

Sentinel EMS

Web Services Guide

Document Revision History

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PREFACE

About This Document

This guide describes how to install the Sentinel EMS service. You can begin by using the topics listed in the TOC or guided on the Welcome page.

This preface also includes the following information about this document:

- ["Release Notes" on page 12](#)
- ["Audience" on the next page](#)
- ["Document Conventions" on page 13](#)
- ["Related Documents" on page 14](#)
- ["Obtaining Support" on page 15](#)

Audience

This document is intended for administrators and users who want to use the Sentinel EMS Web service interfaces.

Release Notes

The release notes provide important information about this release that is not included in the other documentation. It is strongly recommended that you read the Release Notes to fully understand the capabilities, limitations, and known issues for this release. You can view the latest version of the Release Notes for this release at the following location:

<http://sentinelems.safenet-inc.com/EMSdocs/RN/Default.htm>

Document Conventions

This document uses standard conventions for describing the user interface and for alerting you to important information.

Notes

Notes are used to alert you to important or helpful information. They use the following format:



Note: Take note. Contains important or helpful information.

Cautions

Cautions are used to alert you to important information that may help prevent unexpected results or data loss. They use the following format:



CAUTION: Exercise caution. Contains important information that may help prevent unexpected results or data loss.

Warnings

Warnings are used to alert you to the potential for catastrophic data loss or personal injury. They use the following format:



WARNING! Be extremely careful and obey all safety and security measures. In this situation you might do something that could result in catastrophic data loss or personal injury.

Command Syntax and Typeface Conventions

Convention	Description
Bold lettering	Denotes keystrokes, menu items, window names or fields.
<code>Courier</code>	Denotes syntax, prompts, and code examples.
<i>Italic lettering</i>	Denotes file names and directory names. Else, used for emphasis.

Related Documents

The following documents contain related or additional information. You can find them here:

<http://sentinelems.safenet-inc.com/>

Document	What's in it?
Release Notes	Provides information about the new Features and known issues in this release.
Installation Guide	Provides detailed information about the system requirements, environment variables, and installation steps.
User's Guide	Provides details about the functionalities available in Sentinel EMS and demonstrates the steps to perform various tasks in the Sentinel EMS portal.
Configuration Guide	Provides information on how to customize Sentinel EMS.
Web Services Guide (this document)	Details the web services available to facilitate integration of EMS data and transactions with external IT systems like CRM and ERP.
Acknowledgments	Contains acknowledgments for the third-party software used. This document is available only in the Sentinel EMS post-installation directory.

Obtaining Support

You can contact us using any of the following options:

Business Contacts

To find the nearest office or distributor, use the following URL:

<https://sentinel.gemalto.com/contact-us-sm/>

Technical Support

To obtain assistance in using Gemalto Sentinel Products, feel free to contact our Technical Support team:

- Customer Support Portal (preferred):
 - <https://supportportal.gemalto.com/csm?id=sentinel>
- Phone:
 - AMER: 800-545-6608 (US toll free), International: +1-410-931-7520
 - EMEA/APAC: <https://supportportal.gemalto.com/csm?id=sentinel>

⇒ Click “Contact us”
- E-mail (only if you cannot submit the technical issue via the portal)
 - technical.support@gemalto.com

Downloads

To download installers and other updated components:

<https://sentinelcustomer.gemalto.com/sentineldownloads/>

Introduction

Sentinel® EMS™ is a comprehensive entitlement management system that allows you to generate, manage, and fulfill licenses. EMS provides a GUI as well as a web service interface for the user to communicate with the web server. This guide lists the various web service interfaces along with some client samples.

EMS uses RESTful web services to facilitate integration of EMS data and transactions with external IT systems like CRM and ERP. Each web service call is either a standard HTTP or HTTPS request. The response is sent in XML format.



Note: Sentinel EMS is available as a licensed software. This means that the licensed features in Sentinel EMS can be consumed only if there is a valid EMS license.

The following table lists the functionalities of EMS for which web services are provided.

Entity	Operations				
	Retrieve - one record based on ID - all records	Create	Update	Delete	Activate
User	•	•			NA
Role	•				NA
Namespace		•	•	•	NA
Feature	•	•	•	•	NA
Product	•	•	•	•	NA
Suite	•	•	•		NA
Customer	•	•	•	•	NA
Contact	•	•	•	•	NA
Entitlement	•	•	•	•	•



Note: • denotes that the web service for this functionality is available in the current version of EMS; NA - not applicable.



Note: Additional features such as split and transfer, revocation, Retrieve Usage Log, and Retrieve Billing Data.

RESTful Web Service Call Basics

Using the RESTful web services you can construct request URLs that will work in your browser, on the command line, and in your code.

Creating a RESTful Request

The starting point for all web service calls is a URI, which identifies the Sentinel EMS Server.

Base URL

All request URLs start with a fixed string which resembles the following. This is called the base URL.

```
http(s)://<Hostname>:<Port>/<Variable>/v4_2/ws/  
where
```

- Hostname—Host name of the Sentinel EMS Server.
- Port—Port of the Sentinel EMS Server.
- Variable—Starting directory.
- v4_2—Version of Sentinel EMS web services.
- ws—A mandatory part of the string.

HTTP Methods

You can manage (for example, create, update, delete) the resources using the following HTTP methods

- HTTP GET
- HTTP POST
- HTTP PUT
- HTTP DELETE

HTTP GET

The GET method is used to (i) retrieve details of a resource or (ii) search resources.

Get Details of a Resource

URL Pattern

```
https://<Hostname>/ems/v4_2/ws/<Object type>/<Object Id>.ws
```

Example

For

- <ObjectType> = product
- <ObjectId> = 1

The URL becomes

```
https://<Hostname>/ems/v4_2/ws/product/1.ws
```

This request will return the details of a product with ProductId = 1.

Search Resources

URL Pattern

```
https://localhost:8443/ems/v4_2/ws/<RootObjectType>/<Root Object Id>/<Object Type>.ws?<SearchParam>=<SearchValue>
```

- The question mark (?) denotes the starting point for optional parameters. You need to separate multiple optional parameters by semi-colons (;).
- If you remove the question mark along with the parameters that follow, all records will be returned.

Example

For

- <RootObjectType> = vendor
- <RootObjectId> = 1
- <ObjectType> = product
- <SearchParam>=productName
- <SearchValue>=print

The URL becomes

```
https://localhost:8443/ems/v4_2/ws/vendor/1/product.ws?productName=print
```

This request will return all records for vendor ID = 1 and Product name starting with 'print'.



Note: You can remove or repeat the <RootObjectType>/<RootObjectId>/ part in the URL depending on the nesting of the resource. Example: vendor/{vendorId}/product.ws

HTTP PUT

The PUT method is used to create a new resource.

URL Pattern

`https://localhost:8443/ems/v4_2/ws/<RootObjectType>/<Root Object Id>/<Object Type>`

Example

For

- `<RootObjectType> = vendor`
- `<RootObjectId>=1`
- `<ObjectType>=Product`

the URL becomes

`https://localhost:8443/ems/v4_2/ws/vendor/1/product.ws`

This request will create a Product for vendor ID = 1. In the request body, you need to provide a valid input XML (validated by the XSD provided).



Note: By REST convention, repeated HTTP PUT requests should replace existing objects. However, Sentinel EMS does not allow complete replacement of any object, because it internally uses an Auto-ID, which cannot be updated.

HTTP POST

The POST method is used to edit the details of a resource.

URL Pattern

`https://localhost:8443/ems/v4_2/ws/<ObjectType>/<ObjectId>.ws`

Example

For

- `<ObjectType>= product`
- `<ObjectId>=1`

The URL becomes

`https://localhost:8443/ems/v4_2/ws/product/1.ws`

This request will update details of the product with product ID = 1. In the request body, you need to provide a valid input XML (validated by the XSD provided).



Note: The URL for this request is simple as it is based on the Auto-ID generated by Sentinel EMS, which is unique in all conditions for a given object type.

HTTP DELETE

DELETE method is used to delete a resource.

URL Pattern

`https://localhost:8443/ems//ems/v4_2/ws/<ObjectType>/<ObjectId>.ws`

Example

For

- `<ObjectType> = product`
- `<ObjectId> = 1`

The URL becomes

`https://localhost:8443/ems/v4_2/ws/product/1.ws`

This request will delete the product with ID = 1.



Note: The URL for this request is simple as it is based on the Auto-ID generated by Sentinel EMS, which is unique in all conditions for a given object type.

Authentication

This section lists the web services provided to create a working session and to close earlier opened session.

A client application must log on and obtain a sessionId before making any other web service calls. When a client application invokes the verifyLogin method, it passes in a user name and password as user credentials. Upon invocation, the EMS server authenticates the credentials and returns a sessionId for the session to use in all subsequent web service calls. The client application can use the closeSession web service to log out of EMS server.

You can configure log on for your customers/end users by using the method loginByEID and loginByContact. The closeSession method is common for both vendor and end user log in.

Sentinel EMS also provides a web service for technical users, who can access EMS using standard authentication. A technical user can log in to Sentinel EMS using a specific URL, which is only available for technical users. Once authenticated a technical user is treated like other user and has access based on associated privileges.

ISV User Login

Use this method to log on to the EMS server and start a client session. A client application must log on and obtain a sessionId before making any other web services calls.



Note: Version 2.8 onwards, only ISVs can use this method for login. A separate web service is available for Channel Partner login, see "Channel Partner Login" on page 27

When a client application invokes the verifyLogin method it passes in a user name and password as user credentials. Upon invocation, the EMS server authenticates the credentials and returns a sessionId for the session to use in all subsequent web service calls.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/verifyLogin.xml

POST Parameters

Parameter	Description	Type
userName	(Required) Login user name Valid value: String	String
password	(Required) Login password associated with the specified user name Valid value: String	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <sessionId>7D8B62A40233770B476C61A0DEF96878</sessionId>
  <stat>ok</stat>
</EMSResponse>
```



Note: The session ID (sessionId) has to be passed with all service calls including the service call to close a session.

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
213	Specify a valid user name.

Error Code	Description
214	Specify a valid password.
215	Incorrect user name and/or password provided.

Technical User Login

Sentinel EMS also provides a web service for technical users, who can access EMS using standard authentication. A technical user is a user who can access the Sentinel EMS resources for third-party integrated systems. A technical user cannot log on to the Sentinel EMS Portal and can only log on with the help of Web service using a specific URL, which is only available for technical users.

When a user logs in as a technical user, other authentication configurations such as LDAP, SSO etc. will be ignored. For information on creating a Technical User, contact Gemalto Professional Services.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/technicalUserLogin.xml

POST Parameters

Parameter	Description	Type
userName	(Required) Login name for technical user Valid value: String	String
password	(Required) Login password associated with the specified user name Valid value: String	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <sessionId>7D8B62A40233770B876C61A0DEF96878</sessionId>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
213	Specify a valid user name.
214	Specify a valid password.
215	Incorrect user name and/or password provided.

Channel Partner Login

Channel Partners can use this method to log on to the EMS server and start a client session. A client application must log on and obtain a sessionId before making any other web services calls. When a Channel Partner invokes the verifyPartnerLogin method it makes use of the user name and password as user credentials. Upon invocation, the EMS server authenticates the credentials and returns a sessionId for the session to use in all subsequent web service calls.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/verifyPartnerLogin.xml

POST Parameters

Parameter	Description	Type
userName	(Required) Login user name Valid value: String	String
password	(Required) Login password associated with the specified user name Valid value: String	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <sessionId>7D8B62A40233770B476C61A0DEF96878</sessionId>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
213	Specify a valid user name.
214	Specify a valid password.
215	Incorrect user name and/or password provided.

Customer Login By Entitlement ID

You can use this web service in your application to configure log-in by entitlement ID for your customers/end users. The output are session id and entId.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/loginByEID.xml

POST Parameters

Parameter	Description	Type
eid	(Required) Specify the eid to login to EMS. Valid value: String	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <entId>2976</entId>
  <sessionId>7D8B62A40233770B476C61A0DEF96878</sessionId>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
122	{0} is a required field. It cannot have a null value.
218	Access to your user account has been restricted. Contact the system administrator for assistance.
621	Entitlement does not exist. Try again with a correct entitlement ID.
650	The EID cannot be null.
656	The entitlement validity period has yet to start.
657	The entitlement validity period has expired.
658	The entitlement is in the draft stage.

Error Code	Description
659	The entitlement is unavailable. Contact the system administrator for assistance.

Customer Login by Product Key

Login by product key and get session ID and lineItemId.

This Web Service is not available for Lease Entitlements.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/loginByProductKey.xml

POST Parameters

Parameter	Description	Type
productKey	(Required) Specify the Product Key to login to EMS. When logged in by Product Key, the customer can perform certain activities only on one product/suite corresponding to the key. Valid values: String	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <lineItemId>4</lineItemId>
  <sessionId>7D8B62A40233770B476C61A0DEF96878</sessionId>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
219	Login for this product key has been disabled. Please contact administrator.
220	Product Key does not exist, please try with correct id.
531	To use this product key, first login using the EID and complete user registration.
656	The entitlement validity period has yet to start.
657	The entitlement validity period has expired.

Error Code	Description
822	Activation not allowed on disabled Entitlement.
823	The entitlement is not Complete.

Customer Login by User ID and Password

You can use this web service in your application to configure customer/end user login by contact e-mail ID and password. The output parameters are sessionId and entID.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/loginByContact.xml

POST Parameters

Parameter	Description	Type
emailId	(Required) E-mail ID of the contact.	String
password	(Required) Login password associated with the contact.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <entId>
    <entI>98</entI>
    <entI>97</entI>
    <entI>90</entI>
  </entId>
  <sessionId>B9902FF8008931D71882BCD51E71A85F</sessionId>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
214	Specify a valid password.
216	Specify a valid e-mail address.
217	Incorrect e-mail address and/or password provided. Try again with valid inputs.
218	Access to your user account has been restricted. Contact the system administrator for assistance.

Close Session

This web service is common for both vendor log-in and customer log-in. You can use this web service to close the session and log out from EMS.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/closeSession.xml

POST Parameters

None

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
</EMSResponse>
```

Error Codes

Error Code	Description
128	You should log on first.

Web Service Interfaces

This chapter lists all the web services available in EMS and explains how to use REST to make requests through the EMS Web Services. Restfull Web Services allow you to make calls to EMS by passing parameters and values. EMS returns its response in XML format.



Note: Please note both the '.xml' and '.ws' web services are both RESTful Web Services and use the REST convention.

The Web services available in EMS are grouped into the following categories:

- "Users" on page 36
- "User Roles" on page 47
- "Namespaces" on page 51
- "Features" on page 55
- "Product Web Services" on page 65
- "Product Suite" on page 78
- "ESD (Downloads)" on page 87
- "License Models Web Services" on page 101
- "Entitlements" on page 168
- "Entitlement Activation" on page 253
- "Machine Registration for Lease Entitlements" on page 291
- "License Revocation" on page 299
- "Managing Customers and Contacts" on page 316
- "Managing Channel Partners" on page 342
- "Managing Custom Attributes" on page 354
- "Reports Web Services" on page 362
- "Managing Lists" on page 381
- "Release Information" on page 387

For each web service, the default method supported (HTTP or HTTPS) is specified. SSL is enabled in EMS by default, and hence HTTPS is supported. However, if your EMS administrator has disabled SSL then you have to use HTTP for all the web services. For more information on how to enable/disable SSL, refer to "Configuring SSL" in the *Sentinel EMS Administration Guide*.

The query/input parameters are listed for each web service. The query parameters are case sensitive. Their data type and allowed values are mentioned under the column **Valid Values** for each web service. Required parameters must be provided for the request to succeed. Each web service contains a sample code.

The sample response for both success and failure conditions are also listed. For error handling, the error codes and their description are provided for each web service. To see the master list of all the error codes refer to **Error Codes**.



Note: If you call an HTTPS based web service over HTTP, the web server automatically redirects the request. In this case, the HTTP status code is 302 and the web service response is NULL. When correct protocol is used, HTTP status code returned by web service call is 200.

Sentinel EMS uses **XML** and **json**(deprecated) for data in put/output. So content type is **application** for XML and **application/json** for json. For more information on content type, refer <http://spring.io/understanding/REST>.

Users

This section lists the web services provided for

- [Create User](#)
- [Retrieve Users](#)
- [Retrieve the List of Users](#)
- [Retrieve the List of Channel Partners](#)
- [Search Users](#)
- [Update Users](#)

The administrator or any user having administrative rights can perform the operations listed in this section.

Create User

Creates a new User using a User XML string as input.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/user.ws

URI Parameters

None

User XSD

See, "User XSD" on page 448.

Sample Input

```
<user>
  <userName>user01</userName>
  <password>password@3</password>
  <refId1>112</refId1>
  <refId2>121</refId2>
  <emailId>admin01212@admin.com</emailId>
  <enabled>true</enabled>
  <isLocked>false</isLocked>
  <expiresOn></expiresOn>
  <roleIdentifier>
    <roleId>2</roleId>
    <roleName>role01</roleName>
  </roleIdentifier><partnerIdentifier>
    <partnerId>8</partnerId>
    <partnerName>QAPart3</partnerName>
    <partnerIdentifier>QA003</partnerIdentifier>
    <externalId></externalId>
  </partnerIdentifier>
  <customAttribute>
    <attributeName>TestCPU</attributeName>
    <attributeValue>TestBlinker</attributeValue>
  </customAttribute>
</user>
```

Sample Response

Success

HTTP Status Code: 201 (Created)

```
<user>
  <userName>admin01212</userName>
  <refId1></refId1>
  <refId2></refId2>
  <emailId>admin01212@admin.com</emailId>
  <enabled>true</enabled>
  <isLocked>false</isLocked>
  <expiresOn></expiresOn>
```

```

    <partnerIdentifier>
      <partnerId>2</partnerId>
      <partnerName>channelPartner1</partnerName>
    </partnerIdentifier>
    <customAttribute>
      <attributeName>TestCPU</attributeName>
      <attributeValue>TestBlinker</attributeValue>
    </customAttribute>
  </user>

```

Important Input Elements

Tag Name	Description	Values
<customAttribute>	(Optional) This tag is only used for Channel Partner user. This tag specifies the custom attributes for a Channel Partner user.	Nested tags: <attributeName> -Name of custom attribute. <attributeValue> - Value of custom attribute.

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: A user with this name already exists. Retry with a different name.

Retrieve Users

Retrieves User information in form of an XML string using User ID as input.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/user/{userId}.ws

URI Parameters

Parameter	Description	Type
userId	(Required) Specify the User ID.	Integer

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<user>
  <userName>admin01212</userName>
  <externalId></externalId>
  <refId1></refId1>
  <refId2></refId2>
  <emailId>admin01212@admin.com</emailId>
  <enabled>true</enabled>
  <isLocked>false</isLocked>
  <expiresOn></expiresOn>
  <roleIdentifier>
    <roleId>1</roleId>
    <roleName>EMSAdmin</roleName>
  </roleIdentifier>
  <partnerIdentifier>
    <partnerId>162</partnerId>
    <partnerName>John White</partnerName>
    <partnerIdentifier>JohnWhite123</partnerIdentifier>
    <externalId></externalId>
  </partnerIdentifier>
  <customAttribute>
    <attributeName>TestCPU</attributeName>
    <attributeValue>TestBlinker</attributeValue>
  </customAttribute>
</user>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The User does not exist.

Retrieve the List of Users

You can use this web service to retrieve a list of user names. You can filter the search by specifying any of the optional parameters listed.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/userList.xml

Query Parameters

Parameter	Description	Type
channelPartnerId	(Optional) Specify the channel partner ID.	Integer
roleId	(Optional) Specify the role ID.	Integer
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of User IDs retrieved by one request. Default value: 200	Integer (>0)
sortOrder	(Optional) The order to sort. Valid values: asc, desc Default value: desc	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
  <users>
    <user>admin1</user>
    <user>admin2</user>
    <user>admin3</user>
    <user>admin4</user>
  </users>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
109	The sort order value is not valid. Specify asc or desc.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
112	The input JSON string is not valid.
118	{0} should be of data type Integer.
128	You should log on first.

Retrieve the List of Channel Partners

You can use this web service to retrieve a list of channel partners. You can filter the search by specifying any of the optional parameters listed.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/channelPartnerList.xml

Query Parameters

Parameter	Description	Type
channelPartnerName	(Optional) Specify the channel partner name.	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of User IDs retrieved by one request. Default value: 200	Integer (>0)
sortCol	(Optional) Sort against the column. Valid values: channelPartnerName, enabled, trusted, refId1, refId2 Default value: channelPartnerName	String
sortOrder	(Optional) The order to sort. Valid values: asc, desc Default value: desc	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <channelPartners>
    <channelPartner>
      <channelPartnerId>3</channelPartnerId>
      <channelPartnerName>Duper Sales</channelPartnerName>
      <refId1 />
      <refId2 />
    </channelPartner>
  </channelPartners>
  <stat>ok</stat>
  <total>1</total>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
103	Encountered an error while retrieving the list.

Update Users

This Web Service updates User details using User ID and User XML string as the input parameters.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/user/{userId}.ws

URL Parameters

Parameter	Description
userId	(Required) Specify the ID
userXml	Specify the XML string to update user information.

Sample Input

```
<?xml version="1.0" encoding="UTF-8"?>
<user>
  <userName>admin01212</userName>
  <password>password@3</password>
  <externalId></externalId>
  <refId1></refId1>
  <refId2></refId2>
  <emailId>admin01212@admin.com</emailId>
  <enabled>true</enabled>
  <isLocked>false</isLocked>
  <expiresOn></expiresOn>
  <roleIdentifier>
    <roleId>1</roleId>
    <roleName>EMSAdmin</roleName>
  </roleIdentifier>
  <partnerIdentifier>
    <partnerId>162</partnerId>
    <partnerName>John White</partnerName>
    <partnerIdentifier>JohnWhite123</partnerIdentifier>
    <externalId></externalId>
  </partnerIdentifier>
  <customAttribute>
    <attributeName>TestCPU</attributeName>
    <attributeValue>TestBlinker</attributeValue>
  </customAttribute>
</user>
```

Sample Response

Success

HTTP Status Code: 200

Search Users

A new Web service to retrieve the list of Users against the query parameters such as userName, userId, refId, externalId, partnerId and so on.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/user.ws

Example URL

/ems/v4_

2/ws/user.ws?userName=&userId=&emailId=&sortCol=&sortOrder=&pageSize=&pageIndex=&refId1=&refId2=&externalId=&partnerId=&partnerIdentifier=&partnerName=&searchPattern=

Parameter	Description	Type
userName	(Optional) User name	String
userId	(Optional) User ID.	String
emailId	(Optional) Email ID.	String
sortCol	(Optional) Sort against the column.	String
sortOrder	(Optional) The order to sort. Valid values: asc, desc Default value: desc	String
pageSize	(Optional) The number of enforcement IDs to be retrieved by one request. Default value: 5	Integer (>0)
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
externalId	(Optional) External identifier to identify feature.	String (Max 60 characters)
partnerId	(Optional) Channel Partner ID.	String
partnerIdentifier	(Optional) Channel Partner identifier.	String
partnerName	(Optional) Channel Partner Name	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves 	String

Parameter	Description	Type
	<p>exact matching records.</p> <ul style="list-style-type: none"> • Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. • Normal: Default search parameter if search pattern is not specified. • The searchPattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. <p>Default value: Normal</p>	

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<?xml version="1.0" encoding="UTF-8"?>
<listResponse type="User" count="1" searchParameters="{}">
<instance id="23" userName="testUser" externalId="1234" email="1" partnerId="13"
partnerIdentifier="Pid1" refId1="" refId2="" isEnabled="true"/>
</listResponse>
```

User Roles

This section lists the web services provided for

- [Retrieve the List of Roles](#)
- [Retrieve Details of a Role](#)

The administrator or any user having administrative rights can perform the operations listed in this section. The web services for creating or deleting roles are not provided. These functions can be performed only from the EMS portal.

Retrieve the List of Roles

You can use this web service to retrieve a list of roles associated with a userName. If userName is not specified, all role IDs are returned.

Protocol	Method Type	URI
HTTP	GET	/ems/roleList.xml

Query Parameters

Parameter	Description	Type
userName	(Optional) Specify the user name.	String
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of role IDs retrieved by one request. Default value: 200	Integer (>0)
sortOrder	(Optional) The order to sort. Valid values: asc, desc Default value: desc	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <roles>
    <role>ProductManager</role>
    <role>CustomerCareExe</role>
  </roles>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.

Error Code	Description
109	The sort order value is not valid. Specify asc or desc.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
117	Regular expression validation failed for {0}.
128	You should log on first.
211	Either the user does not exist or has been deleted.

Retrieve Details of a Role

Retrieve detailed information of a role, specified by roleId.

Default Protocol	Method Type	URI
HTTP	GET	ems/roleProfile.xml

Query Parameters

Parameter	Description	Type
roleId	(Required) Specify the role name.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <role>
    <attribute />
    <desc />
    <name>VE_Ent</name>
    <permission>
      <permissio>
        <action>V</action>
        <resource>root/RAM</resource>
      </permissio>
    </permission>
    <status>>true</status>
    <user>
      <use>atripathi</use>
    </user>
  </role>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
128	You should log on first.
212	Either the role does not exist or has been deleted.

Namespaces

Following is the list of Namespace related Web services in Sentinel EMS:

- "Create Namespace" on the next page
- "Update Namespace" on page 53
- "Delete Namespace" on page 54

Create Namespace

Create a new Namespace in EMS.

Default Protocol	Method Type	URI
HTTP	POST	/ems/addNamespace.xml

POST Parameters

Parameter	Description	Type
namespaceName	(Required) The namespace name.	String
namespaceDescription	(Optional) Description of the namespace.	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <namespaceId>2</namespaceId>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
115	The length of {0} is {1}. It cannot be more than {2}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
321	Namespace {0} already exists. Try again with a different name.

Update Namespace

Update the details of a Namespace.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateNamespace.xml

POST Parameters

Parameter	Description	Type
namespaceId	(Required) Specify the namespace ID.	Integer
namespaceDescription	(Optional) Description of the namespace.	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
115	The length of {0} is {1}. It cannot be more than {2}.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
322	This {0} does not exist in the system.

Delete Namespace

Delete a namespace.

Default Protocol	Method Type	URI
HTTP	POST	/ems/deleteNamespace.xml

POST Parameters

Parameter	Description	Type
namespaceId	(Required) Specify the namespace ID.	Integer

Sample Responses

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
322	This {0} does not exist in the system.

Features

Following is the list of Feature related Web services in Sentinel EMS:

- "Create Feature" on the next page
- "Retrieve Feature Details" on page 58
- "Update Feature Details for a Feature ID" on page 60
- "Delete Feature" on page 62
- "Search Features" on page 63 (Using query parameters)

Create Feature

Creates a new Feature using a Feature XML string as input.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/feature.ws

URI Parameters

None

Feature XSD

See, "Feature XSD" on page 425.

Sample Input

```
<feature>
  <namespaceIdentifier>
    <namespaceId>1</namespaceId>
    <namespaceName>Global</namespaceName>
  </namespaceIdentifier>
  <externalFtrId></externalFtrId>
  <featureIdentifier></featureIdentifier>
  <featureName>ZipOptionNew</featureName>
  <featureVersion>1.0.1</featureVersion>
  <refId1></refId1>
  <refId2></refId2>
  <description></description>
  <enforcement>
    <enforcementIdentifier>
      <enforcementId>1</enforcementId>
      <enforcementNameVersion>
        <enforcementName>Sentinel RMS</enforcementName>
        <enforcementVersion>9.0</enforcementVersion>
      </enforcementNameVersion>
    </enforcementIdentifier>
  <featurelicenseModel>
    <licenseModelIdentifier>
      <licenseModelId>8</licenseModelId>
      <licenseModelName>Trial Standalone Node Locked</licenseModelName>
    </licenseModelIdentifier>
    <isDefaultLm>True</isDefaultLm>
  </featurelicenseModel>
</enforcement>
  <customAttribute>
    <attributeName>CustomFeature</attributeName>
    <attributeValue>Asdfg@12345</attributeValue>
  </customAttribute>
</feature>
```


Sample Response

Success

HTTP Status Code: 201 (Created)

Header-Location: {feature Id}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Feature {feature name} already belongs to this namespace. Try again with a different name and version.

Retrieve Feature Details

Retrieves Feature information in form of an XML string that consists Feature details.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/feature/{featureId}.ws

URI Parameters

Parameter	Description	Type
featureId	(Required) Specify the Feature ID.	Integer

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<feature>
  <namespaceIdentifier>
    <namespaceId>1</namespaceId>
    <namespaceName>Global</namespaceName>
  </namespaceIdentifier>
  <externalFtrId></externalFtrId>
  <featureIdentifier></featureIdentifier>
  <featureName>ZipOptionNew</featureName>
  <featureVersion>1.0.2</featureVersion>
  <refId1></refId1>
  <refId2></refId2>
  <description></description>
  <enforcement>
    <enforcementIdentifier>
      <enforcementId>1</enforcementId>
      <enforcementNameVersion>
        <enforcementName>Sentinel RMS</enforcementName>
        <enforcementVersion>9.0</enforcementVersion>
      </enforcementNameVersion>
    </enforcementIdentifier>
  <featurelicenseModel>
    <licenseModelIdentifier>
      <licenseModelId>8</licenseModelId>
      <licenseModelName>Trial Standalone Node Locked</licenseModelName>
    </licenseModelIdentifier>
    <isDefaultLm>True</isDefaultLm>
  </featurelicenseModel>
</enforcement>
  <customAttribute>
    <attributeName>CustomFeature</attributeName>
    <attributeValue>Asdfg@12345</attributeValue>
  </customAttribute>
</feature>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Cannot find the feature.

Update Feature Details for a Feature ID

Updates the Feature using Feature ID and Feature XML string as the input parameters.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/feature/{featureId}.ws

URI Parameters

Parameter	Description	Type
featureId	(Required) Specify the feature ID.	Integer
contactXml	(Required) Specify the XML string to update contact detail.	String

Contact XSD

See, "Contact XSD" on page 408 .

Sample Input

```
<feature>
  <namespaceIdentifier>
    <namespaceId>1</namespaceId>
    <namespaceName>test</namespaceName>
  </namespaceIdentifier>
  <externalFtrId></externalFtrId>
  <featureIdentifier></featureIdentifier>
  <featureName>ZipOptionUpdate</featureName>
  <featureVersion>1.0.1</featureVersion>
  <refId1></refId1>
  <refId2></refId2>
  <description></description>
  <enforcement>
    <enforcementIdentifier>
      <enforcementId>1</enforcementId>
      <enforcementNameVersion>
        <enforcementName>Sentinel RMS</enforcementName>
        <enforcementVersion>9.0</enforcementVersion>
      </enforcementNameVersion>
    </enforcementIdentifier>
    <featurelicenseModel>
      <licenseModelIdentifier>
        <licenseModelId>8</licenseModelId>
        <licenseModelName>Trial Standalone Node Locked</licenseModelName>
      </licenseModelIdentifier>
      <isDefaultLm>True</isDefaultLm>
    </featurelicenseModel>
  </enforcement>
  <customAttribute>
    <attributeName>CustomFeature</attributeName>
    <attributeValue>Asdfg@12345</attributeValue>
  </customAttribute>
</feature>
```

Sample Response

Success

HTTP Status Code: 200

Response Body: Same as "Sample Input" on the previous page.

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Cannot find the feature.

Delete Feature

Deletes a feature based on the given parameters.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/feature/{featureId}.ws

URI Parameters

Parameter	Description	Type
featureId	(Required) Specify the feature ID.	Integer

Sample Response

Success

HTTP Status Code: 204 (No Content)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: This Feature does not exist in the system.

Search Features

Retrieve the list of features against the query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/searchFeature.ws

URL Parameters

Example URL: /ems//ems/v4_2/ws/searchFeature.ws?featureName=&namespaceName=&sortOrder=&pageSize=&sortCol=&externalId=&pageIndex=&refId2=&refId1=&featureVersion=

Parameter	Description	Type
featureName	(Optional) Feature name	String
featureVersion	(Optional) The feature version	String
namespaceName	(Optional) Namespace name	String
sortCol	(Optional) Sort against the column.	String
sortOrder	(Optional) The order to sort. Valid values: asc, desc Default value: desc	String
pageSize	(Optional) The number of enforcement IDs to be retrieved by one request. Default value: 5	Integer (>0)
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
externalId	(Optional) External identifier to identify feature.	String (Max 60 characters)
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. 	String

Parameter	Description	Type
	<ul style="list-style-type: none"> • Normal: Default search parameter if search pattern is not specified. • The searchPattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. <p>Default value: Normal</p>	

Sample Response

HTTP Status Code: 200 (OK)

Response Body:

```
<listResponse type="Feature" count="27" searchParameters="{ }"> <instance id="51" name="flweve"
version="" externalId=""/> <instance id="50" name="Mix" version="1" externalId=""
featureIdentifier="18"/> <instance id="49" name="conc" version="1" externalId=""
featureIdentifier="17"/> <instance id="48" name="post" version="1" externalId=""
featureIdentifier="16"/> <instance id="47" name="postpaid" version="1234" externalId=""
featureIdentifier="15"/> <instance id="46" name="postpaid" version="12" externalId=""
featureIdentifier="14"/> <instance id="45" name="Postpaid123" version="" externalId=""
featureIdentifier="13"/> <instance id="44" name="Prepaid" version="12" externalId=""
featureIdentifier="12"/> <instance id="43" name="prepaid" version="1" externalId=""
featureIdentifier="11"/> <instance id="42" name="s" version="" externalId=""
featureIdentifier="10"/> <instance id="41" name="Demo" version="1" externalId="123"/> <instance
id="40" name="Cloud_Subscription" version="1" externalId="14" featureIdentifier="9"/> <instance
id="39" name="Cloud_PrePaid" version="1" externalId="13" featureIdentifier="8"/> <instance
id="38" name="Cloud_postpaid" version="1" externalId="12" featureIdentifier="7"/> <instance
id="37" name="Cloud_concurrency" version="1" externalId="11" featureIdentifier="5"/> <instance
id="36" name="cloud" version="ver1" externalId="" featureIdentifier="23"/> <instance id="35"
name="cloudfrfgrgrg" version="ver1" externalId="exet_wdw123" featureIdentifier="2"/> <instance
id="34" name="fe3changed" version="changed" externalId=""/> <instance id="33" name="chnage"
version="" externalId=""/> <instance id="32" name="df" version="dfsdf" externalId=""
featureIdentifier="4"/> <instance id="31" name="f323" version="" externalId=""/> <instance
id="30" name="F1" version="" externalId="" featureIdentifier="3"/> <instance id="29" name="df"
version="" externalId=""/> <instance id="10" name="RMS" version="w" externalId=""/> <instance
id="9" name="Mix1" version="S" externalId="S" featureIdentifier="45"/> <instance id="8"
name="rt" version="" externalId="" featureIdentifier="6"/> <instance id="1" name="Demo_Mix"
version="1" externalId="" featureIdentifier="1"/> </listResponse>
```

Sample Response

Success

HTTP Status Code: 200 (OK)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: This Feature does not exist in the system.

Product Web Services

Following is the list of Product related Web services in Sentinel EMS:

- "Create Product using Product XML " on the next page
- Retrieve Product Details Using Product ID
- Update Product Using Product ID and Product XML
- "Search Products" on page 519
- "Delete Product" on page 77

Create Product using Product XML

Sentinel EMS allows you to create the following types of Products:

- **Parent** - You can create a Product of type Parent that contains a collection of Features of different License Models across enforcements. You can create multiple variants for a Parent product.
- **Child** - A Child Product is a variant of the Parent Product where the Features included is a subset of the Features included in its Parent. The name of a Child Product is the same as its Parent. You can create several Child Products for a Parent Product by providing the same name and a different version for each Child.
- **Default** - Any Product that is not categorized as a Parent or Child Product is marked as Default. This also helps maintain backward compatibility of all Products created in Sentinel EMS 4.1 and earlier versions where Licence Version Handling (LVH) using Child and Parent Products had not been introduced.

Sentinel EMS' Parent and Child Products are used for License Version Handling (LVH) and these are also referred to as LVH Parent Products and LVH Child Products. License Version Handling allows you to maintain several versions of the license. You can define a number of Products with combination of different Features by understanding the market requirements and keep them ready for order.

This Web service creates a new Product using a Product XML string as input.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/product.ws

URI Parameters

None

Product XSD

See, "Product XSD" on page 437.

Sample Input

This sample creates a Parent Product.

```
<?xml version="1.0" encoding="UTF-8"?>
<product>
  <externalPrdId></externalPrdId>
  <productName>Parent_Product</productName>
  <productVersion>NA</productVersion>
  <deployed>>false</deployed>
  <desc></desc>
  <lifeCycleStage>COMPLETE</lifeCycleStage>
  <namespace>
    <namespaceId>1</namespaceId>
    <namespaceName>Nm1</namespaceName>
  </namespace>
  <refId1></refId1>
  <refId2></refId2>
  <family>
    <familyId>6</familyId>
    <familyName>Default</familyName>
  </family>
  <enabled>>true</enabled>
</product>
```

```

<activationMethod>SAOT</activationMethod>
<productType>PARENT</productType>
<fixedQuantity>0</fixedQuantity>
<productFeatureRef>
  <featureIdentificationInfo>
    <featureId>3</featureId>
    <externalFtrId></externalFtrId>
    <featureUniqueInfo>
      <featureName>Ftr3</featureName>
      <featureVersion>1</featureVersion>
    </featureUniqueInfo>
  </featureIdentificationInfo>
  <productFeatureState>Optional_DefaultOn</productFeatureState>
  <productFeatureLicenseModel>
    <licenseModel>
      <licenseModelName>Auto Checkout</licenseModelName>
      <licenseModelId>7</licenseModelId>
    </licenseModel>
    <default>
      <isFixed>>false</isFixed>
    </default>
  </productFeatureLicenseModel>
</productFeatureRef>
<customAttribute>
  <attributeName>Product Key</attributeName>
  <attributeValue>TRUE</attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>Universal License</attributeName>
  <attributeValue>TRUE</attributeValue>
</customAttribute>
<productAttributes/>
</product>

```

Important Input Elements

Some important elements in the input XML are described below:

Tag Name	Description	Values
<productName>	This element specifies the name of the Product.	Child Product variants must have the same <productName> as their Parent Product.
<productVersion>	This element specifies the version of the Product.	Child Product variants of a Parent Product must all have different versions. The <productVersion> specified for a Parent Product is NA.
<lifeCycleStage>	This element specifies the lifecycle stage of the Product.	Complete, Draft, End of Life.
<activationMethod>	This element specifies the activation method of the Product.	Activation Method for Parent Products is SAOT. Activation Method for Child Products can be Fixed, Partial, or Full.

Tag Name	Description	Values
<productType>	This element specifies whether the Product being created is a LVH Parent Product, a LVH Child Product or a non-LVH product(Default).	Parent, Child, Default. 'Default' is the default <productType> for a Product.
<isFixed>	This element specifies whether the License Model will remain 'fixed' for a Feature at Entitlement level. This means that the License Model cannot be modified at Entitlement level.	true, false. This element is always 'true' for Child Products.

Important

- Products can be created as Default, Parent, and Child Products.
- Child Product variants must have the same Product Name as their Parent Product.
- Child Product variants of a Parent Product must all have different versions.
- A Child Product can only be created for an existing Parent Product, which is in 'Complete' state.
- Activation Method for Parent Products is SAOT.
- Activation Method for Child Products can be Fixed, Partial, or Full.
- The element <isFixed> is always 'true' for Child Products.

Sample Response

Success

HTTP Status Code: 201 (Created)

Header-Location: {product Id}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Product {product Name} already exists. Try again with a different name and version.

Retrieve Product Details Using Product ID

Retrieves Product information in form of an XML string that consists of various information such as, Product details, associated Feature details and License Model details.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/product/{productId}.ws

URI Parameters

Parameter	Description	Type
productId	(Required) Specify the product ID.	Integer

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<product>
  <externalPrdId />
  <productName>Tes109</productName>
  <productVersion>1</productVersion>
  <deployed>>false</deployed>
  <desc />
  <lifeCycleStage>Draft</lifeCycleStage>
  <namespace>
    <namespaceId>1</namespaceId>
    <namespaceName>Global</namespaceName>
  </namespace>
  <refId1 />
  <refId2 />
  <enabled>>true</enabled>
  <activationType>FIXED</activationType>
  <fixedQuantity>10</fixedQuantity>
  <productFeatureRef>
    <featureIdentificationInfo>
      <featureId>2</featureId>
      <externalFtrId />
      <featureUniqueInfo>
        <featureName>TestFeat</featureName>
        <featureVersion>1.0</featureVersion>
      </featureUniqueInfo>
    </featureIdentificationInfo>
    <productFeatureState>defaultoff</productFeatureState>
    <productFeatureLicenseModel>
      <licenseModel>
        <licenseModelName>Trial Network</licenseModelName>
        <licenseModelId>2</licenseModelId>
      </licenseModel>
      <default>
        <isFixed>>false</isFixed>
      </default>
    </productFeatureLicenseModel>
  </productFeatureRef>
</product>
```

```
    </default>  
  </productFeatureLicenseModel>  
</productFeatureRef>  
</product>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Cannot find a product corresponding to {product ID}.

Update Product Using Product ID and Product XML

Updates Product using Product ID and Product XML string as the input parameters. You can also override default License Model of a feature at product level using this Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/product/{productId}.ws

URI Parameters

Parameter	Description	Type
productId	(Required) Specify the product ID.	Integer

Sample Input

```
<?xml version="1.0" encoding="UTF-8"?>
<product>
  <externalPrdId></externalPrdId>
  <productName>sa</productName>
  <productVersion>NA</productVersion>
  <deployed>>false</deployed>
  <desc></desc>
  <lifeCycleStage>DRAFT</lifeCycleStage>
  <namespace>
    <namespaceId>3</namespaceId>
    <namespaceName>Hardware Compatibility</namespaceName>
  </namespace>
  <refId1></refId1>
  <refId2></refId2>
  <family>
    <familyId>6</familyId>
    <familyName>Default</familyName>
  </family>
  <enabled>>true</enabled>
  <activationMethod>SAOT</activationMethod>
  <productType>PARENT</productType>
  <fixedQuantity>0</fixedQuantity>
  <productFeatureRef>
    <featureIdentificationInfo>
      <featureId>7</featureId>
      <externalFtrId></externalFtrId>
      <featureUniqueInfo>
        <featureName>9999</featureName>
        <featureVersion></featureVersion>
      </featureUniqueInfo>
    </featureIdentificationInfo>
    <productFeatureState>Optional_DefaultOn</productFeatureState>
    <productFeatureLicenseModel>
      <licenseModel>
        <licenseModelName>Claim only with locking value</licenseModelName>
        <licenseModelId>16</licenseModelId>
      </licenseModel>
    </productFeatureLicenseModel>
  </productFeatureRef>
  <default>
```



```

        <isFixed>true</isFixed>
    </default>
</productFeatureLicenseModel>
</productFeatureRef>
<customAttribute>
    <attributeName>Product Key</attributeName>
    <attributeValue>TRUE</attributeValue>
</customAttribute>
<customAttribute>
    <attributeName>Universal License</attributeName>
    <attributeValue>TRUE</attributeValue>
</customAttribute>
<customAttribute>
    <attributeName>Capacity</attributeName>
    <attributeValue>0</attributeValue>
</customAttribute>
<customAttribute>
    <attributeName>Capacity Buffer</attributeName>
    <attributeValue>0</attributeValue>
</customAttribute>
</productAttributes/>
</product>

```

Sample Response

Success

HTTP Status Code: 200

Response Body:

```

<product>
  <externalPrdId />
  <productName>Viewer Croz</productName>
  <productVersion>1</productVersion>
  <deployed>>false</deployed>
  <desc />
  <lifeCycleStage>Draft</lifeCycleStage>
  <namespace>
    <namespaceId>1</namespaceId>
    <namespaceName>Global</namespaceName>
  </namespace>
  <refId1 />
  <refId2 />
  <enabled>true</enabled>
  <productFeatureRef>
    <featureIdentificationInfo>
      <featureId>2</featureId>
      <externalFtrId />
      <featureUniqueInfo>
        <featureName>TestFeat</featureName>
        <featureVersion>1.0</featureVersion>
      </featureUniqueInfo>
    </featureIdentificationInfo>
    <productFeatureState>defaultoff</productFeatureState>
    <productFeatureLicenseModel>
      <licenseModel>
        <licenseModelName>Trial Network</licenseModelName>
      </licenseModel>
    </productFeatureLicenseModel>
  </productFeatureRef>
</product>

```

```
<licenseModelId>2</licenseModelId>
</licenseModel>
<default>
  <isFixed>>false</isFixed>
</default>
</productFeatureLicenseModel>
</productFeatureRef>
</product>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Product {product Name} is already in end of life stage. Hence, it cannot be updated/deleted.

Search Products

Retrieve the list of products against the query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/searchProduct.ws

URL Parameters

Example URL: /ems//ems/v4_2/ws/searchProduct.ws?namespaceName=&externalPrdId=&sortOrder=&pageSize=&sortCol=&productVersion=&pageIndex=&refId2=&refId1=&productName=

Parameter	Description	Type
productName	(Optional) Specify the product name.	String
productVersion	(Optional) Version of the product.	String
namespaceName	(Optional) Specify the namespace to which the product belongs.	String
sortCol	(Optional) Sort against the column. Valid values: String (productName, productVersion, namespaceName, productDescription, lifeCycleSatge, deployed) Default value: productName	String
sortOrder	(Optional) The order to sort. Valid values: String (asc, desc) Default value: desc	String
pageSize	(Optional) The number of products retrieved by one request. Default value: 200	Integer (>0)
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
externalPrdId	(Optional) External identifier to identify the Product. Valid values: String (accepts a maximum of 60 characters)	String
productFamily	(Optional) Specify the Product Family. Product Family specifies a group of products derived from a common product platform.	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. 	String

Parameter	Description	Type
	<ul style="list-style-type: none"> Normal: Default search parameter if search pattern is not specified. The searchPattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. <p>Default value: Normal</p>	
productType	<p>(Optional) Specifies whether the product is a Parent, Child, or neither.</p> <p>Valid values: Parent, Child, or Default</p>	String

Sample Response

Success

HTTP Status Code: 200

Response Body:

```
<listResponse type="Product" count="20" searchParameters="{ }"> <instance id="20" name="wewe"
version="w" externalId=""/> <instance id="19" name="conc" version="1" externalId=""/> <instance
id="18" name="post" version="1" externalId=""/> <instance id="17" name="postpaid"
version="1234" externalId=""/> <instance id="16" name="postpaid" version="12" externalId=""/>
<instance id="15" name="postpaid" version="123" externalId=""/> <instance id="14"
name="Prepaid" version="12" externalId=""/> <instance id="13" name="Prepaid" version=""
externalId=""/> <instance id="12" name="Cloud_Subscription" version="1" externalId="14"/>
<instance id="11" name="Cloud_Prepaid" version="13" externalId="13"/> <instance id="10"
name="Cloud_postpaid" version="1" externalId="12"/> <instance id="9" name="Cloud_Concurrency"
version="1" externalId="11"/> <instance id="8" name="cloud_ver1" version="1" externalId=""/>
<instance id="7" name="prd" version="123" externalId=""/> <instance id="6" name="f" version="1"
externalId="f"/> <instance id="5" name="fffff" version="s" externalId=""/> <instance id="4"
name="RMS" version="d" externalId=""/> <instance id="3" name="Cloud_demo" version="1"
externalId=""/> <instance id="2" name="cloud" version="d" externalId=""/> <instance id="1"
name="Mix" version="1" externalId=""/> </listResponse>
```

Delete Product

Deletes a product based on the given parameters.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/product/{productId}.ws

URI Parameters

Parameter	Description	Type
productId	(Required) Specify the product ID.	Integer

Sample Response

Success

HTTP Status Code: 204 (No Content)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Product does not exist.

Product Suite

Following is the list of Product Suite related Web services in Sentinel EMS:

- "Create Suite" on the next page
- "Retrieve Suite Details By Name and Version" on page 81
- "Retrieve Suite Details by ID" on page 83
- "Search Suites" on page 85

Create Suite

Create a Product Suite in the mentioned Namespace.

Default Protocol	Method Type	URI
HTTP	POST	/ems/createSuite.xml

POST Parameters

Parameter	Description	Type
suiteName	(Required) Specify the suite name.	String
suiteVersion	(Required) Version of the suite.	String
suiteDescription	(Optional) Description of the suite.	String
namespaceName	(Required) Specify the Namespace for which the suite is being created.	String
productIds	(Optional) Specify one or more product IDs. Valid values: String (comma separated product IDs)	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
activationType	(Optional) Specifies the Activation type. Valid values: String (FIXED, PARTIAL, FULL, UNLIMITED, SAOT) activationType is an alias for activationMethod and is used for Product Suites. activationType works for Product Suites in the same way as activationMethod works for Products.	String
fixedQuantity	(Optional) Specifies the quantity in case of FIXED activation type.	Integer

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <id>10</id>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
133	The namespace is not valid.
301	Cannot find a product corresponding to {0}.
313	The product suite {0} already exists. Try again with a different name and version.
314	The given product IDs are not correct.

Retrieve Suite Details By Name and Version

Retrieve product suite for given exact suite name and version.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getSuiteByNameAndVer.xml

Query Parameters

Parameter	Description	Type
suiteName	(Required) Specify the suite name.	String
suiteVersion	(Required) Version of the suite	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
  <suite>
    <activationType>FIXED</activationType>
    <deployed>true</deployed>
    <desc>Authoring Tools</desc>
    <enabled>true</enabled>
    <fixedQuantity>10</fixedQuantity>
    <id>1</id>
    <lifeCycleStage>Complete</lifeCycleStage>
    <name>WordImage</name>
    <namespaceId>1</namespaceId>
    <namespaceName>EMS</namespaceName>
    <products>
      <product>
        <id>3</id>
        <name>Word Processor</name>
        <ver>1.0.0</ver>
      </product>
      <product>
        <id>2</id>
        <name>Protect Dirve</name>
        <ver>1.0.0</ver>
      </product>
    </products>
    <refId1 />
    <refId2 />
    <ver>1.0.0</ver>
  </suite>
</EMSResponse>
```

Output Format (failure)

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <code>316</code>
```

```
<desc>Suite does not exists for given Name and Version.</desc>  
<stat>fail</stat>  
</EMSResponse>
```

Error Code

Error Code	Description
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
316	No product suite exists for the given name and version.

Retrieve Suite Details by ID

Retrieve the details of a suite for a given suite ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getSuiteById.xml

Query Parameters

Parameter	Description	Type
suiteld	(Required) Specify the suite ID.	Integer

Sample Response

```
<EMSResponse>
  <stat>ok</stat>
  <suite>
    <activationType>FIXED</activationType>
    <deployed>>false</deployed>
    <desc>Authoring Tools</desc>
    <enabled>>true</enabled>
    <ent_items />
    <fixedQuantity>10</fixedQuantity>
    <id>4</id>
    <lifeCycleStage>Draft</lifeCycleStage>
    <name>NewSafe</name>
    <namespace>
      <id>1</id>
      <name>Global</name>
    </namespace>
    <products>
      <product>
        <id>1</id>
        <name>Word Pro</name>
      </product>
    </products>
    <refId1 />
    <refId2 />
    <ver>1</ver>
  </suite>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.

Error Code	Description
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
128	You should log on first.
133	The namespace is not valid.
330	Cannot find a product suite corresponding to {0}

Search Suites

Retrieves suite listing based on criteria.

Default Protocol	Method Type	URI
HTTP	GET	/ems/searchSuites.xml

Query Parameters

Parameter	Description	Type
suiteName	(Optional) Specify the suite name.	String
suiteVersion	(Optional) Version of the suite.	String
namespaceName	(Optional) Specify the namespace to which the suite belongs	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
sortCol	(Optional) Sort against the column. Valid values: String (suiteName, suiteVersion, namespaceName, lifeCycleSatge, deployed) Default value: suiteName	String
sortOrder	(Optional) The order to sort. Valid values: asc, desc Default value: desc	String
pageSize	(Optional) The number of suites retrieved by one request. Default value: 200	Integer (>0)
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
  <suites>
    <suite>
      <deployed>>false</deployed>
      <desc>hello notepad</desc>
      <enabled>>true</enabled>
      <id>10</id>
      <lifeCycleStage>Draft</lifeCycleStage>
      <name>word pad suite</name>
      <namespace>EMS</namespace>
    </suite>
  </suites>
</EMSResponse>
```

```

    <refId1 />
    <refId2 />
    <ver>1.1</ver>
  </suite>
  <suite>
    <deployed>>false</deployed>
    <desc />
    <enabled>>true</enabled>
    <id>8</id>
    <lifeCycleStage>Complete</lifeCycleStage>
    <name>ps2ftr1</name>
    <namespace>EMS</namespace>
    <refId1 />
    <refId2 />
    <ver>1.1</ver>
  </suite>
</suites>
<total>2</total>
</EMSResponse>

```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
124	The sort column is not valid. The valid values are {0}.
128	You should log on first.
133	The namespace is not valid.

ESD (Downloads)

Following is the list of ESD related Web services (REST) in Sentinel EMS:

- "Retrieve Download by ID" on the next page
- "Retrieve Entitlement Downloads " on page 90
- "Search Downloads" on page 91
- "Get STS Token" on page 93
- "Create Download" on page 95
- "Delete Download" on page 97

Retrieve Download by ID

Retrieves the download information in form of an XML string that consists of various information such as, download details, linked product details, details of associated downloads, assigned customers, and custom attributes. The information is retrieved based on the downloadId parameter.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/download/{downloadId}.ws

URI Parameters

Parameter	Description	Type
downloadId	(Required) Specify the download ID.	Integer

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<download>
<name>BetaXview</name>
<version>1</version>
<releaseDate></releaseDate>
<license></license>
<vendor></vendor>
<description></description>
<status>Enable</status>
<eol>>false</eol>
<downloadFile>
<fileName>betaxview</fileName>
<size></size>
<logo></logo>
<url>http://www.betaxviewdownload.com</url>
</downloadFile>
<linkedProduct>
<productId>4</productId>
<linkProductType>Base</linkProductType>
<state>Active</state>
</linkedProduct>
<linkedProduct>
<productId>2</productId>
<linkProductType>Alternative</linkProductType>
<state>Active</state>
</linkedProduct>

<linkedCustomer>
  <customerId>1</customerId>
  <customerName>Customer1</customerName>
  <custIdentifier>Cust1</custIdentifier>
  <custExternalId>cust111</custExternalId>
</linkedCustomer>
```



```
</linkedCustomer>

<customAttribute>
  <attributeName>OS</attributeName>
  <attributeValue>Linux</attributeValue>
</customAttribute>

</download>
```



Note: . The URL retrieved in the <url> element is a signed URL.

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: No data found for download id {downloadID}.

Retrieve Entitlement Downloads

Retrieves download information for a specified Entitlement. This Web service will retrieve download definitions filtered as per the release date and line item start date and end date. For more information, see Creating New Download Definition in the User's Guide.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/download/Entitlement-item.ws

URL Parameters

Example URL: /ems/v4_2/ws/download/Entitlement-item.ws?ItemId=ccaf3a18-2c29-4780-b326-3b67ec47045e&itemType=EID

Parameter	Description	Type
itemType	(Required) Specify the type for the itemID. Valid values: EID, Ent_ID, ProductKey, or Lineltem.	String
itemId	(Required) Specify the ID value corresponding the itemType field.	String

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<listResponse type="Download" count="1" searchparameter="{ itemType=EID,itemId=ccaf3a18-2c29-4780-b326-3b67ec47045e }"> <instance id="1" name="xb" version="1"
associatedEntityType="Product" associatedEntityIdList="{2}" ChildEntityType="Download"
ChildEntityIDList="{2}"/> </listResponse>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Valid Item Type is eid, ent_id, ProductKey or Lineltem.

Search Downloads

Retrieves download details in form of an XML string that consists information such as, Product details, associated Feature details and License Model details.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/download.ws

URL Parameters

Example URL: /ems/v4_2/ws/download.ws?EOL=&vendor=&state=&version=&releaseDate=&downloadName=newxb&downloadFileName=&associateDownloadName=&associateDownloadVersion=&customerName=

Parameter	Description	Type
downloadName	(Optional) Specify the name of a download.	String
version	(Optional) Specify the download version.	String
state	(Optional) Specify the download status. Valid values: Enabled or Disabled	String
EOL	(Optional) Specify whether or not download is marked End of Life. Valid values: true or false	String
productName	(Optional) Specify the product name.	String
releaseDate	(Optional) Specify the release date.	String
downloadFileName	(Optional) Specify the download file name.	String
associateDownloadName	(Optional) Specify the associated download name.	String
associateDownloadVersion	(Optional) Specify the associated download version.	String
customerName	(Optional) Specify the associated customer.	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. Normal: Default search parameter if search pattern is not specified. The searchPattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. Default value: Normal	String

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<?xml version="1.0" encoding="UTF-8"?>
<list type="Download" count="12" searchparameter="{}">
  <instance id="5" name="d1" version="" associatedEntityType="Product" associatedEntityIdList="{3,2,1}" ChildEntityType="Download" ChildEntityIDList="{}" associatedCustomerList="{}" />
  <instance id="6" name="d2" version="2" associatedEntityType="Product"
associatedEntityIdList="{3}" ChildEntityType="Download" ChildEntityIDList="{}"
associatedCustomerList="{}" />
  <instance id="7" name="d5" version="" associatedEntityType="Product" associatedEntityIdList=""
{" ChildEntityType="Download" ChildEntityIDList="" associatedCustomerList="" />
  <instance id="15" name="d78173" version="" associatedEntityType="Product"
associatedEntityIdList="" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="" />
  <instance id="10" name="d8912" version="" associatedEntityType="Product"
associatedEntityIdList="" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="{2}" />
  <instance id="13" name="d891sh" version="" associatedEntityType="Product"
associatedEntityIdList="" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="" />
  <instance id="17" name="d89213" version="" associatedEntityType="Product"
associatedEntityIdList="{1}" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="" />
  <instance id="18" name="d8921he" version="" associatedEntityType="Product"
associatedEntityIdList="{1}" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="" />
  <instance id="12" name="d9821" version="" associatedEntityType="Product"
associatedEntityIdList="{1}" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="" />
  <instance id="21" name="dheaviest" version="" associatedEntityType="Product"
associatedEntityIdList="{1}" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="{2}" />
  <instance id="20" name="dheavy" version="1" associatedEntityType="Product"
associatedEntityIdList="{1}" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="" />
  <instance id="16" name="y8321" version="" associatedEntityType="Product"
associatedEntityIdList="" ChildEntityType="Download" ChildEntityIDList=""
associatedCustomerList="{2}" />
</list>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The value provided for EOL is not valid. Choose true/false.

Get STS Token

This Web service is used to generate a STS Token that is used for uploading a file to the file server. The STS Token generated is used to authenticate the user who is uploading the file. The validity of a STS Token is 30 minutes.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/download/stsTokenESD.ws

Sample Response

Success

HTTP Status Code: 200

Response Body

```
{ "SecretAccessKey": "XXXXXXXXXXXXXXXXAokpMxcCi5EtBH2WeBF8VvcyArx", "apiRegion": "us-east-1", "s3Region": "us-east-1", "bucketName": "sentinel-esd-XX-XXX", "domainAlias": "XX-XXX.test.sentinelcloud.com", "AccessKeyId": "ASIAID6I2DXXXXXXXXXX", "SessionToken": "XXXXXXXXXXXXXXXXXXXXXXXXlcrsdXXXXXXXXXXXXXXXXLJjP0kNW1NfH7V eRhhYBreKr/NGCL6MkMH5xeJpUwVMt/1CDA1dRidrVxSxiZDtfwda6yVH143nU8+XXXXXXXXXz1LbzIL50lf+6AW5a2QuasIbh1YXq+CAuEjmx7OGcIw38fR0n4YxYJx55Cib5Y3KBQ==" }
```

The STS token generated is used with the JAVA program given below. The purpose of this code is to upload the file to the File server. Replace the variables in the JAVA program with the values generated in the STS token. You can also customize this code as per your requirement.

```
import java.io.File;
import java.io.IOException;

import com.amazonaws.AmazonClientException;
import com.amazonaws.AmazonServiceException;
import com.amazonaws.auth.AWSCredentials;
import com.amazonaws.auth.BasicSessionCredentials;
import com.amazonaws.services.s3.AmazonS3;
import com.amazonaws.services.s3.AmazonS3Client;
import com.amazonaws.services.s3.model.PutObjectRequest;
import com.amazonaws.services.s3.model.PutObjectResult;

public class UploadFile {
    private static String bucketName = "sentinel-esd-XX-XXX";
    private static String keyName = "sampleDownloadIdentifier/XXX2.zip";
    private static String uploadFileName = "c:\\XXX2.zip";
    private static String accessKeyId="ASIAID6I2DXXXXXXXXXX";
    private static String secretAccessKey="XXXXXXXXXXXXXXXXAokpMxcCi5EtBH2WeBF8VvcyArx";
    private static String sessionToken="XXXXXXXXXXXXXXXXXXXXXXXXlcrsdXXXXXXXXXXXXXXXXLJjP0kNW1NfH7V eRhhYBreKr/NGCL6MkMH5xeJpUwVMt/1CDA1dRidrVxSxiZDtfwda6yVH143nU8+XXXXXXXXXz1LbzIL50lf+6AW5a2QuasIbh1YXq+CAuEjmx7OGcIw38fR0n4YxYJx55Cib5Y3KBQ==" ;
    private static String domainAlias = "XX-XXX.test.sentinelcloud.com";
    public static void main(String[] args) throws IOException {
        AWSCredentials credentials = new BasicSessionCredentials
(accessKeyId, secretAccessKey, sessionToken);
        AmazonS3 s3client = new AmazonS3Client(credentials);
        try {
            System.out.println("Uploading a new object to S3 from a file\n");
            File file = new File(uploadFileName);
            PutObjectResult putObjResult=s3client.putObject(new PutObjectRequest
```

```

(bucketName, keyName, file));
    System.out.println("Upload Successful");
    //s3client.getUrl(arg0, arg1)
    s3client.getUrl(bucketName, keyName);
    String downloadFileLink = "http://" + domainAlias + "/" + keyName;
    System.out.println("\n\nKindly use the below download location url as input
during the create download");
    System.out.println("Download File Location : "+downloadFileLink);
} catch (AmazonServiceException ase) {
    System.out.println("Caught an AmazonServiceException, which "
        + "means your request made it "
        + "to Amazon S3, but was rejected with an error response"
        + " for some reason.");
    System.out.println("Error Message: " + ase.getMessage());
    System.out.println("HTTP Status Code: " + ase.getStatusCode());
    System.out.println("AWS Error Code: " + ase.getErrorCode());
    System.out.println("Error Type: " + ase.getErrorType());
    System.out.println("Request ID: " + ase.getRequestId());
} catch (AmazonClientException ace) {
    System.out.println("Caught an AmazonClientException, which "
        + "means the client encountered "
        + "an internal error while trying to "
        + "communicate with S3, "
        + "such as not being able to access the network.");
    System.out.println("Error Message: " + ace.getMessage());
}
}
}

```

Compile and run the above program to generate the base URL of the location where your file is uploaded. This URL (example: `<url>http://qadev.test.sentinelcloud.com/sampledownloadIdentifier/xx2.zip</url>`) has to be passed as a parameter when you are creating a download using the Web service, `/ems/v4_2/ws/download.ws`. The download identifier ensures that a file with the same name can be uploaded for separate downloads. The download identifier should be unique for each download definition. Libraries being used by the JAVA program are:

- aws-java-sdk-1.11.27
- commons-codec-1.9
- commons-io-1.4
- commons-logging-1.1
- httpclient-4.5.2
- httpcore-4.4.4
- jackson-annotations-2.6.0
- jackson-core-2.6.6
- jackson-databind-2.6.6
- jackson-dataformat-cbor-2.6.6
- joda-time-2.8.1

These Jar files need to be included to run the program.

Create Download

Creates a download definition in the database according to a valid XML input string. When creating a download you can also assign customers to it.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/download.ws

URI Parameter

None

Download XSD

See, "Download XSD" on page 410

Sample Input

```
<?xml version="1.0" encoding="utf-8"?>
<download>
<name>BetaXview</name>
<version>1</version>
<releaseDate></releaseDate>
<downloadIdentifier>d5455276-93be-40ce-b959-c1c93690e536</downloadIdentifier>
<license></license>
<vendor></vendor>
<description></description>
<status>Enable</status>
<eol>>false</eol>
<downloadFile>
<fileName>betaxview</fileName>
<size></size>
<logo></logo>
<url>https://sm-dev.test.sentinelcloud.com/d5455276-93be-40ce-b959-c1c93690e536/LVH1.JPG </url>
</downloadFile>
<linkedProduct>
<productId>4</productId>
<linkProductType>Base</linkProductType>
<state>Active</state>
</linkedProduct>
<linkedProduct>
<productId>2</productId>
<linkProductType>Alternative</linkProductType>
<state>Active</state>
</linkedProduct>
<linkedCustomer>
<customerId>1</customerId>
<customerName>Customer1</customerName>
<custIdentifier>Cust1</custIdentifier>
<custExternalId>cust111</custExternalId>
</linkedCustomer>

<customAttribute>
<attributeName>OS</attributeName>
<attributeValue>Linux</attributeValue>
```

```
</customAttribute>
```

```
</download>
```



Note: . The URL passed in the <url> element is the base URL generated using STS Token and a Java program. Refer to the topic, "Get STS Token" on page 93 for more information on STS Token and Java program.

Sample Response

Success

HTTP Status Code: 201 (Created)

Response Body: Location - {downloadID}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The download name already exists.

Delete Download

Deletes download definition. When a download definition is deleted using the Web service, the file uploaded on the file server corresponding the download definition is also deleted. All instances of the uploaded file on all file servers that were replicated to maintain high availability are also deleted. The time frame for this file deletion to take effect can vary up to 2 hours.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/download/{downloadId}.ws

URI Parameters

Parameter	Description	Type
downloadId	(Required) Specify the download ID.	Integer

Sample Response

Success

HTTP Status Code: 204 (No Content)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Download not found.

Device Management

Device Name in Sentinel EMS is the friendly representation of the locking information. You can assign a device friendly name to locking information , which can then be used to perform activation. Locking information is made up of the locking criteria and the locking value and is generally difficult to remember. The Web service available for Device Name Module::

- ["Search Device" on the next page](#)

For more information on Device Name Module, refer ["Important \(for Device Name Module\)" on page 261](#)

Search Device

This Web service retrieves device information based on several URI parameters such as, deviceName, deviceLockingNames, deviceLockingValues, isWwu, activateeEmail, isDefaultActivatee etc.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/Device.ws

URI Parameters

Parameter	Description	Type
deviceName	(Optional) Specify the device friendly name.	String
deviceLockingNames	(Optional) Specify the locking criteria of the device. Multiple comma separated locking names can be specified for a single device.	String
deviceLockingValues	(Optional) Specify the locking value of the device. Multiple comma separated locking values can be specified for a single device.	String
isWwu	(Optional) Specify the value of is World Wide Universal value is true or false. Default value: 'false'.	boolean
isDefaultActivatee	(Optional) Specifies whether the activatee is the default activatee. Default value: 'true'.	boolean
activateeEmail	(Optional) Specify the activatee email address. This field is mandatory if isDefaultActivatee is not blank.	String
DeviceNameOrLockingValue	(Optional) Specify either the device friendly name or the locking value in this field.	String
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of customers retrieved by one request. Default value: 200	Integer (>0)
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. Normal: Default search parameter if search pattern is not specified. The searchpattern parameter can also be left empty (to maintain backward compatibility) and it functions 	String

Parameter	Description	Type
	like 'Normal'. Default value: Normal	

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<?xml version="1.0" encoding="UTF-8"?>
<listResponse type="Device" count="2" searchparameter="{ }">
  <instance id="2" name="Device1" DeviceType="false" lockingName="PRIMARY_1_CRITERIA__4"
value="*182 CMFM NYRU 3TGE"/>
  <instance id="1" name="" DeviceType="false" lockingName="PRIMARY_1_CRITERIA__4"
value="11111"/>
</listResponse>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Cannot find a product corresponding to {product ID}.

License Models Web Services

Following is the list of License Models Web services in Sentinel EMS:

- ["Sample Input \(Connected License Model\)" on page 155](#)
- ["Get License Model Using License ID" on page 165](#)
- ["Update License Model using License ID and License XML" on page 166](#)
- ["Retrieve License Model using Enforcement ID" on page 167](#)

Create License Model using License XML

Creates a new License Model using a License Model XML string as input.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/licenseModel.ws

URI Parameters

None

License Model XSD

See, ["License Model XSD" on page 429](#).

Sample Input (Flexible License Model)

```
<licenseModel>
  <licenseModelName>Flexible License Model</licenseModelName>
  <licenseModelDescription>Flexible license model</licenseModelDescription>
  <licenseType>NETWORK</licenseType>
  <isEnabled>true</isEnabled>
  <enforcement>
    <enforcementId>1</enforcementId>
    <enforcementName>Sentinel RMS</enforcementName>
    <enforcementVersion>9.1</enforcementVersion>
  </enforcement>
  <lmAttribute>
    <attribute>
      <attributeId>3</attributeId>
      <attributeName>GRACE_PERIOD_DAYS</attributeName>
      <attributeDataType>3</attributeDataType>
      <displayOrder>2.1</displayOrder>
      <isSharedAttribute>false</isSharedAttribute>
      <associatedAttribute/>
      <attributeGroupName>NETWORK</attributeGroupName>
      <attributeSubGroupName></attributeSubGroupName>
    </attribute>
    <attributeValue>0</attributeValue>
    <modificationAction>NONE</modificationAction>
    <endUserPermission>NONE</endUserPermission>
    <accessLevel>
      <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
      <featureAccessLevel>MANDATORY</featureAccessLevel>
      <productAccessLevel>MANDATORY</productAccessLevel>
    </accessLevel>
  </lmAttribute>
</licenseModel>
```

```

    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
</accessLevel>
<optional>>false</optional>
<overwriteAllowed>>true</overwriteAllowed>
<RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>40</attributeId>
    <attributeName>LOCAL_REQUEST_LOCKCRIT_FLOAT</attributeName>
    <attributeDataType>3</attributeDataType>
    <displayOrder>5.2</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LOCKING</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>0</attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>>true</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>100</attributeId>
    <attributeName>VENDOR_COMMENTS</attributeName>
    <attributeDataType>1</attributeDataType>
    <displayOrder>2.1</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>VENDOR</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue></attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>WRITE</licenseModelAccessLevel>
    <featureAccessLevel>WRITE</featureAccessLevel>
    <productAccessLevel>WRITE</productAccessLevel>
    <entitlementAccessLevel>WRITE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>>true</optional>

```

```

    <overwriteAllowed>true</overwriteAllowed>
    <RegularExpression></RegularExpression>
  </lmAttribute>
</lmAttribute>
  <attribute>
    <attributeId>131</attributeId>
    <attributeName>USERNODE_7_CRITERIA</attributeName>
    <attributeDataType>1</attributeDataType>
    <displayOrder>45.2</displayOrder>
    <isSharedAttribute>true</isSharedAttribute>
    <associatedAttribute>
      <attributeId>132</attributeId>
      <attributeName>USERNODE_7_INFO</attributeName>
    </associatedAttribute>
    <attributeGroupName>LOCKING</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>4</attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>READ</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>READ</activationAccessLevel>
  </accessLevel>
  <optional>true</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
</lmAttribute>
  <attribute>
    <attributeId>138</attributeId>
    <attributeName>COLLECT_USAGE</attributeName>
    <attributeDataType>4</attributeDataType>
    <displayOrder>1.1</displayOrder>
    <isSharedAttribute>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>CLOUD_SERVED</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>TRUE</attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
    <featureAccessLevel>MANDATORY</featureAccessLevel>
    <productAccessLevel>MANDATORY</productAccessLevel>
    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>false</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>

```

```

</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>135</attributeId>
    <attributeName>DEPLOYMENT_TYPE</attributeName>
    <attributeDataType>7</attributeDataType>
    <attributeValueChoice>
      <valueOption id="0">On-premise Served</valueOption>
      <valueOption id="1">Cloud Served - Lease</valueOption>
      <valueOption id="2">Cloud Served - Connected</valueOption>
    </attributeValueChoice>
    <displayOrder>1.1</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>NO_GROUP</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>1</attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
    <featureAccessLevel>MANDATORY</featureAccessLevel>
    <productAccessLevel>MANDATORY</productAccessLevel>
    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>>false</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>92</attributeId>
    <attributeName>VENDOR_SECRETS_2</attributeName>
    <attributeDataType>1</attributeDataType>
    <displayOrder>3.2</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>VENDOR</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue></attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
    <featureAccessLevel>MANDATORY</featureAccessLevel>
    <productAccessLevel>MANDATORY</productAccessLevel>
    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>>false</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>

```



```

</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>99</attributeId>
    <attributeName>VENDOR_PRIVATE_INFO</attributeName>
    <attributeDataType>1</attributeDataType>
    <displayOrder>1.1</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>VENDOR</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue></attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>WRITE</licenseModelAccessLevel>
    <featureAccessLevel>WRITE</featureAccessLevel>
    <productAccessLevel>WRITE</productAccessLevel>
    <entitlementAccessLevel>WRITE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>>true</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>69</attributeId>
    <attributeName>PRIMARY_4_INFO</attributeName>
    <attributeDataType>1</attributeDataType>
    <displayOrder>17.2</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LOCKING</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>4</attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>WRITE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>MANDATORY</activationAccessLevel>
  </accessLevel>
  <optional>>true</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>7</attributeId>
    <attributeName>COMMUTER_MAX_CHECKOUT_DAYS</attributeName>

```

```

    <attributeDataType>6</attributeDataType>
    <displayOrder>3.2</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>NETWORK</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
</attribute>
<attributeValue>30</attributeValue>
<modificationAction>NONE</modificationAction>
<endUserPermission>NONE</endUserPermission>
<accessLevel>
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    <attributeGroupName>LOCKING</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue></attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>WRITE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>MANDATORY</activationAccessLevel>
  </accessLevel>
  <optional>>true</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>104</attributeId>
    <attributeName>USE_AUTH_CODE</attributeName>
    <attributeDataType>3</attributeDataType>
    <displayOrder>7.1</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>POLICY</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>

```



```

</attribute>
<attributeValue>0</attributeValue>
<modificationAction>NONE</modificationAction>
<endUserPermission>NONE</endUserPermission>
<accessLevel>
  <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
  <featureAccessLevel>NONE</featureAccessLevel>
  <productAccessLevel>NONE</productAccessLevel>
  <entitlementAccessLevel>NONE</entitlementAccessLevel>
  <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
  <activationAccessLevel>NONE</activationAccessLevel>
</accessLevel>
<optional>true</optional>
<overwriteAllowed>true</overwriteAllowed>
<RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>8</attributeId>
    <attributeName>FLOATING_USER_LIMIT</attributeName>
    <attributeDataType>6</attributeDataType>
    <displayOrder>1.1</displayOrder>
    <isSharedAttribute>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LIMIT</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>100</attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>READ</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
    <featureAccessLevel>MANDATORY</featureAccessLevel>
    <productAccessLevel>MANDATORY</productAccessLevel>
    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>READ</activationAccessLevel>
  </accessLevel>
  <optional>false</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>132</attributeId>
    <attributeName>USERNODE_7_INFO</attributeName>
    <attributeDataType>1</attributeDataType>
    <displayOrder>46.1</displayOrder>
    <isSharedAttribute>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LOCKING</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue></attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>WRITE</endUserPermission>
  <accessLevel>

```

```

    <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>MANDATORY</activationAccessLevel>
  </accessLevel>
  <optional>true</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>70</attributeId>
    <attributeName>PRIMARY_5_INFO</attributeName>
    <attributeDataType>1</attributeDataType>
    <displayOrder>18.2</displayOrder>
    <isSharedAttribute>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LOCKING</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>4</attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>WRITE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>MANDATORY</activationAccessLevel>
  </accessLevel>
  <optional>true</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
</licenseModel>

```

Sample Input (Connected License Model)

```

<licenseModel>
  <licenseModelName>Connected License Model</licenseModelName>
  <licenseModelDescription>Connected license model</licenseModelDescription>
  <licenseType>STANDALONE</licenseType>
  <isEnabled>true</isEnabled>
  <enforcement>
    <enforcementId>1</enforcementId>
    <enforcementName>Sentinel RMS</enforcementName>
    <enforcementVersion>9.1</enforcementVersion>
  </enforcement>
  <lmAttribute>
    <attribute>
      <attributeId>146</attributeId>
      <attributeName>USAGE_LIMIT</attributeName>
      <attributeDataType>6</attributeDataType>
      <displayOrder>1.1</displayOrder>
      <isSharedAttribute>false</isSharedAttribute>
      <associatedAttribute/>
      <attributeGroupName>LIMIT</attributeGroupName>
      <attributeSubGroupName></attributeSubGroupName>
    </attribute>
    <attributeValue>0</attributeValue>
    <modificationAction>OVERWRITE</modificationAction>
    <endUserPermission>READ</endUserPermission>
    <accessLevel>
      <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
      <featureAccessLevel>MANDATORY</featureAccessLevel>
      <productAccessLevel>MANDATORY</productAccessLevel>
      <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
      <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
      <activationAccessLevel>NONE</activationAccessLevel>
    </accessLevel>
    <optional>false</optional>
    <overwriteAllowed>true</overwriteAllowed>
    <RegularExpression></RegularExpression>
  </lmAttribute>
  <lmAttribute>
    <attribute>
      <attributeId>149</attributeId>
      <attributeName>GRACE_LIMIT</attributeName>
      <attributeDataType>3</attributeDataType>
      <displayOrder>1.2</displayOrder>
      <isSharedAttribute>false</isSharedAttribute>
      <associatedAttribute/>
      <attributeGroupName>LIMIT</attributeGroupName>
      <attributeSubGroupName></attributeSubGroupName>
    </attribute>
    <attributeValue>0</attributeValue>
    <modificationAction>OVERWRITE</modificationAction>
    <endUserPermission>NONE</endUserPermission>
    <accessLevel>
      <licenseModelAccessLevel>WRITE</licenseModelAccessLevel>
      <featureAccessLevel>WRITE</featureAccessLevel>
      <productAccessLevel>WRITE</productAccessLevel>
      <entitlementAccessLevel>WRITE</entitlementAccessLevel>
    </accessLevel>
  </lmAttribute>
</licenseModel>

```

```

    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>true</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>145</attributeId>
    <attributeName>CONCURRENCY_CRITERIA</attributeName>
    <attributeDataType>7</attributeDataType>
    <attributeValueChoice>
      <valueOption id="2">Per User</valueOption>
      <valueOption id="1">Per Login</valueOption>
    </attributeValueChoice>
    <displayOrder>2.2</displayOrder>
    <isSharedAttribute>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LIMIT</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>1</attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
<accessLevel>
  <licenseModelAccessLevel>WRITE</licenseModelAccessLevel>
  <featureAccessLevel>WRITE</featureAccessLevel>
  <productAccessLevel>WRITE</productAccessLevel>
  <entitlementAccessLevel>WRITE</entitlementAccessLevel>
  <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
  <activationAccessLevel>NONE</activationAccessLevel>
</accessLevel>
  <optional>true</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>143</attributeId>
    <attributeName>USAGE_TYPE</attributeName>
    <attributeDataType>7</attributeDataType>
    <attributeValueChoice>
      <valueOption id="2">Time Based</valueOption>
      <valueOption id="1">Count Based</valueOption>
    </attributeValueChoice>
    <displayOrder>3.1</displayOrder>
    <isSharedAttribute>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>NO_GROUP</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>1</attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
<accessLevel>
  <licenseModelAccessLevel>NONE</licenseModelAccessLevel>

```

```

    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>true</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>2</attributeId>
    <attributeName>END_DATE</attributeName>
    <attributeDataType>5</attributeDataType>
    <displayOrder>2.2</displayOrder>
    <isSharedAttribute>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LICENSE_DURATION</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>2017-01-01 00:00</attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>READ</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
    <featureAccessLevel>MANDATORY</featureAccessLevel>
    <productAccessLevel>MANDATORY</productAccessLevel>
    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>false</optional>
  <overwriteAllowed>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>1</attributeId>
    <attributeName>START_DATE</attributeName>
    <attributeDataType>2</attributeDataType>
    <displayOrder>2.1</displayOrder>
    <isSharedAttribute>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LICENSE_DURATION</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>2016-01-01 00:00</attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>READ</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
    <featureAccessLevel>MANDATORY</featureAccessLevel>
    <productAccessLevel>MANDATORY</productAccessLevel>
    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>READ</activationAccessLevel>
  </accessLevel>

```

```

</accessLevel>
<optional>false</optional>
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<RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
<attribute>
<attributeId>135</attributeId>
<attributeName>DEPLOYMENT_TYPE</attributeName>
<attributeDataType>7</attributeDataType>
<attributeValueChoice>
<valueOption id="0">On-premise Served</valueOption>
<valueOption id="1">Cloud Served - Lease</valueOption>
<valueOption id="2">Cloud Served - Connected</valueOption>
</attributeValueChoice>
<displayOrder>1.1</displayOrder>
<isSharedAttribute>false</isSharedAttribute>
<associatedAttribute/>
<attributeGroupName>NO_GROUP</attributeGroupName>
<attributeSubGroupName></attributeSubGroupName>
</attribute>
<attributeValue>2</attributeValue>
<modificationAction>NONE</modificationAction>
<endUserPermission>NONE</endUserPermission>
<accessLevel>
<licenseModelAccessLevel>READ</licenseModelAccessLevel>
<featureAccessLevel>READ</featureAccessLevel>
<productAccessLevel>READ</productAccessLevel>
<entitlementAccessLevel>READ</entitlementAccessLevel>
<entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
<activationAccessLevel>NONE</activationAccessLevel>
</accessLevel>
<optional>true</optional>
<overwriteAllowed>true</overwriteAllowed>
<RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
<attribute>
<attributeId>150</attributeId>
<attributeName>GRACE_TIME</attributeName>
<attributeDataType>3</attributeDataType>
<displayOrder>3.1</displayOrder>
<isSharedAttribute>false</isSharedAttribute>
<associatedAttribute/>
<attributeGroupName>LICENSE_DURATION</attributeGroupName>
<attributeSubGroupName></attributeSubGroupName>
</attribute>
<attributeValue>0</attributeValue>
<modificationAction>OVERWRITE</modificationAction>
<endUserPermission>NONE</endUserPermission>
<accessLevel>
<licenseModelAccessLevel>WRITE</licenseModelAccessLevel>
<featureAccessLevel>WRITE</featureAccessLevel>
<productAccessLevel>WRITE</productAccessLevel>
<entitlementAccessLevel>WRITE</entitlementAccessLevel>
<entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
<activationAccessLevel>NONE</activationAccessLevel>

```

```

</accessLevel>
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<RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
<attribute>
  <attributeId>15</attributeId>
  <attributeName>LICENSE_TYPE</attributeName>
  <attributeDataType>7</attributeDataType>
  <attributeValueChoice>
    <valueOption id="0">Network</valueOption>
    <valueOption id="2">Repository</valueOption>
    <valueOption id="1">Standalone</valueOption>
  </attributeValueChoice>
  <displayOrder>1.2</displayOrder>
  <isSharedAttribute>false</isSharedAttribute>
  <associatedAttribute/>
  <attributeGroupName>NO_GROUP</attributeGroupName>
  <attributeSubGroupName></attributeSubGroupName>
</attribute>
<attributeValue>1</attributeValue>
<modificationAction>NONE</modificationAction>
<endUserPermission>NONE</endUserPermission>
<accessLevel>
  <licenseModelAccessLevel>READ</licenseModelAccessLevel>
  <featureAccessLevel>READ</featureAccessLevel>
  <productAccessLevel>READ</productAccessLevel>
  <entitlementAccessLevel>READ</entitlementAccessLevel>
  <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
  <activationAccessLevel>NONE</activationAccessLevel>
</accessLevel>
<optional>true</optional>
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<RegularExpression></RegularExpression>
</lmAttribute>
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<attribute>
  <attributeId>148</attributeId>
  <attributeName>VENDOR_INFO</attributeName>
  <attributeDataType>1</attributeDataType>
  <displayOrder>1.1</displayOrder>
  <isSharedAttribute>false</isSharedAttribute>
  <associatedAttribute/>
  <attributeGroupName>VENDOR</attributeGroupName>
  <attributeSubGroupName></attributeSubGroupName>
</attribute>
<attributeValue></attributeValue>
<modificationAction>OVERWRITE</modificationAction>
<endUserPermission>NONE</endUserPermission>
<accessLevel>
  <licenseModelAccessLevel>WRITE</licenseModelAccessLevel>
  <featureAccessLevel>WRITE</featureAccessLevel>
  <productAccessLevel>WRITE</productAccessLevel>
  <entitlementAccessLevel>WRITE</entitlementAccessLevel>
  <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
  <activationAccessLevel>NONE</activationAccessLevel>

```

```

</accessLevel>
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<RegularExpression></RegularExpression>
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<lmAttribute>
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<attributeId>151</attributeId>
<attributeName>NAMED_USER_LICENSE</attributeName>
<attributeDataType>4</attributeDataType>
<displayOrder>2.1</displayOrder>
<isSharedAttribute>true</isSharedAttribute>
<associatedAttribute/>
<attributeGroupName>NO_GROUP</attributeGroupName>
<attributeSubGroupName></attributeSubGroupName>
</attribute>
<attributeValue>FALSE</attributeValue>
<modificationAction>NONE</modificationAction>
<endUserPermission>NONE</endUserPermission>
<accessLevel>
<licenseModelAccessLevel>NONE</licenseModelAccessLevel>
<featureAccessLevel>NONE</featureAccessLevel>
<productAccessLevel>NONE</productAccessLevel>
<entitlementAccessLevel>NONE</entitlementAccessLevel>
<entitlementItemAccessLevel>WRITE</entitlementItemAccessLevel>
<activationAccessLevel>NONE</activationAccessLevel>
</accessLevel>
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<overwriteAllowed>true</overwriteAllowed>
<RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
<attribute>
<attributeId>134</attributeId>
<attributeName>LICENSE_DURATION_IN_DAYS</attributeName>
<attributeDataType>6</attributeDataType>
<displayOrder>1.2</displayOrder>
<isSharedAttribute>>false</isSharedAttribute>
<associatedAttribute/>
<attributeGroupName>LICENSE_DURATION</attributeGroupName>
<attributeSubGroupName></attributeSubGroupName>
</attribute>
<attributeValue>365</attributeValue>
<modificationAction>OVERWRITE</modificationAction>
<endUserPermission>READ</endUserPermission>
<accessLevel>
<licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
<featureAccessLevel>MANDATORY</featureAccessLevel>
<productAccessLevel>MANDATORY</productAccessLevel>
<entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
<entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
<activationAccessLevel>READ</activationAccessLevel>
</accessLevel>
<optional>>false</optional>
<overwriteAllowed>true</overwriteAllowed>
<RegularExpression></RegularExpression>
</lmAttribute>

```



```

<lmAttribute>
  <attribute>
    <attributeId>133</attributeId>
    <attributeName>START_LICENSE_FROM_ACTIVATION_DATE</attributeName>
    <attributeDataType>4</attributeDataType>
    <displayOrder>1.1</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LICENSE_DURATION</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>FALSE</attributeValue>
  <modificationAction>NONE</modificationAction>
  <endUserPermission>READ</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
    <featureAccessLevel>MANDATORY</featureAccessLevel>
    <productAccessLevel>MANDATORY</productAccessLevel>
    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>READ</activationAccessLevel>
  </accessLevel>
  <optional>>false</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>152</attributeId>
    <attributeName>NO_OF_NAMEDUSERS</attributeName>
    <attributeDataType>3</attributeDataType>
    <displayOrder>2.2</displayOrder>
    <isSharedAttribute>>true</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>NO_GROUP</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>1</attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>WRITE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>>true</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>147</attributeId>
    <attributeName>GRACE_TIME_DURATION</attributeName>
    <attributeDataType>7</attributeDataType>

```

```

    <attributeValueChoice>
      <valueOption id="1">Hours</valueOption>
      <valueOption id="2">Days</valueOption>
      <valueOption id="4">Months</valueOption>
      <valueOption id="8">Count</valueOption>
    </attributeValueChoice>
    <displayOrder>3.1</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LIMIT</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>2</attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>NONE</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>NONE</licenseModelAccessLevel>
    <featureAccessLevel>NONE</featureAccessLevel>
    <productAccessLevel>NONE</productAccessLevel>
    <entitlementAccessLevel>NONE</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>>true</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
<lmAttribute>
  <attribute>
    <attributeId>144</attributeId>
    <attributeName>CONCURRENCY_LIMIT</attributeName>
    <attributeDataType>6</attributeDataType>
    <displayOrder>2.1</displayOrder>
    <isSharedAttribute>>false</isSharedAttribute>
    <associatedAttribute/>
    <attributeGroupName>LIMIT</attributeGroupName>
    <attributeSubGroupName></attributeSubGroupName>
  </attribute>
  <attributeValue>0</attributeValue>
  <modificationAction>OVERWRITE</modificationAction>
  <endUserPermission>READ</endUserPermission>
  <accessLevel>
    <licenseModelAccessLevel>MANDATORY</licenseModelAccessLevel>
    <featureAccessLevel>MANDATORY</featureAccessLevel>
    <productAccessLevel>MANDATORY</productAccessLevel>
    <entitlementAccessLevel>MANDATORY</entitlementAccessLevel>
    <entitlementItemAccessLevel>NONE</entitlementItemAccessLevel>
    <activationAccessLevel>NONE</activationAccessLevel>
  </accessLevel>
  <optional>>false</optional>
  <overwriteAllowed>>true</overwriteAllowed>
  <RegularExpression></RegularExpression>
</lmAttribute>
</licenseModel>

```

Important Input Elements

Some important elements in the input XML are described below:

Tag Name	Description	Values
<overwriteAllowed>	This tag when set to false specifies that the deployment attribute of the license model is of the type fixed. When fixed, the specified deployment type cannot be overridden at the time of creating an Entitlement.	true false
<RegularExpression>	This tag specifies the valid values for the <attributevalue> tag in form of a regular expression.	Regular Expression
<licenseType>	This tag defines, type of license model.	StandAlone Network
<ImAttribute>	This parent tag holds License model associated attributes and modified properties.	
<attribute>	This tag hold values for associated attributes.	String
<attributeValue>	Defines attribute value for License Model. Set <attributeValue> to False in order to create License Model with optional fingerprint registration.	String
<modificationAction>	Defines whether or not value can be modified. Default value is NONE.	NONE - modification not allowed ADDSUB - allow addition or subtraction (in case of integer value) OVERWRITE - overwrite existing String value
<endUserPermission>	Permission for end user over License Model. Default value is NONE.	NONE - modification not allowed ADDSUB - allow addition or subtraction (in case of integer value) OVERWRITE - overwrite existing String value
<isvPermission>	Permission for ISV user over license Model. Default value is NONE.	NONE - modification not allowed ADDSUB - allow addition or subtraction (in case of integer value) OVERWRITE - overwrite existing String value

Tag Name	Description	Values
<accesslevel >	Defines the access level of attribute at each entity level example License Model, Product, Feature etc.	
<entitlementAccessLevel>	Define permission of attribute at entitlement level.	- NONE - READ - WRITE - MANDATORY
<entitlementItemAccessLevel>	Define permission of attribute at line item level.	- NONE - READ - WRITE - MANDATORY
<activationAccessLevel>	Define permission of attribute at activation level.	- NONE - READ - WRITE - MANDATORY
<licenseModelAccessLevel>	Define permission of attribute at license model level.	- NONE - READ - WRITE - MANDATORY
<featureAccessLevel>	Define permission of attribute at feature level.	- NONE - READ - WRITE - MANDATORY
<productAccessLevel>	Define permission of attribute at product level.	- NONE - READ - WRITE - MANDATORY

Sample Response

Success

HTTP Status Code: 201 (Created)

Header-Location: {license ID}

Failure

HTTP Status Code: 400

Response Body: The license model {L Name} already exists. Try again with a different name.

Get License Model Using License ID

Retrieve the License Model details for a given License Model ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/licenseModel/{licenseModelId}.ws

URI Parameters

Parameter	Description	Type
licenseModelId	Identifier of the License Model in the database.	Integer (>0)

Sample Response

Success

HTTP Status Code: 200

Response Body:

The License Model XML String is displayed.

Failure

HTTP Status Code: 400 (Bad Request)

Update License Model using License ID and License XML

Updates License Model using License Model ID and License Model XML string as the input parameters.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/licenseModel/{licenseModelId}.ws

URI Parameters

Parameter	Description	Type
licensemodelId	(Required) Specify the License Model ID.	Integer

Sample Input

The sample input of the License XML is available at "[Sample Input \(Flexible License Model\)](#)" on page 101

Sample Response

Success

HTTP Status Code: 200

Header-Location: {license model xml}

Failure

HTTP Status Code: 400 (Not Found)

Retrieve License Model using Enforcement ID

Retrieve the license model details for a given enforcement ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/enforcement/{enforcementId}/licenseModel.ws

URI Parameters

Parameter	Description	Type
enforcementId	Enforcement Identifier.	Integer

Sample Response

Success

HTTP Status Code: 200

Response Body:

```
<listResponse type="licenseModel" count="18">
  <instance id="7" name="Auto Checkout"/>
  <instance id="53" name="c"/>
  <instance id="6" name="Commuter"/>
  <instance id="4" name="Network Node Locked"/>
  <instance id="11" name="Non-Pooled Capacity Node Locked"/>
  <instance id="10" name="Pooled Capacity Node Locked"/>
  <instance id="12" name="Redundant Node Locked"/>
  <instance id="5" name="Standalone Node Locked"/>
  <instance id="3" name="Subscription"/>
  <instance id="68" name="Subscription Test0001"/>
  <instance id="67" name="Subscription Test1122133333"/>
  <instance id="54" name="Test"/>
  <instance id="2" name="Trial Network"/>
  <instance id="66" name="Trial Network IndiaTest"/>
  <instance id="9" name="Trial Network Node Locked"/>
  <instance id="64" name="Trial NetworkIndia"/>
  <instance id="1" name="Trial Standalone"/>
  <instance id="8" name="Trial Standalone Node Locked"/>
</listResponse>
```

Failure

HTTP Status Code: 400 (Bad Request)

Entitlements

Following is the list of new Entitlement related Web services in Sentinel EMS:

- "Create Entitlement Using Entitlement XML" on the next page
- "Update Entitlement" on page 212
- "Modify Entitlement Using Entitlement XML" on page 188
- "Split and Transfer Entitlement " on page 202
- "Get Entitlement Using Entitlement ID" on page 205
- "Search Entitlement" on page 208
- Delete Entitlement Using Entitlement ID
- Retrieve Entitlement Line Item Details by Product Key

This sections also lists a few additional Web services provided for Entitlements.

- "Retrieve Entitlement Certificate as HTML" on page 232
- "Retrieve Entitlements by Contact" on page 234
- "Retrieve License for Renewed Entitlement" on page 236



Note: The label 'Committed' was misspelled earlier and has now been corrected. To maintain backward compatibility, you can use the other value in tag by changing label 'label.Committed' in messages.properties available at `%EMS_HOME%\EMSServer\webapps\ems\WEB-INF\classes`.



Note: Web services with .xml extension will use the <comments> element but their behavior will not be updated for changes to maintain backward compatibility. Only optional <comments> element will be added to old services where they are not present.

Create Entitlement Using Entitlement XML

Creates a new Entitlement using an Entitlement XML string as input. This Web Service can also be used to commit an Entitlement by passing the value 'Commit' with the <action></action> tag in the XML input.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/entitlement.ws

URI Parameters

None

Entitlement XSD

See, "Entitlement XSD" on page 412

Sample XML Input

```
<entitlement>
  <externalId>flexible_lease</externalId>
  <entitlementAsWhole>true</entitlementAsWhole>
  <eId>d11962d2-e05b-4c55-8ba2-68bbe1da4c4</eId>
  <entId>9</entId>
  <entitlementType>PARENT</entitlementType>
  <linkedEntId/>
  <comments>test</comments>
  <executedBy>admin</executedBy>
  <revision>1</revision>
  <startDate>2016-08-24</startDate>
  <endDate>2500-12-31</endDate>
  <customerIdentifier>
    <customerId>1</customerId>
    <customerName>Customer1</customerName>
    <custIdentifier>Cust1</custIdentifier>
    <custExternalId>cust111</custExternalId>
  </customerIdentifier>
  <contactIdentifier>
    <contactId>1</contactId>
    <emailId>contact1@domain.com</emailId>
  </contactIdentifier>
  <channelPartnerIdentifier>
    <channelPartnerId>3</channelPartnerId>
    <channelPartnerName>channell</channelPartnerName>
    <channelPartnerIdentifier>CPref</channelPartnerIdentifier>
  </channelPartnerIdentifier>
  <userRegistration>OPTIONAL</userRegistration>
  <refId1/>
  <refId2/>
  <activationAllowed>true</activationAllowed>
  <revocationAllowed>false</revocationAllowed>
  <lifeCycleStage>COMMITTED</lifeCycleStage>
  <sendNotifcation>true</sendNotifcation>
  <ccEmail/>
  <isTest>false</isTest>
  <productKey>
```

```

<pkId>42ef7396-532d-41e7-b33d-ea5f37c801ce</pkId>
<startDate>2016-08-24</startDate>
<endDate>2500-12-31</endDate>
<Item>
  <ItemId>8</ItemId>
  <enforcementIdentifier>
    <enforcementName>Sentinel RMS</enforcementName>
    <enforcementVersion>9.1</enforcementVersion>
  </enforcementIdentifier>
  <totalQuantity>1</totalQuantity>
  <availableQuantity>0</availableQuantity>
  <activationMethod>FIXED</activationMethod>
  <fixedQuantity>1</fixedQuantity>
  <itemState>2</itemState>
  <product>
    <productIdentifier>
      <prdExternalId></prdExternalId>
      <productId>1</productId>
      <productNameVersion>
        <productName>Flexible</productName>
        <productVersion>1</productVersion>
      </productNameVersion>
    </productIdentifier>
    <feature>
      <featureIdentifier>
        <ftrExternalId></ftrExternalId>
        <featureId>2</featureId>
        <featureIdentity>2</featureIdentity>
        <ftrNameVersion>
          <featureName>Flexible</featureName>
          <featureVersion>1</featureVersion>
        </ftrNameVersion>
      </featureIdentifier>
    </feature>
    <licenseModel>
      <licenseModelIdentifier>
        <licenseModelId>16</licenseModelId>
        <licenseModelName>Flexible License Model</licenseModelName>
      </licenseModelIdentifier>
      <attribute>
        <Name>DEPLOYMENT_TYPE</Name>
        <value>1</value>
      </attribute>
      <attribute>
        <Name>LICENSE_TYPE</Name>
        <value>0</value>
      </attribute>
      <attribute>
        <Name>START_LICENSE_FROM_ACTIVATION_DATE</Name>
        <value>>false</value>
      </attribute>
      <attribute>
        <Name>LICENSE_DURATION_IN_DAYS</Name>
        <value>365</value>
      </attribute>
      <attribute>
        <Name>START_DATE</Name>
        <value>2016-08-24 00:00</value>
      </attribute>
    </licenseModel>
  </product>
</Item>

```

```
</attribute>
<attribute>
  <Name>END_DATE</Name>
  <value>2017-08-24 00:00</value>
</attribute>
<attribute>
  <Name>FLOATING_USER_LIMIT</Name>
  <value>100</value>
</attribute>
<attribute>
  <Name>FLOATING_SOFT_USER_LIMIT</Name>
  <value>10000000</value>
</attribute>
<attribute>
  <Name>KEY_LIFETIME_MINUTES</Name>
  <value>5</value>
</attribute>
<attribute>
  <Name>TRIAL_DURATION_DAYS</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>TRIAL_DURATION_HOURS</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>COLLECT_USAGE</Name>
  <value>>true</value>
</attribute>
<attribute>
  <Name>ALLOW_COMMUTER</Name>
  <value>>false</value>
</attribute>
<attribute>
  <Name>ALLOW_GRACE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>GRACE_PERIOD_DAYS</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>GRACE_PERIOD_ELAPSED_HOURS</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>KEY_HOLDTIME_MINUTES</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>COMMUTER_MAX_CHECKOUT_DAYS</Name>
  <value>30</value>
</attribute>
<attribute>
  <Name>SHARING_CRITERIA</Name>
  <value>0</value>
</attribute>
```

```
<attribute>
  <Name>SHARING_LIMIT</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>OUTPUT_TYPE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ENFORCE_LICENSE_EXCLUSIVE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>ENFORCE_CLOCK_TAMPERED</Name>
  <value>>true</value>
</attribute>
<attribute>
  <Name>LOG_ENCRYPT_LEVEL</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ALLOW_REDUNDANCY</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>ENFORCE_REDUNDANCY_MAJORITY</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>IS_TRIAL</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>KEY_TYPE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>NUMERIC_TYPE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ELAN_KEY_FLAG</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>USE_AUTH_CODE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>CAPACITY</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>CAPACITY_FLAG</Name>
  <value>0</value>
</attribute>
<attribute>
```

```

    <Name>HOLDING_CRITERIA</Name>
    <value>0</value>
  </attribute>
</attribute>
<attribute>
  <Name>LOCKING_MODE</Name>
  <value>0</value>
</attribute>
</attribute>
<attribute>
  <Name>NUM_SUBNET</Name>
  <value>0</value>
</attribute>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_FLAG</Name>
  <value>0</value>
</attribute>
</attribute>
<attribute>
  <Name>CODE_TYPE</Name>
  <value>1</value>
</attribute>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_REQUIRED</Name>
  <value>4</value>
</attribute>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_FLOAT</Name>
  <value>0</value>
</attribute>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_MIN_NUM</Name>
  <value>1</value>
</attribute>
</attribute>
<attribute>
  <Name>CLIENT_1_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
<attribute>
  <Name>PRIMARY_1_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
<attribute>
  <Name>PRIMARY_2_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
<attribute>
  <Name>PRIMARY_3_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
<attribute>
  <Name>PRIMARY_4_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
<attribute>
  <Name>PRIMARY_5_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
<attribute>
  <Name>PRIMARY_6_INFO</Name>

```

```
    <value>4</value>
  </attribute>
</attribute>
  <Name>PRIMARY_7_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
  <Name>PRIMARY_8_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
  <Name>PRIMARY_9_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
  <Name>PRIMARY_10_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
  <Name>PRIMARY_11_INFO</Name>
  <value>4</value>
</attribute>
</attribute>
  <Name>SITE_LIC_2_INFO</Name>
  <value></value>
</attribute>
</attribute>
  <Name>SITE_LIC_1_INFO</Name>
  <value></value>
</attribute>
</attribute>
  <Name>SITE_LIC_4_INFO</Name>
  <value></value>
</attribute>
</attribute>
  <Name>SITE_LIC_3_INFO</Name>
  <value></value>
</attribute>
</attribute>
  <Name>SITE_LIC_5_INFO</Name>
  <value></value>
</attribute>
</attribute>
  <Name>SITE_LIC_6_INFO</Name>
  <value></value>
</attribute>
</attribute>
  <Name>SITE_LIC_7_INFO</Name>
  <value></value>
</attribute>
</attribute>
  <Name>SECONDARY_1_INFO</Name>
  <value></value>
</attribute>
</attribute>
  <Name>USERNODE_1_INFO</Name>
  <value></value>
```

```
</attribute>
<attribute>
  <Name>USERNODE_2_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_3_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_4_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_5_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_6_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_7_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_PRIVATE_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_PUBLIC_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_COMMENTS</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_NUM_OF_SECRETS</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>VENDOR_SECRETS_1</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_SECRETS_2</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_SECRETS_3</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_SECRETS_4</Name>
  <value></value>
</attribute>
```

```

    <attribute>
      <Name>VENDOR_SECRETS_5</Name>
      <value></value>
    </attribute>
    <attribute>
      <Name>VENDOR_SECRETS_6</Name>
      <value></value>
    </attribute>
    <attribute>
      <Name>VENDOR_SECRETS_7</Name>
      <value></value>
    </attribute>
  </licenseModel>
  <itemFeatureState>INCLUDED</itemFeatureState>
</feature>
</product>
<commonLicenseAttributes>
  <attribute>
    <Name>PRIMARY_1_CRITERIA</Name>
    <value>4</value>
  </attribute>
  <attribute>
    <Name>LICENSE_VERSION</Name>
    <value>16</value>
  </attribute>
  <attribute>
    <Name>ALLOW_VM_DETECTION</Name>
    <value>0</value>
  </attribute>
</commonLicenseAttributes>
<activationAttributes>
  <attributeGroup groupName="LOCKING">
    <attribute>
      <attributeName>PRIMARY_1_CRITERIA</attributeName>
      <attributeValue>4</attributeValue>
      <readOnly>>true</readOnly>
      <mandatory>>false</mandatory>
    </attribute>
    <attribute>
      <attributeName>PRIMARY_1_INFO</attributeName>
      <attributeValue></attributeValue>
      <readOnly>>false</readOnly>
      <mandatory>>true</mandatory>
    </attribute>
  </attributeGroup>
</activationAttributes>
<entitlementItemAttributes/>
</Item>
</productKey>
<entitlementAttributes>
  <attributeGroup groupName="CLOUD_SERVED" subGroupName="">
    <attribute>
      <Name>DURATION</Name>
      <value>2160</value>
      <isSANL>>false</isSANL>
    </attribute>
    <attribute>

```



```

    <Name>RENEW_FREQUENCY</Name>
    <value>24</value>
    <isSANL>>false</isSANL>
  </attribute>
  <attribute>
    <Name>USAGE_SYNC_FREQUENCY</Name>
    <value>24</value>
    <isSANL>>false</isSANL>
  </attribute>
</attributeGroup>
<attributeGroup groupName="POLICY" subGroupName="">
  <attribute>
    <Name>REDUNDANCY_MAJORITY_RULE</Name>
    <value>>true</value>
    <isSANL>>false</isSANL>
  </attribute>
  <attribute>
    <Name>IS_REDUNDANT</Name>
    <value>>true</value>
    <isSANL>>false</isSANL>
  </attribute>
</attributeGroup>
<attributeGroup groupName="LOCKING" subGroupName="">
  <attribute>
    <Name>REDUNDANT_SERVERS</Name>
    <value>3</value>
    <isSANL>>false</isSANL>
  </attribute>
</attributeGroup>
</entitlementAttributes>
</entitlement>

```

Sample XML (Connected License Model)



Note: Special characters (/,\,\$,!,@,#,*etc) and internationalized characters (such as Japanese, German, Chinese font set) are not supported for cloud served licenses.

```

<entitlement>
  <externalId />
  <entitlementAsWhole>>true</entitlementAsWhole>
  <linkedEntId />
  <comments>test</comments>
  <executedBy>admin</executedBy>
  <revision>1</revision>
  <startDate>2016-07-26</startDate>
  <endDate>2500-12-31</endDate>
  <customerIdentifier>
    <customerId>1</customerId>
    <customerName>C9092</customerName>
    <custIdentifier>C9092</custIdentifier>
    <custExternalId />
  </customerIdentifier>
  <userRegistration>OPTIONAL</userRegistration>
  <refId1 />
  <refId2 />

```

```

<activationAllowed>>true</activationAllowed>
<revocationAllowed>>false</revocationAllowed>
<lifeCycleStage>COMMITTED</lifeCycleStage>
<sendNotifcation>>true</sendNotifcation>
<ccEmail />
<isTest>>false</isTest>
<productKey>
  <startDate>2016-07-26</startDate>
  <endDate>2500-12-31</endDate>
  <Item>
    <ItemId>1</ItemId>
    <enforcementIdentifier>
      <enforcementName>Sentinel RMS</enforcementName>
      <enforcementVersion>9.1</enforcementVersion>
    </enforcementIdentifier>
    <totalQuantity>1</totalQuantity>
    <availableQuantity>0</availableQuantity>
    <activationMethod>FIXED</activationMethod>
    <fixedQuantity>1</fixedQuantity>
    <itemState>2</itemState>
  </product>
  <product>
    <productIdentifier>
      <prdExternalId />
      <productId>1</productId>
      <productNameVersion>
        <productName>PrdConn1</productName>
        <productVersion>1</productVersion>
      </productNameVersion>
    </productIdentifier>
    <feature>
      <featureIdentifier>
        <ftrExternalId />
        <featureId>1</featureId>
        <featureIdentity>9091</featureIdentity>
        <ftrNameVersion>
          <featureName>FtrConn1</featureName>
          <featureVersion />
        </ftrNameVersion>
      </featureIdentifier>
      <licenseModel>
        <licenseModelIdentifier>
          <licenseModelId>15</licenseModelId>
          <licenseModelName>Conn Copy1</licenseModelName>
        </licenseModelIdentifier>
        <attribute>
          <Name>DEPLOYMENT_TYPE</Name>
          <value>2</value>
        </attribute>
        <attribute>
          <Name>LICENSE_TYPE</Name>
          <value>1</value>
        </attribute>
        <attribute>
          <Name>USAGE_TYPE</Name>
          <value>1</value>
        </attribute>
        <attribute>

```

```

        <Name>START_LICENSE_FROM_ACTIVATION_DATE</Name>
        <value>>false</value>
    </attribute>
    <attribute>
        <Name>LICENSE_DURATION_IN_DAYS</Name>
        <value>0</value>
    </attribute>
    <attribute>
        <Name>START_DATE</Name>
        <value>2016-07-26 00:00</value>
    </attribute>
    <attribute>
        <Name>END_DATE</Name>
        <value>2017-07-26 00:00</value>
    </attribute>
    <attribute>
        <Name>GRACE_TIME</Name>
        <value>5</value>
    </attribute>
    <attribute>
        <Name>USAGE_LIMIT</Name>
        <value>100</value>
    </attribute>
    <attribute>
        <Name>GRACE_LIMIT</Name>
        <value>10</value>
    </attribute>
    <attribute>
        <Name>CONCURRENCY_LIMIT</Name>
        <value>0</value>
    </attribute>
    <attribute>
        <Name>CONCURRENCY_CRITERIA</Name>
        <value>1</value>
    </attribute>
    <attribute>
        <Name>GRACE_TIME_DURATION</Name>
        <value>2</value>
    </attribute>
    <attribute>
        <Name>VENDOR_INFO</Name>
        <value />
    </attribute>
</licenseModel>
<itemFeatureState>INCLUDED</itemFeatureState>
</feature>
</product>
<commonLicenseAttributes>
    <attribute>
        <Name>NO_OF_NAMEDUSERS</Name>
        <value>1</value>
    </attribute>
    <attribute>
        <Name>NAMED_USER_LICENSE</Name>
        <value>FALSE</value>
    </attribute>
</commonLicenseAttributes>

```

```

        <activationAttributes />
        <entitlementItemAttributes />
    </Item>
</productKey>
<entitlementAttributes />
</entitlement>

```

Sample Input (Entitlement for LVH Parent Product)

```

<?xml version="1.0" encoding="UTF-8"?>
<entitlement>
  <externalId></externalId>
  <entitlementAsWhole>false</entitlementAsWhole>
  <comments>test</comments>
  <executedBy>admin</executedBy>
  <eId>eid-0495</eId>
  <entId>10</entId>
  <entitlementType>PARENT</entitlementType>
  <revision>1</revision>
  <startDate>2017-04-25</startDate>
  <endDate>2500-12-31</endDate>
  <expiryInDays>176662</expiryInDays>
  <customerIdentifier>
    <customerId>4</customerId>
    <customerName>Rohit</customerName>
    <custIdentifier>bc2003065</custIdentifier>
    <custExternalId></custExternalId>
  </customerIdentifier>
  <userRegistration>OPTIONAL</userRegistration>
  <refId1></refId1>
  <refId2></refId2>
  <activationAllowed>true</activationAllowed>
  <revocationAllowed>true</revocationAllowed>
  <lifeCycleStage>COMMITTED</lifeCycleStage>
  <sendNotifcation>true</sendNotifcation>
  <ccEmail></ccEmail>
  <isTest>false</isTest>
  <customAttribute>
    <name>Purchase Order Number</name>
    <value></value>
  </customAttribute>
  <customAttribute>
    <name>Order Type</name>
    <value></value>
  </customAttribute>
  <customAttribute>
    <name>Location</name>
    <value></value>
  </customAttribute>
  <customAttribute>
    <name>Deployment Type</name>
    <value></value>
  </customAttribute>
  <txnHistory>
    <eid>06c593f6-e312-4aff-97c5-854719f08e03</eid>
    <entId>11</entId>
    <operation>COMMIT</operation>
  </txnHistory>

```

```

    <operationDate>2017-04-25</operationDate>
    <operationBy>admin</operationBy>
</txnHistory>
<productKey>
  <pkId></pkId>
  <startDate>2017-04-25</startDate>
  <endDate>2500-12-31</endDate>
  <expiryInDays>176662</expiryInDays>
  <Item>
    <ItemId>10</ItemId>
    <totalQuantity>100</totalQuantity>
    <availableQuantity>100</availableQuantity>
    <activationMethod>SAOT</activationMethod>
    <itemState>2</itemState>
    <product>
      <productIdentifier>
        <prdExternalId></prdExternalId>
        <productId>3</productId>
        <productNameVersion>
          <productName>1000</productName>
          <productVersion>NA</productVersion>
        </productNameVersion>
      </productIdentifier>
      <feature>
        <featureIdentifier>
          <ftrExternalId></ftrExternalId>
          <featureId>19</featureId>
          <featureIdentity>3</featureIdentity>
          <ftrNameVersion>
            <featureName>1000</featureName>
            <featureVersion>1.1</featureVersion>
          </ftrNameVersion>
        </featureIdentifier>
        <licenseModel>
          <licenseModelIdentifier>
            <licenseModelId>34</licenseModelId>
            <licenseModelName>Hardware</licenseModelName>
          </licenseModelIdentifier>
        </licenseModel>
        <itemFeatureState>INCLUDED</itemFeatureState>
      </feature>
    </product>

    <customAttribute>
      <name>Order Line Number</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>Contract Number</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>Renewal Quantity</name>
      <value>0</value>
    </customAttribute>
  </Item>
</productKey>

```

</entitlement>

Important Input Elements

Some important elements in the input XML are described below:

Tag Name	Description	Values
<licenseModel>	This element specifies the license model details of the Entitlement line item.	Contains the <attribute> element.
<attribute>	This element specifies the different attribute details of the license model.	Contains the <Name></Name>, <value></value> element.
<Name></Name>	Specifies the attribute name.	Some attribute names are: <ul style="list-style-type: none"> • DEPLOYMENT_TYPE - The <value> can be: <ul style="list-style-type: none"> - 0 - For a software license - 1 - For a lease entitlement - 2 - For a Connected License • LICENSE_TYPE - The <value> can be: <ul style="list-style-type: none"> - 0 - For a network entitlement - 1 - For a standalone entitlement • USAGE_LIMIT - If the <value> is 0, the usage limit set is unlimited • CONCURRENCY_LIMIT - If the <value> is 0, the concurrency limit set is unlimited
<externalId>	Unique Id to be used for external reference.	Can be null or unique
<entitlementAsWhole>	Boolean- If true then activation will be mandatory for all Quantity. If more than 1 lineItem then quantity of both line Items should be same	

Tag Name	Description	Values
<eld>	Entitlement Unique Identifier	
<entId>	Database numeric ID of entitlement - Not exposed from User Interface. It is used for output only.	Auto-Generated Numeric Value
<entitlementType>	Entitlement type - Parent, Transactional	Default - Parent
<linkedEntId>	Required for modify entitlement. The entid passed in this element will be modified.	
<startDate>	Entitlement Start date	Default-Current date, Can be created in future date : Format [yyyy-mm-dd]
<endDate>	Entitlement End date	Default- Never Expirey , Should not be less than Entitlement start date
<customerId>	Database numeric ID of customer	Should pre exists in EMS
<customerName>	Customer Name	Can be duplicate
<custIdentifier>	Customer Identifier.	Required field for cloud entitlement. Should be unique
<custExternalId>	Unique Id to be used for external Reference	Can be null or unique
<contactId>	Database auto generated numeric ID of contact	
<emailId>	Customer email address	
<channelPartnerId>	Database auto generated Numeric ID of channel partner	
<channelPartnerName>	Channel partner name	Can be duplicate
<channelPartnerIdentifier>	Channel Partner identifier.	Should be unique
<userRegistration>	Specifies user registration is mandatory, optional or not required.	Valid values - NONE, OPTIONAL, MANDATORY Default - Optional
<refId1>	String - Can be used for other reference	
<refId2>	String - Can be used for other reference	
<activationAllowed>	Allows entitlement activation	Default - false
<revocationAllowed>	Allows entitlement revocation	Default - false

Tag Name	Description	Values
<lifeCycleStage>	Entitlement Stage	Values - Draft, Committed, Disabled
<sendNotifcation>	Specifies whether or not the Entitlement certificate mail can be sent to contact.	Default - false
<ccEmail>	List of email, to whom notification will be sent.	
<isTest>	Value to identify if entitlement is a test entitlement.	
<pkId>	Product key for each added lineItem	Default auto generated, Can be added manually , Can be overridden using PKID generator interface
<startDate>	LineItem Start Date	Should not be less than Entitlement Start date
<endDate>	LineItem End Date	Should not be greater than Entitlement End date
<ItemId>	Database numeric ID for line item	Auto-Generated Numeric Value
<enforcementName>	Name of enforcement	Default - RMS and Cloud.
<enforcementVersion>	Enforcement version	
<totalQuantity>	Line item quantity	Required field
<availableQuantity>	Quantity available for activation	
<activationMethod>	Fixed, Partial, Full, Unlimited	
<fixedQuantity>	Quantity to be consumed at a time when activation method is 'Fixed'	
<itemState>	State of a line item.	Draft, Complete, Activate, Revoke, Disable
<prdExternalId>	Product unique ID used for external reference	Null or Unique
<productId>	Database numeric ID for Product	Auto-Generated Numeric Value
<productName>	Product Name	
<productVersion>	Product Version	
<ftrExternalId>	Feature unique ID to be used for external reference	Null or Unique

Tag Name	Description	Values
<featureId>	Database numeric ID for Feature	Autogenerated
<featureIdentity>	Unique numeric value for Feature identifier	Default- Autogenerated, can be changed and null value
<featureName>	Feature Name	
<featureVersion>	Feature Version	
<licenseModelId>	Database numeric value of License model	Auto-Generated
<licenseModelName>	License Model Name	
<Name>	License Model Attribute Name	
<Value>	License Model Attribute Value	
<itemFeatureState>	Defines if feature is included in line item	Default-included
<commonLicenseAttributes>	List of common licensing attribute across all line items	
Attribute -> Name	Common licensing attribute name across all line items	
Attribute -> Value	Common licensing attribute value across all line items	
<activationAttributes>	Activation level attribute.	
<groupName>	Group of attribute as defined in License Model groups	
<attributeName>	Activation level attribute name	
<attributeValue>	Activation level attribute value	
<readOnly>	Activation level attribute is readonly	
<Mandatory>	Activation level attribute is Mandatory	
<entitlementItemAttributes>	Attributes consolidated/defined at item level. Generally these attributes are derived from License Models, which are meant to have common value across features.	
<groupName>	Name of group to which this attribute belongs. Could be used while listing attributes.	
<subGroupName>	Name of SubGroup to which this attribute belongs. Could be used while listing attributes.	

Tag Name	Description	Values
<isSANL>	Specified at Next Level	

Important

- The value specified for DEPLOYMENT_TYPE can be overridden at the time of creating an Entitlement only if the license model is not of 'Fixed' deployment type.
- The value specified for LICENSE_TYPE can be overridden at the time of creating an Entitlement only if the license model is not of 'Fixed' license type.
- Licenses can be either Usage based or Concurrent. Specifying value 0 for USAGE_LIMIT makes it mandatory to specify a count for CONCURRENCY_LIMIT. Similarly, specifying value 0 for CONCURRENCY_LIMIT makes it mandatory to specify a count for USAGE_LIMIT. However, both USAGE_LIMIT and CONCURRENCY_LIMIT can have the value 0 (unlimited).
- A Parent Product must have Child Product variant(s) associated with it before an Entitlement can be created for it.
- An Entitlement cannot be created with both Parent Products and Child Products as line items.
- An Entitlement can be created for multiple Parent Products that belong to a common Namespace.
- Only Product ID is required for LVH Parent Product and Feature details are not required.
- Activation method is always 'SAOT' for LVH Parent Products.

Sample Response

Success

HTTP Status Code: 201 (Created)

Header-Location: {entitlement Id}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: External ID 1 already exists. Try again with a different External ID.

Modify Entitlement Using Entitlement XML

Modifies an Entitlement using an Entitlement XML string as input. The Web Service, **entitlement.ws**, can be used to modify Entitlements by introducing the `<linkedEntId>EntID</linkedEntId>` tag in the XML input. The `<action></action>` tag specifies the action to be performed on the Entitlement.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/entitlement.ws

URI Parameters

None

Sample Input

```
<entitlement>
  <externalId>hello</externalId>
  <entitlementAsWhole>>true</entitlementAsWhole>
  <eId>d3217d6c-661c-4f0d-a569-d8b47141e316</eId>
  <entId>41</entId>
  <entitlementType>PARENT</entitlementType>
  <linkedEntId>41</linkedEntId>
  <action>COMMIT</action>
  <comments>test</comments>
  <executedBy>admin</executedBy>
  <revision>1</revision>
  <startDate>2016-08-24</startDate>
  <endDate>2500-12-31</endDate>
  <customerIdentifier>
    <customerId>1</customerId>
    <customerName>Customer1</customerName>
    <custIdentifier>Cust1</custIdentifier>
    <custExternalId>cust111</custExternalId>
  </customerIdentifier>
  <contactIdentifier>
    <contactId>1</contactId>
    <emailId>contact1@domain.com</emailId>
  </contactIdentifier>
  <channelPartnerIdentifier>
    <channelPartnerId>3</channelPartnerId>
    <channelPartnerName>channel1</channelPartnerName>
    <channelPartnerIdentifier>CPref</channelPartnerIdentifier>
  </channelPartnerIdentifier>
  <userRegistration>NONE</userRegistration>
  <refId1>12343</refId1>
  <refId2>456</refId2>
  <activationAllowed>>true</activationAllowed>
  <revocationAllowed>>false</revocationAllowed>
  <lifeCycleStage>COMMITTED</lifeCycleStage>
  <sendNotifcation>true</sendNotifcation>
  <ccEmail></ccEmail>
  <isTest>>false</isTest>
  <txnHistory>
    <eid>6962060c-e4c5-442c-bbae-e939d54bf54c</eid>
  </txnHistory>
  <entId>42</entId>
</entitlement>
```

```

    <operation>DRAFT</operation>
    <operationDate>2016-08-24</operationDate>
    <operationBy>admin</operationBy>
</txnHistory>
<txnHistory>
    <eid>e51e4a79-dfc2-446d-9843-a8bbff40e9ed</eid>
    <entId>43</entId>
    <operation>COMMIT</operation>
    <operationDate>2016-08-24</operationDate>
    <operationBy>admin</operationBy>
</txnHistory>
<txnHistory>
    <eid>a3c61f3b-73bb-4146-b793-5510d0f15c3b</eid>
    <entId>49</entId>
    <operation>UPDATE</operation>
    <operationDate>2016-08-24</operationDate>
    <operationBy>admin</operationBy>
</txnHistory>
<productKey>
    <pkId>d0a8fb78-e884-40ff-ba92-5fc25d50c372</pkId>
    <startDate>2016-08-24</startDate>
    <endDate>2500-12-31</endDate>
    <Item>
        <ItemId>39</ItemId>
        <enforcementIdentifier>
            <enforcementName>Sentinel RMS</enforcementName>
            <enforcementVersion>9.1</enforcementVersion>
        </enforcementIdentifier>
        <totalQuantity>1</totalQuantity>
        <availableQuantity>1</availableQuantity>
        <activationMethod>FIXED</activationMethod>
        <fixedQuantity>1</fixedQuantity>
        <itemState>2</itemState>
    </product>
    <productIdentifier>
        <prdExternalId></prdExternalId>
        <productId>1</productId>
        <productNameVersion>
            <productName>Flexi_Lease</productName>
            <productVersion>1</productVersion>
        </productNameVersion>
    </productIdentifier>
    <feature>
        <featureIdentifier>
            <ftrExternalId></ftrExternalId>
            <featureId>2</featureId>
            <featureIdentity>2</featureIdentity>
            <ftrNameVersion>
                <featureName>Flexi_Lease</featureName>
                <featureVersion>1</featureVersion>
            </ftrNameVersion>
        </featureIdentifier>
    </feature>
    <licenseModel>
        <licenseModelIdentifier>
            <licenseModelId>16</licenseModelId>
            <licenseModelName>Flexi_Lease</licenseModelName>
        </licenseModelIdentifier>
    </licenseModel>
</productKey>

```

```
<attribute>
  <Name>DEPLOYMENT_TYPE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>LICENSE_TYPE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>START_LICENSE_FROM_ACTIVATION_DATE</Name>
  <value>>false</value>
</attribute>
<attribute>
  <Name>LICENSE_DURATION_IN_DAYS</Name>
  <value>365</value>
</attribute>
<attribute>
  <Name>START_DATE</Name>
  <value>2016-08-24 00:00</value>
</attribute>
<attribute>
  <Name>END_DATE</Name>
  <value>2017-08-24 00:00</value>
</attribute>
<attribute>
  <Name>FLOATING_USER_LIMIT</Name>
  <value>100</value>
</attribute>
<attribute>
  <Name>FLOATING_SOFT_USER_LIMIT</Name>
  <value>1000000</value>
</attribute>
<attribute>
  <Name>KEY_LIFETIME_MINUTES</Name>
  <value>5</value>
</attribute>
<attribute>
  <Name>TRIAL_DURATION_DAYS</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>TRIAL_DURATION_HOURS</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>COLLECT_USAGE</Name>
  <value>>true</value>
</attribute>
<attribute>
  <Name>ALLOW_COMMUTER</Name>
  <value>>false</value>
</attribute>
<attribute>
  <Name>ALLOW_GRACE</Name>
  <value>0</value>
</attribute>
<attribute>
```

```
<Name>GRACE_PERIOD_DAYS</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>GRACE_PERIOD_ELAPSED_HOURS</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>KEY_HOLDTIME_MINUTES</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>COMMUTER_MAX_CHECKOUT_DAYS</Name>
  <value>30</value>
</attribute>
<attribute>
  <Name>SHARING_CRITERIA</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>SHARING_LIMIT</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>OUTPUT_TYPE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ENFORCE_LICENSE_EXCLUSIVE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>ENFORCE_CLOCK_TAMPERED</Name>
  <value>>true</value>
</attribute>
<attribute>
  <Name>LOG_ENCRYPT_LEVEL</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ALLOW_REDUNDANCY</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>ENFORCE_REDUNDANCY_MAJORITY</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>IS_TRIAL</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>KEY_TYPE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>NUMERIC_TYPE</Name>
```

```

    <value>0</value>
  </attribute>
  <attribute>
    <Name>ELAN_KEY_FLAG</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>USE_AUTH_CODE</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>CAPACITY</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>CAPACITY_FLAG</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>HOLDING_CRITERIA</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>LOCKING_MODE</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>NUM_SUBNET</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>LOCAL_REQUEST_LOCKCRIT_FLAG</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>CODE_TYPE</Name>
    <value>1</value>
  </attribute>
  <attribute>
    <Name>LOCAL_REQUEST_LOCKCRIT_REQUIRED</Name>
    <value>4</value>
  </attribute>
  <attribute>
    <Name>LOCAL_REQUEST_LOCKCRIT_FLOAT</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>LOCAL_REQUEST_LOCKCRIT_MIN_NUM</Name>
    <value>1</value>
  </attribute>
  <attribute>
    <Name>CLIENT_1_INFO</Name>
    <value>4</value>
  </attribute>
  <attribute>
    <Name>PRIMARY_1_INFO</Name>
    <value>4</value>
  </attribute>

```



```
</attribute>
<attribute>
  <Name>PRIMARY_2_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_3_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_4_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_5_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_6_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_7_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_8_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_9_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_10_INFO</Name>
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</attribute>
<attribute>
  <Name>PRIMARY_11_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>SITE_LIC_2_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>SITE_LIC_1_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>SITE_LIC_4_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>SITE_LIC_3_INFO</Name>
  <value></value>
</attribute>
```

```
<attribute>
  <Name>SITE_LIC_5_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>SITE_LIC_6_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>SITE_LIC_7_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>SECONDARY_1_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_1_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_2_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_3_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_4_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_5_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_6_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>USERNODE_7_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_PRIVATE_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_PUBLIC_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_COMMENTS</Name>
  <value></value>
</attribute>
<attribute>
```

```

    <Name>VENDOR_NUM_OF_SECRETS</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_1</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_2</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_3</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_4</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_5</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_6</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_7</Name>
    <value></value>
  </attribute>
</licenseModel>
<itemFeatureState>INCLUDED</itemFeatureState>
</feature>
</product>
<commonLicenseAttributes>
  <attribute>
    <Name>ALLOW_VM_DETECTION</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>LICENSE_VERSION</Name>
    <value>16</value>
  </attribute>
  <attribute>
    <Name>PRIMARY_1_CRITERIA</Name>
    <value>4</value>
  </attribute>
</commonLicenseAttributes>
<activationAttributes>
  <attributeGroup groupName="LOCKING">
    <attribute>
      <attributeName>PRIMARY_1_CRITERIA</attributeName>
      <attributeValue>4</attributeValue>
      <readOnly>true</readOnly>
      <mandatory>false</mandatory>
    </attribute>
  </attributeGroup>
</activationAttributes>

```

```

        <attribute>
          <attributeName>PRIMARY_1_INFO</attributeName>
          <attributeValue></attributeValue>
          <readOnly>>false</readOnly>
          <mandatory>>true</mandatory>
        </attribute>
      </attributeGroup>
    </activationAttributes>
    <entitlementItemAttributes/>
  </Item>
</productKey>
<entitlementAttributes>
  <attributeGroup groupName="CLOUD_SERVED" subGroupName="">
    <attribute>
      <Name>DURATION</Name>
      <value>2160</value>
      <isSANL>>false</isSANL>
    </attribute>
    <attribute>
      <Name>RENEW_FREQUENCY</Name>
      <value>24</value>
      <isSANL>>false</isSANL>
    </attribute>
    <attribute>
      <Name>USAGE_SYNC_FREQUENCY</Name>
      <value>24</value>
      <isSANL>>false</isSANL>
    </attribute>
  </attributeGroup>
  <attributeGroup groupName="POLICY" subGroupName="">
    <attribute>
      <Name>IS_REDUNDANT</Name>
      <value>>true</value>
      <isSANL>>false</isSANL>
    </attribute>
    <attribute>
      <Name>REDUNDANCY_MAJORITY_RULE</Name>
      <value>>true</value>
      <isSANL>>false</isSANL>
    </attribute>
  </attributeGroup>
  <attributeGroup groupName="LOCKING" subGroupName="">
    <attribute>
      <Name>REDUNDANT_SERVERS</Name>
      <value>3</value>
      <isSANL>>false</isSANL>
    </attribute>
  </attributeGroup>
</entitlementAttributes>
</entitlement>

```

Important

- Use the `<action>` `</action>` tag to pass the following parameters for Entitlement reconfiguration:
 - **Disable** - Disables an Entitlement.
 - **Commit** - Enables a disabled Entitlement

- **Close** - Closes an Entitlement.
- **Renewlicense** - Renews a license.
- **Update** - Updates an Entitlement.

Also, you can add a line item after commit. To do so, the <itemID></itemID> tag should be blank.

- If an Entitlement is activated with mandatory fingerprint registration then the subsequent line items that are added using the Modify Entitlement web service (/ems/v4_2/ws/entitlement.ws) will also have mandatory fingerprint registration. Similarly, for activated Entitlements that have fingerprint registration as 'not required', then the subsequent line items that are added will not require fingerprint registration.

Important Input Elements

Tag Name	Description	Values
<entitlementAsWhole>	(Optional) This tag when set to true specifies that the entitlement is activated as whole. For Lease Entitlement it must be always true. Boolean- If true then activation will be mandatory for all Quantity. If more than 1 lineItem then quantity of both line Items should be same	true – activated as whole rather than single line item false – can activate individual line item (default)
<linkedEntId>	This tag is for Modify web service .In this tag you have to pass value of entitlement id(From DB or which you will get at the time of entitlement creation. It's applicable for committed entitlement only.	Integer
<action>	The <action></action> tag specifies the action to be performed on the Entitlement. This tag is required if you want to modify a committed or activated entitlement. For example, you want to change date or other licensing attributes.	Disable - Disables an Entitlement. Commit - Enables a disabled Entitlement Close - Closes an Entitlement. Renewlicense - Renews a license. Update - Updates an Entitlement.
<userRegistration>	Specifies user registration is required or optional or not required. For Lease Entitlements user registration is mandatory.	NONE OPTIONAL MANDATORY
<itemID>	Specifies line item details. You can add a line item after commit by specifying the <itemID></itemID> tag as blank.	Integer
<itemState>	Species the state of the line item as:	<ul style="list-style-type: none"> • 1 - Draft

Tag Name	Description	Values
	<ul style="list-style-type: none"> Draft - Line item is in draft state. Complete - Line item is in complete state. Activated - Line item has been activated. Revoked - Line item has been revoked. Disabled - Line item has been disabled. 	<ul style="list-style-type: none"> 2 - Complete 3 - Activated 4 - Revoked 5 - Disabled
<externalId>	Unique ID to be used for external reference	Can be null or unique
<eld>	Unique Entitlement Identifier	
<entId>	Database numeric ID of entitlement - Not exposed from the portal.	Auto-Generated Numeric Value
<entitlementType>	Entitlement type - Parent, Transactional	Default - Parent
<startDate>	Entitlement Start date	Default-Current date, Can be created in future date : Format [yyyy-mm-dd]
<endDate>	Entitlement End date	Default- Never Expire , Should not be less than Entitlement start date
<customerId>	Database numeric ID of customer	Should pre exists in EMS
<customerName>	Customer Name	Can be duplicate
<custIdentifier>	Customer identifier	Required field for cloud entitlement
<custExternalId>	Unique ID to be used for external reference	Can be null or unique
<contactId>	Database auto generated numeric ID of contact	
<emailId>	Customer email address	
<channelPartnerId>	Database auto generated numeric ID of channel partner	
<channelPartnerName>	Channel partner name	Can be duplicate
<channelPartnerIdentifier>	Channel partner identifier	
<userRegistration>	Specifies user registration is mandatory, optional or not required.	Valid values - NONE, OPTIONAL, MANDATORY

Tag Name	Description	Values
		Default - Optional
<refId1>	RefId1 of entitlement	
<refId2>	RefId2 of entitlement	
<activationAllowed>	Allows entitlement activation	Default - false
<revocationAllowed>	Allows entitlement revocation	Default - false
<lifeCycleStage>	Entitlement Stage	Values - Draft, Committed, Disabled
<sendNotification>	Specifies whether or not the Entitlement certificate mail can be sent to contact.	Default - false
<ccEmail>	List of email, to whom notification will be sent.	
<isTest>	Value to identify if entitlement is a test entitlement.	
<pkId>	Product key for each added line item	Default auto generated, Can be added manually , Can be override using PKID generator interface
<startDate>	Line item Start Date	Should not be less than Entitlement Start date
<endDate>	Line item End Date	Should not be greater than Entitlement End date
<ItemId>	Database numeric ID for line item	Auto-Generated Numeric Value
<enforcementName>	Name of enforcement	Default - RMS and Cloud.
<enforcementVersion>	Enforcement version	
<totalQuantity>	Line item quantity	
<availableQuantity>	Quantity available for activation	
<activationMethod>	Activation method	Fixed, Partial, Full, Unlimited
<fixedQuantity>	Quantity to be consumed at a time when activation method is 'Fixed'.	
<itemState>	Draft, Complete, Activate, Revoke disable	
<prdExternalId>	Product Unique Id to be used for external reference	Null or Unique

Tag Name	Description	Values
<productId>	Database Numeric Id for Product	Auto-Generated Numeric Value
<productName>	Product Name	
<productVersion>	Product Version	
<ftrExternalId>	Feature Unique Id to be used for external Reference	Null or Unique
<featureId>	Database Numeric Id for Feature	Autogenerated
<featureIdentity>	Numeric value for unique Feature Identifier	Default- Autogenerated, can be changed and null value
<featureName>	Feature Name	
<featureVersion>	Feature Version	
<licenseModelId>	Database Numeric value of License model	Auto-Generated
<licenseModelName>	License Model Name	
<Name>	License Model Attribute Name	
<Value>	License Model Attribute Value	
<itemFeatureState>	Defines if feature is included in lineitem	Default-included
<commonLicenseAttributes>	List of common licensing attribute across all lineitems	
Attribute -> Name	common licensing attribute name across all lineitems	
Attribute -> Value	common licensing attribute value across all lineitems	
<activationAttributes>	activation level attribute where end user permission is writable along with its associated attribute (criteria and its value)	
<groupName>	group of attribute as defined in License Model groups	
<attributeName>	activation level attribute name	
<attributeValue>	activation level attribute value	
<readOnly>	activation level attribute is readonly	Value set at time of license Model

Tag Name	Description	Values
		creation
<Mandatory>	activation level attribute is Mandatory	Value set at time of license Model creation
<entitlementItemAttributes>	Attributes consolidated/defined at item level. Generally these attributes come from LICENSE MODELS which are meant to have common value across features.	
<groupName>	Name of Group to which this attribute belongs. Could be used while listing of attributes and creating UI	
<subGroupName>	Name of SubGroup to which this attribute belongs. Could be used while listing of attributes and creating UI	
isSANL	Specified at Next Level	

Sample Response

Success

HTTP Status Code: 201

Header-Location: {entitlement Id}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Please specify valid action type.

Split and Transfer Entitlement

This Web service can be used to split and/or transfer an Entitlement to another Contact or Customer or Channel Partner based the request.

Split and Transfer Web service is not used for Lease Entitlements.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/entitlement/{entId}/split-transfer.ws

URI Parameters

Parameter	Description	Type
entId	Entitlement ID of parent on which split and transfer will be performed.	Integer

Split and Transfer XSD

See, "Split and Transfer XSD" on page 444.

Sample Input

```
<splitTransfer>
  <externalId></externalId>
  <ccEmail></ccEmail>
  <eid>eid1234</eid>
  <refId1></refId1>
  <refId2></refId2>
  <transferTo>
    <customerIdentifier>
      <customerId></customerId>
      <customerName>Timothy Parker</customerName>
    <custIdentifier>2e40c378-a7cf-4447-9aa0-e33f33d8efd9</custIdentifier>
    </customerIdentifier>
    <contactIdentifier>
      <contactId></contactId>
      <emailId>timothy@live.com</emailId>
    </contactIdentifier>
    <channelPartnerIdentifier>
      <channelPartnerId>1</channelPartnerId>
      <channelPartnerName>Partner</channelPartnerName>
    <channelPartnerIdentifier>4f46a490-97c9-4e16-99e9-d48d3cd9bfe1</channelPartnerIdentifier>
    </channelPartnerIdentifier>
  </transferTo>
  <splitItem>
    <lineItemId>1186</lineItemId>
    <qtySeat>6</qtySeat>
    <transferToProductKey>prdkey1234</transferToProductKey>
  </splitItem>
  <sendNotification>true</sendNotification>
  <comments>comments_xyz</comments>
  <executedBy>admin</executedBy>
  <customAttribute>
    <name>whole</name>
  </customAttribute>
</splitTransfer>
```

```

        <value>FALSE</value>
      </customAttribute>
    <customAttribute>
      <name>said</name>
      <value></value>
    </customAttribute>
  </splitTransfer>

```

The tags, <externalId>, <transferTo>, and <sendNotification> are optional tags. There can be several <splitItem> tags. Also, if the <qtySeat> tag is not specified, the entire quantity is transferred. If the <qtySeat> tag is specified with a blank quantity then the total quantity of that line item gets transferred to the new Entitlement. The <customAttribute> tag is used to specify custom attributes.

Important Input Elements

Tag Name	Description	Values
<externalId>	External ID for new Entitlement to be created	
<ccEmail>	Email addresses to receive entitlement certificate.	
<eid>	New Eid for entitlement to be created, If EMS is configured to accept eid from user.	
<refId1>	RefId1 for new entitlement	
<refId2>	RefId2 for new entitlement	
<customerId>	CustomerID for which new entitlement will be created	
<customerName>	Customer Name for which new entitlement to be created.	
<custIdentifier>	Customer Identifier for which new entitlement to be created.	
<contactId>	Contact ID for which new entitlement to be created.	
<emailId>	EmailId for which new entitlement to be created.	
<channelPartnerId>	Channel Partner ID	
<channelPartnerName>	Channel Partner Name	
<channelPartnerIdentifier>	Channel Partner Identifier	
<lineItemId>	Line Item Id to be split.	

Tag Name	Description	Values
<qtySeat>	Quantity or seat count to be split.	
<transferToProductKey>	New Product Key	
<sendNotification>	Whether or not notification is required for new entitlement.	
<comments>	Comments for this Transaction.	
<customAttribute><name>	Entitlement Custom Attribute Name	
<customAttribute><value>	Entitlement Custom Attribute value for new entitlement.	

Sample Response

Success

HTTP Status Code: 201 (Created)

Header-Location: {entId=Database ID of entitelement created}

Failure

HTTP Status Code: 400 (Bad Request)

Get Entitlement Using Entitlement ID

This Web service is used to retrieve Entitlement details for a the Entitlement ID specified.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/entitlement/{entId}.ws

URI Parameters

Parameter	Description	Type
entId	(Required) Entitlement ID (eid) or entitlement database ID (entId) to retrieve Entitlement data.	String/Integer
idType	(Optional) Specifies ID type to retrieve Entitlement. This parameter is mandatory if the above parameter is an eid. Valid values: eid or Entid	String

Example URL for eid: /ems/v4_2/ws/entitlement/b8d13b7d-f2bc-42cb-ad98-f59adafd2275.ws?idType=eid

Example URL for entId: /ems/v4_2/ws/entitlement/12.ws

Sample Response

Success

HTTP Status Code: 200 (OK)

Header-Location: Entitlement XML

Activation attributes can be fetched from the web service response. For example:

```
<?xml version="1.0" encoding="UTF-8"?>
<entitlement>
  <externalId></externalId>
  <entitlementAsWhole>>false</entitlementAsWhole>
  <eId>eid-0495</eId>
  <entId>10</entId>
  <entitlementType>PARENT</entitlementType>
  <revision>1</revision>
  <startDate>2017-04-25</startDate>
  <endDate>2500-12-31</endDate>
  <expiryInDays>176662</expiryInDays>
  <customerIdentifier>
    <customerId>4</customerId>
    <customerName>Rohit</customerName>
    <custIdentifier>bc2003065</custIdentifier>
    <custExternalId></custExternalId>
  </customerIdentifier>
  <userRegistration>OPTIONAL</userRegistration>
  <refId1></refId1>
  <refId2></refId2>
  <activationAllowed>>true</activationAllowed>
  <revocationAllowed>>true</revocationAllowed>
  <lifeCycleStage>COMMITTED</lifeCycleStage>
```

```

<sendNotifcation>true</sendNotifcation>
<ccEmail></ccEmail>
<isTest>false</isTest>
<customAttribute>
  <name>Purchase Order Number</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Order Type</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Location</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Deployment Type</name>
  <value></value>
</customAttribute>
<txnHistory>
  <eid>06c593f6-e312-4aff-97c5-854719f08e03</eid>
  <entId>11</entId>
  <operation>COMMIT</operation>
  <operationDate>2017-04-25</operationDate>
  <operationBy>admin</operationBy>
</txnHistory>
<productKey>
  <pkId></pkId>
  <startDate>2017-04-25</startDate>
  <endDate>2500-12-31</endDate>
  <expiryInDays>176662</expiryInDays>
  <Item>
    <ItemId>10</ItemId>
    <totalQuantity>100</totalQuantity>
    <availableQuantity>100</availableQuantity>
    <activationMethod>SAOT</activationMethod>
    <itemState>2</itemState>
    <product>
      <productIdentifier>
        <prdExternalId></prdExternalId>
        <productId>3</productId>
        <productNameVersion>
          <productName>1000</productName>
          <productVersion>NA</productVersion>
        </productNameVersion>
      </productIdentifier>
      <feature>
        <featureIdentifier>
          <ftrExternalId></ftrExternalId>
          <featureId>19</featureId>
          <featureIdentity>3</featureIdentity>
          <ftrNameVersion>
            <featureName>1000</featureName>
            <featureVersion>1.1</featureVersion>
          </ftrNameVersion>
        </featureIdentifier>
        <licenseModel>

```

```

        <licenseModelIdentifier>
            <licenseModelId>34</licenseModelId>
            <licenseModelName>Hardware</licenseModelName>
        </licenseModelIdentifier>
    </licenseModel>
    <itemFeatureState>INCLUDED</itemFeatureState>
</feature>
</product>
<variantProduct>
    <variantId>4</variantId>
    <variantInfo>1</variantInfo>
    <commonLicenseAttributes>
        <attribute>
            <name>DEVICE_SERIAL</name>
            <value></value>
        </attribute>
    </commonLicenseAttributes>
    <activationAttributes>
        <attributeGroup groupName="Locking">
            <attribute>
                <attributeName>DEVICE_SERIAL</attributeName>
                <attributeValue></attributeValue>
                <readOnly>>false</readOnly>
                <mandatory>>true</mandatory>
            </attribute>
        </attributeGroup>
    </activationAttributes>
</variantProduct>
<customAttribute>
    <name>Order Line Number</name>
    <value></value>
</customAttribute>
<customAttribute>
    <name>Contract Number</name>
    <value></value>
</customAttribute>
<customAttribute>
    <name>Renewal Quantity</name>
    <value>0</value>
</customAttribute>
</Item>
</productKey>
</entitlement>

```

The above activation attributes are used as input during Entitlement activation.

Failure

HTTP Status Code: 404 (NOT FOUND)

Response Body: Entitlement does not exist. Try again with a correct Entitlement ID.

Search Entitlement

Search Entitlement using a combination of Customer ID, Contact email id, and life cycle stage. Empty values of input fields are ignored.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/searchEntitlement.ws

URL Parameters

Example URL: /ems/v4_2/ws/searchEntitlement.ws?id=1,2&eid=&productKey=&productId=&featureId=&dateRangeStart=&dateRangeEnd=&productFamilyId=&customerId=&contactEmailId=&contactName=&productName=&productVersion=&productDesc=&lifecycleState=&pageIndex=&pageSize=&sortCol=&sortOrder=&refId1=&refId2=&isTest=&isAvailableQuantity=&isOwnerAssigned=&partnerName=

Parameter	Description	Type
id	(Optional) Represents Entitlement ID from database. Input can pass as a single value or comma separated multiple values. Valid values: Comma separated integers	String
eid	(Optional) It represents Entitlement EID from database and here we can pass single EID or comma separated multiple EID.	
externalId	(Optional) External identifier to identify the Entitlement.	
productKey	(Optional) Line Item Product Key. Input can pass as a single value or comma separated multiple values.	
productId	(Optional) Unique identifier to Product. Input can pass as a single value or comma separated multiple values.	
featureId	(Optional) Unique identifier to Feature. Input can pass as a single value or comma separated multiple values.	
dateRangeStart	(Optional) Start date to set a range to search Entitlements. Valid values: String in the format YYYY-MM-DD.	
dateRangeEnd	(Optional) End date to set a range to search Entitlements. Valid values: String in the format YYYY-MM-DD.	
productFamilyId	(Optional) Unique identifier to Product Suite.	
customerId	(Optional) Specify the customer ID.	Integer
contactEmailId	(Optional) Specify the contact e-mail ID for the customer.	String
contactName	(Optional) Name of Contact.	
customerIdentifier	(Optional) Specify the customer identifier. (Space and special characters are not valid. Underscore(_) and hyphen(-)is	String

Parameter	Description	Type
	accepted.)	
productName	(Optional) Name of Product.	
productVersion	(Optional) Product Version.	
productDesc	(Optional) Description of Product.	
lifecycleState	(Optional) Lifecycle state of the entitlement. Default value: 0	Integer
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of entitlements retrieved by one request. Default value: 200	Integer (>0)
sortCol	(Optional) Sort against the column. Valid values - String (startDate,endDate, state, status, contactEmailId, customerName, id) Default value: id	String
sortOrder	(Optional) The order to sort. Valid values: String (asc, desc) Default value: desc	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
isTest	(Optional) Valid values: Boolean. Specify 'true' to search for test entitlements. Specify 'false' to search for normal entitlements. To search for all entitlements leave the parameter blank.	Boolean
partnerName	(Optional) Name of Channel Partner.	String
partnerIdentifier	(Optional) Specify the channel partner identifier. (Space and special characters are not valid. Underscore(_) and hyphen(-)is accepted.)	String
isAvailableQuantity	(Optional) Available quantity that can be activated of an Entitlement. Valid values: Boolean	
isOwnerAssigned	(Optional) Contact associated with Entitlement. Valid values: Boolean	

Parameter	Description	Type
searchPattern	<p>(Optional) Specifies the search pattern as Exact, Like, or Normal.</p> <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. Normal: Default search parameter if search pattern is not specified. The searchpattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. <p>Default value: Normal</p>	String

Search XSD

The response list or output should conform to the Search XSD. This XSD is common for all search or listing related REST Web Services(.ws). See, "[List Response XSD](#)" on page 433.

Sample Response

Success

Response Body:

```
<listResponse type="Entitlement" count="5" searchParameters="{isTest=false, productId=1}">
<instance id="12" eid="9206b39f-0621-486d-b560-d7423b759649" activationAllowed="true"
revokeAllowed="true" userRegistration="2" isTest="false" refId1="" refId2="" state="2"
status="true" endDate="2500-12-31" startDate="2014-08-05" partnerId="1" partner="Publisher"/>
<instance id="3" eid="ecd53c9b-2d6c-4bef-95f0-c2b8e0aedc83" activationAllowed="true"
revokeAllowed="true" userRegistration="2" isTest="false" refId1="" refId2="" state="2"
status="true" endDate="2500-12-31" startDate="2014-08-05" contactId="2"
emailId="timothy.parker@live.com" contact="" partnerId="1" partner="Publisher"/> <instance
id="6" eid="5c9262fd-b6b4-4497-8a84-58d2b5a363d7" activationAllowed="true" revokeAllowed="true"
userRegistration="2" isTest="false" refId1="" refId2="" state="2" status="true" endDate="2500-
12-31" startDate="2014-08-05" partnerId="1" partner="Publisher"/> <instance id="9"
eid="341b93f4-294e-468e-bf28-fa946e68bb97" activationAllowed="true" revokeAllowed="true"
userRegistration="2" isTest="false" refId1="" refId2="" state="2" status="true" endDate="2500-
12-31" startDate="2014-08-05" partnerId="1" partner="Publisher"/> <instance id="1"
eid="b8d13b7d-f2bc-42cb-ad98-f59adafd2275" activationAllowed="true" revokeAllowed="true"
userRegistration="2" isTest="false" refId1="" refId2="" state="2" status="true" endDate="2500-
12-31" startDate="2014-08-05" partnerId="1" partner="Publisher"/> </listResponse>
```

Search Entitlements using Custom Attributes

The Search Entitlement Web Service can be used to perform searches on Entitlement level custom attributes, Entitlement line item level custom attributes, and Contact level custom attributes.

Sample URI and Functionality

```
//ems/v4_2/ws/searchEntitlement.ws?CA_ENT.laptop=sony&CA_ENT.mobile=iphone&CA_LI.destitem=goa&CA_
CONT.destination=tourismdest
```

In above URI use the following prefixes to perform searches using derived attributes:

Prefix	Description
CA_ENT	Perform search on Entitlement level custom attribute.
CA_LI	Perform search on Entitlement line item level custom attribute.
CA_CONT	Perform search on Contact level custom attribute.

For custom attributes of type Boolean, the value to be passed is 0 or 1.

Update Entitlement

This Web service is used to update an Entitlement using Entitlement ID and Entitlement XML string.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/entitlement/{entId}.ws

URI Parameters

Parameter	Description	Type
entId	Entitlement ID to update Entitlement data.	Integer

Sample Input

```
<entitlement>
  <externalId></externalId>
  <entitlementAsWhole>true</entitlementAsWhole>
  <eId>d3217d6c-661c-4f0d-a569-d8b47141e316</eId>
  <entId>41</entId>
  <entitlementType>PARENT</entitlementType>
  <linkedEntId/>
  <comments>test</comments>
  <executedBy>admin</executedBy>
  <revision>1</revision>
  <startDate>2016-08-24</startDate>
  <endDate>2500-12-31</endDate>
  <customerIdentifier>
    <customerId>1</customerId>
    <customerName>Customer1</customerName>
    <custIdentifier>Cust1</custIdentifier>
    <custExternalId>cust111</custExternalId>
  </customerIdentifier>
  <contactIdentifier>
    <contactId>1</contactId>
    <emailId>contact1@domain.com</emailId>
  </contactIdentifier>
  <channelPartnerIdentifier>
    <channelPartnerId>3</channelPartnerId>
    <channelPartnerName>channel1</channelPartnerName>
    <channelPartnerIdentifier>CPref</channelPartnerIdentifier>
  </channelPartnerIdentifier>
  <userRegistration>NONE</userRegistration>
  <refId1>123</refId1>
  <refId2>456</refId2>
  <activationAllowed>true</activationAllowed>
  <revocationAllowed>false</revocationAllowed>
  <lifeCycleStage>Draft</lifeCycleStage>
  <sendNotifcation>true</sendNotifcation>
  <ccEmail></ccEmail>
  <isTest>false</isTest>
  <productKey>
    <startDate>2016-08-24</startDate>
    <endDate>2500-12-31</endDate>
  </productKey>
</entitlement>
```

```

<Item>
  <enforcementIdentifier>
    <enforcementName>Sentinel RMS</enforcementName>
    <enforcementVersion>9.1</enforcementVersion>
  </enforcementIdentifier>
  <totalQuantity>1</totalQuantity>
  <availableQuantity>1</availableQuantity>
  <activationMethod>FIXED</activationMethod>
  <fixedQuantity>1</fixedQuantity>
  <itemState>1</itemState>
  <product>
    <productIdentifier>
      <prdExternalId></prdExternalId>
      <productId>1</productId>
      <productNameVersion>
        <productName>Flexi_Lease</productName>
        <productVersion>1</productVersion>
      </productNameVersion>
    </productIdentifier>
    <feature>
      <featureIdentifier>
        <ftrExternalId></ftrExternalId>
        <featureId>2</featureId>
        <featureIdentity>2</featureIdentity>
        <ftrNameVersion>
          <featureName>Flexi_Lease</featureName>
          <featureVersion>1</featureVersion>
        </ftrNameVersion>
      </featureIdentifier>
      <licenseModel>
        <licenseModelIdentifier>
          <licenseModelId>16</licenseModelId>
          <licenseModelName>Flexi_Lease</licenseModelName>
        </licenseModelIdentifier>
        <attribute>
          <Name>DEPLOYMENT_TYPE</Name>
          <value>1</value>
        </attribute>
        <attribute>
          <Name>LICENSE_TYPE</Name>
          <value>0</value>
        </attribute>
        <attribute>
          <Name>START_LICENSE_FROM_ACTIVATION_DATE</Name>
          <value>false</value>
        </attribute>
        <attribute>
          <Name>LICENSE_DURATION_IN_DAYS</Name>
          <value>365</value>
        </attribute>
        <attribute>
          <Name>START_DATE</Name>
          <value>2016-08-24 00:00</value>
        </attribute>
        <attribute>
          <Name>END_DATE</Name>
          <value>2017-08-24 00:00</value>
        </attribute>
      </licenseModel>
    </feature>
  </product>
</Item>

```

```
</attribute>
<attribute>
  <Name>FLOATING_USER_LIMIT</Name>
  <value>100</value>
</attribute>
<attribute>
  <Name>FLOATING_SOFT_USER_LIMIT</Name>
  <value>1000000</value>
</attribute>
<attribute>
  <Name>KEY_LIFETIME_MINUTES</Name>
  <value>5</value>
</attribute>
<attribute>
  <Name>TRIAL_DURATION_DAYS</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>TRIAL_DURATION_HOURS</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>COLLECT_USAGE</Name>
  <value>true</value>
</attribute>
<attribute>
  <Name>ALLOW_COMMUTER</Name>
  <value>false</value>
</attribute>
<attribute>
  <Name>ALLOW_GRACE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>GRACE_PERIOD_DAYS</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>GRACE_PERIOD_ELAPSED_HOURS</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>KEY_HOLDTIME_MINUTES</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>COMMUTER_MAX_CHECKOUT_DAYS</Name>
  <value>30</value>
</attribute>
<attribute>
  <Name>SHARING_CRITERIA</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>SHARING_LIMIT</Name>
  <value>0</value>
</attribute>
```

```
<attribute>
  <Name>OUTPUT_TYPE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ENFORCE_LICENSE_EXCLUSIVE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>ENFORCE_CLOCK_TAMPERED</Name>
  <value>>true</value>
</attribute>
<attribute>
  <Name>LOG_ENCRYPT_LEVEL</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ALLOW_REDUNDANCY</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>ENFORCE_REDUNDANCY_MAJORITY</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>IS_TRIAL</Name>
  <value>FALSE</value>
</attribute>
<attribute>
  <Name>KEY_TYPE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>NUMERIC_TYPE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ELAN_KEY_FLAG</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>USE_AUTH_CODE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>CAPACITY</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>CAPACITY_FLAG</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>HOLDING_CRITERIA</Name>
  <value>0</value>
</attribute>
<attribute>
```

```
<Name>LOCKING_MODE</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>NUM_SUBNET</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_FLAG</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>CODE_TYPE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_REQUIRED</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_FLOAT</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_MIN_NUM</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>CLIENT_1_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_1_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>PRIMARY_2_INFO</Name>
  <value>4</value>
</attribute>
<attribute>
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</attribute>
<attribute>
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```



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</attribute>
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  <Name>SITE_LIC_7_INFO</Name>
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</attribute>
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</attribute>
<attribute>
  <Name>USERNODE_2_INFO</Name>
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```

```
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  <Name>USERNODE_4_INFO</Name>
  <value></value>
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  <value></value>
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  <value></value>
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</attribute>
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  <Name>VENDOR_PUBLIC_INFO</Name>
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</attribute>
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</attribute>
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</attribute>
```

```

    <attribute>
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    </attribute>
    <attribute>
      <Name>VENDOR_SECRETS_7</Name>
      <value></value>
    </attribute>
  </licenseModel>
  <itemFeatureState>INCLUDED</itemFeatureState>
</feature>
</product>
<commonLicenseAttributes>
  <attribute>
    <Name>PRIMARY_1_CRITERIA</Name>
    <value>4</value>
  </attribute>
  <attribute>
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    <value>0</value>
  </attribute>
  <attribute>
    <Name>LICENSE_VERSION</Name>
    <value>16</value>
  </attribute>
</commonLicenseAttributes>
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      <readOnly>true</readOnly>
      <mandatory>false</mandatory>
    </attribute>
    <attribute>
      <attributeName>PRIMARY_1_INFO</attributeName>
      <attributeValue></attributeValue>
      <readOnly>false</readOnly>
      <mandatory>true</mandatory>
    </attribute>
  </attributeGroup>
</activationAttributes>
  <entitlementItemAttributes/>
</Item>
</productKey>
<entitlementAttributes>
  <attributeGroup groupName="CLOUD_SERVED" subGroupName="">
    <attribute>
      <Name>RENEW_FREQUENCY</Name>
      <value>24</value>
      <isSANL>false</isSANL>
    </attribute>
    <attribute>
      <Name>USAGE_SYNC_FREQUENCY</Name>
      <value>24</value>
      <isSANL>false</isSANL>
    </attribute>
  </attributeGroup>
</entitlementAttributes>

```

```

    <attribute>
      <Name>DURATION</Name>
      <value>2160</value>
      <isSANL>>false</isSANL>
    </attribute>
  </attributeGroup>
  <attributeGroup groupName="POLICY" subGroupName="">
    <attribute>
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      <value>>true</value>
      <isSANL>>false</isSANL>
    </attribute>
    <attribute>
      <Name>IS_REDUNDANT</Name>
      <value>>true</value>
      <isSANL>>false</isSANL>
    </attribute>
  </attributeGroup>
  <attributeGroup groupName="LOCKING" subGroupName="">
    <attribute>
      <Name>REDUNDANT_SERVERS</Name>
      <value>3</value>
      <isSANL>>false</isSANL>
    </attribute>
  </attributeGroup>
</entitlementAttributes>
</entitlement>

```

Sample Response

Success

HTTP Status Code: 200 (OK)

Header-Location: Entitlement XML

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The entitlement is already in complete stage and cannot be updated/deleted.

Delete Entitlement Using Entitlement ID

This Web service is used to delete the Entitlement for the Entitlement ID specified.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/entitlement/{entId}.ws

URI Parameters

Parameter	Description	Type
entId	Entitlement ID to delete Entitlement.	Integer
comments	Remarks or text information entered as comments.	String

Sample Response

Success

HTTP Status Code: 204 (No Content)

Header-Location: {entitlement Id}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Entitlement does not exist. Try again with a correct Entitlement ID.

Retrieve Entitlement Line Item Details by Product Key

Retrieve entitlement line item details by Product Key.

This Web Service is not available for Lease Entitlements.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/productKey/{productKeyId}.ws

URL Parameters

Example URL: /ems/v4_2/ws/productKey/004641bc-9e83-4bdf-bbdc-5f9c9073cd57.ws?

Parameter	Description	Type
productKeyId	(Required) Specify the Product Key.	String

Sample Response

Success

HTTP Status Code: 200 (OK)

Header-Location:

```
<productKeyInfo>
  <productKey>
    <pkId>004641bc-9e83-4bdf-bbdc-5f9c9073cd57</pkId>
    <startDate>2014-10-14</startDate>
    <endDate>2500-12-31</endDate>
    <item>
      <enforcementIdentifier>
        <enforcementName>Sentinel RMS</enforcementName>
        <enforcementVersion>9.0</enforcementVersion>
      </enforcementIdentifier>
      <itemId>1</itemId>
      <totalQuantity>16</totalQuantity>
      <availableQuantity>16</availableQuantity>
      <measurementUnit>SEAT_COUNT_LIMITED</measurementUnit>
      <itemState>2</itemState>
    </product>
    <productIdentifier>
      <prdExternalId></prdExternalId>
      <productId>1</productId>
      <productNameVersion>
        <productName>Protect Drive</productName>
        <productVersion>6.1</productVersion>
      </productNameVersion>
    </productIdentifier>
    <feature>
      <featureIdentifier>
        <ftrExternalId></ftrExternalId>
        <featureId>1</featureId>
        <featureIdentity>null</featureIdentity>
        <featureNameVersion>
          <featureName>ProtectDrive</featureName>
        </featureNameVersion>
      </featureIdentifier>
    </feature>
  </item>
</productKey>
</productKeyInfo>
```

```

    <featureVersion></featureVersion>
  </featureNameVersion>
</featureIdentifier>
<licenseModel>
  <licenseModelIdentifier>
    <licenseModelId>5</licenseModelId>
    <licenseModelName>Standalone Node Locked</licenseModelName>
  </licenseModelIdentifier>
  <attribute>
    <Name>GRACE_PERIOD_DAYS</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>TRIAL_DURATION_DAYS</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>COMMUTER_MAX_CHECKOUT_DAYS</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>START_LICENSE_FROM_ACTIVATION_DATE</Name>
    <value>>false</value>
  </attribute>
  <attribute>
    <Name>GRACE_PERIOD_ELAPSED_HOURS</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>TRIAL_DURATION_HOURS</Name>
    <value>0</value>
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    <Name>LICENSE_DURATION_IN_DAYS</Name>
    <value>365</value>
  </attribute>
  <attribute>
    <Name>START_DATE</Name>
    <value>2010-01-01</value>
  </attribute>
  <attribute>
    <Name>END_DATE</Name>
    <value>2011-01-01</value>
  </attribute>
  <attribute>
    <Name>FLOATING_USER_LIMIT</Name>
    <value>1</value>
  </attribute>
  <attribute>
    <Name>KEY_LIFETIME_MINUTES</Name>
    <value>5</value>
  </attribute>
  <attribute>
    <Name>CAPACITY</Name>
    <value>0</value>
  </attribute>
  <attribute>

```

```
<Name>FLOATING_SOFT_USER_LIMIT</Name>
  <value>10000000</value>
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  <value>0</value>
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  <value>0</value>
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  <Name>LOCAL_REQUEST_LOCKCRIT_FLAG</Name>
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```



```
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</attribute>
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  <Name>SITE_LIC_7_INFO</Name>
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</attribute>
<attribute>
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  <value>FALSE</value>
</attribute>
<attribute>
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```

```
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</attribute>
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</attribute>
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  <Name>VENDOR_SECRETS_4</Name>
  <value></value>
</attribute>
<attribute>
  <Name>VENDOR_SECRETS_5</Name>
  <value></value>
</attribute>
```

```

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    <attribute>
      <Name>VENDOR_SECRETS_7</Name>
      <value></value>
    </attribute>
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    <ftrExternalId></ftrExternalId>
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    <featureIdentity>null</featureIdentity>
    <featureNameVersion>
      <featureName>ZipOption</featureName>
      <featureVersion>1.0.1</featureVersion>
    </featureNameVersion>
  </featureIdentifier>
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    <licenseModelIdentifier>
      <licenseModelId>8</licenseModelId>
      <licenseModelName>Trial Standalone Node Locked</licenseModelName>
    </licenseModelIdentifier>
    <attribute>
      <Name>GRACE_PERIOD_DAYS</Name>
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    </attribute>
    <attribute>
      <Name>TRIAL_DURATION_DAYS</Name>
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    <attribute>
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    <attribute>
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    </attribute>
    <attribute>
      <Name>TRIAL_DURATION_HOURS</Name>
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    </attribute>
    <attribute>
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      <value>2010-01-01</value>
    </attribute>
    <attribute>
      <Name>END_DATE</Name>
      <value>2011-01-01</value>
    </attribute>
    <attribute>
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</feature>

```

```
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  <value>0</value>
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<attribute>
  <Name>CAPACITY_FLAG</Name>
  <value>0</value>
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</attribute>
<attribute>
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</attribute>
<attribute>
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  <value>0</value>
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<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_FLAG</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>LICENSE_TYPE</Name>
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  <value>FALSE</value>
</attribute>
<attribute>
  <Name>SITE_LIC_1_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_REQUIRED</Name>
  <value>4</value>
</attribute>
<attribute>
  <Name>SITE_LIC_2_INFO</Name>
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</attribute>
<attribute>
```

```
<Name>IS_TRIAL</Name>
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</attribute>
<attribute>
  <Name>LOCAL_REQUEST_LOCKCRIT_FLOAT</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>ENFORCE_CLOCK_TAMPERED</Name>
  <value>TRUE</value>
</attribute>
<attribute>
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  <value></value>
</attribute>
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  <value>1</value>
</attribute>
<attribute>
  <Name>SITE_LIC_4_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>ENFORCE_LICENSE_EXCLUSIVE</Name>
  <value>1</value>
</attribute>
<attribute>
  <Name>LOCKING_MODE</Name>
  <value>3</value>
</attribute>
<attribute>
  <Name>SITE_LIC_5_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>OUTPUT_TYPE</Name>
  <value>0</value>
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<attribute>
  <Name>SITE_LIC_6_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>SHARING_CRITERIA</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>SITE_LIC_7_INFO</Name>
  <value></value>
</attribute>
<attribute>
  <Name>HOLDING_CRITERIA</Name>
  <value>0</value>
</attribute>
<attribute>
  <Name>LOG_ENCRYPT_LEVEL</Name>
```

```
    <value>0</value>
  </attribute>
  <attribute>
    <Name>ALLOW_COMMUTER</Name>
    <value>FALSE</value>
  </attribute>
  <attribute>
    <Name>ALLOW_GRACE</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>CODE_TYPE</Name>
    <value>1</value>
  </attribute>
  <attribute>
    <Name>KEY_TYPE</Name>
    <value>1</value>
  </attribute>
  <attribute>
    <Name>NUMERIC_TYPE</Name>
    <value>0</value>
  </attribute>
  <attribute>
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    <value>0</value>
  </attribute>
  <attribute>
    <Name>USE_AUTH_CODE</Name>
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  </attribute>
  <attribute>
    <Name>VENDOR_NUM_OF_SECRETS</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>VENDOR_PRIVATE_INFO</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_1</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_PUBLIC_INFO</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_2</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_COMMENTS</Name>
    <value></value>
  </attribute>
  <attribute>
    <Name>VENDOR_SECRETS_3</Name>
    <value></value>
```

```

    </attribute>
    <attribute>
      <Name>VENDOR_SECRETS_4</Name>
      <value></value>
    </attribute>
    <attribute>
      <Name>VENDOR_SECRETS_5</Name>
      <value></value>
    </attribute>
    <attribute>
      <Name>VENDOR_SECRETS_6</Name>
      <value></value>
    </attribute>
    <attribute>
      <Name>VENDOR_SECRETS_7</Name>
      <value></value>
    </attribute>
  </licenseModel>
</feature>
</product>
<commonLicenseAttributes>
  <attribute>
    <Name>NUM_CLIENT_LOCKED</Name>
    <value>1</value>
  </attribute>
  <attribute>
    <Name>LICENSE_VERSION</Name>
    <value>13</value>
  </attribute>
  <attribute>
    <Name>ALLOW_VM_DETECTION</Name>
    <value>0</value>
  </attribute>
  <attribute>
    <Name>CLIENT_1_CRITERIA</Name>
    <value>4</value>
  </attribute>
</commonLicenseAttributes>
</item>
</productKey>
</productKeyInfo>

```

Failure

HTTP Status Code: 400 (NOT FOUND)

Response Body: Product key does not exist.

Retrieve Entitlement Certificate as HTML

View entitlement certificate in html format against a given entId.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/getEntitlementCertificateHTML.xml

Query Parameters

Parameter	Description	Type
entId	(Required) Specify the entitlement ID.	Integer (>0)

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <entCert>
    <![CDATA[
      <.....HTML for entitlement certificate appears here.....>
    ]]>
  </entCert>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
621	Entitlement does not exist. Try again with a correct entitlement ID.
701	Cannot obtain the entitlement certificate for entitlement (ID- {0}). The entitlement is still in the draft stage.

Retrieve License Certificate as HTML

View license certificate in html format for a given activationId.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/getLicenseCertificateHTML.xml

Query Parameters

Parameter	Description	Type
activationId	(Required) Specify the activation ID.	Integer

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <licCert>
    <![CDATA[
  <.....HTML for license certificate appears here.....>
]]>
  </licCert>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
127	A system exception occurred.
128	You should log on first.
684	Unable to retrieve activation for activation ID - {0}.

Retrieve Entitlements by Contact

Retrieve the list of committed entitlements created for a contact.

Default Protocol	Method Type	URI
HTTP	GET	/ems/searchContactEntitlement.xml

Query Parameters

Parameter	Description	Type
emailId	(Required) Specify the contact e-mail ID.	String
pageIndex	(Optional) The starting page number.	Integer (>0)
pageSize	(Optional) The number of records retrieved by one request.	Integer (>0)
sortCol	(Optional) Sort against the column.	String
sortOrder	(Optional) The order to sort. Default value: asc	String
startDate	(Optional) Entitlement start date.	String (YYYY-MM-DD)
endDate	(Optional) Entitlement end date.	String (YYYY-MM-DD)

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <entitlements>
    <entitlement>
      <activationAllowed>true</activationAllowed>
      <channelPartner>
        <channelPartnerId>1</channelPartnerId>
        <channelPartnerName>Publisher</channelPartnerName>
      </channelPartner>
      <contact>
        <contactEmailId/>
        <contactId>1</contactId>
      </contact>
      <customer/>
      <eid>f1652a****</eid>
      <endDate>2500-12-31</endDate>
      <entId>2</entId>
      <test>false</test>
      <refId1/>
      <refId2/>
      <revokeAllowed>true</revokeAllowed>
      <startDate>2010-10-04</startDate>
      <state>2</state>
      <status>true</status>
      <userRegistration>3</userRegistration>
    </entitlement>
  </entitlements>
</EMSResponse>
```

```

</entitlements>
<stat>ok</stat>
<total>1</total>
</EMSResponse>

```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
109	The sort order value is not valid. Specify asc or desc.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
122	{0} is a required field. It cannot have a null value.
124	The sort column is not valid. The valid values are {0}.
128	You should log on first.
513	The contact does not exist.

Retrieve License for Renewed Entitlement

Retrieve the license string for the renewed entitlement/line item using the activationId as input parameter.

Default Protocol	Method Type	URI
HTTP	POST	/ems/getRenewedLicense.xml

POST Parameters

Parameter	Description	Type
activationId	(Required) Enter the activation ID.	Integer
comments	(Optional) Description or details that the user wants to log when calling this Web service.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <groupActivation>
    <activations>
      <activation>
        <activationAttributes />
        <activationDate>2010-10-05</activationDate>
        <activationId>10</activationId>
        <activationState>2</activationState>
        <activationType>1</activationType>
        <aid>07391b87-272e-4701-9d1f-4f0e9920f187</aid>
        <groupActivationId>0</groupActivationId>
        <licenseString>*D
KVF6A8CQPW9aD53vd893voXMqsX7Hmy6zZ7XwdZrVfz4juZXM2,EWCGjXQJOeh7f0H7tZKHltVFLlaswcQWynLyL40qvw-
aySYOCs8e6RwbB3EFEBhkqwFkxjNaLoRFoi2ft# "ProtectDrive" version "", expires Midnight of Jan 1,
2025, exclusive##AID=07391b87-272e-4701-9d1f-4f0e9920f187</licenseString>
        <lineItem>
          <allowOverride>>true</allowOverride>
          <endDate>2025-01-01</endDate>
          <enforcement>
            <enforcementId>1</enforcementId>
            <enforcementName>Sentinel RMS</enforcementName>
            <enforcementVersion>9.0</enforcementVersion>
          </enforcement>
          <entitlement>
            <eid>4c331b****</eid>
            <entId>116</entId>
          </entitlement>
          <licenseType>1</licenseType>
          <lineItemId>122</lineItemId>
          <lineItemName>ProtectDriveNetwork</lineItemName>
          <lineItemVersion>1</lineItemVersion>
          <productKey>c638dbbd-343c-4cf5-a983-ceb95cee6e40</productKey>
          <quantity>111</quantity>
          <quantityUnlimited>>false</quantityUnlimited>
          <remainingQuantity>109</remainingQuantity>
          <startDate>2010-10-05</startDate>

```

```

        <type>product</type>
    </lineItem>
    <quantity>1</quantity>
</activation>
</activations>
<licenseString>*D
KVF6A8CQPyW9aD53vd893voXMqsX7Hmy6zZ7XwdZrVfz4juZXM2,EWCgjXQJOeh7f0H7tZKHltVFLlaswcQWynLyL4Oqvw-
aySYOCs8e6RwbB3EFEBhkqwFxfkjNaLoRFoi2ft# "ProtectDrive" version "", expires Midnight of Jan 1,
2025, exclusive##AID=07391b87-272e-4701-9d1f-4f0e9920f187</licenseString>
<lineItemLicensingAttributes>
    <lineItemLicensingAttribute>
        <associatedAttribute null="true" />
        <attribute>
            <attributeId>37</attributeId>
            <attributeName>LICENSE_VERSION</attributeName>
            <attributeValue>13</attributeValue>
            <groupName>Policy</groupName>
            <readOnly>true</readOnly>
            <subGroupName />
        </attribute>
    </lineItemLicensingAttribute>
    <lineItemLicensingAttribute>
        <associatedAttribute null="true" />
        <attribute>
            <attributeId>117</attributeId>
            <attributeName>ALLOW_VM_DETECTION</attributeName>
            <attributeValue>0</attributeValue>
            <groupName>Policy</groupName>
            <readOnly>true</readOnly>
            <subGroupName />
        </attribute>
    </lineItemLicensingAttribute>
    <lineItemLicensingAttribute>
        <associatedAttribute null="true" />
        <attribute>
            <attributeId>42</attributeId>
            <attributeName>NUM_CLIENT_LOCKED</attributeName>
            <attributeValue>1</attributeValue>
            <groupName>Client Locking</groupName>
            <readOnly>true</readOnly>
            <subGroupName />
        </attribute>
    </lineItemLicensingAttribute>
    <lineItemLicensingAttribute>
        <associatedAttribute>
            <attributeId>50</attributeId>
            <attributeName>CLIENT_1_INFO</attributeName>
            <attributeValue>4</attributeValue>
            <groupName>Client Locking</groupName>
            <readOnly>false</readOnly>
            <subGroupName />
        </associatedAttribute>
        <attribute>
            <attributeId>43</attributeId>
            <attributeName>CLIENT_1_CRITERIA</attributeName>
            <attributeValue>4</attributeValue>
            <groupName>Client Locking</groupName>

```

```

        <readOnly>true</readOnly>
        <subGroupName />
    </attribute>
</lineItemLicensingAttribute>
</lineItemLicensingAttributes>
</groupActivation>
<stat>ok</stat>
</EMSResponse>

```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
684	Unable to retrieve activation for activation ID - {0}.
828	Renew not allowed for this activation.

Retrieve Usage Log

Retrieves the usage log details for a given product of a deployed entitlement.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/retrieveUsageLog.ws

URL Parameters

Example URL: /ems/v4_2/ws/retrieveUsageLog.ws?entItemId=13&pageSize=&toDate=&pageIndex=&fromDate=

Parameter	Description	Type
entItemId	(Required) Entitlement line item identifier.	Integer
fromDate	(Required) Start date from when the usage log is to be obtained.	String (yyyy-mm-dd)
toDate	(Required) End date till when the usage log is to be obtained.	String (yyyy-mm-dd)
pageIndex	(Optional) Index of the currently displayed page.	Integer
pageSize	(Optional) Number of records to be displayed on a page.	Integer

Sample Response

Success

HTTP Status Code: 200 (OK)

Response Body

```
<?xml version="1.0" encoding="UTF-8"?>
<usageData>
  <usageRecord>
    <featureName>av_con_f1</featureName>
    <identity>avi3</identity>
    <startDate>Mon Mar 10 00:00:00 IST 2014</startDate>
    <endDate>Thu Apr 10 23:59:59 IST 2014</endDate>
    <totalConsumption>1</totalConsumption>
    <usageType>CountBased</usageType>
    <recordCount>1</recordCount>
  </usageRecord>
</usageData>
```

Failure

HTTP Status Code: 400

Response Body: entItemId is a required field. It cannot have a null value.

Retrieve Billing Data

Retrieve the billing data as XML for a specific product included in an entitlement. The XML can be further used to generate bills in different formats. The following types of billing data can be generated:

- **Brief Bill:** The XML includes brief summary of the products consumed within a specified period
- **Detailed Bill:** The XML includes provides consumption details per feature.
- **Itemized Bill:** The XML includes consumption details for a Product on a per-Feature and per-User basis.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/billingData.ws

URL Parameters

Example URL: /ems/v4_2/ws/billingData.ws?billType=1&entItemId=13&toDate=2014-10-10&fromDate=2013-01-01

Parameter	Description	Type
entItemId	(Required) Entitlement line item identifier.	Integer
fromDate	(Required) Start date from when the bill is to be obtained.	String (yyyy-mm-dd)
toDate	(Required) End date till when the bill is to be obtained.	String (yyyy-mm-dd)
billType	(Optional) Bill type. Valid values: The options are: 1 (brief bill), 2 (detailed bill), and 3 (itemized bill). Default value: 1 (brief bill)	Integer

Sample Response

Success

HTTP Status Code: 200 (OK)

Response Body

```
<?xml version="1.0" ?>
<usageBill>
  <!--This is an automated/formatted XML output for the queried ISV aggregation information.-->
  <BriefBillingInformation>
    <ProductInformation>
      <ProductName>av_con_p1</ProductName>
      <ProductVersion>1</ProductVersion>
      <ContractID>a079e41f-748e-4760-8078-826726fee884</ContractID>
      <TenantIdentifier>1</TenantIdentifier>
    </ProductInformation>
    <BreakUpInformation>
      <ProductConsumption>
        <ConsumptionPattern>
          <Consumption>
            <Duration>
              <From>Not-Specified</From>
```



```
<Till>Wed, 9 Apr 2014 10:59:17 000</Till>
</Duration>
<Value>1</Value>
<TotalRecords>1</TotalRecords>
</Consumption>
</ConsumptionPattern>
</ProductConsumption>
</BreakUpInformation>
</BriefBillingInformation>
</usageBill>
```

Failure

HTTP Status Code: 200 (OK)

Response Body: {"stat":"fail","code":122,"desc":"entItemid is a required field. It cannot have a null value."}.

Retrieve Custom Attributes for Entitlement

A Web Service has been added to retrieve custom attributes details for an Entitlement and its associated entities. The entities associated with an Entitlement include, associated products, features, customer, contact etc.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/customAttribute/entitlement/{entId}.ws

URL Parameters

Parameter	Description
entId	Entitlement ID.
idType	Specify the idType as eid or entid. Default value: entid
includeAllAssociation	Specify whether details of all associated Entitlement entities will be displayed or not. Valid value for includeAllAssociation is true or false. If includeAllAssociation is true then details of all associated entitlement entities is displayed. If includeAllAssociation is false then only the Entitlement details are displayed. Default value : false

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<CustomAttribute Entity="Entitlement" EntityId="27" EntityIdType="EId"
EntityIdValue="e00541b3-5ec4-4927-9234-4c68ccfb1188" ParentEntity="" ParentEntityId=""
  AttributeName="ent_date" AttributeValue="2016-12-01"/>
<CustomAttribute Entity="Entitlement" EntityId="27" EntityIdType="EId" EntityIdValue="e00541b3-
5ec4-4927-9234-4c68ccfb1188" ParentEntity="" ParentEntityId="" AttributeName="ent_num"
AttributeValue="123"/>
```

Freeing License Sessions

This Web Service can be called to free the license session and free the quantity so that another machine can fetch the license specified using the given parameters such as customerId and sessionId.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/customer/{customerId}/licenseSession/{sessionId}.ws

URL Parameters

Parameter	Description	Type
customerId	Unique customer identifier specified while creating a customer. It is auto generated if not specified by the user.	String
sessionId	Specifies the session ID to delete as returned by retrieve license session Web service.	String

Sample Response

Success

HTTP Status Code: 204 (No Content)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Customer does not exist. Provide a valid Customer Id.

Named User Management

A named user license is gives exclusive licensing rights to user names specified in the software license. The named users can be managed for an Entitlement using the following Web services in Sentinel EMS:

- "Add Named Users" on the next page
- "Overwrite Named Users" on page 247
- "Get Named Users" on page 249
- "Delete Named Users" on page 251
- "Deploy Named Users" on page 252

Add Named Users

This Web Service is used for adding named users to an Entitlement using XML input.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/namedUser.ws

URL Parameters

Parameter	Description	Type
identityXml	XML input that specifies the list of named user and the entitlement details to which the named users will associated.	XML

Named User XSD

See, "Named User XSD" on page 428.

Sample Input

```
<namedUsers customerId="Cust1">
  <entitlement eid="13e90874-ee54-4266-b7dd-a4c51f227b28">
    <item productKey="aaaae9e51-983a-4eca-9899-a6e9a7e24b3c"
productVersion="1" productName="FCP2" isSuite="false">
      <namedUserSet id="I1"/>
    </item>
    <item productKey="5a33ba91-7eb4-45e6-8f5e-93832668c53c"
productVersion="1" productName="FCP1" isSuite="false">
      <namedUserSet id="I1"/>
    </item>
  </entitlement>
  <namedUserSet id="I1">
    <namedUser state="Draft">
      <user>User_5</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_4</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_3</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_2</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_1</user>
    </namedUser>
  </namedUserSet>
</namedUsers>
```

Important Input Elements

Some important elements in the input XML are described below:

Tag Name	Description	Values
<entitlement>	This element specifies the entitlement details for the named license.	Contains the <item> element(s) with the line item details like Product Key, Product/Suite Name, Product Version, and whether or not the line item is a Product Suite.
<namedUserSet>	This element specifies list of named user's .	Contains the <namedUser></namedUser> element(s).
<namedUser>	Specifies the named user details.	Specifies the state of the named user as 'Draft' or 'Deployed' and the name of the user in the <user></user> element

Sample Response

Success

HTTP Status Code: 201 (OK)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: String Message

Overwrite Named Users

This Web Service is used for overwriting all existing named users associated with an entitlement with new named users specified through XML input.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/namedUser.ws

URL Parameters

Parameter	Description	Type
identityXml	XML input that specifies the list of new named users and the entitlement details to which the users will associated.	XML

Named User XSD

See, "Named User XSD" on page 428.

Sample Input

```
<namedUsers customerId="Cust1">
  <entitlement eid="13e90874-ee54-4266-b7dd-a4c51f227b28">
    <item productKey="aaaa9e51-983a-4eca-9899-a6e9a7e24b3c"
productVersion="1" productName="FCP2" isSuite="false">
      <namedUserSet id="I1"/>
    </item>
    <item productKey="5a33ba91-7eb4-45e6-8f5e-93832668c53c"
productVersion="1" productName="FCP1" isSuite="false">
      <namedUserSet id="I1"/>
    </item>
  </entitlement>
  <namedUserSet id="I1">
    <namedUser state="Draft">
      <user>User_5</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_4</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_3</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_2</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_1</user>
    </namedUser>
  </namedUserSet>
</namedUsers>
```

Sample Response

Success

HTTP Status Code: 201 (OK)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: String Message

Get Named Users

This Web Service is used for retrieving named users.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/entitlement/{eid}/namedUser.ws

URL Parameters

Parameter	Description	Type
eid	Entitlement ID	String
pkid	Product Key	String
productName	Name of the Product.	String
productVesion	Product version	String
userName	Named User associated with the entitlement.	String
isSuite	Specifies whether the product specified is product suite. false = Product, true = Suite	boolean

Sample Response

Success

HTTP Status Code: 201 (OK)

Response Body:

```
<namedUsers customerId="Cust1">
  <entitlement eid="13e90874-ee54-4266-b7dd-a4c51f227b28">
    <item productKey="aaaae9e51-983a-4eca-9899-a6e9a7e24b3c"
productVersion="1" productName="FCP2" isSuite="false">
      <namedUserSet id="I1"/>
    </item>
    <item productKey="5a33ba91-7eb4-45e6-8f5e-93832668c53c"
productVersion="1" productName="FCP1" isSuite="false">
      <namedUserSet id="I1"/>
    </item>
  </entitlement>
  <namedUserSet id="I1">
    <namedUser state="Draft">
      <user>User_5</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_4</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_3</user>
    </namedUser>
    <namedUser state="Draft">
      <user>User_2</user>
    </namedUser>
  </namedUserSet>
</namedUsers>
```

```
        </namedUser>
        <namedUser state="Draft">
            <user>User_1</user>
        </namedUser>
    </namedUserSet>
</namedUsers>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: String Message

Important

- When all three parameters, pkid, productName, and productVersion are specified as input parameters in the web services to get, delete or deploy Named Users then search is performed on pkid.
- To specify that the line item is a Product Suite the input parameter, isSuite is used but if the input parameter pkid is specified then the 'isSuite' parameter may be omitted.
- If user logs in using the Product Key, then the value of pkid is used for eid, which implies that the value of pkid and eid is same.

Delete Named Users

This Web Service is used for deleting named user(s).

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/entitlement/{eid}/namedUser.ws

URL Parameters

Parameter	Description	Type
eid	Entitlement ID	String
pkid	Product Key	String
productName	Name of the Product.	String
productVesion	Product version	String
userName	Named User associated with the entitlement.	String
isSuite	Specifies whether the product specified is product suite. false = Product, true = Suite	boolean

Sample Response

Success

HTTP Status Code: 204 Success

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: String Message

If user logs in using Product Key, then the value of pkid is used for eid, which implies that the value of pkid and eid is same.

Deploy Named Users

This Web Service is used for deploying named user(s) to SCL.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/entitlement/{eid}/namedUser.ws

URL Parameters

Parameter	Description	Type
eid	Entitlement ID	String
pkid	Product Key	String
productName	Name of the Product.	String
productVesion	Product version	String
userName	Named User associated with the entitlement.	String
isSuite	Specifies whether the product specified is product suite. false = Product, true = Suite	boolean

Sample Response

Success

HTTP Status Code: 200 Identity deployed successfully.

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: String Message

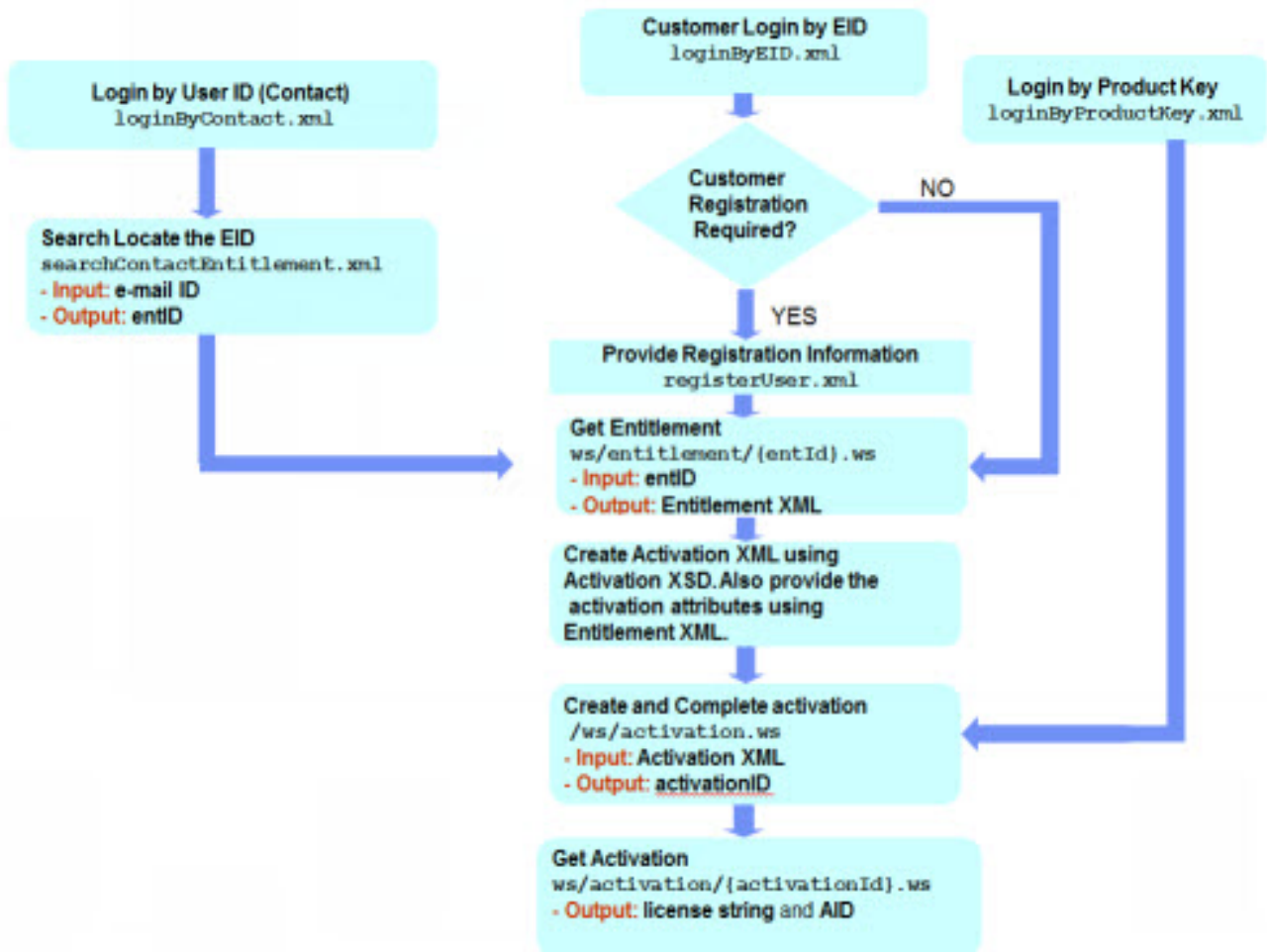
If user logs in using Product Key, then the value of pkid is used for eid, which implies that the value of pkid and eid is same.

Entitlement Activation

After an entitlement is created, the customer receives an e-mail containing entitlement ID (EID) and Product Key. The customer then needs to log on to EMS using any of the following to perform activation for his products/suites.

- User ID
- Entitlement ID
- Product Key

The steps of activation differ depending on the way the customer logs on. Follow the diagram below for detailed steps. This section describes the web services available for configuring line item activation.



Allowing End User to Modify Additional Attributes During Activation

During activation Sentinel EMS allows the end users to enter values for RMS Lock Info fields only (e.g., Primary 1 Info, Client 1 Info, etc). However, it is possible to change this behavior and expose more license model fields for end user input. To do so, you need to edit your Sentinel EMS database and perform following steps:

- Get the license model ID from the T_LM table.
- Query the database to find out the ID of the attribute that you want to expose for end user input.
- Run update query and set EndUserPermission to 2 for this attribute.

Example

For enabling the end user to specify VENDOR_PUBLIC_INFO for "Standalone node locked" license model during activation, you would need to execute the following in your database:

```

DECLARE @EnfId Int
DECLARE @LMid Int
DECLARE @AttrId Int

-- Step 1) Find out the Enforcement ID.
select @EnfId = EnfId from T_ENF where enfcode = 'RMS'

-- Step 2) Find out the license model ID.
SELECT @LMid = LMID FROM T_LM WHERE LMNAME ='Standalone Node Locked' and EnfId = @EnfId

-- Step 3) Find out the attribute for which you want to set EndUserPermission to 2.
SELECT @AttrId = ATTRID FROM T_ENF_LM_GROUP_ATTR_MASTER WHERE ATTRNAME = 'VENDOR_PUBLIC_INFO'
and EnfId = @EnfId

-- Step 4) Update this attribute and set end user permission to 2.
UPDATE T_LM_ATTR SET EndUserPermission = 2 WHERE LMID =@LMID and ATTRID = @AttrId

-- Step 5) Update Permissions.

update T_LM_ATTR set ACCESSLEVEL='L2_F2_P2_E2_I1_A2' where attrid=@AttrId and LMid=@LMid

update T_ENF_LM_GROUP_ATTR_MASTER set ISCRITERIA = 1, ACCESSLEVEL='L2_F2_P2_E2_I0_A2',
CONSOLIDATEDLEVEL = 'P0_E0_I1_A1' where attrid = @AttrId

```

Create and Complete Activation

Creates and completes Activation.



Note: Special characters (/,\,\$,!,@,#,*etc) and internationalized characters (such as Japanese, German, Chinese font set) are not supported for cloud served licenses.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/activation.ws

URI Parameters

None

Activation XSD

See, "Activation XSD" on page 402.

Sample Input

The following sample is for activation of entitlement created for 'Default' product and Device is not enabled.

```
<groupActivation groupActivationId="0">
  <userInput>
    <sendNotification>false</sendNotification>
    <activatorEmailId></activatorEmailId>
    <activateeEmailId></activateeEmailId>
    <comments>test</comments>
    <executedBy>admin</executedBy>
    <lineItem>
      <aid>51415822-f23b-w4727-8fc5-16a325776bb1</aid>
      <externalId></externalId>
      <lineItemIdentifier>
        <lineItemId>2</lineItemId>
        <productKey>97032f71-c504-4640-8ee5-6ada09cef74b</productKey>
      </lineItemIdentifier>
      <activationQuantity>1</activationQuantity>
      <timeZone>America/Phoenix</timeZone>
      <activationAttributes>
        <attributeGroup groupName="Locking Info">
          <attribute>
            <attributeName>MANUAL_LIBRARY_SERIAL_NUMBER.target_id</attributeName>
            <attributeValue>2</attributeValue>
            <readOnly>false</readOnly>
          </attribute>
        </attributeGroup>
      </activationAttributes>
    </lineItem>
    <customAttribute>
      <name>66565</name>
      <value></value>
    </customAttribute>
  </userInput>
</groupActivation>
```

Sample Input for Group Activation

The following sample is for group activation of default Products and Device is not enabled for Sentinel EMS.

```
<groupActivation groupActivationId="6315022">
  <userInput>
    <sendNotification>>false</sendNotification>
    <activatorEmailId></activatorEmailId>
    <activateeEmailId>laviiii@gmail.com</activateeEmailId>
    <activateeEmailId>bansal@gmail.com</activateeEmailId>
    <AddIfNotAvailable>>true</AddIfNotAvailable>
  </userInput>
  <lineItem>
    <aid></aid>
    <externalId></externalId>
    <lineItemIdentifier>
      <lineItemId>454263</lineItemId>
      <productKey>4AU7JGEJJUDJ</productKey>
    </lineItemIdentifier>
    <activationQuantity>1</activationQuantity>
    <activationAttributes>
      <attributeGroup groupName="Locking Info">
        <attribute>
          <attributeName>HITACHI_OVKY4.target_id</attributeName>
          <attributeValue>85959,P9500</attributeValue>
          <readOnly>>false</readOnly>
        </attribute>
        <attribute>
          <attributeName>HITACHI_OVKY4.info_1</attributeName>
          <attributeValue>85959,P9500</attributeValue>
          <readOnly>>false</readOnly>
        </attribute>
      </attributeGroup>
    </activationAttributes>
  </lineItem>
  <lineItem>
    <aid></aid>
    <externalId></externalId>
    <lineItemIdentifier>
      <lineItemId>543414</lineItemId>
      <productKey>752801974661</productKey>
    </lineItemIdentifier>
    <activationQuantity>1</activationQuantity>
    <activationAttributes>
      <attributeGroup groupName="Locking Info">
        <attribute>
          <attributeName>3PAR.SSN.target_id</attributeName>
          <attributeValue>1637795</attributeValue>
          <readOnly>>false</readOnly>
        </attribute>
      </attributeGroup>
    </activationAttributes>
  </lineItem>
</groupActivation>
```

Sample Input for Activation of Entitlement with Parent Product(s)

The following sample input is for activation of Entitlement with Parent Products where Device is not enabled.


```

<?xml version="1.0" encoding="UTF-8"?>
<groupActivation groupActivationId="0">
  <userInput>
    <sendNotification>>false</sendNotification>
    <activatorEmailId></activatorEmailId>
    <activateeEmailId></activateeEmailId>
    <lineItem>
      <aid>9bbeal7e-26e0-4838-8de0-db2cb3487d6d</aid>
      <externalId></externalId>
      <lineItemIdentifier>
        <lineItemId>118</lineItemId>
        <productKey>1411fb3e-d3a6-412d-93bd-28f3df7c9612</productKey>
      </lineItemIdentifier>
      <variantIdentifier>
        <productVersion>V8</productVersion>
      </variantIdentifier>
      <activationQuantity>1</activationQuantity>
      <timeZone>America/Phoenix</timeZone>
      <activationAttributes>
        <attributeGroup groupName="LOCKING">
          <attribute>
            <attributeName>PRIMARY_1_CRITERIA</attributeName>
            <attributeValue>4</attributeValue>
            <readOnly>>true</readOnly>
          </attribute>
          <attribute>
            <attributeName>PRIMARY_1_INFO</attributeName>
            <attributeValue>1</attributeValue>
            <readOnly>>false</readOnly>
          </attribute>
        </attributeGroup>
      </activationAttributes>
    </lineItem>
    <customAttribute>
      <name>SWUID</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>Device Model</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>Hardware SKU</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>RMA Type</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>RMA Number</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>RMA Comments</name>
      <value></value>
    </customAttribute>
  </userInput>
</groupActivation>

```

```

<customAttribute>
  <name>Renewal Status</name>
  <value>FALSE</value>
</customAttribute>
<customAttribute>
  <name>Activator User ID</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Site ID</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Site Name</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Managing Reseller ID</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Managing Reseller Name</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Old Serial</name>
  <value></value>
</customAttribute>
<customAttribute>
  <name>Old Serial SKU</name>
  <value></value>
</customAttribute>
</userInput>
</groupActivation>

```

Sample Input for Activation when Device is Enabled

The following sample is for group activation when Device is enabled in Sentinel EMS.

```

<groupActivation groupActivationId="0">
  <userInput>
    <sendNotification>>false</sendNotification>
    <activatorEmailId></activatorEmailId>
    <activateeEmailId></activateeEmailId>
    <lineItem>
      <aid>d6d7e142-9b05-494d-881e-0251201b086a</aid>
      <externalId></externalId>
      <lineItemIdentifier>
        <lineItemId>1</lineItemId>
        <productKey>41e05248-7fal-433e-a3d2-fcb334cccbaa</productKey>
      </lineItemIdentifier>
      <deviceName>Device_Server01</deviceName>
      <activationQuantity>1</activationQuantity>
      <timeZone>America/Phoenix</timeZone>
      <activationAttributes>
        <attributeGroup groupName="LOCKING">
          <attribute>

```

```

    <attributeName>PRIMARY_1_CRITERIA</attributeName>
    <attributeValue>200C</attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>PRIMARY_1_INFO</attributeName>
    <attributeValue>1</attributeValue>
    <readOnly>>false</readOnly>
  </attribute>
</attributeGroup>
</activationAttributes>
</lineItem>
</userInput>
</groupActivation>

```

Important Input Elements

Tag Name	Description	Values
<isOverwrite>	This tag when set to true specifies that existing activation is being modified	true – to modify Activation false – to create activation (default)
<sendNotification>	Sets on/off license certificate emails. If True, will send notification to Activatee and Activator.	true – to send license certificate email false – to stop license certificate email Default value depends on EMS global configuration settings in admin console.
<activatorEmailId>	(Optional) EmailId of user performing the activation	String
<activateeEmailId>	(Optional) EmailId of enduser, for whom activation is being made.	String
<aid>	This is an identifier of the activation, required in case of Update calls.	
<Addifnotavailable>	(Optional) Adds activatee email as contact if not already exists	true – add activatee email as contact false – assumes activatee email already exists as contact (default)
<externalId>	ExternalId link to that activation	
<lineItem>	(Required) Multiple lineItem tags for group activation	
<lineItemId>	(Required) Database id of	Integer

Tag Name	Description	Values
	lineItem to activate (either lineItemId or productKey is required for activation)	
<productKey>	(Required) Product Key to activate (either lineItemId or productKey is required for activation)	String
<aid>	Activation ID is required in case of push keys	String
<variantIdentifier>	This element specifies the Child variant of the Parent Product to be activated.	Contains the <productVersion></productVersion> element.
<productVersion>	This element specifies the version of the Child Product variant to be activated.	String
<activationQuantity>	Quantity to activate (tag is not required for lease type activation, by default full quantity specified in entitlement is activated in case of lease type activation)	Integer
<activationAttributes>	Activation level attribute where end user permission is writable along with its associated attribute. These are the attributes required for activation. Mostly used to generate license. Not required in case of lease type activation	String
<attributeGroup groupName="Locking Info">	GroupName in which these attributes are clubbed.	String
<attribute>		String
<attributeName>	Name of the ActivationAttribute.	String

Tag Name	Description	Values
<attributeValue>	Value of the attribute	String
<readOnly>	Not required in input	String
<customAttribute>	Custom Attributes	String
<name>	Name of the CustomAttribute	String
<value>	Value for the CustomAttribute	String
<deviceName>	Device friendly name. This element is used when Device is enabled in Sentinel EMS and you want to specify a friendly name for the locking information during activation.	String
<deviceIdentifier>	Unique identifier for the Device name.	String

Important

- The element <variantIdentifier> is required when you are activating a Child Product variant for a Parent Product.
- Activation Quantity has to be specified if the activation method is 'Partial' for the Child Product variant being activated
- A Child Product variant where activation method is 'Full' can only be activated if quantity and remaining quantity of the Product is same.
- A Child Product variant where activation method is 'Fixed' can only be activated if quantity is more than or equal to fixed quantity.
- Web services with .xml extension will use the <comments> element but their behavior will not be updated for changes to maintain backward compatibility. Only optional <comments> element will be added to old services where they are not present.

Important (for Device Name Module)

- Device name should be unique for an activatee
- Locking Value should be unique for an activatee
- Devices and Locking value can be searched for an activatee but this search is not available across multiple activatees.
- Devices is not supported for
 - Cloud Served Entitlements
 - Redundant License Models

- License Models where usernode is greater than 0.
- Multiple line item should have same locking criteria and locking criteria value.
- To create a Device Name, the minimum length is 4 and maximum length is 255.

Sample Response

Success

HTTP Status Code: 201 (Created)

Header-Location: {ActivationId}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Invalid XML string provided. Provide a valid XML.

External Activation using Push Keys

EMS can accept activation record along with keys from external system.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/activation.ws

To associate a device name with an activation, specify the <deviceName> element in the activation input XML.

URI Parameters

None

Activation XSD

See, "Activation XSD" on page 402.

Sample Input

```
<groupActivation groupActivationId="0">
  <userInput>
    <sendNotification>false</sendNotification>
    <activatorEmailId></activatorEmailId>
    <activateeEmailId></activateeEmailId>
    <comments>test</comments>
    <executedBy>admin</executedBy>
    <lineItem>
      <aid>51415822-f23b-w4727-8fc5-16a325776bb1</aid>
      <externalId></externalId>
      <lineItemIdentifier>
        <lineItemId>2</lineItemId>
        <productKey>97032f71-c504-4640-8ee5-6ada09cef74b</productKey>
      </lineItemIdentifier>
      <activationQuantity>1</activationQuantity>
      <timeZone>America/Phoenix</timeZone>
      <activationAttributes>
        <attributeGroup groupName="Locking Info">
          <attribute>
            <attributeName>MANUAL_LIBRARY_SERIAL_NUMBER.target_id</attributeName>
            <attributeValue>2</attributeValue>
            <readOnly>false</readOnly>
          </attribute>
        </attributeGroup>
      </activationAttributes>
    </lineItem>
    <customAttribute>
      <name>66565</name>
      <value></value>
    </customAttribute>
  </userInput>
  <activation activationId="12" lineItemId="2">
    <activatorEmailId></activatorEmailId>
    <activateeEmailId></activateeEmailId>
    <aid>51415822-f23b-w4727-8fc5-16a325776bb1</aid>
    <activationDate>2014-09-29</activationDate>
```

```

<externalId></externalId>
<activationState>Revoked Manually</activationState>
<activatedQuantity>1</activatedQuantity>
<productKey>97032f71-c504-4640-8ee5-6ada09cef74b</productKey>
<activatedProduct productId="4">
  <productName>p2</productName>
  <productVersion>ver</productVersion>
  <activatedfeature featureId="6" licenseKeyRef="11">
    <featureName>f2</featureName>
    <featureVersion></featureVersion>
    <activatedLicenseModel licenseModelId="19">
      <licenseModelName>MANUAL_LIBRARY_SERIAL_NUMBER</licenseModelName>
      <activationAttributes>
        <attributeGroup groupName="Locking Info">
          <attribute>
            <attributeName>MANUAL_LIBRARY_SERIAL_NUMBER.target_id</attributeName>
            <attributeValue>2</attributeValue>
            <readOnly>>false</readOnly>
          </attribute>
        </attributeGroup>
        <attributeGroup groupName="Key Gen Technology Info">
          <attribute>
            <attributeName>KEY_GEN_NAME</attributeName>
            <attributeValue>Manual Keygen</attributeValue>
            <readOnly>>true</readOnly>
          </attribute>
          <attribute>
            <attributeName>KEY_GEN_TYPE</attributeName>
            <attributeValue>1</attributeValue>
            <readOnly>>true</readOnly>
          </attribute>
        </attributeGroup>
        <attributeGroup groupName="Key Info">
          <attribute>
            <attributeName>KEY_FILE_FORMAT</attributeName>
            <attributeValue>0</attributeValue>
            <readOnly>>true</readOnly>
          </attribute>
          <attribute>
            <attributeName>IS_WWU</attributeName>
            <attributeValue>False</attributeValue>
            <readOnly>>true</readOnly>
          </attribute>
          <attribute>
            <attributeName>KEY_FILE_DESC</attributeName>
            <attributeValue>{Feature.descr}</attributeValue>
            <readOnly>>true</readOnly>
          </attribute>
          <attribute>
            <attributeName>KEY_FILE_NAME_TMPL</attributeName>
            <attributeValue>{Feature.descr}_{Activation.aid}.DAT</attributeValue>
            <readOnly>>true</readOnly>
          </attribute>
        </attributeGroup>
      </activationAttributes>
    </activatedLicenseModel>
  </activatedfeature>

```


Manual Activation

The manual activation is a two step process where the activation.ws Web service is first called using the PUT method to return a blank key ID and then the activation.ws (push key using isOverwrite flag set to true) Web service is evoked using the POST method to update the actual key in database.

Default Protocol	Method Type	URI
HTTP	PUT and POST	/ems/v4_2/ws/activation.ws

You can update an Entitlement, which has been manually activated if:

- Activator and Activatee, if blank
- External ID, if blank
- Marketing Questions
- License Key for non-accumulative type
- Custom attributes

If a device is not associated with an activation you can use manual activation to associate a Device with the activation. To do so, set the `<isOverwrite>` flag to true and specify the `<deviceName>` element in the activation input XML.

URI Parameters

None

Activation XSD

See, "Activation XSD" on page 402.

The `<isOverwrite>` tag is set to the value true for manual activation.

Sample Input

```
<groupActivation groupActivationId="0">
  <userInput>
    <sendNotification>false</sendNotification>
    <activatorEmailId></activatorEmailId>
    <activateeEmailId></activateeEmailId>
    <comments>test</comments>
    <executedBy>admin</executedBy>
    <isOverwrite>true</isOverwrite>
  </userInput>
  <lineItem>
    <aid>51415822-f23b-w4727-8fc5-16a325776bb1</aid>
    <externalId></externalId>
    <lineItemIdentifier>
      <lineItemId>2</lineItemId>
      <productKey>97032f71-c504-4640-8ee5-6ada09cef74b</productKey>
    </lineItemIdentifier>
    <activationQuantity>1</activationQuantity>
    <timeZone>America/Phoenix</timeZone>
    <activationAttributes>
      <attributeGroup groupName="Locking Info">
        <attribute>
          <attributeName>MANUAL_LIBRARY_SERIAL_NUMBER.target_id</attributeName>
```

```

        <attributeValue>2</attributeValue>
        <readOnly>>false</readOnly>
    </attribute>
</attributeGroup>
</activationAttributes>
</lineItem>
<customAttribute>
    <name>66565</name>
    <value></value>
</customAttribute>
</userInput>
<activation activationId="12" lineItemId="2">
    <activatorEmailId></activatorEmailId>
    <activateeEmailId></activateeEmailId>
    <aid>51415822-f23b-w4727-8fc5-16a325776bb1</aid>
    <activationDate>2014-09-29</activationDate>
    <externalId></externalId>
    <activationState>Revoked Manually</activationState>
    <activatedQuantity>1</activatedQuantity>
    <productKey>97032f71-c504-4640-8ee5-6ada09cef74b</productKey>
    <activatedProduct productId="4">
        <productName>p2</productName>
        <productVersion>ver</productVersion>
        <activatedfeature featureId="6" licenseKeyRef="11">
            <featureName>f2</featureName>
            <featureVersion></featureVersion>
        <activatedLicenseModel licenseModelId="19">
            <licenseModelName>MANUAL_LIBRARY_SERIAL_NUMBER</licenseModelName>
        <activationAttributes>
            <attributeGroup groupName="Locking Info">
                <attribute>
                    <attributeName>MANUAL_LIBRARY_SERIAL_NUMBER.target_id</attributeName>
                    <attributeValue>2</attributeValue>
                    <readOnly>>false</readOnly>
                </attribute>
            </attributeGroup>
            <attributeGroup groupName="Key Gen Technology Info">
                <attribute>
                    <attributeName>KEY_GEN_NAME</attributeName>
                    <attributeValue>Manual Keygen</attributeValue>
                    <readOnly>>true</readOnly>
                </attribute>
                <attribute>
                    <attributeName>KEY_GEN_TYPE</attributeName>
                    <attributeValue>1</attributeValue>
                    <readOnly>>true</readOnly>
                </attribute>
            </attributeGroup>
            <attributeGroup groupName="Key Info">
                <attribute>
                    <attributeName>KEY_FILE_FORMAT</attributeName>
                    <attributeValue>0</attributeValue>
                    <readOnly>>true</readOnly>
                </attribute>
                <attribute>
                    <attributeName>IS_WWU</attributeName>
                    <attributeValue>False</attributeValue>
                </attribute>
            </attributeGroup>
        </activationAttributes>
    </activatedProduct>
</activation>

```


Retrieve Activation Using Activation ID

Retrieve Activation details using Activation ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/activation/{activationId}.ws

URI Parameters

Parameter	Description	Type
activationId	Activation ID of on which search is performed to retrieve Activation details.	Integer

Query Parameters

Parameter	Description	Type
activationId	(Required) Activation ID of on which search is performed to retrieve Activation details.	Integer
getPeerActivations	(Optional) Specify whether or not to retrieve the activations performed as a group along with this activation. Valid values: Boolean (true/false) Default value: false	Boolean
idType	(Optional) Specify type for activationID to retrieve activation data. Valid values: <ul style="list-style-type: none"> External ID- Specifies that the value of 'activationId' is an External ID. Group ID- Specifies that the value of 'activationId' is a Group ID. AID- Specifies that the value of 'activationId' is an AID. ID- Specifies that the value of 'activationId' is the database ID of the activation record. (default) 	String

Activation XSD

See, "Activation XSD" on page 402.

Sample Response

Success

HTTP Status Code: 200 (OK)

Response Body: XML String

```

<?xml version="1.0" encoding="UTF-8"?>
<groupActivation groupActivationId="0">
  <userInput>
    <sendNotification>>false</sendNotification>
    <activatorEmailId></activatorEmailId>
    <activateeEmailId></activateeEmailId>
    <lineItem>
      <aid>e35c617f-4cdb-44ec-a389-0cde85a218f0</aid>
      <externalId></externalId>
      <lineItemIdentifier>
        <lineItemId>1</lineItemId>
        <productKey>2419aa98-ffb9-4e4c-8f21-765c4fbd2956</productKey>
      </lineItemIdentifier>
      <variantIdentifier>
        <productVersion>V2</productVersion>
      </variantIdentifier>
      <deviceName>Device_Server01</deviceName>
      <deviceIdentifier>d74cdbb1-ecd4-4a77-8bb2-e4881f5ff732</deviceIdentifier>
      <activationQuantity>1</activationQuantity>
      <timeZone>America/Phoenix</timeZone>
      <activationAttributes>
        <attributeGroup groupName="LOCKING">
          <attribute>
            <attributeName>PRIMARY_1_INFO</attributeName>
            <attributeValue>1</attributeValue>
            <readOnly>>false</readOnly>
          </attribute>
          <attribute>
            <attributeName>PRIMARY_1_CRITERIA</attributeName>
            <attributeValue>4</attributeValue>
            <readOnly>>true</readOnly>
          </attribute>
        </attributeGroup>
      </activationAttributes>
    </lineItem>
    <customAttribute>
      <name>SWUID</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>Device Model</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>Hardware SKU</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>RMA Type</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>RMA Number</name>
      <value></value>
    </customAttribute>
    <customAttribute>
      <name>RMA Comments</name>

```

```

    <value></value>
  </customAttribute>
</customAttribute>
  <name>Renewal Status</name>
  <value>FALSE</value>
</customAttribute>
</customAttribute>
  <name>Activator User ID</name>
  <value></value>
</customAttribute>
</customAttribute>
  <name>Site ID</name>
  <value></value>
</customAttribute>
</customAttribute>
  <name>Site Name</name>
  <value></value>
</customAttribute>
</customAttribute>
  <name>Managing Reseller ID</name>
  <value></value>
</customAttribute>
</customAttribute>
  <name>Managing Reseller Name</name>
  <value></value>
</customAttribute>
</customAttribute>
  <name>Old Serial</name>
  <value></value>
</customAttribute>
</customAttribute>
  <name>Old Serial SKU</name>
  <value></value>
</customAttribute>
</userInput>
<activation activationId="79" lineItemId="231">
  <activatorEmailId></activatorEmailId>
  <activateeEmailId></activateeEmailId>
  <aid>e35c617f-4cdb-44ec-a389-0cde85a218f0</aid>
  <activationDate>2017-03-22</activationDate>
  <externalId></externalId>
  <activationState>Activated</activationState>
  <activatedQuantity>1</activatedQuantity>
  <productKey>2419aa98-ffb9-4e4c-8f21-765c4fbd2956</productKey>
  <activatedProduct productId="95">
    <productName>Demo_Product</productName>
    <productVersion>NA</productVersion>
    <activatedfeature featureId="2" licenseKeyRef="56">
      <featureName>Ftr2</featureName>
      <featureVersion>1</featureVersion>
    </activatedfeature>
    <activatedLicenseModel licenseModelId="4">
      <licenseModelName>Network Node Locked</licenseModelName>
    </activatedLicenseModel>
    <activationAttributes>
      <attributeGroup groupName="LIMIT">
        <attribute>
          <attributeName>TRIAL_DURATION_HOURS</attributeName>
          <attributeValue>0</attributeValue>
        </attribute>
      </attributeGroup>
    </activationAttributes>
  </activatedProduct>
</activation>

```

```

    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>FLOATING_USER_LIMIT</attributeName>
    <attributeValue>100</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>KEY_LIFETIME_MINUTES</attributeName>
    <attributeValue>5</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>FLOATING_SOFT_USER_LIMIT</attributeName>
    <attributeValue>10000000</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>TRIAL_DURATION_DAYS</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
</attributeGroup>
<attributeGroup groupName="LOCKING">
  <attribute>
    <attributeName>SITE_LIC_2_INFO</attributeName>
    <attributeValue></attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>LOCAL_REQUEST_LOCKCRIT_FLAG</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>PRIMARY_1_CRITERIA</attributeName>
    <attributeValue>4</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>PRIMARY_1_INFO</attributeName>
    <attributeValue>1</attributeValue>
    <readOnly>false</readOnly>
  </attribute>
  <attribute>
    <attributeName>SITE_LIC_3_INFO</attributeName>
    <attributeValue></attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>LOCAL_REQUEST_LOCKCRIT_REQUIRED</attributeName>
    <attributeValue>4</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>SITE_LIC_6_INFO</attributeName>
    <attributeValue></attributeValue>

```



```

    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>NUM_USERNODE</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>NUM_SUBNET</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>NUM_SERVERS</attributeName>
    <attributeValue>1</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>SITE_LIC_4_INFO</attributeName>
    <attributeValue></attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>HOLDING_CRITERIA</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>LOCAL_REQUEST_LOCKCRIT_MIN_NUM</attributeName>
    <attributeValue>1</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>LOCAL_REQUEST_LOCKCRIT_FLOAT</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>SITE_LIC_1_INFO</attributeName>
    <attributeValue></attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>LOCKING_MODE</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>SITE_LIC_5_INFO</attributeName>
    <attributeValue></attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>SITE_LIC_7_INFO</attributeName>
    <attributeValue></attributeValue>
    <readOnly>true</readOnly>
  </attribute>

```

```

    <attribute>
      <attributeName>CODE_TYPE</attributeName>
      <attributeValue>1</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
  </attributeGroup>
  <attributeGroup groupName="POLICY">
    <attribute>
      <attributeName>KEY_TYPE</attributeName>
      <attributeValue>1</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>OUTPUT_TYPE</attributeName>
      <attributeValue>0</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>LOG_ENCRYPT_LEVEL</attributeName>
      <attributeValue>0</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>ELAN_KEY_FLAG</attributeName>
      <attributeValue>0</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>ENFORCE_REDUNDANCY_MAJORITY</attributeName>
      <attributeValue>FALSE</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>ALLOW_VM_DETECTION</attributeName>
      <attributeValue>0</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>USE_AUTH_CODE</attributeName>
      <attributeValue>0</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>ALLOW_REDUNDANCY</attributeName>
      <attributeValue>FALSE</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>ENFORCE_CLOCK_TAMPERED</attributeName>
      <attributeValue>TRUE</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
    <attribute>
      <attributeName>NUMERIC_TYPE</attributeName>
      <attributeValue>0</attributeValue>
      <readOnly>true</readOnly>
    </attribute>
  </attributeGroup>

```

```

<attribute>
  <attributeName>IS_TRIAL</attributeName>
  <attributeValue>FALSE</attributeValue>
  <readOnly>true</readOnly>
</attribute>
<attribute>
  <attributeName>ENFORCE_LICENSE_EXCLUSIVE</attributeName>
  <attributeValue>1</attributeValue>
  <readOnly>true</readOnly>
</attribute>
<attribute>
  <attributeName>LICENSE_VERSION</attributeName>
  <attributeValue>13</attributeValue>
  <readOnly>true</readOnly>
</attribute>
</attributeGroup>
<attributeGroup groupName="NO_GROUP">
  <attribute>
    <attributeName>LICENSE_TYPE</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>DEPLOYMENT_TYPE</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
</attributeGroup>
<attributeGroup groupName="CAPACITY">
  <attribute>
    <attributeName>CAPACITY</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>CAPACITY_FLAG</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
</attributeGroup>
<attributeGroup groupName="LICENSE_DURATION">
  <attribute>
    <attributeName>END_DATE</attributeName>
    <attributeValue>2018-03-22 10:27</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>START_LICENSE_FROM_ACTIVATION_DATE</attributeName>
    <attributeValue>FALSE</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>START_DATE</attributeName>
    <attributeValue>2017-03-22 10:27</attributeValue>
    <readOnly>true</readOnly>
  </attribute>
  <attribute>

```

```

        <attributeName>LICENSE_DURATION_IN_DAYS</attributeName>
        <attributeValue>365</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
</attributeGroup>
<attributeGroup groupName="NETWORK">
    <attribute>
        <attributeName>GRACE_PERIOD_ELAPSED_HOURS</attributeName>
        <attributeValue>0</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
    <attribute>
        <attributeName>SHARING_LIMIT</attributeName>
        <attributeValue>0</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
    <attribute>
        <attributeName>ALLOW_COMMUTER</attributeName>
        <attributeValue>FALSE</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
    <attribute>
        <attributeName>SHARING_CRITERIA</attributeName>
        <attributeValue>0</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
    <attribute>
        <attributeName>KEY_HOLDTIME_MINUTES</attributeName>
        <attributeValue>0</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
    <attribute>
        <attributeName>GRACE_PERIOD_DAYS</attributeName>
        <attributeValue>0</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
    <attribute>
        <attributeName>ALLOW_GRACE</attributeName>
        <attributeValue>0</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
    <attribute>
        <attributeName>COMMUTER_MAX_CHECKOUT_DAYS</attributeName>
        <attributeValue>0</attributeValue>
        <readOnly>true</readOnly>
    </attribute>
</attributeGroup>
<attributeGroup groupName="VENDOR">
    <attribute>
        <attributeName>VENDOR_PRIVATE_INFO</attributeName>
        <attributeValue></attributeValue>
        <readOnly>true</readOnly>
    </attribute>
    <attribute>
        <attributeName>VENDOR_SECRETS_2</attributeName>
        <attributeValue></attributeValue>
        <readOnly>true</readOnly>
    </attribute>

```

```

    </attribute>
  <attribute>
    <attributeName>VENDOR_SECRETS_7</attributeName>
    <attributeValue></attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>VENDOR_SECRETS_6</attributeName>
    <attributeValue></attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>VENDOR_SECRETS_4</attributeName>
    <attributeValue></attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>VENDOR_SECRETS_5</attributeName>
    <attributeValue></attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>VENDOR_SECRETS_1</attributeName>
    <attributeValue></attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>VENDOR_NUM_OF_SECRETS</attributeName>
    <attributeValue>0</attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>VENDOR_SECRETS_3</attributeName>
    <attributeValue></attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>VENDOR_COMMENTS</attributeName>
    <attributeValue></attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
  <attribute>
    <attributeName>VENDOR_PUBLIC_INFO</attributeName>
    <attributeValue></attributeValue>
    <readOnly>>true</readOnly>
  </attribute>
</attributeGroup>
</activationAttributes>
</activatedLicenseModel>
</activatedfeature>
</activatedProduct>
</activation>
<licenseKeyInfo licenseKeyRef="56">
  <keyGenTechnology>RMS</keyGenTechnology>
  <keyFormat>TEXT</keyFormat>
  <keyType>NORMAL</keyType>
  <keyFileName>lserverc</keyFileName>

```

```
<keyFileDescription></keyFileDescription>
<isWWU>>false</isWWU>
<licenseKey keyEncodingType="">*D
mCyWplUMixyW2vyRipeSfunoV:tc,cspPK8rqasC3rV2qy1n3k0r8V0NgmbU4zUzVU9HPipLEhF10zV:ky5G:fv9UHRXpC-
P5X,
ASE9V3PCSzf3twep4GivgjrSylFmellcfa# "Ftr2" version "1", expires at 10:27 hrs (UTC) on Mar 22,
2018, exclusive##AID=e35c617f-4cdb-44ec-a389-0cde85a218f0</licenseKey>
</licenseKeyInfo>
</groupActivation>
```

Failure

HTTP Status Code: 400 (Not Found)

Response Body: The activation ID does not exist.

Create Activation by Product Key

Using this web service you can configure activation of a line item by using the associated Product Key. The web service returns activation string with products, features, and attributes details for the line item.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/createActivationByProductKey.xml

Query Parameters

Parameter	Description	Type
productKeys	(Required) Comma-separated product keys for the product(s)/suite(s) you want to activate.	String
displayReadOnlyAttributes	(Optional) Specify whether to display the read-only attributes. Default value: true	Boolean

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <groupActivation>
    <activations>
      <activation>
        <activationAttributes>
          <activationAttribute>
            <attribute>
              <attributeId>2</attributeId>
              <attributeName>END_DATE</attributeName>
              <attributeValue>2500-12-31</attributeValue>
              <groupName>Time</groupName>
              <readOnly>true</readOnly>
              <subGroupName>License Duration</subGroupName>
            </attribute>
            <itemFeatureLicenseModel>
              <entFtrLmId>1</entFtrLmId>
              <feature>
                <featureId>1</featureId>
                <featureName>ProtectDrive</featureName>
                <featureVersion />
              </feature>
              <licenseModel>
                <licenseModelId>5</licenseModelId>
                <licenseModelName>Standalone Node Locked</licenseModelName>
              </licenseModel>
              <product>
                <productId>1</productId>
                <productName>Protect Drive</productName>
                <productVersion>6.1</productVersion>
              </product>
            </itemFeatureLicenseModel>
          </activationAttribute>
        </activationAttributes>
      </activation>
    </activations>
  </groupActivation>
</EMSResponse>
```

```

<attribute>
  <attributeId>11</attributeId>
  <attributeName>KEY_LIFETIME_MINUTES</attributeName>
  <groupName>Limit</groupName>
  <readOnly>>false</readOnly>
  <subGroupName />
</attribute>
<itemFeatureLicenseModel>
  <entFtrLmId>2</entFtrLmId>
  <feature>
    <featureId>3</featureId>
    <featureName>ReportOption</featureName>
    <featureVersion>4.3</featureVersion>
  </feature>
  <licenseModel>
    <licenseModelId>5</licenseModelId>
    <licenseModelName>Standalone Node Locked</licenseModelName>
  </licenseModel>
  <product>
    <productId>1</productId>
    <productName>Protect Drive</productName>
    <productVersion>6.1</productVersion>
  </product>
</itemFeatureLicenseModel>
</activationAttribute>
</activationAttributes>
<activationDate>2012-02-13</activationDate>
<activationId>66</activationId>
<activationState>1</activationState>
<activationType>1</activationType>
<aid>0b5621c1-440e-4c14-86e3-131e878fc281</aid>
<groupActivationId>0</groupActivationId>
<lineItem>
<allowOverride>>false</allowOverride>
<endDate>2500-12-31</endDate>
<enforcement>
  <enforcementId>1</enforcementId>
  <enforcementName>Sentinel RMS</enforcementName>
  <enforcementVersion>9.0</enforcementVersion>
</enforcement>
<entitlement>
  <eid>00a355****</eid>
  <entId>1</entId>
</entitlement>
<isNumberActivationBased>>true</isNumberActivationBased>
<licenseType>1</licenseType>
<lineItemId>1</lineItemId>
<lineItemName>Protect Drive</lineItemName>
<lineItemVersion>6.1</lineItemVersion>
<productKey>8a2f79a7-33b8-4aa1-a7a8-12e4b2692492</productKey>
<quantity>10</quantity>
<quantityUnlimited>>false</quantityUnlimited>
<remainingQuantity>8</remainingQuantity>
<startDate>2011-06-08</startDate>
<type>product</type>
  </lineItem>
  <quantity>0</quantity>

```



```

    </activation>
</activations>
<groupActivationId>0</groupActivationId>
<lineItemLicensingAttributes>
  <lineItemLicensingAttribute>
    <associatedAttribute null="true" />
    <attribute>
      <attributeId>37</attributeId>
      <attributeName>LICENSE_VERSION</attributeName>
      <attributeValue>13</attributeValue>
      <groupName>Policy</groupName>
      <readOnly>true</readOnly>
      <subGroupName />
    </attribute>
  </lineItemLicensingAttribute>
  <lineItemLicensingAttribute>
    <associatedAttribute null="true" />
    <attribute>
      <attributeId>117</attributeId>
      <attributeName>ALLOW_VM_DETECTION</attributeName>
      <attributeValue>0</attributeValue>
      <groupName>Policy</groupName>
      <readOnly>true</readOnly>
      <subGroupName />
    </attribute>
  </lineItemLicensingAttribute>
  <lineItemLicensingAttribute>
    <associatedAttribute null="true" />
    <attribute>
      <attributeId>42</attributeId>
      <attributeName>NUM_CLIENT_LOCKED</attributeName>
      <attributeValue>1</attributeValue>
      <groupName>Client Locking</groupName>
      <readOnly>true</readOnly>
      <subGroupName />
    </attribute>
  </lineItemLicensingAttribute>
  <lineItemLicensingAttribute>
    <associatedAttribute>
      <attributeId>50</attributeId>
      <attributeName>CLIENT_1_INFO</attributeName>
      <attributeValue />
      <groupName>Client Locking</groupName>
      <readOnly>false</readOnly>
      <subGroupName />
    </associatedAttribute>
    <attribute>
      <attributeId>43</attributeId>
      <attributeName>CLIENT_1_CRITERIA</attributeName>
      <attributeValue>4</attributeValue>
      <groupName>Client Locking</groupName>
      <readOnly>true</readOnly>
      <subGroupName />
    </attribute>
  </lineItemLicensingAttribute>
</lineItemLicensingAttributes>
</groupActivation>

```

```
<stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

"Allowing End User to Modify Additional Attributes During Activation" on page 254

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
618	Could not find the entitlement line item.
625	You are not authorized to activate/retrieve this product.
628	The entitlement has expired. It cannot be activated.
669	The contact must be registered in order to activate an entitlement.
671	Activation cannot be completed. There are no license models associated with the entitlement.
672	Activation is no longer in the draft stage.
673	Disabled/Closed line Item cannot be activated.
674	Activation cannot be completed. The line item's end date is in past.
675	The license generator is not invalid.
676	Sentinel Caffè configuration problem --
802	Activation not allowed.
804	The entitlement cannot be activated.
821	Product Key does not exist
822	Activation not allowed on disabled Entitlement.

Error Code	Description
830	Activation cannot be completed. The line item's start date is in future.
831	Activation is not allowed as remaining quantity is 0.

Retrieve Previous Activation Details

Retrieve the previous activation details for an entitlement or line item for given entId or lineItemId, respectively. If you supply both lineItemId and entId in a request, then the lineItemId must belong to the entitlement.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getPreviousActivations.xml

Query Parameters

Parameter	Description	Type
entId	(Optional) Specify the entitlement ID.	Integer (>0)
lineItemId	(Optional) Specify the line item ID.	Integer (>0)

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <activations>
    <activation>
      <activationAttributes/>
      <activationDate>2010-10-04</activationDate>
      <activationId>3</activationId>
      <activationState>2</activationState>
      <activationType>1</activationType>
      <aid>272ca084-6105-494c-92fe-24380bbdb27b</aid>
      <groupActivationId>0</groupActivationId>
      <licenseString>*D
t1KoTTcKMYUr:EUX19cw3EFkzRr1EOs2D8XgvudcnLfjqHXq4wI4jXK9IQkTx1X5Vx5mYAvI2GSgmB9p:AsOeCVexbuY4S-
EW4OnQLQXdsuBT3OB9031WVLOMwelmc0QfBNVYD,lTBlpLU7i3BaOPMD0LLt# "ProtectDrive" version "",
expires Midnight of Oct 1, 2011, exclusive##AID=272ca084-6105-494c-92fe-24380bbdb27b *D
tR9llhUPPhtQc0klYdSaLMEjPZdPiGPFd4GNMsLqsBfF,LJZ:LXdkfYY3aio:rQwVybNXTck994iz5JFgfH,01L
pNgvchlXAZaRSzN4cIOV5fsUb5yOkxaxzmoESFT,
ety3f3MqjsQWsJT:Cw4L9m7UW3bTZEi5ccdzagiLQZfi9az3f# "ZipOption" version "1.0.1", expires
Midnight of Oct 1, 2011, exclusive##AID=272ca084-6105-494c-92fe-24380bbdb27b</licenseString>
    </lineItem>
      <allowOverride>true</allowOverride>
<deviceIdentifier>elf9cf27-1f05-4d8f-82c1-d7ea5f9829be</deviceIdentifier>
<deviceName>Dabc91</deviceName>
  <endDate>2011-12-15</endDate>
  <enforcement>
    <enforcementId>1</enforcementId>
    <enforcementName>Sentinel RMS</enforcementName>
    <enforcementVersion>9.0</enforcementVersion>
  </enforcement>
  <entitlement>
    <eid>9b13c3****</eid>
    <entId>1</entId>
  </entitlement>
  <licenseType>1</licenseType>
  <lineItemId>1</lineItemId>
  <lineItemName>Protect Drive</lineItemName>

```

```

    <lineItemVersion>6.1</lineItemVersion>
    <productKey>fcbaaa30-9280-4ca2-aa3c-ea40c7b8cc12</productKey>
    <quantity>111</quantity>
    <quantityUnlimited>false</quantityUnlimited>
    <remainingQuantity>110</remainingQuantity>
    <startDate>2010-10-01</startDate>
    <type>product</type>
  </lineItem>
  <quantity>1</quantity>
</activation>
</activations>
<stat>ok</stat>
<total>1</total>
</EMSResponse>

```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
411	The license model does not exist.
618	Could not find the entitlement line item.
621	Entitlement does not exist. Try again with a correct entitlement ID.
644	The line item ID is not valid.
698	Both 'entId' and 'lineItemId' cannot be null.

Retrieve Entitlement Activations by Entitlement ID

Retrieve entitlement activations by entId.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/showEntitlementActivations.xml

Query Parameters

Parameter	Description	Valid Values
entId	(Required) Specify the entitlement ID.	Integer

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <activationIds>
    <activationId>32</activationId>
    <activationId>29</activationId>
    <activationId>1</activationId>
    <activationId>31</activationId>
  </activationIds>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
621	Entitlement does not exist. Try again with a correct entitlement ID.

Advanced Search Activations

Retrieve activations by search parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/Activation.ws

URL Parameters

Example URL: /ems/v4_2/ws/Activation.ws?eid=&entId=2&aid=&externalPrdId=&productId=&productKey=&suiteId=&contactName=&customerId=&contactEmailId=&state=&fromDate=&toDate=&pageIndex=&pageSize=

Parameter	Description	Type
eid	(Optional) Entitlement ID. Input can pass as a single value or comma separated multiple values. Valid values: Comma separated strings.	String
entId	(Optional) Database ID of entitlement. Input can pass as a single value or comma separated multiple values. Valid values: Comma separated integers.	Integer
aid	(Optional) String representation of activation ID. Input can pass as a single value or comma separated multiple values. Valid values: Comma separated strings.	String
deviceName	(Optional) User friendly name provided for the locking information. The locking information is a combination of the locking criteria and locking value.	String
lockCode	The locking value of the locking criteria of a device.	String
externalPrdId	(Optional) External ID of product. Input can pass as a single value or comma separated multiple values. Valid values: Comma separated strings.	String
productId	(Optional) Specify the product ID. Input can pass as a single value or comma separated multiple values. Valid values: Comma separated integers.	Integer
productKey	(Optional) The unique identifier for the line item. Input can pass as a single value or comma separated multiple values. Valid values: Comma separated strings.	String
suiteId	(Optional) Specify the suite ID.	Integer
contactName	Name of the contact associated with either entitlement of activation or is activatee in activation.	String

Parameter	Description	Type
customerId	Database ID of customer associated with entitlement of activation.	Integer
contactEmailId	(Optional) Specify the contact e-mail ID for the customer.	String
state	Specify the Activation status code. Valid values: 1, 2, 3, 5, 19, and 20. <ul style="list-style-type: none"> • 1 - Activation is in Draft stage. • 2 - License has been generated. • 3 - Permission ticket has been downloaded. Revocation has been initiated (displayed as revocation status 1). • 5 - Revocation is either complete (displayed as revocation status 2) or confirmed (displayed as revocation status 3). The output will display the revocation status in the <code><revocationStatus>2</revocationStatus></code> tag. • 19 - For manual revocation, this value shows revocation is either complete (displayed as revocation status 6) or confirmed (displayed as revocation status 3). The output will display the revocation status in the <code><revocationStatus>2</revocationStatus></code> tag. • 20 - Activation has been renewed. 	Integer
fromDate	(Optional) Start date to set a range to search activations. Given date will be included.	String (YYYY-MM-DD)
toDate	(Optional) End date to set a range to search Entitlements. Given date will be included.	String (YYYY-MM-DD)
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of records retrieved per request. Default value: 200	Integer (>0)
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> • Exact: Searches and retrieves exact matching records. • Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. 	String

Parameter	Description	Type
	<ul style="list-style-type: none"> Normal: Default search parameter if search pattern is not specified. The searchPattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. <p>Default value: Normal</p>	

Search XSD

The response list or output should cto the Search XSD. This XSD is common for all search or listing related REST Web Services(.ws). See, "[List Response XSD](#)" on page 433.

Sample Response

Success

Status Code: 200 OK

Response Body:

```
<listResponse type="activation" count="2" searchParameters="{fromDate=2014-01-01, toDate=2014-08-19}"/>
```

Search Activations using Dynamic Attributes

The Advanced Search Activations Web Service can also be used to perform searches on dynamically created parameters.

Sample URI and Functionality

```
//ems/v4_2/ws/Activation.ws?CA_ENT.laptop=sony&CA_ENT.mobile=iphone&CA_LI.destitem=goa&CA_CONT.destination=tourismdest&CA_ACT.activationAttr=actActAttrVal&LMAttr.START_DATE=2014-08-21
```

In above URI use the following prefixes to perform searches using dynamic attributes:

Prefix	Description
CA_ENT	Perform search on Entitlement level custom attribute.
CA_LI	Perform search on Entitlement line item level custom attribute.
CA_CONT	Perform search on Contact level custom attribute.
CA_ACT	Perform search on custom attribute of Activation.
LMAttr	Perform search on License Model attribute.

The rules to be followed when using dynamic attributes for search activations:

- All prefixed are case-sensitive.
- To pass multiple values in parameters:

- Values should be separated by comma.
- If comma exist in the value to be assigned, then that comma should be escaped e.g. 'Jake,Martin' should be assigned as Jake\,Martin.
- If single value is provided then search is performed using 'LIKE' else exact match search is performed.



Note: For custom attributes of type Boolean, the value to be passed is 0 or 1.

Machine Registration for Lease Entitlements

Machine registration is required to implement device-based licensing. It enables you to restrict the use of your protected application only on the machines that are registered with Sentinel Cloud Connect (SCC). The information that can be used to identify a machine is called its fingerprint. The fingerprint of the client machine needs to be obtained and registered with SCC.



Note: Fingerprint Registration is optional for lease entitlements. If Redundancy is enabled for lease entitlements, Fingerprint registration is mandatory.

For machine registration, you need to use the following web services.

Web Services for Lease Entitlement Fingerprint:

- "Add Entitlement Fingerprint " on the next page
- "Retrieve Entitlement Fingerprint " on page 295
- "Delete Entitlement Fingerprint " on page 298

Add Entitlement Fingerprint

Use this Web service to add machine fingerprints to the SCC database for a given Entitlement. A machine fingerprint can be registered with only one Entitlement.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/FingerPrint.ws

URI Parameter

None

Sample Input

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<FingerPrintDetails>
<ContainerList>
<Container>
<Eid>728ba273-4e3e-435d-b711-ba96d6806c7e</Eid>
<FingerprintList>
<Fingerprint>
<FingerprintFriendlyName>PAOLOMACHINE</FingerprintFriendlyName>
<FingerprintValue>
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<sentinelInfo>
<fingerprint type="SentinelRMS" checksum="64DCCEE7E269C39E">
<criteria>
<name>ID Prom</name>
<selector>0x1</selector>
<hash></hash>
</criteria>
<criteria>
<name>IP Address</name>
<selector>0x2</selector>
<hash>7F3AD37547F16D21</hash>
</criteria>
<criteria>
<name>Disk ID</name>
<selector>0x4</selector>
<hash>5E3F6CB418F31566</hash>
</criteria>
<criteria>
<name>Host Name</name>
<selector>0x8</selector>
<hash>9303D72E405A4877</hash>
</criteria>
<criteria>
<name>Ethernet Address</name>
<selector>0x10</selector>
<hash>29C7F6F20DD69B39</hash>
</criteria>
<criteria>
<name>Network IPX</name>
<selector>0x20</selector>
<hash></hash>
```

```

</criteria>
<criteria>
<name>Network Serial</name>
<selector>0x40</selector>
<hash></hash>
</criteria>
<criteria>
<name>Portable Serv</name>
<selector>0x80</selector>
<hash></hash>
</criteria>
<criteria>
<name>Custom</name>
<selector>0x100</selector>
<hash></hash>
</criteria>
<criteria>
<name>CPU Id</name>
<selector>0x200</selector>
<hash></hash>
</criteria>
<criteria>
<name>Custom Ex</name>
<selector>0x400</selector>
<hash></hash>
</criteria>
<criteria>
<name>Hard Disk Serial</name>
<selector>0x800</selector>
<hash></hash>
</criteria>
<criteria>
<name>CPU Info</name>
<selector>0x1000</selector>
<hash>8AB8286C71ECBFEC</hash>
</criteria>
<criteria>
<name>UUID</name>
<selector>0x2000</selector>
<hash>3B359193268E4FE5</hash>
</criteria>
</fingerprint>
</sentinelInfo>
</FingerprintValue>
</Fingerprint>
</FingerprintList>
</Container>
</ContainerList>
</FingerPrintDetails>

```

Important Input Elements

Some important elements in the input XML are described below:

Tag Name	Description	Values
<Eid></Eid>	<p>This is a 'Required' element. It specifies the Entitlement EID for which you have to add Fingerprint.</p> <hr/> <p>Note: The element <Pcid> was earlier used and has now been replaced by <Eid>. <Pcid> has been retained in the XSD to maintain backward compatibility.</p> <hr/>	String
<FingerprintFriendlyName></FingerprintFriendlyName>	Requires Unique Name which is specified by User.	String
<FingerprintValue></FingerprintValue>	RMS Tool provided fingerprint value which you have to decode using Base64 and have to pass xml in this Tag.	XML/String

Sample Response

Success

HTTP Status Code: 201 (Created)

Response Body: Successfully saved the data.



Note: HTTP Status Code returned for this Web Service in Sentinel EMS 4.1 and earlier versions is 200.

Failure

HTTP Status Code: 107

Response Body: Unable to add machine fingerprint.

Retrieve Entitlement Fingerprint

Using this Web service you can retrieve the list of fingerprints for a specified Entitlement. This Web service is available only for on-premise Entitlement level licensing.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/entitlement/{eid}/FingerPrint.ws

URI Parameter

Parameter	Description	Type
eid	Identifier of the Entitlement.	String

Sample Response

Success

HTTP Status Code: 201

Response Body

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?><FingerPrintDetails>
<ContainerList>
<Container>
<Eid>fb4b6bee-30f1-41da-9a23-3a04c2efb241</Eid>
<FingerprintList>
<Fingerprint>
<FingerprintId>2</FingerprintId>
<FingerprintFriendlyName>newfp</FingerprintFriendlyName>
<FingerprintValue>
<sentinelInfo>
<fingerprint type="SentinelRMS" checksum="222BFD00DE6AE316">
<criteria>
<name>ID Prom</name>
<selector>0x1</selector>
<hash></hash>
</criteria>
<criteria>
<name>IP Address</name>
<selector>0x2</selector>
<hash>9C6DE1C09F4264DA</hash>
</criteria>
<criteria>
<name>Disk ID</name>
<selector>0x4</selector>
<hash>EF4D819A49B793D9</hash>
</criteria>
<criteria>
<name>Host Name</name>
<selector>0x8</selector>
<hash>7E2FD5A3C26279C3</hash>
</criteria>
<criteria>
<name>Ethernet Address</name>
```

```
<selector>0x10</selector>
<hash>B5D8CB26BD967E51</hash>
<hash>7B70D029CF384F96</hash>
</criteria>
<criteria>
<name>Network IPX</name>
<selector>0x20</selector>
<hash></hash>
</criteria>
<criteria>
<name>Network Serial</name>
<selector>0x40</selector>
<hash></hash>
</criteria>
<criteria>
<name>Portable Serv</name>
<selector>0x80</selector>
<hash></hash>
</criteria>
<criteria>
<name>Custom</name>
<selector>0x100</selector>
<hash></hash>
</criteria>
<criteria>
<name>CPU Id</name>
<selector>0x200</selector>
<hash></hash>
</criteria>
<criteria>
<name>Custom Ex</name>
<selector>0x400</selector>
<hash></hash>
</criteria>
<criteria>
<name>Hard Disk Serial</name>
<selector>0x800</selector>
<hash>4A36846A9B34732A</hash>
</criteria>
<criteria>
<name>CPU Info</name>
<selector>0x1000</selector>
<hash>FF870FB84BDC86BC</hash>
</criteria>
<criteria>
<name>UUID</name>
<selector>0x2000</selector>
<hash>D762B2B99AB4FA96</hash>
</criteria>
</fingerprint>
</sentinelInfo>
</FingerprintValue>
<isActive>>false</isActive>
</Fingerprint>
</FingerprintList>
</Container>
</ContainerList>
```


</FingerPrintDetails>

Failure

HTTP Status Code: 107

Response Body: Unable to get machine fingerprint.

Delete Entitlement Fingerprint

Use this Web service to delete given machine fingerprint from the associated Entitlement.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/FingerPrint/{fingerPrintId}.ws

URI Parameter

Parameter	Description	Type
fingerPrintId	Identifier of the fingerprint in the database.	Integer

Sample Response

Success

HTTP Status Code: 204

Response Body: Deleted

Failure

HTTP Status Code: 107

Response Body: Fingerprint ID does not exist.

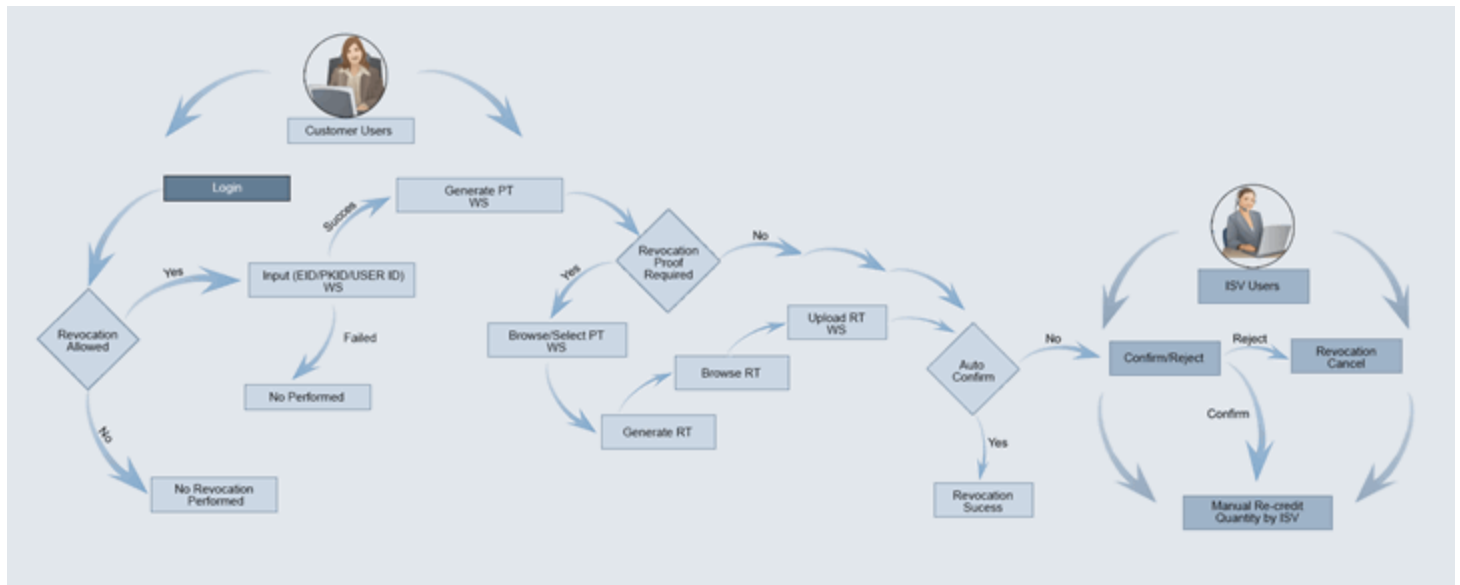
License Revocation

The following web services are provided to implement license revocation in your application:

- [Create Revocation Request](#)
- [Get Permission Ticket by RID](#)
- [Upload Revocation Output](#)
- [Confirm Revocation](#)
- [Mark an Activation as "Revoked"](#)
- [Custom Revoke](#)
- [Reject Revocation](#)
- [Delete Revocation](#)

Revocation Workflow

Revocation Workflow refers to the set of steps involved in revoking an activation on a target machine using the web services as mentioned above.



Step 1: Create permission ticket

Use the web service, `createRevocationRequest.xml` to create a revocation request. This web service takes the license string or AID as input parameters and the resultant output are the permission ticket in the form of a byte array string and the Revocation ID (RID).

You can use the `getPermissionTicketByRID.xml` web service, if you already have a RID and you want to generate the permission ticket using the same.

Step 2: Convert permission ticket to a binary string

Your application needs to have a mechanism to convert the permission ticket from byte array to a binary string and store it. See the following code sample in C, which converts byte array to binary string:

```
/*This function converts the data in byte array format string to binary format string*/
int convertByteArrayToBinary(char *binary, char* byteArrayString, int* length)
{
    unsigned int iLen = 0;
    char * pch;
    char pucPermissionTicket[MAX_PERMISSION_TKT_LEN];
    /*Logic To convert Byte Array to Binary String*/
    pch = strtok (byteArrayString,",");
    while (pch != NULL)
    {
        pucPermissionTicket[iLen++] = atoi(pch);
        pch = strtok (NULL, ",");
    }

    *length = iLen;
    memcpy(binary, pucPermissionTicket, iLen);
    return EMS_SUCCESS;
}
```

Step 3: Revoke the activation on the target machine

To revoke the activation on the target machine, your application needs to use the RMS API

VLSrevokeByPermissionTicket (refer to *Sentinel RMS API Reference Guide* for details). This API takes the permission ticket (in a binary form) as the input string and generates the revocation ticket as a binary string.

Step 4: Convert revocation ticket to a byte array string

Your application needs to have a mechanism to convert the revocation ticket generated from a binary string to a byte array. See the following code sample in C, which converts string to byte array:

```
/*This function converts the data in binary format string to byte array format string */
int convertBinaryToByteArray(char* byteArrayString, char *binary, int* length)
{
    int iLen = 0;
    int charValue = 0;
    char pch[10];
    strcpy(byteArrayString, "");
    /*Logic To convert Byte Array to Binary String*/
    for(iLen = 0; iLen < *length; iLen++)
    {
        charValue = binary[iLen];
        itoa(charValue, pch, 10);
        if(byteArrayString == '\0')
            strcpy(byteArrayString, pch);
        else
            strcat(byteArrayString, pch);
            strcat(byteArrayString, ",");
    }
    iLen = strlen(byteArrayString);
    *(byteArrayString + iLen - 1)='\0';
    *length = iLen;
    return EMS_SUCCESS;
}
```

Step 5: Upload revocation ticket

Use the `uploadRevocationOutput.xml` web service to upload the converted revocation ticket (in byte array) to the EMS server.

Create Revocation Request

Create a revocation request.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/createRevocationRequest.xml

POST Parameters

Parameter	Description	Type
licenseString	(Optional) License string obtained after activation.	String
aid	(Optional) Activation ID.	String
comments	(Optional) Description or details that the user wants to log for the revocation.	String
ExecutedBy	(Optional) Information of the user performing the revocation.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
  <EMSResponse>
    <permissionTicket>[-127,2,-25,1,0,4,0,0,0,12,2,0,8,97,99,97,101,48,
57,57,97,3,0,4,0,0,0,4,4,0,17,42,49,82,86,74,82,71,83,
 78,50,72,83,87,78, 78,68,0,5,0,4,5,-82,-17,-53,72,0,4,0,0,
0,0,73,0,36,48,100,98,55,56,102,100,54,45,53,102,54,55,45,52,
99,51,50, 45,56,55,53,102,45,101,50,54,98,102,48,101,52,50,56,51,56,80,0,
4,0,0,0,
80,17,0,31,69,77,83,32,71,101,110,101,114,97,116,101,100,32,
80,101,114, 109,105,115,115,105,111,110,32,84,105,
]
    </permissionTicket>
    <rid>0db78fd6-5f67-4c32-875f-e26bf0e42838</rid>
    <stat>ok</stat>
  </EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
128	You should log on first.
324	The user type is not valid.

Error Code	Description
623	Enter AID or License String
636	License does not exist, please try manual revoke or custom revoke or mark revoke.
651	Specify only one valid license string.
652	Revocation is not allowed. The entitlement already has a pending revocation. The pending revocation must be completed first.
653	Revocation is not allowed. The entitlement has already been completely revoked.
662	The license string is incomplete. Enter the complete license string.
693	No activation exists for the AID. Provide a valid AID.
702	Revocation is not allowed for this entitlement.
703	The revocation request failed. {0}
840	The activation is already renewed.
841	Only completed activation can be revoked.

Get Permission Ticket by RID

Get the permission ticket by revocation ID.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/getPermissionTicketByRID.xml

Query Parameters

Parameter	Description	Type
rid	(Required) Revocation ID.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <permissionTicket>[-127,2,-25,1,0,4,0,0,0,12,2,0,8,97,99, 97,101,48,57,57,97,3,0,4,0,0,0,
  ..... 4,4,0,17,42,49,82,86, 74,82,71,83,78,50,72,83,87,78,78,
  <rid>0db78fd6-5f67-4c32-875f-e26bf0e42838</rid>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
663	No revocation exists for the RID. Provide a valid RID.

Upload Revocation Output

Upload the revocation ticket to EMS server.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/uploadRevocationOutput.xml

POST Parameters

Parameter	Description	Type
rid	(Required) Revocation ID.	String
revokeTicket	(Required) Revocation ticket.	String
comments	(Optional) Description or details that the user wants to log.	String
ExecutedBy	(Optional) Information of the user performing the upload.	String

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
653	Revocation is not allowed. The entitlement has already been completely revoked.
663	No revocation exists for the RID. Provide a valid RID.
677	Enter Revocation Ticket.
690	The revocation output belongs to some other revocation. Upload the correct revocation output.

Confirm Revocation

Confirms the revocation and re-credits the specified quantity to end user.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/ConfirmRevocation.xml

POST Parameters

Parameter	Description	Type
lineItemId	(Required) Enter the line item ID.	Integer
rid	(Required) Enter the revocation ID	String
recreditQuantity	(Optional) Specify a quantity that you want to re-credit to the customer. The recredit quantity cannot be more than the activation quantity. Default value: 0	Integer
comments	Specify remarks. May be required or optional (as specified in the Administration Console).	String
sendNotification	Specify whether or not to send notification to Contact on successful completion of the web service. Valid values: true/false Default value: As specified in the Administration Console.	Boolean

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
< EMSResponse>
<message>The revocation request is confirmed.</message>
<saved>>true</saved>
<stat>ok</stat>
< /EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
663	No revocation exists for the RID. Provide a valid RID.

Error Code	Description
687	Revocation is already completed.

Mark an Activation as "Revoked"

You can use this web service to mark any activation "Revoked" instantly, without requiring to follow normal revocation process. No permission ticket is generated in this case, hence end user is not required to apply any permission ticket and upload revocation proof. You can use this option if you are facing some issues with your normal revocation process.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/MarkRevoked.xml

POST Parameters

Provide the value for only one parameter from the following.

Parameter	Description	Type
licenseString	(Optional) Provide the license string.	String
aid	(Optional) Specify the activation ID.	String
comments	Specify remarks. The 'Comments Required' field available in Administration Console specifies whether the 'comments' parameter is mandatory or optional. See the <i>Configuration Guide</i> for information on Administration Console.	String
sendNotification	(Optional) Specify whether or not to send notification to Contact on successful completion of the web service. The 'Email Required' field available in Administration Console specifies the default value for the 'sendNotification' parameter. However, if a value is specified using sendNotification, it overrides the default value. See the <i>Configuration Guide</i> for information on Administration Console. Valid values: true/false	Boolean
performedBy	(Optional) Specify contact e-mail performing the action. Valid values: String e-mail id	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <rid>7c0f36e6-6730-40b3-9701-12e13255ea77</rid>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
636	License does not exist, please try manual revoke or custom revoke or mark revoke.
693	No activation exists for the AID. Provide a valid AID.
840	The activation is already renewed.

Custom Revoke

This web service enables you to configure license revocation for third-party enforcement.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/customRevoke.xml

POST Parameters

Provide the value for only one parameter from the following.

Parameter	Description	Type
licenseString	Provide the license string. Required (if aid is not specified)	String
aid	Specify the activation ID. Required (if licenseString is not specified)	String
<i>deactivationCode</i>	Parameter available for ISVs to customize and use in the handler logic.	String
comments	Specify remarks. Required or Optional (as specified in the Administration Console)	String
sendNotification	Specify whether or not to send notification to Contact on successful completion of the web service. Optional (default value is specified in the Administration Console) Valid values: true/false	Boolean
performedBy	Specify contact e-mail performing the action. Valid values: String e-mail id	String

ISVs can define multiple customizable parameters as required. "deactivationCode" is one such parameter that can be customized.

Revocation Handler

```
package com.sfnt.ems.service;
import java.util.Map;
import com.sfnt.ems.domain.License;
import com.sfnt.ems.util.EMSEException;
public interface RevocationHandler {
    public boolean validateToken(
        Map<String,String> revocationAttribs)throws EMSEException;
}
```

Sample Code for Revocation Handler Implementation

```
package com.sfnt.ems.service;
import java.lang.reflect.InvocationTargetException;
import java.lang.reflect.UndeclaredThrowableException;
import java.util.ArrayList;
```

```

import java.util.HashMap;
import java.util.List;
import java.util.Map;
import org.apache.commons.logging.Log;
import org.apache.commons.logging.LogFactory;
import org.springframework.beans.factory.annotation.Autowired;
import com.sfnt.ems.service.generator.LicenseGenerator;
import com.sfnt.ems.service.generator.LicenseGeneratorActions;
import com.sfnt.ems.service.generator.LicenseGeneratorManager;
import com.sfnt.ems.service.generator.LicenseGeneratorRequest;
import com.sfnt.ems.service.generator.LicenseGeneratorResponse;
import com.sfnt.ems.service.generator.model.LicenseRevocationInput;
import com.sfnt.ems.util.EMSEException;
public class RevocationHandlerImpl implements RevocationHandler{
    @Autowired
    private LicenseGeneratorManager
licenseGeneratorManager;
    private final Log log =
LogFactory.getLog(this.getClass());
    public boolean validateToken(Map<Object, Object> revocationAttribs) throws EMSEException{
//A dummy implementation which shows how you can use license generator in your implementation
// Code below showing how you can use your license generator in the implementation of
RevokeHandler.
// However license generator use in actual implementation depends on your requirements and is
not mandatory
log.debug("revocationAttribs "+revocationAttribs);
System.out.println("revocationAttribs "+revocationAttribs);
//1st: Create object of License generator Input
LicenseRevocationInput licenseRevocationInput
= new LicenseRevocationInput();
//revocationAttribs includes all request parameters passed as part of CustomRevoke web service.
//This also includes enforcement name and version
licenseRevocationInput.setRevocationJSON(revocationAttribs);
//Create license generator request
LicenseGeneratorRequest request = licenseGeneratorManager.createLicenseGeneratorRequest();
List<String> actions = new ArrayList<String>();
// Call specific license generator action, it can be any other action of your choice.
// For demo purpose, sample code using VerifyStandaloneRevocation
actions.add(LicenseGeneratorActions.VerifyStandaloneRevocation.toString());
request.setAction(actions);
request.setLicenseRevocationInput(licenseRevocationInput);
LicenseGeneratorResponse response
= initServiceGenerator((String) revocationAttribs.get("enfName"), (String) revocationAttribs.get
("enfVersion"), request);
//Store license generator response in list object. It can be a list with 1 or more elements.
// For demo purpose, code assumes there is only one element in list
List<String> initRevokeResponse = response.getResult
(LicenseGeneratorActions.VerifyStandaloneRevocation.toString());
String enforcementData = initRevokeResponse.get(0);
// Logic to decide if revocation happened successfully or not.
// For demo purpose it is based on value of first element in list (Yes: Successful revocation,
No: unsuccessful revocation)
if(enforcementData.equalsIgnoreCase("Yes")){
return true;
}else{
return false;
}
}

```

```

    }
    protected LicenseGeneratorResponse initServiceGenerator
(String enforcementName, String enforcementVersion, LicenseGeneratorRequest request) throws
EMSEException
    {
        LicenseGenerator generator = licenseGeneratorManager.loadGenerator
(enforcementName, enforcementVersion);
        if (generator == null)
            throw new EMSEException("GeneratorInvalid",
enforcementName,enforcementVersion);

        try {
            generator.init();
        }
        catch(UndeclaredThrowableException ute)
        {
            log.error("UndeclaredThrowableException", ute);
            if(ute.getUndeclaredThrowable()
instanceof InvocationTargetException
                && ute.getUndeclaredThrowable().getCause() instanceof EMSEException)
            {
                EMSEException emsExc = (EMSEException)
ute.getUndeclaredThrowable().getCause();
                throw emsExc;
            }
            else throw new EMSEException
("error.GeneratorInitialization",ute.getMessage());
        }
        try
        {
            LicenseGeneratorResponse response = licenseGeneratorManager.
createLicenseGeneratorResponse();
            generator.service(request, response);
            return response;
        }
        catch(UndeclaredThrowableException ute)
        {
            log.error("UndeclaredThrowableException", ute);
            if(ute.getUndeclaredThrowable() instanceof InvocationTargetException
                && ute.getUndeclaredThrowable().getCause()
instanceof EMSEException)
            {
                EMSEException emsExc =
(EMSEException) ute.getUndeclaredThrowable().getCause();
                throw emsExc;
            }
            else throw new EMSEException
("error.LicenseRevocationFail",ute.getMessage());
        }
    }

    public LicenseGeneratorManager getLicenseGeneratorManager() {
        return licenseGeneratorManager;
    }

    public void setLicenseGeneratorManager(
        LicenseGeneratorManager licenseGeneratorManager) {

```



```

        this.licenseGeneratorManager = licenseGeneratorManager;
    }
}

```

Sample Response

```

<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <rid>7c0f36e6-6730-40b3-9701-12e13255ea77</rid>
  <stat>ok</stat>
</EMSResponse>

```

For more information on implementing third party revocation, see Sentinel EMS Configuration Guide.

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
655	The license string is not valid.
693	No activation exists for the AID. Provide a valid AID.
703	The revocation request failed. {0}

Reject Revocation

Rejects the revocation.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/RejectRevocation.xml

POST Parameters

Parameter	Description	Type
rid	(Required) Enter the revocation ID	String
comments	Specify remarks. Required or Optional (as specified in the Administration Console)	String
sendNotification	Specify whether or not to send notification to Contact on successful completion of the web service. Optional (default value is specified in the Administration Console) Valid values: true/false	Boolean

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <message>The revocation request is rejected.</message>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
101	You are not authorized to use this service.
663	No revocation exists for the RID. Provide a valid RID.
720	Revocation can not be rejected, it has already been confirmed.
721	Revocation is already rejected.

Delete Revocation

Deletes the revocation specified. You can delete a revocation only if the revocation receipt is pending from the end user.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/deleteRevocations.xml

POST Parameters

Parameter	Description	Type
rid	(Required) Enter the revocation ID	String
comments	(Optional) Description or details that the user wants to log deleting the revocation.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <message>Successfully deleted.</message>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
101	You are not authorized to use this service.
122	{0} is a required field. It cannot have a null value.
663	No revocation exists for the RID. Provide a valid RID.
687	Revocation is already completed.

Managing Customers and Contacts

The following web services are provided for managing customers and contacts.

- "Create Customer" on the next page
- "Retrieve Customer Details by ID" on page 319
- "Retrieve Customer Details by Name" on page 321
- "Update Customer Details" on page 323
- "Delete Customer" on page 327
- "Search Customers" on page 325
- "Change Contact Password" on page 328
- "Associate Contact with Customer" on page 330
- "Register End User" on page 331
- "Create Contact" on page 333
- "Get Contact BY ID / Email (REST) " on page 335
- "Update Contact" on page 337
- "Search Contact" on page 339
- "Delete Contact" on page 341

Create Customer

Create a customer with the given parameters.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/createCustomer.xml

POST Parameters

Parameter	Description	Type
customerName	(Required) Specify the customer name.	String
isEnabled	(Optional) Specify if the customer is to be enabled. Default value: false	Boolean
crmId	(Optional) CRM ID.	String
refId	(Optional) Reference ID.	String
externalId	(Optional) Specify the external ID if any.	String
customerIdentifier	(Optional) Specify the customer identifier. This value is auto-generated if not specified. (Space and special characters are not valid. Underscore(_) and hyphen(-)is accepted.)	String
description	(Optional) Description of the customer.	String
timeZone	Specify time zone for a customer. For input details refer " Time Zone Chart " on page 618. Enter the ID corresponding the location mentioned in the time zone chart.	String

Customer XSD

See, "Customer XSD" on page 1

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
<customerId>1</customerId>
<stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
115	The length of {0} is {1}. It cannot be more than {2}. {0} - This parameter is an XML field. {1} - The parameter value that specifies the length of parameter {0}. {2} - This parameter is the length criteria that the parameter {1} should not exceed.
122	{0} is a required field. It cannot have a null value.
902	Customer {0} already exists. Try again with a different name.

Retrieve Customer Details by ID

Retrieve details for a customer using customer ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getCustomerById.xml

Query Parameters

Parameter	Description	Type
customerId	(Required) Specify the customer ID.	Integer

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <contacts>
    <contact>
      <admin>false</admin>
      <contactEmail>abcd@defghi.com</contactEmail>
      <contactId>1</contactId>
      <contactName/>
      <contactNumber/>
      <customerName>cstmr</customerName>
      <custIdentifier>123</custIdentifier>
      <status>true</status>
    </contact>
  </contacts>
  <cstmrcrmid>11122233</cstmrcrmid>
  <customerId>1</customerId>
  <customerName>cstmr</customerName>
  <custIdentifier>124</custIdentifier>
  <desc/>
  <enabled>true</enabled>
  <refId>asdf</refId>
  <stat>ok</stat>
  <timeZone>America/Tijuana</timeZone>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
512	The customer does not exist.

Retrieve Customer Details by Name

Retrieve details of a customer using exact customer name.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getCustomerByCustomerName.xml

Query Parameters

Parameter	Description	Type
customerName	(Required) Specify the customer name.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <contacts>
    <contact>
      <admin>>false</admin>
      <contactEmail>abcd@defghi.com</contactEmail>
      <contactId>1</contactId>
      <contactName/>
      <contactNumber/>
      <customerName>cstmr</customerName>
      <custIdentifier>123</custIdentifier>
      <status>>true</status>
    </contact>
  </contacts>
  <cstmrcrmid>11122233</cstmrcrmid>
  <customerId>1</customerId>
  <customerName>cstmr</customerName>
  <custIdentifier>124</custIdentifier>
<channelPartnerIdentifier>
<channelPartnerId>3</channelPartnerId>
<channelPartnerName>channel1</channelPartnerName>
<channelPartnerIdentifier>CPref</channelPartnerIdentifier>
</channelPartnerIdentifier>
  <desc/>
  <enabled>>true</enabled>
  <refId>asdf</refId>
  <stat>ok</stat>
  <timeZone>America/Tijuana</timeZone>s
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
512	The customer does not exist.
547	More than one customer exists with the same name.

Update Customer Details

Update the details of a customer.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateCustomer.xml

POST Parameters

Parameter	Description	Type
customerId	(Required) Specify the customer ID.	Integer
customerName	(Optional) Specify the customer name.	String
isEnabled	(Optional) Enable/disable the customer. Specifying no value for this parameter sets the value to default. Valid values: Boolean Default value: false	Boolean
crmId	(Optional) Customer CRM ID.	String
externalId	(Optional) Specify the external ID if any.	String
custIdentifier	(Optional) Specify the customer identifier.	String
refId	(Optional) Customer reference ID.	String
description	(Optional) Description of the customer.	String
timeZone	Specify time zone for a customer. For input details refer " Time Zone Chart " on page 618 . Enter the ID corresponding the location mentioned in the time zone chart.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
115	The length of {0} is {1}. It cannot be more than {2}.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
512	The customer does not exist.

Search Customers

Search customers/view all customers for the given query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/searchCustomers.xml

Query Parameters

Parameter	Description	Type
customerName	(Optional) Specify the customer name.	String
crmId	(Optional) CRM ID.	String
refId	(Optional) Reference ID.	String
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
externalId	(Optional) Specify the external ID if any. External ID should be unique.	String
customerIdentifier	(Optional) Specify the Customer Identifier. If value is not specified then it is auto-generated. The Customer Identifier should be unique.	String
pageSize	(Optional) The number of customers retrieved by one request. Default value: 200	Integer (>0)
sortCol	(Optional) Sort against the column. Valid values: crmId, cstmrId, customerName, refId, status Default value: cstmrId	String
sortOrder	(Optional) The order to sort. Valid values: String (asc, desc) Default value: desc	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. Normal: Default search parameter if search pattern is not specified. The searchpattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. Default value: Normal	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <customers>
    <customer>
      <cmstmrcrmid />
      <cmstmrid>1</cmstmrid>
      <cmstmname>Justin</cmstmname>
      <customerIdentifier>0d72a1e2-e97d-441c-95bd-28eeab07bd28</customerIdentifier>
      <desc />
      <enabled>true</enabled>
      <externalId />
      <refId />
    </customer>
  </customers>
  <stat>ok</stat> <total>1</total>
  <timeZone>America/Tijuana</timeZone>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
109	The sort order value is not valid. Specify asc or desc.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
124	The sort column is not valid. The valid values are {0}.
128	You should log on first.

Delete Customer

Delete a customer using customer ID.

Default Protocol	Method Type	URI
HTTP	POST	/ems/deleteCustomerById.xml

POST Parameters

Parameter	Description	Type
customerId	(Required) Specify the customer ID.	Integer

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
519	The customer ID is not valid.
694	{0} cannot be deleted as an entitlement exists for this customer.

Change Contact Password

Change the password for a contact.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/changeContactPassword.xml

Query Parameters

Parameter	Description	Type
emailId	E-mail ID of the contact. Required for Publisher. Optional for end user.	String
oldPassword	Old password of the contact Optional for Publisher. Required for end user.	String
newPassword	(Required) New password of the contact	String

Sample Response

For Publisher

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <message>Password changed successfully.</message>
  <stat>ok</stat>
</EMSResponse>
```

For End User

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <message>Password changed successfully, please login again.</message>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
115	The length of {0} is {1}. It cannot be more than {2}.

Error Code	Description
117	Regular expression validation failed for {0}.
128	You should log on first.
518	Contact not found for the given contact ID.
523	Specify a valid e-mail address.
524	The new password cannot be blank.
525	The old password cannot be blank.
526	Incorrect username and/or password provided.

Associate Contact with Customer

Add customer to a contact (only for a contacts that are not associated with any customer).

Default Protocol	Method Type	URI
HTTPS	POST	/ems/associateContactWithCustomer.xml

POST Parameters

Parameter	Description	Type
contactId	(Required) Specify the contact ID.	Integer
customerId	(Required) Specify the customer ID.	Integer

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
125	The requested resource is not found.
127	A system exception occurred.
128	You should log on first.
512	The customer does not exist.
513	The contact does not exist.
514	A customer is already associated with the contact.

Register End User

Using this web service, you can configure end user registration. Choose from pre-defined template attributes of contact to store data.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/registerUser.xml

POST Parameters

Parameter	Description	Type
emailId	(Required) E-mail ID of the contact.	String
contName	(Optional) Name for the contact.	String
contNumber	(Optional) Contact number.	String
billAddr	(Optional) Billing address.	String
billAddrCity	(Optional) Billing city.	String
billAddrState	(Optional) Billing state.	String
billAddrZip	(Optional) Billing zip.	String
billAddrCountry	(Optional) Billing country.	String
shipAddr	(Optional) Shipping address.	String
shipAddrCity	(Optional) Shipping city.	String
shipAddrState	(Optional) Shipping state.	String
shipAddrZip	(Optional) Shipping zip.	String
shipAddrCountry	(Optional) Shipping country.	String
contPassword	(Required) Password for the contact.	String
enabled	(Optional) Whether to enable or disable contact. Valid values: Boolean (true/false) Default value: true	Boolean
localeId	(Optional) Enter a value for the default language of the contact. Valid values: 1 (English), 2 (German), 3 (Japanese) Default value: 1	Integer

Additional parameters with name same as the custom attributes for contact can be passed (optional).

Sample Response

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
117	Regular expression validation failed for {0}.
122	{0} is a required field. It cannot have a null value.
516	Modifying the contact information is not allowed.
521	Customer {0} already exists. Try again with a different name.
528	Specify a valid e-mail address.
532	User registration not allowed for publisher.
533	The password must be at least 6 characters long.
714	The numeric value {0} is not valid. Specify a valid value.
715	The date value {0} is not valid. Specify date in YYYY-MM-DD format.

Create Contact

Create a contact with the given parameters.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/contact.ws

URI Parameters

None

Contact XSD

See, "[Contact XSD](#)" on page 408 .

Sample Input

```
<?xml version="1.0" encoding="utf-8"?>
<contact>
  <contactName>Rosamund Heady</contactName>
  <contactEmail>rosemund@msn.com</contactEmail>
  <contactPassword>123456</contactPassword>
  <contactNumber>8782919802</contactNumber>
  <contactOrganisation>XYZNNN</contactOrganisation>
  <defaultLocale></defaultLocale>
  <refId1></refId1>
  <refId2></refId2>
  <isEnabled>true</isEnabled>
  <shippingDetails>
    <address>12345 6th St.</address>
    <city>Melbourne</city>
    <state>FL</state>
    <country>USA</country>
    <zip>32904</zip>
  </shippingDetails>
  <billingDetails>
    <address>12345 6th St.</address>
    <city>Melbourne</city>
    <state>FL</state>
    <country>USA</country>
    <zip>32904</zip>
  </billingDetails>
  <customerIdentifier>
    <customerId>7</customerId>
  </customerIdentifier>
</contact>
```

Sample Response

Success

HTTP Status Code: 201 (Created)

Header-Location: {contact Id}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The e-mail is not unique.

Get Contact BY ID / Email (REST)

Retrieves Contact information in form of an XML string.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/contact/{contactId}.ws

URI Parameters

Parameter	Description	Type
contactId	(Required) Specify the Contact ID.	Integer
idType	Specify the ID type. Valid idType is contactId and emailId.	String

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<?xml version="1.0" encoding="UTF-8"?>
<contact>
  <contactName></contactName>
  <contactEmail>lukas.herbst@gemalto.com</contactEmail>
  <contactNumber></contactNumber>
  <contactOrganisation></contactOrganisation>
  <defaultLocale>en</defaultLocale>
  <refId1></refId1>
  <refId2></refId2>
  <isEnabled>true</isEnabled>
  <customerIdentifier>
    <custIdentifier>31fc5dd6-61fc-47d0-bf65-fc829aaf5bb9</custIdentifier>
  </customerIdentifier>
  <customAttribute>
    <attributeName>First Name</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>Last Name</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>Company</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>Country</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>Address Line 1</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
</contact>
```

```
<customAttribute>
  <attributeName>Address Line 2</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>City</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>State/Province</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>Zip/Postal</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>Phone</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>Fax</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>Company Website</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>HP_newcont</attributeName>
  <attributeValue>cont_12</attributeValue>
</customAttribute>
</contact>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The contact does not exist.

Update Contact

Update the details of a contact.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/contact/{contactId}.ws

URI Parameters

Parameter	Description	Type
contactId	(Required) Specify the contact ID.	Integer
contactXml	(Required) Specify the contact XML string input to be updated.	String

Sample Input

```
<?xml version="1.0" encoding="utf-8"?>
<contact>
  <contactName>Rosamund Heady</contactName>
  <contactEmail>rosemund@msn.com</contactEmail>
  <contactPassword>123456</contactPassword>
  <contactNumber>8782919802</contactNumber>
  <contactOrganisation>NewageN</contactOrganisation>
  <defaultLocale></defaultLocale>
  <refId1></refId1>
  <refId2></refId2>
  <isEnabled>true</isEnabled>
  <shippingDetails>
    <address>12 7th St.</address>
    <city>Melbourne</city>
    <state>FL</state>
    <country>USA</country>
    <zip>32904</zip>
  </shippingDetails>
  <billingDetails>
    <address>12 7th St.</address>
    <city>Melbourne</city>
    <state>FL</state>
    <country>USA</country>
    <zip>32904</zip>
  </billingDetails>
  <customerIdentifier>
    <customerId>1</customerId>
  </customerIdentifier>
</contact>
```



Note: The `<contactPassword>` element should be included in the XML input only if you need to update the contact password.

Sample Response

Success

HTTP Status Code: 200

Response Body: Same as "Sample Input" on the previous page

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Contact does not exist.

Search Contact

Retrieve the list of contacts against the query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/searchContact.ws

URL Parameters

Example URL: /ems//ems/v4_2/ws/searchContact.ws?contactName=&contactEmail=&sortOrder=&pageSize=&sortCol=&pageIndex=&refId1=&refId2=&contactNumber=&contactOrganisation=&searchPattern=

Parameter	Description	Type
contactName	(Optional) Contact name	String
contactEmail	(Optional) Contact Email ID.	String
sortOrder	(Optional) The order to sort. Valid values: asc, desc Default value: desc	String
sortCol	(Optional) Sort against the column.	String
pageSize	(Optional) The number of enforcement IDs to be retrieved by one request. Default value: 5	Integer (>0)
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
contactNumber	(Optional) Contact number.	String
contactOrganisation	(Optional) Contact organization details.	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. Normal: Default search 	String

Parameter	Description	Type
	<p>parameter if search pattern is not specified.</p> <ul style="list-style-type: none"> The searchPattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. <p>Default value: Normal</p>	

Sample Response

HTTP Status Code: 200 (OK)

Response Body:

```
<?xml version="1.0" encoding="UTF-8"?>
<listResponse type="Contact" count="2" searchParameters="{contactName=Rosa}">
  <instance id="2" Name="Rosaline White" Email="rosaline@msn.com" contactNumber="888888889"
Organisation="NewaXXXN" refId1="" refId2="" isEnabled="true" customerName="Alan"
custIdentifier="2"/>
  <instance id="1" Name="Rosamund Heady" Email="rosemund@msn.com" contactNumber="8782919802"
Organisation="NewaXXXN" refId1="" refId2="" isEnabled="true" customerName="Alan"
custIdentifier="2"/>
</listResponse>
```

Sample Response

Success

HTTP Status Code: 200 (OK)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: This Contact does not exist in the system.

Delete Contact

Deletes a contact based on the given parameters.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/contact/{contactId}.ws

URI Parameters

Parameter	Description	Type
contactId	(Required) Specify the contact ID.	Integer
idType	(Optional) Specify the ID type. Valid idType is contactId and emailId.	String

Sample Response

Success

HTTP Status Code: 204 (No Content)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: This Contact does not exist.

Managing Channel Partners

The following web services are provided for managing Channel Partners:

- "Create Channel Partner" on the next page
- "Retrieve Channel Partner Details" on page 346
- "Search Channel Partners" on page 348
- "Update Channel Partner" on page 350
- "Delete Channel Partner" on page 353

Create Channel Partner

Creates a new Channel Partner using a Channel Partner XML string as input.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/partner.ws

URI Parameters

None

Channel Partner XSD

See, "Channel Partner XSD" on page 446.

Sample Input

```
<partner>
  <partnerName>Jacob</partnerName>
  <partnerIdentifier>qa002</partnerIdentifier>
  <externalId></externalId>
  <refId1>1</refId1>
  <refId2>2</refId2>
  <status>enable</status> <!--Default value is enable -->
  <billingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>USA</country>
  </billingDetails>
  <shippingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>USA</country>
  </shippingDetails>
  <customAttribute>
    <attributeName>CP1_string</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp2_numeric</attributeName>
    <attributeValue>25</attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp3_date</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp4_boolean</attributeName>
    <attributeValue>TRUE</attributeValue>
  </customAttribute>
</customAttribute>
```

```

    <attributeName>cp5_list</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
</partner>

```

Sample Response

Success

HTTP Status Code: 201 (Created)

```

<partner>
  <Id>4</Id>
  <partnerName>Jacob</partnerName>
  <refId1>1</refId1>
  <refId2>2</refId2>
  <partnerIdentifier>qa002</partnerIdentifier>
  <externalId></externalId>
  <status>enable</status>
  <billingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>USA</country>
  </billingDetails>
  <shippingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>USA</country>
  </shippingDetails>
  <customAttribute>
    <attributeName>CP1_string</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp2_numeric</attributeName>
    <attributeValue>25</attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp3_date</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp4_boolean</attributeName>
    <attributeValue>TRUE</attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp5_list</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
</partner>

```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: A channel partner with this name already exists. Retry with a different name.

Retrieve Channel Partner Details

Retrieves Channel Partner information in form of an XML string using Channel Partner ID as input.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/partner/{partnerId}.ws

URI Parameters

Parameter	Description	Type
partnerId	(Required) Specify the Channel Partner ID.	Integer

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<partner>
  <Id>4</Id>
  <partnerName>Jacob</partnerName>
  <refId1>1</refId1>
  <refId2>2</refId2>
  <partnerIdentifier>qa002</partnerIdentifier>
  <externalId></externalId>
  <status>enable</status>
  <billingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>USA</country>
  </billingDetails>
  <shippingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>USA</country>
  </shippingDetails>
  <customAttribute>
    <attributeName>CP1_string</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp2_numeric</attributeName>
    <attributeValue>25</attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp3_date</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
</partner>
```

```
<customAttribute>
  <attributeName>cp4_boolean</attributeName>
  <attributeValue>TRUE</attributeValue>
</customAttribute>
<customAttribute>
  <attributeName>cp5_list</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
</partner>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The Channel Partner does not exist.

Search Channel Partners

Retrieve the list of Channel Partners against the query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/searchPartner.ws

URL Parameters

Example URL: /ems//ems/v4_2ws/searchPartner.ws?name=a&refId1=&refId2=&pageIndex=&pageSize=&sortCol=&sortOrder=

Parameter	Description	Type
name	(Optional) Specify the Channel Partner name.	String
refid1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refid2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of products retrieved by one request. Default value: 200	Integer (>0)
sortCol	(Optional) Sort against the column.	String
sortOrder	(Optional) The order to sort. Valid values: String (asc, desc) Default value: desc	String
partnerIdentifier	(Optional) Specify the channel partner identifier. (Space and special characters are not valid. Underscore(_) and hyphen(-) is accepted.)	String
externalId	(Optional) Specify the external ID if any. External ID should be unique.	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. Normal: Default search parameter if search pattern is not specified. The searchpattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. Default value: Normal	String

Sample Response

Success

HTTP Status Code: 200

Response Body:

```
<listResponse type="Partner" count="1" searchparameter="{ }">
  <Instance Id="2" Name="channel1" identifier="a72d0814-7800-461e-bae0-3969326f4e06"
externalId="" refId1="" refId2=""/>
</listResponse>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The sort order value is not valid. Specify asc or desc.

Update Channel Partner

Updates Channel Partner using XML string as the input parameters.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/partner/{partnerId}.ws

URI Parameters

Parameter	Description	Type
partnerId	(Required) Specify the Channel Partner ID to update.	Integer
partnerXml	(Required) Specify the Channel Partner details in form of XML string to update.	String

Sample Input

```
<partner>
  <partnerName>Jacob</partnerName>
  <partnerIdentifier>qa002</partnerIdentifier>
  <externalId></externalId>
  <refId1>1</refId1>
  <refId2>2</refId2>
  <status>enable</status> <!--Default value is enable -->
  <billingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>United States</country>
  </billingDetails>
  <shippingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>USA</country>
  </shippingDetails>
  <customAttribute>
    <attributeName>CP1_string</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp2_numeric</attributeName>
    <attributeValue>25</attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp3_date</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp4_boolean</attributeName>
    <attributeValue>TRUE</attributeValue>
  </customAttribute>
</partner>
```

```

<customAttribute>
  <attributeName>cp5_list</attributeName>
  <attributeValue></attributeValue>
</customAttribute>
</partner>

```

Sample Response

Success

HTTP Status Code: 200

Response Body:

```

<partner>
  <Id>4</Id>
  <partnerName>Jacob</partnerName>
  <refId1>1</refId1>
  <refId2>2</refId2>
  <partnerIdentifier>qa002</partnerIdentifier>
  <externalId></externalId>
  <status>enable</status>
  <billingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>United States</country>
  </billingDetails>
  <shippingDetails>
    <address>Blue Hills</address>
    <city>Cincinnati</city>
    <zip>45202</zip>
    <state>Ohio</state>
    <country>USA</country>
  </shippingDetails>
  <customAttribute>
    <attributeName>CP1_string</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp2_numeric</attributeName>
    <attributeValue>25</attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp3_date</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp4_boolean</attributeName>
    <attributeValue>TRUE</attributeValue>
  </customAttribute>
  <customAttribute>
    <attributeName>cp5_list</attributeName>
    <attributeValue></attributeValue>
  </customAttribute>
</partner>

```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Please provide Partner XML data.

Delete Channel Partner

Deletes a Channel Partner based on the given parameter.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/partner/{partnerId}.ws

URI Parameters

Parameter	Description	Type
partnerId	(Required) Specify the Channel Partner ID.	Integer

Sample Response

Success

HTTP Status Code: 200

Header Message: Deleted

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: PartnerNotExist.

Managing Custom Attributes

The following web services are provided for managing custom attributes:

- [Retrieve Custom Attributes List](#)
- [Update Custom Attribute](#)
- [Search Entity by Custom Attribute](#)
- [Get Custom Attributes for Entity and Child](#)

Retrieve Custom Attributes List

Retrieve custom attribute by the query parameters `templateType` and `entityId`.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getEntityCustomAttributes.xml

Query Parameters

Parameter	Description	Type
<code>templateType</code>	(Required) Specify the template type from the valid values. Valid values: 1 (Feature), 2 (Product), 3 (Product suite), 4 (Customer), 5 (Contact), 6 (Entitlement), 7 (Batch), 8 (Channel partner), 9 (Activation), 10 (Line Item), 11 (Channel Partner User).	Integer
<code>entityId</code>	(Required) The ID for the entity specified in <code>templateType</code> .	Integer

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <entityId>1</entityId>
  <entityName>Entitlement</entityName>
  <stat>ok</stat>
  <template>
    <templat>
      <attributeId>2</attributeId>
      <attributeName>ent_never_exp</attributeName>
      <dataType>DATE</dataType>
      <dataTypeCode>2</dataTypeCode>
      <optional>true</optional>
      <regularExpression/>
      <value>2010-07-31</value>
    </templat>
  </template>
  <templateType>Entitlement</templateType>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.

Error Code	Description
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
309	Cannot find the feature.
711	The template type is not valid.
712	The entity cannot be found.

Update Custom Attribute

Update custom attribute of an entity.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateCustomAttribute.xml

Query Parameters

Parameter	Description	Type
customAttribute	(Required) Specify the custom attribute string to be updated.	String

Sample Input String

Edit the output string from the Web service `getEntityCustomAttributes.xml` and use it as input string. See the following example:

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <entityId>1</entityId>
  <entityName>ProtectDrive</entityName>
  <stat>ok</stat>
  <template>
    <templat>
      <attributeId>13</attributeId>
      <attributeName>FeatureRefId1</attributeName>
      <dataType>STRING</dataType>
      <dataTypeCode>1</dataTypeCode>
      <optional>true</optional>
      <regularExpression/>
      <value>ref1</value>
    </templat>
    <templat>
      <attributeId>14</attributeId>
      <attributeName>FeatureRefId2</attributeName>
      <dataType>STRING</dataType>
      <dataTypeCode>1</dataTypeCode>
      <optional>true</optional>
      <regularExpression/>
      <value>RefId2</value>
    </templat>
  </template>
  <templateType>Feature</templateType>
</EMSResponse>
```

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
711	The template type is not valid.
717	The entity ID or custom attribute is not valid.

Search Entity by Custom Attribute

Retrieve an entity by custom attribute and its value.

Default Protocol	Method Type	URI
HTTP	GET	/ems/searchEntityByCustomAttribute.xml

Query Parameters

Parameter	Description	Type
templateType	(Required) Specify type of template. Valid values: 1 (Feature), 2 (Product), 3 (Product suite), 4 (Customer), 5 (Contact), 6 (Entitlement), 7 (Batch), 8(Channel partner), 9(Activation), 10 (Line Item), 11(Channel Partner User), 12 (Custom Attribute).	Integer
attributeName	(Required) Specify attribute name.	String
attributeValue	(Required) Specify attribute value.	String

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <attribute>e1</attribute>
  <attributeValue>2221</attributeValue>
  <entities>
    <entitie>
      <activationAllowed>true</activationAllowed>
      <contactEmailId/>
      <contactId/>
      <customerId/>
      <customerName/>
      <eid>306d05....</eid>
      <endDate>05/27/2011</endDate>
      <entId>1</entId>
      <revocationAllowed>true</revocationAllowed>
      <startDate>05/27/2010</startDate>
      <state>2</state>
      <status>true</status>
      <userRegistration>3</userRegistration>
    </entitie>
  </entities>
  <stat>ok</stat>
  <templateType>Entitlement</templateType>
  <total>1</total>
</EMSResponse>
```

See Also:

["Output Format for Failure" on page 399](#)

Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
711	The template type is not valid.
718	The attribute is not found.

Get Custom Attributes for Entity and Child

Retrieves custom attribute details of an entity and its associated child entities. The associated child entities include Entitlement, Customer, Contact, Channel Partner, Line Item, Product Suite, Product, and Feature.



Note: For Sentinel EMS 4.2, this Web service retrieves only the custom attribute details for an Entitlement and its associated child attributes.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/customAttribute/entitlement/

Example URI: /ems/v4_2/ws/customAttribute/entitlement/8ab75537-7b9e-472c-8c41-d0048f7be42d.ws?idType=eid&includeAllAssociation=true

URL Parameters

Parameter	Description
entId	Entitlement ID.
idType	Specify the idType as eid or entid. Default value: entid
includeAllAssociation	Specify whether details of all associated Entitlement entities will be displayed or not. Valid value for includeAllAssociation is true or false. If includeAllAssociation is true then details of all associated entitlement entities is displayed. If includeAllAssociation is false then only the Entitlement details are displayed. Default value : false

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<?xml version="1.0" encoding="UTF-8"?>
<CustomAttribute Entity="Product" EntityId="1" EntityIdType="Name (version)" EntityIdValue="rms
(1)" ParentEntity="LineItem" ParentEntityId="1" AttributeName="prd" AttributeValue="default_
prd" />
<CustomAttribute Entity="Feature" EntityId="1" EntityIdType="Name (version)" EntityIdValue="rms
()" ParentEntity="Product" ParentEntityId="1" AttributeName="FTR_Date" AttributeValue="2016-12-
01" />
<CustomAttribute Entity="Feature" EntityId="1" EntityIdType="Name (version)" EntityIdValue="rms
()" ParentEntity="Product" ParentEntityId="1" AttributeName="FTR_Temp" AttributeValue="default"
/>
```

Reports Web Services

The following web services are provided for viewing the list of reports and generating reports:

- [Retrieve the List of Reports](#)
- [Get Report as XML or Jasper](#)
- [List of Customers where Data is Tampered](#)
- ["Data Tampering Details for Customer" on page 368](#)
- ["Raw Usage Report" on page 370](#)
- ["Peak Concurrency Report" on page 372](#)
- ["Provisioning Data Report" on page 374](#)

Retrieve the List of Reports

Retrieve the list of available reports. This web service returns the list of all pre-defined and custom reports.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/report.ws

Example URL: /ems/v4_2/ws/report.ws

Sample Response

HTTP Status Code: 200 (OK)

Response Body:

```
<ReportExecuted>
  <ExecutedBy>admin</ExecutedBy>
  <ExecutionTime>Thu Sep 25 13:36:52 IST 2014</ExecutionTime>
  <ReportContent>
    <![CDATA[
      <reports>
        <reportGroup name="License Reports">
          <report id="1" displayName="License Activation Report">
            <inputParameter name="StartDate" displayName="Start Date" type="DATE"/>
            <inputParameter name="EndDate" displayName="End Date" type="DATE"/>
            <inputParameter name="GroupBy" displayName="Group By" type="STRING"/>
            <inputParameter name="LICENSETYPE" displayName="License Type" type="STRING"/>
            <inputParameter name="PartnerName" displayName="Partner Name" type="STRING"/>
          </report>
          <report id="2" displayName="License Expiration Report">
            <inputParameter name="DaysBeforeExpiration" displayName="Days Before
Expiration" type="NUMERIC"/>
            <inputParameter name="GroupBy" displayName="Group By" type="STRING"/>
            <inputParameter name="LICENSETYPE" displayName="License Type" type="STRING"/>
            <inputParameter name="PartnerName" displayName="Partner Name" type="STRING"/>
          </report>
          <report id="9" displayName="Most Popular License Model Sold">
            <inputParameter name="StartDate" displayName="Start Date" type="DATE"/>
            <inputParameter name="EndDate" displayName="End Date" type="DATE"/>
            <inputParameter name="PartnerName" displayName="Partner Name" type="STRING"/>
            <inputParameter name="IncludeUnlimited" displayName="Include Unlimited
Quantity" type="BOOLEAN"/>
          </report>
          <report id="10" displayName="Most Popular Product Sold">
            <inputParameter name="StartDate" displayName="Start Date" type="DATE"/>
            <inputParameter name="EndDate" displayName="End Date" type="DATE"/>
            <inputParameter name="PartnerName" displayName="Partner Name" type="STRING"/>
            <inputParameter name="IncludeUnlimited" displayName="Include Unlimited
Quantity" type="BOOLEAN"/>
          </report>
        </reportGroup>
        <reportGroup name="Customer Reports">
          <report id="3" displayName="Customer Activation Report">
            <inputParameter name="StartDate" displayName="Start Date" type="DATE"/>
            <inputParameter name="EndDate" displayName="End Date" type="DATE"/>
            <inputParameter name="PartnerName" displayName="Partner Name" type="STRING"/>
          </report>
        </reportGroup>
      </reports>
    </![CDATA[
  </ReportContent>
</ReportExecuted>
```

```

    <report id="4" displayName="Customer Activation Report (Product Wise)">
      <inputParameter name="StartDate" displayName="Start Date" type="DATE"/>
      <inputParameter name="EndDate" displayName="End Date" type="DATE"/>
      <inputParameter name="PartnerName" displayName="Partner Name" type="STRING"/>
    </report>
    <report id="8" displayName="User Registration Report">
      <inputParameter name="StartDate" displayName="Registered From" type="DATE"/>
      <inputParameter name="EndDate" displayName="Registered To" type="DATE"/>
    </report>
  </reportGroup>
  <reportGroup name="Entitlement Reports">
    <report id="5" displayName="Customer Entitlement Report">
      <inputParameter name="StartDate" displayName="Start Date" type="DATE"/>
      <inputParameter name="EndDate" displayName="End Date" type="DATE"/>
      <inputParameter name="CustomerName" displayName="Customer Name"
type="STRING"/>
      <inputParameter name="ContactEmailId" displayName="Contact Email Id"
type="STRING"/>
      <inputParameter name="PartnerName" displayName="Partner Name" type="STRING"/>
    </report>
    <report id="6" displayName="Batch Entitlement Report">
      <inputParameter name="StartDate" displayName="Start Date" type="DATE"/>
      <inputParameter name="EndDate" displayName="End Date" type="DATE"/>
      <inputParameter name="Distributor" displayName="Distributor" type="STRING"/>
    </report>
  </reportGroup>
  <reportGroup name="Audit Log Reports">
    <report id="7" displayName="Audit Log Report">
      <inputParameter name="StartDate" displayName="Start Date" type="DATE"/>
      <inputParameter name="EndDate" displayName="End Date" type="DATE"/>
    </report>
  </reportGroup>
  <reportGroup name="Custom Reports">
  </reportGroup>
</reports>
]]>
</ReportContent>
</ReportExecuted>

```

Sample Response

Success

HTTP Status Code: 200 (OK)

Get Report as XML or JasperXML

Retrieve the report details against the query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/report/{reportId}.ws

URL Parameters

Example URL: `http://hostname:8080/ems/v4_2/ws/report/{reportId}.ws?reportId=14&format=XML&Locking_ID=1234&NoOfLockings=3`

Parameter	Description	Type
reportId	(Required) Identifier of the report in the database. You can get this parameter using Retrieve the List of Reports web service.	Integer
format	(Optional) The report format. Valid values: <ul style="list-style-type: none"> XML - The report is provided as a plain XML. Jasper - The report will be provided in JasperXML format. Using JasperXML format user can generate reports in PDF/Excel/RTF formats. Default value: XML	String
<Parameters 1> <Parameters 2>	Report parameters are different for different reports. You can get the input parameters for a report by using Retrieve the List of Reports web service. The parameter values can be specified by using <code>,=</code> , sign and multiple parameters should be separated by <code>'&'</code> . Example: If input parameters are Locking_ID and NoOfLockings , you can specify these as follows: <code>http://hostname:8080/ems//ems/v4_2/ws/report/{reportId}.ws?reportId=14&format=XML&Locking_ID=1234&NoOfLockings=3</code>	Data type are different for different input types.

Sample Response

Success

HTTP Status Code: 200 (OK)

Response Body:

```
<ReportExecuted ReportId="14" >
  <DisplayName>End User Locking code</DisplayName>
  <ExecutedBy>admin</ExecutedBy>
  <ExecutionTime>Thu Sep 25 16:54:31 IST 2014</ExecutionTime>
  <ReportContent>
    <![CDATA[
```

```
    ]]>
  </ReportContent>
</ReportExecuted>
```

The XML or JasperXML is included in the CDATA section.

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Report does not exist. Try again with a correct report ID.

Customer List for Usage Tampering

This Web service is used for retrieving the list of all customers for whom data is tampered or missing.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/retrieveCustomerTamperList.ws

URL Parameters

Parameter	Description	Type
StartDate	Specify the start date of the duration to locate the tampered data.	String (yyyy-mm-dd)
EndDate	Specify the end date of the duration to locate the tampered data.	String (yyyy-mm-dd)
UsageTimeout	Time duration for which the data is missing or tampered.	Integer
ReportType	Specifies report type as Data Tampered or Data Missing or All.	String

Sample Response

HTTP Status Code: 200 (OK)

Response Body:

```
<?xml version="1.0" encoding="UTF-8"?>
<usageTampering>
  <stat>ok</stat>
  <usageTamperedData type="TamperedData">
    <customer refId="cust1" />
  </usageTamperedData>
  <usageTamperedData type="MissingData">
    <customer refId="cust2" />
  </usageTamperedData>
</usageTampering>
```

Sample Response

Success

HTTP Status Code: 200 (OK)

Data Tampering Details for Customer

This Web Service is used for retrieving the tampered data details for the customer specified using the customer reference ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/retrieveCustomerTamperData.ws



Note: If this report is generated for a customer having no deployed cloud served lease entitlements then the following error is generated - 'Customer does not exist. Provide a valid Customer Id.'

URL Parameters

Parameter	Description	Type
StartDate	Specify the start date of the duration to locate the tampered data.	String (yyyy-mm-dd)
EndDate	Specify the end date of the duration to locate the tampered data.	String (yyyy-mm-dd)
CustId	Specifies the Customer ID to list the tampered data details	String
UsageTimeout	Time duration for which the data is missing or tampered.	Integer
ReportType	Specifies report type as Data Tampered or Data Missing or All.	String

Sample Response

Success

HTTP Status Code: 200 (OK)

Response Body:

```
<?xml version="1.0" encoding="UTF-8"?>
<usageTampering>
  <stat>ok</stat>
  <customer Id="1">
    <friendlyName name="fingerprint1">
      <tamperRecord>
        <totalCount>7</totalCount>
        <startTime>2015-06-22T23:24:26+05:30</startTime>
        <endTime>2015-06-22T23:24:26+05:30</endTime>
      </tamperRecord>
      <tamperRecord>
        <totalCount>3</totalCount>
        <startTime>2015-06-22T23:24:26+05:30</startTime>
        <endTime>2015-06-22T23:24:26+05:30</endTime>
      </tamperRecord>
    </friendlyName>
  </customer Id>
</usageTampering>
```



```
</tamperRecord>
<missingRecord>
  <lastReceivedTime>2015-06-22T23:24:27+05:30</lastReceivedTime>
</missingRecord>
</friendlyName>
</customer>
</usageTampering>
```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Customer does not exist.

Raw Usage Report

This Web Service is used for retrieving the raw usage data that can be processed for billing and metering. The product name and product version need to be used in together and cannot be used alone.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/retrieveUsageReport.ws

URL Parameters

Parameter	Description	Type
startDate	(Required) Specify the start date of the duration to locate the provisioned data.	String (yyyy-mm-dd hh:mm:ss)
endDate	(Required) Specify the end date of the duration to locate the provisioned data.	String (yyyy-mm-dd hh:mm:ss)
customerRefId	(Required) Specify the customer reference ID.	String
productName	Specify product name.	String
productVersion	Specify product version.	String
featureName	Specify feature name.	String
featureVersion	Specify feature version.	String
user	Specify user name.	String
EID	Specify entitlement ID.	String
EntitlementState	Specify entitlement status as: 0 : Enable 1 : Disable 2 : Revoked 3 : Enable And Disable 4 : All	Integer
pageSize	(Optional) The number of records retrieved per request. Default value: 200	Integer (>0)
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)

Sample Response

Success

HTTP Status Code: 200 (OK)

Response Body:

```

<?xml version="1.0" encoding="UTF-8"?>
<emsResponse ReportParameters="{startDate=2010-01-01, endDate=2020-01-01}">
  <stat>ok</stat>
  <total>4</total>
  <customer refId="test">
    <entitlement id="1aa83e9f-a935-4863-b4de-ee9232f03ce1">
      <product version="1" name="prd_count_up">
        <feature concurrentLimit="10" usageType="CountBased" name="F_Count_Up" version="1">
          <rawUsageData>
            <user id="cloud1456976394667">
              <record id="1">
                <startDateTime>2016-03-03 03:39:55.0</startDateTime>
                <endDateTime>2016-03-03 03:39:56.0</endDateTime>
                <usageCount>1</usageCount>
                <vendorInfo>for SNTL cloud Demo</vendorInfo>
                <sourceIpAddress>10.164.29.4</sourceIpAddress>
              </record>
              <record id="2">
                <startDateTime>2016-03-03 03:39:56.0</startDateTime>
                <endDateTime>2016-03-03 03:39:57.0</endDateTime>
                <usageCount>1</usageCount>
                <vendorInfo>for SNTL cloud Demo</vendorInfo>
                <sourceIpAddress>10.164.29.4</sourceIpAddress>
              </record>
            </user>
            <user id="cloud1456977114919">
              <record id="3">
                <startDateTime>2016-03-03 03:51:55.0</startDateTime>
                <endDateTime>2016-03-03 03:51:56.0</endDateTime>
                <usageCount>1</usageCount>
                <vendorInfo>for SNTL cloud Demo</vendorInfo>
                <sourceIpAddress>10.164.29.4</sourceIpAddress>
              </record>
              <record id="4">
                <startDateTime>2016-03-03 03:51:56.0</startDateTime>
                <endDateTime>2016-03-03 03:51:57.0</endDateTime>
                <usageCount>1</usageCount>
                <vendorInfo>for SNTL cloud Demo</vendorInfo>
                <sourceIpAddress>10.164.29.4</sourceIpAddress>
              </record>
            </user>
          </rawUsageData>
        </feature>
      </product>
    </entitlement>
  </customer>
</emsResponse>

```

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Customer does not exist.

Peak Concurrency Report

This Web Service calculates peak concurrency based on the data available in SCL at a particular point of time. Peak Concurrency report shows the peak number of login sessions occurring over a specified time interval.

This report indicates the highest number of users using an application concurrently during a certain period of time.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/retrievePeakConcurrencyReport.ws

URL Parameters

Parameter	Description	Type
StartDate	(Required) Specify the start date of the duration to locate the provisioned data.	String (yyyy-mm-dd)
EndDate	(Required) Specify the end date of the duration to locate the provisioned data.	String (yyyy-mm-dd)
customerId	(Required) Specify the customer ID.	String
eid	Specify the Entitlement ID.	String
featureVersions	Specify one or multiple comma separated feature versions.	String
featureNames	Specify one or multiple comma separated feature names.	String
granularity	(Required) Specify granularity of time interval, in hours, at which peak capacity is to be reported.	Integer
productStatus	(Required) Specify the line item status as: 0 : Enable And Disable 1 : All 2 : Enable 3 : Disable 4 : Revoked	Integer
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of records retrieved per request. Default value: 200	Integer (>0)

Sample Response

Success

HTTP Status Code: 200 (OK)

Response Body:

```
<emsResponse ReportParameters="
{startDate=2016-04-11, featureVersions=null, productStatus=null, eID=, granularity=1,
endDate=2016-04-12, featureNames=, customer=customer1}">
  <concurrencyData>
    <customerRefId>customer1</customerRefId>
    <feature>
      <id>1</id>
      <name>feature1</name>
      <version>1</version>
      <peakConcurrency startDateTime="2016-04-11 00:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 01:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 02:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 03:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 04:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 05:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 06:00:00">18</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 07:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 08:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 09:00:00">0</peakConcurrency>
    </feature>
    <feature>
      <id>2</id>
      <name>feature2</name>
      <version/>
      <peakConcurrency startDateTime="2016-04-11 00:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 01:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 02:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 03:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 04:00:00">0</peakConcurrency>
      <peakConcurrency startDateTime="2016-04-11 05:00:00">0</peakConcurrency>
    </feature>
  </concurrencyData>
  <stat>ok</stat>
</emsResponse>
```

Failure

HTTP Status Code: 400 (Bad Request)

Provisioning Data Report

This Web Service is used for retrieving provisioning data. This report specifically obtains concurrency information for features and excludes other associated license attributes. This web service is not based on usage data, and shows only concurrency information.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/retrieveProvisioningDataReport.ws

URL Parameters

Parameter	Description	Type
startDate	(Required) Specify the start date of the duration to locate the provisioned data.	String (yyyy-mm-dd)
endDate	(Required) Specify the end date of the duration to locate the provisioned data.	String (yyyy-mm-dd)
customerId	(Required) Specify the customer ID.	String
eid	Specify Entitlement ID.	String
featureVersions	Specify one or multiple comma separated feature versions.	String
featureNames	Specify one or multiple comma separated feature names.	String
productStatus	(Required) Specify the line item status as: 0 : Enable And Disable 1 : All 2 : Enable 3 : Disable 4 : Revoked	Integer
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of records retrieved per request. Default value: 200	Integer (>0)

Sample Response

Success

HTTP Status Code: 200 (OK)

Response Body:

```

<emsResponse ReportParameters="{startDate=2016-04-11, featureVersions=null, productStatus=null,
eID=, endDate=2016-04-12, featureNames=, customer=customer1}
">
  <ConcurrencyProvisionedData>
    <entitlement>
      <eid>02ef6b66-db3b-4584-87ca-3fe9fe6ba558</eid>
      <product>
        <name>product</name>
        <version>1</version>
        <feature>
          <id>1</id>
          <name>feature1</name>
          <version>1</version>
          <UserLimit/>
          <SoftLimit/>
        </feature>
        <feature>
          <id>2</id>
          <name>feature2</name>
          <version/>
          <UserLimit/>
          <SoftLimit/> //SoftUserLimit
        </feature>
      </product>
    </entitlement>
    <entitlement>
      <eid>1ac60a5f-9af0-4af8-bf98-781afade11f4</eid>
      <product>
        <name>product</name>
        <version>1</version>
        <feature>
          <id>1</id>
          <name>feature1</name>
          <version>1</version>
          <UserLimit/>
          <SoftLimit/>
        </feature>
        <feature>
          <id>2</id>
          <name>feature2</name>
          <version/>
          <UserLimit/>
          <SoftLimit/>
        </feature>
      </product>
    </entitlement>
    <entitlement>
      <eid>65e002ff-d744-4eb4-8983-1ed26a9baa01</eid>
      <product>
        <name>product2</name>
        <version>1</version>
        <feature>
          <id>1</id>
          <name>feature1</name>
          <version>1</version>
          <concurrencyAttribute>0</concurrencyAttribute>
        </feature>

```

```

<feature>
<id>2</id>
<name>feature2</name>
<version/>
<concurrencyAttribute>0</concurrencyAttribute>
</feature>
</product>
<product>
<name>product</name>
<version>1</version>
<feature>
<id>1</id>
<name>feature1</name>
<version>1</version>
<concurrencyAttribute>0</concurrencyAttribute>
</feature>
<feature>
<id>2</id>
<name>feature2</name>
<version/>
<concurrencyAttribute>0</concurrencyAttribute>
</feature>
</product>
</entitlement>
<entitlement>
<eid>b0b2b2dc-b397-4f7f-b460-040cafdfa715</eid>
<product>
<name>product</name>
<version>1</version>
<feature>
<id>1</id>
<name>feature1</name>
<version>1</version>
<UserLimit/>
<SoftLimit/>
</feature>
<feature>
<id>2</id>
<name>feature2</name>
<version/>
<UserLimit/>
<SoftLimit/>
</feature>
</product>
</entitlement>
<entitlement>
<eid>f68b297e-69c8-4bd3-951f-aa779eee4477</eid>
<product>
<name>product</name>
<version>1</version>
<feature>
<id>1</id>
<name>feature1</name>
<version>1</version>
<UserLimit>4</UserLimit>
<SoftLimit/>
</feature>

```



```

<feature>
<id>2</id>
<name>feature2</name>
<version/>
<UserLimit>6</UserLimit>
<SoftLimit/>
</feature>
</product>
</entitlement>
<entitlement>
<eid>f819fcc2-3680-4c9d-82b0-888833cd766e</eid>
<product>
<name>product</name>
<version>1</version>
<feature>
<id>1</id>
<name>feature1</name>
<version>1</version>
<UserLimit>8</UserLimit>
<SoftLimit/>
</feature>
<feature>
<id>2</id>
<name>feature2</name>
<version/>
<UserLimit>1</UserLimit>
<SoftLimit/>
</feature>
</product>
</entitlement>
</ConcurrencyProvisionedData>
<stat>ok</stat>
</emsResponse>

```



Note: The value displayed for <UserLimit> and <SoftLimit> is always the latest irrespective for the Start Date and End Date specified as query parameter.

Failure

HTTP Status Code: 400 (Bad Request)

Retrieve Entitlement Details Registered Against Fingerprint

A new Web service to retrieve entitlement details against registered fingerprint on query parameters such as, customerId, fingerprintFriendlyName, entitlementState and so on.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/customer/{customerId}/entitlement.ws

Example URI

/ems/v4_2/ws/customer/susan_custid/entitlement.ws?fingerprintFriendlyName=susan_fingerprint

URL Parameters

Parameter	Description	Type
customerId	Unique customer identifier specified while creating a customer. It is auto generated if not specified by the user.	String
fingerprintFriendlyName	Unique name specified by user during fingerprint registration in the Sentinel EMS portal.	String
entitlementState	Specify entitlement status as: 0 : Enable 1 : Disable 2 : Closed/Revoked	Integer
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of records retrieved per request. Default value: 200	Integer (>0)

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<listResponse type="entitlement" count="2" searchParameters="{customerId=susan_custid,
fingerprintFriendlyName=susan_fingerprint, entitlementState=0, pageIndex=1, pageSize=200}">
    <instance eid="5b998c78-9b46-417f-9f3a-de683480e1cb"/>
    <instance eid="8e2c0ae2-39ef-45e9-a95b-8498a154609e"/>
</listResponse>
```

Retrieve License Sessions

Web service to retrieve the list of all license sessions using input parameters such as customerId. Currently license sessions can only be retrieved for leased licenses.



Note: Special characters (/,\,\$,!,@,#,*etc) and internationalized characters (such as Japanese, German, Chinese font set) are not supported for cloud served licenses.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/customer/{customerId}/licenseSession.ws

Example URI

/ems/v4_2s/ws/customer/susan_custid/licenseSession.ws?eid=&fingerprintFriendlyName=susan_fingerprint&isHistory=&pageIndex=&pageSize=

URL Parameters

Parameter	Description	Type
customerId	Unique customer identifier specified while creating a customer.	String
eid	(Optional) Entitlement ID. Special characters such as (#%^{}[]? \) etc. are not accepted.	String
fingerprintFriendlyName	Unique name specified by user during fingerprint registration in the Sentinel EMS portal. Special characters such as (#%^{}[]? \) etc. are not accepted.	String
isHistory	Returns history data of license session that are not active currently as well as currently active sessions when value of isHistory is set to true. The Web Service returns only active license sessions when value of isHistory is false. Default value: false	Boolean
pageIndex	(Optional) The starting page number. Default value: 1	Integer (>0)
pageSize	(Optional) The number of records retrieved per request. Default value: 200	Integer (>0)

Sample Response

Success

HTTP Status Code: 200

Response Body

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<sessions reportParameters="customerId=susan_custid, fingerprintFriendlyName=susan_fingerprint,
isHistory=true, pageIndex=1, pageSize=200}">
  <session type="Lease">
    <sessionStartTime>2016-12-08 05:46:11</sessionStartTime>
    <eid>f36b79cc-a57e-422d-886e-faa53b21b32f</eid>
    <sessionData>
      <fingerprintId>1</fingerprintId>
      <fingerprintFriendlyName>susan_
fingerprint</fingerprintFriendlyName>
      <duration unit="seconds">1626</duration>
    </sessionData>
  </session>
  <session type="Lease">
    <sessionId>1</sessionId>
    <sessionStartTime>2016-12-08 06:13:17</sessionStartTime>
    <eid>f36b79cc-a57e-422d-886e-faa53b21b32f</eid>
    <sessionData>
      <fingerprintId>1</fingerprintId>
      <fingerprintFriendlyName>susan_
fingerprint</fingerprintFriendlyName>
      <duration unit="seconds">29</duration>
    </sessionData>
  </session>
  <count>2</count>
</sessions>
```



Note: The `<sessionId>` element is only displayed for active sessions.

Managing Lists

The following web services are provided for managing Lists and List Items:

- "Create List Item" on the next page
- "Update List Item" on page 383
- "Search List Item" on page 384
- "Delete List Item" on page 385
- "Search List Type" on page 386

Create List Item

Creates a new List Item using a XML string as input. XSD is available at "[List Type Value XSD](#)" on page 435.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/listItem.ws

URI Parameters

None

Sample Input

```
<listItem>
  <listItemName>Name</listItemName>
  <listTypeIdentifier>
    <listId>8</listId>
    <listName></listName>
  </listTypeIdentifier>
  <default>true</default>
</listItem>
```

To get list type identifiers like 'listId' or 'listName', use [Search List Item](#) web service.

Sample Response

Success

HTTP Status Code: 201 (Created)

Header-Location: {listItemId}

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The XML string contains invalid characters or incomplete content. Provide a valid XML.

Update List Item

Updates List Item using List Item ID and List Item XML string as the input parameters.

Default Protocol	Method Type	URI
HTTP	POST	/ems/v4_2/ws/listType/{listItemId}.ws

URI Parameters

Parameter	Description	Type
listItemId	(Required) Specify the list item ID.	Integer

Sample Input

```
<listItem>
  <listItemName>chk1</listItemName>
  <listTypeIdentifier>
    <listId>8</listId>
    <listName></listName>
  </listTypeIdentifier>
  <default>true</default>
</listItem>
```

Sample Response

Success

HTTP Status Code: 200

Response Body: XML String

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: The XML string contains invalid characters or incomplete content. Provide a valid XML.

Search List Item

Retrieve the list of list items against the query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/searchListItem.ws

URL Parameters

Parameter	Description	Type
listItemName	(Optional) Specify the list item name.	String
listItemId	(Optional) Specify the list item ID.	Integer
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> Exact: Searches and retrieves exact matching records. Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field. Normal: Default search parameter if search pattern is not specified. The searchPattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'. Default value: Normal	String

Sample Response

Success

HTTP Status Code: 200

Response Body:

```
<listResponse type="download" count="1" searchparameter="{listId=1, listItemName=}"> <instance id="1" name="Documentation" listType="1" default="false"/> </listResponse>
```


Delete List Item

Deletes a list item for a given listItemId.

Default Protocol	Method Type	URI
HTTP	DELETE	/ems/v4_2/ws/listType/{listItemId}.ws

URI Parameters

Parameter	Description	Type
listItemId	(Required) Specify the ID of the list item to delete.	Integer

Sample Response

Success

HTTP Status Code: 204 (No Content)

Failure

HTTP Status Code: 400 (Bad Request)

Response Body: No listType found for listItemId {1}.

Search List Type

Retrieve the list types available in your Sentinel EMS environment for the given query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/searchListType.ws

URL Parameters

Parameter	Description	Type
listId	(Optional) Specify numeric identifier for the list type.	Integer
listName	(Optional) Specify the list item ID.	String
entity	(Optional) Specify the entity.	String

Sample Response

Success

HTTP Status Code: 200

Response Body:

```
<listResponse>
  <listId>1</listId>
  <listName>download</listName>
  <entity>DOWNLOAD</entity>
  <customAttribute>>false</customAttribute>
</listResponse>
```

Release Information

The following web services are provided for configuration management.

- ["Retrieving Version Information" on the next page](#)
- ["Retrieve a List of Locales Supported" on page 389](#)

Retrieving Version Information

Retrieve the current version of EMS.

Default Protocol	Method Type	URI
HTTP	GET	/ems/releaseInfo.xml

Query Parameters

None

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
<ReleaseName>EMS 2.0.0</ReleaseName>
  <stat>ok</stat>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
100	The request parameter is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
128	You should log on first.

Retrieve a List of Locales Supported

Retrieve a list of locale (languages) available in your EMS deployment. The default locale is English.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getLocales.xml

Query Parameters

None

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
  <locales>
    <locale>
      <countryCode>DE</countryCode>
      <localeCode>de</localeCode>
      <localeId>2</localeId>
      <localeName>German</localeName>
    </locale>
    <locale>
      <countryCode>US</countryCode>
      <localeCode>en</localeCode>
      <localeId>1</localeId>
      <localeName>English</localeName>
    </locale>
  </locales>
  <stat>ok</stat>
  <total>2</total>
</EMSResponse>
```

See Also:

"Output Format for Failure" on page 399

Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
128	You should log on first.

Testing Web Services Using emsWSDemo

emsWSDemo is a demo application available with Sentinel EMS, using which you can test the EMS web services. Using emsWSDemo, you can also generate sample codes for the web services. To use the tool, first you need to deploy it in your Sentinel EMS Server. You can call EMS Web services using any programming language like Java and C#. Most of the operations that can be performed using the EMS portal can also be performed using the Web services.

Deploying emsWSDemo

1. Copy the file *emsWSDemo.war* from `%EMS_HOME%\samples\EmsWSDemo\bin` to `%EMS_HOME%\EMSServer\webapps`.
2. Wait for some time (approximately 2 minutes) before Tomcat extracts this war file.
3. Edit `%EMS_HOME%\EMSServer\webapps\emsWSDemo\WEB-INF\classes\emsWSDemo.properties` and update values for the following properties:
 - **useSSL** - if you have configured Sentinel EMS to use SSL, set the value to true (default value: false)
 - **server** - specify the machine name and port for (default value: localhost:8080)
 - **trustStore** - provide the path of the certificate keystore file
 - **trustStorePass** - provide the trust store password (default value: changeit)
 - **emsContextName** - provide the web application context name for EMS deployment package (default value: ems)
4. Re-start Sentinel EMS service.

Accessing the emsWSDemo URL

Make sure that the Sentinel EMS service is started. Use the URL *http://host:port/emsWSDemo* from any client machine in the network to access the tool.

Where,

- **host** - IP address or name of the machine where emsWSDemo tool is deployed.
- **port** - Sentinel EMS Server port.

Example: `http://localhost:8080/emsWSDemo`

Web Service Client Samples

Sample applications are provided to demonstrate how to implement Sentinel EMS Web Services in your client applications. The samples are available in the `<EMS_Install_Dir>\Sample` folder.

A Sample Application using Java

The Java code samples provided with `emsWSDemo` use Apache *HTTPClient* to access the EMS web services. The web services require authentication before you can use them in your code. This section first explains how to authenticate using EMS user name and password, and then provides an example to call a web service for getting details of a product.

Getting Ready

- Download or get a copy of *HttpClient* and its dependencies. Next, include them in your system's classpath.
- The sample assumes that you have created a property file to read different EMS settings like EMS server name, http port, https port, etc. One such property file is present in the *emsWSDemo* tool. You can modify the same to use it in your application. Following entries should be present in your property file:
 - server = localhost:8080
 - sslServer = localhost:8443
 - trustStore = c:/cacerts
 - trustStorePass = changeit

The Concept

The general process for executing EMS web service URLs can be divided into the following steps.

1. Read different values like server URL, trust store location, password from property file.
2.


```
Properties properties = new Properties();
InputStream file = Thread.currentThread().getContextClassLoader()
getResourceAsStream(emsWSDemoFile);
if (file == null) {
    throw new Exception("unable to load file '" + emsWSDemoFile + "'");
}
properties.load(file);
server = properties.getProperty("server");
sslServer = properties.getProperty("sslServer");
trustStore = properties.getProperty("trustStore");
trustStorePass = properties.getProperty("trustStorePass");
```
3. Set `javax.net.ssl.trustStore` and `javax.net.ssl.trustStorePassword` to authenticate the EMS Server specified in **server** property.
4.


```
System.setProperty("javax.net.ssl.trustStore", trustStore);
System.setProperty("javax.net.ssl.trustStorePassword", trustStorePass);
```
5. To access a web service, you need to first log on using `verifyLogin.xml`. To implement this, create an object of `HttpContext` and call the EMS log on URL using POST method as shown below:
6.


```
HttpContext context = new BasicHttpContext();
HttpPost post = new HttpPost(
    "https://localhost:8443/ems/verifyLogin.xml");
List<NameValuePair> nvps = new ArrayList<NameValuePair>();
nvps.add(new BasicNameValuePair("userName", "xxxxx"));
nvps.add(new BasicNameValuePair("password", "xxxxx"));
post.setEntity(new UrlEncodedFormEntity(nvps, HTTP.UTF_8));
HttpResponse emsResponse = httpClient.execute(post, context);
HttpEntity entity = emsResponse.getEntity();
byte[] b = null; if (entity != null) {
    long l = entity.getContentLength();
    b = new byte[(int) l];
    entity.getContent().read(b);
    entity.consumeContent();
}
principal = (Principal) context.getAttribute(ClientContext.USER_TOKEN);
String loginResult = new String(b);
```

```

if (loginResult.indexOf("\"stat\": \"ok\"") > 0)
    return true;
else
    return false;

```



Note: Once login is successful, store `ClientContext.USER_TOKEN` in a variable to use in further calls. This will help you to authenticate once for one session of your application.

- After login is successful, you can call any web service method to get/create/update different EMS entities. For example, to get details of a product, you need to execute the web service `getProductDetailsById.xml`. First create an object of `HttpContext`, set `ClientContext.USER_TOKEN`, add request parameters, and execute and parse the response.

- ```

HttpContext context = new BasicHttpContext();
context.setAttribute(ClientContext.USER_TOKEN, principal);
HttpGet get = new HttpGet(
 "http://localhost:8080/ems/getProductById.xml");
query = new StringBuffer();
setParameter("productId", "1");
get.setURI(new URI(URLEncoder.decode(get.getURI() +
 query.toString(), "UTF-8")));
HttpResponse response = httpClient.execute(get, context);
HttpEntity entity = response.getEntity();
byte[] b = null; if (entity != null) {
 long l = entity.getContentLength();
 b = new byte[(int) l];
 entity.getContent().read(b);
 entity.consumeContent();
}
return new String(b);

```

## Specifying Web Service Version

For web services of the current version of EMS you need to define the version info in the Accept header. If you do not specify the version, the default version would be 1.1.0.

Refer to the sample code below for the usage of the following two lines of code:

```

private static String version = "application/vnd.ems.v12";

post.addHeader("Accept", version);

```

Where,

- `vnd.ems.v11` - Use this for EMS 1.1.0 Web services
- `vnd.ems.v12` - Use this for EMS 2.0.0 Web services

## The Final Source Code...

When we put all of that together plus a little bit of glue code we get the program below:

```
import java.io.IOException;
import java.io.InputStream;
import java.net.URLDecoder;
import java.security.Principal;
import java.util.ArrayList;
import java.util.List;
import java.util.Properties;
import org.apache.http.HttpEntity;
import org.apache.http.HttpResponse;
import org.apache.http.client.entity.UrlEncodedFormEntity;
import org.apache.http.client.methods.HttpPost;
import org.apache.http.client.protocol.ClientContext;
import org.apache.http.impl.client.DefaultHttpClient;
import org.apache.http.message.BasicNameValuePair;
import org.apache.http.protocol.BasicHttpContext;
import org.apache.http.protocol.HTTP;
import org.apache.http.protocol.HttpContext;
import org.apache.http.NameValuePair;
import org.apache.http.client.methods.HttpGet;
import org.apache.http.params.BasicHttpParams;
import org.apache.http.params.HttpParams;
public class EMSSample {
 private static DefaultHttpClient httpClient = new DefaultHttpClient();
 private static Principal principal = null;
 private static String server;
 private static String sslServer;
 private static String trustStore;
 private static String trustStorePass;
 private static String emsWSDemoFile = "emsWSDemo.properties";
 private static StringBuffer query = null;
 private static String version = "application/vnd.ems.v12"
 public static void loadPropertiesFile() throws Exception {
 Properties properties = new Properties();
 InputStream file = Thread.currentThread().getContextClassLoader()
 .getResourceAsStream(emsWSDemoFile);
 if (file == null) {
 throw new Exception("unable to load file '" + emsWSDemoFile + "'");
 }
 properties.load(file);
 server = properties.getProperty("server");
 sslServer = properties.getProperty("sslServer");
 trustStore = properties.getProperty("trustStore");
 trustStorePass = properties.getProperty("trustStorePass");
 System.setProperty("javax.net.ssl.trustStore", trustStore);
 System.setProperty("javax.net.ssl.trustStorePassword", trustStorePass);
 }
 public static boolean verifyLogin() throws Exception {
 loadPropertiesFile();
 HttpContext context = new BasicHttpContext();
 HttpPost post = new HttpPost(
 "https://localhost:8443/ems/verifyLogin.xml");
 List<NameValuePair> nvps = new ArrayList<NameValuePair>();
 nvps.add(new BasicNameValuePair("userName", "xxxxx"));
 nvps.add(new BasicNameValuePair("password", "xxxxx"));
 }
}
```

```

post.setEntity(new UrlEncodedFormEntity(nvps, HTTP.UTF_8));
post.addHeader("Accept", version);
HttpResponse emsResponse = httpClient.execute(post, context);
HttpEntity entity = emsResponse.getEntity();
byte[] b = null;
if (entity != null) {
 long l = entity.getContentLength();
 b = new byte[(int) l];
 entity.getContent().read(b);
 entity.consumeContent();
}
principal = (Principal) context.getAttribute(ClientContext.USER_TOKEN);
String loginResult = new String(b);
if (loginResult.indexOf("\"stat\": \"ok\"") > 0)
 return true;
else
 return false;
}
public static String getProductById() throws Exception {
 if (!verifyLogin()) {
 return "login failed";
 }
 HttpContext context = new BasicHttpContext();
 context.setAttribute(ClientContext.USER_TOKEN, principal);
 HttpGet get = new HttpGet(
 "http://localhost:8080/ems/getProductById.xml");
 get.addHeader("Accept", version);
 query = new StringBuffer();
 setParameter("productId", "1");
 get.setURI(new URI(URLEncoder.decode(get.getURI() + query.toString(),
 "UTF-8")));
 HttpResponse response = httpClient.execute(get, context);
 HttpEntity entity = response.getEntity();
 byte[] b = null;
 if (entity != null) {
 long l = entity.getContentLength();
 b = new byte[(int) l];
 entity.getContent().read(b);
 entity.consumeContent();
 }
 return new String(b);
}
static void setParameter(String key, String value) {
 if (query.toString().equals("")) {
 query.append("? " + key + "=" + value + "&");
 } else {
 query.append(key + "=" + value + "&");
 }
}
}
}

```

## Output Format for Failure

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <code>100</code>
 <desc>The request parameter is not valid.</desc>
 <stat>fail</stat>
</EMSResponse>
```

## About CSharpWrapper

---

The CSharpWrapper utility provides a C# wrapper for the EMS web services. It has methods corresponding to each EMS web service.

Query parameters for the web services have been converted into method arguments. For example, the `verifyLogin.xml` web service has got a corresponding method `verifyLogin(username, password)`. You need to include the reference of `EMSWrapper.dll` (available in `/bin/Release`) in your client application. Using the object of the `EMSWrapper` class, you can call the required method.

The source code for the wrapper is available at `<EMS_Install_Dir>\samples\CSharpWrapper`. Here are the steps to obtain the source code (as a `.zip` file):

1. If `emsWSDemo` is deployed in your Web Server:
  - Copy the source code from: `%CATALINA_HOME%/webapps/emsWSDemo/CSharpWrapper`  
**or**
  - Download the code from the URL: `http://localhost:8080/emsWSDemo/CSharpWrapper.zip`.
2. Extract the file `CSharpWrapper.zip` to any directory in your system. The extracted folder contains the source code.



# Request/Response Schemas for Web Service Resources

The request and response XMLs can be validated against the XSDs provided. Sentinel EMS provides a set of XSDs at %EMS\_HOME%\EMSServer\webapps\ems\xsd on the Sentinel EMS Server locally.

Following XSDs are available:

- "Activation XSD" on the next page
- "Create List Type XSD" on page 407
- "Download XSD" on page 410
- "Entitlement XSD" on page 412
- "Export Compliance XSD" on page 422
- "Export Compliance Output XSD" on page 424
- "Feature XSD" on page 425
- "Fingerprint XSD" on page 427
- "Named User XSD" on page 428
- "License Model XSD" on page 429
- "List Response XSD" on page 433
- "List Type Value XSD" on page 435
- "XML Report XSD" on page 436
- "Product XSD" on page 437
- "Product Key XSD" on page 441
- "Split and Transfer XSD" on page 444
- "Channel Partner XSD" on page 446
- "User XSD" on page 448

## Activation XSD

The Activation XSD is used by Activation Web Services.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
 <xs:element name="groupActivation">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="userInput" minOccurs="1" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:boolean" name="isOverwrite" minOccurs="0" maxOccurs="1"
default="false" />
 <xs:element type="xs:boolean" name="sendNotification" minOccurs="0" maxOccurs="1"
/>
 <xs:element type="xs:string" name="activatorEmailId" minOccurs="0" maxOccurs="1"
/>
 <!-- activator email -->
 <xs:element name="activateeEmailId" minOccurs="0" maxOccurs="5">
 <xs:complexType>
 <xs:simpleContent>
 <xs:extension base="xs:string">
 <xs:attribute name="isDefault" type="xs:boolean" />
 <xs:attribute name="isEnabled" type="xs:boolean" />
 </xs:extension>
 </xs:simpleContent>
 </xs:complexType>
 </xs:element>
 <!-- activate email -->
 <xs:element type="xs:string" name="comments" minOccurs="0" maxOccurs="1" />
 <!-- transaction comment -->
 <xs:element type="xs:string" name="executedBy" minOccurs="0" maxOccurs="1" />
 <!--for actual user-->
 <xs:element type="xs:boolean" name="AddIfNotAvailable" minOccurs="0"
maxOccurs="1" />
 <xs:element name="lineItem" minOccurs="1" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="aid" minOccurs="0" maxOccurs="1" />
 <!-- push key usecase -->
 <xs:element type="xs:string" name="externalId" minOccurs="0" maxOccurs="1"
/>
 <xs:element name="lineItemIdentifier" minOccurs="1" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="lineItemId" minOccurs="0" />
 <xs:element type="xs:string" name="productKey" minOccurs="0" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <!-- LicenseVersion is used to pass LVH Variant Version for Activation -->
 <xs:element name="variantIdentifier" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:all>
 <xs:element type="xs:string" name="productVersion" minOccurs="1"
maxOccurs="1" />
 </xs:all>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```

```

 </xs:complexType>
 </xs:element>
 <xs:element type="xs:string" name="deviceName" minOccurs="0" maxOccurs="1"
/>

 <!-- Device Name -->
 <xs:element type="xs:string" name="deviceIdentifier" minOccurs="0"
maxOccurs="1">
 <xs:annotation>
 <xs:appinfo>
 <readOnly>true</readOnly>
 </xs:appinfo>
 </xs:annotation>
 </xs:element>
 <!-- Device Identifier -->
 <xs:element type="xs:integer" name="activationQuantity" minOccurs="0"
maxOccurs="1" />

 <!-- quantity to activate -->
 <xs:element type="xs:string" name="timeZone" minOccurs="0" maxOccurs="1" />
 <xs:element ref="activationAttributes" minOccurs="0" maxOccurs="1" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="customAttribute" minOccurs="0" maxOccurs="unbounded">
 <!-- custom attributes -->
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="name" minOccurs="1" maxOccurs="1" />
 <xs:element type="xs:string" name="value" minOccurs="1" maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="activation" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="activatorEmailId" minOccurs="0" maxOccurs="1"
/>

 <xs:element type="xs:string" name="activateeEmailId" minOccurs="0" maxOccurs="1"
/>

 <xs:element type="xs:string" name="aid" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:date" name="activationDate" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:string" name="externalId" minOccurs="0" maxOccurs="1" />
 <xs:element name="activationState" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="Draft" />
 <xs:enumeration value="Activated" />
 <xs:enumeration value="Rehosted" />
 <xs:enumeration value="Revoked Partially" />
 <xs:enumeration value="Revocation Confirmation Pending" />
 <xs:enumeration value="Re-credited" />
 <xs:enumeration value="Revocation in Progress" />
 <xs:enumeration value="Upgrade: Revocation in Progress" />
 <xs:enumeration value="Upgrade: Revoked Partially" />
 <xs:enumeration value="Upgrade: Revocation Confirmation Pending" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
</xs:element>

```

```

 <xs:enumeration value="Upgrade: Re-credited" />
 <xs:enumeration value="Upsell: Revoked Partially" />
 <xs:enumeration value="Upsell: Revocation in Progress" />
 <xs:enumeration value="Upsell: Revocation Confirmation Pending" />
 <xs:enumeration value="Upsell: Re-credited" />
 <xs:enumeration value="Reconfigure: Revocation in Progress" />
 <xs:enumeration value="Reconfigure: Revoked Partially" />
 <xs:enumeration value="Reconfigure: Revocation Confirmation Pending" />
 <xs:enumeration value="Reconfigure: Re-credited" />
 <xs:enumeration value="Upgrade Complete" />
 <xs:enumeration value="Upsell Complete" />
 <xs:enumeration value="Reconfigure Complete" />
 <xs:enumeration value="Revoked Manually" />
 <xs:enumeration value="Activation Renewed" />
 </xs:restriction>
</xs:simpleType>
</xs:element>
<xs:element type="xs:integer" name="activatedQuantity" minOccurs="0"
maxOccurs="1" />
<xs:element type="xs:string" name="timeZone" minOccurs="0" maxOccurs="1" />
<xs:element type="xs:string" name="productKey" minOccurs="0" maxOccurs="1" />
<xs:element name="activatedProduct" maxOccurs="unbounded" minOccurs="1">
 <!-- multiple tags in case of product suite -->
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="productName" maxOccurs="1" minOccurs="1"
/>
 <xs:element type="xs:string" name="productVersion" maxOccurs="1"
minOccurs="1" />
 <xs:element name="activatedfeature" maxOccurs="unbounded" minOccurs="1">
 <!-- multiple tags in case of product has multiple features. This is
unique combination of product and feature in an activation -->
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="featureName" minOccurs="0"
maxOccurs="1" />
 <xs:element type="xs:string" name="featureVersion" minOccurs="0"
maxOccurs="1" />
 <xs:element name="activatedLicenseModel" maxOccurs="1" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="licenseModelName"
minOccurs="0" maxOccurs="1" />
 <xs:element ref="activationAttributes" minOccurs="0"
maxOccurs="1" />
 </xs:sequence>
 <xs:attribute type="xs:integer" name="licenseModelId"
use="optional" />
 <!-- license model database id -->
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 <xs:attribute type="xs:integer" name="featureId" />
 <!-- feature database id -->
 <xs:attribute type="xs:integer" name="licenseKeyRef" />
 <!-- license key reference generated at feature level -->
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>

```

```

 </xs:element>
 </xs:sequence>
 <xs:attribute type="xs:integer" name="productId" />
 <!-- product database id -->
</xs:complexType>
</xs:element>
<xs:element name="downloads" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="instance" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:attribute name="id" type="xs:int" />
 <xs:attribute name="name" type="xs:string" />
 <xs:attribute name="version" type="xs:string" />
 <xs:attribute name="description" type="xs:string" />
 <xs:attribute name="IsAttachable" type="xs:string" />
 <xs:attribute name="url" type="xs:string" />
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
</xs:element>
</xs:sequence>
<xs:attribute type="xs:integer" name="activationId" />
<!-- activation database id -->
<xs:attribute type="xs:integer" name="lineItemId" />
<!-- lineitem database id -->
<xs:attribute type="xs:integer" name="licenseKeyRef" use="optional" />
<!-- license key reference generated at product level -->
</xs:complexType>
</xs:element>
<xs:element name="licenseKeyInfo" minOccurs="0" maxOccurs="unbounded">
 <!-- license key information -->
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="keyGenTechnology" minOccurs="0" maxOccurs="1"
/>
 <xs:element name="keyFormat" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="TEXT" />
 <xs:enumeration value="BINARY" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="keyType" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="NORMAL" />
 <xs:enumeration value="RTU" />
 <xs:enumeration value="ACCUMLATIVE" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element type="xs:string" name="keyFileName" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:string" name="keyFileDescription" minOccurs="0"
maxOccurs="1" />

```

```

<xs:element name="isWWU" minOccurs="0" maxOccurs="1" />
<xs:element name="licenseKey" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:simpleContent>
 <xs:extension base="xs:string">
 <xs:attribute type="xs:string" name="keyEncodingType" />
 </xs:extension>
 </xs:simpleContent>
 </xs:complexType>
</xs:element>
</xs:sequence>
<xs:attribute type="xs:integer" name="licenseKeyRef" />
</xs:complexType>
</xs:element>
</xs:sequence>
<xs:attribute type="xs:integer" name="groupActivationId" use="optional" />
<!-- database id -->
</xs:complexType>
</xs:element>
<xs:element name="activationAttributes">
 <!-- activation level attribute where end user permission is writable along with its
associated attribute (criteria and its value) -->
 <xs:complexType>
 <xs:sequence>
 <xs:element name="attributeGroup" minOccurs="1" maxOccurs="unbounded">
 <!-- group of attribute as defined in License Model groups -->
 <xs:complexType>
 <xs:sequence>
 <xs:element name="attribute" minOccurs="1" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="attributeName" minOccurs="1"
maxOccurs="1" />
 <xs:element type="xs:string" name="attributeValue" minOccurs="1"
maxOccurs="1" />
 <xs:element type="xs:boolean" name="readOnly" minOccurs="1" maxOccurs="1"
/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 <xs:attribute type="xs:string" name="groupName" />
 <xs:attribute type="xs:string" name="subGroupName" />
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
</xs:element>
</xs:schema>

```

## Create List Type XSD

The Create List Type XSD is used for creating a new List Type.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" attributeFormDefault="unqualified"
elementFormDefault="qualified">
 <xs:element name="listItem">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="listItemName" minOccurs="1" maxOccurs="1" />
 <xs:element type="xs:string" name="remark" minOccurs="0" maxOccurs="1" />
 <xs:element name="listTypeIdentifier" maxOccurs="1" minOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:choice>
 <xs:element type="xs:string" name="listId" minOccurs="1" maxOccurs="1" />
 <xs:element type="xs:string" name="listName" minOccurs="1" maxOccurs="1" />
 </xs:choice>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element type="xs:boolean" name="default" minOccurs="1" maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```

## Contact XSD

The Contact XSD is used for creating, updating, and retrieving Contact details.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
 <xs:element name="contact">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="contactName" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="contactEmail" minOccurs="1" maxOccurs="1" type="xs:string" />
 <xs:element name="contactPassword" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="contactNumber" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="contactOrganisation" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="defaultLocale" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="refId1" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="refId2" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="isEnabled" minOccurs="0" maxOccurs="1" type="xs:boolean" />
 <xs:element ref="shippingDetails" minOccurs="0" maxOccurs="1" />
 <xs:element ref="billingDetails" minOccurs="0" maxOccurs="1" />
 <xs:element ref="customerIdentifier" minOccurs="0" maxOccurs="1" />
 <xs:element ref="customAttribute" minOccurs="0" maxOccurs="unbounded" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="shippingDetails">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="address" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="city" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="state" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="country" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="zip" minOccurs="0" maxOccurs="1" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="billingDetails">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="address" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="city" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="state" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="country" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="zip" minOccurs="0" maxOccurs="1" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="customerIdentifier">
 <xs:complexType>
 <xs:sequence>
 <xs:choice>
 <xs:element name="customerId" type="xs:integer" />
 <xs:element name="customerName" type="xs:string" />
 <xs:element name="custIdentifier" type="xs:string" />
 <xs:element name="custExternalId" type="xs:string" />
 </xs:choice>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```



```
</xs:element>
<xs:element name="customAttribute">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="attributeName" maxOccurs="1" minOccurs="1" type="xs:string" />
 <xs:element name="attributeValue" maxOccurs="1" minOccurs="1" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
</xs:element>
</xs:schema>
```

## Download XSD

The Download XSD is used for ESD Web services.

```
<xs:schema attributeFormDefault="unqualified"
 elementFormDefault="qualified" xmlns:xs="http://www.w3.org/2001/XMLSchema">
 <xs:element name="download">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="name" minOccurs="1" />
 <xs:element type="xs:string" name="version" />
 <xs:element type="xs:string" name="releaseDate" />
 <xs:element type="xs:string" name="downloadIdentifier" />
 <xs:element type="xs:string" name="description" minOccurs="0" />
 <xs:element name="status" minOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="Enable" />
 <xs:enumeration value="Disable" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element type="xs:boolean" name="eol" />
 <xs:element type="xs:boolean" name="IsAttachable" minOccurs="0"/>
 <xs:element name="downloadFile">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="fileName" />
 <xs:element type="xs:string" name="size" />
 <xs:element type="xs:string" name="logo" />
 <xs:element type="xs:string" name="url" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="linkedProduct" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:byte" name="productId" />
 <xs:element name="state" minOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="Active" />
 <xs:enumeration value="Inactive" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="associatedDownload" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:byte" name="downloadId"
 minOccurs="1" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```

```
<xs:element name="customAttribute" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="name" type="xs:string" minOccurs="1"/>
 <xs:element type="xs:string" name="value" minOccurs="1"/>
 </xs:sequence>
 </xs:complexType>
</xs:element>
<!-- user input on why these change required -->
<xs:element type="xs:string" name="Remark" minOccurs="0" />
<xs:element name="linkedCustomer" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="customerId" type="xs:integer"/>
 <xs:element name="customerName" type="xs:string"/>
 <xs:element name="custIdentifier" type="xs:string"/>
 <xs:element name="custExternalId" type="xs:string"/>
 </xs:sequence>
 </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

## Entitlement XSD

The Entitlement XSD is used for creating, updating, and retrieving Entitlement details.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" attributeFormDefault="unqualified"
elementFormDefault="qualified">
 <xs:element name="dataInput">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="entitlements">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="entitlement">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="externalId" minOccurs="0" maxOccurs="1"
/>
 <xs:element type="xs:string" name="eId" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:string" name="revision" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:date" name="startDate" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:date" name="endDate" minOccurs="0" maxOccurs="1" />
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 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:integer" name="customerId" />
 <xs:element type="xs:string" name="customerName" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="contactIdentifier" minOccurs="0" maxOccurs="1">
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 <xs:sequence>
 <xs:element type="xs:integer" name="contactId" />
 <xs:element type="xs:string" name="emailId" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="channelPartnerIdentifier" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:integer" name="channelPartnerId" />
 <xs:element type="xs:string" name="channelPartnerName" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="userRegistration" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="NONE" />
 <xs:enumeration value="OPTIONAL" />
 <xs:enumeration value="MANDATORY" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element type="xs:string" name="refId1" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:string" name="refId2" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:boolean" name="activationAllowed" minOccurs="0"
```

```

maxOccurs="1" />
<xs:element type="xs:boolean" name="revocationAllowed" minOccurs="0"
maxOccurs="1" />
<xs:element name="lifeCycleStage" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="DRAFT" />
 <xs:enumeration value="COMMITTED" />
 </xs:restriction>
 </xs:simpleType>
</xs:element>
<xs:element type="xs:boolean" name="sendNotification" minOccurs="0"
maxOccurs="1" />
<xs:element type="xs:string" name="comments" minOccurs="0" maxOccurs="1" />
<xs:element name="productKey">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="pkId" minOccurs="0" maxOccurs="1"
/>
 <xs:element type="xs:date" name="startDate" minOccurs="0"
maxOccurs="1" />
 <xs:element type="xs:date" name="endDate" minOccurs="0" maxOccurs="1"
/>
 <xs:element name="item">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="enforcementIdentifier" minOccurs="0"
maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="enforcementName" />
 <xs:element type="xs:float" name="enforcementVersion" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element type="xs:integer" name="totalQuantity"
minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:integer" name="availableQty" />
 <xs:element type="xs:string" name="activationMethod"
minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:integer" name="fixedQuantity"
minOccurs="0" maxOccurs="1" />
 <xs:element name="suiteIdentifier" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="suiteId" />
 <xs:element type="xs:string" name="suiteName" />
 <xs:element type="xs:string" name="suiteVersion" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
</xs:element>
<xs:element name="product">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="productIdentifier">
 <xs:complexType>
 <xs:sequence>

```

```

/>
<xs:element type="xs:integer" name="externalPrdId"
<xs:element type="xs:integer" name="productId" />
<xs:element type="xs:string" name="productName" />
<xs:element type="xs:string" name="productVersion"
/>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="feature" minOccurs="0" maxOccurs="1">
<xs:complexType>
<xs:sequence>
<xs:element name="featureIdentifier" minOccurs="0"
maxOccurs="1">
<xs:complexType>
<xs:choice maxOccurs="1" minOccurs="1">
<xs:sequence>
<xs:element type="xs:byte"
name="externalFtrId" />
<xs:element type="xs:integer"
name="featureId" />
<xs:element name="featureNameVersion">
<xs:complexType>
<xs:sequence>
<xs:element type="xs:string"
name="featureName" />
<xs:element type="xs:string"
name="featureVersion" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:choice>
</xs:complexType>
</xs:element>
<xs:element name="licenseModel" minOccurs="0"
maxOccurs="1">
<xs:complexType>
<xs:sequence>
<xs:element name="licenseModelIdentifier"
minOccurs="0" maxOccurs="1">
<xs:complexType>
<xs:sequence>
<xs:element type="xs:integer"
name="licenseModelId" />
<xs:element type="xs:string"
name="licenseModelName" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="attribute"
maxOccurs="unbounded" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="name">
<xs:simpleType>
<xs:restriction base="xs:string">

```

```

DATE" />
/>
PERIOD_DAYS" />
PERIOD_ELAPSED_HOURS" />
DURATION_DAYS" />
DURATION_HOURS" />
MAX_CHECKOUT_DAYS" />
USER_LIMIT" />
SOFT_USER_LIMIT" />
LIMIT" />
LIFETIME_MINUTES" />
HOLDTIME_MINUTES" />
/>
FLAG" />
TYPE" />
CLOCK_TAMPERED" />
LICENSE_EXCLUSIVE" />
REDUNDANCY_MAJORITY" />
REDUNDANCY" />
COMMUTER" />
GRACE" />
CRITERIA" />
TYPE" />
MODE" />
CRITERIA" />
/>
SUBNET" />
1_INFO" />
<xs:enumeration value="START_"
<xs:enumeration value="END_DATE"
<xs:enumeration value="GRACE_"
<xs:enumeration value="GRACE_"
<xs:enumeration value="TRIAL_"
<xs:enumeration value="TRIAL_"
<xs:enumeration value="COMMUTER_"
<xs:enumeration value="FLOATING_"
<xs:enumeration value="FLOATING_"
<xs:enumeration value="SHARING_"
<xs:enumeration value="KEY_"
<xs:enumeration value="KEY_"
<xs:enumeration value="CAPACITY_"
<xs:enumeration value="CAPACITY_"
<xs:enumeration value="LICENSE_"
<xs:enumeration value="ENFORCE_"
<xs:enumeration value="ENFORCE_"
<xs:enumeration value="ENFORCE_"
<xs:enumeration value="ALLOW_"
<xs:enumeration value="ALLOW_"
<xs:enumeration value="ALLOW_"
<xs:enumeration value="SHARING_"
<xs:enumeration value="OUTPUT_"
<xs:enumeration value="LOCKING_"
<xs:enumeration value="HOLDING_"
<xs:enumeration value="CODE_TYPE"
<xs:enumeration value="NUM_"
<xs:enumeration value="SITE_LIC_"
<xs:enumeration value="SITE_LIC_"

```





```

3_INFO" />
4_INFO" />
5_INFO" />
6_INFO" />
7_INFO" />
8_INFO" />
NUM_OF_SECRETS" />
SECRETS_1" />
SECRETS_2" />
SECRETS_3" />
SECRETS_4" />
SECRETS_5" />
SECRETS_6" />
SECRETS_7" />
PUBLIC_INFO" />
PRIVATE_INFO" />
COMMENTS" />
/>
TYPE" />
FLAG" />
CODE" />
INFO" />
10_INFO" />
11_INFO" />
9_INFO" />
10_INFO" />
11_INFO" />
1_INFO" />
<xs:enumeration value="SECONDARY_
<xs:enumeration value="SECONDARY_
<xs:enumeration value="SECONDARY_
<xs:enumeration value="SECONDARY_
<xs:enumeration value="SECONDARY_
<xs:enumeration value="SECONDARY_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="VENDOR_
<xs:enumeration value="KEY_TYPE"
<xs:enumeration value="NUMERIC_
<xs:enumeration value="ELAN_KEY_
<xs:enumeration value="USE_AUTH_
<xs:enumeration value="PRIMARY_9_
<xs:enumeration value="PRIMARY_
<xs:enumeration value="PRIMARY_
<xs:enumeration value="SECONDARY_
<xs:enumeration value="SECONDARY_
<xs:enumeration value="SECONDARY_
<xs:enumeration value="USERNODE_
<xs:enumeration value="USERNODE_

```

```

2_INFO" />
3_INFO" />
4_INFO" />
5_INFO" />
6_INFO" />
7_INFO" />
LICENSE_FROM_ACTIVATION_DATE" />
DURATION_IN_DAYS" />
value="DEPLOYMENT_TYPE" />
NETWORK" />
LEASE" />
USAGE" />
/>
SYNC_FREQUENCY" />
FREQUENCY" />
/>
TYPE" />
value="CONCURRENCY_LIMIT" />
value="CONCURRENCY_CRITERIA" />
LIMIT" />
TIME_DURATION" />
INFO" />
LIMIT" />
TIME" />
REDUNDANT" />
value="REDUNDANCY_MAJORITY_RULE" />
SERVERS" />
value="FINGERPRINT_REGISTRATION" />
<xs:enumeration value="USERNODE_
<xs:enumeration value="USERNODE_
<xs:enumeration value="USERNODE_
<xs:enumeration value="USERNODE_
<xs:enumeration value="USERNODE_
<xs:enumeration value="START_
<xs:enumeration value="LICENSE_
<xs:enumeration
<xs:enumeration value="IS_
<xs:enumeration value="IS_SL_
<xs:enumeration value="COLLECT_
<xs:enumeration value="DURATION"
<xs:enumeration value="USAGE_
<xs:enumeration value="RENEW_
<xs:enumeration value="CRITERIA"
<xs:enumeration value="USAGE_
<xs:enumeration
<xs:enumeration
<xs:enumeration value="USAGE_
<xs:enumeration value="GRACE_
<xs:enumeration value="VENDOR_
<xs:enumeration value="GRACE_
<xs:enumeration value="GRACE_
<xs:enumeration value="IS_
<xs:enumeration
<xs:enumeration value="REDUNDANT_
<xs:enumeration
</xs:restriction>
</xs:simpleType>

```

```

 </xs:element>
 <xs:element type="xs:string"
name="value" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="commonLicenseAttributes" minOccurs="0"
maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="attribute" maxOccurs="unbounded"
minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="name">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="LICENSE_VERSION" />
 <xs:enumeration value="NUM_CLIENT_LOCKED" />
 <xs:enumeration value="CLIENT_1_CRITERIA" />
 <xs:enumeration value="CLIENT_2_CRITERIA" />
 <xs:enumeration value="CLIENT_3_CRITERIA" />
 <xs:enumeration value="CLIENT_4_CRITERIA" />
 <xs:enumeration value="CLIENT_5_CRITERIA" />
 <xs:enumeration value="CLIENT_6_CRITERIA" />
 <xs:enumeration value="CLIENT_7_CRITERIA" />
 <xs:enumeration value="NUM_SERVERS" />
 <xs:enumeration value="PRIMARY_1_CRITERIA" />
 <xs:enumeration value="PRIMARY_2_CRITERIA" />
 <xs:enumeration value="PRIMARY_3_CRITERIA" />
 <xs:enumeration value="PRIMARY_4_CRITERIA" />
 <xs:enumeration value="PRIMARY_5_CRITERIA" />
 <xs:enumeration value="PRIMARY_6_CRITERIA" />
 <xs:enumeration value="PRIMARY_7_CRITERIA" />
 <xs:enumeration value="PRIMARY_8_CRITERIA" />
 <xs:enumeration value="SECONDARY_1_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_2_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_3_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_4_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_5_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_6_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_7_CRITERIA"
/>

```

```

/>
 <xs:enumeration value="SECONDARY_8_CRITERIA"
/>
 <xs:enumeration value="PRIMARY_9_CRITERIA" />
 <xs:enumeration value="PRIMARY_10_CRITERIA"
/>
 <xs:enumeration value="PRIMARY_11_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_9_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_10_CRITERIA"
/>
 <xs:enumeration value="SECONDARY_11_CRITERIA"
/>
 <xs:enumeration value="ALLOW_VM_DETECTION" />
 <xs:enumeration value="NUM_USERNODE" />
 <xs:enumeration value="USERNODE_1_CRITERIA"
/>
 <xs:enumeration value="USERNODE_2_CRITERIA"
/>
 <xs:enumeration value="USERNODE_3_CRITERIA"
/>
 <xs:enumeration value="USERNODE_4_CRITERIA"
/>
 <xs:enumeration value="USERNODE_5_CRITERIA"
/>
 <xs:enumeration value="USERNODE_6_CRITERIA"
/>
 <xs:enumeration value="USERNODE_7_CRITERIA"
/>
 <xs:enumeration value="NAMED_USER_LICENSE" />
 <xs:enumeration value="NO_OF_NAMEDUSERS" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element type="xs:string" name="value" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="customAttribute" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="attributeName">
 <xs:simpleType>
 <xs:restriction base="xs:string" />
 </xs:simpleType>
 </xs:element>
 <xs:element type="xs:string" name="attributeValue" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>

```



## Export Compliance XSD

The Export Compliance XSD is used for ESD permissions:

```
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
 <xs:element name="exportCompliance">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="userRequestHeader" maxOccurs="1" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="header" maxOccurs="unbounded" minOccurs="0">
 <xs:complexType>
 <xs:simpleContent>
 <xs:extension base="xs:string">
 <xs:attribute type="xs:string" name="name" use="optional"/>
 <xs:attribute type="xs:string" name="value" use="optional"/>
 </xs:extension>
 </xs:simpleContent>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="loggedinUserDetail" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="loginId"/>
 <xs:element type="xs:string" name="name"/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element type="xs:string" name="PKID" minOccurs="0" maxOccurs="1"/>
 <xs:element type="xs:string" name="EID" minOccurs="0" maxOccurs="1"/>
 <xs:element name="customer" maxOccurs="1" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="name"/>
 <xs:element type="xs:string" name="customerCRMId"/>
 <xs:element type="xs:string" name="refId"/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="contact" maxOccurs="1" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="contactEmail"/>
 <xs:element type="xs:string" name="contactName"/>
 <xs:element type="xs:string" name="contactNumber"/>
 <xs:element name="locale" maxOccurs="1" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="countryCode"/>
 <xs:element type="xs:string" name="localeDisplayName"/>
 <xs:element type="xs:string" name="localeCode"/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```

```
 </xs:complexType>
 </xs:element>
 <xs:element type="xs:string" name="refId1"/>
 <xs:element type="xs:string" name="refId2"/>
 <xs:element type="xs:string" name="shipAddr"/>
 <xs:element type="xs:string" name="shipAddrCity"/>
 <xs:element type="xs:string" name="shipAddrState"/>
 <xs:element type="xs:string" name="shipAddrCountry"/>
 <xs:element type="xs:string" name="shipAddrZip"/>
 <xs:element type="xs:string" name="billAddr"/>
 <xs:element type="xs:string" name="billAddrCity"/>
 <xs:element type="xs:string" name="billAddrState"/>
 <xs:element type="xs:string" name="billAddrCountry"/>
 <xs:element type="xs:string" name="billAddrZip"/>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="product" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="productName"/>
 <xs:element type="xs:string" name="productVersion"/>
 <xs:element type="xs:string" name="refId1"/>
 <xs:element type="xs:string" name="refId2"/>
 <xs:element type="xs:string" name="externalId"/>
 </xs:sequence>
 </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

## Export Compliance Output XSD

```
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
 <xs:element name="exportComplianceResult">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="status"/>
 <xs:element type="xs:string" name="message"/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```



## Feature XSD

The Feature XSD is used for creating, updating, and retrieving Feature details.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
 <xs:element name="feature">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="namespaceIdentifier" minOccurs="1" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="namespaceId" maxOccurs="1" minOccurs="0"
type="xs:positiveInteger" />
 <xs:element name="namespaceName" maxOccurs="1" minOccurs="0" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="externalFtrId" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="featureId" minOccurs="0" maxOccurs="1" type="xs:positiveInteger" />
 <xs:element name="featureIdentifier" minOccurs="0" maxOccurs="1"
type="xs:positiveInteger" />
 <xs:element name="featureName" minOccurs="1" maxOccurs="1" type="xs:string" />
 <xs:element name="featureVersion" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="refId1" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="refId2" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="description" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element ref="enforcement" minOccurs="0" maxOccurs="unbounded" />
 <xs:element ref="customAttribute" minOccurs="0" maxOccurs="unbounded" />
 <xs:element name="comments" minOccurs="0" maxOccurs="1" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="enforcement">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="enforcementIdentifier">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="enforcementId" type="xs:int" />
 <xs:element name="enforcementNameVersion">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="enforcementName" type="xs:string" />
 <xs:element name="enforcementVersion" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="featurelicenseModel">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="licenseModelIdentifier" minOccurs="1" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="licenseModelId" maxOccurs="1" minOccurs="0"
```

```
type="xs:positiveInteger" />
 <xs:element name="licenseModelName" maxOccurs="1" minOccurs="0"
type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="isDefaultLm" minOccurs="1" maxOccurs="1" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="customAttribute">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="attributeName" maxOccurs="1" minOccurs="1" type="xs:string" />
 <xs:element name="attributeValue" maxOccurs="1" minOccurs="1" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```

## Fingerprint XSD

The Fingerprint XSD is used for generating Fingerprint.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" attributeFormDefault="unqualified"
elementFormDefault="qualified">
 <xs:element name="FingerPrintDetails" type="FingerPrintDetailsType" />
 <xs:complexType name="FingerprintType">
 <xs:sequence>
 <xs:element type="xs:string" name="FingerprintFriendlyName" minOccurs="1" maxOccurs="1"
/>
 <xs:element type="xs:string" name="FingerprintValue" minOccurs="1" maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
 <xs:complexType name="FingerprintListType">
 <xs:sequence>
 <xs:element type="FingerprintType" name="Fingerprint" minOccurs="1" maxOccurs="unbounded"
/>
 </xs:sequence>
 </xs:complexType>
 <xs:complexType name="ContainerType">
 <xs:sequence>
 <xs:element type="xs:string" name="PcId" minOccurs="0" maxOccurs="1" />
 <!-- Available up to EMS 4.0 Release after that it's remane to Eid from 4.1 Release. -->
 <xs:element type="xs:string" name="Eid" minOccurs="1" maxOccurs="1" />
 <xs:element type="FingerprintListType" name="FingerprintList" minOccurs="1" maxOccurs="1"
/>
 </xs:sequence>
 </xs:complexType>
 <xs:complexType name="ContainerListType">
 <xs:sequence>
 <xs:element type="ContainerType" name="Container" minOccurs="1" maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
 <xs:complexType name="FingerPrintDetailsType">
 <xs:sequence>
 <xs:element type="ContainerListType" name="ContainerList" minOccurs="1" maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
</xs:schema>
```

## Named User XSD

This XSD is used to create, modify and delete named users of an Entitlement.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" attributeFormDefault="unqualified"
elementFormDefault="qualified">
 <xs:element name="namedUsers">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="entitlement" maxOccurs="unbounded" minOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="item" maxOccurs="unbounded" minOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="namedUserSet" maxOccurs="1" minOccurs="1">
 <xs:complexType>
 <xs:attribute name="id" type="xs:string" />
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 <xs:attribute type="xs:string" name="productKey" />
 <xs:attribute type="xs:string" name="productVersion" />
 <xs:attribute type="xs:string" name="productName" />
 <xs:attribute type="xs:boolean" name="isSuite" />
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 <xs:attribute type="xs:string" name="eid" />
 </xs:complexType>
 </xs:element>
 <xs:element name="namedUserSet" maxOccurs="unbounded" minOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="namedUser" maxOccurs="unbounded" minOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="user" />
 </xs:sequence>
 <xs:attribute name="state" type="stateValues" />
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 <xs:attribute type="xs:string" name="id" use="required" />
 </xs:complexType>
 </xs:element>
 <xs:attribute type="xs:string" name="customerId" use="required" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:simpleType name="stateValues">
 <xs:restriction base="xs:string">
 <xs:enumeration value="Draft" />
 <xs:enumeration value="Deployed" />
 </xs:restriction>
 </xs:simpleType>
</xs:schema>
```

## License Model XSD

The License Model XSD is used by the License Model Web services.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" version="1.0"
elementFormDefault="qualified">
 <xs:element name="licenseModel">
 <xs:complexType>
 <xs:sequence>
 <xs:element minOccurs="0" name="licenseModelName">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="1" />
 <xs:maxLength value="255" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element minOccurs="0" name="licenseModelDescription">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="0" />
 <xs:maxLength value="500" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="licenseType" maxOccurs="1" minOccurs="0">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="STANDALONE" />
 <xs:enumeration value="NETWORK" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="isEnabled" type="xs:boolean" />
 <xs:element name="enforcement" maxOccurs="1" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="enforcementId" type="xs:int" maxOccurs="1" minOccurs="0" />
 <xs:element type="xs:string" name="enforcementName" />
 <xs:element type="xs:float" name="enforcementVersion" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element maxOccurs="unbounded" minOccurs="0" name="lmAttribute" type="lmAttribute" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:complexType name="lmAttribute">
 <xs:sequence>
 <xs:element minOccurs="0" name="attribute" type="attribute" />
 <xs:element minOccurs="0" name="attributeValue">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="0" />
 <xs:maxLength value="2100" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
</xs:schema>
```

```

 </xs:simpleType>
 </xs:element>
 <xs:element name="modificationAction">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="NONE" />
 <xs:enumeration value="ADDSUB" />
 <xs:enumeration value="OVERWRITE" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="endUserPermission">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="NONE" />
 <xs:enumeration value="READ" />
 <xs:enumeration value="WRITE" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element type="accessLevelType" name="accessLevel" maxOccurs="1" minOccurs="1" />
 <xs:element name="optional" type="xs:boolean" />
 <xs:element name="overwriteAllowed" type="xs:boolean" />
 <xs:element name="RegularExpression">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="0" />
 <xs:maxLength value="200" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
</xs:sequence>
</xs:complexType>
<xs:complexType name="attribute">
 <xs:sequence>
 <xs:element name="attributeId">
 <xs:simpleType>
 <xs:restriction base="xs:int">
 <xs:minInclusive value="1" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element minOccurs="0" name="attributeName">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="1" />
 <xs:maxLength value="200" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="attributeDataType" type="xs:int" />
 <xs:element name="attributeValueChoice" type="attributeValueChoice" maxOccurs="1"
minOccurs="0" />
 <xs:element name="displayOrder" minOccurs="0" type="xs:float" />
 <xs:element name="isSharedAttribute" type="xs:boolean" />
 <xs:element name="associatedAttribute" minOccurs="0">
 <xs:complexType>

```

```

<xs:sequence>
 <xs:element name="attributeId" type="xs:int" minOccurs="0" />
 <xs:element name="attributeName" type="xs:string" minOccurs="0" />
 <xs:element name="associationType" minOccurs="0">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="PARENT" />
 <xs:enumeration value="CHILD" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="aliasAttribute" type="aliasAttribute" minOccurs="0" />
<xs:element name="attributeGroupName" type="xs:string" minOccurs="0" />
<xs:element name="attributeSubGroupName" minOccurs="0" type="xs:string" />
</xs:sequence>
</xs:complexType>
<xs:complexType name="aliasAttribute">
 <xs:sequence>
 <xs:element name="attributeId" type="xs:int" />
 <xs:element name="attributeName" type="xs:string" />
 <xs:element name="priority">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="HIGH" />
 <xs:enumeration value="LOW" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 </xs:sequence>
</xs:complexType>
<xs:complexType name="attributeValueChoice">
 <xs:sequence>
 <xs:element minOccurs="0" maxOccurs="unbounded" name="valueOption">
 <xs:complexType>
 <xs:simpleContent>
 <xs:extension base="xs:string">
 <xs:attribute name="id" type="xs:int" />
 </xs:extension>
 </xs:simpleContent>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
</xs:complexType>
<xs:complexType name="accessLevelType">
 <xs:sequence>
 <xs:element name="licenseModelAccessLevel" type="entityAccessLevels" maxOccurs="1"
minOccurs="0" />
 <xs:element name="featureAccessLevel" type="entityAccessLevels" maxOccurs="1"
minOccurs="0" />
 <xs:element name="productAccessLevel" type="entityAccessLevels" maxOccurs="1"
minOccurs="0" />
 <xs:element name="entitlementAccessLevel" type="entityAccessLevels" maxOccurs="1"
minOccurs="0" />
 <xs:element name="entitlementItemAccessLevel" type="entityAccessLevels" maxOccurs="1"

```

```
minOccurs="0" />
 <xs:element name="activationAccessLevel" type="entityAccessLevels" maxOccurs="1"
minOccurs="0" />
 </xs:sequence>
</xs:complexType>
<xs:simpleType name="entityAccessLevels">
 <xs:restriction base="xs:string">
 <xs:enumeration value="NONE" />
 <xs:enumeration value="READ" />
 <xs:enumeration value="WRITE" />
 <xs:enumeration value="MANDATORY" />
 </xs:restriction>
</xs:simpleType>
</xs:schema>
```



## List Response XSD

For, Entitlements, Products, and Features, the response list or output should conform to the following XSD. This XSD is common for all search or listing related REST Web Services(.ws).

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" version="1.0"
elementFormDefault="qualified">
 <xs:element name="listResponse">
 <xs:complexType>
 <xs:sequence>
 <xs:element maxOccurs="unbounded" minOccurs="0" name="instance" type="instance" />
 </xs:sequence>
 <xs:attribute name="count" type="xs:int" />
 <xs:attribute name="type" type="xs:string" />
 <xs:attribute name="searchParameters" type="xs:string" />
 </xs:complexType>
 </xs:element>
 <xs:complexType name="instance">
 <xs:attribute name="id" type="xs:int" />
 <xs:attribute name="name" type="xs:string" />
 <xs:attribute name="refId1" type="xs:string" />
 <xs:attribute name="identifier" type="xs:string" />
 <xs:attribute name="type" type="xs:string" />
 <xs:attribute name="lifeCycleStage" type="xs:string" />
 <xs:attribute name="state" type="xs:string" />
 <xs:attribute name="createDate" type="xs:string" />
 <xs:attribute name="commitDate" type="xs:string" />
 <xs:attribute name="contact" type="xs:string" />
 <xs:attribute name="customer" type="xs:string" />
 <xs:attribute name="batchCode" type="xs:string" />
 <xs:attribute name="descr" type="xs:string" />
 <xs:attribute name="lockType" type="xs:string" />
 <xs:attribute name="enabled" type="xs:boolean" />
 <xs:attribute name="deployed" type="xs:boolean" />
 <xs:attribute name="keysNumber" type="xs:integer" />
 <xs:attribute name="actPerKey" type="xs:integer" />
 <xs:attribute name="activationDate" type="xs:date" />
 <xs:attribute name="customerId" type="xs:string" />
 <xs:attribute name="needConfirm" type="xs:boolean" />
 <xs:attribute name="phone" type="xs:string" />
 <xs:attribute name="fax" type="xs:string" />
 <xs:attribute name="billingAddress" type="xs:string" />
 <xs:attribute name="billingZip" type="xs:string" />
 <xs:attribute name="billingCity" type="xs:string" />
 <xs:attribute name="billingCountry" type="xs:string" />
 <xs:attribute name="billingState" type="xs:string" />
 <xs:attribute name="vendorId" type="xs:integer" />
 <xs:attribute name="defaultEmail" type="xs:string" />
 <xs:attribute name="defaultContactName" type="xs:string" />
 <xs:attribute name="contactId" type="xs:integer" />
 <xs:attribute name="emailId" type="xs:string" />
 <xs:attribute name="version" type="xs:string" />
 <!-- newly added -->
 <xs:attribute name="status" type="xs:boolean" />
 <xs:attribute name="activationAllowed" type="xs:boolean" />
 <xs:attribute name="refId2" type="xs:string" />
 <xs:attribute name="revokeAllowed" type="xs:boolean" />
 </xs:complexType>
</xs:schema>
```

```

<xs:attribute name="startDate" type="xs:string" />
<xs:attribute name="userRegistration" type="xs:integer" />
<xs:attribute name="isTest" type="xs:boolean" />
<xs:attribute name="endDate" type="xs:string" />
<xs:attribute name="externalId" type="xs:string" />
<xs:attribute name="customerIdentifier" type="xs:string" />
<xs:attribute name="customerExternalId" type="xs:string" />
<xs:attribute name="partnerId" type="xs:string" />
<xs:attribute name="partner" type="xs:string" />
<xs:attribute name="partnerIdentifier" type="xs:string" />
<xs:attribute name="partnerExternalId" type="xs:string" />
<!-- add in 4.1 release for activation search -->
<xs:attribute name="KeyIds" type="xs:string" />
<xs:attribute name="downloadId" type="xs:string" />
<!-- added for downloads -->
<xs:attribute name="default" type="xs:boolean" />
<xs:attribute name="listType" type="xs:integer" />
<!-- added for Features -->
<xs:attribute name="featureIdentifier" type="xs:string" />
<xs:attribute name="eid" type="xs:string" />
<!-- added for Activations -->
<xs:attribute name="aid" type="xs:string" />
<xs:attribute name="groupActivationId" type="xs:integer" />
<xs:attribute name="productFamily" type="xs:string" />
<xs:attribute name="productId" type="xs:string" />
<xs:attribute name="productName" type="xs:string" />
<xs:attribute name="productVersion" type="xs:string" />
<xs:attribute name="quantity" type="xs:integer" />
<xs:attribute name="suiteId" type="xs:string" />
<xs:attribute name="suiteName" type="xs:string" />
<xs:attribute name="suiteVersion" type="xs:string" />
<!-- added for search contact -->
<xs:attribute name="contactNumber" type="xs:string" />
<xs:attribute name="organisation" type="xs:string" />
<xs:attribute name="isEnabled" type="xs:boolean" />
<xs:attribute name="customerName" type="xs:string" />
<xs:attribute name="custIdentifier" type="xs:string" />
<!-- Added in 4.2 Release for device search -->
<xs:attribute name="DeviceType" type="xs:boolean" />
<xs:attribute name="lockingName" type="xs:string" />
<xs:attribute name="value" type="xs:string" />
<!-- Added in 4.2 Release for search user -->
<xs:attribute name="userName" type="xs:string" />
<xs:attribute name="userId" type="xs:string" />
</xs:complexType>
</xs:schema>

```

## List Type Value XSD

This XSD is used to validate List Type.

```
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
 <xs:element name="listItem">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="listItemName"/>
 <xs:element type="xs:byte" name="listId"/>
 <xs:element type="xs:boolean" name="default"/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```

## XML Report XSD

The Plain XML report XSD is used to validate XML Output report format.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" attributeFormDefault="unqualified"
elementFormDefault="qualified">
 <xs:element name="ReportExecuted">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="DisplayName" />
 <xs:element type="xs:string" name="ExecutedBy" />
 <xs:element type="xs:string" name="ExecutionTime" />
 <xs:element type="xs:string" name="ReportContent" />
 </xs:sequence>
 <xs:attribute type="xs:byte" name="ReportId" />
 </xs:complexType>
 </xs:element>
</xs:schema>
```

## Product XSD

The Product XSD is used for creating, updating, and retrieving Product details.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" version="1.0"
 elementFormDefault="qualified">
 <xs:element name="product">
 <xs:complexType>
 <xs:sequence>
 <xs:element minOccurs="0" maxOccurs="1" name="externalPrdId" type="xs:string" />
 <xs:element minOccurs="1" maxOccurs="1" name="productName">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="1" />
 <xs:maxLength value="50" />
 <!--<xs:pattern value="[\w\d\s-]+"></xs:pattern>
 -->
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="productVersion" minOccurs="1" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="1" />
 <xs:maxLength value="20" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="deployed" type="xs:string" minOccurs="0" maxOccurs="1" />
 <xs:element name="desc" minOccurs="0">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="0" />
 <xs:maxLength value="500" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="lifeCycleStage" maxOccurs="1" minOccurs="0">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="DRAFT" />
 <xs:enumeration value="COMPLETE" />
 <xs:enumeration value="EOL" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="namespace" maxOccurs="1" minOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="namespaceId" type="xs:string" />
 <xs:element name="namespaceName" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="refId1" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
```

```

 <xs:minLength value="0" />
 <xs:maxLength value="100" />
 </xs:restriction>
</xs:simpleType>
</xs:element>
<xs:element name="refId2" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="0" />
 <xs:maxLength value="100" />
 </xs:restriction>
 </xs:simpleType>
</xs:element>
<!-- Element added for Product Family Start -->
<xs:element name="family" maxOccurs="1" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="familyId" type="xs:string" maxOccurs="1" />
 <xs:element name="familyName" type="xs:string" maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
</xs:element>
<!--End -->
<xs:element name="enabled" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:boolean" />
 </xs:simpleType>
</xs:element>
<xs:element name="activationMethod" minOccurs="0" maxOccurs="1" type="xs:string" />
<xs:element name="productType" maxOccurs="1" minOccurs="0">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="DEFAULT" />
 <xs:enumeration value="PARENT" />
 <xs:enumeration value="CHILD" />
 </xs:restriction>
 </xs:simpleType>
</xs:element>
<xs:element name="fixedQuantity" minOccurs="0" maxOccurs="1" type="xs:integer" />
<xs:element name="productFeatureRef" maxOccurs="unbounded" minOccurs="0"
type="productFeatureRef" />
 <xs:element name="customAttribute" type="customAttribute" minOccurs="0"
maxOccurs="unbounded" />
 <xs:element name="productAttributes" type="productAttributes" minOccurs="0"
maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:complexType name="productFeatureRef">
 <xs:sequence>
 <xs:element name="featureIdentificationInfo">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="featureId" type="xs:int" />
 <xs:element name="externalFtrId" type="xs:string" />
 <xs:element name="featureUniqueInfo">
 <xs:complexType>

```

```

 <xs:sequence>
 <xs:element name="featureName" type="xs:string" />
 <xs:element name="featureVersion" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="productFeatureState">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="Mandatory" />
 <xs:enumeration value="Optional_DefaultOn" />
 <xs:enumeration value="Optional_defaultOff" />
 </xs:restriction>
 </xs:simpleType>
</xs:element>
<xs:element name="productFeatureLicenseModel" minOccurs="0" maxOccurs="1"
type="productFeatureLicenseModel" />
 <xs:element name="componentMultiplier" minOccurs="0" maxOccurs="1" type="xs:int" />
</xs:sequence>
</xs:complexType>
<xs:complexType name="productFeatureLicenseModel">
 <xs:sequence>
 <xs:element name="licenseModel" minOccurs="1" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="licenseModelName">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="1" />
 <xs:maxLength value="255" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="licenseModelId">
 <xs:simpleType>
 <xs:restriction base="xs:int">
 <xs:minInclusive value="1" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="default" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="isFixed" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:boolean" />
 </xs:simpleType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
</xs:element>

```

```
</xs:sequence>
</xs:complexType>
<xs:complexType name="customAttribute">
 <xs:sequence>
 <xs:element maxOccurs="1" minOccurs="1" name="attributeName" type="xs:string" />
 <xs:element maxOccurs="1" minOccurs="1" name="attributeValue" type="xs:string" />
 </xs:sequence>
</xs:complexType>
<xs:complexType name="productAttributes">
 <xs:sequence>
 <xs:element name="attribute" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="name" minOccurs="1" maxOccurs="1" />
 <xs:element type="xs:byte" name="value" minOccurs="1" maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
</xs:complexType>
</xs:schema>
```



## Product Key XSD

The Product key XSD is used validate the Product Key attribute.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
 <xs:element name="productKeyInfo">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="productKey" minOccurs="1" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="pkId" minOccurs="0" />
 <xs:element type="xs:date" name="startDate" minOccurs="0" />
 <xs:element type="xs:date" name="endDate" minOccurs="0" />
 <xs:element name="item">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="enforcementIdentifier" maxOccurs="1" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="enforcementName" />
 <xs:element type="xs:float" name="enforcementVersion" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element type="xs:integer" name="ItemId" maxOccurs="1" minOccurs="0" />
 <xs:element type="xs:integer" name="totalQuantity" minOccurs="0"
maxOccurs="1" default="1" />
 <xs:element type="xs:integer" name="availableQuantity" minOccurs="0"
maxOccurs="1" />
 <xs:element type="xs:integer" name="itemState" minOccurs="0" maxOccurs="1"
/>
 <xs:element name="measurementUnit" minOccurs="0" maxOccurs="1">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="SEAT_COUNT_LIMITED" />
 <xs:enumeration value="SEAT_COUNT_UNLIMITED" />
 <xs:enumeration value="SEAT_COUNT_LIMITED_OVERWRITE_ALLOWED" />
 <xs:enumeration value="NUMBER_OF_ACTIVATION" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 <xs:element name="suiteIdentifier" minOccurs="0">
 <xs:complexType>
 <xs:choice>
 <xs:element type="xs:string" name="suiteId" />
 <xs:element name="suiteNameVersion">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="suiteName" minOccurs="1" />
 <xs:element type="xs:string" name="suiteVersion" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:choice>
 </xs:complexType>
 </xs:element>
 </xs:complexType>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:schema>
```

```

<xs:element name="product" minOccurs="0">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="productIdentifier">
 <xs:complexType>
 <xs:choice>
 <xs:element type="xs:integer" name="prdExternalId" />
 <xs:element type="xs:integer" name="productId" />
 <xs:element name="productNameVersion">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="productName"
minOccurs="1" />
 <xs:element type="xs:string" name="productVersion" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:choice>
 </xs:complexType>
 </xs:element>
 <xs:element name="feature">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="featureIdentifier">
 <xs:complexType>
 <xs:choice>
 <xs:element type="xs:string" name="ftrExternalId" />
 <xs:element type="xs:integer" name="featureId" />
 <xs:element type="xs:integer" name="featureIdentity" />
 <xs:element name="featureNameVersion">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="featureName"
minOccurs="1" />
 <xs:element type="xs:string" name="featureVersion"
/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:choice>
 </xs:complexType>
 </xs:element>
 <xs:element name="licenseModel" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="licenseModelIdentifier" minOccurs="1"
maxOccurs="1">
 <xs:complexType>
 <xs:choice>
 <xs:element type="xs:integer" name="licenseModelId"
/>
 <xs:element type="xs:string"
name="licenseModelName" />
 </xs:choice>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
</xs:element>

```



## Split and Transfer XSD

The split and transfer XSD is used by the split and transfer Web service.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
 <xs:element name="splitTransfer">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:string" name="externalId" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:string" name="ccEmail" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:string" name="eid" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:string" name="refId1" minOccurs="0" maxOccurs="1" />
 <xs:element type="xs:string" name="refId2" minOccurs="0" maxOccurs="1" />
 <xs:element name="transferTo" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="customerIdentifier" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:choice>
 <xs:element type="xs:integer" name="customerId" />
 <xs:element type="xs:string" name="customerName" />
 <xs:element name="custIdentifier" type="xs:string" />
 <xs:element name="custExternalId" type="xs:string" />
 </xs:choice>
 </xs:complexType>
 </xs:element>
 <xs:element name="contactIdentifier" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:choice>
 <xs:element type="xs:integer" name="contactId" />
 <xs:element type="xs:string" name="emailId" />
 </xs:choice>
 </xs:complexType>
 </xs:element>
 <xs:element name="channelPartnerIdentifier" minOccurs="0" maxOccurs="5">
 <xs:complexType>
 <xs:choice>
 <xs:element type="xs:integer" name="channelPartnerId" />
 <xs:element type="xs:string" name="channelPartnerName" />
 <xs:element type="xs:string" name="channelPartnerIdentifier" />
 </xs:choice>
 </xs:complexType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="splitItem" maxOccurs="unbounded" minOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element type="xs:integer" name="lineItemId" minOccurs="1" maxOccurs="1" />
 <xs:element type="xs:integer" name="qtySeat" minOccurs="1" maxOccurs="1" />
 <xs:element type="xs:string" name="transferToProductKey" minOccurs="0"
maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element type="xs:boolean" name="sendNotification" minOccurs="0" maxOccurs="1" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:schema>
```

```
<xs:element type="xs:string" name="executedBy" minOccurs="0" maxOccurs="1" />
<xs:element type="xs:string" name="comments" minOccurs="0" maxOccurs="1" />
<xs:element name="customAttribute" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element maxOccurs="1" minOccurs="1" name="name" type="xs:string" />
 <xs:element maxOccurs="1" minOccurs="1" name="value" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

## Channel Partner XSD

The Channel Partner XSD is used by Channel Partner Web Services. This is available as Partner.xsd in the XSDs folder.

```
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
 <xs:element name="partner">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="partnerName" minOccurs="1" maxOccurs="1" type="xs:string"/>
 <xs:element name="partnerIdentifier" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="externalId" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="refId1" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="refId2" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="status" minOccurs="0" maxOccurs="1" default="ENABLE">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:enumeration value="ENABLE" />
 <xs:enumeration value="DISABLE" />
 </xs:restriction>
 </xs:simpleType>
 </xs:element>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="billingDetails" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="address" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="city" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="zip" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="state" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="country" minOccurs="0" maxOccurs="1" type="xs:string"/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="shippingDetails" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="address" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="city" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="zip" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="state" minOccurs="0" maxOccurs="1" type="xs:string"/>
 <xs:element name="country" minOccurs="0" maxOccurs="1" type="xs:string"/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:element name="customAttribute" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:sequence>
 <xs:element maxOccurs="1" minOccurs="1"
name="attributeName" type="xs:string"/>
 <xs:element maxOccurs="1" minOccurs="1"
name="attributeValue" type="xs:string"/>
 </xs:sequence>
 </xs:complexType>
 </xs:element>
</xs:sequence>
</xs:complexType>
</xs:schema>
```

```
</xs:element>
</xs:schema>
```

## User XSD

The User XSD is used by create, edit, and delete user Web Services.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" attributeFormDefault="unqualified"
elementFormDefault="qualified">
 <xs:element name="user">
 <xs:complexType>
 <xs:sequence>
 <xs:element name="userName" minOccurs="1" maxOccurs="1" type="xs:string" />
 <!-- It denotes loginName/userId by which we login on EMS -->
 <xs:element name="name" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="password" minOccurs="1" maxOccurs="1" type="xs:string" />
 <xs:element name="externalId" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="refId1" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="refId2" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="emailId" minOccurs="1" maxOccurs="1" type="xs:string" />
 <xs:element name="enabled" minOccurs="0" maxOccurs="1" default="true" type="xs:boolean"
/>
 <xs:element name="isLocked" minOccurs="0" maxOccurs="1" default="false"
type="xs:boolean" />
 <xs:element name="expiresOn" minOccurs="0" maxOccurs="1" type="xs:date" />
 <xs:element name="localeCode" minOccurs="0" maxOccurs="1" type="xs:string" />
 <xs:element name="roleIdentifier" minOccurs="0" maxOccurs="unbounded">
 <xs:complexType>
 <xs:choice>
 <xs:element name="roleId" type="xs:integer" />
 <xs:element name="roleName" type="xs:string" />
 </xs:choice>
 </xs:complexType>
 </xs:element>
 <xs:element name="partnerIdentifier" minOccurs="0" maxOccurs="1">
 <xs:complexType>
 <xs:choice>
 <xs:element name="partnerId" type="xs:integer" />
 <xs:element name="partnerName" type="xs:string" />
 </xs:choice>
 </xs:complexType>
 </xs:element>
 <xs:element name="isAdmin" minOccurs="0" maxOccurs="1" default="false"
type="xs:boolean" />
 <xs:element name="customAttribute" type="customAttribute" minOccurs="0"
maxOccurs="unbounded" />
 </xs:sequence>
 </xs:complexType>
 </xs:element>
 <xs:complexType name="customAttribute">
 <xs:sequence>
 <xs:element maxOccurs="1" minOccurs="1" name="attributeName" type="xs:string" />
 <xs:element maxOccurs="1" minOccurs="1" name="attributeValue" type="xs:string" />
 </xs:sequence>
 </xs:complexType>
</xs:schema>
```



# APPENDIX A

## Error Codes

Given below is a master list of the web services error codes:

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
103	Encountered an error while retrieving the list.
104	Encountered an error while retrieving the profile.
105	Encountered an error while adding the resource.
106	Encountered an error while removing the resource.
107	An internal error occurred. Contact the system administrator for assistance.
108	The column name is not valid.
109	The sort order value is not valid. Specify asc or desc.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
112	The input JSON string is not valid.
113	The value provided for {0} is not valid. Choose between true or false.
114	The length of {0} is {1}. It cannot be less than {2}.
115	The length of {0} is {1}. It cannot be more than {2}.
116	Special characters are found in request for {0}. Either remove special characters or reduce the length by {1} characters.
117	Regular expression validation failed for {0}.
118	{0} should be of data type Integer.
119	{0} should be of data type Double.

Error Code	Description
120	{0} is less than the minimum allowed value {1}.
121	{0} is more than the maximum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
123	{0} should be of data type Date in the format {1}.
124	The sort column is not valid. The valid values are {0}.
125	The requested resource is not found.
126	An error occurred while calling a JSON function.
127	A system exception occurred.
128	You should log on first.
129	The sort order is not valid.
130	The specified date is not valid. Specify in YYYY-MM-DD format.
131	The date specified is not valid.
132	The URL address does not exist.
133	The namespace is not valid.
134	A valid license is not found. Contact the system administrator for assistance.
135	License initialization failed. Contact the system administrator for assistance.
136	The value provided is not valid. Specify a product or suite.
137	Specify either the product ID or suite ID.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
140	Invalid xml string provided. Provide a valid xml.
141	This operation is not supported on entitlements created after EMS 1.1.
142	Entitlement belongs to EMS 1.1. Please use correct web service version.
143	Entitlement doesn't belongs to EMS 1.1. Please use correct web service version.
144	The webservice is not supported.
145	You are not authorized to access this resource.
146	The Entitlement Type Provided is not Valid.

Error Code	Description
147	Modification action can have only NONE,ADDSUB or OVERRITE.
148	The number of email IDs should not exceed 15. Also check that all email IDs are correctly formed.
149	Entitlement cc-emails change not allowed.
199	An internal error occurred. Record is in use, please try after some time.
211	Either the user does not exist or has been deleted.
212	Either the role does not exist or has been deleted.
213	Specify a valid user name.
214	Specify a valid password.
215	Incorrect user name and/or password provided.
216	Specify a valid e-mail address.
217	Incorrect e-mail address and/or password provided. Try again with valid inputs.
218	Access to your user account has been restricted. Contact the system administrator for assistance.
219	Login for this product key has been disabled. Please contact administrator.
220	Product Key does not exist, please try with correct id.
221	Could not find the e-mail. Contact the system administrator for assistance.
301	Cannot find a product corresponding to {0}.
302	No product exists for the given name and version.
303	Namespace with name: {0} does not exist.
304	The given feature IDs are not correct.
305	The given feature ID should belong to the same namespace as product.
306	Product cannot be marked complete. Add at least one feature.
307	{0} is already a part of a completed product suite.
308	{0} lifecycle stage is not valid.
309	Cannot find the feature.
310	The suit cannot be found.
311	{0} is already a part of an entitlement. Hence, it cannot be deleted/updated.
312	Product {0} already exists. Try again with a different name and version.

Error Code	Description
313	The product suite {0} already exists. Try again with a different name and version.
314	The given product IDs are not correct.
315	The given product ID should belong to the same namespace as suite.
316	No product suite exists for the given name and version.
317	The feature {0} must contain at least one license model.
318	Set at least one license model as default.
319	The feature does not exist.
320	A deployed feature cannot be updated.
321	Namespace {0} already exists. Try again with a different name.
322	This {0} does not exist in the system.
323	Feature {0} already belongs to this namespace. Try again with a different name and version.
324	The user type is not valid.
325	This product is already a part of an entitlement.
326	This suite is already a part of an entitlement.
327	The entitlement can be deleted only in the draft stage.
328	The product's life cycle is not yet in the complete stage.
329	The suite's life cycle is not yet in the complete stage.
330	Cannot find a product suite corresponding to {0}
331	{0} cannot have more than 24 characters.
332	{0} cannot have more than 11 characters.
333	The product is already in complete stage and cannot be updated.
334	Specify a product ID.
335	Product suite with ID {0} does not exist in this entitlement.
336	Product with ID {0} does not exist in this suite.
337	Entitlement with ID {0} does not have any product suite.
338	{0} cannot have {1} character.
339	{0} cannot have reserved word {1}.

Error Code	Description
340	Product with ID {0} does not exist in this entitlement.
341	The entity type is not valid. Specify a feature, product, or suite.
342	Specify value for either the refId1 or refId2.
343	{0} belongs to a completed/EOL product. Hence, it cannot be deleted.
344	{0} is already in end of life stage. Hence, it cannot be updated/deleted.
345	The feature name and/or version is not valid.
346	License Model {0} does not exist.
347	License Model with ID {0} does not exist.
348	Namespace does not exist.
349	Namespace with ID {0} does not exist.
350	Invalid or blank attribute name.
351	The License Model {0} is already associated.
352	{0} is required.
353	At least one from {0} or {1} is required.
354	The Feature is already associated with the Product.
355	The external ID is not valid.
356	The Feature state is not valid.
357	Product name or version contains invalid characters.
358	Values have not been provided for {0}/{1} and {2}. At least one of these is required.
359	Product name and version required.
360	The custom attributes defined are not specified in Sentinel EMS.
361	External ID {0} already exists. Try again with a different External ID.
362	No product found for id: {0}
363	Feature with externalId {0} doesn't exist.
364	Suite name and version should either both be provided or both be left blank.
365	Required attributes for Product are missing.
366	Product version is missing.

Error Code	Description
367	Customer name and ID are missing. At least one is required.
368	Contact ID and e-mail are missing. At least one is required.
369	Required attributes for Product Suite are missing.
370	Partner name and ID are missing. At least one is required.
371	Required attributes for Feature are missing.
372	License Model name and ID are missing. At least one is required.
373	Product key attribute name is missing. Attribute value can be blank to specify null.
374	License model attribute name is missing. Attribute value can be blank to specify null.
375	Custom attribute name is missing. Attribute value can be blank to specify null.
376	Invalid activation type provided. Seatcount or NoOfActivation is allowed.
377	Required attributes to identify entitlement are missing.
378	Enforcement with name {0} and version {1} doesn't exist.
379	Enforcement name and version provided are missing. Both are required if multiple Enforcements are available.
380	Product default definition doesn't have any features that are either non-excludable or are included by default.
381	The Product doesn't have any Feature with the specified Enforcement.
411	The license model does not exist.
412	The default license model is not from the license model list.
413	The enforcement ID is not found.
414	Cannot retrieve activation of more than one enforcement. License model attribute {0} exists in multiple enforcements.
511	Could not find a customer against the given customer name.
512	The customer does not exist.
513	The contact does not exist.
514	A customer is already associated with the contact.
515	The contact is not valid for this customer.
516	Modifying the contact information is not allowed.

Error Code	Description
517	Specify a valid e-mail address when user registration is mandatory.
518	Contact not found for the given contact ID.
519	The customer ID is not valid.
521	Customer {0} already exists. Try again with a different name.
522	The contact {0} is not unique. Try again a with different name.
523	Specify a valid e-mail address.
524	The new password cannot be blank.
525	The old password cannot be blank.
526	Incorrect username and/or password provided.
527	Password changed successfully.
528	Specify a valid e-mail address.
529	The e-mail address {0} already exists. Specify a different e-mail address.
530	Could not send the registration e-mail message. Contact the system administrator for assistance.
531	To use this product key, first login using the EID and complete user registration.
532	User registration not allowed for publisher.
533	The password must be at least 6 characters long.
534	The password cannot contain more than 30 characters.
537	Please login with the provided contact.
538	Unable to find customer for ID {0}.
539	The partner does not exist.
540	Unable to find contact for ID {0}.
541	The contact and customer are not associated.
542	Could not create entitlement for disabled Partner.
543	Contact doesnot exists for e-mail {0}.
544	Unable to send an e-mail message.
611	{0} cannot be deleted as an entitlement exists for this contact.
612	The entitlement cannot be completed as it does not contain line items.

Error Code	Description
613	Already committed.
614	The line item cannot be updated once the entitlement is committed.
615	The end date and start date cannot be null.
616	The credit amount must be greater than zero.
617	The start date cannot be later than the end date.
618	Could not find the entitlement line item.
619	All license model inside the entitlement item: {0} should be of license type {1}. Specify valid license models.
620	The entitlement item has license models of more than one enforcement.
621	Entitlement does not exist. Try again with a correct entitlement ID.
622	The value for user registration is not valid. Provide a value from 1 (not required), 2 (desired), or 3 (mandatory).
623	Enter AID or License String
624	Enter RID
625	You are not authorized to activate/retrieve this product.
626	Activation is not allowed for this entitlement.
627	The entitlement start date is in future. The entitlement cannot be activated.
628	The entitlement has expired. It cannot be activated.
629	The activation allowed value can either be true or false.
630	Update failed. The entitlement is still in the draft stage.
631	The revoke allowed value can either be true or false.
632	The relicense allowed value can either be true or false.
633	The activation allowed value can either be true or false.
634	The customer ID cannot be a negative value.
635	The life cycle stage is not valid. Specify 0 (for all), 1 (for draft), or 2 (for complete).
636	License does not exist, please try manual revoke or custom revoke or mark revoke.
640	Specify a valid recharge amount.
641	Specify a valid renew date.



Error Code	Description
642	No product is available for activation.
643	No feature is available for activation.
644	The line item ID is not valid.
645	The AID is not valid.
647	The entitlement is already in complete stage and cannot be updated/deleted.
648	Could not generate the license because: {0}
649	Invalid argument. The start date {0} cannot be later than the new end date {1}.
650	The EID cannot be null.
651	Specify only one valid license string.
652	Revocation is not allowed. The entitlement already has a pending revocation. The pending revocation must be completed first.
653	Revocation is not allowed. The entitlement has already been completely revoked.
654	Mismatched AID. The AID belongs to a different entitlement line item.
655	The license string is not valid.
656	The entitlement validity period has yet to start.
657	The entitlement validity period has expired.
658	The entitlement is in the draft stage.
659	The entitlement is unavailable. Contact the system administrator for assistance.
660	The cost is not valid.
661	The entitlement item cannot be updated because the entitlement is in the complete stage.
662	The license string is incomplete. Enter the complete license string.
663	No revocation exists for the RID. Provide a valid RID.
664	The revocation input is not valid.
665	The license type of the line item has to be either stand-alone(1) or network(2). Specify a valid value.
666	Provide a RID to obtain a revocation ticket.
667	Sentinel Caffe configuration problem --
668	Could not find the entitlement license model for id ={0}.

Error Code	Description
669	The contact must be registered in order to activate an entitlement.
670	Activation not allowed. The product's cost {1} is more than the balance left. {0}.
671	Activation cannot be completed. There are no license models associated with the entitlement.
672	Activation is no longer in the draft stage.
673	Disabled/Closed line Item cannot be activated.
674	Activation cannot be completed. The line item's end date is in past.
675	The license generator is not invalid.
676	Sentinel Caffè configuration problem --
677	Enter Revocation Ticket.
678	The license model you have chosen is same as the existing license model.
679	The license model does not exist in the given feature.
680	The feature does not exist in the given product.
681	The product does not exist in the given line item.
682	The line item does not exist.
683	Could not find the activation details.
684	Unable to retrieve activation for activation ID - {0}.
685	The activation ID does not exist.
686	The recharge amount cannot be greater than the entitlement item cost. Specify a valid recharge value.
687	Revocation is already completed.
688	Revocation does not exist. Try again with correct revocation ID.
689	The file is not found.
690	The revocation output belongs to some other revocation. Upload the correct revocation output.
691	The item start date cannot be ahead of the end date.
692	{0} is already in complete stage and cannot be updated/deleted.
693	No activation exists for the AID. Provide a valid AID.
694	{0} cannot be deleted as an entitlement exists for this customer.

Error Code	Description
695	The specified feature IDs are not present in the entitlement with ID {0}.
696	An entitlement with ID {0} does not exist.
697	No attribute exists for the given attribute ID.
698	Both 'entId' and 'lineItemid' cannot be null.
699	The revocation ticket is not valid.
700	Revocation is not completed yet.
701	Cannot obtain the entitlement certificate for entitlement (ID- {0}). The entitlement is still in the draft stage.
702	Revocation is not allowed for this entitlement.
703	The revocation request failed. {0}
704	The entitlement item does not have this product.
705	The product does not have this feature.
706	The license models belong to an unavailable enforcement. Select a license model from an available enforcement only.
707	Encountered an error in initializing the license generator. This is because: {0}
708	The JSON input is not valid. {0} cannot be null.
709	Revocation is not allowed for unlocked licenses.
711	The template type is not valid.
712	The entity cannot be found.
713	The Boolean value {0} is not valid. Specify a valid value (0 or 1).
714	The numeric value {0} is not valid. Specify a valid value.
715	The date value {0} is not valid. Specify date in YYYY-MM-DD format.
716	No data type exists for the value {0}.
717	The entity ID or custom attribute is not valid.
718	The attribute is not found.
719	Invalid activation state. Refer to the document for valid activation states.
720	Revocation can not be rejected, it has already been confirmed.
721	Revocation is already rejected.

Error Code	Description
801	Feature IDs should have a numeric value.
802	Activation not allowed.
803	The entitlement does not have a valid suite or product name or version.
804	The entitlement cannot be activated.
805	Activation is not allowed. The entitlement's start date is in future.
806	The entitlement has expired. Hence, it cannot be activated.
807	Revocation is supported for stand-alone licenses only.
808	You cannot activate this entitlement. The user registration is mandatory.
809	This entitlement belongs to another customer. You are not authorized to use this entitlement.
810	Error in reading the {0} file. Contact the system administrator for assistance.
811	The search criteria is not valid. Specify a locking code, AID, or license string.
812	The license file is not valid.
813	The EID generated is not unique. Contact the system administrator for assistance.
814	LineItem licensing attributes update not allowed.
815	The entitlement item details provided for update are not valid. Validate from the entitlement item definition.
816	Not valid {0}.
817	Entitlement Item contains both product and suite. Please provide valid entitlement item.
818	Invalid Product provided in entitlement item details. Please validate from product catalog definition.
819	Invalid Feature provided in entitlement item details. Please validate from product catalog definition.
820	Non excludable Feature is not provided in entitlement item details. Please validate from product catalog definition.
821	Product Key does not exist
822	Activation not allowed on disabled Entitlement.
823	The entitlement is not Complete.
824	Invalid operation. Cannot obtain license certificate for an activation (id- {0}).
825	Only committed line items can be recharged.
826	The end date must be ahead of the start date.

Error Code	Description
827	The end date must be ahead of the entitlement end date.
828	Renew not allowed for this activation.
829	Invalid Quantity provided. Provide a valid value (greater than 0).
830	Activation cannot be completed. The line item's start date is in future.
831	Activation is not allowed as remaining quantity is 0.
832	Line item of more than one entitlement provided for activation.
833	Please provide quantity less than the remaining quantity {0}.
834	Entitlement with ID {0} does not have any line item.
835	License model start date is more than the renew date.
836	Invalid lineitem licensing attribute provided. Specify attributes present in the license models definition.
837	Primary 1 criteria (in hex) should be of data type integer (in hexadecimal).
838	Specify a valid value for {0}.
839	Unable to retrieve activation license model attribute.
840	The activation is already renewed.
841	Only completed activation can be revoked.
843	Recharge not allowed on line items with unlimited quantity.
844	Permission ticket cannot be generated for products having more than {0} features.
845	The Customer/Contact associated with the Entitlement cannot be changed.
846	The Entitlement is deployed. The value for 'User Registration' cannot be changed to 'Mandatory'.
847	The Entitlement is deployed. The value for 'User Registration' cannot be changed to 'Not Required'.
848	The Entitlement is deployed. The value for 'User Registration' cannot be changed.
849	The Entitlement start date should be earlier than its line items' end date.
850	The Entitlement end date should not be earlier than its line items' end date.
851	The Channel Partner associated with the Entitlement cannot be changed.
852	The Entitlement start date should be earlier than its line items' start date.
853	The line item start date should not be earlier than the Entitlement start date.

Error Code	Description
854	The line item end date should not be later than the Entitlement end date.
856	License model does not exist in specified enforcement.
857	Disabled/Closed line Item cannot be activated.
859	EId can not be changed after commit.
860	A temporary issue prevented us from processing your request. Please try again later.
861	Length of attribute {0} cannot be greater than {1}
862	Invalid lineItem licensing attribute provided. Specify attributes present in the license models definition.
863	Product Suite is not supported.
864	
901	The customer name is not valid.
902	A customer with this name already exists. Retry with a different name.
903	Locale Code is not valid
904	The value cannot be blank for an attribute {0}.
905	The license model does not exist in the given product feature definition.
906	A deployed license {0} with feature cannot be deleted.
907	Unable to edit License Model, since its already deployed.
908	Feature Name cannot Modified After Activation.
909	Feature Version cannot Modified After Activation.
999	More than one customer exists with the same name.
1000	Please provide product XML data. This error code is for New REST Product Web services.
1001	INVALID LICENSE FOUND
1003	EMS license server not reachable.
1004	Security certificate is not valid.
1005	Active Directory Integration Failed.
1006	Enforcement Detail Required.
1007	Enforcement ID Required.

Error Code	Description
1008	Enforcement Name and Version Required.
1009	Please provide License XML data.
1010	Enforcement ID should have a numeric value.
1011	Attribute ID should have a numeric value.
1012	LicenseModelName length must be 255 chars only.
1013	LicenseModelDescription length must be 500 chars only.
1014	Vendor Private Info length must be 2000 chars only.
1015	Please provide a valid attribute ID.
1016	Please provide applicable Enforcement Attributes.
1020	Please Provide customerId or customerName.
1021	Please provide contactId or emailId.
1022	Please provide channelPartnerId or channelPartnerName.
1023	Provided date is not valid range {0}.
1024	Please specify valid action Type.
1025	Invalid user registration value.
1026	Please provide productId or productName and productVersion.
1027	Please provide ftrId or ftrName and ftrVer.
1028	Please provide attribute name.
1029	Entitlement must have one Entitlement Item.
1030	Could not create entitlement for disabled customer.
1031	The e-mail doesn't belong to the specified customer.
1032	Could not create entitlement for disabled Partner.
1033	Entitlement Deleted Successfully.
1034	The specified featureId {featureId} is not a valid integer value.
1035	Please provide a valid Entitlement ID.
1036	Please provide Entitlement XML Data.
1037	Please provide Entitlement XML Data.

Error Code	Description
1038	Please provide License Model Id or License Model Name.
1039	Only Committed Entitlement can be Modified.
1040	Fixed quantity is not applicable to Activation Method other than FIXED.
1041	Total quantity should be multiple of Fixed quantity.
1042	Fixed quantity cannot be changed.
1043	Activation Method is {0}. It cannot be changed.
1044	Activation Method cannot be blank.
1045	Quantity is not applicable to Activation Method UNLIMITED.
1046	Only eid and entId is allowed as valid idType.
1047	dateRangeStart and dateRangeEnd both required to search on creation Date.
1050	Valid Item Type is eid, ent_id, ProductKey or LineItem.
1051	Please provide Valid Item Id.
1052	Valid values are enabled or disabled.
1053	Blocked by Export Compliance at Product Level.
1054	Blocked by Export Compliance at Login Level.
1056	Valid values are enable or disable for Status.
1057	Please provide Unique Linked Product Ids.
1058	Please provide Unique Associated Download Ids.
1059	Please provide Valid Character in {0}.
1060	Associate Download in EOL State.
1061	Please provide download name.
1062	Please provide LinkedProductType.
1063	Please provide Download associationType.
1064	Download Name can not contain more than 350 characters.
1065	Download version can not contain more than 80 characters.
1067	DownloadFileName can not contain more than 100 characters.
1068	Lineitem is transactional item.



Error Code	Description
1069	Channel Partner Portal license is not active. Kindly contact your EMS Administrator
1099	Invalid or Blank Eid. Please provide valid Eid for login.
1101	Activation not allowed on disabled entitlement.
1103	Choose enforcement from the same group.
1107	Cannot Change Entitlement Caching at Commit Stage
1108	Cannot Change Entitlement Deployment Type at Commit Stage
1109	Cannot Change Detached Mode at Commit Stage
1110	Cannot Disable Allow Activation at Commit Stage
1111	Cannot Change Feature Identifier at Commit Stage
1112	Entitlement already contains Channel Partner Information
1113	Entitlement already contains Customer Information
1116	Cannot Change User Registration Mandatory at Activated Stage
1117	Cannot Change User Registration from Mandatory at Activated Stage
1118	Cannot Change User Registration Mandatory at Commit Stage
1119	product Family doesn't exist with Id {0}.
1122	Error in initializing resources. Please correct the syntax of {0}.
1125	Invalid lineItem licensing attribute provided for activation. Specify attributes present in the entitlement item definition.
1129	The update details are not valid.
1130	The level of the enforcement can either be feature (1) or product (2). Specify a valid value.
1135	For {0} greater than 15, specify a value multiple of 10(max 150), 30(max 450), or 60(max 900).
1136	Invalid license lock status. Specify license lock status as unlocked or locked.
1138	All license model inside the entitlement item: {0} should be of license type {1}. Specify valid license models.
1139	The line item update can only be of type upgrade, upsell, or reconfigure.
1140	The number of activations transferred must not be greater than the remaining number of activations.
1141	The number of updates cannot exceed the number of activations.
1143	Specify a valid product key.

Error Code	Description
1148	Invalid Remaining Quantity provided. Please provide a valid (greater than or equal to 0) value.
1151	The template type is not valid.
1152	The update details are not valid.
1153	{0} cannot be greater than 900. Specify a valid value (either less than 15 or in multiples of 10 (max 150), 30 (max 450), or 60 (max 900)).
1155	Encountered an error while obtaining the license certificate.
1156	Invalid license model template attribute\: {0}
1157	Invalid entitlement license model in feature\: {0}
1158	The line item update can only be of type upgrade, upsell, or reconfigure.
1162	The template attribute {0} already exists. Try again with a different name.
1163	The license model attribute cannot be modified in payload. Contact the system administrator for assistance.
1164	The license model attribute removed from payload. Contact the system administrator for assistance.
1165	An update item already in draft stage already defined. Please commit/delete the draft update item before defining a new update.
1166	{0} cannot be updated. However, you can provide same value from the previous activation.
1169	Reduced amount cannot be greater than remaining quantity.
1170	Re-credit quantity cannot be greater than activation quantity.
1171	Please provide valid re-credit quantity as remaining quantity can never be more than total quantity.
1175	Revocation not allowed. A previous revocation of this activation is already confirmed.
1178	Update not defined for this entitlement item.
1180	Activation upgrade not allowed because the activation is not activated.
1181	Activation upgrade not allowed because the activation is not completely revoked.
1182	Activation upgrade does not require revocation.
1184	Activation update not allowed as the remaining update count is 0.
1186	Activation not found
1187	Error in generating Report. Please contact administrator.
1188	{0} should be greater than 0. Specify a valid value.

Error Code	Description
1190	The e-mail is not valid.
1192	The attribute value {0} is not in the predefined list values. Specify a valid attribute value.
1193	Invalid Quantity
1194	The return format sent in request is not valid. Specify a valid return format (json).
1196	Look up query should return 2 columns.
1197	Look up query is invalid.
1199	No licensing attributes found.
1200	No listType found for {0} {1}.
1201	No matches found
1203	Password changed successfully. Try login again.
1204	Activation cannot be performed as the quantity is not available for one of the line item selected.
1206	Select line item to activate
1207	Select at least one feature to delete.
1208	Select one line item
1209	Select one line item to renew
1210	Select one line item to revoke
1211	Select at least one namespace to delete.
1212	Select at least one product to delete.
1501	Provide either productKey or productName and productVersion for entitlement item.
1502	{0} {1} not found in EMS.
1503	Named User {0} is already deployed
1504	There is no named user for given parameters.
1505	{0} is not associated with Entitlement.
1506	{0} is not deployed entitlement.
1507	Maximum {0} Named Users are allowed for {1} .
1508	Named Users could not be deployed on cloud.
1509	EID and PKID should be same in product key login.

Error Code	Description
1519	Disabled license models are not available for new features.
1520	Please provide LVH Variant (licenseVersion).
1521	For LVH Entitlement entitlementAsWhole must be false.
1522	Provided license version {0} does not exist for product Variant.
1523	Please create Variant for Parent Product Before Proceeding for entitlement.
2000	You have been logged out.
2001	Could not fetch user data for the UID.
2002	Could not fetch any attribute for the UID.
2003	User does not exist in EMS Database. Contact the system administrator for assistance.
2004	The user ID has been disabled.
2005	The user ID has expired.
2006	Insufficient user rights. Contact the system administrator for assistance.
2007	Can't create EOL Download.
2008	{0} can have maximum {1} length.
2010	Cannot find a product for create Download.
2011	Inactive Product can't be linked with download.
2012	Valid values for searchPattern is normal, like or exact.
2015	Please provide productId or productName and productVersion or ProductExtenalId.
2016	Cannot change Customer at Activation level.
2017	Product and download association not allowed in Update.
2018	Product is already disassociated with download.
2021	Customer cannot removed from committed entitlement.
2022	Please provide customer or channel partner.
2023	Valid values for searchPattern is normal, like or exact.
2024	Quantity cannot add after activation for Cloud Connected Entitlement.
3001	All line items selected for an Entitlement must be of the same deployment type, either On-premise Served, Cloud Served - Lease or Cloud Served - Connected.

Error Code	Description
3002	License Model for all selected features should be of Cloud Served - Lease type
3003	Valid values for searchPattern is normal, like or exact.
3004	Invalid Value for attribute {0} .
3006	All line items must be of the same license type, either Network or Standalone, if entitlement as whole is selected.
3007	All line items selected for an Entitlement must be of the same license type, either Network or Standalone.
3008	For Cloud Served Entitlement 'entitlementAsWhole' must be true.
3009	Attribute {0} can not overwrite because it's value is Fixed as LM Level.
3010	{0} criteria value must be common at All Line Item Level.
3011	EntitlementAsWhole change not Allowed after Commit.
3021	Server time is not in sync with NTP. Please check.
5001	Provide either productKey or productName and productVersion for entitlement item.
5002	{0} {1} not found in EMS.
5003	Named User {0} is already deployed
5004	There is no named user for given parameters.
5005	{0} is not associated with Entitlement.
5006	{0} is not deployed entitlement.
5007	Maximum {0} Named Users are allowed for {1} .
5008	Named Users could not be deployed on cloud.

# APPENDIX B

## Web Services Permissions

This section contains a compiled list of Web services available in Sentinel EMS, along with their URLs and permissions. Permission can be for ISV, End User (EU), or Channel Partner (CP).

<b>User Management and Authentication</b>		
<b>Web Service</b>	<b>URL;</b>	<b>ISV/End User/Channel Partner</b>
Login by Product Key	/ems/loginByProductKey.xml	ISV, EU, CP
ISV User Login	/ems/verifyLogin.xml	ISV
Partner Login	/ems/verifyPartnerLogin.xml	CP
Logout	/ems/closeSession.xml	ISV, EU, CP
Login by Contact	/ems/loginByContact.xml	EU
Create User	/ems/v4_2/ws/user.ws	ISV
Retrieve Users	/ems/v4_2/user/{userId}.ws	ISV
Channel Partner Listing	/ems/channelPartnerList.xml	ISV
Retrieving all users	/ems/userList.xml	ISV
<b>Deprecated</b>		
Retrieving the details of user	/ems/userProfile.xml	ISV

<b>Template</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Get Entity Template Attributes	/ems/getEntityCustomAttributes.xml	ISV, CP (only for Entitlement attribute)
View Entity By Attribute	/ems/searchEntityByCustomAttribute.xml	ISV, CP (only for Entitlement attribute)
Update Custom Attribute	/ems/updateCustomAttribute.xml	ISV

<b>Product Suite</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Retrieving the details of suite given suite id	/ems/getSuiteById.xml	ISV
Search Suite for name and version	/ems/getSuiteByNameAndVer.xml	ISV
Create Product Suite	/ems/createSuite.xml	ISV
Search Suites	/ems/searchSuites.xml	ISV

<b>Role</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Retrieving all roles	/ems/roleList.xml	ISV
Retrieving the details of role given role name	/ems/roleProfile.xml	ISV

<b>Reports</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Retrieve the List of Reports	/ems/v4_2/ws/report.ws	ISV
Get Report as XML or Jasper	/ems/v4_2/ws/report/{reportId}.ws	ISV
List of Customers where Data is Tampered	/ems/v4_2/ws/retrieveCustomerTamperList.ws	ISV
Data Tampering Details for Customer	/ws/retrieveCustomerTamperData.ws	ISV
Raw Usage Report	/ws/retrieveUsageReport.ws	ISV

<b>Reports</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Peak Concurrency Report	/ws/retrievePeakConcurrencyReport.ws	ISV
Provisioning Data Report	/ws/retrieveProvisioningDataReport.ws	ISV

<b>Products</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create Product Using product XML	/ems/v4_2/ws/product.ws	ISV
Get Product Using product Id	/ems/v4_2/ws/product/{productId}.ws	ISV
Update Product Using product Id and Product XML	/ems/v4_2/ws/product/{productId}.ws	ISV
Search Products	/ems/v4_2/ws/searchProduct.ws	ISV
Delete Products	/ems/v4_2/ws/feature/{featureId}.ws	ISV

<b>Deprecated</b>		
Associate Features With a Product	/ems/associateFeaturesWithProduct.xml	ISV
Disassociate Features from a Product	/ems/associateFeaturesWithProduct.xml	ISV
Create new Product	/ems/createProduct.xml	ISV
Retrieving the details of product for product name and version	/ems/getProductByNameAndVer.xml	ISV
Retrieving the details of product given product id	/ems/getProductById.xml	ISV
Change Product LifeCycle Stage	/ems/changeProductLifeCycleStage.xml	ISV
Update Catalog RefIds	/ems/updateCatalogRefIds.xml	ISV
Search Products	/ems/searchProducts.xml	ISV



<b>Namespace</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Add Namespace	/ems/addNamespace.xml	ISV
Edit Namespace	/ems/updateNamespace.xml	ISV
Delete Namespace	/ems/deleteNamespace.xml	ISV

<b>ESD</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Retrieve Download by ID	/ems/v4_2/ws/download/{downloadId}.ws	ISV
Search Vendor List Item	/ems/v4_2/ws/download/vendorList/listItem.ws	ISV
Search Download List Item	/ems/v4_2/ws/download/downloadList/listItem.ws	ISV
Search License List Item	/ems/v4_2/ws/download/licenseList/listItem.ws	ISV
Search Product List Item	/ems/v4_2/ws/download/productList/listItem.ws	ISV
Add List Type Name in Vendor List	/ems/v4_2/ws/download/vendorList/listItem.ws	ISV
Add List Type Name in Download List	/ems/v4_2/ws/download/downloadList/listItem.ws	ISV
Add List Type Name in Product List	/ems/v4_2/ws/download/productList/listItem.ws	ISV
Add List Type Name in License List	/ems/v4_2/ws/download/licenseList/listItem.ws	ISV

<b>ESD</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Retrieve Entitlement Downloads	/ems/v4_2/ws/download/Entitlement-item.ws	ISV
Search Downloads	/ems/v4_2/ws/download.ws	ISV
Create Download	/ems/v4_2/ws/download.ws	ISV
Delete Download	/ems/v4_2/ws/download/{downloadId}.ws	ISV

<b>License Model</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create License Model using License XML (REST)	/ems/v4_2/ws/licenseModel.ws	ISV
Get License Model Using License ID (REST)	/ems/v4_2/ws/licenseModel/{licenseModelId}.ws	ISV
Update License Model Using License ID and License XML (REST)	/ems/v4_2/ws/licenseModel/{licenseModelId}.ws	ISV
Get License Models using Enforcement ID (REST)	/ems/v4_2/ws/enforcement/{enforcementId}/licenseModel.ws	ISV

### Deprecated

Search License Model	/ems/searchLicenseModelList.xml	ISV
Get License Model Detail by ID	/ems/getLicenseModelById.xml	ISV

<b>Feature</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create Feature (REST)	/ems/v4_2/ws/feature.ws	ISV
Retrieve Features Details (REST)	/ems/v4_2/ws/feature/{featureId}.ws	ISV
Update Feature Details for a Feature ID (REST)	/ems/v4_2/ws/feature/{featureId}.ws	ISV
Delete Feature (REST)	/ems/v4_2/ws/feature/{featureId}.ws	ISV
Search Features (REST)	/ems/v4_2/ws/searchFeature.ws	ISV

**Deprecated**

Retrieving the details of feature for given feature id	/ems/viewFeatureById.xml	ISV
Add Feature	/ems/addFeature.xml	ISV
Search Feature	/ems/searchFeatures.xml	ISV
Edit Feature Description	/ems/updateFeatureDescription.xml	ISV
Edit Feature LM Association	/ems/updateFeatureLMAssociation.xml	ISV
Delete Feature	/ems/deleteFeature.xml	ISV

**Entitlement**

<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create Entitlement Using Entitlement XML	/ems/v4_2/ws/entitlement.ws	ISV
Modify Entitlement Using Entitlement XML	/ems/v4_2/ws/entitlement.ws	ISV
Split and Transfer Entitlement	/ems/v4_2/ws/entitlement/{entId}/split-transfer.ws	ISV
Get Entitlement Using Entitlement Id	/ems/v4_2/ws/entitlement/{entId}.ws	ISV, CP, EU

<b>Entitlement</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Search Entitlements	/ems/v4_2/ws/searchEntitlement.ws	ISV, CP
Update Entitlement Using Entitlement Id and Entitlement XML	/ems/v4_2/ws/entitlement/{entId}.ws	ISV, CP
Delete Entitlement Using Entitlement ID	/ems/v4_2/ws/entitlement/{entId}.ws	ISV
Get Entitlement Item by ProductKey	/ems/getEntitlementItemByProductKey.xml	ISV, CP
View Entitlement Certificate	/ems/getEntitlementCertificateHTML.xml	ISV, EU, CP
Search Contact Entitlement	/ems/searchContactEntitlement.xml	ISV, CP
Retrieve previous activation details	/ems/getPreviousActivations.xml	ISV, CP
Retrieve License Certificate of a Previous Activation	/ems/getLicenseCertificateHTML.xml	ISV, EU, CP
Retrieve Usage Log (REST)	/ws/retrieveUsageLog.ws	ISV, CP
Retrieve Billing Data (REST)	/ws/billingData.ws	ISV, CP
Retrieve Custom Attributes for Entitlement	/ws/customAttribute/entitlement/{entId}.ws	ISV

### Deprecated

Create Entitlement	/ems/createEntitlement.xml	ISV
Commit Entitlement	/ems/commitEntitlement.xml	ISV
Get Entitlement Item by ID	/ems/getEntitlementItemById.xml	ISV, CP, EU
Change Entitlement Item Status	/ems/changeLineItemStatus.xml	ISV
Change Product Key status	/ems/changeProductKeyStatus.xml	ISV
Search Entitlements	/ems/searchEntitlements.xml	ISV, CP

<b>Entitlement</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Allow/Deny Activation for an Entitlement	/ems/changeEntitlementActivationState.xml	ISV, CP
Renew an Entitlement	/ems/renewEntitlement.xml	ISV, CP
Renew Line Item	/ems/renewLineItem.xml	ISV, CP
Update Entitlement Details	/ems/updateEntitlement.xml	ISV
Retrieve list of Line Items, with Product(s), Feature(s) and License Model, for a given Entitlement ID	/ems/getEntitlementDetailsById.xml	ISV, CP, EU
Add Entitlement Item	/ems/addEntitlementItem.xml	ISV
Edit Entitlement Item	/ems/editEntitlementItem.xml	ISV
Update Entitlement - Remove Products and Suites	/ems/removeEntitlementItem.xml	ISV
Recharge line item	/ems/rechargeLineItem.xml	ISV
Update Entitlement attribute for all/given features.	/ems/updateEntitlementAttributeForAllFeatures.xml	ISV
Update a Attribute for all/given features in a product in an entitlement.	/ems/updateProductFeatureEntitlementAttributes.xml	ISV
Associate an existing or new Contact with an anonymous Entitlement	/ems/updateEntitlementContact.xml	ISV, CP
Retrieve license model attributes for a lineitem ->product ->feature	/ems/getEntFeatureLMAttributes.xml	ISV, CP
Update license model attributes for a lineitem ->product ->feature	/ems/setEntFeatureLMAttributes.xml	ISV

<b>Named Users</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Add Named Users	/ws/namedUser.ws	ISV, EU, CP
Overwrite Named Users	/ws/namedUser.ws	ISV, EU, CP
Get Named Users	/ws/entitlement/{eid}/namedUser.ws	ISV, EU, CP
Delete Named Users	/ws/entitlement/{eid}/namedUser.ws	ISV, EU, CP
Deploy Named Users	/ws/entitlement/{eid}/namedUser.ws	ISV, EU, CP

<b>Revocation</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create Revocation Request	/ems/createRevocationRequest.xml	ISV, EU, CP
Mark an activation revoked	/ems/MarkRevoked.xml	ISV, CP
Custom Revoke	/ems/customRevoke.xml	ISV, CP
Upload Revocation Ticket	/ems/uploadRevocationOutput.xml	ISV, EU, CP
Get Permission Ticket By RID	/ems/getPermissionTicketByRID.xml	ISV, EU, CP
Confirm Revocation	/ems/ConfirmRevocation.xml	ISV, CP
Reject Revocation	/ems/RejectRevocation.xml	ISV, CP
Delete Revocation	/ems/deleteRevocations.xml	ISV

<b>Customer and Contact</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Retrieve customer by Id	/ems/getCustomerById.xml	ISV
Retrieve customer by customer name	/ems/getCustomerByCustomerName.xml	ISV
Delete customer by customerId	/ems/deleteCustomerById.xml	ISV

<b>Customer and Contact</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create Customer	/ems/createCustomer.xml	ISV
Update a Customer	/ems/updateCustomer.xml	ISV
Search Customers	/ems/searchCustomers.xml	ISV
Add Customer to a Contact (only if Customer is null for a Contact)	/ems/associateContactWithCustomer.xml	ISV
Change Contact Password	/ems/changeContactPassword.xml	ISV
User Registration	/ems/registerUser.xml	ISV, EU
Get Contact BY ID / Email (REST)	/ems/v4_2/ws/contact/{contactId}.ws	ISV
Create Contact (REST)	/ems/v4_2/ws/contact.ws	ISV
Update Contact (REST)	/ems/v4_2/ws/contact/{contactId}.ws	ISV
Search Contact (REST)	/ems/v4_2/ws/searchContact.ws	ISV
Delete Contact BY ID (REST)	/ems/v4_2/ws/contact/{contactId}.ws	ISV
<b>Deprecated</b>		
Search Contacts	/ems/searchContacts.xml	ISV
Create Contact	/ems/createContact.xml	ISV
Retrieve one Contact by ID	/ems/getContactById.xml	ISV
Retrieve one Contact by EmailId	/ems/getContactByEmailId.xml	ISV
Delete contact by Id	/ems/deleteContact.xml	ISV
Update a Contact	/ems/updateContact.xml	ISV

<b>Channel Partner</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create Channel Partner	/ems/v4_2/ws/partner.ws	ISV
Retrieve Channel Partner Details	/ems/v4_2/ws/partner/{partnerId}.ws	ISV
Search Channel Partners	/ems/v4_2/ws/searchPartner.ws	ISV
Update Channel Partner	/ems/v4_2/ws/partner/{partnerId}.ws	ISV
Delete Channel Partner	/ems/v4_2/ws/partner/{partnerId}.ws	ISV

<b>Configuration Management</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Get Release Info	/ems/releaseInfo.xml	ISV
Get Locale List	/ems/getLocales.xml	ISV

<b>Fingerprint Registration for Lease Entitlements</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Add Entitlement Fingerprint	/ws/FingerPrint.ws	ISV
Retrieve Entitlement Fingerprint	/ws/entitlement/{entId}/FingerPrint.ws	ISV
Delete Entitlement Fingerprint	/ws/FingerPrint/{fingerPrintId}.ws	ISV



<b>Lists</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create List Item	/ws/listItem.ws	ISV
Update List Item	/ws/listType/{listItemId}.ws	ISV
Search List Item	/ws/searchListItem.ws	ISV
Delete List Item	/ws/listType/{listItemId}.ws	ISV
Search List Type	/ws/searchListType.ws	ISV

<b>Activation</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Create and Complete Activation	/ems/v4_2/ws/activation.ws	ISV, EU, CP
External Activation using Push Keys	/ems/v4_2/ws/activation.ws	ISV
Manual Activation	/ems/v4_2/ws/activation.ws	ISV
Retrieve Activation Using Activation ID	/ems/v4_2/ws/activation/{activationId}.ws	ISV
Create Activation By ProductKey	/ems/createActivationByProductKey.xml	ISV, EU, CP
Get Renewed License	/ems/getRenewedLicense.xml	ISV, EU, CP
Show Entitlement Activations by entId	/ems/showEntitlementActivations.xml	ISV, EU (EID, Contact), CP
Advanced Search Activations	/ems/v4_2/ws/Activation.ws	ISV

### Deprecated

Create Activation	/ems/createActivation.xml	ISV, EU, CP
Complete Activation	/ems/completeActivation.xml	ISV, EU, CP
Get Activation By Id	/ems/getActivationById.xml	ISV, EU, CP

<b>Activation</b>		
<b>Web Service</b>	<b>URL</b>	<b>ISV/End User/Channel Partner</b>
Get Activation By Aid	/ems/getActivationByAid.xml	ISV, EU, CP
Search Activations	/ems/searchActivations.xml	ISV, EU, CP



**Note:** Chanel Partner has permissions to Web services only for its own Entitlements.

# APPENDIX C

## Backward Compatibility

Some XSDs for Sentinel EMS web services have been updated to support additional attributes and the data type of some attributes have been modified. Optimum care has been taken to keep these XSDs backward compatible. However, it is advisable to update your client application to use the new XSDs for validating responses.

Please note a Web service called using a previous version will function as per its deprecated functionality.

## New Web Services in 4.2

This section provides information about the web services are new to this release.

New Web Service	Method	Description
<b>Web Service for Custom Attributes</b>		
<i>/ems/v4_2/ws/customAttribute/entitlement/</i>	GET	Retrieves custom attribute details of an entity and its associated child entities. The associated child entities include Entitlement, Customer, Contact, Channel Partner, Line Item, Product Suite, Product, and Feature.
<b>Web Services for User</b>		
<i>/ems/v4_2/ws/user.ws</i>	GET	This Web service retrieves the list of Users against the query parameters such as userName, userId, refId, externalId, partnerId etc.
<i>/ems/v4_2/ws/user/{userId}.ws</i>	POST	This Web Service updates User details using User ID and User XML string as the input parameters.
<b>Web Service for License Sessions</b>		
<i>/ems/v4_2/ws/customer/{customerid}/licenseSession.ws</i>	GET	This Web Service retrieves the list of all license sessions using input parameters such as customerid. Currently license sessions can only be retrieved for leased licenses.
<i>/ems/v4_2/ws/customer/{customerid}/licenseSession/{sessionid}.ws</i>	DELETE	This Web Service can be called to free the license session specified using the given parameters such as customerid and sessionid.
<b>Web Service for Entitlement Report</b>		
<i>ems/v4_2/ws/customer/{customerid}/entitlement.ws</i>	GET	Web service to retrieve entitlement details against fingerprint on query parameters such as, customerid, fingerprintFriendlyName, entitlementState and so on.
<b>Web Service for Device Management</b>		
<i>/ems/v4_2/ws/Device.ws</i>	GET	This Web Service is used for searching device.
<b>Web Service for ESD</b>		

New Web Service	Method	Description
<i>/ems/v4_2/ws/download/stsTokenESD</i>	GET	This Web service is used to generate a STS Token that is used for uploading a file to the file server. The STS Token generated is used to authenticate the user who is uploading the file. The validity of a STS Token is 30 minutes.
<b>Web Service for Contact</b>		
<i>/ems/v4_2/ws/contact.ws</i>	PUT	This Web Service is used to create a contact with the given parameters.
<i>/ems/v4_2/ws/contact/{contactId}.ws</i>	GET	This Web Service retrieves Contact information in form of an XML string.
<i>/ems/v4_2/ws/contact/{contactId}.ws</i>	POST	This Web Service updates the details of a contact.
<i>/ems/v4_2/ws/searchContact.ws</i>	GET	This Web Service retrieves the list of contacts against the query parameters.
<i>/ems/v4_2/ws/contact/{contactId}.ws</i>	DELETE	This Web Service deletes a contact based on the given parameters.



**Note:** All Web services of version V11 will not be supported in Sentinel EMS v4.1 (and higher).

# APPENDIX D

## Deprecated Web Services

This section lists all the Web services that have been deprecated in Sentinel EMS. The Web Services that have been modified as .ws format have been marked as 'REST'. The Web Services that used to exist as .xml and now have an alternate .ws Web services have been marked as 'Deprecated'. Deprecated Web Services have been retained to maintain backward compatibility.



**Note:** Please note a Web service called using a previous version will function as per its deprecated functionality.

Deprecated WS Name	Deprecated WS URI	New Alternate REST WS URI	Deprecated in Release
<b>Users</b>			
Retrieving the details of user	/ems/userProfile.xml	/ems/v3_2/ws/user/{userId}.ws	3.2
<b>Products</b>			
Associate Features with a Product	/ems/associateFeaturesWithProduct.xml	/ems/v3_2/ws/product/{productId}.ws	2.7
Disassociate Features from a Product	/ems/createProduct.xml	/ems/v3_2/ws/product/{productId}.ws	2.7
Create new Product	/ems/createProduct.xml	/ems/v3_2/ws/product.ws	2.7
Retrieving the details of product for product name and version	/ems/getProductByNameAndVer.xml	/ems/v3_2/ws/searchProduct.ws	3.0
Retrieving the details of product given product id	/ems/getProductById.xml	/ems/v3_2/ws/product/{productId}.ws	2.7
Change Product	/ems/changeProductLifeCycleStage.xml	/ems/v3_2/ws/product/{productId}.ws	2.7

Deprecated WS Name	Deprecated WS URI	New Alternate REST WS URI	Deprecated in Release
LifeCycle Stage			
Update Catalog RefIds	/ems/updateCatalogRefIds.xml	/ems/v3_2/ws/product/{productId}.ws	2.7
Search Products	/ems/searchProducts.xml	/ems/v3_2/ws/searchProduct.ws	3.0

### License Models

Search License Model	/ems/searchLicenseModelList.xml	/ems/v3_2/ws/licenseModel/{licenseModelId}.ws	2.9
Get License Model Detail by ID	/ems/getLicenseModelById.xml	/ems/v3_2/ws/enforcement/{enforcementId}/licenseModel.ws	2.9

### Features

Retrieving the details of feature for given feature id	/ems/viewFeatureById.xml	/ems/v3_2/ws/feature/{featureId}.ws	3.0
Add Feature	/ems/addFeature.xml	/ems/v3_2/ws/feature.ws	3.0
Search Feature	/ems/searchFeatures.xml	/ems/v3_2/ws/searchFeature.ws	3.0
Edit Feature Description	/ems/updateFeatureDescription.xml	/ems/v3_2/ws/feature/{featureId}.ws	3.0
Edit Feature LM Association	/ems/updateFeatureLMAssociation.xml	/ems/v3_2/ws/feature/{featureId}.ws	3.0
Delete Feature	/ems/deleteFeature.xml	/ems/v3_2/ws/feature/{featureId}.ws	3.0

### Entitlements

Create Entitlement	/ems/createEntitlement.xml	/ems/v3_2/ws/entitlement.ws	2.9
Commit Entitlement	/ems/commitEntitlement.xml	/ems/v3_2/ws/entitlement.ws	2.9

Deprecated WS Name	Deprecated WS URI	New Alternate REST WS URI	Deprecated in Release
Get Entitlement Item by ID	/ems/getEntitlementItemById.xml	/ems/v3_2/ws/entitlement/{entId}.ws	2.9
Change Entitlement Item Status	/ems/changeLineItemStatus.xml	/ems/v3_2/ws/entitlement/{entId}.ws(Draft) v3_2/ws/entitlement.ws(Commit)	2.9
Change Product Key Status	/ems/changeProductKeyStatus.xml	/ems/v3_2/ws/entitlement.ws	2.9
Search Entitlements	/ems/searchEntitlements.xml	/ems/v3_2/ws/searchEntitlement.ws	2.9
Allow/Deny Activation for an Entitlement	/ems/changeEntitlementActivationState.xml	/ems/v3_2/ws/entitlement/{entId}.ws(Draft) v3_2/ws/entitlement.ws(Commit)	2.9
Renew an Entitlement	/ems/renewEntitlement.xml	/ems/v3_2/ws/entitlement.ws	2.9
Renew Line Item	/ems/renewLineItem.xml	/ems/v3_2/ws/entitlement.ws	2.9
Update Entitlement Details	/ems/updateEntitlement.xml	/ems/v3_2/ws/entitlement/{entId}.ws	2.9
Retrieve list of Line Items, with Product (s), Feature(s) and License Model, for a given Entitlement ID	/ems/getEntitlementDetailsById.xml	/ems/v3_2/ws/entitlement/{entId}.ws	2.9
Add Entitlement Item	/ems/addEntitlementItem.xml	/ems/v3_2/ws/entitlement.ws (Create) /ems/v3_2/ws/entitlement/{entId}.ws(Draft) /ems/v3_2/ws/entitlement.ws (Commit)	2.9
Edit Entitlement Item	/ems/editEntitlementItem.xml	/ems/v3_2/ws/entitlement/{entId}.ws(Draft) /ems/v3_2/ws/entitlement.ws	2.9



Deprecated WS Name	Deprecated WS URI	New Alternate REST WS URI	Deprecated in Release
		(Commit)	
Update Entitlement - Remove Products and Suites	/ems/removeEntitlementItem.xml	/ems/v3_2/ws/entitlement/{entId}.ws	2.9
Recharge line item	/ems/rechargeLineItem.xml	/ems/v3_2/ws/entitlement.ws (Modify)	2.9
Update Entitlement attribute for all/given features.	/ems/updateEntitlementAttributeForAllFeatures.xml	/ems/v3_2/ws/entitlement/{entId}.ws(Draft) v3_2/ws/entitlement.ws(Commit)	2.9
Update Attribute for all/given features in a product in an entitlement.	/ems/udateProductFeatureEntitlementAttributes.xml	/ems/v3_2/ws/entitlement/{entId}.ws(Draft) /ems/v3_2/ws/entitlement.ws (Commit)	2.9
Associate an existing or new Contact with an anonymous Entitlement	/ems/updateEntitlementContact.xml	/ems/v3_2/ws/entitlement/{entId}.ws(Draft) /ems/v3_2/ws/entitlement.ws (Commit)	2.9
Retrieve license model attributes for a lineitem ->product ->feature	/ems/getEntFeatureLMAttributes.xml	/ems/v3_2/ws/entitlement/{entId}.ws	2.9
Update license model attributes for a lineitem ->product ->feature	/ems/setEntFeatureLMAttributes.xml	/ems/v3_2/ws/entitlement/{entId}.ws(Draft) /ems/v3_2/ws/entitlement.ws (Commit)	2.9
<b>Activation</b>			
Create	/ems/createActivation.xml	/ems/v3_2/ws/activation.ws	3.1.500

Deprecated WS Name	Deprecated WS URI	New Alternate REST WS URI	Deprecated in Release
Activation			
Complete Activation	/ems/completeActivation.xml	/ems/v3_2/ws/activation.ws	3.1.500
Get Activation By Id	/ems/getActivationById.xml	/ems/v3_2/ws/activation/{activationId}.ws	3.1.500
Get Activation By Aid	/ems/getActivationByAid.xml	/ems/v3_2/ws/activation/{activationId}.ws	3.1.500
Search Activations	/ems/searchActivations.xml	/ems/v3_2/ws/Activation.ws	3.1.500

**ESD**

Search Vendor List Item	/ems/v4_2 /ws/download/vendorList/listItem.ws	NA	4.2
Search Download List Item	/ems/v4_2 /ws/download/downloadList/listItem.ws	NA	4.2
Search License List Item	/ems/v4_2 /ws/download/licenseList/listItem.ws	NA	4.2
Search Product List Item	/ems/v4_2 /ws/download/productList/listItem.ws	NA	4.2
Add List Type Name in Vendor List	/ems/ws/download/vendorList/listItem.ws	NA	4.2
Add List Type Name in Download List	/ems/ws/download/downloadList/listItem.ws	NA	4.2
Add List Type Name in Product List	/ems/ws/download/productList/listItem.ws	NA	4.2
Add List Type Name in License List	/ems/ws/download/licenseList/listItem.ws	NA	4.2

## Deprecated Features Web Services

---

This section lists the Features Web services that have been deprecated in Sentinel EMS:

- ["Create Feature" on the next page](#)
- ["Retrieve Features Details" on page 494](#)
- ["Retrieving Feature Details for a Given Feature ID" on page 497](#)
- ["Edit Feature Description" on page 499](#)
- ["Associate License Model with a Feature" on page 500](#)
- ["Delete Feature" on page 501](#)

## Create Feature

Add a Feature to a Namespace.

Default Protocol	Method Type	URI
HTTP	POST	/ems/addFeature.xml

### POST Parameters

Parameter	Description	Type
namespaceName	(Required) Specify the Namespace.	String
featureName	(Required) Specify the feature name.	String
version	(Required) The feature version.	String
featureDescription	(Optional) Description of the feature.	String
licenseModelIds	(Required) IDs corresponding to the license models chosen. <b>Valid values:</b> 1, 2	String
defaultLicenseModelId	(Required) Specify the default license model. <b>Valid values:</b> One of license model Id from 'licenseModelIds' list.	Integer
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
externalId	(Optional) External identifier to identify the Feature. <b>Valid values:</b> String ( accepts a maximum of 60 characters)	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <featureId>3</featureId>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

"Output Format for Failure" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.

Error Code	Description
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
115	The length of {0} is {1}. It cannot be more than {2}.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
133	The namespace is not valid.
323	Feature {0} already belongs to this namespace. Try again with a different name and version.
332	{0} cannot have more than 11 characters.
338	{0} cannot have {1} character.
339	{0} cannot have reserved word {1}.
411	The license model does not exist.
412	The default license model is not from the license model list.

## Retrieve Features Details

Search the features for given query parameters.

Protocol	Method Type	URI
HTTP	GET	/ems/searchFeatures.xml

## Query Parameters

Parameter	Description	Type
namespaceName	(Optional) Namespace name	String
featureName	(Optional) Feature name	String
version	(Optional) The feature version	String
pageIndex	(Optional) The starting page number. <b>Default value:</b> 1	Integer (>0)
pageSize	(Optional) The number of enforcement IDs to be retrieved by one request. <b>Default value:</b> 5	Integer (>0)
sortCol	(Optional) Sort against the column.	String
sortOrder	(Optional) The order to sort. <b>Valid values:</b> asc, desc <b>Default value:</b> desc	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
showProducts	(Optional) Returns the products associated with the feature. <b>Valid values:</b> Boolean <b>Default value:</b> false	Boolean
externalId	(Optional) External identifier to identify feature. <b>Valid values:</b> String ( accepts a maximum of 60 characters)	String

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <Features>
 <Feature>
 <LicenseModels>
```

```

 <LicenseModel>
 <default>1</default>
 <enfName>Sentinel RMS</enfName>
 <enfVersion>9.0</enfVersion>
 <id>5</id>
 <name>Standalone Node Locked</name>
 </LicenseModel>
 </LicenseModels>
 <deployed>>false</deployed>
 <enabled>>true</enabled>
 <id>4</id>
 <name>CleanDrive</name>
 <namespaceId>1</namespaceId>
 <namespaceName>Global</namespaceName>
 <refId1 />
 <refId2 />
 <ver>2.3.4</ver>
</Feature>
<Feature>
 <LicenseModels>
 <LicenseModel>
 <default>1</default>
 <enfName>Sentinel RMS</enfName>
 <enfVersion>9.0</enfVersion>
 <id>5</id>
 <name>Standalone Node Locked</name>
 </LicenseModel>
 </LicenseModels>
 <deployed>>false</deployed>
 <enabled>>true</enabled>
 <id>1</id>
 <name>ProtectDrive</name>
 <namespaceId>1</namespaceId>
 <namespaceName>Global</namespaceName>
 <refId1 />
 <refId2 />
 <ver />
</Feature>
<Feature>
 <LicenseModels>
 <LicenseModel>
 <default>1</default>
 <enfName>Sentinel RMS</enfName>
 <enfVersion>9.0</enfVersion>
 <id>5</id>
 <name>Standalone Node Locked</name>
 </LicenseModel> </LicenseModels>
 <deployed>>false</deployed>
 <enabled>>true</enabled>
 <id>3</id>
 <name>ReportOption</name>
 <namespaceId>1</namespaceId>
 <namespaceName>Global</namespaceName>
 <refId1 />
 <refId2 />
 <ver>4.3</ver>
</Feature>

```

```

<Feature>
 <LicenseModels>
 <LicenseModel>
 <default>1</default>
 <enfName>Sentinel RMS</enfName>
 <enfVersion>8.5.0</enfVersion>
 <id>8</id>
 <name>Trial Standalone Node Locked</name>
 </LicenseModel>
 </LicenseModels>
 <deployed>>false</deployed>
 <enabled>>true</enabled>
 <id>2</id>
 <name>ZipOption</name>
 <namespaceId>1</namespaceId>
 <namespaceName>Global</namespaceName>
 <refId1 />
 <refId2 />
 <ver>1.0.1</ver>
</Feature>
</Features>
<stat>ok</stat>
<total>4</total>
</EMSResponse>

```

**See Also:**

["Output Format for Failure" on page 399](#)

**Error Codes**

Error Code	Description
101	You are not authorized to use this service.
109	The sort order value is not valid. Specify asc or desc.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
115	The length of {0} is {1}. It cannot be more than {2}.
133	The namespace is not valid.
345	The feature name and/or version is not valid.



## Retrieving Feature Details for a Given Feature ID

Retrieve the details of a feature for a given feature ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/viewFeatureById.xml

### Query Parameters

Parameter	Description	Valid Values	Default Values	Optional/ Required
featureId	Specify the feature ID. <b>Required</b>	Integer		Required

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <feature>
 <LicenseModels>
 <LicenseModel>
 <default>1</default>
 <enfName>Sentinel RMS</enfName>
 <enfVersion>8.4.0</enfVersion>
 <id>1</id>
 <name>Trial Standalone</name>
 </LicenseModel>
 </LicenseModels>
 <deployed>>false</deployed>
 <desc/>
 <enabled>>true</enabled>
 <externalId>101</externalId>
 <id>3</id>
 <name>ftr22</name>
 <namespaceId>2</namespaceId>
 <namespaceName>nms2</namespaceName>
 <refId1/>
 <refId2/>
 <ver>11</ver>
 </feature>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

"Output Format for Failure" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.

Error Code	Description
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
133	The namespace is not valid.
309	Cannot find the feature.

## Edit Feature Description

Edit the description for a feature.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateFeatureDescription.xml

### POST Parameters

Parameter	Description	Type
featureId	(Required) Specify the feature ID.	Integer
featureDescription	(Optional) Provide a description for the feature.	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

"Output Format for Failure" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
115	The length of {0} is {1}. It cannot be more than {2}.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
133	The namespace is not valid.
309	Cannot find the feature.
320	A deployed feature cannot be updated.

## Associate License Model with a Feature

Edit the license models associated with a feature.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/updateFeatureLMAssociation.xml

### POST Parameters

Parameter	Description	Type
featureId	(Required) Specify the feature ID.	Integer
licenseModelIds	(Required) List of license model IDs separated by commas.	String
defaultLicenseModelId	(Required) Specify the default license model ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

"Output Format for Failure" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
309	Cannot find the feature.
906	A deployed license {0} with feature cannot be deleted.

## Delete Feature

Delete a feature for a given feature ID.

Default Protocol	Method Type	URI
HTTP	POST	/ems/deleteFeature.xml

## POST Parameters

Parameter	Description	Type
featureId	(Required) Specify the feature ID.	Integer

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

## Deprecated License Model Web Services

---

This section lists the License Model Web services that have been deprecated in Sentinel EMS:

- [Retrieve License Models](#)
- [Retrieve License Model by ID](#)

## Retrieve License Models

Retrieve the license model for a given enforcement ID. This is a deprecated Web service, refer "[Retrieve License Model using Enforcement ID](#)" on page 167 for new REST Web Service.

Protocol	Method Type	URI
HTTP	GET	/ems/searchLicenseModelList.xml

## Query Parameters

Parameter	Description	Type
enflid	(Optional) Enforcement ID <b>Default value:</b> 1	Integer (>0)
pageIndex	(Optional) The starting page number. <b>Default value:</b> 1	Integer (>0)
pageSize	(Optional) The number of enforcement IDs to be retrieved by one request. <b>Default value:</b> 5	Integer (>0)
sortCol	(Optional) Sort against the column <b>Valid values:</b> enflid, licenseModelId <b>Default value:</b> licenseModelId	String
sortOrder	(Optional) The order to sort. <b>Valid values:</b> asc, desc <b>Default value:</b> desc	String

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <licenseModels>
 <licenseModel>
 <deployed>>false</deployed>
 <enabled>>true</enabled>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <licenseModelDescription>Auto checkout license model</licenseModelDescription>
 <licenseModelId>7</licenseModelId>
 <licenseModelName>Auto Checkout</licenseModelName>
 </licenseModel>
 <licenseModel>
 <deployed>>false</deployed>
 <enabled>>true</enabled>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
```

```

 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <licenseModelDescription>Commuter license model</licenseModelDescription>
 <licenseModelId>6</licenseModelId>
 <licenseModelName>Commuter</licenseModelName>
 </licenseModel>
 </licenseModels>
 <stat>ok</stat>
 <total>2</total>
</EMSResponse>

```

**See Also:**

"Output Format for Failure" on page 399

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
109	The sort order value is not valid. Specify asc or desc.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
118	{0} should be of data type Integer.
124	The sort column is not valid. The valid values are {0}.
128	You should log on first.
413	The enforcement ID is not found.



## Retrieve License Model by ID

Retrieve the license model details and attributes for a given license model ID (lmdl). This is a deprecated Web service, refer "[Get License Model Using License ID](#)" on page 165 for new REST Web Service.

Protocol	Method Type	URI
HTTP	GET	/ems/getLicenseModelById.xml

### Query Parameters

Parameter	Description	Type
lmdl	(Optional) License model ID	Integer (>0)

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <licenseModel>
 <deployed>false</deployed>
 <enabled>true</enabled>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <licenseModelDescription>
 Trial standalone license model
 </licenseModelDescription>
 <licenseModelId>1</licenseModelId>
 <licenseModelName>Trial Standalone</licenseModelName>
 <licensingAttributes>
 <licensingAttribute>
 <attributeId>99</attributeId>
 <attributeName>VENDOR_PRIVATE_INFO</attributeName>
 <attributeValue/>
 <groupName>Vendor</groupName>
 <readOnly>false</readOnly>
 <subGroupName>Vendor Info</subGroupName>
 </licensingAttribute>
 <licensingAttribute>
 <attributeId>21</attributeId>
 <attributeName>ALLOW_GRACE</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 <subGroupName/>
 </licensingAttribute>

 <licensingAttribute>
 <attributeId>5</attributeId>
 <attributeName>TRIAL_DURATION_DAYS</attributeName>
 <attributeValue>30</attributeValue>
 </licensingAttribute>
 </licensingAttributes>
 </licenseModel>
</EMSResponse>
```

```

<groupName>Time</groupName>
<readOnly>>false</readOnly>
<subGroupName>Trial Limit</subGroupName>
 </licensingAttribute>
 <licensingAttribute>
<attributeId>93</attributeId>
<attributeName>VENDOR_SECRETS_3</attributeName>
<attributeValue/>
<groupName>Vendor</groupName>
<readOnly>>false</readOnly>
<subGroupName>Vendor Secrets</subGroupName>
 </licensingAttribute>
 </licensingAttributes>
</licenseModel>
<stat>ok</stat>
</EMSResponse>

```

**See Also:**

"Output Format for Failure" on page 399

**Error Codes**

Error Code	Description
101	You are not authorized to use this service.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
411	The license model does not exist.

## Deprecated Product Web Services

---

This section lists the Product Web services that have been deprecated in Sentinel EMS:

- "Create Product" on the next page
- "Retrieve Product Details by Product ID" on page 510
- "Retrieve Product Details By Name and Version" on page 512
- "Associate Features with Product" on page 514
- "Remove Features From Product" on page 516
- "Change Lifecycle Stage of a Product" on page 518

## Create Product

Create a new product.

Default Protocol	Method Type	URI
HTTP	POST	/ems/createProduct.xml

### POST Parameters

Parameter	Description	Type
productName	(Required) Specify the product name.	String
productVersion	(Required) Version of the product.	String
namespaceName	(Required) Specify the namespace to which the product belongs.	String
productDescription	(Optional) Description of the product.	String
featureIds	(Optional) Specify one or more feature IDs. <b>Valid values:</b> String (comma separated integers)	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
externalPrdId	(Optional) External identifier to identify the Product. <b>Valid values:</b> String ( accepts a maximum of 60 characters)	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <id>40</id>
 <stat>ok</stat>
</EMSResponse>
```

#### See Also:

"Output Format for Failure" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
115	The length of {0} is {1}. It cannot be more than {2}.
117	Regular expression validation failed for {0}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
133	The namespace is not valid.
304	The given feature IDs are not correct.
305	The given feature ID should belong to the same namespace as product.
309	Cannot find the feature.
312	Product {0} already exists. Try again with a different name and version.
322	This {0} does not exist in the system.

## Retrieve Product Details by Product ID

Retrieve the details of a product for a given product ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getProductById.xml

### Query Parameters

Parameter	Description	Type
productId	(Required) Specify the product ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
<product>
<deployed>true</deployed>
<desc />
<enabled>true</enabled>
<externalPrdId />
<features>
<feature>
<featureState>2</featureState>
<id>1</id>
<name>ftr1</name>
<ver />
</feature>
</features>
<id>1</id>
<lifeCycleStage>Complete</lifeCycleStage>
<name>prod1</name>
<namespaceId>1</namespaceId>
<namespaceName>global</namespaceName>
<refId1 />
<refId2 />
<ver>1</ver>
</product>
<stat>ok</stat>
</EMSResponse>
```

In this response, the integer value within the `<featureState></featureState>` tags has the following meaning:

- 1 – Excludable at order time with default value ON
- 2 – Excludable at order time with default value OFF
- 3 – Included (cannot be excluded at order time)

#### See Also:

"Output Format for Failure" on page 399

## Error Codes

Error Code	Description
100	The request parameter is not valid.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
133	The namespace is not valid.
301	Cannot find a product corresponding to {0}.

## Retrieve Product Details By Name and Version

Retrieve product details for given exact product name and version.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getProductByNameAndVer.xml

### Query Parameters

Parameter	Description	Type
productName	(Required) Specify the product name.	String
productVersion	(Required) Version of the product.	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
<product>
<deployed>true</deployed>
<desc />
<enabled>true</enabled>
<externalPrdId />
<features>
<feature>
<featureState>2</featureState>
<id>1</id>
<name>ftr1</name>
<ver />
</feature>
</features>
<id>1</id>
<lifeCycleStage>Complete</lifeCycleStage>
<name>prod1</name>
<namespaceId>1</namespaceId>
<namespaceName>global</namespaceName>
<refId1 />
<refId2 />
<ver>1</ver>
</product>
<stat>ok</stat>
</EMSResponse>
```

In this response, the integer value within the `<featureState></featureState>` tags has the following meaning:

- 1 – Excludable at order time with default value ON
- 2 – Excludable at order time with default value OFF
- 3 – Included (cannot be excluded at order time)

### See Also:

["Output Format for Failure" on page 399](#)



## Error Codes

Error Code	Description
100	The request parameter is not valid.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
133	The namespace is not valid.
302	No product exists for the given name and version.

## Associate Features with Product

Associates features with products. Comma separated featureIds are provided as input. The output is the union of already existing features and new features to be associated.

Default Protocol	Method Type	URI
HTTP	POST	/ems/associateFeaturesWithProduct.xml

### POST Parameters

Parameter	Description	Type
productId	(Required) Specify the product ID.	Integer
featureIds	<p>(Required) Specify feature IDs (separated by comma). You can also specify the exclusion condition for each feature as shown in the following example.</p> <p><b>Example</b></p> <p>9-1,10-2,11-3. Here the first parts are the feature IDs and the second parts are the exclusion condition.</p> <p>The exclusion condition has the following meaning:</p> <ul style="list-style-type: none"> <li>• 1 – Excludable at order time with default value ON</li> <li>• 2 – Excludable at order time with default value OFF</li> <li>• 3 – Included (cannot be excluded at order time)</li> </ul> <p>If exclusion condition is not specified then default value is 3 (Included).</p>	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <features>
 <feature>
 <id>2</id>
 </feature>
 <feature>
 <id>1</id>
 </feature>
 </features>
 <id>41</id>
 <stat>ok</stat>
</EMSResponse>
```

#### See Also:

"Output Format for Failure" on page 399

## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
128	You should log on first.
133	The namespace is not valid.
301	Cannot find a product corresponding to {0}.
304	The given feature IDs are not correct.
333	The product is already in complete stage and cannot be updated.

## Remove Features From Product

Using this interface you can dissociate features from a product. Comma separated featureids are provided as input. Result is the intersection of already existing features and new features to be removed.

Default Protocol	Method Type	URI
HTTP	POST	/ems/disAssociateFeaturesFromProduct.xml

### POST Parameters

Parameter	Description	Type
productId	(Required) Specify the product ID.	Integer
featureids	(Required) Specify one or more feature IDs. <b>Valid values:</b> String (comma separated feature ids)	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <features>
 <feature>
 <id>2</id>
 </feature>
 <feature>
 <id>1</id>
 </feature>
 </features>
 <id>41</id>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

"Output Format for Failure" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
128	You should log on first.

Error Code	Description
304	The given feature IDs are not correct.
333	The product is already in complete stage and cannot be updated.

## Change Lifecycle Stage of a Product

Change the lifecycle stage of a product for a given product ID.

Default Protocol	Method Type	URI
HTTP	POST	/ems/changeProductLifeCycleStage.xml

### POST Parameters

Parameter	Description	Type
productId	(Required) Specify the product ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <lifeCycleStage>Complete</lifeCycleStage>
 <productId>40</productId>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
128	You should log on first.
133	The namespace is not valid.
306	Product cannot be marked complete. Add at least one feature.
307	{0} is already a part of a completed product suite.
308	{0} lifecycle stage is not valid.

## Search Products

Retrieve the list of products against the query parameters.

Default Protocol	Method Type	URI
HTTP	GET	/ems/searchProducts.xml

## Query Parameters

Parameter	Description	Type
productName	(Optional) Specify the product name.	String
productVersion	(Optional) Version of the product.	String
namespaceName	(Optional) Specify the namespace to which the product belongs.	String
sortCol	(Optional) Sort against the column. <b>Valid values:</b> String (productName, productVersion, namespaceName, productDescription, lifeCycleStage, deployed) <b>Default value:</b> productName	String
sortOrder	(Optional) The order to sort. <b>Valid values:</b> String (asc, desc) <b>Default value:</b> desc	String
pageSize	(Optional) The number of products retrieved by one request. <b>Default value:</b> 200	Integer (>0)
pageIndex	(Optional) The starting page number. <b>Default value:</b> 1	Integer (>0)
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
externalPrdId	(Optional) External identifier to identify the Product. <b>Valid values:</b> String ( accepts a maximum of 60 characters)	String

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <products>
 <product>
 <deployed>>false</deployed>
 <enabled>>true</enabled>
 <id>38</id>
 <lifeCycleStage>Complete</lifeCycleStage>
 <name>prd_newlm_up</name>
 </product>
 </products>
</EMSResponse>
```

```

 <namespace>EMS</namespace>
 <refId1 />
 <refId2 />
 <ver>1.1</ver>
 </product>
</product>
<product>
 <deployed>true</deployed>
 <desc />
 <enabled>true</enabled>
 <id>36</id>
 <lifeCycleStage>Complete</lifeCycleStage>
 <name>Image Converter</name>
 <namespace>EMS</namespace>
 <refId1 />
 <refId2 />
 <ver>1.1</ver>
</product>
</products>
<stat>ok</stat>
<total>2</total>
</EMSResponse>

```

**See Also:**

"Output Format for Failure" on page 399

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
124	The sort column is not valid. The valid values are {0}.
128	You should log on first.
129	The sort order is not valid.
133	The namespace is not valid.



## Update Catalog Reference IDs

Edit reference IDs for features, products, and suites.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateCatalogRefIds.xml

### POST Parameters

Parameter	Description	Type
entityType	(Required) Specify the entity type. <b>Valid values:</b> String (feature, product, suite)	String
entityId	(Required) The ID for the entity specified in entityType.	Integer
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
externalId	(Optional) External identifier to identify the Feature. <b>Valid values:</b> String ( accepts a maximum of 60 characters)	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
115	The length of {0} is {1}. It cannot be more than {2}.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.

Error Code	Description
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
301	Cannot find a product corresponding to {0}.
309	Cannot find the feature.
311	{0} is already a part of an entitlement. Hence, it cannot be deleted/updated.
330	Cannot find a product suite corresponding to {0}
341	The entity type is not valid. Specify a feature, product, or suite.
342	Specify value for either the refId1 or refId2.
344	{0} is already in end of life stage. Hence, it cannot be updated/deleted.

---

## Deprecated Entitlement Web Services

---

This section lists the Entitlement Web services that have been deprecated in Sentinel EMS.

- "Create an Entitlement" on the next page
- "Retrieve Details of an Entitlement" on page 546
- "Retrieve Entitlement Line Item Details" on page 530
- "Retrieve Entitlement Line Item Details by Product Key " on page 533
- "Update Entitlement Details" on page 543
- "Sample Response" on page 553
- "Sample Response" on page 557
- "Remove Entitlement Line Items" on page 559
- "Update Entitlement Attribute for All Features" on page 560
- "Associate Contact Details with Entitlement " on page 564
- "Retrieve License Model Attributes for a Feature" on page 566
- "Update LM Attributes for a Line Item" on page 569
- "Commit Entitlement" on page 526
- "Enable/disable Activation State of Entitlement " on page 538
- "Recharge a Line Item" on page 571
- "Renew Entitlement" on page 539
- "Update Feature Attribute of a Product in an Entitlement" on page 562
- "Change Line Item Status" on page 536
- "Change Status of Product Key" on page 537
- "Renew Line Item" on page 541

## Create an Entitlement

Create an entitlement using the parameters provided. This is a deprecated Web service, refer "[Create Entitlement Using Entitlement XML](#)" on page 169 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/createEntitlement.xml

### POST Parameters

Parameter	Description	Type
startDate	(Required) Entitlement start date.	Date (YYYY-MM-DD)
endDate	(Required) Entitlement end date. Specify <b>2500-12-31</b> for "Never Expire".	Date (YYYY-MM-DD)
activationAllowed	(Optional) Specify if you want to allow activation for the entitlement. <b>Valid values:</b> Boolean (true or false) <b>Default value:</b> true	Boolean
userRegistration	(Required) Specify if user is required to register to activate the entitlement. <b>Valid values:</b> 1 - not required, 2 - desired, 3 - mandatory. <b>Default value:</b> true	Integer
customerId	(Optional) Specify the customer ID.	Integer
contactEmailId	(Optional) E-mail ID of the contact.	String
revokeAllowed	(Optional) Specify if revoke is allowed for the entitlement. <b>Default value:</b> true	Boolean
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
isTest	(Optional) Specify if the entitlement is to be created as a test entitlement. <b>Default value:</b> false	Boolean
partnerId	(Optional) Specify the channel partner ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <entId>390</entId>
```

```
<stat>ok</stat>
</EMSResponse>
```

**See Also:**

["Output Format for Failure" on page 399](#)

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
117	Regular expression validation failed for {0}.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
123	{0} should be of data type Date in the format {1}.
128	You should log on first.
519	The customer ID is not valid.
531	To use this product key, first login using the EID and complete user registration.
617	The start date cannot be later than the end date.
622	The value for user registration is not valid. Provide a value from 1 (not required), 2 (desired), or 3 (mandatory).
631	The revoke allowed value can either be true or false.
633	The activation allowed value can either be true or false.

## Commit Entitlement

Commit an entitlement. This is a deprecated Web service, refer ["Update Entitlement" on page 212](#) for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/commitEntitlement.xml

### POST Parameters

Parameter	Description	Type
entId	(Required) Specify the entitlement ID.	Integer (>0)

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
612	The entitlement cannot be completed as it does not contain line items.
613	Already committed.
619	All license model inside the entitlement item: {0} should be of license type {1}. Specify valid license models.
621	Entitlement does not exist. Try again with a correct entitlement ID.
810	Error in reading the {0} file. Contact the system administrator for assistance.

## Search Entitlements

Search Entitlements using a combination of customer ID, Contact email id, and lifecycle stage. Empty values of input fields are ignored.

Default Protocol	Method Type	URI
HTTP	GET	/ems/searchEntitlements.xml

### Query Parameters

Parameter	Description	Type
customerId	(Optional) Specify the customer ID.	Integer
contactEmailId	(Optional) Specify the contact e-mail ID for the customer.	String
lifecycleState	(Optional) Lifecycle state of the entitlement. <b>Valid values:</b> 0 (all), 1 (Draft), 2 (Complete) <b>Default value:</b> 0	Integer
pageIndex	(Optional) The starting page number. <b>Default value:</b> 1	Integer (>0)
pageSize	(Optional) The number of entitlements retrieved by one request. <b>Default value:</b> 200	Integer (>0)
sortCol	(Optional) Sort against the column. <b>Valid values:</b> String (startDate, endDate, state, status, contactEmailId, customerName, id) <b>Default value:</b> id	String
sortOrder	(Optional) The order to sort. <b>Valid values:</b> String (asc, desc) <b>Default value:</b> desc	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems. <b>Valid values:</b> String	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems. <b>Valid values:</b> String	String
isTest	(Optional) Specify "true" to search for test entitlements. <b>Valid values:</b> Boolean <b>Default value:</b> false	Boolean

## Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <entitlements>
 <entitlement>
 <activationAllowed>true</activationAllowed>
 <channelPartner>
 <channelPartnerId>1</channelPartnerId> <channelPartnerName>UniSoft</channelPartnerName>
 </channelPartner>
 <contact>
 <contactId>1</contactId>
 </contact>
 <customer />
 <eid>ebd38d****</eid>
 <endDate>2500-12-31</endDate>
 <entId>1</entId>
 <isTest>false</isTest>
 <refId1 />
 <refId2 />
 <revokeAllowed>true</revokeAllowed>
 <startDate>2010-10-01</startDate>
 <state>1</state>
 <status>true</status>
 <userRegistration>3</userRegistration>
 </entitlement>
 </entitlements>
 <stat>ok</stat>
 <total>1</total>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)



## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
109	The sort order value is not valid. Specify asc or desc.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
124	The sort column is not valid. The valid values are {0}.
128	You should log on first.
635	The life cycle stage is not valid. Specify 0 (for all), 1 (for draft), or 2 (for complete).

## Retrieve Entitlement Line Item Details

Retrieve entitlement line item details by lineItemId. This is a deprecated Web service, refer "[Get Entitlement Using Entitlement ID](#)" on page 205 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getEntitlementItemById.xml

### Query Parameters

Parameter	Description	Type
lineItemId	(Required) Specify the line item ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <lineItem>
 <activationAllowed>false</activationAllowed>
 <allowLogin>true</allowLogin>
 <allowOverride>true</allowOverride>
 <endDate>2500-12-31</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>a84d75****</eid>
 <entId>4</entId>
 </entitlement>
 <itemProduct>
 <itemFeatureLicenseModels>
 <itemFeatureLicenseModel>
 <entFtrLmId>1</entFtrLmId>
 <feature>
 <featureId>2</featureId>
 <featureName>ZipOption</featureName>
 <featureVersion>1.0.1</featureVersion>
 </feature>
 <licenseModel>
 <licenseModelId>8</licenseModelId>
 <licenseModelName>Trial Standalone Node Locked</licenseModelName>
 </licenseModel>
 </itemFeatureLicenseModel>
 </itemFeatureLicenseModels>
 <product>
 <productId>2</productId>
 <productName>Clean Drive</productName>
 <productVersion>0.9 Beta</productVersion>
 </product>
 </itemProduct>
 </lineItem>
</EMSResponse>
```

```

<licenseType>1</licenseType>
<lineItemId>1</lineItemId>
<lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>>false</readOnly>
 <subGroupName/>
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue/>
 <groupName>Client Locking</groupName>
 <readOnly>>true</readOnly>
 <subGroupName/>
 </associatedAttribute>
 <attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>
 <attributeValue>4</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>>false</readOnly>
 <subGroupName/>
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>42</attributeId>
 <attributeName>NUM_CLIENT_LOCKED</attributeName>
 <attributeValue>2</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>>false</readOnly>
 <subGroupName/>
 </attribute>
 </lineItemLicensingAttribute>
</lineItemLicensingAttributes>
<lineItemName>Clean Drive</lineItemName>
<lineItemVersion>0.9 Beta</lineItemVersion>
<productKey>58169ada-cadc-4d86-b610-badccbbb0da8</productKey>
<quantity>11222</quantity>
<quantityUnlimited>>false</quantityUnlimited>
<remainingQuantity>11222</remainingQuantity>
<startDate>2010-10-05</startDate>
<state>2</state>
<status>>true</status>
<type>product</type>
</lineItem>
<stat>ok</stat>
</EMSResponse>

```

**See Also:**

["Output Format for Failure" on page 399](#)

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
618	Could not find the entitlement line item.

## Retrieve Entitlement Line Item Details by Product Key

Retrieve entitlement line item details by Product Key.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getEntitlementItemByProductKey.xml

### Query Parameters

Parameter	Description	Type
productKey	(Required) Specify the Product Key.	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <lineItem>
 <activationAllowed>true</activationAllowed>
 <allowLogin>true</allowLogin>
 <allowOverride>true</allowOverride>
 <endDate>2010-10-30</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>bab7a1****</eid>
 <entId>1</entId>
 </entitlement>
 <itemProduct/>
 <itemSuite>
 <itemProducts>
 <itemProduct>
 <itemFeatureLicenseModels>
 <itemFeatureLicenseModel>
 <entFtrLmId>1</entFtrLmId>
 <feature>
 <featureId>1</featureId>
 <featureName>ProtectDrive</featureName>
 <featureVersion/>
 </feature>
 <licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
 </licenseModel>
 </itemFeatureLicenseModel>
 <itemFeatureLicenseModel>
 <entFtrLmId>2</entFtrLmId>
 <feature>
 <featureId>2</featureId>
 <featureName>ZipOption</featureName>
 <featureVersion>1.0.1</featureVersion>
 </feature>
 </itemFeatureLicenseModel>
 </itemFeatureLicenseModels>
 </itemProduct>
 </itemProducts>
 </itemSuite>
 </lineItem>
</EMSResponse>
```

```

 </feature>
 <licenseModel>
 <licenseModelId>8</licenseModelId>
 <licenseModelName>Trial Standalone Node Locked</licenseModelName>
 </licenseModel>
 </itemFeatureLicenseModel>
</itemFeatureLicenseModels>
<product>
 <productId>1</productId>
 <productName>Protect Drive</productName>
 <productVersion>6.1</productVersion>
</product>
</itemProduct>
</itemProducts>
<suite>
 <suiteId>1</suiteId>
 <suiteName>Protect-Clean Suite</suiteName>
 <suiteVersion>1.0.0</suiteVersion>
</suite>
</itemSuite>
<licenseType>1</licenseType>
<lineItemId>1</lineItemId>
<lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>false</readOnly>
 <subGroupName/>
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue/>
 <groupName>Client Locking</groupName>
 <readOnly>true</readOnly>
 <subGroupName/>
 </associatedAttribute>
 <attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>
 <attributeValue>4</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>false</readOnly>
 <subGroupName/>
 </attribute>
 </lineItemLicensingAttribute>
</lineItemLicensingAttributes>
<lineItemName>Protect-Clean Suite</lineItemName>
<lineItemVersion>1.0.0</lineItemVersion>
<productKey>761674cf-6732-417e-8c23-bd094f928972</productKey>
<quantity>25</quantity>

```

```

<quantityUnlimited>>false</quantityUnlimited>
<remainingQuantity>24</remainingQuantity>
<startDate>2010-10-15</startDate>
<state>2</state>
<status>>true</status>
<type>productSuite</type>
</lineItem>
<stat>ok</stat>
</EMSResponse>

```

**See Also:**

["Output Format for Failure" on page 399](#)

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
618	Could not find the entitlement line item.
821	Product Key does not exist

## Change Line Item Status

Change entitlement item status, from enabled to disabled and vice versa. This is a deprecated Web service, refer "[Modify Entitlement Using Entitlement XML](#)" on page 188 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/changeLineItemStatus.xml

### POST Parameters

Parameter	Description	Type
lineItemId	(Required) Specify line item ID for which you want to change the status.	Integer
allowLogin	(Optional) Specify if login is allowed. <b>Default value:</b> true	Boolean (true or false)

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
 <status>enabled</status>
</EMSResponse>
```

### See Also:

["Output Format for Failure"](#) on page 399

### Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
128	You should log on first.
682	The line item does not exist.



## Change Status of Product Key

Change Product Key status, from enabled to disabled and vice versa. This is a deprecated Web service, refer ["Modify Entitlement Using Entitlement XML"](#) on page 188 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/changeProductKeyStatus.xml

### POST Parameters

Parameter	Description	Type
productKey	(Required) Specify the product key for which you want to change the status.	String
allowLogin	(Optional) Specify the required line item status. <b>Default value:</b> true	Boolean (true or false)

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
 <status>enabled</status>
</EMSResponse>
```

### See Also:

["Output Format for Failure"](#) on page 399

### Error Codes

None

## Enable/disable Activation State of Entitlement

Update the activation state for an entitlement. The lifecycle state of the entitlements to be updated can be either Complete or Draft. This is a deprecated Web service, refer "[Modify Entitlement Using Entitlement XML](#)" on page 188 for new REST Web Service.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/changeEntitlementActivationState.xml

### POST Parameters

Parameter	Description	Type
entId	(Required) Specify the entitlement ID.	Integer (>0)
activationAllowed	(Optional) Specify if activation is allowed for the entitlement. <b>Default value:</b> false	Boolean (true or false)

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
621	Entitlement does not exist. Try again with a correct entitlement ID.

## Renew Entitlement

Using this web service one can only change the end date of entitlements. It is present since EMS 1.1, and a new web service, `renewLineItem.xml`, was introduced in EMS 2.0 to enable renewal of a line item. This is a deprecated Web service, refer "[Modify Entitlement Using Entitlement XML](#)" on page 188 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/renewEntitlement.xml

## POST Parameters

Parameter	Description	Type
entId	(Required) Specify the entitlement ID.	Integer (>0)
renewDate	(Required) Specify the new date. <b>Valid values:</b> Date (yyyy-mm-dd)	Date
renewEntItems	(Optional) Specify if the entitlement items should be renewed. <b>Valid values:</b> Boolean <b>Default value:</b> false	Boolean

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

## See Also:

["Output Format for Failure" on page 399](#)

## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
123	{0} should be of data type Date in the format {1}.

Error Code	Description
128	You should log on first.
641	Specify a valid renew date.
649	Invalid argument. The start date {0} cannot be later than the new end date {1}.

## Renew Line Item

Renew a entitlement line item. Using this web service, you can extend the end date of an activated entitlement. This is a deprecated Web service, refer "[Modify Entitlement Using Entitlement XML](#)" on page 188 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/renewLineItem.xml

## POST Parameters

Parameter	Description	Type
lineItemId	(Required) Enter the line item ID.	Integer
renewDate	(Required) Specify the new date. <b>Valid values:</b> Date (yyyy-mm-dd)	Date
cascadeExistingLMDates	(Optional) If you specify "true," the start and end dates for the license model attributes will also be renewed. <b>Valid values:</b> Boolean <b>Default value:</b> false	Boolean
endDateNeverExpire	(Optional) If you select "true," the end date will extend indefinitely. <b>Valid values:</b> Boolean <b>Default value:</b> false	Boolean

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure"](#) on page 399

## Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.

Error Code	Description
128	You should log on first.
682	The line item does not exist.
826	The end date must be ahead of the start date.
827	The end date must be ahead of the entitlement end date.

## Update Entitlement Details

Update entitlement details for a given entId. Using this web service, you can only update entitlements that are in Draft stage. This is a deprecated Web service, refer "[Update Entitlement](#)" on page 212 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateEntitlement.xml

### POST Parameters

Parameter	Description	Type
entId	(Required) Entitlement ID	Integer
startDate	(Required) Entitlement start date. <b>Valid values:</b> Date (yyyy-mm-dd)	Date
endDate	(Required) Entitlement end date. <b>Valid values:</b> Date (yyyy-mm-dd)	Date
userRegistration	(Required) Specify if user registration is required. <b>Valid values:</b> 1 -not required, 2- desired, 3 - mandatory <b>Default value:</b> 3	Integer
activationAllowed	(Optional) Specify if activation is allowed for the end user. <b>Valid values:</b> Boolean (true/false) <b>Default value:</b> true	Boolean
revokeAllowed	(Optional) Specify if revocation is allowed for the activation. <b>Valid values:</b> Boolean (true/false) <b>Default value:</b> true	Boolean
customerId	(Optional) Specify the customer ID.	Integer
contactEmailId	(Optional) E-mail ID of the end user.	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
partnerId	(Optional) Specify the channel partner ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

**See Also:**

"Output Format for Failure" on page 399

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
123	{0} should be of data type Date in the format {1}.
128	You should log on first.
511	Could not find a customer against the given customer name.
513	The contact does not exist.
515	The contact is not valid for this customer.
519	The customer ID is not valid.
615	The end date and start date cannot be null.
616	The credit amount must be greater than zero.
617	The start date cannot be later than the end date.
621	Entitlement does not exist. Try again with a correct entitlement ID.
622	The value for user registration is not valid. Provide a value from 1 (not required), 2 (desired), or 3 (mandatory).
647	The entitlement is already in complete stage and cannot be updated/deleted.
845	The Customer/Contact associated with the Entitlement cannot be changed.
846	The Entitlement is deployed. The value for 'User Registration' cannot be changed to 'Mandatory'.
847	The Entitlement is deployed. The value for 'User Registration' cannot be changed to 'Not Required'.
848	The Entitlement is deployed. The value for 'User Registration' cannot be changed.
849	The Entitlement start date should be earlier than its line items' end date.



Error Code	Description
850	The Entitlement end date should not be earlier than its line items' end date.
851	The Channel Partner associated with the Entitlement cannot be changed.
852	The Entitlement start date should be earlier than its line items' start date.

## Retrieve Details of an Entitlement

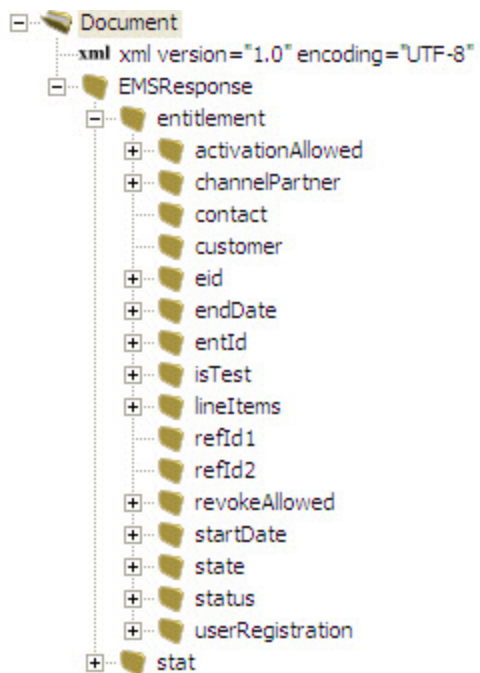
Retrieve the list of line items, with product(s), features(s), and license model, for a given entitlement ID. This is a deprecated Web service, refer "[Get Entitlement Using Entitlement ID](#)" on page 205 for new REST Web Service.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/getEntitlementDetailsById.xml

## Query Parameters

Parameter	Description	Type
entId	(Required) Specify the entitlement ID.	Integer (>0)
fetchCompleteEID	(Optional) Specify whether to retrieve complete details of the entitlement. <b>Default value:</b> false	Boolean

## Sample Response



```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <entitlement>
 <activationAllowed>true</activationAllowed>
 <channelPartner>
 <channelPartnerId>1</channelPartnerId>
 <channelPartnerName>Publisher</channelPartnerName>
 </channelPartner>
 <contact/>
 <customer/>
 <eid>9b13c303-dc0a-4e61-b0e0-c949cdf67192</eid>
```

```

<endDate>2011-10-01</endDate>
<entId>1</entId>
<test>false</test>
<lineItems>
 <lineItem>
 <activationAllowed>true</activationAllowed>
 <allowLogin>true</allowLogin>
 <allowOverride>true</allowOverride>
 <endDate>2011-10-01</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>9b13c3****</eid>
 <entId>1</entId>
 </entitlement>
 <itemProduct>
 <itemFeatureLicenseModels>
 <itemFeatureLicenseModel>
 <entFtrLmId>1</entFtrLmId>
 <feature>
 <featureId>1</featureId>
 <featureName>ProtectDrive</featureName>
 <featureVersion/>
 </feature>
 <licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
 </licenseModel>
 </itemFeatureLicenseModel>
 <itemFeatureLicenseModel>
 <entFtrLmId>2</entFtrLmId>
 <feature>
 <featureId>2</featureId>
 <featureName>ZipOption</featureName>
 <featureVersion>1.0.1</featureVersion>
 </feature>
 <licenseModel>
 <licenseModelId>8</licenseModelId>
 <licenseModelName>Trial Standalone Node Locked</licenseModelName>
 </licenseModel>
 </itemFeatureLicenseModel>
 </itemFeatureLicenseModels>
 <product>
 <productId>1</productId>
 <productName>Protect Drive</productName>
 <productVersion>6.1</productVersion>
 </product>
 </itemProduct>
 </lineItem>
</lineItems>
<licenseType>1</licenseType>
<lineItemId>1</lineItemId>
<lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 </lineItemLicensingAttribute>
</lineItemLicensingAttributes>

```

```

<attribute>
 <attributeId>37</attributeId>
 <attributeName>LICENSE_VERSION</attributeName>
 <attributeValue>13</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>>false</readOnly>
 <subGroupName/>
</attribute>
</lineItemLicensingAttribute>
<lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>>false</readOnly>
 <subGroupName/>
 </attribute>
</lineItemLicensingAttribute>
<lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>42</attributeId>
 <attributeName>NUM_CLIENT_LOCKED</attributeName>
 <attributeValue>1</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>>false</readOnly>
 <subGroupName/>
 </attribute>
</lineItemLicensingAttribute>
<lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue/>
 <groupName>Client Locking</groupName>
 <readOnly>>true</readOnly>
 <subGroupName/>
 </associatedAttribute>
 <attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>
 <attributeValue>4</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>>false</readOnly>
 <subGroupName/>
 </attribute>
</lineItemLicensingAttribute>
</lineItemLicensingAttributes>
<lineItemName>Protect Drive</lineItemName>
<lineItemVersion>6.1</lineItemVersion>
<productKey>fcbaaa30-9280-4ca2-aa3c-ea40c7b8cc12</productKey>
<quantity>111</quantity>
<quantityUnlimited>>false</quantityUnlimited>
<remainingQuantity>111</remainingQuantity>
<startDate>2010-10-01</startDate>

```

```

 <state>2</state>
 <status>true</status>
 <type>product</type>
 </lineItem>
</lineItems>
<refId1/>
<refId2/>
<revokeAllowed>true</revokeAllowed>
<startDate>2010-10-01</startDate>
<state>2</state>
<status>true</status>
<userRegistration>1</userRegistration>
</entitlement>
<stat>ok</stat>
</EMSResponse>

```

**See Also:**

"Output Format for Failure" on page 399

**Error Codes**

Error Code	Description
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
621	Entitlement does not exist. Try again with a correct entitlement ID.

**Add Line Items to an Entitlement**

Add line items (products or suites) to an entitlement. The entitlement must be in Draft state. The products and suits must be in Complete state. This is a deprecated Web service, refer "[Update Entitlement](#)" on page 212 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/addEntitlementItem.xml

**POST Parameters**

Parameter	Description	Type
entitlementItem	(Required) Specify the entitlement item XML.	String

**Sample Input XML**

```

<?xml version="1.0" encoding="UTF-8"?>
<lineItem>
 <activationAllowed>true</activationAllowed>
 <allowLogin>true</allowLogin>
 <allowOverride>true</allowOverride>
 <endDate>2500-12-31</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>46c08b****</eid>
 <entId>38</entId>
 </entitlement>
 <isNumberActivationBased>false</isNumberActivationBased>
 <itemProduct>
 <itemFeatureLicenseModels>
 <itemFeatureLicenseModel>
 <entFtrLmId>649</entFtrLmId>
 <feature>
 <featureId>1</featureId>
 <featureName>Test</featureName>
 <featureVersion />
 <refId1 />
 <refId2 />
 </feature>
 <itemFeatureLicenseModelAttribute>
 <itemFeatureLicenseModelAttribute>
 <attributeId>2</attributeId>
 <attributeName>END_DATE</attributeName>
 <attributeValue>2015-05-05</attributeValue>
 <groupName>Time</groupName>
 <isvPermission>2</isvPermission>
 <subGroupName>License Duration</subGroupName>
 </itemFeatureLicenseModelAttribute>
 </itemFeatureLicenseModelAttribute>
 <licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
 </licenseModel>
 </itemFeatureLicenseModel>
 </itemFeatureLicenseModels>
 <product>
 <productId>1</productId>
 <productName>Test</productName>
 <productVersion>1</productVersion>
 <refId1 />
 <refId2 />
 </product>
 </itemProduct>
 <itemSuite />
 <licenseType>1</licenseType>
 <lineItemId>649</lineItemId>
 <lineItemLicensingAttributes>
 <lineItemLicensingAttribute>

```

```

<associatedAttribute null="true" />
<attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <endUserPermission>0</endUserPermission>
 <groupName>Policy</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>>false</readOnly>
 <subGroupName />
</attribute>
</lineItemLicensingAttribute>
<lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>37</attributeId>
 <attributeName>LICENSE_VERSION</attributeName>
 <attributeValue>13</attributeValue>
 <endUserPermission>0</endUserPermission>
 <groupName>Policy</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>>false</readOnly>
 <subGroupName />
 </attribute>
</lineItemLicensingAttribute>
<lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>42</attributeId>
 <attributeName>NUM_CLIENT_LOCKED</attributeName>
 <attributeValue>1</attributeValue>
 <endUserPermission>0</endUserPermission>
 <groupName>Client Locking</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>>false</readOnly>
 <subGroupName />
 </attribute>
</lineItemLicensingAttribute>
<lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue />
 <endUserPermission>0</endUserPermission>
 <groupName>Client Locking</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>>true</readOnly>
 <subGroupName />
 </associatedAttribute>
 <attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>
 <attributeValue>4</attributeValue>
 <endUserPermission>0</endUserPermission>
 <groupName>Client Locking</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>>false</readOnly>

```

```

 <subGroupName />
 </attribute>
</lineItemLicensingAttribute>
</lineItemLicensingAttributes>
<lineItemName>Test</lineItemName>
<lineItemVersion>1</lineItemVersion>
<productKey>bbf925da-103d-4340-84d5-cf2f1af4285c</productKey>
<quantity>11</quantity>
<quantityUnlimited>>false</quantityUnlimited>
<remainingQuantity>11</remainingQuantity>
<startDate>2014-07-01</startDate>
<state>1</state>
<status>>true</status>
<type>product</type>
</lineItem>

```

In the XML, the line item licensing attributes are optional and EMS server assigns default values to the blank entries. Also consider the following important element:

XML Element	Description	Default Value
isNumberActivationBased	(Required) Specify whether <b>Quantity</b> should be treated as Number of Activations or Seat Count. Following are the options: <ul style="list-style-type: none"> <li>• true - Quantity indicates Number of Activations</li> <li>• false - Quantity indicates Seat Count</li> </ul>	true

If you set `isNumberActivationBased` to true you can set `FLOATING_USER_LIMIT` for each feature in the line item separately as follows:

```

<itemFeatureLicenseModelAttributes>
 <itemFeatureLicenseModelAttribute>
 <attributeId>8</attributeId>
 <attributeName>FLOATING_USER_LIMIT</attributeName>
 <attributeValue>10</attributeValue>
 </itemFeatureLicenseModelAttribute>
 ...
 ...
 ...
 <itemFeatureLicenseModelAttribute>
 ...
 </itemFeatureLicenseModelAttribute>
</itemFeatureLicenseModelAttributes>

```



## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
 <EMSResponse>
 <lineItemId>77</lineItemId>
 <stat>ok</stat>
 </EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
123	{0} should be of data type Date in the format {1}.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
647	The entitlement is already in complete stage and cannot be updated/deleted.
679	The license model does not exist in the given feature.
817	Entitlement Item contains both product and suite. Please provide valid entitlement item.
818	Invalid Product provided in entitlement item details. Please validate from product catalog definition.
819	Invalid Feature provided in entitlement item details. Please validate from product catalog definition.
820	Non excludable Feature is not provided in entitlement item details. Please validate from product catalog definition.
836	Invalid lineItem licensing attribute provided. Specify attributes present in the license models definition.
837	Primary 1 criteria (in hex) should be of data type integer (in hexadecimal).

Error Code	Description
838	Specify a valid value for {0}.
853	The line item start date should not be earlier than the Entitlement start date.
854	The line item end date should not be later than the Entitlement end date.

### Edit Entitlement Line Item

Update entitlement line item, start date, end date. The entitlement to be edited must be in Draft state. This is a deprecated Web service, refer "[Update Entitlement](#)" on page 212 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/editEntitlementItem.xml

### POST Parameters

Parameter	Description	Type
entitlementItem	(Required) Specify the entitlement item to be edited. <b>Valid values:</b> XML string	XML string

### Sample Input String (XML)

```
<?xml version="1.0" encoding="UTF-8"?>
<lineItem>
 <activationAllowed>true</activationAllowed>
 <allowLogin>true</allowLogin>
 <allowOverride>true</allowOverride>
 <endDate>2500-12-31</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>46c08b****</eid>
 <entId>38</entId>
 </entitlement>
 <isNumberActivationBased>>false</isNumberActivationBased>
 <itemProduct>
 <itemFeatureLicenseModels>
 <itemFeatureLicenseModel>
 <entFtrLmId>649</entFtrLmId>
 <feature>
 <featureId>1</featureId>
 <featureName>Test</featureName>
 <featureVersion />
 <refId1 />
 <refId2 />
 </feature>
 <itemFeatureLicenseModelAttribute>
 <itemFeatureLicenseModelAttribute>
```

```

 <attributeId>2</attributeId>
 <attributeName>END_DATE</attributeName>
 <attributeValue>2015-05-05</attributeValue>
 <groupName>Time</groupName>
 <isvPermission>2</isvPermission>
 <subGroupName>License Duration</subGroupName>
 </itemFeatureLicenseModelAttribute>
</itemFeatureLicenseModelAttributes>
<licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
</licenseModel>
</itemFeatureLicenseModel>
</itemFeatureLicenseModels>
<product>
 <productId>1</productId>
 <productName>Test</productName>
 <productVersion>1</productVersion>
 <refId1 />
 <refId2 />
</product>
</itemProduct>
<itemSuite />
<licenseType>1</licenseType>
<lineItemId>649</lineItemId>
<lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <endUserPermission>0</endUserPermission>
 <groupName>Policy</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>>false</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>37</attributeId>
 <attributeName>LICENSE_VERSION</attributeName>
 <attributeValue>13</attributeValue>
 <endUserPermission>0</endUserPermission>
 <groupName>Policy</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>>false</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>42</attributeId>
 <attributeName>NUM_CLIENT_LOCKED</attributeName>

```

```

 <attributeValue>1</attributeValue>
 <endUserPermission>0</endUserPermission>
 <groupName>Client Locking</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>false</readOnly>
 <subGroupName />
 </attribute>
</lineItemLicensingAttribute>
<lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue />
 <endUserPermission>0</endUserPermission>
 <groupName>Client Locking</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>true</readOnly>
 <subGroupName />
 </associatedAttribute>
 <attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>
 <attributeValue>4</attributeValue>
 <endUserPermission>0</endUserPermission>
 <groupName>Client Locking</groupName>
 <isvPermission>0</isvPermission>
 <readOnly>false</readOnly>
 <subGroupName />
 </attribute>
</lineItemLicensingAttribute>
</lineItemLicensingAttributes>
<lineItemName>Test</lineItemName>
<lineItemVersion>1</lineItemVersion>
<productKey>bbf925da-103d-4340-84d5-cf2f1af4285c</productKey>
<quantity>11</quantity>
<quantityUnlimited>false</quantityUnlimited>
<remainingQuantity>11</remainingQuantity>
<startDate>2014-07-01</startDate>
<state>1</state>
<status>true</status>
<type>product</type>
</lineItem>

```

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <lineItemId>68</lineItemId>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
123	{0} should be of data type Date in the format {1}.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
647	The entitlement is already in complete stage and cannot be updated/deleted.
668	Could not find the entitlement license model for id ={0}.
679	The license model does not exist in the given feature.
815	The entitlement item details provided for update are not valid. Validate from the entitlement item definition.
816	Not valid {0}.
817	Entitlement Item contains both product and suite. Please provide valid entitlement item.
818	Invalid Product provided in entitlement item details. Please validate from product catalog definition.
819	Invalid Feature provided in entitlement item details. Please validate from product catalog definition.
820	Non excludable Feature is not provided in entitlement item details. Please validate from product

Error Code	Description
	catalog definition.
829	Invalid Quantity provided. Provide a valid value (greater than 0).
836	Invalid lineltem licensing attribute provided. Specify attributes present in the license models definition.
837	Primary 1 criteria (in hex) should be of data type integer (in hexadecimal).
838	Specify a valid value for {0}.
853	The line item start date should not be earlier than the Entitlement start date.
854	The line item end date should not be later than the Entitlement end date.

## Remove Entitlement Line Items

Remove line items from an entitlement. The entitlement must be in lifecycle state Draft. This is a deprecated Web service, refer ["Update Entitlement" on page 212](#) for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/removeEntitlementItem.xml

### POST Parameters

Parameter	Description	Type
lineItemId	(Required) Specify the line item to delete.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
128	You should log on first.
327	The entitlement can be deleted only in the draft stage.
618	Could not find the entitlement line item.

## Update Entitlement Attribute for All Features

Change attribute value for given/all features for an entitlement. This is a deprecated Web service, refer "[Update Entitlement](#)" on page 212 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateEntitlementAttributeForAllFeatures.xml

### POST Parameters

Parameter	Description	Type
entId	(Required) Specify the entitlement ID.	Integer
attrId	(Required) Specify the attribute ID.	Integer
attrValue	(Required) Specify the value of the attribute.	String
featureIds	(Optional) Specify the feature IDS.	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

"[Output Format for Failure](#)" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
692	{0} is already in complete stage and cannot be updated/deleted.
695	The specified feature IDs are not present in the entitlement with ID {0}.
696	An entitlement with ID {0} does not exist.
697	No attribute exists for the given attribute ID.



Error Code	Description
801	Feature IDs should have a numeric value.
999	More than one customer exists with the same name.

## Update Feature Attribute of a Product in an Entitlement

Update the feature attribute of a product in an entitlement. This is a deprecated Web service, refer "[Modify Entitlement Using Entitlement XML](#)" on page 188 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateProductFeatureEntitlementAttributes.xml

### POST Parameters

Parameter	Description	Type
entId	(Required) Specify the entitlement ID.	Integer
attrId	(Required) Specify the attribute ID.	Integer
attrValue	(Required) Specify the attribute value.	String
featureIds	(Optional) Specify the feature ID.	String
suiteId	(Required) Specify the suite ID.	Integer
productId	(Required) Specify the product ID.	Integer

### Sample Input String

```
{
 entId:8,
 suiteId:1,
 productId:5,
 attrId:510,
 attrValue:"newValue1111",
 features:
 [2, 5]
}
```

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
 <EMSResponse>
 <stat>ok</stat>
 </EMSResponse>
```

### See Also:

"[Output Format for Failure](#)" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.

Error Code	Description
101	You are not authorized to use this service.
112	The input JSON string is not valid.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
334	Specify a product ID.
335	Product suite with ID {0} does not exist in this entitlement.
336	Product with ID {0} does not exist in this suite.
337	Entitlement with ID {0} does not have any product suite.
340	Product with ID {0} does not exist in this entitlement.
695	The specified feature IDs are not present in the entitlement with ID {0}.
696	An entitlement with ID {0} does not exist.
697	No attribute exists for the given attribute ID.
801	Feature IDs should have a numeric value.

## Associate Contact Details with Entitlement

Associate an existing or new contact with an entitlement. This is a deprecated Web service, refer "[Update Entitlement](#)" on [page 212](#) for new REST Web Service. Following conditions must be satisfied for entitlement contact update:

- The entitlement must be in lifecycle state Complete.
- If entitlement has already been activated and entitlement contact is not null, then contact update is not allowed.
- If entitlement's registration required field is set to 'mandatory', then contact cannot be set to empty/null.
- If entitlement already has a customer associated, then entitlement's contact can only be updated to have same customer contacts.

Default Protocol	Method Type	URI
HTTP	POST	/ems/updateEntitlementContact.xml

### POST Parameters

Parameter	Description	Type
entId	(Required) Specify the entitlement ID.	Integer
contactId	(Optional) Specify the contact ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.

<b>Error Code</b>	<b>Description</b>
513	The contact does not exist.
515	The contact is not valid for this customer.
516	Modifying the contact information is not allowed.
517	Specify a valid e-mail address when user registration is mandatory.
621	Entitlement does not exist. Try again with a correct entitlement ID.
630	Update failed. The entitlement is still in the draft stage.

## Retrieve License Model Attributes for a Feature

Using this interface you can retrieve license model attributes and values for all the features in a line item. This is a deprecated Web service, refer "[Update Entitlement](#)" on page 212 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	GET	/ems/getEntFeatureLMAttributes.xml

### Query Parameters

Parameter	Description	Type
lineItemId	(Required) Specify the line item ID.	Integer
productId	(Required) Specify the product ID.	Integer
featureId	(Required) Specify the feature ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <itemFeatureLicenseModel>
 <entFtrLmId>1</entFtrLmId>
 <feature>
 <featureId>1</featureId>
 <featureName>ProtectDrive</featureName>
 <featureVersion/>
 </feature>
 <itemFeatureLicenseModelAttributes>
 <itemFeatureLicenseModelAttribute>
 <attributeId>3</attributeId>
 <attributeName>GRACE_PERIOD_DAYS</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Time</groupName>
 <readOnly>>true</readOnly>
 <subGroupName>Grace Licensing</subGroupName>
 </itemFeatureLicenseModelAttribute>
 <itemFeatureLicenseModelAttribute>
 <attributeId>5</attributeId>
 <attributeName>TRIAL_DURATION_DAYS</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Time</groupName>
 <readOnly>>true</readOnly>
 <subGroupName>Trial Limit</subGroupName>
 </itemFeatureLicenseModelAttribute>
 <itemFeatureLicenseModelAttribute>
 <attributeId>134</attributeId>
 <attributeName>LICENSE_DURATION_IN_DAYS</attributeName>
 <attributeValue>365</attributeValue>
 <groupName>Time</groupName>
 <readOnly>>false</readOnly>
 <subGroupName>License Duration</subGroupName>
 </itemFeatureLicenseModelAttribute>
 </itemFeatureLicenseModelAttributes>
 </itemFeatureLicenseModel>
</EMSResponse>
```

```

<itemFeatureLicenseModelAttribute>
 <attributeId>95</attributeId>
 <attributeName>VENDOR_SECRETS_5</attributeName>
 <attributeValue/>
 <groupName>Vendor</groupName>
 <readOnly>>false</readOnly>
 <subGroupName>Vendor Secrets</subGroupName>
</itemFeatureLicenseModelAttribute>
<itemFeatureLicenseModelAttribute>
 <attributeId>96</attributeId>
 <attributeName>VENDOR_SECRETS_6</attributeName>
 <attributeValue/>
 <groupName>Vendor</groupName>
 <readOnly>>false</readOnly>
 <subGroupName>Vendor Secrets</subGroupName>
</itemFeatureLicenseModelAttribute>
</itemFeatureLicenseModelAttributes>
<licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
</licenseModel>
<product>
 <productId>1</productId>
 <productName>Protect Drive</productName>
 <productVersion>6.1</productVersion>
</product>
</itemFeatureLicenseModel>
<stat>ok</stat>
</EMSResponse>

```

**See Also:**

"Output Format for Failure" on page 399

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
128	You should log on first.
618	Could not find the entitlement line item.
644	The line item ID is not valid.
692	{0} is already in complete stage and cannot be updated/deleted.

Error Code	Description
704	The entitlement item does not have this product.
705	The product does not have this feature.



## Update LM Attributes for a Line Item

Using this interface you can update license model attributes and values for the features of a lineitem. This is a deprecated Web service, refer "[Update Entitlement](#)" on page 212 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/setEntFeatureLMAttributes.xml

### POST Parameters

Parameter	Description	Type
entFeatureLMAttributes	(Required) Specify a valid license model attribute.	String

### Sample Input String (XML)

Edit the output XML of the Web service [getEntFeatureLMAttributes.xml](#) and use it as input.

```
<?xml version="1.0" encoding="UTF-8"?>
<itemFeatureLicenseModel>
 <entFtrLmId>29742</entFtrLmId>
 <itemFeatureLicenseModelAttributes>
 <itemFeatureLicenseModelAttribute>
 <attributeId>5</attributeId>
 <attributeValue>30</attributeValue>
 <readOnly>false</readOnly>
 </itemFeatureLicenseModelAttribute>
 <itemFeatureLicenseModelAttribute>
 <attributeId>7</attributeId>
 <attributeValue>0</attributeValue>
 <readOnly>true</readOnly>
 </itemFeatureLicenseModelAttribute>
 <itemFeatureLicenseModelAttribute>
 <attributeId>4</attributeId>
 <attributeValue>0</attributeValue>
 <readOnly>true</readOnly>
 </itemFeatureLicenseModelAttribute>
 <itemFeatureLicenseModelAttribute>
 <attributeId>6</attributeId>
 <attributeValue>0</attributeValue>
 </itemFeatureLicenseModelAttribute>
 <itemFeatureLicenseModelAttribute>
 <attributeId>98</attributeId>
 <attributeValue>PUBLIC</attributeValue>
 </itemFeatureLicenseModelAttribute>
 </itemFeatureLicenseModelAttributes>
</licenseModel/>
</product/>
</itemFeatureLicenseModel>
```

## Sample Response

### See Also:

"Output Format for Failure" on page 399

## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
118	{0} should be of data type Integer.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
668	Could not find the entitlement license model for id ={0}.
692	{0} is already in complete stage and cannot be updated/deleted.
816	Not valid {0}.

## Recharge a Line Item

Recharge a line item in an entitlement. This is a deprecated Web service, refer "[Modify Entitlement Using Entitlement XML](#)" on page 188 for new REST Web Service.

Default Protocol	Method Type	URI
HTTP	POST	/ems/rechargeLineItem.xml

### POST Parameters

Parameter	Description	Type
lineItemId	(Required) Specify the line item ID.	Integer
amount	(Required) Specify the amount to be added to the quantity.	Integer
quantityUnlimited	(Optional) Allow/deny unlimited quantity. <b>Valid values:</b> Boolean <b>Default value:</b> false	Boolean
allowOverride	(Optional) If you specify "true," the end user can use the quantity in parts. <b>Valid values:</b> Boolean <b>Default value:</b> false	Boolean

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

"[Output Format for Failure](#)" on page 399

### Error Codes

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
682	The line item does not exist.

## Deprecated Activation Web Services

---

This section lists the Activation Web services that have been deprecated in Sentinel EMS.

- "Activate Line Item" on the next page
- "Complete Activation" on page 577
- "Retrieve Activation by Activation ID" on page 584
- "Retrieve Activation by AID" on page 587
- "Search Activations" on page 590

## Activate Line Item

Using this web service you can configure line item activation for given line item IDs (lineItemIds).

Default Protocol	Method Type	URI
HTTP	GET	/ems/createActivation.xml

## Query Parameters

Parameter	Description	Type
lineItemIds	(Required) Comma separated line item IDs.	String
displayReadOnlyAttributes	(Optional) Specify if the read-only attributes are to be displayed. <b>Default value:</b> true	Boolean

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <groupActivation>
 <activations>
 <activation>
 <activationAttributes>
 <activationAttribute>
 <attribute>
 <attributeId>2</attributeId>
 <attributeName>END_DATE</attributeName>
 <attributeValue>2500-12-31</attributeValue>
 <groupName>Time</groupName>
 <readOnly>true</readOnly>
 <subGroupName>License Duration</subGroupName>
 </attribute>
 <itemFeatureLicenseModel>
 <entFtrLmId>1</entFtrLmId>
 <feature>
 <featureId>1</featureId>
 <featureName>Protect Drive</featureName>
 <featureVersion />
 </feature>
 <licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
 </licenseModel>
 <product>
 <productId>1</productId>
 <productName>Protect Drive</productName>
 <productVersion>6.1</productVersion>
 </product>
 </itemFeatureLicenseModel>
 </activationAttribute>
 <activationAttribute>
 <attribute>
 <attributeId>11</attributeId>
```

```

 <attributeName>KEY_LIFETIME_MINUTES</attributeName>
 <groupName>Limit</groupName>
 <readOnly>>false</readOnly>
 <subGroupName />
 </attribute>
 <itemFeatureLicenseModel>
 <entFtrLmId>2</entFtrLmId>
 <feature>
 <featureId>3</featureId>
 <featureName>ReportOption</featureName>
 <featureVersion>4.3</featureVersion>
 </feature>
 <licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
 </licenseModel>
 <product>
 <productId>1</productId>
 <productName>Protect Drive</productName>
 <productVersion>6.1</productVersion>
 </product>
 </itemFeatureLicenseModel>
</activationAttribute>
</activationAttributes>
<activationDate>2012-02-13</activationDate>
<activationId>66</activationId>
<activationState>1</activationState>
<activationType>1</activationType>
<aid>0b5621c1-440e-4c14-86e3-131e878fc281</aid>
<groupActivationId>0</groupActivationId>
<lineItem>
<allowOverride>>false</allowOverride>
<endDate>2500-12-31</endDate>
<enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
</enforcement>
<entitlement>
 <eid>00a355****</eid>
 <entId>1</entId>
</entitlement>
<isNumberActivationBased>>true</isNumberActivationBased>
<licenseType>1</licenseType>
<lineItemId>1</lineItemId>
<lineItemName>Protect Drive</lineItemName>
<lineItemVersion>6.1</lineItemVersion>
<productKey>8a2f79a7-33b8-4aa1-a7a8-12e4b2692492</productKey>
<quantity>10</quantity>
<quantityUnlimited>>false</quantityUnlimited>
<remainingQuantity>8</remainingQuantity>
<startDate>2011-06-08</startDate>
<type>product</type>
 </lineItem>
 <quantity>0</quantity>
</activation>
</activations>

```

```

<groupActivationId>0</groupActivationId>
<lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>37</attributeId>
 <attributeName>LICENSE_VERSION</attributeName>
 <attributeValue>13</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>42</attributeId>
 <attributeName>NUM_CLIENT_LOCKED</attributeName>
 <attributeValue>1</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue />
 <groupName>Client Locking</groupName>
 <readOnly>false</readOnly>
 <subGroupName />
 </associatedAttribute>
 <attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>
 <attributeValue>4</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
</lineItemLicensingAttributes>
</groupActivation>
<stat>ok</stat>
</EMSResponse>

```

**See Also:**["Output Format for Failure" on page 399](#)["Allowing End User to Modify Additional Attributes During Activation" on page 254](#)**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
618	Could not find the entitlement line item.
625	You are not authorized to activate/retrieve this product.
628	The entitlement has expired. It cannot be activated.
644	The line item ID is not valid.
669	The contact must be registered in order to activate an entitlement.
671	Activation cannot be completed. There are no license models associated with the entitlement.
672	Activation is no longer in the draft stage.
673	Disabled/Closed line Item cannot be activated.
674	Activation cannot be completed. The line item's end date is in past.
675	The license generator is not invalid.
676	Sentinel Caffe configuration problem --
802	Activation not allowed.
804	The entitlement cannot be activated.
822	Activation not allowed on disabled Entitlement.
830	Activation cannot be completed. The line item's start date is in future.
831	Activation is not allowed as remaining quantity is 0.



## Complete Activation

This web service completes activation and generates licenses.

### About Activating Product/Suite

Some key points to adhere to when activating a Product/Suite:

- If quantity specifier is **Seat count to be consumed in an activation**, then after activation remaining quantity will be zero. The quantity consumed for this specifier is the entire quantity available.
- If quantity specifier is **Unlimited seat count**, then after activation remaining quantity will be zero.
- If quantity specifier is **Seat count to be consumed in multiple activations**, then after activation the remaining quantity will be the total quantity subtracted by the quantity input by the user.
- If quantity specifier is **Number of Activations**, then the quantity activated at a time is 1.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/completeActivation.xml

### Post Parameters

Parameter	Description	Type
groupActivation	(Required) XML string for activation.	String

### Sample Input String

Use the output of the web service `createActivation.xml` or `createActivationByProductKey.xml` with the following edits:

1. Use only the `groupActivation` section of the XML
2. Edit the XML to provide the values for the locking info against the locking criteria

See the following example:

```
<?xml version="1.0" encoding="UTF-8"?>
 <groupActivation>
 <activations>
 <activation>
 <activationAttributes>
 <activationAttribute>
 <attribute>
 <attributeId>2</attributeId>
 <attributeName>END_DATE</attributeName>
 <attributeValue>2500-12-31</attributeValue>
 <groupName>Time</groupName>
 <readOnly>true</readOnly>
 <subGroupName>License Duration</subGroupName>
 </attribute>
 <itemFeatureLicenseModel>
 <entFtrLmId>1</entFtrLmId>
 <feature>
 <featureId>1</featureId>
 <featureName>ProtectDrive</featureName>
 </feature>
 </itemFeatureLicenseModel>
 </activationAttributes>
 </activation>
 </activations>
 </groupActivation>
```

```

 <featureVersion />
 </feature>
 <licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
 </licenseModel>
 <product>
 <productId>1</productId>
 <productName>Protect Drive</productName>
 <productVersion>6.1</productVersion>
 </product>
</itemFeatureLicenseModel>
</activationAttribute>
<activationAttribute>
 <attribute>
 <attributeId>11</attributeId>
 <attributeName>KEY_LIFETIME_MINUTES</attributeName>
 <groupName>Limit</groupName>
 <readOnly>>false</readOnly>
 <subGroupName />
 </attribute>
 <itemFeatureLicenseModel>
 <entFtrLmId>2</entFtrLmId>
 <feature>
 <featureId>3</featureId>
 <featureName>ReportOption</featureName>
 <featureVersion>4.3</featureVersion>
 </feature>
 <licenseModel>
 <licenseModelId>5</licenseModelId>
 <licenseModelName>Standalone Node Locked</licenseModelName>
 </licenseModel>
 <product>
 <productId>1</productId>
 <productName>Protect Drive</productName>
 <productVersion>6.1</productVersion>
 </product>
 </itemFeatureLicenseModel>
</activationAttribute>
</activationAttributes>
<activationDate>2012-02-13</activationDate>
<activationId>66</activationId>
<activationState>1</activationState>
<activationType>1</activationType>
<aid>0b5621c1-440e-4c14-86e3-131e878fc281</aid>
<groupActivationId>0</groupActivationId>
<lineItem>
<allowOverride>>false</allowOverride>
<endDate>2500-12-31</endDate>
<enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
</enforcement>
<entitlement>
 <eid>00a355****</eid>
 <entId>1</entId>

```

```

</entitlement>
<isNumberActivationBased>true</isNumberActivationBased>
<licenseType>1</licenseType>
<lineItemId>1</lineItemId>
<lineItemName>Protect Drive</lineItemName>
<lineItemVersion>6.1</lineItemVersion>
<productKey>8a2f79a7-33b8-4aa1-a7a8-12e4b2692492</productKey>
<quantity>10</quantity>
<quantityUnlimited>false</quantityUnlimited>
<remainingQuantity>8</remainingQuantity>
<startDate>2011-06-08</startDate>
<type>product</type>
 </lineItem>
 <quantity>0</quantity>
</activation>
</activations>
<groupActivationId>0</groupActivationId>
<lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>37</attributeId>
 <attributeName>LICENSE_VERSION</attributeName>
 <attributeValue>13</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>42</attributeId>
 <attributeName>NUM_CLIENT_LOCKED</attributeName>
 <attributeValue>1</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue />
 <groupName>Client Locking</groupName>
 </attribute>
 </lineItemLicensingAttribute>

```

```

<readOnly>>false</readOnly>
<subGroupName />
 </associatedAttribute>
 <attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>
 <attributeValue>4</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>>true</readOnly>
 </attribute>
</lineItemLicensingAttribute>
</lineItemLicensingAttributes>
</groupActivation>

```

## Sample Response

```

<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <groupActivation>
 <activations>
 <activation>
 <activationAttributes />
 <activationDate>2010-11-22</activationDate>
 <activationId>25</activationId>
 <activationState>2</activationState>
 <activationType>1</activationType>
 <aid>f858485d-3559-43d1-a0c9-3d9e36767686</aid>
 <groupActivationId>0</groupActivationId>
 <licenseString>*D CLG6DCsiB17C8nd:teMjfcP:vwH5nitQulUb6ry98gLYa2e7f
42bAQnbv9AYSoro3vUhsfD6FAJO:obvDbko3y34S1bKvwl7kAi0DkUU0myRL1QP0d6JU
JrnIlVFIJpHdufIikNVwgjwpUklnUBNw6L5L7oNKuNIUCKFsOOmu11vJ13V#
"ZipOption" version "1.0.1", no expiration date, exclusive##AID=
f858485d-3559-43d1-a0c9-3d9e36767686
*D 0aUZaKasdjQBYJqZ03U83Lqg::lcbtdcruhFB:jUrZ3kClP4UuZykIUporvzfinKLGxhRI9mCg
:eVQTXg0MpENvas38zRuaYmt6CFQNa89iwf,4Z7QwH6jgtySHaFn1RIcVO# "ProtectDrive" version "", no
expiration date, exclusive##AID=f858485d-3559-43d1-a0c9-3d9e36767686</licenseString>
 <lineItem>
 <allowOverride>>true</allowOverride>
 <endDate>2500-12-31</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>1d173e****</eid>
 <entId>2</entId>
 </entitlement>
 <licenseType>1</licenseType>
 <lineItemId>1</lineItemId>
 <lineItemName>Protect Drive</lineItemName>
 <lineItemVersion>6.1</lineItemVersion>
 <productKey>a37fa459-1ea3-4d94-ab3e-0b07d3cb3561</productKey>
 <quantity>111</quantity>
 <quantityUnlimited>>false</quantityUnlimited>
 <remainingQuantity>106</remainingQuantity>
 </lineItem>
 </activations>
 </groupActivation>

```

```

 <startDate>2010-10-27</startDate>
 <type>product</type>
 </lineItem>
 <quantity>5</quantity>
</activation>
</activations>
<groupActivationId>0</groupActivationId>
<licenseString>*D CLG6DCsiB17C8nd:teMjfcP:vwH5nitQu1Ub6ry98g
LYa2e7f42bAQnbv9AYSoro3vUhsfD6FAJO:obvDbko3y34S1bKvwl7kAi0DkUU0myRL1Q
POd6JUJrnIlVFIJpHdufIikNVwgjwpUk1nUBNw6L5L7oNKuNIUCKFsOOmul1vJ13V#
"ZipOption" version "1.0.1", no expiration date,
exclusive##AID=f858485d-3559-43d1-a0c9-3d9e36767686
*D 0aUzaKasdjQBYJqZ03U83Lqg::lcbtdcruhFB:jUrZ3kClP4UuZykIUpo
rvzfinKLGxhRI9mCg:eVQTXgoMpENVas38zRuaYmt6CFQNa89iwf,
4Z7QwH6jgtySHaFnlRIcVO# "ProtectDrive" version "",
no expiration date, exclusive##AID=f858485d-3559-43d1-a0c9-3d9e36767686
</licenseString>
<lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>37</attributeId>
 <attributeName>LICENSE_VERSION</attributeName>
 <attributeValue>13</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true" />
 <attribute>
 <attributeId>42</attributeId>
 <attributeName>NUM_CLIENT_LOCKED</attributeName>
 <attributeValue>1</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>true</readOnly>
 <subGroupName />
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue>*1TL QAJK 54Y3 WKPX</attributeValue>
 <groupName>Client Locking</groupName>
 </associatedAttribute>
 </lineItemLicensingAttribute>

```

```

 <readOnly>>false</readOnly>
 <subGroupName />
</associatedAttribute>
<attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>
 <attributeValue>4</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>>true</readOnly>
 <subGroupName />
</attribute>
</lineItemLicensingAttribute>
</lineItemLicensingAttributes>
</groupActivation>
<stat>ok</stat>
</EMSResponse>

```

**See Also:**

"Output Format for Failure" on page 399

"Allowing End User to Modify Additional Attributes During Activation" on page 254

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
112	The input JSON string is not valid.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
644	The line item ID is not valid.
669	The contact must be registered in order to activate an entitlement.
670	Activation not allowed. The product's cost {1} is more than the balance left. {0}.
671	Activation cannot be completed. There are no license models associated with the entitlement.
672	Activation is no longer in the draft stage.
673	Disabled/Closed line Item cannot be activated.

Error Code	Description
674	Activation cannot be completed. The line item's end date is in past.
675	The license generator is not invalid.
676	Sentinel Caffe configuration problem --
802	Activation not allowed.
830	Activation cannot be completed. The line item's start date is in future.
832	Line item of more than one entitlement provided for activation.
833	Please provide quantity less than the remaining quantity {0}.
839	Unable to retrieve activation license model attribute.

## Retrieve Activation by Activation ID

Retrieves details of an activation for a given activationId.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/getActivationById.xml

### Query Parameters

Parameter	Description	Valid Values	Default Values	Optional/ Required
activationId	Auto-generated integer ID for activations internally used by EMS and the web services. It is not available to the end user. <b>Required</b>	Integer		Required
getPeerActivations	Do you want to also retrieve the details of the activations performed with this activation? <b>Valid values:</b> Boolean <b>Default value:</b> false <b>Optional</b>	Boolean	false	Optional

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <groupActivation>
 <activations>
 <activation>
 <activationAttributes/>
 <activationDate>2010-10-04</activationDate>
 <activationId>1</activationId>
 <activationState>1</activationState>
 <activationType>1</activationType>
 <aid>03790bfd-a4f8-4b5d-a385-b4c997ffc5f8</aid>
 <groupActivationId>0</groupActivationId>
 <lineItem>
 <allowOverride>false</allowOverride>
 <endDate>2011-12-17</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>a37314****</eid>
 <entId>4</entId>
 </entitlement>
 <licenseType>1</licenseType>
 <lineItemId>4</lineItemId>
 <lineItemName>Protect Drive</lineItemName>
 </lineItem>
 </activation>
 </activations>
 </groupActivation>
</EMSResponse>
```



```

 <lineItemVersion>6.1</lineItemVersion>
 <productKey>97958b3b-ba77-4f18-8da5-52db0819f787</productKey>
 <quantity>134</quantity>
 <quantityUnlimited>>false</quantityUnlimited>
 <remainingQuantity>134</remainingQuantity>
 <startDate>2010-10-01</startDate>
 <type>product</type>
 </lineItem>
 <quantity>0</quantity>
</activation>
</activations>
<lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>37</attributeId>
 <attributeName>LICENSE_VERSION</attributeName>
 <attributeValue>13</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>>true</readOnly>
 <subGroupName/>
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>>true</readOnly>
 <subGroupName/>
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>42</attributeId>
 <attributeName>NUM_CLIENT_LOCKED</attributeName>
 <attributeValue>1</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>>true</readOnly>
 <subGroupName/>
 </attribute>
 </lineItemLicensingAttribute>
 <lineItemLicensingAttribute>
 <associatedAttribute>
 <attributeId>50</attributeId>
 <attributeName>CLIENT_1_INFO</attributeName>
 <attributeValue/>
 <groupName>Client Locking</groupName>
 <readOnly>>false</readOnly>
 <subGroupName/>
 </associatedAttribute>
 <attribute>
 <attributeId>43</attributeId>
 <attributeName>CLIENT_1_CRITERIA</attributeName>

```

```

 <attributeValue>4</attributeValue>
 <groupName>Client Locking</groupName>
 <readOnly>true</readOnly>
 <subGroupName/>
 </attribute>
</lineItemLicensingAttribute>
</lineItemLicensingAttributes>
</groupActivation>
</EMSResponse>

```

**See Also:**

["Output Format for Failure" on page 399](#)

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
683	Could not find the activation details.
684	Unable to retrieve activation for activation ID - {0}.

## Retrieve Activation by AID

Retrieves details of an activation for a given "aid".

Default Protocol	Method Type	URI
HTTPS	GET	/ems/getActivationByAid.xml

### Query Parameters

Parameter	Description	Valid Values	Default Values	Optional/ Required
aid	Specify the activation ID. <b>Required</b>	String		Required
getPeerActivations	Do you want to also retrieve the activations performed along with this activation? <b>Valid values:</b> Boolean <b>Default value:</b> false <b>Optional</b>	Boolean	false	Optional

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <groupActivation>
 <activations>
 <activation>
 <activationAttributes/>
 <activationDate>2010-10-15</activationDate>
 <activationId>1</activationId>
 <activationState>2</activationState>
 <activationType>1</activationType>
 <aid>2dcc85b1-9565-42c2-a314-e7f8181e5abf</aid>
 <groupActivationId>0</groupActivationId>
 <licenseString>*D ukui2BzQIXn2sCqCE8Pjf29rMq4M7Wf3EeY,VNYwr,3eCCU98xvpq1,
q:OksPXdvVFMeCdxAcPd4wtBjxD:Hmj3ndmPtUWfPB2X:A6hrNDzXftfS8H:
ndSJeeJ5KV0N7wx3hLUqv3:iM2jlgYCymzk7xfL# "ProtectDrive" version "", expires Midnight of Oct 30,
2010, exclusive##AID= 2dcc85b1-9565-42c2-a314-e7f8181e5abf *D
WgJgCLghAa1RQifkx9x53PGFWY5YycGtzRs5HR8,pbLA:8KmakG9a:
nZIQcziLVK39nUaSDHamRAq3oh2tkQ7Q3cGlbs:
QMaZkdF2msa9Kxh3LgpopKafGTW0vh, b5Zubq3AxZcX7Z8azULYkk0ybloKfuNHmtzAkvpw15nmVN6u4Vk#
"ZipOption" version "1.0.1", expires Midnight of Oct 30, 2010, exclusive##AID=2dcc85b1-9565-
42c2-a314-e7f8181e5abf *D 3RcHpp6OaJIYXOMSaw2C38AqTP1752jQzJ1YTDUK:PfasCt6NI10G:
UTcrsPsevWf8wpF2xeDPOVzakxEpevt6LvdjzJbrynq4NonZ8ibaU2:
LX3jv,EjskHQ:Jyh6p1BeffLN: y9NEJTAcJdIn3Q:GHE3v2fTgljE5LONBeE,UhiMrLj# "ZipOption" version
"1.0.1", expires Midnight of Oct 30, 2010, exclusive##AID=2dcc85b1-9565-42c2-a314-e7f8181e5abf
*D wWeYbxEbfnUUKQT8LF6ALq7nfAND6LAj9QbVV4mVbc3ENdrGmUsISQP2
FQtuljoPvmBby7Ea98nk9,HBVvAxnVtMCGqpUzxxvh
Uw5TYagz4fL4wDmn8jY473jjWfeQShVfw,uG6KhC8d3uqYuZw06Mj3v# "CleanDrive" version "2.3.4", expires
Midnight of Oct 30, 2010, exclusive##AID=2dcc85b1-9565-42c2-a314-e7f8181e5abf *D
hxolZq9L6AObc G3BJ7wTfEasqusbj1oUuqnL,L8l:i3WanExy3mfX9KZWaQlhz6XV2
8YSOav1hXuZE0 9xbNdilVBh2Rz9F5qKiUj,Zla0vf:3eWkaa6L:TYemGNbrfOyF: 36Wcy50BHEeZLsMtzeVLqX3Y#
```

```

"ReportOption" version "4.3", expires Midnight of Oct 30, 2010, exclusive##AID=2dcc85b1-9565-42c2-a314 -e7f8181e5abf</licenseString>
 <lineItem>
 <allowOverride>true</allowOverride>
 <endDate>2010-10-30</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>bab7a1****</eid>
 <entId>1</entId>
 </entitlement>
 <licenseType>1</licenseType>
 <lineItemId>1</lineItemId>
 <lineItemName>Protect-Clean Suite</lineItemName>
 <lineItemVersion>1.0.0</lineItemVersion>
 <productKey>761674cf-6732-417e-8c23-bd094f928972</productKey>
 <quantity>25</quantity>
 <quantityUnlimited>>false</quantityUnlimited>
 <remainingQuantity>24</remainingQuantity>
 <startDate>2010-10-15</startDate>
 <type>productSuite</type>
 </lineItem>
 <quantity>1</quantity>
</activation>
</activations>
 <licenseString>*D ukui2BzQIXn2sCqCE8Pjf29rMq4M7Wf3EeY,VNYwr,3eCCU98xvpq1,
q:OksPXdvVFMecdxacPd4wtBjxD:Hmj3ndmPtUWfPB2X:A6hrNDzXftfS8
H:ndsJeeJ5KV0N7wx3hLUqv3:iM2jlgYCymzk7xfL# "ProtectDrive" version "", expires Midnight of Oct
30, 2010, exclusive##AID=2dcc85b1-9565-42c2-a314-e7f8181e5abf *D
WgJgCLghAa1RQifkx9x53PGFWY5YycGtzRs5HR8,pbLA:8KmakG9a
:nZIQc ziLVK39nUaSDHamRAq3oh2tkQ7Q3cGlbs:QMaZkdF2msa9Kxh3LgpopKafG
TWOvh,b5Zubq3AxZcX7Z8azULYkk0ybloKfuNHmtzAkvpcl5nmVN6u4Vk# "ZipOption" version "1.0.1",
expires Midnight of Oct 30, 2010, exclusive##AID=2dcc85b1-9565-42c2-a314-e7f8181e5abf *D
3RcHpp6OaJIYX0MSAw2C38AqTP1752jQzJ1YTDUK:PFasCt6NILOG:
UTcrsPS evWf8wpf2XeDPOVzakxEpevt6LvdjzJbrynq4NonZ8ibaU2:LX3jv,
EjskHQ:Jyh 6p1BeffLN:y9NEJTAcJdIn3Q:GHE3v2fTgljE5LONBeE,UhiMrLj# "ZipOption" version "1.0.1",
expires Midnight of Oct 30, 2010, exclusive##AID=2dcc85b1-9565-42c2-a314-e7f8181e5abf *D
wWeYbxEbfnUUKQT8LF6ALq7nfAND6LAj9QbVV4mvbc3ENdrGmUsISQ
P2FQtuljoPVm Bby7Ea98nk9,HBVvAxnVtMCGqpUzxxvhUw5TYagz4fL4wDmn8jY473
jjWfeQShVfw, uG6KhC8d3uqYuZwO6Mj3v# "CleanDrive" version "2.3.4", expires Midnight of Oct 30,
2010, exclusive##AID=2dcc85b1-9565-42c2-a314-e7f8181e5abf *D
hxolZq9L6A0bCG3BJ7wTfEasqusbj1oUuqnL,L8l:i3WanExy3mfX9KZ
WaQlhZ6XV28YSOavlhXuZE09xbNdil VBh2Rz9F5qKiUj,Zla0vf:3eWkaa6L:TYemGNbrfOyF:36Wcy50BHE
eZLsMtzeVL qX3Y# "ReportOption" version "4.3", expires Midnight of Oct 30, 2010,
exclusive##AID=2dcc85b1-9565-42c2-a314-e7f8181e5abf</licenseString>
 <lineItemLicensingAttributes>
 <lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 </lineItemLicensingAttribute>
 </lineItemLicensingAttributes>
 <attribute>
 <attributeId>37</attributeId>
 <attributeName>LICENSE_VERSION</attributeName>
 <attributeValue>13</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 </attribute>

```

```

 <subGroupName/>
 </attribute>
</lineItemLicensingAttribute>
<lineItemLicensingAttribute>
 <associatedAttribute null="true"/>
 <attribute>
 <attributeId>117</attributeId>
 <attributeName>ALLOW_VM_DETECTION</attributeName>
 <attributeValue>0</attributeValue>
 <groupName>Policy</groupName>
 <readOnly>true</readOnly>
 <subGroupName/>
 </attribute>
</lineItemLicensingAttribute>
</lineItemLicensingAttributes>
</groupActivation>
<stat>ok</stat>
</EMSResponse>

```

**See Also:**

"Output Format for Failure" on page 399

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
683	Could not find the activation details.
693	No activation exists for the AID. Provide a valid AID.

## Search Activations

Retrieve activations by search parameters.

Default Protocol	Method Type	URI
HTTP	POST	/ems/searchActivations.xml

## Post Parameters

Parameter	Description	Valid Values	Default Values	Optional/ Required
namespaceName	(Optional) Specify the namespace.	String		Optional
productId	(Optional) Specify the product ID.	Integer		Optional
suiteId	(Optional) Specify the suite ID.	Integer		Optional
eid	(Optional) Entitlement ID.	String		Optional
productKey	(Optional) The unique identifier for the line item.	String		Optional
contactEmailId	(Optional) Specify the contact e-mail ID for the customer.	String		Optional
channelPartner	(Optional) Specify the channel partner.	String		Optional
searchCriteria	(Optional) Specify the search criteria	String (aid, licenseString, lockCode)		Optional
searchCriteriaValue	(Optional) Specify the value for the search criteria.	String		Optional
state	Specify the Activation status code. <b>Valid values:</b> 1, 2,3,5, 19 and 20. <ul style="list-style-type: none"> <li>• <b>1</b> -Activation is in Draft stage.</li> <li>• <b>2</b> - License has been generated.</li> <li>• <b>3</b>- Permission ticket has been downloaded. Revocation has been initiated (displayed as revocation status <b>1</b>).</li> <li>• <b>5</b> - Revocation is either complete (displayed as revocation status <b>2</b>) or confirmed (displayed as revocation status <b>3</b>). The output will display the revocation status in the <code>&lt;revocationStatus&gt;2&lt;/revocationStatus&gt;</code> tag.</li> <li>• <b>19</b> - For manual revocation, this value shows</li> </ul>	Integer		Optional

Parameter	Description	Valid Values	Default Values	Optional/ Required
	<p>revocation is either complete (displayed as revocation status <b>6</b>) or confirmed (displayed as revocation status <b>3</b>). The output will display the revocation status in the <code>&lt;revocationStatus&gt;2&lt;/revocationStatus&gt;</code> tag.</p> <ul style="list-style-type: none"> <li><b>20</b>- Activation has been renewed.</li> </ul>			
pageIndex	(Optional) The starting page number. <b>Default value:</b> 1	Integer (>0)	1	Optional
pageSize	(Optional) The number of records retrieved per request. <b>Default value:</b> 200	Integer (>0)	200	Optional

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <activations>
 <activation>
 <activationAttributes />
 <activationDate>2013-06-06</activationDate>
 <activationId>32</activationId>
 <activationState>3</activationState>
 <activationType>1</activationType>
 <aid>e82dac2e-09c5-4420-be5e-e75edeb83c31</aid>
 <groupActivationId>0</groupActivationId>
 <licenseString>*D:r06cG4g46Q,SJcHZP,mLWiKuH2i97mTnpNOLUgjjupVWQjXZduje6Wn7RXcNaaQVffejj7Y,
vrBbB8p2tvXW2jfEC07S7GaJC1Su2Acv6lkXf7:RgRRYTNnu0Sx7ov83B332# "ftr2" version "", no expiration
date, exclusive##AID=e82dac2e-09c5-4420-be5e-e75edeb83c31 *D
dKbVxoZX0m0Se9GzNFvMLKBdLNOZZQ15DPoUhXN5xHLYFB,CMfjXZmEWcAlrVphQVFCeijeQanVT,XTcYa2SgJVIncoDVq-
edxZps9wGMyw,8VaRU9zhMNQTHZE3lnqbuMYfg# "Ftr1" version "", no expiration date,
exclusive##AID=e82dac2e-09c5-4420-be5e-e75edeb83c31
 </licenseString>
 <lineItem>
 <allowOverride>true</allowOverride>
 <endDate>2025-12-07</endDate>
 <enforcement>
 <enforcementId>1</enforcementId>
 <enforcementName>Sentinel RMS</enforcementName>
 <enforcementVersion>9.0</enforcementVersion>
 </enforcement>
 <entitlement>
 <eid>688c05****</eid>
 <entId>8</entId>
 </entitlement>
 <isNumberActivationBased>true</isNumberActivationBased>
 <licenseType>2</licenseType>
 </lineItem>
 </activation>
 </activations>
</EMSResponse>
```

```

<lineItemId>13</lineItemId>
<lineItemName>Prd1</lineItemName>
<lineItemVersion>V1</lineItemVersion>
<productKey>559f6352-280c-4ed5-9658-490ee69fe765</productKey>
<quantity>40</quantity>
<quantityUnlimited>>false</quantityUnlimited>
<remainingQuantity>20</remainingQuantity>
<startDate>2013-05-29</startDate>
<type>product</type> </lineItem>
<quantity>1</quantity>
<revocationStatus>1</revocationStatus>
<rid>9d368b91-8e32-42a3-9acb-ee30df58f397</rid>
</activation>
</activations>
<stat>ok</stat>
<total>1</total>
</EMSResponse>

```

**See Also:**

["Output Format for Failure" on page 399](#)

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
110	The page index value is not valid. Specify any positive integer value greater than 0.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
128	You should log on first.
137	Specify either the product ID or suite ID.
138	{0} is not provided. Please provide a valid value.
139	Not valid {0}.
811	The search criteria is not valid. Specify a locking code, AID, or license string.
719	Invalid activation state. Refer to the document for valid activation states.



## Deprecated User Web Services

---

This section lists the User Web services that have been deprecated in Sentinel EMS.

- ["Retrieve Details of a User " on the next page](#)

## Retrieve Details of a User

Retrieve detailed information of a user, specified by userName.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/userProfile.xml

## Query Parameters

Parameter	Description	Type
userName	(Required) Specify the user name.	String

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
 <user>
 <admin>true</admin>
 <attribute/>
 <channelPartner>
 <channelPartnerId>1</channelPartnerId>
 <channelPartnerName>Publisher</channelPartnerName>
 </channelPartner>
 <email>abcd@defghi.com</email>
 <expiry>Never</expiry>
 <userName>Abhishek</userName>
 <locale/>
 <permission/>
 <refId1/>
 <refId2/>
 <role>
 <rol>EMSAdmin</rol>
 </role>
 <status>true</status>
 </user>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.

Error Code	Description
107	An internal error occurred. Contact the system administrator for assistance.
128	You should log on first.
211	Either the user does not exist or has been deleted.

## Deprecated ESD Web Services

---

This section lists the ESD Web services that have been deprecated in Sentinel EMS:

- "Search Vendor List Item" on the next page
- "Search Download List Item" on page 598
- "Search License List Item" on page 599
- "Search Product List Item" on page 600
- "Add List Type Name in Vendor List " on page 601
- "Add List Type Name in Download List" on page 602
- "Add List Type Name in Product List " on page 603
- "Add List Type Name in License List " on page 604

## Search Vendor List Item

Retrieves vendor list item information such as name and ID.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/download/vendorList/listItem.ws

### URL Parameters

**Example URL:** /ems/v4\_2/ws/download/vendorList/listItem.ws?ListTypeValueId=7&ListTypeValueName=

Parameter	Description	Type
ListTypeValueId	(Optional) Specify the line item ID.	Integer
ListTypeValueName	(Optional) Specify the line item name.	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> <li>Exact: Searches and retrieves exact matching records.</li> <li>Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field.</li> <li>Normal: Default search parameter if search pattern is not specified.</li> <li>The searchpattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'.</li> </ul> <b>Default value:</b> Normal	String

### Sample Response

#### Success

HTTP Status Code: 200

Response Body

```
<listResponse type="vendor" count="1" searchparameter="{lineItemId=7}"> <instance id="7" name="ABC Corp"/> </listResponse>
```

#### Failure

HTTP Status Code: 400 (Bad Request)

Response Body: No list item found for this list type.

## Search Download List Item

Retrieves download information such as ID and name for a download list item.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/download/downloadList/listItem.ws

### URL Parameters

**Example URL:** /ems/v4\_2/ws/download/downloadList/listItem.ws?ListTypeValueName=&ListTypeValueId=1

Parameter	Description	Type
ListTypeValueId	(Optional) Specify the line item ID of download.	Integer
ListTypeValueName	(Optional) Specify the line item name of download.	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> <li>Exact: Searches and retrieves exact matching records.</li> <li>Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field.</li> <li>Normal: Default search parameter if search pattern is not specified.</li> <li>The searchpattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'.</li> </ul> <b>Default value:</b> Normal	String

### Sample Response

#### Success

HTTP Status Code: 200

Response Body

```
<listResponse type="download" count="1" searchparameter="{lineItemId=1}"> <instance id="1" name="Documentation"/> </listResponse>
```

#### Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Line Item Id should be of data type Integer.

## Search License List Item

Retrieves information such as ID and name for a license list item.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/download/licenseList/listItem.ws

### URL Parameters

**Example URL:** /ems/v4\_2/ws/download/licenseList/listItem.ws?ListTypeValueId=&ListTypeValueName=Licensexb

Parameter	Description	Type
ListTypeValueId	(Optional) Specify the ID of license list item.	Integer
ListTypeValueName	(Optional) Specify the name of license list item.	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> <li>Exact: Searches and retrieves exact matching records.</li> <li>Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field.</li> <li>Normal: Default search parameter if search pattern is not specified.</li> <li>The searchpattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'.</li> </ul> <b>Default value:</b> Normal	String

### Sample Response

#### Success

HTTP Status Code: 200

Response Body

```
<listResponse type="license" count="1" searchparameter="{lineItemName=Associatexblicense}">
<instance id="9" name="Associatexblicense"/> </listResponse>
```

#### Failure

HTTP Status Code: 400 (Bad Request)

Response Body: No list item found for this list type.

## Search Product List Item

Retrieves download information such as ID and name for a download list item.

Default Protocol	Method Type	URI
HTTP	GET	/ems/v4_2/ws/download/productList/listItem.ws

### URL Parameters

**Example URL:** /ems/v4\_2/ws/download/productList/listItem.ws?ListTypeValueName=&ListTypeValueId=3

Parameter	Description	Type
ListTypeValueId	(Optional) Specify the ID of product list item.	Integer
ListTypeValueName	(Optional) Specify the name of product list item.	String
searchPattern	(Optional) Specifies the search pattern as Exact, Like, or Normal. <ul style="list-style-type: none"> <li>Exact: Searches and retrieves exact matching records.</li> <li>Like: Searches and retrieves similar matching records by matching the search string to appear anywhere in the field.</li> <li>Normal: Default search parameter if search pattern is not specified.</li> <li>The searchPattern parameter can also be left empty (to maintain backward compatibility) and it functions like 'Normal'.</li> </ul> <b>Default value:</b> Normal	String

### Sample Response

#### Success

HTTP Status Code: 200

Response Body

```
<listResponse type="product" count="1" searchparameter="{lineItemId=3}"> <instance id="3" name="Base"/> </listResponse>
```

#### Failure

HTTP Status Code: 400 (Bad Request)

Response Body: No list item found for this list type.



## Add List Type Name in Vendor List

Adds Vendor details for downloads.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/download/vendorList/listItem.ws

### URI Parameter

None

### Sample Input

```
<?xml version="1.0" encoding="utf-8"?>
<listItem>
 <listItemName>ABC Vendors</listItemName>
 <remark>New Vendor</remark>
</listItem>
```

### Sample Response

#### Success

HTTP Status Code: 201 (Created)

Response Body: Location {lineitemID}

#### Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Please provide List Item XML Data.

## Add List Type Name in Download List

Adds new list type name in download list.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/download/downloadList/listItem.ws

### URI Parameter

None

### Sample Input

```
<?xml version="1.0" encoding="utf-8"?>
<listItem>
 <listItemName>Base Code</listItemName>
 <remark>New download list type</remark>
</listItem>
```

### Sample Response

#### Success

HTTP Status Code: 201 (Created)

Response Body: Location {lineitemID}

#### Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Please provide List Item XML Data.

## Add List Type Name in Product List

Adds list type name in product list.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/download/productList/listItem.ws

### URI Parameter

None

### Sample Input

```
<?xml version="1.0" encoding="utf-8"?>
<listItem>
 <listItemName>Associated</listItemName>
 <remark>New list type for Product list</remark>
</listItem>
```

### Sample Response

#### Success

HTTP Status Code: 201 (Created)

Response Body: Location {lineitemID}

#### Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Please provide List Item XML Data.

## Add List Type Name in License List

Adds list type name to the License list.

Default Protocol	Method Type	URI
HTTP	PUT	/ems/v4_2/ws/download/licenseList/listItem.ws

### URI Parameter

None

### Sample Input

```
<?xml version="1.0" encoding="utf-8"?>
<listItem>
 <listItemName>TimeStamp License</listItemName>
 <remark>New list type for liscense list</remark>
</listItem>
```

### Sample Response

#### Success

HTTP Status Code: 201 (Created)

Response Body: Location {lineitemID}

#### Failure

HTTP Status Code: 400 (Bad Request)

Response Body: Please provide List Item XML Data.

## Deprecated Contact Web Services

---

This section lists the Contact Web services that have been deprecated in Sentinel EMS:

- "Create Contact" on the next page
- "Retrieve Contact by ID" on page 608
- "Retrieve Contact by E-mail ID" on page 610
- "Update Contact Details" on page 612
- "Search Contacts" on page 614
- "Delete Contact" on page 616

## Create Contact

Create a contact with the given parameters.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/createContact.xml

## POST Parameters

Parameter	Description	Type
localeId	(Optional) Default language for the contact. <b>Valid values:</b> 1 - English, 2 - German, 3 - Japanese. <b>Default value:</b> 1	Integer
emailId	(Required) Contact e-mail ID	String
contactName	(Optional) Contact name	String
contactNumber	(Optional) Contact number	String
loginAllowed	(Optional) Specify if login is required for the contact. <b>Default value:</b> false	Boolean
contactPassword	(Optional) Login password.	String
customerId	(Optional) Customer ID of the customer for which contact is created.	Integer
shipAddr	(Optional) Shipping address	String
shipAddrCity	(Optional) Shipping address - city	String
shipAddrCountry	(Optional) Shipping address - country	String
shipAddrState	(Optional) Shipping address - state.	String
shipAddrZip	(Optional) Shipping address - zip	String
billAddr	(Optional) Billing address - billing address	String
billAddrCity	(Optional) Billing address - city	String
billAddrCountry	(Optional) Billing address - country	String
billAddrState	(Optional) Billing address - state	String
billAddrZip	(Optional) Billing address - zip	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <contactId>9</contactId>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)

## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
114	The length of {0} is {1}. It cannot be less than {2}.
117	Regular expression validation failed for {0}.
122	{0} is a required field. It cannot have a null value.
519	The customer ID is not valid.
521	Customer {0} already exists. Try again with a different name.
529	The e-mail address {0} already exists. Specify a different e-mail address.

## Retrieve Contact by ID

Retrieve a contact by contact id.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/getContactById.xml

### Query Parameters

Parameter	Description	Type
contactId	(Required) Specify the contact ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <billAddr/>
 <billAddrCity/>
 <billAddrCountry/>
 <billAddrState/>
 <billAddrZip/>
 <contactEmail>abcd@defghi.com</contactEmail>
 <contactId>1</contactId>
 <contactName/>
 <contactNumber/>
 <createDateTime/>
 <customer>
 <customerId>1</customerId>
 <customerName>EMS11</customerName>
 </customer>
 <locale/>
 <loginAllowed>true</loginAllowed>
 <refId1/>
 <refId2/>
 <shipAddr/>
 <shipAddrCity/>
 <shipAddrCountry/>
 <shipAddrState/>
 <shipAddrZip/>
 <stat>ok</stat>
 <userRegistered/>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)



## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
513	The contact does not exist.

## Retrieve Contact by E-mail ID

Retrieve a contact by email ID.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/getContactByEmailId.xml

### Query Parameters

Parameter	Description	Type
emailId	(Required) Specify the e-mail ID.	String

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <billAddr/>
 <billAddrCity/>
 <billAddrCountry/>
 <billAddrState/>
 <billAddrZip/>
 <contactEmail>timothy.parker@live.com</contactEmail>
 <contactId>1</contactId>
 <contactName/>
 <contactNumber/>
 <createDateTime/>
 <customer>
 <customerId>1</customerId>
 <customerName>Timothy Parker</customerName>
 </customer>
 <locale/>
 <loginAllowed>true</loginAllowed>
 <refId1/>
 <refId2/>
 <shipAddr/>
 <shipAddrCity/>
 <shipAddrCountry/>
 <shipAddrState/>
 <shipAddrZip/>
 <stat>ok</stat>
 <userRegistered/>
</EMSResponse>
```

### See Also:

"Output Format for Failure" on page 399

## Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
107	An internal error occurred. Contact the system administrator for assistance.
122	{0} is a required field. It cannot have a null value.
125	The requested resource is not found.
128	You should log on first.

## Update Contact Details

Update the details of a contact.

Default Protocol	Method Type	URI
HTTPS	POST	/ems/updateContact.xml

### POST Parameters

Parameter	Description	Type
contactId	(Required) Specify the contact ID.	Integer
emailId	(Required) Specify the e-mail ID of the contact.	String
contactName	(Optional) Specify the contact name. <b>Optional</b>	String
contactNumber	(Optional) Specify the contact number.	String
loginAllowed	(Optional) Specify if login is allowed for this contact. <b>Valid values:</b> Boolean <b>Default value:</b> false	Boolean
shipAddr	(Optional) Shipping address. <b>Optional</b>	String
shipAddrCity	(Optional) Shipping address city.	String
shipAddrCountry	(Optional) Shipping address country.	String
shipAddrState	(Optional) Shipping address state.	String
shipAddrZip	(Optional) Shipping address Zip.	String
billAddr	(Optional) Billing address.	String
billAddrCity	(Optional) Billing address city.	String
billAddrCountry	(Optional) Billing address country.	String
billAddrState	(Optional) Billing address state.	String
billAddrZip	(Optional) Billing address Zip.	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String
localeId	(Optional) Enter the option for the default language of the contact.	Integer

Parameter	Description	Type
	<b>Valid values:</b> 1 (English), 2 (German), 3 (Japanese) <b>Default value:</b> 1	

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

"Output Format for Failure" on page 399

### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
113	The value provided for {0} is not valid. Choose between true or false.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
512	The customer does not exist.
513	The contact does not exist.
514	A customer is already associated with the contact.
522	The contact {0} is not unique. Try again a with different name.
529	The e-mail address {0} already exists. Specify a different e-mail address.

## Search Contacts

Search contacts/view all contacts for the given query parameters.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/searchContacts.xml

## Query Parameters

Parameter	Description	Type
customerId	(Optional) Specify the customer ID.	Integer
emailId	(Optional) Specify the e-mail ID of the customer.	String
pageIndex	(Optional) The starting page number. <b>Default value:</b> 1	Integer (>0)
pageSize	(Optional) The number of contacts retrieved by one request. <b>Default value:</b> 200	Integer (>0)
sortCol	(Optional) Sort against the column. <b>Valid values:</b> contactName, emailId, customerName, id <b>Default value:</b> id	String
sortOrder	(Optional) The order to sort. <b>Valid values:</b> String (asc, desc) <b>Default value:</b> desc	String
refId1	(Optional) Identifier 1 to store the unique record ID as used by external ERP/CRM systems.	String
refId2	(Optional) Identifier 2 to store the unique record ID as used by external ERP/CRM systems.	String

## Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <contacts>
 <contact>
 <admin>>false</admin>
 <contNumber/>
 <contactid>1</contactid>
 <contactname/>
 <createDate/>
 <customerId>1</customerId>
 </contact>
 </contacts>
</EMSResponse>
```

```

 <customername>Timothy Parker</customername>
 <emailid>timothy.parker@live.com</emailid>
 <entitlementCount>14</entitlementCount>
 <refId1/>
 <refId2/>
 <status>true</status>
 <userRegistered/>
 </contact>
</contacts>
<stat>ok</stat>
<total>1</total>
</EMSResponse>

```

**See Also:**

"Output Format for Failure" on page 399

**Error Codes**

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
110	The page index value is not valid. Specify any positive integer value greater than 0.
111	The page size value is not valid. Specify any positive integer value greater than 0.
120	{0} is less than the minimum allowed value {1}.
124	The sort column is not valid. The valid values are {0}.
128	You should log on first.
519	The customer ID is not valid.

## Delete Contact

Delete a contact using contact ID.

Default Protocol	Method Type	URI
HTTPS	GET	/ems/deleteContact.xml

### Query Parameters

Parameter	Description	Type
contactId	(Required) Specify the contact ID.	Integer

### Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<EMSResponse>
 <stat>ok</stat>
</EMSResponse>
```

### See Also:

["Output Format for Failure" on page 399](#)


### Error Codes

Error Code	Description
100	The request parameter is not valid.
101	You are not authorized to use this service.
102	The data provided is not valid.
107	An internal error occurred. Contact the system administrator for assistance.
118	{0} should be of data type Integer.
120	{0} is less than the minimum allowed value {1}.
122	{0} is a required field. It cannot have a null value.
128	You should log on first.
518	Contact not found for the given contact ID.
611	{0} cannot be deleted as an entitlement exists for this contact.



# APPENDIX E

## HTTP Status Codes

<b>200 (OK)</b>	This code indicates the request was successful. For GET requests, the body of a 200 response contains the entire object requested.
<b>201 (Created)</b>	This code informs the client that its request resulted in the successful creation of a new resource, which can now be referenced.
<b>203 (Non-Authoritative Information)</b>	This code may be used in place of 200 when the sender has reason to believe the information in the response's entity headers are different than what the origin server would send.
<b>204 (No Content)</b>	This code is used in cases where the request was successfully processed, but the response doesn't have a message body.
<b>400 (Bad Request)</b>	This code indicates that the server could not understand the client's request, or found it to be incorrect in some way.
<b>401 (Unauthorized)</b>	<p>This code is used when access to a resource is protected and the client did not provide valid authentication credentials. Often the 401 response includes information that causes the user agent to prompt the user for a username and password.</p> <hr/> <p> <b>Note:</b> In Sentinel EMS 4.2, status code 401 (Unauthorized) is replaced by status code 400 (Bad Request) with error code 145 as the header.</p> <hr/>
<b>403 (Forbidden)</b>	This code indicates that the resource cannot be accessed, regardless of any authentication credentials. For example, this happens if a directory or file is unreadable due to file permissions.
<b>404 (Not Found)</b>	This code indicates that the requested resource does not exist on the server. It may also be used in place of 403 if the server doesn't want to acknowledge that the resource exists, but cannot be accessed.
<b>405 (Method Not Allowed)</b>	This code indicates that the request method is inappropriate for the given URI. The response should include a list of methods that are allowed.

# APPENDIX F

## Time Zone Chart

The following chart displays the IDs used when specifying time zone for a customer or during activation:

ID	Location
TIMEZONE_DEF	(GMT+00:00) Default
Etc/GMT+12	(GMT-12:00) International Date Line West
Etc/GMT+11	(GMT-11:00) Coordinated Universal Time-11
Pacific/Samoa	(GMT-11:00) Samoa
Pacific/Honolulu	(GMT-10:00) Hawaii
Pacific/Marquesas	(GMT-09:30) Marquesas Islands
America/Anchorage	(GMT-09:00) Alaska
America/Tijuana	(GMT-08:00) Baja California
America/Los_Angeles	(GMT-08:00) Pacific Time (US & Canada)
America/Chihuahua	(GMT-07:00) Chihuahua, Mazatlan
America/Phoenix	(GMT-07:00) Arizona
America/Denver	(GMT-07:00) Mountain Time (US & Canada)
America/Chicago	(GMT-06:00) Central Time (US & Canada)
America/Guatemala	(GMT-06:00) Central America
America/Mexico_City	(GMT-06:00) Guadalajara, Mexico City, Monterrey
America/Regina	(GMT-06:00) Saskatchewan
America/Bogota	(GMT-05:00) Bogota, Lima, Quito
America/New_York	(GMT-05:00) Eastern Time (US & Canada)
America/Indianapolis	(GMT-05:00) Indiana (East)
America/Caracas	(GMT-04:30) Caracas
America/Halifax	(GMT-04:00) Atlantic Time (Canada)
America/Asuncion	(GMT-04:00) Asuncion

ID	Location
America/Cuiaba	(GMT-04:00) Cuiaba
America/Santiago	(GMT-04:00) Santiago
America/La_Paz	(GMT-04:00) Georgetown, La Paz, Manaus, San Juan
America/St_Johns	(GMT-03:30) Newfoundland
America/Buenos_Aires	(GMT-03:00) Buenos Aires
America/Sao_Paul	(GMT-03:00) Brasilia
America/Cayenne	(GMT-03:00) Cayenne, Fortaleza
America/Montevideo	(GMT-03:00) Montevideo
America/Godthab	(GMT-03:00) Greenland
Etc/GMT+2	(GMT-02:00) Coordinated Universal Time-02
Etc/GMT+2	(GMT-02:00) Mid-Atlantic
Atlantic/Azores	(GMT-01:00) Azores
Atlantic/Cape_Verde	(GMT-01:00) Cape Verde Is.
Africa/Casablanca	(GMT+00:00) Casablanca
Atlantic/Reykjavik	(GMT+00:00) Monrovia, Reykjavik
Europe/London	(GMT+00:00) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
Europe/Warsaw	(GMT+01:00) Sarajevo, Skopje, Warsaw, Zagreb
Africa/Lagos	(GMT+01:00) West Central Africa
Europe/Budapest	(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
Europe/Paris	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris
Europe/Berlin	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
Africa/Johannesburg	(GMT+02:00) Harare, Pretoria
Asia/Damascus	(GMT+02:00) Damascus
Europe/Kiev	(GMT+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
Africa/Windhoek	(GMT+02:00) Windhoek
Europe/Minsk	(GMT+02:00) Minsk
Europe/Istanbu	(GMT+02:00) Athens, Bucharest, Istanbul

ID	Location
Asia/Amman	(GMT+02:00) Amman
Asia/Beirut	(GMT+02:00) Beirut
Asia/Jerusalem	(GMT+02:00) Jerusalem
Africa/Cairo	(GMT+02:00) Cairo
Asia/Riyadh	(GMT+03:00) Kuwait, Riyadh
Europe/Moscow	(GMT+03:00) Moscow, St. Petersburg, Volgograd
Asia/Baghdad	(GMT+03:00) Baghdad
Africa/Nairobi	(GMT+03:00) Nairobi
Asia/Tehran	(GMT+03:30) Tehran
Indian/Mauritius	(GMT+04:00) Port Louis
Asia/Tbilisi	(GMT+04:00) Tbilisi
Asia/Baku	(GMT+04:00) Baku
Asia/Yerevan	(GMT+04:00) Yerevan
Asia/Dubai	(GMT+04:00) Abu Dhabi, Muscat
Asia/Kabul	(GMT+04:30) Kabul
Asia/Yekaterinburg	(GMT+05:00) Yekaterinburg
Asia/Karachi	(GMT+05:00) Islamabad, Karachi
Asia/Tashkent	(GMT+05:00) Tashkent
Asia/Calcutta	(GMT+05:30) Chennai, Kolkata, Mumbai, New Delhi
Asia/Colombo	(GMT+05:30) Sri Jayawardenepura
Asia/Katmandu	(GMT+05:45) Kathmandu
Asia/Dhaka	(GMT+06:00) Dhaka
Asia/Novosibirsk	(GMT+06:00) Novosibirsk
Asia/Almaty	(GMT+06:00) Astana
Asia/Rangoon	(GMT+06:30) Yangon (Rangoon)
Asia/Krasnoyarsk	(GMT+07:00) Krasnoyarsk
Asia/Bangkok	(GMT+07:00) Bangkok, Hanoi, Jakarta

ID	Location
Asia/Ulaanbaatar	(GMT+08:00) Ulaanbaatar
Australia/Perth	(GMT+08:00) Perth
Asia/Taipei	(GMT+08:00) Taipei
Asia/Singapore	(GMT+08:00) Kuala Lumpur, Singapore
Asia/Shanghai	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi
Asia/Irkutsk	(GMT+08:00) Irkutsk
Asia/Pyongyang	(GMT+08:30) Pyongyang
Australia/Eucla	(GMT+08:30) Eucla
Asia/Seoul	(GMT+09:00) Seoul
Asia/Tokyo	(GMT+09:00) Osaka, Sapporo, Tokyo
Asia/Yakutsk	(GMT+09:00) Yakutsk
Australia/Darwin	(GMT+09:30) Darwin
Australia/Adelaide	(GMT+09:30) Adelaide
Australia/Hobart	(GMT+10:00) Hobart
Asia/Vladivostok	(GMT+10:00) Vladivostok
Pacific/Port_Moresby	(GMT+10:00) Guam, Port Moresby
Australia/Brisbane	(GMT+10:00) Brisbane
Australia/Sydney	(GMT+10:00) Canberra, Melbourne, Sydney
Australia/LHI	(GMT+10:30) Lord Howe Island
Asia/Magadan	(GMT+11:00) Magadan, Solomon Is., New Caledonia
Pacific/Fiji	(GMT+12:00) Fiji
Asia/Kamchatka	(GMT+12:00) Petropavlovsk-Kamchatsky
Pacific/Auckland	(GMT+12:00) Auckland, Wellington
Etc/GMT-12	(GMT+12:00) Coordinated Universal Time+12
Pacific/Chatham	(GMT+12:45) Chatham Islands
Pacific/Enderbury	(GMT+13:00) Phoenix Islands, Tokelau, Tonga
Pacific/Kiritimati	(GMT+14:00) Line Islands

# APPENDIX G

## EMS Web Service Sample Code

The sample codes for EMS Web services are written in Java and C#. The purpose of sample codes is to help you understand the basic flow of Web services. Each sample code explains the order in which Web services should be called to perform a specific function, such as creating a feature, viewing, deleting or updating a resource, where a resource can be any element such as License Model, Feature, Product, or Entitlement.

## Using the Java Code Samples for Calling EMS Web Services

---

The Java code samples provided in this Web Service Guide use Apache HTTPClient to access the EMS Web services. The Web services require authentication before you can use them in your code.

## Getting Ready

1. Download or get a copy of HttpClient and its dependencies. Next, include them in your system's classpath.
2. The sample assumes that you have created a property file to read different EMS settings like EMS server name, http port, https port, etc. One such property file is present in the emsWSDemo tool. You can modify the same to use it in your application. Following entries should be present in your property file:

```
server = localhost:8080
sslServer = localhost:8443
trustStore = c:/cacerts
trustStorePass = changeit
emsContext = ems
```



## The Concept

The general process for executing EMS Web service URLs can be divided into the following.

Read different values like server URL, trust store location, password from property file.

```
Properties properties = new Properties();InputStream file = Thread.currentThread
().getContextClassLoader()
 getResourceAsStream(emsWSDemoFile);if (file == null) {
 throw new Exception("unable to load file '" + emsWSDemoFile + "'");}properties.load(file);
server = properties.getProperty("server");
sslServer = properties.getProperty("sslServer");
trustStore = properties.getProperty("trustStore");
trustStorePass = properties.getProperty("trustStorePass");
emsContext = properties.getProperty("emsContext");
emsWSVersion = properties.getProperty("emsWSVersion");
```

Set `javax.net.ssl.trustStore` and `javax.net.ssl.trustStorePassword` to authenticate the EMS Server specified in server property.

```
System.setProperty("javax.net.ssl.trustStore", trustStore);
System.setProperty("javax.net.ssl.trustStorePassword", trustStorePass);
```

To access a Web service, you need to determine the Web Service version first. Call the `getWebServiceVersionInfo` to get the version information. Create an object of `HttpContext` and provide the URL using appropriate method.

The GET method is used to retrieve details of a resource. The following sample code is used to retrieve Product details:

```
import java.io.IOException;
import java.net.URLDecoder;

//.....
//.....
//.....
import org.apache.http.params.HttpParams;
public class EMSSample {
 private static DefaultHttpClient httpClient = new DefaultHttpClient();
 private static Principal principal = null;
 private static StringBuffer query;
 private static String version = "application/vnd.ems.v12"
 //.....
 //.....
 //.....
public static String v2_7/ws/product/{productId}.ws() throws Exception {
 if(!verifyLogin()){
 return "login failed";
 }
 HttpContext context = new BasicHttpContext();
 context.setAttribute(ClientContext.USER_TOKEN, principal);
 HttpGet get = new HttpGet("http://localhost:8080/ems/v2_7/ws/product/{productId}.ws");
 get.addHeader("Accept", version)
 query = new StringBuffer();
 setParameter("productId", "101");
 get.setURI(new URI(URLEncoder.decode(get.getURI() + query.toString(),"UTF-8")));
 HttpResponse response = httpClient.execute(get, context);
 HttpEntity entity = response.getEntity();
 byte[] b = null;
 if (entity != null) {
 long l = entity.getContentLength();
```

```

 b = new byte[(int) l];
 entity.getContent().read(b);
 entity.consumeContent();
 }
 return new String(b);
}
static void setParameter(String key, String value) {
 if (query.toString().equals("")) {
 query.append("? " + key + " = " + value + "&");
 } else {
 query.append(key + " = " + value + "&");
 }
}
}
}

```

The PUT method is used to create a new resource.. The following sample code is used to create a Product:

```

import java.io.IOException;
//.....
//.....
//.....
import org.apache.http.params.HttpParams;
public class EMSSample {
 private static DefaultHttpClient httpClient = new DefaultHttpClient();
 private static Principal principal = null;
 private static String version = "application/vnd.ems.v12"
//.....
//.....
//.....
public static String v2_7/ws/product()throws Exception {
 if(!verifyLogin()){
 return "login failed";
 }
 HttpContext context = new BasicHttpContext();
 context.setAttribute(ClientContext.USER_TOKEN, principal);
 HttpPut put = new HttpPut("http://localhost:8080/ems/v2_7/ws/product.ws");
 put.addHeader("Accept", version);
 List<NameValuePair> nvps = new ArrayList<NameValuePair>();
 nvps.add(new BasicNameValuePair("productXml", "<product>
<externalPrdId></externalPrdId>
<productName>DemoK1</productName>
<productVersion>1</productVersion>
<deployed>>false</deployed>
<desc></desc>
<lifeCycleStage>DRAFT</lifeCycleStage>
<namespace>
 <namespaceId>1</namespaceId>
 <namespaceName>Global</namespaceName>
</namespace>
<refId1></refId1>
<refId2></refId2>
<enabled>>true</enabled>
<productFeatureRef>
 <featureIdentificationInfo>
 <featureId>2</featureId>
 <externalFtrId></externalFtrId>
 <featureUniqueInfo>
 <featureName>TestFeat</featureName>

```

```

 <featureVersion>1.0</featureVersion>
 </featureUniqueInfo>
</featureIdentificationInfo>
<productFeatureState>defaultoff</productFeatureState>
<productFeatureLicenseModel>
 <licenseModel>
 <licenseModelName>Trial Network</licenseModelName>
 <licenseModelId>2</licenseModelId>
 </licenseModel>
 <default>
 <isFixed>>false</isFixed>
 </default>
</productFeatureLicenseModel>
</productFeatureRef>
</product>
");
 put.setEntity(new UrlEncodedFormEntity(nvps, HTTP.UTF_8));
 HttpResponse response = httpClient.execute(put, context);
 HttpEntity entity = response.getEntity();
 byte[] b = null;
 if (entity != null) {
 long l = entity.getContentLength();
 b = new byte[(int) l];
 entity.getContent().read(b);
 entity.consumeContent();
 }
 return new String(b);
}
}

```

The POST method is used to edit the details of a resource. The following sample code is used to update Product details:

```

import java.io.IOException;
//.....
//.....
//.....
import org.apache.http.params.HttpParams;
public class EMSSample {
 private static DefaultHttpClient httpClient = new DefaultHttpClient();
 private static Principal principal = null;
 private static String version = "application/vnd.ems.v12"
//.....
//.....
//.....
public static String v2_7/ws/product/{productId} () throws Exception {
 if(!verifyLogin()){
 return "login failed";
 }
 HttpContext context = new BasicHttpContext();
 context.setAttribute(ClientContext.USER_TOKEN, principal);
 HttpPost post = new HttpPost("http://localhost:8080/ems/v2_7/ws/product/{productId}.ws");
 post.addHeader("Accept", version);
 List<NameValuePair> nvps = new ArrayList<NameValuePair>();
 nvps.add(new BasicNameValuePair("productXml", "<product>
<externalPrdId />
<productName>DemoNewK1</productName>
<productVersion>1</productVersion>
<deployed>>false</deployed>

```

```

<desc />
<lifeCycleStage>DRAFT</lifeCycleStage>
<namespace>
 <namespaceId>1</namespaceId>
 <namespaceName>Global</namespaceName>
</namespace>
<refId1 />
<refId2 />
<enabled>true</enabled>
<productFeatureRef>
 <featureIdentificationInfo>
 <featureId>2</featureId>
 <externalFtrId />
 <featureUniqueInfo>
 <featureName>TestFeat</featureName>
 <featureVersion>1.0</featureVersion>
 </featureUniqueInfo>
 </featureIdentificationInfo>
 <productFeatureState>defaultoff</productFeatureState>
 <productFeatureLicenseModel>
 <licenseModel>
 <licenseModelName>Trial Network</licenseModelName>
 <licenseModelId>2</licenseModelId>
 </licenseModel>
 <default>
 <isFixed>>false</isFixed>
 </default>
 </productFeatureLicenseModel>
</productFeatureRef>
</product>"));
 nvps.add(new BasicNameValuePair("productId", "102"));
 post.setEntity(new UrlEncodedFormEntity(nvps, HTTP.UTF_8));
 HttpResponse response = httpClient.execute(post, context);
 HttpEntity entity = response.getEntity();
 byte[] b = null;
 if (entity != null) {
 long l = entity.getContentLength();
 b = new byte[(int) l];
 entity.getContent().read(b);
 entity.consumeContent();
 }
 return new String(b);
}
}

```

The DELETE method is used to delete a resource. The following sample code is used to delete Product:

```

import java.io.IOException;
//.....
//.....
//.....
import org.apache.http.params.HttpParams;
public class EMSSample {
 private static DefaultHttpClient httpClient = new DefaultHttpClient();
 private static Principal principal = null;
 private static String version = "application/vnd.ems.v12";
//.....
//.....
//.....

```

```

public static String /ems/v4_2/ws/product/{productId}()throws Exception {
 if(!verifyLogin()){
 return "login failed";
 }
 HttpContext context = new BasicHttpContext();
 context.setAttribute(ClientContext.USER_TOKEN, principal);
 HttpDelete dele = new HttpDelete("http://localhost:8080/ems//ems/v4_2/ws/product/
{productId}.ws");
 dele.addHeader("Accept", version);
 List<NameValuePair> nvps = new ArrayList<NameValuePair>();
 dele.setEntity(new UrlEncodedFormEntity(nvps, HTTP.UTF_8));
 HttpResponse response = httpClient.execute(dele, context);
 HttpEntity entity = response.getEntity();
 String respMessage = null;
 if (entity != null) {
 InputStreamReader reader = new InputStreamReader(entity.getContent());
 char[] dataSect = new char[4096];
 int count = 0;
 respMessage = "";
 for (;;) {
 // Start retrieving data from server side
 count = reader.read(dataSect);
 if (count == -1) {
 break;
 } else {
 if (count < dataSect.length) {
 char[] partDataSect = new char[count];
 System.arraycopy(dataSect, 0, partDataSect, 0, count);
 respMessage += String.valueOf(partDataSect);
 } else {
 respMessage += String.valueOf(dataSect);
 }
 }
 }
 entity.consumeContent();
 }
 return respMessage;
}
}

```

# APPENDIX H

## Sentinel EMS Web Services Cheat Sheet

### Create Product Using product XML

(/ems/v4\_2/ws/product.ws )

Create a Product without any Feature	<ul style="list-style-type: none"><li>Remove the entire &lt;productFeatureRef&gt;&lt;/productFeatureRef&gt; section.</li><li>&lt;namespaceName&gt;, &lt;productName&gt;, &lt;productVersion&gt; are mandatory elements</li></ul>	
Create a Product with a Feature	<ul style="list-style-type: none"><li>Either Feature ID or Feature Name is required.</li></ul>	
Create a product when License Model for the product is not known.	<ul style="list-style-type: none"><li>Remove the element, &lt;productFeatureLicenseModel&gt; and provide the element, &lt;featureName&gt;, only.</li></ul>	
Create a Product when Feature has several License Models associated with it. Provide the details of the License Model that you want to select for the feature.	<ul style="list-style-type: none"><li>Specify the license name using the element, &lt;licenseModelName&gt;, or specify the License Model ID using the element, &lt;licenseModelId&gt;.</li></ul>	

**Update Product Using Product ID and Product XML****( /ems/v4\_2/ws/product/{productId}.ws )**

Mark the product life cycle stage as 'Complete'.	<ul style="list-style-type: none"> <li>Specify 'COMPLETE' using the element, &lt;lifeCycleStage&gt;.</li> </ul>	
Change product stage to End Of Life (EOL)	<ul style="list-style-type: none"> <li>Specify 'EOL' using the element, &lt;lifeCycleStage&gt;.</li> </ul>	
Change product family	<ul style="list-style-type: none"> <li>Specify the product family ID in the element, &lt;familyId&gt; or specify the product family name in the element, &lt;familyName&gt;.</li> </ul>	
Update the activation method before including it in an entitlement.	<ul style="list-style-type: none"> <li>Specify activation method SOAT, Full, Fixed, Partial, or Unlimited in the element, &lt;activationMethod&gt;.</li> </ul>	
Add another feature to product	<ul style="list-style-type: none"> <li>Add another &lt;productFeatureRef&gt;&lt;/productFeatureRef&gt; section.</li> </ul>	

**Create User****( /ems/v4\_2/ws/user.ws )**

Create an isolated user	<ul style="list-style-type: none"> <li>The following elements are mandatory- &lt;userName&gt;, &lt;password&gt;, &lt;emailId&gt;, &lt;expiresOn&gt;.</li> <li>The following elements are optional- &lt;partnerIdentifier&gt; and &lt;roleIdentifier&gt;.</li> </ul>	
Create a disabled user	<ul style="list-style-type: none"> <li>The element &lt;enabled&gt; is set to value, false.</li> </ul>	
Create user	<ul style="list-style-type: none"> <li>Specify date in the element,</li> </ul>	

with expiry date	<expiresOn>.	
Create user with different local languages.	<ul style="list-style-type: none"> <li>Provide local code using the element, &lt;localeCode&gt;. The user can retrieve local code using the Web service, /ems/getLocales.xml.</li> </ul>	
Create user with administrat or role.	<ul style="list-style-type: none"> <li>Specify the value, true in the &lt;isAdmin&gt; tag.</li> </ul>	
Create user and associate it with a partner	<ul style="list-style-type: none"> <li>Provide either &lt;partnerId&gt; or &lt;partnerName&gt;, or both.</li> </ul>	
Create user with a specific role	<ul style="list-style-type: none"> <li>Provide the elements, &lt;roleId&gt; and/or &lt;roleName&gt;.</li> </ul>	
Create user with more than one role	<ul style="list-style-type: none"> <li>Repeat the &lt;roleId&gt; tag for respective role in input XML.</li> </ul>	<pre>&lt;user&gt; &lt;userName&gt;userTest1&lt;/userName&gt; &lt;refId1&gt;&lt;/refId1&gt; &lt;refId2&gt;&lt;/refId2&gt; &lt;emailId&gt;abc@demo.com&lt;/emailId&gt; &lt;enabled&gt;true&lt;/enabled&gt; &lt;isLocked&gt;&gt;false&lt;/isLocked&gt; &lt;expiresOn&gt;&lt;/expiresOn&gt; &lt;roleId&gt; &lt;roleId&gt;4&lt;/roleId&gt; &lt;roleName&gt;testRole&lt;/roleName&gt; &lt;/roleId&gt; &lt;roleId&gt; &lt;roleId&gt;5&lt;/roleId&gt; &lt;roleName&gt;testRole2&lt;/roleName&gt; &lt;/roleId&gt; &lt;/user&gt;</pre>

**Update Custom Attribute**  
**( /ems/updateCustomAttribute.xml )**

Change the value of custom attribute of an entity	<ul style="list-style-type: none"> <li>ID of entity should be provided in the element, &lt;entityId&gt;.</li> <li>Entity type to be provided in the element, &lt;templateType&gt;.</li> <li>Following elements are mandatory: <ul style="list-style-type: none"> <li>- &lt;entityId&gt; or &lt;entityName&gt;</li> <li>- &lt;attributeId&gt; or &lt;attributeName&gt;</li> </ul> </li> </ul>	
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	- <value>	
<b>Create Entitlement Using Entitlement XML</b> (/ems/v4_2/ws/entitlement.ws )		
Create entitlement without any product and with default options	<ul style="list-style-type: none"> <li>Use the element, &lt;entitlement&gt; &lt;/entitlement&gt;.</li> </ul>	
Create entitlement with multiple products.	<ul style="list-style-type: none"> <li>Add the &lt;productKey&gt; tag with product information like &lt;productName&gt; with &lt;productNameVersion&gt; or &lt;productId&gt; and &lt;totalQuantity&gt;.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productId&gt; &lt;productId&gt;2&lt;/productId&gt; &lt;productNameVersion&gt; &lt;productName&gt;pro- sl-net&lt;/productName&gt; &lt;productVersion&gt;1&lt;/productVersion&gt; &lt;/productNameVersion&gt; &lt;/productId&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;/entitlement&gt;</pre>
User can create entitlement with a customized eid using the <eld> tag.	<ul style="list-style-type: none"> <li>Specify EID using the element, &lt;eld&gt; within the element, &lt;entitlement&gt;. NOTE: The 'Allow manual creation of EID and PKID' should be enabled in the admin console.</li> </ul>	
Create entitlement with customer details.	<ul style="list-style-type: none"> <li>Specify elements, &lt;customerId&gt; or &lt;customerName&gt; within the element, &lt;customerIdentifier&gt; in the element, &lt;entitlement&gt;.</li> <li>Provide unique value using element, &lt;custIdentifier&gt;, if entitlement is of cloud served type.</li> </ul>	<pre>&lt;customerIdentifier&gt; &lt;customerId&gt;7&lt;/customerId&gt; &lt;customerName&gt;Customer1&lt;/customerName&gt; &lt;custIdentifier&gt;cust001&lt;/custIdentifier&gt; &lt;/customerIdentifier&gt;</pre>
Create entitlement with contact.	<ul style="list-style-type: none"> <li>Specify &lt;contactId&gt; or &lt;emailId&gt; within the element, &lt;contactIdentifier&gt; tag.</li> <li>If contact is not independent and belongs to a customer then that customer must be included in entitlement.</li> </ul>	<pre>&lt;contactIdentifier&gt; &lt;contactId&gt;4&lt;/contactId&gt; &lt;emailId&gt;abc@demo.com&lt;/emailId&gt; &lt;/contactIdentifier&gt;</pre>

<p>Add Channel Partner to an entitlement.</p>	<ul style="list-style-type: none"> <li>• Provide value in &lt;channelPartnerId&gt; or &lt;channelPartnerName&gt; within the element, &lt;channelPartnerIdentifier&gt;.</li> <li>• Note: A maximum number of five channel partners can be associated with an entitlement. You need to repeat the above element with unique channel partner ID or Name or both.</li> </ul>	<pre>&lt;channelPartnerIdentifier&gt; &lt;channelPartnerId&gt;5&lt;/channelPartnerId&gt; &lt;channelPartnerName&gt;Partner1&lt;/channelPartnerName&gt; &lt;/channelPartnerIdentifier&gt;</pre>
<p>Create and commit entitlement using a single web service call</p>	<ul style="list-style-type: none"> <li>• Within the element, &lt;entitlement&gt;, add the element &lt;action&gt; and assign the value COMMIT to the &lt;action&gt; element.</li> </ul>	
<p>Send CC email to several recipients.</p>	<ul style="list-style-type: none"> <li>• Specify e-mail ID of recipients in the element, &lt;ccEmail&gt;separated by semicolon. A maximum number of 15 CC emails can be specified</li> </ul> <p style="text-align: center;"><b>Note:</b> Note: You can specify CC emails only if the 'CC Email Change Allowed' value is set to true.</p>	
<p>Create entitlement with custom product key if manual 'Allow manual creation of EID and PKID'</p>	<ul style="list-style-type: none"> <li>• Create entitlement using &lt;pkId&gt; tag</li> </ul>	

checkbox is enabled in admin console.		
Add start date to a line item.	<ul style="list-style-type: none"> <li>Use element, &lt;startDate&gt; within &lt;productKey&gt;</li> </ul>	
Add end date to the entitlement.	<ul style="list-style-type: none"> <li>Use element, &lt;endDate&gt; within &lt;productKey&gt;</li> </ul>	
Configure activation method of a line item, if activation method specified during product creation is of type SAOT	<ul style="list-style-type: none"> <li>Specify element &lt;activationMethod&gt; with possible values: - FIXED - PARTIAL - FULL - UNLIMITED</li> </ul>	
Override the value of fixedQuantity associated with product for activation method of type 'FIXED' (specified at Product creation).	<ul style="list-style-type: none"> <li>Specify elements, = &lt;activationMethod&gt; and &lt;fixedQuantity&gt;.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;activationMethod&gt;FIXED&lt;/activationMethod&gt; &lt;fixedQuantity&gt;2&lt;/fixedQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;2&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;/entitlement&gt;</pre>
Suite ID is required if suite is specified in an entitlement	<ul style="list-style-type: none"> <li>Specify Suite ID using element, &lt;suiteIdentifier&gt;.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;suiteIdentifier&gt; &lt;suiteId&gt;2&lt;/suiteId&gt; &lt;/suiteIdentifier&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;entitlementAttributes/&gt; &lt;/entitlement&gt;</pre>
Add more than one	<ul style="list-style-type: none"> <li>Repeat the element, &lt;productKey&gt; in input XML.</li> </ul>	

product or suite.		
Create entitlement with modified value of License attribute	<ul style="list-style-type: none"> <li>Specify the license model details in the element, &lt;licenseModel&gt;.</li> </ul>	
Include or exclude feature while creating entitlement, if product has more than one feature, and some or all feature are excludable	<ul style="list-style-type: none"> <li>Add or remove the element, &lt;feature&gt; as shown in sample code.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;10&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;feature&gt; &lt;featureIdentifier&gt; &lt;featureId&gt;2&lt;/featureId&gt; &lt;/featureIdentifier&gt; &lt;itemFeatureState&gt;INCLUDED&lt;/itemFeatureState&gt; &lt;/feature&gt; &lt;feature&gt; &lt;featureIdentifier&gt; &lt;featureId&gt;6&lt;/featureId&gt; &lt;/featureIdentifier&gt; &lt;itemFeatureState&gt;INCLUDED&lt;/itemFeatureState&gt; &lt;/feature&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;entitlementAttributes/&gt; &lt;/entitlement&gt;</pre>
Specify the license model to use, if a feature has more than one license model.	<ul style="list-style-type: none"> <li>Provide the license model ID in the element, &lt;licenseModelId&gt; within the element &lt;licenseModelIdentifier&gt;. This will specify the license model to be included for the line item.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;7&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;feature&gt; &lt;featureIdentifier&gt; &lt;featureId&gt;6&lt;/featureId&gt; &lt;/featureIdentifier&gt; &lt;licenseModel&gt; &lt;licenseModelIdentifier&gt; &lt;licenseModelId&gt;4&lt;/licenseModelId&gt; &lt;/licenseModelIdentifier&gt; &lt;/licenseModel&gt; &lt;/feature&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;entitlementAttributes/&gt; &lt;/entitlement&gt;</pre>
Activation attributes	<ul style="list-style-type: none"> <li>These attributes are read-only fields and are specified using the element, &lt;activationAttributes&gt; and depend on the License attached in entitlement.</li> </ul>	
Configure line item level attributes at	<ul style="list-style-type: none"> <li>The element, &lt;commonLicenseAttributes&gt; specifies Line item level attributes, which can be</li> </ul>	

time of entitlement creation.	configured at time of entitlement creation. The attribute details depend on licenses included in line item. - For Network Type of license, <CLIENT_1_CRITERIA> is used. - For Standalone Type of license <PRIMARY_1_CRITERIA> is used.	
Define attributes at database level	<ul style="list-style-type: none"> <li>The element, &lt;entitlementAttributes&gt; contains entitlement attributes that are defined at databases level.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;7&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;entitlementAttributes/&gt; &lt;/entitlement&gt;</pre>
Attributes of an entity defined by admin in the configuration module	<ul style="list-style-type: none"> <li>The element, &lt;customAttribute&gt; contains attributes of an entity. These are defined by the admin in the configuration module.</li> </ul>	
Create entitlement with optional fingerprint registration	<ul style="list-style-type: none"> <li>Specify false for FINGERPRINT_REGISTRATION in the &lt;name&gt;, &lt;value&gt; pair defined within &lt;entitlementAttributes&gt;.</li> </ul>	<pre>&lt;entitlementAttributes&gt; &lt;attributeGroup groupName="CLOUD_SERVED" subGroupName=""&gt; &lt;attribute&gt; &lt;name&gt;DURATION&lt;/name&gt; &lt;value&gt;2160&lt;/value&gt; &lt;isSANL&gt;&gt;false&lt;/isSANL&gt; &lt;/attribute&gt; &lt;attribute&gt; &lt;name&gt;RENEW_ FREQUENCY&lt;/name&gt; &lt;value&gt;24&lt;/value&gt; &lt;isSANL&gt;&gt;false&lt;/isSANL&gt; &lt;/attribute&gt; &lt;attribute&gt; &lt;name&gt;FINGERPRINT_ REGISTRATION&lt;/name&gt; &lt;value&gt;FALSE&lt;/value&gt; &lt;isSANL&gt;&gt;false&lt;/isSANL&gt; &lt;/attribute&gt;&lt;/attributeGroup&gt; &lt;/entitlementAttributes&gt;</pre>
Create a test entitlement	<ul style="list-style-type: none"> <li>Specify the value 'true' in the element, &lt;isTest&gt; within the element &lt;entitlement&gt; .</li> </ul>	<pre>&lt;entitlement&gt; &lt;isTest&gt;&gt;true&lt;/isTest&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;2&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;/entitlement&gt;</pre>

**Update Entitlement**

(/ems/v4\_2/ws/entitlement/{entId}.ws )

Retrieve the entitlement ID (entId) to be used in the Update Entitlement URL	<ul style="list-style-type: none"> <li>Use the GET Entitlement web service to retrieve the entitlement XML. The entitlement ID is specified in the element &lt;entId&gt; and can be used as the entId in the URL.</li> </ul>	
Add new product in entitlement	<ul style="list-style-type: none"> <li>Retrieve entitlement XML by Id and then add product by providing the element, &lt;productId&gt; as shown in the sample code.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;2&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;6&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;entitlementAttributes/&gt; &lt;/entitlement&gt;</pre>
Specify new feature (from existing feature list of product) when adding product to an entitlement.	<ul style="list-style-type: none"> <li>Specify feature details in the element &lt;feature&gt; when creating an entitlement.</li> </ul>	
Change/switch feature of an existing product	<ul style="list-style-type: none"> <li>Update the element, &lt;featureId&gt; as shown in sample code.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;10&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;feature&gt; &lt;featureIdentifier&gt; &lt;featureId&gt;2&lt;/featureId&gt; &lt;/featureIdentifier&gt; &lt;/feature&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;entitlementAttributes/&gt; &lt;/entitlement&gt;</pre>
Change license of existing product in an entitlement	<ul style="list-style-type: none"> <li>Update license model ID using element &lt;licenseModelId&gt; in the entitlement XML.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;7&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;feature&gt; &lt;featureIdentifier&gt; &lt;featureId&gt;6&lt;/featureId&gt; &lt;/featureIdentifier&gt; &lt;licenseModel&gt; &lt;licenseModelIdentifier&gt; &lt;licenseModelId&gt;4&lt;/licenseModelId&gt;</pre>

		<pre>&lt;/licenseModelIdentifier&gt; &lt;/licenseModel&gt; &lt;/feature&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;entitlementAttributes/&gt; &lt;/entitlement&gt;</pre>
Change fixed quantity for the activation method 'Fixed'	<ul style="list-style-type: none"> <li>Update value in the element, &lt;fixedQuantity&gt;</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;activationMethod&gt;FIXED&lt;/activationMethod&gt; &lt;fixedQuantity&gt;2&lt;/fixedQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;2&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;/entitlement&gt;</pre>
Remove product from entitlement	<ul style="list-style-type: none"> <li>Make a call to the update entitlement web service and remove section specified within element, &lt;productKey&gt;&lt;/productKey&gt; from the entitlement XML.</li> </ul>	<pre>&lt;entitlement&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;2&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;productKey&gt; &lt;Item&gt; &lt;totalQuantity&gt;12&lt;/totalQuantity&gt; &lt;product&gt; &lt;productIdentifier&gt; &lt;productId&gt;6&lt;/productId&gt; &lt;/productIdentifier&gt; &lt;/product&gt; &lt;/Item&gt; &lt;/productKey&gt; &lt;entitlementAttributes/&gt; &lt;/entitlement&gt;</pre>
Add contact to an entitlement when customer already exists.	<ul style="list-style-type: none"> <li>Provide contact ID and email address using elements, &lt;contactId&gt; and &lt;emailId&gt; respectively within the element &lt;contactIdentifier&gt; to specify the customer to which the contact must belong.</li> </ul>	
Update Email IDs to send emails as CC.	<ul style="list-style-type: none"> <li>Specify the email addresses separated by semicolon in the element, &lt;ccEmail&gt;. A maximum of 15 emails can be specified.</li> <li>Note: CC email addresses can be specified only if 'CC Email Change Allowed' field is set to true in the admin console.</li> </ul>	

**Modify Entitlement**

( /ems/v4\_2/ws/entitlement.ws )

Modify entitlement (committed)	<ul style="list-style-type: none"> <li>Specify entitlement details to be updated.</li> <li>Specify the database ID of</li> </ul>	<pre>&lt;entitlement&gt; &lt;linkedEntId&gt;123&lt;/linkedEntId&gt; &lt;!-- entitlement XML to be updated --&gt;</pre>
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	entitlement using element, <linkedEntId>, generated during entitlement creation.	</entitlement>
Update activation method of a line item for type SAOT (Specify at order time).	<ul style="list-style-type: none"> <li>Specify activation method using element, &lt;activationMethod&gt;. Valid values: - FIXED - PARTIAL - FULL - UNLIMITED</li> </ul>	
Retrieve attribute required for entitlement activation	<ul style="list-style-type: none"> <li>The web service, Get Entitlement by ID to retrieve entitlement activation attributes.</li> </ul>	
Disable or close an entitlement	<ul style="list-style-type: none"> <li>Modify entitlement and specify the value DISABLE (to disable entitlement) or CLOSE (to close entitlement) using the element &lt;action&gt;.</li> </ul>	
Update line item quantity	<ul style="list-style-type: none"> <li>Specify new quantity in the element, &lt;totalQuantity&gt;.</li> </ul>	
Modify line item state	<ul style="list-style-type: none"> <li>Modify line item state by specifying value in the element &lt;itemState&gt;.</li> <li>4 - Close 5 – Disabled</li> <li>Specify &lt;totalQuantity&gt; as 0</li> </ul>	
Renew license after user modifies line item's license details	<ul style="list-style-type: none"> <li>Specify RENEWLICENSE in the element &lt;action&gt;.</li> </ul>	

**Activation**  
( /ems/v4\_2/ws/activation.ws )

Retrieve activation attributes.	<ul style="list-style-type: none"> <li>Call get entitlement by ID web service and retrieve activation attributes from the element, &lt;activationAttributes&gt;.</li> </ul>	
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<p>Provide activation quantity.</p>	<ul style="list-style-type: none"> <li>Specify the activation quantity using element, &lt;activationQuantity&gt;. The value specified depends on the activation method of the line item.</li> </ul>	
<p>Create custom license string for activated feature</p>	<ul style="list-style-type: none"> <li>Provide lineNumber attribute in element &lt;activation&gt;.</li> <li>Provide details using elements such as, &lt;productName&gt;, &lt;feature ID&gt; and &lt;licenseKeyRef&gt; within the &lt;activation&gt; element.</li> <li>Also provide license string value using the element, &lt;licenseKeyInfo&gt;.</li> </ul>	<pre> &lt;groupActivation groupActivationId="0"&gt;   &lt;userInput&gt;     &lt;sendNotification&gt;&gt;false&lt;/sendNotification&gt;     &lt;activatorEmailId&gt;&lt;/activatorEmailId&gt;     &lt;activateeEmailId&gt;&lt;/activateeEmailId&gt;     &lt;lineItem&gt; &lt;aid&gt;&lt;/aid&gt;     &lt;externalId&gt;&lt;/externalId&gt; &lt;lineItemIdIdentifier&gt;     &lt;lineItemId&gt;128&lt;/lineItemId&gt;     &lt;productKey&gt;&lt;/productKey&gt;     &lt;/lineItemIdIdentifier&gt;     &lt;activationQuantity&gt;1&lt;/activationQuantity&gt;     &lt;activationAttributes&gt; &lt;attributeGroup     groupName="LOCKING"&gt; &lt;attribute&gt;     &lt;attributeName&gt;PRIMARY_1_     CRITERIA&lt;/attributeName&gt;     &lt;attributeValue&gt;4&lt;/attributeValue&gt;     &lt;readOnly&gt;&gt;true&lt;/readOnly&gt;     &lt;mandatory&gt;&gt;false&lt;/mandatory&gt; &lt;/attribute&gt;     &lt;attribute&gt; &lt;attributeName&gt;PRIMARY_1_     INFO&lt;/attributeName&gt;     &lt;attributeValue&gt;1234567&lt;/attributeValue&gt;     &lt;readOnly&gt;&gt;false&lt;/readOnly&gt;     &lt;mandatory&gt;&gt;true&lt;/mandatory&gt; &lt;/attribute&gt;     &lt;/attributeGroup&gt; &lt;/activationAttributes&gt;     &lt;/lineItem&gt; &lt;/userInput&gt; &lt;activation     lineNumber="128"&gt; &lt;activatedProduct     productId="2"&gt;     &lt;productName&gt;prodKeyLM&lt;/productName&gt;     &lt;productVersion&gt;1&lt;/productVersion&gt;     &lt;activatedfeature featureId="2"     licenseKeyRef="4"&gt;     &lt;featureName&gt;FtrLM&lt;/featureName&gt;     &lt;featureVersion&gt;&lt;/featureVersion&gt;     &lt;/activatedfeature&gt; &lt;/activatedProduct&gt;     &lt;downloads/&gt; &lt;/activation&gt; &lt;licenseKeyInfo     licenseKeyRef="4"&gt;     &lt;keyFormat&gt;TEXT&lt;/keyFormat&gt;     &lt;keyType&gt;NORMAL&lt;/keyType&gt;     &lt;licenseKey     keyEncodingType=""&gt;11&lt;/licenseKey&gt;     &lt;/licenseKeyInfo&gt; &lt;/groupActivation&gt; </pre>


# APPENDIX I

## Glossary

%EMS_HOME%	Refers to the installation directory for Sentinel EMS. The default installation directory is: <ul style="list-style-type: none"> <li>For 32-bit machines—<i>C:\Program Files\SafeNet Sentinel\Sentinel EMS.</i></li> <li>For 64-bit machines—<i>C:\Program Files (x86)\SafeNet Sentinel\Sentinel EMS.</i></li> </ul>
Activation	Refers to the generation of a license code/file for a product/suite.
Activation ID (AID)	Refers to the unique identifier for an activation.
Admin	Refers to the default user in Sentinel EMS. The Admin is a super user (with all permissions in EMS) and can managing access rights of other users. His primary responsibilities are managing users, roles, namespaces, custom reports, and templates.
Auto-checkout	Refers to the repository license model of RMS, which has the following characteristics: <ul style="list-style-type: none"> <li><b>Network license:</b> Anyone on the network can use the application. The number of users can be up to the limit specified in the license file.</li> <li><b>Automatically commutable:</b> Means that the licensed application can run on the local system even beyond network because it can be automatically commuted (without requiring a formal checking out process).</li> </ul>
Batch Entitlement or “in batch”	Refers to the generation of multiple entitlements at one go. Batch entitlements enable publishers to create large batches of products so that the entitlement IDs can be printed right on the box and sold through various channels without knowing the end user.
Batch ID	Refers to the unique identifier corresponding to multiple entitlements generated in a batch.
Billing address	Billing address is the address registered on your credit card. In simple words, it is the address where you receive the statements for your credit card. For your order to be approved when shopping online, the billing address provided by you has to match this address.
Catalog	Refers to the namespaces, features, license models, products, and suites available in an EMS deployment.
Catalog Permissions	Refers to the permission to view/edit/add/delete the

	features/products/suites available in a namespace. Catalog permissions can be defined in roles.
Channel Partner	Refers to an organization that is allowed to re-sell the publisher's products. End users can buy directly from the publisher or from the channel partners.
Channel Partner User	Refers to an individual user who belongs to a Channel Partner. Such a user can log on to EMS and view, activate and revoke the Entitlements associated with his Channel Partner.
Commit Entitlement	After the entitlement is created and line items are configured, an entitlement can be committed. Commit freezes the Entitlement from further changes, and emails a copy of the Entitlement Certificate (if so configured) to the end user, if specified.
Commuter	An RMS license model. Useful when a user needs to travel and wants to take along the licensed application. A network license can be used as a commuter license. However, it differs from Auto-checkout, because the commuter license must always be manually checked out of network before use.
Complete or complete stage/state	When a product/suite that is in Draft stage is complete from all respects, its state can be changed to Complete. The products/suites that are in Complete state become available for being added to Entitlements.
Compliance	Refers to conforming the terms and conditions of the end-user license agreement (EULA).
Contact	Refers to an individual who is the single point of contact for an entitlement. For retail customers, it is suitable to create Contacts and generate entitlements for them. All the e-mails related to the entitlement are sent to the e-mail address specified for the contact. A contact may or may not belong to a customer.
Copy product / suite / entitlement	A new product, suite, or entitlement can be created by editing a copy of an existing product, suite, or entitlement, respectively.
Custom Attribute	Refers to the custom attributes that one can create under the Template menu.
Custom Reports	Help the publisher to generate some customized reports other than the predefined reports.
Customer	Refers to the organization which owns an entitlement. A customer can have multiple contacts.
Deployed	A product/suite (and the features it contains) is termed as Deployed if it has been added to any entitlement. A deployed product/feature/suite cannot be deleted.
Draft stage	When an entitlement is first created, it remains in Draft stage. In this

(for an entitlement)	stage the entitlement can be edited and line items can be configured. Draft entitlements cannot be viewed or activated by the end user or channel partner.
Draft stage (for product/suite)	When a product/suite is first created, it remains in Draft stage. In this stage, the item can be edited and are not available for orders.
End Date (for an entitlement line item)	The date after which no operations, like Login by Product Key, Activate, or Revoke are allowed on an entitlement line item. As one line item can have multiple licenses for multiple features, specifying a license end date different from the line item end date helps in addressing different end dates for multiple features.
End Date (for an entitlement)	The date after which no operations, like Login by EID, Activate, Revoke are allowed on an entitlement.
End User	Refers to the ultimate user of the products/suites. Also referred to as "Contact."
End-of-Life or EOL stage	When a product is no longer in use, its lifecycle stage can be changed to End of Life (EOL). In this stage the product/suite will no longer be available for new entitlements. However, it exists in the system for pre-existing entitlements.
Enforce Clock Tampered	An RMS enforcement specific term. Software licensing may break down if the customer sets back the system time—such as, to prevent the license expiration. This term is provided as a checkbox option in EMS portal. Selecting/clearing this will decide that whether the publisher wants to deny/allow the licensed application use in case of system clock tampering.
Enforce License Additive Enforce License Exclusive	RMS specific terms. An additive license code appends changes to an existing additive license. Whereas, an exclusive license code completely replaces the old license with a new license.
Enforcement	Refers to the enforcement technology, like RMS, HASP etc.
Entitlement	Entitlement provides your customers the right to use your software within the mutually agreed terms defined in the EULA. Entitlement creation means producing orders for the products/suites. Entitlements include products/suites along with their licensing conditions.
Feature	A feature is a distinct functionality of a software application that can be independently licensed. Features are the basic building blocks of a product.
Fulfillment	The complete process through which the customer gets the product and license.


Global Permissions	Refers to the general permissions in EMS like view, edit, add, delete. These permissions define the rights to use various functionalities of EMS.
Key Lifetime Minutes	An RMS term. Once the application has obtained a license, it also faces the task of maintaining the license. A license must be renewed by the application on a regular schedule, else the license will be reclaimed (keeping it booked so that new clients do not obtain it). This is managed by sending an update call to the License Manager that issued the license. So, lifetime in minutes refers here to the time interval specified for the license (key) to send updates to the License Manager.
License	A file or string generated by the publisher that contains the conditions under which the software can run on the customer's machine.
License Duration	An RMS term. The fixed calendar dates beyond which the licensed application cannot be used.
License Generators	Refers to the software that generates license codes/files that are distributed by EMS. Sentinel EMS is fully integrated with the Sentinel RMS license generator. However, it also supports third-party license generators.
License Model	A license model is a combination of various parameters that define the type of license to be generated. License models define a broad category of licenses which can be further customized by editing the values of its attributes. License models can be included with features.
License Version	An RMS term. The RMS generated licenses are categorized according the versions of the RMS SDK. For example, <ul style="list-style-type: none"> <li>• <b>Version 10</b> refers to the licenses introduced since the 8.0.x version of the RMS license code generator.</li> <li>• <b>Version 11</b> refers to the licenses introduced since the 8.1.x version of the RMS license code generator.</li> <li>• <b>Version 12</b> refers to the licenses introduced since the 8.2.3 version of the RMS license code generator.</li> </ul> <div style="text-align: right; border-top: 1px solid black; padding-top: 5px;">  <b>Note:</b> Refer to the Sentinel RMS SDK Developer's Guide to know the reigning version. </div>
Lifecycle Stage(s)	Refers to the stages of a product/suite. The different states of a product/suite are: <ul style="list-style-type: none"> <li>• Draft</li> <li>• Complete</li> <li>• End of Life (EOL)</li> </ul>

Line Item	After a product/suite is associated with an entitlement, it can be termed as a line item. Various business operations like Activate, Revoke, Re-charge, and Renew are performed on a line item.
Lock Code/Locking Code/Fingerprints	An RMS specific term. Refers to the actual output string (in hex format) resulting from locking to the system properties.
Locking (Fingerprinting)	Refers to binding the license to a particular system properties (like, hard drive, IP address, CPU properties and so on).
Namespace	A namespace acts as a logical partition for your EMS workspace. If you have different product lines, you can maintain different namespaces for them. The features/products/suites defined in a namespace are available to only those users who have permission on that namespace.
Network	A type of a license (in contrast with a stand-alone license). Described above in Auto-checkout.
Network User Limit	An RMS term. The maximum number of users a network license can support concurrently.
Node-Locked	See Trial Standalone Node Locked.
Output Type	An RMS term. Refers to the format of the RMS licenses generated. Like, encrypted, readable etc.
Permissions	Permissions define different levels of access to use various functionalities of EMS. Permissions are not assigned to users directly, but are grouped into roles, and users can be assigned roles. See also: Role
Primary Criteria and Secondary Criteria	RMS specific terms. For server-locked licenses, you can specify two sets of locking criteria known as primary and secondary locking criteria. The licensed application will run if any of the locking criteria is matched.
Private Vendor Info	See Vendor Info below.
Product	A product is a software application that can be ordered or licensed. It is a combination of individual features and is associated with one or more license models.
Product Key	Refers to a string that uniquely identifies a line item in an Entitlement. It can be used to login and activate the relevant line item. It is unique across entitlements.
Public Vendor Info	See Vendor Info below.
Publisher	Refers to the organization who may be an ISV or a hardware manufacturer, who wants to protect his products using software license or

	hardware key and manage entitlements for them.
Quantity	<p>Each product/suite is added to an Entitlement with a Quantity.</p> <ul style="list-style-type: none"> <li>• <b>For Standalone RMS licenses</b>, quantity always refers to Number of Activations. For each feature the order taker can specify a <b>user limit</b>.</li> <li>• <b>For Network RMS licenses</b>, you may specify whether Quantity refers to Number of Activations or Seat Count (maximum concurrent users).</li> </ul> <p>For Network licenses:</p> <ul style="list-style-type: none"> <li>• <b>If Quantity is used as Number of Activations</b>, for each feature the order taker can specify user limit (number of seats). During activation, the feature will have fixed Seat Count as defined by the order taker.</li> <li>• <b>If Quantity is used as Seat Count</b>, the order taker is not required to specify a different seat count for each feature. During activation the end user needs to specify activation quantity, which is used as Seat Count for each feature.</li> </ul>
Regular Expression	<p>A regular expression can be specified for an attribute in a template to define some restrictions for the input type of the attribute.</p> <p>Example of a Regular expression is</p> <pre>[-a-z0-9]+(\.[-a-z0-9]+)*</pre>
Reports	Sentinel EMS reports provide access to selected current information from the Sentinel EMS database. Different predefined reports are available to meet various requirements. The reports provide information in tabular form and, where applicable, in a graphical chart.
Revocation or License Revocation	Revocation is a process by which a software publisher allows return of licenses by the customer.
Revocation Tool – command-line based	A command line tool using which the publisher can configure license revocation at the end user's computer.
Revocation Tool – GUI based	A GUI-based tool using which the publisher can configure license revocation at the end user's computer.
Role	<p>Role is a set of permissions that can be linked with users to manage their access rights.</p> <p>See also: Permission</p>
Shipping address	The address where you want to receive your orders is called the Shipping Address. It could be your home or office.
Stand-alone	<p>An RMS specific term.</p> <p>A type of license that is intended for single computers.</p>
Start Date (for an entitlement line item)	<p>The date before which no operations, like Login by Product Key, Activate, or Revoke are allowed on an entitlement line item.</p> <p>As one line item can have multiple licenses for multiple features, specifying a license start date different from the line item start date helps</p>

	in addressing different start dates for multiple features.
Start Date (for an entitlement)	The date before which no operations, like Login by EID, Activate, or Revoke are allowed on an entitlement.
Suite or Product Suite	A product suite is a combination of products that are meant to be sold together. The products included in a suite may be functionally similar or complementary. A Suite can include one or more products from its parent namespace.
Template	Template is a set of custom attributes that create placeholders to store or input additional information for features / products / suites / customers / contacts / entitlements / batch entitlements.
Test entitlement	A test entitlement lets you make sure that the products, features, and license models are defined in an appropriate manner before deploying them into production. The process of generating a test entitlement is similar to that of a normal entitlement. However a test entitlement can be created using products/suites that are either in Draft or Complete stage. Test Entitlements can be used in Activate and Revoke operations, their data is excluded from Reports.
Trial duration	An RMS term. The time period (defined in the number of days or hours) to allow the use of the licensed application.
Trial Standalone Node Locked	Refers to an RMS license model, which is all of the following: <ul style="list-style-type: none"> <li>• <b>Trial:</b> A temporary license that allows software usage for fixed days or hours starting from the first use.</li> <li>• <b>Stand-alone:</b> A license typically meant for non-networked environments (such as home users).</li> <li>• <b>Node-locked:</b> Means the software can only be used on one machine.</li> </ul>
User	Refers to the employee of the publisher who is responsible to perform various entitlement-related tasks in EMS.
User ID or User Name	A unique identifier for a user in EMS.
User Limit	An RMS term. <ul style="list-style-type: none"> <li>• <b>For Network Licenses</b> - Specifies the number of tokens (concurrent instances) a license can have.</li> <li>• <b>For Stand-alone Licenses</b> - Setting a user limit for stand-alone licenses will limit the number of licensed features used concurrently. For example, a customer purchased a licensed application, which has five features licensed and hard limit is set to three. This limit will ensure that not more than three licensed features are used concurrently.</li> </ul> <p>However, since stand-alone licenses can be used by any number of local applications (instances), the hard limit set may not hold much</p>



	<p>meaning, especially in desktop environments. It is useful for platforms where the whole OS is treated as a single application and so all tasks/processes share memory space. In such environments user limit can be used with standalone licenses for controlling features of a device.</p>
User registration	<p>The process by which the end user provides certain information when he logs on to EMS for the first time using EID or Product Key.</p>
Vendor comments	<p>Refers to comments that can be specified by the publisher to be appended at the end of an RMS license</p>
Vendor Info	<p>An RMS term.</p> <p>Refers to miscellaneous information that a publisher can include as a part of the license code for identification.</p> <p>The private vendor information will remain encrypted in all license formats (whether readable or encrypted). The public vendor information will remain encrypted in encrypted licenses and readable in readable licenses, respectively.</p>
Version	<p>Version can be defined for a feature / product / suite while creating one. Features / products / suites can have same name but different versions. These are useful when a new/different version of your product/suite is to be made available.</p> <p style="text-align: center;"> <b>Note:</b> This is different from license version.</p>
Wechoid	<p>Wechoid is a GUI-based tool, using which your customer can obtain the hexadecimal lock code of his machine. The lock code can be used to generate license code which can be used only in that machine.</p> <p>To get the tool, log on to the EMS portal and click <b>Tools &gt; Wechoid (new style)</b>. You will be prompted to run the tool directly or download it (<i>wechoid.exe</i>). After downloading tool, double-click the file launch it.</p> <p>When launched, the utility shows the available locking criteria and their values. The unavailable locking criteria are shown as disabled. The end-user needs to select the criteria applicable to his license and clear the rest. The end user needs to use the new style locking code for activating a product/suite, unless you have specified to use the old style locking code.</p>

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