

TM Forum Specification

Usage Management API Conformance Profile

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INTRODUCTION - API DESCRIPTION

This document describes the API Conformance for the Usage API.

The Usage API provides a standardized mechanism for usage management such as the creation, update, retrieval, import and export of a collection of usages. A usage is an occurrence of employing a Product, Service or Resource for its intended purpose which is of interest to the business and can have charges applied to it.

This document identifies the parameters that must be included in a request related to the operations above as well as the parameters expected in the response.

RESOURCE MODEL CONFORMANCE

The following table indicates the mandatory resources for this API.

Resource Name	Comment
Usage	This is the mandatory main resource of the API.
UsageSpecification	This resource defines the type of the Usage

General Notes on Resource Attribute Conformance

There are three situations that could occur for an attribute:

- Mandatory attribute,
 - Mandatory attribute if the optional parent attribute is present,
 - Non-mandatory/Optional attribute. Those are all the other attributes not mentioned in the following subsections. Please refer to the corresponding API REST Specification for more details.
- The tables in the subsections below indicate which attributes are mandatory including mandatory when an optional parent is present.
 - Where a resource is an input into an API (e.g. POST, PATCH), Mandatory means that the attribute value must be supplied by the API consumer in the input (and must not be blank or null).
 - Where a resource is an output from an API (e.g. GET, POST), Mandatory means that the attribute value must be supplied by the API provider in the output (and must not be blank or null).
 - For a sub-resource that is not an array, Mandatory (cardinality 1..1) means that the sub-resource must be present, while Optional (cardinality 0..1) means that the sub-resource may be absent. Mandatory and Optional on the sub-resource attributes apply to the sub-resource if present.
 - For a sub-resource that is an array, Mandatory (cardinality 1..*) means that at least one sub-resource must be present in the array, while Optional (cardinality 0..*) means that the array may be absent. Mandatory and Optional on the sub-resource attributes apply to each of the sub-resources if present.

In this table are listed all mandatory attributes. A mandatory attribute MUST be retrieved in resource representation when no attribute selection is used (e.g. GET `../{id}`) without any attribute selection

When an attribute is listed with an indentation (in second column) it means this attribute is mandatory if root (parent) attribute is present.

Usage Resource Mandatory Attributes

Mandatory attribute when parent is present	Rule
id	<p>M (in response messages)</p> <p>Generated by the server and provided in the response upon Usage creation</p>
usageSpecification	<p>M</p> <p>A reference to the collection of characteristics that define this type of Usage</p>
id	<p>M</p> <p>The unique identifier to the UsageSpecification related to this Usage</p>
relatedParty (if present)	<p>Array of RelatedParty</p> <p>Collection of parties related to this Usage (such as the caller of a voice call).</p>
@referredType	<p>M</p> <p>The concrete type of the Party involved</p>
id	<p>M</p> <p>The unique identifier for this party</p>
	<p>The role attribute is not mandatory because the id could be a partyRole id – In this case @referredType must indicate the partyRole (example User, Customer, etc.).</p> <p>If the id is a Party id then a role must be provided.</p>
usageCharacteristic (if present)	<p>Array of UsageCharacteristic</p> <p>Collection of characteristics related to this usage, as defined in the referenced UsageSpecification</p>
name	<p>M</p> <p>The name of the characteristic</p>

Mandatory attribute when parent is present		Rule
	value	M The value of the characteristic
ratedProductUsage (if present)		Array of RatedProductUsage Collection of ratedProductUsage. Must have at least one entry if the Usage status has been rated or billed
	isTaxExempt	M (When Usage is rated or billed)
	taxExcludedRatingAmount	M (When Usage is rated or billed)
	taxIncludedRatingAmount	M (When Usage is rated or billed)
	taxRate	M (When Usage is rated or billed)
	productRef	M (When Usage is rated or billed)
ratedProductUsage.productRef		M (When Usage is rated or billed)
	id	M

UsageSpecification Resource Mandatory Attributes

Mandatory attribute when parent is present		Rule
	href	M (in response messages) Generated by the server and provided in the response upon UsageSpecification creation
	id	M (in response messages) Generated by the server and provided in the response upon UsageSpecification creation
constraint (if present)		Array of ConstraintRef
	id	M
entitySpecRelationship (if present)		Array of EntitySpecificationRelationship
	relationshipType	M

Mandatory attribute when parent is present		Rule
entitySpecRelationship.associationSpec (if present)		
id		M
relatedParty (if present)		Array of RelatedParty
@referredType		M The concrete type of the Party involved
id		M Unique reference to the related Party involved in the UsageSpecification
<p>The role attribute is not mandatory because the id could be a partyRole id – In this case @referredType must indicate the partyRole (example User, Customer, etc.).</p> <p>If the id is a Party id then a role must be provided.</p>		
targetEntitySchema (if present)		
@schemaLocation		M
@type		M

API OPERATIONS CONFORMANCE

For every single resource the following tables includes mandatory operations.

Usage Mandatory Operations

The following table indicates which ones are mandatory for the Usage resource:

Uniform API Operation
GET
POST

UsageSpecification Mandatory Operations

The following table indicates which ones are mandatory for the UsageSpecification resource:

Uniform API Operation
GET
POST

API GET OPERATION CONFORMANCE

All the GET operations in this API share the same status code pattern.

GET	Mandatory/Optional
Response Status Code 200 if successful	M
Response Status Code 404 if not found	M

Definitions for Filter

The following definitions apply to all the GET operations:

- **Filtered Search:** A filtered search can be applied using query parameters to obtain only the resources that meet the criteria defined by the filtering parameters included in the query request. Several elements can be applied to the filtered search. In that case logic, a logical AND is applied to combine the criteria (e.g.:?severity=<value>&status=<value>).
- **Attribute selection (Limiting Response Data):** In order to limit which attributes are included in the response, the GET request can include the ?fields= query parameter. Only those attributes whose names are supplied in this parameter will be returned. Attribute selection capabilities are the same for collections retrieval and individual resource queries.
- **Level:** The filtering and attribute selection can apply to the top level properties (attributes) and subproperties. The tables below show which attributes need to be supported in top-level or contained resources.

GET /usage?fields=...&{filtering}

This operation list or find Usage entities

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET /usage/{id}?fields=...&{filtering}

This operation retrieves a Usage entity. Attribute selection is enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET /usageSpecification?fields=...&{filtering}

This operation list or find UsageSpecification entities

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET /usageSpecification/{id}?fields=...&{filtering}

This operation retrieves a UsageSpecification entity. Attribute selection is enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

API POST OPERATION CONFORMANCE

All the POST operations in this API share the same status code pattern.

POST	Mandatory/Optional
Status Code 201 if resource created	M

POST /usage

This operation creates a Usage entity.

The following table provides the list of mandatory attributes when creating an instance of the Usage resource, including any possible rule, conditions and applicable default values.

Mandatory Attributes	Rule
usageDate	
usageType	

POST /usageSpecification

This operation creates a UsageSpecification entity.

The following table provides the list of mandatory attributes when creating an instance of the UsageSpecification resource, including any possible rule, conditions and applicable default values.

Mandatory Attributes	Rule
name	

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Release History

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Version History

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