TM Forum Specification

Service Catalog Management API REST Specification

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INTRODUCTION

The Service Catalog Management API REST specification allows the management of the entire lifecycle of the Service Catalog elements and the consultation of service catalog elements during several processes such as ordering process.

SAMPLE USE CASES

Lifecycle Management Use Case

The Service Catalog Management API REST Specification allows the management of the entire lifecycle of the service catalog elements. The followings are use case examples of a service catalog management. Please refer to Frameworx guidebook GB978 for more information.

UC1: A partner updates his catalog. He notifies his distributor the catalog change. The distributor requests a catalog export. Then, he retrieves the catalog at the provided URL.
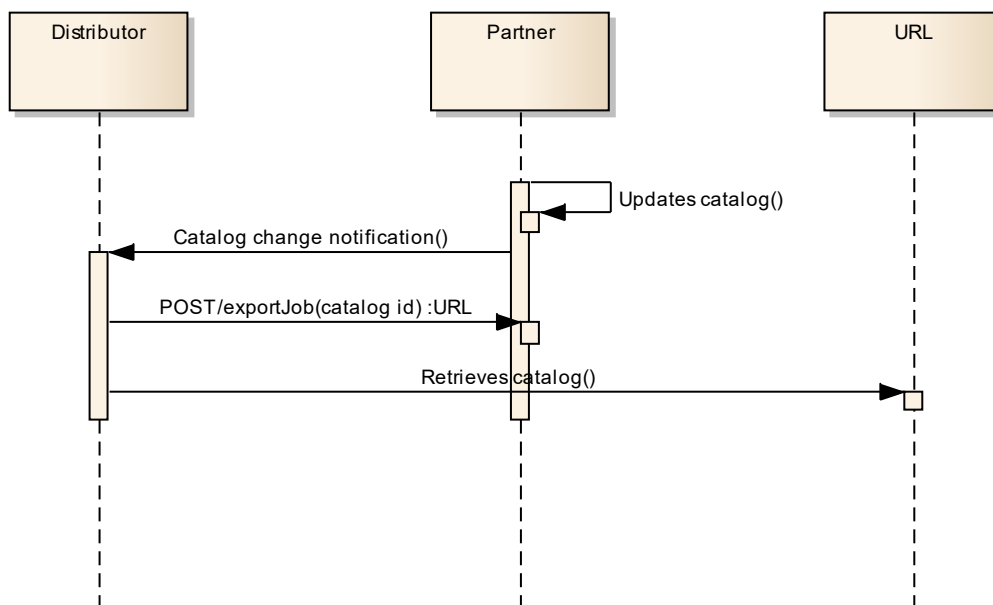
UC2: A partner updates his catalog. He notifies all catalog changes in detail to his distributor. This one updates his catalog copy.
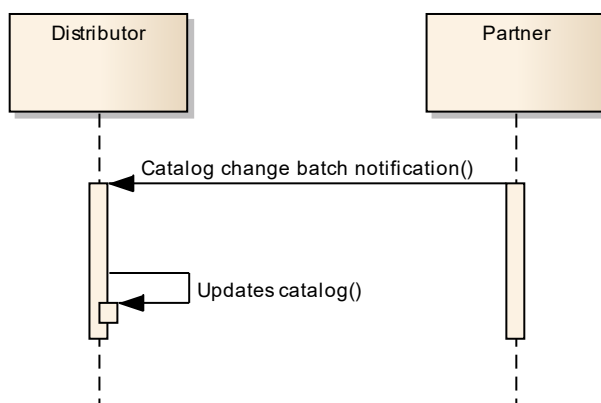
UC3: A catalog administrator wants to retrieve effective duration of a resource candidate based on resource candidate identifier or other search criteria (GET /serviceCandidate/{ID}).

UC4: A catalog administrator wants to retrieve all service candidates in service catalog (GET /serviceCandidate).

UC5: A catalog administrator wants to update the lifecycle status (from Launched to retired for example) of a service candidate (PATCH /serviceCandidate/{ID}).

Entity Lifecycle States

Resource Lifecycle Management is responsible for managing the entire lifecycle of the service catalog element and its underlying components. This include all the processes required to design, build, deploy, maintain and ultimately retire the catalog element.
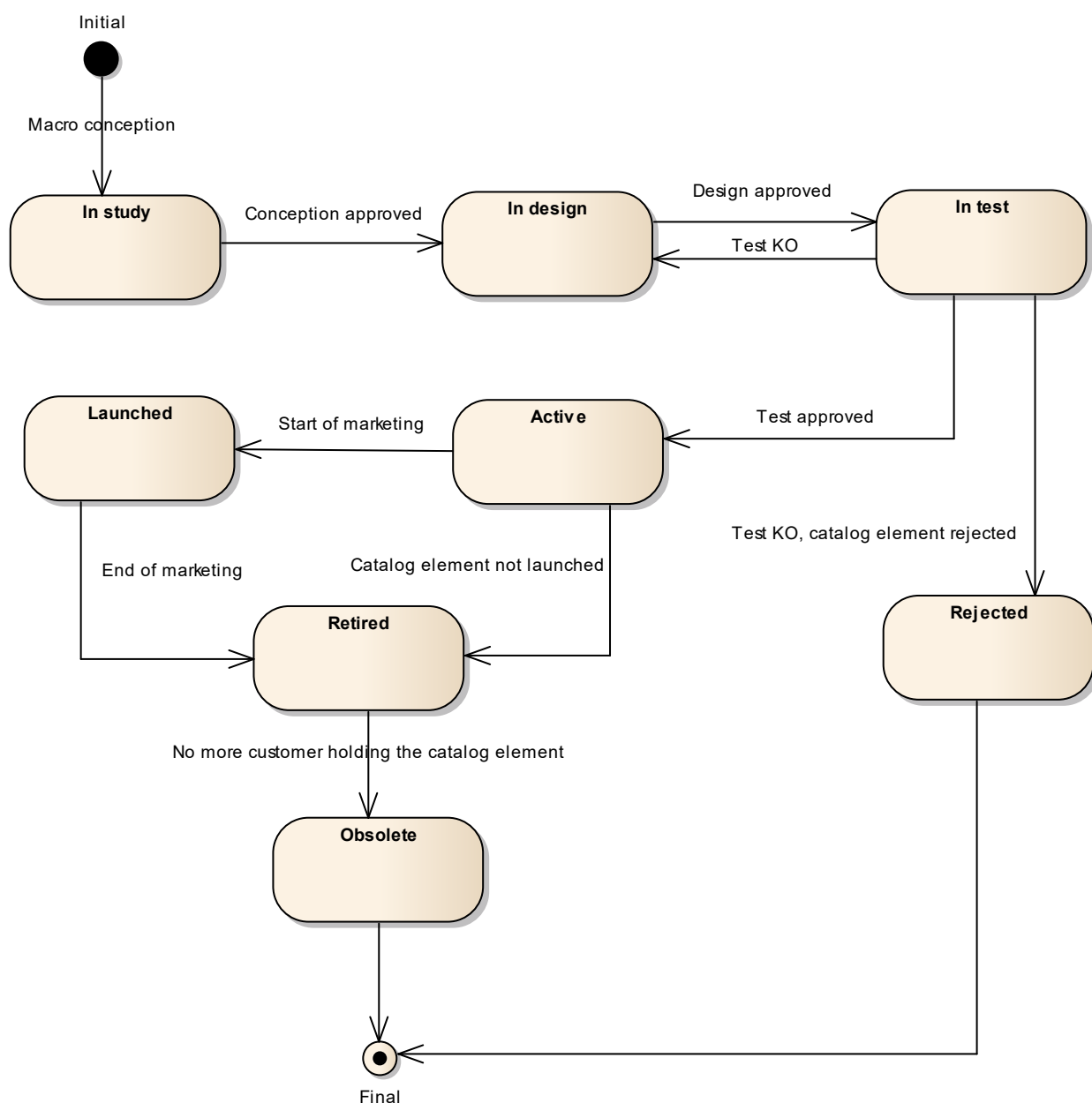
When the macro conception of a catalog element is started the first status of the later is "In Study".

When the conception of the catalog element is accepted, its status is changed to "In Design".

If the design is approved its status is changed to "In Test".

Then either the test is OK and then its status is changed to "Active" or the test is KO (failed) and its status is changed to "Rejected". The Rejected status is a final status.

When a catalog element is in a "Active" status it means, it has been validated and tested, but it is still not available for customers.

When the beginning of marketing is reached, its status is changed to "Launched". At this moment, customers can buy it.

If the catalog element is not launched, its status is changed to "Retired".

The same status is achieved when a catalog element reaches the end of marketing.

The "Retired" status means it cannot be sold to any new customers, but previous customers can still have it.

When no more customer holds the catalog element, its status is changed to "Obsolete" meaning it can be removed from the catalog.

SUPPORT OF POLYMORPHISM AND EXTENSION PATTERNS

Support of polymorphic collections and types and schema based extension is provided by means of a list of generic meta-attributes that we describe below. Polymorphism in collections occurs when entities inherit from base entities, for instance a TypeAServiceSpecification and TypeBServiceSpecification ~~BillingAccount and SettlementAccount~~ inheriting properties from the base ServiceSepcification entity.

Generic support of polymorphism and pattern extensions is described in the TMF API Guidelines v3.0 Part 2 document.

The @type attribute provides a way to represent the actual class type of an entity. For example, within a list of ServiceSpecification instances some may be instances of TypeAServiceSpecification where other could be instances of TypeBServiceSpecification. The @type gives this information. All resources and sub-resources of this API have a @type attributes that can be provided when this is useful.

The @referredType can be used within reference entities (like for instance a RelatedParty object) to explicitly denote the actual entity type of the referred class. Notice that in reference entities the @type, when used, denotes the class type of the reference itself, such as RelatedParty, and not the class type of the referred object. However since reference classes are rarely sub-classed, @type is generally not useful in reference objects.

The @schemaLocation property can be used in resources to allow specifying user-defined properties of an Entity or to specify the expected *characteristics* of an entity.

The @baseType attribute gives a way to provide explicitly the base of class of a given resource that has been extended.

RESOURCE MODEL

Managed Entity and Task Resource Models

Service Catalog resource

The root entity for service catalog management.
A service catalog is a group of service specifications made available through service candidates that an organization provides to the consumers (internal consumers like its employees or B2B customers or B2C customers).
A service catalog typically includes name, description and time period that is valid for. It will have a list of ServiceCandidate catalog items. A ServiceCandidate is an entity that makes a ServiceSpecification available to a catalog.
A ServiceCandidate and its associated ServiceSpecification may be "published" - made visible -in any number of ServiceCatalogs, or in none.

Resource model
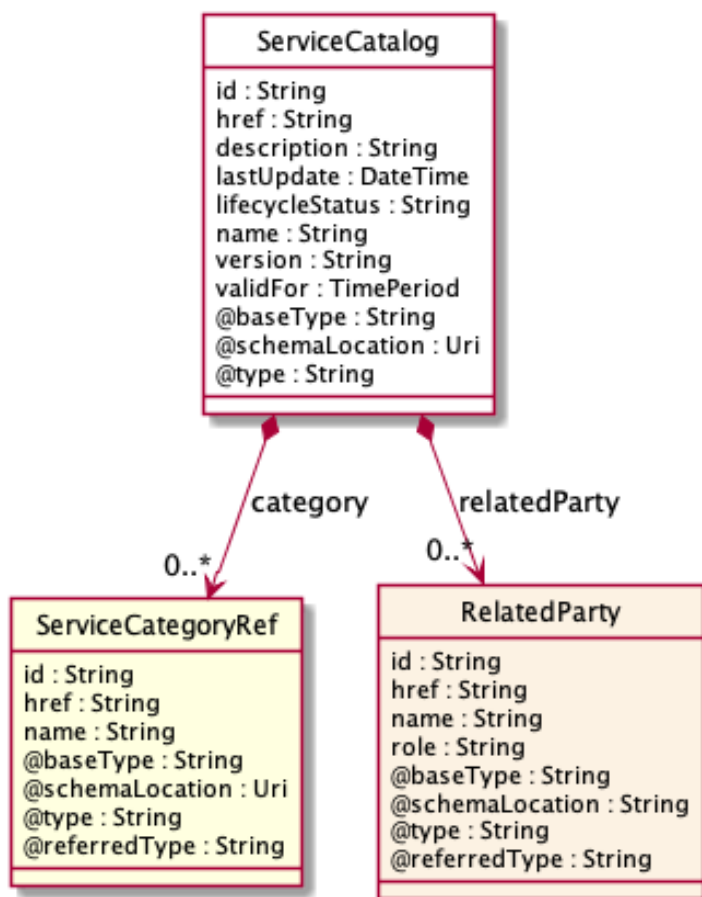
Field descriptions

ServiceCatalog fields

category	A list of service category references (ServiceCategoryRef [*]). List of service categories associated with this catalog.
description	A string. Description of this catalog.
href	A string. Unique reference of the service catalog.
id	A string. Unique identifier of the ServiceCatalog.
lastUpdate	A date time (DateTime). Date and time of the last update.
lifecycleStatus	A string. Used to indicate the current lifecycle status.
name	A string. Name of the service catalog.
relatedParty	A list of related parties (RelatedParty [*]). List of parties or party roles related to this category.
validFor	A time period. The period for which the service catalog is valid.
version	A string. ServiceCatalog version.

RelatedParty sub-resource

RelatedParty reference. A related party defines party or party role linked to a specific entity.

@baseType	A string. When sub-classing, this defines the super-class.
@referredType	A string. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A string. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A string. When sub-classing, this defines the sub-class entity name.
href	A string. Reference of the related party, could be a party reference or a party role reference.
id	A string. Unique identifier of a related party.
name	A string. Name of the related party.
role	A string. Role of the related party.

ServiceCategoryRef relationship

The (service) category resource is used to group service candidates in logical containers. Categories can contain other categories.

@referredType	A string. The actual type of the target instance when needed for disambiguation.
href	A string. Hypertext Reference of the category.
id	A string. Unique identifier of category.
name	A string. Name of the category.

Json representation sample

We provide below the json representation of an example of a 'ServiceCatalog' resource object

```
{
    "id": "3830",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCatalog/3830",
    "name": "Catalog Wholesale Business",
    "description": "This service catalog describes services that address the wholesale business segment.",
    "version": "1.0",
    "validFor": {
        "startDateTime": "2017-08-29T00:00",
        "endDateTime": "2018-03-25T00:00"
    },
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Active",
    "relatedParty": [
        {
            "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3426",
            "id": "3426",
            "name": "Broadly Broad Ltd",
            "role": "vendor"
        }
    ],
    "category": [
        {
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/7752",
            "id": "7752",
            "name": "IoT"
        }
    ],
    "@type": "ServiceCatalog",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCatalog.schema.json ",
    "@baseType": "Catalog"
}
```

Service Category resource

The (service) category resource is used to group service candidates in logical containers. Categories can contain other categories.

Resource model
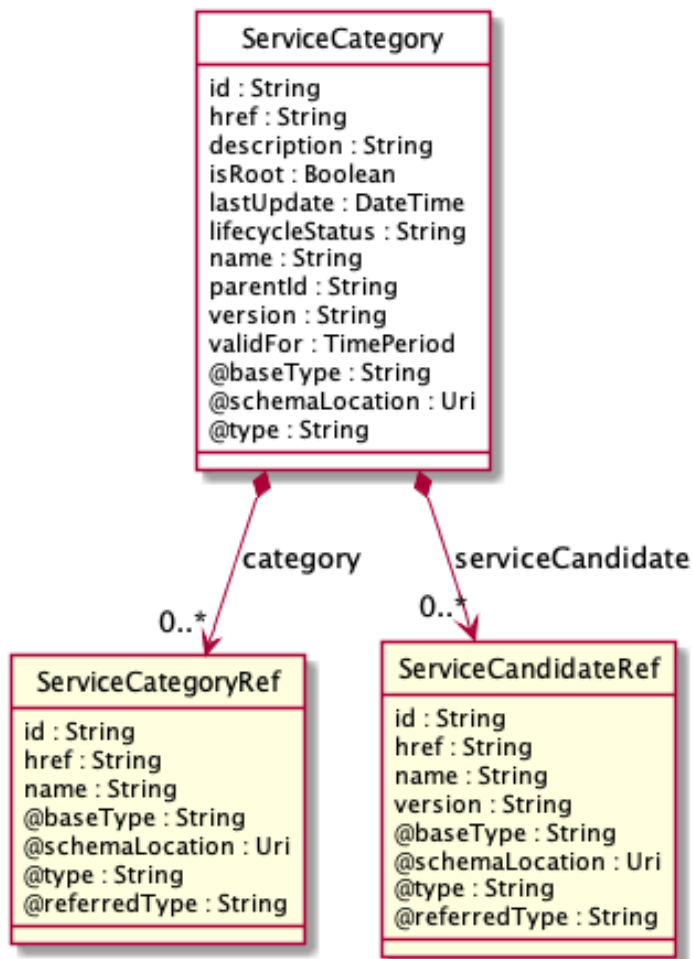
Field descriptions

ServiceCategory fields

category	A list of service category references (ServiceCategoryRef [*]). List of child categories in the tree for in this category.
description	A string. Description of the category.
href	A string. Reference of the category.
id	A string. Unique identifier of the category.
isRoot	A boolean. If true, this Boolean indicates that the category is a root of categories.
lastUpdate	A date time (DateTime). Date and time of the last update.
lifecycleStatus	A string. Used to indicate the current lifecycle status.
name	A string. Name of the category.

parentId	A string. Unique identifier of the parent category.
serviceCandidate	A list of service candidate references (ServiceCandidateRef [*]). List of service candidates associated with this category.
validFor	A time period. The period for which the category is valid.
version	A string. ServiceCategory version.

ServiceCandidateRef relationship

ServiceCandidate reference. ServiceCandidate is an entity that makes a ServiceSpecification available to a catalog.

@referredType	A string. The actual type of the target instance when needed for disambiguation.
href	A string. Unique reference of the service candidate.
id	A string. Unique identifier of the service candidate.
name	A string. Name of the service candidate.
version	A string. Version of the service candidate.

ServiceCategoryRef relationship

The (service) category resource is used to group service candidates in logical containers. Categories can contain other categories.

@referredType	A string. The actual type of the target instance when needed for disambiguation.
href	A string. Hypertext Reference of the category.
id	A string. Unique identifier of category.
name	A string. Name of the category.

Json representation sample

We provide below the json representation of an example of a 'ServiceCategory' resource object

```
{
  "id": "1708",
  "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/1708",
  "name": "Cloud Services",
  "description": "A category to hold all available cloud service offers",
  "version": "1.0",
  "validFor": {
    "startDateTime": "2017-08-24T00:00",
    "endDateTime": "2018-03-25T00:00"
  },
  "lifecycleStatus": "Active",
  "lastUpdate": "2017-08-27T00:00",
  "isRoot": true,
```

```
      "serviceCandidate": [
        {
          "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/5850",
          "id": "5850",
          "name": "Speed Max",
          "version": "1.1",
          "@referredType": "ServiceCandidate"
        }
      ],
      "category": [
        {
          "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/6086",
          "id": "6086",
          "name": "Cloud",
          "@referredType": "ServiceCategory"
        }
      ],
      "@type": "ServiceCategory",
      "@schemalLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCategory.schema.json",
      "@baseType": "Category"
}
```

Service Candidate resource

ServiceCandidate is an entity that makes a service specification available to a catalog. A ServiceCandidate and its associated service specification may be published - made visible - in any number of service catalogs, or in none. One service specification can be composed of other service specifications.

Resource model
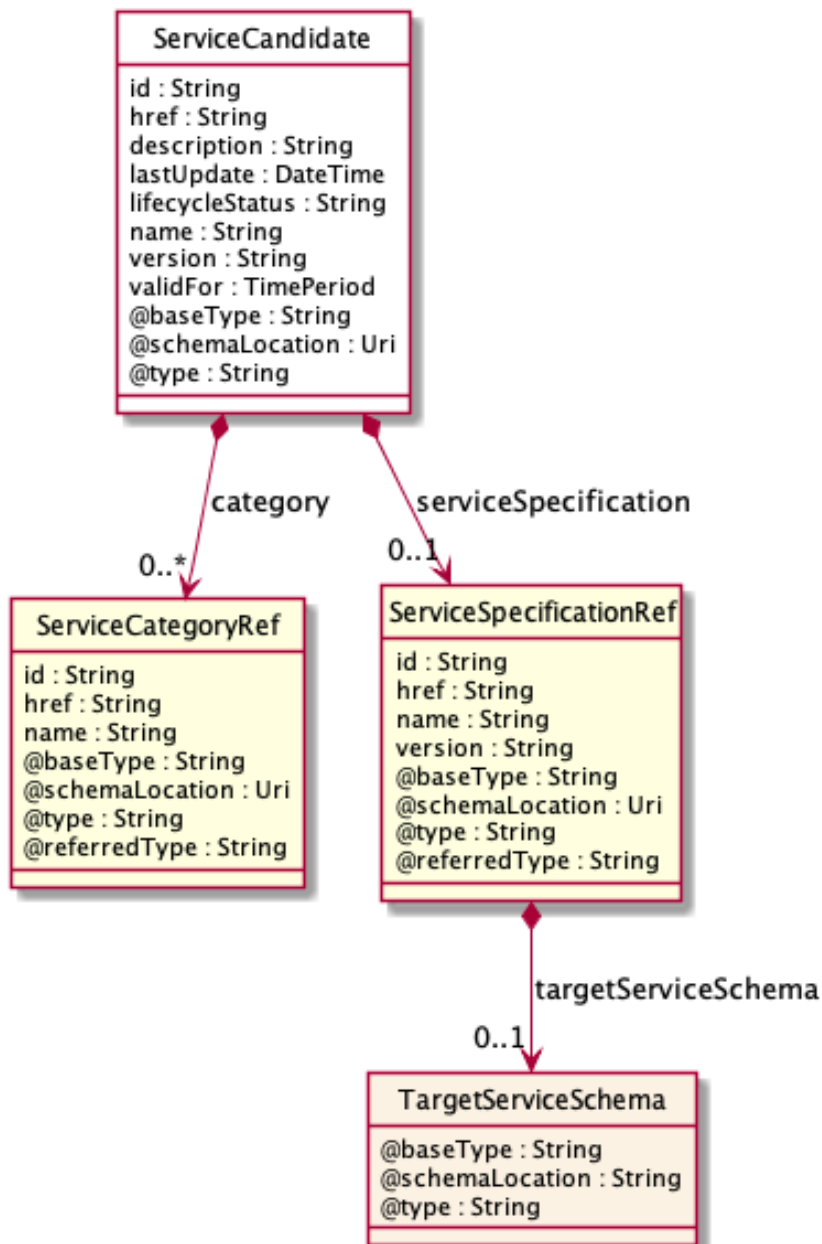
Field descriptions

ServiceCandidate fields

category	A list of service category references (ServiceCategoryRef [*]). List of categories for this candidate.
description	A string. Description of this REST resource.
href	A string. Hyperlink reference to this REST resource.
id	A string. Unique identifier of this REST resource.

lastUpdate	A date time (DateTime). Date and time of the last update of this REST resource.
lifecycleStatus	A string. Used to indicate the current lifecycle status of the service candidate.
name	A string. Name given to this REST resource.
serviceSpecification	A service specification reference (ServiceSpecificationRef). The service specification implied by this candidate.
validFor	A time period. The period for which this REST resource is valid.
version	A string. the version of service candidate.

TargetServiceSchema sub-resource

The reference object to the schema and type of target service which is described by service specification.

@schemaLocation	A string. This field provides a link to the schema describing the target service.
@type	A string. Class type of the target service.

ServiceCategoryRef relationship

The (service) category resource is used to group service candidates in logical containers. Categories can contain other categories.

@referredType	A string. The actual type of the target instance when needed for disambiguation.
href	A string. Hypertext Reference of the category.
id	A string. Unique identifier of category.
name	A string. Name of the category.

ServiceSpecificationRef relationship

Service specification reference: ServiceSpecification(s) required to realize a ProductSpecification.

@referredType	A string. The actual type of the target instance when needed for disambiguation.
href	A string. Reference of the serviceSpecification.
id	A string. Unique identifier of the service specification.
name	A string. Name of the requiredServiceSpecification.
targetServiceSchema	A target service schema (TargetServiceSchema). A target service schema reference (TargetServiceSchemaRef). The reference object to the schema and type of target service which is described by service specification.
version	A string. Service specification version.

Json representation sample

We provide below the json representation of an example of a 'ServiceCandidate' resource object

```
{
   "id": "4994",
   "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/4994",
   "name": "TVServiceCandidate",
   "description": "This service candidate allows provision of TV service",
   "version": "2.1",
   "validFor": {
      "startDateTime": "2017-08-23T00:00",
      "endDateTime": "2018-03-25T00:00"
   },
   "lastUpdate": "2017-08-27T00:00",
   "lifecycleStatus": "Active",
   "category": [
      {
         "id": "5980",
         "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/5980",
         "version": "3.2",
         "name": "TV"
      }
   ],
   "serviceSpecification": {
      "id": "9600",
      "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/9600",
      "version": "2.1",
      "name": "CFSS_TV",
      "@type": "CustomerFacingServiceSpecification"
   },
   "@type": "ServiceCandidate",
   "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCandidate.schema.json ",
   "@baseType": ""
}
```

Service Specification resource

ServiceSpecification is a class that offers characteristics to describe a type of service. Functionally, it acts as a template by which Services may be instantiated. By sharing the same specification, these services would therefore share the same set of characteristics.

Resource model

tmforum
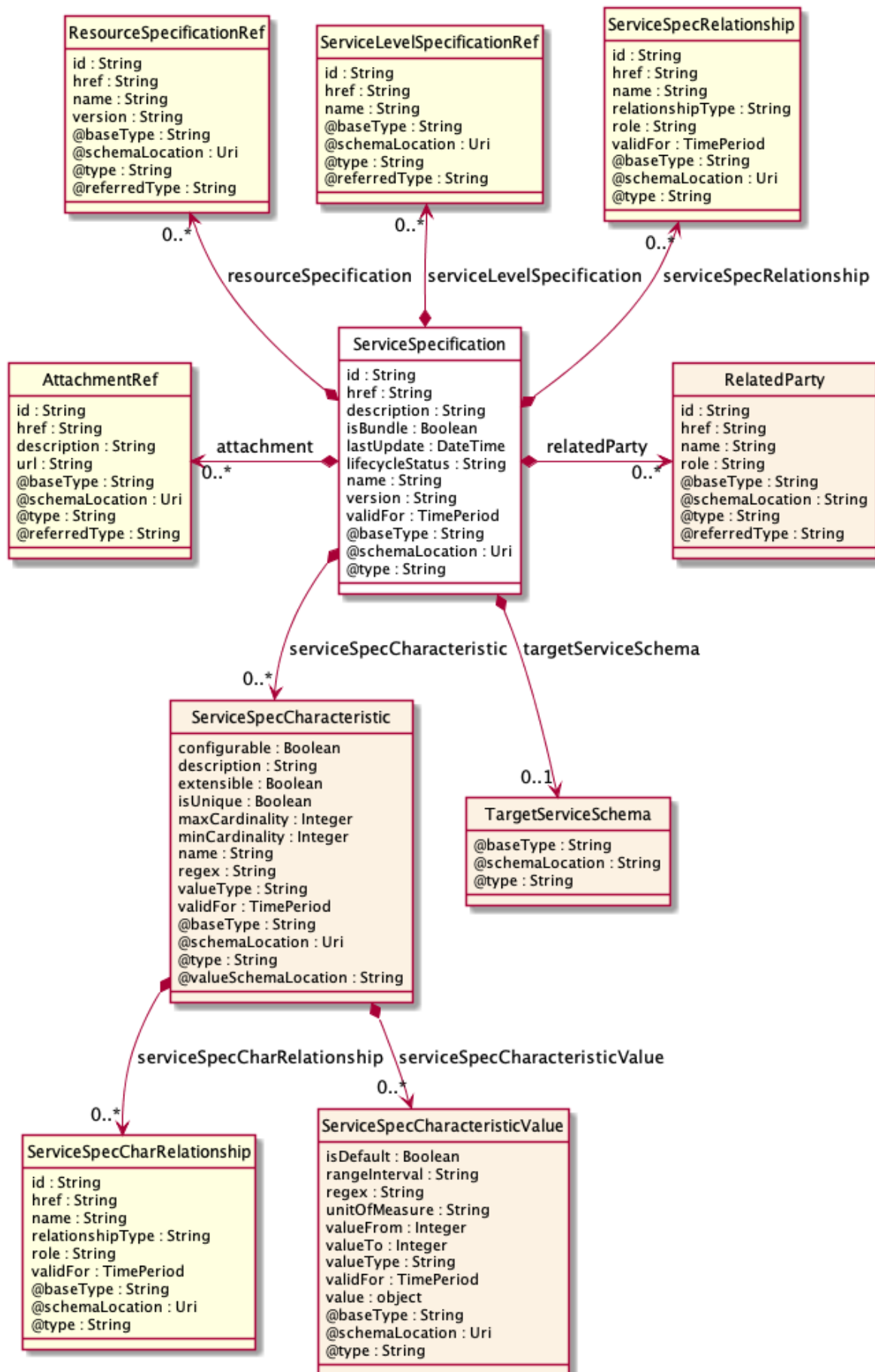
Field descriptions

ServiceSpecification fields

attachment	A list of attachment references (AttachmentRef [*]). A list of attachments (Attachment [*]). Complements the description of the specification through video, pictures...
description	A string. A narrative that explains in detail what the service specification is.
href	A string. Reference of the service specification.
id	A string. Unique identifier of the service specification.
isBundle	A boolean. isBundle determines whether a ServiceSpecification represents a single ServiceSpecification (false), or a bundle of ServiceSpecification (true).
lastUpdate	A date time (DateTime). Date and time of the last update of the service specification.
lifecycleStatus	A string. Used to indicate the current lifecycle status of the service specification.
name	A string. Name of the service specification.
relatedParty	A list of related parties (RelatedParty [*]). A list of related party references (RelatedParty [*]). A related party defines party or party role linked to a specific entity.
resourceSpecification	A list of resource specification references (ResourceSpecificationRef [*]). A list of resource specification references (ResourceSpecificationRef [*]). The ResourceSpecification is required for a service specification with type ResourceFacingServiceSpecification (RFSS).
serviceLevelSpecification	A list of service level specification references (ServiceLevelSpecificationRef [*]). A list of service level specifications related to this service specification, and which will need to be satisfiable for corresponding service instances; e.g. Gold, Platinum.
serviceSpecCharacteristic	A list of service spec characteristics (ServiceSpecCharacteristic [*]). A list of service spec characteristics (ServiceSpecCharacteristic [*]). This class represents the key features of this service specification.
serviceSpecRelationship	A list of service spec relationships (ServiceSpecRelationship [*]). A list of service specifications related to this specification, e.g. migration, substitution, dependency or exclusivity relationship.
targetServiceSchema	A target service schema (TargetServiceSchema). A target service schema reference (TargetServiceSchemaRef). The reference object to the schema and type of target service which is described by service specification.
validFor	A time period. The period for which the service specification is valid.

version	A string. Service specification version.

RelatedParty sub-resource

RelatedParty reference. A related party defines party or party role linked to a specific entity.

@baseType	A string. When sub-classing, this defines the super-class.
@referredType	A string. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A string. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A string. When sub-classing, this defines the sub-class entity name.
href	A string. Reference of the related party, could be a party reference or a party role reference.
id	A string. Unique identifier of a related party.
name	A string. Name of the related party.
role	A string. Role of the related party.

ServiceSpecCharRelationship sub-resource

An aggregation, migration, substitution, dependency or exclusivity relationship between/among serviceSpecCharacteristics.

href	A string. Hyperlink reference to the target specification.
id	A string. Unique identifier of the target specification.
name	A string. Name of the target characteristic.
relationshipType	A string. Type of relationship such as aggregation, migration, substitution, dependency, exclusivity.
role	A string. The association role for this service specification.
validFor	A time period. The period for which the serviceSpecCharRelationship is valid.

ServiceSpecCharacteristic sub-resource

This class represents the key features of this service specification. For example, bandwidth is a characteristic of many different types of services; if bandwidth is a relevant characteristic (e.g., from the point-of-view of a Customer obtaining this Service via a Product) then bandwidth would be a ServiceSpecCharacteristic for that particular Service.

@valueSchemaLocation	A string. This (optional) field provides a link to the schema describing the value type.

configurable	A boolean. If true, the Boolean indicates that the serviceSpecCharacteristic is configurable.
description	A string. A narrative that explains in detail what the serviceSpecCharacteristic is.
extensible	A boolean. An indicator that specifies that the values for the characteristic can be extended by adding new values when instantiating a characteristic for an Entity.
isUnique	A boolean. An indicator that specifies if a value is unique for the specification. Possible values are; "unique while value is in effect" and "unique whether value is in effect or not".
maxCardinality	An integer. The maximum number of instances a CharacteristicValue can take on. For example, zero to five phone numbers in a group calling plan, where five is the value for the maxCardinality.
minCardinality	An integer. The minimum number of instances a CharacteristicValue can take on. For example, zero to five phone numbers in a group calling plan, where zero is the value for the minCardinality.
name	A string. A word, term, or phrase by which this characteristic specification is known and distinguished from other characteristic specifications.
regex	A string. A rule or principle represented in regular expression used to derive the value of a characteristic value.
serviceSpecCharRelationship	A list of service spec char relationships (ServiceSpecCharRelationship [*]). A list of service spec char relationships (ServiceSpecCharRelationship [*]). An aggregation, migration, substitution, dependency or exclusivity relationship between/among Specification Characteristics.
serviceSpecCharacteristicValue	A list of service spec characteristic values (ServiceSpecCharacteristicValue [*]). A list of service spec characteristic values (ServiceSpecCharacteristicValue [*]). A ServiceSpecCharacteristicValue object is used to define a set of attributes, each of which can be assigned to a corresponding set of attributes in a ServiceSpecCharacteristic object. The values of the attributes in the ServiceSpecCharacteristicValue object describe the values of the attributes that a corresponding ServiceSpecCharacteristic object can take on.
validFor	A time period. The period for which the serviceSpecCharacteristic is valid.
valueType	A string. A kind of value that the characteristic can take on, such as numeric, text and so forth.

ServiceSpecCharacteristicValue sub-resource

A ServiceSpecCharacteristicValue object is used to define a set of attributes, each of which can be assigned to a corresponding set of attributes in a ServiceSpecCharacteristic object. The values of the attributes in the ServiceSpecCharacteristicValue object describe the values of the attributes that a corresponding ServiceSpecCharacteristic object can take on.

isDefault	A boolean. Indicates if the value is the default value for a characteristic.
rangeInterval	A string. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A string. A regular expression constraint for given value.
unitOfMeasure	A string. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A time period. The period of time for which a value is applicable.
value	An object (object). A discrete value that the characteristic can take on, or the actual value of the characteristic.
valueFrom	An integer. The low range value that a characteristic can take on.
valueTo	An integer. The upper range value that a characteristic can take on.
valueType	A string. A kind of value that the characteristic can take on, such as numeric, text, and so forth.

ServiceSpecRelationship sub-resource

A migration, substitution, dependency or exclusivity relationship between/among service specifications.

href	A string. Reference of the target serviceSpecification.
id	A string. Unique identifier of the target serviceSpecification.
name	A string. The name given to the target service specification instance.
relationshipType	A string. Type of relationship such as migration, substitution, dependency, exclusivity.
role	A string. The association role for this service specification.
validFor	A time period. The period for which the serviceSpecRelationship is valid.

TargetServiceSchema sub-resource

The reference object to the schema and type of target service which is described by service specification.

@schemaLocation   A string. This field provides a link to the schema describing the target service.

@type   A string. Class type of the target service.

AttachmentRef relationship

Attachment reference. An attachment complements the description of an element (for instance a product) through video, pictures.

@referredType   A string. The actual type of the target instance when needed for disambiguation.

description   A string. A narrative text describing the content of the attachment.

href   A string. URL serving as reference for the attachment resource.

id   A string. Unique-Identifier for this attachment.

url   A string. Link to the attachment media/content.

ResourceSpecificationRef relationship

Resource Specification reference: The ResourceSpecification is required to realize a ProductSpecification.

@referredType   A string. The actual type of the target instance when needed for disambiguation.

href   A string. Reference of the resource specification.

id   A string. Unique identifier of the resource specification.

name   A string. Name of the requiredResourceSpecification.

version   A string. Resource specification version.

ServiceLevelSpecificationRef relationship

A Service Level Specification represents a pre-defined or negotiated set of Service Level Objectives. In addition, certain consequences are associated with not meeting the Service Level Objectives. Service Level Agreements are expressed in terms of Service Level Specifications.

@referredType   A string. The actual type of the target instance when needed for disambiguation.

href   A string. The hyperlink to access a service level specification.

id   A string. The identifier to a service level specification.

name   A string. The name of Service Level Specification.

Json representation sample

We provide below the json representation of an example of a 'ServiceSpecification' resource object

```json
{
    "id": "7655",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/7655",
    "name": "Firewall Service",
    "description": "This service specification describes a firewall service that can be deployed in customer premise.",
    "version": "2.1",
    "validFor": {
        "startDateTime": "2017-08-23T00:00",
        "endDateTime": "2018-03-25T00:00"
    },
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Active",
    "isBundle": false,
    "resourceSpecification": [
        {
            "href": "https://mycsp.com:8080/tmf-api/resourceCatalogManagement/v4/resourceSpecification/42",
            "id": "42",
            "name": "Firewall",
            "version": "1.0",
            "@referredType": "ResourceFunctionSpec"
        }
    ],
    "attachment": [
        {
            "description": "This attachment gives a block diagram of the firewall.",
            "href": "https://mycsp.com:8080/tmf-api/documentManagement/v4/attachment/22",
            "id": "22",
            "url": "https://mycsp.com:7070/docloader?docnum=3534536"
        }
    ],
    "serviceSpecCharacteristic": [
        {
            "name": "OperatingSystem",
            "description": "This characteristic describes the operating system run by the service",
            "valueType": "string",
            "configurable": true,
            "validFor": {
                "startDateTime": "2017-08-12T00:00",
                "endDateTime": "2018-03-07T00:00"
            },
            "@valueSchemaLocation": "",
            "minCardinality": 0,
            "maxCardinality": 1,
            "isUnique": true,
            "regex": "",
            "extensible": false,
            "serviceSpecCharacteristicValue": [
                {
                    "valueType": "string",
                    "isDefault": true,
                    "value": "Android KitKat",
                    "validFor": {
                        "startDateTime": "2017-08-06T00:00",
                        "endDateTime": "2018-03-07T00:00"
                    }
                }
```

```
      ],
      "serviceSpecCharRelationship": [
        {
          "relationshipType": "dependency",
          "role": "",
          "id": "4690",
          "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v4/serviceSpecificationCharacteristic/4690",
          "name": "OperatingSystem",
          "validFor": {
            "startDateTime": "2017-08-11T00:00",
            "endDateTime": "2018-03-07T00:00"
          }
        }
      ],
      "@type": "ServiceSpecCharacteristic",
      "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
    },
    {
      "name": "Scalability",
      "description": "Scalability parameters for this resource facing service spec ",
      "valueType": "CapabilityScalable",
      "configurable": true,
      "validFor": {
        "startDateTime": "2017-08-17T00:00",
        "endDateTime": "2018-03-12T00:00"
      },
      "@valueSchemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json",
      "minCardinality": 0,
      "maxCardinality": 1,
      "isUnique": true,
      "regex": "",
      "extensible": true,
      "serviceSpecCharacteristicValue": [
        {
          "valueType": "object",
          "isDefault": true,
          "value": {
            "minInstances": 1,
            "maxInstances": 1000,
            "@type": "CapabilityScalable",
            "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json"
          },
          "validFor": {
            "startDateTime": "2017-08-17T00:00",
            "endDateTime": "2018-03-12T00:00"
          },
          "@type": "ServiceSpecCharacteristicValue"
        }
      ],
      "serviceSpecCharRelationship": [],
      "@type": "ServiceSpecCharacteristic",
      "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
    }
  ],
  "relatedParty": [
```

```
      {
          "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3643",
          "id": "3643",
          "name": "Firewall Express",
          "role": "Supplier"
      }
    ],
    "serviceSpecRelationship": [
      {
          "relationshipType": "dependency",
          "role": "dependent",
          "id": "5563",
          "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/5563",
          "name": "Points to the Deep Packet Inspection service on which this Firewall service depends",
          "validFor": {
              "startDateTime": "2017-08-25T00:00",
              "endDateTime": "2018-03-25T00:00"
          }
      }
    ],
    "serviceLevelSpecification": [
      {
          "href": "https://mycsp.com:8080/tmf-api/serviceQualityManagement/v4/serviceLevelSpecification/8899",
          "id": "8899",
          "name": "Platinum"
      }
    ],
    "targetServiceSchema": {
        "@type": "RFS",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/RFS.schema.json"
    },
    "@type": "ResourceFacingServiceSpecification",
    "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Service/ResourceFacingServiceSpecification.schema.json",
    "@baseType": "ServiceSpecification"
}
```

Import Job resource

Represents a task used to import resources from a file.

Resource model

Field descriptions

ImportJob fields

completionDate	A date time (DateTime). Date at which the job was completed.
contentType	A string. Indicates the format of the imported data.
creationDate	A date time (DateTime). Date at which the job was created.
errorLog	A string. Reason for failure if status is failed.
href	A string. Reference of the import job.
id	A string. Identifier of the import job.
path	A string. URL of the root resource where the content of the file specified by the import job must be applied.
status	A string. Status of the import job (not started, running, succeeded, failed).
url	A string. URL of the file containing the data to be imported.

Json representation sample

We provide below the json representation of an example of an 'ImportJob' resource object

```
{
    "completionDate": "2017-08-27T00:02",
    "contentType": "application/json",
    "creationDate": "2017-08-27T00:00",
    "errorLog": "http://my-platform/daily/logging/errors.log",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/importJob/7497",
    "id": "7497",
    "path": "/warning/system",
    "status": "completed",
    "url": "https://my-platform/daily/job/NHCFD6"
}
```

Export Job resource

Represents a task used to export resources to a file.

Resource model

Field descriptions

ExportJob fields

completionDate	A date time (DateTime). Data at which the job was completed.
contentType	A string. The format of the exported data.
creationDate	A date time (DateTime). Date at which the job was created.
errorLog	A string. Reason for failure.
href	A string. Reference of the export job.
id	A string. Identifier of the export job.
path	A string. URL of the root resource acting as the source for streaming content to the file specified by the export job.
query	A string. Used to scope the exported data.
status	A string. Status of the export job (not started, running, succeeded, failed).
url	A string. URL of the file containing the data to be exported.

Json representation sample

We provide below the json representation of an example of an 'ExportJob' resource object

```
{
  "completionDate": "2017-08-27T00:02",
  "contentType": "application/json",
  "creationDate": "2017-08-27T00:00",
```

```
    "errorLog": "http://my-platform/daily/logging/errors.log",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/exportJob/1866",
    "id": "1866",
    "path": "/warning/system",
    "query": "advancedCatalog",
    "status": "completed",
    "url": "https://my-platform/daily/job/EHCFD6"
}
```

Notification Resource Models

13 notifications are defined for this API

Notifications related to ServiceCatalog:
  - ServiceCatalogCreateNotification
  - ServiceCatalogChangeNotification
  - ServiceCatalogBatchNotification
  - ServiceCatalogDeleteNotification

Notifications related to ServiceCategory:
  - ServiceCategoryCreateNotification
  - ServiceCategoryChangeNotification
  - ServiceCategoryDeleteNotification

Notifications related to ServiceCandidate:
  - ServiceCandidateCreateNotification
  - ServiceCandidateChangeNotification
  - ServiceCandidateDeleteNotification

Notifications related to ServiceSpecification:
  - ServiceSpecificationCreateNotification
  - ServiceSpecificationChangeNotification
  - ServiceSpecificationDeleteNotification

The notification structure for all notifications in this API follow the pattern depicted by the figure below.
A notification resource (depicted by "SpecificNotification" placeholder) is a sub class of a generic Notification structure containing an id of the event occurrence (eventId), an event timestamp (eventTime), and the name of the notification resource (eventType).

This notification structure owns an event structure ("SpecificEvent" placeholder) linked to the resource concerned by the notification using the resource name as access field ("resourceName" placeholder).

Service Catalog Create Notification

Notification ServiceCatalogCreateNotification case for resource ServiceCatalog

Json representation sample

We provide below the json representation of an example of a 'ServiceCatalogCreateNotification' notification object

```
{
    "eventId":"00001",
    "eventTime":"2015-11-16T16:42:25-04:00",
    "eventType":"ServiceCatalogCreateNotification",
    "event": {
        "serviceCatalog" :
            {-- SEE ServiceCatalog RESOURCE SAMPLE --}
    }
}
```

Service Catalog Change Notification

Notification ServiceCatalogChangeNotification case for resource ServiceCatalog

Json representation sample

We provide below the json representation of an example of a 'ServiceCatalogChangeNotification' notification object

```
{
    "eventId":"00001",
    "eventTime":"2015-11-16T16:42:25-04:00",
    "eventType":"ServiceCatalogChangeNotification",
    "event": {
        "serviceCatalog" :
            {-- SEE ServiceCatalog RESOURCE SAMPLE --}
    }
}
```

Service Catalog Batch Notification

Notification ServiceCatalogBatchNotification case for resource ServiceCatalog

Json representation sample

We provide below the json representation of an example of a 'ServiceCatalogBatchNotification' notification object

```
{
    "eventId":"00001",
    "eventTime":"2015-11-16T16:42:25-04:00",
    "eventType":"ServiceCatalogBatchNotification",
    "event": {
        "serviceCatalog" :
            {-- SEE ServiceCatalog RESOURCE SAMPLE --}
    }
}
```

Service Catalog Delete Notification

Notification ServiceCatalogDeleteNotification case for resource ServiceCatalog

Json representation sample

We provide below the json representation of an example of a 'ServiceCatalogDeleteNotification' notification object

```
{
    "eventId":"00001",
    "eventTime":"2015-11-16T16:42:25-04:00",
    "eventType":"ServiceCatalogDeleteNotification",
    "event": {
        "serviceCatalog" :
            {-- SEE ServiceCatalog RESOURCE SAMPLE --}
    }
}
```

Service Category Create Notification

Notification ServiceCategoryCreateNotification case for resource ServiceCategory

Json representation sample

We provide below the json representation of an example of a 'ServiceCategoryCreateNotification' notification object

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"ServiceCategoryCreateNotification",
    "event": {
      "serviceCategory" :
          {-- SEE ServiceCategory RESOURCE SAMPLE --}
   }
}
```

Service Category Change Notification

Notification ServiceCategoryChangeNotification case for resource ServiceCategory

Json representation sample

We provide below the json representation of an example of a 'ServiceCategoryChangeNotification' notification object

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"ServiceCategoryChangeNotification",
    "event": {
      "serviceCategory" :
          {-- SEE ServiceCategory RESOURCE SAMPLE --}
   }
}
```

Service Category Delete Notification

Notification ServiceCategoryDeleteNotification case for resource ServiceCategory

Json representation sample

We provide below the json representation of an example of a 'ServiceCategoryDeleteNotification' notification object

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"ServiceCategoryDeleteNotification",
```

```
  "event": {
    "serviceCategory" :
        {-- SEE ServiceCategory RESOURCE SAMPLE --}
  }
}
```

Service Candidate Create Notification

Notification ServiceCandidateCreateNotification case for resource ServiceCandidate

Json representation sample

We provide below the json representation of an example of a 'ServiceCandidateCreateNotification' notification object

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"ServiceCandidateCreateNotification",
    "event": {
      "serviceCandidate" :
          {-- SEE ServiceCandidate RESOURCE SAMPLE --}
   }
}
```

Service Candidate Change Notification

Notification ServiceCandidateChangeNotification case for resource ServiceCandidate

Json representation sample

We provide below the json representation of an example of a 'ServiceCandidateChangeNotification' notification object

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"ServiceCandidateChangeNotification",
    "event": {
      "serviceCandidate" :
          {-- SEE ServiceCandidate RESOURCE SAMPLE --}
   }
}
```

Service Candidate Delete Notification

Notification ServiceCandidateDeleteNotification case for resource ServiceCandidate

Json representation sample

We provide below the json representation of an example of a 'ServiceCandidateDeleteNotification' notification object

```
{
  "eventId":"00001",
  "eventTime":"2015-11-16T16:42:25-04:00",
  "eventType":"ServiceCandidateDeleteNotification",
  "event": {
    "serviceCandidate" :
        {-- SEE ServiceCandidate RESOURCE SAMPLE --}
  }
}
```

Service Specification Create Notification

Notification ServiceSpecificationCreateNotification case for resource ServiceSpecification

Json representation sample

We provide below the json representation of an example of a 'ServiceSpecificationCreateNotification' notification object

```
{
  "eventId":"00001",
  "eventTime":"2015-11-16T16:42:25-04:00",
  "eventType":"ServiceSpecificationCreateNotification",
  "event": {
    "serviceSpecification" :
        {-- SEE ServiceSpecification RESOURCE SAMPLE --}
  }
}
```

Service Specification Change Notification

Notification ServiceSpecificationChangeNotification case for resource ServiceSpecification

Json representation sample

We provide below the json representation of an example of a 'ServiceSpecificationChangeNotification' notification object

```
{
  "eventId":"00001",
  "eventTime":"2015-11-16T16:42:25-04:00",
  "eventType":"ServiceSpecificationChangeNotification",
  "event": {
    "serviceSpecification" :
        {-- SEE ServiceSpecification RESOURCE SAMPLE --}
  }
}
```

Service Specification Delete Notification

Notification ServiceSpecificationDeleteNotification case for resource ServiceSpecification

Json representation sample

We provide below the json representation of an example of a 'ServiceSpecificationDeleteNotification' notification object

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"ServiceSpecificationDeleteNotification",
    "event": {
      "serviceSpecification" :
         {-- SEE ServiceSpecification RESOURCE SAMPLE --}
   }
}
```

API OPERATIONS

Remember the following Uniform Contract:

Operation on Entities	Uniform API Operation	Description
Query Entities	GET Resource	GET must be used to retrieve a representation of a resource.
Create Entity	POST Resource	POST must be used to create a new resource
Partial Update of an Entity	PATCH Resource	PATCH must be used to partially update a resource
Complete Update of an Entity	PUT Resource	PUT must be used to completely update a resource identified by its resource URI
Remove an Entity	DELETE Resource	DELETE must be used to remove a resource
Execute an Action on an Entity	POST on TASK Resource	POST must be used to execute Task Resources
Other Request Methods	POST on TASK Resource	GET and POST must not be used to tunnel other request methods.

Filtering and attribute selection rules are described in the TMF REST Design Guidelines Part 1 document.

Notifications are also described in a subsequent section.

OPERATIONS ON SERVICE CATALOG

List service catalogs

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

Description

This operation list service catalog entities.
Attribute selection is enabled for all first level attributes.
Filtering may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving multiple service catalogs.

Request
GET {apiRoot}/serviceCatalog?category.id=7752 Accept: application/json
Response

200
 	
[
  {
    "id": "2355",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCatalog/2355",
    "name": "IoT Service Catalog",
    "description": "This service catalog describes services that address the Internet of Things segment.",
    "version": "1.0",
    "validFor": {
      "startDateTime": "2017-08-17T00:00",
      "endDateTime": "2018-03-12T00:00"
    },
    "lastUpdate": "2017-08-14T00:00",
    "lifecycleStatus": "Active",
    "relatedParty": [
      {
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3336",
        "id": "3336",
        "name": "IoT Soluvec Ltd",
        "role": "vendor"
      }
    ],
    "category": [
      {

```
            "href": "https://host:port/catalogManagement/category/7752",
            "id": "7752",
            "name": "business"
          }
        ],
        "@type": "ServiceCatalog",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCatalog.schema.json",
        "@baseType": "Catalog"
      },
      {
        "id": "3830",
        "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCatalog/3830",
        "name": "Catalog Wholesale Business",
        "description": "This service catalog describes services that address the wholesale business segment.",
        "version": "1.0",
        "validFor": {
          "startDateTime": "2017-08-29T00:00",
          "endDateTime": "2018-03-25T00:00"
        },
        "lastUpdate": "2017-08-27T00:00",
        "lifecycleStatus": "Active",
        "relatedParty": [
          {
            "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3426",
            "id": "3426",
            "name": "Broadly Broad Ltd",
            "role": "vendor"
          }
        ],
        "category": [
          {
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/7752",
            "id": "7752",
            "name": "business"
          }
        ],
        "@type": "ServiceCatalog",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCatalog.schema.json ",
        "@baseType": "Catalog"
      }
    ]
```

Retrieve service catalog

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

Description

This operation retrieves a service catalog entity.

Attribute selection is enabled for all first level attributes.

Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving a specific catalog.

Request
GET {apiRoot}/serviceCatalog/3830 Accept: application/json
Response

200
 	
``json
{
    "id": "3830",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCatalog/3830",
    "name": "Catalog Wholesale Business",
    "description": "This service catalog describes services that address the wholesale business segment.",
    "version": "1.0",
    "validFor": {
        "startDateTime": "2017-08-29T00:00",
        "endDateTime": "2018-03-25T00:00"
    },
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Active",
    "relatedParty": [
        {
            "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3426",
            "id": "3426",
            "name": "Broadly Broad Ltd",
            "role": "vendor"
        }
    ],
    "category": [
        {
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/7752",
            "id": "7752",
            "name": "IoT"
        }
    ],
    "@type": "ServiceCatalog",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCatalog.schema.json ",
    "@baseType": "Catalog"
}
``

Create service catalog

POST /serviceCatalog

Description

This operation creates a service catalog entity.

Mandatory and Non Mandatory Attributes

The following tables provides the list of mandatory and non mandatory attributes when creating a ServiceCatalog, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

Mandatory Attributes	Rule
name	

Non Mandatory Attributes	Default Value	Rule
category		
description		
lastUpdate		
lifecycleStatus		
relatedParty		
validFor		
version		

Default Values Summary

When creating the resource, the following table summarizes the default values applicable to optional attributes of the resource (or sub-resources).

Attributes	Default Value
@type	ServiceCatalog
@baseType	Catalog

Usage Samples

Here's an example of a request for creating a specific catalog. In this example the request only passes mandatory attributes.

Request

POST {apiRoot}/serviceCatalog
Content-Type: application/json
 	
{
   "name": "Catalog Wholesale Business"
}

Response

```
201

{
    "id": "3830",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCatalog/3830",
    "name": "Catalog Wholesale Business",
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Provisional",
    "@type": "ServiceCatalog",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCatalog.schema.json ",
    "@baseType": "Catalog"
}
```

Patch service catalog

PATCH /serviceCatalog/{id}

Description

This operation allows partial updates of a service catalog entity. Support of json/merge (https://tools.ietf.org/html/rfc7386) is mandatory, support of json/patch (http://tools.ietf.org/html/rfc5789) is optional.

Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

Patchable and Non Patchable Attributes

The tables below provide the list of patchable and non patchable attributes, including constraint rules on their usage.

Patchable Attributes	Rule
category	
description	
lifecycleStatus	
name	
relatedParty	
validFor	
version	

Non Patchable Attributes	Rule
id	
href	
lastUpdate	

Usage Samples

Here's an example of a request for patching a catalog. In this example, a new version is set, together with validity period.

Request

PATCH {apiRoot}/serviceCatalog/3830
Content-Type: application/merge-patch+json
 	
{
    "version": "2.0",
    "validFor": {
        "startDateTime": "2018-03-25T00:00",
        "endDateTime": "2018-09-25T00:00"
    }
}

Response

200
 	
{
    "id": "3830",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCatalog/3830",
    "name": "Catalog Wholesale Business",
    "description": "This service catalog describes services that address the wholesale business segment.",
    "version": "2.0",
    "validFor": {
        "startDateTime": "2018-03-25T00:00",
        "endDateTime": "2018-09-25T00:00"
    },
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Active",
    "relatedParty": [
        {
            "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3426",
            "id": "3426",
            "name": "Broadly Broad Ltd",
            "role": "vendor"
        }
    ],
    "category": [
        {
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/7752",
            "id": "7752",
            "name": "IoT"
        }
    ],
    "@type": "ServiceCatalog",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCatalog.schema.json ",

```
    "@baseType": "Catalog"
}
```

Delete service catalog

DELETE /serviceCatalog/{id}

Description

This operation deletes a service catalog entity.

Usage Samples

Here's an example of a request for deleting a catalog.

Request
DELETE {apiRoot}/serviceCatalog/3830

Response
204

OPERATIONS ON SERVICE CATEGORY

List service categories

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

Description

This operation list service category entities.
Attribute selection is enabled for all first level attributes.
Filtering may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving multiple service categories.

Request

GET {apiRoot}/serviceCategory
Accept: application/json

Response

200

```
[
  {
    "id": "1708",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/1708",
    "name": "Cloud Services",
    "description": "A category to hold all available cloud service offers",
    "version": "1.0",
    "validFor": {
      "startDateTime": "2017-08-24T00:00",
      "endDateTime": "2018-03-25T00:00"
    },
    "lifecycleStatus": "Active",
    "lastUpdate": "2017-08-27T00:00",
    "isRoot": true,
    "serviceCandidate": [
      {
        "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/5850",
        "id": "5850",
        "name": "Speed Max",
        "version": "1.1",
        "@referredType": "ServiceCandidate"
      }
    ],
    "category": [
      {
        "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/6086",
        "id": "6086",
        "name": "Cloud",
        "@referredType": "ServiceCategory"
      }
    ],
    "@type": "ServiceCategory",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCategory.schema.json",
    "@baseType": "Category"
  },
  {
    "id": "6086",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/6086",
    "name": "Cloud",
    "description": "A sub-category for cloud-specific services",
    "version": "1.0",
    "validFor": {
      "startDateTime": "2017-08-24T00:00",
```

```
      "endDateTime": "2018-03-25T00:00"
    },
    "lifecycleStatus": "Active",
    "lastUpdate": "2017-08-27T00:00",
    "parentId": "1708",
    "isRoot": false,
    "@type": "ServiceCategory",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCategory.schema.json",
    "@baseType": "Category"
  }
]
```

Retrieve service category

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

Description

This operation retrieves a service category entity.

Attribute selection is enabled for all first level attributes.

Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving a specific category.

Request
GET {apiRoot}/serviceCategory/1708 Accept: application/json
Response

200
 	
{
  "id": "1708",
  "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/1708",
  "name": "Cloud Services",
  "description": "A category to hold all available cloud service offers",
  "version": "1.0",
  "validFor": {
    "startDateTime": "2017-08-24T00:00",
    "endDateTime": "2018-03-25T00:00"
  },
  "lifecycleStatus": "Active",
  "lastUpdate": "2017-08-27T00:00",

```
    "isRoot": true,
    "serviceCandidate": [
        {
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/5850",
            "id": "5850",
            "name": "Speed Max",
            "version": "1.1",
            "@referredType": "ServiceCandidate"
        }
    ],
    "category": [
        {
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/6086",
            "id": "6086",
            "name": "Cloud",
            "@referredType": "ServiceCategory"
        }
    ],
    "@type": "ServiceCategory",
    "@schemalLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCategory.schema.json",
    "@baseType": "Category"
}
```

Create service category

POST /serviceCategory

Description

This operation creates a service category entity.

Mandatory and Non Mandatory Attributes

The following tables provides the list of mandatory and non mandatory attributes when creating a ServiceCategory, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

Mandatory Attributes	Rule
name	

Non Mandatory Attributes	Default Value	Rule
category		
description		
isRoot		
lastUpdate		
lifecycleStatus		
parentId		
serviceCandidate		
validFor		
version		

Default Values Summary

When creating the resource, the following table summarizes the default values applicable to optional attributes of the resource (or sub-resources).

Attributes	Default Value
@type	ServiceCategory
@baseType	Category

Usage Samples

Here's an example of a request for creating a specific category. In this example the request only passes mandatory attributes.

Request

POST {apiRoot}/serviceCategory
Content-Type: application/json
 	
{
   "name": "Cloud Services",
   "description": "A category to hold all available cloud service offers",
   "isRoot": true
}

Response

201
 	
{
   "id": "1708",
   "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/1708",
   "name": "Cloud Services",
   "description": "A category to hold all available cloud service offers",
   "version": "1.0",
   "lastUpdate": "2017-08-27T00:00",
   "isRoot": true,
   "@type": "ServiceCategory",
   "@schemalLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCategory.schema.json",
   "@baseType": "Category"
}

Patch service category

```
PATCH /serviceCategory/{id}
```

Description

This operation allows partial updates of a service category entity. Support of json/merge (https://tools.ietf.org/html/rfc7386) is mandatory, support of json/patch (http://tools.ietf.org/html/rfc5789) is optional.

Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

Patchable and Non Patchable Attributes

The tables below provide the list of patchable and non patchable attributes, including constraint rules on their usage.

Patchable Attributes	Rule
category	
description	
isRoot	
lifecycleStatus	
name	
parentId	
serviceCandidate	
validFor	
version	

Non Patchable Attributes	Rule
id	
href	
lastUpdate	

Usage Samples

Here's an example of a request for patching a category. In this example, a new version is set, together with validity period.

Request

PATCH {apiRoot}/serviceCategory/1708
Content-Type: application/merge-patch+json
 	
{
   "version": "2.0",
   "validFor": {
      "startDateTime": "2018-03-25T00:00",
      "endDateTime": "2018-09-25T00:00"
   }
}

Response

200

```json
{
    "id": "1708",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/1708",
    "name": "Cloud Services",
    "description": "A category to hold all available cloud service offers",
    "version": "2.0",
    "validFor": {
        "startDateTime": "2018-03-25T00:00",
        "endDateTime": "2018-09-25T00:00"
    },
    "lifecycleStatus": "Active",
    "lastUpdate": "2017-08-27T00:00",
    "isRoot": true,
    "serviceCandidate": [
        {
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/5850",
            "id": "5850",
            "name": "Speed Max",
            "version": "1.1",
            "@referredType": "ServiceCandidate"
        }
    ],
    "category": [
        {
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/category/6086",
            "id": "6086",
            "name": "Cloud",
            "@referredType": "ServiceCategory"
        }
    ],
    "@type": "ServiceCategory",
    "@schemalLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCategory.schema.json",
    "@baseType": "Category"
}
```

Delete service category

DELETE /serviceCategory/{id}

Description

This operation deletes a service category entity.

Usage Samples

Here's an example of a request for deleting a category.

Request
DELETE {apiRoot}/serviceCategory/1708
Response
204

OPERATIONS ON SERVICE CANDIDATE

List service candidates

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

Description

This operation list service candidate entities.
Attribute selection is enabled for all first level attributes.
Filtering may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving multiple service categories.

Request
GET {apiRoot}/serviceCandidate?version=2.1 Accept: application/json
Response

200
 	
[
  {
    "id": "4994",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/4994",

```
      "name": "TVServiceCandidate",
      "description": "This service candidate allows provision of TV service",
      "version": "2.1",
      "validFor": {
         "startDateTime": "2017-08-23T00:00",
         "endDateTime": "2018-03-25T00:00"
      },
      "lastUpdate": "2017-08-27T00:00",
      "lifecycleStatus": "Active",
      "category": [
         {
            "id": "5980",
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/5980",
            "version": "3.2",
            "name": "TV"
         }
      ],
      "serviceSpecification": {
         "id": "9600",
         "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/9600",
         "version": "2.1",
         "name": "CFSS_TV",
         "@type": "CustomerFacingServiceSpecification"
      },
      "@type": "ServiceCandidate",
      "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCandidate.schema.json ",
      "@baseType": ""
   },
   {
      "id": "4995",
      "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/4995",
      "name": "Broadband ServiceCandidate",
      "description": "This service candidate allows provision of Broadband service",
      "version": "2.1",
      "validFor": {
         "startDateTime": "2017-08-23T00:00",
         "endDateTime": "2018-03-25T00:00"
      },
      "lastUpdate": "2017-08-27T00:00",
      "lifecycleStatus": "Active",
      "category": [
         {
            "id": "5981",
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/5981",
            "version": "3.2",
            "name": "BB"
         }
      ],
      "serviceSpecification": {
         "id": "9601",
         "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/9601",
         "version": "2.1",
         "name": "CFSS_BB",
         "@type": "CustomerFacingServiceSpecification"
      },
```

```
      "@type": "ServiceCandidate",
      "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCandidate.schema.json ",
      "@baseType": ""
  }
]
```

Retrieve service candidate

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

Description

This operation retrieves a service candidate entity.

Attribute selection is enabled for all first level attributes.

Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving a specific candidate.

Request
GET {apiRoot}/serviceCandidate/4994 Accept: application/json

Response

```
200

{
  "id": "4994",
  "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/4994",
  "name": "TVServiceCandidate",
  "description": "This service candidate allows provision of TV service",
  "version": "2.1",
  "validFor": {
    "startDateTime": "2017-08-23T00:00",
    "endDateTime": "2018-03-25T00:00"
  },
  "lastUpdate": "2017-08-27T00:00",
  "lifecycleStatus": "Active",
  "category": [
    {
      "id": "5980",
      "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/5980",
      "version": "3.2",
      "name": "TV"
    }
  ],
```

```
    "serviceSpecification": {
        "id": "9600",
        "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/9600",
        "version": "2.1",
        "name": "CFSS_TV",
        "@type": "CustomerFacingServiceSpecification"
    },
    "@type": "ServiceCandidate",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCandidate.schema.json ",
    "@baseType": ""
}
```

Create service candidate

POST /serviceCandidate

Description

This operation creates a service candidate entity.

Mandatory and Non Mandatory Attributes

The following tables provides the list of mandatory and non mandatory attributes when creating a ServiceCandidate, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

Mandatory Attributes	Rule
name	

Non Mandatory Attributes	Default Value	Rule
category		
description		
lastUpdate		
lifecycleStatus		
serviceSpecification		
validFor		
version		

Default Values Summary

When creating the resource, the following table summarizes the default values applicable to optional attributes of the resource (or sub-resources).

Attributes	Default Value
@type	ServiceCandidate

Usage Samples

Here's an example of a request for creating a specific candidate. The request includes the service specification and the category.

Request

```
POST {apiRoot}/serviceCandidate
Content-Type: application/json

{
   "name": "TVServiceCandidate",
   "description": "This service candidate allows provision of TV service",
   "version": "2.1",
   "validFor": {
      "startDateTime": "2017-08-23T00:00",
      "endDateTime": "2018-03-25T00:00"
   },
   "category": [
      {
         "id": "5980",
         "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/5980",
         "version": "3.2",
         "name": "TV"
      }
   ],
   "serviceSpecification": {
      "id": "9600",
      "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/9600",
      "version": "2.1",
      "name": "CFSS_TV",
      "@type": "CustomerFacingServiceSpecification"
   },
   "@type": "ServiceCandidate",
   "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCandidate.schema.json",
   "@baseType": ""
}
```

Response

```
201

{
   "id": "4994",
   "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/4994",
   "name": "TVServiceCandidate",
   "description": "This service candidate allows provision of TV service",
   "version": "2.1",
   "validFor": {
      "startDateTime": "2017-08-23T00:00",
      "endDateTime": "2018-03-25T00:00"
   },
   "lastUpdate": "2017-08-27T00:00",
```

```
        "lifecycleStatus": "Active",
        "category": [
            {
                "id": "5980",
                "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/5980",
                "version": "3.2",
                "name": "TV"
            }
        ],
        "serviceSpecification": {
            "id": "9600",
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/9600",
            "version": "2.1",
            "name": "CFSS_TV",
            "@type": "CustomerFacingServiceSpecification"
        },
        "@type": "ServiceCandidate",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCandidate.schema.json",
        "@baseType": ""
}
```

Patch service candidate

PATCH /serviceCandidate/{id}

Description

This operation allows partial updates of a service candidate entity. Support of json/merge (https://tools.ietf.org/html/rfc7386) is mandatory, support of json/patch (http://tools.ietf.org/html/rfc5789) is optional.

Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

Patchable and Non Patchable Attributes

The tables below provide the list of patchable and non patchable attributes, including constraint rules on their usage.

Patchable Attributes	Rule
category	
description	
lifecycleStatus	
name	
serviceSpecification	
validFor	
version	

Non Patchable Attributes	Rule
id	
href	
lastUpdate	

Usage Samples

Here's an example of a request for patching a candidate. In this example, a new version is set, together with validity period.

Request

PATCH {apiRoot}/serviceCandidate/4994
Content-Type: application/merge-patch+json

```
{
    "version": "3.1",
    "validFor": {
        "startDateTime": "2018-03-23T00:00",
        "endDateTime": "2018-09-25T00:00"
    }
}
```

Response

200

```
{
    "id": "4994",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCandidate/4994",
    "name": "TVServiceCandidate",
    "description": "This service candidate allows provision of TV service",
    "version": "3.1",
    "validFor": {
        "startDateTime": "2018-03-23T00:00",
        "endDateTime": "2018-09-25T00:00"
    },
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Active",
    "category": [
        {
            "id": "5980",
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceCategory/5980",
            "version": "3.2",
            "name": "TV"
        }
    ],
    "serviceSpecification": {
        "id": "9600",
        "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/9600",
```

```
    "version": "2.1",
    "name": "CFSS_TV",
    "@type": "CustomerFacingServiceSpecification"
  },
  "@type": "ServiceCandidate",
  "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceCandidate.schema.json ",
  "@baseType": ""
}
```

Delete service candidate

DELETE /serviceCandidate/{id}

Description

This operation deletes a service candidate entity.

Usage Samples

Here's an example of a request for deleting a candidate.

Request
DELETE {apiRoot}/serviceCandidate/4994
Response
204

OPERATIONS ON SERVICE SPECIFICATION

List service specifications

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

Description

This operation list service specification entities.
Attribute selection is enabled for all first level attributes.
Filtering may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving multiple service specifications.

Request
GET {apiRoot}/serviceSpecification?targetServiceSchema.@type=RFS Accept: application/json

Response

```
200

[
  {
    "id": "7655",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/7655",
    "name": "Firewall Service",
    "description": "This service specification describes a firewall service that can be deployed in customer premise.",
    "version": "2.1",
    "validFor": {
      "startDateTime": "2017-08-23T00:00",
      "endDateTime": "2018-03-25T00:00"
    },
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Active",
    "isBundle": false,
    "resourceSpecification": [
      {
        "href": "https://mycsp.com:8080/tmf-api/resourceCatalogManagement/v4/resourceSpecification/42",
        "id": "42",
        "name": "Firewall",
        "version": "1.0",
        "@referredType": "ResourceFunctionSpec"
      }
    ],
    "attachment": [
      {
        "description": "This attachment gives a block diagram of the firewall.",
        "href": "https://mycsp.com:8080/tmf-api/documentManagement/v4/attachment/22",
        "id": "22",
        "url": "https://mycsp.com:7070/docloader?docnum=3534536"
      }
    ],
    "serviceSpecCharacteristic": [
      {
        "name": "OperatingSystem",
        "description": "This characteristic describes the operating system run by the service",
        "valueType": "string",
        "configurable": true,
        "validFor": {
```

```
            "startDateTime": "2017-08-12T00:00",
            "endDateTime": "2018-03-07T00:00"
          },
          "@valueSchemaLocation": "",
          "minCardinality": 0,
          "maxCardinality": 1,
          "isUnique": true,
          "regex": "",
          "extensible": false,
          "serviceSpecCharacteristicValue": [
            {
              "valueType": "string",
              "isDefault": true,
              "value": "Android KitKat",
              "validFor": {
                "startDateTime": "2017-08-06T00:00",
                "endDateTime": "2018-03-07T00:00"
              }
            }
          ],
          "serviceSpecCharRelationship": [
            {
              "relationshipType": "dependency",
              "role": "",
              "id": "4690",
              "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v4/serviceSpecificationCharacteristic/4690",
              "name": "OperatingSystem",
              "validFor": {
                "startDateTime": "2017-08-11T00:00",
                "endDateTime": "2018-03-07T00:00"
              }
            }
          ],
          "@type": "ServiceSpecCharacteristic",
          "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Service/ServiceSpecCharacteristic.schema.json"
        },
        {
          "name": "Scalability",
          "description": "Scalability parameters for this resource facing service spec ",
          "valueType": "CapabilityScalable",
          "configurable": true,
          "validFor": {
            "startDateTime": "2017-08-17T00:00",
            "endDateTime": "2018-03-12T00:00"
          },
          "@valueSchemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json",
          "minCardinality": 0,
          "maxCardinality": 1,
          "isUnique": true,
          "regex": "",
          "extensible": true,
          "serviceSpecCharacteristicValue": [
            {
```

```json
                "valueType": "object",
                "isDefault": true,
                "value": {
                    "minInstances": 1,
                    "maxInstances": 1000,
                    "@type": "CapabilityScalable",
                    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json"
                },
                "validFor": {
                    "startDateTime": "2017-08-17T00:00",
                    "endDateTime": "2018-03-12T00:00"
                },
                "@type": "ServiceSpecCharacteristicValue"
            }
        ],
        "serviceSpecCharRelationship": [],
        "@type": "ServiceSpecCharacteristic",
        "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Service/ServiceSpecCharacteristic.schema.json"
        }
    ],
    "relatedParty": [
        {
            "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3643",
            "id": "3643",
            "name": "Firewall Express",
            "role": "Supplier"
        }
    ],
    "serviceSpecRelationship": [
        {
            "relationshipType": "dependency",
            "role": "dependent",
            "id": "5563",
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/5563",
            "name": "Points to the Deep Packet Inspection service on which this Firewall service depends",
            "validFor": {
                "startDateTime": "2017-08-25T00:00",
                "endDateTime": "2018-03-25T00:00"
            }
        }
    ],
    "targetServiceSchema": {
        "@type": "RFS",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/RFS.schema.json"
    },
    "@type": "ResourceFacingServiceSpecification",
    "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Service/ResourceFacingServiceSpecification.schema.json",
    "@baseType": "ServiceSpecification"
},
{
    "id": "5563",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/5563",
    "name": "Deep Packet Inspection",
```

```
      "description": "This service specification describes a Deep Packet Inspection service that can be deployed in
customer premise.",
      "version": "1.0",
      "validFor": {
        "startDateTime": "2017-08-23T00:00",
        "endDateTime": "2018-03-25T00:00"
      },
      "lastUpdate": "2017-08-27T00:00",
      "lifecycleStatus": "In Design",
      "isBundle": false,
      "relatedParty": [
        {
          "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3644",
          "id": "3644",
          "name": "DPI Doitall",
          "role": "Supplier"
        }
      ],
      "targetServiceSchema": {
        "@type": "RFS",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/RFS.schema.json"
      },
      "@type": "ResourceFacingServiceSpecification",
      "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Service/ResourceFacingServiceSpecification.schema.json",
      "@baseType": "ServiceSpecification"
  }
]
```

Retrieve service specification

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

Description

This operation retrieves a service specification entity.

Attribute selection is enabled for all first level attributes.

Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving a specific specification.

Request
GET {apiRoot}/serviceSpecification/7655 Accept: application/json

Response

```
200

{
    "id": "7655",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/7655",
    "name": "Firewall Service",
    "description": "This service specification describes a firewall service that can be deployed in customer premise.",
    "version": "2.1",
    "validFor": {
        "startDateTime": "2017-08-23T00:00",
        "endDateTime": "2018-03-25T00:00"
    },
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Active",
    "isBundle": false,
    "resourceSpecification": [
        {
            "href": "https://mycsp.com:8080/tmf-api/resourceCatalogManagement/v4/resourceSpecification/42",
            "id": "42",
            "name": "Firewall",
            "version": "1.0",
            "@referredType": "ResourceFunctionSpec"
        }
    ],
    "attachment": [
        {
            "description": "This attachment gives a block diagram of the firewall.",
            "href": "https://mycsp.com:8080/tmf-api/documentManagement/v4/attachment/22",
            "id": "22",
            "url": "https://mycsp.com:7070/docloader?docnum=3534536"
        }
    ],
    "serviceSpecCharacteristic": [
        {
            "name": "OperatingSystem",
            "description": "This characteristic describes the operating system run by the service",
            "valueType": "string",
            "configurable": true,
            "validFor": {
                "startDateTime": "2017-08-12T00:00",
                "endDateTime": "2018-03-07T00:00"
            },
            "@valueSchemaLocation": "",
            "minCardinality": 0,
            "maxCardinality": 1,
            "isUnique": true,
            "regex": "",
            "extensible": false,
            "serviceSpecCharacteristicValue": [
                {
                    "valueType": "string",
                    "isDefault": true,
```

```
            "value": "Android KitKat",
            "validFor": {
              "startDateTime": "2017-08-06T00:00",
              "endDateTime": "2018-03-07T00:00"
            }
          }
        ],
        "serviceSpecCharRelationship": [
          {
            "relationshipType": "dependency",
            "role": "",
            "id": "4690",
            "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v4/serviceSpecificationCharacteristic/4690",
            "name": "OperatingSystem",
            "validFor": {
              "startDateTime": "2017-08-11T00:00",
              "endDateTime": "2018-03-07T00:00"
            }
          }
        ],
        "@type": "ServiceSpecCharacteristic",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
      },
      {
        "name": "Scalability",
        "description": "Scalability parameters for this resource facing service spec ",
        "valueType": "CapabilityScalable",
        "configurable": true,
        "validFor": {
          "startDateTime": "2017-08-17T00:00",
          "endDateTime": "2018-03-12T00:00"
        },
        "@valueSchemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json",
        "minCardinality": 0,
        "maxCardinality": 1,
        "isUnique": true,
        "regex": "",
        "extensible": true,
        "serviceSpecCharacteristicValue": [
          {
            "valueType": "object",
            "isDefault": true,
            "value": {
              "minInstances": 1,
              "maxInstances": 1000,
              "@type": "CapabilityScalable",
              "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json"
            },
            "validFor": {
              "startDateTime": "2017-08-17T00:00",
              "endDateTime": "2018-03-12T00:00"
            },
            "@type": "ServiceSpecCharacteristicValue"
          }
```

```
        ],
        "serviceSpecCharRelationship": [],
        "@type": "ServiceSpecCharacteristic",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
      }
    ],
    "relatedParty": [
      {
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3643",
        "id": "3643",
        "name": "Firewall Express",
        "role": "Supplier"
      }
    ],
    "serviceSpecRelationship": [
      {
        "relationshipType": "dependency",
        "role": "dependent",
        "id": "5563",
        "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/5563",
        "name": "Points to the Deep Packet Inspection service on which this Firewall service depends",
        "validFor": {
          "startDateTime": "2017-08-25T00:00",
          "endDateTime": "2018-03-25T00:00"
        }
      }
    ],
    "serviceLevelSpecification": [
      {
        "href": "https://mycsp.com:8080/tmf-api/serviceQualityManagement/v4/serviceLevelSpecification/8899",
        "id": "8899",
        "name": "Platinum"
      }
    ],
    "targetServiceSchema": {
      "@type": "RFS",
      "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/RFS.schema.json"
    },
    "@type": "ResourceFacingServiceSpecification",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ResourceFacingServiceSpecification.schema.json",
    "@baseType": "ServiceSpecification"
}
```

Create service specification

POST /serviceSpecification

Description

This operation creates a service specification entity.

Mandatory and Non Mandatory Attributes

The following tables provides the list of mandatory and non mandatory attributes when creating a ServiceSpecification, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

Mandatory Attributes	Rule
name	

Non Mandatory Attributes	Default Value	Rule
attachment		
description		
isBundle	false	
lastUpdate		
lifecycleStatus		
relatedParty		
resourceSpecification		
serviceLevelSpecification		
serviceSpecCharacteristic		
serviceSpecRelationship		
targetServiceSchema		
validFor		
version		

Additional Rules

The following table provides additional rules indicating mandatory fields in sub-resources or relationships when creating a ServiceSpecification resource.

Context	Mandatory Sub-Attributes
attachment	name
relatedParty	id or href
serviceSpecRelationship	type, id or href

Default Values Summary

When creating the resource, the following table summarizes the default values applicable to optional attributes of the resource (or sub-resources).

Attributes	Default Value
isBundle	false

Usage Samples

Here's an example of a request for creating a specification.

Request

```
POST {apiRoot}/serviceSpecification
Content-Type: application/json

{
   "name": "Firewall Service",
   "description": "This service specification describes a firewall service that can be deployed in customer premise.",
   "version": "1.0",
   "validFor": {
      "startDateTime": "2017-08-23T00:00",
      "endDateTime": "2018-03-25T00:00"
   },
   "lastUpdate": "2017-08-27T00:00",
   "lifecycleStatus": "In Design",
   "isBundle": false,
   "attachment": [
      {
         "description": "This attachment gives a block diagram of the firewall.",
         "href": "https://mycsp.com:8080/tmf-api/documentManagement/v4/attachment/22",
         "id": "22",
         "url": "https://mycsp.com:7070/docloader?docnum=3534536"
      }
   ],
   "serviceSpecCharacteristic": [
      {
         "name": "OperatingSystem",
         "description": "This characteristic describes the operating system run by the service",
         "valueType": "string",
         "configurable": true,
         "validFor": {
            "startDateTime": "2017-08-12T00:00",
            "endDateTime": "2018-03-07T00:00"
         },
         "@valueSchemaLocation": "",
         "minCardinality": 0,
         "maxCardinality": 1,
         "isUnique": true,
         "regex": "",
         "extensible": false,
         "serviceSpecCharacteristicValue": [
            {
               "valueType": "string",
               "isDefault": true,
               "value": "Android KitKat",
               "validFor": {
                  "startDateTime": "2017-08-06T00:00",
                  "endDateTime": "2018-03-07T00:00"
```

```
                }
              }
          ],
          "serviceSpecCharRelationship": [
              {
                  "relationshipType": "dependency",
                  "role": "",
                  "id": "4690",
                  "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v4/serviceSpecificationCharacteristic/4690",
                  "name": "OperatingSystem",
                  "validFor": {
                      "startDateTime": "2017-08-11T00:00",
                      "endDateTime": "2018-03-07T00:00"
                  }
              }
          ],
          "@type": "ServiceSpecCharacteristic",
          "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
      },
      {
          "name": "Scalability",
          "description": "Scalability parameters for this resource facing service spec ",
          "valueType": "CapabilityScalable",
          "configurable": true,
          "validFor": {
              "startDateTime": "2017-08-17T00:00",
              "endDateTime": "2018-03-12T00:00"
          },
          "@valueSchemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json",
          "minCardinality": 0,
          "maxCardinality": 1,
          "isUnique": true,
          "regex": "",
          "extensible": true,
          "serviceSpecCharacteristicValue": [
              {
                  "valueType": "object",
                  "isDefault": true,
                  "value": {
                      "minInstances": 1,
                      "maxInstances": 1000,
                      "@type": "CapabilityScalable",
                      "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json"
                  },
                  "validFor": {
                      "startDateTime": "2017-08-17T00:00",
                      "endDateTime": "2018-03-12T00:00"
                  },
                  "@type": "ServiceSpecCharacteristicValue"
              }
          ],
          "serviceSpecCharRelationship": [],
          "@type": "ServiceSpecCharacteristic",
          "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
```

```
      }
   ],
   "relatedParty": [
      {
         "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3643",
         "id": "3643",
         "name": "Firewall Express",
         "role": "Supplier"
      }
   ],
   "serviceLevelSpecification": [
      {
         "href": "https://mycsp.com:8080/tmf-api/serviceQualityManagement/v4/serviceLevelSpecification/8899",
         "id": "8899",
         "name": "Platinum"
      }
   ],
   "targetServiceSchema": {
      "@type": "RFS",
      "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/RFS.schema.json"
   },
   "@type": "ResourceFacingServiceSpecification",
   "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Service/ResourceFacingServiceSpecification.schema.json",
   "@baseType": "ServiceSpecification"
}
```

Response

```
201

{
   "id": "7655",
   "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/7655",
   "name": "Firewall Service",
   "description": "This service specification describes a firewall service that can be deployed in customer premise.",
   "version": "1.0",
   "validFor": {
      "startDateTime": "2017-08-23T00:00",
      "endDateTime": "2018-03-25T00:00"
   },
   "lastUpdate": "2017-08-27T00:00",
   "lifecycleStatus": "In Design",
   "isBundle": false,
   "attachment": [
      {
         "description": "This attachment gives a block diagram of the firewall.",
         "href": "https://mycsp.com:8080/tmf-api/documentManagement/v4/attachment/22",
         "id": "22",
         "url": "https://mycsp.com:7070/docloader?docnum=3534536"
      }
   ],
   "serviceSpecCharacteristic": [
```

```
    {
        "name": "OperatingSystem",
        "description": "This characteristic describes the operating system run by the service",
        "valueType": "string",
        "configurable": true,
        "validFor": {
            "startDateTime": "2017-08-12T00:00",
            "endDateTime": "2018-03-07T00:00"
        },
        "@valueSchemaLocation": "",
        "minCardinality": 0,
        "maxCardinality": 1,
        "isUnique": true,
        "regex": "",
        "extensible": false,
        "serviceSpecCharacteristicValue": [
            {
                "valueType": "string",
                "isDefault": true,
                "value": "Android KitKat",
                "validFor": {
                    "startDateTime": "2017-08-06T00:00",
                    "endDateTime": "2018-03-07T00:00"
                }
            }
        ],
        "serviceSpecCharRelationship": [
            {
                "relationshipType": "dependency",
                "role": "",
                "id": "4690",
                "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v4/serviceSpecificationCharacteristic/4690",
                "name": "OperatingSystem",
                "validFor": {
                    "startDateTime": "2017-08-11T00:00",
                    "endDateTime": "2018-03-07T00:00"
                }
            }
        ],
        "@type": "ServiceSpecCharacteristic",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
    },
    {
        "name": "Scalability",
        "description": "Scalability parameters for this resource facing service spec ",
        "valueType": "CapabilityScalable",
        "configurable": true,
        "validFor": {
            "startDateTime": "2017-08-17T00:00",
            "endDateTime": "2018-03-12T00:00"
        },
        "@valueSchemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json",
        "minCardinality": 0,
        "maxCardinality": 1,
```

```
        "isUnique": true,
        "regex": "",
        "extensible": true,
        "serviceSpecCharacteristicValue": [
          {
            "valueType": "object",
            "isDefault": true,
            "value": {
              "minInstances": 1,
              "maxInstances": 1000,
              "@type": "CapabilityScalable",
              "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json"
            },
            "validFor": {
              "startDateTime": "2017-08-17T00:00",
              "endDateTime": "2018-03-12T00:00"
            },
            "@type": "ServiceSpecCharacteristicValue"
          }
        ],
        "serviceSpecCharRelationship": [],
        "@type": "ServiceSpecCharacteristic",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
      }
    ],
    "relatedParty": [
      {
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3643",
        "id": "3643",
        "name": "Firewall Express",
        "role": "Supplier"
      }
    ],
    "serviceLevelSpecification": [
      {
        "href": "https://mycsp.com:8080/tmf-api/serviceQualityManagement/v4/serviceLevelSpecification/8899",
        "id": "8899",
        "name": "Platinum"
      }
    ],
    "targetServiceSchema": {
      "@type": "RFS",
      "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/RFS.schema.json"
    },
    "@type": "ResourceFacingServiceSpecification",
    "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Service/ResourceFacingServiceSpecification.schema.json",
    "@baseType": "ServiceSpecification"
}
```

Patch service specification

PATCH /serviceSpecification/{id}

Description

This operation allows partial updates of a service specification entity. Support of json/merge (https://tools.ietf.org/html/rfc7386) is mandatory, support of json/patch (http://tools.ietf.org/html/rfc5789) is optional.

Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

Patchable and Non Patchable Attributes

The tables below provide the list of patchable and non patchable attributes, including constraint rules on their usage.

Patchable Attributes	Rule
attachment	
description	
isBundle	
lifecycleStatus	
name	
relatedParty	
resourceSpecification	
serviceLevelSpecification	
serviceSpecCharacteristic	
serviceSpecRelationship	
targetServiceSchema	
validFor	
version	

Non Patchable Attributes	Rule
id	
href	
lastUpdate	

Usage Samples

Here's an example of a request for patching a specification. In this example, a new version is set, together with validity period.

Request

```
PATCH {apiRoot}/serviceSpecification/7655
Content-Type: application/merge-patch+json

{
    "version": "3.1",
    "validFor": {
        "startDateTime": "2018-03-23T00:00",
        "endDateTime": "2018-09-25T00:00"
    }
}
```

Response

```
200

{
    "id": "7655",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/7655",
    "name": "Firewall Service",
    "description": "This service specification describes a firewall service that can be deployed in customer premise.",
    "version": "3.1",
    "validFor": {
        "startDateTime": "2018-03-23T00:00",
        "endDateTime": "2018-09-25T00:00"
    },
    "lastUpdate": "2017-08-27T00:00",
    "lifecycleStatus": "Active",
    "isBundle": false,
    "resourceSpecification": [
        {
            "href": "https://mycsp.com:8080/tmf-api/resourceCatalogManagement/v4/resourceSpecification/42",
            "id": "42",
            "name": "Firewall",
            "version": "1.0",
            "@referredType": "ResourceFunctionSpec"
        }
    ],
    "attachment": [
        {
            "description": "This attachment gives a block diagram of the firewall.",
            "href": "https://mycsp.com:8080/tmf-api/documentManagement/v4/attachment/22",
            "id": "22",
            "url": "https://mycsp.com:7070/docloader?docnum=3534536"
        }
    ],
    "serviceSpecCharacteristic": [
        {
            "name": "OperatingSystem",
            "description": "This characteristic describes the operating system run by the service",
            "valueType": "string",
            "configurable": true,
            "validFor": {
                "startDateTime": "2017-08-12T00:00",
```

```
          "endDateTime": "2018-03-07T00:00"
        },
        "@valueSchemaLocation": "",
        "minCardinality": 0,
        "maxCardinality": 1,
        "isUnique": true,
        "regex": "",
        "extensible": false,
        "serviceSpecCharacteristicValue": [
          {
            "valueType": "string",
            "isDefault": true,
            "value": "Android KitKat",
            "validFor": {
              "startDateTime": "2017-08-06T00:00",
              "endDateTime": "2018-03-07T00:00"
            }
          }
        ],
        "serviceSpecCharRelationship": [
          {
            "relationshipType": "dependency",
            "role": "",
            "id": "4690",
            "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v4/serviceSpecificationCharacteristic/4690",
            "name": "OperatingSystem",
            "validFor": {
              "startDateTime": "2017-08-11T00:00",
              "endDateTime": "2018-03-07T00:00"
            }
          }
        ],
        "@type": "ServiceSpecCharacteristic",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
      },
      {
        "name": "Scalability",
        "description": "Scalability parameters for this resource facing service spec ",
        "valueType": "CapabilityScalable",
        "configurable": true,
        "validFor": {
          "startDateTime": "2017-08-17T00:00",
          "endDateTime": "2018-03-12T00:00"
        },
        "@valueSchemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json",
        "minCardinality": 0,
        "maxCardinality": 1,
        "isUnique": true,
        "regex": "",
        "extensible": true,
        "serviceSpecCharacteristicValue": [
          {
            "valueType": "object",
            "isDefault": true,
```

```
                    "value": {
                        "minInstances": 1,
                        "maxInstances": 1000,
                        "@type": "CapabilityScalable",
                        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/CapabilityScalable.schema.json"
                    },
                    "validFor": {
                        "startDateTime": "2017-08-17T00:00",
                        "endDateTime": "2018-03-12T00:00"
                    },
                    "@type": "ServiceSpecCharacteristicValue"
                }
            ],
            "serviceSpecCharRelationship": [],
            "@type": "ServiceSpecCharacteristic",
            "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ServiceSpecCharacteristic.schema.json"
        }
    ],
    "relatedParty": [
        {
            "href": "https://mycsp.com:8080/tmf-api/partyManagement/v4/organization/3643",
            "id": "3643",
            "name": "Firewall Express",
            "role": "Supplier"
        }
    ],
    "serviceSpecRelationship": [
        {
            "relationshipType": "dependency",
            "role": "dependent",
            "id": "5563",
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/serviceSpecification/5563",
            "name": "Points to the Deep Packet Inspection service on which this Firewall service depends",
            "validFor": {
                "startDateTime": "2017-08-25T00:00",
                "endDateTime": "2018-03-25T00:00"
            }
        }
    ],
    "serviceLevelSpecification": [
        {
            "href": "https://mycsp.com:8080/tmf-api/serviceQualityManagement/v4/serviceLevelSpecification/8899",
            "id": "8899",
            "name": "Platinum"
        }
    ],
    "targetServiceSchema": {
        "@type": "RFS",
        "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/RFS.schema.json"
    },
    "@type": "ResourceFacingServiceSpecification",
    "@schemaLocation": "https://mycsp.com:8080/tmf-api/schema/Service/ResourceFacingServiceSpecification.schema.json",
    "@baseType": "ServiceSpecification"
```

```
}
```

Delete service specification

DELETE /serviceSpecification/{id}

Description

This operation deletes a service specification entity.

Usage Samples

Here's an example of a request for deleting a specification.

Request
DELETE {apiRoot}/serviceSpecification/7655
Response
204

OPERATIONS ON IMPORT JOB

List import jobs

```
GET /importJob?fields=...&{filtering}
```

Description

This operation list import job entities.
Attribute selection is enabled for all first level attributes.
Filtering may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving multiple import jobs.

Request
GET {apiRoot}/importJob?creationDate=2017-08-27 Accept: application/json

Response

200
 	
[
  {
    "completionDate": "2017-08-27T00:02",
    "contentType": "application/json",
    "creationDate": "2017-08-27T00:00",
    "errorLog": "http://my-platform/daily/logging/errors.log",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/importJob/7497",
    "id": "7497",
    "path": "/warning/system",
    "status": "completed",
    "url": "https://my-platform/daily/job/NHCFD6"
  },
  {
    "contentType": "application/json",
    "creationDate": "2017-08-27T30:00",
    "errorLog": "http://my-platform/daily/logging/errors.log",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/importJob/7498",
    "id": "7498",
    "path": "/warning/system",
    "status": "started",
    "url": "https://my-platform/daily/job/NHCFD7"
  }

```
]
```

Retrieve import job

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

Description

This operation retrieves an import job entity.
Attribute selection is enabled for all first level attributes.
Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving a specific import job.

Request
GET {apiRoot}/importJob/7497 Accept: application/json

Response

200
 	
{
   "completionDate": "2017-08-27T00:02",
   "contentType": "application/json",
   "creationDate": "2017-08-27T00:00",
   "errorLog": "http://my-platform/daily/logging/errors.log",
   "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/importJob/7497",
   "id": "7497",
   "path": "/warning/system",
   "status": "completed",
   "url": "https://my-platform/daily/job/NHCFD6"
}

Create import job

POST /importJob

Description

This operation creates an import job entity.

Mandatory and Non Mandatory Attributes

The following tables provides the list of mandatory and non mandatory attributes when creating an ImportJob, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

Mandatory Attributes	Rule
url	

Non Mandatory Attributes	Default Value	Rule
completionDate		
contentType		
creationDate		
errorLog		
path		
status		

Usage Samples

Here's an example of a request for creating an import job.

Request

POST {apiRoot}/importJob
Content-Type: application/json
 	
{
   "contentType": "application/json",
   "errorLog": "http://my-platform/daily/logging/errors.log",
   "path": "/warning/system",
   "url": "https://my-platform/daily/job/NHCFD6"
}

Response

201
 	
{
   "contentType": "application/json",
   "creationDate": "2017-08-27T00:00",
   "errorLog": "http://my-platform/daily/logging/errors.log",
   "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/importJob/7497",
   "id": "7497",
   "path": "/warning/system",
   "status": "started",
   "url": "https://my-platform/daily/job/NHCFD6"
}

Delete import job

DELETE /importJob/{id}

Description

This operation deletes an import job entity.

Usage Samples

Here's an example of a request for deleting an import job.

Request
DELETE {apiRoot}/importJob/7497
Response
204

OPERATIONS ON EXPORT JOB

List export jobs

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

Description

This operation list export job entities.
Attribute selection is enabled for all first level attributes.
Filtering may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving multiple export jobs.

Request
GET {apiRoot}/exportJob?creationDate=2017-08-27 Accept: application/json

Response

200
 	
``
[
  {
    "completionDate": "2017-08-27T00:02",
    "contentType": "application/json",
    "creationDate": "2017-08-27T00:00",
    "errorLog": "http://my-platform/daily/logging/errors.log",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/exportJob/1866",
    "id": "1866",
    "path": "/warning/system",
    "query": "advancedCatalog",
    "status": "completed",
    "url": "https://my-platform/daily/job/EHCFD6"
  },
  {
    "contentType": "application/json",
    "creationDate": "2017-08-27T30:00",
    "errorLog": "http://my-platform/daily/logging/errors.log",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/exportJob/1867",
    "id": "1867",
    "path": "/warning/system",
    "query": "simpleCatalog",
    "status": "started",
    "url": "https://my-platform/daily/job/EHCFD7"
  }
]
``

Retrieve export job

`GET /exportJob/{id}?fields=...&{filtering}`

Description

This operation retrieves an export job entity.

Attribute selection is enabled for all first level attributes.

Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

Usage Samples

Here's an example of a request for retrieving a specific export job.

Request

```
GET {apiRoot}/exportJob/1866
Accept: application/json
```

Response

```
200

{
    "completionDate": "2017-08-27T00:02",
    "contentType": "application/json",
    "creationDate": "2017-08-27T00:00",
    "errorLog": "http://my-platform/daily/logging/errors.log",
    "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/exportJob/1866",
    "id": "1866",
    "path": "/warning/system",
    "query": "advancedCatalog",
    "status": "completed",
    "url": "https://my-platform/daily/job/EHCFD6"
}
```

Create export job

POST /exportJob

Description

This operation creates an export job entity.

Mandatory and Non Mandatory Attributes

The following tables provides the list of mandatory and non mandatory attributes when creating an ExportJob, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

Mandatory Attributes	Rule
url	

Non Mandatory Attributes	Default Value	Rule
completionDate		
contentType		
creationDate		
errorLog		
path		
query		
status		

Usage Samples

Here's an example of a request for creating an export job.

Request

POST {apiRoot}/exportJob
Content-Type: application/json
 	
{
   "contentType": "application/json",
   "errorLog": "http://my-platform/daily/logging/errors.log",
   "path": "/warning/system",
   "query": "advancedCatalog",
   "url": "https://my-platform/daily/job/EHCFD6"
}

Response

201
 	
{
   "contentType": "application/json",
   "creationDate": "2017-08-27T00:00",
   "errorLog": "http://my-platform/daily/logging/errors.log",
   "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v4/exportJob/1866",
   "id": "1866",
   "path": "/warning/system",
   "query": "advancedCatalog",
   "status": "started",
   "url": "https://my-platform/daily/job/EHCFD6"
}

Delete export job

`DELETE /exportJob/{id}`

Description

This operation deletes an export job entity.

Usage Samples

Here's an example of a request for deleting an export job.

Request

DELETE {apiRoot}/exportJob/1866
Response
204

API NOTIFICATIONS

For every single of operation on the entities use the following templates and provide sample REST notification POST calls.

It is assumed that the Pub/Sub uses the Register and UnRegister mechanisms described in the REST Guidelines part 1. Refer to the guidelines for more details.

REGISTER LISTENER

POST /hub

Description

Sets the communication endpoint address the service instance must use to deliver information about its health state, execution state, failures and metrics. Subsequent POST calls will be rejected by the service if it does not support multiple listeners. In this case DELETE /api/hub/{id} must be called before an endpoint can be created again.

Behavior

Returns HTTP/1.1 status code 204 if the request was successful.

Returns HTTP/1.1 status code 409 if request is not successful.

Usage Samples

Here's an example of a request for registering a listener.

Request
POST /api/hub Accept: application/json {"callback": "http://in.listener.com"}
Response
201 Content-Type: application/json Location: /api/hub/42 {"id":"42","callback":"http://in.listener.com","query":null}

UNREGISTER LISTENER

`DELETE /hub/{id}`

Description

Clears the communication endpoint address that was set by creating the Hub.

Behavior

Returns HTTP/1.1 status code 204 if the request was successful.

Returns HTTP/1.1 status code 404 if the resource is not found.

Usage Samples

Here's an example of a request for un-registering a listener.

Request
DELETE /api/hub/42 Accept: application/json
Response
204

PUBLISH EVENT TO LISTENER

`POST /client/listener`

Description

Clears the communication endpoint address that was set by creating the Hub.

Provides to a registered listener the description of the event that was raised. The /client/listener url is the callback url passed when registering the listener.

Behavior

Returns HTTP/1.1 status code 201 if the service is able to set the configuration.

Usage Samples

Here's an example of a notification received by the listener. In this example "EVENT TYPE" should be replaced by one of the notification types supported by this API (see Notification resources Models section) and EVENT BODY refers to the data structure of the given notification type.

Request

POST /client/listener
Accept: application/json
 	
{
   "event": {
        EVENT BODY
     },
   "eventType": "EVENT_TYPE"
}

Response
201

For detailed examples on the general TM Forum notification mechanism, see the TMF REST Design Guidelines Part 1 document.

LIFECYCLE MANAGEMENT EXTENSIONS TO CATALOG

In Lifecycle Management, there is a requirement to distinguish between entities existing with different life cycle version numbers and accessible via different ACL mechanisms. For example, the same Service Candidate may exist in a Catalog but with different version numbers.

It may be possible for an administrator to see all the existing versions or for a partner to see only a subset of all the existing versions.

The entity version number is not dependent on the version number of the API. For example, in PLM the same API (running at a specific version number) may be used to retrieve entities with different PLM version numbers.

In order to distinguish resources representing entities running with different version numbers and accessible though the same API version, the following directive can be used /id:(version=x) and the version attribute is added to each entity.

```
{
        "id": "VirtualStorageService",
        "href":
"http://serverlocation:port/catalogManagement/serviceCandidate/VirtualStorageService",
        "version": "1.0",
        "lastUpdate": "2017-04-19T16:42:23-04:00",
        "name": "Virtual Storage Service",
        "description": "Virtual Storage Service",
        "lifecycleStatus": "Active",

…..

}
```

Note that the catalog resources in this case may have the same ID but may be distinguished by the inclusion of the version number in their ID i.e. /VirtualStorageService:(version=1.0), /VirtualStorageService:(version=2.0).

In the following examples, we will assume that two versions of the VirtualStorage Service Candidate exist in the Service Catalog. The Inactive and Active versions respectively version 1.0 and version 2.0.

Query all versioned catalog resources

Users with different roles may have access to different versions of the entities in the catalog. For example, user A may have access to only the version 1.0 of the entities while user B may have access to version 1.0 and version 2.0.

Admin user of Catalog have access to all the versions of the resources while non-admin users have by default access to only the latest version of the entities in the Catalog.

For example, the following request on the admin endpoint will return all the versioned resources matching a specific ID.

REQUEST
GET api/admin/catalogManagement/serviceCandidate/?id=VirtualStorageService Accept: application/json
RESPONSE

200
Content-Type: application/json
[
 	
        {
        "id": "VirtualStorageService",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/VirtualStorage Service",
        "version": "1.0",
        "lastUpdate": "2017-04-19T16:42:23-04:00",
        "name": "Virtual Storage Service",
        "description": "Virtual Storage Service",
        "lifecycleStatus": "Active",
 	
        …..
 	
        },
 	
        {
        "id": "VirtualStorageService",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/VirtualStorage Service",
        "version": "2.0",
        "lastUpdate": "2017-04-19T16:42:23-04:00",
        "name": "Virtual Storage Service",

```
        "description": "Virtual Storage Service",

        "lifecycleStatus": "Active",

        …..

        }

]
```

Query a specific versioned catalog resource

In general, a non-admin API user only has visibility to the latest version number or visibility to a subset of versioned catalog resources.

It may be possible for an admin API user to retrieve a resource with a specific version number by using an ID and versioning filtering criteria.

REQUEST
GET api/admin/catalogManagement/serviceCandidate/?id=VirtualStorageService&version=1.0 Accept: application/json
RESPONSE

200
Content-Type: application/json
[
 	
        {
 	
        "id": "VirtualStorageMedium",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/VirtualStorage Service",
        "version": "1.0",
        "lastUpdate": "2017-01-19T16:42:23-04:00",
        "name": "Virtual Storage Service",
        "description": "Virtual Storage Service",
        "lifecycleStatus": "Active",
 	
        …..
 	
        },
 	
…..

```
]
```

Query current version of a catalog resource

By default, only the most current version is returned (for admin and non-admin).

REQUEST
GET api/admin/catalogManagement/serviceCandidate/VirtualStorageService Accept: application/json
RESPONSE

200
Content-Type: application/json
 	
{
        "id": "VirtualStorageMedium",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/VirtualStorage
Service",
        "version": "2.0",
        "lastUpdate": "2017-04-19T16:42:23-04:00",
        "name": "Virtual Storage Service",
        "description": "Virtual Storage Service",
        "lifecycleStatus": "Active",
 	
…..
 	
}

Create new version of a catalog resource

POST is used to create a new version of a catalog resource.

The constraint is that the version numbers for the resource having the same ID must differ.

REQUEST
POST catalogManagement/serviceCandidate

Content-type: application/json

```
{
        "id": "VirtualStorage",
          "href": "http://serverlocation:port/catalogManagement/serviceCandidate/VirtualStorage
          Service",
          "version": "3.0",
          "name": "Virtual Storage Service",
          "description": "Virtual Storage Service",
          "lifecycleStatus": "Active",
          "validFor": {
                    "startDateTime": "2017-08-19T16:42:23-04:00",
                    "endDateTime": "2017-011-19T00:00:00-04:00"
          },
…
}
```

RESPONSE

201
Content-Type: application/json

```
{
        "id": "VirtualStorage",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/VirtualStorage
Service",
        "version": "3.0",
        "lastUpdate": "2017-08-19T16:42:23-04:00",
        "name": "Virtual Storage Service",
        "description": "Virtual Storage Service",
        "lifecycleStatus": "Active",
        "validFor": {
                  "startDateTime": "2016-04-19T16:42:23-04:00",
                  "endDateTime": "2016-06-19T00:00:00-04:00"
        },
…
}
```

Modify an existing version of a catalog resource

By default, PATCH or PUT will be acting only on the latest version of a catalog resource. For example, PATCH /…/serviceCandidate/VirtualStorageService will only update the VirtualStorageService ServiceCandidate at Version 2.0 (which is the most current).

To update a specific version of an entity the (Version=X) directive is added to the ID (i.e. /id:(version=x).

Note that this capability is only available to API users having the proper authorizations to change the catalog entities with specific version numbers.

For example, to change the VirtualStorageService versioned at 1.0 we could use: /serviceCandidate/VirtualStorageService(Version=1.0)

REQUEST

PATCH /catalogManagement/serviceCandidate/VirtualStorageService(Version=1.0)
Content-type: application/json-patch+json
{
"lifecycleStatus": "Active"
}

RESPONSE

200
Content-Type: application/json
{
     "id": "VirtualStorageService",
     "href":
"http://serverlocation:port/catalogManagement/serviceCanddidate/VirtualStorageService",
     "version": "1.0",
   "lifecycleStatus": "Active",
…..
}

ROLE BASED ACCESS CONTROL

The user presents their credentials for authentication

If the credentials are valid

1.   The user is given access to the catalog

2.   As defined by their role(s)

3.   As defined by their access rights

4.   As defined by the access type: CRUD, discover

5.   As defined by the pre-defined filter

For example, if they issue a get on a catalog that a party has no access they get an error response

Or if they try to modify an area of the catalog but do not have Write Access they get an error response

Normally we anticipate that the OAUTH2 or Open ID Connect are used as the authorization APIs and that ACL are established between authorized parties with regards to the content of the Catalog (i.e. GET but also enable of update operations on specific entities).

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DOCUMENT HISTORY

Version History

Release Number	Date	Release led by:	Description
Release 1.0	15-Apr-2013	Pierre Gauthier TM Forum pgauthier@tmforum.org	First Release of Draft Version of the Document.
Release 1.2	15-Aug-2016	Frank Wong DGIT fwong@dgitsystems.com	Updated to resolve errors and reflect discussion following Team Action Week Vancouver 2016
Release 1.4	16-Oct-2016	Frank Wong DGIT fwong@dgitsystems.com	Incorporated comments from the review meeting
Release 2.0	27-Aug-2017	Kamal Maghsoudlou Ericsson kamal.maghsoudlou@ericsson.com	added extension pattern for REST resources
Release 4.0	13-Jan-2019	Jonathan Goldberg Amdocs Jonathan.Goldberg@amdocs.com	Schema alignment for NaaS APIs in release 18.5

Release History

Release Number	Date	Release led by:	Description
Release 18.5.0	13-Jan-2019	Pierre Gauthier TM Forum pgauthier@tmforum.org	First Release of Draft Version of the Document.

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