



REST RDF API Reference Manual

Note: Before using this information and the product it supports, read the information in the Notices section.

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IBM Rational Focal Point REST RDF API

Table of Contents

IBM Rational Focal Point REST RDF API	3
Introduction	4
Setup	4
Authentication	4
Content negotiation	4
RDF vocabulary approach	5
Standard vocabulary	5
Rational Focal Point core vocabulary	6
Rational Focal Point data type vocabulary	6
Rational Focal Point auto generated vocabulary	6
Workspace scope	7
Module scope	7
Attribute scope	7
Rational Focal Point Primary Resources	7
Service document (fps:Service)	8
Rational Focal Point Primary Data Types	8
Usage of Literals	8
REST Operations	9
Parameters	9
View selection	9
Modified Since	9
Resource Paging	9
Selective properties	10
Format	11
HTTP GET	11
HTTP PUT	11
HTTP POST	12
HTTP DELETE	13
Notices	15
Trademark acknowledgments	16

Introduction

IBM® Rational® Focal Point™ 6.5.2 supports REST Resource Description Framework(RDF) API, where RDF representation for Rational Focal Point resource is included so that Rational Focal Point resources are available for Linked Data. REST RDF API uses the most of the resources defined by RDF XML API and few additional resources. Rational Focal Point 6.5.2, supports content negotiation by using the standard HTTP Accept header values for getting the required resource representations. To understand and use the REST RDF API, you must be familiar with the REST principles and RDF. The RESTful RDF API for Rational Rational Focal Point is a provisional API and subject to change without prior notice. Most of the RDF examples provided in this document are in the TURTLE (<http://www.w3.org/TeamSubmission/turtle/>) format.

Setup

The URIs that Rational Focal Point returns are absolute. To create absolute URIs, the Rational Focal Point server must have information about its own server name. To configure this setting, click **Application > Login Page > Login or Balancer URL** and specify the appropriate value for. Make sure that the host name does not change because a change in the host name can lead to broken links in Rational Focal Point integrated systems that link to the Rational Focal Point resources.

Authentication

The requests to the RESTful API must be authenticated by using HTTP basic authentication. Unless you use HTTPS, the user name and password are sent without encryption. In HTTP basic authentication, character encoding is not specified for user names and passwords. User names and passwords can include ASCII characters only. You might be able to use ISO-8859-1 characters if the client correctly encodes the characters.

Content negotiation

REST RDF API supports RDF/XML, TURTLE and N3 formats. You can request any of these formats by using the standard HTTP Accept header content negotiation. When making the REST API calls, you can use these HTTP Accept header values to specify the preferred format:

Accept header value	Preferred format
application/rdf+xml	rdf/xml
application/x-turtle	rdf/turtle
application/rdf+n3	rdf/n3
application/xml	XML
application/html	HTML

For convenience, typically while requesting for different formats through browsers, the following URL extensions can be used with the resource URLs.

URL Extension	Preferred format
.rdf	rdf/xml
.ttl	rdf/turtle
.n3	rdf/n3
.xml	XML
.html	HTML

For example, to view resources in the RDF/XML format, use the <http://focalpointserver/fp/resources/workspaces/2.rdf> URL in a web browser.

RDF vocabulary approach

The four Rational Focal Point RDF vocabularies used in RDF representations of Rational Focal Point resources are these

- Standard vocabulary
- Rational Focal Point core vocabulary
- Rational Focal Point data type vocabulary
- Rational Focal Point auto-generated vocabulary

The Rational Focal Point defined RDF vocabularies uses <http://jazz.net/ns/psm> as its base URI for defining the resources and terms. Rational Focal Point RDF resource representations also use auto-generated vocabulary for user-defined terms and terms from the Dublin Core, FOAF, OSLC, OWL, RDF, and XML Schema vocabularies.

The following table lists the vocabulary prefixes used in Rational Focal Point RDF representations.

Prefix	Namespace URI	Description
dcterms:	http://purl.org/dc/terms/	Dublin Core vocabulary.
foaf:	http://xmlns.com/foaf/0.1/	Friend of a Friend (FOAF) vocabulary.
owl:	http://www.w3.org/2002/07/owl#	Web Ontology Language (OWL) vocabulary.
rdf:	http://www.w3.org/1999/02/22-rdf-syntax-ns#	RDF vocabulary.
rdfs:	http://www.w3.org/2000/01/rdf-schema#	RDF Schema vocabulary.
xsd:	http://www.w3.org/2001/XMLSchema#	XML Schema (XSD) vocabulary.
oslc:	http://open-services.net/ns/core#	OSLC Core vocabulary.
fps:	http://jazz.net/ns/psm/focalpoint#	Rational Focal Point core vocabulary.
fpdt:	http://jazz.net/ns/psm/focalpoint/datatypes#	Rational Focal Point data type vocabulary.

Standard vocabulary

Rational Focal Point uses a few built-in attributes for the primary resources. For good interoperability, RDF representations reuse existing, widely adopted vocabularies such as the Dublin Core. Rational Focal Point therefore maps as many built-in Rational Focal Point attributes as possible to these standard vocabularies.

The following table lists the mapping to some of the standard properties.

Rational Focal Point built-in attribute	Standard URI
--	---------------------

Alias	dcterms:identifier
Created Date	dcterms:created
Creator	dcterms:creator
Description	dcterms:description
Last Changed Date	dcterms:modified
Title	dcterms:title
User	foaf:Person
User name	foaf:name
User title	foaf:title
User email	foaf:mbox
User login name	foaf:accountName

Rational Focal Point core vocabulary

The Rational Focal Point defined concepts and, built-in attributes that are not mapped to the standard vocabulary are defined in the Rational Focal Point core vocabulary.

Namespace URI <http://jazz.net/ns/psm/focalpoint#>

Prefix fps: (Rational Focal Point Schema) to distinguish it from fp: which is used in the XML representation

Details <https://jazz.net/wiki/bin/view/Main/FocalPointVocabulary>

Rational Focal Point data type vocabulary

Rational Focal Point provides support for a large number of data types that could be used as the values of attributes. These data types are described in their own vocabulary so that the main Rational Focal Point vocabulary smaller and is easier to understand. For a description of the data types see <https://jazz.net/wiki/bin/view/Main/FPDatatypes> .

Namespace URI <http://jazz.net/ns/psm/focalpoint/datatypes#>

Prefix fpdt: (Rational Focal Point data type)

Details <https://jazz.net/wiki/bin/view/Main/FocalPointDatatypeVocabulary>

Rational Focal Point auto-generated vocabulary

In Rational Focal Point you can modules, attributes and choice items. By default Rational Focal Point treats these definitions as user-defined terms and auto generates the vocabularies. Auto-generated vocabularies are of three scopes.

Workspace scope

Namespace URI	http://focalpointserver/fp/resources/workspaces/wid/ns#
Prefix	workspace_wid:
Scope	Workspace scope. Vocabulary for all of the user defined modules, in a given Rational Focal Point workspace

Module scope

Namespace URI	http://focalpointserver/fp/resources/workspaces/wid/modules/mid/ns#
Prefix	module_mid_wid:
Scope	Module scope. Vocabulary for all of the user-defined attributes, for a given Rational Focal Point module.

Attribute scope

Namespace URI	http://focalpointserver/fp/resources/workspaces/wid/modules/mid/attributes/aid/ns#
Prefix	attribute_aid_mid_wid:
Scope	Attribute scope. Vocabulary for all of the user-defined choice items for a given Rational Focal Point attribute.

Rational Focal Point primary resources

The primary resources in Rational Focal Point are service, workspace, module, view, element, and attribute. The following table lists the types and example REST API URIs for the primary resources. The REST XML API does not support HTTP GET for workspace, module and view resources. REST RDF API extends the REST XML API defined resources to define these additional resources.

Type	Example REST API URI	Description
fps:Service	http://focalpointserver/fp/resources/	Service document
fps:Workspace	http://focalpointserver/fp/resources/workspaces/3	Workspace
foaf:Person	http://focalpointserver/fp/resources/users/13	Global user
fps:Member	http://focalpointserver/fp/resources/workspaces/3/members/15	Membership entry
fps:Module	http://focalpointserver/fp/resources/workspaces/3/modules/1	Module or Element collection
fps:Module	http://focalpointserver/fp/resources/workspaces/3/modules/1?view=123	Element collection of a View
fps:View	http://focalpointserver/fp/resources/workspaces/2/modules/2/views/759	View
fps:Element (natural)	http://focalpointserver/fp/resources/workspaces/3/modules/3/elements/3	Element, natural graph (default)
fps:Element (generic)	http://focalpointserver/fp/resources/workspaces/3/modules/3/elements/3?format=genericrdf	Element, generic graph
fps:Attribute	http://focalpointserver/fp/resources/workspaces/3/modules/3/e	Attribute

Service document (fps:Service)

The service document is the starting point of the REST RDF API. The resources listed can be referenced to find subsequent resources. The resource URI for the service document is <http://focalpointserver/context/resources/>. For example, <http://focalpointserver/fp/resources/>.

The service document lists the high level resources (workspace, and user module) that the current user has access to. Only users with global administrator rights can access the list of users. Referencing the workspace resource lists the modules, views, member resources of the workspace.

```
<http://focalpointserver/fp/resources/>
  a      fps:Service ;
  fps:memberModule <http://focalpointserver/fp/resources/users> ;
  fps:memberWorkspace <http://focalpointserver/fp/resources/workspaces/2> ;
  fps:rootService <http://focalpointserver/fp/resources/rootservices> ;
  dcterms:description "This Service documents lists the top level resources for
IBM Rational Rational Focal Point REST API" ;
  dcterms:title "IBM Rational Focal Point REST API Services Document" .
```

Rational Focal Point primary data types

Usage of literals

These are the standard XML data types used for basic Rational Focal Point data types.

Rational Focal Point Data Types **Mapped Data Types**

Boolean (Check Box, Lock)	xsd:boolean
Date	xsd:date
Integer	xsd:integer
Float	xsd:decimal
Text (plain)	plain text
Text (rich)	rdf:XMLLiteral
Time (created, last modified)	xsd:dateTime

For information on how rest of the Rational Focal Point data types are represented in RDF, see <https://jazz.net/wiki/bin/view/Main/FPDatatypes>.

REST Operations

How to use make various HTTP method calls on the REST RDF API defined resource is explained in this section. For all of the REST operations, the HTTP Accept header value is appropriately set to any one of RDF formats as mentioned in the "**Content Negotiation**" section.

Parameters

These are the supported parameters that can used when making REST RDF API calls.

- View selection
- Modified since
- Resource paging
- Selective properties
- Format

View selection

Parameter name	view
Parameter value	view_id as integer
Can be used with	Module and Element resource
Applicable	HTTP GET, PUT and POST
Description	Lists only the elements and attributes of the given view.
Example	http://focalpointserver/fp/resources/workspaces/2/modules/1?view=39

Modified Since

Parameter name	modifiedSince
Parameter value	time as xsd:date or xsd:dateTime
Can be used with	Module (Element collection) resource
Applicable	HTTP GET
Description	Lists only the elements that are modified later to entered time value
Example	http://focalpointserver/fp/resources/workspaces/2/modules/1.rdf?modifiedSince=2012-06-11T09:56:48.128Z

Resource Paging

Sometimes, an element collection is too large to be reasonably transmitted in a single HTTP message. In such cases, resource paging can be used to split the response into several pages. The page size is configurable thru Rational Focal Point administrator configuration UI.

Parameter name	oslc.paging
Parameter value	boolean
Can be used with	Module (Element collection) resource
Applicable	HTTP GET

Description	Activates resource paging, so that the result element collection is paginated
Example	http://focalpointserver/fp/resources/workspaces/2/modules/1.rdf?oslc.paging=true

By default, oslc.paging is turned off.

Parameter name	pageno
Parameter value	integer
Can be used with	Module (Element collection) resource
Applicable	HTTP GET
Description	If paging is activated, any valid page can be request by specifying an integer value.
Example	http://focalpointserver/fp/resources/workspaces/2/modules/1.rdf?oslc.paging=true&pageno=1

By default, pageno is set to 0.

Parameter name	oslc.pageSize
Parameter value	integer
Can be used with	Module (Element collection) resource
Applicable	HTTP GET
Description	Number of elements per page when paging is turned on.
Example	http://focalpointserver/fp/resources/workspaces/2/modules/1.rdf?oslc.paging=true&pageno=1&oslc.pageSize=100
Default	You can change the default page size. From the Rational Focal Point Admin configuration page, click Application->Data Access ->REST Page size to specify the value.

When paging is activated, the following resource is included in the response and it gives details such as total elements and URL for the next page.

For details, see <http://open-services.net/resources/tutorials/oslc-primer/resource-paging/> for more details.

```
<http://focalpointserver/fp/resources/workspaces/2/modules/1?
oslc.paging=true&pageno=0&oslc.pageSize=100>
  a oslc:ResponseInfo ;
  oslc:nextPage <http://focalpointserver/fp/resources/workspaces/2/modules/1?
oslc.paging=true&pageno=1&oslc.pageSize=100> ;
  oslc:totalCount 118 .
```

Selective properties

Sometimes, only a subset of attributes is required when querying for element or element collection. The selective properties parameter can be used to specify a comma-delimited set of attribute names, only specified attribute values are returned in the result.

Parameter name	oslc.properties
Parameter value	list of comma separated attribute names
Can be used with	Module (element collection) or Element resources
Applicable	HTTP GET

Description	Specifies a subset of attributes that are the only attributes to be returned
Example	http://focalpointserver/fp/resources/workspaces/2/modules/1.rdf?oslc.properties=dterms:title , fps:id, :version

Format

Element has two graphs, natural and generic. If the parameter is not used, the default graph type is natural.

Parameter name	format
Parameter value	"genericrdf"
Can be used with	Element and Element Collection resources only
Applicable	HTTP GET
Description	to get generic graph of elements
Example	http://focalpointserver/fp/resources/workspaces/2/modules/1/elements/1.rdf?format=genericrdf
Default	"naturalrdf"

HTTP GET

The HTTP GET method is supported for all Rational Focal Point REST RDF API defined resources. To request for appropriate resource format, see the Content negotiation section of this page. Administrative privilege is need to access an element with a view parameter.

URI:	http://focalpointserver/fp/resources/workspaces/2/modules/1/elements/53.ttl?view=39&oslc.properties=dterms:title
HTTP Accept Header:	application/x-turtle
or URL Extension:	.ttl

Result:

```
<http://focalpointserver/fp/resources/workspaces/2/modules/1/elements/53>
  a      workspace_2:Business_Need ;
  fps:genericLink
<http://focalpointserver/fp/resources/workspaces/2/modules/1/elements/53?
format=genericrdf> ;
  fps:inModule <http://focalpointserver/fp/resources/workspaces/2/modules/1> ;
  dterms:identifier "c414ea18-25ea-4bc1-8cc6-830a074a01d5" ;
  dterms:title "Enable touch screen"^^rdf:XMLLiteral .
```

HTTP PUT

The HTTP PUT method is supported only for the Element resource. The Element RDF/XML document received from an HTTP GET call can be used to update attributes by using a PUT call.

URI:	http://focalpointserver/fp/resources/workspaces/2/modules/1/elements/53.rdf
HTTP Accept Header:	application/xml
or URL Extension:	.xml
Request body	<pre><rdf:RDF xmlns:dcterms="http://purl.org/dc/terms/" xmlns:fps="http://jazz.net/ns/psm/focalpoint#" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:fpdt="http://jazz.net/ns/psm/focalpoint/datatypes#" xmlns:xsd="http://www.w3.org/2001/XMLSchema#" xmlns:module_2_1="http://focalpointserver/fp/resources/workspaces/2/ modules/1/ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:oslc="http://open-services.net/ns/core#" xmlns:workspace_2="http://focalpointserver/fp/resources/workspaces/2 /ns#" xmlns:oslc_rm="http://open-services.net/ns/rm#" > <rdf:Description rdf:about="http://focalpointserver/fp/resources/workspaces/2/modules/1/e lements/53"> <dcterms:title rdf:parseType="Literal">New Title value</dcterms:title> <fps:genericLink rdf:resource="http://focalpointserver/fp/resources/workspaces/2/modules/ 1/elements/53?format=genericrdf"/> <fps:inModule rdf:resource="http://focalpointserver/fp/resources/workspaces/2/modules/ 1"/> <dcterms:identifier>c414ea18-25ea-4bc1-8cc6- 830a074a01d5</dcterms:identifier> <rdf:type rdf:resource="http://focalpointserver/fp/resources/workspaces/2/ns#Busin ess_Need"/> </rdf:Description> </rdf:RDF></pre>

Result:

After a successful PUT call, the title attribute of element 53 is changed to 'New Title value'. Though the example shows updating of only one attribute, it is possible to update more than one attribute in a single PUT call.

HTTP POST

The HTTP POST method is supported only for the Module resource for creating new Elements in the Module. The Element RDF/XML document received from an HTTP GET call can be used to create one or more elements resource using a single PUT call.

URI:	http://focalpointserver/fp/resources/workspaces/2/modules/1/elements.rdf
HTTP Accept Header:	application/xml
or URL Extension:	.xml
Request body	<pre><rdf:RDF xmlns:dcterms="http://purl.org/dc/terms/" xmlns:fps="http://jazz.net/ns/psm/focalpoint#" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:fpdt="http://jazz.net/ns/psm/focalpoint/datatypes#" xmlns:xsd="http://www.w3.org/2001/XMLSchema#" xmlns:module_2_1="http://focalpointserver/fp/resources/workspaces/2/ modules/1/ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:oslc="http://open-services.net/ns/core#" xmlns:workspace_2="http://focalpointserver/fp/resources/workspaces/2 /ns#" xmlns:oslc_rm="http://open-services.net/ns/rm#" > <rdf:Description rdf:about="http://focalpointserver/fp/resources/workspaces/2/modules/1/e lements/53"> <dcterms:title rdf:parseType="Literal">New Title value</dcterms:title> <fps:genericLink rdf:resource="http://focalpointserver/fp/resources/workspaces/2/modules/ 1/elements/53?format=genericrdf"/> <fps:inModule rdf:resource="http://focalpointserver/fp/resources/workspaces/2/modules/ 1"/> <dcterms:identifier>c414ea18-25ea-4bc1-8cc6- 830a074a01d5</dcterms:identifier> <rdf:type rdf:resource="http://focalpointserver/fp/resources/workspaces/2/ns#Busin ess_Need"/> </rdf:Description> </rdf:RDF></pre>

Result:

HTTP Response <http://focalpointserver/fp/resources/workspaces/2/modules/1/elements/163>

After a successful PUT call, a new element is created in module 1 and updated with the attributes values specified in the input RDF/XML document. The URI of the newly created element is returned as response.

More than one elements can be created in a single POST call by including more than one element

resource in the input RDF/XML to the HTTP request. Make sure that the URI of each Element resource has a different element ID.

HTTP DELETE

The HTTP DELETE method is supported only for the Element resource.

URI:	http://focalpointserver/fp/resources/workspaces/2/modules/1/elements/155.rdf
HTTP Accept Header:	application/xml
or URL Extension:	.xml

Result:

After a successful DELETE call, the element 155 is deleted.

Notices

Programming interfaces: Intended programming interfaces allow the customer to write programs to obtain the services of Rational Focal Point.

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