

HP Helion Codar

Software Version: 1.00

API Quick Start

Document Release Date: December 2014
Software Release Date: December 2014



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Chapter 1: Introduction

Welcome to the HP Helion Codar API Quick Start.

HP Helion Codar

HP Helion Codar provides a model driven approach to DevOps. It facilitates continuous delivery where every change to a system is releasable and every code change can be deployed in production. HP Helion Codar enables automation of continuous delivery in that every code change triggers a build, which is deployed, automated unit tests are executed, and the application can be automatically deployed to an environment based on policies. Elements of the core HP Helion Codar value proposition include the following:

- Modeling the application and infrastructure to deliver infrastructure-as-code (IaaS) for fulfillment.
- Managing applications, versions, and packages across different lifecycle stages.
- Policy management for promotion of application packages through the lifecycle stages on different environments consistently in a repeatable manner.

For more information about HP Helion Codar, see the *HP Helion Codar Concepts and Use Case* white paper.

HP Helion Codar APIs

HP Helion Codar provides a REST (REpresentational State Transfer) Application Programming Interface (API) that allows you to interact programmatically with HP Helion Codar functionality.

This API Quick Start is designed to help you learn the API by introducing the HP Helion Codar capabilities that can be accessed programmatically, explaining how to access them, and walking through several examples. This guide assumes that you:

1. Understand how to use a RESTful API. See http://en.wikipedia.org/wiki/Representational_state_transfer for general REST information.
2. Have installed and set up HP Helion Codar following the instructions in the *HP Helion Codar Configuration and Integration* white paper.

Chapter 2: HP Helion Codar API documentation overview

You can exercise all of the HP Helion Codar RESTful API calls programmatically and from an HTTP client. You can find more information on HTTP clients in "[Retrieving information from HP Helion Codar using RESTful calls](#)" on page 35. HP Helion Codar also includes a framework for describing, producing, consuming and exercising these RESTful services. In addition to providing reference API documentation, this content provides an interactive environment where you can exercise API calls and view responses from your server.

The following is an example of content for an API call:

app-package : The API to Manage Packages		Show/Hide	List Operations	Expand Operations	Raw
POST	/codar/app-package/{packageId}/promote			Promote a package to the next lifecycle stage	
PUT	/codar/app-package/{packageId}/properties			Update Package Properties	
GET	/codar/app-package/{packageId}/properties			Get component properties	
POST	/codar/app-package/createWithProperties			Create Package with Properties	
GET	/codar/app-package/states			List All Package States	
GET	/codar/app-package/{applicationPackageId}			Get Application Package Details	
GET	/codar/app-package/composition/{topologyId}/candidateTopology			List the candidate topologies that can fulfill the given partial topology	
GET	/codar/app-package/list			List All Application Packages	
POST	/codar/app-package/{packageId}/reject			Reject a package.	
PUT	/codar/app-package/{packageId}			Update Package Name and Description	
DELETE	/codar/app-package/{packageId}			Delete the Application Package	
POST	/codar/app-package/			Create Package	
POST	/codar/app-package/{packageId}/deploy			Deploy a package. The package can belong to either a partial or complete design. If its a partial design user can optionally specify an infrastructureDesign possessing the required infrastructure capability	

You can click on any method listed to get detailed content for that call, and an interactive "Try it out!" feature. The detailed content provides developers quick and easy access the following for each API call:

- Syntax
- Method (operation)
- Parameter descriptions
- Model and schema information
- Interactive "Try it out!" dialogs that let you submit calls to your server, see the results, and then understand how you need to construct REST URLs and any payloads.

Clicking on the first POST method in the above example displays the following:

app-package : The API to Manage Packages Show/Hide | List Operations | Expand Operations | Raw

POST /codar/app-package/{packageId}/promote Promote a package to the next lifecycle stage

Response Class

Model | Model Schema

```
Map {
  empty (boolean, optional)
}
```

Response Content Type: application/json

Parameters

Parameter	Value	Description	Parameter Type	Data Type
packageId	(required)	The packageId of the package which needs to be promoted.	path	string

Error Status Codes

HTTP Status Code	Reason
400	Bad request
401	Authorization failure
404	Not found
500	Internal server error

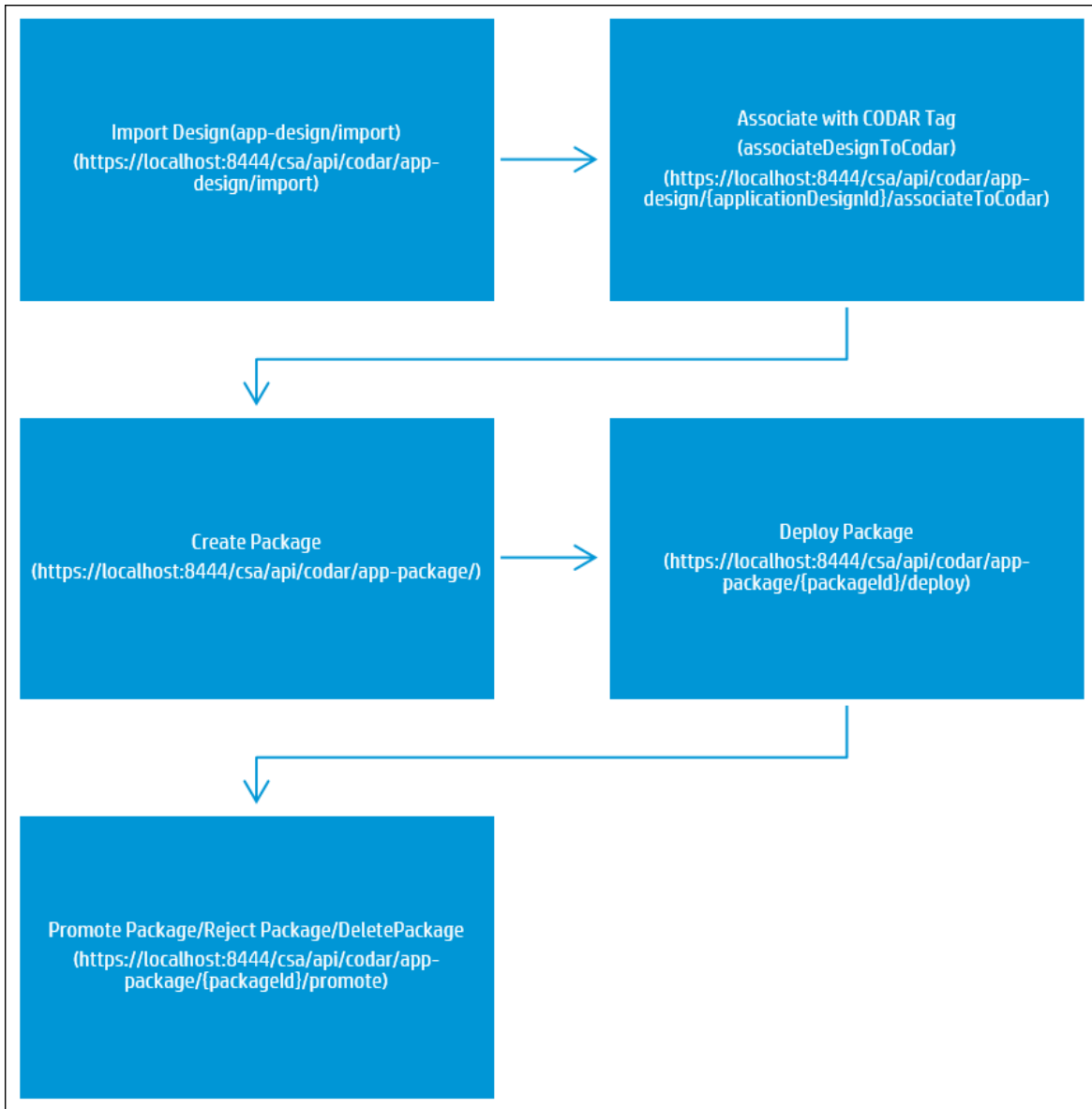
PUT /codar/app-package/{packageId}/properties Update Package Properties

GET /codar/app-package/{packageId}/properties Get component properties

See ["Retrieving information from HP Helion Codar using RESTful calls"](#) on page 35 for more information on executing an API call from this interactive content.

Flow of API calls

The following flow describes the steps for using HP Helion Codar APIs:



You can start with the Import Design API. The Import Design API creates an application design by providing the application design in JSON format as input. If the design already exists, then an error is returned.

Next, you can associate the Codar Application tag on created designs. This associates a design to the HP Helion Codar pipeline management process by tagging the application design with the Codar Application tag.

Then you can use the Create Package API for the application design. The package is only created if the HP Helion Codar license is present and the design is associated to the Codar Application tag.

Once the package is created, you can use the Deploy Package API. You can also promote or reject packages using the APIs.

Chapter 3: API calls

The following public API calls provide access to HP Helion Codar data. These calls are documented and can be exercised through a browser at: **https://<host>:<port>/csa/apidocs.jsp**, substituting the host and port information appropriate for your environment. API calls can also be exercised programmatically or through an HTTP client. See "[Retrieving information from HP Helion Codar using RESTful calls](#)" on page 35 for more information on how to exercise API calls.

Application design APIs

URI	Method	See also
/csa/api/codar/app-design/list	GET	"List application designs" on the next page
/csa/api/codar/app-design/{applicationDesignId}	GET	"Export an application design" on the next page
/csa/api/codar/app-design/import	POST	"Import an application design" on page 11
/csa/api/codar/app-design/importNew	POST	"Import a new application design" on page 13
/csa/api/codar/app-design/{applicationDesignId}/associateToCodar	POST	"Associate a design to HP Helion Codar" on page 14
/csa/api/codar/app-design/{applicationDesignId}	PUT	"Update an application design" on page 15

/csa/api/codar/app-design/{applicationDesignId}	DELETE	"Delete an application design" on page 16
---	--------	---

List application designs

Retrieve a list of application designs.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-design/list	GET	None	200 - successful 400 - bad request 401 - not authorized 500 - internal server error

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-design/list
```

The following JSON was returned:

```
{
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topologys",
  "@self" : "/csa/api/topology-model/topology",
  "@actual-count" : 1,
  "@start-index" : 0,
  "@total-count" : 1,
  "members" : [ {
    "@self" : "/csa/api/topology-model/topology/22b4706c-0849-4c35-b552-4e42c90ae5e4",
    "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
    "groupId" : "com.hp.csa",
    "artifactId" : "81072ea2-2a7f-4fd7-b582-5e47b97fd0b9",
    "version" : "1.0.0"
    "displayName" : "Petclinic Application for AWS"
  } ]
}
```

Export an application design

Export an application design by providing the application design ID. The application design is returned in JSON format.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-design/{applicationDesignId}	GET	Design ID	200 - successful 400 - bad request 401 -not authorized 404 - not found 500 - internal server error

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-design/e57673db-0ee7-4061-8f9e-ffdcabc07b4c
```

The following JSON was returned:

```
{
  "@self" : "/csa/api/topology-model/topology/e57673db-0ee7-4061-8f9e-ffdcabc07b4c",
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca40",
  "version" : "1.0.0",
  "displayName" : "Test_Design-1",
  "description" : "my design",
  "resources" : [ {
    "id" : "VcenterServer0001",
    "name" : "vCenter Server 1",
    ... (For complete output, see "Export an application design example" on page 41.)
  }
}
```

Import an application design

Create an application design by providing the application design in JSON format as input. If the design already exists, then an error is returned.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-design/import	POST	JSON	201 - successful 400 - bad request 401 - authorization failed 500 - internal server error

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-design/import
```

The following JSON was sent:

```
{
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca43",
  "version" : "1.0.0",
  "displayName" : "Test_Design-2",
  "description" : "my design 02",
  "resources" : [ {
    "id" : "VcenterServer0001",
    "name" : "vCenter Server 1",
    "component" : {
      "@self" : "/csa/api/topology-model/component-type/b83f4e21-d8a9-4ff3-a76e-3a69775d1d86"
    }
  },
  ... (For complete output, see "Import an application design example" on page 47.)
}
```

The following JSON was returned:

```
{
  "@self" : "/csa/api/topology-model/topology/e57673db-0ee7-4061-8f9e-ffdcabc07b4c",
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca40",
  "version" : "1.0.0",
  "displayName" : "Test_Design-1",
  "description" : "my design",
  "resources" : [ {
    "id" : "VcenterServer0001",
    "name" : "vCenter Server 1",
    "component" : {
      "@self" : "/csa/api/topology-model/component-type/b83f4e21-d8a9-4ff3-a76e-3a69775d1d86"
    }
  },
  ... (For complete output, see "Import an application design example" on page 47.)
}
```

Import a new application design

Create a new application design if it does not exist. If the design exists, no error is displayed and the original design is returned.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-design/importNew	POST	JSON	201 - successful 400 - bad request 401 - authorization failed 500 - internal server error

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-design/importNew
```

The following JSON was sent:

```
{
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca43",
  "version" : "1.0.1",
  "displayName" : "Test_Design-2",
  "description" : "my design 02",
  ... (The remaining output is the same as "Import an application design example" on page 47.)
}
```

The following JSON was returned:

```
{
  "@self" : "/csa/api/topology-model/topology/e57673db-0ee7-4061-8f9e-ffdcabc07b4c",
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca40",
  "version" : "1.0.1",
  "displayName" : "Test_Design-1",
  "description" : "my design",
  ... (The remaining output is the same as "Import an application design example" on page 47)
}
```

Associate a design to HP Helion Codar

Associate an application design to the HP Helion Codar pipeline management process by tagging the application design with the Codar Application tag.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-design/{applicationDesignId}/associateToCodar	POST	JSON	200 - successful 400 - bad request 401 - authorization failed 404 - Not found 500 - internal server error

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-design/ae058bcc-4ad3-4e9a-8eb8-3ee98eef8d8f/associateToCodar
```

The following JSON was returned:

```
{
  "associatedTagId": "8a818cf8ara15bc772b0145cb6efjhg99",
  "designId": "ae058bcc-4ad3-4e9a-8eb8-3ee98eef8d8f",
  "designName": "MyDesign",
  "associatedTagName": "Codar Application"
}
```

Dissociate a design from HP Helion Codar

Dissociate an application design from the HP Helion Codar pipeline management process by removing the Codar Application tag from the application design.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-design/{applicationDesignId}/dissociateFromCodarApplication	POST	JSON	200 - successful 400 - bad request 404 - Not found

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-design/440af252-741b-4f65-addf-8239f6feb8dd/dissociateFromCodarApplication
```

The following JSON was returned:

```
{
  "dissociatedTagId": "8a8185bb47b46bbe0147b4c4b8c00006",
  "designId": "267fa378-7234-4e8d-b96d-97f62a448cbe",
  "designName": "NewD",
  "dissociatedTagName": "Codar Application"
}
```

Update an application design

Update an application design by providing an application design ID and an application design in JSON format.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-design/{applicationDesignId}	PUT	Design ID	200 - successful 400 - bad request 401 - authorization failed 404 - not found 500 - internal server error

Examples

The following URL was sent:

```
https://localhost:8444/csa/apidocs.jsp/codar/app-design/e57673db-0ee7-4061-8f9e-ffdcabc07b4c
```

The following JSON was sent:

```
{
  "@self" : "/csa/api/topology-model/topology/e57673db-0ee7-4061-8f9e-ffdcabc07b4c",
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca40",
  "version" : "1.0.0",
  "displayName" : "Test_Design-1",
}
```

```

    "description" : "my design updated",
    ... (The remaining output is the same as "Import an application design example" on page 47 with
    modified values.)
  }

```

The following JSON was returned:

```

{
  "@self" : "/csa/api/topology-model/topology/e57673db-0ee7-4061-8f9e-
ffdcabc07b4c",
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca40",
  "version" : "1.0.2",
  "displayName" : "Test_Design-1",
  "description" : "my design updated",
  ... (The remaining output is the same as "Import an application design example" on page 47.)
}

```

Delete an application design

Delete an application design. Any package that is associated with this design is also deleted.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-design/{applicationDesignId}	DELETE	Design ID	200 - successful 204 - no content 400 - bad request 401 - authorization failed 404 - not found 500 - internal server error

Examples

The following URL was sent:

https://localhost:8444/csa/api/codar/app-design/e57673db-0ee7-4061-8f9e-ffdcabc07b4c

Artifact APIs

URI	Method	See also
-----	--------	----------

/artifact/<organization_id>/group	GET	"List active groups associated with an organization" below
/artifact/<organization_id>/group	POST	"Add groups to an organization" on the next page
/artifact/<organization_id>/group/<grou_id>	PUT	"Update group display name, distinguished name" on page 20
/artifact/<organization_id>/group/<group_id>	DELETE	"Delete or disassociate group from an organization" on page 21

List active groups associated with an organization

List active groups associated with an organization

URI	Method	Parameters	Returns
http://[host]:[port]/csa/rest/artifact/<organization_id>/group	GET	userIdentifier=<user_id> Required; the user ID you want to use as credentials for this API call.	200 - successful 401 - not authorized 404 - object not found 500 - server exception

Example

The following URL was sent:

```
https://<host>:<port>/csa/rest/artifact/8a81818f3d02fb7e013d0308891d0003/group?userIdentifier=90d96588360da0c701360da0f1d5f483
```

The following XML was returned:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GroupList>
  <count>1</count>
  <limit>1</limit>
  <group>
    <id>8a81818f3d02fb7e013d030af854000f</id>
    <isCriticalSystemObject>>false</isCriticalSystemObject><isCriticalSystemObject>false</isCriticalSystemObject>
    <name>sc_February 22, 2013 5:54:43 PM UTC</name>
    <displayName>CODAR_APPLICATION_DEVELOPER</displayName>
    <state>...</state>
    <artifactType>...</artifactType>
    <disabled>>false</disabled>
    <distinguishedName>
```

```

        cn=CodarApplicationDeveloper,ou=CodarApplicationDeveloperGroup,ou=CodarGro
ups
    </distinguishedName>
    <role>
        ...
    </role>
</group>
</GroupList>

```

Add groups to an organization

Add groups to an organization.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/rest/artifact/<organization_id>/group	POST	userIdentifier=<user_id> Required; the user ID you want to use as credentials for this API call.	200 - successful 401 - not authorized 404 - object not found 500 - internal server error

Note that the role must be specified for each group in the request body. Valid roles are as follows:

- CODAR_APPLICATION_ARCHITECT
- CODAR_APPLICATION_DEVELOPER
- CODAR_APPLICATION_QA
- CODAR_APPLICATION_RELEASE_MANAGER

Example

The following URL was sent:

https://<host>:<port>/csa/rest/artifact/8a81818f3d1421e7013d1423635a0003/group?userIdentifier=90d96588360da0c701360da0f1d5f483

The following XML was sent:

```

<GroupList>
  <group>
    <displayName>My-Group-Name</displayName>
    <distinguishedName>
      cn=TestConsumer,ou=CodarApplicationDeveloper,ou=CodarGroups
    </distinguishedName>
    <role>

```

```

    <name>CODAR_APPLICATION_DEVELOPER</name>
  </role>
</group>
<group>
  <displayName>Another-Group-Name</displayName>
  <distinguishedName>
cn=TestConsumer2,ou=CodarApplicationDeveloper,ou=CodarGroups
  </distinguishedName>
<role>
<name>CODAR_APPLICATION_DEVELOPER</name>
</role>
</group>
</GroupList>

```

The following XML was returned:

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GroupList>
  <count>2</count>
  <limit>2</limit>
  <group>
    <isCriticalSystemObject>>false</isCriticalSystemObject>
    <name>My-Group-Name</name>
    <displayName>My-Group-Name</displayName>
    <disabled>>false</disabled>
    <distinguishedName>
      cn=TestConsumer,ou=CodarApplicationDeveloper,ou=CodarGroups
    </distinguishedName>
    <role>
      <isCriticalSystemObject>>false</isCriticalSystemObject>
      <name>CODAR_APPLICATION_DEVELOPER</name>
      <disabled>>false</disabled>
    </role>
  </group>
  <group>
    <isCriticalSystemObject>>false</isCriticalSystemObject>
    <name>Another-Group-Name</name>
    <displayName>Another-Group-Name</displayName>
    <disabled>>false</disabled>
    <distinguishedName>
      cn=TestConsumer2,ou=CodarApplicationDeveloper,ou=CodarGroups
    </distinguishedName>
    <role>
      <isCriticalSystemObject>>false</isCriticalSystemObject>
      <name>CODAR_APPLICATION_DEVELOPER</name>
      <disabled>>false</disabled>
    </role>
  </group>
</GroupList>

```

Update group display name, distinguished name

Updates the group display name and/or distinguished name for the specified organization.

URI	Method	Parameters	Returns
http://[host]:[port] /csa/rest/artifact/<organization_ id>/group/<group_id>	PUT	userIdentifier=<user_id> Required; the user ID you want to use as credentials for this API call.	200 - successful 401 - not authorized 404 - object not found 505 - server exception

Example

The following URL was sent:

```
https://<host>:<port>/csa/rest/artifact/8a81818f3d02fb7e013d0308891d0003group/8a81818f3d1437e2013d1795d41107ea?userIdentifier=90d96588360da0c701360da0f1d5f483
```

The following XML was sent:

```
<GroupList>
  <group>
    <displayName>My-New-Group-Name</displayName>
    <distinguishedName>
      cn=TestConsumer,ou=CodarApplicationDeveloper,ou=CodarGroups
    </distinguishedName>
  </group>
</GroupList>
```

The following XML was returned:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Group>
  <id>8a81818f3d1437e2013d1795d41107ea</id>
  <isCriticalSystemObject>>false</isCriticalSystemObject>
  <name>sc_February 22, 2013 5:54:43 PM UTC</name>
  <displayName>My-New-Group-Name</displayName>
  <state>
    <id>90d96588360da0c701360da0ef470038</id>
    <isCriticalSystemObject>>false</isCriticalSystemObject>
    <name>ACTIVE</name>
    <disabled>>false</disabled>
  </state>
```

```

<artifactType>
  <id>90d96588360da0c701360da0eeff002b</id>
  <isCriticalSystemObject>>false</isCriticalSystemObject>
  <name>GROUP</name>
  <disabled>>false</disabled>
</artifactType>
<disabled>>false</disabled>
<distinguishedName>
  cn=TestConsumer,ou=CodarApplicationDeveloper,ou=CodarGroups
</distinguishedName>
</Group>

```

Delete or disassociate group from an organization

Deletes a group or to disassociates it from an organization. If no organization is associated with this group, the group will be deleted. Otherwise, the group will be disassociated from the specified organization.

URI	Method	Parameters	Returns
http://[host]:[port] /csa/rest/artifact/<organization_id>/group/<group_id>	DELETE	userIdentifier=<user_id> Required; the user ID you want to use as credentials for this API call.	200 - successful 401 - not authorized 404 - object not found 500 - server exception

Example

The following URL was sent:

```
https://<host>:<port>/csa/rest/artifact/8a81818f3d1421e7013d1423635a0003/group/8a81818f3d1437e2013d1795d41107ea?userIdentifier=90d96588360da0c701360da0f1d5f483
```

The following XML was returned:

```

<messageList>
  <messages>Removed role association for My-New-Group-Name</messages>
</messageList>

```

Package APIs

URI	Method	See also
/csa/api/codar/app-package	GET	"List packages" below
/csa/api/codar/app-package/{packageId}	GET	"Get package details" on the next page
/csa/api/codar/app-package/states	GET	"Get package states" on page 24
/csa/api/codar/app-package/properties	GET	"Get package properties" on page 25
/csa/api/codar/app-package/composition/{topologyId}/candidateTopology	GET	"List infrastructure designs" on page 25
/csa/api/codar/app-package	POST	"Create a package" on page 26
/csa/api/codar/app-package/createWithProperties	POST	"Create package with properties" on page 27
/csa/api/codar/app-package/{packageId}/promote	POST	"Promote a package" on page 28
/csa/api/codar/app-package/{packageId}/reject	POST	"Reject a package" on page 29
/csa/api/codar/app-package/{packageId}/deploy	POST	"Deploy a package" on page 29
/csa/api/codar/app-package/{packageId}	PUT	"Update package name and description" on page 30
/csa/api/codar/app-package/{packageId}/properties	PUT	"Update package component properties" on page 31
/csa/api/codar/app-package/{packageId}	DELETE	"Delete package" on page 32

List packages

Retrieve a list of all packages for an application design.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/list	GET	None	200 - successful 400 - bad request 401 - authorization failed 404 - not found 500 - internal server error

Examples

<https://localhost:8444/csa/api/codar/app-package/list>

The following JSON was returned:

```
{
  "@total_results": 4,
  "@self": "/csa/api/package/",
  "@type": "urn:x-hp:2012:software:cloud:data_model:package",
  "members": [
    {
      "@type": "urn:x-hp:2012:software:cloud:data_model:package",
      "name": "DEVELOPMENT",
      "color": "#D1AF89",
      "image": "images/applications/dev.png",
      ... (For complete output, see "List packages example" on page 59.)
    }
  ]
}
```

Get package details

Retrieves package details and topology and deployed instance details.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/{packageId}	GET	Package ID	200 - successful 400 - bad request 404 - not found

Examples

<https://localhost:8444/csa/api/codar/app-package/5975ad69-0519-484b-bde3-30b936dd31b>

The following JSON was returned:

```
{
  "@self": "/csa/api/package/455274d8-80dc-4bff-a6cd-4d15408bffe0",
  "@type": "urn:x-hp:2012:software:cloud:data_model:package",
  "stage": "DEVELOPMENT",
  "state": "ACTIVE",
  "name": "Testmypack",
  "lastUpdated": "2014-08-22T10:55:28.059Z",
  "description": null,
  "topologyData": {
    "name": "TestMy App",
    "iconurl": "/csa/api/blobstore/Service_Design.png?tag=library",
  }
}
```

```

    "version": "1.0.0"
  },
  "instanceData": [
    {
      "createdOn": "2014-08-22T10:55:06.416Z",
      "id": "6b5b532d-a498-4381-bcd2-4fbbe7e040a7",
      "status": "FAILED",
      "displayName": "Testmypack:Test"
    },
    {
      "createdOn": "2014-08-22T10:55:06.416Z",
      "id": "afa50882-b72a-4fcc-8127-d51dc4f01e11",
      "status": "FAILED",
      "displayName": "Testmypack:Test"
    }
  ]
}

```

Get package states

Retrieves package states.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/states	GET	None	200 - successful 400 - bad request 401 - not authorized 404 - not found 500 - Internal server error

Examples

The following URL was sent:

https://localhost:8444/csa/api/codar/app-package/states

The following JSON was returned:

```

{
  "@total_results": 2,
  "@self": "/csa/api/package/states",
  "@type": "urn:x-hp:2012:software:cloud:data_model:packageState",
  "members": [
    {
      "name": "ACTIVE"
    },
    {
      "name": "REJECTED"
    }
  ]
}

```



```
    ]
  }
```

Get package properties

Retrieve the properties that are parametrized in the package for each component of the application design.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/{packageId}/properties	GET	Package ID	200 - successful 400 - bad request 404 - not found

Examples

The following URL was sent:

```
https://10.1.13.216:8444/csa/api/codar/app-package/70d8f028-5cfc-48f6-8799-78623eef4f7/properties
```

The following Parameter was sent:

```
packageId
```

The following JSON was returned:

```
{ "members": [
  {
    "icon": "pluginResources/topology/icons/SERVER.svg",
    "@self": "/csa/api/package/component/VcenterServerType__VERSION__04.20.0000__GROUPID__com.hp.csa.type0001",
    "description": "vCenter Server",
    "@type": "urn:x-hp:2012:software:cloud:data_model:package",
    "name": "vCenter Server",
    "provider": "VMWARE_VCENTER",
    "properties": [
      ... (For complete output, see "Get package properties example" on page 62.)
    ]
  }
]
```

List infrastructure designs

Retrieve the infrastructure designs for a given partial design (Topology Composition) of the application design.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/composition/{topologyId}/candidateTopology	GET	Topology ID	200 - successful 400 - bad request 404 - not found

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-package/composition/902442d3-700c-4b57-8abb-8d1a52ae3f3d/candidateTopology
```

The following JSON was sent:

```
{
  "count": 5,
  "members" : [ {
    "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
    "@self" : "/csa/api/topology-model/topology/7843ee06-8a5e-425e-ac0d-424e3a297d52",
    "id" : "7843ee06-8a5e-425e-ac0d-424e3a297d52",

    "iconUrl" : "/csa/designer/img/noimage-lightgray.svg",
    "displayName" : "Infra Design",
    "description" : "dfs",
    ... (For complete output, see "List infrastructure designs example" on page 60.)
  }
}
```

Create a package

Create a new package for the given application design. The package will only be created if the HP Helion Codar license is present and the design is associated to the Codar Application tag.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package	POST	JSON body	201 - successful 400 - bad request 404 - not found

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-package/
```

The following JSON was sent:

```
{ "name": "HelloWorld Package 1", "description": "This is my first Package", "applicationDesignId" : "30d4458b-e54c-4e91-a144-026d09289ae0" }
```

The following JSON was returned:

```
{
  "@self": "/csa/api/package/09ead497-82d1-4045-8b17-73122c3cc6be",
  "@type": "urn:x-hp:2012:software:cloud:data_model:package",
  "lifecycleStage": "DEVELOPMENT",
  "packageState": "ACTIVE",
  "applicationDesignId": "30d4458b-e54c-4e91-a144-026d09289ae0",
  "name": "HelloWorld Package 1",
  "description": "This is my first Package" }
```

Create package with properties

Create a new package for the given application design with properties. The package will only be created if the HP Helion Codar license is present and the design is associated to the Codar Application tag. Only the required properties of the components in the application can be parameterized in the package.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/createWithProperties	POST	JSON body	200 - successful 400 - bad request 401 - authorization failed 500 - internal server error

Examples

The following URL was sent:

https://localhost:8444/csa/api/codar/app-package/createWithProperties

The following JSON was sent:

```
{
  "designId": "02e8c0cc-1dd9-43c7-941e-1252b6619cee",
  "packageName": "Package1",
  "packageDescription": "description",
  "members": [
    {
      "icon": "pluginResources/topology/icons/SERVER.svg",
      "@self": "/csa/api/package/component/VcenterServerType__
```

```

VERSION__04.20.0000__GROUPID__com.hp.csa.type0001",
  "description": "vCenter Server",
  "@type": "urn:x-hp:2012:software:cloud:data_model:package",
  "name": "vCenter Server",
  "provider": "VMWARE_VCENTER",
  "displayName": "vCenter Server",
  "properties" : [
    {
      "name" : "vmTemplateReference",
      "value" : "UbuntuTemp"
    },
    {
      "name" : "vmNamePrefix",
      "value" : "Test"
    }
  ]
},
"displayName": "vCenter Server"
]
}

```

The following JSON was returned:

```

{
  packageId": "bc384c91-6345-4fe1-886f-e3c973280d09"
}

```

Promote a package

Promote a package to the next lifecycle stage. The out of the box lifecycle stages are Development, Testing, Staging and Production. Only one package can be promoted to production.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/{packageId}/promote	POST	Package ID	200 - successful 400 - bad request 404 - not found

Examples

The following URL was sent:

```

https://localhost:8444/csa/api/codar/package/d05bb6ec-23bf-425a-9c90-240fbc8f99a9/promote

```

The following JSON was returned:

```
{ "promotedToStage": "TESTING",
  "packageName": "Demo_package",
  "packageId": "d05bb6ec-23bf-425a-9c90-240fbc8f99a9" }
```

Reject a package

Moves a package to the rejected state. A package in rejected state can not be deployed or promoted.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/{packageId}/reject	POST	Package ID	200 - successful 400 - bad request 401 - authorization failed 404 - not found 500 - internal server error

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/package/a7fa2df4-9f23-4ba7-b8df-0a14f9eba221/reject
```

The following XML was sent:

Example XML sent in request, if applicable

The following XML was returned:

```
{ "packageName": "Promote Package 2",
  "packageState": "REJECTED",
  "packageId": "a7fa2df4-9f23-4ba7-b8df-0a14f9eba221" }
```

Deploy a package

Deploys a package for a complete or partial application design.

URI	Method	Parameters	Returns
-----	--------	------------	---------

<p>http://[host]:[port] /csa/api/codar/app- package/{packageId} /deploy</p>	<p>POST</p>	<p>Package ID, JSON with runname, environment ID, infrastructure design, and modifiable properties of the package.</p> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p>Note: Profile ID is not used.</p> </div>	<p>200 - successful 400 - bad request 401 - authorization failed</p>
---	-------------	--	--

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/package/d8482010-89b8-42ab-8b69-1396267223cd/deploy
```

The following JSON was sent:

```
{
  "name": "Test run of Package",
  "profileId": null,
  "environmentId": "/csa/api/resource/environment/8a81855947f856f30147f85921890003",
  "infrastructureDesign": {"designId": "027daf8c-82f3-419e-9e54-ea4d5acc8d16"},
  "modifiableProperties": [
    {
      "id": "VcenterServerType__VERSION__04.10.0000__GROUPID__com.hp.csa.type0001",
      "itemType": "NODE",
      "propertyName": "vmTemplateReference",
      "propertyType": "string",
      "propertyValue": "csata-rhelsa915"
    }
  ]
}
```

The following JSON was returned:

```
{ "ServiceInstanceId": "8a81855947f874ea0147f8887b0101ae" }
```

Update package name and description

Update a package name and description.

URI	Method	Parameters	Returns
-----	--------	------------	---------

http://[host]:[port]/csa/api/codar/app-package/{packageId}	PUT	Package ID, JSON body with package name and description	200 - successful 400 - bad request 404 - not found
--	-----	---	--

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-package/5975ad69-0519-484b-bde3-30b936dd31b
```

The following JSON was sent:

```
{"name":"package Name","description":"Package Description"}
```

The following JSON was returned:

```
{
  "@self": "/csa/api/package/update/5410dd5a-7b03-4ea3-932a-3dcb108a09a9",
  "@type": "urn:x-hp:2012:software:cloud:data_model:package",
  "name": "package Name",
  "description": "Package Description"
}
```

Update package component properties

Update component properties for a package.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/{packageId}/properties	PUT	Package ID, JSON body	200 - successful 400 - bad request 404 - not found

Examples

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-package/5975ad69-0519-484b-bde3-30b936dd31b/properties
```

The following JSON was sent:

```

{
  "members": [
    {
      "icon": "pluginResources/topology/icons/SERVER.svg",
      "@self": "/csa/api/package/component/VcenterServerType__VERSION__
04.10.0000__GROUPID__com.hp.csa.type0001",
      "description": "vCenter Server",
      "@type": "urn:x-hp:2012:software:cloud:data_model:package",
      "name": "vCenter Server",
      "provider": "VMWARE_VCENTER",
      "displayName": "vCenter Server",
      "properties" : [
        {
          "name" : "vmTemplateReference",
          "value" : "ubuntu_tempref"
        },{
          "name" : "customizationSpec",
          "value" : "linux_spec"
        },{
          "name" : "vmNamePrefix",
          "value" : "app_"
        }
      ],
      "displayName": "vCenter Server"
    }
  ]
}

```

The following JSON was returned:

No Contents

Delete package

Delete a package.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-package/{packageId}	DELETE	Package ID	204 - successful 400 - bad request 404 - not found

Examples

The following URL was sent:

https://localhost:8444/csa/api/codar/app-package/5975ad69-0519-484b-bde3-30b936dd31b

The following JSON was returned:

No contents

Lifecycle APIs

URI	Method	Description
/csa/api/codar/app-lifecycle/stages	GET	"List lifecycle stages" below

List lifecycle stages

Lists all lifecycle stages. This API is used by the HP Helion Codar UI to retrieve packages grouped by lifecycle. The default stage sequence is:

Development > Testing > Staging > Production

The application design ID is an optional parameter. The default lifecycle stage is associated with all application designs, so the result is the same with or without the ID.

URI	Method	Parameters	Returns
http://[host]:[port]/csa/api/codar/app-lifecycle/stages	GET	Application design ID (optional)	200 - successful 400 - bad request 404 - not found

Examples

The following URL was sent:

https://localhost:8444/csa/api/codar/app-lifecycle/stages

The following JSON was returned:

```
{
  "@total_results": 4,
  "@self": "/csa/api/codar/app-lifecycle/stages/",
  "@type": "urn:x-hp:2012:software:cloud:data_model:lifeCycleStage",
  "members": [
    {
      "@self": "/csa/api/codar/app-lifecycle/stages/84905d24-d92f-4916-b312-78af206d31a5",
      "@type": "urn:x-hp:2012:software:cloud:data_model:lifeCycleStage",
```

```
    "name": "DEVELOPMENT"
  },
  {
    "@self": "/csa/api/codar/app-lifecycle/stages/84905d24-d92f-4916-b312-78af206d31a6",
    "@type": "urn:x-hp:2012:software:cloud:data_model:lifeCycleStage",
    "name": "TESTING"
  },
  {
    "@self": "/csa/api/codar/app-lifecycle/stages/84905d24-d92f-4916-b312-78af206d31a7",
    "@type": "urn:x-hp:2012:software:cloud:data_model:lifeCycleStage",
    "name": "STAGING"
  },
  {
    "@self": "/csa/api/codar/app-lifecycle/stages/84905d24-d92f-4916-b312-78af206d31a8",
    "@type": "urn:x-hp:2012:software:cloud:data_model:lifeCycleStage",
    "name": "PRODUCTION"
  }
]
}
```

Chapter 4: Retrieving information from HP Helion Codar using RESTful calls

The following sections provide information about the preparation for and execution of HP Helion Codar RESTful API calls.

Communication with HP Helion Codar

Solution developers communicate with HP Helion Codar over HTTP or HTTPS and parse the data structures returned by HP Helion Codar. The default port for communication with HP Helion Codar is port 8444.

API data is returned in JSON format. You need to set the http headers `Content-Type:application/json` and `accept:application/json` for the call you are making.

Authentication with an integration account

Authentication is handled using HTTP basic authentication. The authentication value is provided in the API call via the Authorization header. The default credentials for the identity service's transport user which can be used in making API calls are `OOinbound user = 'ooinbounduser'` and `password = 'cloud'`. The default credentials for the HP CSA service's transport user which can be used in making API calls are `user = 'ooinbounduser'` and `password = 'cloud'`. The HP Helion Codar Administrator can create multiple transport users.

When exercising an API call from an HTTP client or from the interactive API content, the Authorization header is automatically generated using the credentials you supply when you log into HP Helion Codar as it will be required to get permission to make RESTful calls.

When exercising an API call from your application's code, you must create the Authorization header. Supply the Base64 encoded value of the `<username>:<password>` string for the user you will use for authentication.

The following example shows how to compute the Authorization header for the API identity service default credentials.

1. The `username:password` string for a default `OOinbound` user identity service integration account is `ooinbounduser:cloud`
2. The Base64 encoded value of this `username:password` string is:
`awRtVHJHbnNwb3J0VXN1cjppZG1UcmFuc3BvcnRVc2Vy.`
3. The Authorization header value specifies the keyword `Basic` to distinguish from other forms of authentication. Set the Authorization header to: `Basic`
`awRtVHJHbnNwb3J0VXN1cjppZG1UcmFuc3BvcnRVc2Vy.`

Executing RESTful calls

HP Helion Codar RESTful API calls can be exercised through an HTTP client as described in ["Exercising API calls using an HTTP client" below](#) or programmatically from an application. The API calls can also be exercised through the interactive content as explained in ["Exercising API calls using the interactive content" on page 38](#). Some calls have more strict permission requirements, such as administrator level permissions, so you must supply the appropriate credentials.

The base URL for the API is **https://<host>:<port>/csa/api/**, which is appended with the specific URI for the API call. For example, to access the API for managing application deployments, you would use the URL: `https://<host>:<port>/csa/api/codar/app-deploy`, substituting the host and port information appropriate for your HP Helion Codar environment.

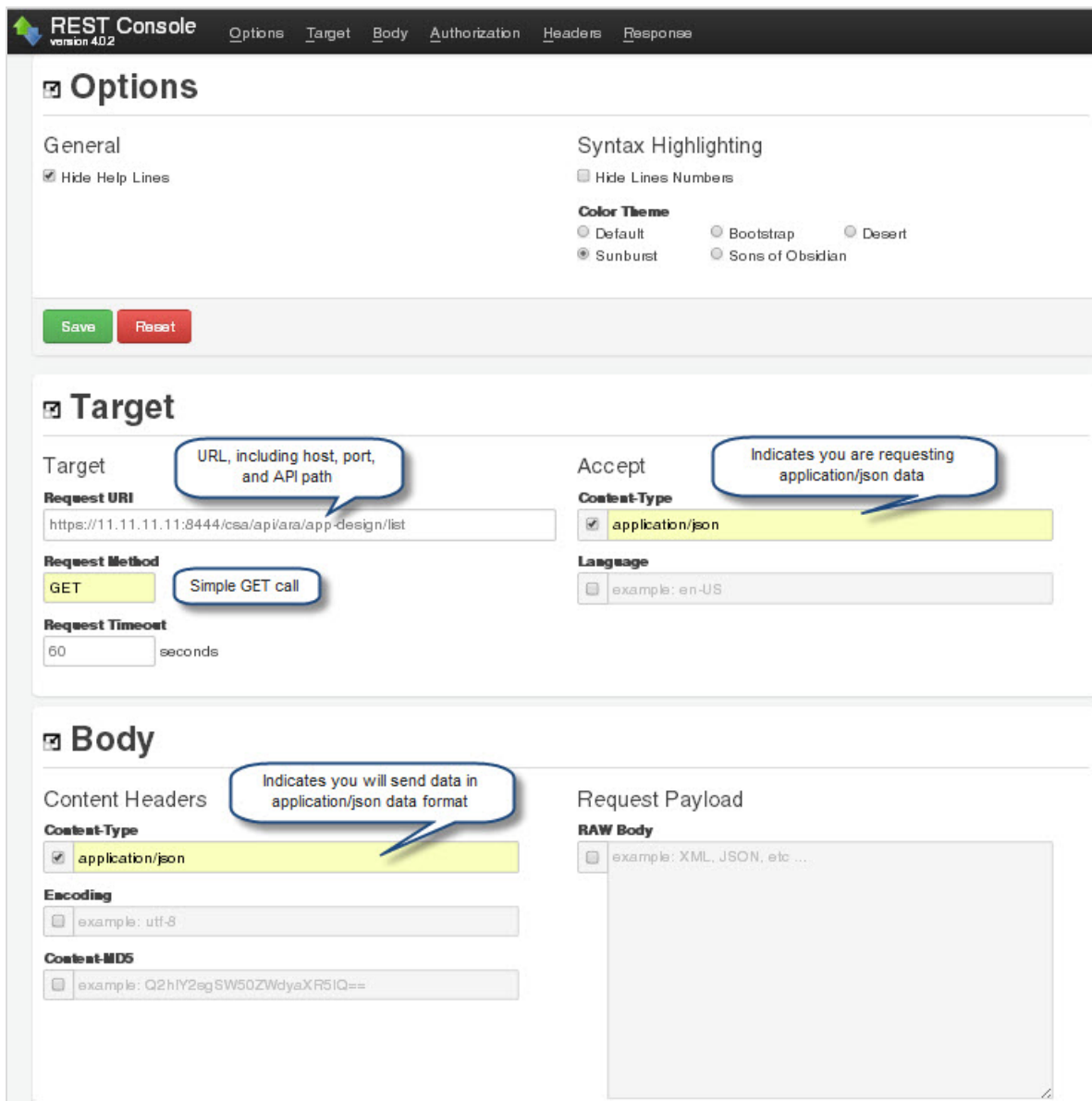
Exercising API calls using an HTTP client

Though you can issue RESTful calls through any typical HTTP client (browser), you will likely find it more convenient to use a client designed especially for developers making RESTful calls. These are often referred to as *REST clients*. A REST client organizes the information you will work with when making RESTful calls: headers, methods, request and response bodies, and so on. A REST client makes it easier to compose and submit requests to the HP Helion Codar RESTful service APIs, as well as for viewing server responses.

A number of REST clients are available. You can add the REST Console plug-in for Google™ Chrome, for example, as follows:

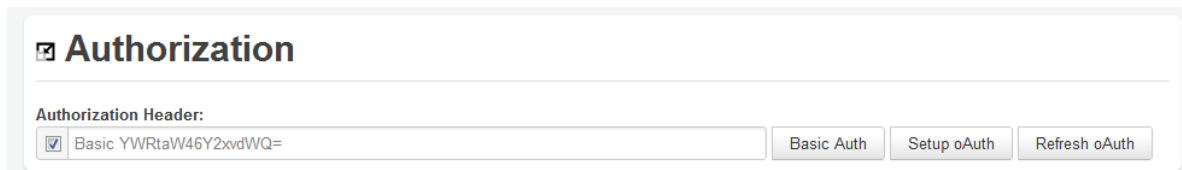
- Start Google Chrome.
- Open Chrome Web Store.
- Use search box to search for REST Console.
- Click the **+ Free** button, then click the **Add** button in the dialog box that appears.

Example configuration of REST Console plug-in:

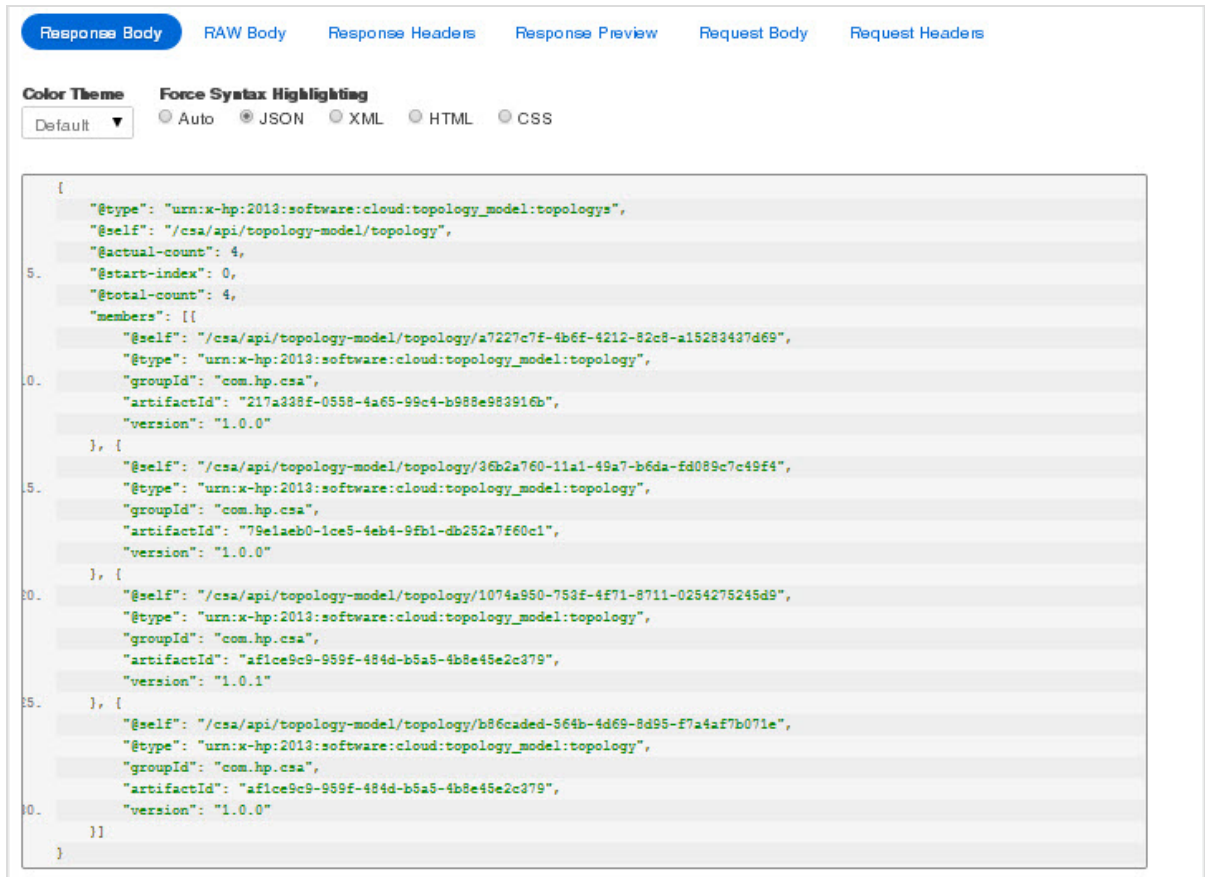


Configure the basic authorization in the Authorization tab using a username and password. See ["Authentication with an integration account" on page 35](#) for more information. This user must have privileges to access HP Helion Codar's RESTful APIs.

Example REST Console authorization:



If the plug-in is configured correctly, you will see output in the Response Body tab similar to the following when you issue a request:

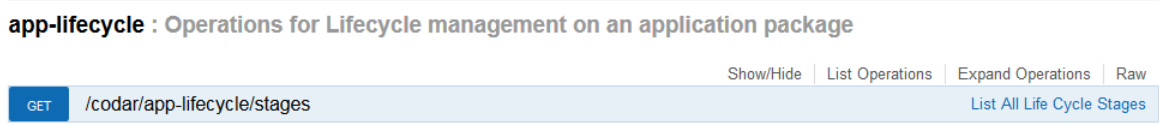


Exercising API calls using the interactive content

In addition to being exercised programmatically or through an HTTP client, the HP Helion Codar API can be exercised through the “Try it out!” feature in the interactive API content. You will be prompted to log in to HP Helion Codar to access this content. Basic authentication and authorization required to make RESTful calls will be configured as part of the login process.

This interactive content is presented in a web interface, and can be accessed at **https://<host>:<port>/csa/apidocs.jsp** from a browser, substituting the host and port information appropriate for your HP Helion Codar environment.

The following is example content. The app-lifecycle call has been expanded in this example:



The content provides developers easy access to the following items:

- URI syntax for each call
- Whether there are any required or optional query parameters

- The data type of each parameter
- Model and schema information, if applicable
- Interactive "Try it out!" dialogs that let you submit calls to your server, see the results, and understand how you need to construct your REST URIs and any request body.

Let's try out an API call.

1. If you have access to an HP Helion Codar instance, launch the interactive API content from a browser at **https://<host>:<port>/csa/apidocs.jsp**.
2. If you are not already logged into HP Helion Codar , you will be prompted to log in. The user must have appropriate authority to exercise HP Helion Codar RESTful calls.
3. Locate the *app-design* API call. Click on the call title to expand it.
4. Click on the *codar/app-design/list* *GET* method to view the complete documentation for this call.

GET /codar/app-design/list [List all Application Designs](#)

Response Class
string

Response Content Type: application/vnd.hp.topology.list+json

Parameters

Parameter	Value	Description	Parameter Type	Data Type
start-index	<input type="text"/>	Specifies the offset of the first entry to be included in the page.	query	integer
page-size	<input type="text"/>	Specifies the page size.	query	integer

Error Status Codes

HTTP Status Code	Reason
400	Bad request
401	Authorization failure
500	Internal server error

5. Enter values for the *start-index* and *page-size* parameters. By default, the response for this API is to list all application designs starting with the start index of zero.
6. Click on the **Try it out!** button.
7. You should now see the request URL that was sent, as well as the response body, response code

and response headers for your request as shown here.

The screenshot shows an API client interface with the following sections:

- Try it out!** and **Hide Response** buttons.
- Request URL**: `https://10.1.5.188:8444/csa/api/codar/app-design/list`
- Response Body**: A JSON object containing metadata and a list of topology members.


```
{
  "@type": "urn:x-hp:2013:software:cloud:topology_model:topologies",
  "@self": "/csa/api/topology-model/topology",
  "@actual-count": 3,

  "@start-index": 0,
  "@total-count": 3,
  "members": [ {
    "@self": "/csa/api/topology-model/topology/c1e6998e-b1de-47a2-9a17-0eb7d9239a41",
    "@type": "urn:x-hp:2013:software:cloud:topology_model:topology",
    "groupId": "com.hp.csa",
    "artifactId": "29d2a3c6-ee1e-461f-af5c-49f79fff7480",
    "version": "1.0.0",
    "displayName": "TestDesign - 2"
  }, {
    "@self": "/csa/api/topology-model/topology/0f243435-25cc-46ef-b088-670cd55e9bac",
    "@type": "urn:x-hp:2013:software:cloud:topology_model:topology",
    "groupId": "com.hp.csa"
  }
  ]
}
```
- Response Code**: `200`
- Response Headers**: `{"X-Frame-Options":"SAMEORIGIN","Cache-Control":"no-store","Content-Type":"application/vnd.hp.topology.list+json;charset=UTF-8","Con`

Not every API call will be this simple to exercise, but this example demonstrates how the interactive API content is presented, and how RESTful calls can easily be made from this interface. In some situations you will need to make other API calls first to get information necessary for parameters or a request body.

Making API calls from an application

RESTful calls can be made from application code. Preparation for making these calls is similar to making them from an HTTP client. Authentication and authorization requirements as explained in ["Communication with HP Helion Codar" on page 35](#) must be met.

You also need to set the HTTP headers `Content-Type:application/json` and `accept:application/json` as appropriate for the call you are making.

Appendix A: API return examples

The following sections provide full output examples for HP Helion Codar RESTful API calls.

Export an application design example

Export an application design by providing the application design ID. The application design is returned in JSON format.

The following URL was sent:

```
https://localhost:8444/csa/api/codar/app-design/e57673db-0ee7-4061-8f9e-ffdcabc07b4c
```

The following JSON was returned:

```
{
  "@self" : "/csa/api/topology-model/topology/e57673db-0ee7-4061-8f9e-ffdcabc07b4c",
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca40",
  "version" : "1.0.0",
  "displayName" : "Test_Design-1",
  "description" : "my design",
  "resources" : [ {
    "id" : "VcenterServer0001",
    "name" : "vCenter Server 1",
    "component" : {
      "@self" : "/csa/api/topology-model/component-type/b83f4e21-d8a9-4ff3-a76e-3a69775d1d86"
    }
  },
  "properties" : [ {
    "propertyKey" : "requestedMemorySize",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "vmTemplateReference",
    "propertyValue" : {
      "value" : "test",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "cpuCount",
    "propertyValue" : {
      "value" : null,
      "type" : "string",

```

```
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "ipAddressList",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "closeSession",
    "propertyValue" : {
        "value" : "true",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "privateKey",
    "propertyValue" : {
        "value" : "",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "memorySize",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "requestedCpuCount",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "customizationSpec",
    "propertyValue" : {
        "value" : "test",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}
```



```

    "propertyKey" : "vmID",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "ipAddress",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "vmNamePrefix",
    "propertyValue" : {
      "value" : "test",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  } ],
  "outgoingRelations" : [ ],
  "annotations" : {
    "description" : "",
    "displayName" : "vCenter Server 1",
    "y" : "-400",
    "x" : "-400"
  }
}, {
  "id" : "VcenterNetworkInterface0001",
  "name" : "vCenter Network Interface 1",
  "component" : {
    "@self" : "/csa/api/topology-model/component-type/05c69cad-ad1d-4285-
befe-4963c7f86ae1"
  },
  "properties" : [ {
    "propertyKey" : "response",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }
}, {
  "propertyKey" : "_modifiable_properties",
  "propertyValue" : {
    "value" : "",

```

```

        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "networkInterfaceType",
    "propertyValue" : {
        "value" : "E1000",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "networkInterfaceId",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "portGroupName",
    "propertyValue" : {
        "value" : "test",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "vmID",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "macAddress",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "ipAddresses",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,

```

```

        "consumerVisible" : true
    }
} ],
"outgoingRelations" : [ {
    "relationType" : "association",
    "id" : "rel0001",
    "properties" : [ {
        "propertyKey" : "_modifiable_properties",
        "propertyValue" : {
            "value" : "",
            "type" : "string",
            "confidential" : false,
            "consumerVisible" : true
        }
    }, {
        "propertyKey" : "_relation_type",
        "propertyValue" : {
            "value" : {
                "first" : "Association",
                "second" : "ASSOCIATION"
            },
            "type" : "pair",
            "confidential" : false,
            "consumerVisible" : true
        }
    }
} ],
"relationDescriptorName" : "VcenterNetworkInterfaceTypeToVcenterServerType",

"resourceReference" : {
    "name" : "vCenter Server 1"
}
} ],
"annotations" : {
    "description" : "",
    "displayName" : "vCenter Network Interface 1",
    "y" : "-400",
    "x" : "-200"
}
} ],
"revision" : 0,
"properties" : [ {
    "propertyKey" : "metamodelId",
    "propertyValue" : {
        "value" : "test",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "is_express",

```

```

    "propertyValue" : {
      "value" : null,
      "type" : "boolean",
      "confidential" : false,
      "consumerVisible" : true
    }
  } ],
  "tagIds" : [ ],
  "state" : "UNLOCKED",
  "profiles" : [ ],
  "annotations" : {
    "providerType" : "independent",
    "serviceBlueprintId" : "8a818cf045d640b00145d64a7c240017"
  }
}

```

Import an application design example

Create an application design by providing the application design in JSON format as input. If the design already exists, then an error is returned.

The following URL was sent:

<https://localhost:8444/csa/api/codar/app-design/import>

The following JSON was sent:

```

{
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca43",
  "version" : "1.0.0",
  "displayName" : "Test_Design-2",
  "description" : "my design 02",
  "resources" : [ {
    "id" : "VcenterServer0001",
    "name" : "vCenter Server 1",
    "component" : {
      "@self" : "/csa/api/topology-model/component-type/b83f4e21-d8a9-4ff3-a76e-3a69775d1d86"
    }
  },
  "properties" : [ {
    "propertyKey" : "requestedMemorySize",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }
}

```

```
}, {
  "propertyKey" : "vmTemplateReference",
  "propertyValue" : {
    "value" : "test",
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "cpuCount",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "ipAddressList",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "closeSession",
  "propertyValue" : {
    "value" : "true",
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "privateKey",
  "propertyValue" : {
    "value" : "",
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "memorySize",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "requestedCpuCount",
```



```
"propertyValue" : {
  "value" : null,
  "type" : "string",
  "confidential" : false,
  "consumerVisible" : true
}
}, {
  "propertyKey" : "customizationSpec",
  "propertyValue" : {
    "value" : "test",
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "hostname",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "macAddress",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "password",
  "propertyValue" : {
    "value" : "null",
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "response",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "_modifiable_properties",
  "propertyValue" : {
    "value" : "",
```

```

        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "username",
    "propertyValue" : {
        "value" : "test",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "vmID",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "ipAddress",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "vmNamePrefix",
    "propertyValue" : {
        "value" : "test",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
} ],
"outgoingRelations" : [ ],
"annotations" : {
    "description" : "",
    "displayName" : "vCenter Server 1",
    "y" : "-400",
    "x" : "-400"
}
}, {
    "id" : "VcenterNetworkInterface0001",
    "name" : "vCenter Network Interface 1",
    "component" : {
        "@self" : "/csa/api/topology-model/component-type/05c69cad-ad1d-4285-befe-

```

```

4963c7f86ae1"
  },
  "properties" : [ {
    "propertyKey" : "response",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "_modifiable_properties",
    "propertyValue" : {
      "value" : "",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "networkInterfaceType",
    "propertyValue" : {
      "value" : "E1000",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "networkInterfaceId",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "portGroupName",
    "propertyValue" : {
      "value" : "test",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "vmID",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }
]

```

```

    }, {
      "propertyKey" : "macAddress",
      "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
      }
    }, {
      "propertyKey" : "ipAddresses",
      "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
      }
    } ],
    "outgoingRelations" : [ {
      "relationType" : "association",
      "id" : "rel0001",
      "properties" : [ {
        "propertyKey" : "_modifiable_properties",
        "propertyValue" : {
          "value" : "",
          "type" : "string",
          "confidential" : false,
          "consumerVisible" : true
        }
      } ],
      {
        "propertyKey" : "_relation_type",
        "propertyValue" : {
          "value" : {
            "first" : "Association",
            "second" : "ASSOCIATION"
          },
          "type" : "pair",
          "confidential" : false,
          "consumerVisible" : true
        }
      } ],
      "relationDescriptorName" :
      "VcenterNetworkInterfaceTypeToVcenterServerType",
      "resourceReference" : {
        "name" : "vCenter Server 1"
      }
    } ],
    "annotations" : {
      "description" : "",
      "displayName" : "vCenter Network Interface 1",
      "y" : "-400",

```

```

    "x" : "-200"
  }
} ],
"revision" : 0,
"properties" : [ {
  "propertyKey" : "metamodelId",
  "propertyValue" : {
    "value" : "test",
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "is_express",
  "propertyValue" : {
    "value" : null,
    "type" : "boolean",
    "confidential" : false,
    "consumerVisible" : true
  }
} ],
"tagIds" : [ ],
"state" : "UNLOCKED",
"profiles" : [ ],
}

```

The following JSON was returned:

```

{
  "@self" : "/csa/api/topology-model/topology/e57673db-0ee7-4061-8f9e-ffdcabc07b4c",
  "@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
  "groupId" : "com.hp.csa",
  "artifactId" : "3eb835ae-750f-41c9-8861-de70a285ca40",
  "version" : "1.0.0",
  "displayName" : "Test_Design-1",
  "description" : "my design",
  "resources" : [ {
    "id" : "VcenterServer0001",
    "name" : "vCenter Server 1",
    "component" : {
      "@self" : "/csa/api/topology-model/component-type/b83f4e21-d8a9-4ff3-a76e-3a69775d1d86"
    }
  },
  "properties" : [ {
    "propertyKey" : "requestedMemorySize",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,

```

```
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "vmTemplateReference",
    "propertyValue" : {
        "value" : "test",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "cpuCount",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "ipAddressList",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "closeSession",
    "propertyValue" : {
        "value" : "true",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "privateKey",
    "propertyValue" : {
        "value" : "",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "memorySize",
    "propertyValue" : {
        "value" : null,
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}
```

```
}, {
  "propertyKey" : "requestedCpuCount",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "customizationSpec",
  "propertyValue" : {
    "value" : "test",
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "hostname",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "macAddress",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "password",
  "propertyValue" : {
    "value" : "null",
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "response",
  "propertyValue" : {
    "value" : null,
    "type" : "string",
    "confidential" : false,
    "consumerVisible" : true
  }
}, {
  "propertyKey" : "_modifiable_properties",
```

```

    "propertyValue" : {
      "value" : "",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "username",
    "propertyValue" : {
      "value" : "test",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "vmID",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "ipAddress",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "vmNamePrefix",
    "propertyValue" : {
      "value" : "test",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  } ],
  "outgoingRelations" : [ ],
  "annotations" : {
    "description" : "",
    "displayName" : "vCenter Server 1",
    "y" : "-400",
    "x" : "-400"
  }
}, {
  "id" : "VcenterNetworkInterface0001",
  "name" : "vCenter Network Interface 1",
  "component" : {

```



```

    "@self" : "/csa/api/topology-model/component-type/05c69cad-ad1d-4285-
befe-4963c7f86ae1"
  },
  "properties" : [ {
    "propertyKey" : "response",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "_modifiable_properties",
    "propertyValue" : {
      "value" : "",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "networkInterfaceType",
    "propertyValue" : {
      "value" : "E1000",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "networkInterfaceId",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "portGroupName",
    "propertyValue" : {
      "value" : "test",
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "vmID",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }
]

```

```

    }
  }, {
    "propertyKey" : "macAddress",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  }, {
    "propertyKey" : "ipAddresses",
    "propertyValue" : {
      "value" : null,
      "type" : "string",
      "confidential" : false,
      "consumerVisible" : true
    }
  } ],
  "outgoingRelations" : [ {
    "relationType" : "association",
    "id" : "rel0001",
    "properties" : [ {
      "propertyKey" : "_modifiable_properties",
      "propertyValue" : {
        "value" : "",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
      }
    }, {
      "propertyKey" : "_relation_type",
      "propertyValue" : {
        "value" : {
          "first" : "Association",
          "second" : "ASSOCIATION"
        },
        "type" : "pair",
        "confidential" : false,
        "consumerVisible" : true
      }
    }
  ] ],
  "relationDescriptorName" :
  "VcenterNetworkInterfaceTypeToVcenterServerType",
  "resourceReference" : {
    "name" : "vCenter Server 1"
  }
} ],
"annotations" : {
  "description" : "",
  "displayName" : "vCenter Network Interface 1",

```

```

        "y" : "-400",
        "x" : "-200"
    }
} ],
"revision" : 0,
"properties" : [ {
    "propertyKey" : "metamodelId",
    "propertyValue" : {
        "value" : "test",
        "type" : "string",
        "confidential" : false,
        "consumerVisible" : true
    }
}, {
    "propertyKey" : "is_express",
    "propertyValue" : {
        "value" : null,
        "type" : "boolean",
        "confidential" : false,
        "consumerVisible" : true
    }
} ],
"tagIds" : [ ],
"state" : "UNLOCKED",
"profiles" : [ ],
"annotations" : {
    "providerType" : "independent",
    "serviceBlueprintId" : "8a818cf045d640b00145d64a7c240017"
}
}

```

List packages example

Retrieve a list of all packages for an application design.

<https://localhost:8444/csa/api/codar/app-package/list>

The following JSON was returned:

```

{
  "@total_results": 4,
  "@self": "/csa/api/package/",
  "@type": "urn:x-hp:2012:software:cloud:data_model:package",
  "members": [
    {
      "@type": "urn:x-hp:2012:software:cloud:data_model:package",
      "name": "DEVELOPMENT",
      "color": "#D1AF89",
      "image": "images/applications/dev.png",
    }
  ]
}

```

```

    "packages": [
      {
        "@self": "/csa/api/package/d207499f-aba3-4e46-aa27-9357e2c6cb8d",
        "@type": "urn:x-hp:2012:software:cloud:data_model:package",
        "stage": "DEVELOPMENT",
        "state": "ACTIVE",
        "icon": "images/applications/dev.png",
        "name": "P1",
        "deployedInstanceCount": "0",
        "lastUpdated": "2014-09-30T11:15:19.344Z",
        "description": null,
        "topologyData": null,
        "instanceData": null
      }
    ],
    {
      "@type": "urn:x-hp:2012:software:cloud:data_model:package",
      "name": "TESTING",
      "color": "#FFC300",
      "image": "images/applications/test.png",
      "packages": []
    },
    {
      "@type": "urn:x-hp:2012:software:cloud:data_model:package",
      "name": "STAGING",
      "color": "#E188CA",
      "image": "images/applications/stage.png",
      "packages": []
    },
    {
      "@type": "urn:x-hp:2012:software:cloud:data_model:package",
      "name": "PRODUCTION",
      "color": "#FF7D6A",
      "image": "images/applications/prod.png",
      "packages": []
    }
  ]
}

```

List infrastructure designs example

Retrieve the infrastructure designs for a given partial design (Topology Composition) of the application design.

The following URL was sent:

<https://localhost:8444/csa/api/codar/app-package/composition/902442d3-700c-4b57-8abb-8d1a52ae3f3d/candidateTopology>

The following JSON was sent:

```
{
  "count": 5,
  "members": [ {
    "@type": "urn:x-hp:2013:software:cloud:topology_model:topology",
    "@self": "/csa/api/topology-model/topology/7843ee06-8a5e-425e-ac0d-424e3a297d52",
    "id": "7843ee06-8a5e-425e-ac0d-424e3a297d52",

    "iconUrl": "/csa/designer/img/noimage-lightgray.svg",
    "displayName": "Infra Design",
    "description": "dfs",
    "version": "1.0.0",
    "artifactId": "40e0dabd-39e0-4e9f-a53b-4a4b9d8bb60c",
    "groupId": "com.hp.csa",
    "published": true,
    "tagIds": [ {
      "@self": "/csa/api/tag/8a818cf8ara15bc772b0145cb6efjhg99"
    } ]
  }, {
    "@type": "urn:x-hp:2013:software:cloud:topology_model:topology",
    "@self": "/csa/api/topology-model/topology/9b073143-8969-43c3-85af-1004084ab05d",
    "id": "9b073143-8969-43c3-85af-1004084ab05d",
    "iconUrl": "/csa/designer/img/noimage-lightgray.svg",

    "displayName": "Exst-srvr",
    "description": "",
    "version": "1.0.0",
    "artifactId": "4ce4c900-8760-4ede-9431-31737bc175a4",
    "groupId": "com.hp.csa",
    "published": false,
    "tagIds": [ ]
  }, {
    "@type": "urn:x-hp:2013:software:cloud:topology_model:topology",
    "@self": "/csa/api/topology-model/topology/e7690ecf-b552-4ba1-989f-ae3922c25cda",
    "id": "e7690ecf-b552-4ba1-989f-ae3922c25cda",
    "iconUrl": "/csa/designer/img/noimage-lightgray.svg",
    "displayName": "Complete-TD-1",
    "description": "",
    "version": "1.0.0",
    "artifactId": "6eed3374-5112-4118-9f37-791b191acfeb",
    "groupId": "com.hp.csa",
    "published": false,
    "tagIds": [ ]
  }
]
```

```

}, {
"@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
"@self" : "/csa/api/topology-model/topology/ab0a4b3d-6476-4e24-8fcf-73d4a8122e48",
"id" : "ab0a4b3d-6476-4e24-8fcf-73d4a8122e48",
"iconUrl" : "/csa/designer/img/noimage-lightgray.svg",
"displayName" : "Testing Configure ",
"description" : "",
"version" : "1.0.0",
"artifactId" : "790a9840-2777-422b-8e71-c3f8d87eb997",

"groupId" : "com.hp.csa",
"published" : false,
"tagIds" : [ {
"@self" : "/csa/api/tag/8a818cf8ara15bc772b0145cb6efjhg99"
} ]
}, {
"@type" : "urn:x-hp:2013:software:cloud:topology_model:topology",
"@self" : "/csa/api/topology-model/topology/ac102c58-8cdb-4e65-8083-e1e1c30f464f",

"id" : "ac102c58-8cdb-4e65-8083-e1e1c30f464f",

"iconUrl" : "/csa/designer/img/noimage-lightgray.svg",
"displayName" : "PD-Test_Complete-TD-1",
"description" : "",
"version" : "1.0.0",
"artifactId" : "a4c87694-3a68-43f7-899a-05279a64a983",
"groupId" : "com.hp.csa",
"published" : false,
"tagIds" : [ ]
} ]
}

```

Get package properties example

Retrieve the properties that are parametrized in the package for each component of the application design.

The following URL was sent:

```
https://10.1.13.216:8444/csa/api/codar/app-package/70d8f028-5cfc-48f6-8799-78623eef4f7/properties
```

The following Parameter was sent:

```
packageId
```

The following JSON was returned:

```

{ "members": [
{
  "icon": "pluginResources/topology/icons/SERVER.svg",
  "@self": "/csa/api/package/component/VcenterServerType__VERSION__04.20.0000__
GROUPID__com.hp.csa.type0001",
  "description": "vCenter Server",
  "@type": "urn:x-hp:2012:software:cloud:data_model:package",
  "name": "vCenter Server",
  "provider": "VMWARE_VCENTER",
  "properties": [
    {
      "name": "vmTemplateReference",
      "value": "ubuntu_tempref"
    },
    {
      "name": "customizationSpec",
      "value": "linux_spec"
    },
    {
      "name": "vmNamePrefix",
      "value": "app_"
    }
  ],
  "displayName": "vCenter Server"
},
{
  "icon": "pluginResources/topology/icons/SERVER.svg",
  "@self": "/csa/api/package/component/VcenterServerType__VERSION__04.20.0000__
_GROUPID__com.hp.csa.type0002",
  "description": "vCenter Server",
  "@type": "urn:x-hp:2012:software:cloud:data_model:package",
  "name": "vCenter Server",
  "provider": "VMWARE_VCENTER",
  "properties": [
    {
      "name": "vmTemplateReference",
      "value": "ubuntu_tempref"
    },
    {
      "name": "customizationSpec",
      "value": "linux_spec"
    },
    {
      "name": "vmNamePrefix",
      "value": "app_"
    }
  ],
  "displayName": "vCenter Server"
}
]

```

```
}
```


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