**Architecture**

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Automatisch generierte Beschreibung

**Start Leon Remote Server without compiling**

Requirement:

* Groovy is installed on machine
* <https://groovy.apache.org/download.html>

Open new command shell and navigate to folder of Leon Remote Server.

eugen@Toaster apac\_showcase % ls -la

total 13792

drwxr-xr-x 15 eugen staff 480 19 Feb 14:42 .

drwxr-xr-x 29 eugen staff 928 19 Feb 14:42 ..

drwxr-xr-x 15 eugen staff 480 24 Feb 08:24 .git

drwxr-xr-x 5 eugen staff 160 19 Feb 14:42 .vs

drwxr-xr-x 21 eugen staff 672 19 Feb 14:42 API-Examples

drwxr-xr-x 7 eugen staff 224 19 Feb 14:42 SSL\_Test

-rw-r--r-- 1 eugen staff 1777 19 Feb 14:42 StartConnector.groovy

-rw-r--r-- 1 eugen staff 0 19 Feb 14:42 Vortrag

-rw-r--r-- 1 eugen staff 5268 19 Feb 14:42 apacTest.groovy

drwxr-xr-x 3 eugen staff 96 19 Feb 14:42 com

-rw-r--r-- 1 eugen staff 101 19 Feb 14:42 compileToJar.bat

-rw-r--r-- 1 eugen staff 474 19 Feb 14:42 config.yml

-rw-r--r-- 1 eugen staff 7031748 19 Feb 14:42 groovy-all-2.4.11.jar

-rw-r--r-- 1 eugen staff 148 19 Feb 14:42 test.groovy

-rw-r--r-- 1 eugen staff 629 19 Feb 14:42 todO

Start Leon Remote Server with groovy command

* Leon Remote Server configuration is set within file config.yml

eugen@Toaster apac\_showcase % groovy StartConnector.groovy

[url:http://portal.a-it.cc, port:8003, username:vipcon\_germany, password:aaAA11!!]

Server up and running

Configuration file

The configuration file config.yml is placed within folder of leon remote server code files.

|  |  |
| --- | --- |
| Config Keys and Values | Description |
| connector\_server: | leon remote server configuration section |
| port: 9090 | port on machine to use |
| username: "abc" | username to authenticate on leon remote server |
| password: "123" | passwort to authenticate on leon remote server |
|  |  |
| ssl: | initiate ssl config section |
| # protocol: "SSL" |  |
| # truststore: "./SSL\_Test/smbbi\_keystore.p12" |  |
| # keystore: "./SSL\_Test/smbbi\_keystore.p12" |  |
| # cert\_alias: "tomcat" |  |
| # cert\_pass: "12345" |  |
| # key\_pass: "12345" |  |
| # truststore\_pass: "12345" |  |
| # algorithmn: "PKIX" |  |
| # keystore\_type: "PKCS12" |  |
|  |  |
| leon\_server: | initiate AIT server config section |
| url: "[http://portal.a-it.cc](http://portal.a-it.cc/)" | url defines protocol and server name of AIT API |
| port: 8003 | port to use for API connection to AIT |
| username: "vipcon\_germany" | username to use for API connection to AIT |
| password: "aaAA11!!" | password to use for API connection to AIT |

**Digital Workplace Catalog (DWPC) - Connect to leon Remote Server**

**Create Remote Server Config**

Open Application Settings on Upper Right Corner within DWPC

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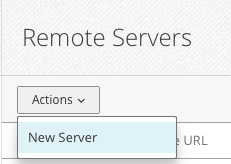
Automatisch generierte Beschreibung

Open Remote Connector Servers

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Automatisch generierte Beschreibung

Use Drop-Down on Actions to choose "New Server"



Set the configuration for Remote Server

Name - Name for Remote Server definition

URL - Reachable DNS Name of Leon Remote Server. DWPC needs to have connectivity to given url. <protocol>://<server.dns.name>:<port>

* Protocol = http | https
* server.dns.name = valid server name or ip address
* Port = mention port if port non default protocol port is used. Default protocol ports are http (80) or https (443).

User Name - User name of leon remote server config option of "connector\_server > username"

Password - Password of leon remote server config option of "connector\_server > password"

Trust all SSL keys - Enable this option when using custom signed SSL certificate. SSL keystore of DWPC need to trust certificate of endpoint.

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Automatisch generierte Beschreibung

Use Save to create server remote configuration.

Developer Note:

This will check the Leon Remote Server API Endpoint with request

GET /rcf/health

GET /rcf/descriptor

Check documentation: <https://docs.bmc.com/docs/digitalworkplaceadvanced/2102/developing-remote-connector-servers-and-connectors-983833072.html>

**Create Connector Instance**

Navigate to Services > Connectors

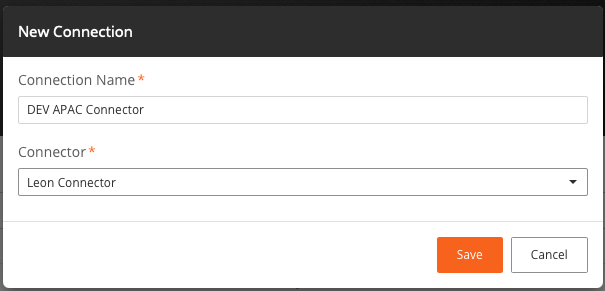
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Automatisch generierte Beschreibung

Use "New Connection" to create new Connector Instance

Connection Name - Identifier Name of Connector Instance

Connector - Choose Connector Type for Connector Instance



Set Connection Options for Connector Instance to configure connector to use a connection instance.

The listed connection instance is provided by leon remote server within section activeConnectionInstances of descriptor API request.

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Automatisch generierte Beschreibung

Save settings.

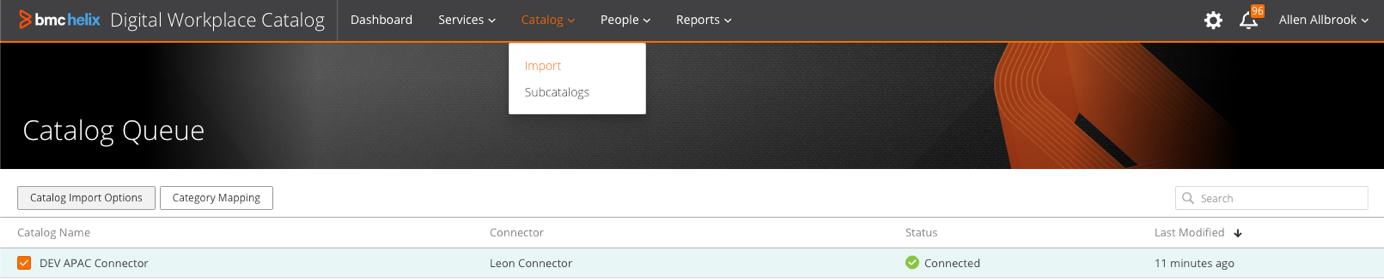
Verify Status of Connector Instance is marked as Connected.



**DWPC Catalog Import**

Navigate to Catalog > Import

Choose Connector Instance of configured Leon Remote Server and use Button "Catalog Import Options"



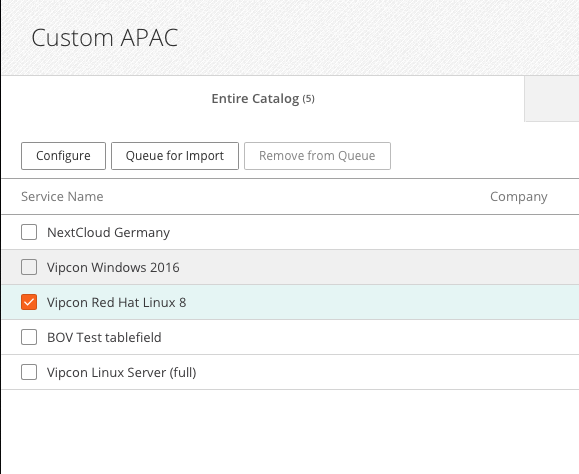
This will initiate API request to leon remote server on

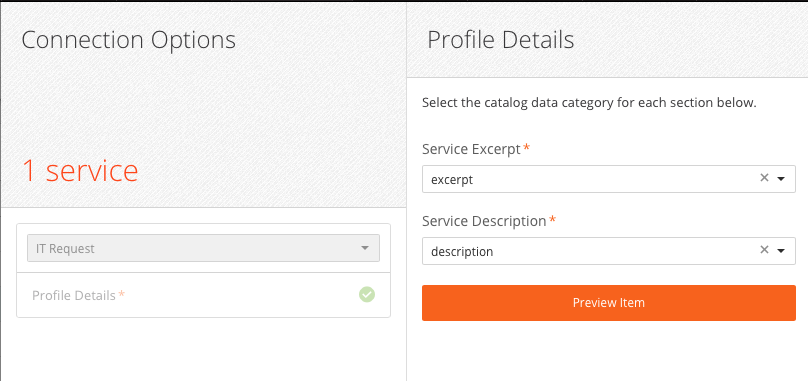
POST /com.vipcon.leon.LeonConnector/com.bmc.dsm.catalog:getServices

POST /com.vipcon.leon.LeonConnector/com.bmc.dsm.catalog:getService

See documentation: <https://docs.bmc.com/docs/digitalworkplaceadvanced/2102/implementing-the-catalog-service-provider-interface-983833073.html>

Choose and available Catalog Service Entry and use Configure to assign a service template and match field to provide Service Excerpt and Service Description or other values if provided by the service Template.





Press save to continue and use "Queue for Import" to register service and conifiguration for import.

Enter Tab "Queued for Import" and use Button "Import <number> Item" to import the services from external catalogue to DWPC.

This event will call an API request against

POST /com.vipcon.leon.LeonConnector/com.bmc.dsm.catalog:getContent

POST /com.vipcon.leon.LeonConnector/com.bmc.dsm.catalog:findQuestionnaire

POST /com.vipcon.leon.LeonConnector/com.bmc.dsm.catalog:getService

See documentation:

* <https://docs.bmc.com/docs/digitalworkplaceadvanced/2102/implementing-the-catalog-service-provider-interface-983833073.html>
* <https://docs.bmc.com/docs/digitalworkplaceadvanced/2102/implementing-questionnaire-import-and-workflow-generation-983833074.html>

The service will be imported and needs to be approved and published, to be visible in Digital Workplace.

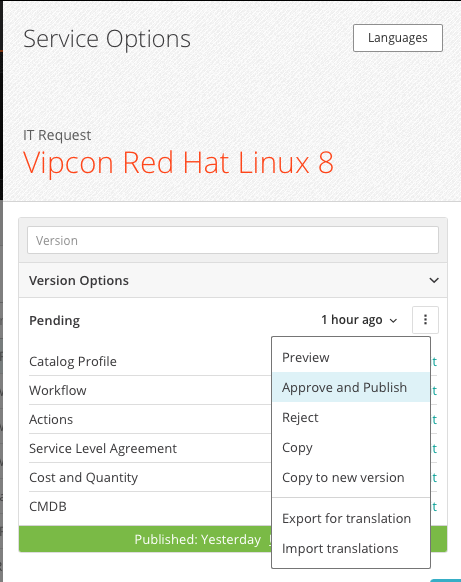
Navigate to Services > Services

Mark Service and choose "Open" on Actions-Button.

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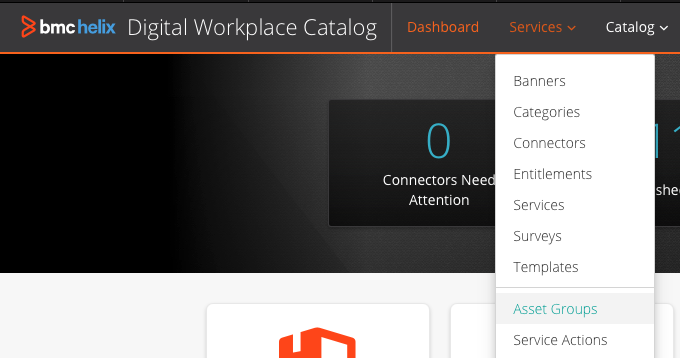
Automatisch generierte Beschreibung

Use drop-down Menu on the imported version and use buttong Approve and Publish to publish the service.

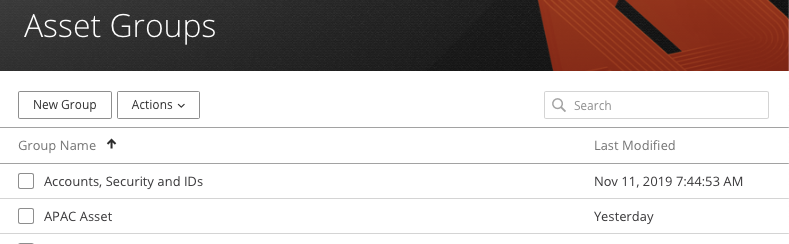


**Listing of Assets on "My Stuff" Section within Digital Workplace and related Day2Actions**

Navigate to Services > Asset Groups



Create a "New Group", to define the section Name, where Assets are listed within Digital Workplace



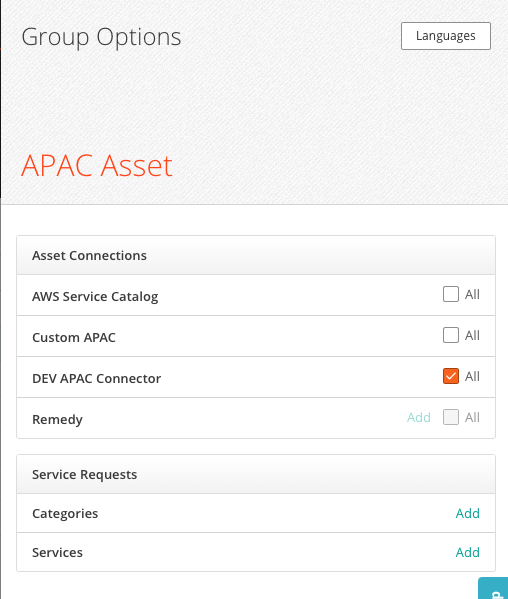
Group Name is used as Visible Name within Digital Workplace

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Automatisch generierte Beschreibung

Double-Click on created Asset Group

Activate checkbox "All" for configured Connector Instance



All Assets from Connector Instance will be listed within My Stuff Section of Digital Workplace.

On Access My Stuff Section within Digital Workplace, the configured Asset Group will trigger API call to Leon Remote Server.

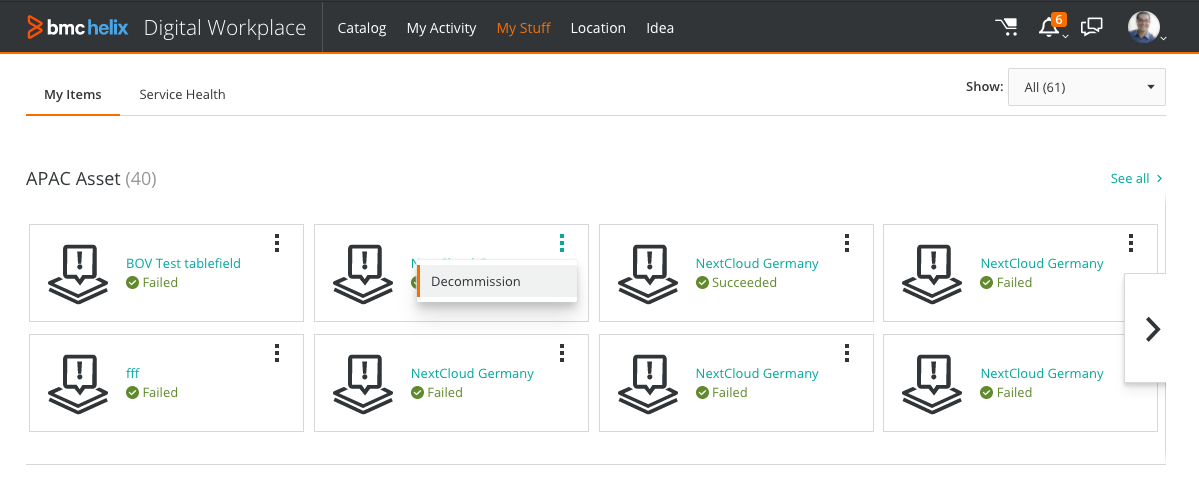
POST /com.vipcon.leon.LeonConnector/com.bmc.dsm.catalog:getAsset

See Documentation: <https://docs.bmc.com/docs/digitalworkplaceadvanced/2102/implementing-the-asset-service-provider-interface-983833086.html>

**Bug Note:**

* Documententation ([Link](https://docs.bmc.com/docs/digitalworkplaceadvanced/2102/implementing-the-asset-service-provider-interface-983833086.html)) references following API endpoints, which should be requested from DWPC to Remote Server.
  + POST ${connector\_path}/com.bmc.dsm.catalog:getAssets
  + POST ${connector\_path}/com.bmc.dsm.catalog:getAsset
  + POST ${connector\_path}/com.bmc.dsm.catalog:performDay2Action
* The expectation:
  + List of available services should use request to endpoint ${connector\_path}/com.bmc.dsm.catalog:getAssets
  + Update service picture or other data and loading day2Actions should be requested to endpoint {connector\_path}/com.bmc.dsm.catalog:getAsset
  + On click on a available day2Action a requested to endpoint {connector\_path}/com.bmc.dsm.catalog:performDay2Action is send to remote server connector instance.
* Result:
  + Request for List of available Asset entries is using endpoint ${connector\_path}/com.bmc.dsm.catalog:getAsset instead of ${connector\_path}/com.bmc.dsm.catalog:getAssets
  + Work around to activate a listing of Asset is to provide all assets on request to endpoint ${connector\_path}/com.bmc.dsm.catalog:getAsset. DWP request for each Asset entry an update on the asset, this takes some time to wait until all Asset images are loaded, caused by missing reference data in body content of the request.  
     This is an example of the request body to Remote Server Connector Instance
    - {"connectionInstanceId":"DEV","request":{"datasetId":null,"requestedBy":null,"requestedFor":null,"parameters":{},"idFieldId":null,"nameFieldId":null,"fieldIds":null,"qualificationExpression":null,"searchText":null,"focusedOnDatasetItemIds":null,"parent":null,"page":null,"pageSize":null,"queryAs":null,"user":{"emailAddress":"Allen@trybmc.com","fullName":"Allen Allbrook","loginName":"Allen","ntDomain":null}}}
  + Listing of Day2Action for an Asset entry, sends a request to endpoint ${connector\_path}/com.bmc.dsm.catalog:getAsset. The body content is missing reference data to asset entry. This is the body content of the request.
    - {"connectionInstanceId":"DEV","request":{"datasetId":null,"requestedBy":null,"requestedFor":null,"parameters":{},"idFieldId":null,"nameFieldId":null,"fieldIds":null,"qualificationExpression":null,"searchText":null,"focusedOnDatasetItemIds":null,"parent":null,"page":null,"pageSize":null,"queryAs":null,"user":{"emailAddress":"Allen@trybmc.com","fullName":"Allen Allbrook","loginName":"Allen","ntDomain":null}}}
  + On Execution of listed Day2Action, the expectation is, that a request is send to endpoint ${connector\_path}/com.bmc.dsm.catalog:performDay2Action but no request to Remote Server Connector Instance happen at all.
* Code reference of Remote Server
  + See class AssetProvider on file AssetProvider.groovy and listed Methods.
  + Mapping of Class Method and endpoint can be viewed on file DwpcHandler.groovy - line 60 - 62
* Tested with: BMC BDC - Helix ITSM 20.08 v2

**Development Note:**



* Request der Day2Action "Decommission" ist nicht erfolgreich, da beim Leon Remote Server keine API Anfrage ankommt.   
   Aufgrund des fehlenden Trigger für das Event performDay2Action von DWPC kann auch keine Day2Action verarbeitet werden. Die Verarbeitung der Day2Actions von Leon Remote Server zu AIT API ist an dieser Stelle bisher nicht implementiert.