

How do I validate my ODM topology with CP4BA 22.0.1?

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<https://community.ibm.com/community/user/automation/blogs/nicolas-peulvast/2022/09/02/validate-your-odm-topology-2201>

Target audience: ODM user with ODM Administrator role
Estimated duration: 90 minutes

This article is part of an article series around Operational Decision Manager (ODM) topologies in context of Cloud Pak for Business Automation (CP4BA).

For more information about ODM environments and the topologies, see [CP4BA ODM topologies on OpenShift](#).

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That technical article is made in the context of validating an ODM topology at the end of the process to deploy your Cloud Pak for Business Automation deployment Custom Resource (CR) in all of your environments.

Once you have at least one cycle of the Cloud Pak for Business Automation operator being performed, you can start to progress on the following checklist.

It completes the generated *Verify Deployment* PDF from the [Custom installation guide for production deployments](#).

Check Pods

Check the status of your Pods.

All Pods of the targeted namespace should be up-and-running.

Check the status: if there are some Pods on error, try to resolve the issue before going further.

To do that, you can follow the doc below:

<https://kubernetes.io/docs/tasks/debug/debug-application/debug-pods/>

Check LDAP service

Check if an LDAP user can connect on each environment.

Try to log on to the Cloud Pak Dashboard (CPD) Console using an user with the Administrator role.

To access Operational Decision Manager (ODM), you must assign a user role through the Cloud Pak Platform UI (Zen) console.

To do that, you can follow the doc below:

<https://www.ibm.com/docs/en/cloud-paks/cp-biz-automation/22.0.1?topic=manager-configuring-user-access>

Also try to log on to the CPD Console using a user from the LDAP and try to access to the expected ODM Consoles (Decision Center and/or Decision Server).

[Optional] Check Basic Authentication users

Check if BasicAuth users are well registered on each environment.

If you want to test the **Decision Center Console** REST API call, try to execute the following cURL call:

```
url=$(oc get routes cpd -o jsonpath={.spec.host} -n <your-authoring-namespace>)
curl -Ik -u odmAdmin:odmAdmin https://${url}/odm/decisioncenter-api/v1/repository/metrics
```

And check the response if:

- It's either valid answer: HTTP/1.1 200 OK [...]
- Or an error: HTTP/1.1 401 Unauthorized [...], in this case, try to review your `webSecurity.xml` file custom secret.

If you want to test the **Decision Server Console** REST API call, try to execute the following cURL call:

```
url=$(oc get routes cpd -o jsonpath={.spec.host} -n <your-runtime-namespace>)
curl -Ik -u odmAdmin:odmAdmin https://${url}/odm/res/api/v1/utilities/consoleinfo
```

And check the response if:

- It's either valid answer: HTTP/1.1 200 OK [...]
- Or an error: HTTP/1.1 401 Unauthorized [...], in this case, try to review your `webSecurity.xml` file custom secret.

Run the Diagnostic of your Decision Center Console

Run the Diagnostic of your Decision Center Console on each environment.

1. Log on to the Decision Center Console using a user that has the `rtsAdministrator` role.
2. Click the `Administration > Diagnostics` tab.
3. Click on the `Run All` button.

Decision Center Diagnostics report the following:

- About: Information about the Decision Center;
- Manager bean access: Various checks, such as whether the DC was properly installed and database was initialized, license check, hostname, port of the host machine and checks whether a project can be created with the existing installation;
- Data source: checks the database information based on the connected data source, and whether the schema is compatible with the current version of Decision Center;
- Extensions: Determines the model extensions that were defined;
- Verbalizers: retrieves all the verbalizers that are available;
- Database: Various checks on the metadata of the tables and schema level comparisons.

For more details, see: <https://www.ibm.com/support/pages/odm-decision-center-diagnostics>

Run the Diagnostic of your Decision Server Console

Run the Diagnostic of your Decision Server Console on each environment.

1. Log on the RES Console using a user that has the resAdministrators role.
2. Click the `Diagnostics` tab.
3. Diagnostics are run automatically, and you can see their results directly.

All the steps in the diagnostics should have green check marks.

If you want to see more detail, you can expand the results of each step or click `Expand All` to view all the results for all steps.

Note: The local XU connectivity and two rule session execution entries are grayed out because the sample server uses the WebSphere Liberty application server in J2SE mode. And in J2SE mode, the eXecution Units (XUs) are embedded in the client applications, and the Rule Execution Server console does not have J2EE XUs.

If something goes wrong, please go to the troubleshooting section of the official Knowledge Center of the ODM 8.11 product.

Configure and test your environment connections

For the Silver and Gold topologies, you have to validate that your Authoring environment is able to establish connections to run a "Test and Simulation" testsuite to the Sandbox environment and also to publish Decision Services to the Production environment.

1. Log on to the Decision Center Console using a user that has the rtsAdministrator role.
2. Click the `Administration > Servers` tab.
3. Click on the `New Server (+)` button to add your server.
4. Enter the `Server name`, the `Server URL` (i.e. RES console of the Production environment), enable the `Use OpenID Connect` switch.
5. Give the `Username` and put the Zen API key of the Production environment as a `Password`.
6. Before the final click on the `Create` button, try to connect using the `Test` button that will try to perform a real connection with the provided parameters.
7. Repeat the above steps to create another server configuration for Testing and simulation. This server configuration will be used later in "Ruleset Test & Simulation" section. The following parameters must be adapted to the Sandbox environment:
 - a. Select "Testing and simulation" for the `Usage` parameter.
 - b. Enter the `Server URL` with the URL of Decision Runner in the Sandbox environment. For example: `https://<cpd_sandbox>/odm/DecisionRunner`
 - c. In this case, the Zen API key for the `Password` parameter will be the one generated in the Sandbox environment.

If the connection is not possible, the most common issue is related to the Certificate: Be sure having created an additional secret that stores the certificates of the targeted environment and also be sure that this secret is well registered in the list of certificates from the `spec.shared_configuration.trusted_certificate_list` parameter of your CR file.

See: <https://ibmdocs-test.mybluemix.net/docs/en/cloud-paks/cp-biz-automation/22.0.1?topic=access-using-zen-api-key-authentication>

Note: if you meet the "java.lang.RuntimeException: Unknown OIDC provider: zen" exception, then try to restart all your DecisionCenter Pods.

Check the Execution Units

To validate your installation, you can also check the Execution Units (XUs) list from the Decision Server Console from the Production Environment has a visibility to the correct number of Runtimes.

To do so:

1. Log on to the RES Console using a user that has the resAdministrators role.
2. Click the Server Info tab and select the `Inspect Execution Units` sub-topic.

You must be able to read the number of XUs attached to your Decision Server Console: the number of replicas you've configured + 1, attached to the Decision Server Console directly, which is not used for the production execution purpose (usually named `localhost`).

If it's not the case, double check your CR file. To change the number of runtime, you can either choose to change the `spec.shared_configuration.sc_deployment_profile_size` with `[small=1, medium=3, large=6]`, `spec.odm_configuration.deployment_profile_size` with `[small=1, medium=3, large=6, custom]` or `spec.odm_configuration.decisionServerRuntime.replicaCount` with the custom number you've decided.

Check the Licensing service

Last but not least, you need to check that everything is well configured on the metering service as well, to conform to the IBM pricing policy.

All services from all environments should be able to connect to the Metering service.

Verify that the Production Environment is registered as production (Operational Decision Manager Containers - CP4BA).

Verify that the Authoring and Sandbox Environment is registered as non-production (Operational Decision Manager Containers - CP4BA - Non Prod).

To do that, you have to query the Licensing service.

The Licensing service exposes three REST endpoints:

- GET /snapshot
- GET /products
- GET /bundled_products

Example of querying the licensing service endpoints:

```
url=$(oc get routes ibm-licensing-service-instance -o jsonpath={.spec.host} -n ibm-common-services)
token=$(oc get secret ibm-licensing-token -o jsonpath={.data.token} -n ibm-common-services | base64 -d)

# Endpoints with -k option in order to authorize self sign certificate (if any)
curl -k https://${url}/snapshot?token=${token} > snapshot.zip
curl -k https://${url}/products?token=${token} > products.json
curl -k https://${url}/bundled_products?token=${token} > bundle-d-products.json
```

In addition, you can connect to the human readable view available in:

```
https://${url}/status?token=${token}
```

Final System Verification Testing

Ruleset Promotion

Check if you can deploy from Decision Center Authoring environment to Production environment.

Try to load a dummy project in your Decision Center Console.

Some projects are available on <https://github.com/DecisionsDev/odm-for-dev-getting-started>

- Loan Validation Service.zip;

- `Miniloan Service.zip`, which permits also to validate the Test & Simulation aspect of your installation;
- `Shipment Pricing.zip`

Once downloaded, you have to follow the steps above:

1. Go to `Library > Import Decision Service` (up arrow) button and load your zip file.
2. Go to your project and select the main branch.
3. Click on the `Deployments` and click on the `Deploy` button.
4. Select either the `Sandbox` or `Production` server.
5. Your report status should be green at the end of the deployment process.

The deployment should succeed. If it's not the case, try to troubleshoot the issue with the official Knowledge Center of the ODM 8.11 product.

Ruleset Test & Simulation

Check if you can execute simulation from Decision Center Authoring Environment to Sandbox Environment

Try to load a dummy project in your Decision Center Console, which contains Test Suites and/or Simulations.

If you don't have one, the classical test project "Miniloan" is available on <https://github.com/DecisionsDev/odm-for-dev-getting-started>

- `Miniloan Service.zip`, which permits also to validate the Test & Simulation aspect of your installation;

Once downloaded, you have to follow the steps above:

1. Go to `Library > Import Decision Service` (up arrow) button and load your zip file.
2. Go to your project and select the main branch.
3. If you use the MiniLoan project, you can download the Test Suite from: [miniloan-test.xlsx](#)
4. Click on the `New Test Suite (+)` button and fill in your file with the Test Suite and target the `Sandbox` environment.
5. Click `Save and Run` and enter a Commit message before running your Test Suite.
6. Click ok to go to the Tests Report view and check whether the Status is green or not at the end of the testing process.

The simulation should succeed. If it's not the case, try to troubleshoot the issue with the official Knowledge Center of the ODM 8.11 product.

If you reach that part of this Technical blog post, then your topology is now up-and-running: have fun with ODM!