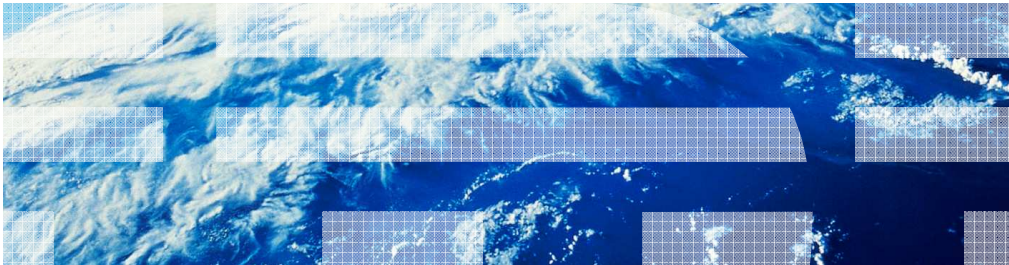IBM

IBM Operational Decision Manager V8.0.1

z/OS installation

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The installation of IBM Operational Decision Manager V8.0.1 on z/OS® is presented here.

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z/OS Installation

This presentation begins with an overview of the Operation Decision Manager for z/OS product and then talks about the requirements for installation. After a brief look at the SMP/E installation task, the presentation will talk about the configuration of the various pieces of the product on z/OS.

Section

Overview

z/OS Installation

This section will discuss an overview of the product.

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Components of Operational Decision Manager for z/OS

IBM Decision Server for z/OS	IBM Decision Center for z/OS
• Rule Designer and Event Designer: development environments based on Eclipse • Rule Execution Server: execution environment for business rules on WebSphere Application Server for z/OS. • Event runtime: execution environment for event rules on WebSphere Application Server for z/OS. • zRule Execution Server for z/OS: execution environment to run business rules on a stand-alone server.	• Decision Center Enterprise Console and Decision Center Business Console: authoring environments for business users to author, manage and test their business rules. • Rule Solutions for Office: an environment for business users to author rules in Microsoft Word and Excel. • Event widgets.

Operational Decision Manager includes two main components. The first component, the Decision Server, provides the runtime and development components to automate the response of highly variable decisions. The second component, the Decision Center, allows business users to manage decisions and events directly based on organizational knowledge and best practices. Both components are available in Operational Decision Manager for z/OS. The building blocks of each component are shown in the table. The building blocks highlighted in blue are what you can specifically configure on z/OS.

Section

Requirements

The next section will briefly look at the requirements to install the Operational Decision Manager V8.0.1 on z/OS.

Installation prerequisites

http://www.ibm.com/support/docview.wss?uid=swg27023067

- z/OS 1.11 or later
- WebSphere Application Server for z/OS
  - V8.0.0.4 or later
  - V7.0.0.24 or later
  - V8.5
- DB2® for z/OS
  - 9.1 or later
  - 10.1 or later
  - (OR Apache Derby 10.5)
- Java
  - IBM Runtime Environment, Java Technology Edition 6.0 or later
- Programming language
  - Enterprise COBOL for z/OS V3.4, V4.1 or V4.2
- Transaction servers
  - CICS® Transaction Server V3.2, V4.1, V4.2 or V5.1
  - IMS™ v11 or V12

The prerequisites for the installation of Operational Decision Manager for z/OS V8.0.1 are shown on the slide. The requirements include z/OS 1.11 or later and WebSphere Application Server for z/OS V8.0.0.4, V7.0.0.24 or later or WebSphere Application Server for z/OS 8.5. If you plan to use a database rather than the file system, DB2 V9.1 or 10.1 or later is also required. Note that depending on your configuration and use, not all software shown is required. There is also a link on the slide to the detailed system requirements that has been published.

Section

SMP/E installation

The next section will give you information on the SMP/E installation of the product.

FMIDs included

- Operational Decision Manager for z/OS
    - HDM8010 - ODM Base z/OS - mandatory
    - HDM8011 - ODM and BR Common – mandatory
    - JDM8012 - Events Component z/OS
    - HDM8013 - Rules Component z/OS
    - JDM8014 - Decision Center z/OS
- Business Rules for z/OS (upgrade to previous JRules customers)
    - HBR8010 - Business Rules Base z/OS - mandatory
    - HDM8011 - ODM and BR Common z/OS - mandatory
    - HDM8013 - Rules Component z/OS - mandatory

Five FMIDs are included with Operational Decision Manager for z/OS. The only two FMIDs that you are required to install are HDM8010 and HDM8011. The other FMIDs are optional, depending on your configuration and planned usage. The HDM8011 FMID consists of some shared code that is also used for the Business Rules for z/OS product. The Business Rules for z/OS product is available as an upgrade to current JRules customers only. The Operational Decision Manager contains all function available there. The rest of the presentation will focus on the Operational Decision Manager.

SMP/E installation

- Automated install JCL customization available
  - Highly recommended!

- Edit the **HBRASYSJ** sample installation job
  - The job contains instructions to define the values you want to use to tailor the installation JCL
    - Appendix C in the Program Directory has descriptions of the parameters you must tailor

- Submit HBRASYSJ

- Submit tailored jobs
  - The sample installation jobs are sorted by name into an order in which to run them in sequence

Automated install JCL customization is available for Operational Decision Manager for z/OS. By automating the customization, you do not need to tailor each piece of JCL individually which greatly reduces the chances of making a mistake. This is a highly recommended installation approach! To use the automation, edit the **HBRASYSJ** sample installation job and submit it. The **HBRASYSJ** job itself contains instructions to define the values required but there is also a table describing the parameters required available in Appendix C of the Program Directory. The available sample installation jobs that you need to run are sorted by name into the order which you would normally run them.

Section

Configuration

z/OS Installation

Once the product is SMP/E-installed, you need to configure it in order to use it.

Configuration overview

- Configuring Decision Server for z/OS execution environment
  – Configuring zRule Execution Server for z/OS:

http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/topic/com.ibm.wodm.family.config.zos/topics/tpc_ds_config_zres.html

  – Configuring Rule Execution Server on WebSphere Application Server for z/OS:

http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/topic/com.ibm.wodm.family.config.zos/topics/tsk_dsz_config_res_wasz.html

- Configuring Decision Center for z/OS management environment:

http://pic.dhe.ibm.com/inhttp://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/topic/com.ibm.wodm.family.config.zos/topics/tsk_dc_config_dc_wasz.html

z/OS Installation

In order to use the Operational Decision Manager for z/OS, you will need an execution environment and a management environment and an authoring environment. The execution environment is provided by Decision Server, the management environment is provided by Decision Center and the authoring environment is provided by the Rule Designer. The Rule Designer is an eclipse-based product that is installed in a distributed environment. Decision Server and Decision Center are both available for the z/OS environment. This presentation will talk about the configuration of the Decision Server and Decision Center on z/OS.

Section

Decision Server configuration

z/OS Installation

First the Decision Server configuration will be discussed.

ODM801_zOS_Install.ppt

Decision Server: Initial configuration

1. Authorize the load library
   - APF authorize the `<SMPLIB>.SHBRAUTH` dataset

2. Customize the JCL variables
   - Update the variables in the `<SMPLIB>.SHBRPARM(HBRINST)` dataset

3. Create the working data sets
   - Run the `<SMPLIB>.SHBRJCL(HBRUUPTI)` dataset

4. Create the working directories
   - Run the `<++HBRWORKDS++>.<HBRSSID_NAME>.SHBRJCL(HBRCRTI)` dataset

5. Configure a DB2 persistence layer
   - Run the SQL in `<++HBRWORKDS++>.<HBRSSID_NAME>.SHBRJCL(HBRDSCDB)`
   - Run the SQL in `<++HBRWORKDS++>.<HBRSSID_NAME>.SHBRJCL(HBRDSXOM)`
   - Run the SQL in `<++HBRWORKDS++>.<HBRSSID_NAME>.SHBRJCL(HBRDSCTR)`

6. Configure your specific environment

There is some initial configuration that is needed no matter what your final configuration will look like. First, you need to APF authorize the load library that is used by the Decision Server. Next you need to customize the variables found in the HBRINST member of the SHBRPARM dataset. The variables here are used to configure your Decision Server environment. One of the variables you will specify is a list of subsystem ids that will define the Decision Server environment. In step three then, you will run the JCL in the HBRUUPTI member of SHBRJCL which will create some working data sets for each of the subsystems defined. You will then run the JCL in the HBRCRTI member in the new working SHBRJCL data set to create the working directory needed for data such as installation logs, component details, and trace output. Finally, in step five, you will have your database administrator run the SQL needed for database persistence. There is also an option for the persistence type to be the file system directory instead. That is what is needed for all configurations. You will learn about the configuration for specific environments next.

Decision Server: Configuring zRule Execution Server for z/OS

z/OS LPAR

Server group

(HBRCNSL,
HBRCMMN,
HBRPSIST)

HBR1 console

(HBRMSTR,
HBRCMMN,
HBRPSIST)

HBR1 server

Rule execution
environment

DB2 database

- Can configure one to 32 zRule Execution Server for z/OS instances as a server group

- For each server instance:
    1. Define a subsystem to run in: `SETSSI ADD,SUBNAME=<HBRSSID_NAME>`
    2. Copy the `<++HBRWORKDS++>.<HBRSSID_NAME>.SHBRPROC(HBRXMSTR)` data set member of each server instance to `SYS1.PROCLIB(<HBRSSID_NAME>MSTR)`
    3. Copy the `<++HBRWORKDS++>.<HBRSSID_NAME>.SHBRPROC(HBRXCNSL)` data set member of each server instance to `SYS1.PROCLIB(<HBRSSID_NAME>CNSL)`

▪Authorize the *<HBRSSID_NAME>*MSTR and *<HBRSSID_NAME>*CNSL members as started task procedures:
  - `RDEFINE STARTED <HBRSSID_NAME>MSTR.* STDATA(USER(<HBRSSID_USER>) GROUP(<HBRSSID_GROUP>))`
  - `RDEFINE STARTED <HBRSSID_NAME>CNSL.* STDATA(USER(<HBRSSID_USER>) GROUP(<HBRSSID_GROUP>)) SETR REF RACLIST(STARTED)`
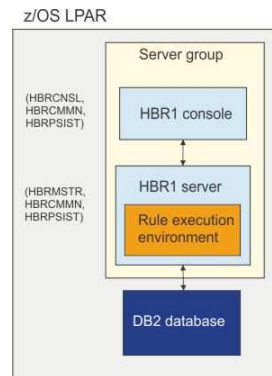
After completing the initial configuration, you can configure one to 32 zRule Execution Server for z/OS instances as a server group. zRule Execution Server for z/OS instances are configured as server groups to enable rule execution to be transferred to another server if a server fails or if there is a planned outage. The graphic on the slide is showing a simple case with a single server in the server group. You see that the server group consists of a console and a server. Other options are available where multiple servers are created. You can read about that in the information center. The first thing you need to do to configure this environment is to define a subsystem for the server instances to run in. You will do that with the SETSSI command. Next you will copy the configured JCL for the PROCs needed to run the server instances over to an active PROCLIB. Finally you will authorize the PROCs as started task procedures. This is shown on the slide.

In order to run rules here from a CICS or IMS environment, you will need to update those environments as well. Instructions to do that can be found in the information center.

Decision Server: Starting zRule Execution Server for z/OS

- Issue `START <HBRSSID_NAME>MSTR` at the z/OS console (or equivalent) command line
    - Repeat the command for each additional server in *++HBRSSIDLIST++*
        - The zRule Execution Server for z/OS console is started
- Display the Rule Execution Server console
    - `http://<host name>:<++HBRCONSOLEPORT++>/res`
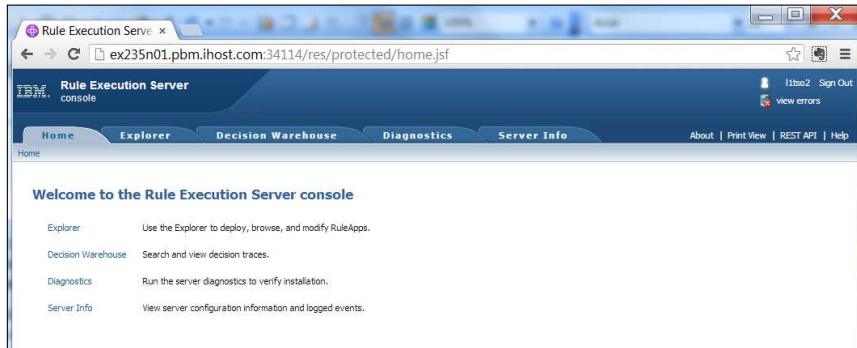
Once the configuration is complete, you can start the zRule Execution Server with the START <HBRSSID_NAME>MSTR command which you will issue at the z/OS console. You will issue the start command for every server listed in your HBRSSIDLIST variable. This command will automatically start the CONSOLE associated with the server instances. Once started, you can display the Rule Execution Server Console by opening a browser and navigating to the URL shown on the slide. '*host name'* is the TCP/IP name of the z/OS machine where you are running zRule Execution Server for z/OS and '*HBRCONSOLEPORT'* is the HTTP port you specified to access the console from your web browser. The default port is 34114.

Decision Server: Configuring Rule Execution Server on WebSphere Application Server for z/OS

- Configure security on WebSphere Application Server for z/OS
  - You must enable WebSphere Application Server administrative security and application security
- Create EJBROLES (`<++HBRWORKDS++>.<HBRSSID_NAME>.SHBRJCL(HBRDCRCF)`)
  - Create the **resAdministrators** role: `RDEF EJBROLE <hlq>resAdministrators`
  - Create the **resDeployers** role: `RDEF EJBROLE <hlq>resDeployers`
  - Create the **resMonitors** role: `RDEF EJBROLE <hlq>resMonitors`
- Run the `<++HBRWORKDS++>.<HBRSSID_NAME>.SHBRJCL(HBRDSWAS)` job to install the required .ear file
  - May need to update if the dmgrpath does not fit on one line:

    ```
    -Ddmgrpath=/wasv8config/wscell/wsdmnode/DeploymentManager/+
    profiles/default
    ```

- Deploy the Rule Execution Server MBean descriptors
  - Copy the `<InstallDir>/executionserver/lib/jrules-mbean-descriptors.jar` file to the `<WAS_HOME>/lib` directory
  - **-OR-** add that .jar file to the JVM CLASSPATH

z/OS Installation

In order to configure the Decision Server to run on WebSphere Application Server for z/OS, you must check the security being used there. Administrative and application security must both be enabled. If using RACF® or another SAF product, some EJBROLES are required as shown on the slide. You may also want to create groups corresponding to these roles so that you can more easily administer users that need access to these roles. Some JCL is provided to help with this configuration in the HBRDCRCF member.

Once the environment is set up, you can run the HBRDSWAS JCL job to install and start the required .ear file. The JCL was configured for you when you did the initial configuration. You might need to check the dmgrpath variable and update that if it does not fit on one line. The JCL comments have directions for this. Finally, you need to also deploy the Rule Execution Server MBean descriptors as seen on the slide. The information center also has optional manual instructions to configure the application server for the Decision Server.

Decision Server: Verifying Rule Execution Server on WebSphere
Application Server for z/OS

- Display the Rule Execution Server console
  - `http://<host name>:<WebSphere_defaultHost>/res`

To display the Rule Execution Server Console for this configuration, you will instead use
the port for the defaultHost defined to WebSphere. You see in this case, it is the default
9080. Note that the console looks identical in all respects to the zRule Execution Server
console you saw earlier.

Section

Decision Center configuration

z/OS Installation

Next you will look at the configuration needed for the Decision Center.

ODM801_zOS_Install.ppt

Decision Center: Initial configuration

- Identical to 'Decision Server initial configuration'
  .
  .
  .

5. Configure a DB2 persistence layer
   - Run the SQL in `<++HBRHLQ++>.<HBRSSID_NAME>.SHBRJCL(HBRDCCDB)`

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If you have already configured the Decision Server, the initial configuration should have already been completed. The one thing that differs for the Decision Center configuration is the DB2 configuration. For the Decision Center configuration, you need to run the SQL found in the HBRDCCDB member.

Decision Center: Configuring the console

- Run the jobs in this order:
  - `<++HBRHLQ++>.<HBRSSID_NAME>.SHBRJCL(HBRDCWAS)`
  - `<++HBRHLQ++>.<HBRSSID_NAME>.SHBRJCL(HBRDSDVS)`

  - May need to update if the dmgrpath does not fit on one line:

    ```
    -Ddmgrpath=/wasv8config/wscell/wsdmnode/DeploymentManager/+
    profiles/default
    ```

- Configure security on WebSphere Application Server for z/OS
  - You must enable WebSphere Application Server administrative security and application security

In order to configure the console, you need to run the jobs shown on the slide. The HBRDSDVS job will install the Decision Validation Services for you. Again, you may need to update the dmgrpath parameter if it does not fit on one line.

If you have not already configured the WebSphere Application Server for z/OS security, you will need to do that as well. You must enable administrative and application security.

Decision Center: Possible error

- HBRDCWAS

  - Ýexec¨ Error: com.ibm.ws.scripting.ScriptingException: WASX7116E:
    Cannot copy file
    "/usr/lpp/zDM/V8R0M1/teamserver/applicationservers/WebSphere8/jru
    les-teamserver-WAS8.ear" to file
    "/wasv8config/wscell/wsnodea/AppServer/profiles/default/temp/app6
    731405743838265574.ear"
  - Ýexec¨ Quitting...

- Fixed in WebSphere Application Server V8.0.0.4 and V7.0.0.24 (APAR PM61998)

Note that if you receive the error shown on the slide when running HBRDCWAS, you need to upgrade to the WebSphere levels shown on the slide. These levels were shown earier in the list of prerequisites. You might have also seen this error when running HBRDSWAS.

Decision Center: Verification

- Open the Decision Center Enterprise console:
  - `http://<host name>:<PORT_NUMBER>/teamserver`

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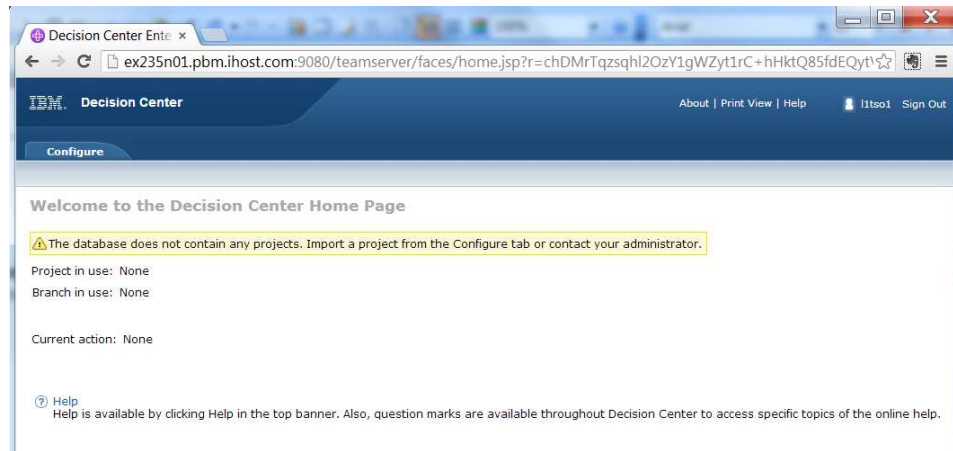
To open the Decision Center Enterprise console, go to the host name where WebSphere for z/OS is running, specifying the correct port that is being used for defaultHost. The context root is "teamserver."

Decision Center Enterprise console: Possible error

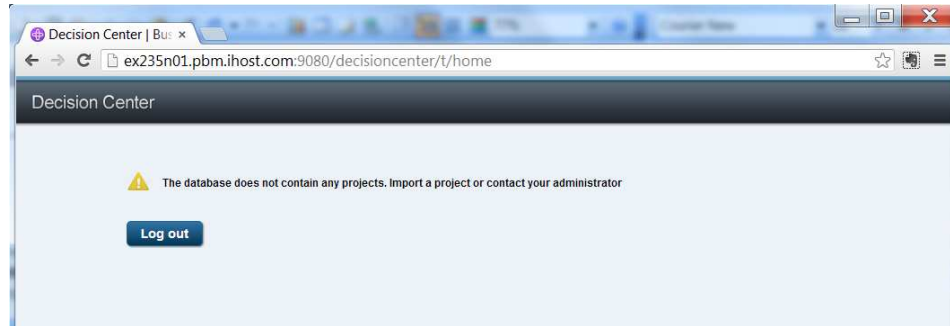- Error when logging onto the Decision Center Enterprise console:

  http://<host name>:<*PORT_NUMBER*>/teamserver

Insufficient permissions to install Decision Center

Decision Center has not been installed. You must sign in with rtsInstaller rights to be able to access the Installation Settings Wizard.

Sign Out

- Make sure you have checked security setup:

  http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/topic/com.ibm.wodm.family.config.zos/topics/tsk_ds_check_security_setup.html

If you receive an "Insufficient permissions" error when logging into the Decision Center Enterprise console, check the security setup. Again, both administrative and application security are required.

Decision Center: Verification continued

- Open the Decision Center Business console:
  - `http://<host name>:<PORT_NUMBER>/decisioncenter`

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To open the Decision Center Business console, specify 'decisioncenter' as the context root. Note that this is a screen capture before any projects have been imported.

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Decision Center Business console: Possible error

- Error when logging onto the Decision Center Business console for the first time:

  http://<URL>:<PORT_NUMBER>/decisioncenter

  Decision Center

  ⚠ Error while trying to access data source 'jdbc/ilogDataSource': Not initialized. Check that the data source exists on the application server, or contact your administrator.

  [Log out]
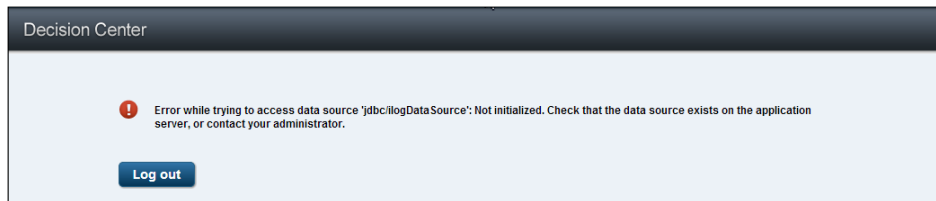
  – Need to go into http://<URL>:<PORT_NUMBER>/teamserver first
    - The database is initialized for you there

If you see this error when logging into the Decision Center Business console, you need to login to the Decision Center Enterprise console first. During that process, the database is initialized for you.

Summary

- SMP/E installation
- Configuration
  - Configuring Decision Server for z/OS execution environment
    - Configuring zRule Execution Server for z/OS
    - Configuring Rule Execution Server on WebSphere Application Server for z/OS
  - Configuring Decision Center

　　　z/OS Installation　　　　　　　　　　　　　　　　© 2012 IBM Corporation

This presentation gave you a brief overview of the configuration required for Operational Decision Manager for z/OS. Starting with the requirements, you briefly saw how the SMP/E installation is done and then how to configure the various components of the product.

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