**MitziCom OpenShift Implementation** **- PoC**

**Runbook Template**

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Document Information

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Approvals

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|  |  |  |
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| Name | Title | Comments |
|  |  |  |
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Purpose

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# Introduction

The following document provides the necessary steps, check list to perform environment configurations, code base build and deploy, a quick smoke test for the BPM components for an *Application*

## Application Details

|  |  |  |
| --- | --- | --- |
| 1 | App Code |  |
| 2 | App Name |  |
| 3 | Business Unit |  |
| 4 | App Description |  |
| 5 | Contacts | See section #8 |

## Application Integrations

Below is the list of external applications that App interacts.

|  |  |  |
| --- | --- | --- |
| **#** | **External Application** | **Service** |
| 1 |  |  |
| 2 |  |  |
| 3. |  |  |
| 4 |  |  |
| 5 |  |  |

## Environment Specifics

### Application Support Contacts

|  |  |
| --- | --- |
| **BPM Infra** |  |
| **BPM App Dev** |  |
| **Tech Connect** |  |

### Adminstration URLs:

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Admin Console |  |
| Process Center |  |
| Process Admin |  |
| BPC |  |

# Environment Checklist

## BPM

### External Folders

*If an application has any dependency on external folders, then it could be listed below along with the reason.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***{Environment Name}*** | ***Location*** | | ***Purpose*** | |
| *folderName1* | /abc/xyz/ext |  | |
| *folderName2* | /pqr/xyz/ext |  | |
|  |  |  | |

### JVM Heap Size

|  |  |  |
| --- | --- | --- |
| ***{Environment Name}*** | ***Heap Size*** | |
| *Dev* | 512KB |
|  |  |
|  |  |

# Initial Server Configuration

The steps listed in this section are only done once to configure the environment.

## Server Properties

*List any properties files or any other files to be moved to an appropriate location on the server box and perform restart if need be.*

## Custom Properties

*Provide information about JVM Variables set up*

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| JVM Variable Name | Value |
|  |  |

## WebSphere Variable

*Provide information about JVM Variables set up*

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| WebSphere Variable Name | Value |
|  |  |

## J2C Authentication Alias

*Provide information about the credentials to be used for accessing the Database*

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| DB Data Source and Connection Information | **J2C Auth Alias:**  **Username:**  **Password:** |

Creating J2C Authentication Alias (Using Admin Console)

Refer to screen shots in Section (9.5)

## Data Sources

*Provide information about the Data Source to be created on server for Database Interactions.*

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| DB Data Source and Connection Information | **Data Source Name:**  **JNDI Name:**  **Scope:**  **JDBC Provider:**  **Driver type:**  **DB Hostname:**  **DB Name:**  **Port :**  **Schema Name**: |

Creating JDBC Data Source (Using Admin Console)

Refer to screen shots in Section (9.6)

## Install the JDBC Resource adapter

*Provide RAR file location and instructions to install the IBM WebSphere Adapter for JDBC*

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| RAR File Location |  |

Installing JDBC Resources Adapter (Using Admin Console)

Refer to screen shots in Section (9.7)

## J2C Connection Factory

*Provide information to Set up J2C Connection Factory for JDBC Resource Adapter for each node*.

|  |
| --- |
| **CF Information for *{Environment Name}*** |

|  |  |
| --- | --- |
| J2C Connection Factory Information | **Provider:** IBM WebSphere Adapter for JDBC  **Name:**  **JNDI Name:**  **Component Auth Alias:** |

|  |  |
| --- | --- |
| **Custom Properties** | |
| Name | Value |

|  |  |
| --- | --- |
| DatabaseVendor |  |

|  |  |
| --- | --- |
| DataSourceJNDIName |  |

Create J2C Connection Factory for JDBC Resource Adapter (Using Admin Console)

Refer to screen shots in Section (9.8)

## Object Cache

*If application has caching requirement, then set up the Object Cache information*

|  |  |
| --- | --- |
| Name |  |
| JNDI Name |  |
| Cache Size |  |
| Default Priority |  |
| Dependency ID Support |  |

## Shared Library

*Provide information about Shared Library and its Location to be set in the environment.*

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Library Name | Classpath |
|  |  |

Adding Shared Library on the Server

Refer to screen shots in Section (9.15)

## Queue Configuration

*Provide information about the Queues to be created on server for any Queue Based Interactions.*

|  |
| --- |
| ***<Environment>*** |
| Host Name |  |
| Port |  |
| Transport Channel |  |
| Queue Manager Name |  |
| Queue Name |  |
| Queue Depth |  |
| Message Size |  |
| Back Out Queue Name |  |
| Queue JNDI Name |  |
| Client Channel |  |
| Queue Connection Factory JNDI Name |  |
| Activation Spec JNDI Name |  |
| Number of sequential delivery failures before suspending endpoint |  |

## SSL Set-Up

*Provide information about the SSL environment if SSL is the mode of Security and also provide relevant information about Certificates.*

## Policy Sets and Policy Bindings

*Provide information about the Tokens to be used for Security and also provide relevant information required to set up Policy Sets and Policy Bindings.*

# Application Modules

|  |  |  |
| --- | --- | --- |
| **#** | **Module Name** | **Module Type** |
| 1 | *{BU Initials}*\_*{ProcessAppName}*\_PA | BPM Process App |
| 2 | MED\_*{ServiceName}*ServiceApp.ear | Mediation Flow |
| 3 | JAVA\_*{JavaModuleName}* | J2EE APP |
| 4 |  |  |

Toolkits referenced in *Process App*

|  |  |
| --- | --- |
| **#** | **Toolkit Name** |
| 1 | *{Toolkit Name}* TK |
|  |  |

# Build

*Provide information about how to create a Build the application to perform deployment in various environments.*

## Connect to *Source Control*

## Checkout/Check-in Code from *Source Control*

## Build Project Artifacts

# Deployment

## BPM

*All the information about the BPM Modules associates with the application should be provided under this section. The information should be exhaustive and should contain all the essentials to set up the application like application install, configurations, environment variables, external libraries, security, and so on.*

### Process App #1: *{BU Initials}*\_*{ProcessAppName}*\_PA

Process Application Exposed Endpoint

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| App Name | URL (Web Service/REST) |

#### Installation Target

BPM Runtime Environment

|  |  |
| --- | --- |
| ***{Environment} (DEV/QA..)*** | |
| *{Runtime Environment Name}* | *BPM1* |

#### Deployment Dependencies

Properties File

* Location:
* File Name:

Log File

* Location:
* File Name:

Dependencies

* Toolkits:
* Mediations (EAR):

Shared Libraries

* Location:
* File Name:

Database Configurations

* J2C Authentication Alias:
* JDBC Data Source:
* JDBC Resource Adapter:
* J2C Connection Factory:

MQ Configurations

* JMS/Queue Name:
* MQ Server:
* Port:

Security Configurations

* Authentication model:
* SSL certificates required:
* System where SSL cert is used:
* Contact for that system:
* Version:

External Services

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Service Name 1 | {Service URL} |

Environment Variables and Promotable Properties

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Environment Variables | |  |  |  | | --- | --- | --- | | **Sr. No.** | **Name** | **Value** | | 1 | *variableName* | *{variable\_value}* | |  |  |  | |

#### Steps for Installation

Steps for Online Deployment

Refer section 9.11

Update Environment Variables

Refer Section 9.12

## Mediation Module

*All the information about the Mediation Modules associates with the application should be provided under this section. The information should be exhaustive and should contain all the essentials to set up the application like application install, configurations, modules properties, backend service url’s, external libraries, security, and so on.*

### Mediation Module #1 : MED\_*{ServiceName)*Service

Mediation Exposed Endpoint

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Mediation Name | URL (Web Service/REST) |

#### Installation Target

BPM Runtime Environment

|  |  |
| --- | --- |
| ***{Environment} (DEV/QA..)*** | |
| *{Runtime Environment Name}* | *BPM1* |

Targeted JVMs: App Target, Web Servers and so on

#### Deployment Dependencies

Properties File

* Location:
* File Name:

Log File

* Location:
* File Name:

Dependencies

* Toolkits:
* Mediations (EAR):

Shared Libraries

* Location:
* File Name:

Database Configurations

* J2C Authentication Alias:
* JDBC Data Source:
* JDBC Resource Adapter:
* J2C Connection Factory:

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Database Information | **DB Hostname:**  **DB Name:**  **Port :**  **Schema Name**: |

MQ Configurations

* JMS/Queue Name:
* MQ Server:
* Port:

Security Configurations

* Authentication model:
* SSL certificates required:
* System where SSL cert is used:
* Contact for that system:
* Version:

External Services

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Service Name 1 | {Service URL} |

Environment Variables and Promotable Properties

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Module Property | |  |  |  | | --- | --- | --- | | **Sr. No.** | **Name** | **Value** | | 1 | *variableName* | *{variable\_value}* | |  |  |  | |

#### Steps of Installation

Uninstalling Application Manually(from Admin Console)

Refer to screen shots in Section (9.2)

Steps for Installation of EAR(Using Admin Console)

Refer to screen shots in Section 9.1)

Updating Module Properties (using Admin Console)

**Important Note:** This needs to be performed only if there is any change in Module Property

Refer to screen shots in Section (9.3)

Change the Backend Service Endpoints manually using Admin Console

Refer to screen shots in Section (9.4)

Adding Shared Library Reference to Application

Refer to screen shots in Section (9.16)

## J2EE App

*All the information about the J2EE Modules like (Servlets, JSPs, etc.) associated with the application should be provided under this section. The information should be exhaustive and should contain all the essentials to set up the application like application install, configurations, properties, external libraries, security, and so on.*

### J2EE App #1: JAVA\_*{JavaModuleName}*

J2EE Exposed Endpoint

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| J2EE App Name | URL (Sevlet/Web Service/REST) |

#### Installation Target

BPM Runtime Environment

|  |  |
| --- | --- |
| ***{Environment} (DEV/QA..)*** | |
| *{Runtime Environment Name}* | *BPM1* |

Targeted JVMs: App Target, Web Servers and so on

#### Deployment Dependencies

Properties File

* Location:
* File Name:

Log File

* Location:
* File Name:

Dependencies

* Toolkits:
* Mediations (EAR):

Shared Libraries

* Location:
* File Name:

Database Configurations

* J2C Authentication Alias:
* JDBC Data Source:
* JDBC Resource Adapter:
* J2C Connection Factory:

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Database Information | **DB Hostname:**  **DB Name:**  **Port :**  **Schema Name**: |

MQ Configurations

* JMS/Queue Name:
* MQ Server:
* Port:

Security Configurations

* Authentication model:
* SSL certificates required:
* System where SSL cert is used:
* Contact for that system:
* Version:

External Services

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Service Name 1 | {Service URL} |

Environment Variables and Promotable Properties

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Module Property | |  |  |  | | --- | --- | --- | | **Sr. No.** | **Name** | **Value** | | 1 | *variableName* | *{variable\_value}* | |  |  |  | |

#### Steps of Installation

Uninstalling Application Manually(from Admin Console)

Refer to screen shots in Section (9.2)

Steps for Installation of EAR(Using Admin Console)

Refer to screen shots in Section 9.1)

Adding Shared Library Reference to Application

Refer to screen shots in Section (9.16)

## DATABASE

*If application consists of any specific database, then attach the E-R Diagram, DDLs and any other information regarding Database in this section.*

## Entitlements

*If any functional roles or entitlements are created for the application, then it should be represented in this section.*

### Functional Roles

### Request a Functional Role

# Smoke Testing

*Provide information to enable smoke testing once the environment set up and deployment is complete.*

## Testing Set-up

*Provide set up information to perform smoke testing. E.g. testing tool*

## Test Cases

*Provide Test Case information to perform smoke testing*

# Contact List

*Provide contact information of key team members involved with the project. The list below can vary per application.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ROLE** | **CONTACT NAME** | **PRIMARY** | **SECONDARY** | **TERTIARY** |
| Process Owner |  |  |  |  |
| Business Manager |  |  |  |  |
| Business Analyst |  |  |  |  |
| Technical Program Manager |  |  |  |  |
| Project Manager |  |  |  |  |
| Technical Lead Architect |  |  |  |  |
| BPM Developer |  |  |  |  |
| External Service Team Manager |  |  |  |  |
| BPM Infrastructure SME |  |  |  |  |

# Reference

## Steps for Installation of EAR (Using Admin Console)

1. Go to Application -> Application Types -> WebSphere enterprise application
2. Click Install , Browse to the path where we have the EAR file and Click Next
3. Select Fast Path and click Next (Select Detailed if you want to check other parameters for deployment)
4. Check Select Install Options and click Next
5. Check the Web module of the Application and select the AppTarget Cluster and click apply to map the module to App Target. Click Next
6. Check the Summary of the install and click Finish
7. Check the log for the App to deploy Successfully
8. Click Review after successful deployment, Check Synchronize changes with Nodes and Click
9. Wait for synchronization to complete and then click ok
10. Once it is saved , go to the deployed application WebSphere enterprise applications, check the Application and click Start button to start the Application
11. Check if Application started successfully.

## Uninstalling Application Manually (Using Admin Console)

1. Select the application to be Uninstall and click Uninstall Button
2. Check the Application Name and click OK
3. Check for uninstall successfully message and then click Review
4. Select Synchronize changes with Nodes and click Save
5. Make sure the sync completed successfully and then click OK
6. That should complete the Uninstall

## Updating Module Properties (using Admin Console)

1. Click on the module for which you need to update Module Properties and then click Module Properties under Additional Properties section
2. Expand the General Properties and you should find the promotable Module Properties defined there. Update the values as required and Apply the changes
3. Review the changes, check Synchronize changes with Nodes and click Save

## Change the Backend Service Endpoints manually (using Admin Console):

1. Go to Application -> SCA Module
2. Expand Module components till you reach the service whose endpoint you want to change eg: for Import -> IMP\_WS\_*{ServiceName}* -> Binding -> JAX-Web service [\*\*\*\*\*] and Click on it
3. Click Edit for Target Endpoint Address
4. Change the Endpoint and click Apply
5. Review the changes, check Synchronize changes with Nodes and click Save

## Create J2C Authentication Alias

1. Open Admin Console and go to Security -> Global Security and expand Java Authentication
2. Click J2C Authentication Alias under Java Authentication. Click New.

**Note:** Make sure the “Prefix new alias names with the node name of the cell (for compatibility with earlier releases)” check box is unchecked. If not the uncheck it and Click Apply

1. Enter the Alias, User ID, Password and Description and click Apply
2. Click Review, check for Synchronize changes with Nodes and Save.

**NOTE:** J2C Auth Alias creation as well as update needs a JVM restart to take effect.

## Create JDBC DataSource

1. Log into Admin Console. Go to Resources ->JDBC -> Data Sources
2. Set the scope to AppTarget Cluster, click New and fill up Data Source Name and JNDI Name and click Next
3. Select existing JDBC Provider “DB2 Using IBM JCC Driver (XA)” and click Next
4. Fill in the Database Information for Data Source and click Next
5. Set up the Authentication alias for XA Recovery and Component-managed authentication alias and Click Next
6. Check if all the information is filled in as expected and click Finish
7. Click Review. Check Synchronize changes to Nodes and click Save
8. Select the Data Source from the list of Data Sources and Test Connection to make sure Data Source is able to connect to DB and works fine.
9. Click on the Data Source, go to Additional Properties (Top right corner) and click Custom Properties
10. Click curentSchema from the Custom Properties, enter the DB Schema Name for that particular Environment as Value and click Apply
11. Click Review , check Synchronize changes with nodes and click Save
12. Click OK after Save is completed successfully

**NOTE:** JDBC Data Source Server re-start for it to take effect

## Install JDBC Adapter (using Admin Console)

1. Get the RAR File to be installed on the Server in appropriate folder location.
2. Log into Admin Console and go to Resources -> Resources Adapters -> Resource adapters.

Select AppTarget Cluster level scope and click Install the RAR

1. Select Node, select the RAR file from the appropriate file location and click Next
2. Leave everything default make sure the name is IBM WebSphere Adapter for JDBC and click OK
3. Click Review, check Synchronize changes in Nodes and click Save
4. Click OK on successful completion
5. **Perform the same step for other Nodes as well**

Note: Restart the server for it to take effect.

## Create J2C Connection Factory for JDBC Resource Adapter (using Admin Console)

1. Log into Admin Console and go to Resources -> Resources Adapters -> J2C Connection Factory

Select Node1 as scope and click New

1. Fill in below information and click OK

|  |
| --- |
| **CF Information** |

|  |  |
| --- | --- |
| J2C Connection Factory Information | **Provide:** IBM WebSphere Adapter for JDBC  **Name:**  **JNDI Name:**  **Component Auth Alias:** |

1. Click *jndiName* and go to Custom Properties and enter below information:

|  |  |
| --- | --- |
| **Custom Properties** | |
| Name | Value |

|  |  |
| --- | --- |
| DatabaseVendor |  |

|  |  |
| --- | --- |
| DataSourceJNDIName |  |

Click Apply.

1. Click Review, select Synchronize with other Node and click Save
2. Click OK on successful completion.
3. **Repeat the same steps for other Nodes**

**Note:** This step will need a Server Restart to take effect.

## Set Connection Factory JNDI to EAR (Using Admin Console)

1. In the Admin Console, go the Application -> Application Types -> WebSphere enterprise applications and find MED\_*{ServiceName}*App
2. Click on MED\_*{ServiceName}*App
3. Click on to Resource Reference under References section.
4. Check if the “Target Resource JNDI Name” is set to “jdbc/*{jndi\_name}*CF”. If not then perform below steps else no need to perform below steps.
5. Select all the module, click Set Multiple JNDI Name drop down and select jdbc/”*{jndi\_name}*CF and click OK
6. Click OK. The target Resource JNDI Name column should display the CF JNDI Name.
7. Click Review , select Synchronize changes with nodes option and click Save
8. Click OK on completion of Save function

## Update Service Retry Promotable Property (Using Admin Console)

It is preferred that the Service Retry properties should be set in the Application itself by the Developers at development time. However, if there are updates to be done then below are the steps to follow to change it at runtime.

1. Log into the Admin Console and got Application -> SCA Modules
2. Go the Module for which we want to change to property.
3. Go to Module Properties under Additional Properties section and expand the module under the General Properties
4. For Service Retry you can update 3 properties:

* Retry On: On which type of fault we want to perform Retry:
  + Never: 0
  + Any Fault: 1
  + Modeled Fault: 2
  + Unmodeled Fault: 3
* Retry Count: Number of times we want to Retry
* Retry Delay: Interval after which we want to Retry in seconds

1. Depending on which operation we want to update the properties it can be updated. The way we have it defined in Module properties is as follow:

**OperationName.retryOn**

**OperationName.retryCount**

**OperationName.retryDelay**

1. Click Apply
2. Click Review, check Synchronize changes with Nodes and click Save
3. Click OK when the Save is complete.

## Take snapshot and do Online Deployment

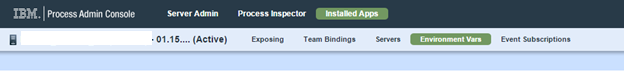
1. Open the Process Designer that is connected to the Sandbox Process Center.
2. Go to the ‘Process Center’ perspective and locate *{BUInitials}*\_*{ProcesAppName}*\_PA process App.
3. Open the app by pressing ‘Open in Designer’. The Process App opens as shown below.
4. Take the snapshot of the Process App by pressing snapshot option in the right corner of the screen.
5. Enter the name of the snapshot
6. Press OK. Snapshot is created as shown below.
7. Install the Process App to the appropriate environment by using the ‘Install’ option.(This is applicable for online deployment).

Once the application is installed successfully set the page to default by login in to Process Admin console.

## Update Environment Variables

The Process Application can have *n* environment variables which have to be set once install is done.

To set the environment variables, go to the Process Admin Console and select the process App in the ‘Installed Apps’ tab. Once selected, go to the ‘Environment Vars’ tab and update the variables to match the server and the environment that the application is running on.



|  |  |
| --- | --- |
| ***{Environment\_name}*** | |
| Variable Name | Value |
|  |  |

## Adding Shared Library on the Server

1. Expand Environment and select Shared Libraries.
2. Make sure the scope is set appropriately and create a new shared library.
3. Click New and fill out the correct information including the Name and appropriate Classpath.

|  |  |
| --- | --- |
| ***{Environment Name}*** | |
| Library Name | Classpath |
|  |  |

Click Apply.

**Note:** This step will need a Server Restart to take effect.

## Adding Shared Library Reference to Application

1. In admin console go to Applications > WebSphere enterprise applications > *Your Application Name* > Shared Library References and add the new shared library to the Web Project
2. Click OK and save your changes.
3. Now test your application.

## Enable Trace for Mediation Module (Trace Primitive) (Using Admin Console)

The Trace primitive should be ideally used to perform debugging on a Service. By default Trace should be **DISABLED** in QA and higher environments. In the event of debugging it can enabled following below steps.

1. Log into the Admin Console and got Application -> SCA Modules
2. Go the Module for which we want to change to property.
3. Go to Module Properties under Additional Properties section and expand the module under the General Properties
4. For enabling Trace we need to set ***{operation\_name}.*log.enabled** flag to **“true”**.
5. Below is the list of Trace names based on the operations within the service.

|  |  |  |  |
| --- | --- | --- | --- |
| **Service Name** | **Operation Name** | **Trace Enable String** | **Values** |
| service1 | service1.operation1 | operation1.log.enabled | true/false |
|  |  |  |  |
|  |  |  |  |

1. Below is the module properties change we made in Admin Console screenshot
2. Click Apply
3. Click Review, check Synchronize changes with Nodes and click Save
4. Click OK when the Save is complete.

**Note:** Trace is disabled (set to false) by default. To avoid filling up the log files, it should be disabled after debugging is done.