Deploying IBM Business Process Manager packages to offline process servers

How to generate installation packages in the Process Center and deploy them to unconnected process servers

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In IBM® Business Process Manager, the Process Center is used to deploy process application snapshots to connected process servers. However, there may be times when you need to deploy a process application to a process server that is started, but is not connected to a Process Center. In this case, you'll need to create packages from the Process Center to deploy the snapshots. This article describes how to create deployment packages from snapshots, and how to deploy them to a process server.

Overview

In the business process management world, situations may occur where a connection between a running process server and Process Center is neither practical or desired, such as when there is a firewall between the process server and Process Center, or the process server is a production z/OS server housing mission-critical applications and the administrator does not want a Process Center to be connected. This article describes how to create deployment packages from snapshots in the Process Center and deploy them to offline process servers.

What do we mean by offline?

When we refer to a process server as as offline, we mean that it is not connected to a Process Center. In this context, a process server can be started with all its messaging engines and applications running, but if it is not connected to a Process Center, it is referred to as offline.

Add an offline process server

The Process Center is where deployment packages are created based on snapshots. For this article, we'll use the Advanced Hiring Sample application that comes packaged with the Process Center. The first step is to add the offline server to the Process Center:
1. Log in to IBM Process Center.
2. Click the **Servers** tab.
3. On the right side of the console, click **Add a New Offline Server**.
4. Enter a server name of your choice, such as `dv_works_offline`, and click **Create**.
   The server should now appear in the list with a status of **offline**.

### Create an installation package to deploy to the offline process server

To create the installation package for the Advanced Hiring Sample application, do the following:

2. On the next page click **Create a New Snapshot** on the right.
3. Give the new snapshot a name, such as `HSA_DV_Work`. The new snapshot will appear in the list of ProcessApps.
4. Select **Install** on the right of the snapshot.
5. A page will appear with the list of servers to which you can install the snapshot, as shown in Figure 1. Select the offline server you added earlier. Notice that the **Install** button on the bottom right changes to **Create Installation Package** when an offline server is selected, as shown in Figure 1.

**Figure 1. IBM Process Center showing servers**

6. Click **Create Installation Package**.
7. While the package is being created, you’ll see a progress message. When the package is created, the message changes to “Deployment Package Available,” as shown in Figure 2.
Figure 2. IBM Process Center showing the deployment package generated for a snapshot

Extract the installation package

Now that an installation package has been generated for the snapshot, you need to extract it using the BPMExtractOfflinePackage command, as follows:

1. Open a command window on the IBM Process Center machine.
2. Start the wsadmin tool. For example:
   ```
   C:\<Installation Root>\bin>wsadmin.bat -lang jython -user <wsadmin user> -password <wsadmin password> -conntype SOAP -port <soap Port>
   ```
   For more information, refer to Installing snapshots on offline process servers in the IBM BPM Information Center.
3. Using the wsadmin tool, you can display information about the snapshot with the AdminTask.BPMShowProcessApplication command. Listing 1 shows an example of this command and some typical output. Note that you can determine the containerAcronym by looking next to the process application name in the Process Center.

Listing 1. BPMShowProcessApplication

   ```
   wsadmin>AdminTask.BPMShowProcessApplication('[-containerAcronym HSAV1]
   Name: Hiring Sample Advanced\nAcronym: HSAV1
Description: Toolkit: false
Tracks: Track Name: Main
Track Acronym: Main
Default: true
Tip:
   ```
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4. Using the information for the various parameters required by the **BPMExtractOfflinePackage** command, you can extract the package, as shown in Listing 2.

```plaintext
Listing 2. BPMExtractOfflinePackage
wsadmin>AdminTask.BPMExtractOfflinePackage('[ -containerAcronym HSAV1 -containerSnapshotAcronym HSADVW -containerTrackAcronym Main -serverName DV_Works_Offline -outputFile /tmp/hsav1.zip ])
'BPMExtractOfflinePackage passed.'
wsadmin>
```

5. The **BPMExtractOfflinePackage** will report "passed" once the package has been successfully created.

**Upload the package**

Now that the file has been extracted, you can transfer it to the machine running the process server as follows:

1. By any suitable means, transfer the zip file generated in the previous section to the machine running the target process server. Note that you may want to change the permissions after transfer so that the file can be unzipped by the **BPMInstallOfflinePackage** command.
2. Start the wsadmin tool on the process server. Note: **BPMInstallOfflinePackage** cannot be run on the Deployment Manager in a Network Deployment (ND) environment, it must be run on the node instead. This is an easy error to make. If you see the error message: "This command should be executed for a node where IBM BPM teamworks application is running," ensure that the command is being run at the correct location.
3. In the wsadmin tool, run the **BPMInstallOfflinePackage** command, as shown in the example in Listing 3.

```plaintext
Listing 3. BPMInstallOfflinePackage
wsadmin>AdminTask.BPMInstallOfflinePackage('[ -inputFile /tmp/hsav1.zip ]')
'BPMInstallOfflinePackage passed.'
wsadmin>
```
Verify the package

In order to verify that the package has been successfully deployed, you can run the Advanced Hiring Sample application in the exact same fashion as if the deployment was done through the Process Center:

1. Log into the process portal of the process server to which the package was deployed.
2. Once logged in, check the right side of the portal. Advanced HR Open New Position should be shown as one of the available processes. Figure 3 shows an example of the Process Portal showing a successful deployment.

![Advanced HR Open New Position](image)

**Figure 3. IBM Process Portal showing successful deployment of the hiring sample**

Conclusion

This article described the steps to create, install, and verify BPM packages to offline process servers. This can help you deploy BPM packages to offline process servers when it's not desirable or feasible to connect the process server to IBM Process Center.
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