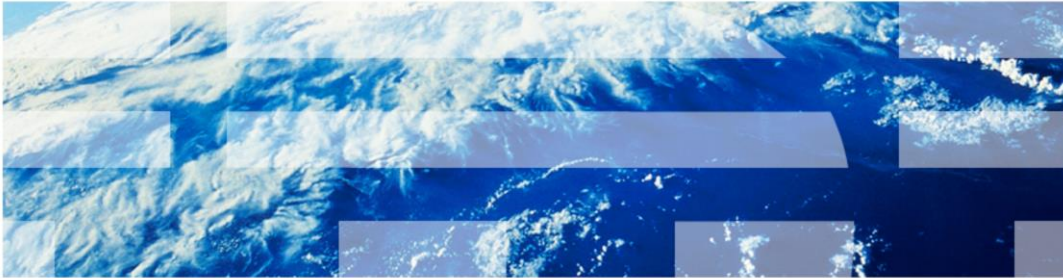

IBM PureApplication System and IBM Workload Deployer
IBM Business Process Manager Pattern V8.0

ConfigBPM Script Package



This presentation will cover the ConfigBPM script package in the Business Process Manager Pattern V8.0 in IBM PureApplication System and IBM Workload Deployer.

Agenda

- ConfigBPM script package introduction

You will be introduced to the ConfigBPM script package.

Background: injected configuration scripts versus preconfigured profiles

- WebSphere® Application Server Hypervisor Edition “injects” a preconfigured profile into the image
 - At deployment time, system scripts are run to patch up with host name, DB user ID,
 - System scripts carry out minimal configuration
- Being a stacked product, Business Process Manager cannot inject a preconfigured profile into the image
 - WebSphere Application Server does not provide enough API support to implement such a capability safely
- Therefore, Business Process Manager profile creation is done at deployment time with a set of configuration scripts
 - By default, automatically with configuration scripts injected into the image
 - Optionally, with the exposed configuration script package provided by IBM (requiring pattern modifications)
- Business Process Manager profile creation takes time
 - With injected scripts, some optimization achieved by running scripts in parallel across virtual machines
 - With exposed configuration scripts added to pattern, all scripts run serially

Here is background information on why IBM exposed these configuration scripts.

Business Process Manager is a “stacked” product, which means it was implemented on top of WebSphere Application Server. Virtual images for WebSphere Application Server Hypervisor Edition are “injected” with a preconfigured profile. Therefore very little configuration needs to be done at deployment time and the deployment will complete relatively quickly. However, at this time WebSphere Application Server does not have sufficient API support for stacked products to safely inject similar preconfigured profiles into their virtual images. So it is necessary to use a different technique to build the profiles for your Business Process Manager deployment.

For Business Process Manager patterns, by default, profile creation is done at deployment time by a set of configuration scripts that have been injected into the image. These scripts are automatically ran on every virtual machine. But IBM has also exposed all of these configuration scripts in the ConfigBPM script package. Therefore you can modify the exposed scripts and run them during deployment. If you choose this option, then you can't use the default deployment pattern; running the ConfigBPM script package during deployment requires pattern changes.

Regardless of whether you use the injected scripts or the ConfigBPM script package, having to run these configuration scripts during Business Process Manager pattern deployment makes it take longer than a WebSphere Application Server pattern deployment. If you use the default pattern with the injected scripts, some optimization is achieved by running the scripts in parallel on multiple virtual machines. If you use the exposed scripts in the ConfigBPM script package, the deployment will take even longer because all the scripts have to run serially.

Background – configuration scripts

What happens if a configuration script requires modifications:

- Default image injected script changes require a new image, a lengthy and often unacceptable process
- May be able to apply emergency fix if injected scripts have a bug
- Ability to include the ConfigBPM script package in the pattern provides quicker and cleaner resolution
- ConfigBPM script package exposes the same scripts “injected” into the image
 - They can be customized as any script package can
- Intent is that users will not make extensive configuration changes
- Documentation is forth-coming on the details of the contents of the ConfigBPM script package

Here is another reason why IBM exposed the configuration scripts. Consider the scenarios where one of the configuration scripts has a defect or a customer needs a small configuration change. If the configuration scripts were available only as part of the virtual image, then IBM would have to create new images. Image building is a lengthy process. The time required would be unacceptable in these scenarios. Instead, IBM would have to create an emergency fix, a solution that should be avoided, if possible.

With the configuration scripts exposed, the process for modifying a script is very easy. The customer modifies the script package, modifies the pattern to pull in the script package and re-deploys the pattern. Note that you should not make significant changes to the exposed configuration scripts. At this time, there is very little documentation available about the details of these scripts, such as the scope of customization possible and each script’s functionality.

ConfigBPM - script package introduction

- To use the ConfigBPM script package:
 - In edit mode or during deployment:
 - Required: change the **Script package activation** property on the individual parts of choice to True
 - In edit mode:
 - Optionally add the ConfigBPM script package to the same individual parts
- If ConfigBPM script package is not provided to the pattern and the Script package activation field is True:
 - Then scripts must be run manually in the virtual machines – which is useful for testing scripts
- One ConfigBPM script package is provided by IBM that correlates to the default Business Process Manager configuration scripts injected into image
 - It has the intelligence to detect the type of part it is running against and configures accordingly
 - User has option of maintaining one script package for all parts, or to create a separate script package for each individual part

To deploy a Business Process Manager pattern with the script package, you must change the Script package activation property from False to True for each part in the pattern that runs the script package. Then typically you add the script package to the part. This step is optional in order to facilitate testing of the script. When testing the script, deploy the part without adding the script package and then manually run the script on the virtual machine until you are satisfied with the script. Once the script has been tested, then add it to the part and test the full, multi-hour deployment.

The ConfigBPM script package provided by IBM works for all parts of the Business Process Manager image. When ConfigBPM runs on any of the parts, it has the built-in intelligence to detect what kind of part it is running on and invokes the correct sub-scripts accordingly. If you modify the configuration scripts, you have the option of keeping all the scripts together in one script package or creating a separate script package per part.

ConfigBPM script package

- Navigate to **Catalog > Script Packages** and select **ConfigBPM**
- Download the script package, and open with archive tool

The screenshot shows the details for the 'ConfigBPM' script package. The page includes a title bar with 'Refresh', 'Clone', and 'Lock' icons. The main content area displays the following information:

- Description:** Install and configure each part for IBM Business Process Manager v8.0
- Created on:** Aug 15, 2012 12:04:59 PM
- Current status:** Draft
- Updated on:** Aug 21, 2012 3:02:49 PM
- Script package files:** A 'Browse...' button and an 'Upload' button. Below this, it states 'The script package is in ConfigBPM.zip.' with a 'Download' button.
- Environment:** (none)

The screenshot shows a file explorer window displaying the contents of the 'ConfigBPM-1.zip' file. The file is expanded to show a directory structure with the following files and folders:

Name	Size
..	
cloud_profile.d	
common	
system	
cbscript.json	361
cloud_profile	605
ConfigBPM.sh	2,651
ConfigBPM_Adv_PC_Standalone.sh	1,383
ConfigBPM_Adv_PS_Standalone.sh	2,704
ConfigBPM_Custom.sh	3,195
ConfigBPM_DB2.sh	2,065
ConfigBPM_Dmgr.sh	4,248
ConfigBPM_IHS.sh	1,299
ConfigBPM_PrimaryDB.sh	2,042
ConfigBPM_StandbyDB.sh	764

6

IBM Business Process Manager Pattern V8.0 ConfigBPM Script Package

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The next few slides walk through the screens related to the ConfigBPM script package. To view the contents of the script package, navigate to **Catalog**, and then **Script Packages** and select the **ConfigBPM** script. Once selected, you can download the script package archive file to your workstation and view it. When viewing it, remember that ConfigBPM.sh is the first script that runs, for any virtual image part.

ConfigBPM - add scripts to parts in pattern (optional) (1/2)

- In edit mode, select **Scripts**, and drag/drop ConfigBPM script into parts of choice

The screenshot displays the IBM Business Process Manager Pattern Editor interface. The title bar indicates the pattern being edited is "Editing AIMCP_BPM_v8_PC_ConfigBPM". The main window shows a process flow diagram with several parts: "Process center deployment manager", "Process center custom nodes", "IBM HTTP server for process center", and "Process center database". Each of these parts has a "ConfigBPM" script package icon added to it. On the left, a "Parts (226/229)" pane is open to the "Scripts (50/50)" sub-pane, where the "ConfigBPM" script package is highlighted. A red arrow points from this script package in the list to the "ConfigBPM" icon on the "Process center deployment manager" part in the diagram. The bottom of the window shows the page number "7", the text "IBM Business Process Manager Pattern V8.0 ConfigBPM Script Package", and the copyright notice "© 2012 IBM Corporation".

To add the ConfigBPM script package to any of the Business Process Manager patterns, while editing the pattern, drag the ConfigBPM script package into the part or parts where you want to run it. As mentioned before, before you add the script package to the deployment pattern you should test it by running it manually after deployment.

ConfigBPM - add scripts to parts in pattern (required) (2/2)

- Set **Script package activation** field to “True” in parts the ConfigBPM script is to run
- After all parts are configured, click OK to deploy

Properties for part Process center deployment manager (BPMPCDMGRPart)

Name:	BPMPCDMGRPart	
Virtual CPUs:	1	🔒
Memory size (MB):	2048	🔒
Reserve physical CPUs:	False	🔒
Reserve physical memory:	False	🔒
Script package activation:	True	🔒
Password (root):	••••••	🔒
Verify password:	••••••	

OK Cancel

8

IBM Business Process Manager Pattern V8.0 ConfigBPM Script Package

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Additionally, for each part, you need to change the **Script package activation** property from **False** to **True**.

ConfigBPM – history after deployment

- Expand History and note that ConfigBPM is run on all parts
- Time taken to run scripts in this example approximately 1.5 hours

The virtual system has been deployed	Aug 21, 2012 3:46:38 PM
Executing script package ConfigBPM on virtual machine aimcp137-BPM PC Custom Node-BPM	Aug 21, 2012 2:53:09 PM
Executing script package ConfigBPM on virtual machine aimcp138-BPM PC DMGR-BPMv8_LP_P	Aug 21, 2012 2:30:17 PM
Executing script package ConfigBPM on virtual machine aimcp139-BPM PC IHS-BPMv8_LP_PC	Aug 21, 2012 2:29:16 PM
Executing script package ConfigBPM on virtual machine aimcp142-BPM PC Database-BPMv8_	Aug 21, 2012 2:21:59 PM
Starting virtual machine aimcp137-BPM PC Custom Node-BPM	Aug 21, 2012 2:19:22 PM
Starting virtual machine aimcp138-BPM PC DMGR-BPMv8_LP_P	Aug 21, 2012 2:17:21 PM
Starting virtual machine aimcp139-BPM PC IHS-BPMv8_LP_PC	Aug 21, 2012 2:14:56 PM
Starting virtual machine aimcp142-BPM PC Database-BPMv8_	Aug 21, 2012 2:14:56 PM
Starting virtual machines in virtual system BPMv8_LP_PC_configBPM (test defect2).	Aug 21, 2012 2:14:56 PM
Registering virtual system BPMv8_LP_PC_configBPM (test defect2)	Aug 21, 2012 2:12:01 PM
Transferring virtual images to hypervisors	Aug 21, 2012 2:11:46 PM
Generating model for topology and network	Aug 21, 2012 2:11:01 PM
Reserving cloud resources	Aug 21, 2012 2:09:26 PM
Deployment has been queued	Aug 21, 2012 2:09:16 PM

After the deployment completes, the History for the deployed instance reflects the fact that the configuration script package ran for the parts that you specified. On this slide, look at the length of time the scripts ran for the four parts in this example. The times varied from about one minute for the HTTP server to about 53 minutes for the custom node.

ConfigBPM – script results

- View the remote_std_out.log for the ConfigBPM script package for every virtual machine
- Script results for every virtual machine are different

Script Packages			
AddDisk	✓	Aug 22, 2012 4:02:23 PM	remote_std_out.log remote_std_err.log
	▶	Execute now	
Default raw disk		(none)	
ConfigBPM	✓	Aug 21, 2012 3:29:09 PM	remote_std_out.log remote_std_err.log
Must Gather Logs	✓	Aug 21, 2012 4:45:57 PM	remote_std_out.log remote_std_err.log cloudburst_collect1345581957831.zip
	▶	Execute now	

After the deployment completes, you can also view the results of the ConfigBPM script package. Select the “remote standard out log” to view that log.

ConfigBPM – script results example

```

30 Configuration type: Advanced Process Center Dmgr
31 In ConfigBPM_Dmgr.sh: configure dmgr.prococtr.adv
32 [2012/08/21 19:30:59] Entry of NDutil configuration
33 [2012/08/21 19:49:15] Exit of NDutil configuration
34 [2012/08/21 19:49:15] Entry of setting SSH trust to IHS
35 Generating local ssh keys if needed
36 Generating public/private rsa key pair.
37 Your identification has been saved in /root/.ssh/id_rsa.
38 Your public key has been saved in /root/.ssh/id_rsa.pub.
39 The key fingerprint is:
40 67:95:e4:4d:2d:78:66:cb:9b:2e:c2:a8:5e:7b:17:84 root@aimcpl38
41 The key's randomart image is:
42 +--[ RSA 2048 ]-----+
43 |          . . . . |
44 |         o.+* . |
45 |        .+*.o |
46 |         E. o |
47 |        S o. o |
48 |         o . o |
49 |        .o o |
50 |       ...+ o . |
51 |      .o... o . |
52 +-----+
53 Installing public key on aimcpl39.austin.ibm.com
54 Buildfile: /opt/IBM/BPM/cloud/common/utills/setupSSH.ant
55
56 default:
57 [sshexec] Connecting to aimcpl39.austin.ibm.com:22
58 [sshexec] cmd : mkdir -p /root/.ssh ; touch /root/.ssh/authorized_keys ; echo ssh-rsa
  AAAAB3NzaC1yc2EAAAABIwAAAQEAxFss6ZUff7KJL4EYCizKvDcSs0d/W12RQFURs1RaaUHCwsQdeTeq6ptZrvNohwkeR0wmOr+I59XfqSu/9e+UR4wTeYQ0GC+5K4JebF51xn9XAlaf18WQP
  vZhupe1/zpxr0XkyaBRyOV3Of8qlhKDrzRb/9VfZ2hcoJVvH7xQeZMjnozTBzXDZKf1ReoErcB5pIh12GXvyRyvIdekQeS8aIBm73Xpr07WaySzDaWa0BHoAL5inClqVW6ibChy7+u4K9MY1pjSaF
  YwJvSmcwqupJ15YUw00Ba2cV1Bmyy9baLwcoX5FQae3pxFb1C8f2pWeNcdp/RA5QKiLSc/rvvQ== root@aimcpl38 >> /root/.ssh/authorized_keys; chmod -R go-rwx
  /root/.ssh

```

This slide shows an example log. You can review the entire log to see what configuration has taken place.

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