Cloud Management HOL

Fusion Middleware Provisioning

#### Enterprise Manager 12c R4

# Objective

This workbook will introduce a variety of exercises around provisioning of Oracle Fusion Middleware with Oracle Enterprise Manager 12c. The exercises will demonstrate a selection of the rich feature set available.

# Lab Coverage

The lab will cover the following exercises:

* Cloning of a plain WebLogic Server domain
* Fresh provisioning of a SOA domain
* Provisioning of a Middleware home from a gold image
* Creating a profile from an install image

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# About Enterprise Manager

## Overview

Oracle Enterprise Manager

Oracle Enterprise Manager is Oracle’s premiere cloud management solution. It is the industry’s first complete solution including self-service provisioning balanced against centralized, policy-based resource management, integrated chargeback and capacity planning and complete visibility of the physical and virtual environment from applications to disk.

More information about Enterprise Manager’s Cloud Solution can be found on OTN:

<http://www.oracle.com/technetwork/oem/cloud-mgmt-496758.html>

## Middleware Provisioning

Being able to quickly provision Fusion Middleware in a standardized way Having a standardized way to provision extends the capabilities of the Private Cloud by:

* Increasing Quality of Service: IT organizations are not only trying to drive down costs, they are also looking at solutions that will simultaneously improve quality of service in terms of performance, availability and security. Cloud consumers inherently benefit from the high availability characteristics built into the Private Cloud. Organizations can also enforce a unified identity and security infrastructure as part of standardized provisioning. Thus, instead of bolting on security policies, these policies and compliance regulations are part of the provisioning process.
* Enabling Faster Deployment: Building the Private Cloud infrastructure using standard building block components (for example, servers, CPUs, storage, and network), configurations, and tools, enables a streamlined, automated, and simplified deployment process.
* Rapid Provisioning: Middleware in a private cloud can be rapidly provisioned, providing agility in application deployment. This reduces overall time in deploying production applications, development platforms or creating test bed configurations.
* IT Accountability: Through quota and chargeback mechanism, IT can have control over usage of Middleware licenses and resources by consuming departments and lines of business.

## Oracle Cloud Management Pack for Oracle Middleware

Oracle Cloud Management Pack for Oracle Middleware delivers capabilities spanning the entire middleware cloud lifecycle. It lets cloud administrators identify pooled resources, configure role-based access, define the service catalog, and the related chargeback plans. It allows cloud users to request middleware services, and consume them on-demand. It also allows for users to scale-up and down their platforms to adapt to changes in workload. Finally, it enables both parties to understand the costs of the service delivered, and establish accountability for consumption of resources.

The key benefit of a middleware cloud is to enable faster deployment of typical platforms by moving away from admin driven provisioning to end user driven. Enterprise Manager allows administrators to:

* Allocate computing resources to internal line of businesses
* Establish placement policies
* Pool resources for middleware or database
* Standardize and automate deployment processes
* Publish established templates to service catalog
* Setup role-based access and privileges
* Set user quotas to limit over-consumption
* Log middleware instance messages
* Establish policy for retirement
* Enable metering and optional chargeback on consumed resources.

# Exercises

## Exercise 1: Plain domain cloning (Estimated time: 15 mins)

### Overview

Domain cloning allows you to create a provisioning profile of a domain configured according to company and Oracle best practices or standards, which can then be used for mass provisioning this domain. This enables the administrator to create profiles of reference installs and configurations that can then be re-used to quickly provision additional domains that are identical to the source.

The domain profiles can include the domain bits as well as the Middleware Home, so that both can be provisioned together. You can also create a more lightweight profile that only includes the domain pieces that can be used to provision domains to already provisioned Middleware homes.

|  |  |
| --- | --- |
| **Step #** | **What to do** |
|  | Login to Enterprise manager using the Cloud Admin Account, CLOUD\_ADMIN/welcome1 |
|  |
|  | Go to the Middleware provisioning home page, Enterprise -> Provisioning and Patching -> Middleware Provisioning |
|  |
|  | Click on create and select From WLS domain |
|  |
|  | Enter a name and description for your domain profile  Select Riddles\_Dev\_1486c374c2a\_MWAAS\_USER1 domain  Uncheck “include Oracle Home” |
|  |
|  | Click the magnifying glass to find and select a credential to use.  In the popup, select “New” and enter oracle as UserName and welcome1 as password  Check the “Save As” check box and name it “NC\_EC3TDSGC\_HOST”  Check the “Set As Preferred Credentials” checkbox and “Normal Host Credentials” |
|  |
|  | Make sure the “Immediately” checkbox for Schedule is selected and leave the  Software Library Upload Location defaults  Click create |
|  |
|  | You can see the status on this page. Creating the profile should take 3-4 minutes. |
|  |
|  | Once the profile creation finishes, go back to the Middleware provisioning page and select the row with your new profile  Click Provision |
|  |
|  | Click Next |
|  |
|  | Select ec3tdsgc host as the destination host  Make sure the “Use an existing Middleware Home” checkbox is selected and that the paths are  Middleware Home Directory: /app/ec3tdsgc/wls1212/middleware  Working Directory: /tmp/fmwProvDest  Click next |
|  |
|  | Enter welcome1 for weblogic password  Do not check “Enable Administration port” or “Enable Coherence” |
|  |
|  | Click on the Machines tab.  Change Node manager port to 6956 |
|  |
|  | Click on the Servers tab Change Admin server port to 6501  Change Managed server port to 6511  You can look around on the other tabs, but don’t need to change any other defaults  Click next |
|  |  |
|  | Select the NC\_EC3TDSGC\_HOST credential  Click Next |
|  |
|  | Unselect the notification checkboxes  Click Next |
|  |
|  | Review your inputs and click Submit |
|  |
|  | It will take a few minutes for the profile to complete, so you can move on to the next exercise while this runs in the background.  We can go back and look at its status at any point by going to Enterprise -> Provisioning and Patching -> Job Activity. |
|  |

## Exercise 2: Fresh Provisioning of SOA 11g (Estimated time: 15 mins)

### Overview

In addition to provisioning from an existing domain, you can also provision from a “Gold Image”. A Gold image is a middleware home that might have been patched, or otherwise configured, to adhere to company standards for things like patching and configuration.

This gold image can then be used to provision fresh environments based on a standardized middleware home to make sure bits on the disks of all our machines look the same. If a database is required for the products we’re provisioning, like SOA or JRF enabled WLS, we can choose between using an existing database or create schemas by running RCU as part of the process.

|  |  |
| --- | --- |
| **Step #** | **What to do** |
|  | Login to Enterprise manager using the Cloud Admin Account, CLOUD\_ADMIN/welcome1 |
|  |
|  | Go to the Middleware provisioning home page, Enterprise -> Provisioning and Patching -> Middleware Provisioning |
|  |
|  | Select the SOA\_PS6\_Gold\_Image provisioning profile  Click Provision |
|  |
|  | Make sure Provision WLS domain checkbox is checked and “Create a new WebLogic domain” and “Oracle SOA suite” are selected |
|  |
|  | Add the ec3tdsgc host |
|  |
|  | Select create new home  Enter  /app/ec3tdsgc/mwhomes as Middleware Home Directory  /tmp/fmwProvDest as Working Directory  /app/oracle/12cR4/Middleware/jdk16/jdk as JDK Home Location |
|  |
|  | Enter “welcome1” as the weblogic password  Do not check “Enable Administration Port” |
|  |
|  | Click on the Machine tab  Delete second node manager row  Change Node Manager Listen Port to 3556 |
|  |
|  | On servers tab,  change Admin server listen port to 7901, managed server listen ports to 8901 and delete second managed server |
|  |
|  | ON JDBC Data Sources tab, check create schemas  Select orcl for database  Enter Lab for schema prefix  Select PS6-RCU rcu profile  Select enter same password “welcome1” |
|  |
|  | On JMS tab, delete the following rows UMSJMSFileStore\_auto\_2  BPMJMSFileStore\_auto\_2  SOAJMSFileStore\_auto\_2  UMSJMSServer\_auto\_2  BPMJMSServer\_auto\_2  SOAJMSServer\_auto\_2  Click Next |
|  |
|  | Click the + - sign to add a Credential for the database  Enter  sys for Username  welcome1 for password  Select SYSDBA for role  Check Save As and name it “NC\_ORCL\_SYS”  Check “Set As Preferred Credentials” and select “SYSDBA Database Credentials”  Click Ok |
|  |
|  | Click Next |
|  |
|  | Unselect the notification checkboxes  Click Next |
|  |
|  | Review your inputs and click Submit |
|  |
|  | It will take a few minutes for the profile to complete, so we’ll move on to the next exercise while this runs in the background.  We can go back and look at its status at any point by going to Enterprise -> Provisioning and Patching -> Job Activity. |
|  |
|  |  |

## Exercise 3: Provision a MWH from a Gold Image (Estimated time: 10 mins)

### Overview

With Enterprise Manager’s extensive role and privileges functionality you can also separate the provision into two steps, for example you might want the administrator to have control over the Middleware Home, but still allow the developers, or another group or admins, to provision the domains.

In this lab we’ll see how quick and easy it is to provision a middleware home that can then be used by other admins or developers to create domains.

|  |  |
| --- | --- |
| **Step #** | **What to do** |
|  | Login to Enterprise manager using the Cloud Admin Account, CLOUD\_ADMIN/welcome1 |
|  |
|  | Go to the Middleware provisioning home page, Enterprise -> Provisioning and Patching -> Middleware Provisioning |
|  |
|  | Select pre-created Middleware Oracle Home - WLS-12.1.2  Click Provision |
|  |
|  | Unselect “Provision WebLogic domain”  Click Next |
|  |
|  | Select ec3tdsgc as the destination host and click “Select” |
|  |
|  | Change the Middleware home directory to /app/ec3tdsgc/mwhomes. Leave the other paths as is.  Click next |
|  |
|  | Select the NC\_EC3TDSGC\_HOST credential  Click next |
|  |
|  | Uncheckthe Notification checkboxes  Click next |
|  |
|  | Review and click submit |
|  |
|  | A background job will be scheduled to create the install profile. You can go to the Procedure Activity page to look at the status and the steps.  Once the job completes, the profile will be ready for provisioning. |
|  |

## Exercise 4: Create install profile (Estimated time: 10 mins)

### Overview

Enterprise Manager 12c simplifies the installation and provisioning of Fusion Middleware and allows you to do it at scale. The labs in this workbook are only provisioning to a single host, but scaling out and provisioning to multiple hosts is a very simple operation.

Another option available to you is to use Oracle supplied install media to create your provisioning profiles. This gives you a first install options, since gold images and domain cloning require that you already have a Middleware home or domain provisioned/configured.

In this lab we’ll take a look at how you can create a provisioning profile from install media downloaded from OTN or eDelivery, which can then be used for subsequent provisioning.

|  |  |
| --- | --- |
| **Step #** | **What to do** |
|  | Login to Enterprise manager using the Cloud Admin Account, CLOUD\_ADMIN/welcome1 |
|  |
|  | Go to the Middleware provisioning home page, Enterprise -> Provisioning and Patching -> Middleware Provisioning |
|  |
|  | Select create from installation media |
|  |
|  | Enter a name for the Profile  Select  Product: Oracle WebLogic server  Platform: Generic platform  Version: 12.1.3 |
|  |
|  | Select ec3tdsgc for host  Select the preferred credential for oracle |
|  |
|  | Click on the WebLogic Server row and click “Select Folder” |
|  |
|  | Navigate to /app/binaries/wls folder and click ok  Leave Software Library Settings as default |
|  |
|  | Click create |
|  |
|  | A background job will be scheduled to create the install profile. You can go to the Procedure Activity page to look at the status and the steps.  Once the job completes, the profile will be ready for provisioning. |
|  |

# Summary

The provisioning features in Oracle Enterprise Manager 12c deliver capabilities that will help administrators quickly mass provision standardized Fusion Middleware images and domains. The simplified and efficient procedures will reduce time required to provision new instances and help drive cost savings with environments always being provisioning according to best practices and standards.

Other powerful features in Enterprise Manager like Application Performance Monitoring, Lifecycle Management and Diagnosibility can then be layered on top for a complete single pane of glass management experience.

More collateral and screenwatches can be found on OTN <http://www.oracle.com/technetwork/oem/cloud-mgmt-496758.html>

**This concludes the Provisioning hands-on lab.**