# IBM Virtual System Pattern for Oracle E-Business Suite 12.2 on AIX and Linux (x86)

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# Abstract

*This white paper introduces the building process and usage scenario of IBM Virtual System Patterns (VSPs) for Oracle E-Business Suite 12.2 using IBM SmartCloud® Orchestrator. The VSPs are designed for IBM Power Systems™ platform with AIX® and general x86/64 servers that use VMware vSphere ESXi as hypervisors. The VSP approach helps in automating the entire topology, and thereby dramatically reduces the overall time taken to deploy a certain workload, and helps provide a more predictable outcome—one that drastically reduces the risk of human setup errors.*

*In this whitepaper, we provide a detailed walk-through of the approach used in creation and deployment of Oracle E-Business Suite 12.2 Virtual System Pattern using IBM SmartCloud Orchestrator along with the test setup details and operational efficiencies recorded during the tests at the IBM Oracle International Competency Center Lab. We also provide sample Oracle E-Business Suite script packages for the database and application tiers along with this whitepaper to IBM customers and business partners by request on an "as-is" basis for both training and test deployment purposes (see associated disclaimer on page 29 and in the "Trademark and special notices" section at the end of this paper).*

*This paper assumes that the infrastructure elements required or referenced for creation and deployment of the virtual appliances, such as IBM SmartCloud Orchestrator, IBM Power® Systems and VMware vCenter/vSphere regional servers, Virtual I/O server (VIOS), SAN storage, etc. are available. Further setup details of these components can be obtained through the IBM white papers, websites, or Redbooks referenced in the "References" section of this whitepaper.*

*Note: please be advised that a valid Oracle software license is required when following the Virtual System Pattern based Oracle E-Business Suite software installation and deployment approach as described in this paper. Customers who use the VSP to conduct repeated deployments must ensure that they have the proper Oracle software licensing to cover the multiple deployments.*

# Introduction

## Background

Server virtualization is fast gaining acceptance and popularity due to its ability to increase speed of deployment, enable workload consolidation, improve resource utilization and ease systems management. IBM PowerVM® provides a secure and scalable server virtualization environment for AIX, IBM i, and Linux® applications built upon the advanced RAS features and leading performance of the Power Systems platform. For x86/64 servers, VMware provides a server virtualization platform for various x86/64 workloads such as Linux and Windows®.

Virtual System Patterns in IBM SmartCloud Orchestrator enable fast and repeatable deployments of systems from the virtual machine up to the application. With a Virtual System Pattern, manual tasks that are needed to bring up your entire topology can be fully automated, which allows an application to be deployed in minutes as opposed to hours or days. Virtual System Pattern oriented deployment of middleware eliminates bugs introduced by error-prone, manual configuration processes and allows best practices to be baked into patterns, thereby accelerating and optimizing deployment of solutions.

It is often desirable to have an ability to deploy such workloads rapidly under a variety of situations such as application development testing, validating a solution proof-of-concept, staging, creating demos, or

perhaps even for quick re-deployments in case of node failures. One example of a workload where rapid provisioning is often desired is for the Oracle E-Business Suite applications, comprised of application and database tiers. Presently, a typical Oracle E-Business Suite 12.2 software provisioning activity encompasses the following tasks: provisioning and installing the base operating system, carrying out a number of pre-installation and operating environment configuration tasks, installing the Oracle E-Business Suite 12.2 database and application tier software, and carrying out a number of Oracle E-Business Suite 12.2 upgrade tasks. In order to replicate the environment, users must carry out the necessary pre and post cloning procedures manually.

IBM SmartCloud Orchestrator is designed to work with a number of hypervisor managers including IBM Systems Director VMControl™ (PowerVM), KVM and VMware vCenter (vSphere ESXi). The Virtual System Patterns can therefore be created and deployed on any of these hypervisors, which are presented to the IBM SmartCloud Orchestrator as regional servers, through the same management portal.

Through the Virtual System Patterns approach, we provide customers with the ability to automate creation of virtual server images for both database and application tier, which can be deployed with new network configuration settings through a self-service portal, without needing deeper understanding of the Oracle E-Business Suite cloning procedures. As illustrated in the efficiency comparison chart below, substantial time and effort savings can be realized through the smart virtual appliance approach. Moreover, since the process is automated, there is little (if any) room for human error, thereby leading to more predictable outcomes.

## Efficiency comparison (results)*

### Manual vs. VSP based deployment on IBM Power Systems

Table 1 and Table 2 below show an operational efficiency comparison between manual (traditional) and Virtual System Pattern (VSP) based approaches for provisioning Oracle E-Business Suite database and application servers on an IBM Power System server, managed by IBM Systems Directory and HMC.

*NOTE: The storage volumes on the Power server were configured on an IBM Storwize V7000 with Flashcopy enabled.*

| | Task | Initial deployment** | Repeat deployment |
|---|---|---|---|
| 1) | *Provisioning virtual servers and installing AIX* | 2 hour | Not Applicable |
| 2) | *Configuring environment and installing Oracle EBS 12.2 DB tier* | 1 hour | Not Applicable |
| 3) | *Configuring environment and installing Oracle EBS 12.2 Apps tier* | 2½ hour | Not Applicable |
| 4) | *Replicating/cloning setup:*<br><br>• *provisioning virtual servers and installing AIX*<br><br>• *configuring OS environment*<br><br>• *pre-cloning, copying installation directories and data files, and post-cloning* | Not Applicable | ~ 8 hours** |
| | **Total time taken to complete Oracle EBS 12.2 setup** | **~ 5½ hours** | **~ 8 hours** |

*Table 1. Provisioning of Oracle E-Business Suite 12.2 servers using traditional (manual) approach*

| | Task | Initial deployment | Repeat deployment*** |
|---|---|---|---|
| *PREPARATION: VIRTUAL SYSTEM PATTERN CREATION TASKS* | | | |
| 1) | *Complete Oracle EBS 12.2 setup* | ~ 5 ½ hours | Not Applicable |
| 2) | *Pre-clone Oracle EBS 12.2 and capturing base DB/App images* | 1 hour | Not Applicable |
| 3) | *Prepare base virtual server images and create EBS Virtual System Pattern for database and application tiers* | 30 min | Not Applicable |
| *VIRTUAL SYSTEM PATTERN DEPLOYMENT* | | | |
| 1) | *Deploying the Oracle EBS Virtual System Pattern*<br>*(includes automatic post-cloning setup)* | ~ 2 hours | ~ 2 hours |
| | **Total time taken in repeat deployments** | **2 hours (~ 4x faster than traditional deployment)** | |

*Table 2. Provisioning of Oracle E-Business Suite 12.2 servers on Power/AIX using IBM virtual system pattern approach*

## Manual vs. VSP based deployment on VMware

Table 3 and Table 4 below show an operational efficiency comparison between manual (traditional) and Virtual System Pattern (VSP) based approaches for provisioning Oracle E-Business Suite database and application servers on an x86/64 system running VMware vSphere ESXi, managed by VMware vCenter:

| | Task | Initial deployment** | Repeat deployment |
|---|---|---|---|
| 1) | *Provisioning virtual servers and installing AIX* | 2 hour | Not Applicable |
| 2) | *Configuring environment and installing Oracle EBS 12.2 DB tier* | 1 hour | Not Applicable |
| 3) | *Configuring environment and installing Oracle EBS 12.2 Apps tier* | 2½ hour | Not Applicable |
| 4) | *Replicating/cloning setup:* <br> • *provisioning virtual servers and installing AIX* <br> • *configuring OS environment* <br> • *pre-cloning, copying installation directories and data files, and post-cloning* | Not Applicable | ~ 8 hours** |
| | **Total time taken to complete Oracle EBS 12.2 setup** | **~ 5½ hours\*\*** | **~ 8 hours\*\*** |

*Table 3. Provisioning of Oracle E-Business Suite 12.2 servers using traditional (manual) approach*

| | Task | Initial deployment | Repeat deployment*** |
|---|---|---|---|
| *PREPARATION: VIRTUAL SYSTEM PATTERN CREATION TASKS* | | | |
| 1) | *Complete Oracle EBS 12.2 setup* | ~ 5 ½ hours | Not Applicable |
| 2) | *Pre-clone Oracle EBS 12.2 and capturing base DB/App images* | 1 hour | Not Applicable |
| 3) | *Prepare base virtual server images and create EBS Virtual System Pattern for database and application tiers* | 1 hour | Not Applicable |
| *VIRTUAL SYSTEM PATTERN DEPLOYMENT* | | | |
| 1) | *Deploying the Oracle EBS Virtual System Pattern* <br> *(includes automatic post-cloning setup)* | ~ 2 ¾ hours | ~ 2 ¾ hours |
| | **Total time taken in repeat deployments** | **2 ¾ hours (~ 3x faster than traditional deployment)** | |

*Table 4. Provisioning of Oracle E-Business Suite 12.2 servers on Power Systems with AIX using IBM Virtual System Pattern approach*

\* Performance is based on measurements and projections in a controlled environment. The actual results a user will experience may vary significantly depending upon considerations such as systems and software expertise, resource availability, etc. Therefore, no assurance can be given that an individual user will achieve similar efficiency results. In general, the time taken for provisioning infrastructure and installing/configuring software varies from site to site and depends on human factors as well. The timings used here are based on authors' own experiences. Additional human errors in provisioning, installation, or configuration could lead to delays and will affect results.

\*\* In test setup and assuming transfer of roughly 300GB of data @ 40 MBps

\*\*\* Virtual System Pattern creation tasks are one-time activities, which aren't needed during repeat deployments.

## IBM Virtual System Patterns overview

### IBM Cloud Orchestrator

IBM Cloud Orchestrator (earlier known as IBM SmartCloud Orchestrator) provides cloud management for your IT services, allowing you to accelerate the delivery of software and infrastructure. Based on open standards, it reduces the number of steps to manage public, private and hybrid clouds by using an easy-to-use interface.

IBM Cloud Orchestrator gives you access to ready-to-use patterns and content packs – helping to speed configuration, provisioning and deployment. It integrates management tools such as metering, usage, accounting, monitoring and capacity management into your cloud services. Go live as quickly as you develop and test applications.

IBM Cloud Orchestrator helps you:

- Quickly deploy and scale on-premise and off-premise cloud services.
- Provision and scale cloud resources.
- Reduce administrator workloads and error-prone manual IT administrator tasks.
- Integrate with existing environments using application program interfaces and tooling extensions.
- Deliver services with IBM SoftLayer, existing OpenStack platforms, PowerVM, IBM System z®, VMware or Amazon EC2.

IBM Cloud Orchestrator helps you with end-to-end service deployment across infrastructure and platform layers. It also provides integrated IT workflow capabilities for process automation and IT governance, resource monitoring, and cost management. The product offers you an extensible approach to integration with existing environments such as network management tools. It facilitates integration with customer-specific service management processes, such as those defined in the IT infrastructure library (ITIL).

The product includes manage-from support on KVM and VMWare virtual machines and manage-to support on KVM, VMWare, System z and Power hypervisors. Various host and guest operating systems are supported as well.

You choose between two editions: IBM Cloud Orchestrator and IBM Cloud Orchestrator Enterprise Edition which also includes Monitoring and Cost Management.

### Virtual System Patterns

Virtual System Patterns are a logical representation of a recurring topology for a given set of deployment requirements and enable efficient and repeatable deployments of systems that include one or more virtual machine instances, and the applications that run on them. You can completely automate the deployment and eliminate the need to perform multiple time-consuming manual tasks. Such a deployment eliminates problems that are introduced by error-prone, manual configuration processes and accelerates solution deployment.
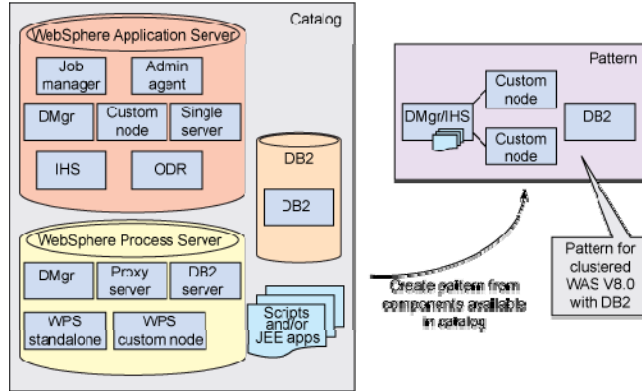
*Figure 1. A generalized view of creating a Virtual System Pattern from catalog components*

Virtual System Patterns can be as simple as a single server product instance or as complex as a multi-product, multi-node deployment. IBM-supplied, best practice, Virtual System Patterns that include IBM software and technology are available for use with IBM SmartCloud Orchestrator; the culmination of years of experience working with our customers to understand optimal configurations. Once a Virtual System Pattern is provisioned, it is referred to as a virtual system instance.

Virtual System Patterns can be customized or new patterns can be created using the Pattern Editor in the IBM SmartCloud Orchestrator user interface. Customization in the Pattern Editor is achieved using a simple drag-and-drop interface from a pallet of parts (derived from virtual images), script packages, and add-ons.

A Virtual System Pattern typically consists of one or more middleware elements working together to provide the necessary platform for a complete application. An example of a Virtual System Pattern for a WebSphere® configuration might contain multiple parts, each representing a virtual machine that includes a Linux operating system with WebSphere Application Server or other middleware software pre-installed and enabled for activation. The pattern might include a deployment manager, several custom nodes, a DB2® database, and an IBM HTTP Server.

Using a Virtual System Pattern gives you more control over the middleware topology, but it also requires that you configure the middleware for your particular application needs. Script packages can be added to the pattern to automate further customization of the virtual systems topology; for example, a script package to create WebSphere resources and to install an application.

When a Virtual System Pattern is deployed, the appliance creates the topology, builds the relationships between the components (for example, federating the custom nodes to the deployment manager), and configures the middleware based on the script packages you provide. System administrators can login to the system to perform additional customization if necessary — but the best practice is to provide the complete configuration of the system in the pattern using image customizations, parameters, add-ons, and automation scripts to create a pattern that can be consistently deployed to the cloud. The ability to integrate standard aspects of high availability and fault tolerance are contained within the topology.

# Test Setup

## Architecture

Even though a single IBM SmartCloud Orchestrator setup can support multiple region servers, for this paper two separate IBM SmartCloud Orchestrator setups were used: one for the Power region and another for the VMware region.

For the Power region setup (Figure 2), a Hardware Management Console (HMC) managed PureFlex Power ITE was used with VIOS configured. Storage volumes for virtual servers in this configuration were made available through NPIV mechanism from an IBM Storwize V7000 SAN array. IBM Systems Director with VMControl and Storage Control plug-ins were also setup to provide the integration between Compute and Storage. The SCO central servers were configured as virtual servers on an x86 server on the same network.
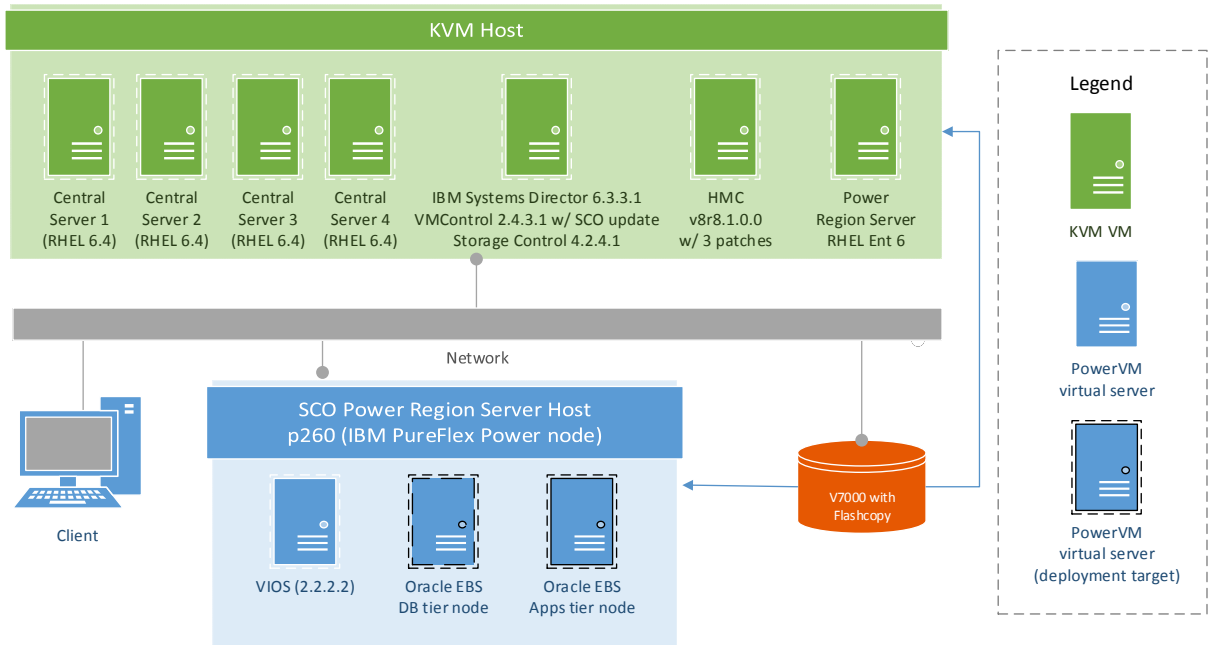


*Figure 2. IBM SmartCloud Orchestrator Power region setup*

For the VMware region setup (Figure 3), an IBM System x x3950 M2 (x86-64) server was used. VMware vSphere ESXi / vCenter was configured on the server to manage VMs and storage (data-stores). For test purposes, the same vSphere host was used for SCO central servers as well as deployment (regional) server. Various central servers were configured as VMs on the vSphere host.
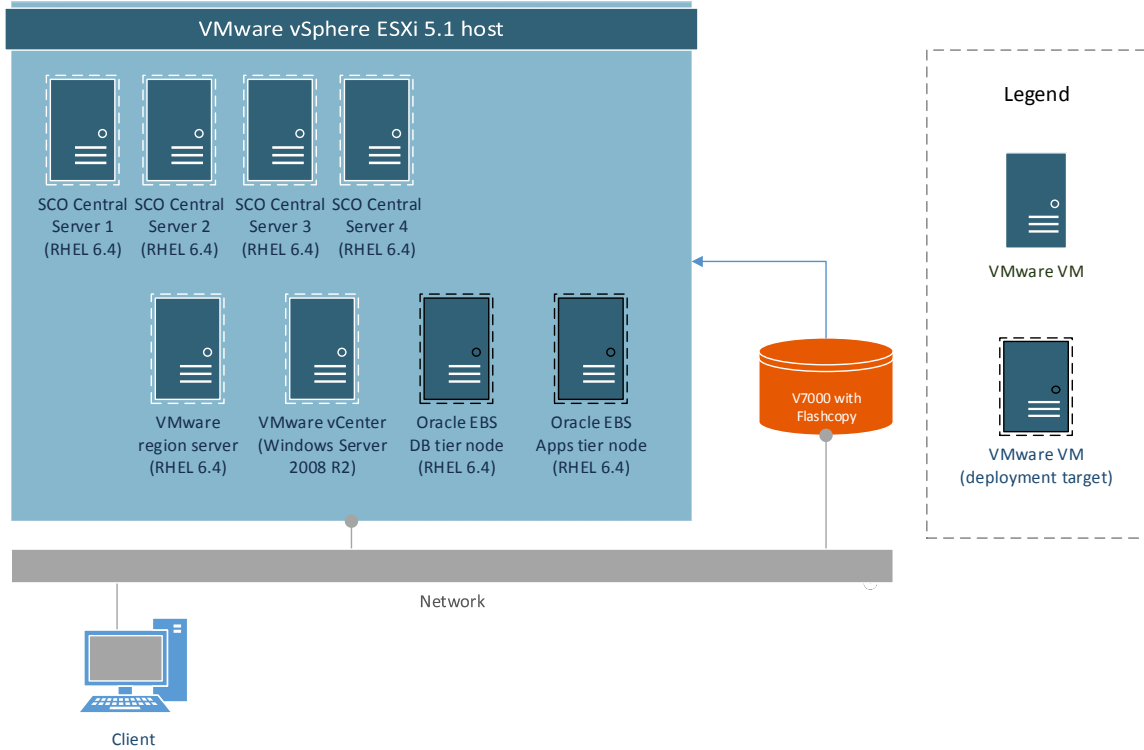
*Figure 3. IBM SmartCloud Orchestrator VMware region setup*

## Software Stack

| Software Component | Release Version |
|---|---|
| IBM SmartCloud Orchestrator | 2.3.0.1 |
| Oracle E-Business Suite | 12.2 |
| Power Server | |
| AIX Virtual servers | 7.1 TL3 SP1 |
| IBM Systems Director | 6.3.3.1 |
| VMControl Plug-In | 2.4.3.1-201307300438 |
| Storage Control Plug-In | 4.2.4.1 |
| HMC | V8R8.1.0.0 |
| Virtual I/O server | 2.2.2.2 |
| X86/Linux Server | |
| x86_64 Server | IBM x3950 M2 |
| VMware vCenter Server | 5.1.0 (Build 1364037) |
| VMware vSphere ESXi | VMware ESXi 5.1.0 build-1483097 |
| Linux | RHEL 6.4 |

*Table 5. Software used in test setup*

IBM Virtual System Pattern for Oracle E-Business Suite 12.2 on AIX and Linux (x86)
http://www.ibm.com/support/techdocs
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# Oracle E-Business Suite Virtual System Pattern

## Pre-requisites

### IBM SmartCloud Orchestrator setup

In order to build and use the Power/AIX and x86/Linux (VMware) Virtual System Patterns referenced in this whitepaper, a SmartCloud Orchestrator was setup with Power and VMware regional servers.

### Power regional server requirements

For the Power regional server setup, either a rack-mounted Power Systems server, or a Pureflex System with Power ITEs is needed. Additionally, to manage virtual server and other resources, a Hardware Management Console with IBM Systems Director (ISD) is needed for rack-mounted Power System servers and FlexSystem Manager (FSM) is needed for a Pureflex System compute node. For both ISD and FSM, VMControl and Storage Control plug-ins must be enabled and configured to capture and deploy virtual server images.

*NOTE:  SmartCloud Orchestrator 2.3 only supports VMControl 2.4.3 and earlier. Please check the levels of ISD and FSM to see if your level of VMControl is supported.*

### VMware regional server requirements

For VMware regional server, an x86-64 server must be used, with management access through vCenter configured. Datastores with sufficient storage must be configured to deploy VMs.

*Refer to the SmartCloud Orchestrator administrator guide, referenced in this whitepaper, for setting up the SCO environment.*

*NOTE: a single SCO setup can support both Power and VMware regional servers simultaneously.*

### Hardware requirements

- Compute:  For each regional server (Power or x86), we recommend a minimum of 4 CPUs with at least 32 GB available memory for deploying a 2-node EBS 12.2 instance.
- Storage: For each regional server, overall, a minimum of about 1.2TB storage is needed for creation and deployment of the 2-node EBS 12.2 Virtual System Pattern. This includes about 400-500 GB of storage space, required for deploying a 2-node EBS instance with VISION database, an equal amount of storage for storing base images referenced in the Virtual System Pattern definition, and staging data.
- Network: Each 2-node EBS instance requires 2 IP addresses, one for the database tier and another for the applications (apps) tier. Additional IP addresses, as mentioned in the SmartCloud Orchestrator administration guide, are needed for the SmartCloud central and regional servers. All IP addresses used for virtual pattern deployment must be configured in the IP pool in SCO and should be in the same VLAN.

## Base virtual server image requirements

The base virtual server images needed for creating the Oracle E-Business Suite 12.2 virtual server pattern need to be have the following on both the database and application tier:

- Following software packages must be available on the base virtual system: expect, telnet-client, Perl.
- IP filter or firewall rules must allow port 8000 and other regular network ports (telnet, HTTP(s), ssh etc.) connectivity between database and apps tier, and with various clients as well.
- Oracle E-Business Suite 12.2 pre-cloned and services stopped. To pre-clone the Oracle E-Business Suite 12.2 instance, following steps must be performed:
    - As database user, perform pre-cloning (adpreclone.pl dbTier) while the database service is up.
    - As apps tier user, perform pre-cloning (adpreclone.pl appsTier) while the database and apps tier services are up.
- FMW specific ORACLE_HOME entries must be detached on the apps tier before cloning the instance. Validate inventory.xml in Oracle inventory on apps tier node and ensure that no <HOST> tag inside <HOST_LIST> has any <DEPHOMELIST> or <REFHOSTLIST> tags defined. If so, detach ORACLE_HOME using the `runInstaller –detachHome ORACLE_HOME=<ORACLE_HOME>` command available in `<FMW_HOME>/oracle_common/oui/bin` directory.
- Once the above requirements are fulfilled, the virtual server image needs to be captured in the SCO Virtual Image Library (VIL)
    - For AIX/Power virtual servers, the virtual server image may be captured using the VMControl capture function in IBM Systems Director.
    - For VMware VM, the VM needs to be converted into a template before it can be registered in the SCO VIL.

*NOTE:*

1. *In both cases, the base virtual server images must include VSAE package. You may use the ICCT to extend the base images to include VSAE package.*
2. *Details on using ICCT and VIL can be found in the SCO administration guide, referenced in this whitepaper.*

## Create and deploy Virtual System Pattern

The Oracle E-Business Suite 12.2 Virtual System Pattern is composed of 2 nodes – the database tier node and the applications tier node, along with script packages to automate cloning of the two tiers upon deployment.

Prior to creating and deploying the Virtual System Patterns, please ensure that the IBM SmartCloud Orchestrator environment is setup to discover and import virtual server images from the regional server. Also, validate the network settings and IP address availability under *Configuration > IP Groups*.
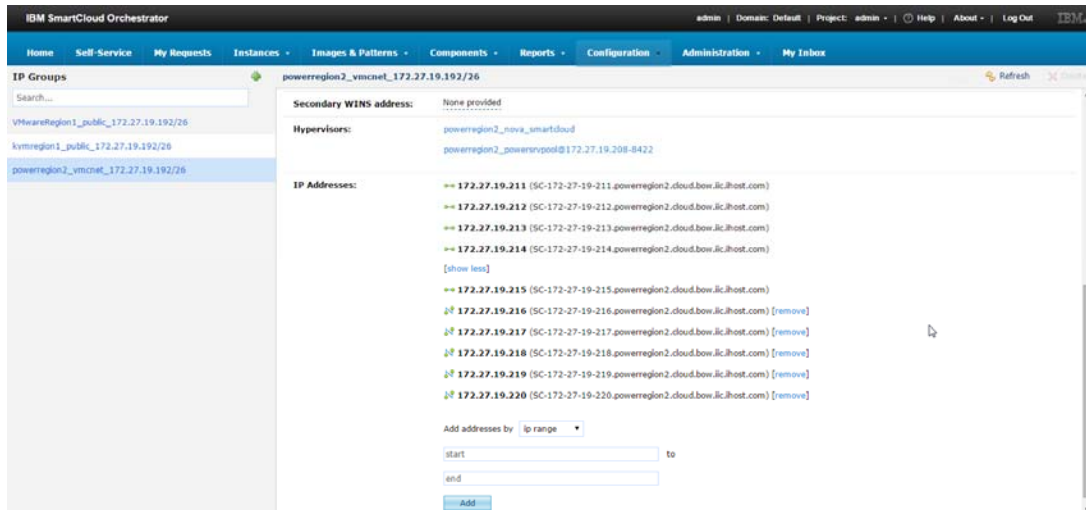
## Oracle E-Business Suite Virtual System Pattern for Power region

Follow the steps listed below to create the Oracle E-Business Suite Virtual System Pattern for Power region. The script packages for use on Power region (AIX) are published along with this paper on IBM Techdocs.

- Database tier cloning script package for Power region (AIX): cloneDatabaseAIX.zip
- Applications tier cloning script package for Power region (AIX): cloneAppsAIX.zip

## Database tier cloning script package

1. Log into IBM SmartCloud Orchestrator as the admin user.
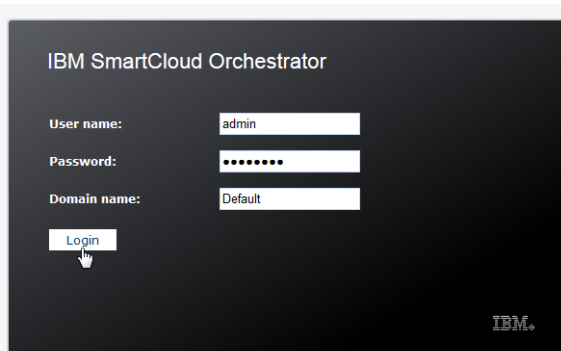


2. Select *Components > Script Packages* from main menu.
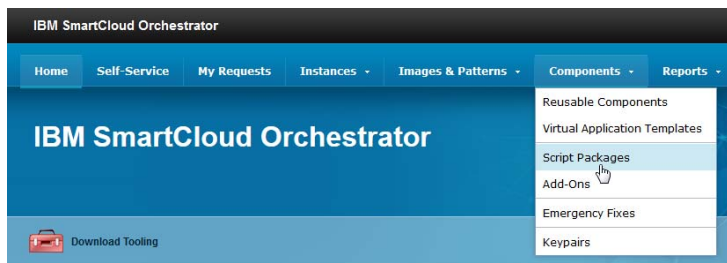
3. Click on *new* button to create a new script package and choose a name for the script package.
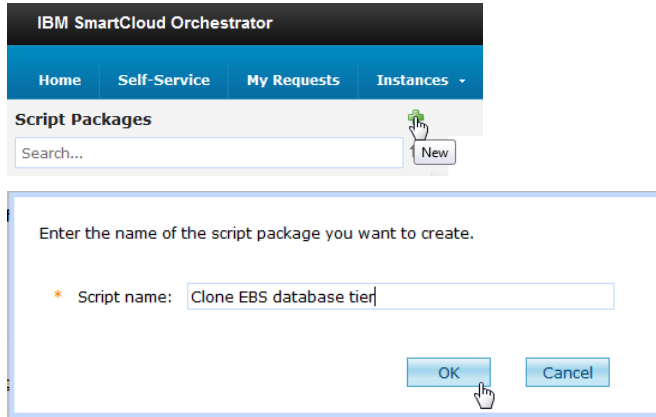


4. Click on the *Script package file* text box and upload the database cloning script package (cloneDatabaseAIX.zip), which is published along with this whitepaper on the IBM Techdocs portal.
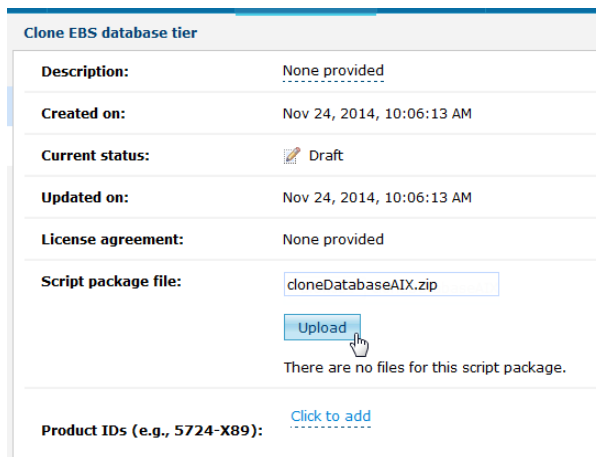
5. Once successfully uploaded, you may observe and edit various default values associated with the script package.



**Clone EBS database tier**

| | |
|---|---|
| Description: | Clone EBS 12.2 database tier on AIX |
| Created on: | Nov 24, 2014, 10:06:13 AM |
| Current status: | ✏ Draft |
| Updated on: | Nov 24, 2014, 10:07:16 AM |
| License agreement: | None provided |
| Script package file: | Browse... <br> Upload <br> The script package is in cloneDatabaseAIX.zip. ⬇ Download |
| Product IDs (e.g., 5724-X89): | Click to add |
| Environment: | DB_HOME = /u01/oracle/VIS/11.2.0 [remove] <br> DB_BASE = /u01/oracle/VIS [remove] <br> DB_SID = VIS [remove] <br> DB_USER = oracle [remove] <br> [show less] <br> APPS_PW = apps [remove] <br> UTL_FILE_DIR = /u01/tmp [remove] <br><br> Add variable name = value Add |
| Working directory: | /tmp/cloneDB |
| Logging directory: | /tmp/cloneDB |
| Executable: | /tmp/cloneDB/postCloneDB.sh |
| Arguments: | -h $DB_HOME -b $DB_BASE -s $DB_SID -u $DB_USER -p $APPS_PW -t $UTL_FILE_DIR |
| Timeout (ms): | 60000000 |
| Executes: | at virtual system creation and when I initiate it ▾ |
| Save environment variables after post-deployment executions: | Yes ▾ |
| Included in patterns: | (none) |
| In the cloud now: | (none) |
| Operating system: | Linux/Unix ▾ |
| Access granted to: | admin [owner] <br> Add more... |
| ⊞ Comments | There are no comments yet |

Note that the environment variables are used by the main cloning script (postCloneDB.sh) that's included in the script package.

## Applications tier cloning script package

1. Follow the steps outlined in the *Database tier cloning script package* section above with the applications tier script package (cloneAppsAIX.zip) to create the applications tier script package.

**Clone EBS applications tier**

| | |
|---|---|
| **Description:** | Clone EBS 12.2 applications tier on AIX |
| **Created on:** | Nov 24, 2014, 10:16:14 AM |
| **Current status:** | ✏️ Draft |
| **Updated on:** | Nov 24, 2014, 10:16:27 AM |
| **License agreement:** | None provided |
| **Script package file:** | Browse... |

Upload

The script package is in cloneAppsAIX.zip.   📥 Download

**Product IDs (e.g., 5724-X89):**   Click to add

**Environment:**

APPS_BASE_DIR = /u02/oracle/VIS [remove]

DB_HOSTNAME = localhost [remove]

DB_DOMAIN = localdomain [remove]

DB_IP_ADDR = 127.0.0.1 [remove]

[show less]

WEBLOGIC_ADMIN_PW = passw0rd [remove]

DB_PORT = 1521 [remove]

DB_SID = VIS [remove]

DB_USER = oracle [remove]

APPS_USER = oracle [remove]

APPS_PW = apps [remove]

TIMEOUT_MIN = 60 [remove]

Add variable   name   =   value   Add

| | |
|---|---|
| **Working directory:** | /tmp/cloneApp |
| **Logging directory:** | /tmp/cloneApp |
| **Executable:** | /tmp/cloneApp/postCloneApp.sh |
| **Arguments:** | -b $APPS_BASE_DIR -h $DB_HOSTNAME -d $DB_DOMAIN -i $DB_IP_ADDR -w $WEBLOGIC_ADMIN_PW -P $DB_PORT -s $DB_SID -u $DB_USER -a $APPS_USER -p $APPS_PW -t $TIMEOUT_MIN |
| **Timeout (ms):** | 60000000 |
| **Executes:** | at virtual system creation and when I initiate it ▾ |
| **Save environment variables after post-deployment executions:** | Yes ▾ |
| **Included in patterns:** | (none) |
| **In the cloud now:** | (none) |
| **Operating system:** | Linux/Unix ▾ |
| **Access granted to:** | admin [owner] |
| | Add more... |
| ➕ **Comments** | There are no comments yet |

## Register base virtual server images

1. Import the base virtual server image of the Oracle E-Business Suite database tier that has been pre-cloned and captured earlier. Click on *Images & Patterns > Virtual Images* menu tab:
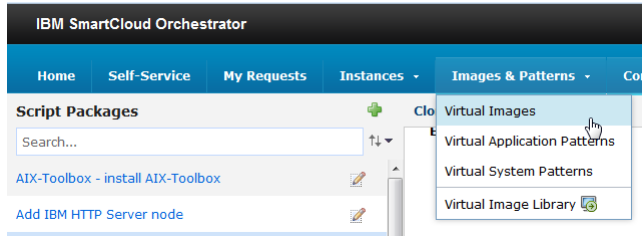


2. Click on the *new* button to import the base virtual server image into the Virtual Image Library. Then select *Register an image from a region* radio button and choose the Power region. Select the database base virtual server image from the list and click *Register.* Close the dialog once the image has been registered.
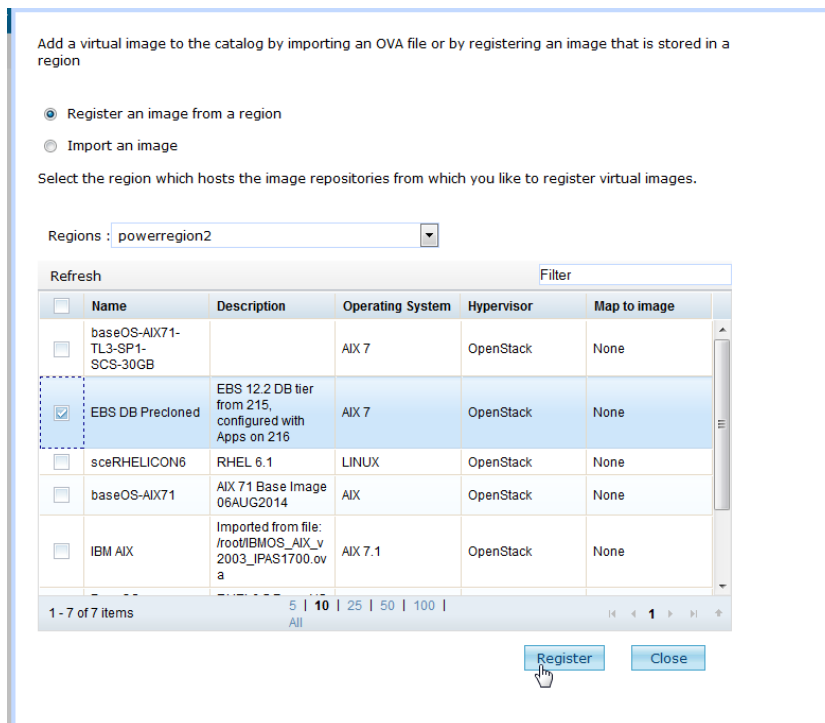


3. Repeat the above steps to import the applications tier base virtual server image into the Virtual Image Library as well.

## Create Oracle E-Business Suite Virtual System Pattern

1. Select *Images & Pattern > Virtual System Patterns* from main menu.
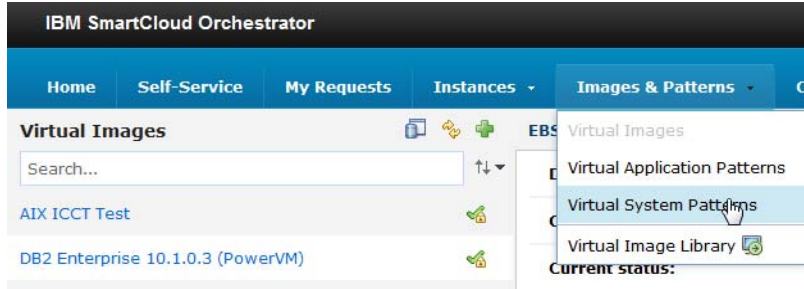
2. Click on *new* button to create a new Virtual System Pattern, and provide a name and description for the pattern.
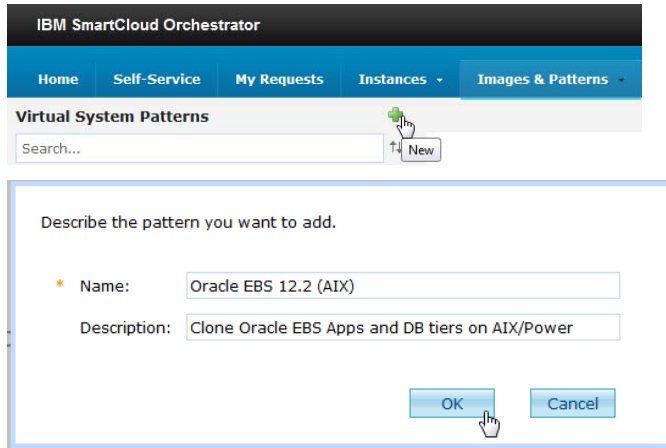


3. Select the newly created Virtual System Pattern from the virtual systems patterns list and click on the *Edit* button to modify the pattern topology
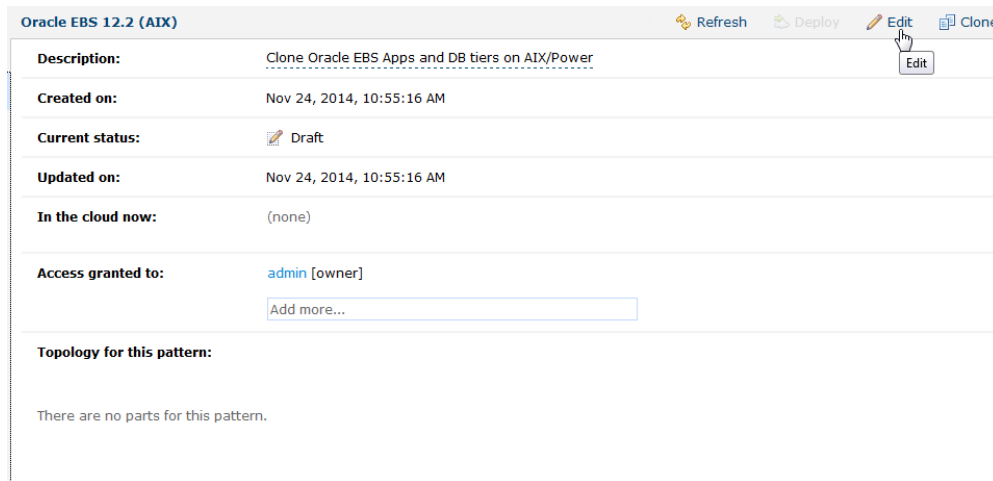
4. Drag-and-drop the base virtual server images registered in the VIL in the *Register base virtual server images* section above.
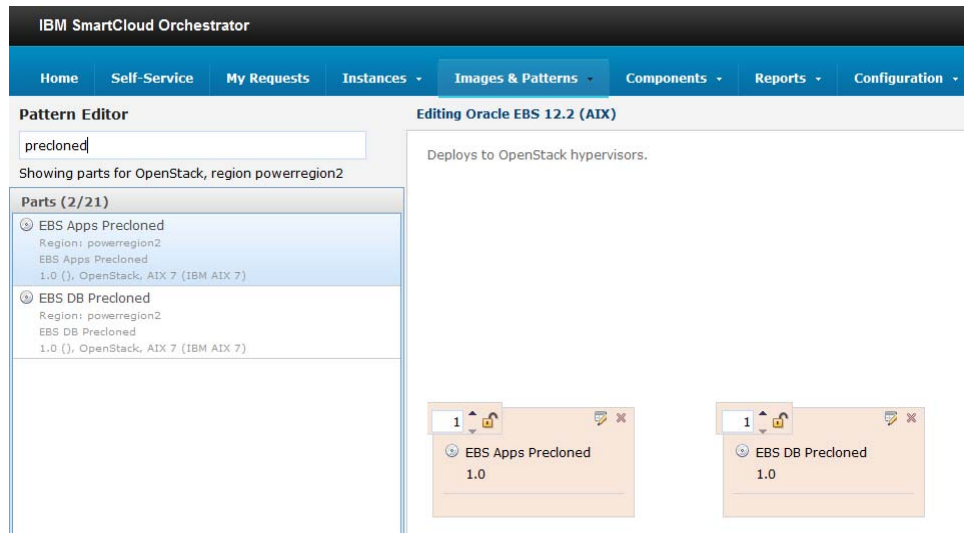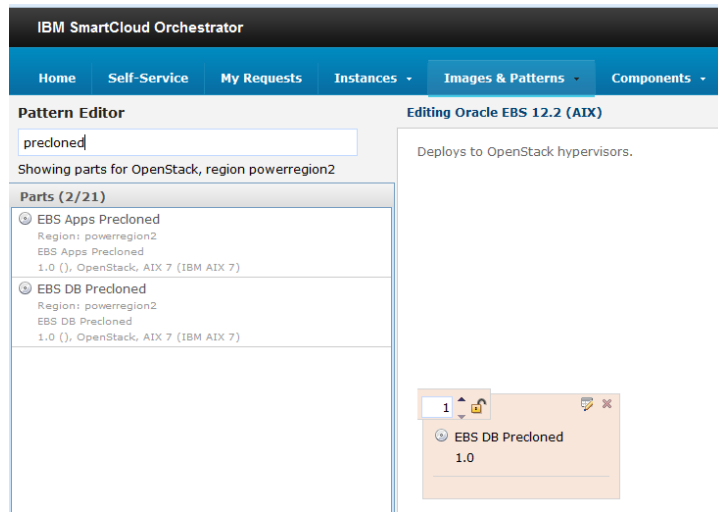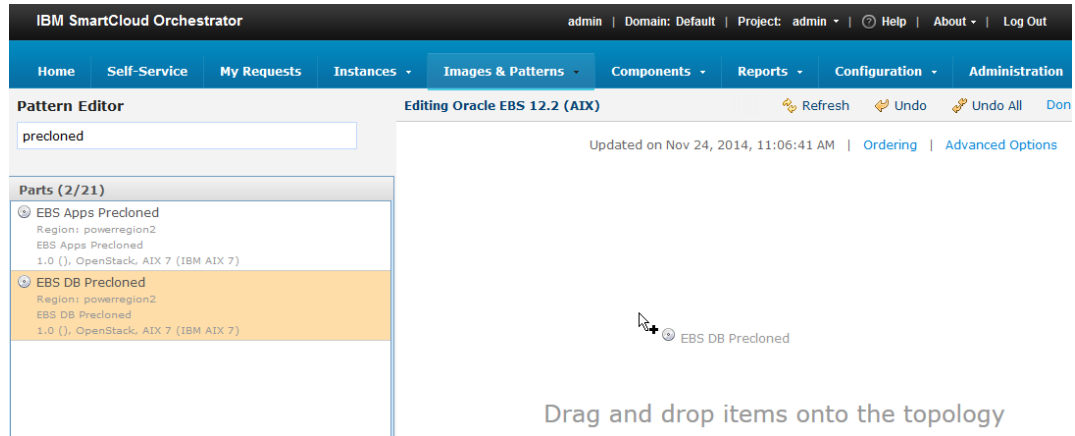
5.  Select the *Scripts* tab from the *Pattern Editor* menu on the left, and drag-and-drop the database cloning script package, created in the *Database tier cloning script package* section above, onto the database base virtual server image part.
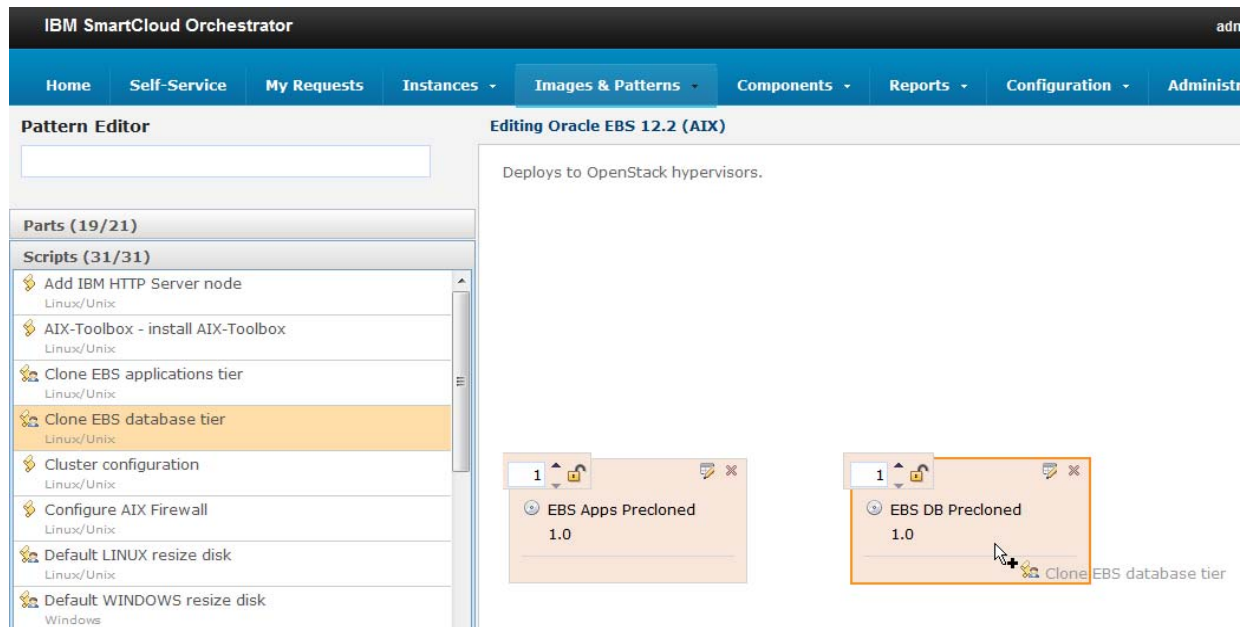


6.  Drag-and-drop the applications cloning script package, created in the *Applications tier cloning script package* section above, onto the applications base virtual server image part.
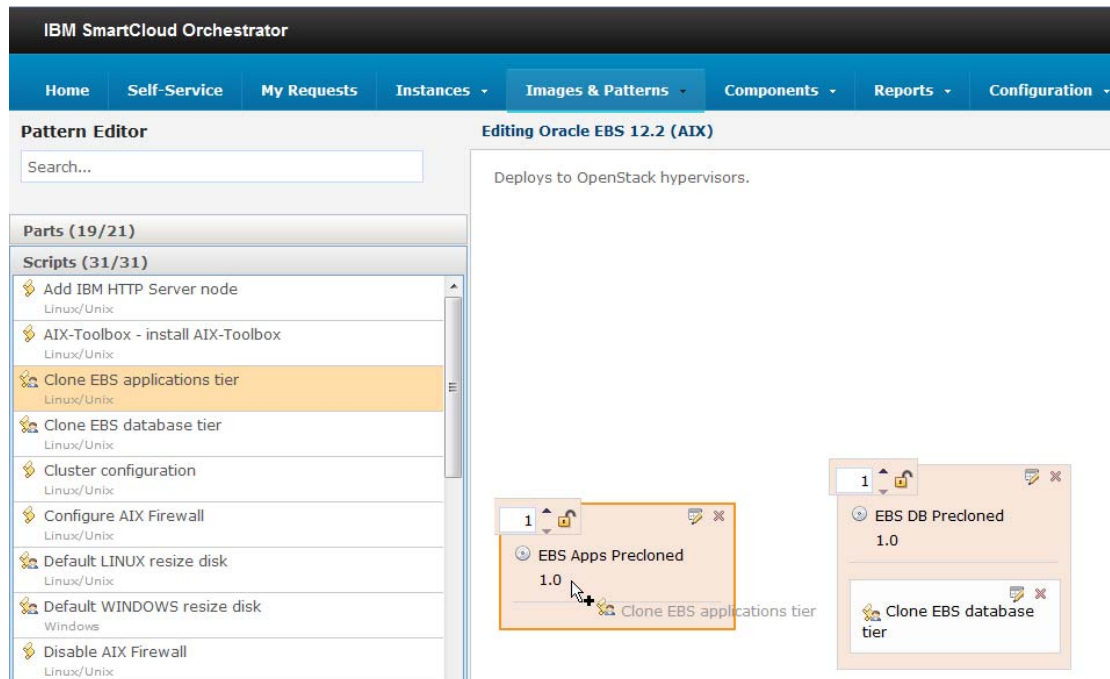
7. Click on the ✎ edit button on the different pattern parts and scripts to updated properties of the part or script.

Database tier virtual server image part
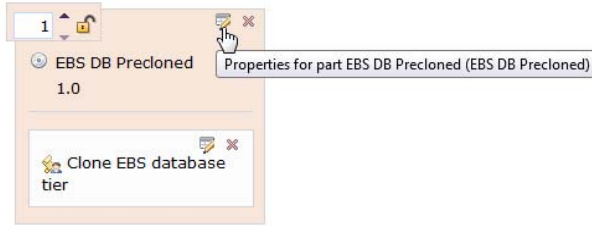




NOTE: the part-name for this part is *EBS DB Precloned.*

Database tier clone script package





Applications tier virtual server image part

Applications tier virtual server image part





*Note: The DB_HOSTNAME variable refers to the hostname of the database tier node. In the previous step while configuring the DB tier node part properties, we observed that the part name is EBS DB Precloned. Using the ${} syntax, we can refer to the DB tier node's hostname, IP address and domain name, all of which are dynamic and would be assigned when the DB tier node is provisioned.*

8. Since the applications tier node cloning must be started after the database tier node is cloned, we need to specify script ordering.
Click on the *ordering* menu item to specify orchestration ordering:



In the Script order constraints, drag-and-drop the EBS Apps Precloned part onto the EBS DB Precloned part to specify script ordering.
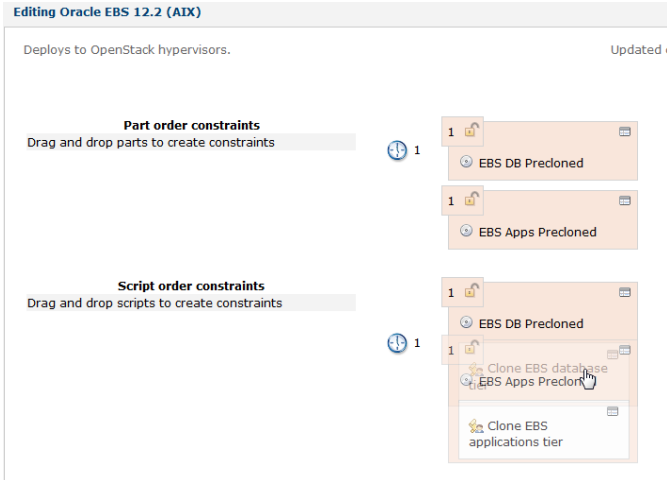


Here's the resulting script ordering:
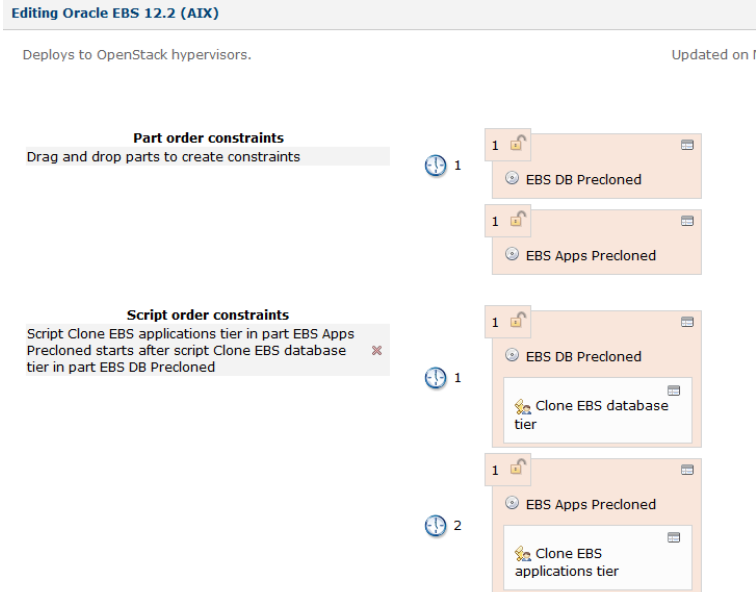


From the above ordering, we can observe that while the two nodes will be deployed in parallel, the applications tier cloning script will be called once the database tier cloning script is completed.

Click on the *Done editing* menu item to complete pattern editing.

IBM Virtual System Pattern for Oracle E-Business Suite 12.2 on AIX and Linux (x86)
http://www.ibm.com/support/techdocs
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Editing Oracle EBS 12.2 (AIX)        🔁 Refresh   ↩ Undo   ↩ Undo All   Done editing

Deploys to OpenStack hypervisors.       Updated on Nov 24, 2014, 11:35:37 AM   |   Topology   |   Advanced Options

## Deploy Oracle E-Business Suite Virtual System Pattern

1. Select the Virtual System Pattern to be deployed and click on the *Deploy* button to initiate pattern deployment.

2. Provide a name for the virtual system and choose the profile (region) for deploying pattern.



3. Choose the default root password for both nodes.

4. Finally, configure/validate the virtual parts properties.







5. Click on the *OK* button to start Virtual System Pattern deploy.

6. Once the pattern deployment has started, the deployment progress can be monitored by reviewing the *History* section of the virtual system instance (*Instances > Virtual Systems).*

7. The virtual servers created for the virtual server pattern can be observed by clicking on the Virtual machines section of the virtual system instance.



Click on ⊞ to see virtual machine details.

8. Once the virtual server pattern is deployed, the *current status* of the virtual system instance would change to *"The virtual system has been deployed".*



9. To review script packages execution logs, select the virtual machine and view details.



The execution logs are in the *Script Packages* section

*NOTE: while the virtual server pattern is being deployed, you could also review the script execution log file under /tmp (/tmp/postCloneDB.log – DB tier, and /tmp/postCloneApp.log – Apps tier) to monitor progress.*

## Oracle E-Business Suite Virtual System Pattern for VMware region

Follow the steps described in the previous section *Oracle E-Business Suite Virtual System Pattern for Power region* to create and deploy the Linux (x86) Virtual System Patterns on the SCO VMware regional server. Note that the scripts used for automating the Oracle E-Business Suite instance cloning are same for VMware region (Linux/x86) as well as Power region (AIX).

The script packages for use on VMware region (Linux/x86) are published along with this paper on IBM Techdocs.

- Database tier cloning script package for VMware region (Linux/x86): cloneDatabaseLinux.zip
- Applications tier cloning script package for VMware region (Linux/x86): cloneAppsLinux.zip

# Appendix A

## Sample Oracle E-Business Suite 12.2 script packages

The sample script packages are provided on an "As Is" basis, without warranty, either express or implied. It is up to the users to check that the software bundle and scripts meet Oracle E-Business Suite pre-cloning requirements at the time of use, and make any needed changes. Oracle E-Business Suite pre-cloning requirements can be found on the *My Oracle Support* website at: https://support.oracle.com.

The script packages referenced in this whitepaper are available on the IBM Techdocs web-portal along with this whitepaper. For any queries regarding this whitepaper or to get a copy of the script packages, please send a request to: ibmoracle@us.ibm.com.

### Oracle E-Business Suite 12.2 database tier script package

The Oracle E-Business Suite 12.2 database script package includes the automation scripts for cloning the Oracle E-Business Suite database tier and metadata files for calling the script from IBM SmartCloud Orchestrator. Here is a quick overview of the provided scripts:

1. Oracle E-Business Suite 12.2 database tier clone script (postCloneDB.sh):
   - Set the environment from supplied parameters or default values before calling post cloning procedure.
   - Execute the associated expect script as the specified database tier user.
2. Oracle E-Business Suite 12.2 database tier post-clone interactive response script (postCloneDB.exp):
   - Execute the post-clone script (adcfgclone.pl) for the DB tier.
   - Answer post-clone procedure's interactive questions automatically.
   - Start listener service.
   - Start the database instance.

Here is sample output during the Oracle E-Business Suite database tier Virtual System Pattern deployment:

```
SC-172-27-19-213 /tmp# cat ./postCloneDB.log
[INFO] starting DB tier cloning
[INFO] $ORACLE_HOME = '/u01/oracle/VIS/11.2.0'
[INFO] $ORACLE_BASE = '/u01/oracle/VIS'
[INFO] $ORACLE_SID = 'VIS'
[INFO] $EBSVA_ORACLE_DB_USER = 'oracle'
[INFO] $EBSVA_APPS_PASS = 'apps'
[INFO] $EBSVA_UTL_FILE_DIR = '/u01/tmp'
[INFO] $EBSVA_DB_HOSTNAME=SC-172-27-19-213
[INFO] Updating /etc/hosts; updated entry:'$NEW_HOST_ENTRY'
[INFO] $EBSVA_DB_CLONE_SCRIPT=postCloneDB.exp
[DEBUG] $AE_DIR=/tmp/cloneDB
[DEBUG] $postCloneDBScriptPath='/tmp/cloneDB/postCloneDB.exp'
[INFO] starting clone process
spawn perl /u01/oracle/VIS/11.2.0/appsutil/clone/bin/adcfgclone.pl dbTier

                    Copyright (c) 2011 Oracle Corporation

                        Redwood Shores, California, USA

                    Oracle E-Business Suite Rapid Clone

                            Version 12.2
```

```
Enter the APPS password :

Running:

/u01/oracle/VIS/11.2.0/appsutil/clone/bin/../jre/bin/java -Xmx600M -cp
/u01/oracle/VIS/11.2.0/appsutil/clone/jlib/java:/u01/oracle/VIS/11.2.0/appsutil/clone/jlib/xm
lparserv2.jar:/u01/oracle/VIS/11.2.0/appsutil/clone/jlib/ojdbc5.jar
oracle.apps.ad.context.CloneContext -e
/u01/oracle/VIS/11.2.0/appsutil/clone/bin/../context/db/CTXORIG.xml -validate -pairsfile
/tmp/adpairsfile_8323156.lst -stage /u01/oracle/VIS/11.2.0/appsutil/clone  2>
/tmp/adcfgclone_8323156.err; echo $? > /tmp/adcfgclone_8323156.res

Log file located at /u01/oracle/VIS/11.2.0/appsutil/clone/bin/CloneContext_1124063546.log

Provide the values required for creation of the new Database Context file.

Target System Hostname (virtual or normal) [sc-172-27-19-213] :

Target Instance is RAC (y/n) [n] :

Target System Database SID : VIS

Target System Base Directory : /u01/oracle/VIS

Target System utl_file_dir Directory List : /u01/tmp

Number of DATA_TOP's on the Target System [1] :

Target System DATA_TOP Directory 1 [/u01/oracle/VIS/data] :

Target System RDBMS ORACLE_HOME Directory [/u01/oracle/VIS/11.2.0] : /u01/oracle/VIS/11.2.0

Do you want to preserve the Display [null] (y/n)  : n

Target System Display [sc-172-27-19-213:0.0] :

Do you want the target system to have the same port values as the source system (y/n) [y] ? :

Complete port information available at /u01/oracle/VIS/11.2.0/appsutil/clone/bin/out/VIS_sc-
172-27-19-213/portpool.lst


Creating the new Database Context file from :

   /u01/oracle/VIS/11.2.0/appsutil/template/adxdbctx.tmp

The new database context file has been created :

   /u01/oracle/VIS/11.2.0/appsutil/VIS_sc-172-27-19-213.xml


Log file located at /u01/oracle/VIS/11.2.0/appsutil/clone/bin/CloneContext_1124063546.log

Check Clone Context logfile
/u01/oracle/VIS/11.2.0/appsutil/clone/bin/CloneContext_1124063546.log for details.

Running Rapid Clone with command:

Running:

perl /u01/oracle/VIS/11.2.0/appsutil/clone/bin/adclone.pl
java=/u01/oracle/VIS/11.2.0/appsutil/clone/bin/../jre mode=apply
stage=/u01/oracle/VIS/11.2.0/appsutil/clone component=dbTier method=CUSTOM
dbctxtg=/u01/oracle/VIS/11.2.0/appsutil/VIS_sc-172-27-19-213.xml showProgress
contextValidated=true

Setting LIBPATH to /u01/oracle/VIS/11.2.0/appsutil/clone/oui/lib/aix

Beginning database tier Apply - Mon Nov 24 06:36:09 2014

/u01/oracle/VIS/11.2.0/appsutil/clone/bin/../jre/bin/java -Xmx600M -DCONTEXT_VALIDATED=true
-Doracle.installer.oui_loc=/u01/oracle/VIS/11.2.0/oui -classpath
/u01/oracle/VIS/11.2.0/appsutil/clone/jlib/xmlparserv2.jar:/u01/oracle/VIS/11.2.0/appsutil/cl
```

```
one/jlib/ojdbc6.jar:/u01/oracle/VIS/11.2.0/appsutil/clone/jlib/java:/u01/oracle/VIS/11.2.0/ap
psutil/clone/jlib/oui/OraInstaller.jar:/u01/oracle/VIS/11.2.0/appsutil/clone/jlib/oui/ewt3.ja
r:/u01/oracle/VIS/11.2.0/appsutil/clone/jlib/oui/share.jar:/u01/oracle/VIS/11.2.0/appsutil/cl
one/jlib/oui/srvm.jar:/u01/oracle/VIS/11.2.0/appsutil/clone/jlib/ojmisc.jar
oracle.apps.ad.clone.ApplyDBTier -e /u01/oracle/VIS/11.2.0/appsutil/VIS_sc-172-27-19-213.xml
-stage /u01/oracle/VIS/11.2.0/appsutil/clone   -showProgress
```

APPS Password : Log file located at /u01/oracle/VIS/11.2.0/appsutil/log/VIS_sc-172-27-19-213/ApplyDBTier_11240636.log

100% completed

Completed Apply...

Mon Nov 24 06:40:46 2014

Starting database listener for VIS:

Running:

/u01/oracle/VIS/11.2.0/appsutil/scripts/VIS_sc-172-27-19-213/addlnctl.sh start VIS

Logfile: /u01/oracle/VIS/11.2.0/appsutil/log/VIS_sc-172-27-19-213/addlnctl.txt

You are running addlnctl.sh version 120.4

Starting listener process VIS ...

Listener VIS has already been started.

addlnctl.sh: exiting with status 0

addlnctl.sh: check the logfile /u01/oracle/VIS/11.2.0/appsutil/log/VIS_sc-172-27-19-213/addlnctl.txt for more information ...

[INFO] successfully completed DB tier cloning


## Oracle E-Business Suite 12.2 applications tier script package

The Oracle E-Business Suite 12.2 applications tier script package includes the automation scripts for cloning the Oracle E-Business Suite applications tier and metadata files for calling the script from IBM SmartCloud Orchestrator. Here is a quick overview of the provided scripts:

1. Oracle E-Business Suite 12.2 applications tier clone script (postCloneApp.sh):
   - Update /etc/hosts file.
   - Connect to DB tier and check if database services are up.
   - If DB tier services are up:
     - Set the environment from supplied parameters or default values before calling post cloning procedure.
     - Remove FMW_HOME directory structure on run-edition.
     - Update minimum Linux host requirement for cloning run edition.
     - Clone run-edition (postCloneAppRun.exp).
     - Start node-manager and app tier services.
     - Pre-clone run-edition to prepare for patch-edition cloning (preCloneApp.exp).
     - Update minimum Linux host requirement for cloning patch edition.
     - Clone patch-edition (postCloneAppPatch.exp).
   - Start application tier services.
2. Oracle E-Business Suite apps tier clone interactive response script (postCloneAppRun.exp):
   - Executes the clone script (adcfgclone.pl) for the apps tier run-edition.
   - Answers cloning procedure's interactive questions automatically.

3. Oracle E-Business Suite apps tier clone interactive response script (preCloneApp.exp):
   - Executes the pre-clone script (adpreclone.pl) for the apps tier run-edition.
   - Answers pre-clone procedure's interactive questions automatically.
4. Oracle E-Business Suite apps tier clone interactive response script (postCloneAppPatch.exp):
   - Executes the clone script (adcfgclone.pl) for the apps tier run-edition.
   - Answers cloning procedure's interactive questions automatically.

Here is sample output during the Oracle E-Business Suite apps tier Virtual System Pattern deployment:

```
SC-172-27-19-212 /tmp# cat ./postCloneApp.log

[INFO] starting App tier cloning
[INFO] $EBSVA_APPS_BASE = '/u02/oracle/VIS'
[INFO] $EBSVA_DB_HOSTNAME = 'SC-172-27-19-213'
[INFO] $EBSVA_DB_DOMAIN = 'powerregion2.cloud.bow.iic.ihost.com'
[INFO] $EBSVA_DB_IP = '172.27.19.213'
[INFO] $EBSVA_WLA_PASS = '@Ibm0racle'
[INFO] $EBSVA_DB_PORT = '1521'
[INFO] $ORACLE_SID = 'VIS'
[INFO] $EBSVA_ORACLE_DB_USER = 'oracle'
[INFO] $EBSVA_ORACLE_APPS_USER = 'oracle'
[INFO] $EBSVA_APPS_PASS = 'apps'
[INFO] $EBSVA_DB_CONN_TIMEOUT_MINS = '60'
[INFO] $EBSVA_APPS_HOSTNAME=SC-172-27-19-212
[INFO] Updating /etc/hosts; updated entry:'$NEW_HOST_ENTRY'
[INFO] $EBSVA_APPS_CLONE_RUN_SCRIPT=postCloneAppRun.exp
[INFO] $EBSVA_APPS_PRECLONE_SCRIPT=preCloneApp.exp
[INFO] $EBSVA_APPS_CLONE_PATCH_SCRIPT=postCloneAppPatch.exp
[INFO] adding App tier hostname entry in /etc/hosts (SC-172-27-19-
213.powerregion2.cloud.bow.iic.ihost.com = 172.27.19.213)
[INFO] Testing connectivity to DB server SC-172-27-19-213 on port 1521
[INFO] Telnet attempt #1 to SC-172-27-19-213:1521 on Mon Nov 24 06:41:26 UTC 2014
[INFO] Successfully tested connection to port 1521 on SC-172-27-19-213!
[INFO] DB connectivity tested successfully, proceeding with App post-cloning
[INFO] removing FMW_Home directory structure in run-edition (fs1)
[INFO] cloning run-edition (fs1)

spawn perl /u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/adcfgclone.pl appsTier

                    Copyright (c) 2011 Oracle Corporation

                        Redwood Shores, California, USA

                        Oracle E-Business Suite Rapid Clone

                                Version 12.2

                    adcfgclone Version 120.63.12020000.7.1202010.2

Enter the APPS password :
Enter the Weblogic AdminServer password :
Running:

/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/../jre/bin/java -Xmx600M -classpath
/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/obfuscatepassword.jar:/u02/oracle/VIS/fs1/EBSapps
/comn/clone/jlib/ojmisc.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/java
oracle.apps.ad.clone.util.OPWrapper
/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/../FMW/tempinfo.txt

Running:

/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/../jre/bin/java -Xmx600M -classpath
/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/obfuscatepassword.jar:/u02/oracle/VIS/fs1/EBSapps
/comn/clone/jlib/ojmisc.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/java
oracle.apps.ad.clone.util.OPWrapper
/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/../FMW/EBSDataSource

Do you want to add a node (yes/no) [no] :
```

Running:

```
/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/../jre/bin/java -Xmx600M -cp
/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/java:/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/
xmlparserv2.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/ojdbc5.jar
oracle.apps.ad.context.CloneContext -e
/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/../context/apps/CTXORIG.xml -validate -pairsfile
/tmp/adpairsfile_8061092.lst -stage /u02/oracle/VIS/fs1/EBSapps/comn/clone  2>
/tmp/adcfgclone_8061092.err; echo $? > /tmp/adcfgclone_8061092.res
```

Log file located at /u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/CloneContext_1124064216.log

Target System File Edition type [run] :

Provide the values required for creation of the new APPL_TOP Context file.

Target System Hostname (virtual or normal) [sc-172-27-19-212] : SC-172-27-19-212

Target System Database SID : VIS

Target System Database Server Node [SC-172-27-19-212] : SC-172-27-19-213

Target System Database Domain Name [powerregion2.cloud.bow.iic.ihost.com] :
powerregion2.cloud.bow.iic.ihost.com

Target System Base Directory : /u02/oracle/VIS

Target System Base Directory set to /u02/oracle/VIS

Target System Run File System Base set to /u02/oracle/VIS/fs1

Target System Patch File System Base set to /u02/oracle/VIS/fs2

Target System Fusion Middleware Home set to /u02/oracle/VIS/fs1/FMW_Home

Target System Web Oracle Home set to /u02/oracle/VIS/fs1/FMW_Home/webtier

Target System Appl TOP set to /u02/oracle/VIS/fs1/EBSapps/appl

Target System COMMON TOP set to /u02/oracle/VIS/fs1/EBSapps/comn

Target System Instance Home Directory [/u02/oracle/VIS] :

Target System Instance Top set to /u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-212

Do you want to preserve the Display [apps:0.0] (y/n)  : n

Target System Display [SC-172-27-19-212:0.0] :

Target System Root Service [enabled] :

Target System Web Administration [enabled] :

Target System Web Entry Point Services [enabled] :

Target System Web Application Services [enabled] :

Target System Batch Processing Services [enabled] :

Target System Other Services [disabled] :

Do you want the target system to have the same port values as the source system (y/n) [y] ? :
y

Complete port information available at /u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/out/VIS_SC-
172-27-19-212/portpool.lst

UTL_FILE_DIR on database tier consists of the following directories.

1. /usr/tmp
2. /u01/tmp
3. /u01/oracle/VIS/11.2.0/appsutil/outbound/VIS_sc-172-27-19-213
4. /usr/tmp

Choose a value which will be set as APPLPTMP value on the target node [1] : 2

Creating the new APPL_TOP Context file from :

   /u02/oracle/VIS/fs1/EBSapps/appl/ad/12.0.0/admin/template/adxmlctx.tmp

The new APPL_TOP context file has been created :

  /u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-212.xml

Log file located at /u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/CloneContext_1124064216.log

Check Clone Context logfile
/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/CloneContext_1124064216.log for details.


Running Rapid Clone with command:

Running:

perl /u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/adclone.pl
java=/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/../jre mode=apply
stage=/u02/oracle/VIS/fs1/EBSapps/comn/clone component=appsTier method=CUSTOM
appctxtg=/u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-
212.xml showProgress contextValidated=true

FMW Pre-requisite check log file location :
/u02/oracle/VIS/fs1/EBSapps/comn/clone/FMW/logs/prereqcheck.log

Running: /u02/oracle/VIS/fs1/EBSapps/comn/clone/FMW/t2pjdk/bin/java -classpath
/u02/oracle/VIS/fs1/EBSapps/comn/clone/prereq/webtier/Scripts/ext/jlib/engine.jar:/u02/oracle
/VIS/fs1/EBSapps/comn/clone/prereq/webtier/oui/jlib/OraPrereq.jar:/u02/oracle/VIS/fs1/EBSapps
/comn/clone/prereq/webtier/oui/jlib/OraPrereqChecks.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clon
e/prereq/webtier/oui/jlib/OraInstaller.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/prereq/webt
ier/oui/jlib/OraInstallerNet.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/prereq/webtier/oui/jl
ib/srvm.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/prereq/webtier/Scripts/ext/jlib/ojdl.jar:/
u02/oracle/VIS/fs1/EBSapps/comn/clone/prereq/webtier/Scripts/ext/jlib/ojdl2.jar:/u02/oracle/V
IS/fs1/EBSapps/comn/clone/prereq/webtier/Scripts/ext/jlib/ojdl-
log4j.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/prereq/webtier/oui/jlib/xmlparserv2.jar:/u02
/oracle/VIS/fs1/EBSapps/comn/clone/prereq/webtier/oui/jlib/share.jar:/u02/oracle/VIS/fs1/EBSa
pps/comn/clone/jlib/java oracle.apps.ad.clone.util.FMWOracleHomePreReqCheck -prereqCheckFMW -
e /u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-212.xml -
stage /u02/oracle/VIS/fs1/EBSapps/comn/clone -log
/u02/oracle/VIS/fs1/EBSapps/comn/clone/FMW/logs/prereqcheck.log

Setting LIBPATH to /u02/oracle/VIS/fs1/EBSapps/comn/clone/oui/lib/aix

Beginning application tier Apply - Mon Nov 24 06:42:46 2014

/u02/oracle/VIS/fs1/EBSapps/comn/clone/bin/../jre/bin/java -Xmx600M -DCONTEXT_VALIDATED=true
-Doracle.installer.oui_loc=/oui -classpath
/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/xmlparserv2.jar:/u02/oracle/VIS/fs1/EBSapps/comn/
clone/jlib/ojdbc6.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/java:/u02/oracle/VIS/fs1/EB
Sapps/comn/clone/jlib/oui/OraInstaller.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/oui/ew
t3.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/oui/share.jar:/u02/oracle/VIS/fs1/EBSapps/
comn/clone/jlib/oui/srvm.jar:/u02/oracle/VIS/fs1/EBSapps/comn/clone/jlib/ojmisc.jar:/u02/orac
le/VIS/fs1/FMW_Home/wlserver_10.3/server/lib/weblogic.jar:/u02/oracle/VIS/fs1/EBSapps/comn/cl
one/jlib/obfuscatepassword.jar  oracle.apps.ad.clone.ApplyAppsTier -e
/u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-212.xml -stage
/u02/oracle/VIS/fs1/EBSapps/comn/clone    -showProgress -nopromptmsg

Log file located at /u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-
212/admin/log/ApplyAppsTier_11240642.log

    |     0% completed        n

100% completed

Completed Apply...

Mon Nov 24 07:00:37 2014


Do you want to startup the Application Services for VIS? (y/n) [y] :

Services not started

[INFO] starting node manager on run-edition (fs1)

[DEBUG] trying to start node manager..

```
[INFO] successfully started node manager!

[INFO] starting app tier services in run-edition (fs1)

[INFO] pre-cloning run-edition (fs1) to prepare for patch-edition (fs2) cloning

spawn perl /u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-212/admin/scripts/adpreclone.pl
appsTier

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                            Redwood Shores, California, USA



                          Oracle E-Business Suite Rapid Clone

                                   Version 12.2

                          adpreclone Version 120.31.12020000.4


    Enter the Weblogic AdminServer password :

     Checking the status of the Oracle WebLogic Administration Server....

     Running perl /u02/oracle/VIS/fs1/EBSapps/appl/ad/12.0.0/patch/115/bin/adProvisionEBS.pl ebs-
    get-serverstatus -contextfile=/u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-
    212/appl/admin/VIS_SC-172-27-19-212.xml -servername=AdminServer -promptmsg=hide

    AC-00002: Error: Unable to create log file - EBSProvisioner.log

    Exception in thread "main" java.lang.RuntimeException: AC-00002: Unable to create log file -
    EBSProvisioner.log

    Raised by oracle.apps.ad.util.LogFile

        at oracle.apps.ad.util.LogFile.appendLogFile(LogFile.java:410)

        at oracle.apps.ad.util.LogFile.log(LogFile.java:265)

        at oracle.apps.ad.util.LogFile.info(LogFile.java:244)

        at
    oracle.apps.ad.tools.configuration.EBSProvisioner.validateArgs(EBSProvisioner.java:5072)

        at oracle.apps.ad.tools.configuration.EBSProvisioner.main(EBSProvisioner.java:5096)


    Running:

    perl /u02/oracle/VIS/fs1/EBSapps/appl/ad/12.0.0/bin/adclone.pl
    java=/u02/oracle/VIS/fs1/EBSapps/comn/util/jdk32 mode=stage
    stage=/u02/oracle/VIS/fs1/EBSapps/comn/clone component=appsTier method=
    appctx=/u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-212.xml
    showProgress

    Setting LIBPATH to /u02/oracle/VIS/fs1/FMW_Home/webtier/oui/lib/aix

    Beginning application tier Stage - Mon Nov 24 07:04:28 2014

    /u02/oracle/VIS/fs1/EBSapps/comn/util/jdk32/bin/java -Xmx600M -DCONTEXT_VALIDATED=false  -
    Doracle.installer.oui_loc=/oui -classpath
    /u02/oracle/VIS/fs1/FMW_Home/webtier/lib/xmlparserv2.jar:/u02/oracle/VIS/fs1/FMW_Home/webtier
    /jdbc/lib/ojdbc6.jar:/u02/oracle/VIS/fs1/EBSapps/comn/java/classes:/u02/oracle/VIS/fs1/FMW_Ho
    me/webtier/oui/jlib/OraInstaller.jar:/u02/oracle/VIS/fs1/FMW_Home/webtier/oui/jlib/ewt3.jar:/
    u02/oracle/VIS/fs1/FMW_Home/webtier/oui/jlib/share.jar:/u02/oracle/VIS/fs1/FMW_Home/webtier/o
    ui/jlib/srvm.jar:/u02/oracle/VIS/fs1/FMW_Home/webtier/jlib/ojmisc.jar:/u02/oracle/VIS/fs1/FMW
    _Home/wlserver_10.3/server/lib/weblogic.jar:/u02/oracle/VIS/fs1/FMW_Home/oracle_common/jlib/o
    bfuscatepassword.jar   oracle.apps.ad.clone.StageAppsTier -e
    /u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-212.xml -stage
    /u02/oracle/VIS/fs1/EBSapps/comn/clone -tmp /tmp -method CUSTOM   -showProgress -nopromptmsg


    Log file located at /u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-
    212/admin/log/StageAppsTier_11240704.log
```

```
20% completed

Completed Stage...

Mon Nov 24 07:26:13 2014

[INFO] removing directories under patch-edition and copying EBSapps and inst from run-edition
to patch-edition
[INFO] cloning patch-edition (fs2)

spawn perl /u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/adcfgclone.pl appsTier

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                       Redwood Shores, California, USA

                     Oracle E-Business Suite Rapid Clone

                               Version 12.2

                   adcfgclone Version 120.63.12020000.7.1202010.2

Enter the APPS password :

Enter the Weblogic AdminServer password :

Running:

/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/../jre/bin/java -Xmx600M -classpath
/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/obfuscatepassword.jar:/u02/oracle/VIS/fs2/EBSapps
/comn/clone/jlib/ojmisc.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/java
oracle.apps.ad.clone.util.OPWrapper
/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/../FMW/tempinfo.txt

Running:

/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/../jre/bin/java -Xmx600M -classpath
/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/obfuscatepassword.jar:/u02/oracle/VIS/fs2/EBSapps
/comn/clone/jlib/ojmisc.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/java
oracle.apps.ad.clone.util.OPWrapper
/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/../FMW/EBSDataSource


Do you want to add a node (yes/no) [no] :

Running:

/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/../jre/bin/java -Xmx600M -cp
/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/java:/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/
xmlparserv2.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/ojdbc5.jar
oracle.apps.ad.context.CloneContext -e
/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/../context/apps/CTXORIG.xml -validate -pairsfile
/tmp/adpairsfile_11272306.lst -stage /u02/oracle/VIS/fs2/EBSapps/comn/clone  2>
/tmp/adcfgclone_11272306.err; echo $? > /tmp/adcfgclone_11272306.res

Log file located at /u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/CloneContext_1124074750.log

Target System File Edition type [run] : patch

Location of Run File System context file : /u02/oracle/VIS/fs1/inst/apps/VIS_SC-172-27-19-
212/appl/admin/VIS_SC-172-27-19-212.xml

Provide the values required for creation of the new APPL_TOP Context file.

Target System Fusion Middleware Home set to /u02/oracle/VIS/fs2/FMW_Home

Target System Web Oracle Home set to /u02/oracle/VIS/fs2/FMW_Home/webtier

Target System Appl TOP set to /u02/oracle/VIS/fs2/EBSapps/appl

Target System COMMON TOP set to /u02/oracle/VIS/fs2/EBSapps/comn

RC-00217: Warning: Configuration home directory (s_config_home) evaluates to
/u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212. A directory with this name already exists
and is not empty.

Do you want to continue (y/n)   : y

Target System Instance Top set to /u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212
```

```
Target System Port Pool [0-99] : 2

Checking the port pool 2

done: Port Pool 2 is free

Report file located at /u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212/temp/portpool.lst

Complete port information available at /u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-
212/temp/portpool.lst

UTL_FILE_DIR on database tier consists of the following directories.

1. /usr/tmp
2. /u01/tmp
3. /u01/oracle/VIS/11.2.0/appsutil/outbound/VIS_sc-172-27-19-213
4. /usr/tmp

Choose a value which will be set as APPLPTMP value on the target node [1] : 2

Backing up /u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-
212.xml to /u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-
212.xml.bak

Creating the new APPL_TOP Context file from :

   /u02/oracle/VIS/fs2/EBSapps/appl/ad/12.0.0/admin/template/adxmlctx.tmp

The new APPL_TOP context file has been created :

   /u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-212.xml

Log file located at /u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/CloneContext_1124074750.log

Check Clone Context logfile
/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/CloneContext_1124074750.log for details.

Running Rapid Clone with command:
Running:

perl /u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/adclone.pl
java=/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/../jre mode=apply
stage=/u02/oracle/VIS/fs2/EBSapps/comn/clone component=appsTier method=CUSTOM
appctxtg=/u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-
212.xml showProgress contextValidated=true

FMW Pre-requisite check log file location :
/u02/oracle/VIS/fs2/EBSapps/comn/clone/FMW/logs/prereqcheck.log

Running: /u02/oracle/VIS/fs2/EBSapps/comn/clone/FMW/t2pjdk/bin/java -classpath
/u02/oracle/VIS/fs2/EBSapps/comn/clone/prereq/webtier/Scripts/ext/jlib/engine.jar:/u02/oracle
/VIS/fs2/EBSapps/comn/clone/prereq/webtier/oui/jlib/OraPrereq.jar:/u02/oracle/VIS/fs2/EBSapps
/comn/clone/prereq/webtier/oui/jlib/OraPrereqChecks.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clon
e/prereq/webtier/oui/jlib/OraInstaller.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/prereq/webt
ier/oui/jlib/OraInstallerNet.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/prereq/webtier/oui/jl
ib/srvm.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/prereq/webtier/Scripts/ext/jlib/ojdl.jar:/
u02/oracle/VIS/fs2/EBSapps/comn/clone/prereq/webtier/Scripts/ext/jlib/ojdl2.jar:/u02/oracle/V
IS/fs2/EBSapps/comn/clone/prereq/webtier/Scripts/ext/jlib/ojdl-
log4j.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/prereq/webtier/oui/jlib/xmlparserv2.jar:/u02
/oracle/VIS/fs2/EBSapps/comn/clone/prereq/webtier/oui/jlib/share.jar:/u02/oracle/VIS/fs2/EBSa
pps/comn/clone/jlib/java oracle.apps.ad.clone.util.FMWOracleHomePreReqCheck -prereqCheckFMW -
e /u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-212.xml -
stage /u02/oracle/VIS/fs2/EBSapps/comn/clone -log
/u02/oracle/VIS/fs2/EBSapps/comn/clone/FMW/logs/prereqcheck.log

Setting LIBPATH to /u02/oracle/VIS/fs2/EBSapps/comn/clone/oui/lib/aix

Beginning application tier Apply - Mon Nov 24 07:48:01 2014

/u02/oracle/VIS/fs2/EBSapps/comn/clone/bin/../jre/bin/java -Xmx600M -DCONTEXT_VALIDATED=true
-Doracle.installer.oui_loc=/oui -classpath
/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/xmlparserv2.jar:/u02/oracle/VIS/fs2/EBSapps/comn/
clone/jlib/ojdbc6.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/java:/u02/oracle/VIS/fs2/EB
Sapps/comn/clone/jlib/oui/OraInstaller.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/oui/ew
t3.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/oui/share.jar:/u02/oracle/VIS/fs2/EBSapps/
comn/clone/jlib/oui/srvm.jar:/u02/oracle/VIS/fs2/EBSapps/comn/clone/jlib/ojmisc.jar:/u02/orac
le/VIS/fs2/FMW_Home/wlserver_10.3/server/lib/weblogic.jar:/u02/oracle/VIS/fs2/EBSapps/comn/cl
```

```
one/jlib/obfuscatepassword.jar  oracle.apps.ad.clone.ApplyAppsTier -e
/u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-212/appl/admin/VIS_SC-172-27-19-212.xml -stage
/u02/oracle/VIS/fs2/EBSapps/comn/clone    -showProgress -nopromptmsg

Log file located at /u02/oracle/VIS/fs2/inst/apps/VIS_SC-172-27-19-
212/admin/log/ApplyAppsTier_11240748.log

100% completed


Completed Apply...
Mon Nov 24 08:06:44 2014

[INFO] successfully completed app tier cloning
```

# Terminology

**Management server:**  The server on which IBM Systems Director is installed.

**Virtual server:**  A logical partition (LPAR) with virtualized resources presented from a host system. An operating system and other software application can be installed on a virtual server.

**Virtual system:** Virtual systems consist of one or more virtual image parts and defined through a Virtual System Pattern, a provisionable unit of one or more virtual images to be installed, configured, and integrated in order to implement a topology.

**Host / Managed system:**  A system that contains resources from which virtual servers are constructed. For example, an IBM Power System server that is managed by a Hardware Management Console (HMC) or IBM Integrated Virtualization Manager (IVM), BladeCenter chassis, FlexSystem chassis or a system running VMWare ESX Server.

# References

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- Manage the topology with Virtual System Patterns
  http://www.ibm.com/developerworks/cloud/library/cl-puresystem-vsp/

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**Vishal Agarwal** is a senior technical consultant at the IBM India Software Labs in Bangalore, India. As part of the IBM STG ISV enablement team, Vishal is involved in technical enablement of cloud offerings on the IBM Power platform. Prior to joining IBM, he has worked on various UNIX® server technologies as a systems and application programmer, platform migration expert and performance consultant.

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