

**Oracle® Communications
User Data Repository**

Cloud Installation Guide

Release 12.1

E67495-03

September 2016

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See more information on MOS in the Appendix section.

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1.0 INTRODUCTION

1.1 Purpose and Scope

This document describes the application-related installation procedures for an VMware User Data Repository 12.1 system.

This document assumes that platform-related configuration has already been done.

The audience for this document includes Oracle customers as well as these groups: Software System, Product Verification, Documentation, and Customer Service including Software Operations and First Office Application.

1.2 References

Oracle customer documentation is available on the web at the Oracle Help Center site, <http://docs.oracle.com>. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at www.adobe.com.

- 1. Access Oracle Help Center at <http://docs.oracle.com>.*
- 2. Select the tab “Find a product.”*
- 3. Type “User Data Repository.”*
- 4. Takes you to “CGBU Documentation.”*
- 5. Select “User Data Repository” followed by version.*

1.2.1 External

- [1] UDR Cloud Resource Profile, E67495-01, latest revision
- [2] *UDR Installation and Configuration Procedure*, E66198-01, latest revision
- [3] *UDR Disaster Recovery Guide*, E66199-01, latest revision

1.3 Acronyms

An alphabetized list of acronyms used in the document

Table 1. Acronyms

Acronym	Definition
BIOS	Basic Input Output System
CD	Compact Disk
UDR	User Data Repository
ESXi	Elastic Sky X Integrated
FABR	Full Address Based Resolution
iDIH	Integrated Diameter Intelligence Hub
IPFE	IP Front End
IPM	Initial Product Manufacture – the process of installing TPD
IWF	Inter Working Function
NAPD	Network Architecture Planning Diagram
OS	Operating System (e.g. TPD)
OVA	Open Virtualization Appliance
PDRA	Policy Diameter Routing Agent
PCA	Policy and Charging Application
RBAR	Range Based Address Resolution
SAN	Storage Area Network
SFTP	Secure File Transfer Protocol
SNMP	Simple Network Management Protocol
TPD	Tekelec Platform Distribution
VM	Virtual Machine

1.4 Terminology

Multiple server types may be involved with the procedures in this manual. Therefore, most steps in the written procedures begin with the name or type of server to which the step applies.

Each step has a checkbox for every command within the step that the technician should check to keep track of the progress of the procedure.

The title box describes the operations to be performed during that step.

Each command that the technician is to enter is in 10 point bold Courier font.

5	<input type="checkbox"/> ServerX: Connect to the console of the server	Establish a connection to the server using cu on the terminal server/console. <pre>\$ cu -l /dev/ttyS7</pre>
---	---	--

Figure 1. Example of an instruction that indicates the server to which it applies

<p>Site</p>	<p>Applicable for various applications, a Site is type of “Place”. A Place is configured object that allows servers to be associated with a physical location.</p> <p>A Site place allows servers to be associated with a physical site. For example, Sites may be configured for Atlanta, Charlotte, and Chicago. Every server is associated with exactly one Site when the server is configured.</p> <p>For the Policy & Charging DRA application, when configuring a Site only put DA-MPs and SBR MP servers in the site. Do not add NOAMP, SOAM or IPFE MPs to a Site</p>
<p>Place Association</p>	<p>Applicable for various applications, a “Place Association” is a configured object that allows Places to be grouped together. A Place can be a member of more than one Place Association.</p> <p>The Policy & Charging DRA application defines two Place Association Types: Policy Binding Region and Policy & Charging Mated Sites.</p>
<p>Two Site Redundancy</p>	<p>Two Site Redundancy is a data durability configuration in which Policy and Charging data is unaffected by the loss of one site in a Policy & Charging Mated Sites Place Association containing two sites.</p> <p>Two Site Redundancy is a feature provided by Server Group configuration. This feature provides geographic redundancy. Some Server Groups can be configured with servers located in two geographically separate Sites(locations). This feature will ensure that there is always a functioning Active server in a Server Group even if all the servers in a single site fail.</p>
<p>Server Group Primary Site</p>	<p>A Server Group Primary Site is a term used to represent the principle location within a SOAM. SOAM Server groups are intended to span several Sites(Places).</p> <p>The Primary Site may be in a different Site(Place) for each configured SOAM.</p> <p>A Primary Site is described as the location in which the Active and Standby servers to reside, however there cannot be any Preferred Spare servers within this location. All SOAM Server Groups will have a Primary Site.</p>
<p>Server Group Secondary Site</p>	<p>A Server Group Secondary Site is a term used to represent location in addition to the Primary Site within a SOAM Server Group. SOAM Server groups are intended to span several Sites(Places)</p> <p>The Secondary Site may be in a different Site(Place) for each configured SOAM.</p> <p>A Secondary Site is described as the location in which only Preferred Spare servers reside. The Active and Standby servers cannot reside within this location. If Two Site Redundancy is wanted, a Secondary Site is required for all SOAM Server Groups.</p>

1.1 Assumptions

This procedure assumes the following:

- The user has taken assigned values from the Customer network and used them to compile XML files (see Appendix C for each NOAMP and SOAM site's NE prior to attempting to execute this procedure).
- The user has at least an intermediate skill set with command prompt activities on an Open Systems computing environment such as Linux or TPD.

1.2 XML Files (for installing NE)

The XML files compiled for installation of the each of the NOAMP and SOAM site's NE must be maintained and accessible for use in Disaster Recovery procedures. The Professional Services Engineer (PSE) will provide a copy of the XML files used for installation to the designated Customer Operations POC. The customer is ultimately responsible for maintaining and providing the XML files to My Oracle Support (MOS) if needed for use in Disaster Recovery operations. For more details on Disaster Recovery refer to [3].

1.3 How to use this Document

Although this document is primarily to be used as an initial installation guide, its secondary purpose is to be used as a reference for Disaster Recovery procedures [3]. When executing this document for either purpose, there are a few points which help to ensure that the user understands the author's intent. These points are as follows;

- 1) Before beginning a procedure, completely read the instructional text (it will appear immediately after the Section heading for each procedure) and all associated procedural WARNINGS or NOTES.
- 2) Before execution of a STEP within a procedure, completely read the left and right columns including any STEP specific WARNINGS or NOTES.

If a procedural STEP fails to execute successfully, STOP and contact My Oracle Support MOS for assistance before attempting to continue.

2.0 GENERAL DESCRIPTION

This document defines the steps to execute the initial installation of the User Data Repository (UDR) application on a VMware hypervisor or a OpenStack hypervisor.

UDR installation paths are shown in the figures below. The general timeline for all processes to perform a software installation/configuration and upgrade is also included below.

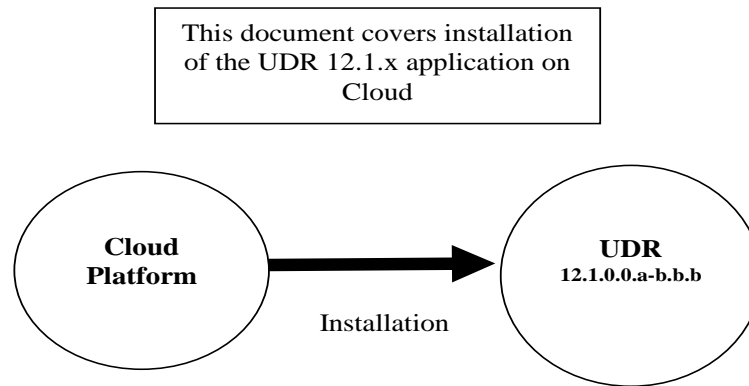


Figure 2. Initial Application Installation Path – Example shown

2.1 Required Materials

The following materials are required to complete UDR installation:

1. Target release UDR OVA Media
2. Target release UDR ISO Media only for ISO installs
3. Target release TPD Media only for ISO installs

The software media referenced here may be acquired online from the Oracle e-Delivery service at edelivery.oracle.com

This document and others referenced here can be acquired online from the Oracle Document Repository at the following URL:

<http://docs.oracle.com/en/industries/communications/user-data-repository/index.html>

2.2 Installation Overview

This section describes the overall strategy to be employed for a single or multi-site UDR installation. It also lists the procedures required for installation with estimated times. Section 2.4 discusses the overall install strategy and includes an installation flow chart that can be used to determine exactly which procedures should be run for an installation. Section 3.2.3 lists the steps required to install a UDR system. These latter sections expand on the information from the matrix and provide a general timeline for the installation.

2.3 SNMP Configuration

The network-wide plan for SNMP configuration should be decided upon before UDR installation proceeds. This section provides recommendations for these decisions.

SNMP traps can originate from the following entities in a UDR installation:

- UDR Application Servers (NOAMP, SOAM, MPs)

UDR application servers can be configured to:

1. Send all their SNMP traps to the NOAMP via merging from their local SOAM. All traps will terminate at the NOAMP and be viewable from the NOAMP GUI (entire network) and the SOAM GUI (site specific). Traps are displayed on the GUI

both as alarms and logged in trap history. **This is the default configuration option and no changes are required for this to take effect.**

2. Send all their SNMP traps to an external Network Management Station (NMS). The traps will be seen at the SOAM AND/OR NOAM as alarms **AND** they will be viewable at the configured NMS(s) as traps.

Application server SNMP configuration is done from the NOAMP GUI, near the end of UDR installation. See the procedure list for details.

2.4 Installation List of Procedures

The following table illustrates the progression of the installation process by procedure with estimated times. The estimated times and the phases that must be completed may vary due to differences in typing ability and system configuration. The phases outlined in are to be executed in the order they are listed.

Table 2. Installation Overview

Procedure	Phase	Elapsed Time (Minutes)	
		This Step	Cum.
Procedure 1	Verify Deployment Options and Cloud Resources	5	5
Procedure 2	Deploy UDR Virtual Machines (Only for VMware deployments)	20	25
Procedure 3	Deploy UDR Virtual Machines on OpenStack (Only for OpenStack deployments)	20	25
Procedure 4	Configure NOAMP-A Server (1st NOAMP only)	25	50
Procedure 5	Create Configuration for Remaining Servers	15	65
Procedure 6	Apply Configuration To Remaining Servers	15	80
Procedure 7	Configure XSI Networks (All SOAM Sites)	10	90
Procedure 8	OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)	10	100
Procedure 9	OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)	15	115
Procedure 10	OAM Pairing for MP Server Groups (All SOAM sites)	5	120
Procedure 11	Configure Signaling Routes	5	125
Procedure 12	Configure SPR Application on MP (All SOAM Sites)	10	135
Procedure 13	Configure NOAMP Signaling Routes (All NOAM Sites)	10	145
Procedure 14	Configure Services on Signaling Network	5	150
Procedure 15	Accept Installation	5	155

3.0 PRE-INSTALLATION PROCEDURE

3.1 Verify Deployment Options and Cloud Resources

This procedure determines appropriate HA Configurations and VM Profiles for the deployment, as well as verifies the environment.

Procedure 1: Verify Deployment Options and Cloud Resources

Step	Procedure	Result
1. <input type="checkbox"/>	Decide which UDR profile to deploy	The first step in deploying UDR for cloud is to review the Resource Profiles stated in [1]. A choice of HA configuration and resource profile must be driven by the available resources and expected use of the UDR deployment. <ul style="list-style-type: none">• For demo purposes a OVA lab profile is the best option.• For support of larger datasets, ISO installation may be required.
2. <input type="checkbox"/>	Ensure availability of cloud resources	If you are using vCloud Director or vSphere as a non-privileged user, contact your cloud administrator to ensure the availability of sufficient process, memory, storage and network resources to meet the requirements of your chosen configuration and profile in Step 1. Note: If you are a privileged user with VMWare vSphere, you can leverage procedures in Appendix A to configure storage and host networking for hosting UDR.
THIS PROCEDURE HAS BEEN COMPLETED		

4.0 CLOUD CREATION

4.1 Deploy UDR Virtual Machines on VMware

This procedure will create UDR virtual machines (guests).

Requirements:

- **Section 3.1 Verify Deployment Options and Cloud Resources** has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 2: Deploy UDR Virtual Machines on VMware

Step	Procedure	Result
1. <input type="checkbox"/>	Ready Installation media	If using vSphere client, place installation media (OVA, or ISO) onto your local machine. If using vCloud Director, upload installation media using Appendix C-1: vCloud Director UDR Media Upload.
2. <input type="checkbox"/>	Create vApp	If using vCloud Director, follow: <ul style="list-style-type: none"> • Appendix C-2: Create vApp If using vSphere client proceed to the next step.
3. <input type="checkbox"/>	Create UDR guests	If using vSphere client, follow: <ul style="list-style-type: none"> • Appendix B-1: Create Guests from OVA If using vCloud Director, follow: <ul style="list-style-type: none"> • Appendix C-5 Create Guests from ISO for large database NOAMP or • Appendix C-3 Create Guests from OVA for all other server types "Check off" the associated Check Box as addition is completed for each Server. <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4
4. <input type="checkbox"/>	Configure guest resources <i>Only OVA installs</i>	If using vSphere client to install by OVA, follow: <ul style="list-style-type: none"> • Appendix B-2: Configure Guest Resources If using vCloud Director to install by OVA, follow: <ul style="list-style-type: none"> • Appendix C-4: Configure Guest Resources If installing by ISO proceed to the next step. "Check off" the associated Check Box as addition is completed for each Server. <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4
5. <input type="checkbox"/>	Install guest OS <i>Only ISO installs</i>	Only for ISO installs using vCloud Director, follow Appendix C-6: Install Guests from ISO "Check off" the associated Check Box as addition is completed for each Server. <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B

Procedure 2: Deploy UDR Virtual Machines on VMware

Step	Procedure	Result
6. <input type="checkbox"/>	Configure guest OAM network	<p>If using vSphere client, follow:</p> <ul style="list-style-type: none"> Appendix B-3: Configure Guest OAM Network: Create Guests from OVA <p>If using vCloud Director, follow:</p> <ul style="list-style-type: none"> Appendix C-7: Configure Guests OAM Network <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>
THIS PROCEDURE HAS BEEN COMPLETED		

4.2 Deploy UDR Virtual Machines on OpenStack

This procedure will create UDR virtual machines (guests) on OpenStack.

Requirements:

- Section 3.1 Verify Deployment Options and Cloud Resources has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 3: Deploy UDR Virtual Machines on OpenStack

Step	Procedure	Result
1. <input type="checkbox"/>	Ready Installation media	Create and import OVA image file to OpenStack using Appendix G-1: OpenStack Image Creation
2. <input type="checkbox"/>	Ready Installation media	Create and import ISO image file to OpenStack using Appendix G-2: OpenStack Image Creation from ISO
3. <input type="checkbox"/>	Create Resource Profile	Create Resource Profile (Flavor) on OpenStack following: Appendix G-4: Create Resource Profiles (Flavors)
4. <input type="checkbox"/>	Create NOAMP VM Instances	<p>On OpenStack, please follow this to create NOAMP vm instances:</p> <p>Appendix G-3: Create VM from ISO-Based Image</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B</p>

Step	Procedure	Result
5. <input type="checkbox"/>	Create VM Instances	<p>On OpenStack, please follow this to create vm instances:</p> <p style="text-align: center;">Appendix G-5: Create VM Instances Using qcow2 Image</p> <p>Use different flavor for different Server stated in [1]</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p style="text-align: center;"> <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B </p>
6. <input type="checkbox"/>	Configure guest OAM network	<p>Follow this step to configure OAM network for vm instances:</p> <p style="text-align: center;">Appendix G-7: VM Instance Network Configuration</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p style="text-align: center;"> <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B </p>
7. <input type="checkbox"/>	Create Virtual IPs	<p>Create Virtual IP addresses following:</p> <p style="text-align: center;">Appendix G-8: Virtual IP Address Assignment</p>
THIS PROCEDURE HAS BEEN COMPLETED		

5.0 UDR SERVER CONFIGURATION

5.1 Configure NOAMP-A Server (1st NOAMP only)

This procedure does all steps that are necessary for configuring the first NOAMP server. This includes creating the NOAMP Network Element, configuring Services and creating/configuring the first NOAMP-A server.

Requirements:

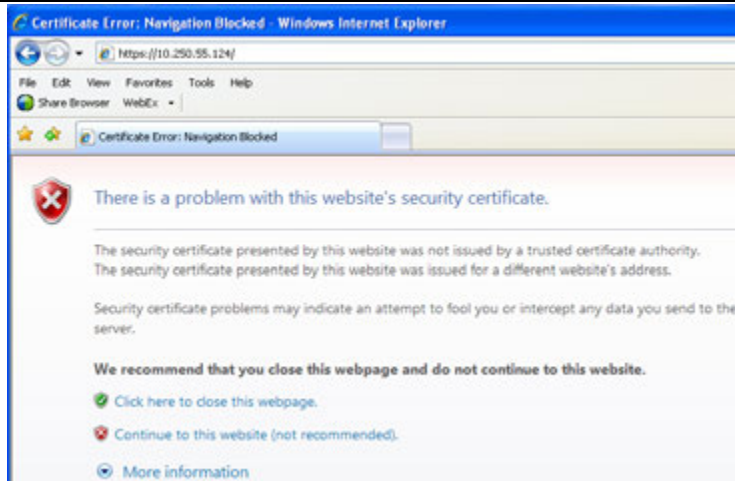

- **Section 4.0 Cloud Creation** has been completed

Assumptions:

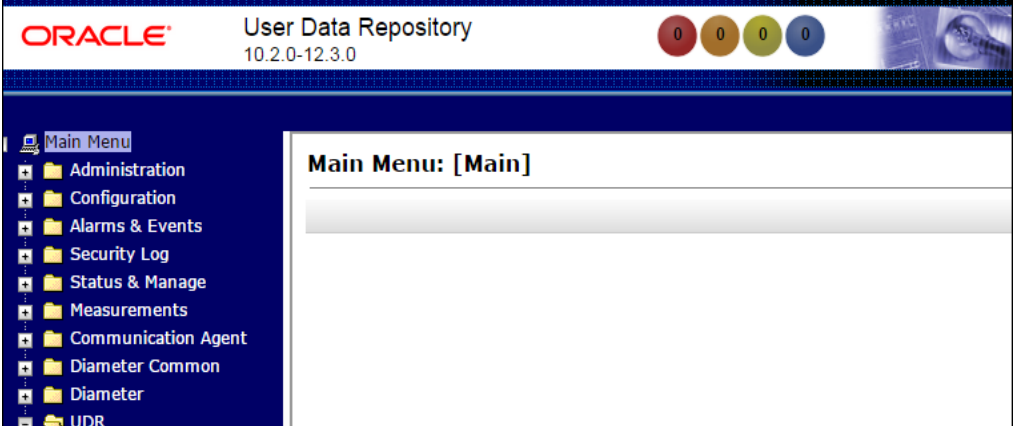
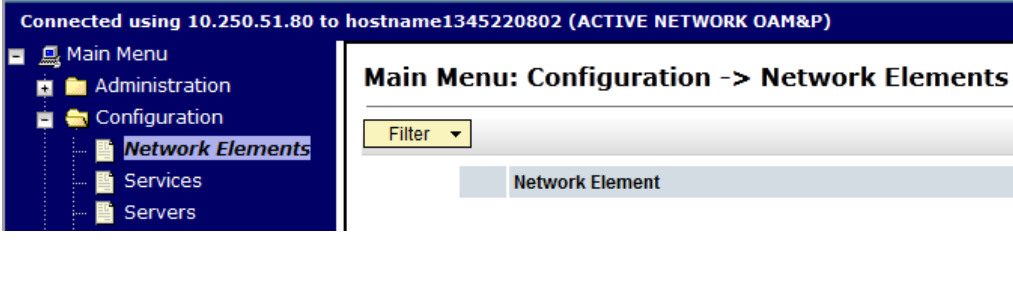
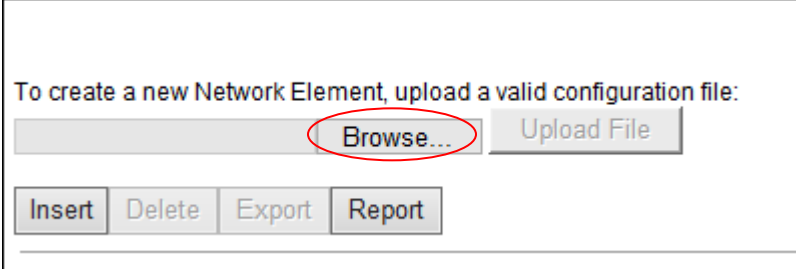
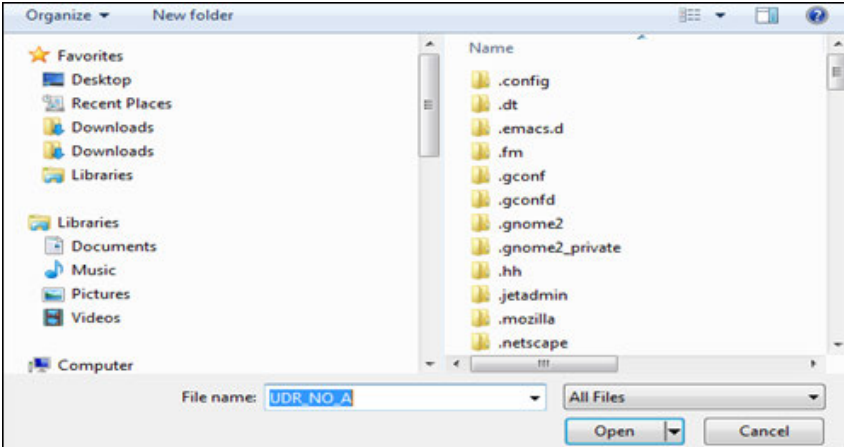
- This procedure assumes that the UDR Network Element XML file for the Primary Provisioning NOAMP site has previously been created, as described in Appendix D.
- This procedure assumes that the Network Element XML files are either on a USB flash drive or the laptop's hard drive. The steps are written as if the XML files are on a USB flash drive, but the files can exist on any accessible drive.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

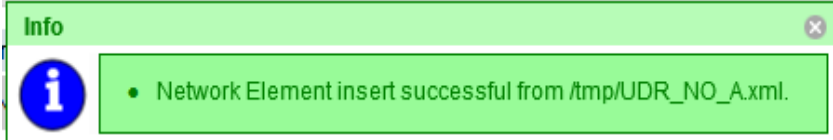
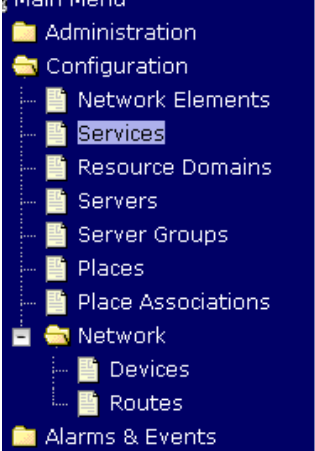
Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result
1. <input type="checkbox"/>	<p>NOAMP Server A: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: If presented with the "security certificate" warning screen shown to the right, choose the following option: "Continue to this website (not recommended)".</p>	
2. <input type="checkbox"/>	<p>NOAMP Server A: The user should be presented the login screen shown on the right.</p> <p>Login to the GUI using the default user and password.</p>	

Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result
<p>3.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: The user should be presented the UDR Main Menu as shown on the right.</p>	
<p>4.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: <i>Configuring Network Element</i></p> <p>Select...</p> <p>Main Menu → Configuration → Network Elements</p> <p>...as shown on the right.</p>	
<p>5.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: From the Configuration / Network Elements screen...</p> <p>Select the “Browse” dialogue button (scroll to bottom left corner of screen).</p>	
<p>6.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: Note: This step assumes that the xml files were previously prepared, as described in Appendix C.</p> <p>1) Select the location containing the site .xml file.</p> <p>2) Select the .xml file and click the “Open” dialogue button.</p>	

Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result																								
7.	<p>NOAMP Server A: Select the “Upload File” dialogue button (bottom left corner of screen).</p>	<p>To create a new Network Element, upload a valid configuration file: <input type="text" value="H:\Sun\UDR_NO_A.xml"/> <input type="button" value="Browse..."/> <input type="button" value="Upload File"/></p> <p><input type="button" value="Insert"/> <input type="button" value="Delete"/> <input type="button" value="Export"/> <input type="button" value="Report"/></p>																								
8.	<p>NOAMP Server A: If the values in the .xml file pass validation rules, the user receives a banner information message showing that the data has been successfully committed to the DB.</p> <p>Note: You may have to left mouse click the “Info” banner option in order to see the banner output.</p>	 <p>Main Menu: Configuration -> Network Elements</p> <p>Filter Info</p> <table border="1"> <thead> <tr> <th>Network Element</th> </tr> </thead> <tbody> <tr> <td>UDR_NO_A</td> </tr> </tbody> </table>	Network Element	UDR_NO_A																						
Network Element																										
UDR_NO_A																										
9.	<p>Select...</p> <p>Main Menu → Configuration → Services</p> <p>...as shown on the right.</p>	 <p>Main Menu: Configuration -> Services</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Intra-NE Network</th> <th>Inter-NE Network</th> </tr> </thead> <tbody> <tr> <td>OAM</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>Replication</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>Signaling</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>HA_Secondary</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>HA_MP_Secondary</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>Replication_MP</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>ComAgent</td> <td>Unspecified</td> <td>Unspecified</td> </tr> </tbody> </table>	Name	Intra-NE Network	Inter-NE Network	OAM	Unspecified	Unspecified	Replication	Unspecified	Unspecified	Signaling	Unspecified	Unspecified	HA_Secondary	Unspecified	Unspecified	HA_MP_Secondary	Unspecified	Unspecified	Replication_MP	Unspecified	Unspecified	ComAgent	Unspecified	Unspecified
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10.	<p>NOAMP Server A:</p> <p>Select the “Edit” dialogue button.</p>	<p>Main Menu: Configuration -> Services</p> <p>Help Thu Jan 12 16:19:44 2012 UTC</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Intra-NE Network</th> <th>Inter-NE Network</th> </tr> </thead> <tbody> <tr> <td>OAM</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>Replication</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>Signaling</td> <td>Unspecified</td> <td>Unspecified</td> </tr> </tbody> </table> <p>Help Logout</p> <p><input type="button" value="Edit"/> <input type="button" value="Report"/></p>	Name	Intra-NE Network	Inter-NE Network	OAM	Unspecified	Unspecified	Replication	Unspecified	Unspecified	Signaling	Unspecified	Unspecified												
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Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result																								
<p>11.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>1) Set the services values as shown on the right (see Note section).</p> <p>2) Select the “Apply” dialogue button.</p> <p>3) Select the “OK” dialogue button in the popup window.</p>	<p>Services</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Intra-NE Network</th> <th>Inter-NE Network</th> </tr> </thead> <tbody> <tr> <td>OAM</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Replication</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Signaling</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>HA_Secondary</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>HA_MP_Secondary</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Replication_MP</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>ComAgent</td> <td>IMI</td> <td>XMI</td> </tr> </tbody> </table> <p>Ok Apply Cancel</p> <p>Note: Servers do not need to be restarted if this is a fresh installation.</p> <p>Note: ComAgent Service is used for NOAMP ↔ MP and MP ↔ MP communication.</p>	Name	Intra-NE Network	Inter-NE Network	OAM	IMI	XMI	Replication	IMI	XMI	Signaling	Unspecified	Unspecified	HA_Secondary	IMI	XMI	HA_MP_Secondary	IMI	XMI	Replication_MP	IMI	XMI	ComAgent	IMI	XMI
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<p>12.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>The user will be presented with the “Services” configuration screen</p>	<table border="1"> <thead> <tr> <th>Name</th> <th>Intra-NE Network</th> <th>Inter-NE Network</th> </tr> </thead> <tbody> <tr> <td>OAM</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Replication</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Signaling</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>HA_Secondary</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>HA_MP_Secondary</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Replication_MP</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>ComAgent</td> <td>IMI</td> <td>XMI</td> </tr> </tbody> </table>	Name	Intra-NE Network	Inter-NE Network	OAM	IMI	XMI	Replication	IMI	XMI	Signaling	Unspecified	Unspecified	HA_Secondary	IMI	XMI	HA_MP_Secondary	IMI	XMI	Replication_MP	IMI	XMI	ComAgent	IMI	XMI
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<p>13.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p><i>Configuring UDR Server</i></p> <p>Select...</p> <p>Main Menu → Configuration → Servers</p> <p>...as shown on the right.</p>																									
<p>14.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>Select the “Insert” dialogue button.</p>	<p>Insert Edit Delete Export Report</p>																								

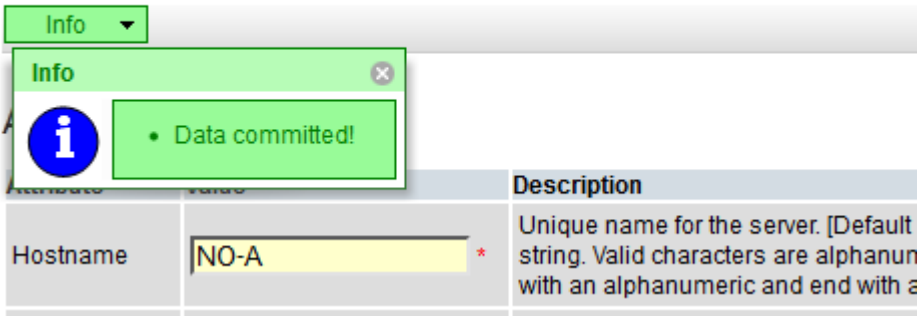
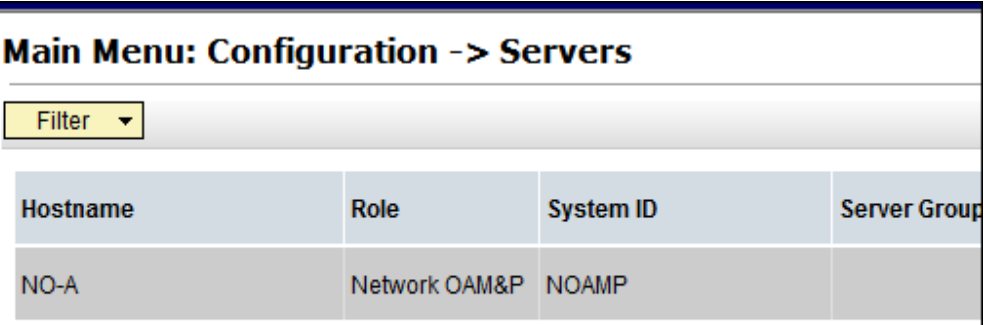
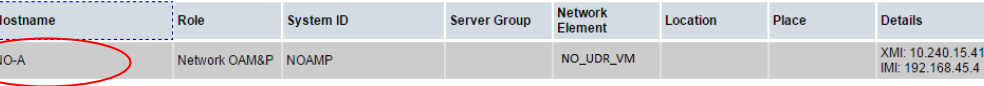
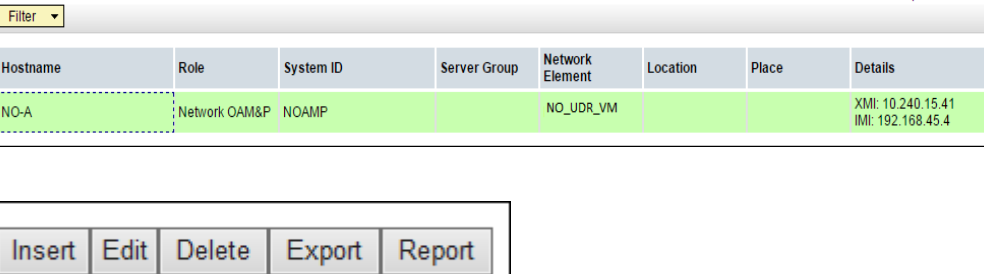
Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result																					
15. <input type="checkbox"/>	<p>NOAMP Server A: The user is now presented with the “Adding a new server” configuration screen.</p>	<p>Main Menu: Configuration -> Servers [Insert]</p> <p style="text-align: right;">Tue Oct 14 16:30:00 2</p> <hr/> <p>Adding a new server</p> <table border="1"> <thead> <tr> <th>Attribute</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Hostname</td> <td><input type="text"/></td> <td>Unique name for the server. [Default = n/a. Range = A 20-character string. Valid characters are alphanumeric and minus sign. Must start with an alphanumeric and end with an alphanumeric.]</td> </tr> <tr> <td>Role</td> <td>- Select Role -</td> <td>Select the function of the server</td> </tr> <tr> <td>System ID</td> <td><input type="text"/></td> <td>System ID for the NOAMP or SOAM server. [Default = n/a. Range = A 64-character string. Valid value is any text string.]</td> </tr> <tr> <td>Hardware Profile</td> <td>BL460 HP c-Class Blade</td> <td>Hardware profile of the server</td> </tr> <tr> <td>Network Element Name</td> <td>- Unassigned -</td> <td>Select the network element</td> </tr> <tr> <td>Location</td> <td><input type="text"/></td> <td>Location description [Default = "". Range = A 15-character string. Valid value is any text string.]</td> </tr> </tbody> </table> <p style="text-align: right;"><input type="button" value="Ok"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/></p>	Attribute	Value	Description	Hostname	<input type="text"/>	Unique name for the server. [Default = n/a. Range = A 20-character string. Valid characters are alphanumeric and minus sign. Must start with an alphanumeric and end with an alphanumeric.]	Role	- Select Role -	Select the function of the server	System ID	<input type="text"/>	System ID for the NOAMP or SOAM server. [Default = n/a. Range = A 64-character string. Valid value is any text string.]	Hardware Profile	BL460 HP c-Class Blade	Hardware profile of the server	Network Element Name	- Unassigned -	Select the network element	Location	<input type="text"/>	Location description [Default = "". Range = A 15-character string. Valid value is any text string.]
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16. <input type="checkbox"/>	<p>NOAMP Server A: Input the assigned “hostname” for the NOAMP-A Server.</p>	<table border="1"> <thead> <tr> <th>Attribute</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Hostname</td> <td>NO-A</td> <td>Unique name for the server. [Default = n/a. Range = A 20-character string. Valid characters are alphanumeric and minus sign. Must start with an alphanumeric and end with an alphanumeric.]</td> </tr> </tbody> </table>	Attribute	Value	Description	Hostname	NO-A	Unique name for the server. [Default = n/a. Range = A 20-character string. Valid characters are alphanumeric and minus sign. Must start with an alphanumeric and end with an alphanumeric.]															
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17. <input type="checkbox"/>	<p>NOAMP Server A: Select “NETWORK OAM&P” for the server “Role” from the pull-down menu.</p>	<table border="1"> <tbody> <tr> <td>Role</td> <td>- Select Role -</td> <td>Select the function of the server</td> </tr> <tr> <td>Hardware Profile</td> <td>- Select Role -</td> <td>Hardware profile of the server</td> </tr> <tr> <td>Network Element Name</td> <td>SYSTEM OAM MP QUERY SERVER</td> <td>Select the network element</td> </tr> <tr> <td>Location</td> <td><input type="text"/></td> <td>Location description [Default = "". Range = A 15-character string. Valid value is any text string.]</td> </tr> </tbody> </table>	Role	- Select Role -	Select the function of the server	Hardware Profile	- Select Role -	Hardware profile of the server	Network Element Name	SYSTEM OAM MP QUERY SERVER	Select the network element	Location	<input type="text"/>	Location description [Default = "". Range = A 15-character string. Valid value is any text string.]									
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18. <input type="checkbox"/>	<p>NOAMP Server A: Input the “System ID” for the NOAMP Server.</p>	<table border="1"> <tbody> <tr> <td>System ID</td> <td>NOAMP</td> <td>System ID for the NOAMP or SOAM server. [Default = n/a. Range = A 64-character string. Valid value is any text string.]</td> </tr> </tbody> </table>	System ID	NOAMP	System ID for the NOAMP or SOAM server. [Default = n/a. Range = A 64-character string. Valid value is any text string.]																		
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19. <input type="checkbox"/>	<p>NOAMP Server A: Select the correct Hardware Profile from the pull-down menu.</p>	<p>Select Hardware Profile: Cloud UDR NOAMP</p> <table border="1"> <tbody> <tr> <td>Hardware Profile</td> <td>Cloud UDR NOAMP</td> </tr> </tbody> </table>	Hardware Profile	Cloud UDR NOAMP																			
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20. <input type="checkbox"/>	<p>NOAMP Server A: Select the Network Element Name from the pull-down menu.</p> <p>NOTE: After the Network Element Name is selected, the Interfaces fields will be displayed.</p>	<table border="1"> <tbody> <tr> <td>Network Element Name</td> <td>NO_UDR_VM</td> <td>Select the network element</td> </tr> </tbody> </table>	Network Element Name	NO_UDR_VM	Select the network element																		
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21. <input type="checkbox"/>	<p>NOAMP Server A: Enter the site location.</p> <p>NOTE: Location is an optional field.</p>	<table border="1"> <tbody> <tr> <td>Location</td> <td>Morrisville_NC</td> <td>Location description [Default = "". Range = A 15-character string. Valid value is any text string.]</td> </tr> </tbody> </table>	Location	Morrisville_NC	Location description [Default = "". Range = A 15-character string. Valid value is any text string.]																		
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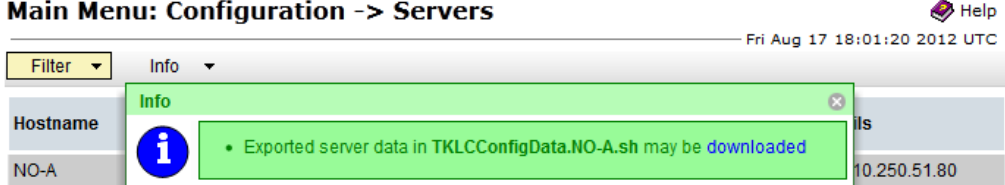
Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result																			
22. <input type="checkbox"/>	<p>NOAMP Server A:</p> <p>1) Enter the IP Addresses for the UDR Server.</p> <p>2) Set the Interface parameters according to deployment type.</p>	<p>Interfaces:</p> <table border="1"> <thead> <tr> <th>Network</th> <th>IP Address</th> <th>Interface</th> </tr> </thead> <tbody> <tr> <td>XMI (10.148.232.0/22)</td> <td>10.148.235.212</td> <td>eth0 <input type="checkbox"/> VLAN (332)</td> </tr> <tr> <td>IMI (10.196.128.0/22)</td> <td>10.196.130.15</td> <td>eth1 <input type="checkbox"/> VLAN (528)</td> </tr> </tbody> </table> <p>Enter the IP Addresses for XMI and IMI networks.</p> <p>Set the Interface device for XMI and IMI networks according to this VM guest's network adapter assignment as viewable in Appendix B-3 Step 3 or Appendix C-7 Step 5.</p> <p>Leave the VLAN boxes unchecked.</p>	Network	IP Address	Interface	XMI (10.148.232.0/22)	10.148.235.212	eth0 <input type="checkbox"/> VLAN (332)	IMI (10.196.128.0/22)	10.196.130.15	eth1 <input type="checkbox"/> VLAN (528)										
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23. <input type="checkbox"/>	<p>NOAMP Server A:</p> <p>Click the "Add" button under NTP Servers and add the address of the customer supplied NTP server.</p>	<table border="1"> <thead> <tr> <th>NTP Server IP Address</th> <th>Prefer</th> <th></th> </tr> </thead> <tbody> <tr> <td>10.240.15.7</td> <td><input type="checkbox"/></td> <td><input type="button" value="Remove"/></td> </tr> <tr> <td>10.240.15.8</td> <td><input type="checkbox"/></td> <td><input type="button" value="Remove"/></td> </tr> <tr> <td>10.240.15.9</td> <td><input type="checkbox"/></td> <td><input type="button" value="Remove"/></td> </tr> <tr> <td>10.240.15.11</td> <td><input type="checkbox"/></td> <td><input type="button" value="Remove"/></td> </tr> </tbody> </table> <p>Set one or more NTP Server IP Address(es) to customer supplied NTP server(s). It is recommended to have minimum of 3 and up to 4 external NTP servers for reliable functioning of NTP service.</p> <p>NTP Servers:</p> <table border="1"> <thead> <tr> <th>NTP Server IP Address</th> <th>Prefer</th> </tr> </thead> <tbody> <tr> <td><input type="text"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> <p><input type="button" value="Add"/> <input type="button" value="Remove"/></p>	NTP Server IP Address	Prefer		10.240.15.7	<input type="checkbox"/>	<input type="button" value="Remove"/>	10.240.15.8	<input type="checkbox"/>	<input type="button" value="Remove"/>	10.240.15.9	<input type="checkbox"/>	<input type="button" value="Remove"/>	10.240.15.11	<input type="checkbox"/>	<input type="button" value="Remove"/>	NTP Server IP Address	Prefer	<input type="text"/>	<input type="checkbox"/>
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24. <input type="checkbox"/>	<p>NOAMP Server A:</p> <p>By clicking Info the user should be presented with a banner information message stating "Pre-Validation passed".</p> <p>Click the "Apply" dialogue button.</p>	<p>Main Menu: Configuration -> Servers [Insert]</p> <p>Info <input type="button" value="Info"/> <input type="button" value="Close"/></p> <p>Info</p> <ul style="list-style-type: none"> Pre-Validation passed - Data NOT committed ... <p>Hostname <input type="text" value="NO-A"/> * Unique name for the server. [Default string. Valid characters are alphanumeric with an alphanumeric and end with a</p> <table border="1"> <tbody> <tr> <td>XMI (10.240.80.128/26)</td> <td>10.240.80.146</td> <td>bond0 <input checked="" type="checkbox"/> VLAN (3)</td> </tr> <tr> <td>IMI (10.240.56.192/26)</td> <td>10.240.56.197</td> <td>bond0 <input checked="" type="checkbox"/> VLAN (4)</td> </tr> </tbody> </table> <p><input type="button" value="Apply"/> <input type="button" value="Cancel"/></p>	XMI (10.240.80.128/26)	10.240.80.146	bond0 <input checked="" type="checkbox"/> VLAN (3)	IMI (10.240.56.192/26)	10.240.56.197	bond0 <input checked="" type="checkbox"/> VLAN (4)													
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Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result
<p>25.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: If the values provided match the network ranges assigned to the NOAMP NE, the user will receive a banner information message showing that the data has been validated and committed to the DB.</p>	<p>Main Menu: Configuration -> Servers [Insert]</p> 
<p>26.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>Applying the UDR Server Configuration File</p> <p>Select...</p> <p>Main Menu → Configuration → Servers</p> <p>...as shown on the right.</p>	<p>Main Menu: Configuration -> Servers</p> 
<p>27.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>The “Configuration → Servers” screen should now show the newly added UDR Server in the list.</p>	<p>Main Menu: Configuration -> Servers</p> 
<p>28.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>1) Use the cursor to select the UDR Server just inserted.</p> <p>The row containing the desired Server should now be highlighted in GREEN.</p> <p>2) Select the “Export” dialogue button.</p>	<p>Main Menu: Configuration -> Servers</p> 

Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result
29. <input type="checkbox"/>	<p>NOAMP Server A: The user will receive a banner information message showing a download link for the UDR Server configuration data.</p>	<p>Main Menu: Configuration -> Servers</p>  <p>The configuration file was created and stored in the /var/TKLC/db/filemgmt directory. The configuration file will have a file name like TKLCConfigData.<hostname>.sh.</p>
30. <input type="checkbox"/>	<p>NOAMP Server A: 1) Access the command prompt. 2) Log into the NOAMP-A server as the “admusr” user.</p>	<pre>login as: admusr root@10.250.xx.yy's password: <admusr_password> Last login: Mon Jul 30 10:33:19 2012 from 10.25.80.199 [root@pc9040833-no-a ~]#</pre>
31. <input type="checkbox"/>	<p>NOAMP Server A: Switch to “root” user.</p>	<pre>[admusr@ pc9040833-no-a ~]\$ su - password: <root_password></pre>
32. <input type="checkbox"/>	<p>NOAMP Server A: Copy the server configuration file to the “/var/tmp” directory on the server, making sure to rename the file by omitting the server hostname from the file name.</p>	<p>Example: TKLCConfigData<.server_hostname>.sh → will translate to →TKLCConfigData.sh</p> <pre># cp -p /var/TKLC/db/filemgmt/TKLCConfigData.NO-A.sh /var/tmp/TKLCConfigData.sh</pre> <p>NOTE: The server will poll the /var/tmp directory for the presence of the configuration file and automatically execute it when found.</p>
33. <input type="checkbox"/>	<p>NOAMP Server A: After the script completes, a broadcast message will be sent to the terminal. Ignore the output shown and press the <ENTER> key to return to the command prompt. NOTE: The user should be aware that the time to complete this step varies by server and may take from 3-20 minutes to complete.</p>	<p>*** NO OUTPUT FOR ≈ 3-20 MINUTES ***</p> <pre>Broadcast message from root (Thu Dec 1 09:41:24 2011): Server configuration completed successfully! See /var/TKLC/appw/logs/Process/install.log for details. Please remove the USB flash drive if connected and reboot the server. <ENTER></pre>

Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result
34. <input type="checkbox"/>	NOAMP Server A: Configure the time zone.	# <code>set_ini_tz.pl <time zone></code> Note: The following command example uses America/New_York time zone. Replace, as appropriate, with the time zone you have selected for this installation. For UTC, use "Etc/UTC". # <code>set_ini_tz.pl "America/New_York"</code>
35. <input type="checkbox"/>	NOAMP Server A: Initiate a reboot of the NOAMP Server .	# <code>reboot</code>
36. <input type="checkbox"/>	NOAMP Server A: Wait until server reboot is done. Then, SSH into the NOAMP-A server. Output similar to that shown on the right may be observed	Wait about 9 minutes until the server reboot is done. Using an SSH client such as putty, ssh to the NOAMP-A server. login as: <code>admusr</code> root@10.250.xx.yy's password: <code><admusr_password></code> Last login: Mon Jul 30 10:33:19 2012 from 10.25.80.199 Note: If the server isn't up, wait a few minutes and re-enter the <code>ssh</code> command. You can also try running the " <code>ping</code> " command to see if the server is up.
37. <input type="checkbox"/>	NOAMP Server A: Verify that the XMI and IMI IP addresses entered in Step 22 have been applied	\$ <code>ifconfig grep in grep -v inet6</code> Example: eth0 Link encap:Ethernet HWaddr F0:92:1C:18:59:10 inet addr:10.240.80.146 Bcast:10.240.80.191 Mask:255.255.255.192 eth1 Link encap:Ethernet HWaddr F0:92:1C:18:59:10 inet addr:10.240.56.197 Bcast:10.240.56.255 Mask:255.255.255.192 NOTE: The server's XMI and IMI addresses can be verified by reviewing the server configuration through the UDR GUI . Main Menu → Configuration → Servers <i>Scroll to line entry containing the server's hostname.</i>
38. <input type="checkbox"/>	NOAMP Server A: Use the " <code>ntpq</code> " command to verify that the server has connectivity to the assigned Primary (and Secondary if one was provided) NTP server(s).	\$ <code>ntpq -np</code> remote refid st t when poll reach delay offset jitter ----- *10.250.32.10 192.5.41.209 2 u 651 1024 377 0.339 0.583 0.048 +10.250.32.51 192.5.41.209 2 u 656 1024 377 0.416 0.641 0.086
 <p>IF CONNECTIVITY TO THE NTP SERVER(S) CANNOT BE ESTABLISHED, STOP AND EXECUTE THE FOLLOWING STEPS:</p> <ul style="list-style-type: none"> • Have the customer IT group provide a network path from the OAM server IP to the assigned NTP IP addresses. <p>ONCE NETWORK CONNECTIVITY IS ESTABLISHED TO THE ASSIGNED NTP IP ADDRESSES, THEN RESTART THIS PROCEDURE BEGINNING WITH STEP 35 .</p>		

Procedure 4: Configure NOAMP-A Server (1st NOAMP only)

Step	Procedure	Result
39. <input type="checkbox"/>	NOAMP Server A: Execute a “alarmMgr” to verify the current health of the server	\$ <code>alarmMgr --alarmStatus</code> NOTE: This command should return no output on a healthy system.
40. <input type="checkbox"/>	NOAMP Server A: Exit the SSH session for the NOAMP-A server	\$ <code>exit</code>
THIS PROCEDURE HAS BEEN COMPLETED		

5.2 Create Configuration for Remaining Servers

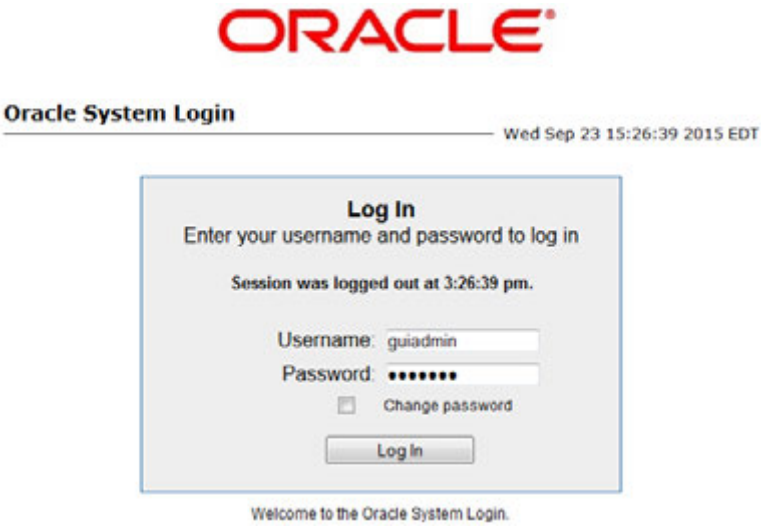
This procedure is used to create and configure all UDR Servers (Primary and DR Servers) except the first NOAMP-A server.

Requirements:

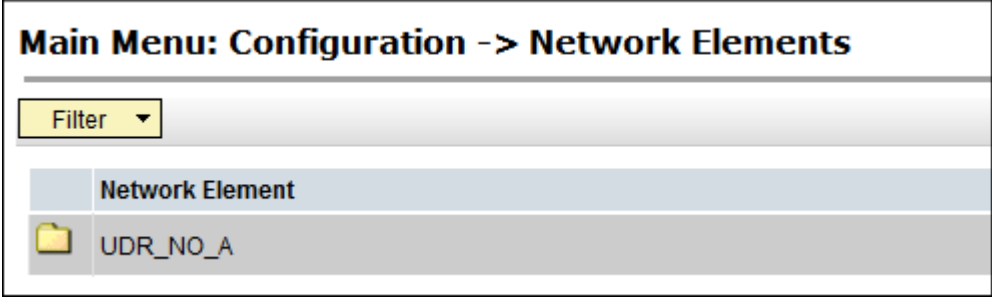
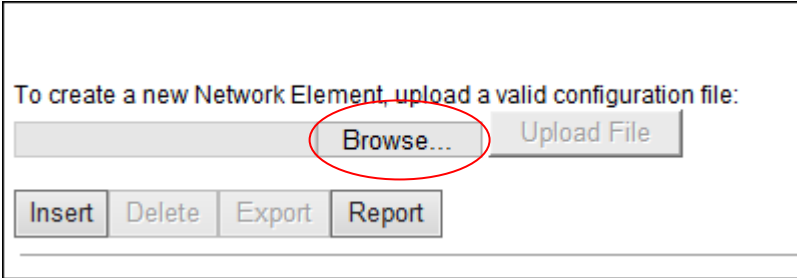
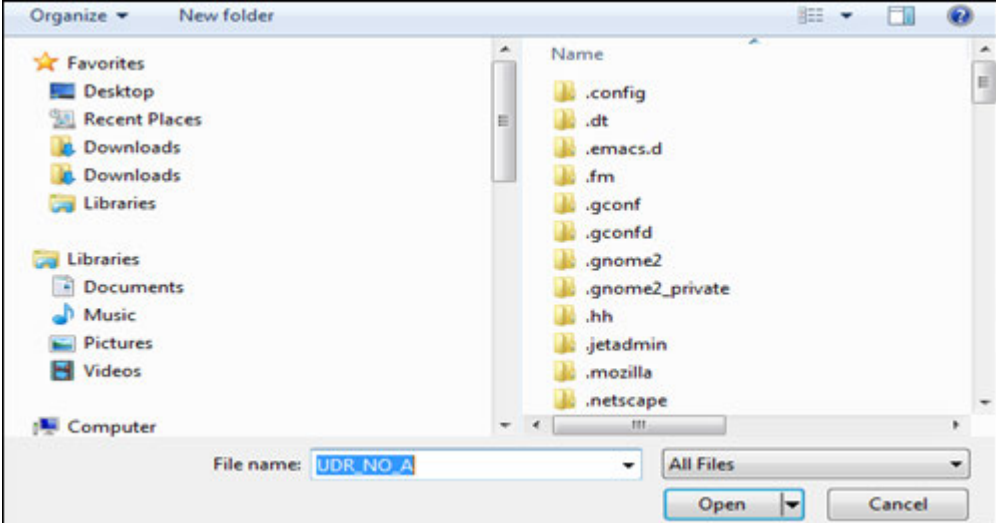
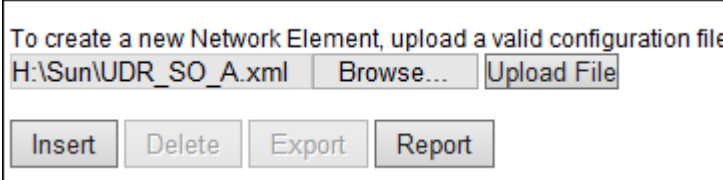
- **Section 5.1 Configure NOAMP-A Server (1st NOAMP only)** has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

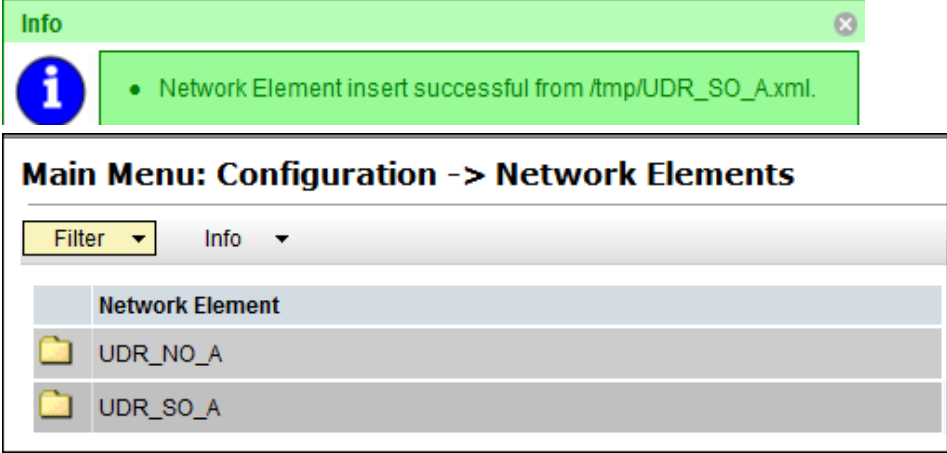
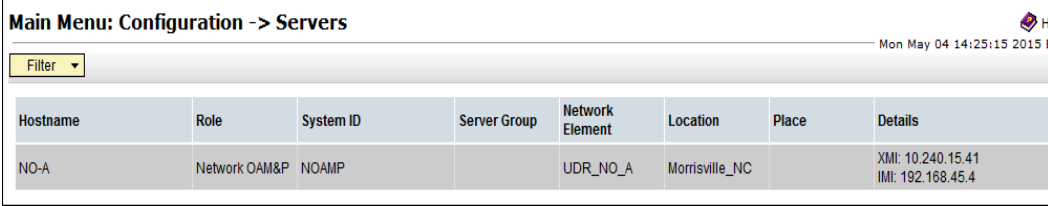
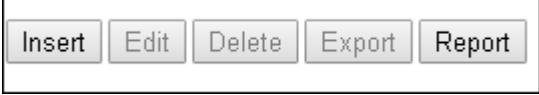
Procedure 5: Create Configuration for Remaining Servers

Step	Procedure	Result
1. <input type="checkbox"/>	NOAMP Server A: Launch an approved web browser and connect to the NOAMP Server A IP address NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning. Login to the GUI using the default user and password.	
<p>For steps 4 – 8 add the remaining Network Elements one at a time. This includes the SO network Element for the Primary site and the DR elements (NO and SO) if present. (DR elements can be uploaded during DR install)</p>		

Procedure 5: Create Configuration for Remaining Servers

Step	Procedure	Result
<p>2.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: <i>Configuring Network Element</i></p> <p>Select...</p> <p>Main Menu → Configuration → Network Elements</p> <p>...as shown on the right.</p>	
<p>3.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: From the Configuration / Network Elements screen...</p> <p>Select the "Browse" dialogue button (scroll to bottom left corner of screen).</p>	
<p>4.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>Note: This step assumes that the xml files were previously prepared, as described in Appendix C.</p> <p>1) Select the location containing the site .xml file.</p> <p>2) Select the .xml file and click the "Open" dialogue button.</p>	
<p>5.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>Select the "Upload File" dialogue button (bottom left corner of screen).</p>	

Procedure 5: Create Configuration for Remaining Servers

Step	Procedure	Result
<p>6.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: If the values in the .xml file pass validation rules, the user receives a banner information message showing that the data has been successfully committed to the DB.</p> <p>Note: You may have to left mouse click the "Info" banner option in order to see the banner output.</p>	
<p>Note: The following steps need to run for all servers EXCEPT the first NOAMP-A server. These steps include a check box for NOAMP-A server. That check box is only referring to NOAMP-A servers that are not at the primary provisioning site, such as the NOAMP-A server at the Disaster Recovery (DR) site.</p>		
<p>7.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: Select...</p> <p>Main Menu → Configuration → Servers</p> <p>...as shown on the right.</p>	 <p>"Check off" the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>
<p>8.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: Select the "Insert" dialogue button at the bottom left.</p>	 <p>"Check off" the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>

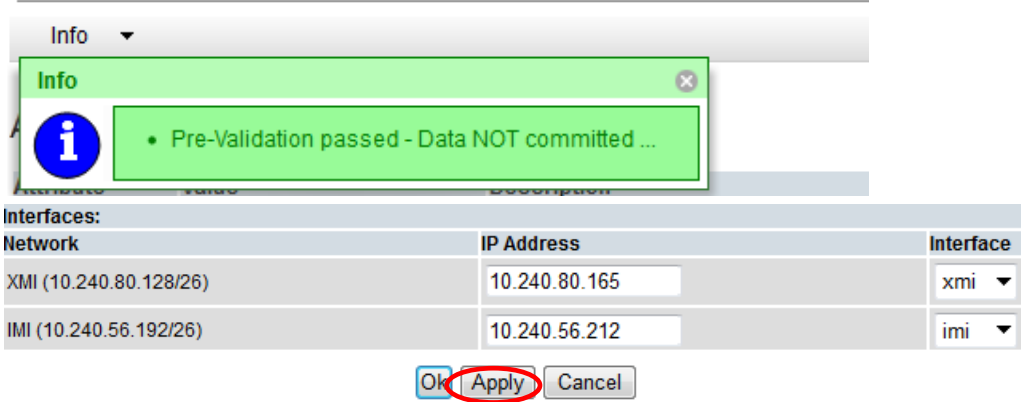
Procedure 5: Create Configuration for Remaining Servers

Step	Procedure	Result																					
<p>9.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: The user is now presented with the “Adding a new server” configuration screen.</p>	<p>Main Menu: Configuration -> Servers [Insert]</p> <p style="text-align: right;">Tue Oct 14 16:07:40 2</p> <hr/> <p>Adding a new server</p> <table border="1"> <thead> <tr> <th>Attribute</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Hostname</td> <td><input type="text"/></td> <td>Unique name for the server. [Default = n/a. Range = A 20-character string. Valid characters are alphanumeric and minus sign. Must start with an alphanumeric and end with an alphanumeric.]</td> </tr> <tr> <td>Role</td> <td>- Select Role -</td> <td>Select the function of the server</td> </tr> <tr> <td>System ID</td> <td><input type="text"/></td> <td>System ID for the NOAMP or SOAM server. [Default = n/a. Range = A 64-character string. Valid value is any text string.]</td> </tr> <tr> <td>Hardware Profile</td> <td>UDR SO</td> <td>Hardware profile of the server</td> </tr> <tr> <td>Network Element Name</td> <td>- Unassigned -</td> <td>Select the network element</td> </tr> <tr> <td>Location</td> <td><input type="text"/></td> <td>Location description [Default = "". Range = A 15-character string. Valid value is any text string.]</td> </tr> </tbody> </table> <p style="text-align: center;"><input type="button" value="Ok"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/></p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	Attribute	Value	Description	Hostname	<input type="text"/>	Unique name for the server. [Default = n/a. Range = A 20-character string. Valid characters are alphanumeric and minus sign. Must start with an alphanumeric and end with an alphanumeric.]	Role	- Select Role -	Select the function of the server	System ID	<input type="text"/>	System ID for the NOAMP or SOAM server. [Default = n/a. Range = A 64-character string. Valid value is any text string.]	Hardware Profile	UDR SO	Hardware profile of the server	Network Element Name	- Unassigned -	Select the network element	Location	<input type="text"/>	Location description [Default = "". Range = A 15-character string. Valid value is any text string.]
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Network Element Name	- Unassigned -	Select the network element																					
Location	<input type="text"/>	Location description [Default = "". Range = A 15-character string. Valid value is any text string.]																					
<p>10.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: Input the assigned “Hostname” for the server.</p>	<table border="1"> <thead> <tr> <th>Attribute</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Hostname</td> <td>NO-B</td> <td>Unique name for the server. [Default = n/a. Range = A 20-character string. Valid characters are alphanumeric and minus sign. Must start with an alphanumeric and end with an alphanumeric.]</td> </tr> </tbody> </table> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	Attribute	Value	Description	Hostname	NO-B	Unique name for the server. [Default = n/a. Range = A 20-character string. Valid characters are alphanumeric and minus sign. Must start with an alphanumeric and end with an alphanumeric.]															
Attribute	Value	Description																					
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<p>11.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: Select the appropriate server “Role” from the pull-down menu.</p>	<table border="1"> <tbody> <tr> <td>Role</td> <td>- Select Role -</td> <td>Select the function of the server</td> </tr> <tr> <td>Hardware Profile</td> <td>- Select Role -</td> <td>Hardware profile of the server</td> </tr> <tr> <td>Network Element Name</td> <td>SYSTEM OAM MP QUERY SERVER</td> <td>Select the network element</td> </tr> <tr> <td>Location</td> <td><input type="text"/></td> <td>Location description [Default = "". Range = A 15-character string. Valid value is any text string.]</td> </tr> </tbody> </table> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	Role	- Select Role -	Select the function of the server	Hardware Profile	- Select Role -	Hardware profile of the server	Network Element Name	SYSTEM OAM MP QUERY SERVER	Select the network element	Location	<input type="text"/>	Location description [Default = "". Range = A 15-character string. Valid value is any text string.]									
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Location	<input type="text"/>	Location description [Default = "". Range = A 15-character string. Valid value is any text string.]																					
<p>12.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: Input the “System ID” for the server.</p> <p>NOTE: <i>System ID is not required for MP.</i></p>	<table border="1"> <tbody> <tr> <td>System ID</td> <td>NOAMP</td> <td>System ID for the NOAMP or SOAM server. [Default = n/a. Range = A 64-character string. Valid value is any text string.]</td> </tr> </tbody> </table> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	System ID	NOAMP	System ID for the NOAMP or SOAM server. [Default = n/a. Range = A 64-character string. Valid value is any text string.]																		
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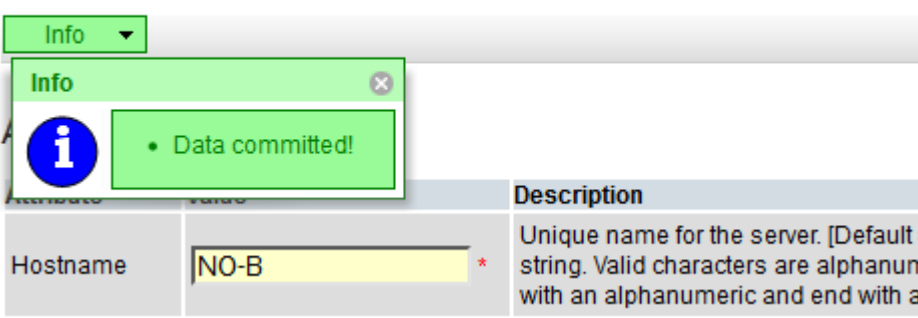
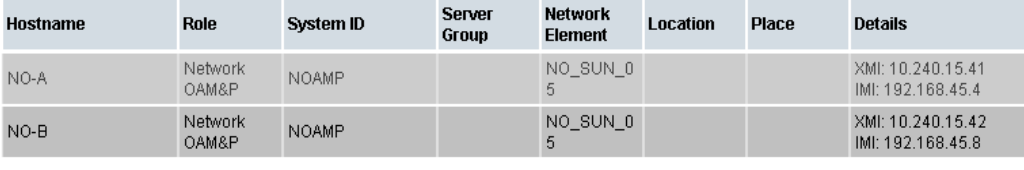
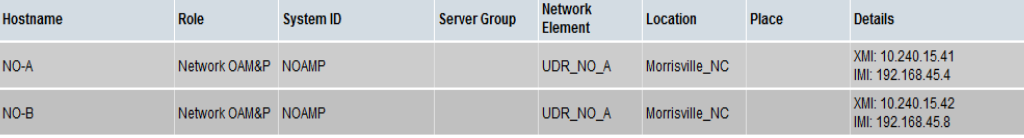
Procedure 5: Create Configuration for Remaining Servers

Step	Procedure	Result												
13. <input type="checkbox"/>	<p>NOAMP Server A: Select the correct Hardware Profile from the pull-down menu.</p>	<p>SOAM Select Hardware Profile: Cloud UDR SOAM MP Select Hardware Profile: UDR VMware</p> <table border="1"> <tr> <td>Hardware Profile</td> <td>Cloud</td> </tr> </table> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	Hardware Profile	Cloud										
Hardware Profile	Cloud													
14. <input type="checkbox"/>	<p>NOAMP Server A: Select the Network Element Name from the pull-down menu.</p> <p>NOTE: After the Network Element Name is selected, the Interfaces fields will be displayed.</p>	<table border="1"> <tr> <td>Network Element Name</td> <td>NO_UDR_VM *</td> <td>Select the network element</td> </tr> </table> <p>NOTE: NO and DR pairs will have their own Network element. SO pairs will also have their own Network Element which they share with their associated MP.</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	Network Element Name	NO_UDR_VM *	Select the network element									
Network Element Name	NO_UDR_VM *	Select the network element												
15. <input type="checkbox"/>	<p>NOAMP Server A: Enter the site location.</p> <p>NOTE: Location is an optional field.</p>	<table border="1"> <tr> <td>Location</td> <td>Morrisville_NC</td> <td>Location description [Default = ". Range = A 15-character string. Valid value is any text string.]</td> </tr> </table> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	Location	Morrisville_NC	Location description [Default = ". Range = A 15-character string. Valid value is any text string.]									
Location	Morrisville_NC	Location description [Default = ". Range = A 15-character string. Valid value is any text string.]												
16. <input type="checkbox"/>	<p>NOAMP Server A: 1) Enter the IP Addresses for the UDR Server. 2) Set the Interface parameters according to deployment type.</p>	<table border="1"> <thead> <tr> <th colspan="3">Interfaces:</th> </tr> <tr> <th>Network</th> <th>IP Address</th> <th>Interface</th> </tr> </thead> <tbody> <tr> <td>XMI (10.148.232.0/22)</td> <td>10.148.235.212</td> <td>eth0 ▾ <input type="checkbox"/> VLAN (332)</td> </tr> <tr> <td>IMI (10.196.128.0/22)</td> <td>10.196.130.15</td> <td>eth1 ▾ <input type="checkbox"/> VLAN (528)</td> </tr> </tbody> </table> <p>Enter the IP Addresses for XMI and IMI networks.</p> <p>Set the Interface device for XMI and IMI networks according to this VM guest’s network adapter assignment as viewable in Appendix B-3 Step 3 or Appendix C-7 Step 5.</p> <p>Leave the VLAN boxes unchecked.</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	Interfaces:			Network	IP Address	Interface	XMI (10.148.232.0/22)	10.148.235.212	eth0 ▾ <input type="checkbox"/> VLAN (332)	IMI (10.196.128.0/22)	10.196.130.15	eth1 ▾ <input type="checkbox"/> VLAN (528)
Interfaces:														
Network	IP Address	Interface												
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IMI (10.196.128.0/22)	10.196.130.15	eth1 ▾ <input type="checkbox"/> VLAN (528)												

Procedure 5: Create Configuration for Remaining Servers

Step	Procedure	Result															
<p>17.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: Click the “Add” button under NTP Servers and add the address(s) of the NTP server(s).</p>	<table border="1"> <thead> <tr> <th>NTP Server IP Address</th> <th>Prefer</th> <th></th> </tr> </thead> <tbody> <tr> <td>10.240.15.7</td> <td><input type="checkbox"/></td> <td><input type="button" value="Add"/> <input type="button" value="Remove"/></td> </tr> <tr> <td>10.240.15.8</td> <td><input type="checkbox"/></td> <td><input type="button" value="Remove"/></td> </tr> <tr> <td>10.240.15.9</td> <td><input type="checkbox"/></td> <td><input type="button" value="Remove"/></td> </tr> <tr> <td>10.240.15.11</td> <td><input type="checkbox"/></td> <td><input type="button" value="Remove"/></td> </tr> </tbody> </table> <p>Set one ore more NTP Server IP Address(es) to customer supplied NTP server(s). It is recommended to have minimum of 3 and up to 4 external NTP servers for reliable functioning of NTP service.</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	NTP Server IP Address	Prefer		10.240.15.7	<input type="checkbox"/>	<input type="button" value="Add"/> <input type="button" value="Remove"/>	10.240.15.8	<input type="checkbox"/>	<input type="button" value="Remove"/>	10.240.15.9	<input type="checkbox"/>	<input type="button" value="Remove"/>	10.240.15.11	<input type="checkbox"/>	<input type="button" value="Remove"/>
NTP Server IP Address	Prefer																
10.240.15.7	<input type="checkbox"/>	<input type="button" value="Add"/> <input type="button" value="Remove"/>															
10.240.15.8	<input type="checkbox"/>	<input type="button" value="Remove"/>															
10.240.15.9	<input type="checkbox"/>	<input type="button" value="Remove"/>															
10.240.15.11	<input type="checkbox"/>	<input type="button" value="Remove"/>															
<p>18.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: By clicking Info the user should be presented with a banner information message stating “Pre-Validation passed”.</p> <p>Click the “Apply” dialogue button.</p>	<p>Main Menu: Configuration -> Servers [Insert]</p>  <p>Info</p> <p>Info</p> <p>• Pre-Validation passed - Data NOT committed ...</p> <table border="1"> <thead> <tr> <th>Network</th> <th>IP Address</th> <th>Interface</th> </tr> </thead> <tbody> <tr> <td>XMI (10.240.80.128/26)</td> <td>10.240.80.165</td> <td>xmi</td> </tr> <tr> <td>IMI (10.240.56.192/26)</td> <td>10.240.56.212</td> <td>imi</td> </tr> </tbody> </table> <p>Ok Apply Cancel</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>	Network	IP Address	Interface	XMI (10.240.80.128/26)	10.240.80.165	xmi	IMI (10.240.56.192/26)	10.240.56.212	imi						
Network	IP Address	Interface															
XMI (10.240.80.128/26)	10.240.80.165	xmi															
IMI (10.240.56.192/26)	10.240.56.212	imi															

Procedure 5: Create Configuration for Remaining Servers

Step	Procedure	Result
<p>19.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: If the values provided match the network ranges assigned to the UDR NE, the user will receive a banner information message showing that the data has been validated and committed to the DB.</p>	<p>Main Menu: Configuration -> Servers [Insert]</p>  <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>
<p>20.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: <i>Applying the Server Configuration File</i></p> <p>Select...</p> <p>Main Menu → Configuration → Servers</p> <p>...as shown on the right.</p>	<p>Main Menu: Configuration -> Servers</p>  <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>
<p>21.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: The “Configuration →Servers” screen should now show the newly added UDR Server in the list.</p>	<p>Main Menu: Configuration -> Servers</p>  <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>

Procedure 5: Create Configuration for Remaining Servers

Step	Procedure	Result																								
22.	<p>NOAMP Server A:</p> <p>1) Use the cursor to select the UDR Server just inserted.</p> <p>The row containing the desired Server should now be highlighted in GREEN.</p> <p>2) Select the “Export” dialogue button.</p>	<p>Main Menu: Configuration -> Servers</p> <p>Mon May 04 14:47:37 2015 EDT</p> <p>Filter</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Role</th> <th>System ID</th> <th>Server Group</th> <th>Network Element</th> <th>Location</th> <th>Place</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td>Network OAM&P</td> <td>NOAMP</td> <td></td> <td>UDR_NO_A</td> <td>Morrisville_NC</td> <td></td> <td>XMI: 10.240.15.41 IMI: 192.168.45.4</td> </tr> <tr> <td>NO-B</td> <td>Network OAM&P</td> <td>NOAMP</td> <td></td> <td>UDR_NO_A</td> <td>Morrisville_NC</td> <td></td> <td>XMI: 10.240.15.42 IMI: 192.168.45.8</td> </tr> </tbody> </table> <p>Insert Edit Delete Export Report</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>	Hostname	Role	System ID	Server Group	Network Element	Location	Place	Details	NO-A	Network OAM&P	NOAMP		UDR_NO_A	Morrisville_NC		XMI: 10.240.15.41 IMI: 192.168.45.4	NO-B	Network OAM&P	NOAMP		UDR_NO_A	Morrisville_NC		XMI: 10.240.15.42 IMI: 192.168.45.8
Hostname	Role	System ID	Server Group	Network Element	Location	Place	Details																			
NO-A	Network OAM&P	NOAMP		UDR_NO_A	Morrisville_NC		XMI: 10.240.15.41 IMI: 192.168.45.4																			
NO-B	Network OAM&P	NOAMP		UDR_NO_A	Morrisville_NC		XMI: 10.240.15.42 IMI: 192.168.45.8																			
23.	<p>VMware client:</p> <p>Repeat this procedure to create configuration</p>	<p>Repeat this procedure to create configuration for each remaining server:</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>																								
THIS PROCEDURE HAS BEEN COMPLETED																										

5.3 Apply Configuration To Remaining Servers

This procedure is used to apply configuration to all UDR Servers (Primary and DR Servers) except the first NOAMP-A server.

Requirements:

- Section 5.2 Create Configuration for Remaining Servers has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 6: Apply Configuration to Remaining Servers

Step	Procedure	Result
1.	<p>NOAMP Server A:</p> <p>Connect to the NOAMP-A Server terminal at the Primary NOAMP site</p>	<p>SSH to the Primary NOAMP-A XMI IP_address.</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>
2.	<p>NOAMP Server A:</p> <p>1) Access the command prompt.</p> <p>2) Log into the Primary NOAMP-A server as the “admusr” user..</p>	<pre>login as: admusr admusr@10.250.xx.yy's password: <admusr_password> Last login: Mon Jul 30 10:33:19 2012 from 10.25.80.199 \$</pre> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 6: Apply Configuration to Remaining Servers

Step	Procedure	Result
3.	<input type="checkbox"/> NOAMP Server A: Change directory into the file management space	<pre>[admusr@pc9040833-no-a ~]\$ cd /var/TKLC/db/filemgmt</pre> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>
4.	<input type="checkbox"/> NOAMP Server A: Get a directory listing and find the desired servers configuration files . Note: Server names are in red.	<pre>[admusr@pc9040833-no-a ~]\$ ls -ltr TKLCConfigData*.sh</pre> <p>*** TRUNCATED OUTPUT ***</p> <pre>-rw-rw-rw- 1 root root 1257 Aug 17 14:01 TKLCConfigData.NOAMP-A .sh -rw-rw-rw- 1 root root 1311 Aug 17 14:30 TKLCConfigData.NO-B.sh</pre> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>
5.	<input type="checkbox"/> NOAMP Server A: Copy the configuration files found in the previous step to the appropriate target server based on the configuration file's server name.	<pre>[admusr@pc9040833-no-a ~]\$ scp -p <configuration_file-a> <Associated_Server_XMI_IP>:/tmp admusr@10.240.39.4's password: <admusr_password> TKLCConfigData.so-carync-a.sh 100% 1741 1.7KB/s 00:00 [root@no-mrsvnc-a filemgmt]\$</pre> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>
6.	<input type="checkbox"/> NOAMP Server A: Connect to the target server which has received a configuration file copy in the previous step	<pre>[admusr@pc9040833-no-a ~]\$ ssh <Associated_Server_XMI_IP > admusr@192.168.1.10's password: <admusr_password></pre> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>
7.	<input type="checkbox"/> Target Server: Copy the server configuration file to the “/var/tmp” directory on the server, making sure to rename the file by omitting the server hostname from the file name.	<p>Example: TKLCConfigData<server_hostname>.sh → will translate to →TKLCConfigData.sh</p> <pre>[admusr@hostname1326744539 ~]\$ sudo cp -p /tmp/TKLCConfigData.NO-B.sh /var/tmp/TKLCConfigData.sh [admusr@hostname1326744539 ~]\$</pre> <p>NOTE: The server will poll the /var/tmp directory for the presence of the configuration file and automatically execute it when found.</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>


Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 6: Apply Configuration to Remaining Servers

Step	Procedure	Result
<p>8.</p> <p><input type="checkbox"/></p>	<p>Target Server: After the script completes, a broadcast message will be sent to the terminal.</p> <p>Ignore the output shown and press the <ENTER> key to return to the command prompt.</p> <p>NOTE: <i>The user should be aware that the time to complete this step varies by server and may take from 3-20 minutes to complete.</i></p>	<p>*** NO OUTPUT FOR ≈ 3-20 MINUTES ***</p> <p>Broadcast message from root (Thu Dec 1 09:41:24 2011):</p> <p>Server configuration completed successfully! See /var/TKLC/appw/logs/Process/install.log for details.</p> <p>Please remove the USB flash drive if connected and reboot the server. <ENTER></p> <p>[admusr@hostname1326744539 ~]\$</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>
<p>9.</p> <p><input type="checkbox"/></p>	<p>Target Server: Initiate a reboot of the UDR Server.</p>	<p>[admusr@hostname1326744539 ~]\$ sudo reboot</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>
<p>10.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: The SSH session for the target server was terminated by previous step.</p> <p>Output similar to that shown on the right may be observed.</p>	<p>The previous step should cause the ssh session to the desired server to close and user should return to the NOAMP server console prompt. The user should see output similar to the below output:</p> <p>Connection to 192.168.1.16 closed by remote host. Connection to 192.168.1.16 closed. \$</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>
<p>11.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A: Wait until server reboot is done. Then, SSH into the target server using its XMI address.</p> <p>Output similar to that shown on the right may be observed</p>	<p>Wait about 9 minutes until the server reboot is done.</p> <p>Using an SSH client such as putty, ssh to the target server using admusr credentials and the <XMI IP Address>.</p> <p>[admusr@pc9040833-no-a ~]\$ ssh 192.168.1.xx admusr@192.168.1.20's password: <admusr_password></p> <p>Note: If the server isn't up, wait a few minutes and re-enter the ssh command. You can also try running the “ping 192.168.1.xx” command to see if the server is up.</p> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 6: Apply Configuration to Remaining Servers

Step	Procedure	Result
12.	<p>Target Server:</p> <p><input type="checkbox"/> Verify that the XMI and IMI IP addresses entered in Section 5.2 Step 16 have been applied</p>	<pre>\$ ifconfig grep in grep -v inet6 control Link encap:Ethernet HWaddr 52:54:00:6C:3C:B4 inet addr:192.168.1.11 Bcast:192.168.1.255 Mask:255.255.255.0 imi Link encap:Ethernet HWaddr 52:54:00:F6:DC:4A inet addr:169.254.2.2 Bcast:169.254.2.255 Mask:255.255.255.0 lo Link encap:Local Loopback inet addr:127.0.0.1 Mask:255.0.0.0 xmi Link encap:Ethernet HWaddr 52:54:00:0F:1F:3B inet addr:10.250.39.19 Bcast:10.250.39.31 Mask:255.255.255.240</pre> <p>NOTE: The server's XMI and IMI addresses can be verified by reviewing the server configuration through the UDR GUI.</p> <p>Main Menu → Configuration → Servers</p> <p>Scroll to line entry containing the server's hostname.</p> <p>"Check off" the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>
13.	<p>Target Server:</p> <p><input type="checkbox"/> Use the "ntpq" command to verify that the server has connectivity to the assigned Primary and Secondary NTP server(s).</p>	<pre>\$ ntpq -np remote refid st t when poll reach delay offset jitter ===== *10.250.32.10 192.5.41.209 2 u 651 1024 377 0.339 0.583 0.048 +10.250.32.51 192.5.41.209 2 u 656 1024 377 0.416 0.641 0.086 [root@pc9040725-no-a ~]\$</pre> <p>If offset value is in excess of five seconds, run the commands below to sync time manually:</p> <pre>\$ sudo service ntpd stop Shutting down ntpd: [OK] \$ sudo ntpdate <Remote_NTP_Server_IP> \$ sudo service ntpd start Starting ntpd: [OK]</pre> <p>"Check off" the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>
		<p>IF CONNECTIVITY TO THE NTP SERVER(S) CANNOT BE ESTABLISHED, STOP AND EXECUTE THE FOLLOWING STEPS:</p>
14.	<p>Target Server:</p> <p><input type="checkbox"/> Execute a "alarmMgr" to verify the current health of the server</p>	<pre>\$ alarmMgr --alarmStatus</pre> <p>NOTE: This command should return no output on a healthy system.</p> <p>"Check off" the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B</p> <p><input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4</p>

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 6: Apply Configuration to Remaining Servers

Step	Procedure	Result
15. <input type="checkbox"/>	Target Server: Exit the SSH session for the target server	<pre>\$ exit logout Connection to 192.168.1.16 closed. #</pre> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> NOAMP-A <input type="checkbox"/> NOAMP-B <input type="checkbox"/> SOAM-A <input type="checkbox"/> SOAM-B <input type="checkbox"/> MP-1 <input type="checkbox"/> MP-2 <input type="checkbox"/> MP-3 <input type="checkbox"/> MP-4 </p>
16. <input type="checkbox"/>	NOAMP Server A: Exit terminal session	<pre># exit logout Connection to 192.168.1.4 closed. #</pre>
THIS PROCEDURE HAS BEEN COMPLETED		

5.4 Configure XSI Networks (All SOAM Sites)


This procedure configures the XSI networks used on MP to support signaling traffic.

Requirements:

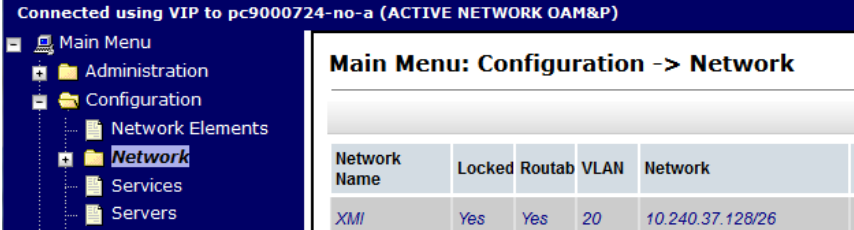

- Section 5.3 Apply Configuration To Remaining Servers has been completed

Note: If deploying two sites use the same name for both XSI networks.

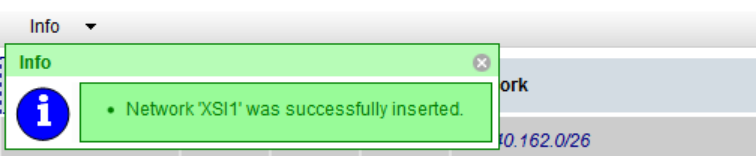
Procedure 7: Configure XSI Networks

Step	Procedure	Result
1. <input type="checkbox"/>	<p>NOAMP Server A: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>	

Procedure 7: Configure XSI Networks

Step	Procedure	Result																											
2.	<p>NOAMP Server A Select...</p> <p>Main Menu → Configuration → Network</p> <p>...as shown on the right.</p>																												
3.	<p>NOAMP Server A Add the XSI1 network</p>	<p>Click the Insert button. </p> <p>Output similar to that shown below may be observed.</p> <p>Insert Network</p> <table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Network Name</td> <td>XSI1</td> <td>The name of this network. [Default = N/A. Range = Alphanumeric string up to 31 chars, starting with a letter.]</td> </tr> <tr> <td>Network Element</td> <td>- Unassigned -</td> <td>The network element this network is a part of. If not specified, the network will be available to servers in all network elements.</td> </tr> <tr> <td>VLAN ID</td> <td>17</td> <td>The VLAN ID to use for this network. [Default = N/A. Range = 1-4094.]</td> </tr> <tr> <td>Network Address</td> <td>10.240.162.96</td> <td>The network address of this network. [Default = N/A. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.]</td> </tr> <tr> <td>Netmask</td> <td>255.255.255.224</td> <td>Subnetting to apply to servers within this network. [Default = N/A. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.]</td> </tr> <tr> <td>Router IP</td> <td>10.240.162.97</td> <td>The IP address of a router on this network. If this is a default network, this will be used as the gateway address of the default route on servers with interfaces on this network. If customer router monitoring is enabled, this address will be the one monitored.</td> </tr> <tr> <td>Default Network</td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> <td>A selection indicating whether this is the network with a default gateway.</td> </tr> <tr> <td>Routable</td> <td><input checked="" type="radio"/> Yes <input type="radio"/> No</td> <td>Whether or not this network is routable outside its network element. If it is not assigned to a network element, it is assumed to be possibly present in all network elements.</td> </tr> </tbody> </table> <p style="text-align: center;"><input type="button" value="Ok"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/></p> <p>Enter all of the above fields for the XSI1 network according to the customer's network parameters. The default values for Network Element (Unassigned), Default Network (No) and Routable (Yes) should be retained.</p> <p>ComAgent Service may be configured to run on XSI1 in Section 7.3. In such case, the XSI1 network shall be used for MP⇔NOAMP ComAgent Traffic.</p> <p>This network may or may not be used for MP Signaling Traffic.</p> <p>Note: Network names can be overloaded to support multiple subnets. When defining network for ComAgent Service, use same network name for Primary and DR Site.</p> <p>Note: VLANs are not used in the context of this document, though VLAN ID is a required field on this screen. Enter any number in the valid range.</p>	Field	Value	Description	Network Name	XSI1	The name of this network. [Default = N/A. Range = Alphanumeric string up to 31 chars, starting with a letter.]	Network Element	- Unassigned -	The network element this network is a part of. If not specified, the network will be available to servers in all network elements.	VLAN ID	17	The VLAN ID to use for this network. [Default = N/A. Range = 1-4094.]	Network Address	10.240.162.96	The network address of this network. [Default = N/A. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.]	Netmask	255.255.255.224	Subnetting to apply to servers within this network. [Default = N/A. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.]	Router IP	10.240.162.97	The IP address of a router on this network. If this is a default network, this will be used as the gateway address of the default route on servers with interfaces on this network. If customer router monitoring is enabled, this address will be the one monitored.	Default Network	<input type="radio"/> Yes <input checked="" type="radio"/> No	A selection indicating whether this is the network with a default gateway.	Routable	<input checked="" type="radio"/> Yes <input type="radio"/> No	Whether or not this network is routable outside its network element. If it is not assigned to a network element, it is assumed to be possibly present in all network elements.
Field	Value	Description																											
Network Name	XSI1	The name of this network. [Default = N/A. Range = Alphanumeric string up to 31 chars, starting with a letter.]																											
Network Element	- Unassigned -	The network element this network is a part of. If not specified, the network will be available to servers in all network elements.																											
VLAN ID	17	The VLAN ID to use for this network. [Default = N/A. Range = 1-4094.]																											
Network Address	10.240.162.96	The network address of this network. [Default = N/A. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.]																											
Netmask	255.255.255.224	Subnetting to apply to servers within this network. [Default = N/A. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.]																											
Router IP	10.240.162.97	The IP address of a router on this network. If this is a default network, this will be used as the gateway address of the default route on servers with interfaces on this network. If customer router monitoring is enabled, this address will be the one monitored.																											
Default Network	<input type="radio"/> Yes <input checked="" type="radio"/> No	A selection indicating whether this is the network with a default gateway.																											
Routable	<input checked="" type="radio"/> Yes <input type="radio"/> No	Whether or not this network is routable outside its network element. If it is not assigned to a network element, it is assumed to be possibly present in all network elements.																											
4.	<p>NOAMP Server A Repeat as required</p>	<p>Repeat Step 3 of this procedure to Insert additional signaling networks (XSI2, etc) if applicable.</p>																											

Procedure 7: Configure XSI Networks

Step	Procedure	Result
5. <input type="checkbox"/>	NOAMP Server A New XSI network is displayed along with a success message.	<p>Main Menu: Configuration -> Network</p>  <p>The screenshot shows the 'Configuration -> Network' menu. A green information box is overlaid on the screen, containing the text: 'Network 'XSI1' was successfully inserted.' The background shows a list of network configurations with columns for name and IP address, with 'XSI1' and '10.162.0/26' visible.</p>
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

6.0 OAM PAIRING

6.1 OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

The user should be aware that during the OAM Pairing procedure, various errors may be seen at different stages of the procedure. During the execution of a step, the user is directed to ignore errors related to values other than the ones referenced by that step.

This procedure creates active/standby pair for the NOAMP servers at the Primary Provisioning Site..

Requirements:

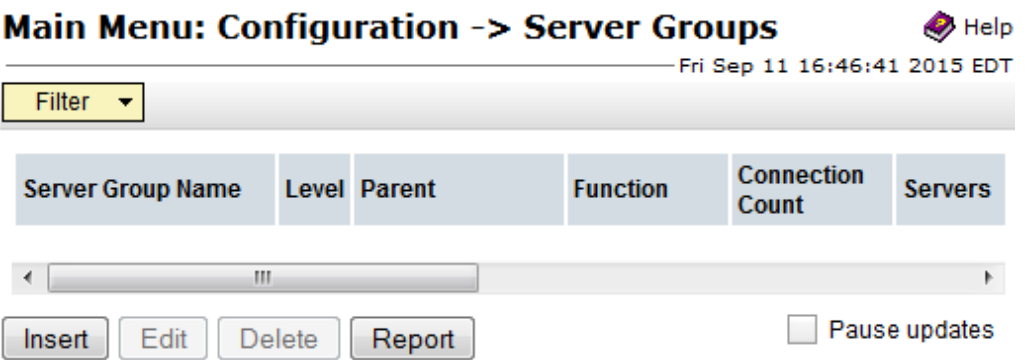
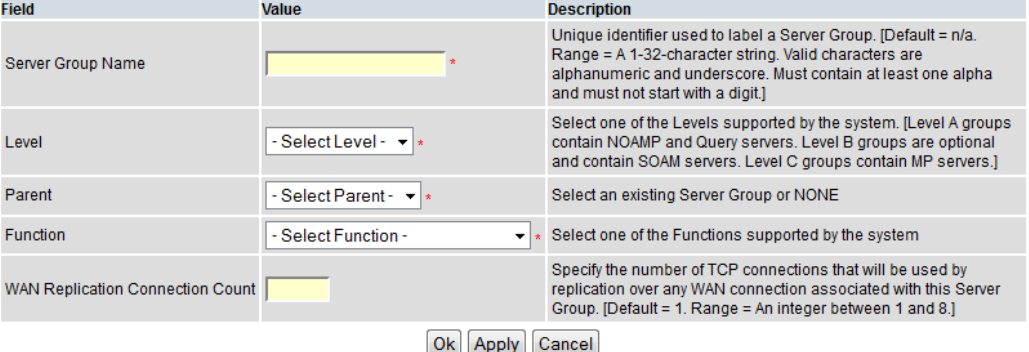

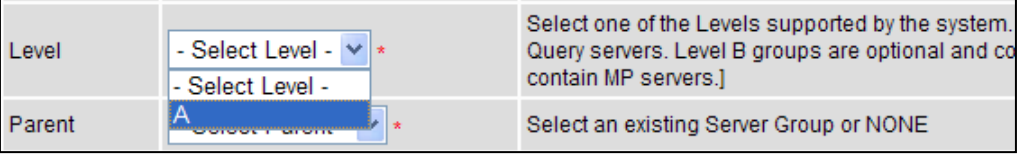
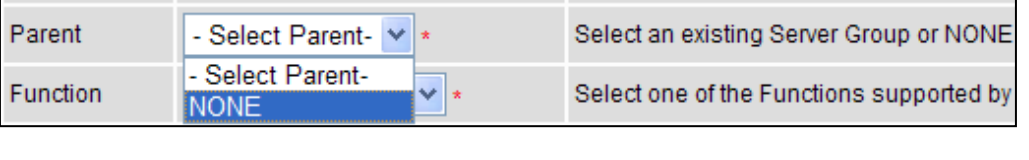
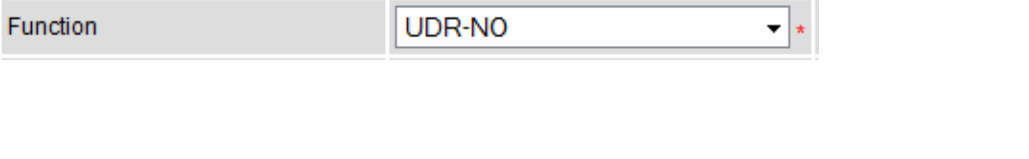
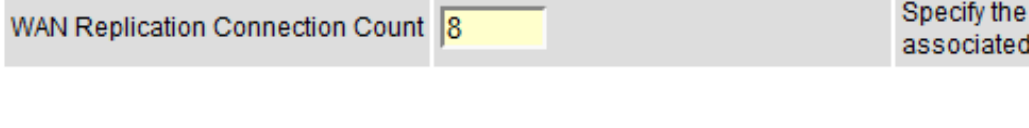
- **Section 5.3 Apply Configuration To Remaining Servers** has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

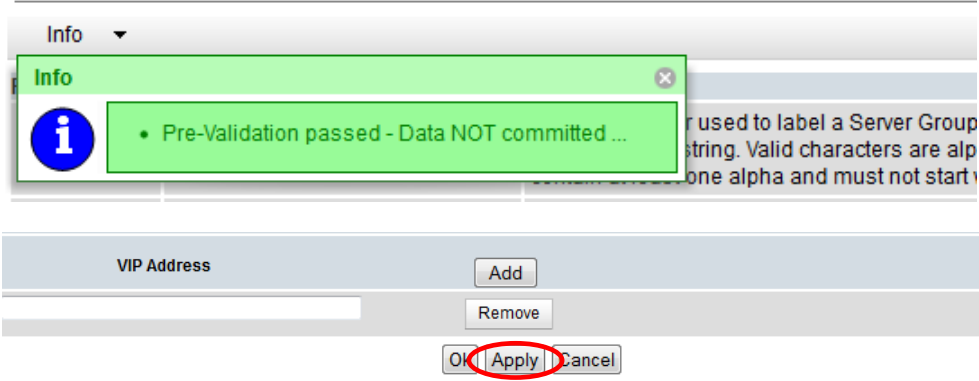
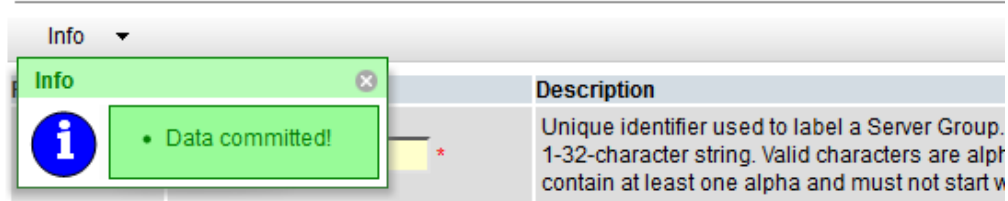
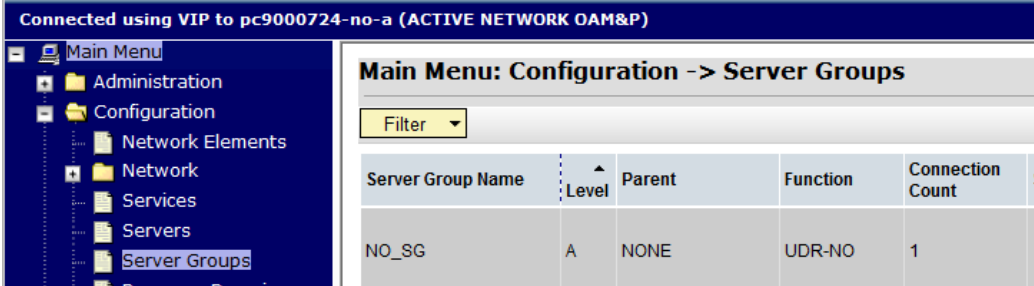
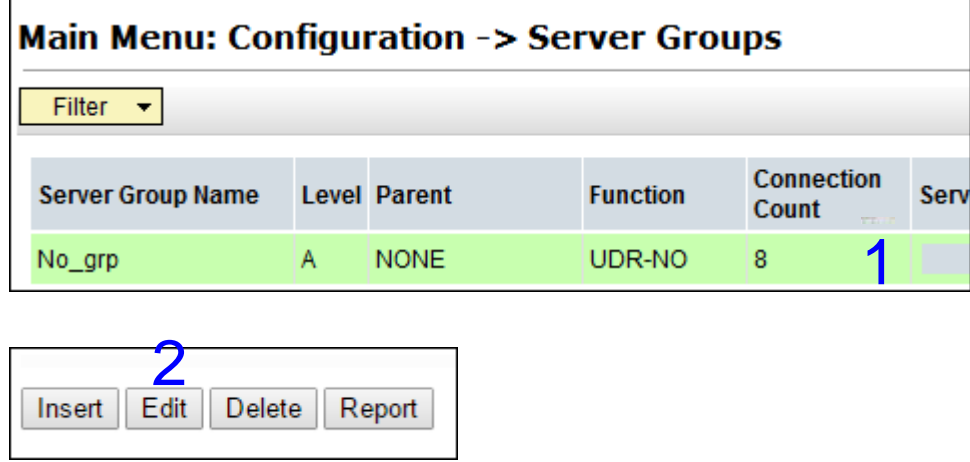
Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result
1. <input type="checkbox"/>	<p>NOAMP Server A: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>	
2. <input type="checkbox"/>	<p>NOAMP Server A: <i>Configuring Server Group</i></p> <p>Select...</p> <p>Main Menu → Configuration → Server Groups</p> <p>...as shown on the right.</p>	

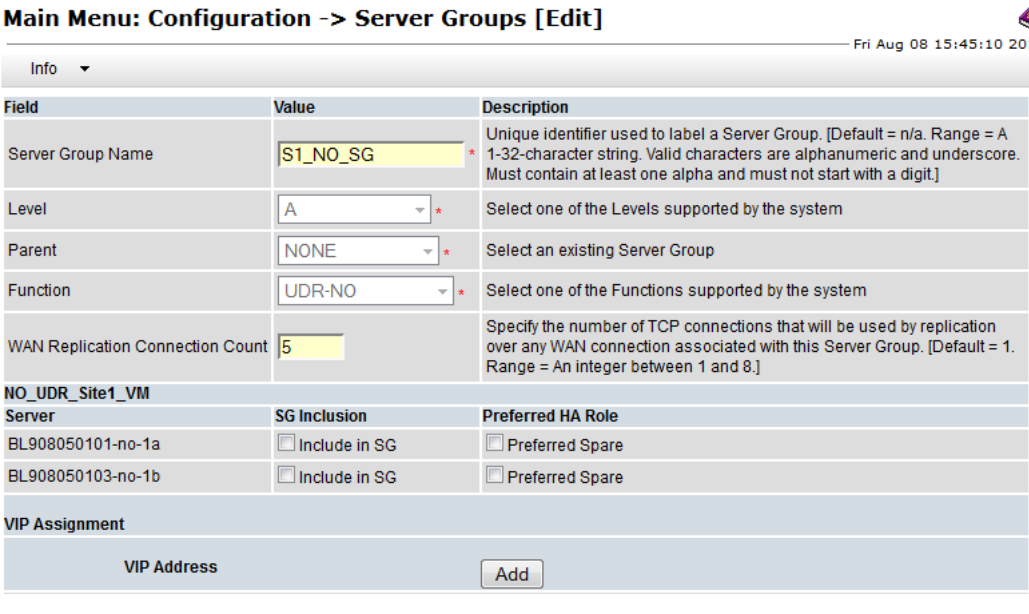
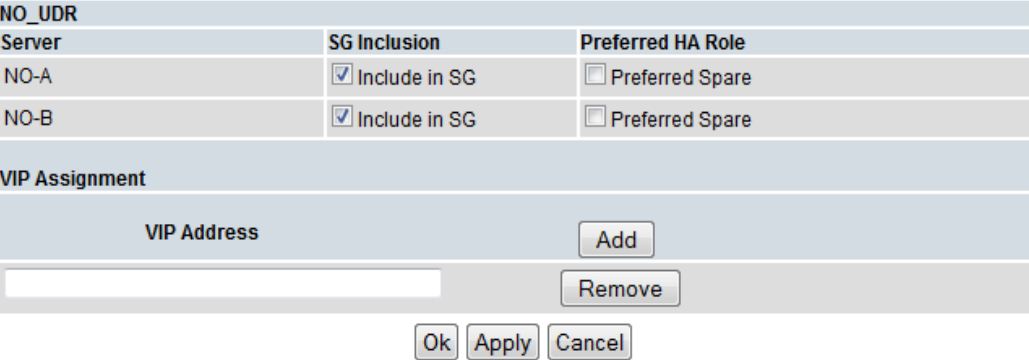
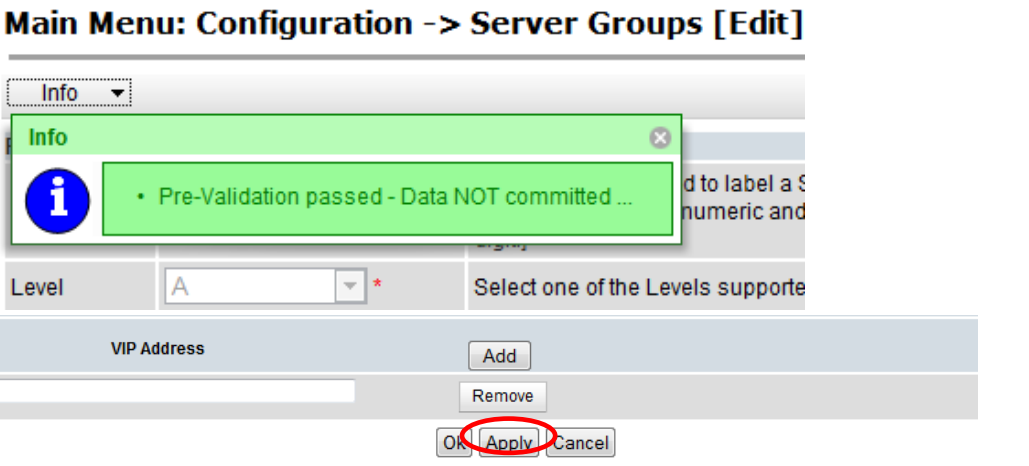
Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result
3.	<p>NOAMP Server A: Click the “Insert” dialogue button from the bottom left corner of the screen.</p> <p>NOTE: <i>The user may need to use the vertical scroll-bar in order to make the “Insert” dialogue button visible.</i></p>	
4.	<p>NOAMP Server A: The user will be presented with the “Server Groups [Insert]” screen as shown on the right.</p>	
5.	<p>NOAMP Server A: Input the Server Group Name.</p>	
6.	<p>NOAMP Server A: Select “A” on the “Level” pull-down menu.</p>	
7.	<p>NOAMP Server A: Select “None” on the “Parent” pull-down menu.</p>	
8.	<p>NOAMP Server A: Select “UDR-NO” on the “Function” pull-down menu.</p>	
9.	<p>NOAMP Server A: Input value “8” into “WAN Replication Connection Count”.</p>	

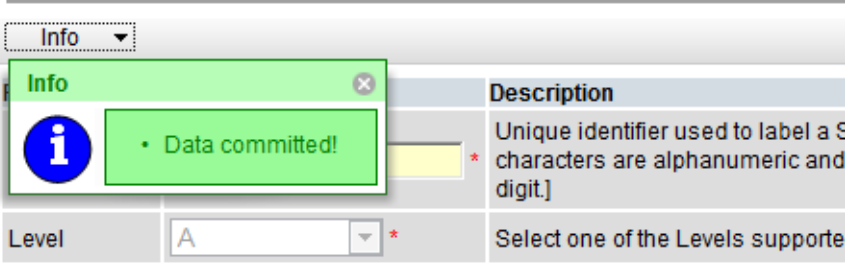
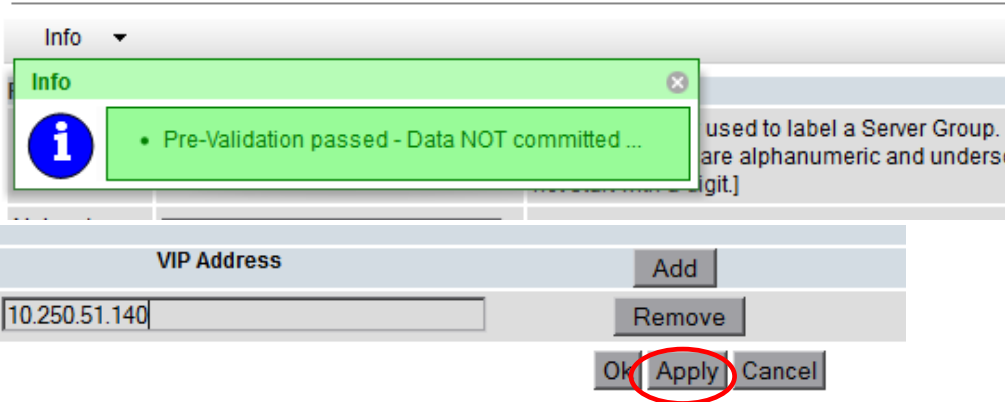
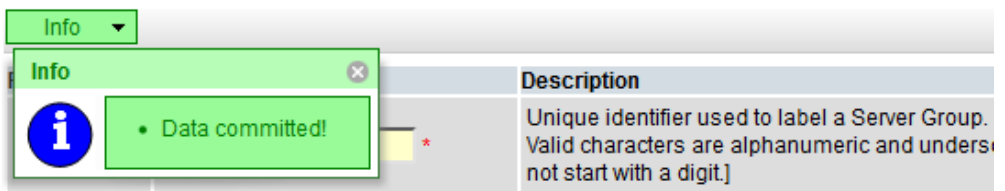
Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result
10.	<p>NOAMP Server A: By clicking Info the user should be presented with a banner information message stating “Pre-Validation passed”.</p> <p>Select the “Apply” dialogue button.</p>	<p>Main Menu: Configuration -> Server Groups [Insert]</p> 
11.	<p>NOAMP Server A: The user should be presented with a banner information message stating “Data committed”.</p>	<p>Main Menu: Configuration -> Server Groups [Insert]</p> 
12.	<p>NOAMP Server A: Select...</p> <p>Main Menu → Configuration → Server Groups</p> <p>...as shown on the right.</p>	
13.	<p>NOAMP Server A:</p> <p>1) Select the Server Group entry just added. The line entry should now be highlighted in GREEN.</p> <p>2) Select the “Edit” dialogue button from the bottom left corner of the screen.</p> <p>NOTE: The user may need to use the vertical scroll-bar in order to make the “Edit” dialogue button visible.</p>	<p>Main Menu: Configuration -> Server Groups</p> 

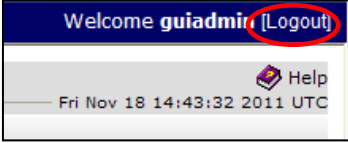



Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result																											
<p>14.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>The user will be presented with the “Server Groups [Edit]” screen as shown on the right.</p>	 <p>Main Menu: Configuration -> Server Groups [Edit]</p> <p>Info ▾</p> <table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Server Group Name</td> <td>S1_NO_SG *</td> <td>Unique identifier used to label a Server Group. [Default = n/a. Range = A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.]</td> </tr> <tr> <td>Level</td> <td>A *</td> <td>Select one of the Levels supported by the system</td> </tr> <tr> <td>Parent</td> <td>NONE *</td> <td>Select an existing Server Group</td> </tr> <tr> <td>Function</td> <td>UDR-NO *</td> <td>Select one of the Functions supported by the system</td> </tr> <tr> <td>WAN Replication Connection Count</td> <td>5</td> <td>Specify the number of TCP connections that will be used by replication over any WAN connection associated with this Server Group. [Default = 1. Range = An integer between 1 and 8.]</td> </tr> </tbody> </table> <p>NO_UDR_Site1_VM</p> <table border="1"> <thead> <tr> <th>Server</th> <th>SG Inclusion</th> <th>Preferred HA Role</th> </tr> </thead> <tbody> <tr> <td>BL908050101-no-1a</td> <td><input type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> <tr> <td>BL908050103-no-1b</td> <td><input type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> </tbody> </table> <p>VIP Assignment</p> <p>VIP Address <input type="text"/> <input type="button" value="Add"/></p>	Field	Value	Description	Server Group Name	S1_NO_SG *	Unique identifier used to label a Server Group. [Default = n/a. Range = A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.]	Level	A *	Select one of the Levels supported by the system	Parent	NONE *	Select an existing Server Group	Function	UDR-NO *	Select one of the Functions supported by the system	WAN Replication Connection Count	5	Specify the number of TCP connections that will be used by replication over any WAN connection associated with this Server Group. [Default = 1. Range = An integer between 1 and 8.]	Server	SG Inclusion	Preferred HA Role	BL908050101-no-1a	<input type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare	BL908050103-no-1b	<input type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare
Field	Value	Description																											
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<p>15.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>Check the boxes to include the “A” server and the “B” server into the NOAMP Server Group.</p> <p>Note: For Single Server Installation, only NO-A will be displayed; therefore only one box will be selected.</p>	 <p>NO_UDR</p> <table border="1"> <thead> <tr> <th>Server</th> <th>SG Inclusion</th> <th>Preferred HA Role</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td><input checked="" type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> <tr> <td>NO-B</td> <td><input checked="" type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> </tbody> </table> <p>VIP Assignment</p> <p>VIP Address <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/></p> <p><input type="button" value="Ok"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/></p>	Server	SG Inclusion	Preferred HA Role	NO-A	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare	NO-B	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare																		
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NO-B	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare																											
<p>16.</p> <p><input type="checkbox"/></p>	<p>NOAMP Server A:</p> <p>By clicking Info the user should be presented with a banner information message stating “Pre-Validation passed”.</p> <p>Select the “Apply” dialogue button.</p>	 <p>Main Menu: Configuration -> Server Groups [Edit]</p> <p>Info ▾</p> <p>Info <input type="button" value="x"/></p> <p>i • Pre-Validation passed - Data NOT committed ...</p> <p>Level <input type="text" value="A"/> *</p>																											

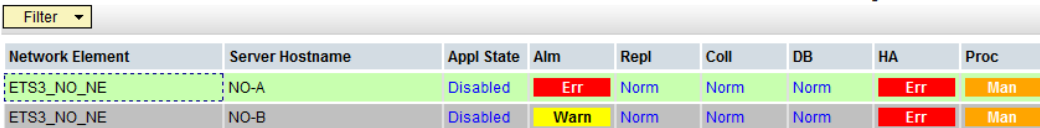
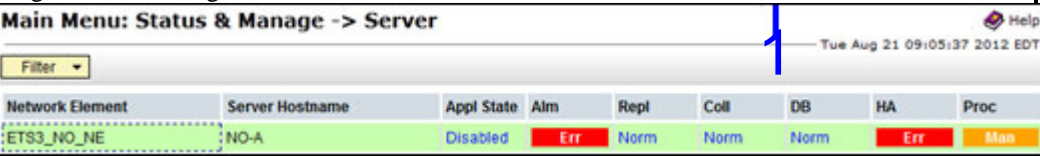
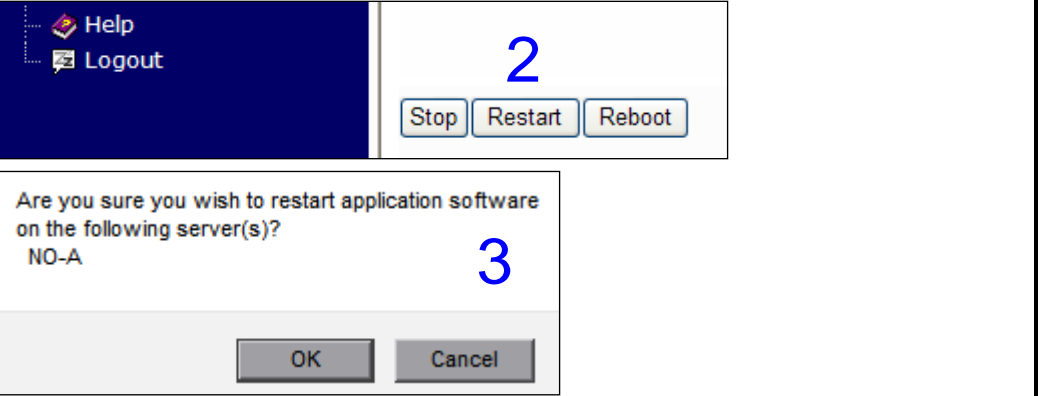
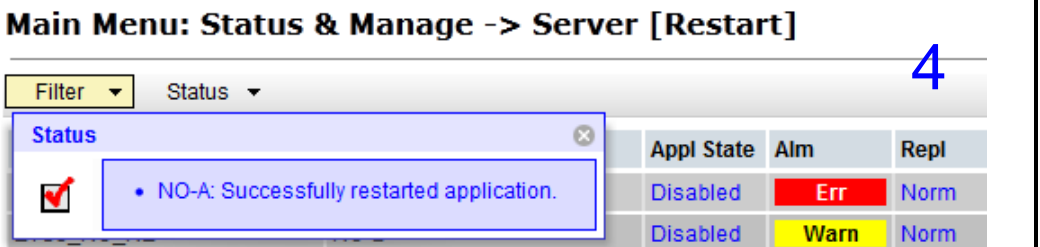
Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result									
17.	<p>NOAMP Server A: The user should be presented with a banner information message stating “Data committed”.</p>	<p>Main Menu: Configuration -> Server Groups [Edit]</p>  <p>The screenshot shows the 'Main Menu: Configuration -> Server Groups [Edit]' page. A green information box with a blue 'i' icon and the text 'Data committed!' is overlaid on the page. The background shows a table with columns for 'Info', 'Description', and 'Level'. The 'Description' column contains the text: 'Unique identifier used to label a S characters are alphanumeric and digit.]'. The 'Level' column has a dropdown menu with 'A' selected and a red asterisk next to it. Below the table, there is a text input field for 'VIP Address' and buttons for 'Add', 'Remove', 'Ok', 'Apply', and 'Cancel'.</p>									
18.	<p>NOAMP Server A: Click the “Add” dialogue button for the VIP Address.</p> <p>Note: VIP Address optional for Single Server Configuration.</p>	<p>NO_UDR</p> <table border="1"> <thead> <tr> <th>Server</th> <th>SG Inclusion</th> <th>Preferred HA Role</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td><input checked="" type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> <tr> <td>NO-B</td> <td><input checked="" type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> </tbody> </table> <p>VIP Assignment</p> <p>VIP Address <input type="text"/> Add Remove</p> <p>Ok Apply Cancel</p> <p>The screenshot shows the 'VIP Assignment' section of the configuration page. The 'Add' button is circled in red. Below the 'Add' button is a text input field for 'VIP Address' and buttons for 'Remove', 'Ok', 'Apply', and 'Cancel'.</p>	Server	SG Inclusion	Preferred HA Role	NO-A	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare	NO-B	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare
Server	SG Inclusion	Preferred HA Role									
NO-A	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare									
NO-B	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare									
19.	<p>NOAMP Server A: Input the VIP Address</p>	<p>VIP Address <input type="text"/> Add Remove</p> <p>Ok Apply Cancel</p> <p>The screenshot shows the 'VIP Assignment' section of the configuration page. The text input field for 'VIP Address' contains the value '10.250.51.140' and is circled in red. Below the input field are buttons for 'Add', 'Remove', 'Ok', 'Apply', and 'Cancel'.</p>									
20.	<p>NOAMP Server A: By clicking Info the user should be presented with a banner information message stating “Pre-Validation passed”.</p> <p>Select the “Apply” dialogue button.</p>	<p>Main Menu: Configuration -> Server Groups [Edit]</p>  <p>The screenshot shows the 'Main Menu: Configuration -> Server Groups [Edit]' page. A green information box with a blue 'i' icon and the text 'Pre-Validation passed - Data NOT committed ...' is overlaid on the page. The background shows the 'VIP Assignment' section with the 'VIP Address' input field containing '10.250.51.140'. The 'Apply' button is circled in red. Below the input field are buttons for 'Add', 'Remove', 'Ok', 'Apply', and 'Cancel'.</p>									
21.	<p>NOAMP Server A: The user should be presented with a banner information message stating “Data committed”.</p>	<p>Main Menu: Configuration -> Server Groups [Edit]</p>  <p>The screenshot shows the 'Main Menu: Configuration -> Server Groups [Edit]' page. A green information box with a blue 'i' icon and the text 'Data committed!' is overlaid on the page. The background shows the 'Description' column with the text: 'Unique identifier used to label a Server Group. Valid characters are alphanumeric and unders not start with a digit.]'. Below the table, there is a text input field for 'VIP Address' and buttons for 'Add', 'Remove', 'Ok', 'Apply', and 'Cancel'.</p>									

Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result
22. <input type="checkbox"/>	<p>NOAMP Server A: Click the “Logout” link on the OAM A server GUI.</p>	
23. <input type="checkbox"/>	<p>IMPORTANT: Wait at least 5 minutes before proceeding on to the next Step.</p>	<ul style="list-style-type: none"> Now that the server(s) have been paired within a Server Group they must establish a master/slave relationship for High Availability (HA). It may take several minutes for this process to be completed. Note: Single Server Configuration will not need to establish the master/slave relationship for High Availability (HA). <p>Allow a minimum of 5 minutes before continuing to the next Step.</p>
24. <input type="checkbox"/>	<p>Active NOAMP VIP: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>	
25. <input type="checkbox"/>	<p>NOAMP VIP:</p> <p><i>Restarting the NOAMP Server Application</i></p> <p>Select...</p> <p>Main Menu → Status & Manage → Server</p> <p>...as shown on the right.</p>	<p>Normal or Low Capacity Configuration:</p>  <p>Single Server Configuration:</p> 

Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result																																			
26.	<p>NOAMP VIP:</p> <p>1) The “A” and “B” servers should now appear in the right panel. Note: For single server, only the “A” server will appear.</p> <p>2) Verify that the “DB” status shows “Norm” and the “Proc” status shows “Man” for one/both servers before proceeding to the next Step.</p>	<p>Normal or Low Capacity Configuration:</p> <table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table> <p>Single Server Configuration:</p> <table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table>	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	no-a	NO_UDR_NE	Disabled	Err	Norm	Norm	Man	no-b	NO_UDR_NE	Disabled	Err	Norm	Norm	Man	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	no-a	NO_UDR_NE	Disabled	Err	Norm	Norm	Man
Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc																															
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no-a	NO_UDR_NE	Disabled	Err	Norm	Norm	Man																															
27.	<p>NOAMP VIP:</p> <p>1) Using the mouse, select NOAMP Server A. The line entry should now be highlighted in GREEN.</p> <p>2) Select the “Restart” dialogue button from the bottom left corner of the screen.</p> <p>3) Click the “OK” button on the confirmation dialogue box.</p> <p>4) The user should be presented with a confirmation message (in the banner area) for NOAMP Server A stating: “Successfully restarted application”.</p> <p>NOTE: The user may need to use the vertical scroll-bar in order to make the “Restart” dialogue button visible.</p>	<p>Normal Configuration:</p> <p>Main Menu: Status & Manage -> Server 1</p>  <p>Single Server Configuration:</p> <p>Main Menu: Status & Manage -> Server 1</p>  <p>2</p>  <p>3</p> <p>Main Menu: Status & Manage -> Server [Restart] 4</p> 																																			

Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result																																																		
28.	<p>NOAMP VIP: Verify that the “Appl State” now shows “Enabled” and that the “DB, Reporting Status & Proc” status columns all show “Norm” for NOAMP Server A before proceeding to the next Step.</p>	<table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table> <p>NOTE: If user chooses to refresh the Server status screen in advance of the default setting (15-30 sec.). This may be done by simply reselecting the “Status & Manage → Server” option from the Main menu on the left.</p>	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	no-a	NO_UDR_NE	Enabled	Err	Norm	Norm	Norm	no-b	NO_UDR_NE	Disabled	Err	Norm	Norm	Man																													
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no-b	NO_UDR_NE	Disabled	Err	Norm	Norm	Man																																														
29.	<p>NOAMP VIP: Restart NOAMP Server B.</p>	<p>Note: Don't perform this step for single server installations. Repeat steps 27 and 28 above to restart NOAMP Server B.</p>																																																		
30.	<p>NOAMP VIP: <i>Verifying the NOAMP Server Alarm status</i></p> <p>Select...</p> <p>Main Menu → Alarms & Events → View Active</p> <p>...as shown on the right.</p>																																																			
31.	<p>NOAMP VIP: Verify that the noted Event IDs are the only alarms present on the system at this time.</p>	<table border="1"> <thead> <tr> <th>Seq #</th> <th>Event ID</th> <th>Timestamp</th> <th>Severity</th> <th>Product</th> <th>Process</th> <th>NE</th> <th>Server</th> <th>Type</th> <th>Instance</th> </tr> </thead> <tbody> <tr> <td>129</td> <td>19820</td> <td>2015-09-21 15:42:00.187 EDT</td> <td>MAJOR</td> <td>CAF</td> <td>udrbe</td> <td>NO_UDR_NE</td> <td>no-b</td> <td>CAF</td> <td>UDR-RS-Sh-App</td> </tr> <tr> <td>309</td> <td>19820</td> <td>2015-09-21 15:14:54.295 EDT</td> <td>MAJOR</td> <td>CAF</td> <td>udrbe</td> <td>NO_UDR_NE</td> <td>no-a</td> <td>CAF</td> <td>UDR-RS-Sh-App</td> </tr> <tr> <td>266</td> <td>13001</td> <td>2015-09-21 15:14:48.842 EDT</td> <td>MAJOR</td> <td>Provisioning</td> <td>udrprov</td> <td>NO_UDR_NE</td> <td>no-a</td> <td>PROV</td> <td>REST</td> </tr> <tr> <td>265</td> <td>13027</td> <td>2015-09-21 15:14:47.841 EDT</td> <td>MAJOR</td> <td>Provisioning</td> <td>udrprov</td> <td>NO_UDR_NE</td> <td>no-a</td> <td>PROV</td> <td>SOAP</td> </tr> </tbody> </table> <p>Verify that only the following Event IDs are the only alarms present:</p> <ul style="list-style-type: none"> - 13075 (“<i>Provisioning Interfaces Disabled</i>”) - 19820 (“<i>Communication Agent Routed Service Unavailable</i>”) <p>Note: It may take a few minutes for residual process alarms to clear.</p>	Seq #	Event ID	Timestamp	Severity	Product	Process	NE	Server	Type	Instance	129	19820	2015-09-21 15:42:00.187 EDT	MAJOR	CAF	udrbe	NO_UDR_NE	no-b	CAF	UDR-RS-Sh-App	309	19820	2015-09-21 15:14:54.295 EDT	MAJOR	CAF	udrbe	NO_UDR_NE	no-a	CAF	UDR-RS-Sh-App	266	13001	2015-09-21 15:14:48.842 EDT	MAJOR	Provisioning	udrprov	NO_UDR_NE	no-a	PROV	REST	265	13027	2015-09-21 15:14:47.841 EDT	MAJOR	Provisioning	udrprov	NO_UDR_NE	no-a	PROV	SOAP
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Procedure 8: OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)

Step	Procedure	Result
32.	<p>NOAMP VIP:</p> <p>Configuring SNMP for Traps from Individual Servers</p> <p>Select...</p> <p>Main Menu → Administration → Remote Servers → SNMP Trapping ...as shown on the right.</p>	
33.	<p>NOAMP VIP:</p> <p>1) Using the cursor, place a “check” in the check box for “Traps from Individual Servers”.</p> <p>2) Click the “OK” button located at the bottom in the center of the screen.</p> <p>3) Verify that a banner message stating “Data committed” is received.</p>	
34.	<p>NOAMP VIP:</p> <p>Click the “Logout” link on the server GUI.</p>	
THIS PROCEDURE HAS BEEN COMPLETED		

6.2 OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)


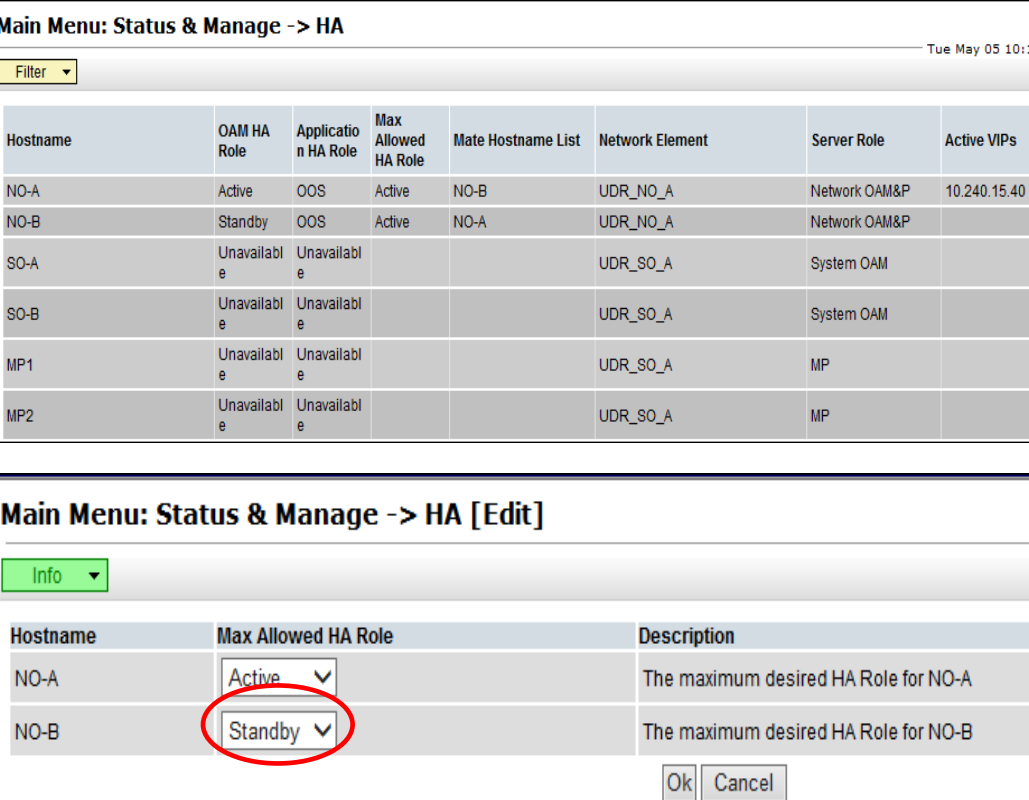
The user should be aware that during the OAM Pairing procedure, various errors may be seen at different stages of the procedure. During the execution of a step, the user is directed to ignore errors related to values other than the ones referenced by that step. The steps in this procedure are for all SOAM servers and the DR NOAMP servers. This procedure creates active/standby pair for the SOAM servers at any site or the DR NOAMP Servers.

Requirements:

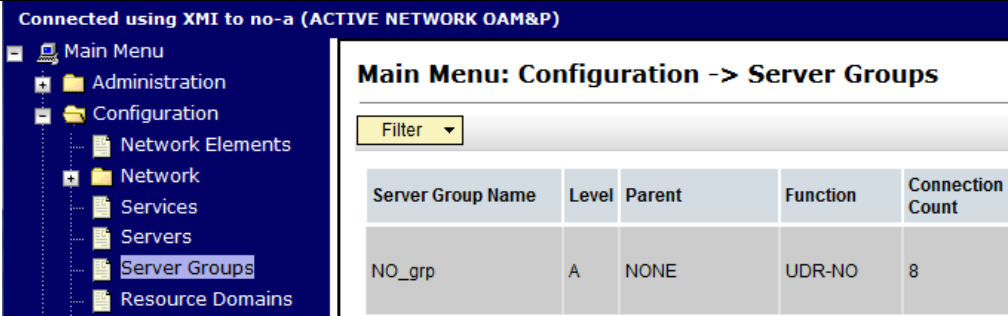
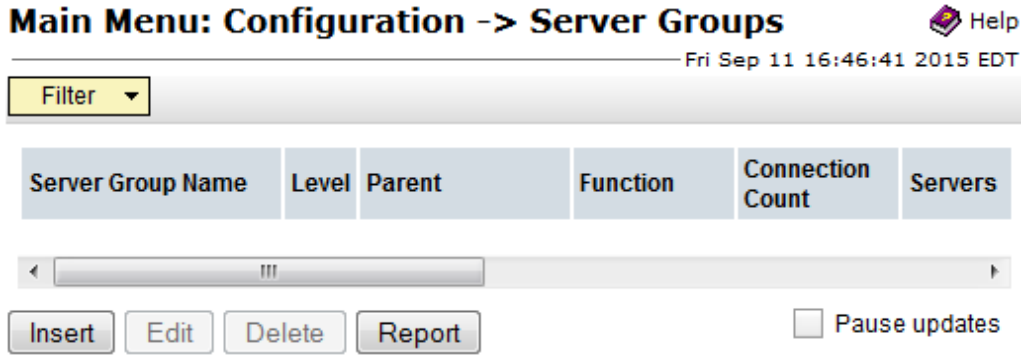
- **Section 5.0 UDR Server Configuration** has been completed
- **Section 6.1 OAM Pairing for Primary NOAMP Servers (1st NOAMP site only)** has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

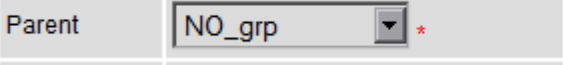


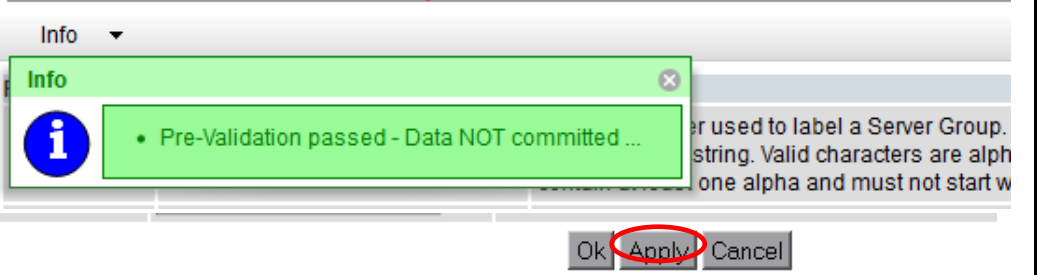
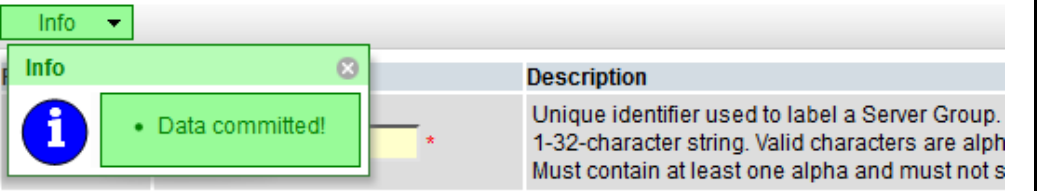
Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

Step	Procedure	Result																																																																	
<p>1.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>																																																																		
<p>2.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP: <i>For Primary NOAMP Standby server only:</i> Mark the server ‘forced standby’</p> <p>Main Menu → Status & Manage → HA</p> <p>Click “Edit” button on bottom left</p> <p>Find the row for the Primary NOAMP Standby server and change “Max Allowed HA Role” to “Standby”.</p>	<p>* Note: Don’t perform this step for single server installations.</p>  <p>Main Menu: Status & Manage -> HA</p> <p>Filter ▾</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM HA Role</th> <th>Application HA Role</th> <th>Max Allowed HA Role</th> <th>Mate Hostname List</th> <th>Network Element</th> <th>Server Role</th> <th>Active VIPs</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>NO-B</td> <td>UDR_NO_A</td> <td>Network OAM&P</td> <td>10.240.15.40</td> </tr> <tr> <td>NO-B</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>NO-A</td> <td>UDR_NO_A</td> <td>Network OAM&P</td> <td></td> </tr> <tr> <td>SO-A</td> <td>Unavailable</td> <td>Unavailable</td> <td></td> <td></td> <td>UDR_SO_A</td> <td>System OAM</td> <td></td> </tr> <tr> <td>SO-B</td> <td>Unavailable</td> <td>Unavailable</td> <td></td> <td></td> <td>UDR_SO_A</td> <td>System OAM</td> <td></td> </tr> <tr> <td>MP1</td> <td>Unavailable</td> <td>Unavailable</td> <td></td> <td></td> <td>UDR_SO_A</td> <td>MP</td> <td></td> </tr> <tr> <td>MP2</td> <td>Unavailable</td> <td>Unavailable</td> <td></td> <td></td> <td>UDR_SO_A</td> <td>MP</td> <td></td> </tr> </tbody> </table> <p>Main Menu: Status & Manage -> HA [Edit]</p> <p>Info ▾</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Max Allowed HA Role</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td>Active ▾</td> <td>The maximum desired HA Role for NO-A</td> </tr> <tr> <td>NO-B</td> <td>Standby ▾</td> <td>The maximum desired HA Role for NO-B</td> </tr> </tbody> </table> <p>Ok Cancel</p>	Hostname	OAM HA Role	Application HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role	Active VIPs	NO-A	Active	OOS	Active	NO-B	UDR_NO_A	Network OAM&P	10.240.15.40	NO-B	Standby	OOS	Active	NO-A	UDR_NO_A	Network OAM&P		SO-A	Unavailable	Unavailable			UDR_SO_A	System OAM		SO-B	Unavailable	Unavailable			UDR_SO_A	System OAM		MP1	Unavailable	Unavailable			UDR_SO_A	MP		MP2	Unavailable	Unavailable			UDR_SO_A	MP		Hostname	Max Allowed HA Role	Description	NO-A	Active ▾	The maximum desired HA Role for NO-A	NO-B	Standby ▾	The maximum desired HA Role for NO-B
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Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

Step	Procedure	Result																		
3.	<p>Active NOAMP VIP: Select...</p> <p><input type="checkbox"/></p> <p>Main Menu → Configuration → Server Groups</p> <p>...as shown on the right.</p>	 <p>Connected using XMI to no-a (ACTIVE NETWORK OAM&P)</p> <p>Main Menu: Configuration -> Server Groups</p> <table border="1"> <thead> <tr> <th>Server Group Name</th> <th>Level</th> <th>Parent</th> <th>Function</th> <th>Connection Count</th> </tr> </thead> <tbody> <tr> <td>NO_grp</td> <td>A</td> <td>NONE</td> <td>UDR-NO</td> <td>8</td> </tr> </tbody> </table>	Server Group Name	Level	Parent	Function	Connection Count	NO_grp	A	NONE	UDR-NO	8								
Server Group Name	Level	Parent	Function	Connection Count																
NO_grp	A	NONE	UDR-NO	8																
4.	<p>Active NOAMP VIP: Click the “Insert” dialogue button from the bottom left corner of the screen.</p> <p>NOTE: The user may need to use the vertical scroll-bar in order to make the “Insert” dialogue button visible.</p> <p><input type="checkbox"/></p>	 <p>Main Menu: Configuration -> Server Groups Help</p> <p style="text-align: right;">Fri Sep 11 16:46:41 2015 EDT</p> <table border="1"> <thead> <tr> <th>Server Group Name</th> <th>Level</th> <th>Parent</th> <th>Function</th> <th>Connection Count</th> <th>Servers</th> </tr> </thead> <tbody> <tr> <td colspan="6" style="text-align: center;">[Horizontal scrollbar]</td> </tr> </tbody> </table> <p style="text-align: right;"><input type="checkbox"/> Pause updates</p> <p style="text-align: center;"> <input type="button" value="Insert"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/> <input type="button" value="Report"/> </p>	Server Group Name	Level	Parent	Function	Connection Count	Servers	[Horizontal scrollbar]											
Server Group Name	Level	Parent	Function	Connection Count	Servers															
[Horizontal scrollbar]																				
5.	<p>Active NOAMP VIP:</p> <p>Configuring the SOAM or DR NOAMP Server Group</p> <p>The user will be presented with the “Server Groups [Insert]” screen as shown on the right.</p> <p><input type="checkbox"/></p>	<table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Server Group Name</td> <td><input type="text" value=""/></td> <td>Unique identifier used to label a Server Group. [Default = n/a. Range = A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.]</td> </tr> <tr> <td>Level</td> <td>- Select Level - *</td> <td>Select one of the Levels supported by the system. [Level A groups contain NOAMP and Query servers. Level B groups are optional and contain SOAM servers. Level C groups contain MP servers.]</td> </tr> <tr> <td>Parent</td> <td>- Select Parent - *</td> <td>Select an existing Server Group or NONE</td> </tr> <tr> <td>Function</td> <td>- Select Function - *</td> <td>Select one of the Functions supported by the system</td> </tr> <tr> <td>WAN Replication Connection Count</td> <td><input type="text" value=""/></td> <td>Specify the number of TCP connections that will be used by replication over any WAN connection associated with this Server Group. [Default = 1. Range = An integer between 1 and 8.]</td> </tr> </tbody> </table> <p style="text-align: right;"> <input type="button" value="Ok"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/> </p>	Field	Value	Description	Server Group Name	<input type="text" value=""/>	Unique identifier used to label a Server Group. [Default = n/a. Range = A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.]	Level	- Select Level - *	Select one of the Levels supported by the system. [Level A groups contain NOAMP and Query servers. Level B groups are optional and contain SOAM servers. Level C groups contain MP servers.]	Parent	- Select Parent - *	Select an existing Server Group or NONE	Function	- Select Function - *	Select one of the Functions supported by the system	WAN Replication Connection Count	<input type="text" value=""/>	Specify the number of TCP connections that will be used by replication over any WAN connection associated with this Server Group. [Default = 1. Range = An integer between 1 and 8.]
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6.	<p>Active NOAMP VIP: Input the Server Group Name.</p> <p><input type="checkbox"/></p>	<table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Server Group Name</td> <td>SO_grp *</td> <td>Unique identifier used to label a Server Group. 1-32-character string. Valid characters are alpt contain at least one alpha and must not start w</td> </tr> </tbody> </table>	Field	Value	Description	Server Group Name	SO_grp *	Unique identifier used to label a Server Group. 1-32-character string. Valid characters are alpt contain at least one alpha and must not start w												
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7.	<p>Active NOAMP VIP: Assign the correct group Level.</p> <p><input type="checkbox"/></p>	<table border="1"> <tbody> <tr> <td>Level</td> <td>- Select Level - * - Select Level -</td> <td>Select one of the Levels supported by the servers. Level B groups are optional and servers.]</td> </tr> <tr> <td>Parent</td> <td>B C *</td> <td>Select an existing Server Group or NONE</td> </tr> </tbody> </table> <p>Note: Use these setting for group level:</p> <ul style="list-style-type: none"> For DR NOAMP server group: select “A” on the “Level” pull-down menu.. For SOAM server group: select “B” on the “Level” pull-down menu. 	Level	- Select Level - * - Select Level -	Select one of the Levels supported by the servers. Level B groups are optional and servers.]	Parent	B C *	Select an existing Server Group or NONE												
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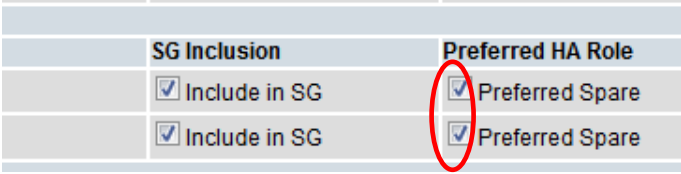
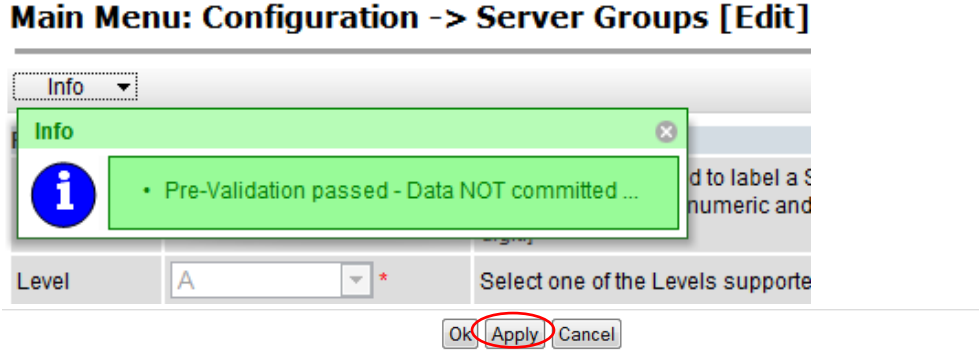
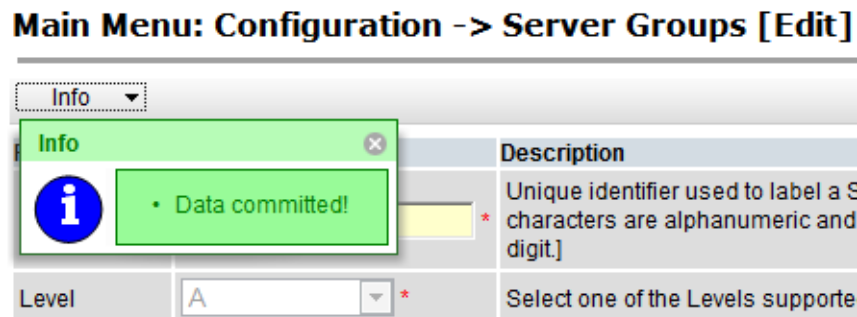
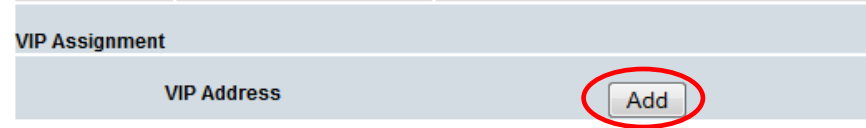
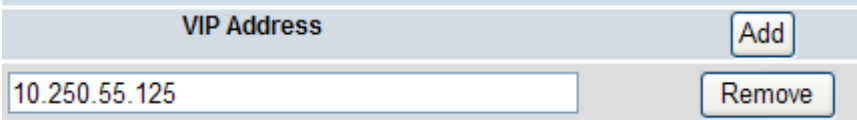
Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

Step	Procedure	Result
8.	<p>Active NOAMP VIP: Assign the correct Parent.</p>	 <p>Select an existing Server Group or NONE</p> <p>Note: Use these setting for parent:</p> <ul style="list-style-type: none"> For DR NOAMP server group: select “NONE” on the “Parent” pull-down menu. For SOAM server group: select the 1st NOAMP Site’s server group, as entered in Section 6.1 step 5 on the “Parent” pull-down menu.
9.	<p>Active NOAMP VIP: Assign the correct Function.</p>	 <p>Note: Use these setting for function:</p> <ul style="list-style-type: none"> For DR NOAMP server group: select “UDR-NO” on the “Function” pull-down menu. For SOAM server group: select “NONE” on the “Function” pull-down menu.
10.	<p>Active NOAMP VIP: <i>For DR NOAMP only:</i> Input value “8” into “WAN Replication Connection Count”.</p>	 <p>Specify the r associated</p>
11.	<p>Active NOAMP VIP: By clicking Info the user should be presented with a banner information message stating “Pre-Validation passed”.</p> <p>Select the “Apply” dialogue button.</p>	<p>Main Menu: Configuration -> Server Groups [Insert]</p> 
12.	<p>Active NOAMP VIP: The user should be presented with a banner information message stating “Data committed”.</p>	<p>Main Menu: Configuration -> Server Groups [Insert]</p> 

Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

Step	Procedure	Result																								
<p>13.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP: Select...</p> <p>Main Menu → Configuration → Server Groups</p> <p>...as shown on the right.</p> <p>Note: Server Group entry should be shown on the “Server Groups” configuration screen as shown on the right.</p>	<p>Main Menu: Configuration -> Server Groups</p> <p>Filter ▼</p> <table border="1"> <thead> <tr> <th>Server Group Name</th> <th>Level</th> <th>Parent</th> <th>Function</th> <th>Connection Count</th> <th>Servers</th> </tr> </thead> <tbody> <tr> <td>NO_grp</td> <td>A</td> <td>NONE</td> <td>UDR-NO</td> <td>8</td> <td>NE NO_SUN_05 NO-A</td> </tr> <tr> <td>SO_grp</td> <td>B</td> <td>NO_grp</td> <td>NONE</td> <td>1</td> <td>NE Serve</td> </tr> </tbody> </table>	Server Group Name	Level	Parent	Function	Connection Count	Servers	NO_grp	A	NONE	UDR-NO	8	NE NO_SUN_05 NO-A	SO_grp	B	NO_grp	NONE	1	NE Serve						
Server Group Name	Level	Parent	Function	Connection Count	Servers																					
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SO_grp	B	NO_grp	NONE	1	NE Serve																					
<p>14.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>1) Select the Server Group entry applied in Step 7. The line entry should now be highlighted in GREEN.</p> <p>2) Select the “Edit” dialogue button from the bottom left corner of the screen.</p> <p>NOTE: The user may need to use the vertical scroll-bar in order to make the “Edit” dialogue button visible.</p>	<p>Main Menu: Configuration -> Server Groups</p> <p>Filter ▼</p> <table border="1"> <thead> <tr> <th>Server Group Name</th> <th>Level</th> <th>Parent</th> <th>Function</th> <th>Connection Count</th> <th>Servers</th> </tr> </thead> <tbody> <tr> <td>MP_SG</td> <td>C</td> <td>SO_SG</td> <td>UDR-MP (multi-active cluster)</td> <td>8</td> <td>NE SO_UDR pc900 SO_UDR pc900 SO_UDR pc900 SO_UDR pc900 SO_UDR pc900</td> </tr> <tr> <td>NO_SG</td> <td>A</td> <td>NONE</td> <td>UDR-NO</td> <td>8</td> <td>NE NO_UDR pc900 NO_UDR pc900</td> </tr> <tr style="background-color: #90EE90;"> <td>SO_SG</td> <td>B</td> <td>NO_SG</td> <td>NONE</td> <td>8</td> <td>NE SO_UDR pc900 SO_UDR pc900 SO_UDR pc900</td> </tr> </tbody> </table> <p style="text-align: center; font-size: 2em; color: blue;">2</p> <p style="text-align: right; font-size: 2em; color: blue;">1</p> <p style="text-align: center;">◀ ▶</p> <p>Insert Edit Delete Report</p>	Server Group Name	Level	Parent	Function	Connection Count	Servers	MP_SG	C	SO_SG	UDR-MP (multi-active cluster)	8	NE SO_UDR pc900 SO_UDR pc900 SO_UDR pc900 SO_UDR pc900 SO_UDR pc900	NO_SG	A	NONE	UDR-NO	8	NE NO_UDR pc900 NO_UDR pc900	SO_SG	B	NO_SG	NONE	8	NE SO_UDR pc900 SO_UDR pc900 SO_UDR pc900
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NO_SG	A	NONE	UDR-NO	8	NE NO_UDR pc900 NO_UDR pc900																					
SO_SG	B	NO_SG	NONE	8	NE SO_UDR pc900 SO_UDR pc900 SO_UDR pc900																					
<p>15.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP: Select the “A” server and the “B” server from the list of “Servers” by clicking the check box next to their names.</p> <p>Note: For Single Server Installation, only SO-A will be displayed; therefore only one box will be selected.</p>	<p>Normal or Low Capacity Configuration:</p> <table border="1"> <thead> <tr> <th>SO_UDR Server</th> <th>SG Inclusion</th> <th>Preferred HA Role</th> </tr> </thead> <tbody> <tr> <td>SO-A</td> <td><input checked="" type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> <tr> <td>SO-B</td> <td><input checked="" type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> </tbody> </table> <p>VIP Assignment</p> <p>Single Server Configuration:</p> <table border="1"> <thead> <tr> <th>Server</th> <th>SG Inclusion</th> <th>Preferred HA Role</th> </tr> </thead> <tbody> <tr> <td>SO-A</td> <td><input checked="" type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> </tbody> </table> <p>VIP Assignment</p>	SO_UDR Server	SG Inclusion	Preferred HA Role	SO-A	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare	SO-B	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare	Server	SG Inclusion	Preferred HA Role	SO-A	<input checked="" type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare									
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Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

Step	Procedure	Result
16. <input type="checkbox"/>	Active NOAMP VIP: For DR NOAMP servers only: Check the Preferred Spare boxes next to their names	 <p>NOTE: DR NOAMP will not be accessible via their VIP unless they become the Active NOAMP. Individual servers in the DR NOAMP server group are always accessible by their XMI addresses.</p>
17. <input type="checkbox"/>	Active NOAMP VIP: By clicking Info the user should be presented with a banner information message stating " Pre-Validation passed ". Select the " Apply " dialogue button.	<p>Main Menu: Configuration -> Server Groups [Edit]</p> 
18. <input type="checkbox"/>	Active NOAMP VIP: The user should be presented with a banner information message stating " Data committed ".	<p>Main Menu: Configuration -> Server Groups [Edit]</p> 
19. <input type="checkbox"/>	Active NOAMP VIP: Click the " Add " dialogue button for the VIP Address .	
20. <input type="checkbox"/>	Active NOAMP VIP: Input the VIP Address	


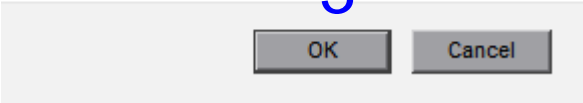
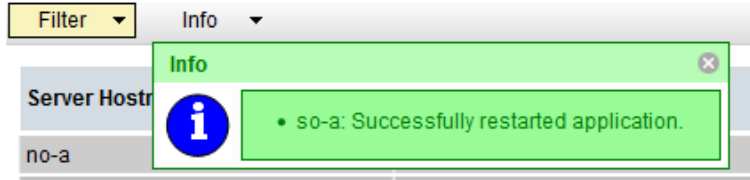
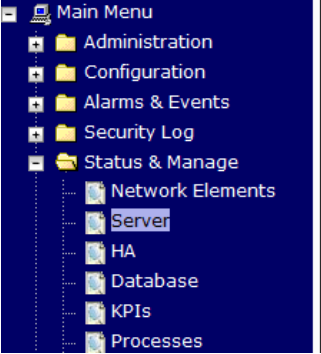
Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

Step	Procedure	Result																																																								
21.	<p>Active NOAMP VIP: By clicking Info the user should be presented with a banner information message stating “Pre-Validation passed”.</p> <p>Select the “Apply” dialogue button.</p>	<p>Main Menu: Configuration -> Server Groups [Edit]</p> <p>Info</p> <p>Info • Pre-Validation passed - Data NOT committed ...</p> <p>Level A * Select one of the Levels supported</p> <p>VIP Address Add</p> <p>10.250.55.125 Remove</p> <p>OK Apply Cancel</p>																																																								
22.	<p>Active NOAMP VIP: The user should be presented with a banner information message stating “Data committed”.</p>	<p>Main Menu: Configuration -> Server Groups [Edit]</p> <p>Info</p> <p>Info • Data committed!</p> <p>Description</p> <p>Unique identifier used to label a Server Group. Valid characters are alphanumeric and underscores not start with a digit.]</p>																																																								
23.	<p>IMPORTANT: Wait at least 5 minutes before proceeding on to the next Step.</p>	<ul style="list-style-type: none"> Now that the server(s) have been paired within a Server Group they must establish a master/slave relationship for High Availability (HA). It may take several minutes for this process to be completed. Note: Single Server Configurations do not establish master/slave relationship for High Availability (HA). <p>Allow a minimum of 5 minutes before continuing to the next Step.</p>																																																								
24.	<p>Active NOAMP VIP: Select...</p> <p>Main Menu → Status & Manage → HA</p> <p>...as shown on the right.</p>	<p>Main Menu: Status & Manage -> HA Tue May 05 10:24:36</p> <p>Filter</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM HA Role</th> <th>Application HA Role</th> <th>Max Allowed HA Role</th> <th>Mate Hostname List</th> <th>Network Element</th> <th>Server Role</th> <th>Active VIPs</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>NO-B</td> <td>UDR_NO_A</td> <td>Network OAM&P</td> <td>10.240.15.40</td> </tr> <tr> <td>NO-B</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>NO-A</td> <td>UDR_NO_A</td> <td>Network OAM&P</td> <td></td> </tr> <tr> <td>SO-A</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>SO-B</td> <td>UDR_SO_A</td> <td>System OAM</td> <td>10.240.15.43</td> </tr> <tr> <td>SO-B</td> <td>Standby</td> <td>OOS</td> <td>Standby</td> <td>SO-A</td> <td>UDR_SO_A</td> <td>System OAM</td> <td></td> </tr> <tr> <td>MP1</td> <td>Unavailable</td> <td>Unavailable</td> <td></td> <td></td> <td>UDR_SO_A</td> <td>MP</td> <td></td> </tr> <tr> <td>MP2</td> <td>Unavailable</td> <td>Unavailable</td> <td></td> <td></td> <td>UDR_SO_A</td> <td>MP</td> <td></td> </tr> </tbody> </table>	Hostname	OAM HA Role	Application HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role	Active VIPs	NO-A	Active	OOS	Active	NO-B	UDR_NO_A	Network OAM&P	10.240.15.40	NO-B	Standby	OOS	Active	NO-A	UDR_NO_A	Network OAM&P		SO-A	Active	OOS	Active	SO-B	UDR_SO_A	System OAM	10.240.15.43	SO-B	Standby	OOS	Standby	SO-A	UDR_SO_A	System OAM		MP1	Unavailable	Unavailable			UDR_SO_A	MP		MP2	Unavailable	Unavailable			UDR_SO_A	MP	
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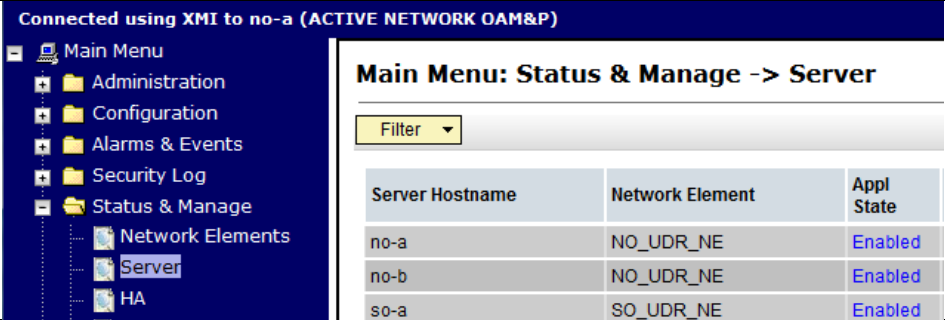
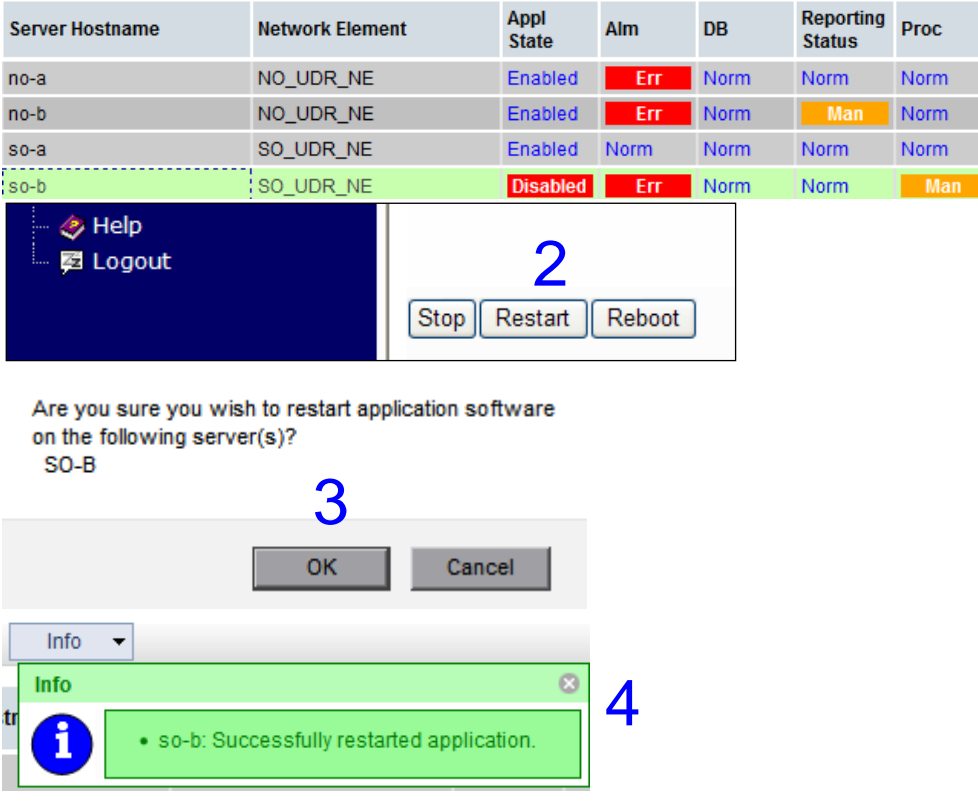
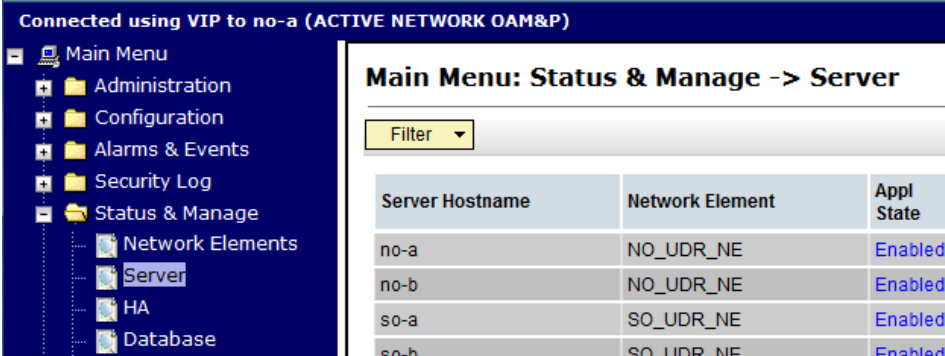
Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

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25.	<p>Active NOAMP VIP:</p> <p><u>Note:</u></p> <p>DR NOAMP servers will have OAM MAX HA Role of Spare and no Active VIPs (shown in red)</p> <p>SOAM server(s) will have OAM MAX HA Role of Active or Standby and an Active VIP.</p>	<p>Normal or Low Capacity Configuration:</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM Max HA Role</th> <th>Application Max HA Role</th> <th>Max Allowed HA Role</th> <th>Mate Hostname List</th> <th>Network Element</th> <th>Server Role</th> <th>Active VIPs</th> </tr> </thead> <tbody> <tr> <td>BL119122305-SO-1A</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>BL119122306-SO-1B</td> <td>SO_UDR_Site1_VM</td> <td>System OAM</td> <td>10.240.168</td> </tr> <tr> <td>BL119122306-SO-1B</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>BL119122305-SO-1A</td> <td>SO_UDR_Site1_VM</td> <td>System OAM</td> <td></td> </tr> <tr> <td>BL119121305-SO-2A</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>BL119121306-SO-2B</td> <td>SO_UDR_Site2_VM</td> <td>System OAM</td> <td>10.240.168</td> </tr> <tr> <td>BL119121306-SO-2B</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>BL119121305-SO-2A</td> <td>SO_UDR_Site2_VM</td> <td>System OAM</td> <td></td> </tr> <tr> <td>BL119122301-NO-1A</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>BL119122303-NO-1B</td> <td>NO_UDR_Site1_VM</td> <td>Network OAM&P</td> <td></td> </tr> <tr> <td>BL119122303-NO-1B</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>BL119122301-NO-1A</td> <td>NO_UDR_Site1_VM</td> <td>Network OAM&P</td> <td>10.240.168</td> </tr> <tr> <td>BL119121301-NO-2A</td> <td>Spare</td> <td>OOS</td> <td>Active</td> <td>BL119121303-NO-2B</td> <td>NO_UDR_Site2_VM</td> <td>Network OAM&P</td> <td></td> </tr> <tr> <td>BL119121303-NO-2B</td> <td>Spare</td> <td>OOS</td> <td>Active</td> <td>BL119121301-NO-2A</td> <td>NO_UDR_Site2_VM</td> <td>Network OAM&P</td> <td></td> </tr> </tbody> </table>	Hostname	OAM Max HA Role	Application Max HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role	Active VIPs	BL119122305-SO-1A	Active	OOS	Active	BL119122306-SO-1B	SO_UDR_Site1_VM	System OAM	10.240.168	BL119122306-SO-1B	Standby	OOS	Active	BL119122305-SO-1A	SO_UDR_Site1_VM	System OAM		BL119121305-SO-2A	Active	OOS	Active	BL119121306-SO-2B	SO_UDR_Site2_VM	System OAM	10.240.168	BL119121306-SO-2B	Standby	OOS	Active	BL119121305-SO-2A	SO_UDR_Site2_VM	System OAM		BL119122301-NO-1A	Standby	OOS	Active	BL119122303-NO-1B	NO_UDR_Site1_VM	Network OAM&P		BL119122303-NO-1B	Active	OOS	Active	BL119122301-NO-1A	NO_UDR_Site1_VM	Network OAM&P	10.240.168	BL119121301-NO-2A	Spare	OOS	Active	BL119121303-NO-2B	NO_UDR_Site2_VM	Network OAM&P		BL119121303-NO-2B	Spare	OOS	Active	BL119121301-NO-2A	NO_UDR_Site2_VM	Network OAM&P	
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27.	<p>Active NOAMP VIP:</p> <p>1) The "A" and "B" servers should now appear in the right panel. (Only "A" for single server installs)</p> <p>2) Verify that the "DB" status shows "Norm" and the "Proc" status shows "Man" for both servers before proceeding to the next Step. (Only "A" server for single server configuration)</p>	<p>Normal or Low Capacity Configuration:</p> <table border="1"> <thead> <tr> <th>Network Element</th> <th>Server Hostname</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>SO_UDR</td> <td>pc9000722-so-b</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> <tr> <td>SO_UDR</td> <td>pc9000720-so-a</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table> <p>Single Server Configuration:</p> <table border="1"> <thead> <tr> <th>Network Element</th> <th>Server Hostname</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>NO_UDR</td> <td>pc9000724-no-a</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>SO_UDR</td> <td>pc9000720-so-a</td> <td>Disabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table>	Network Element	Server Hostname	Appl State	Alm	DB	Reporting Status	Proc	SO_UDR	pc9000722-so-b	Disabled	Err	Norm	Norm	Man	SO_UDR	pc9000720-so-a	Disabled	Err	Norm	Norm	Man	Network Element	Server Hostname	Appl State	Alm	DB	Reporting Status	Proc	NO_UDR	pc9000724-no-a	Enabled	Err	Norm	Norm	Norm	SO_UDR	pc9000720-so-a	Disabled	Norm	Norm	Norm	Man																														
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28.	<p>Active NOAMP VIP:</p> <p>1) Using the mouse, select Server A. The line entry should now be highlighted in GREEN.</p> <p>2) Select the “Restart” dialogue button from the bottom left corner of the screen.</p> <p>3) Click the “OK” button on the confirmation dialogue box.</p> <p>4) The user should be presented with a confirmation message (in the banner area) for Server A stating: “Successfully restarted application”.</p> <p>NOTE: The user may need to use the vertical scroll-bar in order to make the “Restart” dialogue button visible.</p>	<p>Normal or Low Capacity Configuration:</p> <table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Man</td> <td>Norm</td> </tr> <tr> <td>so-a</td> <td>SO_UDR_NE</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> <tr> <td>so-b</td> <td>SO_UDR_NE</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table> <p>1</p>  <p>2</p> <p>Are you sure you wish to restart application software on the following server(s)? SO-A</p> <p>3</p>  <p>4</p> 	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	no-a	NO_UDR_NE	Enabled	Err	Norm	Norm	Norm	no-b	NO_UDR_NE	Enabled	Err	Norm	Man	Norm	so-a	SO_UDR_NE	Disabled	Err	Norm	Norm	Man	so-b	SO_UDR_NE	Disabled	Err	Norm	Norm	Man
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30.	<p>Active NOAMP VIP:</p> <p>Verify that the “Appl State” now shows “Enabled” and that the “Alm, DB, Reporting Status & Proc” columns all show “Norm” for OAM Server A before proceeding to the next Step.</p>	<table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Man</td> <td>Norm</td> </tr> <tr> <td>so-a</td> <td>SO_UDR_NE</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>so-b</td> <td>SO_UDR_NE</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table> <p>NOTE: If user chooses to refresh the Server status screen in advance of the default setting (15-30 sec.). This may be done by simply reselecting the “Status & Manage → Server” option from the Main menu on the left.</p>	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	no-a	NO_UDR_NE	Enabled	Err	Norm	Norm	Norm	no-b	NO_UDR_NE	Enabled	Err	Norm	Man	Norm	so-a	SO_UDR_NE	Enabled	Norm	Norm	Norm	Norm	so-b	SO_UDR_NE	Disabled	Err	Norm	Norm	Man
Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc																															
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Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

Step	Procedure	Result																																			
31.	<p>Active NOAMP VIP: Select...</p> <p>Main Menu → Status & Manage → Server</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Enabled</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Enabled</td> </tr> <tr> <td>so-a</td> <td>SO_UDR_NE</td> <td>Enabled</td> </tr> </tbody> </table>	Server Hostname	Network Element	Appl State	no-a	NO_UDR_NE	Enabled	no-b	NO_UDR_NE	Enabled	so-a	SO_UDR_NE	Enabled																							
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<p>Perform steps 32 – 35 for multiple server configurations only (not single server).</p>																																					
32.	<p>Active NOAMP VIP:</p> <ol style="list-style-type: none"> Using the mouse, select Server B. The line entry should now be highlighted in GREEN. Select the “Restart” dialogue button from the bottom left corner of the screen. Click the “OK” button on the confirmation dialogue box. The user should be presented with a confirmation message (in the banner area) for Server B stating: “Successfully restarted application”. <p>NOTE: The user may need to use the vertical scroll-bar in order to make the “Restart” dialogue button visible.</p>	 <table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Man</td> <td>Norm</td> </tr> <tr> <td>so-a</td> <td>SO_UDR_NE</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr style="background-color: #e0ffe0;"> <td>so-b</td> <td>SO_UDR_NE</td> <td>Disabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table>	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	no-a	NO_UDR_NE	Enabled	Err	Norm	Norm	Norm	no-b	NO_UDR_NE	Enabled	Err	Norm	Man	Norm	so-a	SO_UDR_NE	Enabled	Norm	Norm	Norm	Norm	so-b	SO_UDR_NE	Disabled	Err	Norm	Norm	Man
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33.	<p>Active NOAMP VIP: Select...</p> <p>Main Menu → Status & Manage → Server</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Enabled</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Enabled</td> </tr> <tr> <td>so-a</td> <td>SO_UDR_NE</td> <td>Enabled</td> </tr> <tr> <td>so-b</td> <td>SO_UDR_NE</td> <td>Enabled</td> </tr> </tbody> </table>	Server Hostname	Network Element	Appl State	no-a	NO_UDR_NE	Enabled	no-b	NO_UDR_NE	Enabled	so-a	SO_UDR_NE	Enabled	so-b	SO_UDR_NE	Enabled																				
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Procedure 9: OAM Pairing for SOAM and DR Sites (All SOAM and DR sites)

Step	Procedure	Result																																			
34.	<p>Active NOAMP VIP: Verify that the “Appl State” now shows “Enabled” and that the “Alm, DB, Reporting Status & Proc” columns all show “Norm” for Server B before proceeding to the next Step.</p>	<table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Man</td> <td>Norm</td> </tr> <tr> <td>so-a</td> <td>SO_UDR_NE</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>so-b</td> <td>SO_UDR_NE</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> </tbody> </table> <p>NOTE: If user chooses to refresh the Server status screen in advance of the default setting (15-30 sec.). This may be done by simply reselecting the “Status & Manage → Server” option from the Main menu on the left.</p>	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	no-a	NO_UDR_NE	Enabled	Err	Norm	Norm	Norm	no-b	NO_UDR_NE	Enabled	Err	Norm	Man	Norm	so-a	SO_UDR_NE	Enabled	Norm	Norm	Norm	Norm	so-b	SO_UDR_NE	Enabled	Norm	Norm	Norm	Norm
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so-a	SO_UDR_NE	Enabled	Norm	Norm	Norm	Norm																															
so-b	SO_UDR_NE	Enabled	Norm	Norm	Norm	Norm																															
Repeat all steps above for each DR NOAMP and SOAM site being installed.																																					
35.	<p>Active NOAMP VIP: <i>For Primary NOAMP Standby server only:</i> Move the server back to ‘Active’</p> <p>Main Menu → Status & Manage → HA[Edit]</p> <p>Find the row for the Primary NOAMP Standby server and change “Max Allowed HA Role” back to “Active”.</p>	<p>Main Menu: Status & Manage -> HA [Edit]</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Max Allowed HA Role</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td>Active</td> <td>The maximum desired HA Role for NO-A</td> </tr> <tr> <td>NO-B</td> <td>Active</td> <td>The maximum desired HA Role for NO-B</td> </tr> <tr> <td>SO-A</td> <td>Active</td> <td>The maximum desired HA Role for SO-A</td> </tr> <tr> <td>SO-B</td> <td>Active</td> <td>The maximum desired HA Role for SO-B</td> </tr> </tbody> </table> <p>Ok Cancel</p>	Hostname	Max Allowed HA Role	Description	NO-A	Active	The maximum desired HA Role for NO-A	NO-B	Active	The maximum desired HA Role for NO-B	SO-A	Active	The maximum desired HA Role for SO-A	SO-B	Active	The maximum desired HA Role for SO-B																				
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SO-A	Active	The maximum desired HA Role for SO-A																																			
SO-B	Active	The maximum desired HA Role for SO-B																																			
36.	<p>Active NOAMP VIP: Click the “Logout” link on the server GUI.</p>																																				
THIS PROCEDURE HAS BEEN COMPLETED																																					

6.3 OAM Pairing for MP Server Groups (All SOAM sites)

The user should be aware that during the Message Processor (MP) installation procedure, various errors may be seen at different stages of the procedure. During the execution of a step, the user is directed to ignore errors related to values other than the ones referenced by that step.

Requirements:


- Section 6.2 OAM Pairing for SOAM and DR Sites (All SOAM and DR sites) has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 10: OAM Pairing for MP Server Groups (All SOAM sites)

Step	Procedure	Result
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Procedure 10: OAM Pairing for MP Server Groups (All SOAM sites)

Step	Procedure	Result																		
<p>1.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>																			
<p>2.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP: Select...</p> <p>Main Menu → Configuration → Server Groups</p> <p>...as shown on the right.</p>	<p>Main Menu: Configuration -> Server Groups</p> <p>Filter ▼</p> <table border="1"> <thead> <tr> <th>Server Group Name</th> <th>Level</th> <th>Parent</th> <th>Function</th> <th>Connection Count</th> <th>Servers</th> </tr> </thead> <tbody> <tr> <td>NO_grp</td> <td>A</td> <td>NONE</td> <td>UDR-NO</td> <td>8</td> <td>NE NO_SUN_05</td> </tr> <tr> <td>SO_grp</td> <td>B</td> <td>NO_grp</td> <td>NONE</td> <td>1</td> <td>NE SO_SUN_05</td> </tr> </tbody> </table>	Server Group Name	Level	Parent	Function	Connection Count	Servers	NO_grp	A	NONE	UDR-NO	8	NE NO_SUN_05	SO_grp	B	NO_grp	NONE	1	NE SO_SUN_05
Server Group Name	Level	Parent	Function	Connection Count	Servers															
NO_grp	A	NONE	UDR-NO	8	NE NO_SUN_05															
SO_grp	B	NO_grp	NONE	1	NE SO_SUN_05															
<p>3.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>Click the “Insert” dialogue button from the bottom left corner of the screen.</p> <p>NOTE: <i>The user may need to use the vertical scroll-bar in order to make the “Insert” dialogue button visible.</i></p>	<p>Main Menu: Configuration -> Server Groups</p> <p>Filter ▼</p> <table border="1"> <thead> <tr> <th>Server Group Name</th> <th>Level</th> <th>Parent</th> <th>Function</th> <th>Connection Count</th> <th>Servers</th> </tr> </thead> <tbody> <tr> <td>NO_grp</td> <td>A</td> <td>NONE</td> <td>UDR-NO</td> <td>8</td> <td>NE NO_SUN_05</td> </tr> <tr> <td>SO_grp</td> <td>B</td> <td>NO_grp</td> <td>NONE</td> <td>1</td> <td>NE SO_SUN_05</td> </tr> </tbody> </table> <p>Help Logout</p> <p>Insert Edit Delete Report</p>	Server Group Name	Level	Parent	Function	Connection Count	Servers	NO_grp	A	NONE	UDR-NO	8	NE NO_SUN_05	SO_grp	B	NO_grp	NONE	1	NE SO_SUN_05
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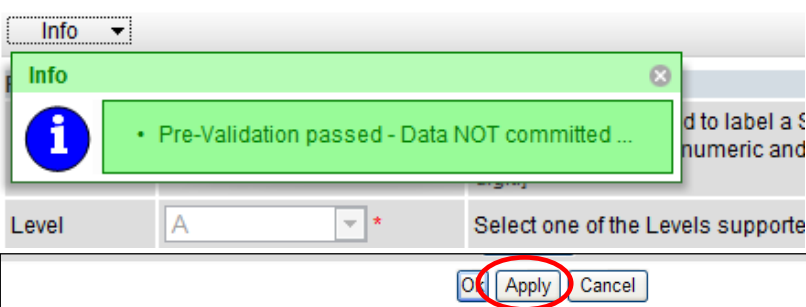
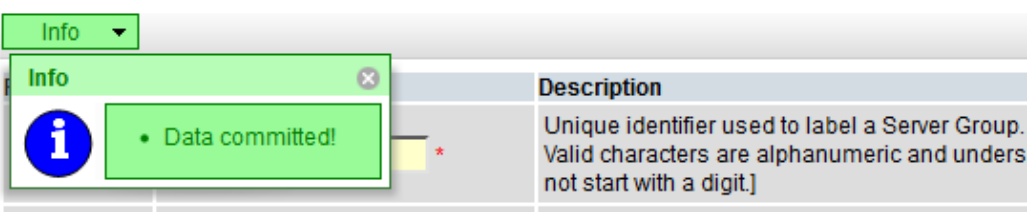
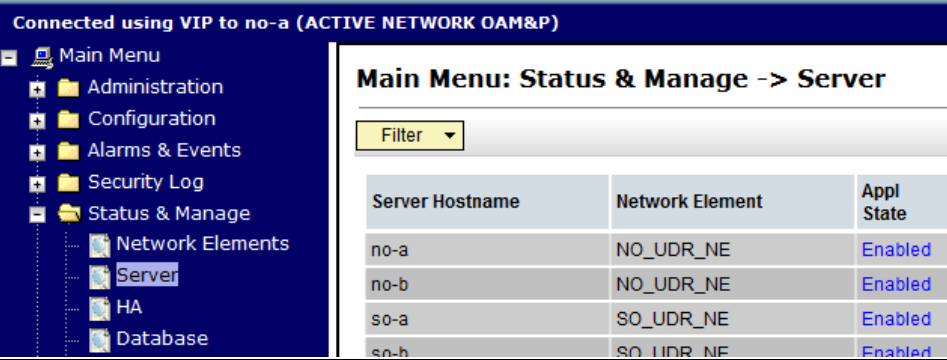
Procedure 10: OAM Pairing for MP Server Groups (All SOAM sites)

Step	Procedure	Result																		
4.	<p>Active NOAMP VIP: The user will be presented with the “Server Groups [Insert]” screen as shown on the right</p>	<table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Server Group Name</td> <td><input type="text"/></td> <td>Unique identifier used to label a Server Group. [Default = n/a. Range = A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.]</td> </tr> <tr> <td>Level</td> <td>- Select Level -</td> <td>Select one of the Levels supported by the system. [Level A groups contain NOAMP and Query servers. Level B groups are optional and contain SOAM servers. Level C groups contain MP servers.]</td> </tr> <tr> <td>Parent</td> <td>- Select Parent -</td> <td>Select an existing Server Group or NONE</td> </tr> <tr> <td>Function</td> <td>- Select Function -</td> <td>Select one of the Functions supported by the system</td> </tr> <tr> <td>WAN Replication Connection Count</td> <td><input type="text"/></td> <td>Specify the number of TCP connections that will be used by replication over any WAN connection associated with this Server Group. [Default = 1. Range = An integer between 1 and 8.]</td> </tr> </tbody> </table> <p style="text-align: right;">Ok Apply Cancel</p>	Field	Value	Description	Server Group Name	<input type="text"/>	Unique identifier used to label a Server Group. [Default = n/a. Range = A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.]	Level	- Select Level -	Select one of the Levels supported by the system. [Level A groups contain NOAMP and Query servers. Level B groups are optional and contain SOAM servers. Level C groups contain MP servers.]	Parent	- Select Parent -	Select an existing Server Group or NONE	Function	- Select Function -	Select one of the Functions supported by the system	WAN Replication Connection Count	<input type="text"/>	Specify the number of TCP connections that will be used by replication over any WAN connection associated with this Server Group. [Default = 1. Range = An integer between 1 and 8.]
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5.	<p>Active NOAMP VIP: Input the Server Group Name.</p>	<table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Server Group Name</td> <td>MP1_grp <input type="text"/></td> <td>Unique identifier used to label a Server Group. 1-32-character string. Valid characters are alpha Must contain at least one alpha and must not s</td> </tr> </tbody> </table>	Field	Value	Description	Server Group Name	MP1_grp <input type="text"/>	Unique identifier used to label a Server Group. 1-32-character string. Valid characters are alpha Must contain at least one alpha and must not s												
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6.	<p>Active NOAMP VIP: Select “C” on the “Level” pull-down menu..</p>	<table border="1"> <tbody> <tr> <td>Level</td> <td>C</td> <td>Select one of the Levels supported by the system. [Level A groups contain NOAMP and Query servers. Level B groups are optional and contain SOAM servers. Level C groups contain MP servers.]</td> </tr> </tbody> </table>	Level	C	Select one of the Levels supported by the system. [Level A groups contain NOAMP and Query servers. Level B groups are optional and contain SOAM servers. Level C groups contain MP servers.]															
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7.	<p>Active NOAMP VIP: Select the desired SOAM server group on the “Parent” pull-down menu.</p>	<table border="1"> <tbody> <tr> <td>Parent</td> <td>SO_grp</td> <td>Select an existing Server Group or NONE</td> </tr> </tbody> </table>	Parent	SO_grp	Select an existing Server Group or NONE															
Parent	SO_grp	Select an existing Server Group or NONE																		
8.	<p>Active NOAMP VIP: Select “UDR-MP (multi-active cluster)” on the “Function” pull-down menu.</p>	<table border="1"> <tbody> <tr> <td>Function</td> <td>UDR-MP (multi-active cluster)</td> <td></td> </tr> </tbody> </table>	Function	UDR-MP (multi-active cluster)																
Function	UDR-MP (multi-active cluster)																			
9.	<p>Active NOAMP VIP: By clicking Info the user should be presented with a banner information message stating “Pre-Validation passed”.</p> <p>Select the “OK” dialogue button.</p>	<p>Main Menu: Configuration -> Server Groups [Insert]</p> <p>The screenshot shows the configuration interface with an 'Info' dialog box overlaid. The dialog box contains an information icon and the text 'Pre-Validation passed - Data NOT committed ...'. Below the dialog box, the 'Ok Apply Cancel' buttons are visible.</p>																		

Procedure 10: OAM Pairing for MP Server Groups (All SOAM sites)

Step	Procedure	Result																																	
<p>10.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>1) Using the mouse, select the MP Server Group associated with the MP being installed.</p> <p>2) Select the “Edit” dialogue button from the bottom left corner of the screen.</p>	<p>Main Menu: Configuration -> Server Groups Tue May 05 10:41:12 2015</p> <p>Filter ▾</p> <table border="1"> <thead> <tr> <th>Server Group Name</th> <th>Level</th> <th>Parent</th> <th>Function</th> <th>Connection Count</th> <th>Servers</th> </tr> </thead> <tbody> <tr style="background-color: #e0ffe0;"> <td>MP1_grp</td> <td>C</td> <td>SO_grp</td> <td>UDR-MP (multi-active cluster)</td> <td>1</td> <td>NE Server HA Role Pref VIPs</td> </tr> <tr> <td>No_grp</td> <td>A</td> <td>NONE</td> <td>UDR-NO</td> <td>8</td> <td>NE Server HA Role Pref VIPs UDR_NO_A NO-A 10.240.15.40 UDR_NO_A NO-B 10.240.15.40</td> </tr> <tr> <td>SO_grp</td> <td>B</td> <td>No_grp</td> <td>NONE</td> <td>8</td> <td>NE Server HA Role Pref VIPs UDR_SO_A SO-A 10.240.15.43 UDR_SO_A SO-B 10.240.15.43</td> </tr> </tbody> </table> <p style="text-align: right; font-size: 2em; color: blue;">1</p> <p style="text-align: center; font-size: 2em; color: blue;">2</p> <div style="border: 1px solid black; padding: 5px;"> Help Logout Insert Edit Delete Report </div>	Server Group Name	Level	Parent	Function	Connection Count	Servers	MP1_grp	C	SO_grp	UDR-MP (multi-active cluster)	1	NE Server HA Role Pref VIPs	No_grp	A	NONE	UDR-NO	8	NE Server HA Role Pref VIPs UDR_NO_A NO-A 10.240.15.40 UDR_NO_A NO-B 10.240.15.40	SO_grp	B	No_grp	NONE	8	NE Server HA Role Pref VIPs UDR_SO_A SO-A 10.240.15.43 UDR_SO_A SO-B 10.240.15.43									
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<p>11.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>The user will be presented with the “Configuration → Server Groups [Edit]” screen as shown on the right</p>	<p>Normal Capacity Configuration:</p> <table border="1"> <tr> <td>Server Group Name</td> <td>MP_SG *</td> <td>A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.]</td> </tr> <tr> <td>Level</td> <td>C *</td> <td>Select one of the Levels supported by the system</td> </tr> <tr> <td>Parent</td> <td>SO_SG *</td> <td>Select an existing Server Group or NONE</td> </tr> <tr> <td>Function</td> <td>UDR-MP (multi-active cluster) *</td> <td>Select one of the Functions supported by the system</td> </tr> <tr> <td>WAN Replication Connection Count</td> <td>1</td> <td>Specify the number of TCP connections that will be used by replication over any WAN connection associated with this Server Group. [Default = 1. Range = An integer between 1 and 8.]</td> </tr> </table> <table border="1"> <thead> <tr> <th colspan="3">SO_UDR</th> </tr> <tr> <th>Server</th> <th>SG Inclusion</th> <th>Preferred HA Role</th> </tr> </thead> <tbody> <tr> <td>MP-1</td> <td><input type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> <tr> <td>MP-2</td> <td><input type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> <tr> <td>MP-3</td> <td><input type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> <tr> <td>MP-4</td> <td><input type="checkbox"/> Include in SG</td> <td><input type="checkbox"/> Preferred Spare</td> </tr> </tbody> </table> <p>VIP Assignment</p> <p>VIP Address Add</p>	Server Group Name	MP_SG *	A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.]	Level	C *	Select one of the Levels supported by the system	Parent	SO_SG *	Select an existing Server Group or NONE	Function	UDR-MP (multi-active cluster) *	Select one of the Functions supported by the system	WAN Replication Connection Count	1	Specify the number of TCP connections that will be used by replication over any WAN connection associated with this Server Group. [Default = 1. Range = An integer between 1 and 8.]	SO_UDR			Server	SG Inclusion	Preferred HA Role	MP-1	<input type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare	MP-2	<input type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare	MP-3	<input type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare	MP-4	<input type="checkbox"/> Include in SG	<input type="checkbox"/> Preferred Spare
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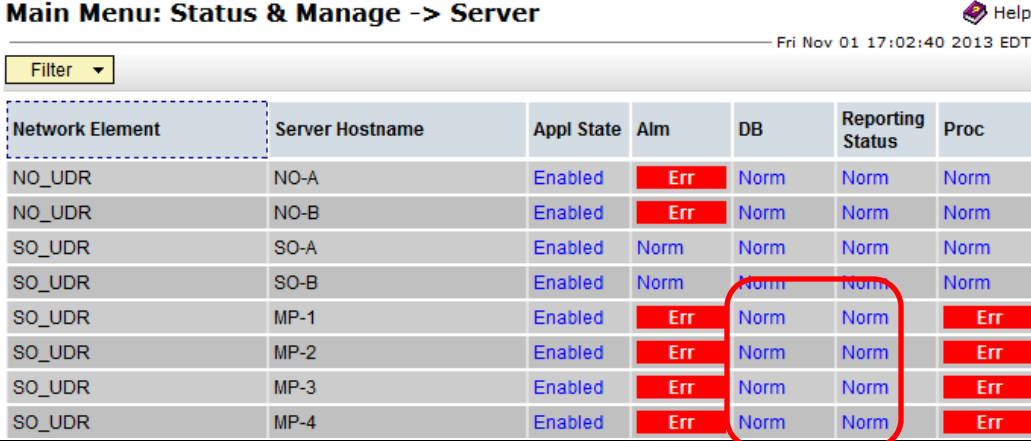
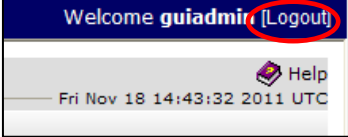
Procedure 10: OAM Pairing for MP Server Groups (All SOAM sites)

Step	Procedure	Result																												
13.	<p>Active NOAMP VIP: By clicking Info the user should be presented with a banner information message stating “Pre-Validation passed”.</p> <p>Select the “Apply” dialogue button.</p>	<p>Main Menu: Configuration -> Server Groups [Edit]</p> 																												
14.	<p>Active NOAMP VIP: The user should be presented with a banner information message stating “Data committed”.</p>	<p>Main Menu: Configuration -> Server Groups [Edit]</p> 																												
15.	<p>IMPORTANT: Wait at least 5 minutes before proceeding on to the next Step.</p>	<ul style="list-style-type: none"> Now that the Message Processor(s) have been placed within their respective Server Groups, each must establish DB replication with the Active SOAM server at the NE. It may take several minutes for this process to be completed. UDR processs alarms may be present until Section 7.2 Configure SPR Application on MP (All SOAM Sites) is completed. <p>Allow a minimum of 5 minutes before continuing to the next Step.</p>																												
16.	<p>Active NOAMP VIP: Select...</p> <p>Main Menu → Status & Manage → Server</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> </tr> </thead> <tbody> <tr> <td>no-a</td> <td>NO_UDR_NE</td> <td>Enabled</td> </tr> <tr> <td>no-b</td> <td>NO_UDR_NE</td> <td>Enabled</td> </tr> <tr> <td>so-a</td> <td>SO_UDR_NE</td> <td>Enabled</td> </tr> <tr> <td>so-b</td> <td>SO_UDR_NE</td> <td>Enabled</td> </tr> </tbody> </table>	Server Hostname	Network Element	Appl State	no-a	NO_UDR_NE	Enabled	no-b	NO_UDR_NE	Enabled	so-a	SO_UDR_NE	Enabled	so-b	SO_UDR_NE	Enabled													
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17.	<p>Active NOAMP VIP: Verify that the “DB & Reporting Status” status columns show “Norm” for the MPs at this point. The “Proc” column should show “Man”.</p>	<p>Normal Capacity Configuration :</p> <table border="1"> <tbody> <tr> <td>SO_UDR</td> <td>MP-1</td> <td>Disabled</td> <td>Warn</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> <tr> <td>SO_UDR</td> <td>MP-2</td> <td>Disabled</td> <td>Warn</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> <tr> <td>SO_UDR</td> <td>MP-3</td> <td>Disabled</td> <td>Warn</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> <tr> <td>SO_UDR</td> <td>MP-4</td> <td>Disabled</td> <td>Warn</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> </tbody> </table>	SO_UDR	MP-1	Disabled	Warn	Norm	Norm	Man	SO_UDR	MP-2	Disabled	Warn	Norm	Norm	Man	SO_UDR	MP-3	Disabled	Warn	Norm	Norm	Man	SO_UDR	MP-4	Disabled	Warn	Norm	Norm	Man
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Procedure 10: OAM Pairing for MP Server Groups (All SOAM sites)

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<p>18.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>1) Select each “MP” with “Man” status using the mouse and holding the Ctrl key. The line entries should be highlighted in GREEN.</p> <p>2) Select the “Restart” dialogue button from the bottom left corner of the screen.</p> <p>3) Click the “OK” button on the confirmation dialogue box.</p> <p>4) The user should be presented with a confirmation message (in the banner area) stating: “Successfully restarted application”.</p> <p>NOTE: The user may need to use the vertical scroll-bar in order to make the “Restart” dialogue button visible.</p>	<p>Main Menu: Status & Manage -> Server Help Fri Nov 01 17:05:48 2013 EDT</p> <p>Filter</p> <table border="1"> <thead> <tr> <th>Network Element</th> <th>Server Hostname</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr><td>NO_UGR</td><td>NO-A</td><td>Enabled</td><td>Err</td><td>Norm</td><td>Norm</td><td>Norm</td></tr> <tr><td>NO_UGR</td><td>NO-B</td><td>Enabled</td><td>Err</td><td>Norm</td><td>Norm</td><td>Norm</td></tr> <tr><td>SO_UGR</td><td>SO-A</td><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr> <tr><td>SO_UGR</td><td>SO-B</td><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr> <tr style="background-color: #e0ffe0;"><td>SO_UGR</td><td>MP-1</td><td>Disabled</td><td>Err</td><td>Norm</td><td>Norm</td><td>Man</td></tr> <tr style="background-color: #e0ffe0;"><td>SO_UGR</td><td>MP-2</td><td>Disabled</td><td>Err</td><td>Norm</td><td>Norm</td><td>Man</td></tr> <tr style="background-color: #e0ffe0;"><td>SO_UGR</td><td>MP-3</td><td>Disabled</td><td>Err</td><td>Norm</td><td>Norm</td><td>Man</td></tr> <tr style="background-color: #e0ffe0;"><td>SO_UGR</td><td>MP-4</td><td>Disabled</td><td>Err</td><td>Norm</td><td>Norm</td><td>Man</td></tr> </tbody> </table> <p>Help Logout</p> <p>Stop Restart Reboot</p> <p>Are you sure you wish to restart application software on the following server(s)? MP-1,MP-2,MP-3,MP-4</p> <p>OK Cancel</p> <p>Info</p> <p>Info</p> <ul style="list-style-type: none"> mp1: Successfully restarted application. 	Network Element	Server Hostname	Appl State	Alm	DB	Reporting Status	Proc	NO_UGR	NO-A	Enabled	Err	Norm	Norm	Norm	NO_UGR	NO-B	Enabled	Err	Norm	Norm	Norm	SO_UGR	SO-A	Enabled	Norm	Norm	Norm	Norm	SO_UGR	SO-B	Enabled	Norm	Norm	Norm	Norm	SO_UGR	MP-1	Disabled	Err	Norm	Norm	Man	SO_UGR	MP-2	Disabled	Err	Norm	Norm	Man	SO_UGR	MP-3	Disabled	Err	Norm	Norm	Man	SO_UGR	MP-4	Disabled	Err	Norm	Norm	Man
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<p>19.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP: Select...</p> <p>Main Menu → Status & Manage → Server</p> <p>...as shown on the right.</p>	<p>Connected using VIP to no-a (ACTIVE NETWORK OAM&P)</p> <p>Main Menu</p> <ul style="list-style-type: none"> Administration Configuration Alarms & Events Security Log Status & Manage Network Elements Server HA Database <p>Main Menu: Status & Manage -> Server</p> <p>Filter</p> <table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> </tr> </thead> <tbody> <tr><td>no-a</td><td>NO_UGR_NE</td><td>Enabled</td></tr> <tr><td>no-b</td><td>NO_UGR_NE</td><td>Enabled</td></tr> <tr><td>so-a</td><td>SO_UGR_NE</td><td>Enabled</td></tr> <tr><td>so-b</td><td>SO_UGR_NE</td><td>Enabled</td></tr> </tbody> </table>	Server Hostname	Network Element	Appl State	no-a	NO_UGR_NE	Enabled	no-b	NO_UGR_NE	Enabled	so-a	SO_UGR_NE	Enabled	so-b	SO_UGR_NE	Enabled																																																
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Procedure 10: OAM Pairing for MP Server Groups (All SOAM sites)

Step	Procedure	Result																																																															
20. <input type="checkbox"/>	Active NOAMP VIP: Verify that the “ Appl State ” now shows “ Enabled ” and that the “ DB & Reporting Status ” status columns all show “ Norm ” for the MPs . The “ Alm & Proc ” columns may show “ Err ” at this point.	 <p>Main Menu: Status & Manage -> Server Help</p> <p style="text-align: right;">Fri Nov 01 17:02:40 2013 EDT</p> <p>Filter ▾</p> <table border="1"> <thead> <tr> <th>Network Element</th> <th>Server Hostname</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>NO_UDR</td> <td>NO-A</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>NO_UDR</td> <td>NO-B</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>SO_UDR</td> <td>SO-A</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>SO_UDR</td> <td>SO-B</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>SO_UDR</td> <td>MP-1</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Err</td> </tr> <tr> <td>SO_UDR</td> <td>MP-2</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Err</td> </tr> <tr> <td>SO_UDR</td> <td>MP-3</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Err</td> </tr> <tr> <td>SO_UDR</td> <td>MP-4</td> <td>Enabled</td> <td>Err</td> <td>Norm</td> <td>Norm</td> <td>Err</td> </tr> </tbody> </table>	Network Element	Server Hostname	Appl State	Alm	DB	Reporting Status	Proc	NO_UDR	NO-A	Enabled	Err	Norm	Norm	Norm	NO_UDR	NO-B	Enabled	Err	Norm	Norm	Norm	SO_UDR	SO-A	Enabled	Norm	Norm	Norm	Norm	SO_UDR	SO-B	Enabled	Norm	Norm	Norm	Norm	SO_UDR	MP-1	Enabled	Err	Norm	Norm	Err	SO_UDR	MP-2	Enabled	Err	Norm	Norm	Err	SO_UDR	MP-3	Enabled	Err	Norm	Norm	Err	SO_UDR	MP-4	Enabled	Err	Norm	Norm	Err
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21. <input type="checkbox"/>	Active NOAMP VIP: Click the “ Logout ” link on the server GUI.	 <p>Welcome guidmi (Logout)</p> <p style="text-align: right;">Help</p> <p style="text-align: right;">Fri Nov 18 14:43:32 2011 UTC</p>																																																															
THIS PROCEDURE HAS BEEN COMPLETED																																																																	

7.0 APPLICATION CONFIGURATION

7.1 Configure Signaling Routes


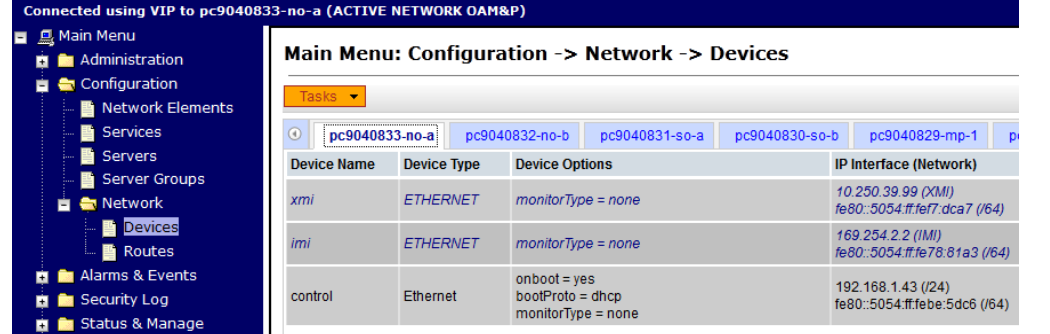
This procedure configures the XSI signaling route for all MP Servers.

Requirements:

- **Section 6.0 OAM Pairing** has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

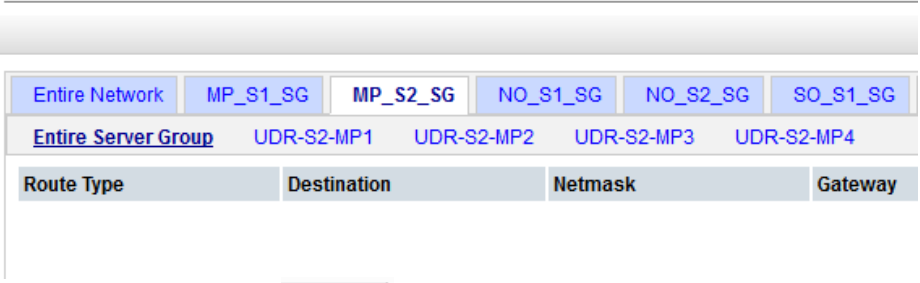
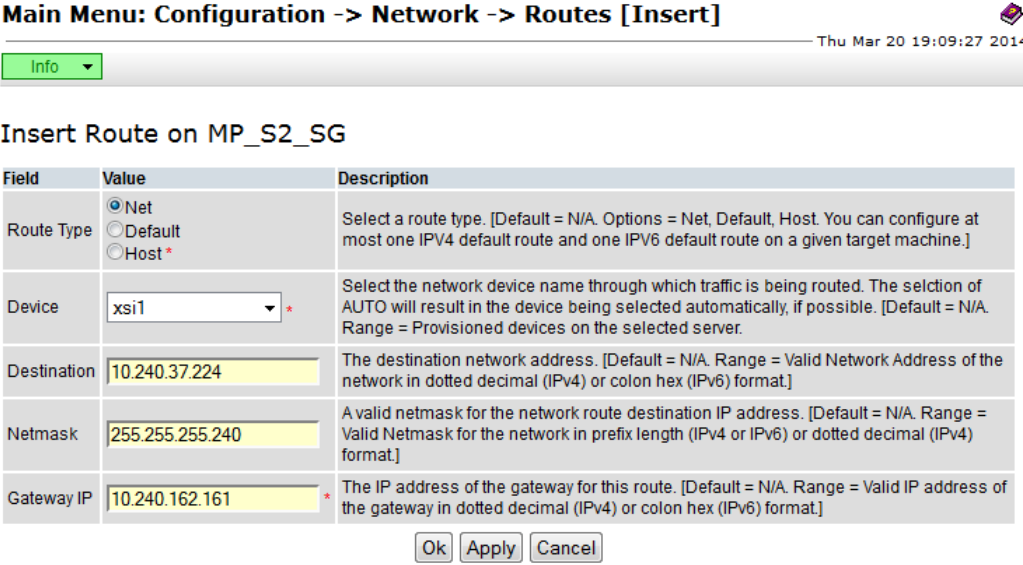
Procedure 11: Configure Signaling Routes

Step	Procedure	Result																
1. <input type="checkbox"/>	<p>Active NOAMP VIP: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>																	
2. <input type="checkbox"/>	<p>Active NOAMP VIP Select...</p> <p>Main Menu → Configuration → Network → Devices</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>Device Name</th> <th>Device Type</th> <th>Device Options</th> <th>IP Interface (Network)</th> </tr> </thead> <tbody> <tr> <td>xmi</td> <td>ETHERNET</td> <td>monitorType = none</td> <td>10.250.39.99 (XMI) fe80::5054:ff:fe7:dca7 (/64)</td> </tr> <tr> <td>imi</td> <td>ETHERNET</td> <td>monitorType = none</td> <td>169.254.2.2 (IMI) fe80::5054:ff:fe78:81a3 (/64)</td> </tr> <tr> <td>control</td> <td>Ethernet</td> <td>onboot = yes bootProto = dhcp monitorType = none</td> <td>192.168.1.43 (/24) fe80::5054:ff:febe:5dc6 (/64)</td> </tr> </tbody> </table>	Device Name	Device Type	Device Options	IP Interface (Network)	xmi	ETHERNET	monitorType = none	10.250.39.99 (XMI) fe80::5054:ff:fe7:dca7 (/64)	imi	ETHERNET	monitorType = none	169.254.2.2 (IMI) fe80::5054:ff:fe78:81a3 (/64)	control	Ethernet	onboot = yes bootProto = dhcp monitorType = none	192.168.1.43 (/24) fe80::5054:ff:febe:5dc6 (/64)
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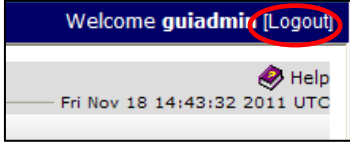
Procedure 11: Configure Signaling Routes

Step	Procedure	Result																																																		
<p>3.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP</p> <p>Select the xsi device for the desired MP</p>	<p>Click on the desired MP tab. Select the eth2 or eth3 device. Output similar to that shown below may be observed.</p> <p>Main Menu: Configuration -> Network -> Devices Help</p> <p style="text-align: right;">Thu Feb 11 13:54:00 2016 EST</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"></td> <td style="text-align: center;">no-a</td> <td style="text-align: center;">so-a</td> <td style="text-align: center;">mp1</td> <td style="text-align: center;">drno-a</td> <td style="text-align: center;">drso-a</td> <td style="text-align: center;">drmp1</td> <td style="text-align: center;">no-b</td> <td style="text-align: center;">drno-b</td> </tr> <tr> <th>Device Name</th> <th>Device Type</th> <th colspan="2">Device Options</th> <th colspan="2">IP Interface (Network)</th> <th colspan="4">Configuration Status</th> </tr> <tr> <td>eth2</td> <td>Ethernet</td> <td colspan="2">bootProto = none onboot = yes</td> <td colspan="2">192.168.3.9 (XSI1) fe80::250:56ff:fe01:a6d (/64)</td> <td colspan="4">Discovered</td> </tr> <tr> <td>eth0</td> <td>Ethernet</td> <td colspan="2">bootProto = none onboot = yes</td> <td colspan="2">10.240.23.11 (XMI) fe80::250:56ff:fe01:a69 (/64)</td> <td colspan="4">Deployed</td> </tr> <tr> <td>eth1</td> <td>Ethernet</td> <td colspan="2">bootProto = none onboot = yes</td> <td colspan="2">192.168.2.108 (IMI) fe80::250:56ff:fe01:a6c (/64)</td> <td colspan="4">Deployed</td> </tr> </table> <p>• “Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> MP-1(XSI-1) <input type="checkbox"/> MP-2(XSI-1) <input type="checkbox"/> MP-3(XSI-1) <input type="checkbox"/> MP-4(XSI-1) <input type="checkbox"/> MP-1(XSI-1) <input type="checkbox"/> MP-2(XSI-1) <input type="checkbox"/> MP-3(XSI-2) <input type="checkbox"/> MP-4(XSI-2) </p>			no-a	so-a	mp1	drno-a	drso-a	drmp1	no-b	drno-b	Device Name	Device Type	Device Options		IP Interface (Network)		Configuration Status				eth2	Ethernet	bootProto = none onboot = yes		192.168.3.9 (XSI1) fe80::250:56ff:fe01:a6d (/64)		Discovered				eth0	Ethernet	bootProto = none onboot = yes		10.240.23.11 (XMI) fe80::250:56ff:fe01:a69 (/64)		Deployed				eth1	Ethernet	bootProto = none onboot = yes		192.168.2.108 (IMI) fe80::250:56ff:fe01:a6c (/64)		Deployed			
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<p>4.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP</p> <p>Take ownership of the xsi device for the desired MP</p>	<p>Click on the Take Ownership button. Take Ownership</p> <p>• “Check off” the associated Check Box as addition is completed for each Server.</p> <p> <input type="checkbox"/> MP-1(XSI-1) <input type="checkbox"/> MP-2(XSI-1) <input type="checkbox"/> MP-3(XSI-1) <input type="checkbox"/> MP-4(XSI-1) <input type="checkbox"/> MP-1(XSI-1) <input type="checkbox"/> MP-2(XSI-1) <input type="checkbox"/> MP-3(XSI-2) <input type="checkbox"/> MP-4(XSI-2) </p>																																																		
<p>5.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>Select...</p> <p>Main Menu → Configuration → Network → Routes</p> <p>...as shown on the right.</p>	<div style="display: flex;"> <div style="flex: 1; border: 1px solid black; background-color: #000080; color: white; padding: 5px;"> <p>Main Menu</p> <ul style="list-style-type: none"> Administration Configuration Network Elements Network <ul style="list-style-type: none"> Devices Routes </div> <div style="flex: 2; padding-left: 10px;"> <p>Main Menu: Configuration -> Network -> Routes</p> <p>Warning ▾</p> <p style="text-align: center;">Entire Network MP_GRP NO_GRP SO_GRP</p> <p>BL908070109-NO-A BL908070110-NO-B BL908070111-SO-A BL908070112-SO-B</p> </div> </div>																																																		

Procedure 11: Configure Signaling Routes

Step	Procedure	Result
<p>6.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>Insert a new route for the MP server group.</p>	<p>Click on the desired MP Server Group tab on the top line. Then click on the Entire Server Group tab on the line below Server Group line. Output similar to that shown below may be observed.</p> <p>Main Menu: Configuration -> Network -> Routes</p>  <p>Click on the Insert button</p> <p>“Check off” the associated Check Box as addition is completed for each Network.</p> <p><input type="checkbox"/> XSI-1 <input type="checkbox"/> XSI-2</p>
<p>7.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>Add xsi signaling route to MP</p>	<p>Output similar to that shown below may be observed.</p> <p>Main Menu: Configuration -> Network -> Routes [Insert]</p>  <p>Set Route Type to desired value Set Device to the appropriate signaling device name (eth2 or eth3) Enter Destination: This is the network address of the Diameter Sh clients that will connect to UDR on the signaling network. Enter Netmask for the Diameter Sh client network. Enter Gateway IP : This is the gateway for UDR’s signaling network Click Apply button</p> <p>“Check off” the associated Check Box as addition is completed for each Network.</p> <p><input type="checkbox"/> XSI-1 (eth2) <input type="checkbox"/> XSI-2 (eth3)</p>

Procedure 11: Configure Signaling Routes

Step	Procedure	Result
8.	Repeat the steps above for each signaling network.	
9.	Active NOAMP VIP: Click the “Logout” link on the server GUI.	
THIS PROCEDURE HAS BEEN COMPLETED		

7.2 Configure SPR Application on MP (All SOAM Sites)


This procedure configures the SPR application for MP Servers on each SOAM site.

Requirements:

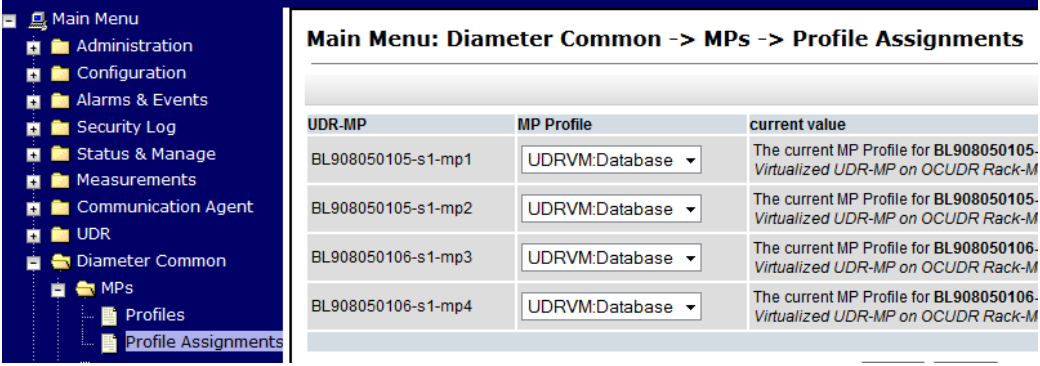
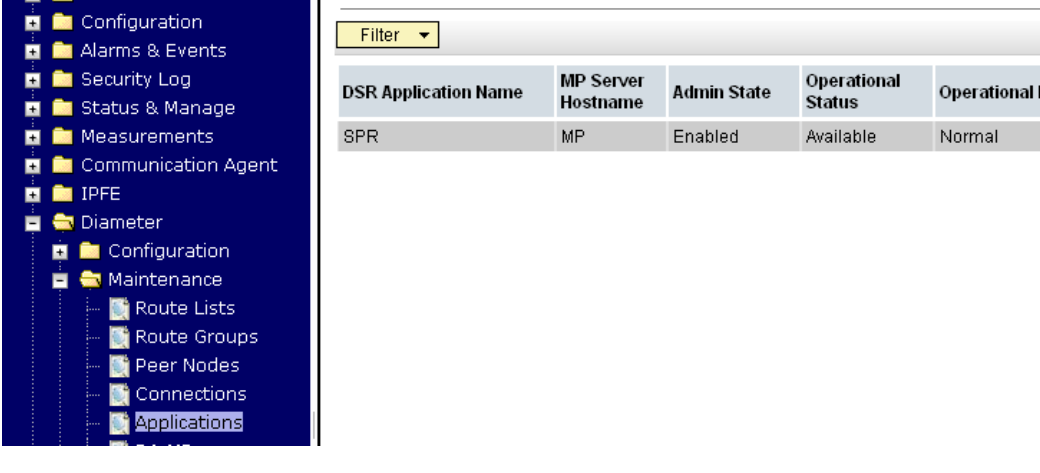
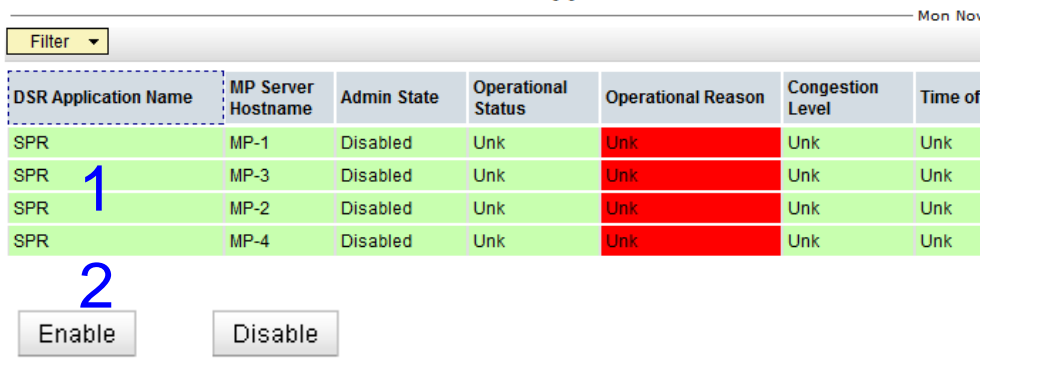
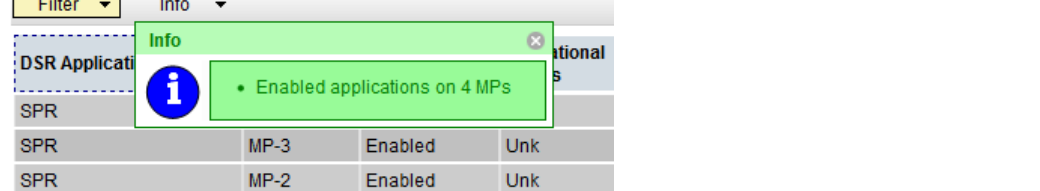
- Section 7.1 Configure Signaling Routes has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

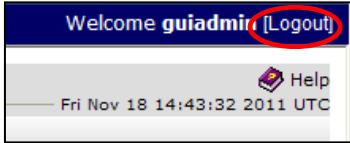

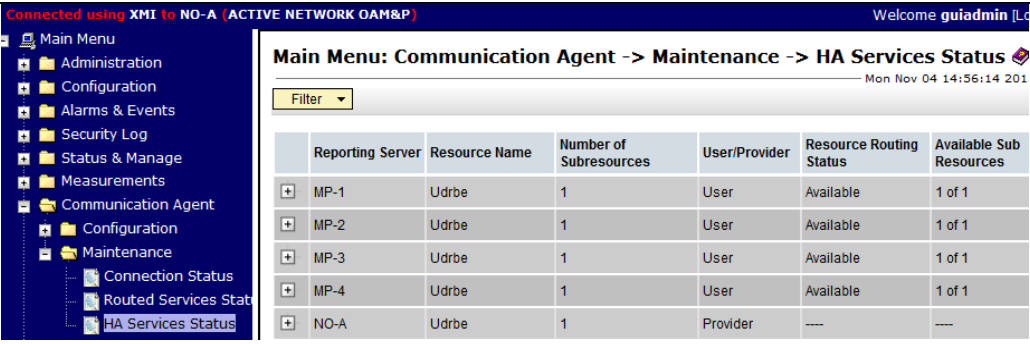
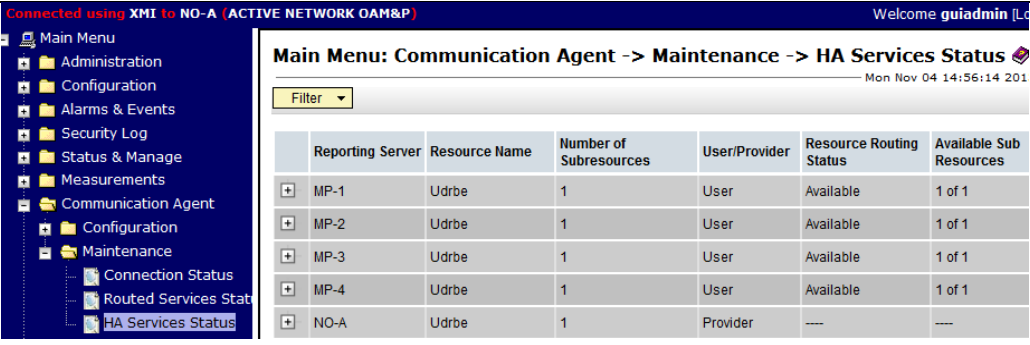
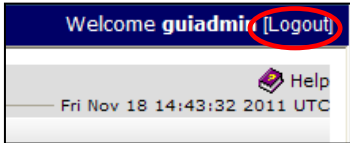
Procedure 12: Configure SPR Application on MP (All SOAM Sites)

Step	Procedure	Result
1.	SOAM VIP: Launch an approved web browser and connect to the NOAMP Server A IP address NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning. Login to the GUI using the default user and password.	

Procedure 12: Configure SPR Application on MP (All SOAM Sites)

Step	Procedure	Result																																			
2.	<p>SOAM VIP:</p> <p>Select...</p> <p>Main Menu → Diameter Common → MPs → Profile Assignments</p> <p>Select profile as UDRVM:Database and click on Assign</p>	<p>Normal Capacity Configuration:</p>  <table border="1"> <thead> <tr> <th>UDR-MP</th> <th>MP Profile</th> <th>current value</th> </tr> </thead> <tbody> <tr> <td>BL908050105-s1-mp1</td> <td>UDRVM:Database</td> <td>The current MP Profile for BL908050105-Virtualized UDR-MP on OCUDR Rack-M</td> </tr> <tr> <td>BL908050105-s1-mp2</td> <td>UDRVM:Database</td> <td>The current MP Profile for BL908050105-Virtualized UDR-MP on OCUDR Rack-M</td> </tr> <tr> <td>BL908050106-s1-mp3</td> <td>UDRVM:Database</td> <td>The current MP Profile for BL908050106-Virtualized UDR-MP on OCUDR Rack-M</td> </tr> <tr> <td>BL908050106-s1-mp4</td> <td>UDRVM:Database</td> <td>The current MP Profile for BL908050106-Virtualized UDR-MP on OCUDR Rack-M</td> </tr> </tbody> </table>	UDR-MP	MP Profile	current value	BL908050105-s1-mp1	UDRVM:Database	The current MP Profile for BL908050105-Virtualized UDR-MP on OCUDR Rack-M	BL908050105-s1-mp2	UDRVM:Database	The current MP Profile for BL908050105-Virtualized UDR-MP on OCUDR Rack-M	BL908050106-s1-mp3	UDRVM:Database	The current MP Profile for BL908050106-Virtualized UDR-MP on OCUDR Rack-M	BL908050106-s1-mp4	UDRVM:Database	The current MP Profile for BL908050106-Virtualized UDR-MP on OCUDR Rack-M																				
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3.	<p>SOAM VIP:</p> <p>Select...</p> <p>Main Menu → Diameter → Maintenance → Applications</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>DSR Application Name</th> <th>MP Server Hostname</th> <th>Admin State</th> <th>Operational Status</th> <th>Operational Reason</th> </tr> </thead> <tbody> <tr> <td>SPR</td> <td>MP</td> <td>Enabled</td> <td>Available</td> <td>Normal</td> </tr> </tbody> </table>	DSR Application Name	MP Server Hostname	Admin State	Operational Status	Operational Reason	SPR	MP	Enabled	Available	Normal																									
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SPR	MP	Enabled	Available	Normal																																	
4.	<p>SOAM VIP:</p> <p>1) Select the “SPR” Application on each “MP” using the mouse and holding the Ctrl key. The line entries should be highlighted in GREEN.</p> <p>2) Click on Enable Button</p>	<p>Main Menu: Diameter -> Maintenance -> Applications</p>  <table border="1"> <thead> <tr> <th>DSR Application Name</th> <th>MP Server Hostname</th> <th>Admin State</th> <th>Operational Status</th> <th>Operational Reason</th> <th>Congestion Level</th> <th>Time of</th> </tr> </thead> <tbody> <tr> <td>SPR</td> <td>MP-1</td> <td>Disabled</td> <td>Unk</td> <td>Unk</td> <td>Unk</td> <td>Unk</td> </tr> <tr> <td>SPR</td> <td>MP-3</td> <td>Disabled</td> <td>Unk</td> <td>Unk</td> <td>Unk</td> <td>Unk</td> </tr> <tr> <td>SPR</td> <td>MP-2</td> <td>Disabled</td> <td>Unk</td> <td>Unk</td> <td>Unk</td> <td>Unk</td> </tr> <tr> <td>SPR</td> <td>MP-4</td> <td>Disabled</td> <td>Unk</td> <td>Unk</td> <td>Unk</td> <td>Unk</td> </tr> </tbody> </table> <p>Enable Disable</p>	DSR Application Name	MP Server Hostname	Admin State	Operational Status	Operational Reason	Congestion Level	Time of	SPR	MP-1	Disabled	Unk	Unk	Unk	Unk	SPR	MP-3	Disabled	Unk	Unk	Unk	Unk	SPR	MP-2	Disabled	Unk	Unk	Unk	Unk	SPR	MP-4	Disabled	Unk	Unk	Unk	Unk
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SPR	MP-2	Disabled	Unk	Unk	Unk	Unk																															
SPR	MP-4	Disabled	Unk	Unk	Unk	Unk																															
5.	<p>SOAM VIP:</p> <p>The user should be presented with a banner information message stating “Enabled application”.</p>	 <table border="1"> <thead> <tr> <th>DSR Application Name</th> <th>MP Server Hostname</th> <th>Admin State</th> <th>Operational Status</th> </tr> </thead> <tbody> <tr> <td>SPR</td> <td>MP-3</td> <td>Enabled</td> <td>Unk</td> </tr> <tr> <td>SPR</td> <td>MP-2</td> <td>Enabled</td> <td>Unk</td> </tr> </tbody> </table>	DSR Application Name	MP Server Hostname	Admin State	Operational Status	SPR	MP-3	Enabled	Unk	SPR	MP-2	Enabled	Unk																							
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Procedure 12: Configure SPR Application on MP (All SOAM Sites)

Step	Procedure	Result																																				
6.	<p>SOAM VIP:</p> <p>Click the “Logout” link on the server GUI.</p>																																					
7.	<p>Active NOAMP VIP:</p> <p>The user should be presented the login screen shown on the right.</p> <p>Login to the GUI using the default user and password.</p>																																					
8.	<p>Active NOAMP VIP:</p> <p>Verify service appears on NOAMP GUI page</p> <p>Select...</p> <p>Main Menu → Communication Agent → Maintenance → HA Services Status</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>Reporting Server</th> <th>Resource Name</th> <th>Number of Subresources</th> <th>User/Provider</th> <th>Resource Routing Status</th> <th>Available Sub Resources</th> </tr> </thead> <tbody> <tr> <td>MP-1</td> <td>Udrbe</td> <td>1</td> <td>User</td> <td>Available</td> <td>1 of 1</td> </tr> <tr> <td>MP-2</td> <td>Udrbe</td> <td>1</td> <td>User</td> <td>Available</td> <td>1 of 1</td> </tr> <tr> <td>MP-3</td> <td>Udrbe</td> <td>1</td> <td>User</td> <td>Available</td> <td>1 of 1</td> </tr> <tr> <td>MP-4</td> <td>Udrbe</td> <td>1</td> <td>User</td> <td>Available</td> <td>1 of 1</td> </tr> <tr> <td>NO-A</td> <td>Udrbe</td> <td>1</td> <td>Provider</td> <td>---</td> <td>---</td> </tr> </tbody> </table>	Reporting Server	Resource Name	Number of Subresources	User/Provider	Resource Routing Status	Available Sub Resources	MP-1	Udrbe	1	User	Available	1 of 1	MP-2	Udrbe	1	User	Available	1 of 1	MP-3	Udrbe	1	User	Available	1 of 1	MP-4	Udrbe	1	User	Available	1 of 1	NO-A	Udrbe	1	Provider	---	---
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10.	<p>Active NOAMP VIP:</p> <p>Click the “Logout” link on the server GUI.</p>																																					
THIS PROCEDURE HAS BEEN COMPLETED																																						

7.3 Configure NOAMP Signaling Routes (All NOAM Sites)

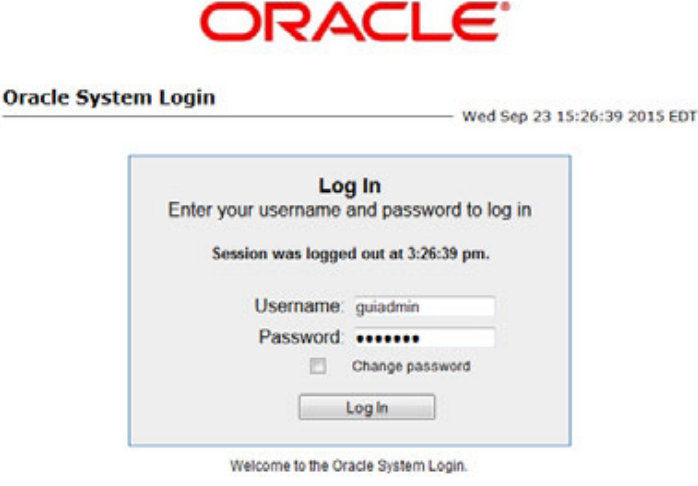

This procedure configures the XSI signaling route for the NOAMP and DR NOAMP Server Groups.

Requirements:

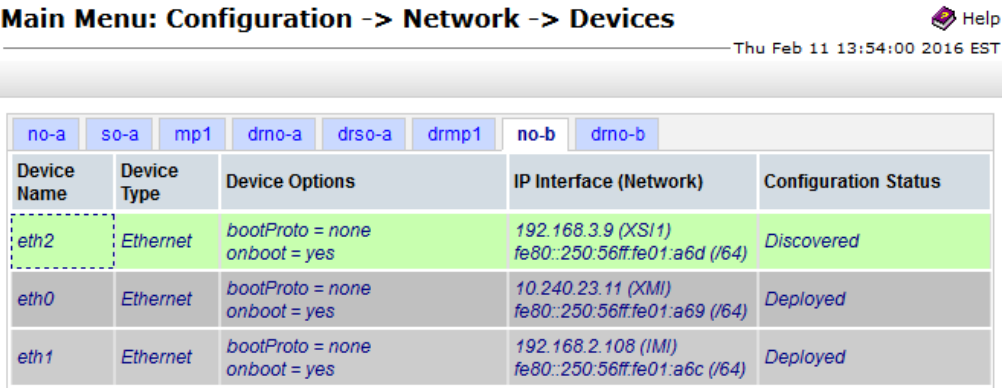
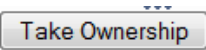
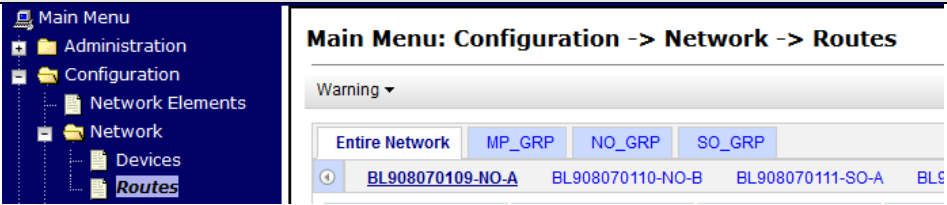
- **Section 7.2 Configure SPR Application on MP (All SOAM Sites)** has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.


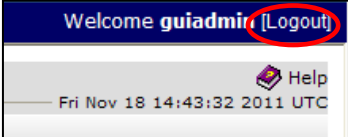
Procedure 13: Configure NOAMP Signaling Routes (All NOAM Sites)

Step	Procedure	Result
<p>1.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>	
<p>2.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP Select...</p> <p>Main Menu → Configuration → Network → Devices</p> <p>...as shown on the right.</p>	 <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A (XSI-1) <input type="checkbox"/> NOAMP-B (XSI-1)</p>

Procedure 13: Configure NOAMP Signaling Routes (All NOAM Sites)

Step	Procedure	Result																				
3.	<p>Active NOAMP VIP</p> <p>Select the xsi device for the desired NOAMP</p>	<p>Click on the desired NOAMP tab. Select the xsi1 device. Output similar to that shown below may be observed.</p>  <p>Main Menu: Configuration -> Network -> Devices</p> <p>Thu Feb 11 13:54:00 2016 EST</p> <table border="1"> <thead> <tr> <th>Device Name</th> <th>Device Type</th> <th>Device Options</th> <th>IP Interface (Network)</th> <th>Configuration Status</th> </tr> </thead> <tbody> <tr> <td>eth2</td> <td>Ethernet</td> <td>bootProto = none onboot = yes</td> <td>192.168.3.9 (XSI1) fe80::250:56ff:fe01:a6d (/64)</td> <td>Discovered</td> </tr> <tr> <td>eth0</td> <td>Ethernet</td> <td>bootProto = none onboot = yes</td> <td>10.240.23.11 (XMI) fe80::250:56ff:fe01:a69 (/64)</td> <td>Deployed</td> </tr> <tr> <td>eth1</td> <td>Ethernet</td> <td>bootProto = none onboot = yes</td> <td>192.168.2.108 (IMI) fe80::250:56ff:fe01:a6c (/64)</td> <td>Deployed</td> </tr> </tbody> </table> <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A (XSI-1) <input type="checkbox"/> NOAMP-B (XSI-1)</p>	Device Name	Device Type	Device Options	IP Interface (Network)	Configuration Status	eth2	Ethernet	bootProto = none onboot = yes	192.168.3.9 (XSI1) fe80::250:56ff:fe01:a6d (/64)	Discovered	eth0	Ethernet	bootProto = none onboot = yes	10.240.23.11 (XMI) fe80::250:56ff:fe01:a69 (/64)	Deployed	eth1	Ethernet	bootProto = none onboot = yes	192.168.2.108 (IMI) fe80::250:56ff:fe01:a6c (/64)	Deployed
Device Name	Device Type	Device Options	IP Interface (Network)	Configuration Status																		
eth2	Ethernet	bootProto = none onboot = yes	192.168.3.9 (XSI1) fe80::250:56ff:fe01:a6d (/64)	Discovered																		
eth0	Ethernet	bootProto = none onboot = yes	10.240.23.11 (XMI) fe80::250:56ff:fe01:a69 (/64)	Deployed																		
eth1	Ethernet	bootProto = none onboot = yes	192.168.2.108 (IMI) fe80::250:56ff:fe01:a6c (/64)	Deployed																		
4.	<p>Active NOAMP VIP</p> <p>Edit the xsi device for the desired NOAMP</p>	<p>Click on the Take Ownership button.</p>  <p>“Check off” the associated Check Box as addition is completed for each Server.</p> <p><input type="checkbox"/> NOAMP-A (XSI-1) <input type="checkbox"/> NOAMP-B (XSI-1)</p>																				
5.	<p>Active NOAMP VIP</p> <p>Repeat as required.</p>	<p>Repeat Steps 3 - 4 for each NOAMP and its Signaling network(s).</p> <p>NOTE: Steps 6 - 8 are only needed for geo-redundant systems.</p>																				
6.	<p>Active NOAMP VIP:</p> <p>Select...</p> <p>Main Menu → Configuration → Network → Routes</p> <p>...as shown on the right.</p>	 <p>Main Menu: Configuration -> Network -> Routes</p> <p>Warning</p> <p>Entire Network MP_GRP NO_GRP SO_GRP</p> <table border="1"> <tbody> <tr> <td>BL908070109-NO-A</td> <td>BL908070110-NO-B</td> <td>BL908070111-SO-A</td> <td>BL908070112-SO-B</td> </tr> </tbody> </table>	BL908070109-NO-A	BL908070110-NO-B	BL908070111-SO-A	BL908070112-SO-B																
BL908070109-NO-A	BL908070110-NO-B	BL908070111-SO-A	BL908070112-SO-B																			

Procedure 13: Configure NOAMP Signaling Routes (All NOAM Sites)

Step	Procedure	Result																		
7.	<p>Active NOAMP VIP:</p> <p>Insert a new route for the NOAMP or DR NOAMP Server group.</p>	<p>Click on the desired Server Group tab on the top line. Then click on the Entire Server Group tab on the line below Server Group line. Output similar to that shown below may be observed.</p> <p>Main Menu: Configuration -> Network -> Routes</p>  <p>Click on the Insert button</p>																		
8.	<p>Active NOAMP VIP:</p> <p>Add signaling route</p>	<p>Main Menu: Configuration -> Network -> Routes [Insert]</p> <p>Wed Sep 23 17:18:48 2015</p> <p>Insert Route on NO_grp</p> <table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Route Type</td> <td> <input type="radio"/> Net <input type="radio"/> Default <input type="radio"/> Host* </td> <td>Select a route type. [Default = N/A. Options = Net, Default, Host. You can configure at most one IPV4 default route and one IPV6 default route on a given target machine.]</td> </tr> <tr> <td>Device</td> <td>- Select Device - *</td> <td>Select the network device name through which traffic is being routed. The selction of AUTO will result in the device being selected automatically, if possible. [Default = N/A. Range = Provisioned devices on the selected server.]</td> </tr> <tr> <td>Destination</td> <td><input type="text"/></td> <td>The destination network address. [Default = N/A. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.]</td> </tr> <tr> <td>Netmask</td> <td><input type="text"/></td> <td>A valid netmask for the network route destination IP address. [Default = N/A. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.]</td> </tr> <tr> <td>Gateway IP</td> <td><input type="text"/> *</td> <td>The IP address of the gateway for this route. [Default = N/A. Range = Valid IP address of the gateway in dotted decimal (IPv4) or colon hex (IPv6) format.]</td> </tr> </tbody> </table> <p>Ok Apply Cancel</p> <p>Set Route Type to Net Set Device to eth2 Enter Destination: This is the network address of the remote MP server group that will connect to UDR NOAMP for ComAgent service, Enter Netmask for the remote network. Enter Gateway IP: This is the gateway for UDR's signaling network. Click Apply button</p>	Field	Value	Description	Route Type	<input type="radio"/> Net <input type="radio"/> Default <input type="radio"/> Host*	Select a route type. [Default = N/A. Options = Net, Default, Host. You can configure at most one IPV4 default route and one IPV6 default route on a given target machine.]	Device	- Select Device - *	Select the network device name through which traffic is being routed. The selction of AUTO will result in the device being selected automatically, if possible. [Default = N/A. Range = Provisioned devices on the selected server.]	Destination	<input type="text"/>	The destination network address. [Default = N/A. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.]	Netmask	<input type="text"/>	A valid netmask for the network route destination IP address. [Default = N/A. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.]	Gateway IP	<input type="text"/> *	The IP address of the gateway for this route. [Default = N/A. Range = Valid IP address of the gateway in dotted decimal (IPv4) or colon hex (IPv6) format.]
Field	Value	Description																		
Route Type	<input type="radio"/> Net <input type="radio"/> Default <input type="radio"/> Host*	Select a route type. [Default = N/A. Options = Net, Default, Host. You can configure at most one IPV4 default route and one IPV6 default route on a given target machine.]																		
Device	- Select Device - *	Select the network device name through which traffic is being routed. The selction of AUTO will result in the device being selected automatically, if possible. [Default = N/A. Range = Provisioned devices on the selected server.]																		
Destination	<input type="text"/>	The destination network address. [Default = N/A. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.]																		
Netmask	<input type="text"/>	A valid netmask for the network route destination IP address. [Default = N/A. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.]																		
Gateway IP	<input type="text"/> *	The IP address of the gateway for this route. [Default = N/A. Range = Valid IP address of the gateway in dotted decimal (IPv4) or colon hex (IPv6) format.]																		
9.	<p>Repeat Steps 6 - 8 if MP ↔ ComAgent communication is intended to be configured on XSI1 .</p> <p>Note: Destination would be DR Site XSI1 Address if configuring Primary Site and vice-versa. Note: Netmask would be DR Site XSI1 Address if configuring Primary Site and vice-versa. Note: Gateway IP would be Primary Site XSI1 Gateway if configuring Primary Site and vice-versa.</p>																			
10.	<p>Active NOAMP VIP:</p> <p>Click the “Logout” link on the server GUI.</p>																			
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>																				

7.4 Configure Services on Signaling Network


This procedure configures ComAgent communication between NOAMP and MP to use Signaling Network. This procedure also configures dual path HA heartbeat to use the XSI network.

Requirements:

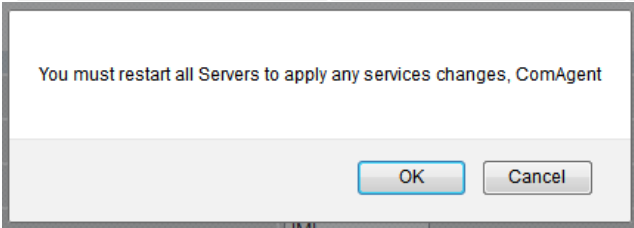
- Section 7.3 Configure NOAMP Signaling Routes (All NOAM Sites) has been completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 14: Configure Services on Signaling Network

Step	Procedure	Result																								
1. <input type="checkbox"/>	<p>Active NOAMP VIP: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>																									
2. <input type="checkbox"/>	<p>Active NOAMP VIP: Select...</p> <p>Main Menu → Configuration → Services</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>Name</th> <th>Intra-NE Network</th> <th>Inter-NE Network</th> </tr> </thead> <tbody> <tr> <td>OAM</td> <td>IR</td> <td>XXI</td> </tr> <tr> <td>Replication</td> <td>IR</td> <td>XXI</td> </tr> <tr> <td>Signaling</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>HA_Secondary</td> <td>IR</td> <td>XXI</td> </tr> <tr> <td>HA_MP_Secondary</td> <td>IR</td> <td>XXI</td> </tr> <tr> <td>Replication_MP</td> <td>IR</td> <td>XXI</td> </tr> <tr> <td>ComAgent</td> <td>IR</td> <td>XXI</td> </tr> </tbody> </table>	Name	Intra-NE Network	Inter-NE Network	OAM	IR	XXI	Replication	IR	XXI	Signaling	Unspecified	Unspecified	HA_Secondary	IR	XXI	HA_MP_Secondary	IR	XXI	Replication_MP	IR	XXI	ComAgent	IR	XXI
Name	Intra-NE Network	Inter-NE Network																								
OAM	IR	XXI																								
Replication	IR	XXI																								
Signaling	Unspecified	Unspecified																								
HA_Secondary	IR	XXI																								
HA_MP_Secondary	IR	XXI																								
Replication_MP	IR	XXI																								
ComAgent	IR	XXI																								

Procedure 14: Configure Services on Signaling Network

Step	Procedure	Result																								
3. <input type="checkbox"/>	<p>Active NOAMP VIP:</p> <p>1) Set two services values as shown on the right. Inter-NE HA_Secondary → XSI1 Inter-NE ComAgent → XSI1.</p> <p>2) Select the “Apply” dialogue button.</p> <p>3) Select the “OK” dialogue button in the popup window.</p>	<table border="1"> <thead> <tr> <th>Name</th> <th>Intra-NE Network</th> <th>Inter-NE Network</th> </tr> </thead> <tbody> <tr> <td>OAM</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Replication</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Signaling</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>HA_Secondary</td> <td>IMI</td> <td>XSI1</td> </tr> <tr> <td>HA_MP_Secondary</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Replication_MP</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>ComAgent</td> <td>IMI</td> <td>XSI1</td> </tr> </tbody> </table>  <p>NOAMP and MP Servers need to be restarted.</p>	Name	Intra-NE Network	Inter-NE Network	OAM	IMI	XMI	Replication	IMI	XMI	Signaling	Unspecified	Unspecified	HA_Secondary	IMI	XSI1	HA_MP_Secondary	IMI	XMI	Replication_MP	IMI	XMI	ComAgent	IMI	XSI1
Name	Intra-NE Network	Inter-NE Network																								
OAM	IMI	XMI																								
Replication	IMI	XMI																								
Signaling	Unspecified	Unspecified																								
HA_Secondary	IMI	XSI1																								
HA_MP_Secondary	IMI	XMI																								
Replication_MP	IMI	XMI																								
ComAgent	IMI	XSI1																								
4. <input type="checkbox"/>	<p>Active NOAMP VIP:</p> <p>The user will be presented with the “Services” configuration screen as shown on the right</p>	<table border="1"> <thead> <tr> <th>Name</th> <th>Intra-NE Network</th> <th>Inter-NE Network</th> </tr> </thead> <tbody> <tr> <td>OAM</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Replication</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Signaling</td> <td>Unspecified</td> <td>Unspecified</td> </tr> <tr> <td>HA_Secondary</td> <td>IMI</td> <td>XSI1</td> </tr> <tr> <td>HA_MP_Secondary</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>Replication_MP</td> <td>IMI</td> <td>XMI</td> </tr> <tr> <td>ComAgent</td> <td>IMI</td> <td>XSI1</td> </tr> </tbody> </table>	Name	Intra-NE Network	Inter-NE Network	OAM	IMI	XMI	Replication	IMI	XMI	Signaling	Unspecified	Unspecified	HA_Secondary	IMI	XSI1	HA_MP_Secondary	IMI	XMI	Replication_MP	IMI	XMI	ComAgent	IMI	XSI1
Name	Intra-NE Network	Inter-NE Network																								
OAM	IMI	XMI																								
Replication	IMI	XMI																								
Signaling	Unspecified	Unspecified																								
HA_Secondary	IMI	XSI1																								
HA_MP_Secondary	IMI	XMI																								
Replication_MP	IMI	XMI																								
ComAgent	IMI	XSI1																								
5. <input type="checkbox"/>	<p>Restart all NOAMP and MP Servers</p>	<p># reboot</p> <p>Note: This should be executed on all NOAMPs and MPs.</p>																								
THIS PROCEDURE HAS BEEN COMPLETED																										

7.5 Accept Installation


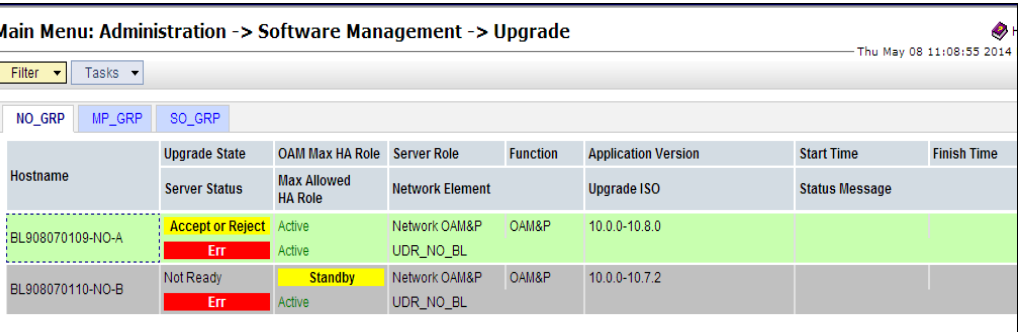
The upgrade needs either to be accepted or rejected before any subsequent upgrades are performed in the future.

The Alarm 32532 (Server Upgrade Pending Accept/Reject) will be displayed for each server until one of these two actions (accept or reject) is performed.

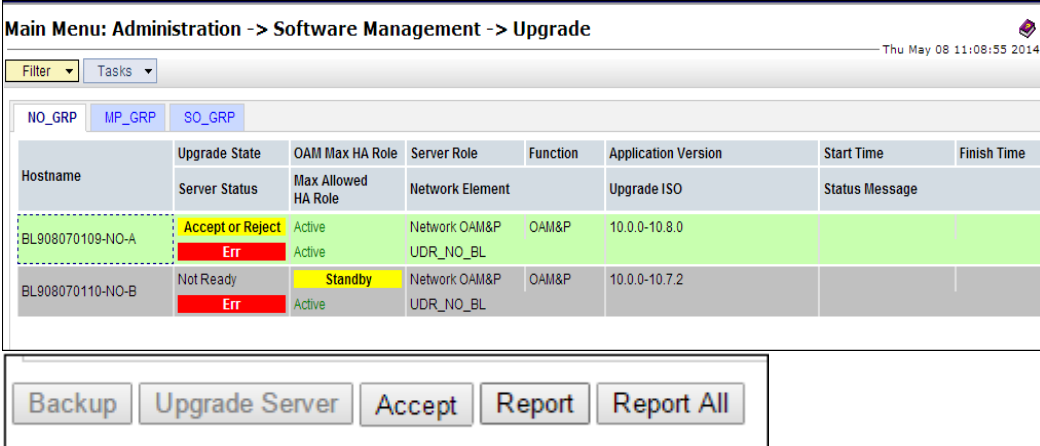
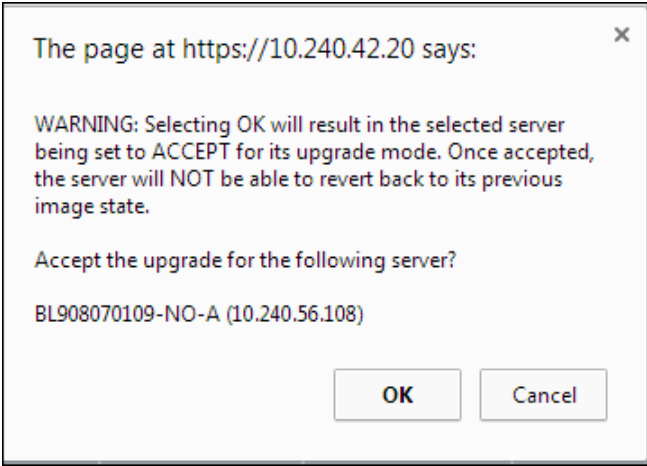
An upgrade should be accepted only after it was determined to be successful as the accept is final. This frees up file storage but prevents a backout from the previous upgrade.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 15: Accept Installation

Step	Procedure	Result																														
1. <input type="checkbox"/>	<p>Active NOAMP VIP: Launch an approved web browser and connect to the NOAMP Server A IP address</p> <p>NOTE: Choose “Continue to this website (not recommended)” if presented with the “security certificate” warning.</p> <p>Login to the GUI using the default user and password.</p>																															
2. <input type="checkbox"/>	<p>Active NOAMP VIP:</p> <p>Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>NO_GRP</th> <th>MP_GRP</th> <th>SO_GRP</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> <th>Application Version</th> <th>Start Time</th> <th>Finish Time</th> </tr> </thead> <tbody> <tr> <td>BL908070109-NO-A</td> <td></td> <td></td> <td>Accept or Reject Err</td> <td>Active</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>10.0.0-10.8.0</td> <td></td> <td></td> </tr> <tr> <td>BL908070110-NO-B</td> <td></td> <td></td> <td>Not Ready Err</td> <td>Standby</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>10.0.0-10.7.2</td> <td></td> <td></td> </tr> </tbody> </table>	NO_GRP	MP_GRP	SO_GRP	Upgrade State	OAM Max HA Role	Server Role	Function	Application Version	Start Time	Finish Time	BL908070109-NO-A			Accept or Reject Err	Active	Network OAM&P	OAM&P	10.0.0-10.8.0			BL908070110-NO-B			Not Ready Err	Standby	Network OAM&P	OAM&P	10.0.0-10.7.2		
NO_GRP	MP_GRP	SO_GRP	Upgrade State	OAM Max HA Role	Server Role	Function	Application Version	Start Time	Finish Time																							
BL908070109-NO-A			Accept or Reject Err	Active	Network OAM&P	OAM&P	10.0.0-10.8.0																									
BL908070110-NO-B			Not Ready Err	Standby	Network OAM&P	OAM&P	10.0.0-10.7.2																									

Procedure 15: Accept Installation

Step	Procedure	Result
<p>3.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP (GUI):</p> <p>Accept upgrade for selected server(s)</p>	<p>Accept upgrade of selected server(s) Select the server on which upgrade is to be accepted. Click the “Accept” button</p>  <p>The screenshot shows the 'Main Menu: Administration -> Software Management -> Upgrade' interface. It features a table with columns for Hostname, Upgrade State, OAM Max HA Role, Server Role, Function, Application Version, Start Time, and Finish Time. The table lists two servers: BL908070109-NO-A and BL908070110-NO-B. The first server is highlighted in green and has an 'Accept or Reject' button. The second server is highlighted in grey and has a 'Standby' button. Below the table are buttons for 'Backup', 'Upgrade Server', 'Accept', 'Report', and 'Report All'.</p> <p>A confirmation dialog will warn that once upgrade is accepted, the servers will not be able to revert back to their previous image states.</p>  <p>The dialog box contains the following text: 'WARNING: Selecting OK will result in the selected server being set to ACCEPT for its upgrade mode. Once accepted, the server will NOT be able to revert back to its previous image state. Accept the upgrade for the following server? BL908070109-NO-A (10.240.56.108)'. It has 'OK' and 'Cancel' buttons.</p> <p>Click “OK” The Upgrade Administration screen re-displays. A pull-down Info message will indicate the server(s) on which upgrade was accepted.</p>
<p>4.</p> <p><input type="checkbox"/></p>	<p>Active NOAMP VIP:</p> <p>Accept upgrade of the rest of the system</p>	<p>Accept Upgrade on all remaining servers in the system:</p> <p>Repeat all sub-steps of step 3 of this procedure on remaining servers until the upgrade of all servers in the User Data Repository system has been accepted.</p> <p>Note: As upgrade is accepted on each server the corresponding Alarm ID 32532 (Server Upgrade Pending Accept/Reject) should be removed.</p>

Procedure 15: Accept Installation

Step	Procedure	Result																
5. <input type="checkbox"/>	Active NOAMP VIP: Verify accept	Check that alarms are removed: Navigate to this GUI page Alarms & Events > View Active <div style="border: 1px solid black; padding: 5px;"> <p>Main Menu: Alarms & Events -> View Active</p> <hr/> <p>Filter ▾ Tasks ▾</p> <hr/> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Seq #</th> <th style="width: 20%;">Event ID</th> <th style="width: 25%;">Timestamp</th> <th style="width: 10%;">Severity</th> <th style="width: 10%;">Product</th> <th style="width: 10%;">Process</th> <th style="width: 10%;">NE</th> <th style="width: 15%;">Server</th> </tr> </thead> <tbody> <tr> <td></td> <td colspan="2">Alarm Text</td> <td colspan="5">Additional Info</td> </tr> </tbody> </table> </div> Verify that Alarm ID 32532 (Server Upgrade Pending Accept/Reject) is not displayed under active alarms on User Data Repository system <p style="text-align: center;">THIS PROCEDURE HAS BEEN COMPLETED</p>	Seq #	Event ID	Timestamp	Severity	Product	Process	NE	Server		Alarm Text		Additional Info				
Seq #	Event ID	Timestamp	Severity	Product	Process	NE	Server											
	Alarm Text		Additional Info															

8.0 APPENDIXES


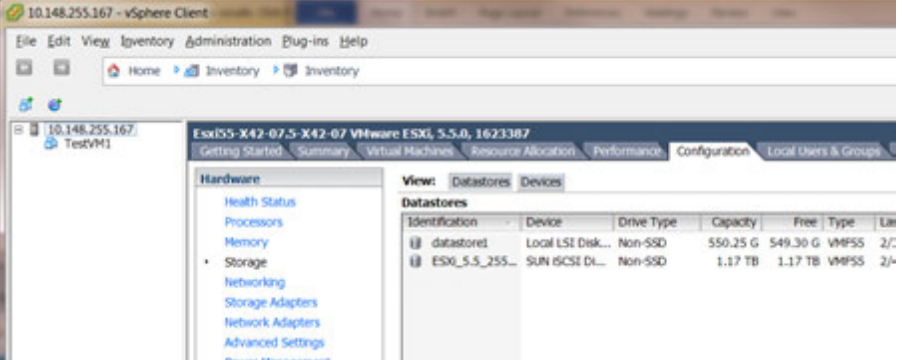
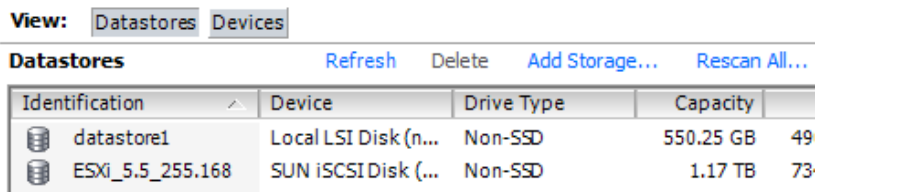
Appendix A. VMWARE VSPHERE ENVIRONMENT SETUP

Important Note: The content of this appendix is for informational purposes only. Please consult the latest documents from the vendor (VMware).

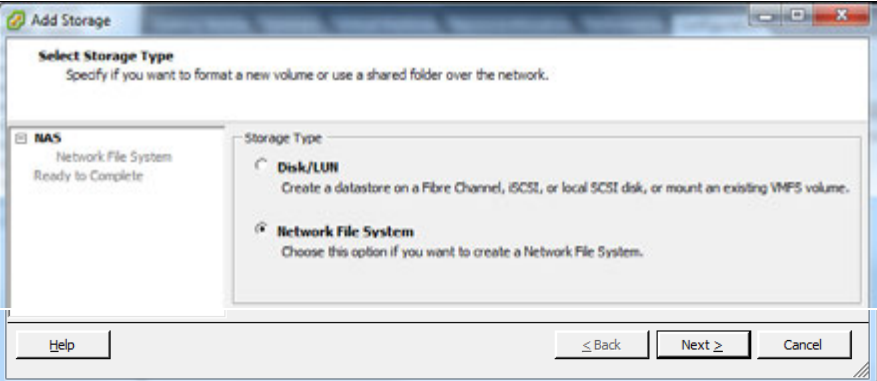
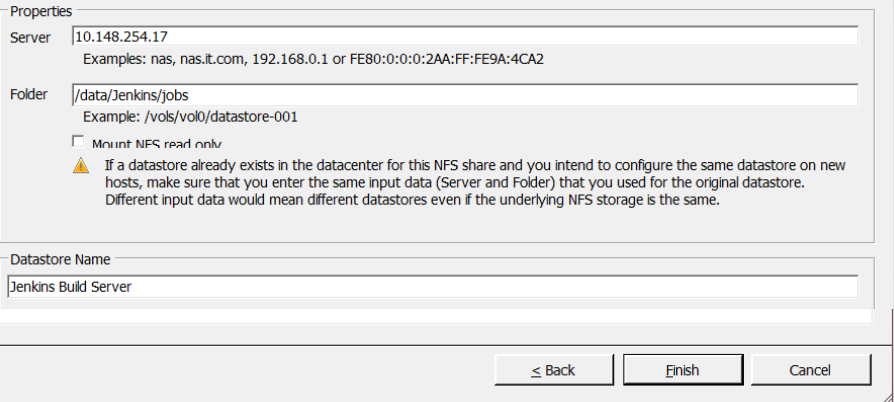
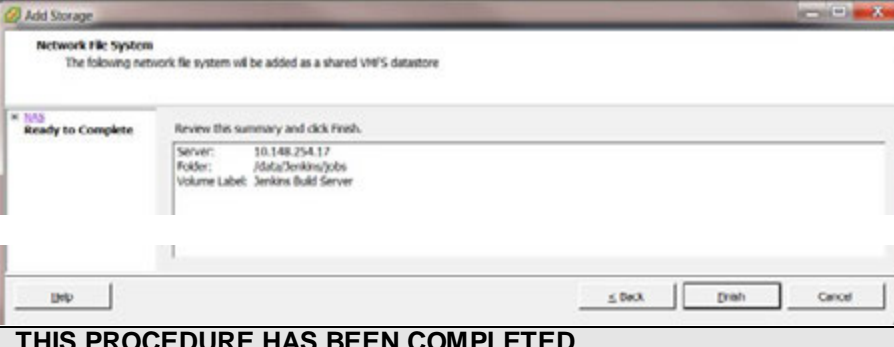
A-1 Host Datastore configuration using vsphere

The following procedure is executed to properly configure a datastore on the Host so that the appropriate storage is available for UDR component VMs. Steps and screenshots are taken from vSphere Client.

Procedure 16: Host Datastore Configuration with vSphere

S T E P #	<p>This procedure configures host networking.</p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p>	
1. <input type="checkbox"/>	Log into the VMware client	
2. <input type="checkbox"/>	VMware client: 1) Select the Host on the left tree menu 2) Click the Configuration tab on right 3) Click Storage under Hardware menu	
3. <input type="checkbox"/>	VMware client: Click “Add Storage...”	

Procedure 16: Host Datastore Configuration with vSphere

<p>4. VMware client:</p> <p><input type="checkbox"/></p> <p>1) Select Network File System storage type</p> <p>2) Click Next</p>	
<p>5. VMware client:</p> <p><input type="checkbox"/></p> <p>1) Enter a Server IP, Folder, and Datastore Name in the provided fields according to the resource availability in your VMware host environment</p> <p>2) Click Next</p>	
<p>6. VMware client:</p> <p><input type="checkbox"/></p> <p>1) Review the Datastore summary</p> <p>2) Click Finish</p>	

THIS PROCEDURE HAS BEEN COMPLETED

A-2 Host networking configuration using vsphere

The following procedure is executed to properly configure the recommended Networking on the Host so that the appropriate vNICs are available for UDR component VMs. Steps and screenshots are taken from vSphere Client.

To view the currently available Networks on the Host, select the **Summary** tab. In the example below several OAM and Signaling Networks have been configured. Each of these is associated with vSwitch on the Host and physical eth.

UDR VMs can be associated with up to 5 vLAN Networks. All 5 vNICs should be created and configured in order to be available for the Guest. The expected vNICs correspond to the following dedicated interfaces of the UDR and so the recommendation is to label them similarly:

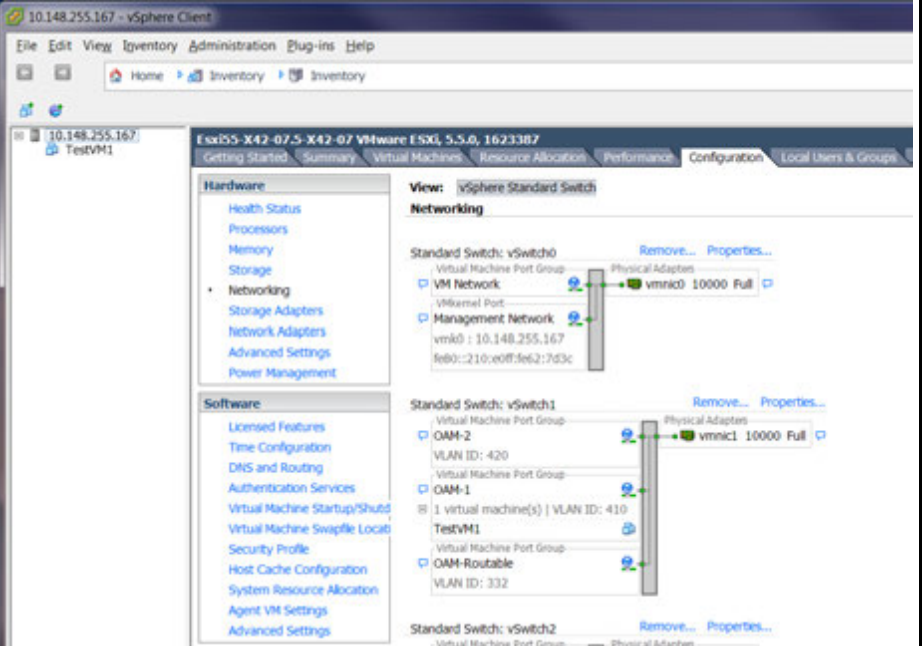
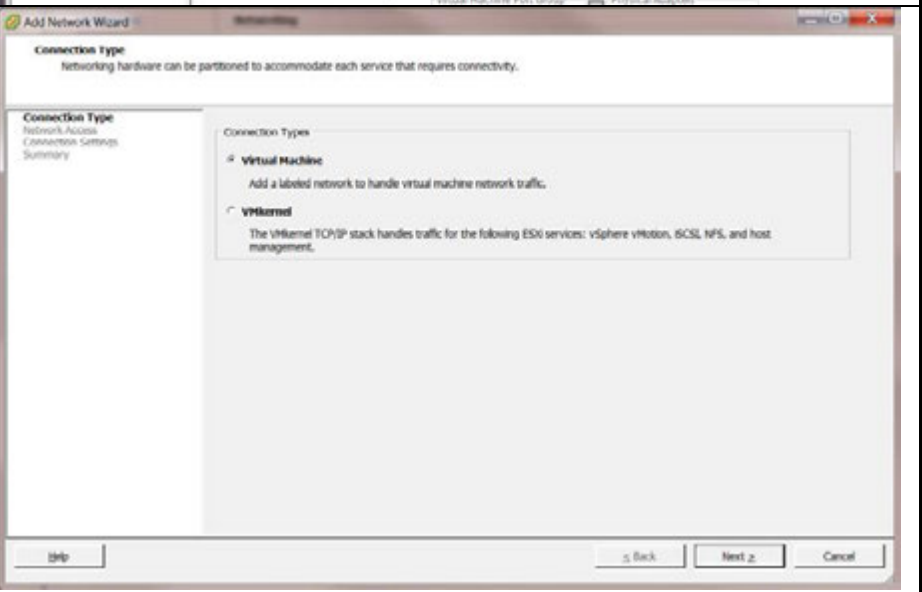
XMI – OAM Management Interface for the application

XSI1 – Signaling Interface

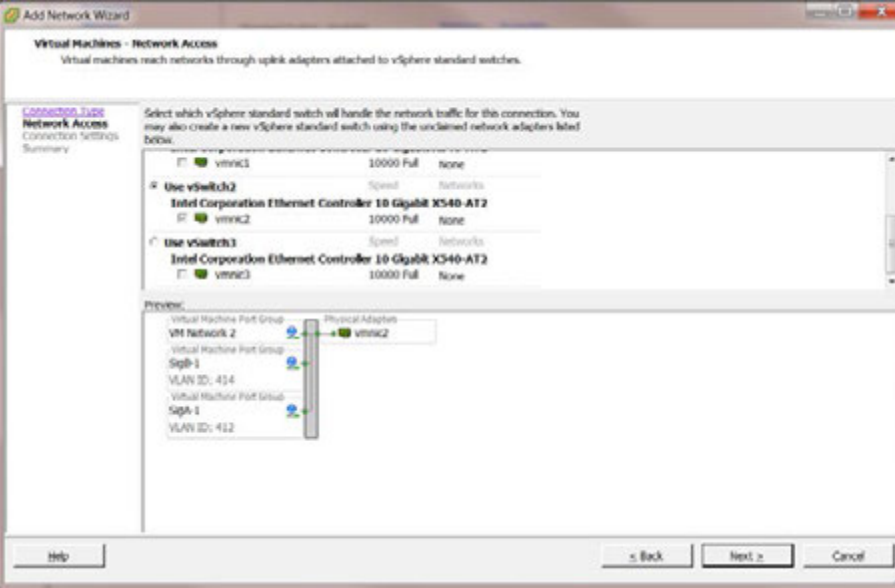
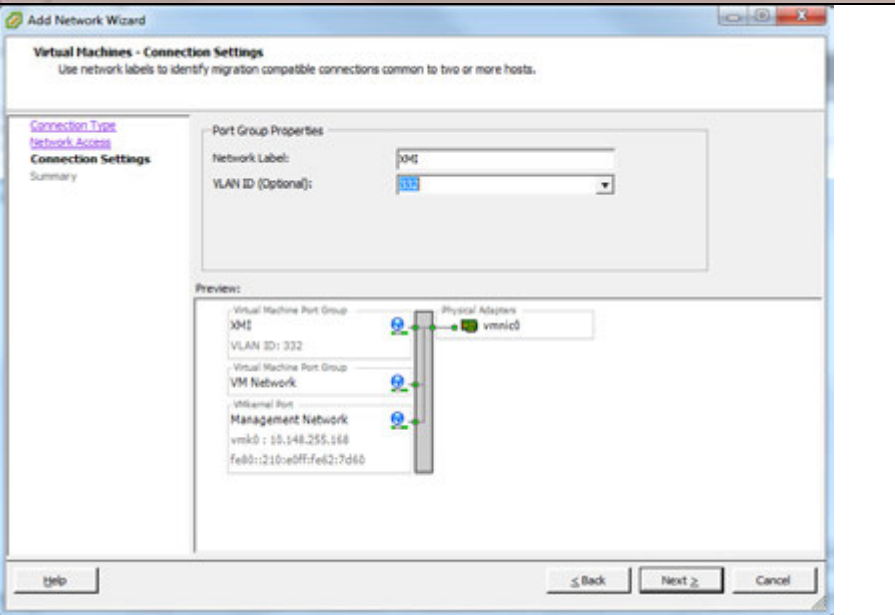
XSI2 – Signaling Interface

IMI – Replication Interface

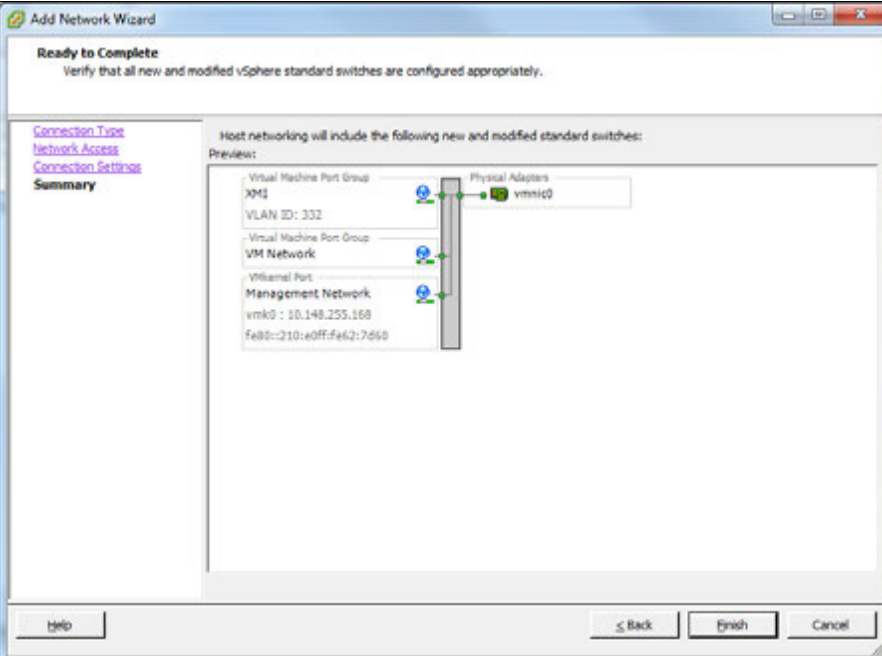
Procedure 17: Host Networking Configuration with vSphere

<p>S T E P #</p>	<p>This procedure configures test networking. Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p>
<p>1. <input type="checkbox"/></p>	<p>Log into the VMware client</p> <div style="border: 1px solid gray; padding: 5px; width: fit-content;"> <p>IP address / Name: <input type="text"/></p> <p>User name: <input type="text"/></p> <p>Password: <input type="password"/></p> </div>
<p>2. <input type="checkbox"/></p>	<p>VMware client:</p> <p>1) Select the Host on the left tree menu</p> <p>2) Click the Configuration tab on right</p> <p>3) Click Networking under Hardware menu</p> 
<p>3. <input type="checkbox"/></p>	<p>VMware client:</p> <p>1) Select Add Networking from top</p> <p>2) Chose connection type Virtual Machine and click Next</p> 

Procedure 17: Host Networking Configuration with vSphere

<p>4. VMware client:</p> <p><input type="checkbox"/> Select appropriate vSwitch type based on the Host hardware and click Next</p>	
<p>5. VMware client:</p> <p><input type="checkbox"/> Label the Network, enter its VLAN ID, click Next</p>	 <p>Note: It is recommended that the name reflect how the Network will be used or referenced from within the Guest, ie XMI, IMI, XS11, etc.</p>

Procedure 17: Host Networking Configuration with vSphere

<p>6. VMware client:</p> <p><input type="checkbox"/> Review input and click Finish</p>		
<p>7. <input type="checkbox"/></p>	<p>Repeat this procedure for each network</p>	<p>Repeat this procedure for each network type that will be supported by this VMWare host:</p> <p><input type="checkbox"/> XMI <input type="checkbox"/> IMI <input type="checkbox"/> XSI-1 <input type="checkbox"/> XSI-2 (optional)</p>
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

Appendix B. VMWARE VSPHERE UDR DEPLOYMENT

Important Note: The content of this appendix is for informational purposes only. Please consult the latest documents from the vendor (VMware).

B-1 Create Guests from OVA


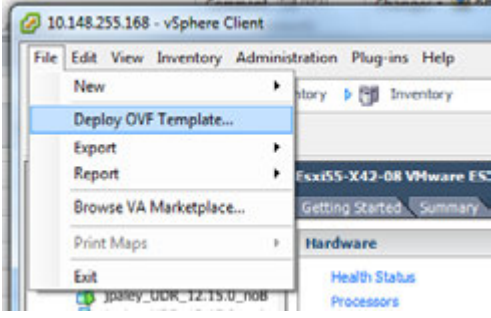
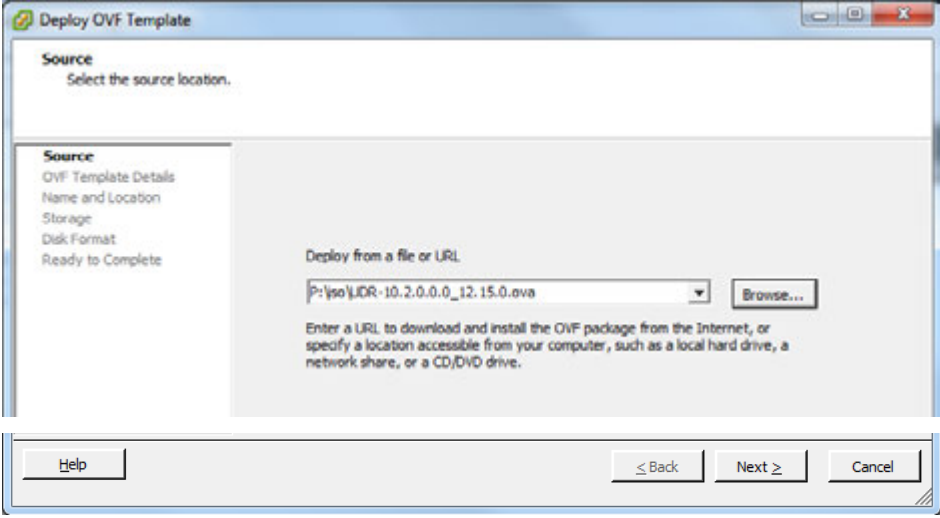
This procedure will create UDR virtual machines (guests) from OVA.

Needed material:

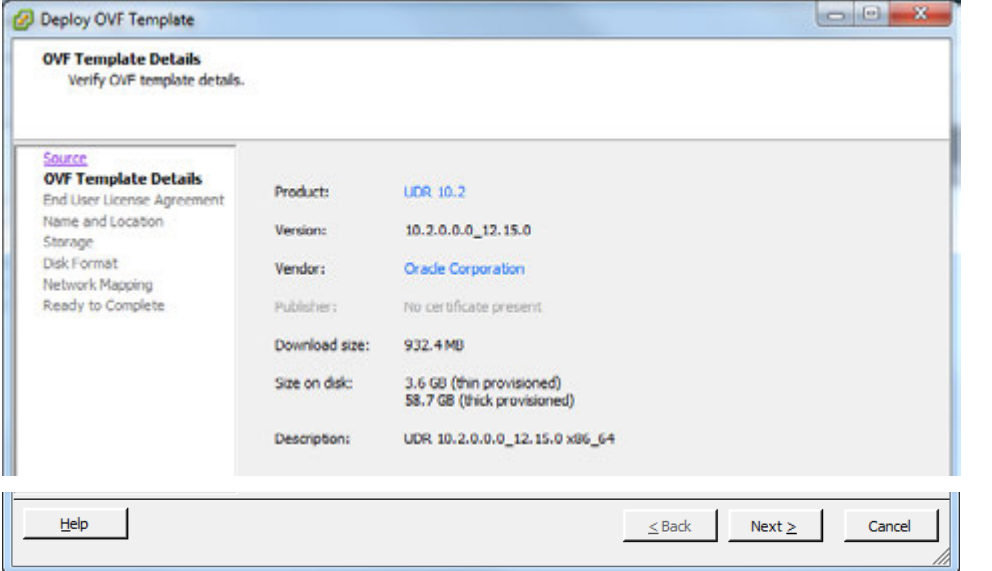
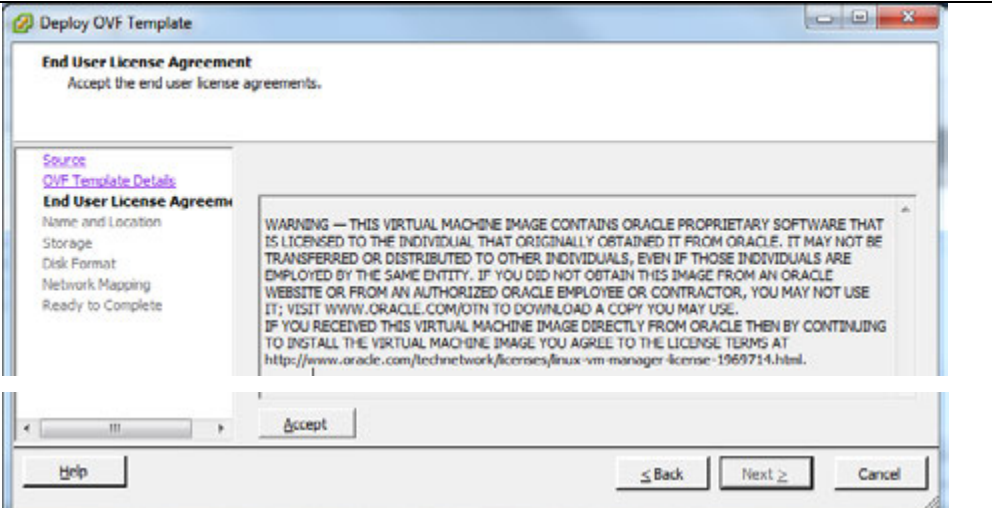
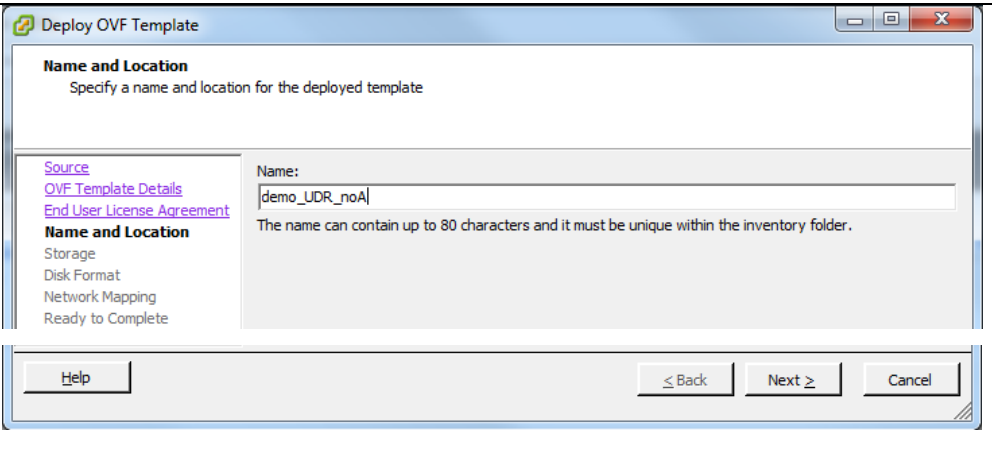
- UDR OVA

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

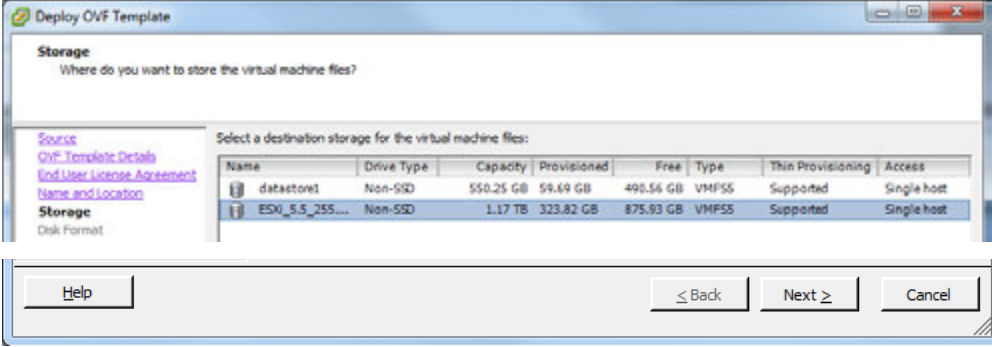
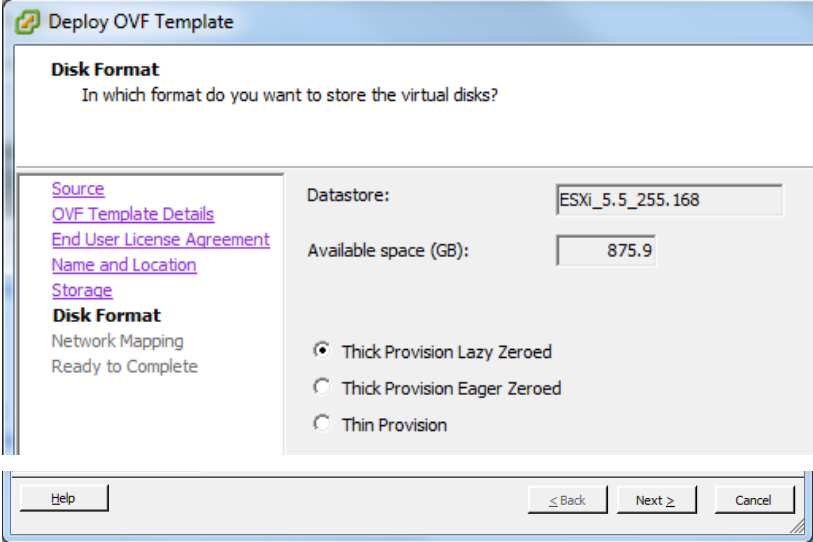
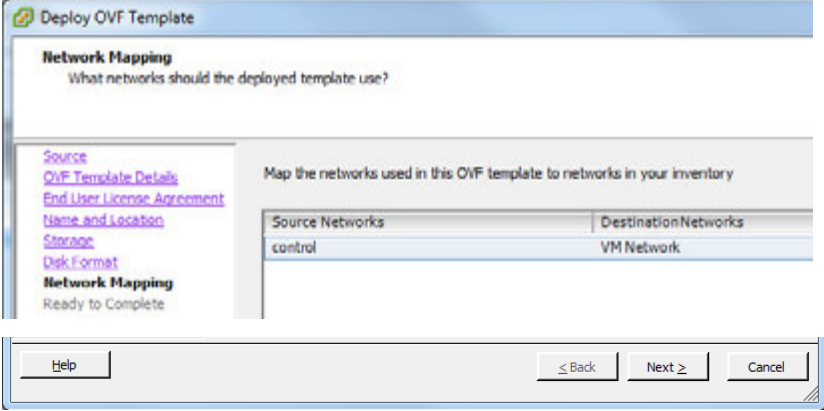
Procedure 18: Deploy UDR OVA

Step	Procedure	Result
1. <input type="checkbox"/>	Log into the VMware client	
2. <input type="checkbox"/>	VMware client: Select... → File → Deploy OVF Template	
3. <input type="checkbox"/>	VMware client: 1) Click Browse button and select the UDR OVA file 2) Click Next	

Procedure 18: Deploy UDR OVA

Step	Procedure	Result
<p>4.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Details screen displays, click Next</p>	 <p>The screenshot shows the 'Deploy OVF Template' window with the 'OVF Template Details' section active. The title bar reads 'Deploy OVF Template'. Below the title bar, it says 'OVF Template Details' and 'Verify OVF template details.'. A left-hand navigation pane lists: Source, OVF Template Details (selected), End User License Agreement, Name and Location, Storage, Disk Format, Network Mapping, and Ready to Complete. The main area displays the following details:</p> <ul style="list-style-type: none"> Products: UDR 10.2 Version: 10.2.0.0.0_12.15.0 Vendor: Oracle Corporation Publisher: No certificate present Download size: 932.4 MB Size on disk: 3.6 GB (thin provisioned), 58.7 GB (thick provisioned) Description: UDR 10.2.0.0.0_12.15.0 x86_64 <p>At the bottom, there are buttons for 'Help', '< Back', 'Next >', and 'Cancel'.</p>
<p>5.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Accept End User License Agreement by clicking Accept button then click Next</p>	 <p>The screenshot shows the 'Deploy OVF Template' window with the 'End User License Agreement' section active. The title bar reads 'Deploy OVF Template'. Below the title bar, it says 'End User License Agreement' and 'Accept the end user license agreements.'. The left-hand navigation pane lists: Source, OVF Template Details, End User License Agreement (selected), Name and Location, Storage, Disk Format, Network Mapping, and Ready to Complete. The main area displays a warning message:</p> <p>WARNING — THIS VIRTUAL MACHINE IMAGE CONTAINS ORACLE PROPRIETARY SOFTWARE THAT IS LICENSED TO THE INDIVIDUAL THAT ORIGINALLY OBTAINED IT FROM ORACLE. IT MAY NOT BE TRANSFERRED OR DISTRIBUTED TO OTHER INDIVIDUALS, EVEN IF THOSE INDIVIDUALS ARE EMPLOYED BY THE SAME ENTITY. IF YOU DID NOT OBTAIN THIS IMAGE FROM AN ORACLE WEBSITE OR FROM AN AUTHORIZED ORACLE EMPLOYEE OR CONTRACTOR, YOU MAY NOT USE IT; VISIT WWW.ORACLE.COM/OTN TO DOWNLOAD A COPY YOU MAY USE. IF YOU RECEIVED THIS VIRTUAL MACHINE IMAGE DIRECTLY FROM ORACLE THEN BY CONTINUING TO INSTALL THE VIRTUAL MACHINE IMAGE YOU AGREE TO THE LICENSE TERMS AT http://www.oracle.com/technetwork/licenses/linux-vm-manager-license-1969714.html.</p> <p>At the bottom, there is an 'Accept' button and buttons for 'Help', '< Back', 'Next >', and 'Cancel'.</p>
<p>6.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Name the virtual machine and click Next</p>	 <p>The screenshot shows the 'Deploy OVF Template' window with the 'Name and Location' section active. The title bar reads 'Deploy OVF Template'. Below the title bar, it says 'Name and Location' and 'Specify a name and location for the deployed template'. The left-hand navigation pane lists: Source, OVF Template Details, End User License Agreement, Name and Location (selected), Storage, Disk Format, Network Mapping, and Ready to Complete. The main area has a 'Name:' label and a text input field containing 'demo_UDR_noA'. Below the input field, it says: 'The name can contain up to 80 characters and it must be unique within the inventory folder.'. At the bottom, there are buttons for 'Help', '< Back', 'Next >', and 'Cancel'.</p>

Procedure 18: Deploy UDR OVA

Step	Procedure	Result
<p>7.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Select destination storage for the virtual machine from the list of available data stores then click Next.</p>	 <p>Note: For an upgradeable deployment, ensure the data store has enough free capacity to support the type of VM according to the profile selected from [1].</p>
<p>8.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Choose Thick Provision Lazy Zeroed and click Next</p>	
<p>9.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Click Next</p>	

Procedure 18: Deploy UDR OVA

Step	Procedure	Result
10. <input type="checkbox"/>	VMware client: Review deployment settings and click Finish	
11. <input type="checkbox"/>	VMware client: After a wait a deployment status message is displayed. Click Close .	
THIS PROCEDURE HAS BEEN COMPLETED		

B-2 Configure Guest Resources

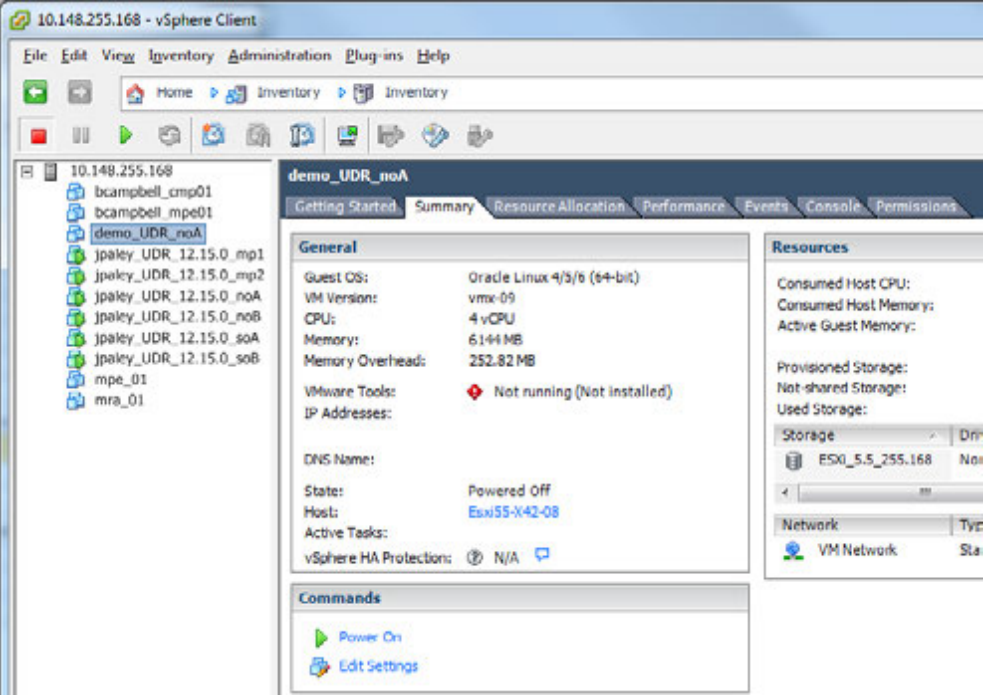
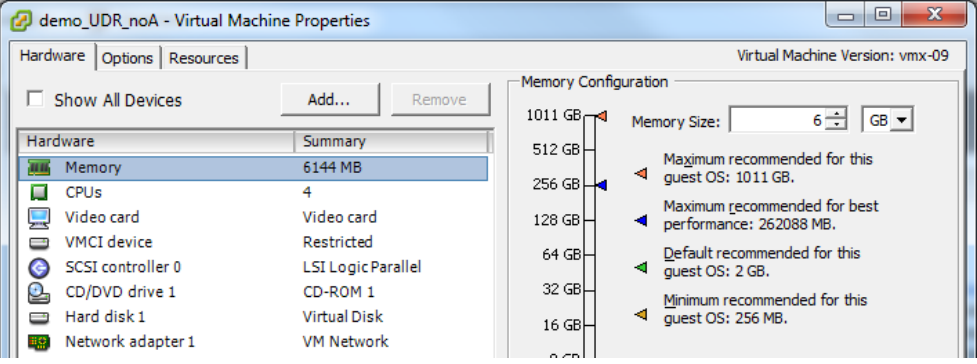
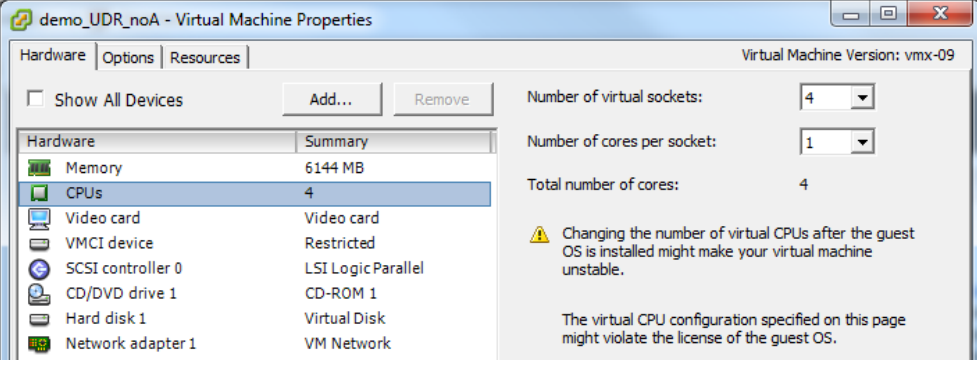
This procedure will configure the required resource allocations and associations for UDR virtual machines (guests) and power them on.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

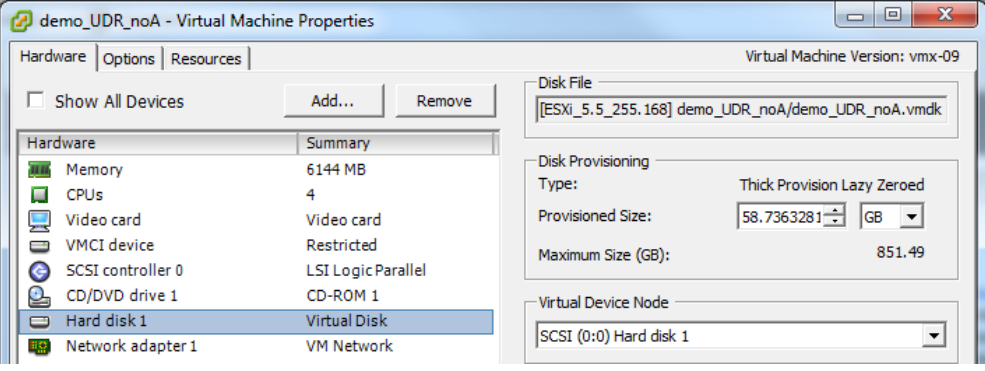
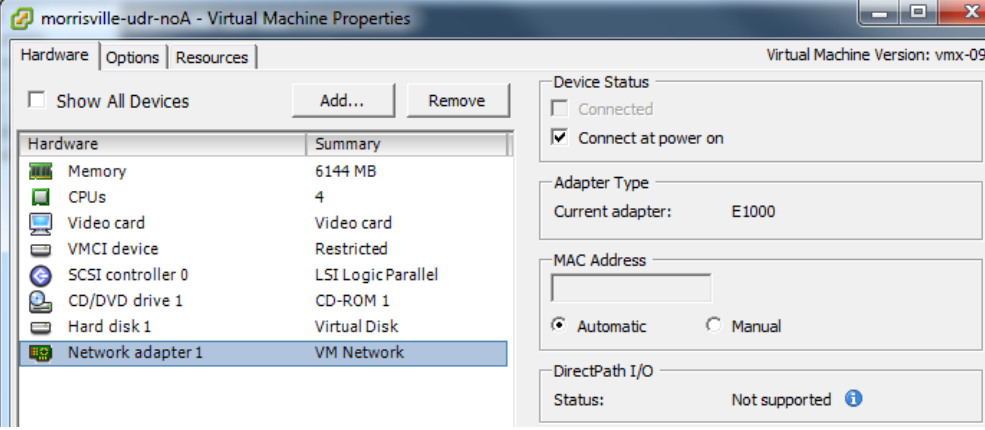
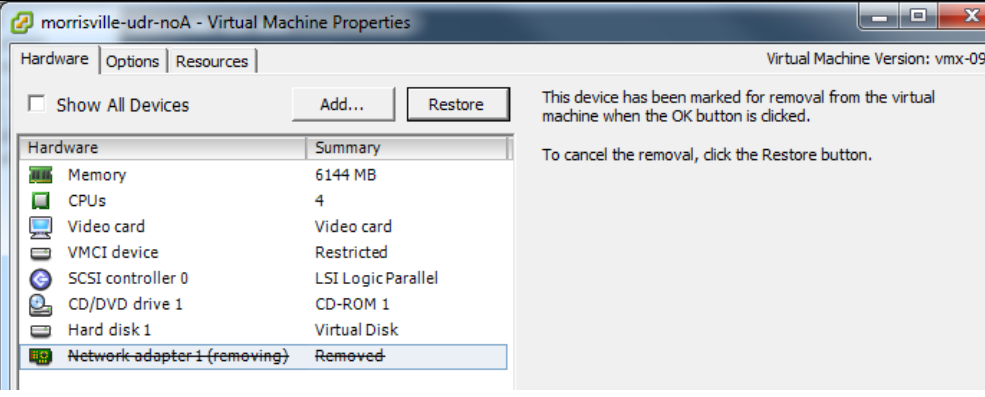
Procedure 19: Configure Guest Resources

Step	Procedure	Result
1. <input type="checkbox"/>	VMware client: Log into the VMware client	

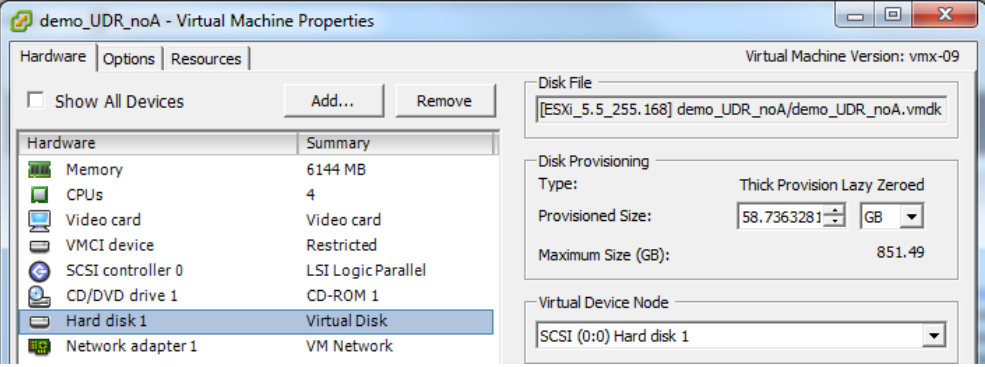
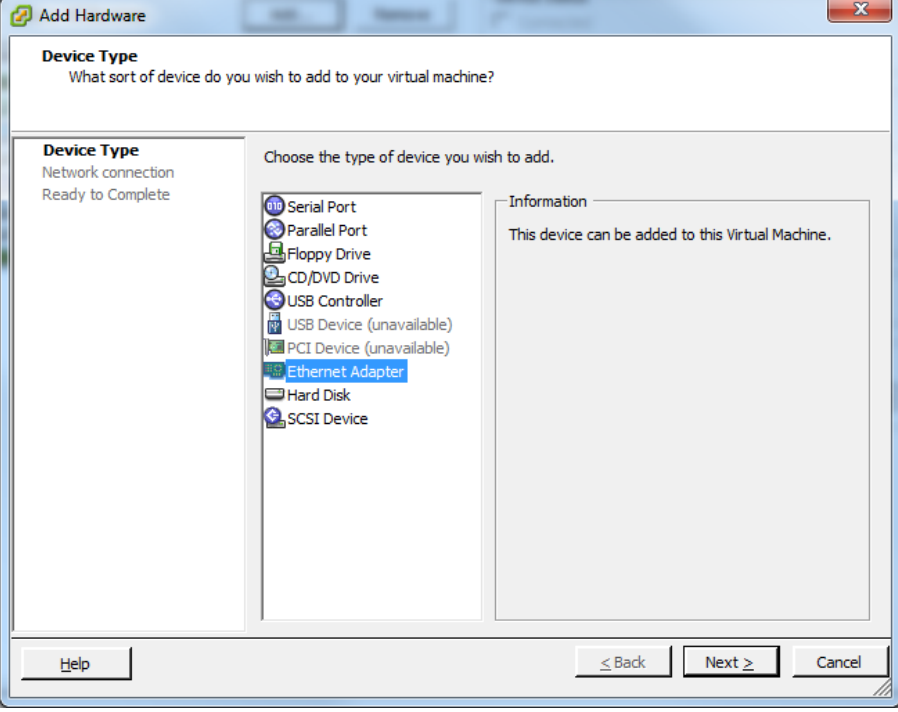
Procedure 19: Configure Guest Resources

Step	Procedure	Result
<p>2.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <ol style="list-style-type: none"> 1) Select the UDR virtual machine from the left tree menu 2) Click the Summary tab 3) Click Edit Settings under Commands 	
<p>3.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Select Memory from the Hardware menu and adjust Memory Size to suit the server's role</p> <p>NOAMP: 48 GB</p> <p>SOAM: 4 GB</p> <p>MP: 16 GB</p>	
<p>4.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Select CPUs from the Hardware menu and adjust the Number of virtual sockets according to [1].</p>	

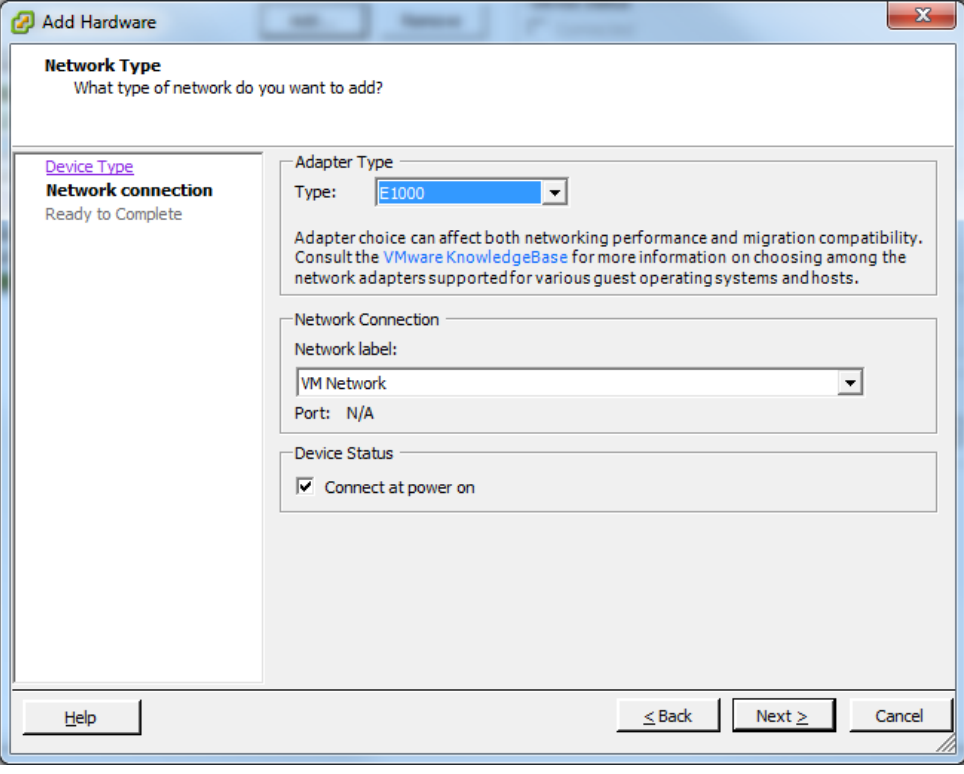
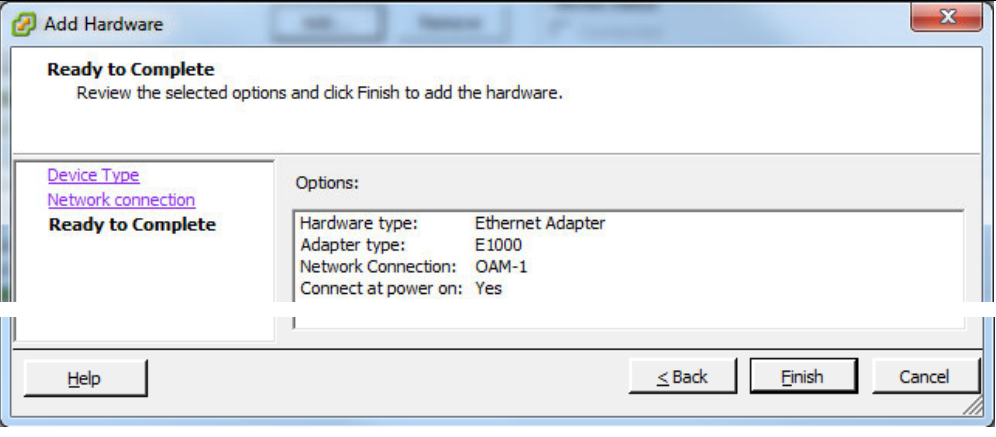
Procedure 19: Configure Guest Resources

Step	Procedure	Result															
<p>5.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Select Hard disk 1 from the Hardware menu and adjust the Provisioned Size according to [1].</p>																
<p>6.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>1) Select any Network adapter that may exist by default</p> <p>2) Click the Remove tab</p>																
<p>7.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>The network adapter will be crossed out and a removal message displayed</p>																
<p>8.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Take note of the order in which networks are added.</p>	<p>Note: The order in which networks are added by the following steps affects their device order within the virtual machine. Care should be taken to add them in the order they appear for each server:</p> <table border="1"> <thead> <tr> <th>NOAMP</th> <th>SOAM</th> <th>MP</th> </tr> </thead> <tbody> <tr> <td>1. <input type="checkbox"/> XMI</td> <td>1. <input type="checkbox"/> XMI</td> <td>1. <input type="checkbox"/> XMI</td> </tr> <tr> <td>2. <input type="checkbox"/> IMI</td> <td>2. <input type="checkbox"/> IMI</td> <td>2. <input type="checkbox"/> IMI</td> </tr> <tr> <td>3. <input type="checkbox"/> XSI-1 (optional)</td> <td></td> <td>3. <input type="checkbox"/> XSI-1</td> </tr> <tr> <td></td> <td></td> <td>4. <input type="checkbox"/> XSI-2 (optional)</td> </tr> </tbody> </table>	NOAMP	SOAM	MP	1. <input type="checkbox"/> XMI	1. <input type="checkbox"/> XMI	1. <input type="checkbox"/> XMI	2. <input type="checkbox"/> IMI	2. <input type="checkbox"/> IMI	2. <input type="checkbox"/> IMI	3. <input type="checkbox"/> XSI-1 (optional)		3. <input type="checkbox"/> XSI-1			4. <input type="checkbox"/> XSI-2 (optional)
NOAMP	SOAM	MP															
1. <input type="checkbox"/> XMI	1. <input type="checkbox"/> XMI	1. <input type="checkbox"/> XMI															
2. <input type="checkbox"/> IMI	2. <input type="checkbox"/> IMI	2. <input type="checkbox"/> IMI															
3. <input type="checkbox"/> XSI-1 (optional)		3. <input type="checkbox"/> XSI-1															
		4. <input type="checkbox"/> XSI-2 (optional)															

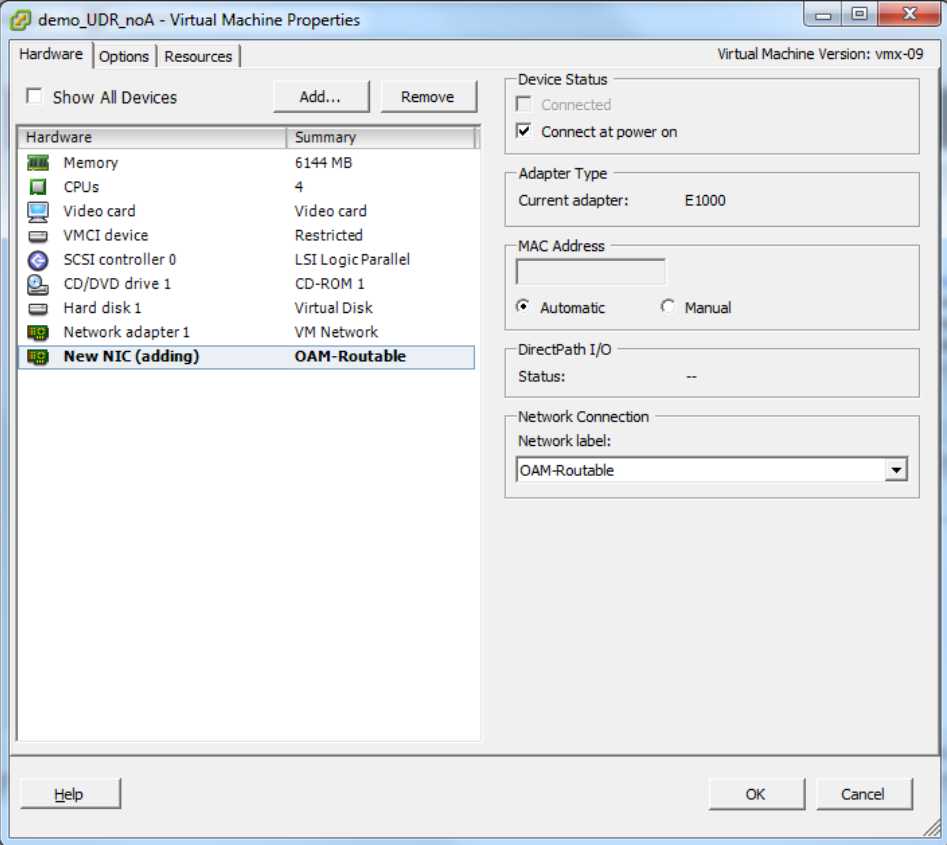
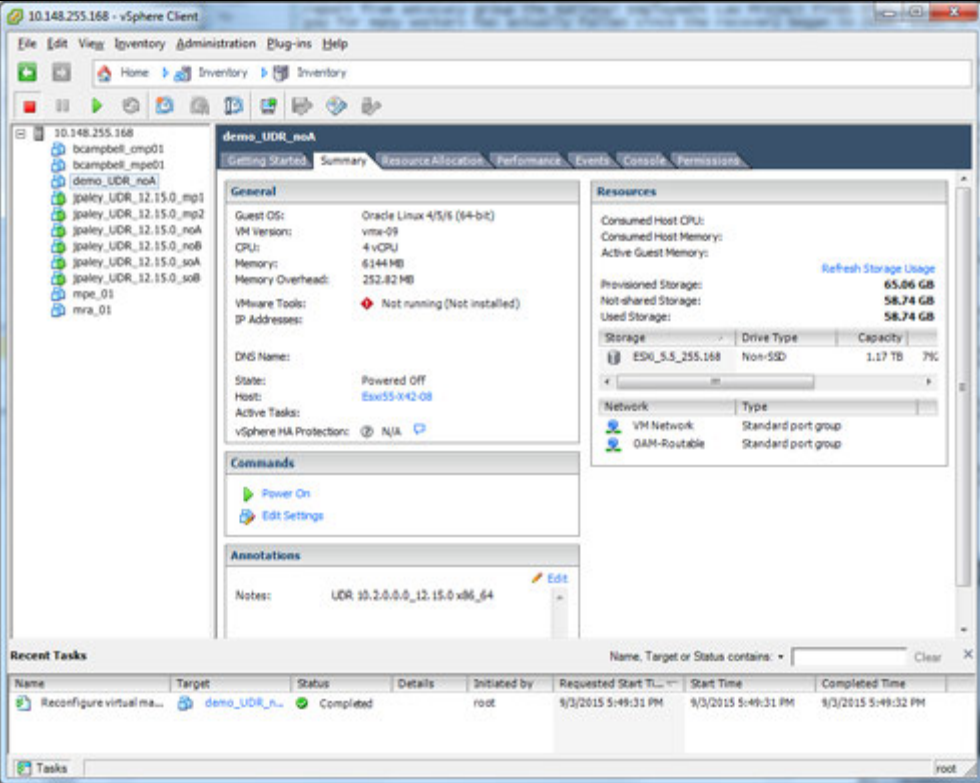
Procedure 19: Configure Guest Resources

Step	Procedure	Result
<p>9.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Click ‘Add...’ button from Hardware tab</p>	 <p>The screenshot shows the 'demo_UDR_noA - Virtual Machine Properties' window with the 'Hardware' tab selected. A table lists hardware components: Memory (6144 MB), CPUs (4), Video card, VMCi device (Restricted), SCSI controller 0 (LSI Logic Parallel), CD/DVD drive 1 (CD-ROM 1), Hard disk 1 (Virtual Disk), and Network adapter 1 (VM Network). The 'Hard disk 1' row is highlighted. To the right, the 'Disk File' field shows '[ESXi_5.5_255.168] demo_UDR_noA/demo_UDR_noA.vmdk'. Below that, 'Disk Provisioning' is set to 'Thick Provision Lazy Zeroed', with a 'Provisioned Size' of 58.7363281 GB and a 'Maximum Size (GB)' of 851.49. The 'Virtual Device Node' is set to 'SCSI (0:0) Hard disk 1'. An 'Add...' button is located above the hardware list.</p>
<p>10.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Select Eathernet Adapter from the list of devices and click Next</p>	 <p>The screenshot shows the 'Add Hardware' dialog box. The title is 'Add Hardware'. Below the title, it asks 'What sort of device do you wish to add to your virtual machine?'. There are two main sections: 'Device Type' and 'Information'. The 'Device Type' section has a list of device types: Network connection (Ready to Complete), Serial Port, Parallel Port, Floppy Drive, CD/DVD Drive, USB Controller, USB Device (unavailable), PCI Device (unavailable), Ethernet Adapter (highlighted in blue), Hard Disk, and SCSI Device. The 'Information' section contains the text: 'This device can be added to this Virtual Machine.' At the bottom, there are buttons for 'Help', '< Back', 'Next >', and 'Cancel'.</p>

Procedure 19: Configure Guest Resources

Step	Procedure	Result
<p>11.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>1) Select Adapter Type to conform to your virtual host</p> <p>2) Select the Network Label to match the desired network type</p> <p>3) Click Next</p>	
<p>12.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Confirm Option settings and click Finish</p>	
<p>13.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>Repeat as required</p>	<p>Repeat Steps 9 - 12 to add every network appropriate for the server's role.</p>

Procedure 19: Configure Guest Resources

Step	Procedure	Result																
<p>14.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>After all networks are added, confirm their correct entry in the left Hardware menu then click OK.</p>																	
<p>15.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <p>New devices and networks are shown on the Summary tab and Reconfigure task shows status Completed under Recent Tasks. Click Power On under Commands.</p>	 <table border="1"> <caption>Recent Tasks</caption> <thead> <tr> <th>Name</th> <th>Target</th> <th>Status</th> <th>Details</th> <th>Initiated by</th> <th>Requested Start Time</th> <th>Start Time</th> <th>Completed Time</th> </tr> </thead> <tbody> <tr> <td>Reconfigure virtual ma...</td> <td>demo_UDR_noA</td> <td>Completed</td> <td></td> <td>root</td> <td>8/3/2015 5:49:31 PM</td> <td>8/3/2015 5:49:31 PM</td> <td>8/3/2015 5:49:32 PM</td> </tr> </tbody> </table>	Name	Target	Status	Details	Initiated by	Requested Start Time	Start Time	Completed Time	Reconfigure virtual ma...	demo_UDR_noA	Completed		root	8/3/2015 5:49:31 PM	8/3/2015 5:49:31 PM	8/3/2015 5:49:32 PM
Name	Target	Status	Details	Initiated by	Requested Start Time	Start Time	Completed Time											
Reconfigure virtual ma...	demo_UDR_noA	Completed		root	8/3/2015 5:49:31 PM	8/3/2015 5:49:31 PM	8/3/2015 5:49:32 PM											

Procedure 19: Configure Guest Resources

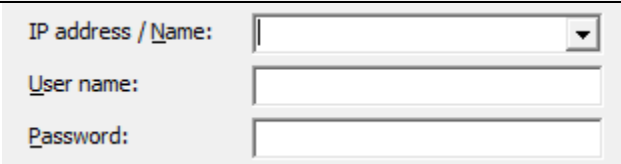
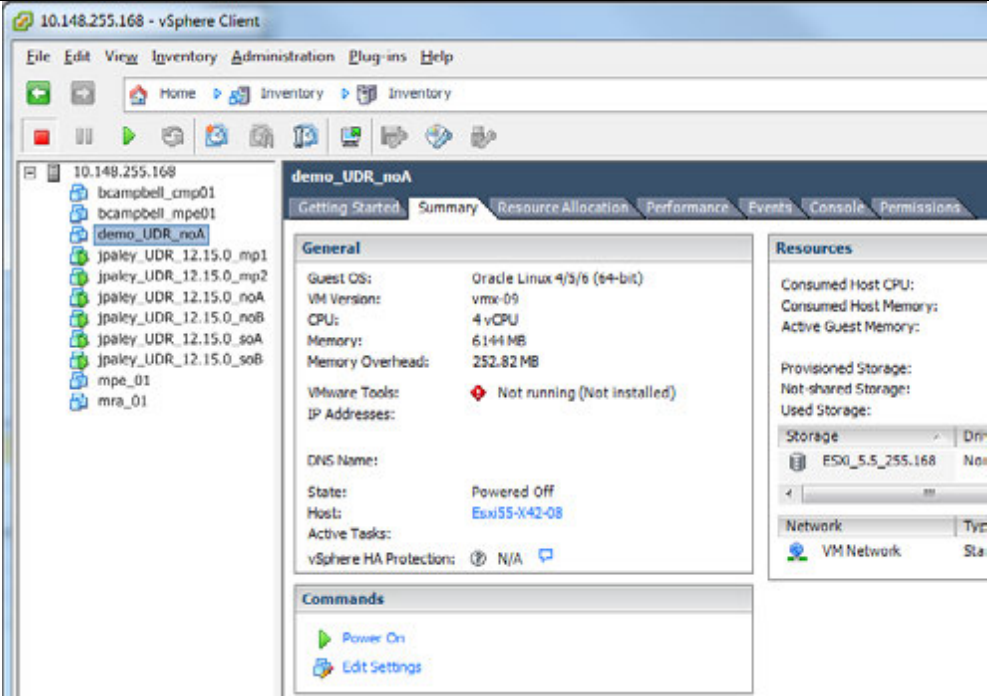
Step	Procedure	Result
THIS PROCEDURE HAS BEEN COMPLETED		

B-3 Configure Guest OAM Network

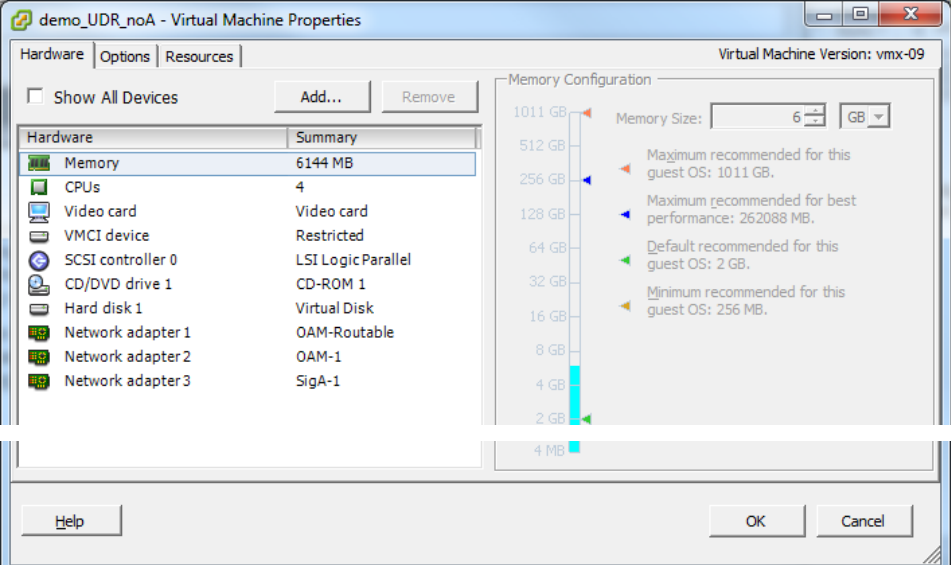
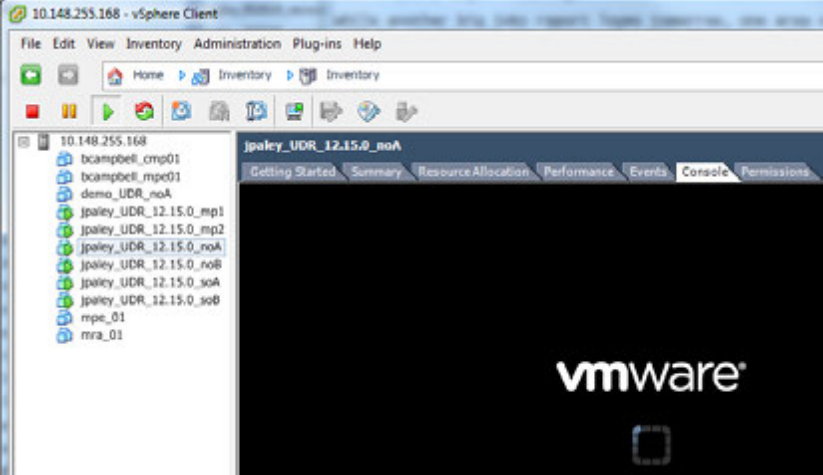
This procedure will configure the OAM network on UDR virtual machines (guests).

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 20: Configure Guest OAM Network

Step	Procedure	Result
1. <input type="checkbox"/>	Log into the VMware client	
2. <input type="checkbox"/>	<p>VMware client:</p> <p>1) Select the UDR virtual machine from the left tree menu</p> <p>2) Click the Summary tab</p> <p>3) Click Edit Settings under Commands</p>	

Procedure 20: Configure Guest OAM Network

Step	Procedure	Result
<p>3.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <ol style="list-style-type: none"> 1) Take note of the Network adapter assignment under Hardware tab 2) Click Cancel 	 <p>Network adapters are enumerated under the Hardware tab. Their adapter number in the Hardware column corresponds to their <i>zero-based</i> device name assignment within a running guest.</p> <p>For instance, in the example capture above:</p> <ul style="list-style-type: none"> • OAM (XMI) is on eth0 device • OAM-1 (IMI) is on eth1 device • Sig-A (XSI-1) is on eth2 device
<p>4.</p> <p><input type="checkbox"/></p>	<p>VMware client:</p> <ol style="list-style-type: none"> 1) Click the Console tab 2) Click inside the console window to bring focus there <p>Note: Press Ctrl-Alt keys to escape from console.</p>	
<p>5.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <p>Login to console as admusr</p>	<pre>login as: admusr Password:</pre>

Procedure 20: Configure Guest OAM Network

Step	Procedure	Result
6. <input type="checkbox"/>	UDR Console: Configure XMI network	<p>1. Set the XMI device for routable OAM access:</p> <p>Note: Where ethX is the interface associated with the XMI network</p> <pre>\$ sudo netAdm add --device=eth0 --address=<Guest_XMI_IP_Address> --netmask=<XMI_Netmask> --onboot=yes --bootproto=none</pre> <p>2. Add the default route for XMI:</p> <pre>\$ sudo netAdm add --route=default --gateway=<Gateway_XMI_IP_Address> --device=eth0</pre> <p>Note: The network device may be different than shown here (eth0) if the order of network adapter insertion was other than shown. Refer to Step 3 for this assignment.</p>
7. <input type="checkbox"/>	UDR Console: Configure XSI network (NO and MP Server Only)	<p>Set the XSI device for routable signaling network access (Only for NO & MP Servers):</p> <p>Note: Where ethX is the interface associated with the XSI network</p> <pre>\$ sudo netAdm add --device=eth2 --address=<Guest_XSI_IP_Address> --netmask=<XSI_Netmask> --onboot=yes --bootproto=none</pre> <p>Note: The network device may be different than shown here (eth2) if the order of network adapter insertion was other than shown. Refer to Step 3 for this assignment.</p>
8. <input type="checkbox"/>	UDR Console: Repeat as required (MP Server Only)	Repeat Step 7 to add XSI-2 (eth3) if a second signaling network is in use (Only for MP Servers). Adjust input parameter values accordingly.
9. <input type="checkbox"/>	UDR Console: Exit console	<pre>\$ exit</pre> <p>Note: Press Ctrl-Alt keys to escape from console.</p>
THIS PROCEDURE HAS BEEN COMPLETED		

Appendix C. VMWARE VCLOUD DIRECTOR UDR DEPLOYMENT

Important Note: The content of this appendix is for informational purposes only. Please consult the latest documents from the vendor (VMware).

C-1 vCloud Director UDR Media Upload

This procedure will upload UDR media (ISO or OVA) into vCloud Director Catalogs.

Needed material:


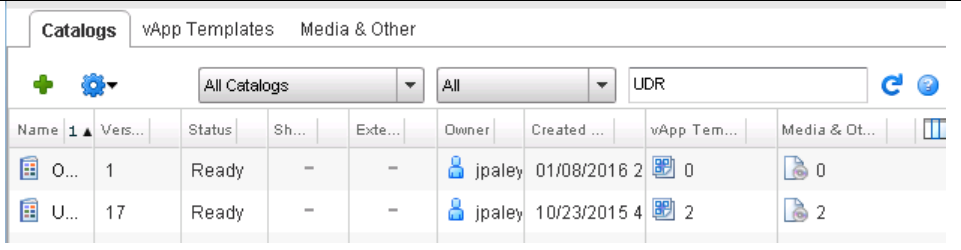
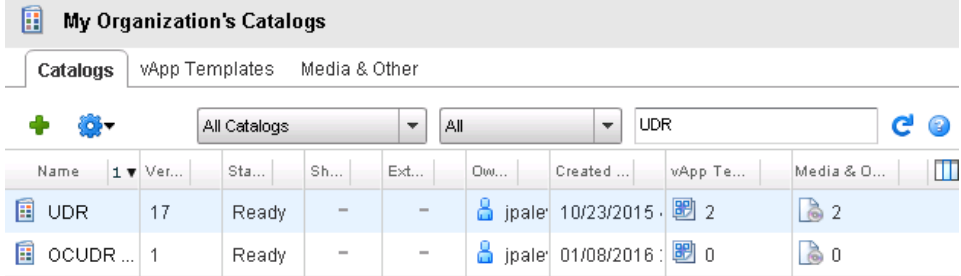
- UDR OVA

Optional material (required for ISO install only):

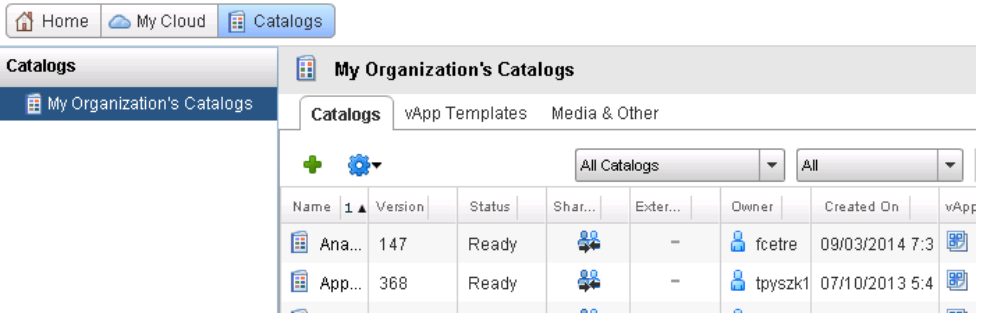
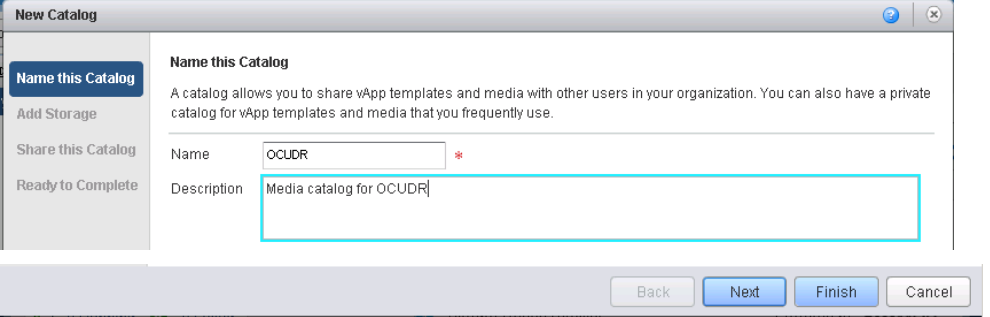

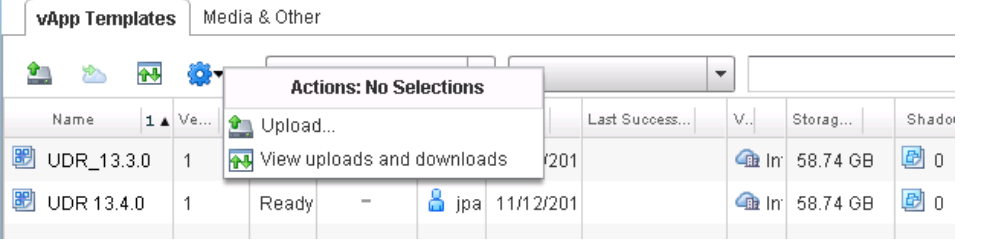
- UDR ISO
- TPD Platform ISO

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

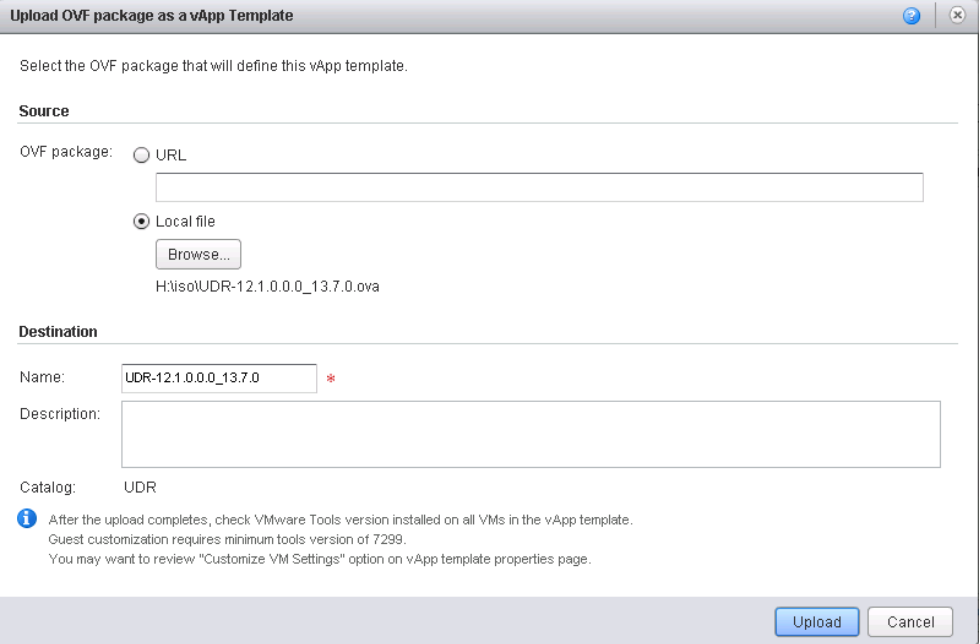
Procedure 21: vCloud Director UDR Media Upload

Step	Procedure	Result
1. <input type="checkbox"/>	Log into the VMware vCloud Director	
2. <input type="checkbox"/>	vCloud Director: Enter UDR catalog name in the search field and hit Enter.	
3. <input type="checkbox"/>	vCloud Director: Click on the name hyperlink for the appropriate catalog and proceed to Step 6	 <p>Note: If a catalog for UDR does not yet exist, create one with the following two steps.</p>

Procedure 21: vCloud Director UDR Media Upload

Step	Procedure	Result
4.	<p>vCloud Director:</p> <p>Select...</p> <p>→ Catalogs</p> <p>→ Green Plus +</p>	 <p>The screenshot shows the 'Catalogs' page in vCloud Director. The breadcrumb navigation is 'Home > My Cloud > Catalogs'. The main heading is 'My Organization's Catalogs'. Below this, there are tabs for 'Catalogs', 'vApp Templates', and 'Media & Other'. A toolbar contains a green plus icon, a gear icon, and two dropdown menus: 'All Catalogs' and 'All'. A table lists catalogs with columns: Name, Version, Status, Share, External, Owner, Created On, and vApp. Two catalogs are visible: 'Ana...' (version 147, status Ready, owner fcetre, created 09/03/2014 7:3) and 'App...' (version 368, status Ready, owner tpyszk1, created 07/10/2013 5:4).</p>
5.	<p>vCloud Director:</p> <p>1. Input catalog name and description.</p> <p>2. Unless this catalog requires special storage or sharing, click Finish.</p>	 <p>The screenshot shows the 'New Catalog' dialog box. It has a title bar 'New Catalog' and a close button. On the left, there are buttons for 'Name this Catalog', 'Add Storage', 'Share this Catalog', and 'Ready to Complete'. The main area is titled 'Name this Catalog' and contains a text area for 'Name' with the value 'OCUDR' and a red asterisk indicating a required field. Below it is a text area for 'Description' with the value 'Media catalog for OCUDR'. At the bottom, there are buttons for 'Back', 'Next', 'Finish', and 'Cancel'. Below the dialog box, a note reads: 'Note: After clicking Finish, return to Step 2 of this procedure to access the new catalog.'</p>
6.	<p>vCloud Director:</p> <p>Select..</p> <p>vApp Templates for OVA upload</p> <p>or</p> <p>Media & Other for ISO upload</p>	 <p>The screenshot shows the 'Media & Other' tab selected in the vCloud Director interface. The breadcrumb navigation is 'vApp Templates > Media & Other'. The toolbar contains a green plus icon, a gear icon, and two dropdown menus: 'All Catalogs' and 'All'.</p>
7.	<p>vCloud Director:</p> <p>Select...</p> <p>→ Blue Gear Symbol</p> <p>→ Upload...</p>	 <p>The screenshot shows the 'vApp Templates' tab selected. A context menu is open over a table, with the 'Upload...' option highlighted. The table has columns: Name, Version, Status, Share, External, Owner, Last Success..., V., Storage..., and Shadow. Two catalogs are visible: 'UDR_13.3.0' (version 1, status Ready, owner jpa, created 11/12/201, storage 58.74 GB, shadow 0) and 'UDR 13.4.0' (version 1, status Ready, owner jpa, created 11/12/201, storage 58.74 GB, shadow 0).</p>

Procedure 21: vCloud Director UDR Media Upload


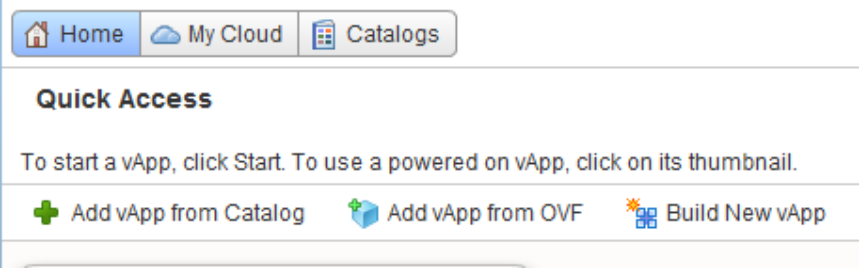
Step	Procedure	Result
<p>8.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Select Source as either URL or local file then input a Name.</p> <p>Click Upload.</p>	
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

C-2 Create vApp

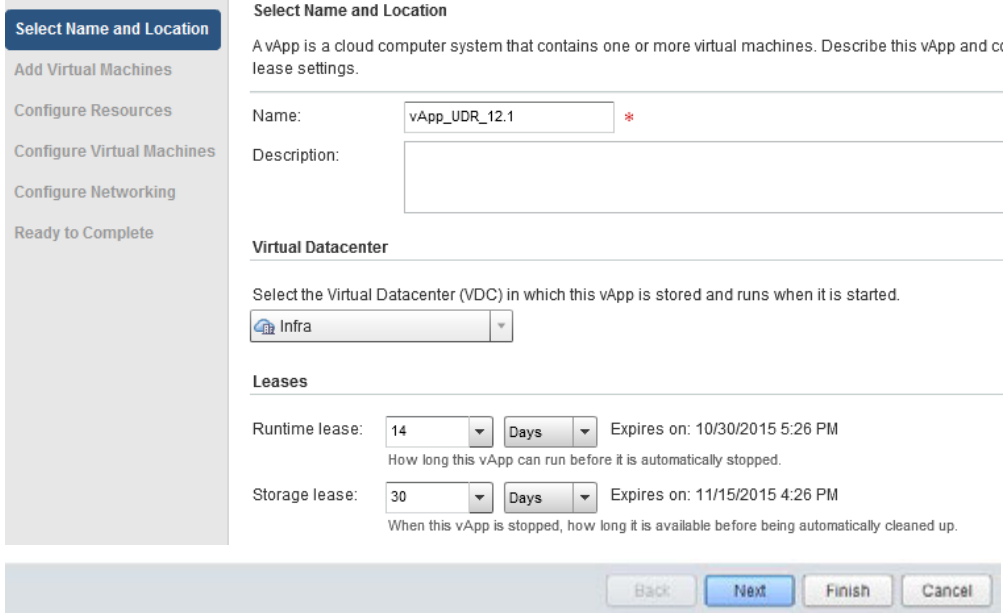
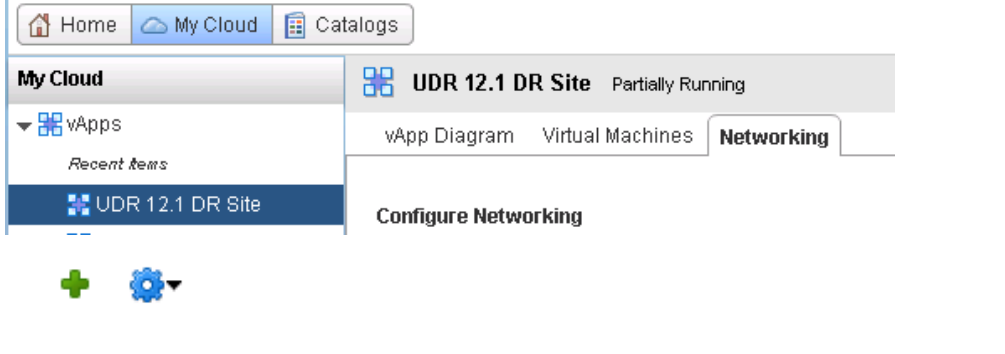
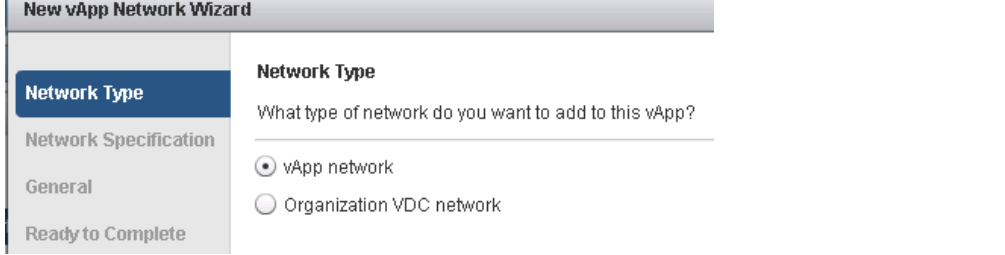
This procedure will create and configure a new vApp virtual appliance.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

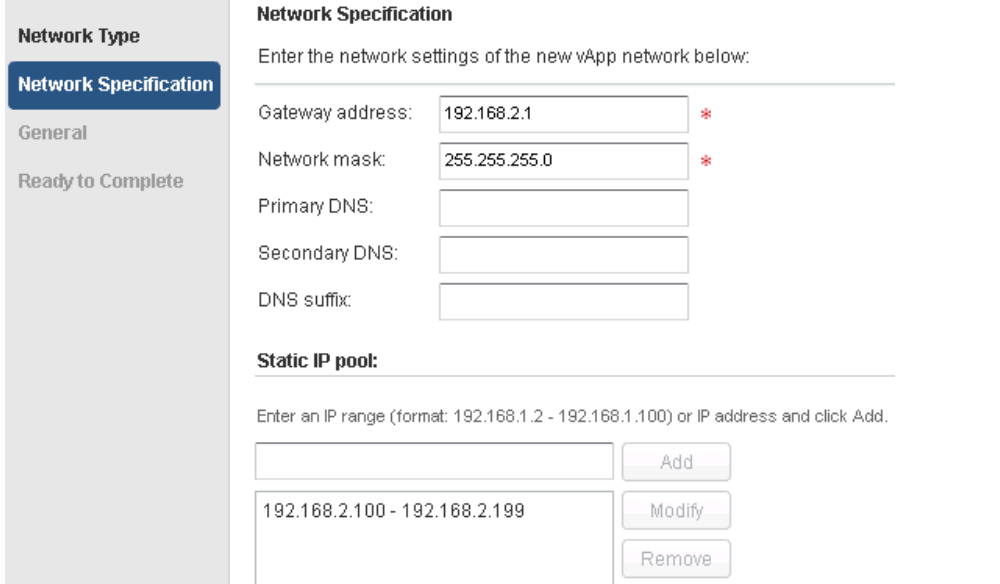

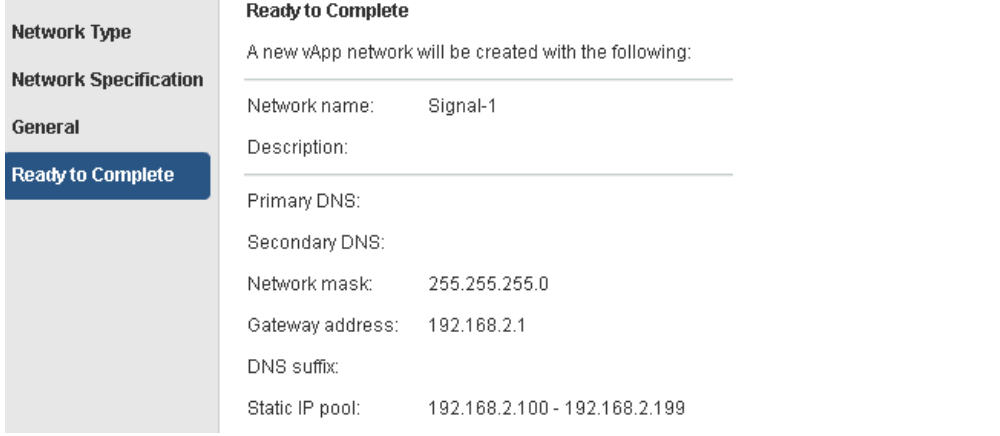
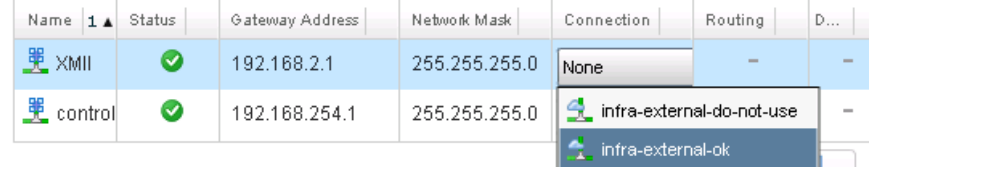
Procedure 22: Create vApp

Step	Procedure	Result
<p>1.</p> <p><input type="checkbox"/></p>	<p>Log into the VMware vCloud Director</p>	
<p>2.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Select Home tab</p> <p>Build New vApp</p>	

Procedure 22: Create vApp

Step	Procedure	Result
<p>3.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>1. Enter Name for the vApp and other parameters as required.</p> <p>2. Click Finish.</p>	 <p>Select Name and Location</p> <p>A vApp is a cloud computer system that contains one or more virtual machines. Describe this vApp and its lease settings.</p> <p>Name: <input type="text" value="vApp_UDR_12.1"/> *</p> <p>Description: <input type="text"/></p> <p>Virtual Datacenter</p> <p>Select the Virtual Datacenter (VDC) in which this vApp is stored and runs when it is started.</p> <p><input type="text" value="Infra"/></p> <p>Leases</p> <p>Runtime lease: <input type="text" value="14"/> <input type="text" value="Days"/> Expires on: 10/30/2015 5:26 PM How long this vApp can run before it is automatically stopped.</p> <p>Storage lease: <input type="text" value="30"/> <input type="text" value="Days"/> Expires on: 11/15/2015 4:26 PM When this vApp is stopped, how long it is available before being automatically cleaned up.</p> <p>Buttons: Back, Next, Finish, Cancel</p>
<p>4.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Select...</p> <p>→ My Cloud</p> <p>→ <vApp Name></p> <p>→ Networking</p> <p>Then click the + icon to add a network</p>	 <p>Home My Cloud Catalogs</p> <p>My Cloud UDR 12.1 DR Site Partially Running</p> <p>vApp Diagram Virtual Machines Networking</p> <p>UDR 12.1 DR Site</p> <p>Configure Networking</p> <p>+ ⚙</p>
<p>5.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Select the vApp network.</p> <p>Click Next.</p>	 <p>New vApp Network Wizard</p> <p>Network Type</p> <p>What type of network do you want to add to this vApp?</p> <p><input checked="" type="radio"/> vApp network</p> <p><input type="radio"/> Organization VDC network</p>

Procedure 22: Create vApp

Step	Procedure	Result																												
<p>6.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Enter desired parameters for your internal network. Be sure to have sufficient address space for the number of servers you expect to deploy.</p> <p>Click Next.</p>	 <p>Network Specification</p> <p>Enter the network settings of the new vApp network below:</p> <p>Gateway address: 192.168.2.1 *</p> <p>Network mask: 255.255.255.0 *</p> <p>Primary DNS: <input type="text"/></p> <p>Secondary DNS: <input type="text"/></p> <p>DNS suffix: <input type="text"/></p> <p>Static IP pool:</p> <p>Enter an IP range (format: 192.168.1.2 - 192.168.1.100) or IP address and click Add.</p> <p><input type="text"/> Add</p> <p>192.168.2.100 - 192.168.2.199 Modify Remove</p>																												
<p>7.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Enter a Name for your network using [1] as a guide.</p> <p>Click Next.</p>	 <p>General</p> <p>Enter a name and description for the new vApp network.</p> <p>Network name: XMI</p> <p>Description: <input type="text"/></p>																												
<p>8.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Review the network data</p> <p>Click Finish.</p>	 <p>Ready to Complete</p> <p>A new vApp network will be created with the following:</p> <p>Network name: Signal-1</p> <p>Description: <input type="text"/></p> <p>Primary DNS: <input type="text"/></p> <p>Secondary DNS: <input type="text"/></p> <p>Network mask: 255.255.255.0</p> <p>Gateway address: 192.168.2.1</p> <p>DNS suffix: <input type="text"/></p> <p>Static IP pool: 192.168.2.100 - 192.168.2.199</p>																												
<p>9.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Back on the Networking tab.</p>	 <table border="1"> <thead> <tr> <th>Name</th> <th>Status</th> <th>Gateway Address</th> <th>Network Mask</th> <th>Connection</th> <th>Routing</th> <th>D...</th> </tr> </thead> <tbody> <tr> <td>XMI</td> <td>✓</td> <td>192.168.2.1</td> <td>255.255.255.0</td> <td>None</td> <td>-</td> <td>-</td> </tr> <tr> <td>control</td> <td>✓</td> <td>192.168.254.1</td> <td>255.255.255.0</td> <td>infra-external-do-not-use</td> <td>-</td> <td>-</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>infra-external-ok</td> <td></td> <td></td> </tr> </tbody> </table> <p>If the network is to be addressable outside the Cloud (such as XMI for administration), select an external network from the Connection drop box.</p> <p>Otherwise, leave Connection setting as None.</p>	Name	Status	Gateway Address	Network Mask	Connection	Routing	D...	XMI	✓	192.168.2.1	255.255.255.0	None	-	-	control	✓	192.168.254.1	255.255.255.0	infra-external-do-not-use	-	-					infra-external-ok		
Name	Status	Gateway Address	Network Mask	Connection	Routing	D...																								
XMI	✓	192.168.2.1	255.255.255.0	None	-	-																								
control	✓	192.168.254.1	255.255.255.0	infra-external-do-not-use	-	-																								
				infra-external-ok																										

Procedure 22: Create vApp

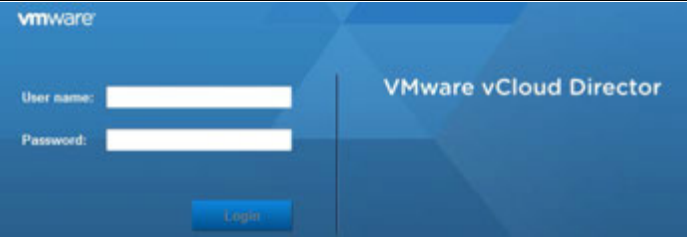
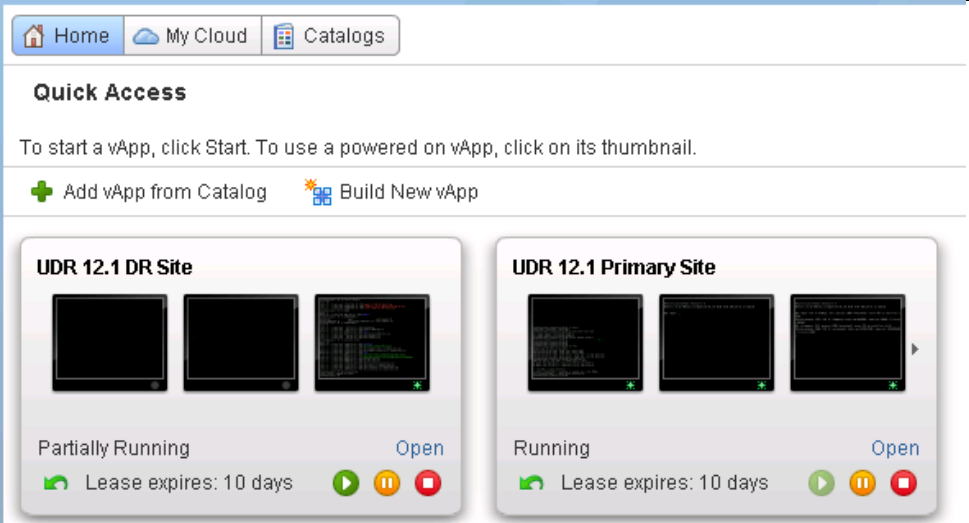
Step	Procedure	Result
10. <input type="checkbox"/>	vCloud Director: Click Apply .	
THIS PROCEDURE HAS BEEN COMPLETED		

C-3 Create Guests from OVA


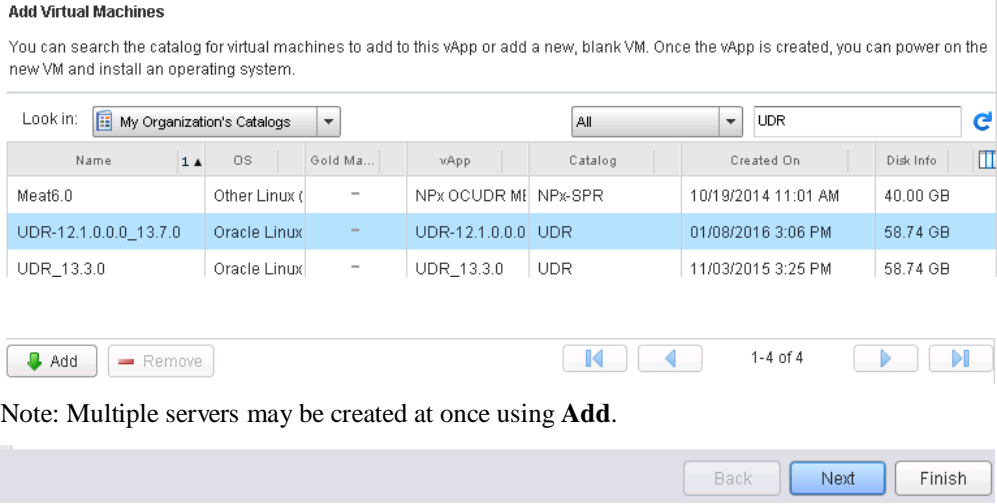
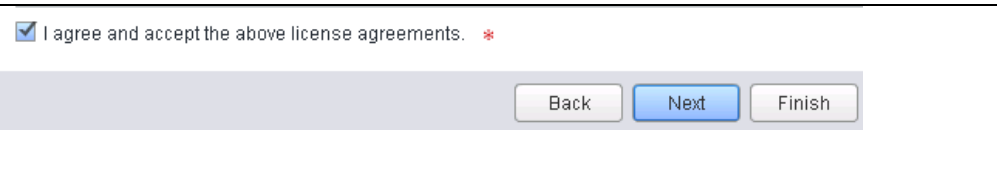
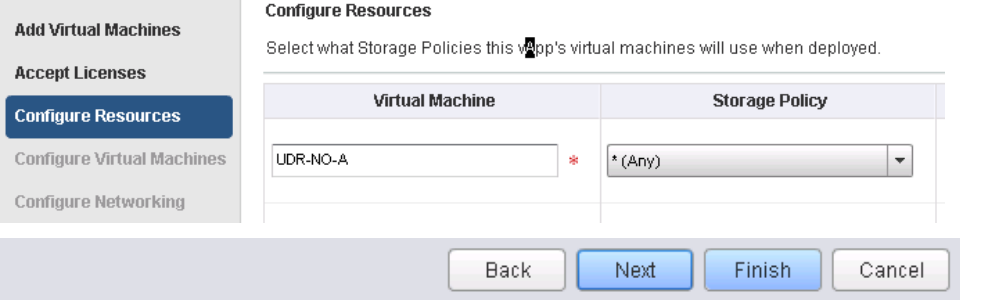
This procedure will create UDR virtual machines (guests) from OVA.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 23: Create Guests from OVA with vCloud Director

Step	Procedure	Result
1. <input type="checkbox"/>	Log into the VMware vCloud Director	
2. <input type="checkbox"/>	vCloud Director: Select Open hyperlink for the UDR vApp	 <p>Note: Current vApps are listed on the Home Page. If a new vApp is required continue with the next step to create it.</p>

Procedure 23: Create Guests from OVA with vCloud Director

Step	Procedure	Result
3.	vCloud Director: Select icon on left to Add VM	
4.	vCloud Director: 1. Enter name in the search field and press Enter 2. Select UDR media name 3. Click Add 3. Click Next	
5.	vCloud Director: 1. Check box to agree with license 2. Click Next	
6.	vCloud Director: 1. Rename virtual machine(s) to suit its location and role 2. Click Finish	
THIS PROCEDURE HAS BEEN COMPLETED		

C-4 Configure Guest Resources


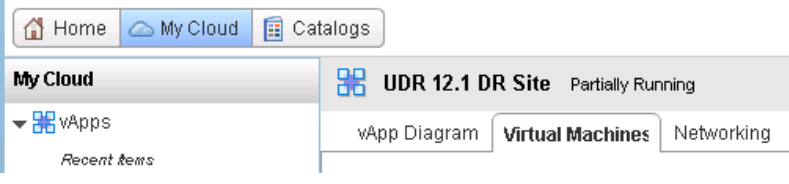
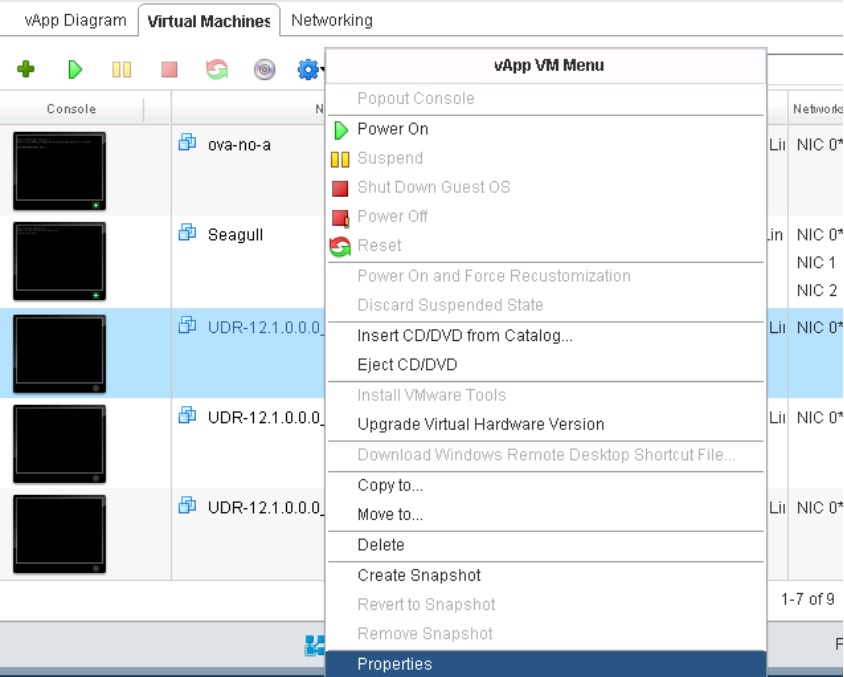

This procedure will configure UDR virtual machines (guests) which have been created from OVA.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 24: Configure Guests from OVA with vCloud Director

Step	Procedure	Result
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Procedure 24: Configure Guests from OVA with vCloud Director

Step	Procedure	Result
1.	Log into the VMware vCloud Director	
2.	vCloud Director: Select... → My Cloud → Virtual Machines	
3.	vCloud Director: 1. Select the VM. 2. Click the Blue Gear icon. 3. Select Properties .	
4.	vCloud Director: Under the General tab... Adjust Virtual Machine and Computer names to suit preference.	

Procedure 24: Configure Guests from OVA with vCloud Director

Step	Procedure	Result
5.	<p>vCloud Director:</p> <p>Under the Hardware tab...</p> <p>1) Adjust the number of Virtual CPUs and Total Memory to match the server's role in [1].</p> <p>2) Check Expose hardware-assisted CPU virtualization box.</p> <p>3) Adjust NICs to match the server's role in [1].</p> <p>4) Click OK.</p>	<p>The screenshot shows the vCloud Director Hardware configuration page. The CPU section is set to 4 virtual CPUs, 1 core per socket, and 4 sockets. The 'Expose hardware-assisted CPU virtualization to guest OS' checkbox is checked. The Memory section is set to 6 GB. The NICs section shows three network adapters: XMI (NIC 0), IMI (NIC 1), and XSI1 (NIC 2). NIC 0 is the primary NIC and is connected to a static IP pool with address 10.240.23.9. NICs 1 and 2 are also connected to static IP pools but have no IP address assigned. The MAC addresses for NICs 1 and 2 will be generated. The 'Add' button is visible at the bottom right of the NICs section.</p>
THIS PROCEDURE HAS BEEN COMPLETED		

C-5 Create Guests from ISO

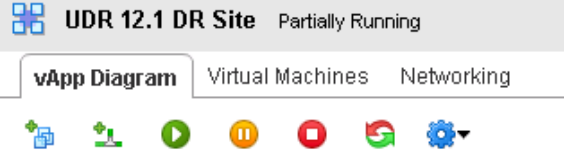
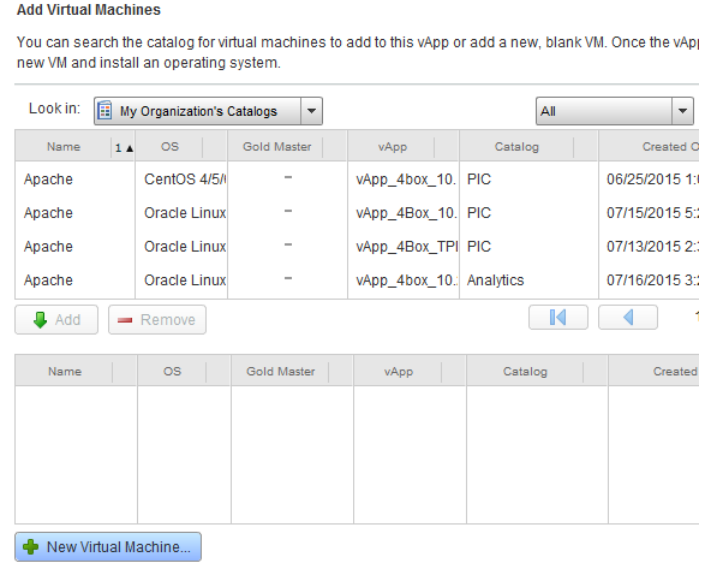
This procedure will create UDR virtual machines (guests) from ISO.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

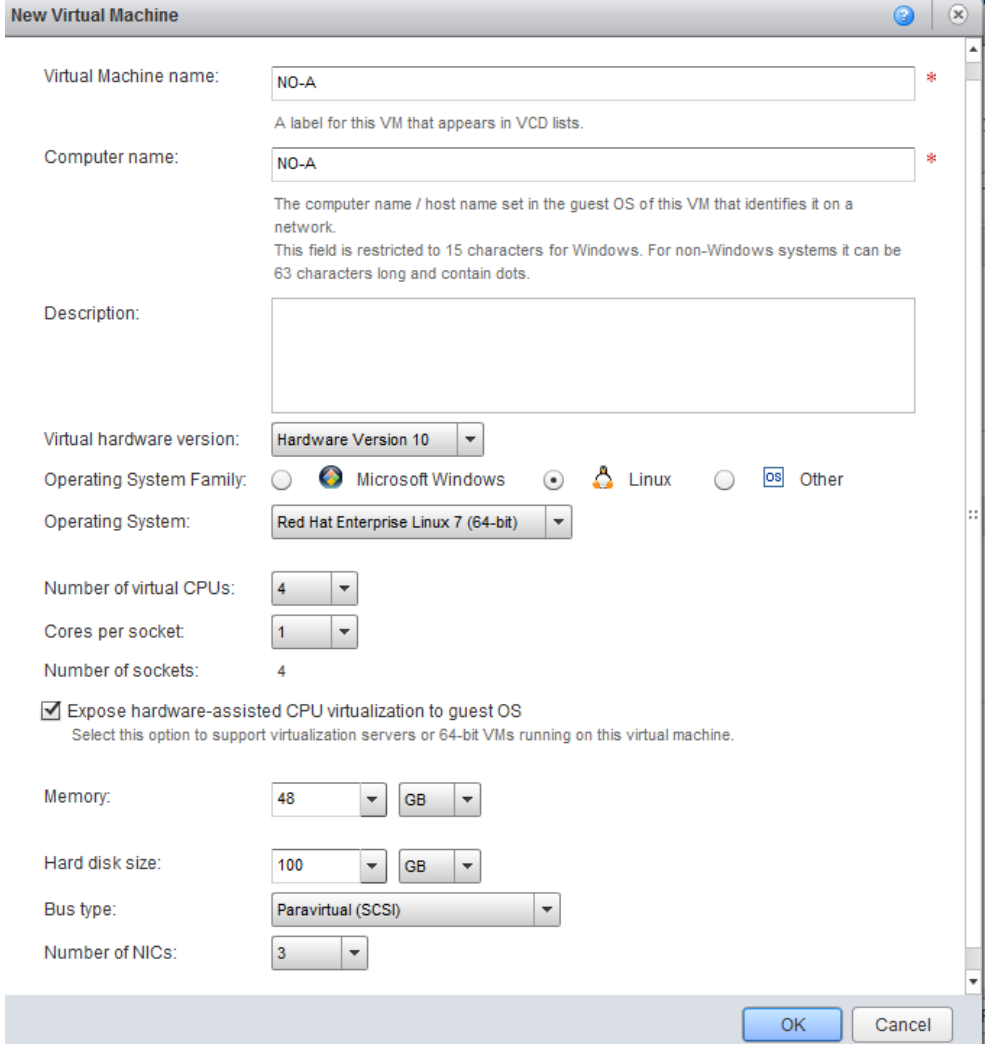
Procedure 25: Create Guests from ISO with vCloud Director

Step	Procedure	Result
1. <input type="checkbox"/>	Log into the VMware vCloud Director	<p>The screenshot shows the VMware vCloud Director login interface. It features a blue background with the VMware logo at the top left. The text 'VMware vCloud Director' is displayed on the right. There are two input fields: 'User name:' and 'Password:'. A blue 'Login' button is located at the bottom center.</p>

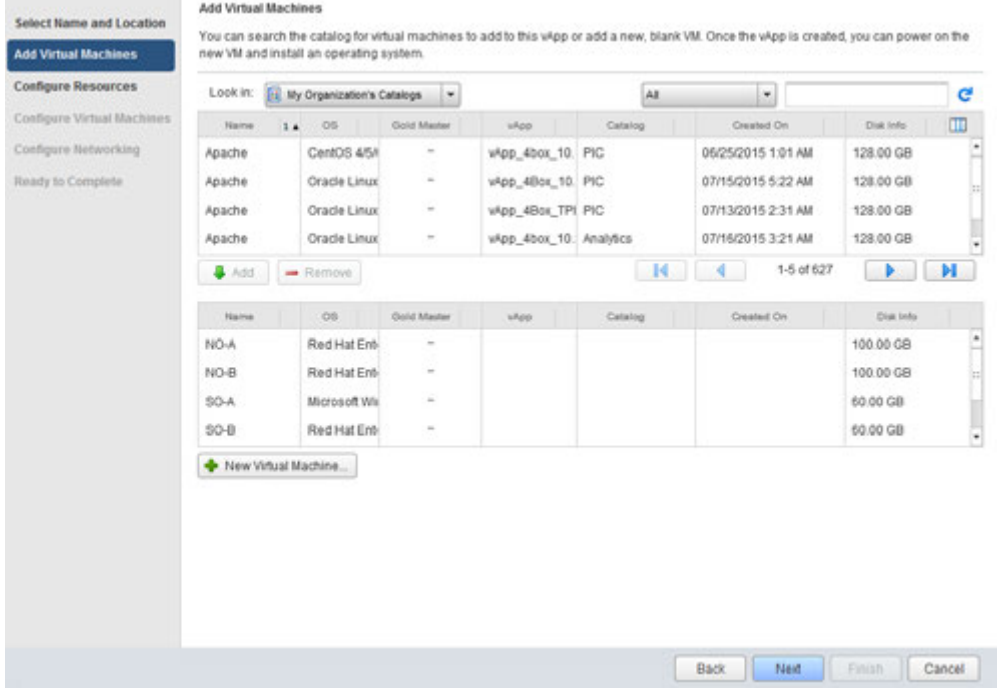
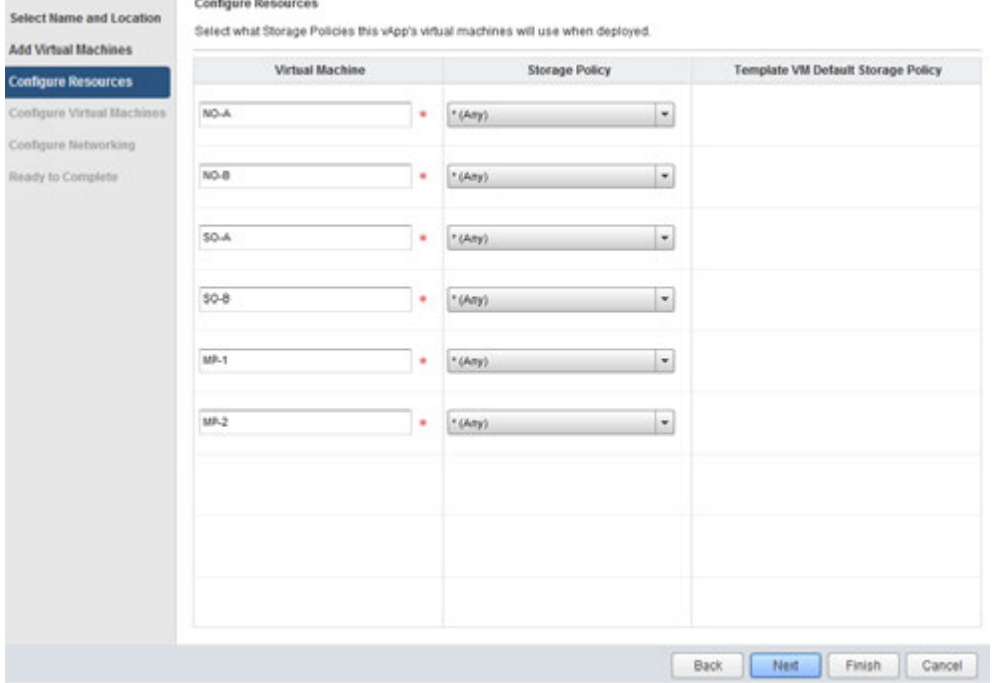
Procedure 25: Create Guests from ISO with vCloud Director

Step	Procedure	Result																														
<p>2.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Select Open hyperlink for the UDR vApp</p>	 <p>Note: Current vApps are listed on the Home Page. If a new vApp is required continue with the next step to create it.</p>																														
<p>3.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Select icon on left to Add VM</p>																															
<p>4.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Click New Virtual Machine button.</p>	 <table border="1"> <thead> <tr> <th>Name</th> <th>OS</th> <th>Gold Master</th> <th>vApp</th> <th>Catalog</th> <th>Created</th> </tr> </thead> <tbody> <tr> <td>Apache</td> <td>CentOS 4/5/6</td> <td>-</td> <td>vApp_4box_10.</td> <td>PIC</td> <td>06/25/2015 1:1</td> </tr> <tr> <td>Apache</td> <td>Oracle Linux</td> <td>-</td> <td>vApp_4Box_10.</td> <td>PIC</td> <td>07/15/2015 5:3</td> </tr> <tr> <td>Apache</td> <td>Oracle Linux</td> <td>-</td> <td>vApp_4Box_TPI</td> <td>PIC</td> <td>07/13/2015 2:3</td> </tr> <tr> <td>Apache</td> <td>Oracle Linux</td> <td>-</td> <td>vApp_4box_10.</td> <td>Analytics</td> <td>07/16/2015 3:3</td> </tr> </tbody> </table>	Name	OS	Gold Master	vApp	Catalog	Created	Apache	CentOS 4/5/6	-	vApp_4box_10.	PIC	06/25/2015 1:1	Apache	Oracle Linux	-	vApp_4Box_10.	PIC	07/15/2015 5:3	Apache	Oracle Linux	-	vApp_4Box_TPI	PIC	07/13/2015 2:3	Apache	Oracle Linux	-	vApp_4box_10.	Analytics	07/16/2015 3:3
Name	OS	Gold Master	vApp	Catalog	Created																											
Apache	CentOS 4/5/6	-	vApp_4box_10.	PIC	06/25/2015 1:1																											
Apache	Oracle Linux	-	vApp_4Box_10.	PIC	07/15/2015 5:3																											
Apache	Oracle Linux	-	vApp_4Box_TPI	PIC	07/13/2015 2:3																											
Apache	Oracle Linux	-	vApp_4box_10.	Analytics	07/16/2015 3:3																											

Procedure 25: Create Guests from ISO with vCloud Director

Step	Procedure	Result
<p>5.</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 10px 0;"></div>	<p>vCloud Director:</p> <ol style="list-style-type: none"> 1. Enter Name and Computer Name for VM. 2. Set Operating System Family = Linux. 3. Check ‘Expose hardware-assisted CPU...’ box. 4. Enter all resource parameters according to the role given in OCCUR Resource Profile [1]. 5. Click OK. 	 <p>The screenshot shows the 'New Virtual Machine' configuration window. The 'Virtual Machine name' and 'Computer name' fields are both set to 'NO-A'. The 'Operating System Family' is set to 'Linux' and the 'Operating System' is 'Red Hat Enterprise Linux 7 (64-bit)'. The 'Expose hardware-assisted CPU virtualization to guest OS' checkbox is checked. Other settings include 4 virtual CPUs, 1 core per socket, 4 sockets, 48 GB memory, 100 GB hard disk size, Paravirtual (SCSI) bus type, and 3 NICs.</p>

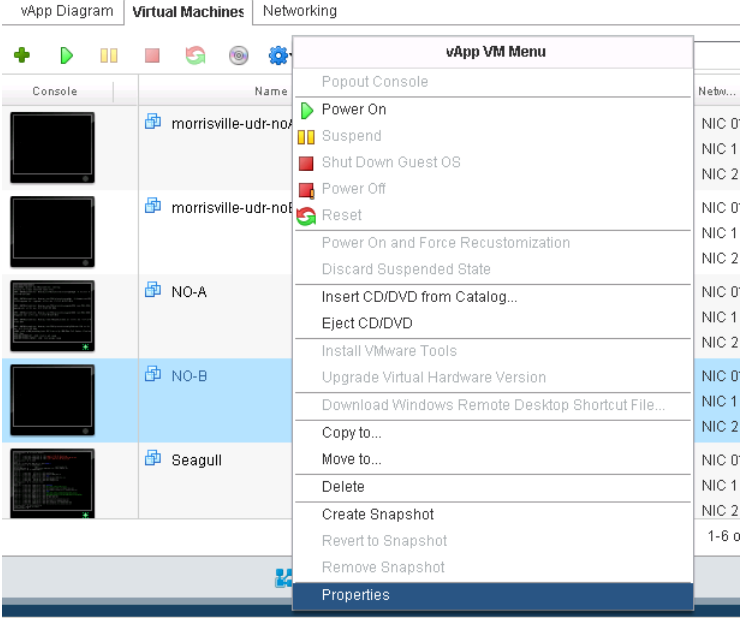

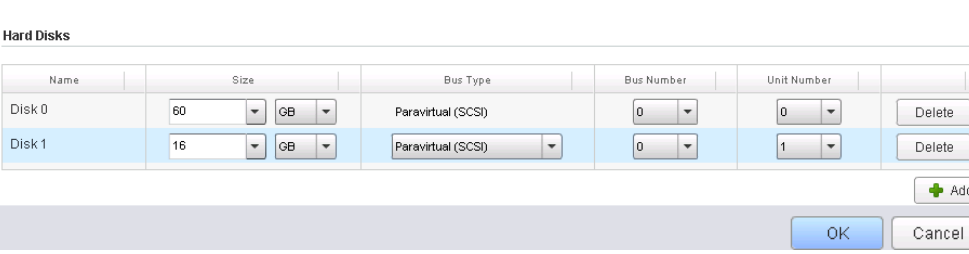
Procedure 25: Create Guests from ISO with vCloud Director

Step	Procedure	Result																																																																						
<p>6.</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin-left: 10px;"></div>	<p>vCloud Director:</p> <p>Click Next.</p>	 <p>Add Virtual Machines</p> <p>You can search the catalog for virtual machines to add to this vApp or add a new, blank VM. Once the vApp is created, you can power on the new VM and install an operating system.</p> <p>Look in: <input type="text" value="My Organization's Catalogs"/> All <input type="text" value=""/></p> <table border="1"> <thead> <tr> <th>Name</th> <th>OS</th> <th>Gold Master</th> <th>vApp</th> <th>Catalog</th> <th>Created On</th> <th>Disk Info</th> </tr> </thead> <tbody> <tr> <td>Apache</td> <td>CentOS 4/5</td> <td>-</td> <td>vApp_4box_10</td> <td>PIC</td> <td>06/25/2015 1:01 AM</td> <td>128.00 GB</td> </tr> <tr> <td>Apache</td> <td>Oracle Linux</td> <td>-</td> <td>vApp_4Box_10</td> <td>PIC</td> <td>07/15/2015 5:22 AM</td> <td>128.00 GB</td> </tr> <tr> <td>Apache</td> <td>Oracle Linux</td> <td>-</td> <td>vApp_4Box_TPI</td> <td>PIC</td> <td>07/13/2015 2:31 AM</td> <td>128.00 GB</td> </tr> <tr> <td>Apache</td> <td>Oracle Linux</td> <td>-</td> <td>vApp_4box_10</td> <td>Analytics</td> <td>07/16/2015 3:21 AM</td> <td>128.00 GB</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Name</th> <th>OS</th> <th>Gold Master</th> <th>vApp</th> <th>Catalog</th> <th>Created On</th> <th>Disk Info</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td>Red Hat Ent</td> <td>-</td> <td></td> <td></td> <td></td> <td>100.00 GB</td> </tr> <tr> <td>NO-B</td> <td>Red Hat Ent</td> <td>-</td> <td></td> <td></td> <td></td> <td>100.00 GB</td> </tr> <tr> <td>SO-A</td> <td>Microsoft Win</td> <td>-</td> <td></td> <td></td> <td></td> <td>60.00 GB</td> </tr> <tr> <td>SO-B</td> <td>Red Hat Ent</td> <td>-</td> <td></td> <td></td> <td></td> <td>60.00 GB</td> </tr> </tbody> </table> <p>Buttons: Add, Remove, Next, Finish, Cancel</p>	Name	OS	Gold Master	vApp	Catalog	Created On	Disk Info	Apache	CentOS 4/5	-	vApp_4box_10	PIC	06/25/2015 1:01 AM	128.00 GB	Apache	Oracle Linux	-	vApp_4Box_10	PIC	07/15/2015 5:22 AM	128.00 GB	Apache	Oracle Linux	-	vApp_4Box_TPI	PIC	07/13/2015 2:31 AM	128.00 GB	Apache	Oracle Linux	-	vApp_4box_10	Analytics	07/16/2015 3:21 AM	128.00 GB	Name	OS	Gold Master	vApp	Catalog	Created On	Disk Info	NO-A	Red Hat Ent	-				100.00 GB	NO-B	Red Hat Ent	-				100.00 GB	SO-A	Microsoft Win	-				60.00 GB	SO-B	Red Hat Ent	-				60.00 GB
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<p>7.</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin-left: 10px;"></div>	<p>vCloud Director:</p> <p>Click Next.</p>	 <p>Configure Resources</p> <p>Select what Storage Policies this vApp's virtual machines will use when deployed.</p> <table border="1"> <thead> <tr> <th>Virtual Machine</th> <th>Storage Policy</th> <th>Template VM Default Storage Policy</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td>*(Any)</td> <td></td> </tr> <tr> <td>NO-B</td> <td>*(Any)</td> <td></td> </tr> <tr> <td>SO-A</td> <td>*(Any)</td> <td></td> </tr> <tr> <td>SO-B</td> <td>*(Any)</td> <td></td> </tr> <tr> <td>MP-1</td> <td>*(Any)</td> <td></td> </tr> <tr> <td>MP-2</td> <td>*(Any)</td> <td></td> </tr> </tbody> </table> <p>Buttons: Back, Next, Finish, Cancel</p>	Virtual Machine	Storage Policy	Template VM Default Storage Policy	NO-A	*(Any)		NO-B	*(Any)		SO-A	*(Any)		SO-B	*(Any)		MP-1	*(Any)		MP-2	*(Any)																																																		
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Procedure 25: Create Guests from ISO with vCloud Director

Step	Procedure	Result																																																
<p>8.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>1. Select Networks and IP Assignments for VM according to the role given in Resource Profile [1].</p> <p>2. Click Next.</p>	<p>Configure Virtual Machines</p> <p>Name each virtual machine and select the network to which you want it to connect. You can configure additional properties for virtual machines after you complete this wizard.</p> <p><input type="checkbox"/> Show network adapter type Adapter choice can affect both networking performance and migration compatibility. Consult the VMware KnowledgeBase for more information or choosing among the network adapter support for various guest operating systems and hosts.</p> <table border="1"> <thead> <tr> <th>Virtual Machine</th> <th>Computer Name</th> <th>Primary NIC</th> <th>Network</th> <th>IP Assignment</th> </tr> </thead> <tbody> <tr> <td>SO-A</td> <td>SO-A *</td> <td><input checked="" type="radio"/> NIC 0</td> <td>XMI</td> <td>Static - IP Pool</td> </tr> <tr> <td></td> <td></td> <td><input type="radio"/> NIC 1</td> <td>IMI</td> <td>Static - IP Pool</td> </tr> </tbody> </table> <p>Back Next Finish Cancel</p>	Virtual Machine	Computer Name	Primary NIC	Network	IP Assignment	SO-A	SO-A *	<input checked="" type="radio"/> NIC 0	XMI	Static - IP Pool			<input type="radio"/> NIC 1	IMI	Static - IP Pool																																	
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<p>9.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>1. For each external network (XMI, XSI): Set Connection to the network a cloud administrator has granted for external communication.</p> <p>2. For each external network (XMI, XSI): Check NAT and Uncheck Firewall.</p> <p>3. Click Next.</p>	<p>Configure Networking</p> <p>Specify how this vApp, its virtual machines, and its vApp networks connect to the organization VDC networks that are accessed in this vApp.</p> <p><input type="checkbox"/> Fence vApp Fencing allows identical virtual machines in different vApps to be powered on without conflict by isolating the MAC and IP addresses of the virtual machines.</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Gateway Ad...</th> <th>Network Mask</th> <th>Connection</th> <th>Routing</th> <th>DHCP</th> <th>Retain IP/ M...</th> </tr> </thead> <tbody> <tr> <td>XSI1</td> <td>vApp</td> <td>192.168.3.1</td> <td>255.255.255.0</td> <td>infra-external</td> <td><input checked="" type="checkbox"/> NAT <input type="checkbox"/> Firewall</td> <td>-</td> <td><input type="checkbox"/></td> </tr> <tr> <td>IMI</td> <td>vApp</td> <td>192.168.2.1</td> <td>255.255.255.0</td> <td>None</td> <td>-</td> <td>-</td> <td><input type="checkbox"/></td> </tr> <tr> <td>XSI2</td> <td>vApp</td> <td>192.168.4.1</td> <td>255.255.255.0</td> <td>None</td> <td>-</td> <td>-</td> <td><input type="checkbox"/></td> </tr> <tr> <td>control</td> <td>vApp</td> <td>192.168.254.1</td> <td>255.255.255.0</td> <td>None</td> <td>-</td> <td>-</td> <td><input type="checkbox"/></td> </tr> <tr> <td>XMI</td> <td>vApp</td> <td>10.240.23.1</td> <td>255.255.255.0</td> <td>infra-external</td> <td><input checked="" type="checkbox"/> NAT <input type="checkbox"/> Firewall</td> <td>-</td> <td><input type="checkbox"/></td> </tr> </tbody> </table> <p>Back Next Finish Cancel</p>	Name	Type	Gateway Ad...	Network Mask	Connection	Routing	DHCP	Retain IP/ M...	XSI1	vApp	192.168.3.1	255.255.255.0	infra-external	<input checked="" type="checkbox"/> NAT <input type="checkbox"/> Firewall	-	<input type="checkbox"/>	IMI	vApp	192.168.2.1	255.255.255.0	None	-	-	<input type="checkbox"/>	XSI2	vApp	192.168.4.1	255.255.255.0	None	-	-	<input type="checkbox"/>	control	vApp	192.168.254.1	255.255.255.0	None	-	-	<input type="checkbox"/>	XMI	vApp	10.240.23.1	255.255.255.0	infra-external	<input checked="" type="checkbox"/> NAT <input type="checkbox"/> Firewall	-	<input type="checkbox"/>
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<p>10.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>1. Review the settings.</p> <p>2. Click Finish.</p>	<p>Ready to Complete</p> <p>Select Name and Location</p> <p>Add Virtual Machines</p> <p>Configure Resources</p> <p>Configure Virtual Machines</p> <p>Configure Networking</p> <p>Ready to Complete</p> <p>You are about to create a vApp with these specifications. Review the settings and click Finish.</p> <p>Name: vApp_UCR_12.1</p> <p>Description:</p> <p>Owner: jpailey3</p> <p>Virtual datacenter: Infra</p> <p>Runtime lease: 14 Days</p> <p>Runtime lease expiration: 10/30/2015 5:44 PM</p> <p>Storage lease: 30 Days</p> <p>Storage lease expiration: 11/15/2015 4:44 PM</p> <p>Networks - 0:</p> <p>VMs - 0:</p> <table border="1"> <thead> <tr> <th>Virtual Machine</th> <th>Guest OS</th> <th>Storage Policy</th> </tr> </thead> <tbody> <tr> <td>NO-A</td> <td>Red Hat Enterprise Linux 7 (64-bit)</td> <td>* (Any)</td> </tr> <tr> <td>NO-B</td> <td>Red Hat Enterprise Linux 7 (64-bit)</td> <td>* (Any)</td> </tr> </tbody> </table> <p>Back Next Finish Cancel</p>	Virtual Machine	Guest OS	Storage Policy	NO-A	Red Hat Enterprise Linux 7 (64-bit)	* (Any)	NO-B	Red Hat Enterprise Linux 7 (64-bit)	* (Any)																																							
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Procedure 25: Create Guests from ISO with vCloud Director


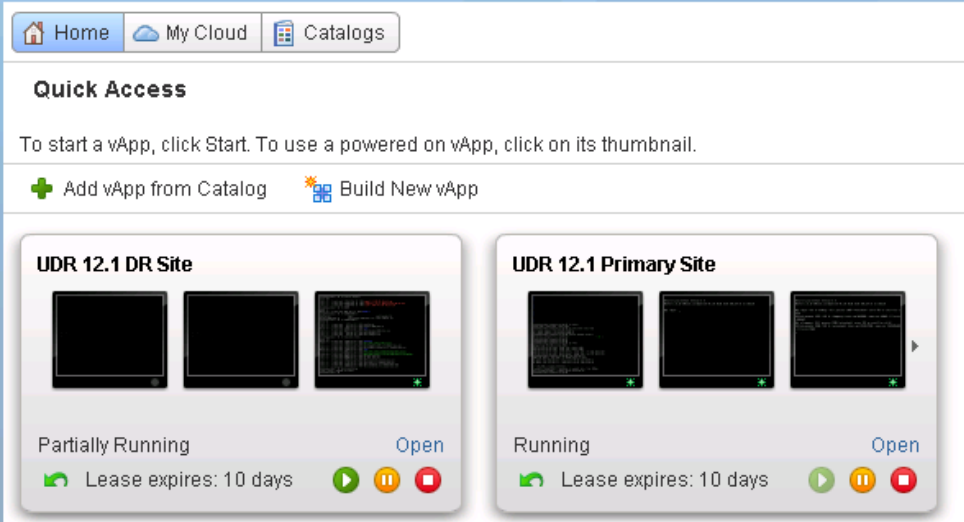

Step	Procedure	Result
11. <input type="checkbox"/>	vCloud Director: 1. Select the VM. 2. Click the Blue Gear icon. 3. Select Properties .	
12.	vCloud Director: 1. Select the Hardware tab. 2. Adjust size of Disk 0 to match VM profile [1].	
13.	vCloud Director: Only If the VM uses a second disk by [1]: 1. Click Add 2. Adjust size of Disk 1 to match VM profile [1]. 3. Click OK	
THIS PROCEDURE HAS BEEN COMPLETED		

C-6 Install Guests from ISO

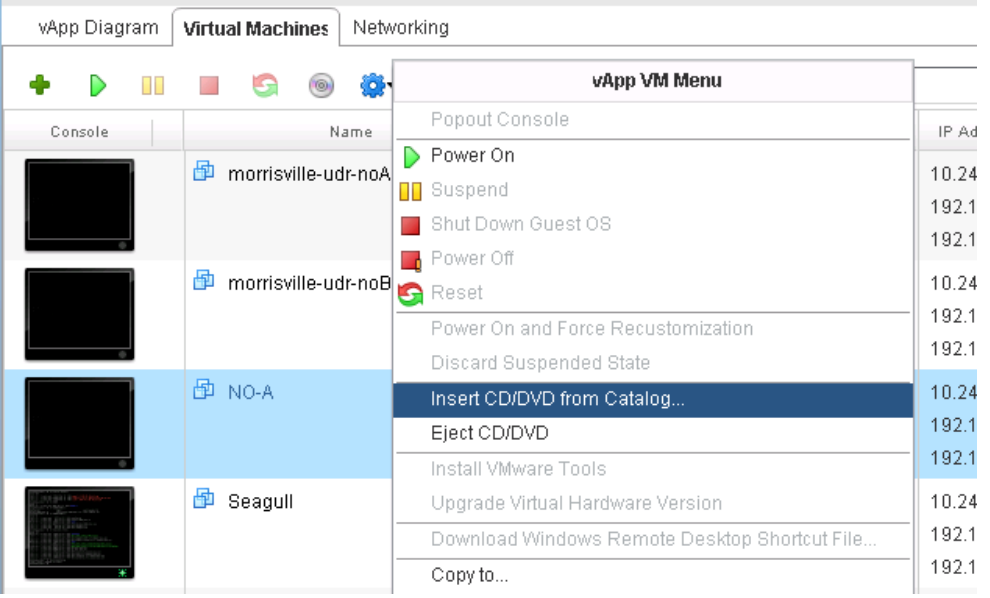
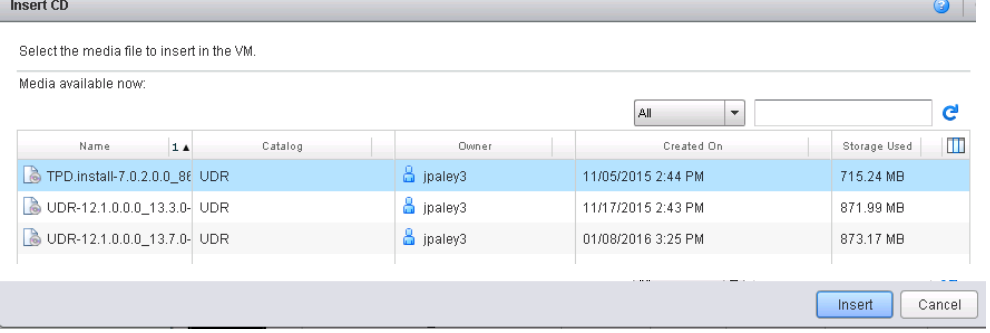
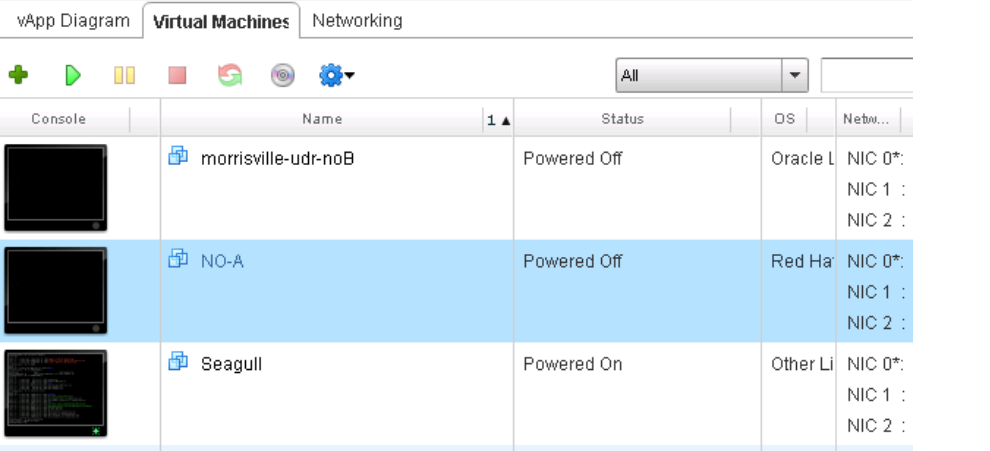
This procedure will create UDR virtual machines (guests) from ISO.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

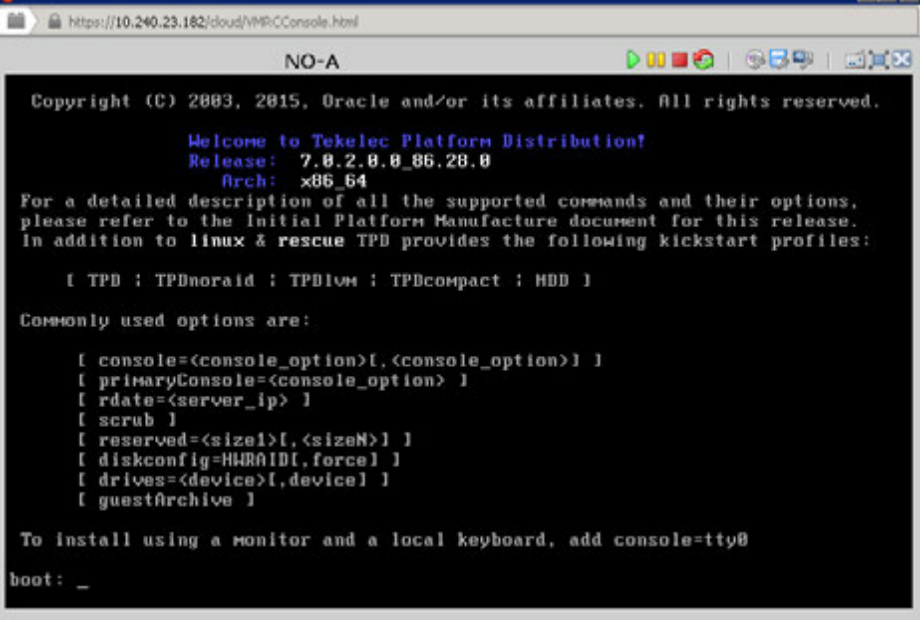
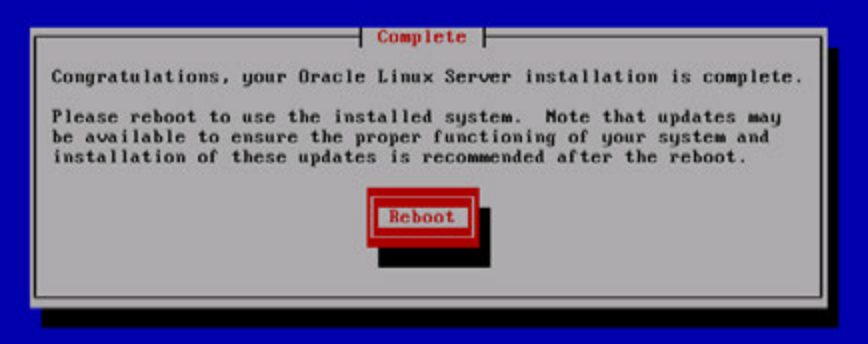
Procedure 26: Install Guests from ISO with vCloud Director

Step	Procedure	Result
1.	Log into the VMware vCloud Director	 <p>The screenshot shows the VMware vCloud Director login interface. It features a blue header with the VMware logo and the text 'VMware vCloud Director'. Below the header, there are two input fields: 'User name:' and 'Password:'. A blue 'Login' button is positioned at the bottom center of the page.</p>
2.	<p>vCloud Director:</p> <p>Select Open hyperlink for the UDR vApp then proceed to Step 5.</p>	 <p>The screenshot displays the vCloud Director Home page. At the top, there are navigation tabs for 'Home', 'My Cloud', and 'Catalogs'. Below this is a 'Quick Access' section with instructions: 'To start a vApp, click Start. To use a powered on vApp, click on its thumbnail.' There are two main buttons: 'Add vApp from Catalog' and 'Build New vApp'. The main content area shows two vApp thumbnails: 'UDR 12.1 DR Site' (Partially Running) and 'UDR 12.1 Primary Site' (Running). Each thumbnail includes a 'Lease expires: 10 days' indicator and an 'Open' button. Below the thumbnails, a note reads: 'Note: Current vApps are listed on the Home Page. If a new vApp is required continue with the next step to create it.'</p>
3.	<p>vCloud Director:</p> <p>Select...</p> <p>→ My Cloud</p> <p>→ Virtual Machines</p>	 <p>The screenshot shows the 'My Cloud' page in vCloud Director. The 'My Cloud' tab is selected, and the 'vApps' section is expanded. The 'UDR 12.1 DR Site' vApp is highlighted, showing its status as 'Partially Running'. Below the vApp name, there are three tabs: 'vApp Diagram', 'Virtual Machines', and 'Networking'. The 'Virtual Machines' tab is currently active.</p>

Procedure 26: Install Guests from ISO with vCloud Director

Step	Procedure	Result																				
<p>4.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <ol style="list-style-type: none"> 1. Select the VM. 2. Click the Blue Gear icon. 3. Select Insert CD/DVD from Catalog. 	 <table border="1"> <thead> <tr> <th>IP Ad</th> </tr> </thead> <tbody> <tr><td>10.24</td></tr> <tr><td>192.1</td></tr> <tr><td>192.1</td></tr> <tr><td>10.24</td></tr> <tr><td>192.1</td></tr> <tr><td>192.1</td></tr> <tr><td>10.24</td></tr> <tr><td>192.1</td></tr> <tr><td>10.24</td></tr> <tr><td>192.1</td></tr> <tr><td>192.1</td></tr> <tr><td>10.24</td></tr> <tr><td>192.1</td></tr> <tr><td>192.1</td></tr> </tbody> </table>	IP Ad	10.24	192.1	192.1	10.24	192.1	192.1	10.24	192.1	10.24	192.1	192.1	10.24	192.1	192.1					
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<p>5.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <ol style="list-style-type: none"> 1. Select TPD ISO. 2. Click Insert 	 <table border="1"> <thead> <tr> <th>Name</th> <th>Catalog</th> <th>Owner</th> <th>Created On</th> <th>Storage Used</th> </tr> </thead> <tbody> <tr> <td>TPD.install-7.0.2.0.0_86</td> <td>UDR</td> <td>jpaley3</td> <td>11/05/2015 2:44 PM</td> <td>715.24 MB</td> </tr> <tr> <td>UDR-12.1.0.0.0_13.3.0-</td> <td>UDR</td> <td>jpaley3</td> <td>11/17/2015 2:43 PM</td> <td>871.99 MB</td> </tr> <tr> <td>UDR-12.1.0.0.0_13.7.0-</td> <td>UDR</td> <td>jpaley3</td> <td>01/08/2016 3:25 PM</td> <td>873.17 MB</td> </tr> </tbody> </table>	Name	Catalog	Owner	Created On	Storage Used	TPD.install-7.0.2.0.0_86	UDR	jpaley3	11/05/2015 2:44 PM	715.24 MB	UDR-12.1.0.0.0_13.3.0-	UDR	jpaley3	11/17/2015 2:43 PM	871.99 MB	UDR-12.1.0.0.0_13.7.0-	UDR	jpaley3	01/08/2016 3:25 PM	873.17 MB
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<p>6.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <ol style="list-style-type: none"> 1. Click on the Green Play icon to start the VM 2. Click the Console raise console window 	 <table border="1"> <thead> <tr> <th>Name</th> <th>Status</th> <th>OS</th> <th>Netw...</th> </tr> </thead> <tbody> <tr> <td>morrisville-udr-noB</td> <td>Powered Off</td> <td>Oracle L</td> <td>NIC 0*: NIC 1 : NIC 2 :</td> </tr> <tr> <td>NO-A</td> <td>Powered Off</td> <td>Red Ha</td> <td>NIC 0*: NIC 1 : NIC 2 :</td> </tr> <tr> <td>Seagull</td> <td>Powered On</td> <td>Other Li</td> <td>NIC 0*: NIC 1 : NIC 2 :</td> </tr> </tbody> </table>	Name	Status	OS	Netw...	morrisville-udr-noB	Powered Off	Oracle L	NIC 0*: NIC 1 : NIC 2 :	NO-A	Powered Off	Red Ha	NIC 0*: NIC 1 : NIC 2 :	Seagull	Powered On	Other Li	NIC 0*: NIC 1 : NIC 2 :				
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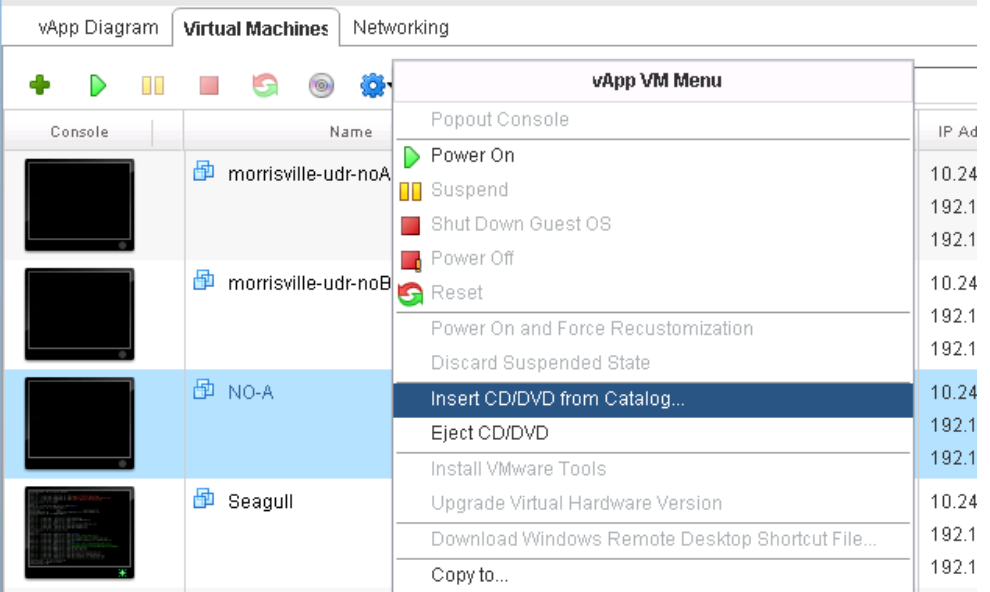
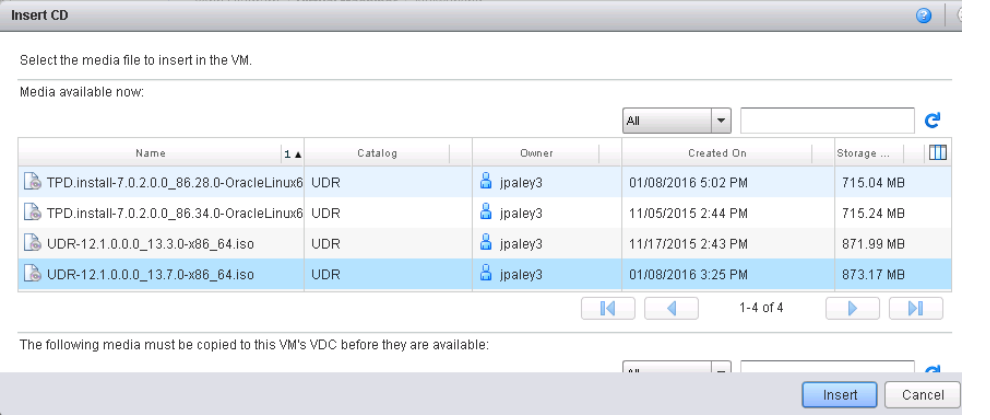
Procedure 26: Install Guests from ISO with vCloud Director

Step	Procedure	Result
<p>7.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Initiate operating system install by entering the given text into console boot prompt</p>	 <p>boot: TPDnoraaid console=tty0</p>
<p>8.</p> <p><input type="checkbox"/></p>	<p>When installation completes, press Enter to reboot</p>	 <p>Note: Escape the console session with keyboard combination Ctrl – Alt</p>
<p>9.</p> <p><input type="checkbox"/></p>	<p>After reboot, log into console</p>	<p>Hostnameb6092a316785 login: root</p> <p>password:</p>
<p>10.</p> <p><input type="checkbox"/></p>	<p>Verify that the TPD release is 7.0.2.x</p>	<pre># getPlatRev 7.0.2.0.0-86.34.0</pre>
<p>11.</p> <p><input type="checkbox"/></p>	<p>Execute “alarmMgr” command to verify health of the server before Application install.</p>	<pre># alarmMgr --alarmStatus</pre> <p><i>NOTE: This command should return no output on a healthy system.</i></p>

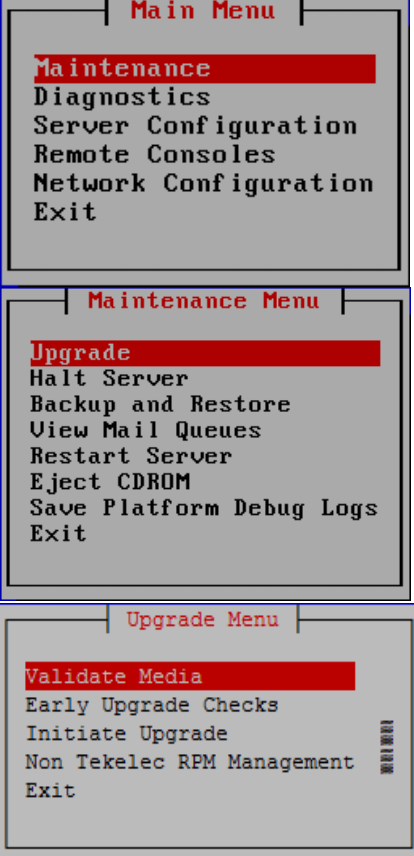
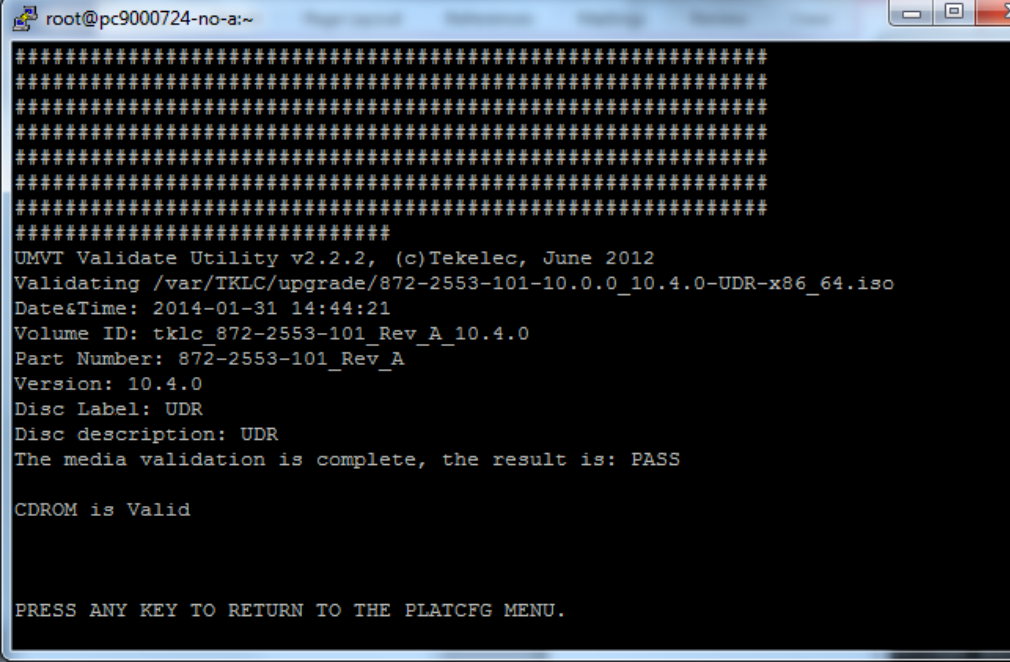
Procedure 26: Install Guests from ISO with vCloud Director

Step	Procedure	Result
12. <input type="checkbox"/>	Execute "verifyIPM" as a secondary way to verify health of the server before Application install.	# verifyIPM <i>NOTE: This command should return no output on a healthy system.</i>
13. <input type="checkbox"/>	Create physical volume sdb	# pvcreate /dev/sdb Physical volume "/dev/sdb" successfully created
14. <input type="checkbox"/>	Create volume group stripe_vg	# vgcreate stripe_vg /dev/sdb Volume group "stripe_vg" successfully created
15. <input type="checkbox"/>	Create logical volume rundb	# lvcreate -L <SIZE>G --alloc anywhere --name rundb stripe_vg Replace <SIZE> size tag with a number in gigabytes half the size of the second disk according to [1]. ISO lab second disk is 120: <SIZE> = 60 ISO production second disk is 720: <SIZE> = 360
16. <input type="checkbox"/>	Make filesystem on rundb	# mkfs -t ext4 /dev/stripe_vg/rundb mke2fs 1.43-WIP (20-Jun-2013) Filesystem label= OS type: Linux Block size=4096 (log=2) Fragment size=4096 (log=2) Stride=0 blocks, Stripe width=0 blocks 25231360 inodes, 100925440 blocks 5046272 blocks (5.00%) reserved for the super user First data block=0 Maximum filesystem blocks=4294967296 3080 block groups 32768 blocks per group, 32768 fragments per group 8192 inodes per group Superblock backups stored on blocks: 32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208, 4096000, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968 Allocating group tables: done Writing inode tables: done Creating journal (32768 blocks): done Writing superblocks and filesystem accounting information: done This filesystem will be automatically checked every 22 mounts or 180 days, whichever comes first. Use tune2fs -c or -i to override.
17. <input type="checkbox"/>	Execute the following syscheck/restart steps in order	# syscheck --reconfig disk
18. <input type="checkbox"/>	Escape console	Escape the console session with keyboard combination Ctrl – Alt

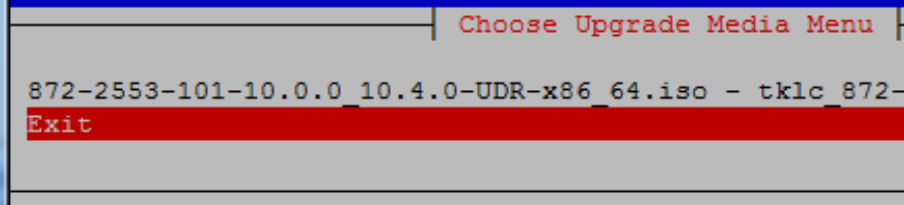
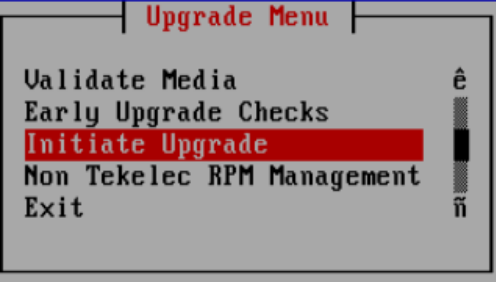


Procedure 26: Install Guests from ISO with vCloud Director

Step	Procedure	Result																									
<p>19.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <ol style="list-style-type: none"> 1. Select the VM. 2. Click the Blue Gear icon. 3. Select Insert CD/DVD from Catalog. 	 <p>The screenshot shows the vApp VM Menu with the following options: Popout Console, Power On, Suspend, Shut Down Guest OS, Power Off, Reset, Power On and Force Recustomization, Discard Suspended State, Insert CD/DVD from Catalog..., Eject CD/DVD, Install VMware Tools, Upgrade Virtual Hardware Version, Download Windows Remote Desktop Shortcut File..., and Copy to... The VM list in the background includes 'morrisville-udr-noA', 'morrisville-udr-noB', 'NO-A', and 'Seagull'.</p>																									
<p>20.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <ol style="list-style-type: none"> 1. Select UDR ISO. 2. Click Insert 	 <p>The 'Insert CD' dialog box displays a table of available media files:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Catalog</th> <th>Owner</th> <th>Created On</th> <th>Storage ...</th> </tr> </thead> <tbody> <tr> <td>TPD.install-7.0.2.0.0_86.28.0-OracleLinux6</td> <td>UDR</td> <td>jpaley3</td> <td>01/08/2016 5:02 PM</td> <td>715.04 MB</td> </tr> <tr> <td>TPD.install-7.0.2.0.0_86.34.0-OracleLinux6</td> <td>UDR</td> <td>jpaley3</td> <td>11/05/2015 2:44 PM</td> <td>715.24 MB</td> </tr> <tr> <td>UDR-12.1.0.0.0_13.3.0-x86_64.iso</td> <td>UDR</td> <td>jpaley3</td> <td>11/17/2015 2:43 PM</td> <td>871.99 MB</td> </tr> <tr> <td>UDR-12.1.0.0.0_13.7.0-x86_64.iso</td> <td>UDR</td> <td>jpaley3</td> <td>01/08/2016 3:25 PM</td> <td>873.17 MB</td> </tr> </tbody> </table> <p>Buttons for 'Insert' and 'Cancel' are visible at the bottom right of the dialog.</p>	Name	Catalog	Owner	Created On	Storage ...	TPD.install-7.0.2.0.0_86.28.0-OracleLinux6	UDR	jpaley3	01/08/2016 5:02 PM	715.04 MB	TPD.install-7.0.2.0.0_86.34.0-OracleLinux6	UDR	jpaley3	11/05/2015 2:44 PM	715.24 MB	UDR-12.1.0.0.0_13.3.0-x86_64.iso	UDR	jpaley3	11/17/2015 2:43 PM	871.99 MB	UDR-12.1.0.0.0_13.7.0-x86_64.iso	UDR	jpaley3	01/08/2016 3:25 PM	873.17 MB
Name	Catalog	Owner	Created On	Storage ...																							
TPD.install-7.0.2.0.0_86.28.0-OracleLinux6	UDR	jpaley3	01/08/2016 5:02 PM	715.04 MB																							
TPD.install-7.0.2.0.0_86.34.0-OracleLinux6	UDR	jpaley3	11/05/2015 2:44 PM	715.24 MB																							
UDR-12.1.0.0.0_13.3.0-x86_64.iso	UDR	jpaley3	11/17/2015 2:43 PM	871.99 MB																							
UDR-12.1.0.0.0_13.7.0-x86_64.iso	UDR	jpaley3	01/08/2016 3:25 PM	873.17 MB																							
<p>21.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <ol style="list-style-type: none"> 1. Re-enter the console window 2. Login to the "placfg" utility. 	<pre>[root@hostname1260476221 ~]# su - placfg</pre>																									

Procedure 26: Install Guests from ISO with vCloud Director

Step	Procedure	Result
<p>22.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <p>From the “platcfg” Main Menu...</p> <p>Select each option as shown on the right, pressing the Enter key after each selection.</p> <ol style="list-style-type: none"> 1. Maintenance 2. Upgrade 3. Validate Meida 	
<p>23.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <p>From the “platcfg” Main Menu...</p> <p>Verify “CDROM is Valid.”</p> <p>..... then press any key to return to platcfg menu.</p>	

Procedure 26: Install Guests from ISO with vCloud Director

Step	Procedure	Result
<p>24.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <p>From the “platacfg” Main Menu...</p> <p>Select each option as shown on the right, pressing the Enter key after each selection.</p>	 <p>1</p>  <p>2</p>
<p>25.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <p>Verify that the Application release level shown matches the target release.</p> <p>Press Enter.</p>	 <p>1</p>  <p>2</p>

Procedure 26: Install Guests from ISO with vCloud Director

Step	Procedure	Result
<p>26.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <p>Output similar to that shown on the right may be observed as the Application install progresses.</p>	<pre> Determining if we should upgrade... Install product is TPD Install product record exists in /etc/tekelec.cfg Install products match Stopping cron service... Checking for stale RPM DB locks... Installing public key /mnt/upgrade/upgrade/pub_keys/MySQL_public_key.asc... Installing public key /mnt/upgrade/upgrade/pub_keys/RPM-GPG-KEY-redhat-beta... Installing public key /mnt/upgrade/upgrade/pub_keys/RPM-GPG-KEY-redhat-release... . Checking for any missing packages or files Checking for missing files... No missing files found. Checking if upgrade is supported Current platform version: 5.0.0-72.28.0 Target platform version: 5.0.0-72.28.0 Minimum supported version: 4.2.0-70.60.0 Upgrade from same release as current is supported Evaluate if there are any packages to upgrade Evaluating if there are packages to upgrade... </pre>
<p>27.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <p>Output similar to that shown on the right may be observed as the server initiates a post-install reboot.</p>	<pre> scsi7 : SCSI emulation for USB Mass Storage devices scsi8 : SCSI emulation for USB Mass Storage devices input: Intel(R) Multidevice as /class/input/input3 input: USB HID v1.01 Mouse [Intel(R) Multidevice] on usb-0000:00:1d.3-1 input: Intel(R) Multidevice as /class/input/input4 input: USB HID v1.01 Keyboard [Intel(R) Multidevice] on usb-0000:00:1d.3 Restarting system. . machine restart █ </pre>
<p>28.</p> <p><input type="checkbox"/></p>	<p>UDR Console:</p> <p>After the server has completed reboot...</p> <p>Log into the server as "admusr".</p>	<pre> CentOS release 5.6 (Final) Kernel 2.6.18-238.19.1.el5prere15.0.0_72.22.0 on an x86_64 hostname1260476221 login:admusr Password: <admusr_password> </pre>

Procedure 26: Install Guests from ISO with vCloud Director


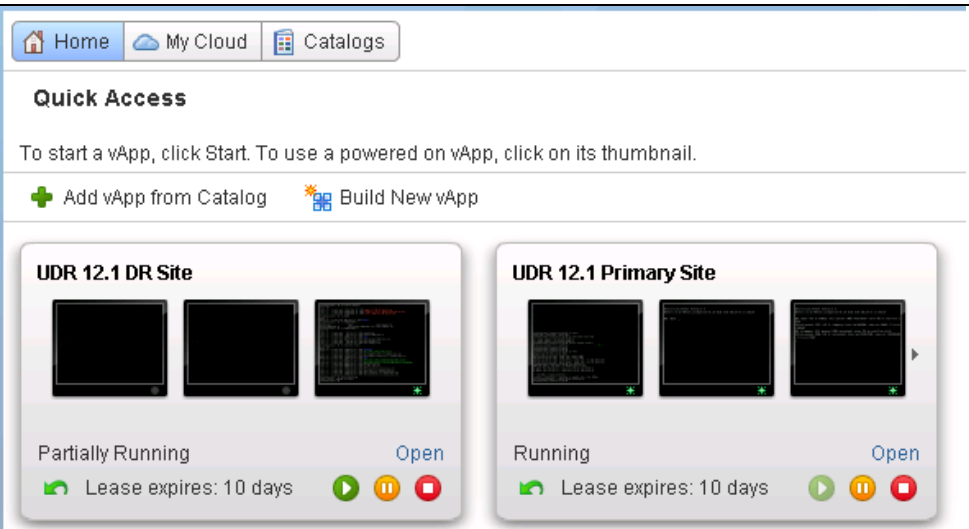

Step	Procedure	Result
29.	<p>UDR Console:</p> <p><input type="checkbox"/> Output similar to that shown on the right will appear as the server returns to a command prompt.</p>	<p>*** TRUNCATED OUTPUT ***</p> <pre> ===== This system has been upgraded but the upgrade has not yet been accepted or rejected. Please accept or reject the upgrade soon. ===== VPATH=/opt/TKLCcomcol/runcm5.16:/opt/TKLCcomcol/cm5.16 PRODPATH= RELEASE=5.16 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TK LC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/udr PRODPATH=/opt/comcol/prod RUNID=00 [admusr@hostname1260476221 ~]\$ </pre>
30.	<p>UDR Console:</p> <p><input type="checkbox"/> Verify successful upgrade.</p>	<p>\$ verifyUpgrade</p> <p><i>NOTE: This command should return no output on a healthy system.</i></p>
31.	<p>UDR Console:</p> <p><input type="checkbox"/> Verify that the Application release level shown matches the target release.</p>	<pre> [admusr@pc9000724-no-a ~]\$ appRev Install Time: Tue Dec 8 06:16:58 2015 Product Name: UDR Product Release: 12.1.0.0.0_13.5.0 Base Distro Product: TPD Base Distro Release: 7.0.2.0.0_86.36.0 Base Distro ISO: TPD.install-7.0.2.0.0_86.36.0-OracleLinux6.6- x86_64.iso ISO name: UDR-12.1.0.0.0_13.5.0-x86_64.iso OS: OracleLinux 6.6 </pre>
32.	<p><i>Change directory</i></p> <p><input type="checkbox"/></p>	<p>\$ cd /var/TKLC/backout</p>
33.	<p><i>Perform upgrade acceptance.</i></p> <p><input type="checkbox"/></p>	<p>\$ sudo ./accept</p>
34.	<p>UDR Console:</p> <p><input type="checkbox"/> Reboot the server</p>	<p>Reboot the server:</p> <p>\$ sudo reboot</p> <p>Wait until the reboot completes and re-login with admusr credentials.</p>
35.	<p>UDR Console:</p> <p><input type="checkbox"/> Verify server health</p>	<p>Verify server health:</p> <p>\$ alarmMgr --alarmStatus</p> <p><i>Note: This command should return only one alarm related to pending upgrade acceptance.</i></p>
THIS PROCEDURE HAS BEEN COMPLETED		

C-7 Configure Guests OAM Network

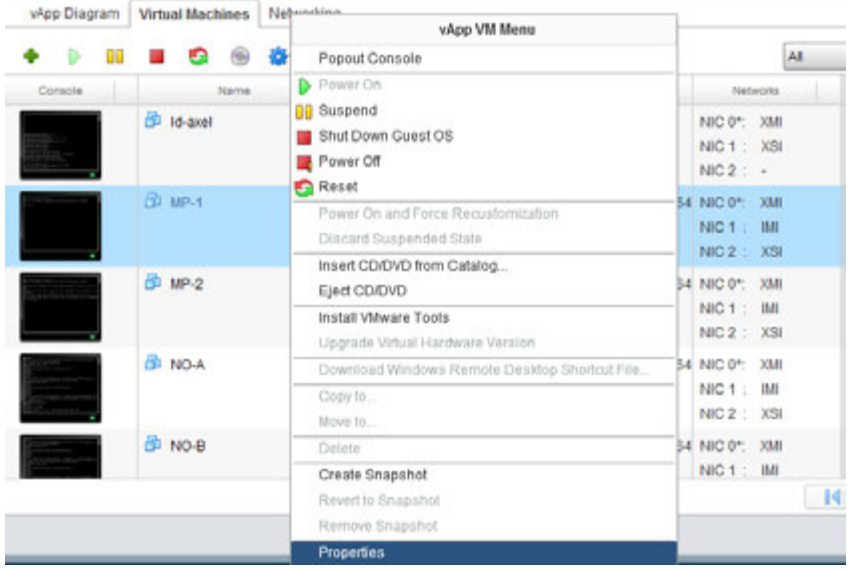
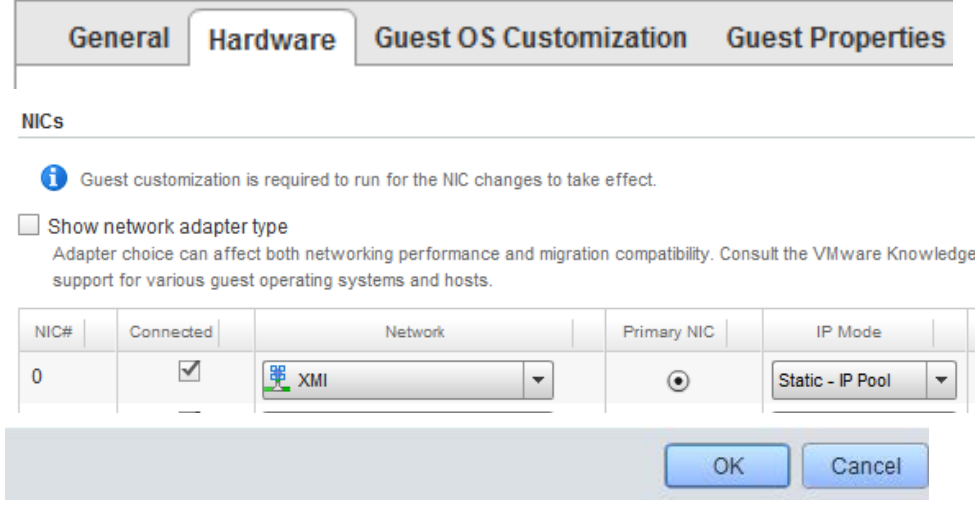
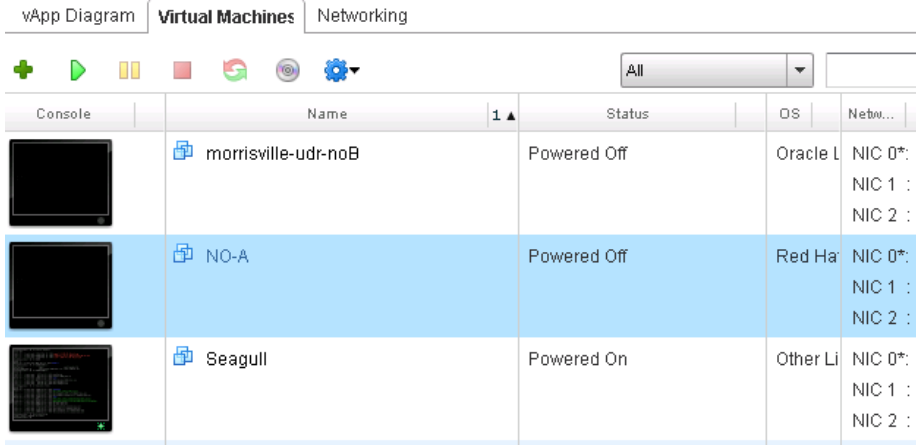
This procedure will create UDR virtual machines (guests) from ISO.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 27: Configure Guest OAM Network

Step	Procedure	Result
1. <input type="checkbox"/>	Log into the VMware vCloud Director	 <p>The screenshot shows the VMware vCloud Director login interface. It features a blue header with the VMware logo and the text 'VMware vCloud Director'. Below the header, there are two input fields: 'User name:' and 'Password:'. A blue 'Login' button is positioned at the bottom center of the page.</p>
2. <input type="checkbox"/>	vCloud Director: Select Open hyperlink for the UDR vApp then proceed to Step 5 .	 <p>The screenshot displays the vCloud Director Home page. At the top, there are navigation tabs for 'Home', 'My Cloud', and 'Catalogs'. Below this is a 'Quick Access' section with instructions: 'To start a vApp, click Start. To use a powered on vApp, click on its thumbnail.' There are two main action buttons: 'Add vApp from Catalog' and 'Build New vApp'. The page shows two vApp thumbnails: 'UDR 12.1 DR Site' (Partially Running) and 'UDR 12.1 Primary Site' (Running). Each thumbnail includes a 'Lease expires: 10 days' indicator and an 'Open' button. Below the thumbnails, a note reads: 'Note: Current vApps are listed on the Home Page. If a new vApp is required continue with the next step to create it.'</p>
3. <input type="checkbox"/>	vCloud Director: Select... → My Cloud → Virtual Machines	 <p>The screenshot shows the 'My Cloud' page in vCloud Director. The 'My Cloud' tab is selected, and the 'vApps' section is expanded. A vApp named 'UDR 12.1 DR Site' is shown in a 'Partially Running' state. Below the vApp name, there are three tabs: 'vApp Diagram', 'Virtual Machines', and 'Networking'. The 'Virtual Machines' tab is currently active.</p>

Procedure 27: Configure Guest OAM Network

Step	Procedure	Result
<p>4.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <ol style="list-style-type: none"> 1. Select the VM. 2. Click the Blue Gear icon. 3. Select Properties 	
<p>5.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <ol style="list-style-type: none"> 1. Select Hardware tab. 2. Note the NIC# assignment of OAM/XMI network 3. Click Cancel 	
<p>6.</p> <p><input type="checkbox"/></p>	<p>vCloud Director:</p> <p>Click the console to raise console window</p>	

Procedure 27: Configure Guest OAM Network

Step	Procedure	Result
7. <input type="checkbox"/>	UDR Console: Login to console as admusr	login as: admusr Password:
8. <input type="checkbox"/>	UDR Console: Configure XMI network	<ol style="list-style-type: none"> View a list of netAdm devices \$ sudo netAdm show Set the XMI device for routable OAM access: Note: Use 'add' if the show command did not list device eth0. Use 'set' otherwise. \$ sudo netAdm add --device=eth0 --address=<Guest_XMI_IP_Address> --netmask=<XMI_Netmask> --onboot=yes --bootproto=none Add the default route for XMI: \$ sudo netAdm add --route=default --gateway=<Gateway_XMI_IP_Address> --device=eth0 <p>Note: The network device may be different than shown here (eth0) if the order of network adapter insertion was other than shown. Refer to Step 5 for this assignment.</p>
9. <input type="checkbox"/>	UDR Console: Configure XSI network (NO and MP Server Only)	<p>Set the XSI device for routable signaling network access (Only for NO & MP Servers):</p> <p>Note: Where ethX is the interface associated with the signaling network</p> <p>\$ sudo netAdm add --device=eth2 --address=<Guest_XSI_IP_Address> --netmask=<XSI_Netmask> --onboot=yes --bootproto=none</p> <p>Note: The network device may be different than shown here (eth2) if the order of network adapter insertion was other than shown. Refer to Step 5 for this assignment.</p>
10. <input type="checkbox"/>	UDR Console: Repeat as required (MP Server Only)	Repeat Step 7 to add XS1-2 (eth3) if a second signaling network is in use (Only for MP Servers). Adjust input parameter values accordingly
11. <input type="checkbox"/>	UDR Console: Exit console	\$ exit Note: Press Ctrl-Alt keys to escape from console.
THIS PROCEDURE HAS BEEN COMPLETED		

Appendix D. SAMPLE NETWORK ELEMENT AND HARDWARE PROFILES

In order to enter all the network information for a network element into an Appworks-based system, a specially formatted XML file needs to be filled out with the required network information. The network information is needed to configure both the NOAMP and any SOAM Network Elements.

It is expected that the maintainer/creator of this file has networking knowledge of this product and the customer site at which it is being installed. The following is an example of a Network Element XML file.

The SOAM Network Element XML file needs to have same network names for the networks as the NOAMP Network Element XML file has. It is easy to accidentally create different network names for NOAMP and SOAM Network Element, and then the mapping of services to networks will not be possible.

Example Network Element XML file:

Example NOAMP Network Element XML	Example SOAM Network Element XML
<pre><?xml version="1.0"?> <networkelement> <name>NO_UDR_NE</name> <networks> <network> <name>XMI</name> <vlanId>3</vlanId> <ip>10.2.0.0</ip> <mask>255.255.255.0</mask> <gateway>10.2.0.1</gateway> <isDefault>true</isDefault> </network> <network> <name>IMI</name> <vlanId>4</vlanId> <ip>10.3.0.0</ip> <mask>255.255.255.0</mask> <nonRoutable>true</nonRoutable> </network> </networks> </networkelement></pre>	<pre><?xml version="1.0"?> <networkelement> <name>SO_UDR_NE</name> <networks> <network> <name>XMI</name> <vlanId>3</vlanId> <ip>10.2.0.0</ip> <mask>255.255.255.0</mask> <gateway>10.2.0.1</gateway> <isDefault>true</isDefault> </network> <network> <name>IMI</name> <vlanId>4</vlanId> <ip>10.3.0.0</ip> <mask>255.255.255.0</mask> <nonRoutable>true</nonRoutable> </network> </networks> </networkelement></pre>

The server hardware information is needed to configure the Ethernet interfaces on the servers. This server hardware profile data XML file is used for Appworks deployments. It is supplied to the NOAMP server so that the information can be pulled in by Appworks and presented to the user in the GUI during server configuration. The following is an example of a Server Hardware Profile XML file which is stored at path /var/TKLC/appworks/profiles

Example Server Hardware Profile XML – Virtual Guest:

```
<profile>
  <serverType>UDR VMware</serverType>
  <available>
    <device>eth0</device>
    <device>eth1</device>
    <device>eth2</device>
    <device>eth3</device>
  </available>
</devices>
```

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```
<device>
  <name>eth0</name>
  <type>ETHERNET</type>
</device>
<device>
  <name>eth1</name>
  <type>ETHERNET</type>
</device>
<device>
  <name>eth2</name>
  <type>ETHERNET</type>
</device>
<device>
  <name>eth3</name>
  <type>ETHERNET</type>
</device>
</devices>
</profile>
```

Appendix E. RESOURCE PROFILE

VM Name		vCPUs		RAM (GB)		Storage (GB)	
		2K Sh Profile	7K Sh Profile	2K Sh Profile	7K Sh Profile	2K Sh Profile	7K Sh Profile
<i>NOAMP</i>	Network Operation, Administration, Maintenance, and Provisioning	4	14	48	128	OVA: 60 ISO: 100 (+120GB DB)	ISO: 400 (+720GB DB)
<i>SOAM</i>	Site (node) Operation, Administration, Maintenance	4*	4*	4	8	60	60
<i>MP</i>	Message Processor	4	10	16	32	60	60

*- SOAM can run with only 2 CPU. This will not create a performance degradation though Server Hardware Configuration Error alarm will be raised and remain on the system.

Notes:

- Storage profile for NOAMP is determined by installation media. OVA installation will yield a NOAMP with a single 60GB storage. Higher capacity installations can be achieved by ISO media installation of NOAMP with a larger primary storage and additional secondary storage for database.
- Lab numbers are for demonstration of functionality only and can only support 100/s SOAP provisioning with 2k/s SH traffic.
- Performance numbers were gathered from an ISO based lab deployment to enable the use of larger datasets than supported by an OVA based deployment, though the performance of ISO and OVA should be equivalent due to the equality of their processing and memory resource.

Appendix F. NETWORK DEVICE ASSIGNMENTS

		Interface Assignment						
Product	Role	Control	Platform Management	OAMP (XMI)	Local (IMI)	Signaling A (XSI1)	Signaling B (XSI2)	NetBackup
Platform	TVOE							
	PMAC							
UDR	NOAMP			eth0	eth1	eth2		
	SOAM			eth0	eth1			
	MP			eth0	eth1	eth2	eth3	

Legend				
Mandatory	Not Applicable	Unsupported	Optional	Suggested

Appendix G. OPENSTACK CLOUD ORACLE COMMUNICATIONS USER DATA REPOSITORY

This appendix contains procedures for deploying User Data Repository on the Openstack platform. The steps here contain references to third party interfaces, the accuracy of which cannot be guaranteed. Appearance and function may differ between versions of Openstack software and deployments of Openstack cloud computing.

Important Note: The content of this appendix is for informational purposes only. Please consult the latest documents from the vendor of your OpenStack distribution.

G-1 OpenStack Image Creation from OVA

This procedure will convert application media (OVA) to qcow2 format and upload it into OpenStack.

Needed material:

- Oracle Communications User Data Repository OVAs

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 28: OpenStack Image Creation from OVA

Step	Procedure	Result
1. <input type="checkbox"/>	1. Login to OpenStack Controller Node using root user 2. Create /home/ova dir	login as: root root@100.65.218.136's password: <root_password> Last login: Thu Mar 31 21:10:59 2016 from 10.182.167.73 [root@pc12107008 ~]# mkdir -p /home/ova [root@pc12107008 ~]# cd /home/ova
2. <input type="checkbox"/>	Transfer OVA file this dir using sftp tool	[root@pc12107008 ova]# ll total 12322888 -rw-r--r-- 1 root root 1044500480 Mar 14 02:57 UDR-12.2.0.0.0_14.3.1.ova
3. <input type="checkbox"/>	Untar this ova file	[root@pc12107008 ova]# tar xvf UDR-12.2.0.0.0_14.3.1.ova UDR-14_3_1.ovf UDR-14_3_1.mf UDR-14_3_1.vmdk
4. <input type="checkbox"/>	Convert this vmdk file to qcow2 file	[root@pc12107008 ova]# qemu-img convert -O qcow2 UDR-14_3_1.vmdk UDR-14_3_1.qcow2

Procedure 28: OpenStack Image Creation from OVA

Step	Procedure	Result																																				
5. <input type="checkbox"/>	Import converted qcow2 file into OpenStack	<pre>[root@pcl2107008 ova]# source /root/keystonerc_admin [root@pcl2107008 ova(keystone_admin)]# time glance image-create --name UDR-14_3_1 --disk-format=qcow2 --container-format=bare --is-public=true --file=UDR-14_3_1.qcow2</pre> <table border="1"> <thead> <tr> <th>Property</th> <th>Value</th> </tr> </thead> <tbody> <tr><td>checksum</td><td>81e7f682231b108e29053e9516ff91ac</td></tr> <tr><td>container_format</td><td>bare</td></tr> <tr><td>created_at</td><td>2016-03-29T06:56:51</td></tr> <tr><td>deleted</td><td>False</td></tr> <tr><td>deleted_at</td><td>None</td></tr> <tr><td>disk_format</td><td>qcow2</td></tr> <tr><td>id</td><td>ee0ffa59-356b-4b32-aea2-b0cdf9063653</td></tr> <tr><td>is_public</td><td>True</td></tr> <tr><td>min_disk</td><td>0</td></tr> <tr><td>min_ram</td><td>0</td></tr> <tr><td>name</td><td>UDR-14_3_1</td></tr> <tr><td>owner</td><td>63efbafd70864562aa6440abfca60ca5</td></tr> <tr><td>protected</td><td>False</td></tr> <tr><td>size</td><td>3615227904</td></tr> <tr><td>status</td><td>active</td></tr> <tr><td>updated_at</td><td>2016-03-29T06:57:16</td></tr> <tr><td>virtual_size</td><td>None</td></tr> </tbody> </table> <pre>real 0m26.267s user 0m2.435s sys 0m2.691s</pre>	Property	Value	checksum	81e7f682231b108e29053e9516ff91ac	container_format	bare	created_at	2016-03-29T06:56:51	deleted	False	deleted_at	None	disk_format	qcow2	id	ee0ffa59-356b-4b32-aea2-b0cdf9063653	is_public	True	min_disk	0	min_ram	0	name	UDR-14_3_1	owner	63efbafd70864562aa6440abfca60ca5	protected	False	size	3615227904	status	active	updated_at	2016-03-29T06:57:16	virtual_size	None
Property	Value																																					
checksum	81e7f682231b108e29053e9516ff91ac																																					
container_format	bare																																					
created_at	2016-03-29T06:56:51																																					
deleted	False																																					
deleted_at	None																																					
disk_format	qcow2																																					
id	ee0ffa59-356b-4b32-aea2-b0cdf9063653																																					
is_public	True																																					
min_disk	0																																					
min_ram	0																																					
name	UDR-14_3_1																																					
owner	63efbafd70864562aa6440abfca60ca5																																					
protected	False																																					
size	3615227904																																					
status	active																																					
updated_at	2016-03-29T06:57:16																																					
virtual_size	None																																					
6. <input type="checkbox"/>	After image-create, this image could be seen from OpenStack GUI under → Project → Images	<table border="1"> <thead> <tr> <th>Image Name</th> <th>Type</th> <th>Status</th> <th>Public</th> <th>Protected</th> <th>Format</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>UDR-14_3_1</td> <td>Image</td> <td>Active</td> <td>Yes</td> <td>No</td> <td>QCOW2</td> <td>Edit Store</td> </tr> </tbody> </table>	Image Name	Type	Status	Public	Protected	Format	Actions	UDR-14_3_1	Image	Active	Yes	No	QCOW2	Edit Store																						
Image Name	Type	Status	Public	Protected	Format	Actions																																
UDR-14_3_1	Image	Active	Yes	No	QCOW2	Edit Store																																
THIS PROCEDURE HAS BEEN COMPLETED																																						

G-2 OpenStack Image Creation from ISO

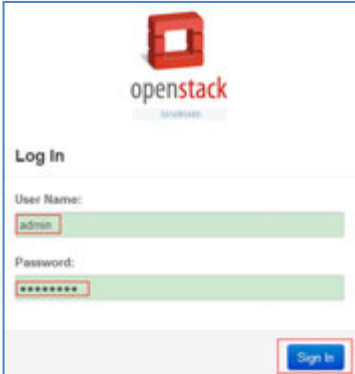
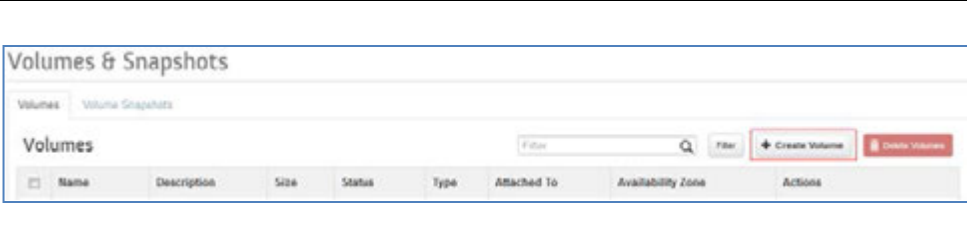
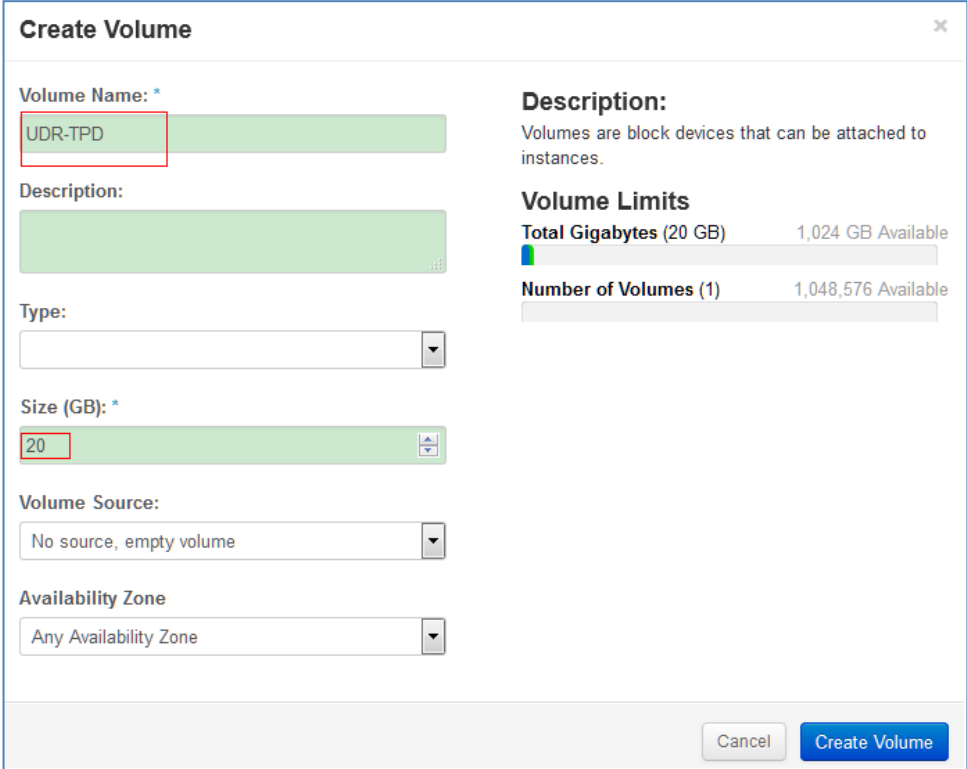
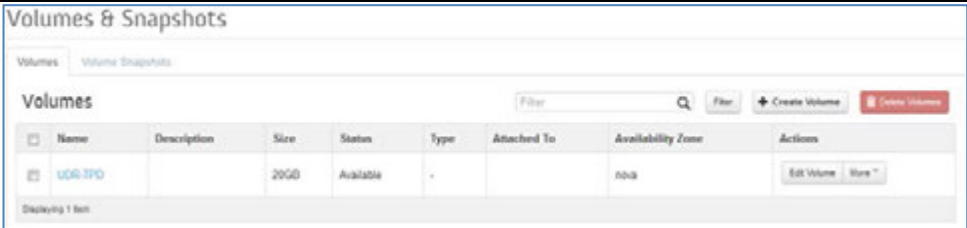
This procedure will create an OpenStack qcow2 image based on ISO media. This procedure is based on the OpenStack IceHouse release and serves only as an example. It requires administrative access to the OpenStack controller node.

Needed material:

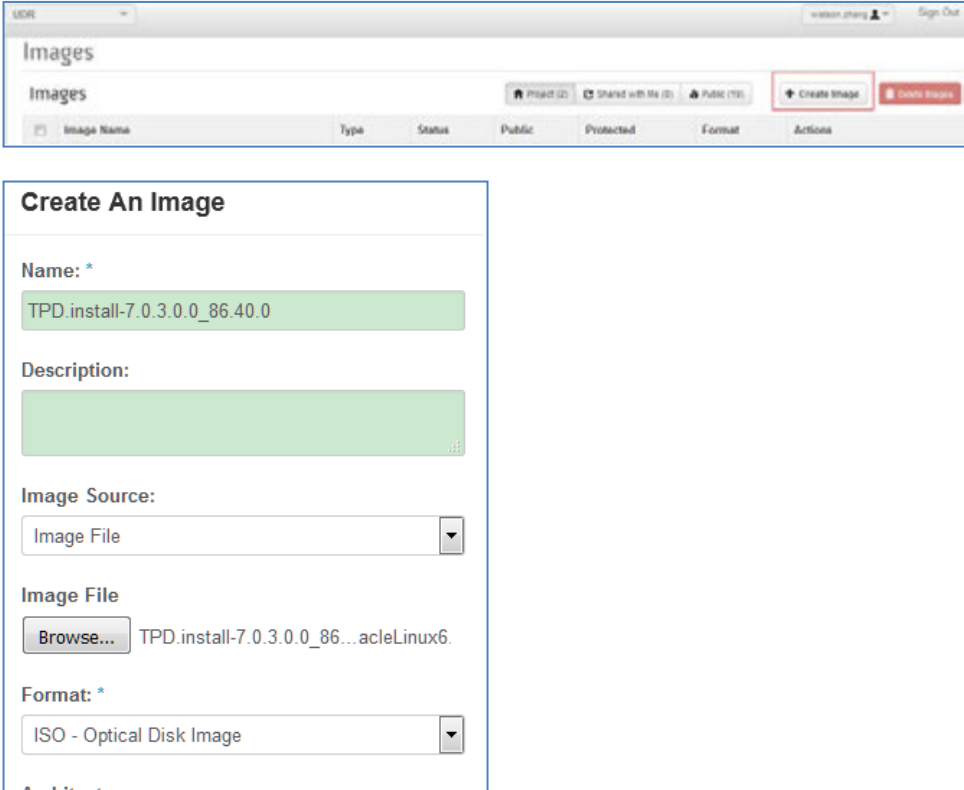
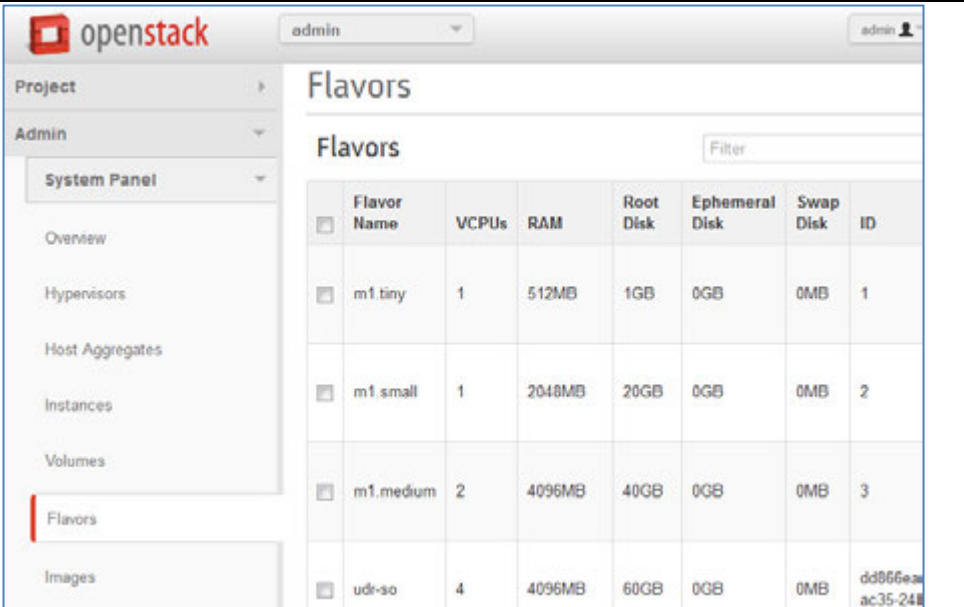
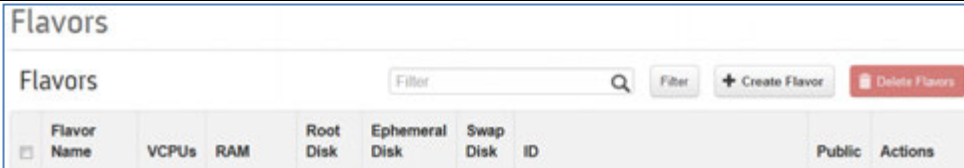
- Oracle Communications Tekelec Platform Distribution ISO

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

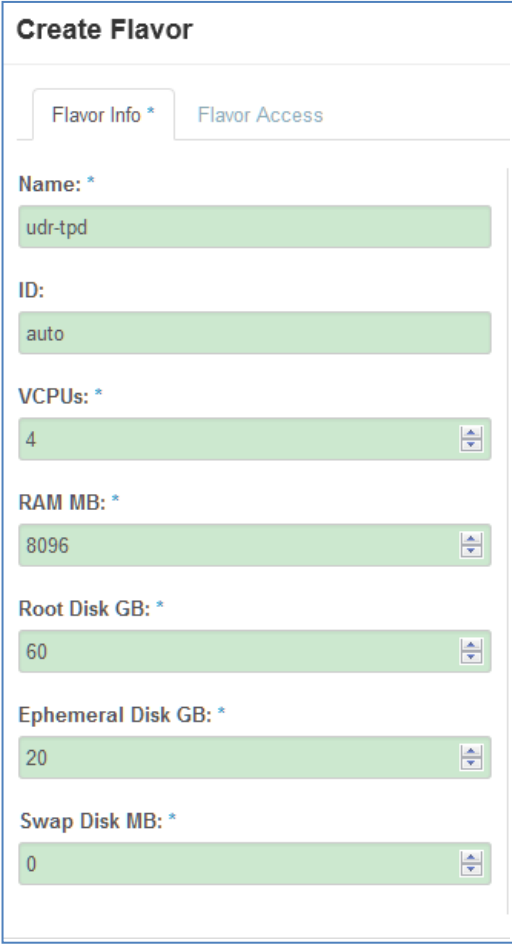

Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
<p>1.</p> <p><input type="checkbox"/></p>	<p>Login to the OpenStack GUI with user who has admin privilege</p>	
<p>2.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Project → Volumes</p> <p>...as shown on the right.</p>	
<p>3.</p> <p><input type="checkbox"/></p>	<p>Click the “+ Create Volume” button</p> <p>Volume Name: UDR-TPD</p> <p>Size (BG): 20</p>	
<p>4.</p> <p><input type="checkbox"/></p>	<p>After create successfully, Volume status should be Available as shown on the right:</p>	

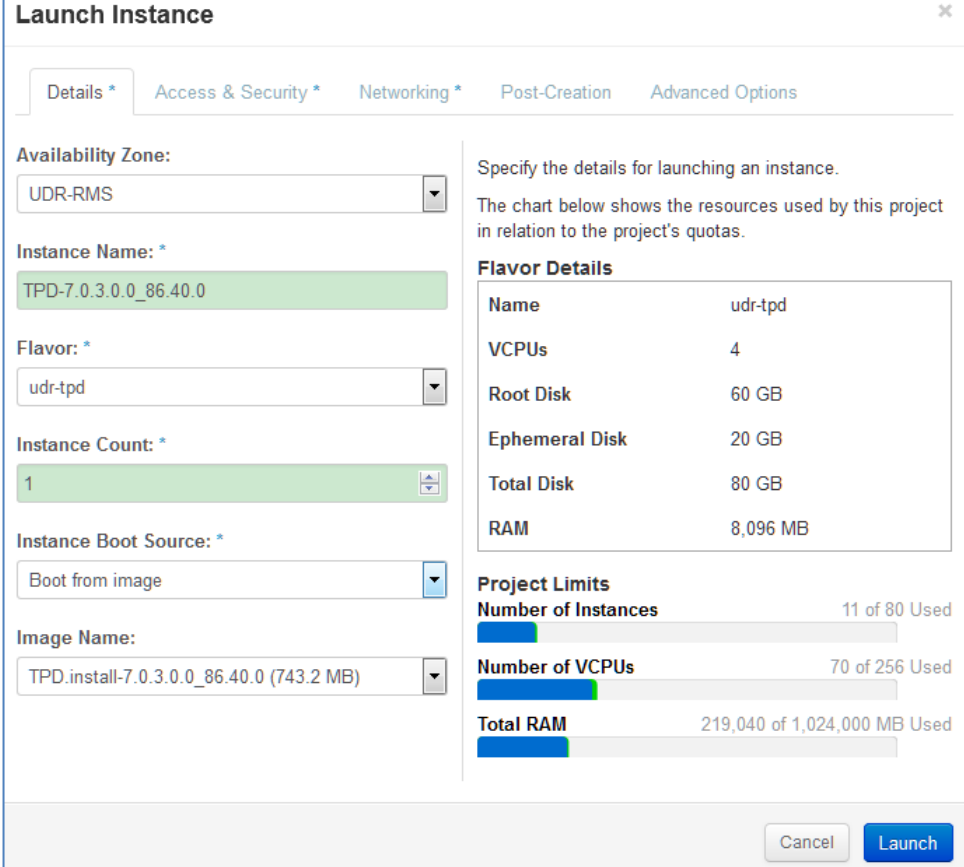
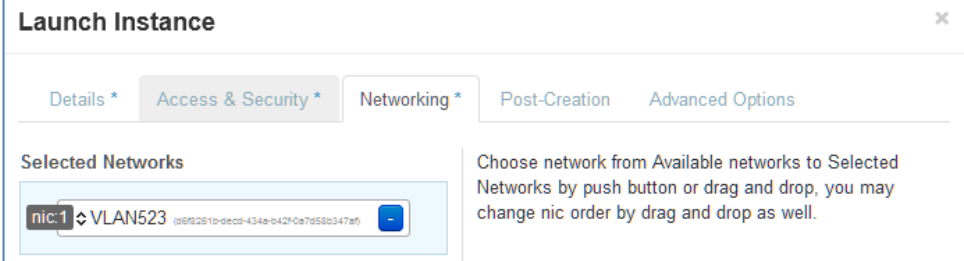
Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result																																			
<p>5.</p> <p><input type="checkbox"/></p>	<p>Download corresponding version of TPD iso to your local server</p> <p>Select...</p> <p>Main Menu → Project → Images</p> <p>Click the “+ Create Image” button</p> <p>Format: ISO</p>																																				
<p>6.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Admin → System Panel → Flavors</p> <p>...as shown on the right.</p>	 <table border="1" data-bbox="820 1249 1437 1675"> <thead> <tr> <th>Flavor Name</th> <th>VCPUs</th> <th>RAM</th> <th>Root Disk</th> <th>Ephemeral Disk</th> <th>Swap Disk</th> <th>ID</th> </tr> </thead> <tbody> <tr> <td>m1.tiny</td> <td>1</td> <td>512MB</td> <td>1GB</td> <td>0GB</td> <td>0MB</td> <td>1</td> </tr> <tr> <td>m1.small</td> <td>1</td> <td>2048MB</td> <td>20GB</td> <td>0GB</td> <td>0MB</td> <td>2</td> </tr> <tr> <td>m1.medium</td> <td>2</td> <td>4096MB</td> <td>40GB</td> <td>0GB</td> <td>0MB</td> <td>3</td> </tr> <tr> <td>udr-iso</td> <td>4</td> <td>4096MB</td> <td>60GB</td> <td>0GB</td> <td>0MB</td> <td>dd866eaa-ac35-248</td> </tr> </tbody> </table>	Flavor Name	VCPUs	RAM	Root Disk	Ephemeral Disk	Swap Disk	ID	m1.tiny	1	512MB	1GB	0GB	0MB	1	m1.small	1	2048MB	20GB	0GB	0MB	2	m1.medium	2	4096MB	40GB	0GB	0MB	3	udr-iso	4	4096MB	60GB	0GB	0MB	dd866eaa-ac35-248
Flavor Name	VCPUs	RAM	Root Disk	Ephemeral Disk	Swap Disk	ID																															
m1.tiny	1	512MB	1GB	0GB	0MB	1																															
m1.small	1	2048MB	20GB	0GB	0MB	2																															
m1.medium	2	4096MB	40GB	0GB	0MB	3																															
udr-iso	4	4096MB	60GB	0GB	0MB	dd866eaa-ac35-248																															
<p>7.</p> <p><input type="checkbox"/></p>	<p>Click the “+ Create Flavor” button</p>																																				

Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
<p>8.</p> <p><input type="checkbox"/></p>	<p>Enter Flavor Details as shown on the right:</p> <p>Name: udr-tpd VCPUS: 4 RAM MB: 8096 Root Disk GB: 60 Ephemeral: 20G Swap Disk MP: 0</p>	
<p>9.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Project → Images</p> <p>Click the “Launch” button shown on the TPD instance just created</p>	

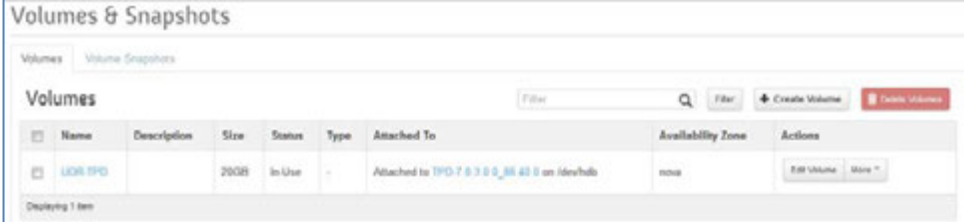
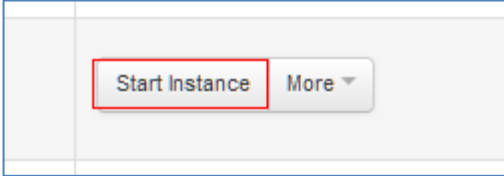
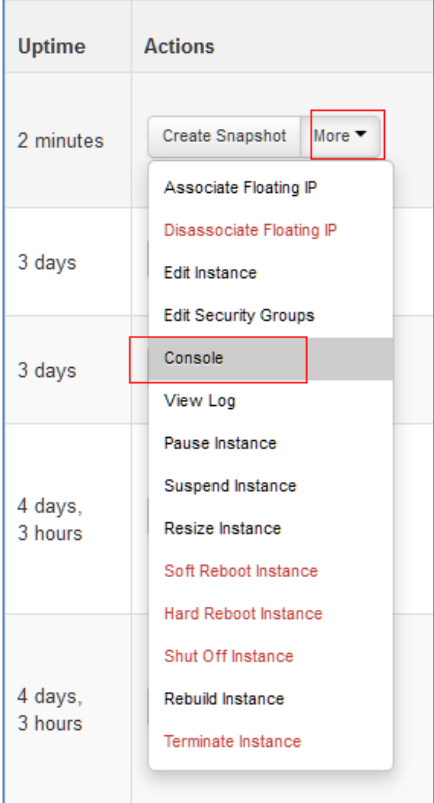
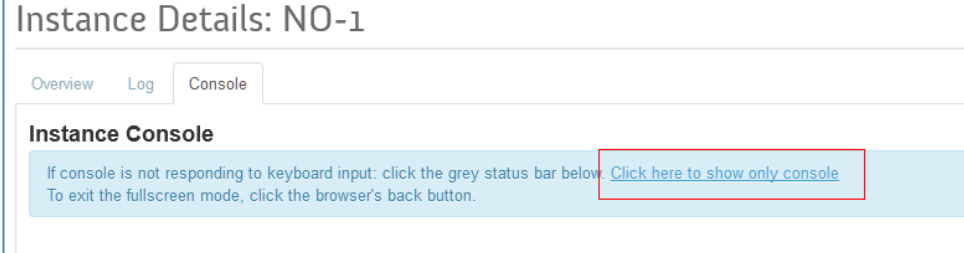
Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
<p>10.</p> <p><input type="checkbox"/></p>	<p>Enter Instance Details as shown on the right:</p> <p>Chose an availability Zone.</p> <p>Enter an Instance name.</p> <p>Flavor: udr-tpd</p>	
<p>11.</p> <p><input type="checkbox"/></p>	<p>Click the “Networking” tag on the top</p> <p>Selete and add atleast one Network.</p>	

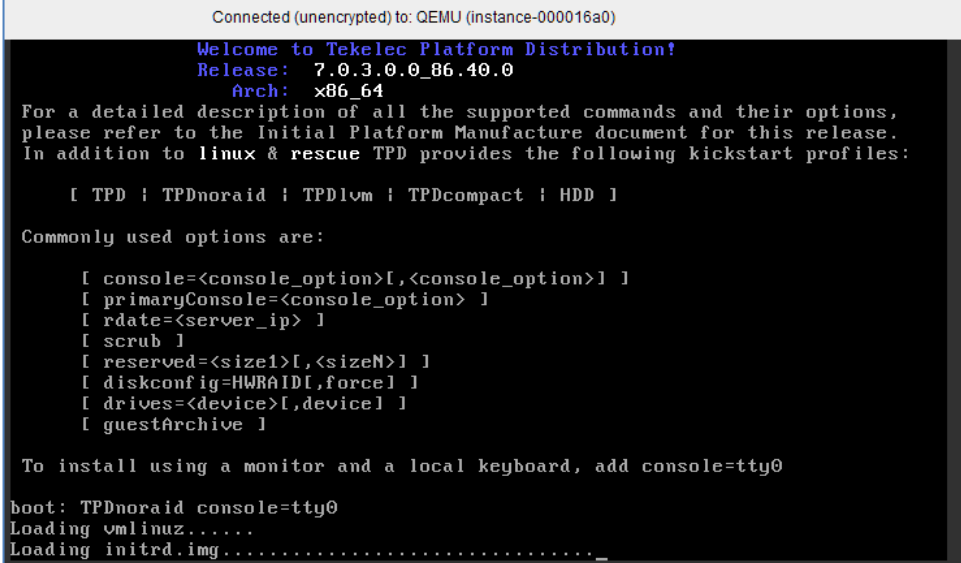
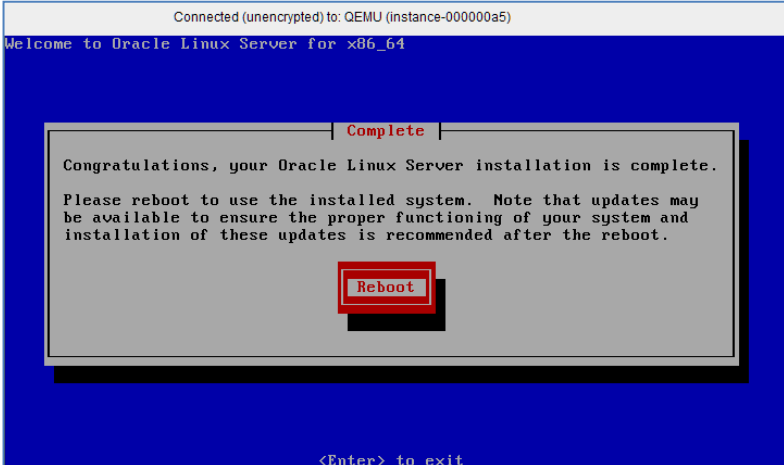
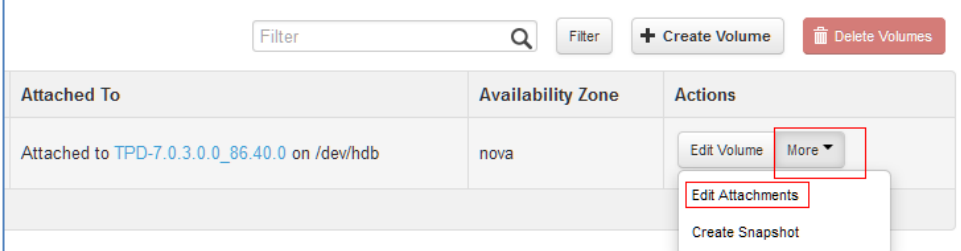
Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
12.	<p>Select...</p> <p>Main Menu → Project → Instances</p> <p>Click the “More->Shut off Instance”</p>	
13.	<p>Select...</p> <p>Main Menu → Project → Volumes</p> <p>Click “More->Edit Attachments”</p>	
14.	<p>Select the TPD instance created in Step 10 and click “Attach Volume”</p>	

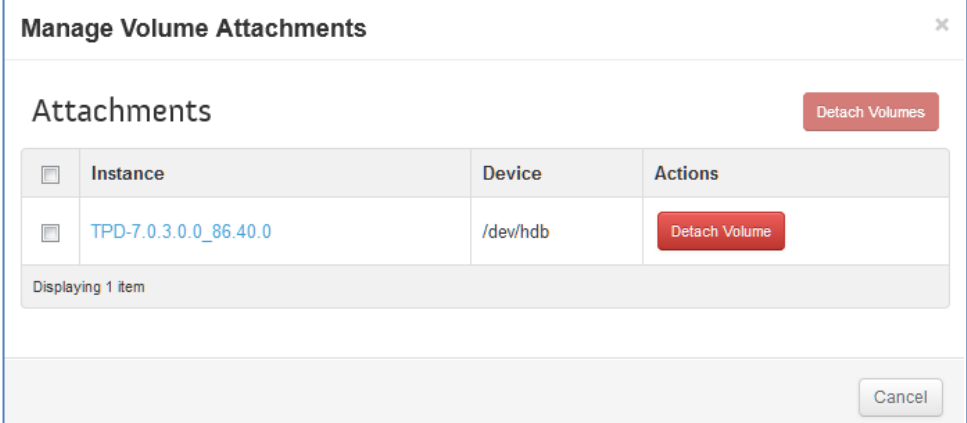
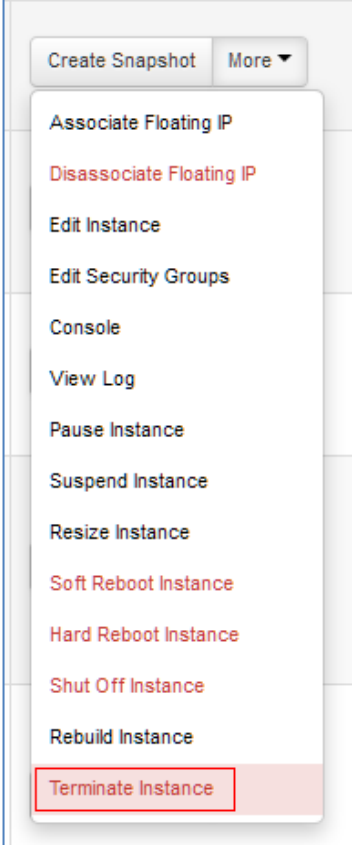
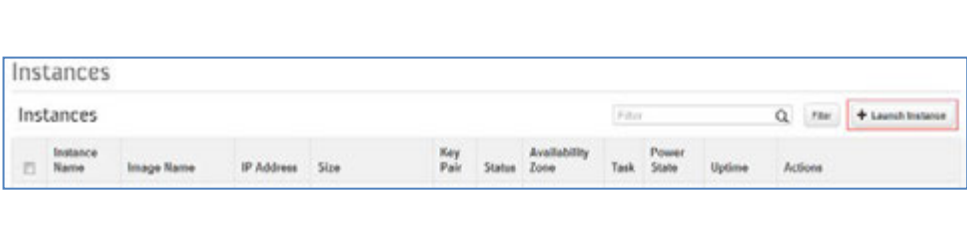
Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
<p>15.</p> <p><input type="checkbox"/></p>	<p>Volume status should be “In Use”, and “Attached To” should show the attachment information as shown on right.</p>	 <p>The screenshot shows the 'Volumes & Snapshots' dashboard. Under the 'Volumes' tab, there is a table with columns: Name, Description, Size, Status, Type, Attached To, Availability Zone, and Actions. One volume is listed with Name 'LOGR TPO', Size '20GB', Status 'In Use', and Attached To 'Attached to TPO-7-5-3-0-0_00_40-0 on idevhub'. The 'Actions' column for this volume includes 'Edit Volume' and 'More' buttons.</p>
<p>16.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Project → Instances</p> <p>Click “Start Instance” button on the instance we just created</p>	 <p>The screenshot shows a button labeled 'Start Instance' with a 'More' dropdown arrow to its right. The 'Start Instance' button is highlighted with a red rectangular box.</p>
<p>17.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Project → Instances</p> <p>Click “More->Console” button</p>	 <p>The screenshot shows a table with columns 'Uptime' and 'Actions'. The 'Uptime' column shows values like '2 minutes', '3 days', and '4 days, 3 hours'. The 'Actions' column contains a 'Create Snapshot' button and a 'More' dropdown menu. The 'More' dropdown is open, showing a list of actions: 'Associate Floating IP', 'Disassociate Floating IP', 'Edit Instance', 'Edit Security Groups', 'Console', 'View Log', 'Pause Instance', 'Suspend Instance', 'Resize Instance', 'Soft Reboot Instance', 'Hard Reboot Instance', 'Shut Off Instance', 'Rebuild Instance', and 'Terminate Instance'. The 'Console' option is highlighted with a red rectangular box.</p>
<p>18.</p> <p><input type="checkbox"/></p>	<p>Click “Click here to show only console”</p>	 <p>The screenshot shows the 'Instance Details: NO-1' page with tabs for 'Overview', 'Log', and 'Console'. The 'Console' tab is active. Below the tabs, there is a section titled 'Instance Console'. A blue banner at the bottom of the console area contains the text: 'If console is not responding to keyboard input: click the grey status bar below. Click here to show only console. To exit the fullscreen mode, click the browser's back button.' The link 'Click here to show only console' is highlighted with a red rectangular box.</p>

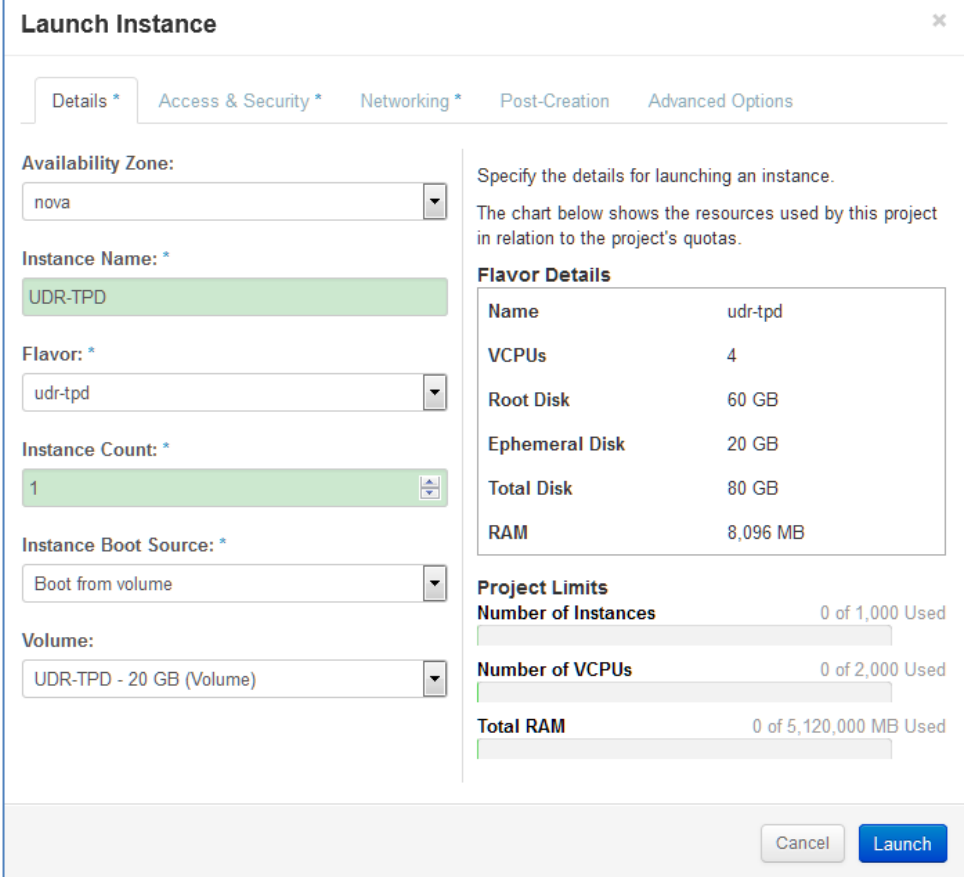
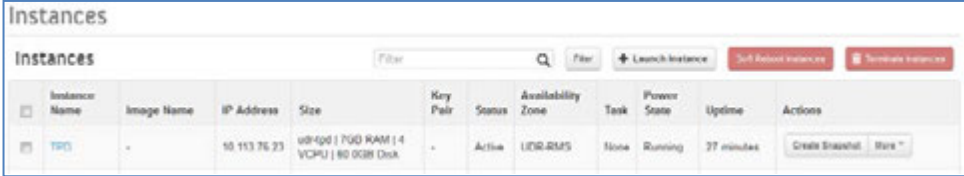
Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result						
<p>19.</p> <p><input type="checkbox"/></p>	<p>Enter “TPDnoraaid console=tty0” to install TPD</p> <p>Wait for installation finish.</p>	 <pre> Connected (unencrypted) to: QEMU (instance-000016a0) Welcome to Tekelec Platform Distribution! Release: 7.0.3.0.0_86.40.0 Arch: x86_64 For a detailed description of all the supported commands and their options, please refer to the Initial Platform Manufacture document for this release. In addition to linux & rescue TPD provides the following kickstart profiles: [TPD TPDnoraaid TPDlvm TPDcompact HDD] Commonly used options are: [console=<console_option>[,<console_option>]] [primaryConsole=<console_option>] [rdate=<server_ip>] [scrub] [reserved=<size1>[,<sizeN>]] [diskconfig=HWRRAID[,force]] [drives=<device>[,device]] [guestarchive] To install using a monitor and a local keyboard, add console=tty0 boot: TPDnoraaid console=tty0 Loading vmlinuz..... Loading initrd.img....._ </pre>						
<p>20.</p> <p><input type="checkbox"/></p>	<p>When installation finished , do not press Enter button.</p>	<p>Do not reboot.</p>  <pre> Connected (unencrypted) to: QEMU (instance-000000a5) Welcome to Oracle Linux Server for x86_64 Complete Congratulations, your Oracle Linux Server installation is complete. Please reboot to use the installed system. Note that updates may be available to ensure the proper functioning of your system and installation of these updates is recommended after the reboot. Reboot <Enter> to exit </pre>						
<p>21.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Project → Volumes</p> <p>Click “More->Edit Attachments”</p>	 <table border="1"> <thead> <tr> <th>Attached To</th> <th>Availability Zone</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>Attached to TPD-7.0.3.0.0_86.40.0 on /dev/hdb</td> <td>nova</td> <td> Edit Volume More <ul style="list-style-type: none"> Edit Attachments Create Snapshot </td> </tr> </tbody> </table>	Attached To	Availability Zone	Actions	Attached to TPD-7.0.3.0.0_86.40.0 on /dev/hdb	nova	Edit Volume More <ul style="list-style-type: none"> Edit Attachments Create Snapshot
Attached To	Availability Zone	Actions						
Attached to TPD-7.0.3.0.0_86.40.0 on /dev/hdb	nova	Edit Volume More <ul style="list-style-type: none"> Edit Attachments Create Snapshot 						

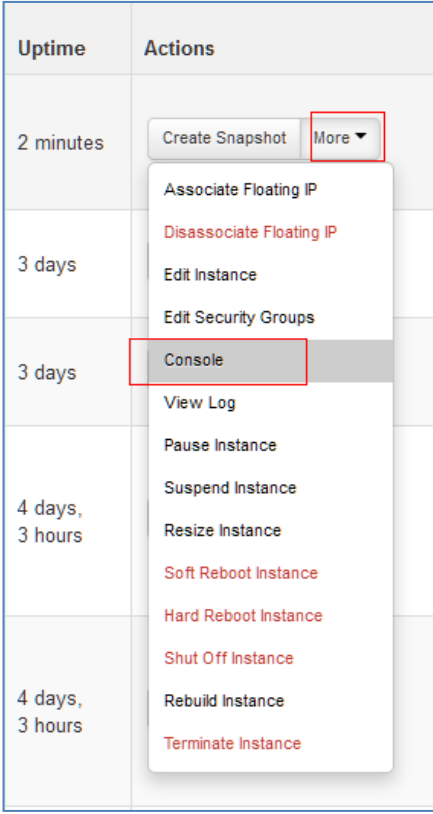
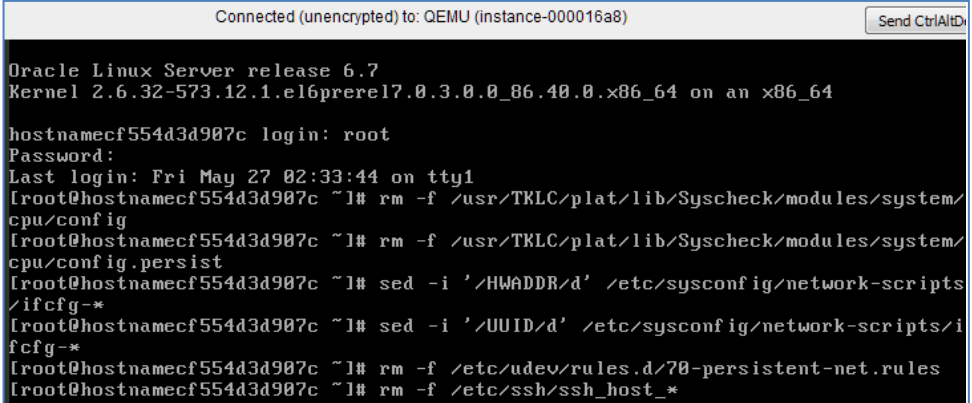
Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
22. <input type="checkbox"/>	Click " Detach Volume " button	
23. <input type="checkbox"/>	Select... Main Menu → Project → Instances Click " More->Terminate Instance " button on the instance we created	
24. <input type="checkbox"/>	Select... Main Menu → Project → Instances Click the " + Launch Instance " button	

Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
<p>25.</p> <p><input type="checkbox"/></p>	<p>Enter Instance Details as shown on the right:</p> <p>Chose an availability Zone.</p> <p>Enter an Instance name.</p> <p>Flavor: udr-tpd</p> <p>Use “Boot from volume” as Instance Boot Source</p> <p>Chose the volume create in Step 3</p>	
<p>26.</p> <p><input type="checkbox"/></p>	<p>Wait for instance launch</p>	

Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
<p>27.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Project → Instances</p> <p>Click "More->Console" button on the instance</p>	 <p>The screenshot shows a table with columns 'Uptime' and 'Actions'. The 'More' button in the 'Actions' column is highlighted with a red box. A dropdown menu is open, showing various actions. The 'Console' option in the dropdown menu is highlighted with a red box.</p>
<p>28.</p> <p><input type="checkbox"/></p>	<p>Execute these commands on the console</p>	<pre>rm -f /usr/TKLC/plat/lib/Syscheck/modules/system/cpu/config rm -f /usr/TKLC/plat/lib/Syscheck/modules/system/cpu/config.persist sed -i '/HWADDR/d' /etc/sysconfig/network-scripts/ifcfg-* sed -i '/UUID/d' /etc/sysconfig/network-scripts/ifcfg-* rm -f /etc/udev/rules.d/70-persistent-net.rules rm -f /etc/ssh/ssh_host_*</pre>  <p>The screenshot shows a terminal window with the following output:</p> <pre>Connected (unencrypted) to: QEMU (instance-000016a8) Oracle Linux Server release 6.7 Kernel 2.6.32-573.12.1.el6prere17.0.3.0.0_86.40.0.x86_64 on an x86_64 hostnamecf554d3d907c login: root Password: Last login: Fri May 27 02:33:44 on tty1 [root@hostnamecf554d3d907c ~]# rm -f /usr/TKLC/plat/lib/Syscheck/modules/system/ cpu/config [root@hostnamecf554d3d907c ~]# rm -f /usr/TKLC/plat/lib/Syscheck/modules/system/ cpu/config.persist [root@hostnamecf554d3d907c ~]# sed -i '/HWADDR/d' /etc/sysconfig/network-scripts /ifcfg-* [root@hostnamecf554d3d907c ~]# sed -i '/UUID/d' /etc/sysconfig/network-scripts/i fcfg-* [root@hostnamecf554d3d907c ~]# rm -f /etc/udev/rules.d/70-persistent-net.rules [root@hostnamecf554d3d907c ~]# rm -f /etc/ssh/ssh_host_*</pre>

Procedure 29: OpenStack Image Creation from ISO

Step	Procedure	Result
29.	<p>Select...</p> <p>Main Menu → Project → Instances</p> <p>Click “More->Terminate Instance” on the instance</p>	
30.	<p>Login to OpenStack Controller Node using root user</p>	<pre>login as: root root@100.65.218.136's password: <root_password> Last login: Thu Mar 31 21:10:59 2016 from 10.182.167.73 [root@pc12107008 ova]# source /root/keystonerc_admin</pre>
31.	<p>Find the volume id using cinder command “cinder list”</p> <p>Record the Volume ID</p>	
32.	<p>Use cinder command to upload image.</p> <p>Use the Volume ID we got in last step here</p>	<pre>[root@P146 ~(keystone_watson)]# cinder upload-to-image <volume_ID> TPD.install-7.0.3.0.0_86.40.0 --disk-format=qcow2</pre>
33.	<p>Select...</p> <p>Main Menu → Project → Images</p> <p>Check upload status on this page, wait until it finished</p>	
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

G-3 Create VM from ISO-Based Image

This procedure will create and configure a new VM instance based on the Tekelec Platform Distribution ISO file and install Oracle Communications User Data Repository ISO on it.

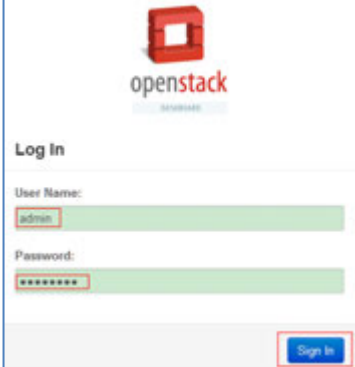
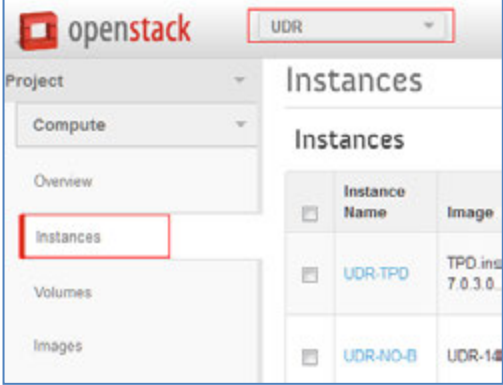
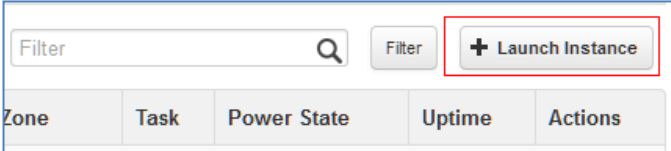
Oracle Communications User Data Repository Cloud Installation Guide

Requirements:

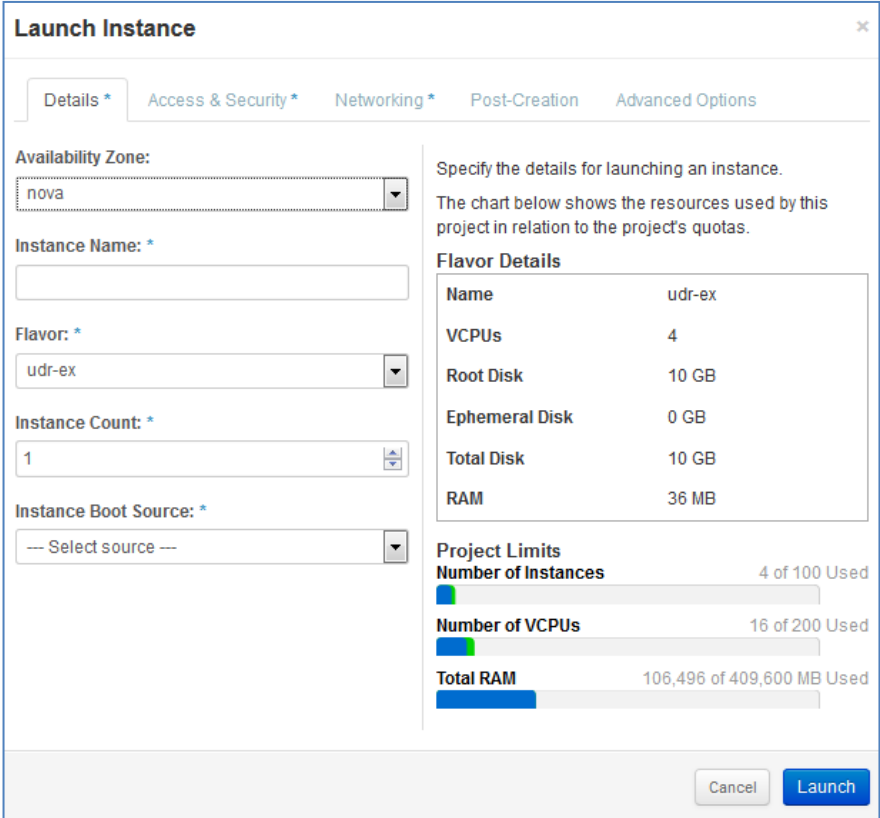
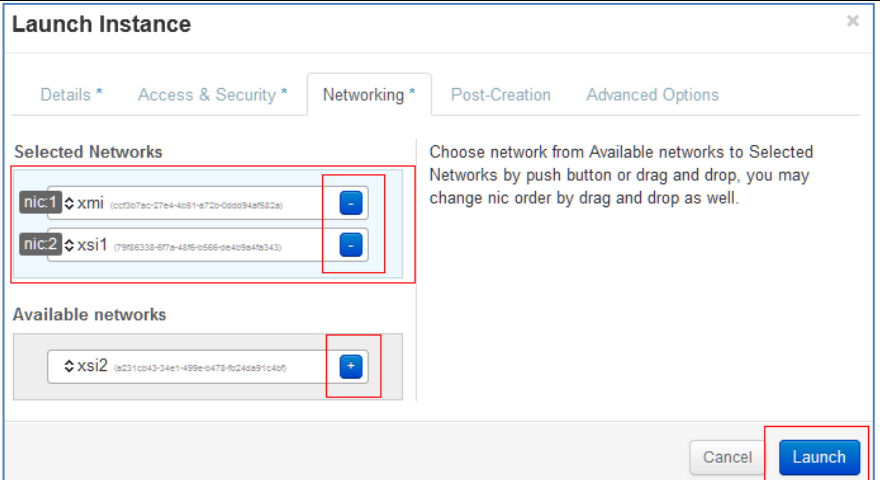
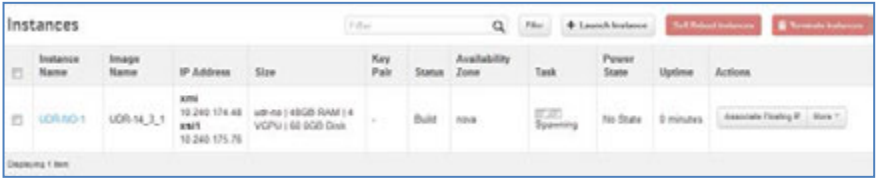
- **Appendix G-2 OpenStack Image Creation from ISO** is completed

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

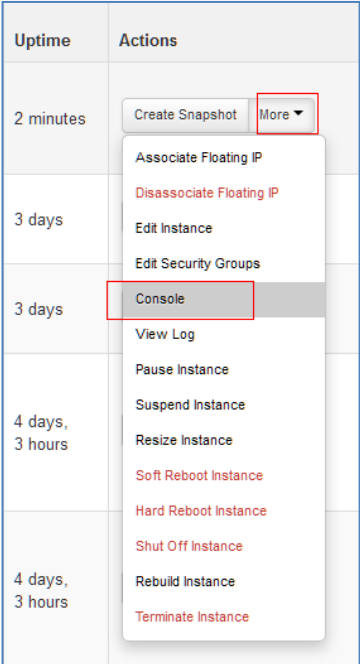
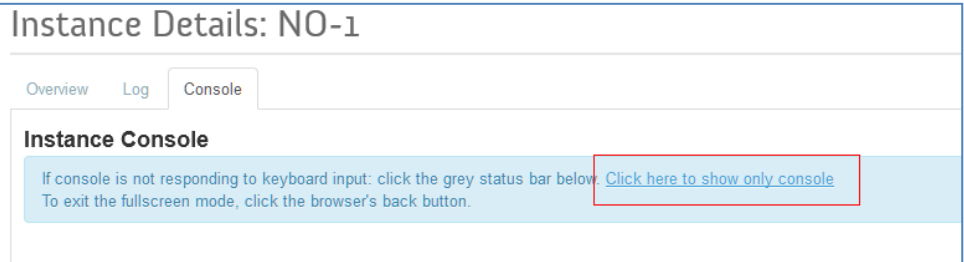
Procedure 30: Create VM from ISO-Based Image

Step	Procedure	Result
1. <input type="checkbox"/>	Login to the OpenStack GUI	
2. <input type="checkbox"/>	1. Select project, (ex: "UDR"). 2. Click →Project →Instances to show all Instances created under this project:	
3. <input type="checkbox"/>	Click Launch Instance	

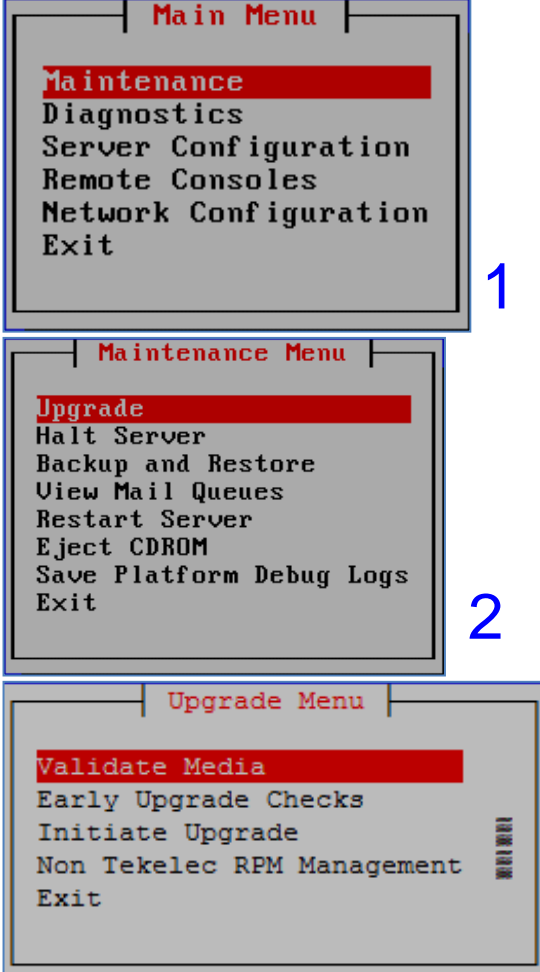
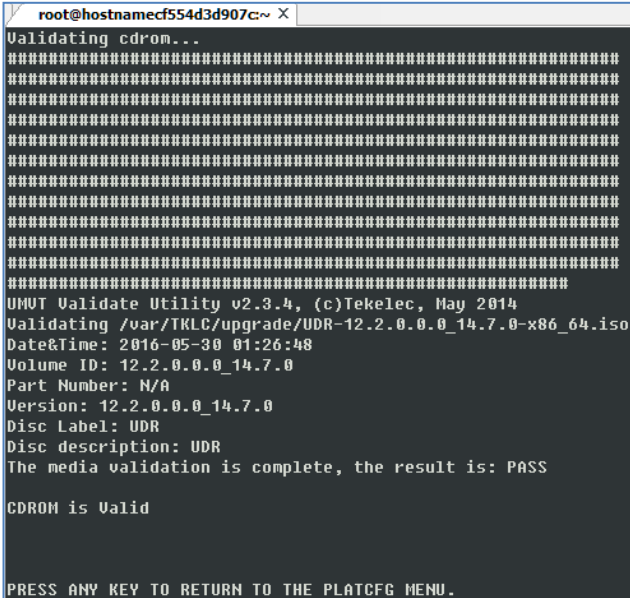
Procedure 30: Create VM from ISO-Based Image

Step	Procedure	Result
<p>4.</p> <p><input type="checkbox"/></p>	<p>1. Select an → Availability Zone</p> <p>2. Enter a unique Instance Name</p> <p>3. Select Flavor to suit the server's role</p> <p>4. Select → Boot from image image created in Appendix G-2</p>	
<p>5.</p> <p><input type="checkbox"/></p>	<p>1. Click Networking tab</p> <p>Add networks to suit the server's role</p> <p>2. Click Launch to create instance</p>	
<p>6.</p> <p><input type="checkbox"/></p>	<p>Wait for instance creation finish, you will see IP Addresses allocated for this instance</p>	

Procedure 30: Create VM from ISO-Based Image

Step	Procedure	Result
<p>7.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Project → Instances</p> <p>Click "More->Console" button on the instance we just started</p>	
<p>8.</p> <p><input type="checkbox"/></p>	<p>Click "Click here to show only console"</p>	
<p>9.</p> <p><input type="checkbox"/></p>	<p>Extend Volume Group Size</p>	<p>Follow</p> <p>Appendix G-6 Extend VM</p> <p>to extend Volume Group vgroot size.</p>
<p>10.</p> <p><input type="checkbox"/></p>	<p>Configure Network Interface for VM instance just created</p>	<p>Follow</p> <p>Appendix G-7 VM Instance Network Configuration</p> <p>to configure network interfaces for vm instance.</p>
<p>11.</p> <p><input type="checkbox"/></p>	<p>Upload Oracle Communications User Data Repository ISO to /var/TKLC/upgrade directory using sftp command</p>	<pre>[admsr@hostnameecf554d3d907c upgrade]\$ pwd /var/TKLC/upgrade [admsr@hostnameecf554d3d907c upgrade]\$ ll total 939120 -rw----- 1 admsr admgrp 961654784 May 27 05:29 UDR-12.2.0.0.0_14.7.0-x86_64.iso</pre>
<p>12.</p> <p><input type="checkbox"/></p>	<p>Login to the "placfg" utility</p>	<pre>[root@hostnameecf554d3d907c ~]# su - placfg</pre>

Procedure 30: Create VM from ISO-Based Image

Step	Procedure	Result
<p>13.</p> <p><input type="checkbox"/></p>	<p>From the “platcfg” Main Menu...</p> <p>Select each option as shown on the right, pressing the <ENTER> key after each selection.</p> <ol style="list-style-type: none"> 1. Maintenance 2. Upgrade 3. Validate Media 	 <p>1</p> <p>2</p> <p>3</p>
<p>14.</p> <p><input type="checkbox"/></p>	<p>From the “platcfg” Main Menu...</p> <p>Verify “CDROM is Valid.”</p> <p>..... then press any key to return to platcfg menu.</p>	

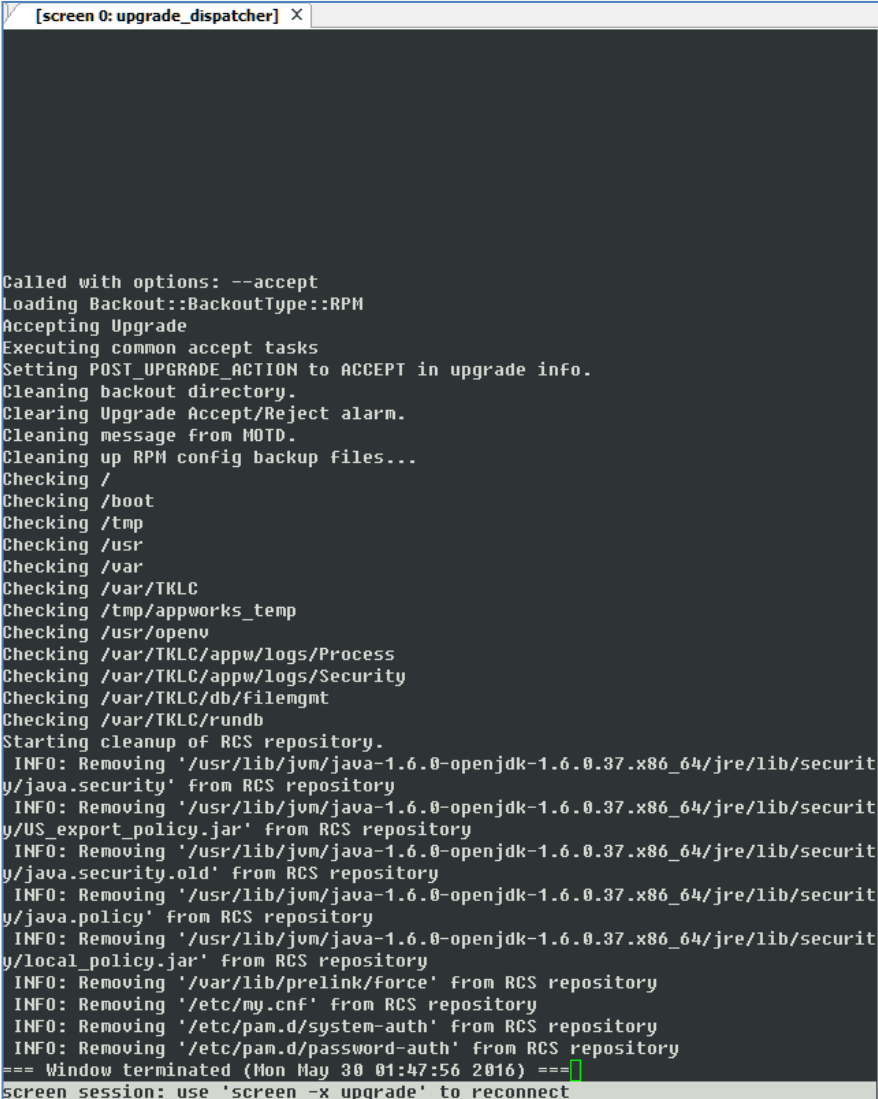
Procedure 30: Create VM from ISO-Based Image

Step	Procedure	Result
<p>15.</p> <p><input type="checkbox"/></p>	<p>From the “platcfg” Main Menu...</p> <p>Select each option as shown on the right, pressing the <ENTER> key after each selection.</p>	<pre>lqqqqqqqqqqqqqqqqqqqqqqqqqqqq Choose Upgrade Media Menu tqqqqqqqqqqqqqqqqqqqqqk x x UDR-12.2.0.0.0_14.7.0-x86_64.iso - 12.2.0.0.0_14.7.0 x x Exit x x x mqqqj lqqqqqqqqqq Upgrade Menu tqqqqqqqqqk x x Validate Media x x Early Upgrade Checks a x x Initiate Upgrade x x Copy USB Upgrade Image a x x Non Tekelec RPM Management a x x Accept Upgrade a x x Reject Upgrade a x x Exit x x x mqqqj</pre>
<p>16.</p> <p><input type="checkbox"/></p>	<p>Verify that the Application release level shown matches the target release.</p>	<pre>lqqqqqqqqqqqqqqqqqqqqqqqqqqqq Choose Upgrade Media Menu tqqqqqqqqqqqqqqqqqqqqqk x x UDR-12.2.0.0.0_14.7.0-x86_64.iso - 12.2.0.0.0_14.7.0 x x Exit x x x mqqqj</pre>
<p>17.</p> <p><input type="checkbox"/></p>	<p>Output similar to that shown on the right may be observed as the Application install progresses.</p>	<pre>Determining if we should upgrade... Install product is TPD Install product record exists in /etc/tekelec.cfg Install products match Stopping cron service... Checking for stale RPM DB locks... Installing public key /mnt/upgrade/upgrade/pub_keys/PjSQL_public_key.asc... Installing public key /mnt/upgrade/upgrade/pub_keys/RPM-GPG-KEY-redhat-beta... Installing public key /mnt/upgrade/upgrade/pub_keys/RPM-GPG-KEY-redhat-release... Checking for any missing packages or files Checking for missing files... No missing files found. Checking if upgrade is supported Current platform version: 5.8.0-72.28.0 Target platform version: 5.8.0-72.28.0 Minimum supported version: 4.2.0-78.68.0 Upgrade from same release as current is supported Evaluate if there are any packages to upgrade Evaluating if there are packages to upgrade...</pre>
<p>18.</p> <p><input type="checkbox"/></p>	<p>Output similar to that shown on the right may be observed as the Application install progresses.</p>	<pre>Adding /usr/TRLC/plat/etc/rpm.d/plat.TRLCplat.macro to /etc/rpm/macros... [OK] Adding /usr/TRLC/plat/etc/rpm.d/plat.TPD-prood.macro to /etc/rpm/macros... [OK] Updating /etc/rpm/macros... Now dispatching /mnt/upgrade/upgrade/ugwrap --noexecdispatch OK] Initializing Upgrade Wrapper... package TRLCappsworks is not installed TRLCappsworks is not installed, therefore this must be an initial install. Validating Distribution... Validating cdrom... ===== =====</pre>
<p>19.</p> <p><input type="checkbox"/></p>	<p>Output similar to that shown on the right may be observed as the server initiates a post-install reboot.</p>	<pre>scsi7 : SCSI emulation for USB Mass Storage devices scsi8 : SCSI emulation for USB Mass Storage devices input: Intel(R) Multidevice as /class/input/input3 input: USB HID v1.01 Mouse [Intel(R) Multidevice] on usb-0000:00:1d.3-1 input: Intel(R) Multidevice as /class/input/input4 input: USB HID v1.01 Keyboard [Intel(R) Multidevice] on usb-0000:00:1d.3-1 Restarting system. . machine restart █</pre>

Procedure 30: Create VM from ISO-Based Image

Step	Procedure	Result
20. <input type="checkbox"/>	After the server has completed reboot... Log back into the server as the “root” user.	CentOS release 5.6 (Final) Kernel 2.6.18-238.19.1.el5prere15.0.0_72.22.0 on an x86_64 hostname1260476221 login: root Password: <root_password>
21. <input type="checkbox"/>	Output similar to that shown on the right will appear as the server returns to a command prompt.	*** TRUNCATED OUTPUT *** ===== This system has been upgraded but the upgrade has not yet been accepted or rejected. Please accept or reject the upgrade soon. ===== VPATH=/opt/TKLCcomcol/runcm5.16:/opt/TKLCcomcol/cm5.16 PRODPATH= RELEASE=5.16 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/coma gent-gui:/usr/TKLC/comagent:/usr/TKLC/udr PRODPATH=/opt/comcol/prod RUNID=00 [root@hostnameecf554d3d907c ~]#
22. <input type="checkbox"/>	Verify successful upgrade.	# <code>verifyUpgrade</code> <i>NOTE: This command should return no output on a healthy system.</i>
23. <input type="checkbox"/>	Verify that the Application release level shown matches the target release.	[root@hostnameecf554d3d907c ~]# <code>appRev</code> Install Time: Sun May 29 21:57:03 2016 Product Name: UDR Product Release: 12.2.0.0.0_14.7.0 Base Distro Product: TPD Base Distro Release: 7.0.3.0.0_86.44.0 Base Distro ISO: TPD.install-7.0.3.0.0_86.44.0-OracleLinux6.7-x86_64.iso ISO name: UDR-12.2.0.0.0_14.7.0-x86_64.iso OS: OracleLinux 6.7
24. <input type="checkbox"/>	Reboot the server.	# <code>init 6</code> <i>NOTE: Wait until the reboot completes and re-login with root credentials.</i>
25. <input type="checkbox"/>	Verify server health	Verify server health: # <code>alarmMgr --alarmStatus</code> <i>NOTE: This command should return only one alarm related to pending upgrade acceptance.</i>
26. <input type="checkbox"/>	Change directory	# <code>cd /var/TKLC/backout</code>
27. <input type="checkbox"/>	Perform upgrade acceptance.	# <code>./accept</code>

Procedure 30: Create VM from ISO-Based Image

Step	Procedure	Result
28. <input type="checkbox"/>	Press the 'q' key to quit screen session wrapper from upgrade acceptance.	 <pre> [screen 0: upgrade_dispatcher] x Called with options: --accept Loading Backout::BackoutType::RPM Accepting Upgrade Executing common accept tasks Setting POST_UPGRADE_ACTION to ACCEPT in upgrade info. Cleaning backout directory. Clearing Upgrade Accept/Reject alarm. Cleaning message from MOTD. Cleaning up RPM config backup files... Checking / Checking /boot Checking /tmp Checking /usr Checking /var Checking /var/TKLC Checking /tmp/appworks_temp Checking /usr/openv Checking /var/TKLC/appw/logs/Process Checking /var/TKLC/appw/logs/Security Checking /var/TKLC/db/filengmt Checking /var/TKLC/rundb Starting cleanup of RCS repository. INFO: Removing '/usr/lib/jvm/java-1.6.0-openjdk-1.6.0.37.x86_64/jre/lib/security/java.security' from RCS repository INFO: Removing '/usr/lib/jvm/java-1.6.0-openjdk-1.6.0.37.x86_64/jre/lib/security/US_export_policy.jar' from RCS repository INFO: Removing '/usr/lib/jvm/java-1.6.0-openjdk-1.6.0.37.x86_64/jre/lib/security/java.security.old' from RCS repository INFO: Removing '/usr/lib/jvm/java-1.6.0-openjdk-1.6.0.37.x86_64/jre/lib/security/java.policy' from RCS repository INFO: Removing '/usr/lib/jvm/java-1.6.0-openjdk-1.6.0.37.x86_64/jre/lib/security/local_policy.jar' from RCS repository INFO: Removing '/var/lib/prelink/force' from RCS repository INFO: Removing '/etc/my.cnf' from RCS repository INFO: Removing '/etc/pam.d/system-auth' from RCS repository INFO: Removing '/etc/pam.d/password-auth' from RCS repository === Window terminated (Mon May 30 01:47:56 2016) === screen session: use 'screen -x upgrade' to reconnect </pre>
THIS PROCEDURE HAS BEEN COMPLETED		

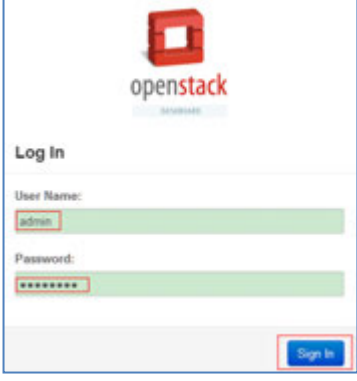
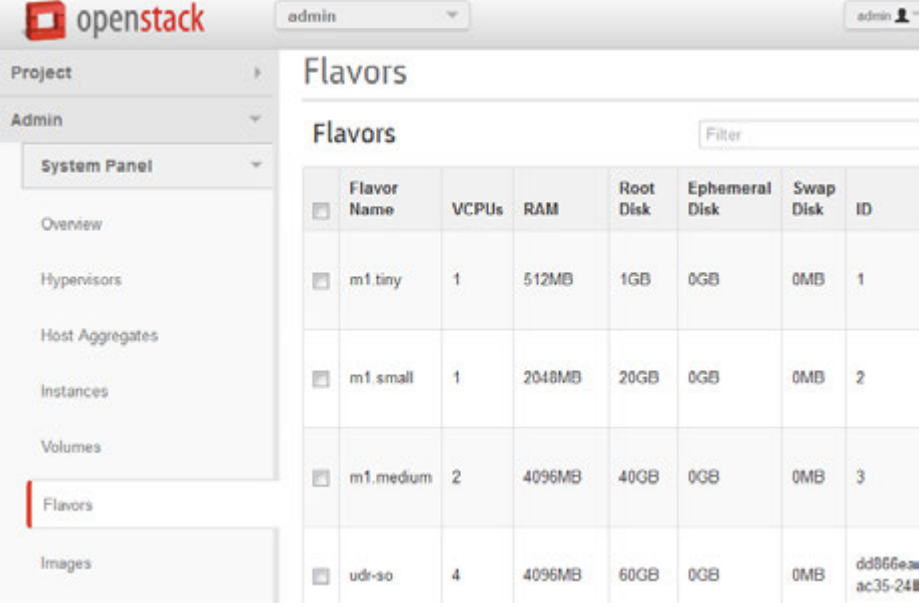
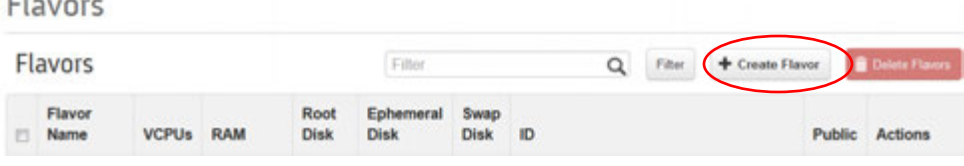
G-4 Create Resource Profiles (Flavors)

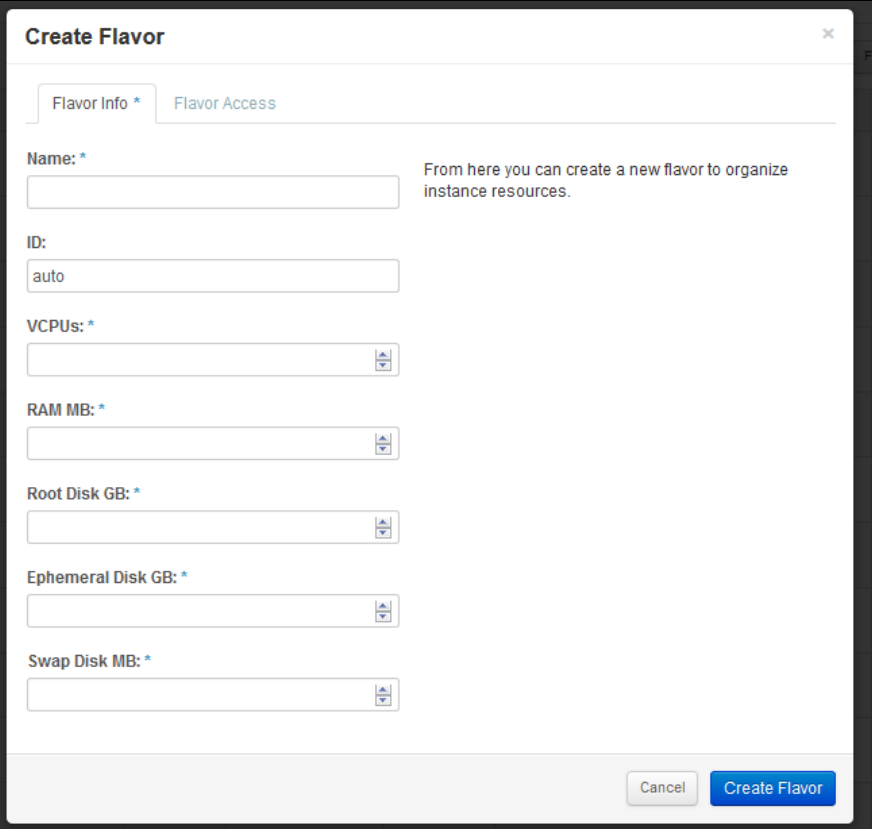
This procedure creates resource profiles called flavors to aid in VM creation.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 31: Create Resource Profiles (Flavors)

Step	Procedure	Result
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Step	Procedure	Result																																			
<p>1.</p> <p><input type="checkbox"/></p>	<p>Login to the OpenStack GUI</p> <p>Note: Flavor Profile creation may require administrative privilege.</p>																																				
<p>2.</p> <p><input type="checkbox"/></p>	<p>Select...</p> <p>Main Menu → Admin → System Panel → Flavors</p> <p>...as shown on the right.</p>	 <table border="1" data-bbox="813 779 1430 1213"> <thead> <tr> <th>Flavor Name</th> <th>VCPUs</th> <th>RAM</th> <th>Root Disk</th> <th>Ephemeral Disk</th> <th>Swap Disk</th> <th>ID</th> </tr> </thead> <tbody> <tr> <td>m1.tiny</td> <td>1</td> <td>512MB</td> <td>1GB</td> <td>0GB</td> <td>0MB</td> <td>1</td> </tr> <tr> <td>m1.small</td> <td>1</td> <td>2048MB</td> <td>20GB</td> <td>0GB</td> <td>0MB</td> <td>2</td> </tr> <tr> <td>m1.medium</td> <td>2</td> <td>4096MB</td> <td>40GB</td> <td>0GB</td> <td>0MB</td> <td>3</td> </tr> <tr> <td>udr-so</td> <td>4</td> <td>4096MB</td> <td>60GB</td> <td>0GB</td> <td>0MB</td> <td>dd866e2e-ac35-2488</td> </tr> </tbody> </table>	Flavor Name	VCPUs	RAM	Root Disk	Ephemeral Disk	Swap Disk	ID	m1.tiny	1	512MB	1GB	0GB	0MB	1	m1.small	1	2048MB	20GB	0GB	0MB	2	m1.medium	2	4096MB	40GB	0GB	0MB	3	udr-so	4	4096MB	60GB	0GB	0MB	dd866e2e-ac35-2488
Flavor Name	VCPUs	RAM	Root Disk	Ephemeral Disk	Swap Disk	ID																															
m1.tiny	1	512MB	1GB	0GB	0MB	1																															
m1.small	1	2048MB	20GB	0GB	0MB	2																															
m1.medium	2	4096MB	40GB	0GB	0MB	3																															
udr-so	4	4096MB	60GB	0GB	0MB	dd866e2e-ac35-2488																															
<p>3.</p> <p><input type="checkbox"/></p>	<p>Click the “+ Create Flavor” button</p>																																				

Step	Procedure	Result
<p>4.</p> <p><input type="checkbox"/></p>	<p>Enter Flavor Details using Appendix A</p> <p>Error! Not a valid result for table. as a guide *</p> <p>Name:</p> <ul style="list-style-type: none"> - udr-no - udr-so - udr-mp <p>ID: auto</p> <p>VCPUs: vCPUs*</p> <p>RAM: RAM*</p> <p>Root Disk: Storage*</p> <p>Ephemeral Disk: 0</p> <p>Swap Disk: 0</p> <p>Note: UDR does not require Ephemeral or Swap Disk.</p> <p>Then click Create Flavor.</p>	
<p>5.</p> <p><input type="checkbox"/></p>	<p>Repeat for each server type</p>	<p>Repeat Steps 3 and 4 above for each additional server type: udr-so, udr-mp.</p>
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

G-5 Create VM Instances Using qcow2 Image

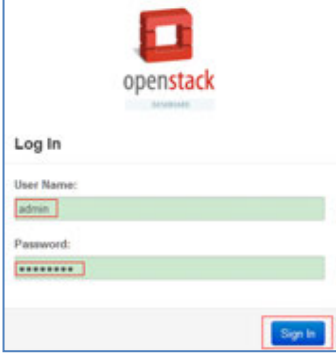
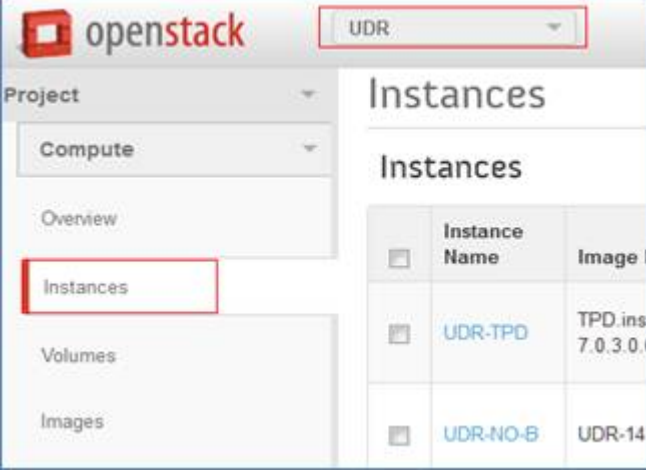
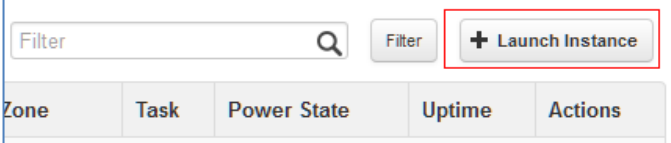
This procedure will create and configure a new vm instance.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

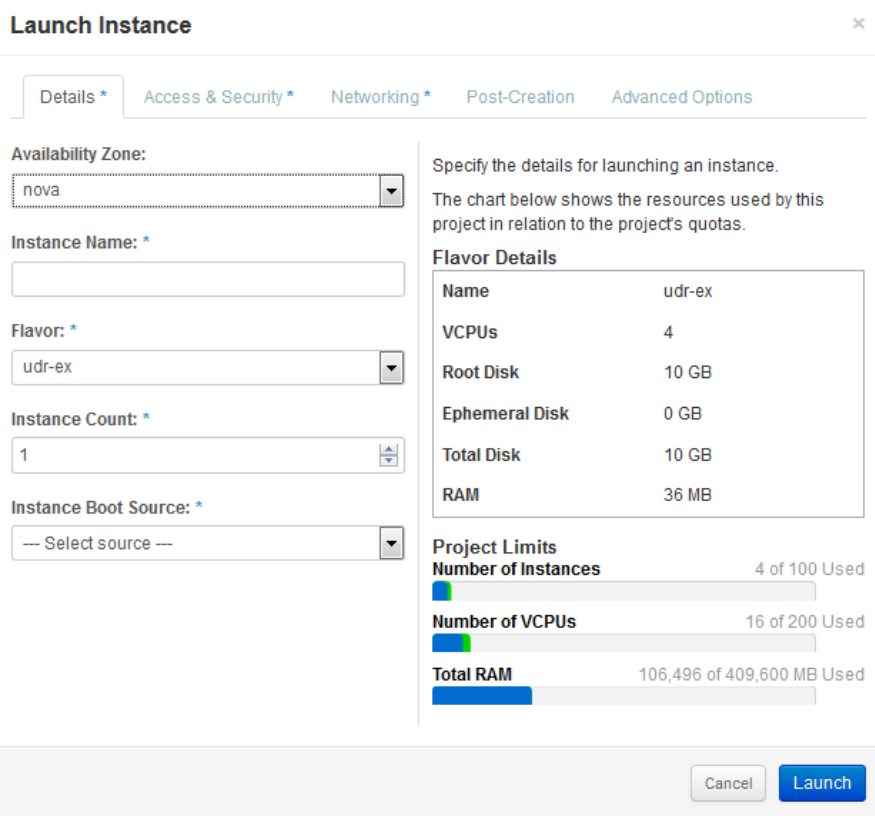
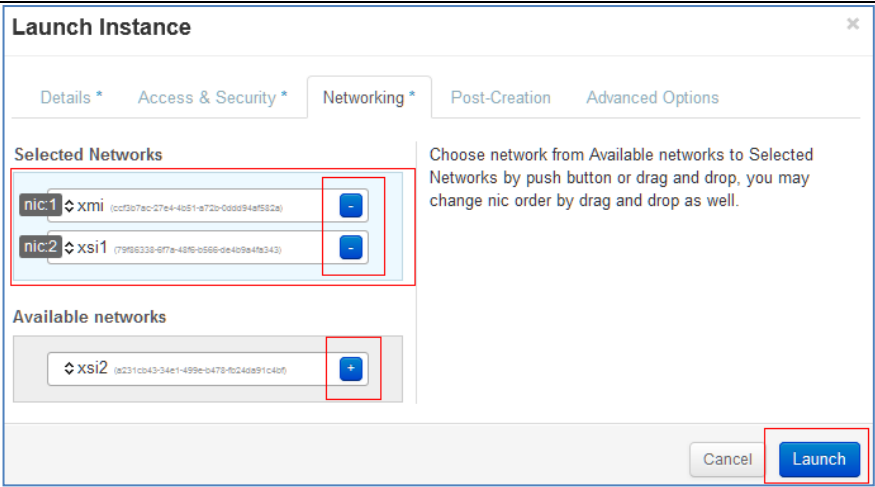
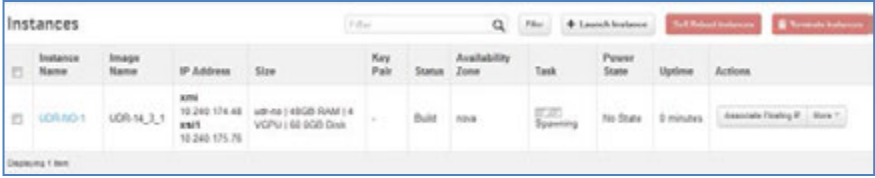
Procedure 32: Create VM Instances Using qcow2 Image

Step	Procedure	Result
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Procedure 32: Create VM Instances Using qcow2 Image

Step	Procedure	Result
1. <input type="checkbox"/>	Login to the OpenStack GUI	
2. <input type="checkbox"/>	1. Select project, (ex: "UDR"). 2. Click →Project →Compute →Instances to show all Instances created under this project:	
3. <input type="checkbox"/>	Click Launch Instance	

Procedure 32: Create VM Instances Using qcow2 Image

Step	Procedure	Result
<p>4.</p> <div style="border: 1px solid gray; width: 20px; height: 20px; margin-left: 10px;"></div>	<p>1. Select an → Availability Zone</p> <p>2. Enter a unique Instance Name</p> <p>3. Select Flavor to suit the server's role (created in Appendix G-4).</p> <p>4. Select → Boot from image image created in Appendix G-4</p>	
<p>5.</p> <div style="border: 1px solid gray; width: 20px; height: 20px; margin-left: 10px;"></div>	<p>1. Click Networking tab</p> <p>Add networks to suit the server's role (see 1.1.1.1 Appendix A)</p> <p>2. Click Launch to create instance</p>	
<p>6.</p> <div style="border: 1px solid gray; width: 20px; height: 20px; margin-left: 10px;"></div>	<p>Wait for instance creation finish, you will see IP Addresses allocated for this instance</p>	

Procedure 32: Create VM Instances Using qcow2 Image

Step	Procedure	Result
7.	Login to the VM with root user	<pre>hostname0c2d9aa8bce login: root password: <root_password></pre>
8.	Run prod.clobber on newly created instances	<pre>[root@hostname2c6772f9819e ~]# prod.clobber ...prod.clobber (RUNID=00)... ...getting current state... Current state: X (product under procmgr) WARNING: ABOUT TO DESTROY ALL PRODUCT DISK FILES !!!! Are you sure? [enter Y or N] y ...setting state 0... ...waiting for state 0... Current state is 0 ...taking down processes... processes down ...removing existing IPC resources... + md_ipcrm ... 852 resources ...clobbering runenv files... + rm -rf /var/TKLC/run/db/run</pre>
9.	Run prod.start on instance After start, use "pl" to check process status, after first start, only a few processes will start	<pre>[root@hostname2c6772f9819e ~]# prod.start_ + iqt -liddtoX00 -DataDictPart > /var/TKLC/run/db/DataDictPart/20160527.055813.5460.DataDictPart.tmp + edd.op --install --must-eq-current /var/TKLC/run/db/DataDictPart/20160527.055813.5460.DataDictPart.tmp created: 20160527.055813.5460.DataDictPart.xml ...starting procmgr ... [root@hostname2c6772f9819e ~]# pl \$ pid proclag \$! stat spawntime N cmd Z 29470 cnha Up 05/27 01:59:29 1 cnha Z 29471 cnsoapa Up 05/27 01:59:29 1 cnsoapa Z 29473 idbsuc Up 05/27 01:59:29 1 idbsuc -H10 -HE204 -D40 -DE820 -V1 -S2 -L1 Z 29475 inetmerge Up 05/27 01:59:29 1 inetmerge Z 29477 raclerk Up 05/27 01:59:29 1 raclerk -r 3000 Z 29478 re.portmap Up 05/27 01:59:29 1 re.portmap -c100</pre>
10.	Run prod.start again on instance, this time, all processes will be started	<pre>[root@hostname2c6772f9819e ~]# prod.start ...prod.start (RUNID=00)... ...getting current state... Current state: Z (product under procmgr) ...setting state X... ...waiting for state [X00]... Current state is X [root@hostname2c6772f9819e ~]# pl \$ pid proclag \$! stat spawntime N cmd X 29586 Inysqld Up 05/27 02:00:25 1 Inysqld.start -force X 29587 ProcWatch Up 05/27 02:00:25 1 ProcWatch -L X 29589 apuSoapServer Up 05/27 02:00:25 1 tCHNOSIGCHK=1 apuSoapServer X 29470 cnha Up 05/27 01:59:29 1 cnha X 29591 cnplatalarm Up 05/27 02:00:25 1 cnplatalarm X 29593 cnsnmpsa Up 05/27 02:00:25 1 cnsnmpsa -R 1.3.6.1.4.1.323.5.3.32.1 X 29471 cnsoapa Up 05/27 01:59:29 1 cnsoapa X 29608 eclipseHelp Up 05/27 02:00:25 1 eclipseHelp X 29594 guiReqMapLoad Up 05/27 02:00:25 1 guiReqMapLoad X 29473 idbsuc Up 05/27 01:59:29 1 idbsuc -H10 -HE204 -D40 -DE820 -V1 -S2 -L1 X 29475 inetmerge Up 05/27 01:59:29 1 inetmerge X 29596 inetrep Up 05/27 02:00:25 1 inetrep X 29598 nkdbhooks Up 05/27 02:00:25 1 nkdbhooks X 29601 oanpAgent Up 05/27 02:00:25 1 oanpAgent X 29603 pn.watchdog Up 05/27 02:00:25 1 pn.watchdog X 29477 raclerk Up 05/27 01:59:29 1 raclerk -r 3000 X 29478 re.portmap Up 05/27 01:59:29 1 re.portmap -c100 X 29605 statclerk Up 05/27 02:00:25 1 statclerk -s -0 X 29607 vipmgr Up 05/27 02:00:25 1 vipmgr</pre>
THIS PROCEDURE HAS BEEN COMPLETED		

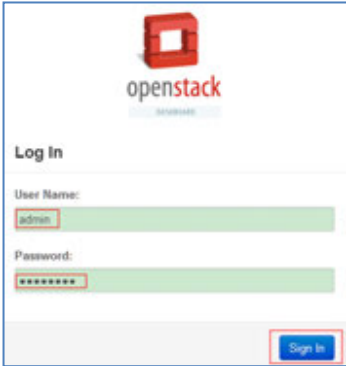
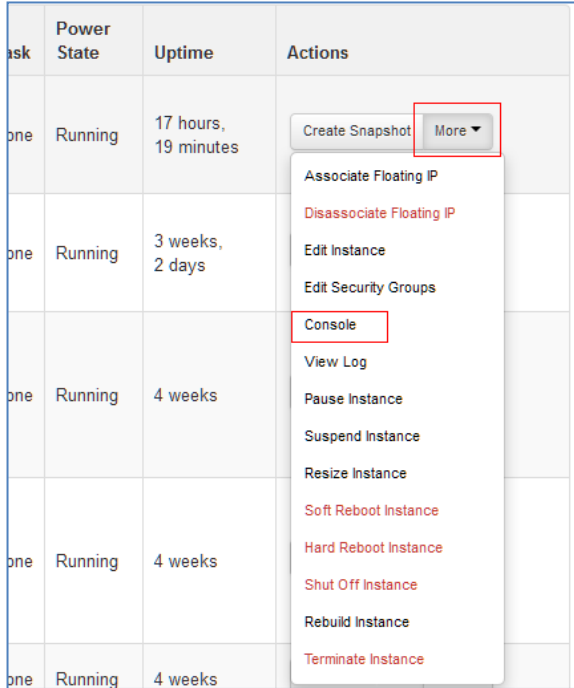
G-6 Extend VM Instance Volume Size

This procedure will extend a VM instance’s storage capacity using filesystem utilities. It is used for NOAMP servers that require more storage capacity than the default image size provides. Virtual machines must have been installed by ISO.

Important Note: The steps here only apply to NOAMP servers where storage demands exceed the server’s default size. The numbers here will vary depending on the unique needs of such deployments and specific hardware resource availability. This is to be taken as an example only. The suitability of these steps cannot be guaranteed across all deployment scenarios.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 33: Extend VM Instance Volume Size

Step	Procedure	Result
1. <input type="checkbox"/>	Login to the OpenStack GUI	
2. <input type="checkbox"/>	Login VM instance from →Project →Instances →More →Console	
3. <input type="checkbox"/>	After reboot, Login to the VM with root user	hostnameb267a6968148 login: root password: <root_password>

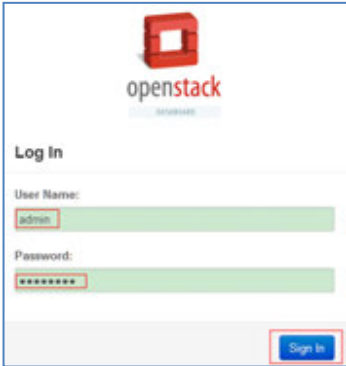
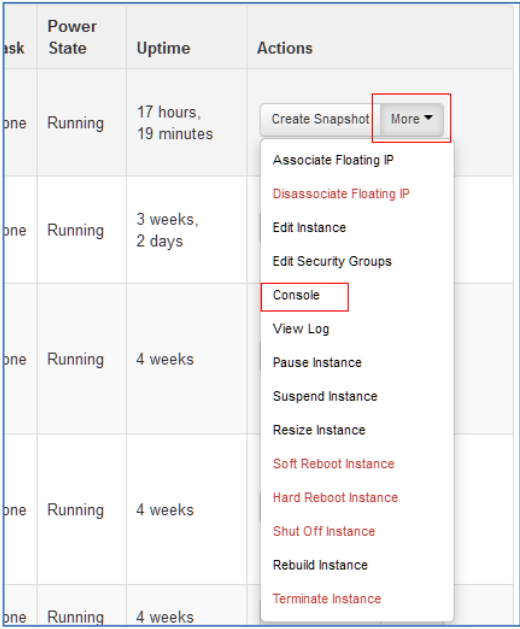
Step	Procedure	Result
4. <input type="checkbox"/>	Use fdisk to create new partition on /dev/vda NOTE: First cylinder of /dev/vda3 is calculated from End cylinder of /dev/vda2, say 124810 is the next of the End Cylinder of /dev/vda2	<pre>[root@hostnameb267a6968148 ~]#fdisk /dev/vda Command (m for help): p Disk /dev/vda: 171.8 GB, 171798691840 bytes 16 heads, 63 sectors/track, 332881 cylinders Units = cylinders of 1008 * 512 = 516096 bytes Sector size (logical/physical): 512 bytes / 512 bytes I/O size (minimum/optimal): 512 bytes / 512 bytes Disk identifier: 0x0008a531 Device Boot Start End Blocks Id System /dev/vda1 * 3 523 262144 83 Linux Partition 1 does not end on cylinder boundary. /dev/vda2 523 124809 62640128 8e Linux LVM Partition 2 does not end on cylinder boundary. Command (m for help): n Command action e extended p primary partition (1-4) p Partition number (1-4): 3 First cylinder (1-332881, default 1): 124810 Last cylinder, +cylinders or +size{K,M,G} (124810-332881, default 332881): Using default value 332881 Command (m for help): w The partition table has been altered! Calling ioctl() to re-read partition table. WARNING: Re-reading the partition table failed with error 16: Device or resource busy. The kernel still uses the old table. The new table will be used at the next reboot or after you run partprobe(8) or kpartx(8) Syncing disks.</pre>
5. <input type="checkbox"/>	Reboot instance	<pre>[root@hostnameb267a6968148 ~]# init 6</pre>
6. <input type="checkbox"/>	After reboot, Login to the VM with root user	<pre>hostnameb267a6968148 login: root password: <root_password></pre>
7. <input type="checkbox"/>	Create pv /dev/vda3	<pre>[root@hostnameb267a6968148 ~]# pvcreate /dev/vda3 Physical volume "/dev/vda3" successfully created</pre>
8. <input type="checkbox"/>	Extend vg vgroot on /dev/vda3	<pre>[root@hostnameb267a6968148 ~]# vgextend vgroot /dev/vda3 Volume group "vgroot" successfully extended</pre>
THIS PROCEDURE HAS BEEN COMPLETED		

G-7 VM Instance Network Configuration

This procedure will configure network interfaces for vm instance.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 34: VM Instance Network Configuration

Step	Procedure	Result
1. <input type="checkbox"/>	Login to the OpenStack GUI	
2. <input type="checkbox"/>	Login VM instance from → Project → Instances → More → Console	
3. <input type="checkbox"/>	Login to the VM with root user	hostnameea0c2d9aa8bce login: root password: <root_password>
4. <input type="checkbox"/>	Use netAdm to add device and set ip address	[root@ hostnameea0c2d9aa8bce ~]# netAdm add --device=eth0 Interface eth0 added
5. <input type="checkbox"/>	Set ip address for this interface	[root@ hostnameea0c2d9aa8bce ~]# netAdm set --device=eth0 --onboot=yes \ --netmask=<netmask> --address=<ip_address> Interface eth0 updated

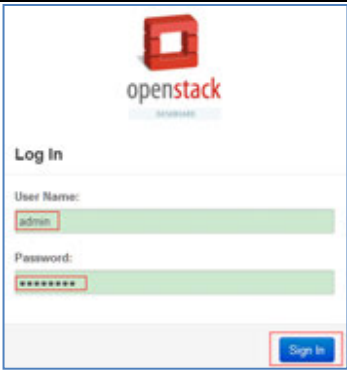
Step	Procedure	Result
6. <input type="checkbox"/>	Add default router	[root@ hostnameea0c2d9aa8bce ~]# netAdm add --route=default --device=eth0 \ --gateway=10.240.174.1 Route to eth0 added
7. <input type="checkbox"/>	Add eth1 interface	[root@ hostnameea0c2d9aa8bce ~]# netAdm add --device=eth1 Interface eth1 added
8. <input type="checkbox"/>	Add eth2 interface NOAMP & MP only	<i>Note: Execute this step only for NOAMP and MP virtual machines:</i> [root@hostnameeb6092a316785 ~]# netAdm add --device=eth2 Interface eth2 added
9. <input type="checkbox"/>	Add eth3 interface MP only	<i>Note: Execute this step only for MP virtual machines for deployments that use a second signaling network (XSI2):</i> [root@hostnameeb6092a316785 ~]# netAdm add --device=eth3 Interface eth3 added
THIS PROCEDURE HAS BEEN COMPLETED		

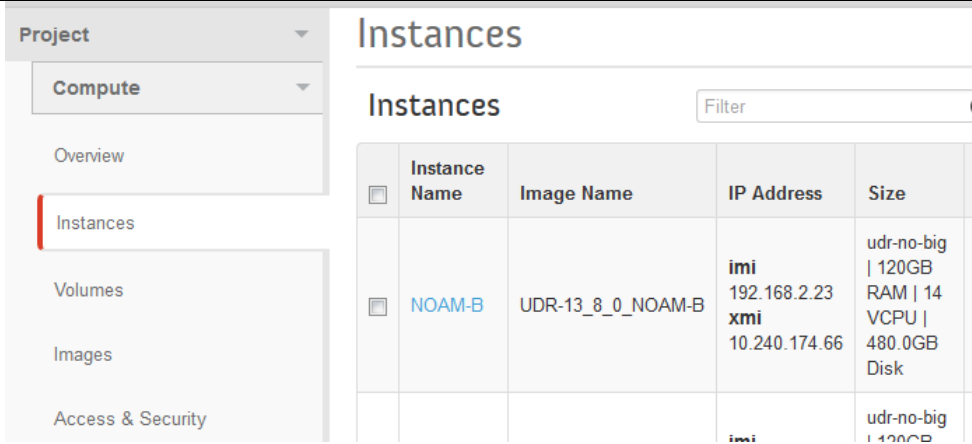
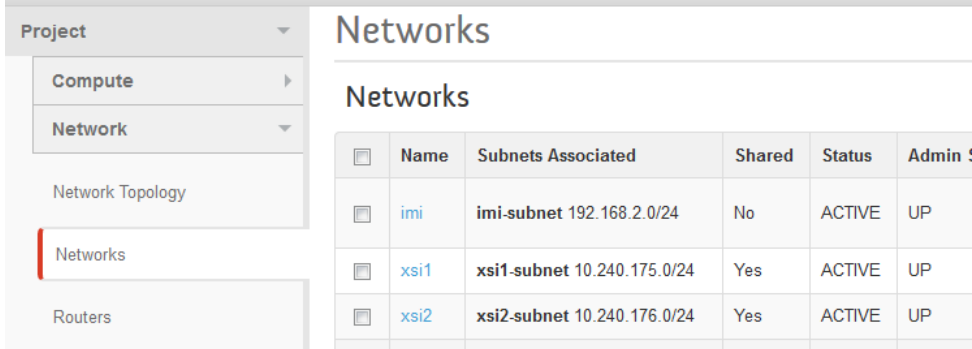
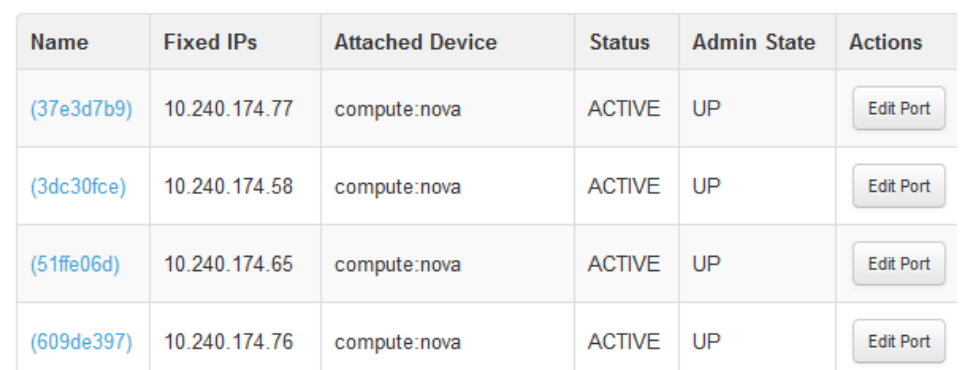
G-8 Virtual IP Address Assignment

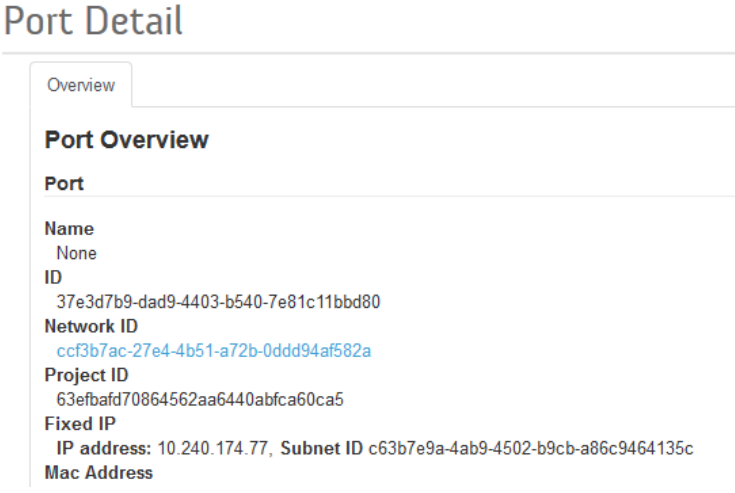
This procedure will configure a VIP for a virtual machine. Administrative access to the OpenStack controller node is required.

Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure 35: Virtual IP Address Assignment

Step	Procedure	Result
1. <input type="checkbox"/>	Login to the OpenStack GUI	

Step	Procedure	Result																														
2.	<p>1. Select project, (ex: "UDR").</p> <p>2. Click</p> <p>→Project</p> <p>→Compute</p> <p>→Instances</p> <p>to show all Instances created under this project:</p>	 <table border="1"> <caption>Instances</caption> <thead> <tr> <th>Instance Name</th> <th>Image Name</th> <th>IP Address</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>NOAM-B</td> <td>UDR-13_8_0_NOAM-B</td> <td>imi 192.168.2.23 xmi 10.240.174.66</td> <td>udr-no-big 120GB RAM 14 VCPU 480.0GB Disk</td> </tr> </tbody> </table>	Instance Name	Image Name	IP Address	Size	NOAM-B	UDR-13_8_0_NOAM-B	imi 192.168.2.23 xmi 10.240.174.66	udr-no-big 120GB RAM 14 VCPU 480.0GB Disk																						
Instance Name	Image Name	IP Address	Size																													
NOAM-B	UDR-13_8_0_NOAM-B	imi 192.168.2.23 xmi 10.240.174.66	udr-no-big 120GB RAM 14 VCPU 480.0GB Disk																													
3.	<p>Find the NOAMP instances</p>	<p>Record the IP addresses of the NOAMP and/or SOAM instances primary XMI network.</p> <p>NOAMP A: _____ SOAM A: _____</p> <p>NOAMP B: _____ SOAM B: _____</p>																														
4.	<p>1. Select...</p> <p>→Project</p> <p>→Network</p> <p>→Networks</p> <p>2. Click the XMI network for expanded detail</p>	 <table border="1"> <caption>Networks</caption> <thead> <tr> <th>Name</th> <th>Subnets Associated</th> <th>Shared</th> <th>Status</th> <th>Admin</th> </tr> </thead> <tbody> <tr> <td>imi</td> <td>imi-subnet 192.168.2.0/24</td> <td>No</td> <td>ACTIVE</td> <td>UP</td> </tr> <tr> <td>xsi1</td> <td>xsi1-subnet 10.240.175.0/24</td> <td>Yes</td> <td>ACTIVE</td> <td>UP</td> </tr> <tr> <td>xsi2</td> <td>xsi2-subnet 10.240.176.0/24</td> <td>Yes</td> <td>ACTIVE</td> <td>UP</td> </tr> </tbody> </table>	Name	Subnets Associated	Shared	Status	Admin	imi	imi-subnet 192.168.2.0/24	No	ACTIVE	UP	xsi1	xsi1-subnet 10.240.175.0/24	Yes	ACTIVE	UP	xsi2	xsi2-subnet 10.240.176.0/24	Yes	ACTIVE	UP										
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xsi2	xsi2-subnet 10.240.176.0/24	Yes	ACTIVE	UP																												
5.	<p>1. Under the Ports section, find the Fixed IP associated with the address(es) recorded in Step 3.</p> <p>2. Click on the associated Port Name.</p>	 <table border="1"> <caption>Ports</caption> <thead> <tr> <th>Name</th> <th>Fixed IPs</th> <th>Attached Device</th> <th>Status</th> <th>Admin State</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>(37e3d7b9)</td> <td>10.240.174.77</td> <td>compute:nova</td> <td>ACTIVE</td> <td>UP</td> <td>Edit Port</td> </tr> <tr> <td>(3dc30fce)</td> <td>10.240.174.58</td> <td>compute:nova</td> <td>ACTIVE</td> <td>UP</td> <td>Edit Port</td> </tr> <tr> <td>(51ffe06d)</td> <td>10.240.174.65</td> <td>compute:nova</td> <td>ACTIVE</td> <td>UP</td> <td>Edit Port</td> </tr> <tr> <td>(609de397)</td> <td>10.240.174.76</td> <td>compute:nova</td> <td>ACTIVE</td> <td>UP</td> <td>Edit Port</td> </tr> </tbody> </table>	Name	Fixed IPs	Attached Device	Status	Admin State	Actions	(37e3d7b9)	10.240.174.77	compute:nova	ACTIVE	UP	Edit Port	(3dc30fce)	10.240.174.58	compute:nova	ACTIVE	UP	Edit Port	(51ffe06d)	10.240.174.65	compute:nova	ACTIVE	UP	Edit Port	(609de397)	10.240.174.76	compute:nova	ACTIVE	UP	Edit Port
Name	Fixed IPs	Attached Device	Status	Admin State	Actions																											
(37e3d7b9)	10.240.174.77	compute:nova	ACTIVE	UP	Edit Port																											
(3dc30fce)	10.240.174.58	compute:nova	ACTIVE	UP	Edit Port																											
(51ffe06d)	10.240.174.65	compute:nova	ACTIVE	UP	Edit Port																											
(609de397)	10.240.174.76	compute:nova	ACTIVE	UP	Edit Port																											

Step	Procedure	Result
6. <input type="checkbox"/>	Copy or record the Port ID	 <p>Port Detail</p> <p>Overview</p> <p>Port Overview</p> <p>Port</p> <p>Name None</p> <p>ID 37e3d7b9-dad9-4403-b540-7e81c11bdd80</p> <p>Network ID cc3b7ac-27e4-4b51-a72b-0ddd94af582a</p> <p>Project ID 63efbafd70864562aa6440abfca60ca5</p> <p>Fixed IP IP address: 10.240.174.77, Subnet ID c63b7e9a-4ab9-4502-b9cb-a86c9464135c</p> <p>Mac Address</p>
7. <input type="checkbox"/>	Copy or record all required Port IDs.	<p>Repeat Step 5 and Step 6 to copy or record the Port ID of each server from Step 3.</p> <p>NOAMP A: _____ SOAM A: _____</p> <p>NOAMP B: _____ SOAM B: _____</p>
8. <input type="checkbox"/>	<p>OpenStack Controller node:</p> <p>1) Access the command prompt.</p> <p>2) Log into the controller node as a privileged user.</p>	<pre>login as: <usr_name> root@10.250.xx.yy's password: <usr_password> Last login: Mon Jul 30 10:33:19 2012 from 10.25.80.199 [root@control01]#</pre>
9. <input type="checkbox"/>	<p>OpenStack Controller node:</p> <p>Initialize environment variables</p>	<pre>controller ~]# source keystone_admin</pre>
10. <input type="checkbox"/>	<p>OpenStack Controller node:</p> <p>Assign VIP by Port IDs</p>	<p>Assign the desired VIP address to both A and B servers sharing the VIP:</p> <pre>[root@control01 ~(keystone_admin)]# neutron port-update <A_server_port_id> -- allowed-address-pairs type-dict list=true ip_address=<vip> [root@control01 ~(keystone_admin)]# neutron port-update <B_server_port_id> -- allowed-address-pairs type-dict list=true ip_address=<vip></pre>
11. <input type="checkbox"/>	<p>OpenStack Controller node:</p> <p>Repeat if needed</p>	<p>Repeat Step 10 as required for any other server pairs requiring a VIP.</p>

Step	Procedure	Result
12. <input type="checkbox"/>	OpenStack Controller node: Confirm VIP association	VIP associations may be confirmed with the following command by Port ID: <pre>[root@control01 ~(keystone_admin)]# neutron port-show <port_id></pre> <pre> ----- Field Value ----- admin_state_up True allowed_address_pairs {"ip_address": "10.240.221.36", "mac_address": "fa:16:3e:ce:18:2a"} binding:host_id compute05.labafrica binding:profile {} binding:vif_details {"port_filter": true, "ovs_hybrid_plug": true} binding:vif_type ovs binding:vnic_type normal device_id 947457b4-46e8-43e7-8f14-79c816388e3d device_owner compute:0dds extra_dhcp_opts fixed_ips {"subnet_id": "23f28095-bdb6-4fab-b13e-281d726ef3eb", "ip_address": "10.240.221.38"} id aa14b554-d0a6-413d-b77c-63e11a3c9895 mac_address fa:16:3e:ce:18:2a name network_id 62027e77-7556-42b2-8070-ffbd61933877 port_security_enabled True security_groups 1e4bd44c-9ac2-4cd0-a56b-c094a52830c2 status ACTIVE tenant_id d2fda814485247f795c23b9af2bc2e1c ----- </pre>
THIS PROCEDURE HAS BEEN COMPLETED		

Appendix H. INSTALL UDR ON ORACLE LINUX OS VIA KVM

Important Note: The content of this appendix is for informational purposes only.

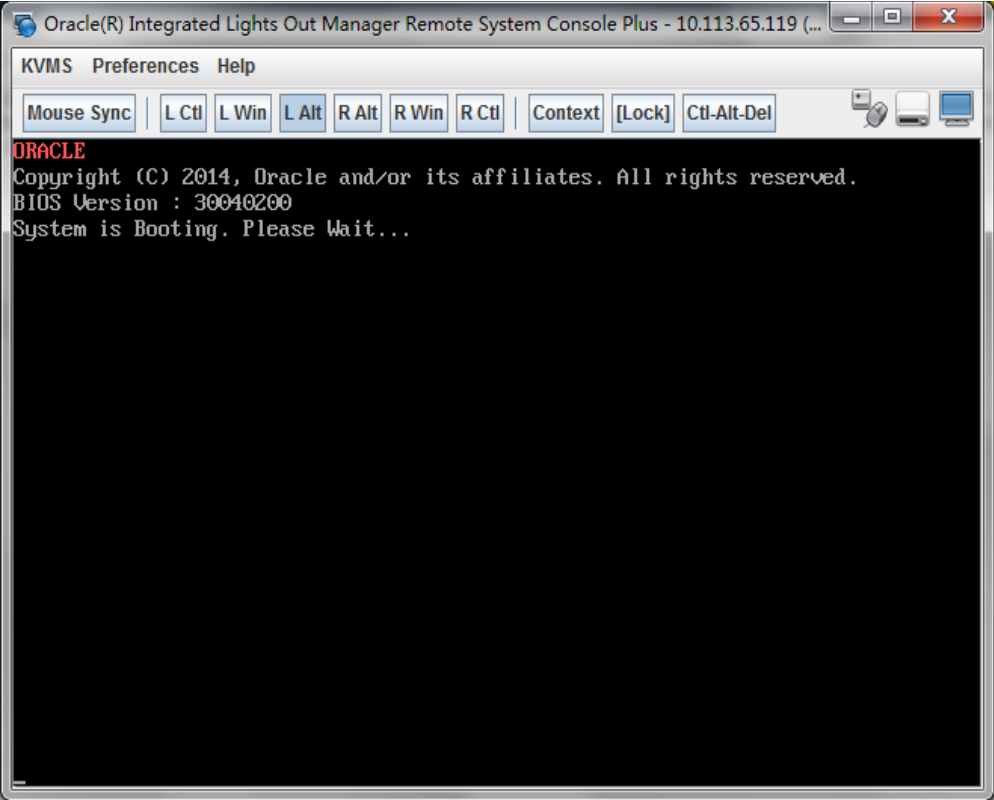
This procedure will install UDR configuration on Oracle Linux OS with direct KVM as hypervisor.

Note:

- This installation procedure only applies when installing UDR on Oracle Linux OS via direct KVM
- For the Oracle Linux OS, Oracle Linux 7.2 GA release is used and verified OK.

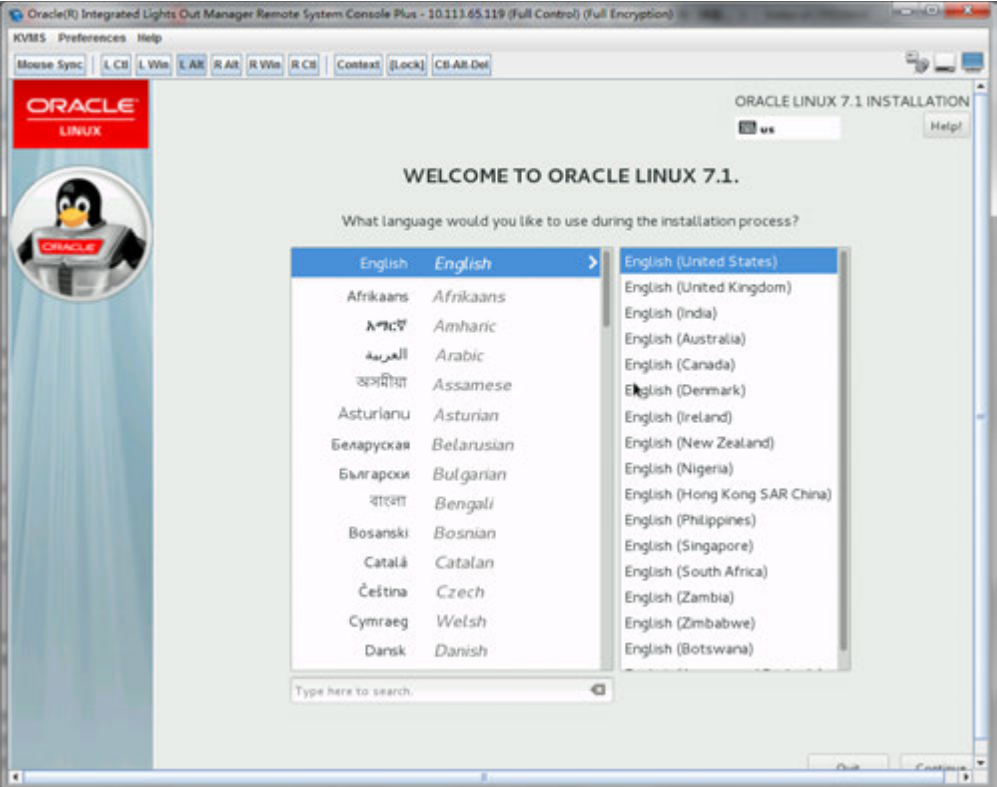
Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

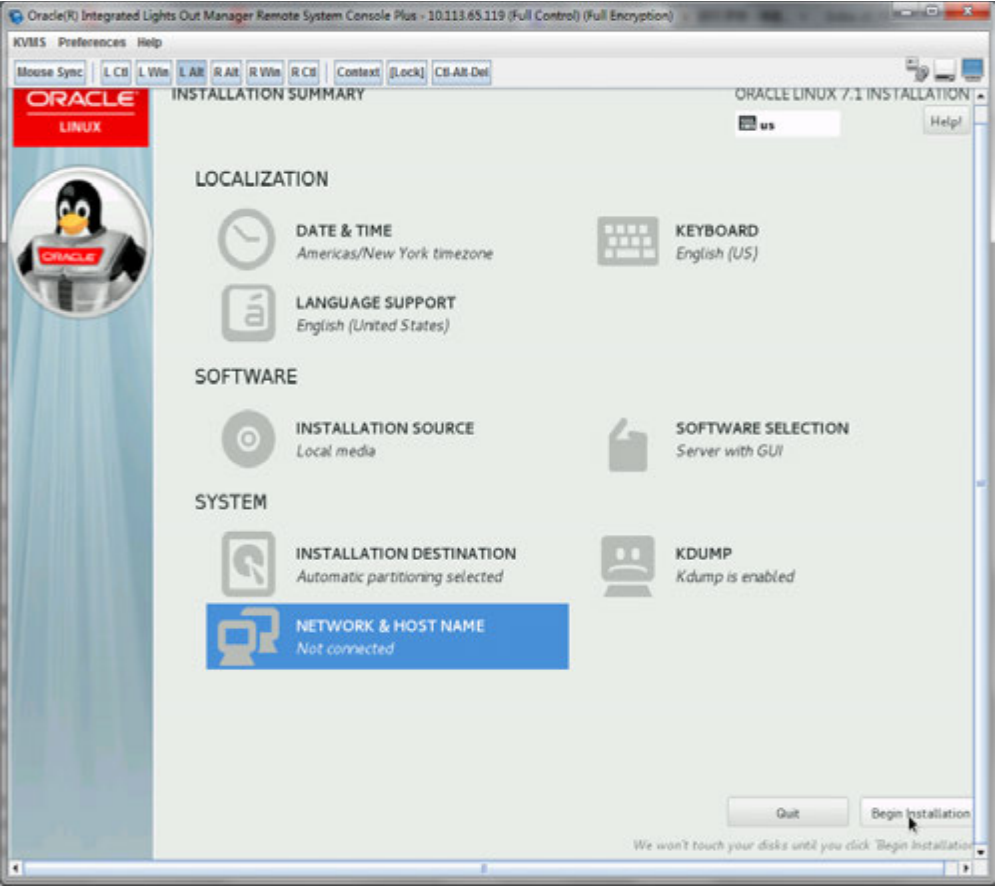
Step	Procedure	Result
1. <input type="checkbox"/>	For each Oracle X5-2 RMS: Mount virtual media contains Oracle Linux OS software	Follow steps defined in ... Appendix C.3 Mounting Virtual Media on Oracle RMS Server of [2] ... to mount the Oracle Linux OS software ISO.
2. <input type="checkbox"/>	For each Oracle X5-2 RMS: Reboot host Login to X5-2 iLo GUI browser page and launch remote console In ILO GUI, navigate to “ Host Management ” - > “ Power Control ” menu, select “ Reset ” in dropdown menu and click “ Save ” to reboot host.	<div style="border: 1px solid #ccc; padding: 5px;"> <p style="text-align: center; margin: 0;">Power Control</p> <hr/> <p style="font-size: 0.8em; margin: 0;">Control the host power from this page. To change the power state, choose an option from the Actions drop down list. <i>Immediate Power Off</i> cuts power to the host. <i>Graceful Shutdown</i> and <i>Power Off</i> attempts to bring the OS down gracefully, then cuts power to the host. <i>Power On</i> gives the host full power. <i>Power Cycle</i> brings the host to power off, then automatically powers the host back on. <i>Reset</i> reboots the host immediately. More details...</p> <hr/> <p style="margin: 0;">Settings</p> <p style="margin: 0;">Host is currently on.</p> <div style="border: 1px solid #ccc; padding: 2px; display: inline-block; margin-bottom: 5px;">Reset</div> <div style="margin-left: 10px;">▼</div> <div style="margin-top: 5px;"> <input type="button" value="Save"/> </div> </div> <p style="margin-top: 10px;">In remote console window you’ll see host is rebooting.</p>

		 <p>The screenshot shows a remote console window titled "Oracle(R) Integrated Lights Out Manager Remote System Console Plus - 10.113.65.119 (...)". The window has a menu bar with "KVMS", "Preferences", and "Help". Below the menu bar is a toolbar with buttons for "Mouse Sync", "L Ctl", "L Win", "L Alt", "R Alt", "R Win", "R Ctl", "Context", "[Lock]", and "Ctl-Alt-Del". The main display area shows the following text:</p> <pre> ORACLE Copyright (C) 2014, Oracle and/or its affiliates. All rights reserved. BIOS Version : 30040200 System is Booting. Please Wait... </pre>
<p>3.</p> <p><input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Initiate Oracle Linux Platform installation</p>	<p>Wait for a couple of minutes for reboot to complete.</p> <p>Once reboot completed, host will boot with Oracle Linux installation ISO and GUI screen will be prompted for installation option.</p>

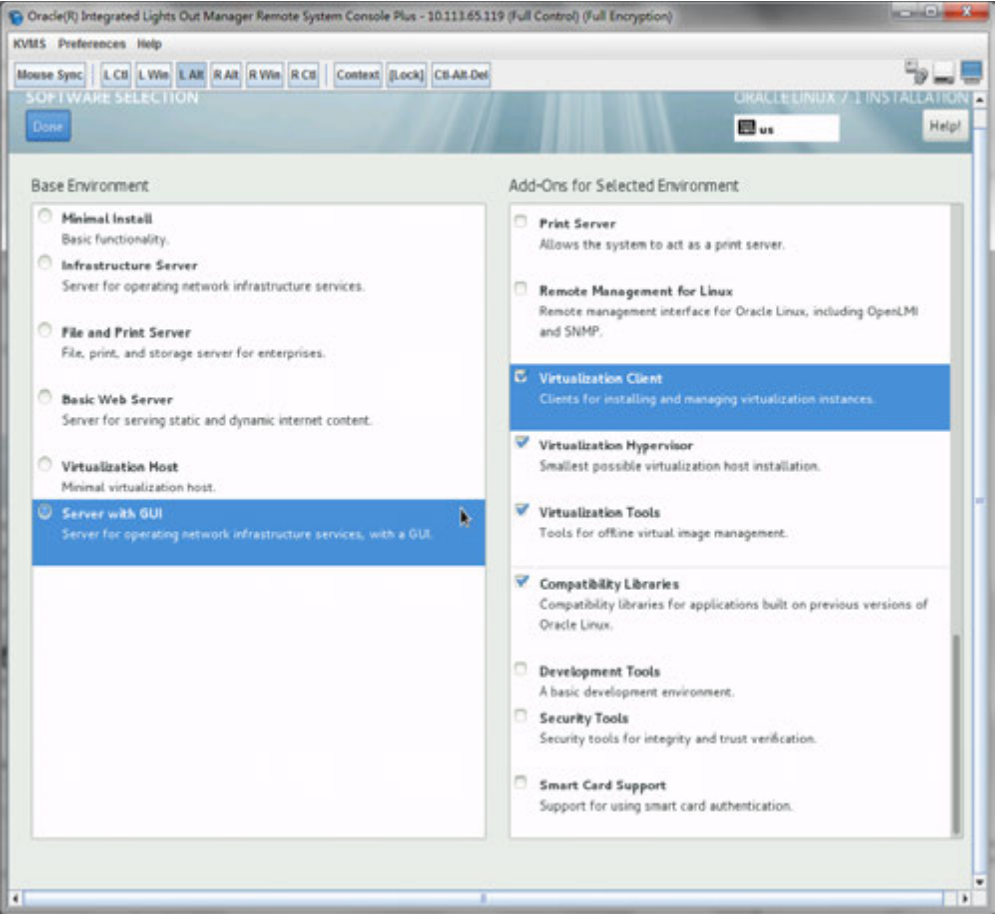
		 <p>Choose option of “Install Oracle Linux 7.x” to continue.</p>
<p>4. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Choose Oracle Linux OS language</p>	<p>When prompted, choose “English” as Oracle Linux OS language:</p>

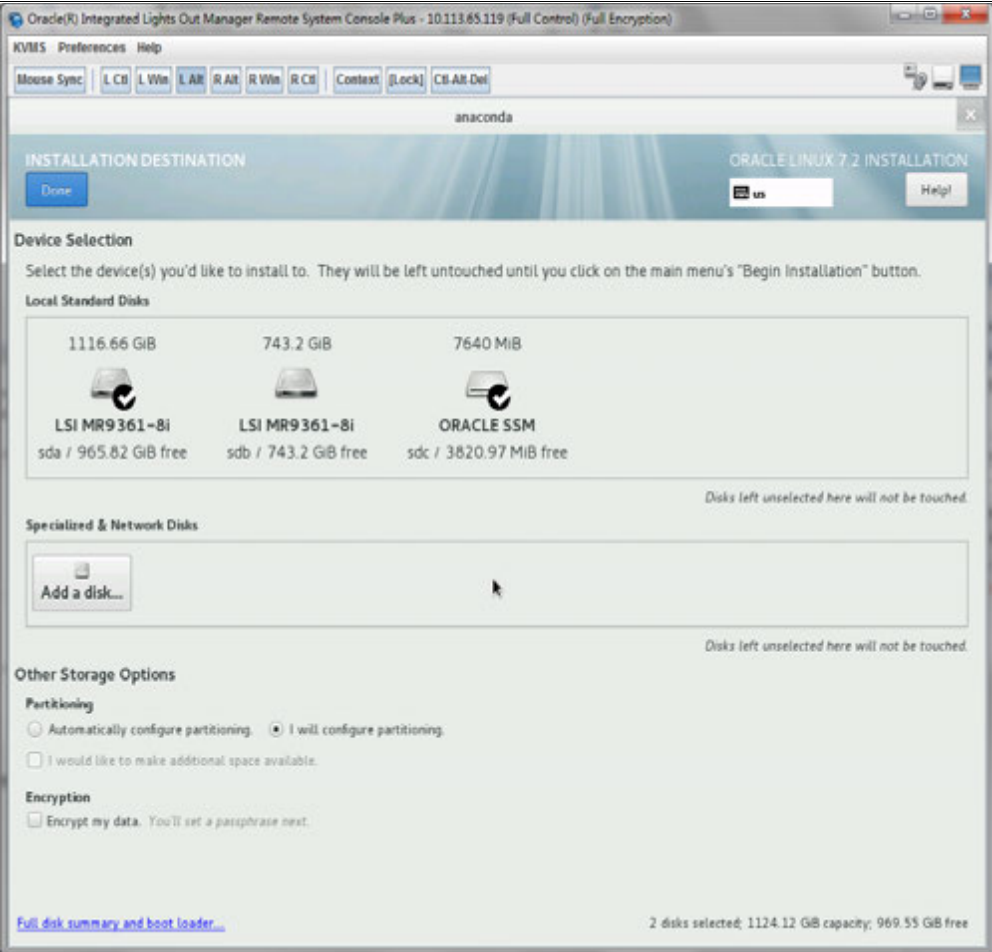
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		 <p>Press “Continue” button to go to next step.</p>
<p>5. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS: Setup time zone</p>	<p>The next page will prompt for Oracle Linux OS installation required information to start installation.</p>

		 <p>Click into LOCALIZATION -> DATE & TIME menu: Set time zone as Americas/New York.</p> <p>Click “Done” to save up changes and goes back to main configuration page.</p>
<p>6. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Setup installation base environment</p>	<p>Click into SOFTWARE -> SOFTWARE SELECTION menu. Choose “Server with GUI” group, and make sure following add-ons are selected:</p> <ul style="list-style-type: none"> ➤ Virtualization Client ➤ Virtualization Hypervisor ➤ Virtualization Tools ➤ Compatibility Libraries

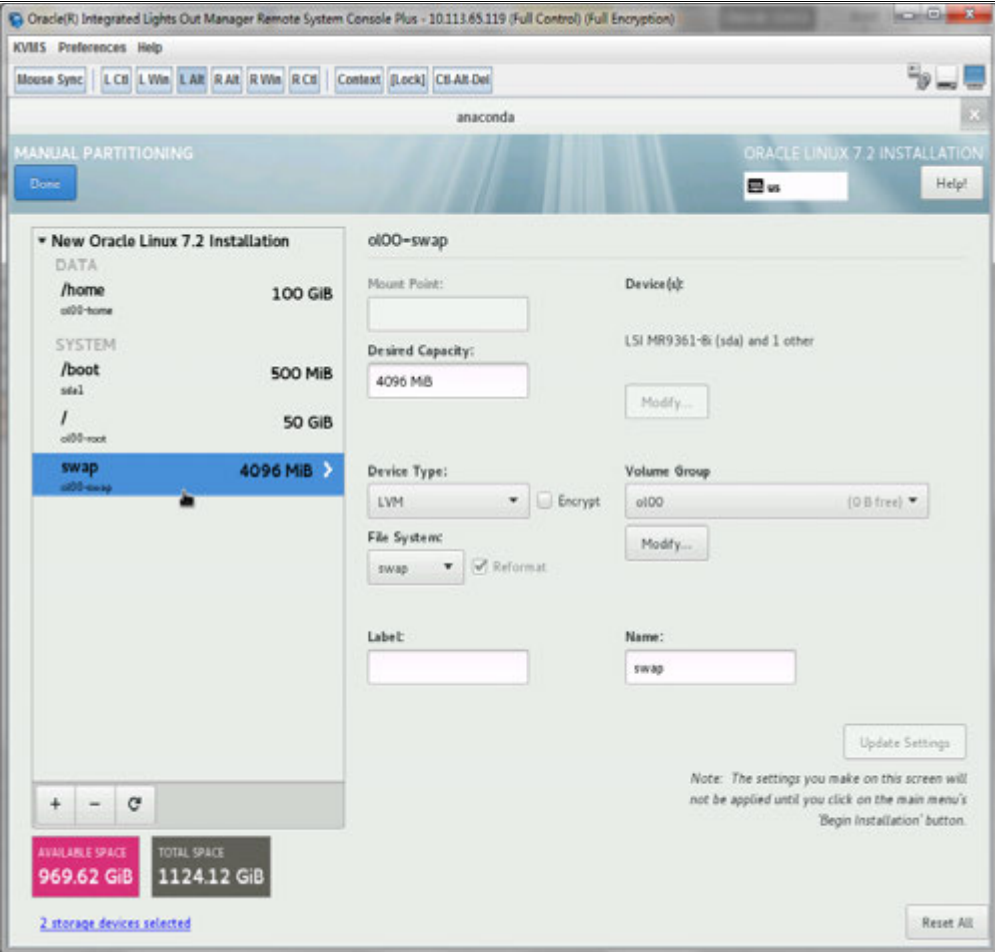
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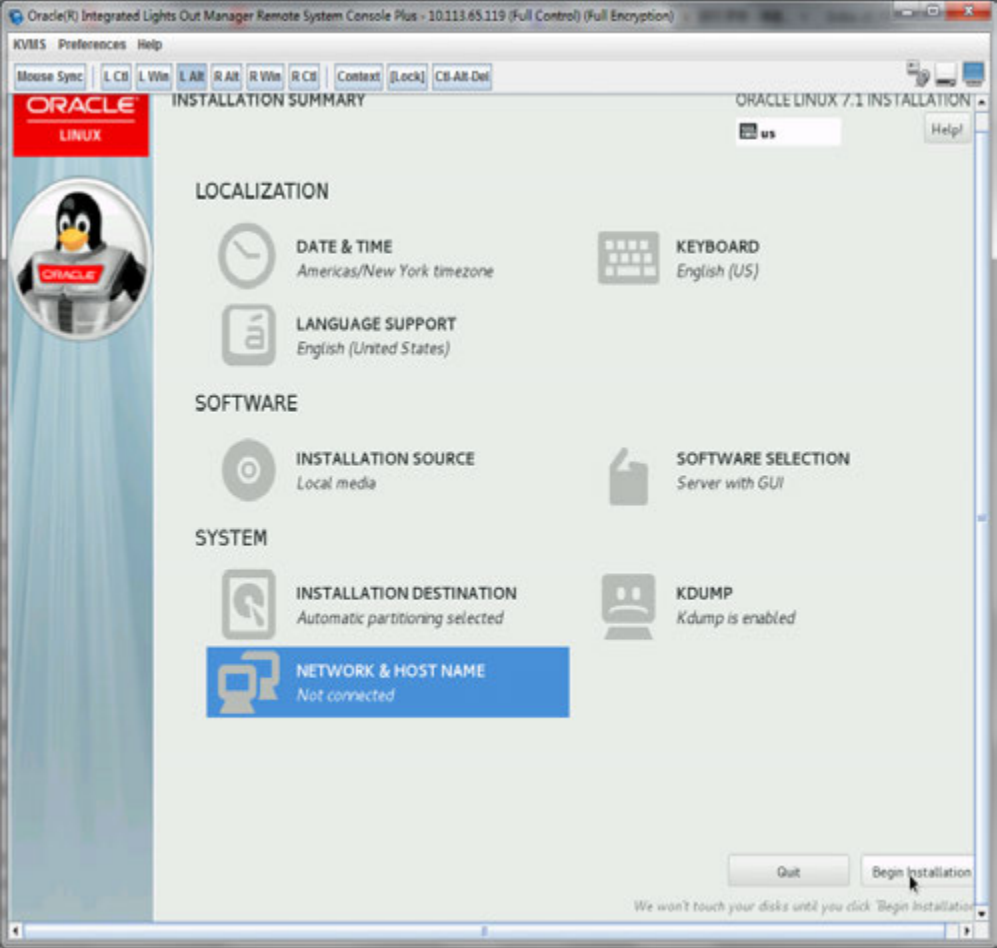
		 <p>Click “Done” to save up changes and goes back to main configuration page.</p>
<p>7. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS: Setup installation destination</p>	<p>Click into SYSTEM -> INSTALLATION DESTINATION menu. Select 'sda' and 'sdc' to use, and check “I will configure partitioning”, click 'Done' to continue.</p>



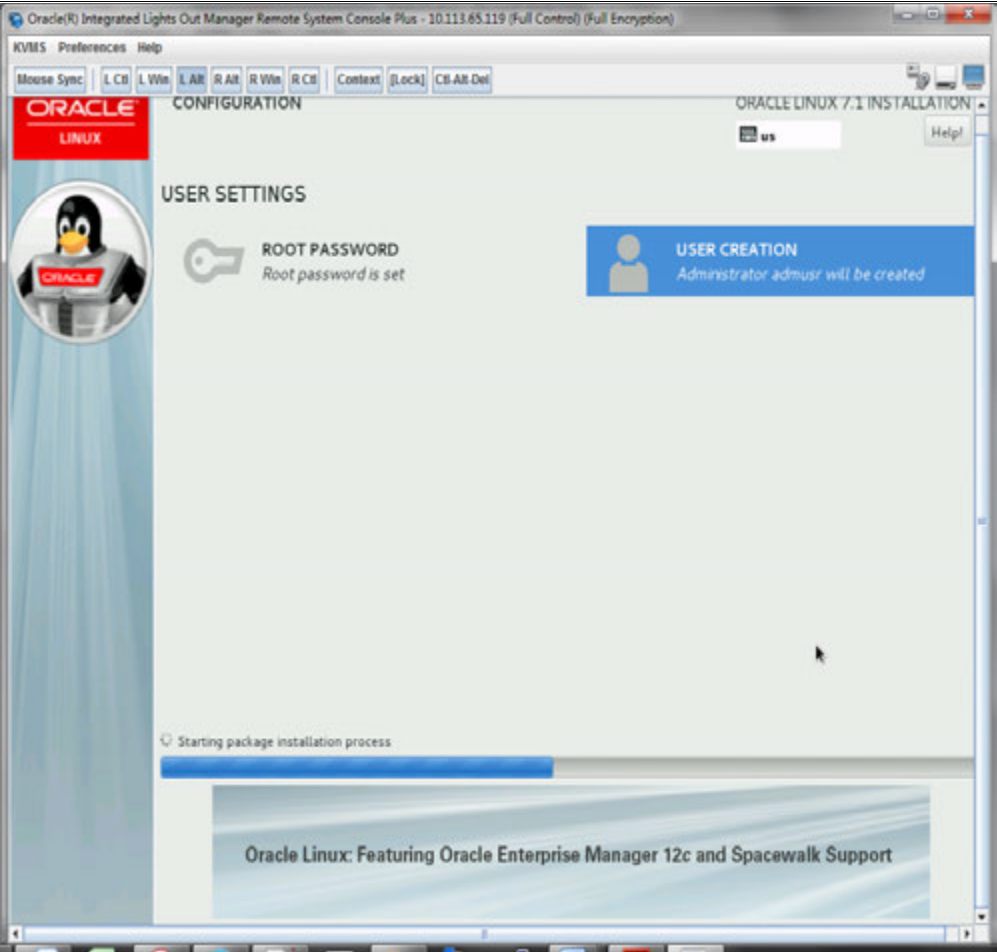
The screenshot shows the 'anaconda' installer window for Oracle Linux 7.2. The 'INSTALLATION DESTINATION' section is active, displaying 'Device Selection'. Under 'Local Standard Disks', three disks are listed: 'sda' (1116.66 GiB total, 965.82 GiB free), 'sdb' (743.2 GiB total, 743.2 GiB free), and 'sdc' (7640 MiB total, 3820.97 MiB free). The 'Other Storage Options' section shows 'Partitioning' set to 'I will configure partitioning' and 'Encryption' set to 'Encrypt my data'. A status bar at the bottom indicates '2 disks selected; 1124.12 GiB capacity; 969.55 GiB free'.

Manually configure disk partition like following (remove any existing mount points if any):

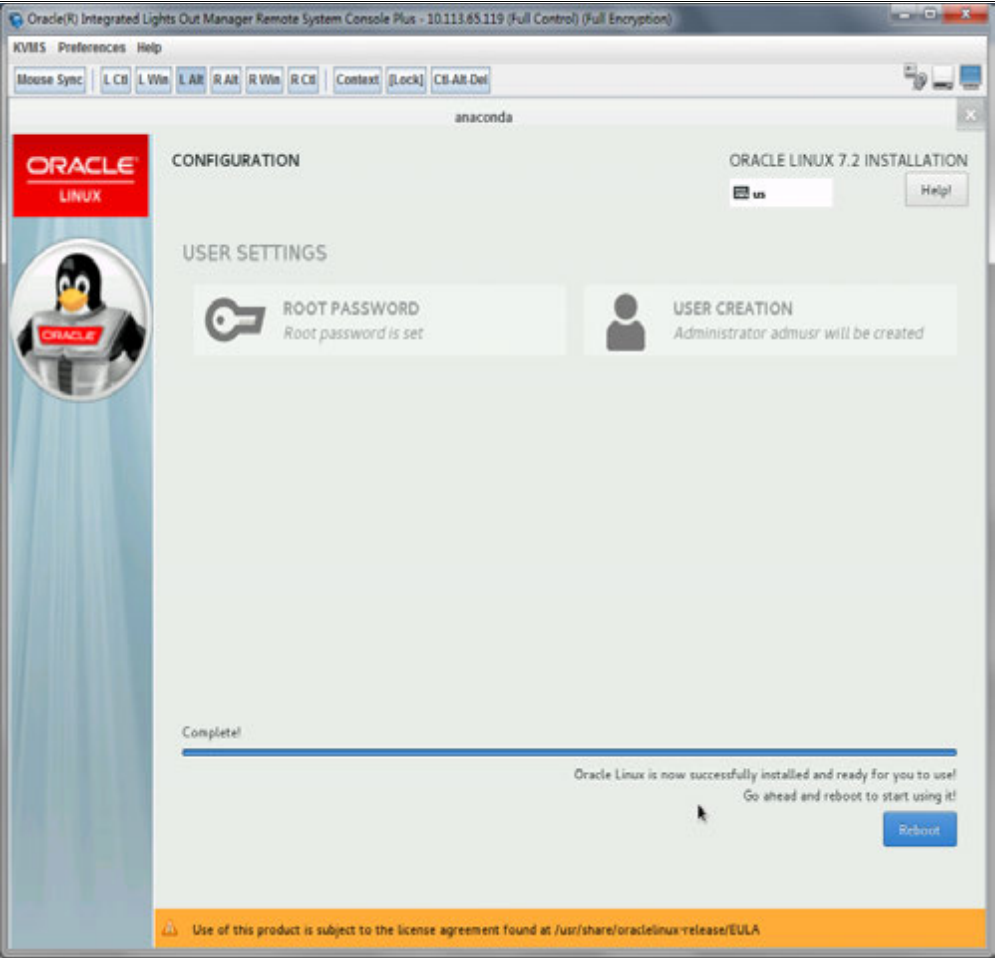
		 <p>Press “Done” to save up changes and go back to main configuration page.</p>
<p>8. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Review configuration and start to install</p>	<p>Review all information before clicking “Begin Installation” button:</p> <p>(You don’t need to configure network right now, we’ll leave that part after Oracle Linux OS is installed.)</p>

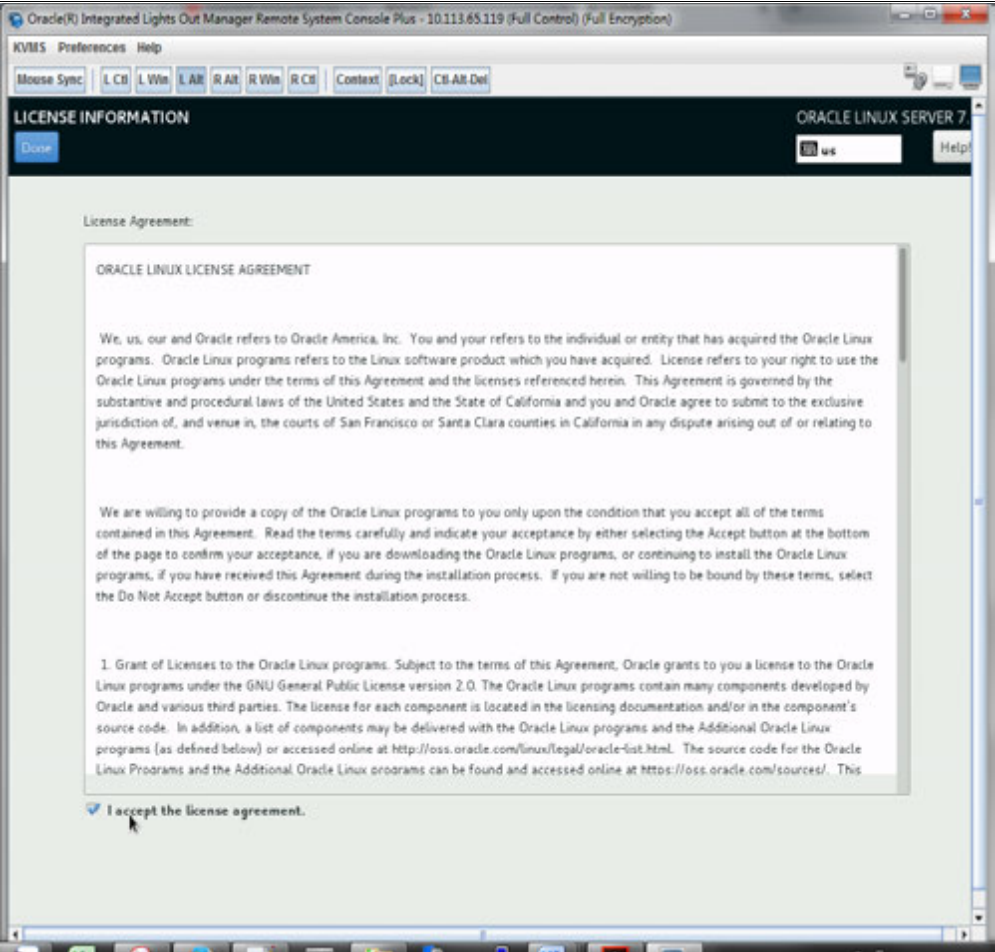
		 <p>The screenshot shows the Oracle Linux 7.1 installation summary screen. The window title is 'Oracle(R) Integrated Lights Out Manager Remote System Console Plus - 10.113.65.119 (Full Control) (Full Encryption)'. The interface includes a menu bar with 'KVMS', 'Preferences', and 'Help'. Below the menu bar are keyboard shortcuts: 'Mouse Sync', 'L Ctl', 'L Win', 'L Alt', 'R Alt', 'R Win', 'R Ctl', 'Context', 'Lock', and 'Ctl-Alt-Del'. The main content area is titled 'INSTALLATION SUMMARY' and features the Oracle Linux logo on the left. The configuration options are as follows:</p> <ul style="list-style-type: none"> LOCALIZATION <ul style="list-style-type: none"> DATE & TIME: Americas/New York timezone LANGUAGE SUPPORT: English (United States) KEYBOARD: English (US) SOFTWARE <ul style="list-style-type: none"> INSTALLATION SOURCE: Local media SOFTWARE SELECTION: Server with GUI SYSTEM <ul style="list-style-type: none"> INSTALLATION DESTINATION: Automatic partitioning selected KDUMP: Kdump is enabled NETWORK & HOST NAME: Not connected <p>At the bottom right, there are 'Quit' and 'Begin Installation' buttons. A warning at the bottom states: 'We won't touch your disks until you click "Begin Installation"'.</p>
<p>9. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS: Create login credential</p>	<p>At the same time Oracle Linux installation software is laying down files into Oracle X5-2 local hard disk, you may configure root credential or any other login credentials per your needs:</p>

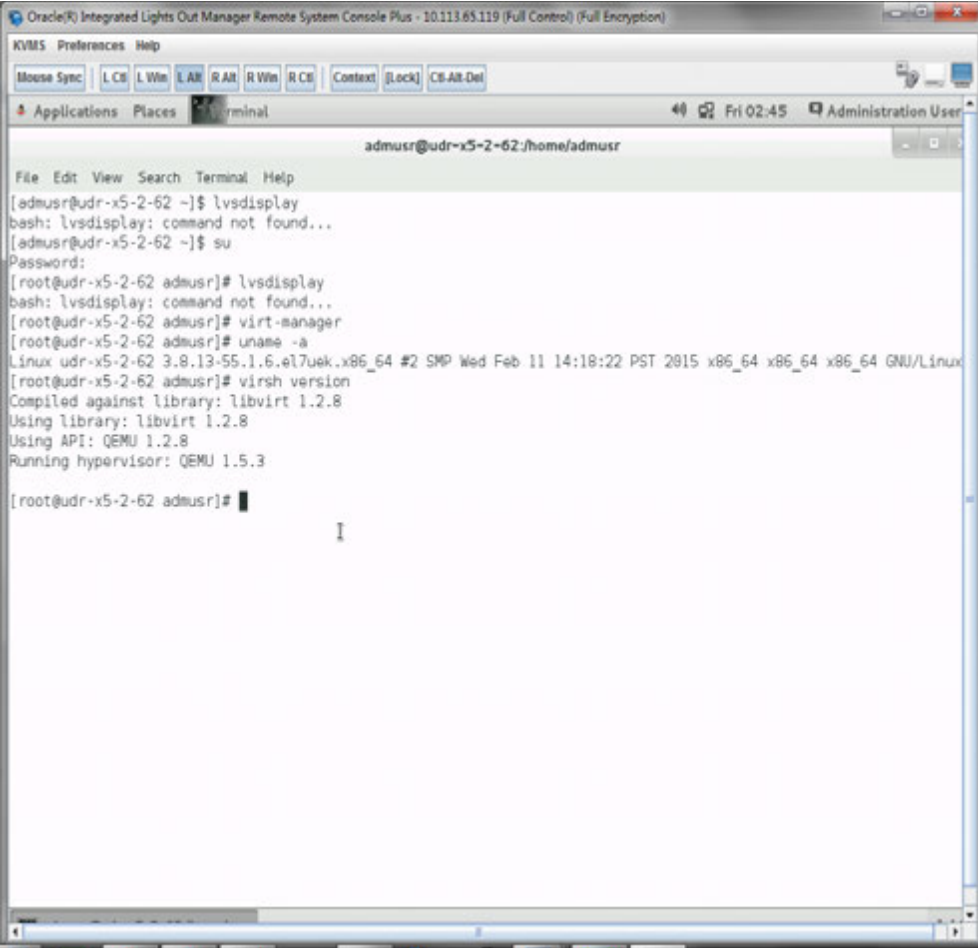
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<p>10.</p> <input type="checkbox"/>	<p>For each Oracle X5-2 RMS:</p> <p>Reboot host after installation completed</p>	<p>Wait for installation complete until following screen is shown:</p>

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		 <p>Click "Reboot" button to reboot.</p>
<p>11. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS: Accept license agreement</p>	<p>After reboot is done, license agreement page will be prompted:</p>

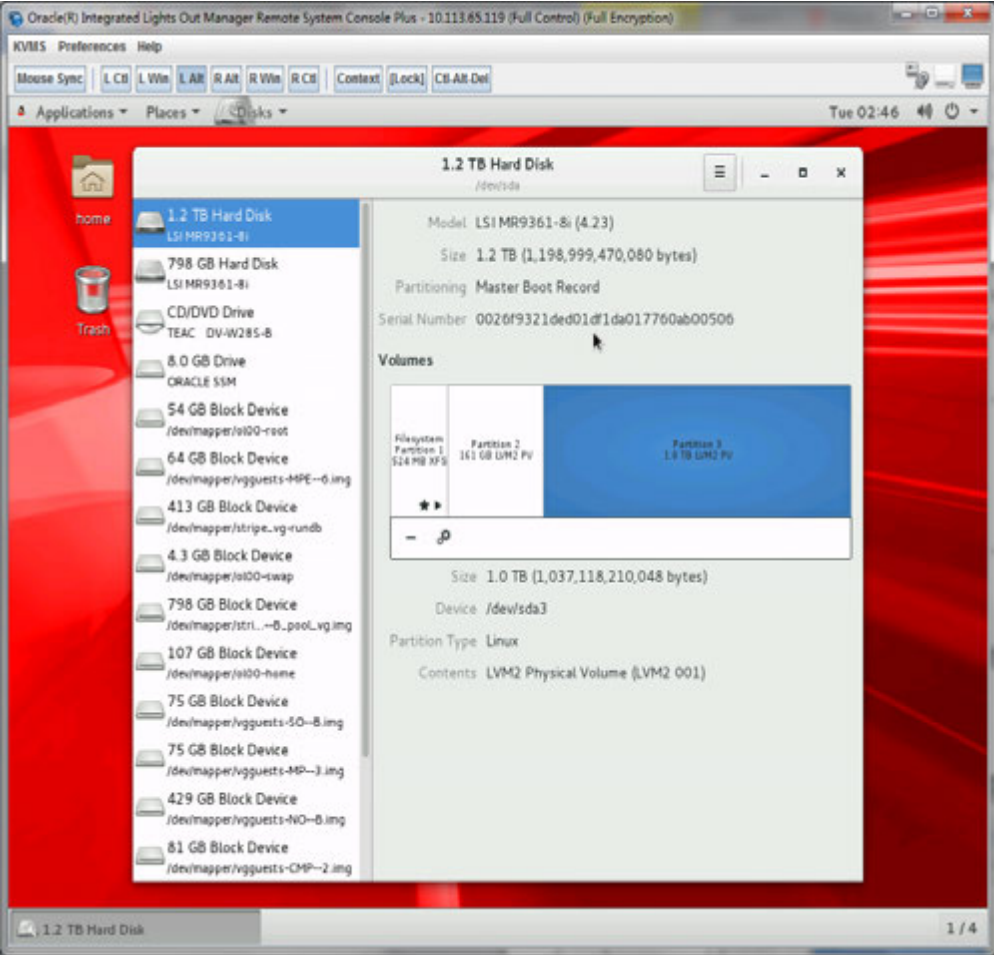
		 <p>Check “I accept the license agreement”, following with “Finish Configuration” to continue.</p> <p>Later you’ll be prompted for ULN setting, skip that step.</p>
<p>12.</p> <p><input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Verify kernel version and KVM version</p>	<p>Open SSH console window and check following:</p>

		
<p>13. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Change network interface name pattern to 'ethx'</p>	<p>Edit /etc/default/grub to append 'net.ifnames=0' to option GRUB_CMDLINE_LINUX:</p> <pre>[root@udr-x5-2-62-017 admusr]# cat /etc/default/grub GRUB_TIMEOUT=5 GRUB_DISTRIBUTOR="\$(sed 's, release .*\$,,g' /etc/system-release)" GRUB_DEFAULT=saved GRUB_DISABLE_SUBMENU=true GRUB_TERMINAL_OUTPUT="console" GRUB_CMDLINE_LINUX="crashkernel=auto rd.lvm.lv=ol100/root rd.lvm.lv=ol100/swap rhgb quiet net.ifnames=0" GRUB_DISABLE_RECOVERY="true"</pre> <p>Recreate the grub2 config file with following command: # grub2-mkconfig -o /boot/grub2/grub.cfg</p> <p>Restart host with 'shutdown -r' command and verify that network interface are with 'ethx' name pattern now.</p>
<p>14. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Create bond0 device</p>	<p>Create device bond0 configuration file:</p> <pre># vim /etc/sysconfig/network-scripts/ifcfg-bond0 DEVICE=bond0 TYPE=Bonding BOND_INTERFACES=eth0,eth1 ONBOOT=yes NM_CONTROLLED=no BOOTPROTO=none BONDING_OPTS="mode=active-backup primary=eth0 miimon=100"</pre>

		<p>Save up file and exit.</p> <p>Create device eth0 configuration file: <pre># vim /etc/sysconfig/network-scripts/ifcfg-eth0 DEVICE=eth0 TYPE=Ethernet ONBOOT=yes NM_CONTROLLED=no BOOTPROTO=none MASTER=bond0 SLAVE=yes</pre> </p> <p>Save up file and exit.</p> <p>Create device eth1 configuration file: <pre># vim /etc/sysconfig/network-scripts/ifcfg-eth1 DEVICE=eth1 TYPE=Ethernet ONBOOT=yes NM_CONTROLLED=no BOOTPROTO=none MASTER=bond0 SLAVE=yes</pre> </p> <p>Save up file and exit.</p> <p>Bring up devices into services: <pre># ifup eth0 # ifup eth1 # ifup bond0</pre> </p>
<p>15. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Create IMI bridge</p>	<p>Create bond0.<imi_vlan> configuration file: <pre># vim /etc/sysconfig/network-scripts/ifcfg-bond0.<imi_vlan> DEVICE=bond0.<imi_vlan> TYPE=Ethernet BOOTPROTO=none ONBOOT=yes NM_CONTROLLED=no BRIDGE=imi</pre> </p> <p>Create imi device configuration file: <pre># vim /etc/sysconfig/network-scripts/ifcfg-imi DEVICE=imi TYPE=Bridge BOOTPROTO=none ONBOOT=yes NM_CONTROLLED=no BRIDGE_INTERFACES=bond0.<imi_vlan></pre> </p> <p>Bring up devices into services: <pre># ifup bond0.<imi_vlan> # ifup imi</pre> </p>
<p>16. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Create XMI bridge</p>	<p>Create bond0.<xmi_vlan> configuration file: <pre># vim /etc/sysconfig/network-scripts/ifcfg-bond0.<xmi_vlan> DEVICE=bond0.<xmi_vlan> TYPE=Ethernet BOOTPROTO=none ONBOOT=yes NM_CONTROLLED=no</pre> </p>

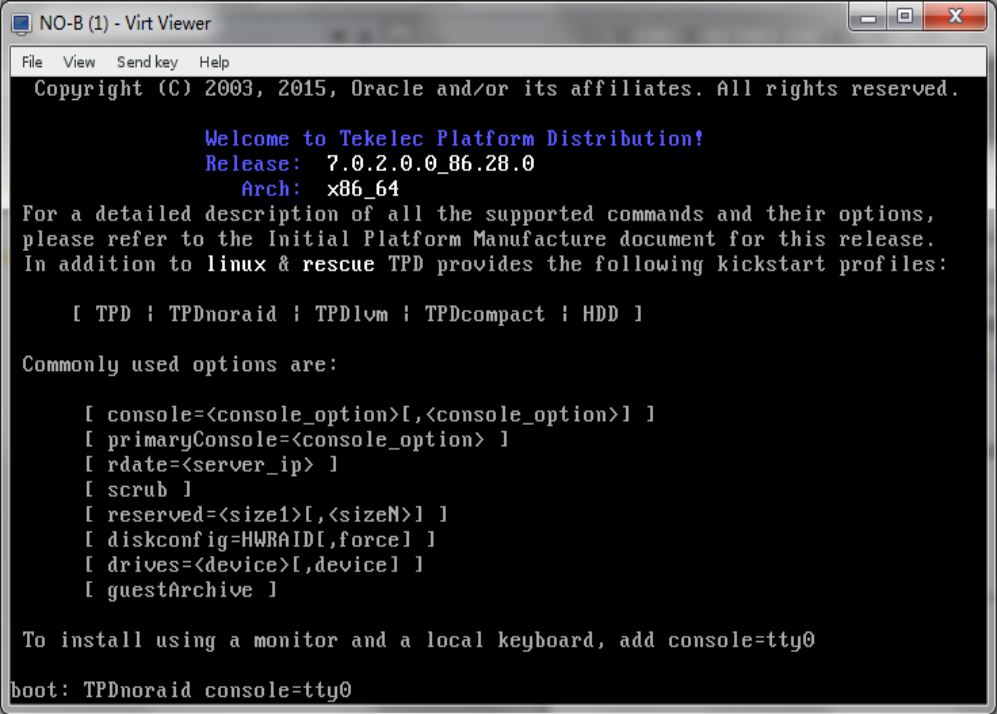
		<pre>BRIDGE=xmi Create xmi device configuration file: # vim /etc/sysconfig/network-scripts/ifcfg-xmi: DEVICE=xmi TYPE=Bridge BOOTPROTO=none ONBOOT=yes NM_CONTROLLED=no IPADDR=<xmi_ip_addr> NETMASK=<xmi_netmask> NETWORK=<xmi_network> BRIDGE_INTERFACES=bond0.<xmi_vlan> Set default route for xmi network: # vim /etc/sysconfig/network-scripts/route-xmi default via <xmi_gateway> table main Bring up devices into services: # ifup bond0.<xmi_vlan> # ifup xmi</pre>
<p>17. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Create bond1 device</p>	<pre>Create device bond1 configuration file: # vim /etc/sysconfig/network-scripts/ifcfg-bond1 DEVICE=bond1 TYPE=Bonding BOND_INTERFACES=eth4,eth5 ONBOOT=yes NM_CONTROLLED=no BOOTPROTO=none BONDING_OPTS="mode=active-backup primary=eth4 miimon=100" Create device eth4 configuration file: # vim /etc/sysconfig/network-scripts/ifcfg-eth4 DEVICE=eth4 TYPE=Ethernet ONBOOT=yes NM_CONTROLLED=no BOOTPROTO=none MASTER=bond1 SLAVE=yes Create device eth5 configuration file: # vim /etc/sysconfig/network-scripts/ifcfg-eth5 DEVICE=eth5 TYPE=Ethernet ONBOOT=yes NM_CONTROLLED=no BOOTPROTO=none MASTER=bond1 SLAVE=yes Bring up devices into services: # ifup eth4 # ifup eth5 # ifup bond1</pre>
<p>18. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p>	<pre>Create device bond1.<xsi1_vlan> configuration file: # vim /etc/sysconfig/network-scripts/ifcfg-bond1.<xsi1_vlan> BOOTPROTO=none</pre>

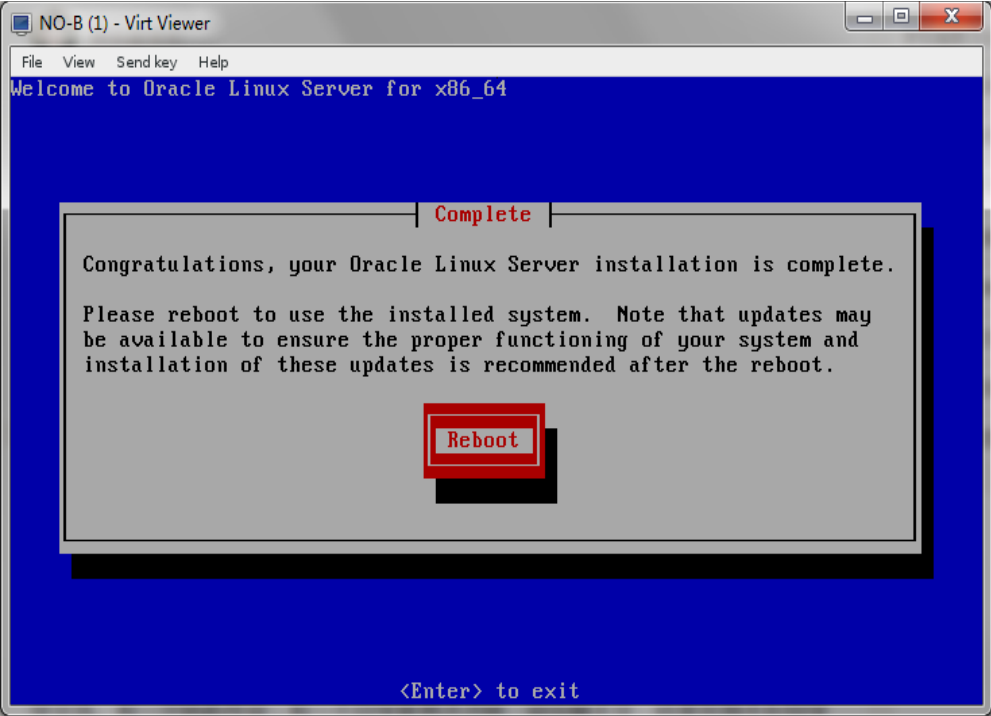
	<p>Create xs1/xsi2 bridge</p>	<pre>VLAN=yes ONBOOT=yes TYPE=Ethernet DEVICE=bond1.<xs1_vlan> BRIDGE=xs1 NM_CONTROLLED=no Create device xs1 configuration file: # vim /etc/sysconfig/network-scripts/ifcfg-xs1 DEVICE=xs1 TYPE=Bridge BOOTPROTO=none ONBOOT=yes NM_CONTROLLED=no BRIDGE_INTERFACES=bond1.<xs1_vlan> Bring up devices into services: # ifup xs1 # ifup bond1.<xs1_vlan> Perform similar operations to create network devices for xsi2.</pre>
<p>19. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS: Set host name</p>	<pre>Rename host by modifying /etc/hostname file: [root@localhost network-scripts]# cat /etc/hostname udr-x5-2-62-017 Review host name change with following command: [root@localhost network-scripts]# hostnamectl status Static hostname: udr-x5-2-62-017 Icon name: computer-server Chassis: server Machine ID: 17980a78ef7d440ca5a6900768903795 Boot ID: a2a5a649eea14d8ab7534aec962c6782 Operating System: Oracle Linux Server 7.2 CPE OS Name: cpe:/o:oracle:linux:7:2:server Kernel: Linux 3.8.13-98.7.1.el7uek.x86_64 Architecture: x86-64</pre>
<p>20. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS: Set NTP service</p>	<pre>Modify /etc/chrony.conf, comment out all server * entries and append your NTP server IP to the list with prepending 'server ' text: # Use public servers from the pool.ntp.org project. # Please consider joining the pool (http://www.pool.ntp.org/join.html). #server 0.rhel.pool.ntp.org iburst #server 1.rhel.pool.ntp.org iburst #server 2.rhel.pool.ntp.org iburst #server 3.rhel.pool.ntp.org iburst server 144.25.255.140 Force ntp to sync with newly added server: # ntpdate 144.25.255.140 Verify time synced: [root@udr-x5-2-62 log]# chronyc tracking Reference ID : 144.25.255.140 (144.25.255.140) Stratum : 3 Ref time (UTC) : Mon Feb 29 06:06:44 2016 System time : 1.692247748 seconds slow of NTP time Last offset : -3.862722397 seconds RMS offset : 3.862722397 seconds Frequency : 0.000 ppm fast</pre>

		<pre>Residual freq : -93.109 ppm Skew : 1000000.000 ppm Root delay : 0.178002 seconds Root dispersion : 30.041723 seconds Update interval : 0.0 seconds Leap status : Normal</pre>
<p>21. <input type="checkbox"/></p>	<p>For each Oracle X5-2 RMS:</p> <p>Create VG of 'vgguests'</p>	<p>Navigate to 'Applications -> Utilities -> Disk' menu, select '1.2 TB Hard Disk', create a new partition using the rest of the free disk space on that disk, like following:</p>  <p>Open SSH window and type in following command to create PV on the newly created partition:</p> <pre># pvcreate /dev/sda3 WARNING: ext4 signature detected on /dev/sda3 at offset 1080. Wipe it? [y/n]: y Wiping ext4 signature on /dev/sda3. Physical volume "/dev/sda3" successfully created</pre> <p>Create VG of 'vgguests' on this newly created PV:</p> <pre># vgcreate vgguests /dev/sda3 Volume group "vgguests" successfully created</pre> <p>Verify that 'vgguests' created successfully:</p> <pre># vgs --- Volume group --- VG Name vgguests</pre>

		<pre> System ID Format lvm2 Metadata Areas 1 Metadata Sequence No 14 VG Access read/write VG Status resizable MAX LV 0 Cur LV 7 Open LV 7 Max PV 0 Cur PV 1 Act PV 1 VG Size 965.89 GiB PE Size 4.00 MiB Total PE 247268 Alloc PE / Size 207360 / 810.00 GiB Free PE / Size 39908 / 155.89 GiB VG UUID gceZRh-QR7y-w5dP-wj8l-0e6i-dC2q-rkwl57 </pre>
22. <input type="checkbox"/>	<p>For each Oracle X5-2 RMS:</p> <p>Create PV upon SSD disk array</p>	<p>Create PV upon SSD disk array (mounted as /dev/sdb device):</p> <pre> # pvcreate /dev/sdb Physical volume "/dev/sdb" successfully created Verify PV is created successfully: # pvdisplay /dev/sdb "/dev/sdb" is a new physical volume of "743.20 GiB" --- NEW Physical volume --- PV Name /dev/sdb VG Name PV Size 743.20 GiB Allocatable NO PE Size 0 Total PE 0 Free PE 0 Allocated PE 0 PV UUID 2nMzSt-44Sr-K8sq-eMdf-cAc7-003R-AQCIiO </pre>
23. <input type="checkbox"/>	<p>For each UDR VMs:</p> <p>Create hard disk image</p> <p>Login to SSH console of X5-2 host</p>	<p>Using lvcreate command create logic volume for UDR VM on Oracle X5-2 host:</p> <pre> # lvcreate -n <UDR_VM_name>.img -L <UDR_VM_HardDisk_sizeGB>G vgguests Logical volume "<UDR_VM_name>.img" created. -if creating VM for NOAMP, set hard disk size to 400G -if creating VM for SOAM/MP, set hard disk size to 70G Verify logic volume created successfully: # [root@udr-x5-2-62-ol7 ~]# lvsdisplay /dev/vgguests/<UDR_VM_name>.img --- Logical volume --- LV Path /dev/vgguests/NO-B.img LV Name NO-B.img VG Name vgguests LV UUID QcfD8S-61cP-P3Ws-H8Ai-Ilxx-reDC-2cT9Aw LV Write Access read/write LV Creation host, time udr-x5-2-62-ol7, 2016-03-02 00:30:04 -0500 LV Status available # open 1 LV Size 400.00 GiB Current LE 102400 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 8192 Block device 252:6 </pre>
24.	For NOAMP	Note: this step is for NOAMP VM only.

<input type="checkbox"/>	<p>VM only:</p> <p>Create LV for subscriber storage</p>	<p>Allocate all space on stripePool_vg to NOAMP VM:</p> <pre># lvcreate -n <NOAMP_name>_pool_vg.img -L 743G stripePool_vg WARNING: LVM2_member signature detected on /dev/stripePool_vg/NO-B_pool_vg.img at offset 536. Wipe it? [y/n]: y Wiping LVM2_member signature on /dev/stripePool_vg/NO-B_pool_vg.img. Logical volume "NO-B_pool_vg.img" created.</pre> <p>Verify that LV is created successfully:</p> <pre># lvdisplay /dev/stripePool_vg/<NOAMP_name>_pool_vg.img --- Logical volume --- LV Path /dev/stripePool_vg/NO-B_pool_vg.img LV Name NO-B_pool_vg.img VG Name stripePool_vg LV UUID gXaYz2-FrXJ-5liq-iUyB-0kDN-e1Pw-0KeRel LV Write Access read/write LV Creation host, time udr-x5-2-62-ol7, 2016-03-02 00:30:11 -0500 LV Status available # open 2 LV Size 743.00 GiB Current LE 190208 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 8192 Block device 252:2</pre>
<p>25.</p> <input type="checkbox"/>	<p>For each UDR VMs:</p> <p>Create VM and install TPD</p>	<p>Note: require X-window enabled so that virt-viewer GUI could pop up to perform installation operation.</p> <p>-if creating NOAMP VM, using following command:</p> <pre># virt-install --name=<NOAMP_name> \ --connect qemu:///system --virt-type kvm \ --vcpus=8 \ --cpu Haswell-noTSX \ --ram=104448 \ --hvm \ --arch=x86_64 --os-type=linux --os-variant=ol6.5 \ --disk path=/dev/vgguests/<NOAMP_name>.img,sparse=false \ \ --disk path=/dev/stripePool_vg/<NOAMP_name>_pool_vg.img,sparse=false \ \ --cdrom <TPD_ISO_location> \ --network=bridge:imi,model=virtio \ --network=bridge:xmi,model=virtio \ --network=bridge:xsil,model=virtio \ --accelerate</pre> <p>-if creating SOAM VM, using following command:</p> <pre># virt-install --name=<SOAM_name> \ --connect qemu:///system --virt-type kvm \ --vcpus=2 \ --cpu Haswell-noTSX \ --ram=12288 \ --hvm \ --arch=x86_64 --os-type=linux --os-variant=ol6.5 \ --disk path=/dev/vgguests/<SOAM_name>.img,sparse=false \ --cdrom <TPD_ISO_location> \ --network=bridge:imi,model=virtio \</pre>

		<pre> --network=bridge:xmi,model=virtio \ --accelerate -if creating MP VM, using following command: # virt-install --name=<MP_name> \ --connect qemu:///system --virt-type kvm \ --vcpus=6 \ --cpu Haswell-noTSX \ --ram=32768 \ --hvm \ --arch=x86_64 --os-type=linux --os-variant=ol6.5 \ --disk path=/dev/vgguests/<MP_name>.img,sparse=false \ --cdrom <TPD_ISO_location> \ --network=bridge:imi,model=virtio \ --network=bridge:xmi,model=virtio \ --network=bridge:xsi1,model=virtio \ --network=bridge:xsi2,model=virtio \ --accelerate </pre> <p>Wait for virt-viewer GUI pop up:</p>  <p>Type in following to start TPD installation:</p> <pre># TPDnoraaid console=tty0</pre>
<p>26.</p> <p><input type="checkbox"/></p>	<p>For each UDR VMs:</p> <p>Reboot after TPD installation complete</p>	<p>Wait for TPD installation to complete until following screen shown:</p>

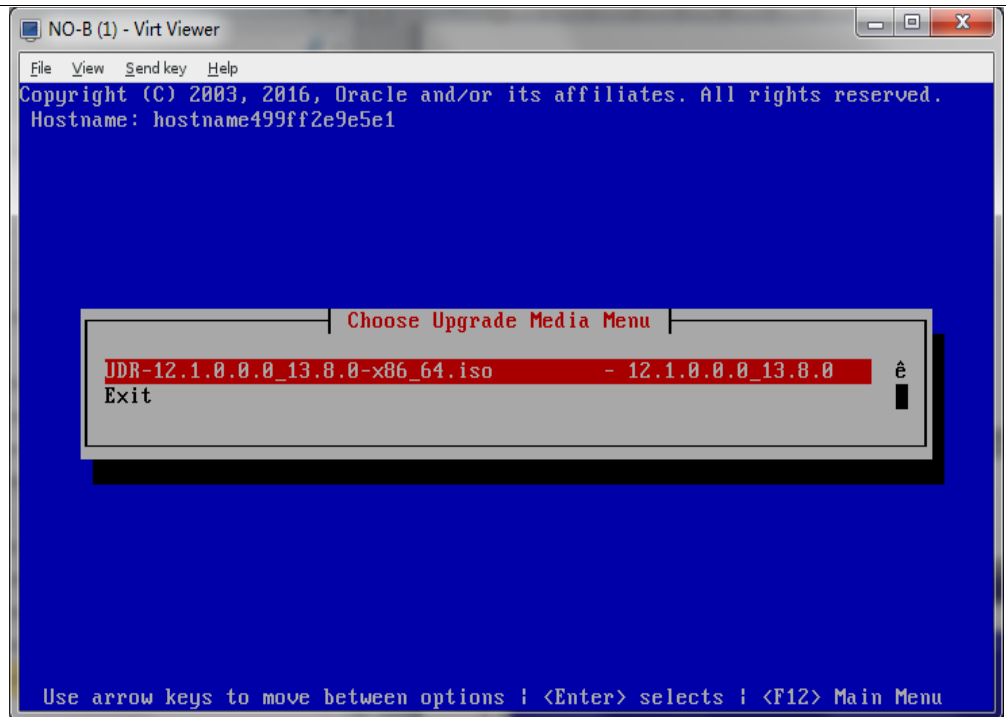
		 <p>Press "Reboot" to continue.</p>
<p>27. <input type="checkbox"/></p>	<p>For each UDR VMs: Modify network interface name</p>	<p>Note: by default the network interface name on VM guest created by Oracle Linux KVM are of pattern 'ethx', UDR VMs requires network interface name as in xmi/imi/xsi1/xsi2, following is a workaround to meet with this requirement.</p> <p>First stop network service: # <code>service network stop</code></p> <p>Modify /etc/udev/rules.d/70-persistent-net.rules as following (take NOAMP for example): Note: check the MAC address before modifying to guarantee the network interface name to be changed to.</p> <pre>## cat /etc/udev/rules.d/70-persistent-net.rules # This file was automatically generated by the /lib/udev/write_net_rules # program, run by the persistent-net-generator.rules rules file. # # You can modify it, as long as you keep each rule on a single # line, and change only the value of the NAME= key.</pre> <pre># PCI device 0x1af4:0x1000 (virtio-pci) (custom name provided by external tool) SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR{address}=="52:54:00:50:dc:80", ATTR{type}=="1", KERNEL=="eth*", NAME="imi"</pre> <pre># PCI device 0x1af4:0x1000 (virtio-pci) SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR{address}=="52:54:00:dc:7e:d1", ATTR{type}=="1", KERNEL=="eth*", NAME="xmi"</pre> <pre># PCI device 0x1af4:0x1000 (virtio-pci) SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR{address}=="52:54:00:08:72:06", ATTR{type}=="1", KERNEL=="eth*",</pre>

		<pre> NAME="xsi1" Restart udev service: # start_udev Rename network interface configuration file name correspondingly: # mv ifcfg-eth0 ifcfg-imi Modify DEVICE name option in configuration file: [root@NO-B network-scripts]# cat ifcfg-imi BOOTPROTO=none TYPE=Ethernet DEVICE=imi NETMASK=255.255.254.0 BROADCAST=192.168.3.255 IPADDR=192.168.2.35 NETWORK=192.168.2.0 ONBOOT=yes Start network service again: # service network start Verify that network interfaces are renamed correctly: # ip link 1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00 2: imi: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000 link/ether 52:54:00:50:dc:80 brd ff:ff:ff:ff:ff:ff 3: xmi: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN qlen 1000 link/ether 52:54:00:dc:7e:d1 brd ff:ff:ff:ff:ff:ff 4: xsi1: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN qlen 1000 link/ether 52:54:00:08:72:06 brd ff:ff:ff:ff:ff:ff </pre>
<p>28. <input type="checkbox"/></p>	<p>For each UDR VMs:</p> <p>Configure XMI network address</p>	<p>Set XMI network address for UDR VM:</p> <pre> # netAdm set --device=xmi --onboot=yes --netmask=<XMI_netmask> --address=<XMI_network_address> # netAdm add --device=xmi --route=default -- gateway=<XMI_gateway> </pre>
<p>29. <input type="checkbox"/></p>	<p>For each UDR VMs:</p> <p>Configure NTP service</p>	<p>Follow instructions in...</p> <p>Step 5 - 6 of Appendix L.6 Configure TVOE Server (Hostname, Time Zone, SNMP, NTP, etc) in [2]</p> <p>... to configure NTP service for each VM.</p>
<p>30. <input type="checkbox"/></p>	<p>For NOAMP VM only:</p> <p>Create rundb logic volume</p>	<p>Note: this step applies on NOAMP VM only.</p> <p>Create volume group stripe_vg:</p> <pre> # vgcreate stripe_vg /dev/sdb Physical volume "/dev/sdb" successfully created Volume group "stripe_vg" successfully created </pre> <p>Verify VG created successfully:</p> <pre> # vgdisplay --- Volume group --- VG Name stripe_vg </pre>

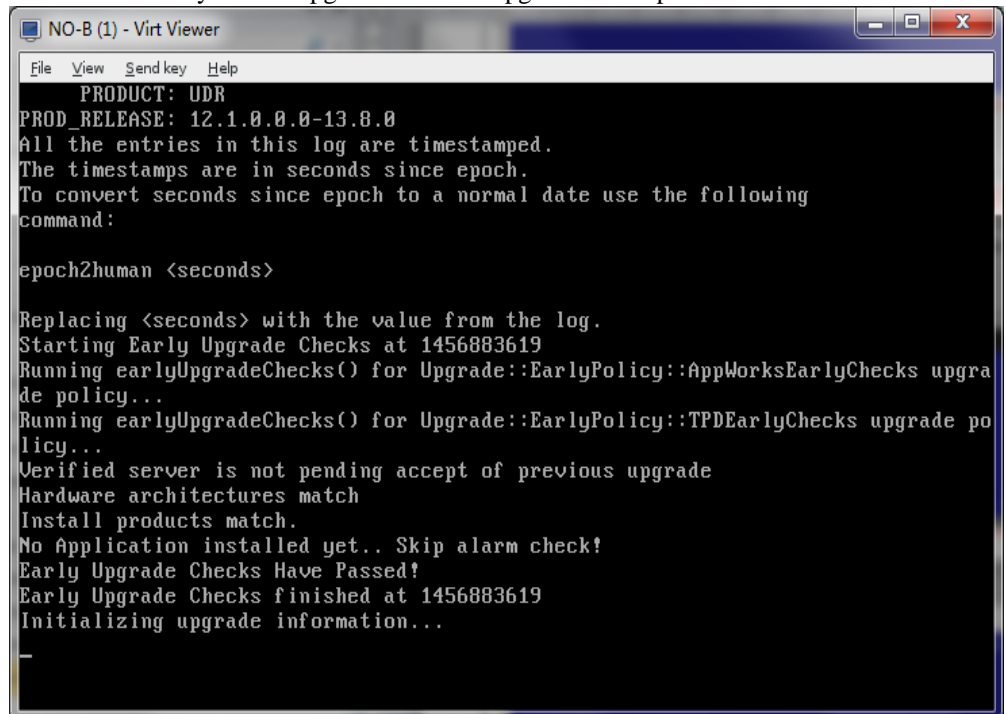
		<pre> System ID Format lvm2 Metadata Areas 1 Metadata Sequence No 1 VG Access read/write VG Status resizable MAX LV 0 Cur LV 0 Open LV 0 Max PV 0 Cur PV 1 Act PV 1 VG Size 743.00 GiB PE Size 4.00 MiB Total PE 190207 Alloc PE / Size 0 / 0 Free PE / Size 190207 / 743.00 GiB VG UUID 3QjoX9-154F-1Xk5-Hnrw-Pid9-dbk0-azk4te --- Volume group --- VG Name vgroup System ID Format lvm2 Metadata Areas 1 Metadata Sequence No 6 VG Access read/write VG Status resizable MAX LV 0 Cur LV 5 Open LV 5 Max PV 0 Cur PV 1 Act PV 1 VG Size 399.72 GiB PE Size 32.00 MiB Total PE 12791 Alloc PE / Size 352 / 11.00 GiB Free PE / Size 12439 / 388.72 GiB VG UUID 9AejnG-F3yM-0EUL-hDXY-lNF5-6mVg-cNC0dC Create LV for rundb: #lvcreate -L 385G --alloc anywhere --name rundb stripe_vg Logical volume "rundb" created #mkfs -t ext4 /dev/strip_vg/rundb mke2fs 1.43-WIP (20-Jun-2013) Discarding device blocks: done Filesystem label= OS type: Linux Block size=4096 (log=2) Fragment size=4096 (log=2) Stride=0 blocks, Stripe width=0 blocks 25231360 inodes, 100925440 blocks 5046272 blocks (5.00%) reserved for the super user First data block=0 Maximum filesystem blocks=4294967296 3080 block groups 32768 blocks per group, 32768 fragments per group 8192 inodes per group Superblock backups stored on blocks: 32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208, 4096000, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968 </pre>
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		<p>Allocating group tables: done Writing inode tables: done Creating journal (32768 blocks): done Writing superblocks and filesystem accounting information: done</p> <pre># lvs stripe_vg LV VG Attr LSize Pool Origin Data% Meta% Move Log Cpy%Sync Convert rundb stripe_vg -wa-a----- 385.00g</pre>
31. <input type="checkbox"/>	<p>For each UDR VMs:</p> <p>Reboot VM guest</p>	<p>Reboot the server:</p> <pre># init 6</pre> <p>Wait until the reboot completes and re-login with root credentials.</p>
32. <input type="checkbox"/>	<p>For each UDR VMs:</p> <p>Copy UDR ISO to upgrade directory</p>	<p>Remote copy UDR ISO to /var/TKLC/upgrade directory on each UDR VM:</p> <pre># scp <UDR_ISO_location> admusr@<UDR_VM_XMI_address>:/var/TKLC/upgrade/ The authenticity of host '10.113.78.35 (10.113.78.35)' can't be established. RSA key fingerprint is SHA256:9dIP5VmF6p95q6XU55E6VjN/zdTvFFrA4GIMkdZ8JYE. Are you sure you want to continue connecting (yes/no)? yes Warning: Permanently added '10.113.78.35' (RSA) to the list of known hosts. Password: UDR-12.1.0.0_13.8.0-x86_64.iso 100% 873MB 43.7MB/s 00:20</pre> <p>Check that ISO has been uploaded to /var/TKLC/upgrade folder on target VM guest correctly.</p>
33. <input type="checkbox"/>	<p>For each UDR VMs:</p> <p>Install UDR</p>	<p>Start UDR VM management console via virt-viewer utility (require X-window support):</p> <pre># virt-viewer <UDR_VM_name></pre> <p>Wait for virt-viewer window pop up, type in following command to enter upgrade window:</p> <pre># su - platcfg</pre>



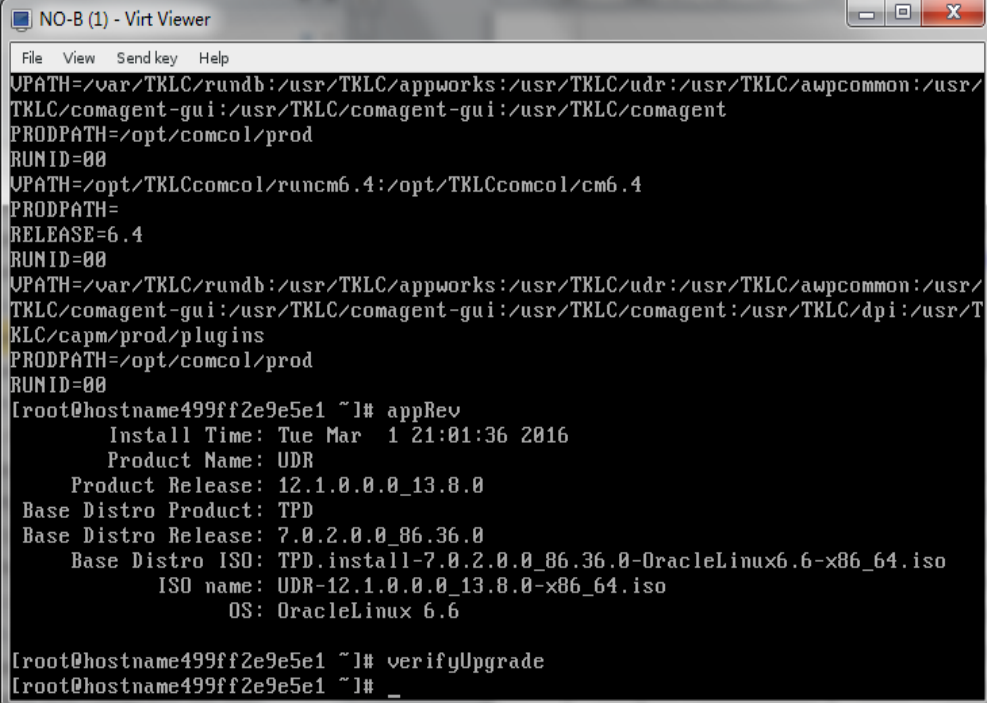
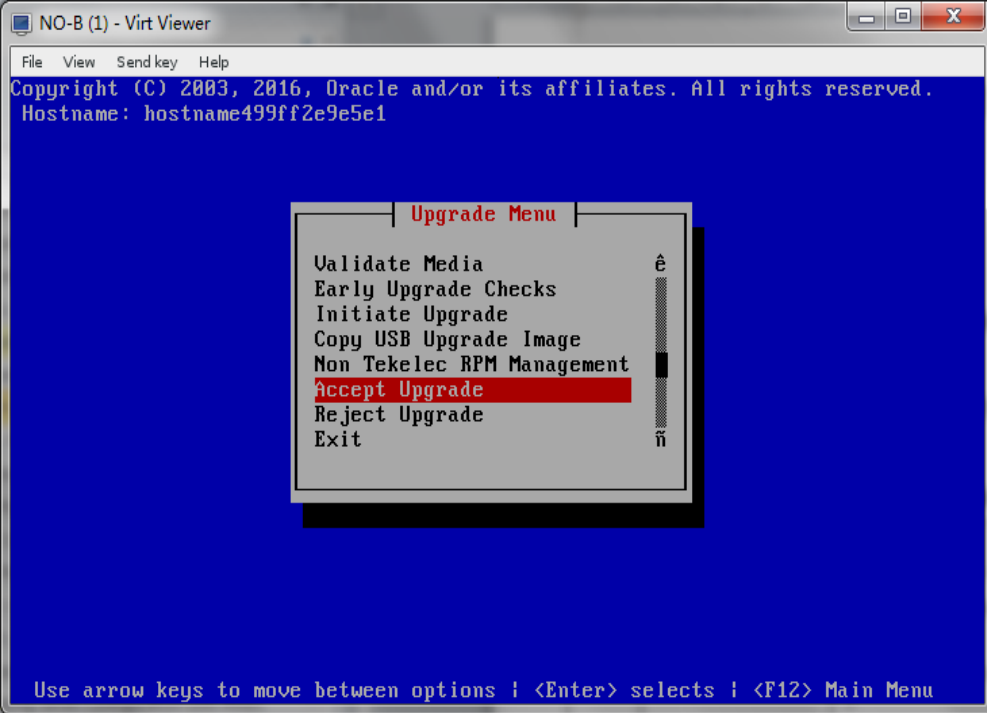
Press "Enter" key to start upgrade. Wait for upgrade to complete:

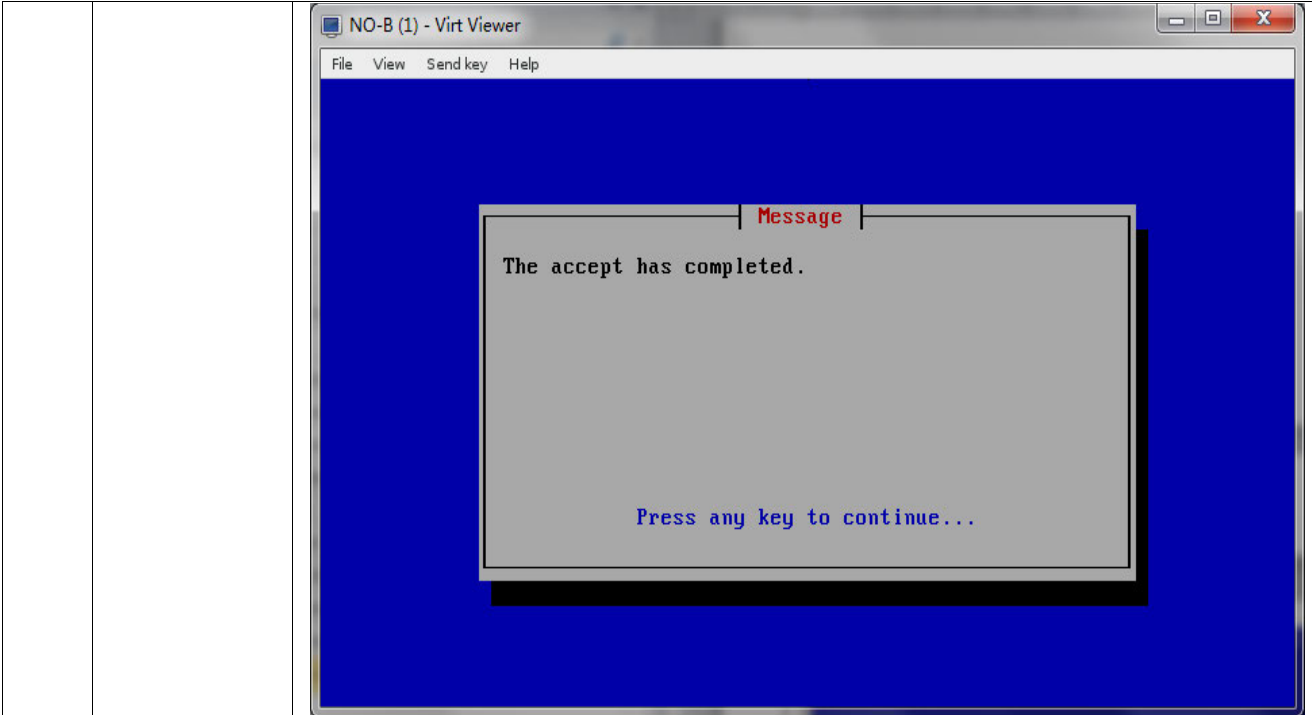


34. For each **UDR VMs**:
Verify UDR installation success

The UDR installation process will restart host automatically, after reboot done. Issue following command to verify upgrade success:
verifyUpgrade

This command shall give no output.

		 <pre> NO-B (1) - Virt Viewer File View Send key Help UPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/udr:/usr/TKLC/awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent PRODPATH=/opt/comcol/prod RUNID=00 UPATH=/opt/TKLCcomcol/runcm6.4:/opt/TKLCcomcol/cm6.4 PRODPATH= RELEASE=6.4 RUNID=00 UPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/udr:/usr/TKLC/awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/dpi:/usr/TKLC/capm/prod/plugins PRODPATH=/opt/comcol/prod RUNID=00 [root@hostname499ff2e9e5e1 ~]# appRev Install Time: Tue Mar 1 21:01:36 2016 Product Name: UDR Product Release: 12.1.0.0_13.8.0 Base Distro Product: TPD Base Distro Release: 7.0.2.0_86.36.0 Base Distro ISO: TPD.install-7.0.2.0_86.36.0-OracleLinux6.6-x86_64.iso ISO name: UDR-12.1.0.0_13.8.0-x86_64.iso OS: OracleLinux 6.6 [root@hostname499ff2e9e5e1 ~]# verifyUpgrade [root@hostname499ff2e9e5e1 ~]# _ </pre>
<p>35. <input type="checkbox"/></p>	<p>For each UDR VMs:</p> <p>Accept upgrade</p>	<p>Type in 'su - platcfg' command to enter platform configuration menu. Navigate into 'Maintenance -> Upgrade -> Accept Upgrade' menu and press "Enter" to start:</p>  <pre> NO-B (1) - Virt Viewer File View Send key Help Copyright (C) 2003, 2016, Oracle and/or its affiliates. All rights reserved. Hostname: hostname499ff2e9e5e1 Upgrade Menu ----- Validate Media ê Early Upgrade Checks Initiate Upgrade Copy USB Upgrade Image Non Tekelec RPM Management Accept Upgrade █ Reject Upgrade Exit ñ Use arrow keys to move between options <Enter> selects <F12> Main Menu </pre> <p>Wait for Accept upgrade operation to complete:</p>



Repeat **step 23 ~ 35** for each UDR VM guest involved.

Appendix I. MY ORACLE SUPPORT (MOS)

MOS (<https://support.oracle.com>) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at **1-800-223-1711** (toll-free in the US), or call the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>.

When calling, there are multiple layers of menu selections. Make the selections in the sequence shown below on the Support telephone menu:

- 1) For the first set of menu options, select 2, “New Service Request”. You will hear another set of menu options.
- 2) In this set of menu options, select 3, “Hardware, Networking and Solaris Operating System Support”. A third set of menu options begins.
- 3) In the third set of options, select 2, “ Non-technical issue”. Then you will be connected to a live agent who can assist you with MOS registration and provide Support. Identifiers. Simply mention you are a Tekelec Customer new to MOS.