

Oracle® Communications Policy and Charging Rules Function
PCRF 9.4 to 11.5 Cable Policy Upgrade Procedure

Release 11.5

E61662-01

February 2015

ORACLE®

Oracle® Communications Policy and Charging Rules Function, 9.4 to 11.5 Cable Policy Upgrade Procedure, Release 11.5

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Contact MOS and inform them of your upgrade plans prior to beginning this or any upgrade procedure.

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>.

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1. Introduction

1.1 Purpose and Scope

Due to the recent transition OF Cable Policy solution to TPD platform, software upgrade to release 11.5 will only be supportable from TPD based Releases 9.3 and 9.4.

This document describes the procedures to upgrade Cable Policy solution from release 9.4 to release 11.5. The upgrade includes the TPD upgrade.

Cable Policy software 9.4 can be installed on any of the following supported HP RMS hardware types:

- HP ProLiant DL360G6/G7
- HP ProLiant DL360pG8
- HP ProLiant DL380pG8

Hence the upgrade to 11.5 is also supported on any of these Hardware types.

Policy 11.5 is based on Platform 6.7 release and contains the following major components releases:

- Oracle Linux OS 6.5
- TPD 6.7
- COMCOL (In-memory DB) 6.3
- Policy components: MPE, MA, BOD and CMP 11.5

Note: During the upgrade period the Cable Policy system may have configuration where some of CMPs, MAs, MPEs, and BoD-AMs are running Release 9.4 software and some are running Release 11.5 software. This could result in some alarms which will be suppressed after the full solution is upgraded and reaches one coherent release.

1.2 Supporting Documentation

- [1] *PD001866 Formal Peer Review Process*
- [2] *FE007452 Cable Reference Architecture*
- [3] *FD008005 Release 11.5 Upgrade*
- [4] *TR007406 Upgrade guide to 11.5 from releases 9.3/9.4*
- [5] *FD008102 Policy platform multiple modes*

1.3 9.4 upgrade considerations

- The upgrade path from 9.4 to 11.5 requires that policy solution is on 9.4.1 release to be upgraded to 11.5, accordingly all 9.4 customers will need to upgrade to 9.4.1 if they are on earlier 9.4 revision before going to 11.5 release.
- Back Plane link should be available and configured before upgrade since it is a mandatory setup to complete the upgrade process to 11.5 successfully.

Cable Policy solution is upgraded in the following order:

- CMP (Primary Site, then Geo-Redundant Site if present)
- MA
- MPE-R
- MPE-S
- BoD-AM

1.4 Upgrade infrastructure

Upgrade is supported from Release 9.4 on all supported HP rack mount server configurations (Gen6, Gen7 and Gen8).

Source	Destination	Hardware	Direct-Link before upgrade	Direct-Link after upgrade
9.4	11.5/Cable	DL360G6	Enable	Enable
		DL360G7	Enable	Enable
		DL360G8	Enable	Enable
		DL380G8	Enable	Enable

1.5 Required Materials

GA released version of Cable Policy components (CMP, BOD, MPE, MA) ISO images on CD/DVD/USB drive or local in the machine used in case of remote installation

1.6 Acronyms

Acronym	Definition
BOD	Bandwidth on Demand
GUI	Graphical User Interface
HA	High Availability
MA	Management Agent
MPE-R	Multimedia Policy Engine (Routing) also known as tier 1 Policy Server
MPE-S	Multimedia Policy Engine (Serving) also known as tier 2 Policy Server
CMP	Camiant Management Platform
OAM	Operation, Administration and Management
SIG	Signaling Network
CD	Compact Disk
iLO	Integrated Lights Out manager
IE	Internet Explorer
IPM	Initial Product Manufacture – the process of installing TPD on a hardware platform
OS	Operating System (e.g. TPD)
RMS	Rack Mount Server
SFTP	SFTP Secure File Transfer Protocol
SNMP	Simple Network Management Protocol
TPD	Tekelec Platform Distribution

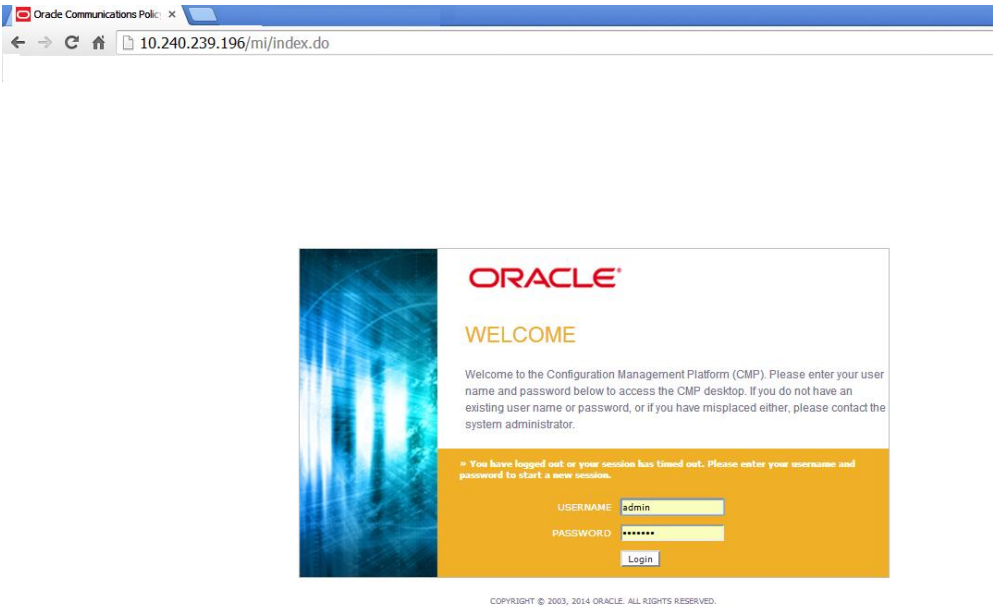

Table 1 Acronyms

2. CMP Cluster(s) Upgrade

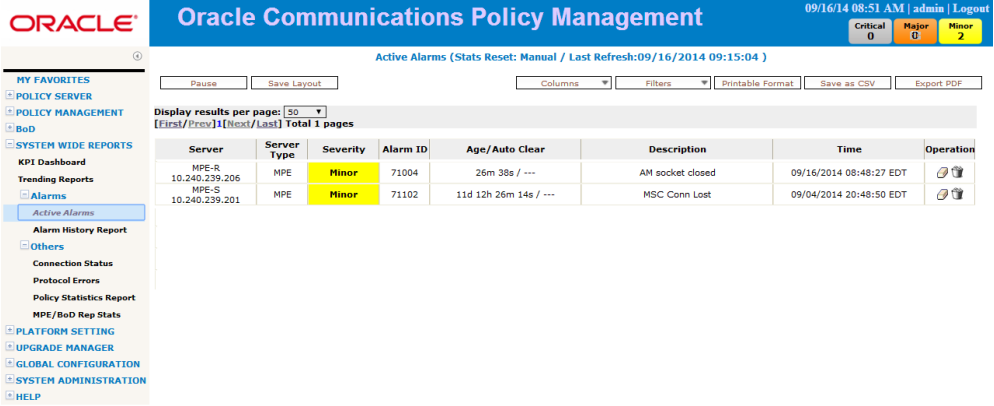
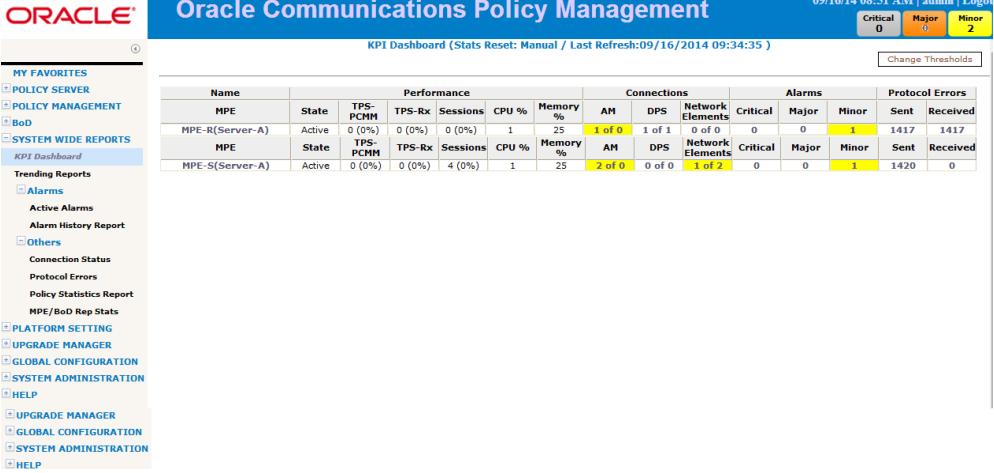
2.1 CMP Pre-Upgrade checks

Procedure 1: CMP pre-Upgrade checks

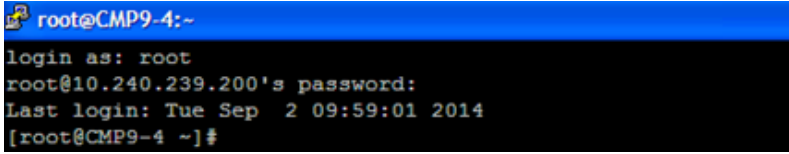
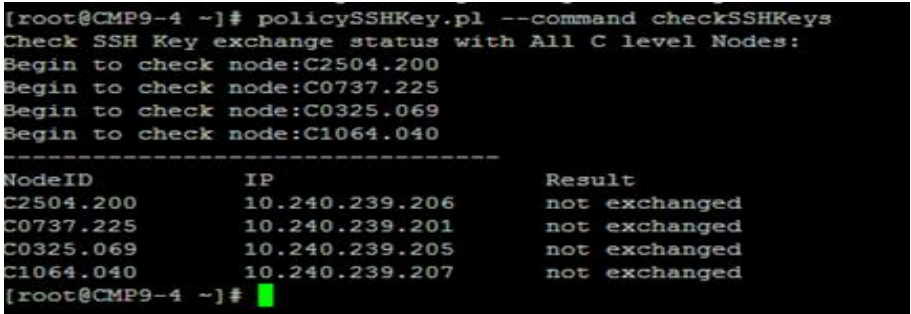
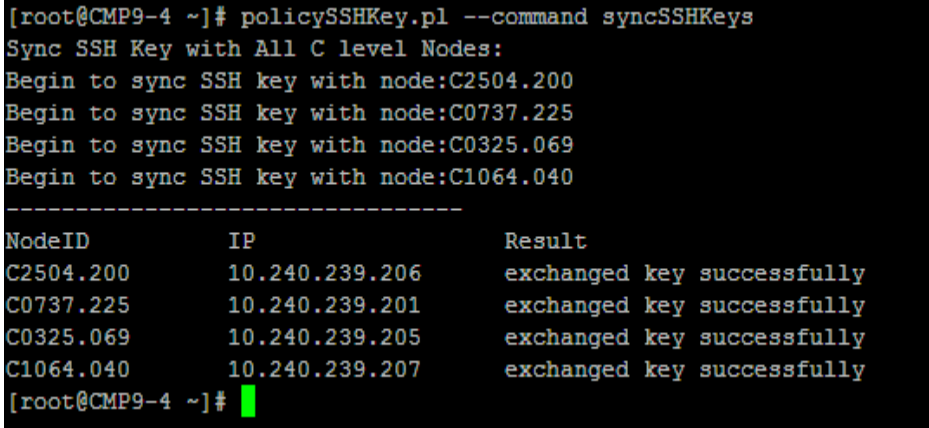
Procedure 1. CMP Pre-Upgrade checks

S T E P #	<p>This procedure will check the health and state of every component of the Cable Policy solution to ensure the readiness before the upgrade.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - Access to customer's network to access the Cable Policy solution - CMP OAM VIP - Admin login to CMP
1. <input type="checkbox"/>	<p>Open a browser and enter CMP's OAM VIP to Navigate to CMP GUI:</p>  <p>Enter the password for the admin account and push "Login":</p> 

Procedure 1. CMP Pre-Upgrade checks

2. <input type="checkbox"/>	CMP GUI: Check active alarms	<p>Navigate to System Wide Reports → Alarms → Active Alarms</p>  <p>Inspect the displayed MAJOR alarms and analyze them to confirm they will not impact the upgrade process.</p>
3. <input type="checkbox"/>	CMP GUI: Check KPI Dashboard	<p>Navigate to System Wide Reports → KPI Dashboard</p>  <p>Ensure system is not overloaded and running in an adequate metrics from CPU / Memory / transactions perspective</p>

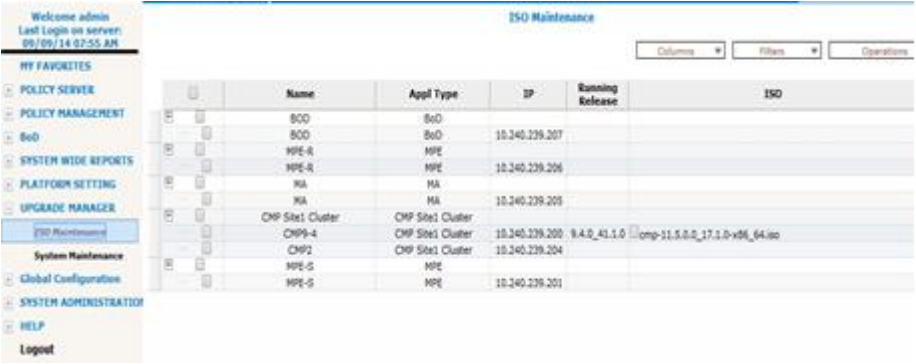

Procedure 2: Exchange SSH Keys**Procedure 2: Exchange SSH keys from Active CMP**

S T E P #	<p>This procedure will make sure SSH keys are exchanged from Active CMP to the different servers of the Cable Policy solution servers.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - Root access to CMP active CLI 	
1. <input type="checkbox"/>	<p>9.4 Active CMP CLI: Connect to CLI</p>	<p>SSH to 9.4 Active CMP CLI as root:</p> 
2. <input type="checkbox"/>	<p>9.4 Active CMP CLI: Validate if keys are exchanged</p>	<p>Run the following command to check if SSH keys status:</p> 
3. <input type="checkbox"/>	<p>9.4 Active CMP CLI: Exchange the SSH keys</p>	<p>In case the results of the previous step include “not exchanged”, run the following command to perform the SSH keys exchange:</p> 

2.2 Prepare ISO image

Procedure 3: Prepare ISO image

Procedure 3: Prepare ISO image

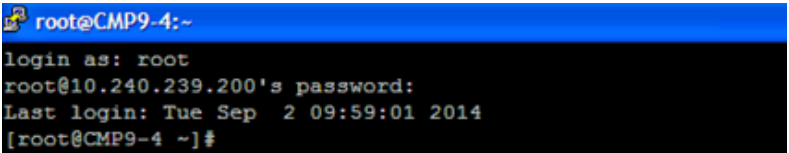
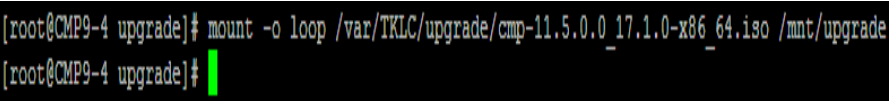
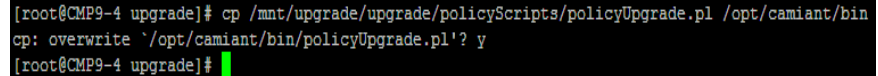
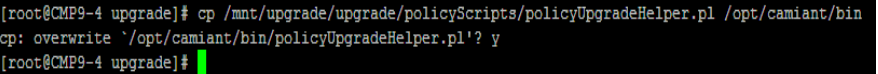
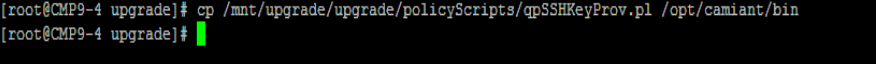
STEP #	This procedure will transfer the ISO image of 11.5 CMP into the upgrade path in preparation for the upgrade.	<p>Needed material:</p> <ul style="list-style-type: none"> - 11.5 CMP iso image file.
1. <input type="checkbox"/>	<p>9.4 Active CMP server: Transfer 11.5 ISO image file to the upgrade path</p>	<p>Transfer the 11.5 ISO image file into the upgrade path (/var/TKLC/upgrade/) of the 9.4 active CMP server:</p> <pre>[root@CMP9-4 upgrade]# pwd /var/TKLC/upgrade [root@CMP9-4 upgrade]# ls -ltr total 1076736 -rw-r--r-- 1 root root 1102571520 Aug 8 13:01 cmp-11.5.0.0_17.1.0-x86_64.iso [root@CMP9-4 upgrade]#</pre>
2. <input type="checkbox"/>	<p>9.4 CMP GUI: Upload 11.5 CMP ISO image via CMP GUI</p>	<p>11.5 ISO image file can be copied over to upgrade path via CMP GUI as shown in the below steps:</p> <p>Login to CMP GUI as administrator then navigate to Upgrade Manager → ISO Maintenance:</p>  <p>Check the active CMP server then expand “Operations” menu and select “Upload ISO” :</p>  <p>Fill in the upload ISO window with the details to transfer the ISO image :</p>

		<div><div>Upload ISO</div><div>Mode: <div>SCP</div></div><div><div>ISO Server Hostname / IP</div><div>10.240.239.200</div></div><div><div>User</div><div>root</div></div><div><div>Password</div><div>*****</div></div><div><div>ISO file full path</div><div>/e/cmp-11.5.0.0_17.1.0-x86_64.iso</div></div><div><div>Add</div><div>Back</div></div></div>																																																															
		<p>Confirm the process completed successfully :</p> <div><div>Upgrade Command</div><div><div>Upload ISO</div><div>CMP2 10.240.239.204 OK</div></div></div>																																																															
3. <div></div>	9.4 CMP GUI: Confirm ISO image transfer completion	<p>Navigate to Upgrade Manager → System Maintenance to confirm the 11.5 CMP ISO image appear under ISO column for the CMP cluster</p> <div><div><div>Welcome admin Last Login on server: 09/09/14 07:55 AM</div><div><div>MY FAVORITES</div><div>POLICY SERVER</div><div>POLICY MANAGEMENT</div><div>BoD</div><div>SYSTEM WIDE REPORTS</div><div>PLATFORM SETTING</div><div>UPGRADE MANAGER</div><div>ISO Maintenance</div><div>System Maintenance</div><div>Global Configuration</div><div>SYSTEM ADMINISTRATION</div><div>HELP</div><div>Logout</div></div></div><div><div>System Maintenance</div><div><div>Columns</div><div>Filters</div><div>Operations</div></div><table><tr><th></th><th>Name</th><th>Appl Type</th><th>IP</th><th>Server State</th><th>ISO</th><th>Prev Release</th><th>Running Release</th><th>Upgrade Status</th></tr><tr><td></td><td>BoD</td><td>BoD</td><td>10.240.239.207</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_45.1.0</td><td>Completed: upgrade was completed at "09/02/2014 15:09:33 UTC"</td></tr><tr><td></td><td>MPE-R</td><td>MPE</td><td>10.240.239.206</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_41.1.0</td><td>Completed: upgrade was completed at "09/02/2014 08:58:36 UTC"</td></tr><tr><td></td><td>MA</td><td>MA</td><td>10.240.239.205</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_41.1.0</td><td>Completed: upgrade was completed at "09/02/2014 15:15:33 UTC"</td></tr><tr><td></td><td>CMP Site1 Cluster</td><td>CMP Site1 Cluster</td><td>10.240.239.200</td><td>Active</td><td>cmp-11.5.0.0_17.1.0-x86_64.iso</td><td>Unknown</td><td>9.4.0_41.1.0</td><td>Completed: upgrade was completed at "09/02/2014 10:56:22 UTC"</td></tr><tr><td></td><td>CMP2</td><td>CMP Site1 Cluster</td><td>10.240.239.204</td><td>Force Standby</td><td>cmp-11.5.0.0_17.1.0-x86_64.iso (48%)</td><td>Unknown</td><td>9.4.0_41.1.0</td><td>Pending: upgrade was completed at "09/09/2014 01:39:12 UTC"</td></tr><tr><td></td><td>MPE-S</td><td>MPE</td><td>10.240.239.201</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_41.1.0</td><td>Completed: upgrade was completed at "09/02/2014 09:00:12 UTC"</td></tr></table></div></div>		Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Upgrade Status		BoD	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	Completed: upgrade was completed at "09/02/2014 15:09:33 UTC"		MPE-R	MPE	10.240.239.206	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at "09/02/2014 08:58:36 UTC"		MA	MA	10.240.239.205	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at "09/02/2014 15:15:33 UTC"		CMP Site1 Cluster	CMP Site1 Cluster	10.240.239.200	Active	cmp-11.5.0.0_17.1.0-x86_64.iso	Unknown	9.4.0_41.1.0	Completed: upgrade was completed at "09/02/2014 10:56:22 UTC"		CMP2	CMP Site1 Cluster	10.240.239.204	Force Standby	cmp-11.5.0.0_17.1.0-x86_64.iso (48%)	Unknown	9.4.0_41.1.0	Pending: upgrade was completed at "09/09/2014 01:39:12 UTC"		MPE-S	MPE	10.240.239.201	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at "09/02/2014 09:00:12 UTC"
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4. <div></div>	9.4 CMP CLI: Confirm ISO image exists under upgrade path	<p>Login to 9.4 CMP servers as root then validate ISO image file exists under upgrade path (/var/TKLC/upgrade):</p> <pre>[root@CMP2 upgrade]# ls -ltr total 1076736 -rw-r--r-- 1 root root 1102571520 Sep 9 08:25 cmp-11.5.0.0_17.1.0-x86_64.iso [root@CMP2 upgrade]#</pre>																																																															

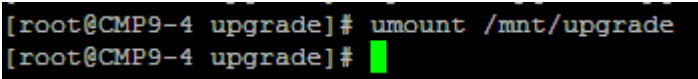
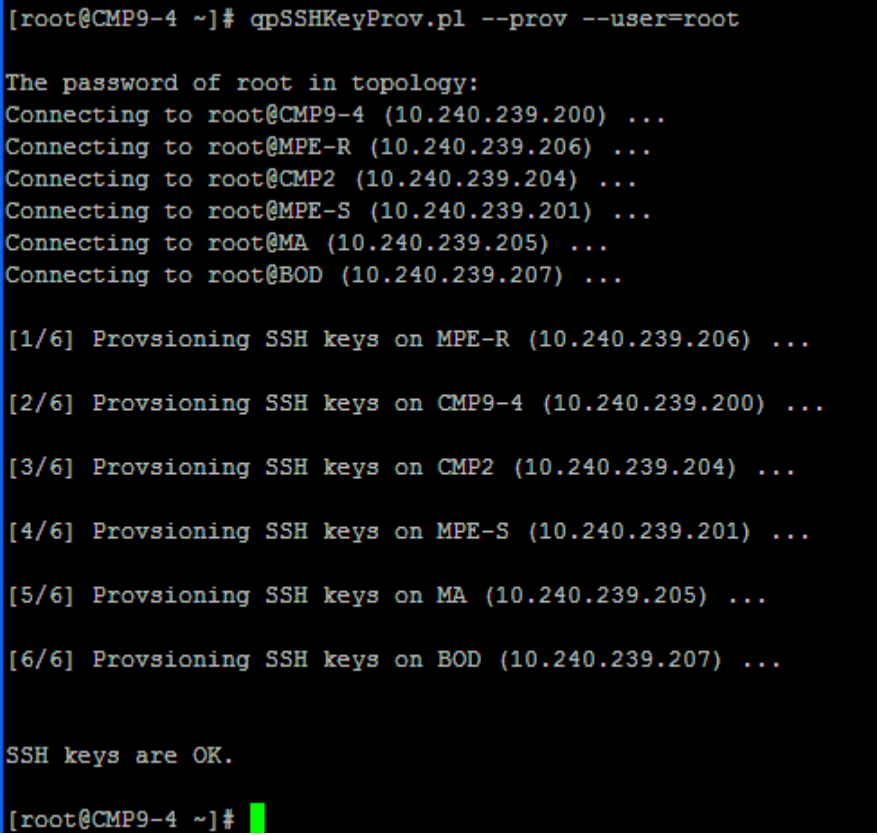
2.3 Stage upgrade scripts

Procedure 4: Copy over upgrade scripts from 11.5 ISO image


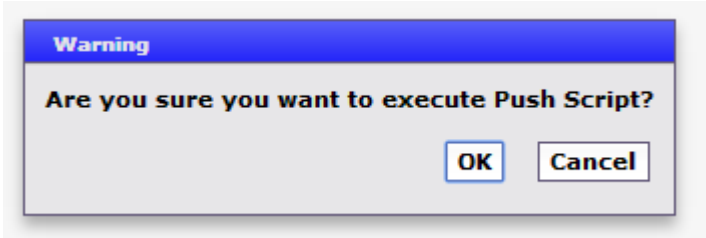
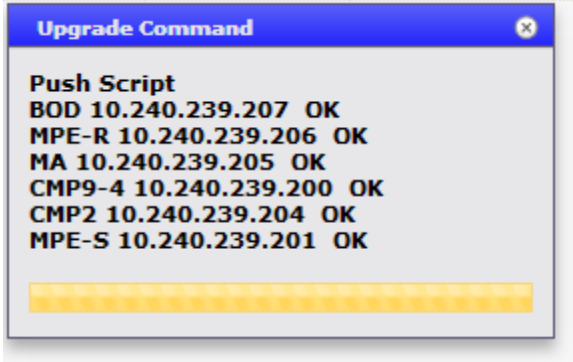
Procedure 4. Copy upgrade scripts from 11.5 ISO image

S T E P #	<p>This procedure will copy necessary upgrade scripts from 11.5 CMP ISO image overwriting the existing scripts.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - 9.4 Active CMP CLI access
1. <input type="checkbox"/>	<p>9.4 Active CMP CLI: SSH to the server's CLI</p> <p>Login to the 9.4 active CMP CLI as root:</p> 
2. <input type="checkbox"/>	<p>9.4 Active CMP CLI: mount ISO image</p> <p>Run the following command to mount the 11.5 CMP ISO image file:</p> <pre>mount -o loop /var/TKLC/upgrade/cmp-11.5.0.0_17.1.0-x86_64.iso /mnt/upgrade</pre> 
3. <input type="checkbox"/>	<p>9.4 Active CMP CLI: Extract needed upgrade scripts</p> <p>Run the following commands to extract the upgrade scripts overwriting the old scripts:</p> <ul style="list-style-type: none"> • cp /mnt/upgrade/upgrade/policyScripts/policyUpgrade.pl /opt/camiant/bin  <ul style="list-style-type: none"> • cp /mnt/upgrade/upgrade/policyScripts/policyUpgradeHelper.pl /opt/camiant/bin •  <ul style="list-style-type: none"> • cp /mnt/upgrade/upgrade/policyScripts/qpSSHKeyProv.pl /opt/camiant/bin 

Procedure 4. Copy upgrade scripts from 11.5 ISO image

4. <input type="checkbox"/>	9.4 Active CMP CLI: Unmount ISO image	<p>Run the following command to unmount the 11.5 CMP ISO image file:</p> <pre><i>umount /mnt/upgrade</i></pre> 
5.	9.4 Active CMP CLI: Exchange SSH keys to all servers configured in the topology	<p>Run the following command to exchange SSH keys to all servers configured in the topology :</p> <pre><i>qpSSHKeyProv.pl -prov -user=root</i></pre>  <p>Note that root password needs to be supplied for script to run successfully.</p>

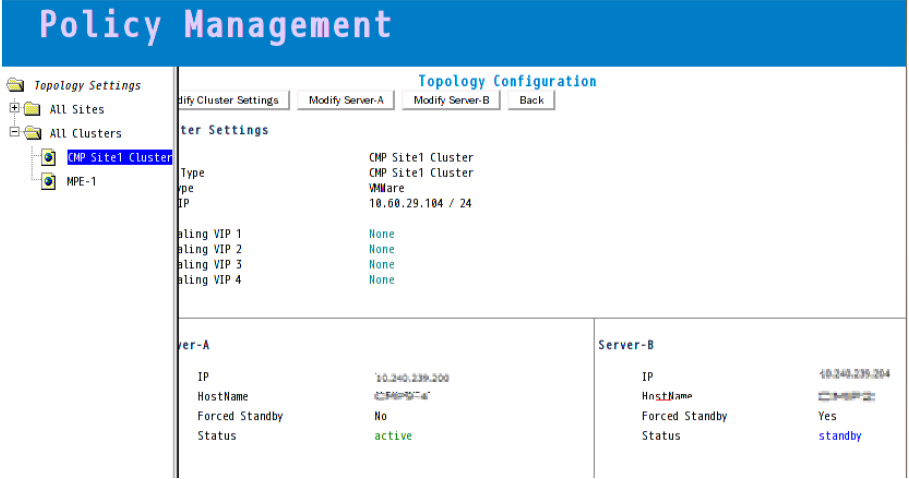
Procedure 4. Copy upgrade scripts from 11.5 ISO image

6.	9.4 Active CMP CLI: Push scripts to all servers in the topology	<p>From CMP GUI, navigate to Upgrade Manager → System Maintenance then select “Push Script” from the operations menu:</p>  <p>Confirm the action in the dialog box:</p>  <p>Validate that action completed and script is pushed to all servers in the topology:</p> 
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2.4 Upgrade CMP servers

Procedure 5: Upgrade CMP Servers

Procedure 5. Upgrade CMP Servers

STEP #	This procedure will perform the actual upgrade of the CMP cluster(s) servers. Needed material: - Admin access to CMP GUI to perform the upgrade	
1. <input type="checkbox"/>	9.4 CMP GUI: Validate CMP servers status	Login to CMP GUI as admin and navigate to Platform Settings → Topology Setting and choose the CMP cluster  Validate the status of the CMP servers to ensure none of the servers is in OOS (Out Of Service) state.

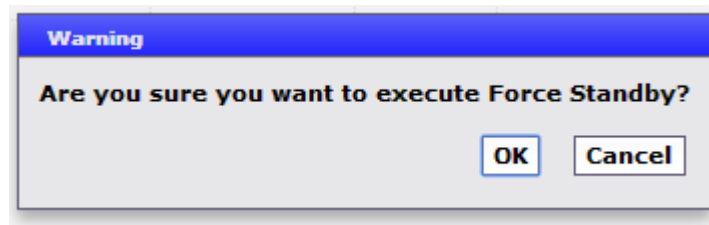
Procedure 5. Upgrade CMP Servers

2. **9.4 CMP GUI:**
☐ Enable Force Stand By on the stand By CMP server

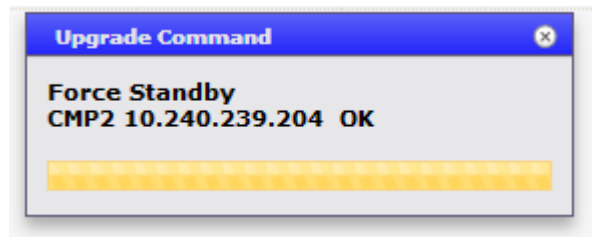
Navigate to Upgrade Manager → System Maintenance, check the CMP stand By server checkbox then from the operations menu click “Force Standby”:

Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Upgrade Status
BOO	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	Completed: upgrade was completed at '09/02/2014 15:09:33 UTC'
BOO	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	Completed: upgrade was completed at '09/02/2014 15:09:33 UTC'
HPE-R	HPE	10.240.239.206	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 08:58:36 UTC'
HPE-R	HPE	10.240.239.206	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 08:58:36 UTC'
HA	HA	10.240.239.205	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 15:15:33 UTC'
HA	HA	10.240.239.205	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 15:15:33 UTC'
CMP Site1 Cluster	CMP Site1 Cluster	10.240.239.200	Active	cmp-11.5.0.0_17.1.0-x86_64.iso	Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/01/2014 10:56:22 UTC'
CMP9-4	CMP Site1 Cluster	10.240.239.204	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/01/2014 10:56:22 UTC'
CMP2	CMP Site1 Cluster	10.240.239.204	Standby		Unknown	9.4.0_41.1.0	Pending: upgrade was completed at '09/09/2014 01:39:12 UTC'
HPE-5	HPE	10.240.239.201	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 09:00:12 UTC'
HPE-5	HPE	10.240.239.201	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 09:00:12 UTC'

Confirm the dialog box to perform the action:



Validate action completed :

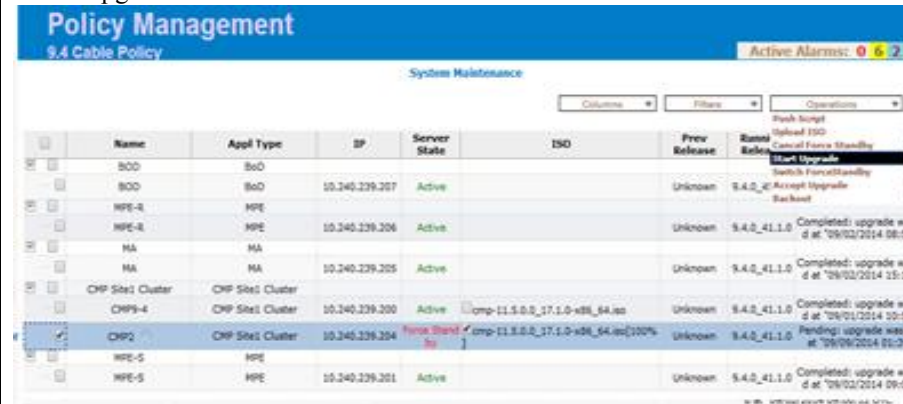


Now CMP server should have the “Force Standby” state:

Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Upgrade Status
BOO	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	Completed: upgrade was completed at '09/02/2014 15:09:33 UTC'
BOO	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	Completed: upgrade was completed at '09/02/2014 15:09:33 UTC'
HPE-R	HPE	10.240.239.206	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 08:58:36 UTC'
HPE-R	HPE	10.240.239.206	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 08:58:36 UTC'
HA	HA	10.240.239.205	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 15:15:33 UTC'
HA	HA	10.240.239.205	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 15:15:33 UTC'
CMP Site1 Cluster	CMP Site1 Cluster	10.240.239.200	Active	cmp-11.5.0.0_17.1.0-x86_64.iso	Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/01/2014 10:56:22 UTC'
CMP9-4	CMP Site1 Cluster	10.240.239.204	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/01/2014 10:56:22 UTC'
CMP2	CMP Site1 Cluster	10.240.239.204	Force Standby		Unknown	9.4.0_41.1.0	Pending: upgrade was completed at '09/09/2014 01:39:12 UTC'
HPE-5	HPE	10.240.239.201	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 09:00:12 UTC'
HPE-5	HPE	10.240.239.201	Active		Unknown	9.4.0_41.1.0	Completed: upgrade was completed at '09/02/2014 09:00:12 UTC'

Procedure 5. Upgrade CMP Servers**3. 9.4 CMP GUI:**
Start the upgrade

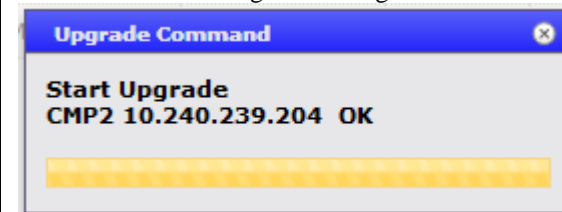
With the Force Stand By server checked, open the operations menu and choose “Start Upgrade” action:



Confirm the action on the next dialog box:



An information message indicating the successful start of the upgrade displays:



The upgrade will go through multiple phases that would be displayed in the upgrade status field like seen from the following samples:

CMP2	CMP Site1 Cluster	10.240.239.204	Force Stand by	cmp-11.5.0.0_17.1.0-x86_64.iso[100%]	9.4.0_41.1.0	9.4.0_41.1.0	InProgress: Initializing upgrade...
CMP2	CMP Site1 Cluster	10.240.239.204	Force Stand by	cmp-11.5.0.0_17.1.0-x86_64.iso[100%]	9.4.0_41.1.0	9.4.0_41.1.0	InProgress: Performing preupgrade processing
CMP2	CMP Site1 Cluster	10.240.239.204	Force Stand by	cmp-11.5.0.0_17.1.0-x86_64.iso[100%]	9.4.0_41.1.0	9.4.0_41.1.0	InProgress: Installing /var/TKLCL/og/upgrade/manifest.QPDKPatch.UPGRADE
CMP2	CMP Site1 Cluster	10.240.239.204	Force Stand by	cmp-11.5.0.0_17.1.0-x86_64.iso[100%]	9.4.0_41.1.0	9.4.0_41.1.0	InProgress: Installing /var/TKLCL/og/upgrade/manifest.normal.UPGRADE
CMP2	CMP Site1 Cluster	10.240.239.204	Force Stand by	cmp-11.5.0.0_17.1.0-x86_64.iso[100%]	9.4.0_41.1.0	9.4.0_41.1.0	InProgress: Running APP_ENABLE

Then when upgrade completes, the upgrade status will reflect that as below:

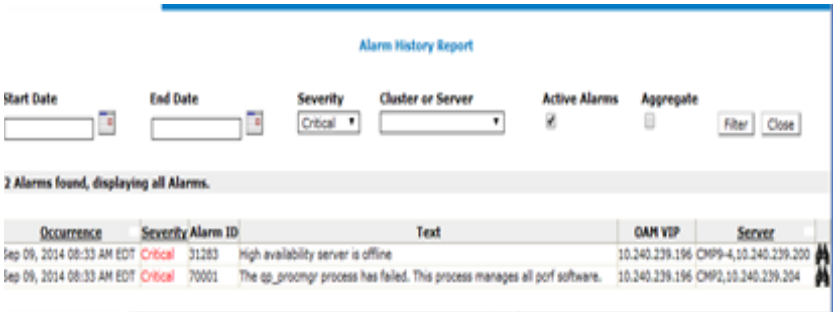
CMP2	CMP Site1 Cluster	10.240.239.204	Force Stand by	cmp-11.5.0.0_17.1.0-x86_64.iso[100%]	9.4.0_41.1.0	11.5.0.0_17.1.0	Pending: upgrade was completed at '09/09/2014 13:03:03 UTC'
------	-------------------	----------------	----------------	--------------------------------------	--------------	-----------------	---

Note that in case an SSH session is opened to the server while it is being upgraded, the connection will be lost as the server will reboot during the upgrade process:

```
[root@CMP2 upgrade]#
Broadcast message from root@CMP2
      (unknown) at 8:53 ...

The system is going down for reboot NOW!
```


Procedure 5. Upgrade CMP Servers

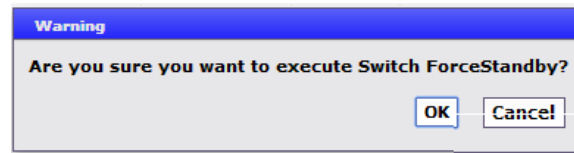
4. <input type="checkbox"/>	9.4 CMP GUI: Expected alarms	<p>During the upgrade some alarms may raise like the following:</p>  <p>These alarms are expected and would be automatically cleared after the upgrade concludes successfully</p>
5.	11.5 upgraded CMP server CLI: Validate upgrade log file	<p>SSH to upgraded CMP server and login then tail the upgrade log file as follows :</p> <pre>[admusr@CMP2 ~]\$ tail /var/TKLC/log/upgrade/upgrade.log 1410267783:: Running postUpgradeBoot() for Upgrade::Policy::QPBondConfig upgrade policy... 1410267783:: Running postUpgradeBoot() for Upgrade::Policy::QPFirewallFixes upgrade policy... 1410267783:: Running postUpgradeBoot() for Upgrade::Policy::QPIPv6Fixes upgrade policy... 1410267783:: Running postUpgradeBoot() for Upgrade::Policy::QPJDKPolicy upgrade policy... 1410267783:: Running postUpgradeBoot() for Upgrade::Policy::QPMysqlPolicy upgrade policy... 1410267783:: Running postUpgradeBoot() for Upgrade::Policy::QPNTPFixes upgrade policy... 1410267783:: Running postUpgradeBoot() for Upgrade::Policy::QPRunPostRPMActionsPolicy upgrade policy... 1410267783:: Running postUpgradeBoot() for Upgrade::Policy::PlatformLast upgrade policy... 1410267783:: Updating platform revision file... 1410267783:: Upgrade returned success! [admusr@CMP2 ~]\$</pre> <p>Validate upgrade returned success.</p>
6.	11.5 Upgraded CMP server CLI: Validate policy revision	<p>Run the following command to check running policy version:</p> <pre>[admusr@CMP2 ~]\$ getPolicyRev -f cmp_11.5.0.0_17.1.0 [admusr@CMP2 ~]\$</pre> <p>Make sure the version is the upgraded version “11.5”</p>
7.	11.5 Upgraded CMP server CLI as root: Verify the server’s HA role	<p>Run the command “ha.mystate” to verify the server has the stand By role:</p> <pre>resourceId role node subResources lastUpdate DbReplication Stby A2527.223 0 0909:122539.810 VIP Stby A2527.223 0 0909:122539.812 QP Stby A2527.223 0 0909:122552.834 DbReplication old OOS A2527.223 0 0909:122534.044</pre>
8.	11.5 Upgraded CMP server CLI as root: Verify NTP sync	<p>Run the command “ntpq -pn” to verify the server is in sync with the NTP server:</p> <pre>remote refid st t when poll reach delay offset jitter ===== 10.250.32.10 192.5.41.40 2 u 657 1024 377 1.488 -1.334 0.765</pre>

Procedure 5. Upgrade CMP Servers**9. 9.4 CMP GUI:
Switch Stand By
CMP servers**

From the System Maintenance screen, check the CMP cluster and choose “Switch Force StandBy” from the operations menu:

Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Operations
BOD	BOD	10.240.229.207	Active		Unknown	9.4.2_41.1.0	Completed: upgrade was complete at 10/10/2014 13:06:22 UTC
RPE-6	RPE	10.240.226.206	Active		Unknown	9.4.2_41.1.0	Completed: upgrade was complete at 10/10/2014 09:58:36 UTC
RA	RA	10.240.229.205	Active		Unknown	9.4.2_41.1.0	Completed: upgrade was complete at 10/10/2014 13:03:33 UTC
CMP SaaS Cluster	CMP SaaS Cluster						Switch Force Standby
CMP-4	CMP SaaS Cluster	10.240.229.200	Active	comp-11.5.0.0_17.1.0-v86_64-bit	Unknown	9.4.2_41.1.0	Completed: upgrade was complete at 10/10/2014 13:06:22 UTC
CMP-2	CMP SaaS Cluster	10.240.226.204	Force Stand By (100%)	comp-11.5.0.0_17.1.0-v86_64-bit	9.4.2_41.1.0	11.5.0.0_17.1.0	Pending: upgrade was complete at 10/09/2014 13:03:03 UTC
RPE-5	RPE	10.240.229.201	Active		Unknown	9.4.2_41.1.0	Completed: upgrade was complete at 10/10/2014 09:58:12 UTC

Confirm the action on the following dialog box:



Connection to CMP GUI will be lost due to the switch of the CMP servers' state, you will need to re-login to CMP GUI again which will be on 11.5 release.

Navigate to System Maintenance again to confirm the upgraded server assumed the Active state while the other CMP server is in Force Stand By state:

Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	Upgrade Status
BOD	BOD							
CMP SaaS Cluster	CMP SaaS Cluster							
CMP-4	CMP SaaS Cluster	10.240.229.200	Force Stand By (100%)	comp-11.5.0.0_17.1.0-v86_64-bit	Unknown	9.4.2_41.1.0	OK	Completed: upgrade was complete at 10/10/2014 09:58:36 UTC
CMP-2	CMP SaaS Cluster	10.240.226.204	Active	comp-11.5.0.0_17.1.0-v86_64-bit	9.4.2_41.1.0	11.5.0.0_17.1.0	OK	Pending: upgrade was complete at 10/09/2014 13:03:03 UTC
RA	RA							
RPE-4	RPE							
RPE-5	RPE							

Procedure 5. Upgrade CMP Servers

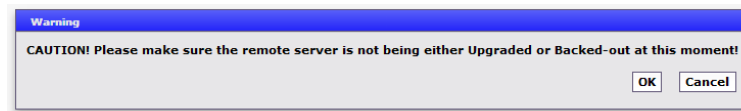
- 10. 11.5 CMP GUI:**
Upgrade the second server in the CMP cluster

Having the second server checked, click the operations menu and choose start upgrade:






System Maintenance(Last Refresh :09/09/2014 11:35:22)

Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replica	Operations
BOD	BOD							Push Script Upload ISO Cancel Force Standby Turn Off Replication Prepare Upgrade
CMP Site1 Cluster	CMP Site1 Cluster							Start Upgrade
CMP9-4	CMP Site1 Cluster	10.240.239.200	Force Standby	cmp-11.5.0.0_17.1.0-x86_64.iso	Unknown	9.4.0_41.1.0	On	Upgrade Completion Undo Upgrade Completion Switch ForceStandby Accept Upgrade Backout
CMP2	CMP Site1 Cluster	10.240.239.204	Active	cmp-11.5.0.0_17.1.0-x86_64.iso[100%]	9.4.0_41.1.0	11.5.0.0_17.1.0	On	
MA	MA							
MPE-R	MPE							
MPE-S	MPE							

Confirm the action on the following dialog box:



Upgrade will start and goes through several stages which will be reflected in the upgrade status column of the server. Following a sample of those stages:

	CMP9-4	CMP Site1 Cluster	10.240.239.200	Force Standby	 cmp-11.5.0.0_17.1.0-x86_64.iso	9.4.0_41.1.0	9.4.0_41.1.0	On	InProgress: Preparing for upgrade
	CMP Site1 Cluster	10.240.239.200	Force Standby	 cmp-11.5.0.0_17.1.0-x86_64.iso	9.4.0_41.1.0	9.4.0_41.1.0	On	InProgress: Installing /var/TKLCLog/upgrade/manifest.QPDKPatch.UPGRADE	
	CMP Site1 Cluster	10.240.239.200	Force Standby	 cmp-11.5.0.0_17.1.0-x86_64.iso	9.4.0_41.1.0	9.4.0_41.1.0	On	InProgress: Installing /var/TKLCLog/upgrade/manifest.normal.UPGRADE	
	CMP Site1 Cluster	10.240.239.200	Force Standby	 cmp-11.5.0.0_17.1.0-x86_64.iso	9.4.0_41.1.0	9.4.0_41.1.0	On	InProgress: Running APP_ENABLE...	

Then when upgrade completes, the upgrade status will reflect that as below:

CMP Site1 Cluster	10.240.239.200	Force Standby	cmp-11.5.0.0_17.1.0-x86_64.iso	9.4.0_41.1.0	11.5.0.0_17.1.0	On	Pending: upgrade was completed at "09/09/2014 16:03:12 UTC"
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Within the upgrade steps, the server will reboot so any opened ssh sessions shall disconnect:

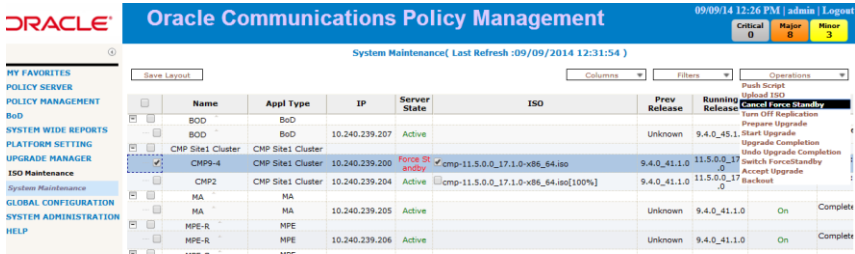
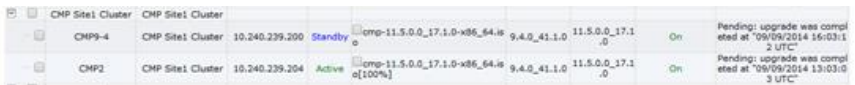
```
[root@CMP9-4 ~]#
Broadcast message from root@CMP9-4
      (unknown) at 11:53 ...

The system is going down for reboot NOW!
```

Procedure 5. Upgrade CMP Servers

11.	11.5 secondly upgraded CMP server CLI: Validate upgrade log file	<p>SSH to latest Upgraded CMP server and login then tail the upgrade log file as follows :</p> <pre>[root@CMP9-4 ~]# tail /var/TKLC/log/upgrade/upgrade.log 1410278592:: Running postUpgradeBoot() for Upgrade::Policy::QPBondConfig upgrade policy... 1410278592:: Running postUpgradeBoot() for Upgrade::Policy::QPFirewallFixes upgrade policy... 1410278592:: Running postUpgradeBoot() for Upgrade::Policy::QPIPV6Fixes upgrade policy... 1410278592:: Running postUpgradeBoot() for Upgrade::Policy::QPJDKPolicy upgrade policy... 1410278592:: Running postUpgradeBoot() for Upgrade::Policy::QPMysqlPolicy upgrade policy... 1410278592:: Running postUpgradeBoot() for Upgrade::Policy::QPNTPFixes upgrade policy... 1410278592:: Running postUpgradeBoot() for Upgrade::Policy::QPRunPostRPMActionsPolicy upgrade policy... 1410278592:: Running postUpgradeBoot() for Upgrade::Policy::PlatformLast upgrade policy... 1410278592:: Updating platform revision file... 1410278592:: Upgrade returned success! [root@CMP9-4 ~]#</pre>
12.	11.5 secondly upgraded CMP server CLI: Validate policy revision	<p>Run the following command to check running policy version:</p> <pre>[root@CMP9-4 ~]# getPolicyRev -f cmp_11.5.0.0_17.1.0 [root@CMP9-4 ~]#</pre> <p>Make sure the version is the upgraded version “11.5”</p>
13.	11.5 secondly upgraded CMP server CLI as root: Verify the server’s HA role	<p>Run the command “ha.mystate” to verify the server has the stand By role:</p> <pre> resourceId role node subResources lastUpdate DbReplication Stby A2527.223 0 0909:122539.810 VIP Stby A2527.223 0 0909:122539.812 QP Stby A2527.223 0 0909:122552.834 DbReplication_old OOS A2527.223 0 0909:122534.044 </pre>
14.	11.5 secondly upgraded CMP server CLI as root: Verify NTP sync	<p>Run the command “ntpq -pn” to verify the server is in sync with the NTP server:</p> <pre> remote refid st t when poll reach delay offset jitter ===== 10.250.32.10 192.5.41.40 2 u 657 1024 377 1.488 -1.334 0.765 </pre>

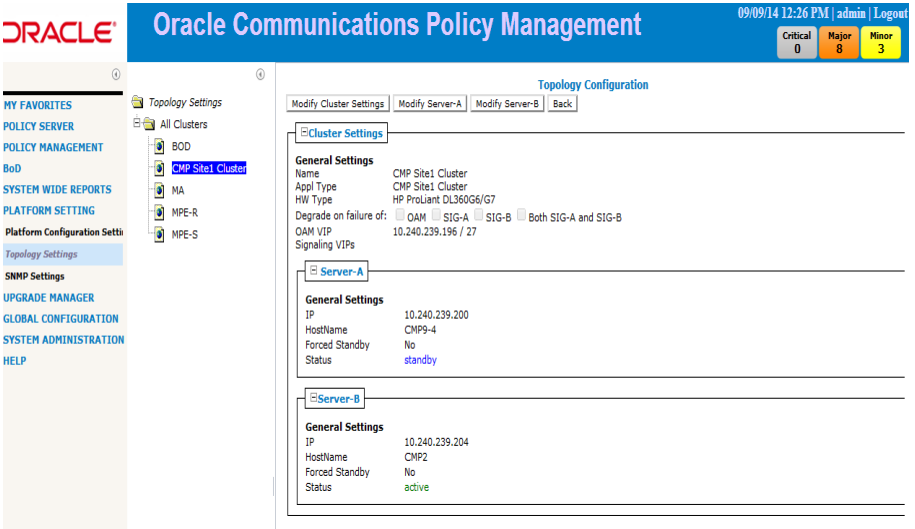
Procedure 5. Upgrade CMP Servers

15.	11.5 CMP GUI: Cancel the force stand By state	<p>From the system maintenance screen of CMP GUI, check the latest upgraded server then from operations menu choose cancel force standby action:</p>  <p>Now the server state should be changed to “StandBy”:</p> 
16.	11.5 secondary site CMP cluster	In case solution is geo-redundant , follow the same current procedure to upgrade CMP cluster in secondary site

2.5 Upgraded CMP cluster validation

Procedure 6: Post Upgrade Validation

Procedure 6. Post CMP cluster Upgrade Validation

S T E P #	<p>This procedure will validate the CMP cluster was upgraded successfully.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - Admin access to CMP GUI - Access to SSH to server's CLI 	
1. <input type="checkbox"/>	<p>11.5 CMP GUI: Validate CMP servers status in Topology</p>	<p>Login to CMP GUI as admin and navigate to Platform Settings → Topology Setting and choose the CMP cluster</p>  <p>Validate the status of the CMP servers is correct: one in Active state and the other in StandBy state</p>
2.	<p>11.5 Active CMP server CLI: Validate MySQL database state</p>	<p>Run the following command to check running MySQL configuration database state of the server:</p> <pre>[root@CMP2 ~]# wbAccess mysqlState MASTER [root@CMP2 ~]#</pre> <p>Note: This command can only be used for CMP and MA components.</p>
3.	<p>11.5 Active CMP server CLI: Verify the server's HA role</p>	<p>Run the following command to verify the server has the Active HA role:</p> <pre>[root@CMP9-4 ~]# ha.mystate resourceId role node subResources lastUpdate DbReplication Active A2527.223 0 0909:130054.744 VIP Active A2527.223 0 0909:130054.746 QP Active A2527.223 0 0909:130057.669 DbReplication old OOS A2527.223 0 0909:125923.153 [root@CMP9-4 ~]#</pre>


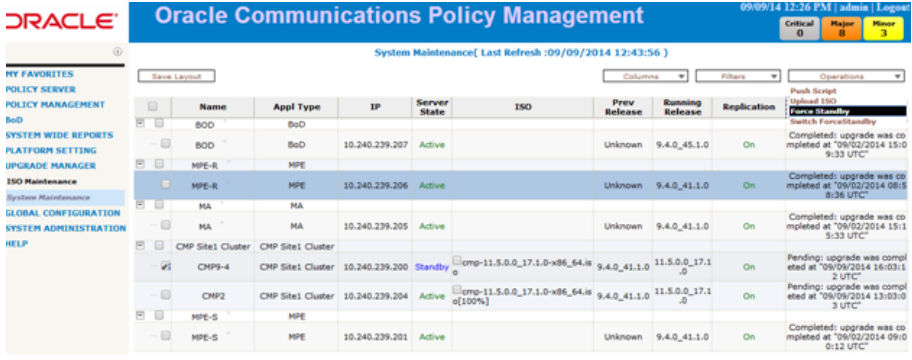
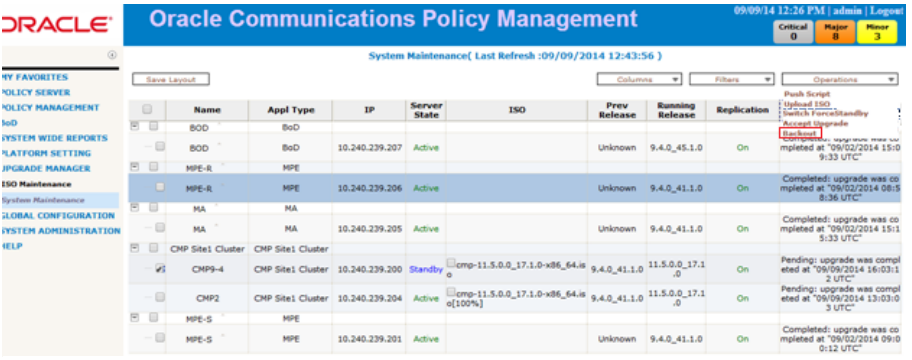
Procedure 6. Post CMP cluster Upgrade Validation

4.	11.5 Active CMP server CLI: Verify the server's replication role	<p>Run the command “<i># irepstat</i>” to verify the server has the Active replication role:</p> <pre> -- Policy 0 ActStb [DbReplication] ----- AA From CMP2 Active 0 0.00 ^0.03%cpu 79B/s </pre>
5.	11.5 StandBy CMP server CLI: Validate MySql database state	<p>Run the following command to verify the server has the Active HA role:</p> <pre> [root@CMP9-4 ~]# wbAccess mysqlState SLAVE SYNCHRONIZED [root@CMP9-4 ~]# </pre>
6.	11.5 StandBy CMP server CLI: Verify the server's HA role	<p>Run the following command to verify the server has the stand By role:</p> <pre> [root@CMP2 ~]# ha.mystate resourceId role node subResources lastUpdate DbReplication Stby A3775.137 0 0930:170933.399 VIP Stby A3775.137 0 0930:170933.401 QP Stby A3775.137 0 0930:170940.444 DbReplication_old OOS A3775.137 0 0930:170929.587 [root@CMP2 ~]# </pre>
7.	Validation results	<p>In case of failure of one or more of the upgrade validation steps in this procedure without a plan for recovery, back out should be performed as in the following procedure.</p> <p>However in case all validation steps passed skip the following procedure (Back out the upgrade) and go directly to accept upgrade procedure in section 2.7.</p>

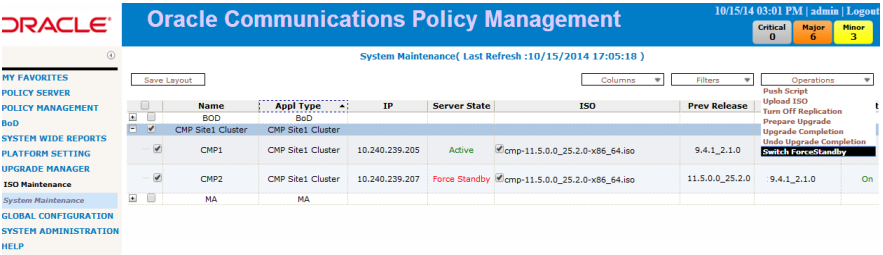
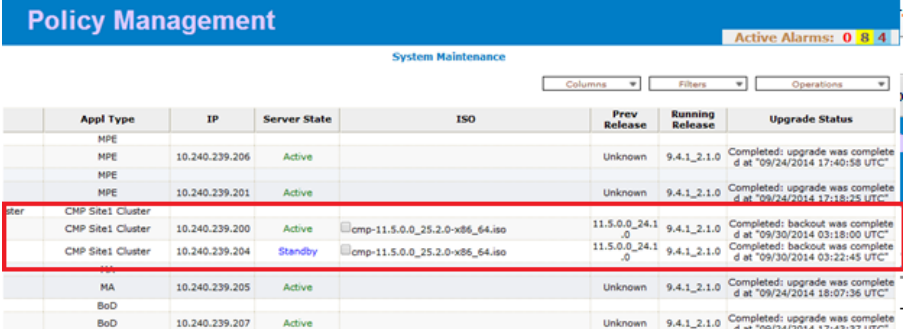
2.6 Back out the upgrade

Procedure 7: Backing out the upgrade

Procedure 7. Back out the upgrade

STEP #		<p>This procedure is only needed if the upgrade verification fails and back out is decided.</p> <p>This Back out procedures can only be followed successfully if:</p> <ol style="list-style-type: none"> 1. Upgrade was not accepted 2. No configuration or new features have been set up 3. CMP can be backed out only when all other policy components were backed out successfully <p>Needed material:</p> <ul style="list-style-type: none"> - Admin access to CMP GUI
1.	<p>11.5 CMP GUI: Undo upgrade completion for the CMP servers</p>	<p>Navigate to Upgrade Manager → System Maintenance, check the CM cluster check box then from the operations menu choose “Undo upgrade completion” :</p> 
2.	<p><input type="checkbox"/> 11.5 CMP GUI: Force Stand By the upgraded Stand By server</p>	<p>Navigate to Upgrade Manager → System Maintenance, set the upgraded server that has the StandBy status to Force StandBy from the operations menu</p> 
3.	<p><input type="checkbox"/> 11.5 CMP GUI: Back out the upgraded Stand By server</p>	<p>With the server set to Force StandBy checked, choose “Backout” from the operations menu:</p> 

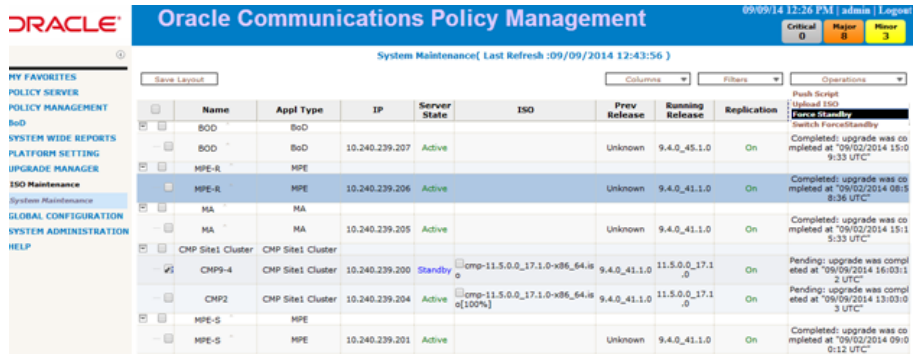
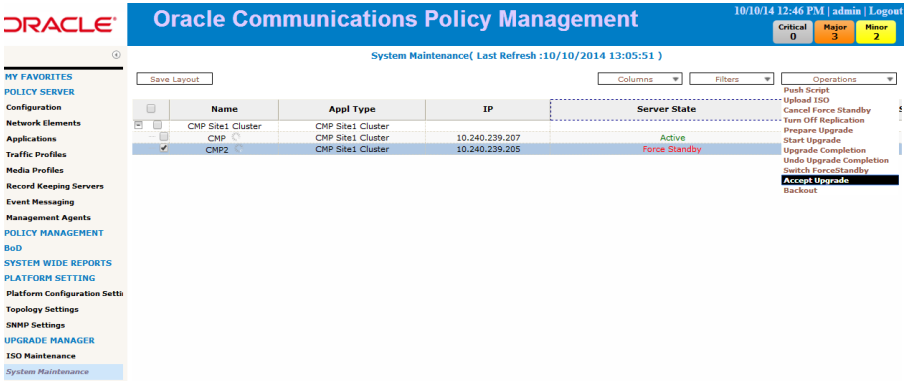
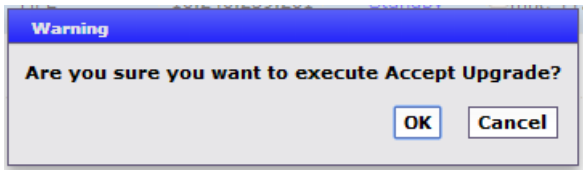
Procedure 7. Back out the upgrade

4.	11.5 CMP GUI: Switch Force Stand By	<p>With the cluster checked, choose switch Force standby from the operations menu</p>  <p>Session to CMP GUI will be lost, re-login to backed out 9.4 CMP GUI then back out the force stand by server as shown in the previous step</p>
5.	9.4 CMP GUI: CMP cluster back out completed	<p>Validate that release running is back to 9.4 release and upgrade status for both servers in the CMP cluster indicates “backout was complete” then from the “Operations” menu, cancel force standby of the latest backed out server :</p> 
6.	9.4 Active CMP CLI: Clean up upgrade files	<p>Login to Active CMP CLI as root run the following command:</p> <p><i>policyUpgrade.pl –cleanupUpgrade</i></p>

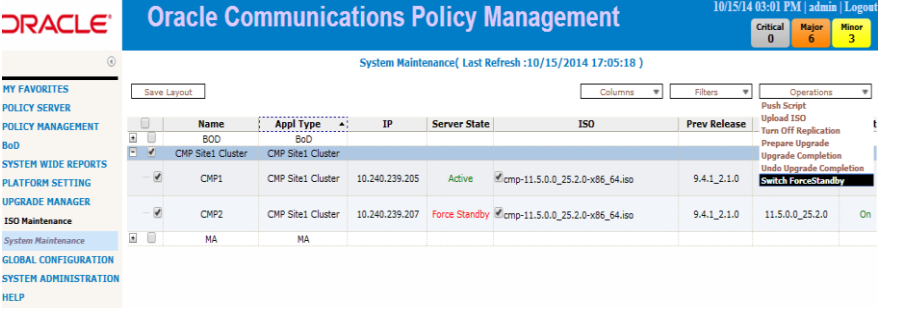
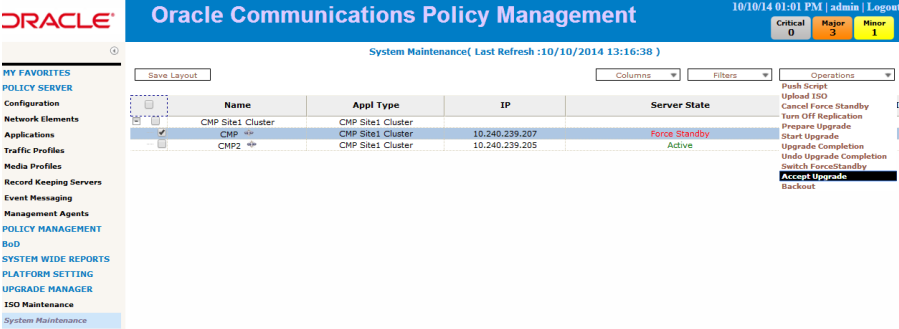
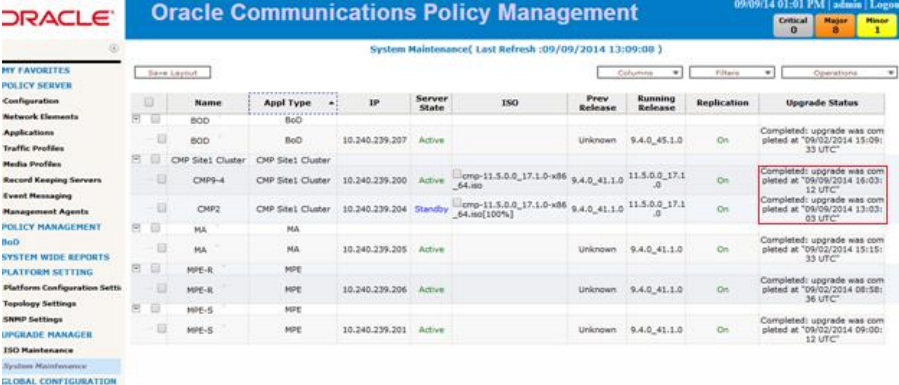
2.7 Accept the upgrade

Procedure 8: Accept the upgrade

Procedure 8. Accept the upgrade

STEP #	This procedure will accept the upgrade.																																																																									
	Needed material: - Admin access to CMP GUI																																																																									
7. <input type="checkbox"/>	11.5 CMP GUI: Force Stand By the upgraded Stand By server	<p>Navigate to Upgrade Manager →System Maintenance, set the upgraded server that has the StandBy status to Force StandBy from the operations menu</p>  <table><thead><tr><th>Name</th><th>Appl Type</th><th>IP</th><th>Server State</th><th>ISO</th><th>Prev Release</th><th>Running Release</th><th>Replication</th><th>Operations</th></tr></thead><tbody><tr><td>BOD</td><td>BoD</td><td>10.240.239.207</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_45.1.0</td><td>On</td><td>Push Script Upload ISO</td></tr><tr><td>BOD</td><td>BoD</td><td>10.240.239.207</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_45.1.0</td><td>On</td><td>Completed: upgrade was completed at '09/02/2014 15:09:33 UTC'</td></tr><tr><td>MPE-6</td><td>MPE</td><td>10.240.239.206</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_41.1.0</td><td>On</td><td>Completed: upgrade was completed at '09/02/2014 08:58:36 UTC'</td></tr><tr><td>MA</td><td>MA</td><td>10.240.239.205</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_41.1.0</td><td>On</td><td>Completed: upgrade was completed at '09/02/2014 15:15:33 UTC'</td></tr><tr><td>CMP Site1 Cluster</td><td>CMP Site1 Cluster</td><td>10.240.239.200</td><td>Standby</td><td>cmp-11.5.0.0_17.1.0-x86_64</td><td>9.4.0_41.1.0</td><td>11.5.0.0_17.1.0</td><td>On</td><td>Pending: upgrade was completed at '09/09/2014 16:03:12 UTC'</td></tr><tr><td>CMP2</td><td>CMP Site1 Cluster</td><td>10.240.239.204</td><td>Active</td><td>cmp-11.5.0.0_17.1.0-x86_64</td><td>9.4.0_41.1.0</td><td>11.5.0.0_17.1.0</td><td>On</td><td>Pending: upgrade was completed at '09/09/2014 13:03:03 UTC'</td></tr><tr><td>MPE-5</td><td>MPE</td><td>10.240.239.201</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_41.1.0</td><td>On</td><td>Completed: upgrade was completed at '09/02/2014 09:00:12 UTC'</td></tr></tbody></table>	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	Operations	BOD	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	On	Push Script Upload ISO	BOD	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	On	Completed: upgrade was completed at '09/02/2014 15:09:33 UTC'	MPE-6	MPE	10.240.239.206	Active		Unknown	9.4.0_41.1.0	On	Completed: upgrade was completed at '09/02/2014 08:58:36 UTC'	MA	MA	10.240.239.205	Active		Unknown	9.4.0_41.1.0	On	Completed: upgrade was completed at '09/02/2014 15:15:33 UTC'	CMP Site1 Cluster	CMP Site1 Cluster	10.240.239.200	Standby	cmp-11.5.0.0_17.1.0-x86_64	9.4.0_41.1.0	11.5.0.0_17.1.0	On	Pending: upgrade was completed at '09/09/2014 16:03:12 UTC'	CMP2	CMP Site1 Cluster	10.240.239.204	Active	cmp-11.5.0.0_17.1.0-x86_64	9.4.0_41.1.0	11.5.0.0_17.1.0	On	Pending: upgrade was completed at '09/09/2014 13:03:03 UTC'	MPE-5	MPE	10.240.239.201	Active		Unknown	9.4.0_41.1.0	On	Completed: upgrade was completed at '09/02/2014 09:00:12 UTC'
Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	Operations																																																																		
BOD	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	On	Push Script Upload ISO																																																																		
BOD	BoD	10.240.239.207	Active		Unknown	9.4.0_45.1.0	On	Completed: upgrade was completed at '09/02/2014 15:09:33 UTC'																																																																		
MPE-6	MPE	10.240.239.206	Active		Unknown	9.4.0_41.1.0	On	Completed: upgrade was completed at '09/02/2014 08:58:36 UTC'																																																																		
MA	MA	10.240.239.205	Active		Unknown	9.4.0_41.1.0	On	Completed: upgrade was completed at '09/02/2014 15:15:33 UTC'																																																																		
CMP Site1 Cluster	CMP Site1 Cluster	10.240.239.200	Standby	cmp-11.5.0.0_17.1.0-x86_64	9.4.0_41.1.0	11.5.0.0_17.1.0	On	Pending: upgrade was completed at '09/09/2014 16:03:12 UTC'																																																																		
CMP2	CMP Site1 Cluster	10.240.239.204	Active	cmp-11.5.0.0_17.1.0-x86_64	9.4.0_41.1.0	11.5.0.0_17.1.0	On	Pending: upgrade was completed at '09/09/2014 13:03:03 UTC'																																																																		
MPE-5	MPE	10.240.239.201	Active		Unknown	9.4.0_41.1.0	On	Completed: upgrade was completed at '09/02/2014 09:00:12 UTC'																																																																		
8. <input type="checkbox"/>	11.5 CMP GUI: Accept the upgrade for Stand By server	<p>With the server set to Force StandBy checked, choose “Accept Upgrade” from the operations menu:</p>  <table><thead><tr><th>Name</th><th>Appl Type</th><th>IP</th><th>Server State</th><th>ISO</th><th>Prev Release</th><th>Running Release</th><th>Replication</th><th>Operations</th></tr></thead><tbody><tr><td>CMP Site1 Cluster</td><td>CMP Site1 Cluster</td><td>10.240.239.207</td><td>Active</td><td></td><td>Unknown</td><td>9.4.0_41.1.0</td><td>On</td><td>Push Script Upload ISO Cancel Force Standby Turn Off Replication Prepare Upgrade Start Upgrade Upgrade Completion Undo Upgrade Completion Switch ForceStandby</td></tr><tr><td>CMP2</td><td>CMP Site1 Cluster</td><td>10.240.239.205</td><td>Force Standby</td><td></td><td>Unknown</td><td>9.4.0_41.1.0</td><td>On</td><td>Accept Upgrade Reinstall</td></tr></tbody></table> <p>Then confirm the action on the next dialog message:</p> 	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	Operations	CMP Site1 Cluster	CMP Site1 Cluster	10.240.239.207	Active		Unknown	9.4.0_41.1.0	On	Push Script Upload ISO Cancel Force Standby Turn Off Replication Prepare Upgrade Start Upgrade Upgrade Completion Undo Upgrade Completion Switch ForceStandby	CMP2	CMP Site1 Cluster	10.240.239.205	Force Standby		Unknown	9.4.0_41.1.0	On	Accept Upgrade Reinstall																																													
Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	Operations																																																																		
CMP Site1 Cluster	CMP Site1 Cluster	10.240.239.207	Active		Unknown	9.4.0_41.1.0	On	Push Script Upload ISO Cancel Force Standby Turn Off Replication Prepare Upgrade Start Upgrade Upgrade Completion Undo Upgrade Completion Switch ForceStandby																																																																		
CMP2	CMP Site1 Cluster	10.240.239.205	Force Standby		Unknown	9.4.0_41.1.0	On	Accept Upgrade Reinstall																																																																		

Procedure 8. Accept the upgrade

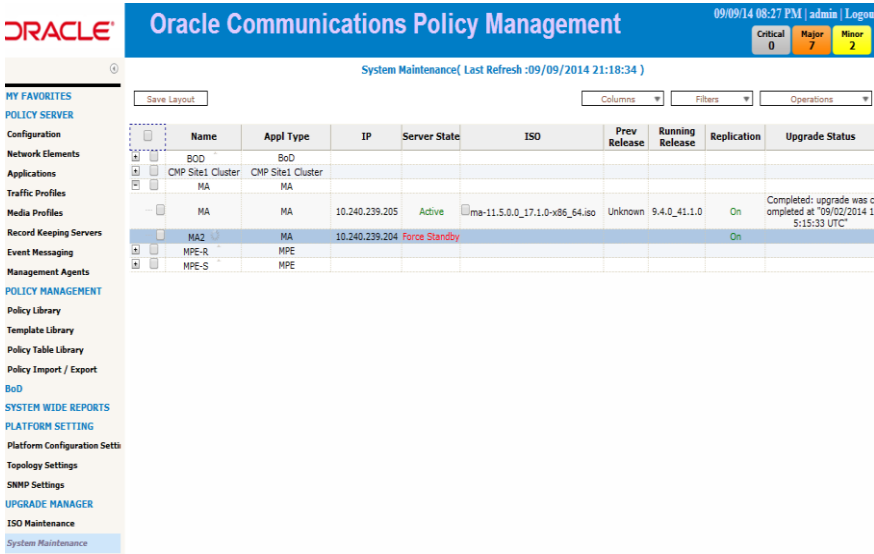
9.	11.5 CMP GUI: Switch Force Stand By	<p>With the cluster checked, choose switch Force standby from the operations menu</p>  <p>Session to CMP GUI will be lost, re-login to CMP GUI then accept the upgrade for the second server</p> 
10.	11.5 CMP GUI: upgrade completion validation	<p>Validate that upgrade pending alarms are cleared out for the cluster.</p> <p>Also validate that both servers in the cluster are showing completed upgrade status:</p> 
11.	11.5 secondary site CMP cluster	<p>In case solution is geo-redundant , follow the same current procedure to accept the upgrade of the CMP cluster in secondary site</p>

3. MA/MPE-R/MPE-S/BOD Cluster Upgrades

3.1 MA cluster upgrade

Procedure 9: MA Cluster Upgrade

Procedure 9. MA Upgrade

S T E P #	<p>This procedure will perform the upgrade for the MA cluster if exists in the Policy Solution to be Upgraded</p> <p>Needed material:</p> <ul style="list-style-type: none"> - Access to customer's network to access the Cable Policy solution - CMP OAM VIP - Admin login to CMP - 11.5 MA ISO image
1. <input type="checkbox"/> <p>Computer on solutions' network or remote access to solutions' network: Transfer MA ISO Image</p>	<p>Follow the same procedures outlined in section 2.2 of this document to transfer the 11.5 MA ISO Image into the servers to be upgraded from 9.4 release</p>
2. <input type="checkbox"/> <p>CMP GUI: Force StandBy the standby server</p>	<p>Navigate to Upgrade Manager → System Maintenance then check the standBy MA server and from the operations menu choose “Force StandBy”:</p>  <p>Then with the server checked from the operations menu, choose “Start Upgrade”.</p> <p>The upgrade will go through multiple steps including rebooting the server; those steps are reflected in the MA's “Upgrade Status” field of the System Maintenance screen.</p> <p>Wait till the upgrade status indicates upgrade was completed.</p> <p>For more details you can refer to steps followed for CMP upgrade in section 2.4 of this document which applies also for MA upgrade</p>

Procedure 9. MA Upgrade**3. CMP GUI:**
Switch Force StandBy

Navigate to Upgrade Manager → System Maintenance then check the MA cluster and from the operations menu choose “Switch Force StandBy”:

Oracle Communications Policy Management 09/09/14 08:27 PM | admin | Logout

System Maintenance(Last Refresh :09/09/2014 22:00:47)

Save Layout Columns Filters Operations

	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	
<input type="checkbox"/>	BOD	BoD							Push Script
<input type="checkbox"/>	MPE-R	MPE							Upload ISO
<input checked="" type="checkbox"/>	MA	MA	10.240.239.205	Active	ma-11.5.0.0_17.1.0-x86_64.iso	Unknown	9.4.0_41.1.0	On	Turn Off Replication
<input checked="" type="checkbox"/>	MA2	MA	10.240.239.204	Force Standby				On	Prepare Upgrade
<input type="checkbox"/>	CMP Site1 Cluster	CMP Site1 Cluster							Upgrade Completion
<input type="checkbox"/>	MPE-S	MPE							Undo Upgrade Completion

Switch ForceStandby
Completed: upgrade was let at "09/02/2014 15: UTC"

Then with the second server checked (the force StandBy server) , open the operations menu and choose the “Start Upgrade”

Oracle Communications Policy Management 09/09/14 08:27 PM | admin | Logout

System Maintenance(Last Refresh :09/09/2014 22:02:35)

Save Layout Columns Filters Operations

	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	
<input type="checkbox"/>	BOD	BoD							Push Script
<input type="checkbox"/>	CMP Site1 Cluster	CMP Site1 Cluster							Upload ISO
<input type="checkbox"/>	MA	MA	10.240.239.205	Force Standby	ma-11.5.0.0_17.1.0-x86_64.iso	Unknown	9.4.0_41.1.0	On	Cancel Force Standby
<input checked="" type="checkbox"/>	MA2	MA	10.240.239.204	Active				On	Turn Off Replication
<input type="checkbox"/>	MPE-R	MPE							Prepare Upgrade
<input type="checkbox"/>	MPE-S	MPE							Start Upgrade

Start Upgrade
Upgrade Completion
Undo Upgrade Completion
Switch ForceStandby
Accept Upgrade
Backout

After upgrade completes, cancel Force Standby from the operations menu :

Oracle Communications Policy Management 09/09/14 08:27 PM | admin | Logout

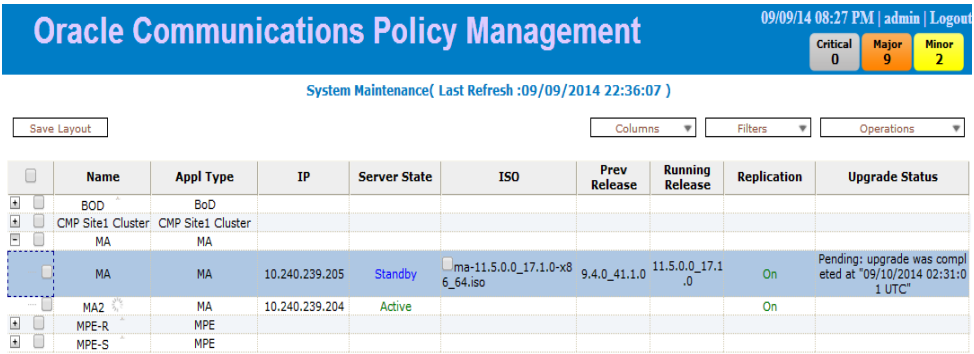
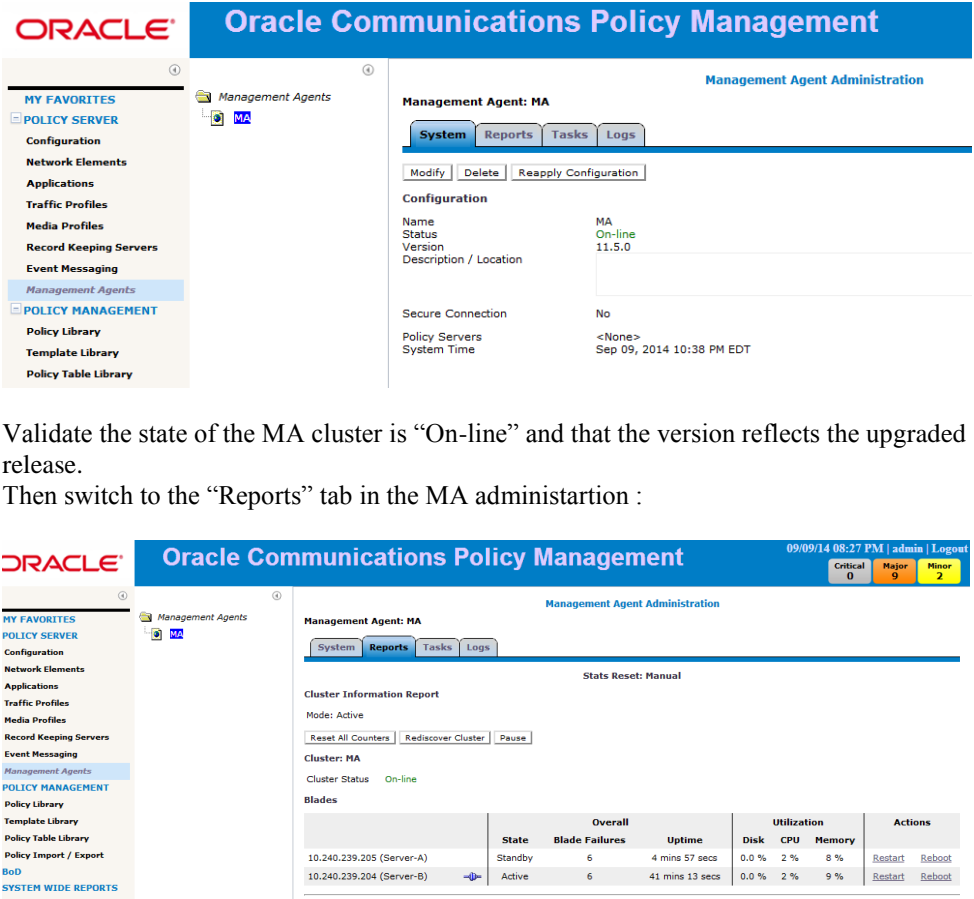
System Maintenance(Last Refresh :09/09/2014 22:35:09)

Save Layout Columns Filters Operations

	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	
<input type="checkbox"/>	BOD	BoD							Push Script
<input type="checkbox"/>	CMP Site1 Cluster	CMP Site1 Cluster							Upload ISO
<input type="checkbox"/>	MA	MA	10.240.239.205	Force Standby	ma-11.5.0.0_17.1.0-x86_64.iso	9.4.0_41.1.0	11.5.0.0_17.1.0	On	Cancel Force Standby
<input checked="" type="checkbox"/>	MA2	MA	10.240.239.204	Active				On	Turn Off Replication
<input type="checkbox"/>	MPE-R	MPE							Prepare Upgrade
<input type="checkbox"/>	MPE-S	MPE							Start Upgrade

Upgrade Completion
Undo Upgrade Completion
Switch ForceStandby
Accept Upgrade
Backout

Procedure 9. MA Upgrade

4.	CMP GUI: MA servers status check	<p>Validate that now one of the MA servers is in “Active” State and the other is in “StandBy” state:</p> 
5.	CMP GUI: MA cluster configuration	<p>Navigate to Policy Server → Management Agents</p>  <p>Validate the state of the MA cluster is “On-line” and that the version reflects the upgraded release.</p> <p>Then switch to the “Reports” tab in the MA administration :</p> <p>Validate both servers of the cluster are displayed and with correct “Active” and “StandBy” state.</p>
6.	Post upgrade checks	<p>Follow the same procedures outlined in section 2.5 of this document to validate the upgrade completed successfully</p>

Procedure 9. MA Upgrade

7. Accept the upgrade

Follow the same procedures outlined in section [2.7](#) of this document to accept the upgrade

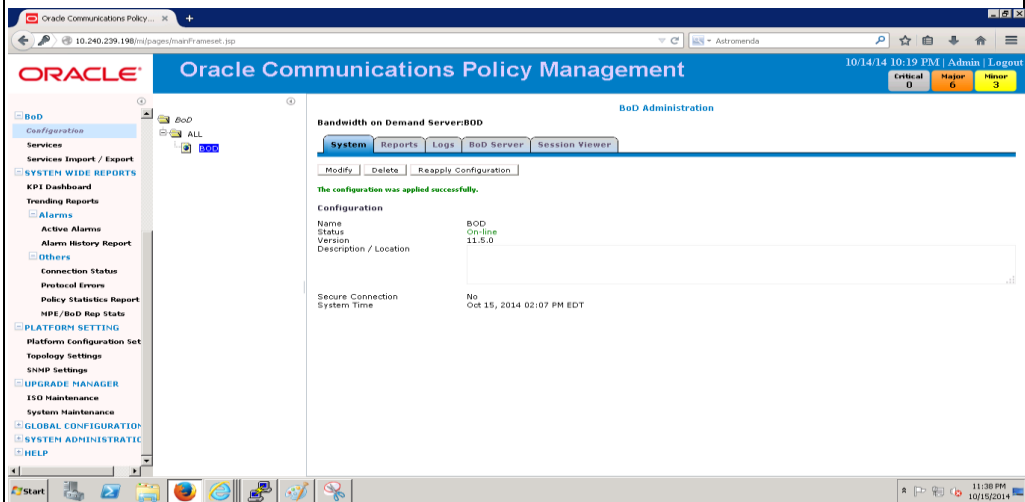
The screenshot shows the Oracle Communications Policy Management interface. The top navigation bar includes the Oracle logo, the title "Oracle Communications Policy Management", the date and time "10/15/14 03:01 PM", the user "admin", and a "Logout" link. Below the navigation bar, there are three status indicators: "Critical 0", "Major 6", and "Minor 3". The main content area is titled "System Maintenance (Last Refresh : 10/15/2014 17:01:33)". It features a "Save Layout" button, a "Columns" dropdown, a "Filters" dropdown, and an "Operations" dropdown. A table displays the upgrade status of various components. The table has columns for Name, Appl Type, IP, Server State, ISO, Prev Release, Running Release, Replicati, and Upgrade Status. The table shows two rows for MA1 and MA2, both of which are in the "Standby" state and have completed the upgrade process.

Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replicati	Upgrade Status
MA1	MA	10.240.239.204	Standby	ma-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	11.5.0.0_25.2.0	On	Completed: upgrade was completed at "10/15/2014 02:50:24 UTC" and accepted at "10/15/2014 03:22:37 UTC"
MA2	MA	10.240.239.206	Active	ma-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	11.5.0.0_25.2.0	On	Completed: upgrade was completed at "10/15/2014 03:17:44 UTC" and accepted at "10/15/2014 03:21:13 UTC"

Procedure 9. MA Upgrade

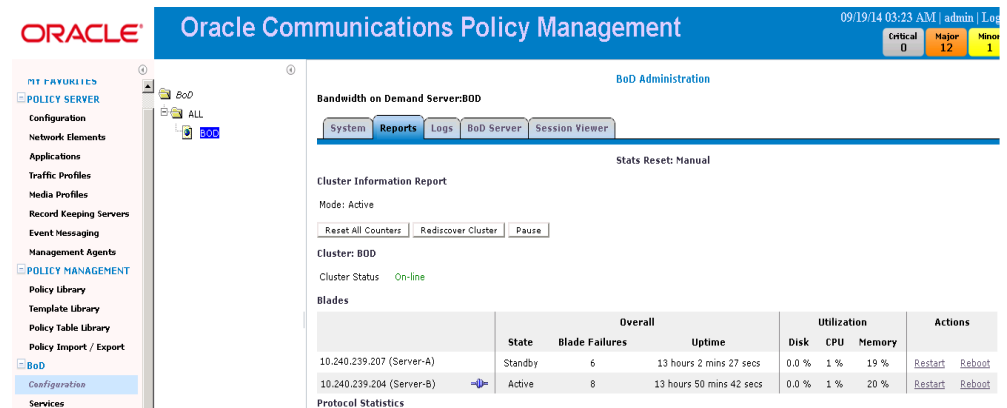
CMP GUI:
BOD cluster
configuration

Navigate to BoD → Configuration



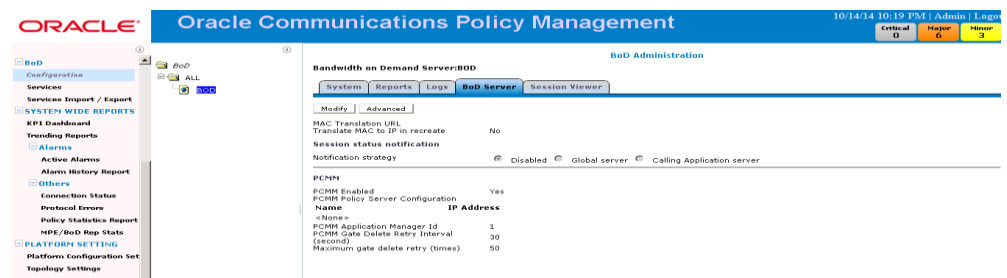
Validate the state of the BOD cluster is “On-line” and that the version reflects the upgraded release.

Then switch to the “Reports” tab in the BOD administration :



Validate both servers of the cluster are displayed and with correct “Active” and “StandBy” state.

Then Switch to “BoD Server” tab in BOD Administration.



Validate that the association with policy server MPE-R is maintained after the upgrade

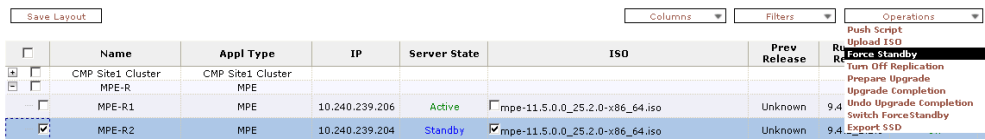
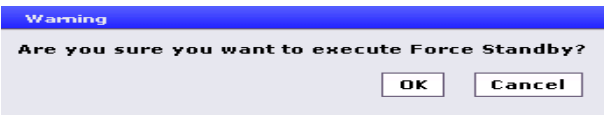
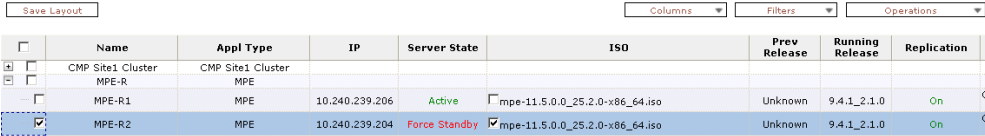
Procedure 9. MA Upgrade

9.	Post upgrade checks	Follow the same procedures outlined in section 2.5 of this document to validate the upgrade completed successfully
10.	Back out the upgrade	In case post upgrade checks failed and back out is decided, follow the same procedures outlined in section 2.6 of this document to back out the MA cluster
11.	Accept the upgrade	Follow the same procedures outlined in section 2.7 of this document to accept the upgrade

3.2 MPE-R/MPE-S cluster upgrade

Procedure 10: MPE-R/MPE-S Cluster Upgrade

Procedure 10. MPE-R/MPE-S Upgrade

S T E P #	<p>This procedure will perform the upgrade for the MPE-R/MPE-S cluster if exists in the Policy Solution to be upgraded.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - Access to customer's network to access the Cable Policy solution - CMP OAM VIP, MPE-R/MPE-S iLO IP & OAM Real IP - Admin login to CMP, iLO Admin & CLI root login to MPE-R/MPE-S - 11.5 MPE-R/MPE-S ISO image
1. <input type="checkbox"/> <p>Computer on solutions' network or remote access to solutions' network: Transfer MPE-R/MPE-S ISO Image</p>	<p>Follow the same procedures outlined in section 2.2 of this document to transfer the 11.5 MPE-R/MPE-S ISO Image into the servers to be upgraded from 9.4 release</p>
2. <input type="checkbox"/> <p>CMP GUI: Force StandBy the standby server</p>	<p>Navigate to Upgrade Manager → System Maintenance then check the standBy MPE-R/MPE-S server and from the operations menu choose “Force StandBy”:</p>  <p>Confirm the action on the next dialog box</p>  <p>An information message indicating the successful execution of Force standby appears.</p> 

Procedure 10. MPE-R/MPE-S Upgrade**3. CMP GUI:**
Start the upgrade

Then with the server checked from the operations menu, choose “Start Upgrade”.

The screenshot shows a table with columns: Name, Appl Type, IP, Server State, ISO, Prev Release, and a column for operations. The table lists two servers: MPE-R1 and MPE-R2. MPE-R1 is in 'Active' state, and MPE-R2 is in 'Force Standby' state. The ISO column shows 'mpe-11.5.0.0_25.2.0-x86_64.iso' for both. The 'Prev Release' column shows 'Unknown' for both. The operations menu on the right includes options like 'Push Script', 'Upload ISO', 'Cancel Force Standby', 'Turn Off Replication', 'Prepare Upgrade', 'Start Upgrade' (highlighted), 'Upgrade Completion', 'Undo Upgrade Completion', 'Switch Force Standby', 'Import SSD', 'Accept Upgrade', and 'Backout'.

Confirm the action on the next dialog box:

A warning dialog box with a blue header and a white body. The text inside reads: "CAUTION! Please make sure the remote server is not being either Upgraded or Backed-out at this moment!". There are 'OK' and 'Cancel' buttons at the bottom right.

An information message indicating the successful start of the upgrade displays:

An 'Upgrade Command' dialog box with a blue header and a white body. The text inside reads: "Start Upgrade MPE-R2 10.240.239.204 OK". There is a yellow progress bar below the text.

The upgrade will go through multiple steps including rebooting the server; those steps are reflected in the MPE-R/MPE-S “Upgrade Status” field of the System Maintenance screen.

MPE-R2	MPE	10.240.239.204	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Chroot execing /mnt/upgrade/upgrade/upgrade_dispatcher
MPE-R2	MPE	10.240.239.204	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Performing preupgrade processing
MPE-R2	MPE	10.240.239.204	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Installing /var/TKLC/log/upgrade/manifest.normal.UPGRADE
MPE-R2	MPE	10.240.239.204	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Running APP_ENABLE...

Wait till the upgrade status indicates upgrade was completed.

MPE-R2	MPE	10.240.239.204	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	11.5.0.0_25.2.0	On	Pending: upgrade was completed at "10/16/2014 17:38:38 UTC"
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4. CMP GUI:
Expected alarms

During the upgrade some alarms may raise like the following:

MPE-R2 10.240.239.204	MPE	Minor	32509	10s / ---	Server NTP Daemon Not Synchronized	10/16/2014 13:40:02 EDT	
MPE-R2 10.240.239.204	MPE	Minor	32532	19s / ---	Server Upgrade Pending Accept/Reject	10/16/2014 13:39:53 EDT	
MPE-R2 10.240.239.204	MPE	Minor	70032	1m 15s / 10m 0s	QP direct link does not work as configuration	10/16/2014 13:38:57 EDT	
MPE-R2 10.240.239.204	MPE	Minor	78001	1m 3s / 1h 0s	Transfer of Policy jar files failed	10/16/2014 13:39:09 EDT	

These alarms are expected and would be automatically cleared after the upgrade concludes successfully

Procedure 10. MPE-R/MPE-S Upgrade

5.	11.5 upgraded MPE server CLI: Validate upgrade log file	SSH to upgraded MPE-R/MPE-S server and login then tail the upgrade log file as follows : Validate upgrade returned success. <pre>[root@MPE-R2 ~]# tail /var/TKLC/log/upgrade/upgrade.log 1413481118: Running postUpgradeBoot() for Upgrade::Policy::HP upgrade policy... 1413481118: Running postUpgradeBoot() for Upgrade::Policy::MBL upgrade policy... 1413481118: Running postUpgradeBoot() for Upgrade::Policy::QPFirewallFixes upgrade policy... 1413481118: Running postUpgradeBoot() for Upgrade::Policy::QPIPv6Fixes upgrade policy... 1413481118: Running postUpgradeBoot() for Upgrade::Policy::QPJKPolicy upgrade policy... 1413481118: Running postUpgradeBoot() for Upgrade::Policy::QNTPFixes upgrade policy... 1413481118: Running postUpgradeBoot() for Upgrade::Policy::QPRunPostRPMActionsPolicy upgrade policy... 1413481118: Updating platform revision file... 1413481119: Upgrade returned success!</pre>
6.	11.5 upgraded MPE server CLI: Validate policy revision	Run the following command to check running policy version: <pre>[root@MPE-R2 ~]# getPolicyRev -f mpe_11.5.0.0_25.2.0</pre> Make sure the version is the upgraded version “11.5”
7.	11.5 upgraded MPE server CLI: Verify the server’s HA role	Run the command “ha.mystate” to verify the server has the stand By role: <pre>[root@MPE-R2 ~]# ha.mystate resourceId role node subResources lastUpdate DbReplication Stby C0093.217 0 1016:133848.348 VIP Stby C0093.217 0 1016:133848.350 QP Stby C0093.217 0 1016:133853.894 DbReplication old OOS C0093.217 0 1016:133843.189</pre>
8.	11.5 upgraded MPE server CLI: Verify NTP sync	Run the command “ntpq -pn” to verify the server is in sync with the NTP server: <pre>[root@MPE-R2 ~]# ntpq -pn remote refid st t when poll reach delay offset jitter ===== *10.250.32.10 192.5.41.40 2 u 35 64 7 0.316 7.918 3.595</pre>

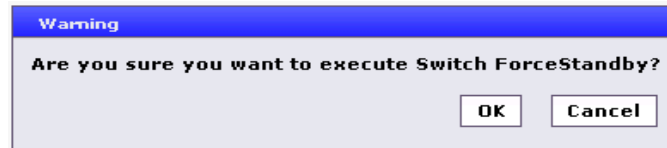
Procedure 10. MPE-R/MPE-S Upgrade

9. CMP GUI: Switch Force StandBy

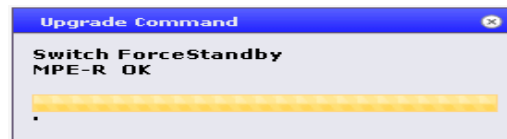
Navigate to Upgrade Manager → System Maintenance then check the MPE-R/MPE-S cluster and from the operations menu choose “Switch Force StandBy”:

Save Layout		Columns		Filters		Operations	
<input type="checkbox"/>	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release
<input type="checkbox"/>	CMP Site1 Cluster	CMP Site1 Cluster					
<input checked="" type="checkbox"/>	MPE-R	MPE					
<input checked="" type="checkbox"/>	MPE-R1	MPE	10.240.239.206	Active	mpe-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4.1_2.1.0
<input checked="" type="checkbox"/>	MPE-R2	MPE	10.240.239.204	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	11.5.0.0_25.2.0

Confirm the action on the next dialog box



An information message indicating the successful execution of Switch Force standby appears.



Save Layout		Columns		Filters		Operations	
<input type="checkbox"/>	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release
<input type="checkbox"/>	CMP Site1 Cluster	CMP Site1 Cluster					
<input type="checkbox"/>	MPE-R	MPE					
<input checked="" type="checkbox"/>	MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4.1_2.1.0
<input type="checkbox"/>	MPE-R2	MPE	10.240.239.204	Active	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	11.5.0.0_25.2.0

Procedure 10. MPE-R/MPE-S Upgrade**10. CMP GUI:**
Start the upgrade

Then with the server checked from the operations menu, choose “Start Upgrade”.

The screenshot shows a table with columns: Name, Appl Type, IP, Server State, ISO, Prev Release, and an 'Operations' dropdown menu. The 'Operations' menu is open, showing options like 'Push Script', 'Upload ISO', 'Cancel Force Standby', 'Turn Off Replication', 'Prepare Upgrade', 'Start Upgrade' (highlighted), 'Upgrade Completion', 'Undo Upgrade Completion', 'Switch ForceStandby', 'Import SSD', 'Accept Upgrade', and 'Backout'.

	Name	Appl Type	IP	Server State	ISO	Prev Release
<input type="checkbox"/>	CMP Site1 Cluster	CMP Site1 Cluster				
<input type="checkbox"/>	MPE-R	MPE				
<input checked="" type="checkbox"/>	MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	Unknown
<input type="checkbox"/>	MPE-R2	MPE	10.240.239.204	Active	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0

Confirm the action on the next dialog box:

A warning dialog box with a blue header and a white body. The text reads: "CAUTION! Please make sure the remote server is not being either Upgraded or Backed-out at this moment!". There are 'OK' and 'Cancel' buttons at the bottom right.

An information message indicating the successful start of the upgrade displays:

An 'Upgrade Command' dialog box with a blue header and a white body. The text reads: "Start Upgrade MPE-R1 10.240.239.206 OK". There is a yellow progress bar below the text.

The upgrade will go through multiple steps including rebooting the server; those steps are reflected in the MPE-R/MPE-S “Upgrade Status” field of the System Maintenance screen.

MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Chroot execing /mnt/upgrade/upgrade/upgrade_dispatcher
MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Initializing upgrade...
MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Performing preupgrade processing
MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Installing /var/TKLC/log/upgrade/manifest.QPDKPatch.UPGRADE
MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Installing /var/TKLC/log/upgrade/manifest.normal.UPGRADE
MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	

Wait till the upgrade status indicates upgrade was completed.

MPE-R1	MPE	10.240.239.206	Force Standby	mpe-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	11.5.0.0_25.2.0	On	Pending: upgrade was completed at "10/16/2014 18:32:57 UTC"
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11. CMP GUI:
Expected alarms

During the upgrade some alarms may raise like the following:

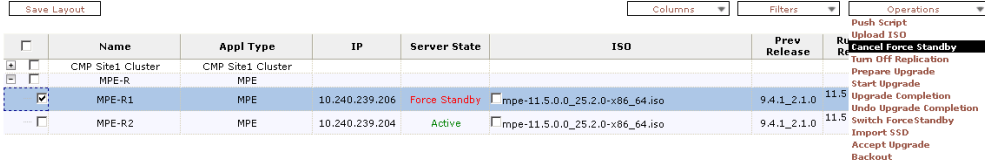
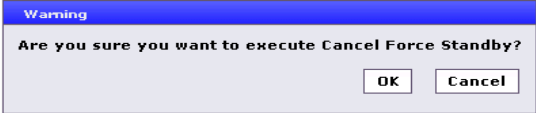
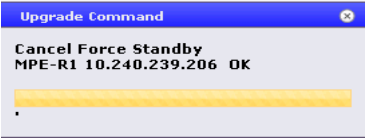
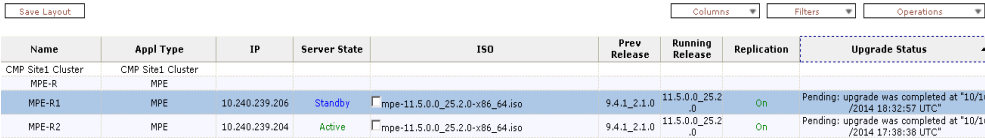
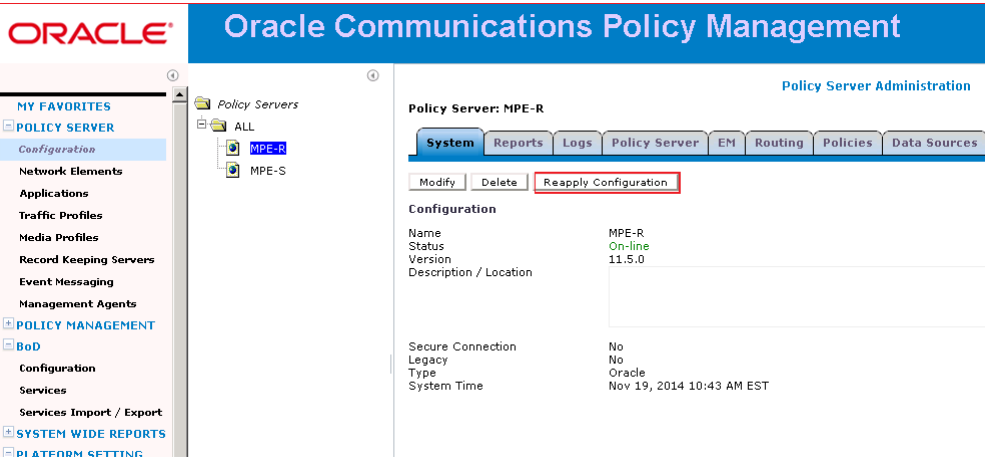
MPE-R1 10.240.239.206	MPE	Minor	32509	15s / ---	Server NTP Daemon Not Synchronized	10/16/2014 14:34:21 EDT	
MPE-R1 10.240.239.206	MPE	Minor	32532	25s / ---	Server Upgrade Pending Accept/Reject	10/16/2014 14:34:11 EDT	
MPE-R1 10.240.239.206	MPE	Minor	70032	1m 22s / 10m 0s	QP direct link does not work as configuration	10/16/2014 14:33:14 EDT	
MPE-R2 10.240.239.204	MPE	Minor	31109	1m 9s / 5m 0s	Topology is configured incorrectly	10/16/2014 14:33:27 EDT	
MPE-R2 10.240.239.204	MPE	Minor	31282	1m 9s / 5m 0s	The HA manager (cmha) is impaired by a s/w fault	10/16/2014 14:33:27 EDT	

These alarms are expected and would be automatically cleared after the upgrade concludes successfully

Procedure 10. MPE-R/MPE-S Upgrade

12.	11.5 upgraded MPE server CLI: Validate upgrade log file	SSH to upgraded MPE-R/MPE-S server and login then tail the upgrade log file as follows : Validate upgrade returned success. <pre>[root@MPE-R1 ~]# tail /var/TKLC/log/upgrade/upgrade.log 1413484376:: Running postUpgradeBoot() for Upgrade::Policy::HP upgrade policy... 1413484376:: Running postUpgradeBoot() for Upgrade::Policy::MBL upgrade policy... 1413484376:: Running postUpgradeBoot() for Upgrade::Policy::QPFirewallFixes upgrade policy... 1413484376:: Running postUpgradeBoot() for Upgrade::Policy::QPIIPv6Fixes upgrade policy... 1413484376:: Running postUpgradeBoot() for Upgrade::Policy::QPJDKPolicy upgrade policy... 1413484376:: Running postUpgradeBoot() for Upgrade::Policy::QNTPTFixes upgrade policy... 1413484376:: Running postUpgradeBoot() for Upgrade::Policy::QPRunPostRPMActionsPolicy upgrade policy... 1413484376:: Running postUpgradeBoot() for Upgrade::Policy::PlatformLast upgrade policy... 1413484377:: Updating platform revision file... 1413484377:: Upgrade returned success!</pre>
13.	11.5 upgraded MPE server CLI: Validate policy revision	Run the following command to check running policy version: <pre>[root@MPE-R1 ~]# getPolicyRev -f mpe 11.5.0.0 25.2.0</pre> Make sure the version is the upgraded version “11.5”
14.	11.5 upgraded MPE server CLI: Verify the server’s HA role	Run the command “ha.mystate” to verify the server has the stand By role: <pre>[root@MPE-R1 ~]# ha.mystate resourceId role node subResources lastUpdate DbReplication Stby C0093.093 0 1016:143357.380 VIP Stby C0093.093 0 1016:143357.383 QP Stby C0093.093 0 1016:143357.384 DbReplication_old OOS C0093.093 0 1016:143300.861</pre>
15.	11.5 upgraded MPE server CLI: Verify NTP sync	Run the command “ntpq -pn” to verify the server is in sync with the NTP server: <pre>[root@MPE-R1 ~]# ntpq -pn remote refid st t when poll reach delay offset jitter ===== *10.250.32.10 192.5.41.40 2 u 52 64 17 0.347 2.022 0.988</pre>

Procedure 10. MPE-R/MPE-S Upgrade

16.	CMP GUI: Cancel force standby	<p>After upgrade completes, cancel Force Standby from the operations menu :</p>  <p>Confirm the action on the next dialog box</p>  <p>An information message indicating the successful cancellation of Force standby</p> 
17.	CMP GUI: MPE servers status check	<p>Validate that now one of the MPE-R/MPE-S servers is in “Active” State and the other is in “StandBy” state:</p> 
18.	11.5 secondary site MPE-S spare server	<p>In case solution is geo-redundant , follow the same current procedure to upgrade the MPE-S spare server in secondary site</p>
19.	CMP GUI: MPE-R/MPE-S cluster configuration	<p>Navigate to Policy Server → Configuration and Reapply Configuration to clear configuration mismatch in</p> 

Procedure 10. MPE-R/MPE-S Upgrade**20. CMP GUI: MPE-R/MPE-S cluster configuration**

Navigate to Policy Server → Configuration

Policy Server: MPE-R

System Reports Logs Policy Server EM Routing Policies Data Sources

Modify Delete Reapply Configuration

Configuration

Name: MPE-R
Status: On-line
Version: 11.5.0
Description / Location:

Secure Connection: No
Legacy: No
Type: Oracle
System Time: Oct 16, 2014 02:47 PM EDT

Validate the state of the MPE-R/MPE-S cluster is “On-line” and that the version reflects the upgraded release.

Then switch to the “Routing” tab in the MPE-R/MPE-S administration:

Policy Server: MPE-R

System Reports Logs Policy Server EM Routing Policies Data Sources

Modify

Execute Policies for Routed Traffic: false
Route to Downstream Policy Servers using IP subnets: true

Downstream Policy Servers: <None>

Subnets: <None>

Validate configurations are maintained for MPE-R/MPE-S after the upgrade.

Then switch to the “Policy Server” tab in the MPE-R/MPE-S administration:, validate that associations of MPE-S with CMTS are intact after the upgrade.

Then switch to the “Reports” tab in the MPE-R/MPE-S administration :

Oracle Communications Policy Management 09/19/14 03:23 AM | admin | L4

Critical 0 Major 12 Min 0

Policy Server: MPE-S

System Reports Logs Policy Server EM Routing Policies Data Sources

Stats Reset: Manual

Cluster Information Report

Mode: Active
Reset All Counters Rediscov Cluster Pause

Cluster: MPE-S
Cluster Status: On-line

Blades

	State	Blade Failures	Uptime	Disk	CPU	Memory	Actions
10.240.239.201 (Server-A)	Active	6	15 hours 8 mins 42 secs	0.0 %	1 %	19 %	Restart Reboot
10.240.239.204 (Server-B)	Standby	9	46 mins 21 secs	0.0 %	1 %	19 %	Restart Reboot

Policy Statistics (details...)

Name	Evaluated	Executed	Ignored
No policies deployed			

Session Cleanup Statistics

Session	Ready for Cleanup	Removed on unknown session id	Reauthorized	Reauthorization Timeout	Removed for Expiration
Pco Count	4	0	0	0	0

Validate both servers of the cluster are displayed and with correct “Active” and “StandBy” state.

21. Post upgrade checks

Follow the same procedures outlined in section 2.5 of this document to validate the upgrade completed successfully.

Procedure 10. MPE-R/MPE-S Upgrade

22.	Back out the upgrade	In case post upgrade checks failed and back out is decided, follow the same procedures outlined in section 2.6 of this document to back out the MPE clusters
23.	Accept the upgrade	Follow the same procedures outlined in section 2.7 of this document to accept the upgrade.

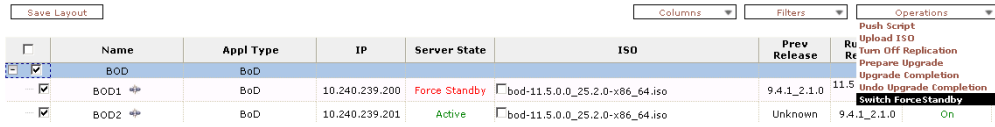
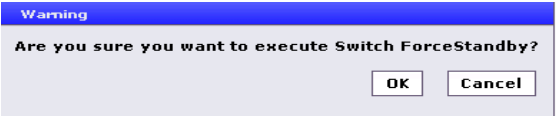
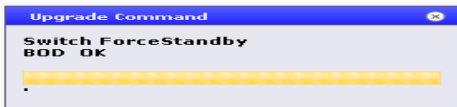
3.3 BOD cluster upgrade

Procedure 11: BOD Cluster Upgrade

Procedure 11. BOD Upgrade

STEP #	This procedure will perform the upgrade for the BOD cluster if exists in the Policy Solution to be upgraded.																																																																									
	Needed material: <ul style="list-style-type: none">- Access to customer’s network to access the Cable Policy solution- CMP OAM VIP, BOD iLO IP & OAM Real IP- Admin login to CMP, iLO Admin & CLI root login to BOD- 11.5 BOD ISO image																																																																									
	1. <div><input type="checkbox"/></div> Computer on solutions’ network or remote access to solutions’ network: Transfer BOD ISO Image	Follow the same procedures outlined in section 2.2 of this document to transfer the 11.5 BOD ISO Image into the servers to be upgraded from 9.4 release																																																																								
2. <div><input type="checkbox"/></div> CMP GUI: Force StandBy or the standby server	<div>Navigate to Upgrade Manager → System Maintenance then check the standBy BOD server and from the operations menu choose “Force StandBy”:</div> <div><div><div>Save Layout</div><div>Columns</div><div>Filters</div><div>Operations</div></div><table><tr><td><input type="checkbox"/></td><td>Name</td><td>Appl Type</td><td>IP</td><td>Server State</td><td>ISO</td><td>Prev Release</td><td>Running Release</td><td>Replication</td></tr><tr><td><input type="checkbox"/></td><td>BOD</td><td>BoD</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>BOD1</td><td>BoD</td><td>10.240.239.200</td><td>Standby</td><td><input checked="" type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso</td><td>Unknown</td><td>9.4</td><td></td></tr><tr><td><input type="checkbox"/></td><td>BOD2</td><td>BoD</td><td>10.240.239.201</td><td>Active</td><td><input type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso</td><td>Unknown</td><td>9.4</td><td></td></tr></table><div><div>Save Layout</div><div>Columns</div><div>Filters</div><div>Operations</div></div><table><tr><td><input type="checkbox"/></td><td>Name</td><td>Appl Type</td><td>IP</td><td>Server State</td><td>ISO</td><td>Prev Release</td><td>Running Release</td><td>Replication</td></tr><tr><td><input type="checkbox"/></td><td>BOD</td><td>BoD</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>BOD1</td><td>BoD</td><td>10.240.239.200</td><td>Force Standby</td><td><input checked="" type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso</td><td>Unknown</td><td>9.4.1_2.1.0</td><td>On</td></tr><tr><td><input type="checkbox"/></td><td>BOD2</td><td>BoD</td><td>10.240.239.201</td><td>Active</td><td><input type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso</td><td>Unknown</td><td>9.4.1_2.1.0</td><td>On</td></tr></table></div>		<input type="checkbox"/>	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	<input type="checkbox"/>	BOD	BoD							<input checked="" type="checkbox"/>	BOD1	BoD	10.240.239.200	Standby	<input checked="" type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4		<input type="checkbox"/>	BOD2	BoD	10.240.239.201	Active	<input type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4		<input type="checkbox"/>	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication	<input type="checkbox"/>	BOD	BoD							<input checked="" type="checkbox"/>	BOD1	BoD	10.240.239.200	Force Standby	<input checked="" type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4.1_2.1.0	On	<input type="checkbox"/>	BOD2	BoD	10.240.239.201	Active	<input type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4.1_2.1.0	On
<input type="checkbox"/>	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication																																																																		
<input type="checkbox"/>	BOD	BoD																																																																								
<input checked="" type="checkbox"/>	BOD1	BoD	10.240.239.200	Standby	<input checked="" type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4																																																																			
<input type="checkbox"/>	BOD2	BoD	10.240.239.201	Active	<input type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4																																																																			
<input type="checkbox"/>	Name	Appl Type	IP	Server State	ISO	Prev Release	Running Release	Replication																																																																		
<input type="checkbox"/>	BOD	BoD																																																																								
<input checked="" type="checkbox"/>	BOD1	BoD	10.240.239.200	Force Standby	<input checked="" type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4.1_2.1.0	On																																																																		
<input type="checkbox"/>	BOD2	BoD	10.240.239.201	Active	<input type="checkbox"/> bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4.1_2.1.0	On																																																																		

Procedure 11. BOD Upgrade

6.	11.5 Upgraded BOD server CLI: Validate policy revision	<p>Run the following command to check running policy version:</p> <pre>[root@BOD1 ~]# getPolicyRev -f bod_11.5.0.0_25.2.0</pre> <p>Make sure the version is the upgraded version “11.5”</p>
7.	11.5 Upgraded BOD server CLI as root: Verify the server’s HA role	<p>Run the command “ha.mystate” to verify the server has the stand By role:</p> <pre>[root@BOD1 ~]# ha.mystate resourceId role node subResources lastUpdate DbReplication Stby C1729.018 0 1015:122011.283 VIP Stby C1729.018 0 1015:122011.285 QP Stby C1729.018 0 1015:122016.448 DbReplication_old OOS C1729.018 0 1015:122005.910</pre>
8.	11.5 Upgraded BOD server CLI as root: Verify NTP sync	<p>Run the command “ntpq -pn” to verify the server is in sync with the NTP server:</p> <pre>[root@BOD1 ~]# ntpq -pn remote refid st t when poll reach delay offset jitter ===== *10.250.32.10 192.5.41.209 2 u 115 128 377 0.291 -0.441 0.037</pre>
12.	CMP GUI: Switch Force StandBy to upgrade the second sever in BOD cluster	<p>Navigate to Upgrade Manager → System Maintenance then check the BOD cluster and from the operations menu choose “Switch Force StandBy”:</p>  <p>Confirm the action on the next dialog box</p>  <p>An information message indicating the successful switch force standby is displayed:</p> 

Procedure 11. BOD Upgrade

13.

CMP GUI:
Start upgrade

Then with the second server checked (the force StandBy server) , open the operations menu and choose the “Start Upgarde”

Save Layout

Columns

Filters

Operations

<input type="checkbox"/>	Name	Appl Type	IP	Server State	ISO	Prev Release	Re	Operations
<input type="checkbox"/>	BOD	BoD						Push Script Upload ISO Cancel Force Standby Turn Off Replication Prepare Upgrade
<input type="checkbox"/>	BOD1	BoD	10.240.239.200	Active	bod-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	11.5	Start Upgrade
<input checked="" type="checkbox"/>	BOD2	BoD	10.240.239.201	Force Standby	bod-11.5.0.0_25.2.0-x86_64.iso	Unknown	9.4	Upgrade Completion Undo Upgrade Completion Switch Force Standby Accept Upgrade Backout
<input type="checkbox"/>	CMP Site1 Cluster	CMP Site1 Cluster						
<input type="checkbox"/>	MA	MA						

Confirm the action on the next dialog box

Warning

CAUTION! Please make sure the remote server is not being either Upgraded or Backed-out at this moment!

OK

Cancel

An information message indicating the successful start of the upgrade displays and upgrade starts.

The upgrade will go through multiple steps including rebooting the server; those steps are reflected in the BOD’s “Upgrade Status” field of the System Maintenance screen.

BoD	10.240.239.201	Force Standby	bod-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Chroot execing /mnt/upgrade/upgrade/upgrade_dispatcher
BoD	10.240.239.201	Force Standby	bod-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Installing /var/TKLC/log/upgrade/manifest.normal.UPGRADE
BoD	10.240.239.201	Force Standby	bod-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	
BoD	10.240.239.201	Force Standby	bod-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	9.4.1_2.1.0	On	InProgress: Running APP_ENABLE...

Wait till the upgrade status indicates upgrade was completed.

BoD	10.240.239.201	Force Standby	bod-11.5.0.0_25.2.0-x86_64.iso	9.4.1_2.1.0	11.5.0.0_25.2.0	On	Pending: upgrade was completed at "10/15/2014 17:49:26 UTC"
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14.

CMP GUI:
Expected alarms

During the upgrade some alarms may raise like the following:

BOD2 10.240.239.201	BoD	Minor	32509	2m 34s / ---	Server NTP Daemon Not Synchronized	10/15/2014 13:50:41 EDT	
BOD2 10.240.239.201	BoD	Minor	32532	2m 35s / ---	Server Upgrade Pending Accept/Reject	10/15/2014 13:50:40 EDT	

These alarms are expected and would be automatically cleared after the upgrade concludes successfully

15.

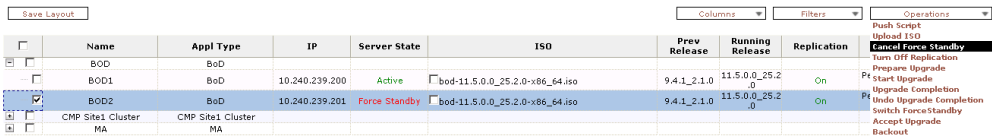
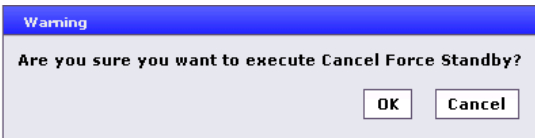
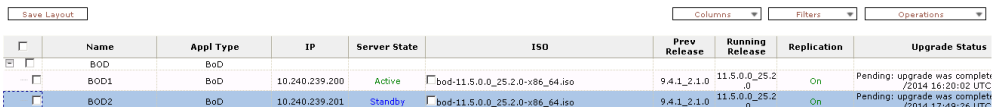
11.5 upgraded BOD server CLI:
Validate upgrade log file

SSH to upgraded BOD server and login then tail the upgrade log file as follows :

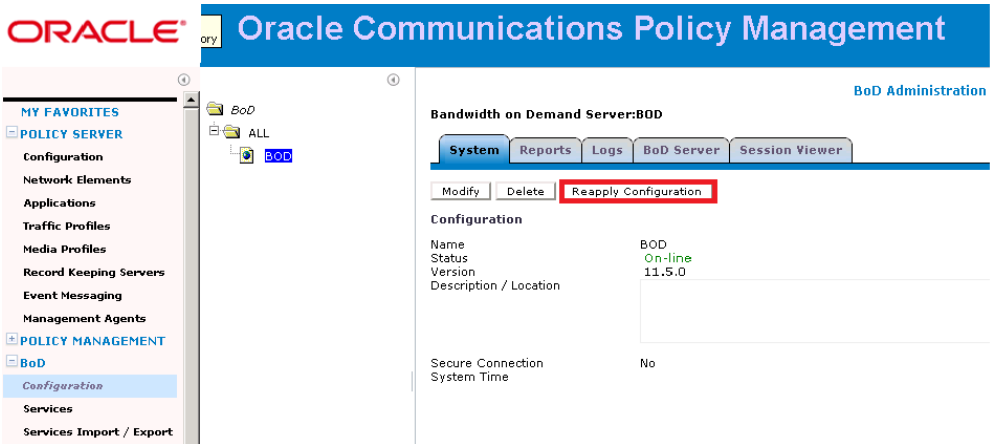
```
[root@BOD2 ~]# tail /var/TKLC/log/upgrade/upgrade.log
1413395365:: Running postUpgradeBoot() for Upgrade::Policy::HP upgrade policy...
1413395365:: Running postUpgradeBoot() for Upgrade::Policy::MBL upgrade policy...
1413395365:: Running postUpgradeBoot() for Upgrade::Policy::QPFirewallFixes upgrade policy...
1413395365:: Running postUpgradeBoot() for Upgrade::Policy::QPIPv6Fixes upgrade policy...
1413395365:: Running postUpgradeBoot() for Upgrade::Policy::QPJDKPolicy upgrade policy...
1413395365:: Running postUpgradeBoot() for Upgrade::Policy::QPNTFPFixes upgrade policy...
1413395365:: Running postUpgradeBoot() for Upgrade::Policy::QPRunPostRPMActionsPolicy upgrade policy...
1413395365:: Running postUpgradeBoot() for Upgrade::Policy::PlatformLast upgrade policy...
1413395366:: Updating platform revision file...
1413395366:: Upgrade returned success!
```

Validate upgrade returned success.

Procedure 11. BOD Upgrade

16.	11.5 upgraded BOD server CLI: Validate policy revision	<p>Run the following command to check running policy version:</p> <pre>[root@BOD2 ~]# getPolicyRev -f bod_11.5.0.0_25.2.0</pre> <p>Make sure the version is the upgraded version “11.5”</p>
17.	11.5 upgraded BOD server CLI: Verify the server’s HA role	<p>Run the command “ha.mystate” to verify the server has the stand By role:</p> <pre>[root@BOD2 ~]# ha.mystate resourceId role node subResources lastUpdate DbReplication Stby C1729.168 0 1015:135016.099 VIP Stby C1729.168 0 1015:135016.100 QP Stby C1729.168 0 1015:135016.139 DbReplication_old OOS C1729.168 0 1015:134929.756</pre>
18.	11.5 upgraded BOD server CLI: Verify NTP sync	<p>Run the command “ntpq -pn” to verify the server is in sync with the NTP server:</p> <pre>[root@BOD2 ~]# ntpq -pn remote refid st t when poll reach delay offset jitter ===== *10.250.32.10 192.5.41.209 2 u 21 64 177 0.260 4.834 2.056</pre>
19.	CMP GUI: Cancel force standby	<p>After upgrade completes, cancel Force Standby from the operations menu :</p>  <p>Confirm the action on the next dialog box</p>  <p>An information message indicating the successful cancellation of Force standby</p>
20.	CMP GUI: BOD servers status check	<p>Validate that now one of the BOD servers is in “Active” State and the other is in “StandBy” state:</p> 
21.	11.5 secondary site BOD spare server	<p>In case solution is geo-redundant , follow the same current procedure to upgrade the BOD spare server in secondary site</p>

Procedure 11. BOD Upgrade

22.	CMP GUI: BOD Configuration	<p>Navigate to BOD → Configuration and Reapply Configuration to clear configuration mismatch</p>  <p>The screenshot shows the Oracle Communications Policy Management interface. The left sidebar contains a tree view with 'POLICY SERVER' expanded, showing 'Configuration', 'Network Elements', 'Applications', 'Traffic Profiles', 'Media Profiles', 'Record Keeping Servers', 'Event Messaging', and 'Management Agents'. Under 'POLICY MANAGEMENT', 'BoD' is selected, showing 'Configuration', 'Services', and 'Services Import / Export'. The main content area displays 'Bandwidth on Demand Server: BOD' with tabs for 'System', 'Reports', 'Logs', 'BoD Server', and 'Session Viewer'. The 'System' tab is active, showing a 'Configuration' section with fields for Name (BOD), Status (On-line), Version (11.5.0), and Description / Location. Below this, 'Secure Connection' is set to 'No' and 'System Time' is visible. A 'Reapply Configuration' button is highlighted with a red box.</p>
23.	Post upgrade checks	Follow the same procedures outlined in section 2.5 of this document to validate the upgrade completed successfully.
24.	Back out the upgrade	In case post upgrade checks failed and back out is decided, follow the same procedures outlined in section 2.6 of this document to back out the BOD cluster
25.	Accept the upgrade	Follow the same procedures outlined in section 2.7 of this document to accept the upgrade.