Oracle® Communications Platform

PM&C Incremental Upgrade

Release 6.4

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ORACLE

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CAUTION: Use only the Upgrade procedure included in the Upgrade Kit.

Before upgrading any system, please access My Oracle Support (MOS) (https://support.oracle.com) and review any MOS Notes that relate to this upgrade.

My Oracle Support (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.
See more information on MOS in the Appendix section.

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Important Notices

CAUTION: Use only the procedure downloaded from the Oracle Help Center (OHC) site (See Appendix J). Before beginning this procedure, contact Oracle Support to inform them of your upgrade plans.

1 Introduction

PM&C is an application that provides platform-level (as opposed to application-level) management functionality for various hardware platforms and virtual environments. PM&C provides the capability to manage and provision platform components to enable the system to host applications and appropriately provision platform components for specific solution configurations.

1.1 Purpose and Scope

This document describes methods utilized and procedures executed to perform a software upgrade on an in-service PM&C application to a 6.4 software release, from software releases identified in section 1.7.

1.2 My Oracle Support

Web portal (preferred option): My Oracle Support (MOS) at https://support.oracle.com/

Phone: +1.800.223.1711 (toll-free in the US),

Or retrieve your local hotline from Oracle Global Customer Support Center at
http://www.oracle.com/us/support/contact/index.html

Make the following selections on the Support telephone menu:

Select **2** for **New Service Request**

Then select **3** for **Hardware, Networking, and Solaris Operating System Support**

Then either

- Select **1** for **Technical Issues**,
  When talking to the agent, please indicate that you are an existing Tekelec customer.

  Note: Oracle support personnel performing installations or upgrades on a customer site must obtain the customer Support Identification (SI) number prior to seeking assistance.

  OR

- Select **2** for **Non-Technical Issues**, for example, for My Oracle Support (MOS) registration.
  When talking to the agent, mention that you are a Tekelec customer new to MOS.

1.3 Software Release Numbering

Refer to the Product Release Notes or other appropriate document with the most recent build numbers.

1.4 Glossary

This section lists terms and acronyms specific to this document.

Table 1. Glossary

Acronym/Term	Definition
DHCP	Dynamic Host Configuration Protocol
OSDC	Oracle Software Delivery Cloud
External Media	USB containing a software image

Table 1. Glossary

Acronym/Term	Definition
HP c-Class	HP blade server offering
IPM	Initial Product Manufacturing
RMS	Rack Mount Server
Management Server	An HP RMS or Oracle RMS that has physical connectivity required to configure switches and may host the PM&C application or serve other configuration purposes.
NetBackup Feature	Feature that provides support of the Symantec NetBackup client utility on an application server.
Redundant Management Server	A Management Server but is not initialized. Ensures a decrease in outage for PM&C Disaster Recovery.
OS	Operating System (e.g. TPD or TVOE)
PM&C	Platform Management and Configuration application, resides on a guest
PM&C guest	The virtual machine hosting the PM&C application.
PM&C TVOE host	The TVOE host that contains the PM&C guest
Redundant PM&C	A secondary PM&C guest that is not initialized. Ensures a decreased outage for PM&C Disaster Recovery
TPD	Tekelec Platform Distribution
TVOE	Tekelec Virtual Operating Environment
TVOE Host	The host (physical machine) capable of hosting virtual machines (guests such as PM&C).
Accept	This process formally accepts the upgrade. This action removes the ability to backout to the previous release.
Reject (Backout)	The process to take a system back to a Source Release prior to completion of upgrade to Target release.
Incremental upgrade	An upgrade that takes a target system from any given release to another release but not necessarily from the shipping baseline to the target release.
Non-preserving upgrade	"Upgrade" that does not adhere to the standard goals of software upgrade methodology. The outcome of the execution is that the system is running on the Target Release; however the Source Release database is not preserved.
Downgrade	The process to take a system from a Target Release back to a Source Release including preservation of databases and system configuration.
Source release	Software release to upgrade from.
Target release	Software release to upgrade to.
Software Centric	A term used to differentiate between customers buying both hardware and software from Oracle, and customers buying only software.

Table 1. Glossary

Acronym/Term	Definition
NUMA	Non-Uniform Memory Access

1.5 Recommendations

Never attempt an upgrade of the PM&C application when the server on which it is running is unhealthy. Follow the pre-upgrade procedures for testing system health, and do not proceed with upgrade if any non-normal conditions are shown.

Upgrade of the PM&C application should be done prior to an upgrade of any other application, with the exception of the TVOE hosting the PM&C guest. The application release notes should indicate which release of PM&C (and TVOE) is required.

Prior to upgrading the PM&C TVOE host and PM&C guest, the Management Server should have its firmware upgraded using the HP Firmware Upgrade Pack (HP FUP) or Oracle Firmware Upgrade Pack (Oracle FUP) specified by the application being upgraded. Otherwise, if the PM&C is being upgraded by itself outside of a larger application upgrade, ensure that the Management Server has been upgraded to the minimum HP FUP or Oracle FUP or newer for the platform that the PM&C release is based on. For PM&C 6.4, the minimums are HP FUP 2.2.10 and Oracle FUP 3.1.6. Use the Upgrade Procedures and Release Notes documents contained in the Firmware Upgrade Packs to assess whether a firmware upgrade is necessary.

1.6 Supported Browsers and Versions

Table 2. Supported Internet Browsers and Versions

Product Release	Supported Browsers	Versions
PM&C 6.0 release	Microsoft® Internet Explorer	8.0, 9.0, or 10.0
PM&C 6.2 release	Microsoft® Internet Explorer	9.0, 10.0, or 11.0
PM&C 6.3 release	Microsoft® Internet Explorer	9.0, 10.0, or 11.0
PM&C 6.4 release	Microsoft® Internet Explorer	9.0, 10.0, or 11.0

1.7 PM&C Release Upgrade Paths

The upgrade to PM&C release 6.4 is supported from the following releases:

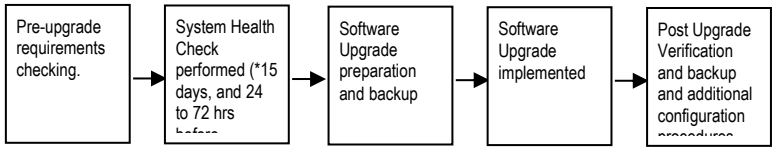
- PM&C 6.0
- PM&C 6.2
- PM&C 6.3
- PM&C 6.4

2 General Description

This document defines the step-by-step actions performed to execute a software upgrade of an in-service PM&C application from the source release to the target release.

The figure below shows the general steps for all processes of performing a software upgrade, from hardware inventory to final upgrade health check of the primary PM&C application. If the system is configured with a Redundant Management Server, and Redundant PM&C guest, the process is modified to perform pre-upgrade steps to verify requirements. Additionally, the redundant PM&C guest is upgraded subsequent to the primary PM&C guest.

Figure 1. Upgrade Process



3 Upgrade Overview

This section provides a brief overview of the recommended method for upgrading the PM&C Source Release software that is installed and running on a server to the Target Release PM&C software. The basic upgrade process and approximate time required is outlined in Table 4, Table 5 and Table 6, with the Reject procedure shown in Table 7.

It is assumed that the upgrade is coordinated to ensure that all work is performed within the four-hour maintenance window. Note that several variables affect the upgrade times shown in the tables – the elapsed time values shown are lab environment estimates and will vary on live systems.

Please note, this document contains several references to a redundant Management Server and/or redundant PM&C. The procedures and steps associated with the redundant PM&C are only applicable if the site has a redundant PM&C deployed. These procedures and steps can be safely skipped if redundant PM&C is not deployed.

Also note that after the successful completion of the upgrade, all active GUI Session are automatically forced out if they remained active during the upgrade. Users will be required to log back in with proper credentials as necessary.

****** WARNING ******

Call Oracle Customer Support prior to executing this upgrade to ensure that the proper media are available for use.

Before upgrade, users must complete section 4.2 Software Upgrade Preparations to ensure that the system to be upgraded is in an upgrade-ready state. Performing the system health check determines which alarms are present in the system and if upgrade can proceed with alarms.

Please read the following notes on upgrade procedures:

- Procedure completion times shown here are estimates. Times may vary due to differences in database size, user experience, and user preparation.
- Where possible, EXACT command response outputs are shown. EXCEPTIONS are as follows:
  - Banner information is displayed in a format form only.
  - System-specific configuration information such as ***hostname***, ***filenames,*** and ***IP addresses.***
  - ANY information marked with "***XXXX***" or "***YYYY***." Where appropriate, instructions are provided to determine what output should be expected in place of "***XXXX* or *YYYY***"
- After completing each step and at each point where data is recorded from the screen, the technician performing the upgrade must initial each step. A check box should be provided.
- Captured data is required for future support reference if Oracle Technical Services is not present during the upgrade.

3.1 Required Materials

1. Information gathered and captured in Table 3. Software Upgrade Required Data
2. The media for the version of PM&C that you are upgrading from
3. The media for the version of PM&C that you are upgrading to
4. The media and documentation for the version of TVOE that you are upgrading from
5. The media and documentation for the version of TVOE that you are upgrading to
6. HP Solutions Firmware Upgrade Pack (HP FUP version specified by the application, otherwise HP FUP 2.2.10 is the minimum and the current version is recommended)
7. Platform 7.4 Configuration Guide, E81293, Current Version

8. Platform 7.3 Configuration Guide, E80301, Current Version
9. Platform 7.2 Configuration Guide, E64363, Current Version
10. Platform 7.0 Configuration Guide, E53486, Current Version
11. TVOE 3.4 Software Upgrade, E80324, Current Version
12. TVOE 3.3 Software Upgrade, E80323, Current Version
13. TVOE 3.0 Software Upgrade, E53018, Current Version
14. Oracle Firmware Upgrade Pack, Release Notes (Oracle FUP version specified by the application, otherwise Oracle FUP 3.1.5 is the minimum and the current version is recommended)
15. Oracle Firmware Upgrade Pack, Upgrade Guide (Oracle FUP version specified by the application, otherwise Oracle FUP 3.1.5 is the minimum and the current version is recommended)
16. HP Solutions Firmware Upgrade Pack, Software Centric Release Notes (HP FUP version specified by the application, otherwise HP FUP 2.2.10 is the minimum and the current version is recommended)
17. Application Release Notes
18. Network access to the PM&C TVOE host iLO/ILOM.
19. Capability to log into the PM&C guest via a network connection to allow remote access for Oracle Customer Service personnel.
20. Capability to log into the PM&C's web UI via supported web browsers.
21. Terminal device or equivalent interface.

3.2 Logins, Passwords and Server IP Addresses

Obtain all the information in the following table. This ensures that the necessary administration information is available prior to an upgrade.

Consider the sensitivity of the information recorded in this table. While all of the information in the table may be required to complete the upgrade, there may be security policies in place that prevent the actual recording of this information in hard-copy form.

Table 3. Software Upgrade Required Data

Subject/Attribute	Value
PM&C TVOE host User IDs/password (root user)	
PM&C TVOE host Network addresses (TVOE IP address)	
PM&C Guest Name	
PM&C User IDs/password (root user)	
PM&C Network addresses (PM&C IP address)	
PM&C GUI administrator account login credentials	

Platform User IDs/password (admusr)	
OA administrator account login credentials	
iLO/ILOM login credentials	

NOTE: Upon completion of the upgrade to PM&C 6.2 or later, the GUI administrative user formerly known as "pmacadmin" will become "guiadmin". This is only a renaming of the standard administrative account, not a different account; the account access privileges will be retained from the "pmacadmin" account.

3.3 Application ISO Image File/Media

The Target Release ISO image file must already be at the customer site; either via OSDC or delivered on physical media.

This file is necessary to perform the upgrade.

- The PM&C application ISO image file for PM&C 6.4 will be in the following format:
  PMAC-6.4..0.0.0.x_64.y.z-x86_64.iso

Note: Prior to the execution of this upgrade procedure it is assumed that the PM&C application ISO image file has already been delivered to the customer's premises and any user performing the upgrade must have access to the ISO image file. Alternatively, if the user performing the upgrade is at a remote location, it is assumed the ISO file is already available to them before starting the upgrade procedure. The distribution of the PM&C application software load is outside the scope of this procedure.

3.4 Pre-Upgrade Overview

The pre-upgrade procedures shown in Table 4 may be executed outside of the maintenance window.

Pre-upgrade health check should be run 24 to 72 hours before the scheduled upgrade. If the system fails the health check, then the failure conditions must be corrected and upgrade rescheduled for a later date.

In addition to the running the system health check 24 to 72 hours before the scheduled upgrade, the system health check should also be executed immediately before the upgrade, to ensure that the system has no error or failure conditions that would interfere with a successful upgrade.

Note: If a Redundant Management server is configured in this system, the pre-upgrade health check should be run on the PM&C application running on the Redundant Management system. The PM&C application running on the Redundant Management server is not initialized and does not require database backups

Table 4. Pre-Upgrade Procedure

Elapsed Time (Hrs:Min)		Downtime (Hrs:Min)		Activity	Impact
This Step	Cum.	This Step	Cum.		
10	10	-	-	Perform System Health check (Refer to section 4)	Do not proceed with upgrade if system health check shows any problems with PM&C system.

Table 4. Pre-Upgrade Procedure

Elapsed Time (Hrs:Min)		Downtime (Hrs:Min)		Activity	Impact
This Step	Cum.	This Step	Cum.		
15	25			Backup PM&C provision and configuration databases.	PM&C provision and configuration databases are backed up.

3.5 Upgrade Execution Overview

The procedures shown in Table 5 are executed in the maintenance window.

Table 5. Upgrade Execution Overview

Elapsed Time (Hrs:Min)		Downtime (Hrs:Min)		Activity	Impact
This Step	Cum.	This Step	Cum.		
40	65	40	40	Execute the upgrade on PM&C	PM&C Software is upgraded

3.6 Post Upgrade Overview

The procedures shown in Table 6 are executed in the maintenance window.

Table 6. Post-Upgrade Overview

Elapsed Time (Hrs:Min)		Downtime (Hrs:Min)		Activity	Impact
This Step	Cum.	This Step	Cum.		
10	75	10	50	Perform System Health check	Notify Oracle Customer Support if system health check shows any problems with PM&C system. Backout may be necessary.
10	85			Configuration of netConfig Repository (execution is conditional)	The elapsed time assumes one switch pair. This step can take an additional 10 min per switch pair.
15	100	15	65	Configuration of larger PM&C ISO Image Repository area (optional).	Ensures the PM&C ISO Image Repository is the appropriate size.
15	115	15	80	Enlarging PM&C ISO temporary import area may be recommended by application (optional).	The PM&C ISO temporary import area supports large images.
15	130			Backup PM&C provision and configuration databases.	PM&C provision and configuration databases are backed up post-upgrade.
10	140			Accept the upgrade	Upgrade is accepted and backout is no longer available.

Note: Upgrading firmware is not included in the maintenance window.

3.7 Backout (reject) Procedure Overview

The procedures shown in Table 7 are executed in the maintenance window.

Table 7. Backout Procedure Overview

Elapsed Time (Hrs:Min)		Downtime (Hrs:Min)		Activity	Impact
This Step	Cum.	This Step	Cum.		
-	-	-	-	Contact Oracle Customer Support	Apprise Oracle of the situation and get guidance on proceeding.
30	170	30	110	If not triggered automatically, execute the backout(reject) of the target release	Upgrade is rejected and server is backed out to the prior installed release.

3.8 Log Files

All commands executed during an upgrade or installation are logged in **`/var/TKLC/log/upgrade/upgrade.log`**. This log file is automatically initiated when upgrade software is invoked. This log file is rolled every time an upgrade is initiated. A total of up to five upgrade log files are stored on the server.

The upgrade wrapper script *ugwrap* logs its actions also to **`/var/TKLC/log/upgrade/ugwrap.log`**. This log file is rolled every time *ugwrap* is initiated. A total of up to five *ugwrap* log files are stored on the server.

4 Upgrade Preparation

This section provides detailed procedures to prepare a system for upgrade execution. These procedures may be executed outside a maintenance window.

Perform pre-upgrade system health checks to establish that the system is fit to upgrade.

Backup PM&C provision and configuration databases and transfer the backups to customer defined network storage.

4.1 Hardware Upgrade Preparation

Hardware upgrade is not in the scope of this document.

4.2 Software Upgrade Preparations

Note: The PM&C Healthcheck procedure below should be executed.

- 15 days prior to upgrade (optional),
- 72 to 24 hours before the scheduled upgrade, and
- Immediately before executing the upgrade

If any error or failure conditions are discovered then *do not proceed with the upgrade*. Contact Oracle Customer Support for assistance in resolving the failure conditions. Upgrade will have to be rescheduled to a later date.

Procedure 1. Verifying Pre-Upgrade Requirements and Capturing Upgrade Data

S T E P #	This procedure verifies that all pre-upgrade requirements have been met. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Verify all materials required are present	Materials are listed in section 3.1 Required Materials
2. ☐	Verify passwords for PM&C systems are available	Refer to Table 3. Software Upgrade Required Data for a list of users. Fill in the username and password information in the table for later reference.
3. ☐	Determine the current PM&C version	Execute Appendix F: Determine The Current PM&C Version.
4. ☐	Contact Oracle Customer Support	Contact Oracle Customer Support and inform them of your plans to upgrade this system.

Procedure 1. Verifying Pre-Upgrade Requirements and Capturing Upgrade Data

5. ☐	Verify the PM&C guest TVOE host is at the appropriate release.	**Note:** Upgrade of the TVOE host may require its own maintenance window. Execute Appendix G Determine If PM&C TVOE Host Requires Upgrade
6. ☐	Verify the redundant PM&C guest TVOE host is at the appropriate release.	**Note:** This step is optional and applies only if this system is configured with a redundant PM&C. **Note:** Upgrade of the TVOE host may require its own maintenance window. Execute Appendix G Determine If PM&C TVOE Host Requires Upgrade using the IP address of redundant PM&C TVOE host.
7. ☐	Whitelist any necessary alarms that may keep the upgrade early checks from succeeding.	Execute Appendix K Whitelist Special Alarms Procedure 39 Whitelist listed alarms.
---End of Procedure---		

Procedure 2. Execute the Health check Procedure on the primary PM&C

STEP #	This procedure executes a health check on the PM&C system. **Note:** The PM&C Health check procedure should be executed • 72 to 24 hours before the scheduled upgrade, and • Immediately before executing the upgrade If any error or failure conditions are discovered then do not proceed with upgrade. Contact Oracle Customer Support for assistance in resolving the failure conditions. Upgrade will have to be rescheduled to a later date. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Execute the system health check.	Execute Appendix C PM&C System Health Check If any error or failure conditions are discovered then do **not** proceed with upgrade. Contact Oracle Customer Support to work to resolve the failure conditions. Upgrade will have to be rescheduled to a later date.
---End of Procedure---		

Procedure 3. Prepare the primary PM&C for a remote upgrade (optional)

STEP #	This procedure prepares the PM&C for a remote upgrade. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	If this upgrade is to be performed remotely, get the ISO image onto the system.	Obtain a copy of the Target-release PM&C ISO image file and place that copy using SCP into the /var/TKLC/upgrade directory of the PM&C guest: Use platform admusr credentials from Table 3. Software Upgrade Required Data
---End of Procedure---		

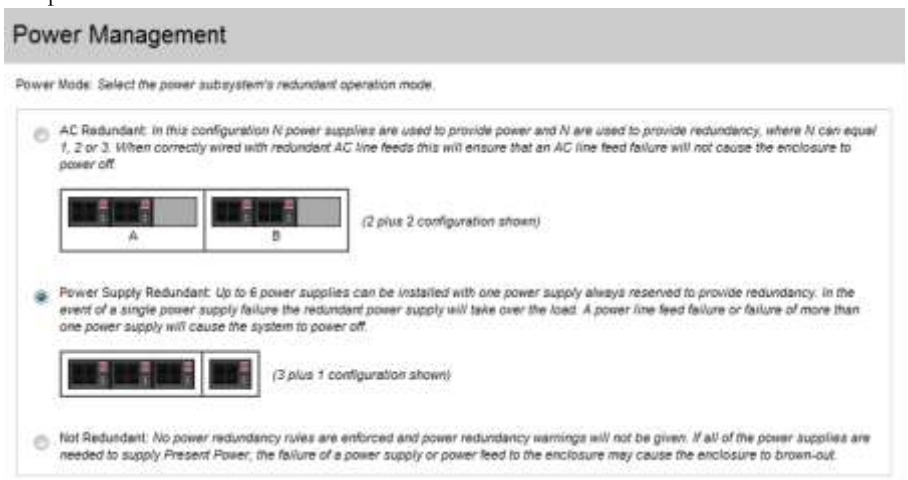
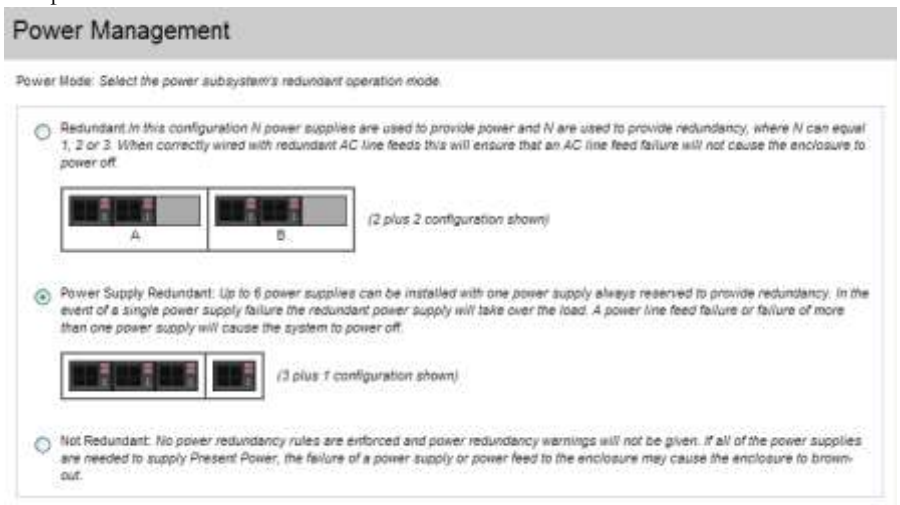
Procedure 4. Check/Modify OA Power Supply Redundancy

STEP #	Use this procedure to configure enclosure power supply redundancy in the HP Onboard Administrator. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the PM&C GUI	If necessary, open the IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data

Procedure 4. Check/Modify OA Power Supply Redundancy

2. ☐	Obtain a list of the Enclosures managed by this PM&C.	The Main Menu > Hardware > System Configuration page of the PM&C GUI contains a "Provisioned Enclosures" table showing the Enclosures being managed by this PM&C. Starting at the top of this table, apply the remaining steps of this procedure successively to each Enclosure in the list.
3. ☐	Access the GUI of the Active OA	Open your web browser and navigate to the login page of the first OA of the Enclosure by using the "Bay 1 OA IP" address from the "Provisioned Enclosures" table. http://< Bay 1 OA IP > If the login page contains the red warning message similar to "This Onboard Administrator is in Standby mode.", then repeat this step using the "Bay 2 OA IP".
4. ☐	Log in to the Active OA	Log in to the GUI of the Active OA with credentials from Table 3. Software Upgrade Required Data
5. ☐	View the configuration of power supply redundancy.	In the menu tree of the OA GUI, select Enclosure Information > Power and Thermal > Power Management.

Procedure 4. Check/Modify OA Power Supply Redundancy

6. ☐	Configure power supply redundancy.	The first available setting will be either "AC Redundant" or "Redundant" depending on whether the Enclosure is powered by AC or DC. In either case, confirm the second radio button, "Power Supply Redundant" ", is selected. If necessary, change the selection to "Power Supply Redundant". AC-powered Enclosures:  DC-powered Enclosures:  Click the Apply button at the bottom of the page to save the change.
7. ☐	Continue with the next Enclosure.	Continue with Step 2, using the IP addresses of the next Enclosure in the "Provisioned Enclosures" table.
---End of Procedure---		

Procedure 5. Backup OA configuration to PM&C

S T E P #	This procedure backs up the OA configuration to the PM&C for inclusion in a backup of PM&C, then performs the actual PM&C data backup. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Backup the OA configuration to the PM&C.	Execute Procedure "Store OA Configuration on Management Server" in the appropriate Platform Configuration Guide for the release being upgrade to 6.4.
	---End of Procedure---	

Procedure 6. Execute the Health check Procedure for the redundant PM&C

S T E P #	This procedure executes a health check on the redundant PM&C (if present). **Note:** This procedure is only executed if the site contains a redundant PM&C **Note:** The PM&C Health check procedure should be executed. • 72 to 24 hours before the scheduled upgrade, and • Immediately before executing the upgrades If any error or failure conditions are discovered then *do not proceed with upgrade*. Contact Oracle Customer Support for assistance in resolving the failure conditions. Upgrade will have to be rescheduled to a later date. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Execute the redundant PM&C system health check	Execute Appendix C PM&C System Health Check on redundant PM&C. If any error or failure conditions are discovered then do ***not*** proceed with upgrade. Contact Oracle Customer Support to work to resolve the failure conditions. Upgrade will have to be rescheduled to a later date.
	---End of Procedure---	

Procedure 7. Prepare the redundant PM&C for a remote upgrade (optional)

STEP #	This procedure prepares the redundant PM&C (if present) for a remote upgrade. **Note:** This procedure is only executed if the site contains a redundant PM&C. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	If this upgrade is to be performed remotely, get the ISO image onto the redundant PM&C.	**NOTE:** This procedure is only executed if the site contains a redundant PM&C. Obtain a copy of the Target-release PM&C ISO image file and place that copy using SCP into the /var/TKLC/upgrade directory of the redundant PM&C guest: Use platform admusr credentials from Table 3. Software Upgrade Required Data
---End of Procedure---		

Procedure 8. Backup PM&C database data to redundant PM&C (optional)

STEP #	This procedure backs up all necessary PM&C database data to redundant PM&C. **Note:** This procedure is only executed if the site contains a redundant PM&C. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Backup the PM&C database to redundant PM&C.	**Note:** This procedure is only executed if the site contains a redundant PM&C Execute Appendix D, PM&C System Backup
Section 4.2 has been completed.		

5 Software Upgrade Procedures

See the warning block in Section 3, Upgrade Overview, before proceeding with procedures in this section

5.1 Software Upgrade Execution on the Primary PM&C

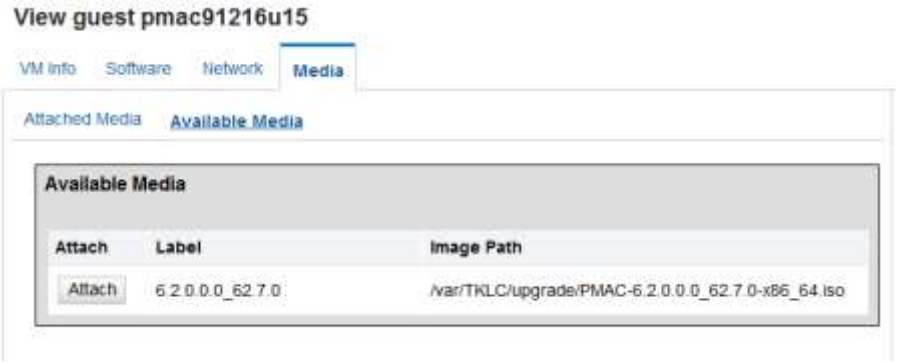
If the PM&C application ISO was delivered to the system remotely (via SCP or SFTP) then make sure the image is located in the /var/TKLC/upgrade directory prior to executing this procedure. This should have been done as part of the Software Upgrade Preparation in section 4.2.

The upgrade of the PM&C Guest TVOE host may be executed in the same maintenance window as the PM&C. It is expected that the TVOE host upgrade is completed prior to the start of the PM&C upgrade. This procedure does not cover the procedural steps required for the upgrade of the TVOE host. Please see the appropriate references noted in the procedures of section 4.2.

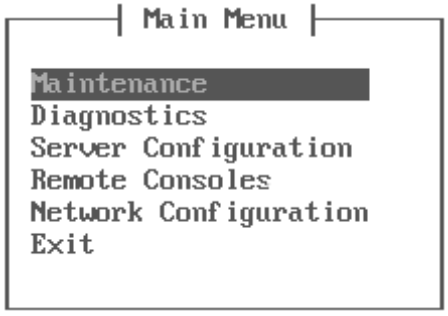
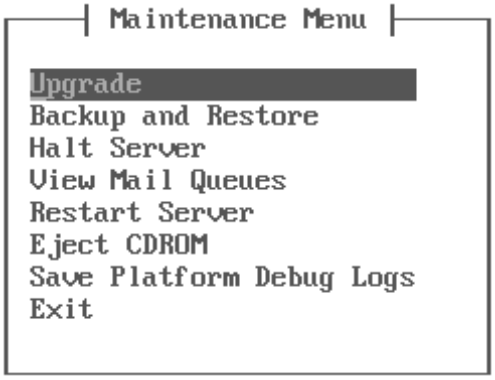
Procedure 9.PM&C Upgrade Procedure on the primary PM&C

S T E P #	This procedure provides instructions to perform a software upgrade of the PM&C. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Execute the system health check	Re-execute *Procedure 2: Execute the Health check Procedure on the primary PM&C.*
2. ☐	For Remote Upgrade, verify correct ISO file is present, and then skip to Step 6	If you executed *Procedure 3: Prepare the primary PM&C for a remote upgrade*, then verify the correct ISO has been delivered to the PM&C. • Access the PM&C Guest console using Appendix B • Verify the correct ISO file is located in the /var/TKLC/upgrade directory. • If the correct ISO is present, proceed to step 6. • If the correct ISO is NOT present, then redo *Procedure 3* before proceeding.
3. ☐	Insert the media containing PM&C image into the Management Server	Insert the media containing PM&C image (item **Error! Reference source not found.** in section 3.1 Required Materials*)* into the Management Server.

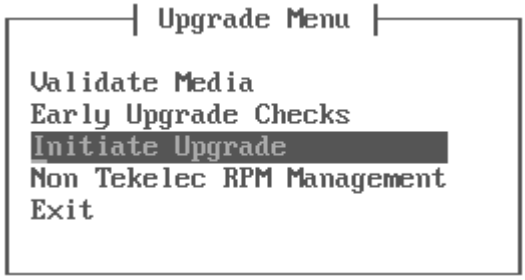
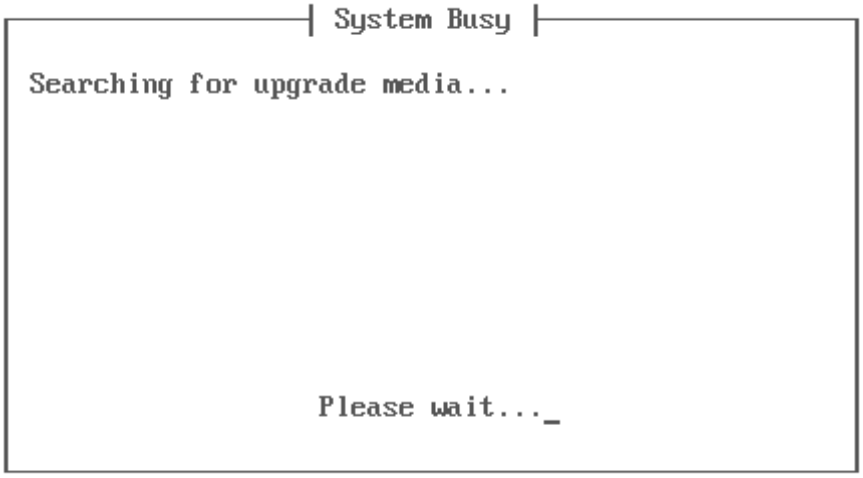
Procedure 9.PM&C Upgrade Procedure on the primary PM&C

4. ☐	Log in to the PM&C GUI.	Open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data
5. ☐	Attach the PM&C ISO media to the PM&C guest.	Using the PM&C GUI, navigate to the VM Management page. Select the PM&C Guest to get to the "View guest" page. Select the "Media" tab on the "View guest" page. Click the "Available Media" link. Click the "Attach" button for the image just inserted. **Note:** The "Label" field can help identify the PM&C upgrade media by part number and release level (see Section 3.1). 
6. ☐	Close any active browser sessions to the PM&C.	If you have any open browsers connected to the PM&C, close them before proceeding.
7. ☐	Access the PM&C guest console	Execute Appendix B Accessing The PM&C Guest Console
8. ☐	Run the "platcfg" utility.	**Note:** If you deviated from the previous step, please ensure that you are in admusr's home directory before executing the following command. Execute (from PM&C guest console): `[admusr@pmac ~]$ sudo su - platcfg`

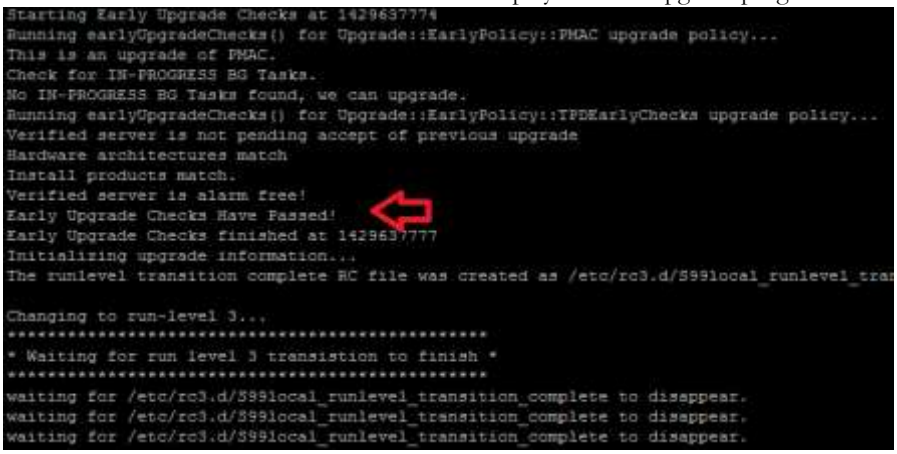
Procedure 9.PM&C Upgrade Procedure on the primary PM&C

9. ☐	In "platcfg" utility Access the Maintenance menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release.  Select "Maintenance" to navigate to the Maintenance Menu.
10. ☐	In "platcfg" utility Access the Upgrade menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release.  Select "Upgrade" to navigate to the Upgrade Menu.

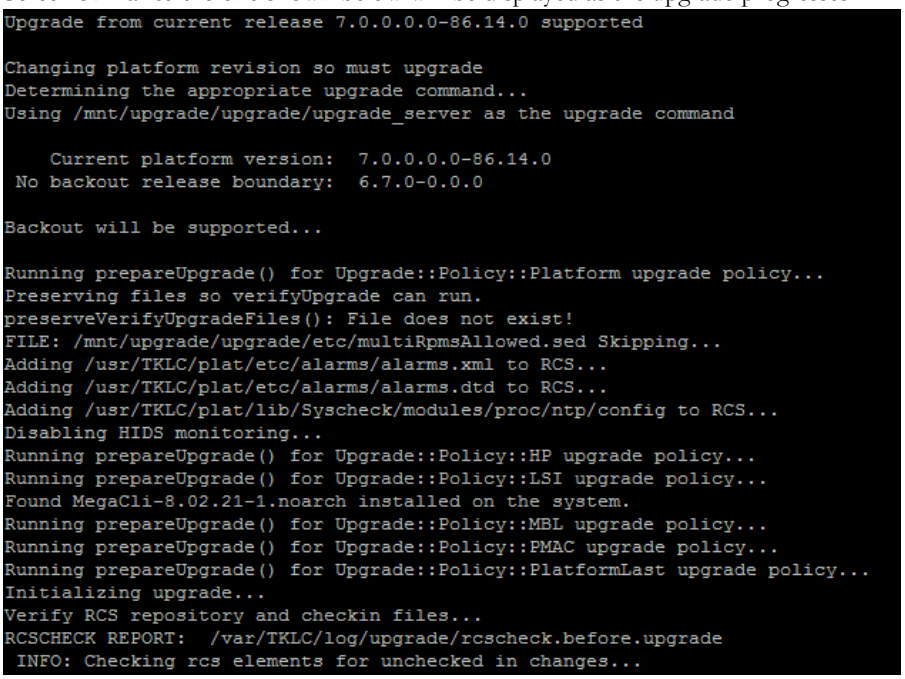
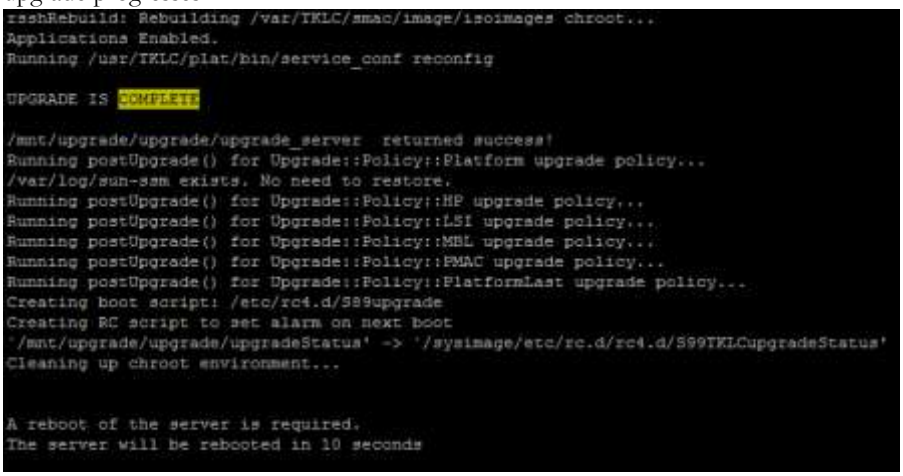
Procedure 9.PM&C Upgrade Procedure on the primary PM&C

11. ☐	In "platcfg" utility select "Initiate Upgrade" to start the upgrade process.	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release.  Select "Initiate Upgrade" to start the upgrade process
12. ☐	Wait for the "Choose Upgrade Media Menu" screen	**Note:** The following images are for illustrative purposes only. **Note:** The screen shown below be displayed several times as the "platcfg" utility searches for available upgrade media.  Wait for the "Choose Upgrade Media Menu" screen to display before proceeding to the next step.

Procedure 9.PM&C Upgrade Procedure on the primary PM&C

13. ☐	Start the upgrade to the target release	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. If the image is located on virtual CD, then the menu would look similar to this: Choose Upgrade Media Menu /dev/sr0 - CDROM /dev/sr1 - 6.0.0.0.0_60.8.1 Exit If the image was copied to the /var/TKLC/upgrade directory of the redundant PM&C guest, then the menu would look similar to this: Choose Upgrade Media Menu /dev/sr0 - CDROM PMAC-6.0.0.0.0_60.8.1-x86_64.iso - 6.0.0.0.0_60.8.1 Exit Select the PM&C 6.4 target release and press the [ENTER] key.
14. ☐	The upgrade begins. Ensure that Early Upgrade Checks pass and the upgrade is started. **Note:** Upgrade takes about 20 minutes and includes a boot of the PM&C guest.	**Note:** The following images are for illustrative purposes only. Screen similar to the one shown below will be displayed as the upgrade progresses. 

Procedure 9.PM&C Upgrade Procedure on the primary PM&C

15. ☐	Verify upgrade is progressing	**Note:** The following images are for illustrative purposes only. Screen similar to the one shown below will be displayed as the upgrade progresses. 
16. ☐	Upgrade completes successfully. **Note:** If the PM&C upgrade fails to complete, contact Oracle Customer Support	**Note:** The following images are for illustrative purposes only. If the upgrade completes successfully, the screen shown below will be displayed as the upgrade progresses.  **Note:** If the PM&C upgrade fails to complete, contact Oracle Customer Support for assistance.

Procedure 9.PM&C Upgrade Procedure on the primary PM&C

Section 5.1 has been completed.

5.2 Software Upgrade Completion on the Primary PM&C

Procedure 10. Post Upgrade Verification on the primary PM&C

STEP #	Use this procedure to provide instructions to verify the success to the PM&C upgrade and perform other required post upgrade steps. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	If necessary, access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

2. ☐	After logging in, a notice similar to the one shown to the right will be displayed.	`Last login: Wed Jun  6 08:39:14 on ttyS0`
		
		`|============================================================|`
		`| This system has been upgraded but the upgrade has not yet  |`
		`| been accepted or rejected.  Please accept or reject the    |`
		`| upgrade soon.                                                |`
		`|============================================================|`
		`[admusr@pmac ~]$`

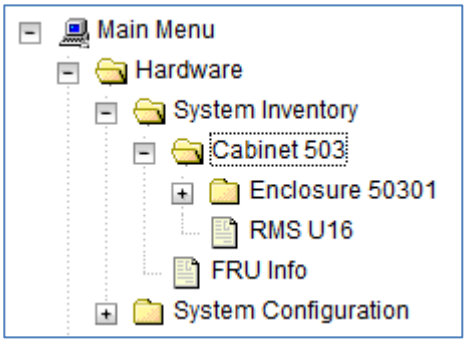
3. ☐	Verify that the date/time stamp of the upgrade log aligns with the time of the upgrade.	Execute the following command:
		`[admusr@pmac ~]$ sudo /bin/ls -l /var/TKLC/log/upgrade/upgrade.log`
		`1.  -rw-rw-r-- 1 platcfg root 113112 Apr 21 14:09 /var/TKLC/log/upgrade/upgrade.log`
		`[admusr@pmac ~]$`

4. ☐	Verify that the release has been updated.	Execute the following command:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/appRev`
		`Install Time: Fri Oct 14 11:37:42 2016`
		`Product Name: PMAC`
		`Product Release: 6.4.0.0.0_64.2.0`
		`Base Distro Product: TPD`
		`Base Distro Release: 7.4.0.0.0_88.31.0`
		`Base Distro ISO: TPD.install-7.4.0.0.0_88.31.0-OracleLinux6.8-x86_64.iso`
		`ISO name: PMACBLD-6.4.0.0.0_64.2.0.iso`
		`OS: OracleLinux 6.8`
		`[admusr@pmac ~]$`
		
		If the Product Release does not match the new target release number, then upgrade was not successful. Contact Oracle Customer Support and do not proceed until instructed by an Oracle Customer representative.

Procedure 10. Post Upgrade Verification on the primary PM&C

5. ☐	Remove any whitelisted alarms that may keep the upgrade early checks from succeeding.	Execute Appendix K Whitelist Special Alarms Procedure 40. Clear Whitelist listed alarms after Upgrade complete.
6. ☐	Execute the system health check.	Execute Appendix C PM&C System Health Check **Note:** Alarm about pending accept/reject such similar to the one below can be safely ignored in this step. `SEQ: 1 UPTIME: 185 BIRTH: 1372167411 TYPE: SET ALARM: TKSPLATMI33|tpdServerUpgradePendingAccept|1.3.6.1.4.1.323.5.3.18.3.1.3.33` If any other error or failure conditions are discovered on the PM&C system then do ***not*** proceed. Contact Oracle Customer Support to work to resolve the failure conditions.
7. ☐	Clear browser cache.	Clear your browser's cache to ensure that your browser has the latest client-side code loaded. Refer to your browser's documentation if necessary.
8. ☐	Log in to the PM&C GUI.	Open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data

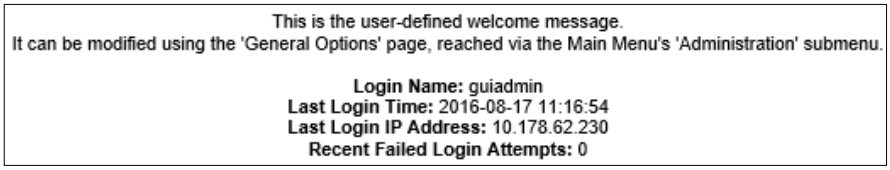
Procedure 10. Post Upgrade Verification on the primary PM&C

9. ☐	Verify the **Hardware-> System Inventory** looks correct in the PM&C GUI.	Select the System Inventory node and verify the previously provisioned enclosures are present. **Note:** The hardware discovery may take some time to complete. The screen capture assumes discovery is complete for all enclosures. 
10. ☐	Verify the **Software->Software Inventory** looks correct through the PM&C GUI.	**Note:** The software discovery may take some time to complete. The screen capture assumes discovery is complete. Using the main menu, navigate to **Software → Software Inventory** page. Verify that all the servers are listed and have the details filled in (assuming TPD or TVOE is installed on the server) **Identity** | **IP Address** | **Hostname** | **Platform Name** | **Platform Vers** Enc:50301 Bay:4F | 169.254.131.2 | hostnamee6495a2d0d73 | TPD (x86_64) | 7.2.0.0.0-88.1.
---End of Procedure---		

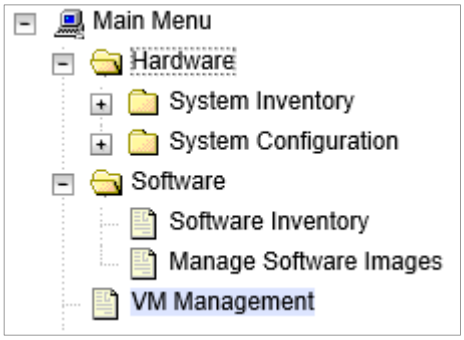
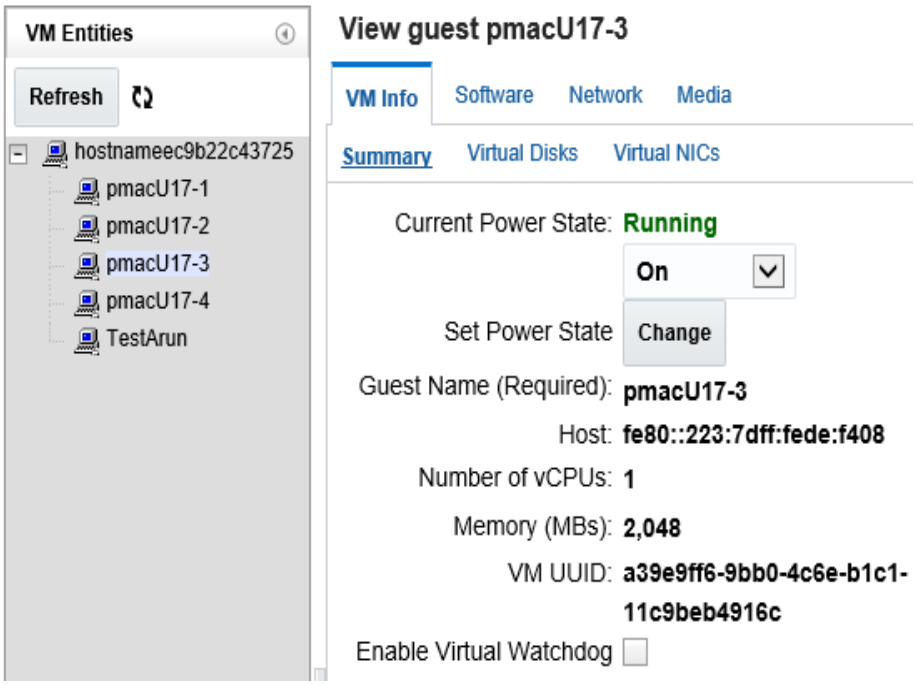
Procedure11. Post Upgrade Procedure to Enable PM&C Virtual Watchdog

S T E P #	This procedure provides instructions to enable Virtual Watchdog of the PM&C and should be executed after upgrade to PM&C 6.4 release. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**

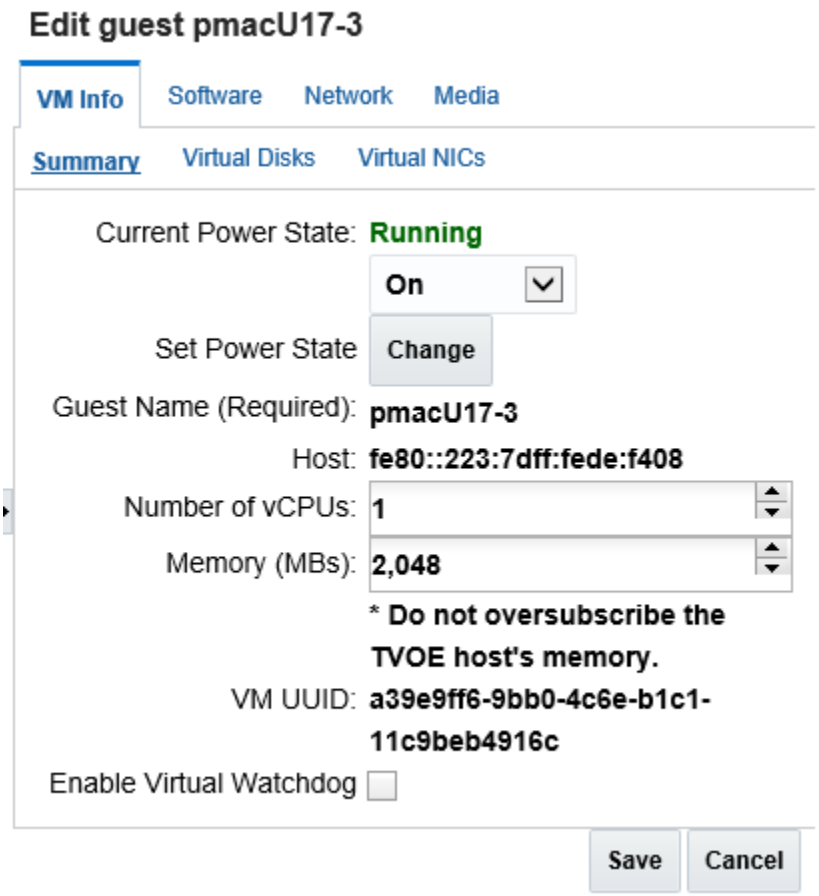
Procedure11. Post Upgrade Procedure to Enable PM&C Virtual Watchdog

1. ☐	Access the PM&C GUI	Open the IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data **Note:**The following images are for illustrative purposes only. Welcome message is displayed after the successful login. 

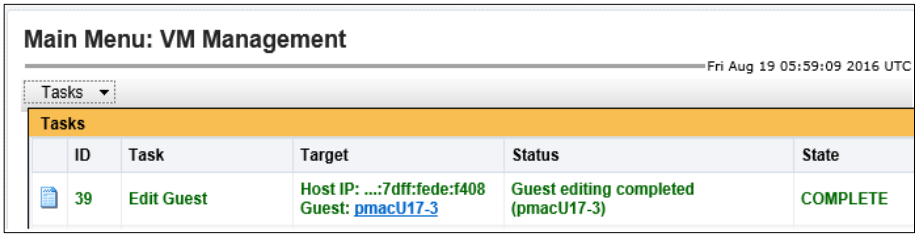
Procedure11. Post Upgrade Procedure to Enable PM&C Virtual Watchdog

2. ☐	Navigate to VM Management page	Using Main Menu > VM Management navigate to VM Management page. **Note:**The following images are for illustrative purposes only.  The pane called 'Main Menu: VM Management' should load.
3. ☐	Select the PM&C guest	Click on VM Host under 'VM Entities' Expand the VM Host if needed and select the PM&C guest **Note:**The following images are for illustrative purposes only.  A pane called 'View guest <PM&C guest name>' should load. If the 'Enable Virtual Watchdog' checkbox is not checked, proceed to the next step, otherwise exit the procedure.

Procedure11. Post Upgrade Procedure to Enable PM&C Virtual Watchdog

4. ☐	Edit PM&C Virtual Watchdog	Click on Edit button, check the 'Enable Virtual Watchdog' checkbox and click on the Save button. **Note:**The following images are for illustrative purposes only. 

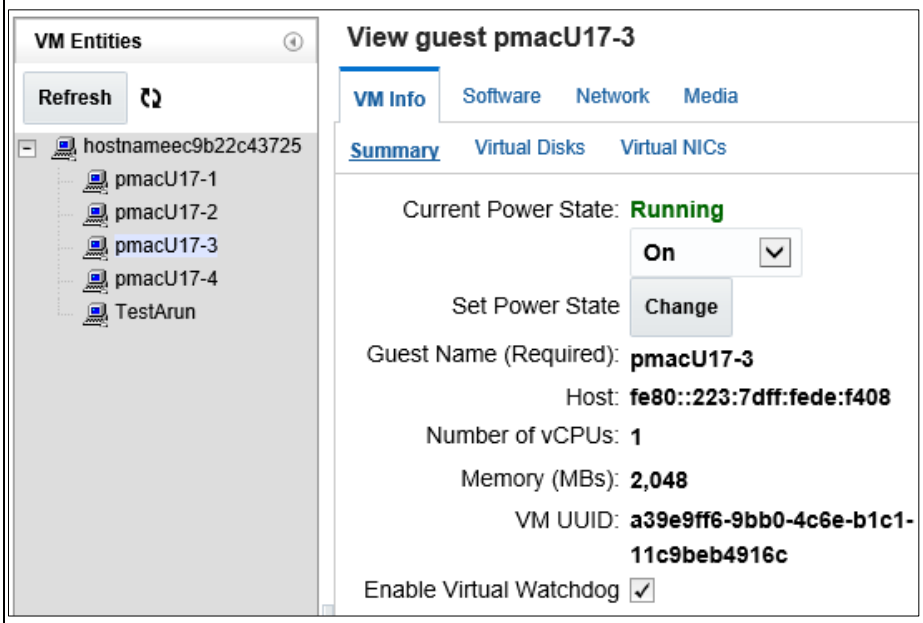
Procedure11. Post Upgrade Procedure to Enable PM&C Virtual Watchdog

5. ☐	Confirm the change to the PM&C guest	A confirmation dialog will be presented with the message, "Changes to the PM&C guest will not take effect until after the next power cycle. Do you wish to continue?". Click "OK" to continue.
6. ☐	Wait for the Edit Guest background task to complete	Click on the dropdown menu, 'Tasks', on the 'View guest <PM&C guest name>' pane. Verify that the 'Edit Guest' Task has completed successfully. **Note:**The following images are for illustrative purposes only. 
7. ☐	Shut down the PM&C guest	Shutdown the PM&C guest as detailed in Appendix H Shutdown PM&C Guest

Procedure11. Post Upgrade Procedure to Enable PM&C Virtual Watchdog

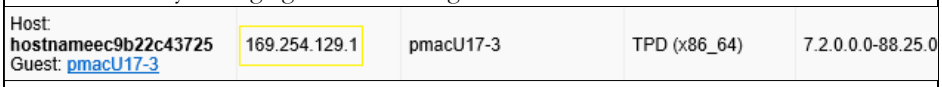
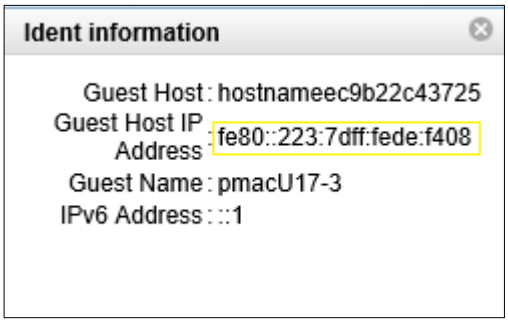
8. ☐	Start the PM&C guest	Using the virsh utility on the PM&C TVOE Host, start the PM&C guest. Query the list of guests until the PM&C guest is "running". **[admusr@tvoeU17~]$ sudo /usr/bin/virsh list --all** Id Name State ---------- 20 <PM&C guest name> shut off **[admusr@tvoeU17~]$ sudo /usr/bin/virsh start <PM&C guest name>** Domain <PM&C guest name> started **[admusr@tvoeU17 ~]$ sudo /usr/bin/virsh list --all** Id Name State ---------- 20 <PM&C guest name> running
9. ☐	Monitor the PM&C guest until it comes up	In a Putty session to PM&C TVOE Host, execute the following command: **[admusr@tvoeU17 ~]$ sudo /usr/bin/virsh console <PM&C guest name>** Wait for the PM&C guest login prompt to appear.

Procedure11. Post Upgrade Procedure to Enable PM&C Virtual Watchdog

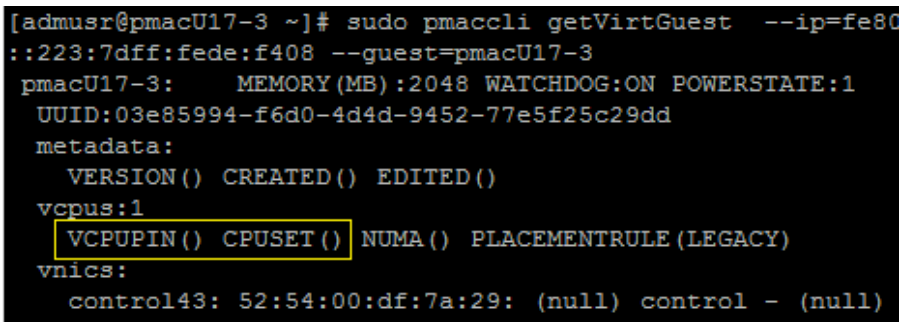
10.	Verify if the Virtual Watchdog is enabled	In the GUI session of the PM&C guest, navigate to VM Management page using Main Menu > VM Management Click on VM Host under 'VM Entities' Expand the VM Host if needed and select the PM&C guest **Note:**The following images are for illustrative purposes only.  Verify in the pane 'View guest < PM&C guest name>' that the 'Enable Virtual Watchdog' checkbox is checked.
---End of Procedure---		

Procedure12. Post Upgrade Procedure to Edit PM&C NUMA Tuning

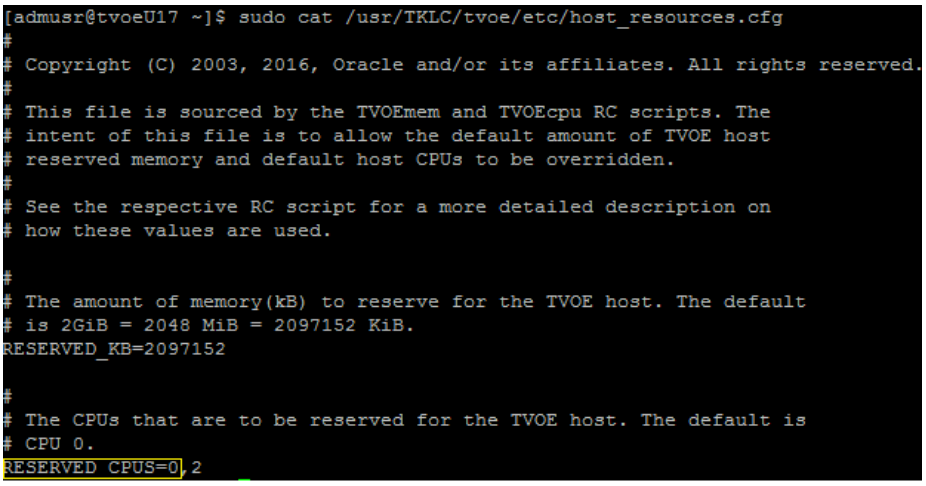
STEP #	This procedure provides instructions to edit the NUMA tuning of the PM&C and should be executed after upgrade to PM&C 6.4 release. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**

1. ☐	Locate the Ipv6 address of the PM&C TVOE Host	Open the IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data **Note:**The following images are for illustrative purposes only. Using the Main Menu, navigate to **Software -> Software Inventory** page. Locate the entry belonging to the PM&C guest.  Now, click on the IP Address field of the PM&C guest entry, this will bring up "Ident Information" window:  Note down the value next to GuestHost IP: Guest Host Ip:

Procedure12. Post Upgrade Procedure to Edit PM&C NUMA Tuning

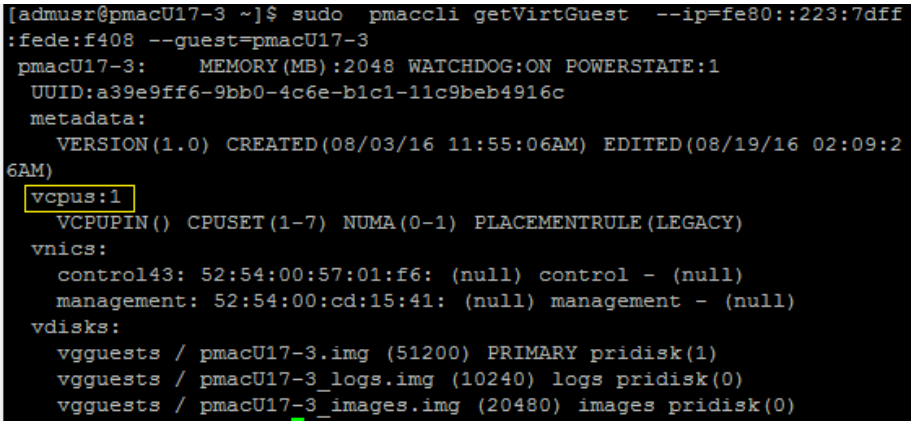
2. ☐	Decide if NUMA Tuning is required	Login to PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console Execute the following command: **[admusr@pmacU17-3~]$ sudo pmaccli getVirtGuest --ip=<Guest Host Ip> --guest=<PM&C guest name>** **Note:**The following images are for illustrative purposes only.  In the output of the above command, if both VCPUPIN and CPUSET have empty values, proceed to the next step, otherwise exit the procedure.
3. ☐	Login to PM&C TVOE Host	Login to the TVOE host console, using Appendix A Accessing The PM&C TVOE Host Console

Procedure12. Post Upgrade Procedure to Edit PM&C NUMA Tuning

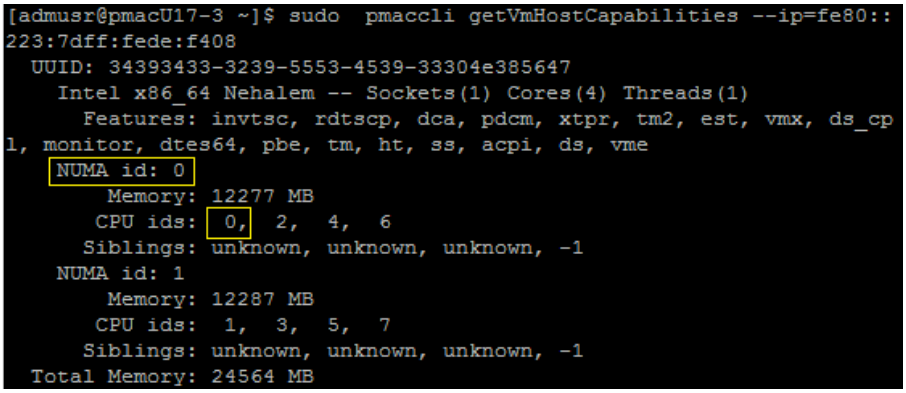
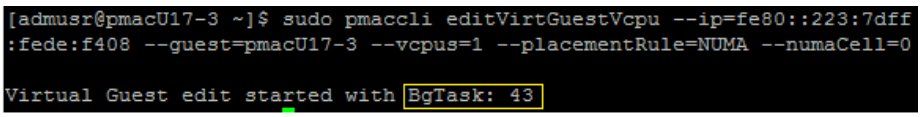
4. ☐	Get Reserved CPUs on PM&C TVOE Host	In the Putty session to PM&C TVOE Host, execute the following command: **[admusr@tvoeU17 ~]$ sudo cat /usr/TKLC/tvoe/etc/host_resources.cfg** Note down the first CPU number listed next to RESERVED_CPU: Reserved CPU **Note:**The following images are for illustrative purposes only.  Reserved CPU to be noted is 0, in the above screenshot.

```
[admusr@tvoeU17 ~]$ sudo cat /usr/TKLC/tvoe/etc/host_resources.cfg
#
# Copyright (C) 2003, 2016, Oracle and/or its affiliates. All rights reserved.
#
# This file is sourced by the TVOEmem and TVOEcpu RC scripts. The
# intent of this file is to allow the default amount of TVOE host
# reserved memory and default host CPUs to be overridden.
#
# See the respective RC script for a more detailed description on
# how these values are used.

#
# The amount of memory(kB) to reserve for the TVOE host. The default
# is 2GiB = 2048 MiB = 2097152 KiB.
RESERVED_KB=2097152

#
# The CPUs that are to be reserved for the TVOE host. The default is
# CPU 0.
RESERVED_CPUS=0,2
```

Procedure12. Post Upgrade Procedure to Edit PM&C NUMA Tuning

5. ☐	Get the allocated vcpus for the PM&C	In a Putty session to PM&C guest, execute the following command: **[admusr@pmacU17-3~]$ sudo pmaccli getVirtGuest --ip=<Guest Host Ip> --guest=<PM&C guest name>** Note down the value next to vcpus: vcpus | **Note:**The following images are for illustrative purposes only.  Vcpus to be noted is 1, in the above screenshot.

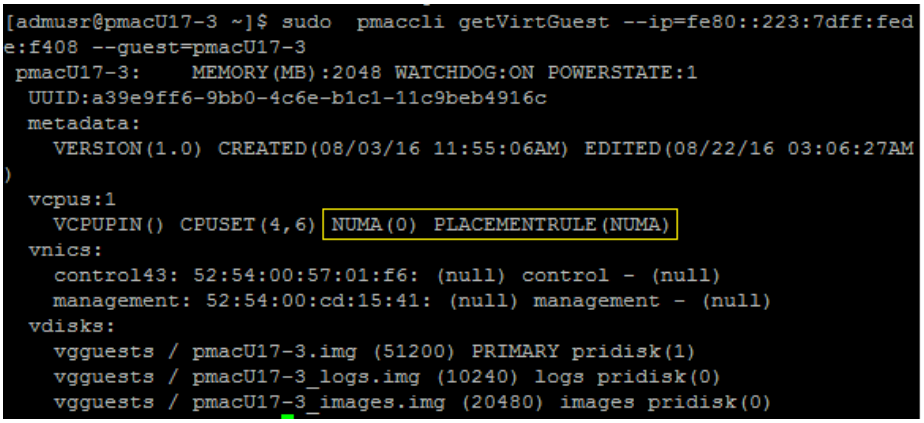
Procedure12. Post Upgrade Procedure to Edit PM&C NUMA Tuning

6. ☐	Identify the NUMA where PM&C's host CPUs are reserved	In a Putty session to PM&C guest, execute the following command: **[admusr@pmacU17-3~]$ sudo pmaccli getVmHostCapabilities --ip=<Guest Host Ip>** Note down the NUMA id to which the Reserved CPU (from Step# 2) belongs: NUMA id **Note:**The following images are for illustrative purposes only.  NUMA id to be noted is 0 in the above screenshot as the Reserved CPU 0 (from Step# 2) belongs to the NUMA id 0.
7. ☐	Edit the PM&C NUMA Tuning	In a Putty session to PM&C guest, execute the following using the NUMA id gathered in the previous step: **[admusr@pmacU17-3~]$ sudo pmaccli editVirtGuestVcpu --ip=<Guest Host Ip> --guest=<PM&C guest Name> --vcpus=<vcpus> --placementRule=NUMA --numaCell=<NUMA id>** Note down the value next the BgTask: BgTask **Note:**The following images are for illustrative purposes only.  BgTask to be noted is 43, in the above screenshot.

Procedure12. Post Upgrade Procedure to Edit PM&C NUMA Tuning

8. ☐	Wait for the Edit Guest background task to complete	In a GUI session to PM&C guest, Under the Main Menu, Navigate to the 'Background Task Monitoring' view. Verify that the 'Edit Guest' task with the Id, <BgTask> has completed successfully. **Note:**The following images are for illustrative purposes only.
9. ☐	Shut down the PM&C guest	Shutdown the PM&C guest as detailed in Appendix H Shutdown PM&C Guest
10. ☐	Start the PM&C guest	Using the virsh utility on the PM&C TVOE Host, start the PM&C guest. Query the list of guests until the PM&C guest is "running". **[admusr@tvoeU17~]$ sudo /usr/bin/virsh list --all** Id Name State ---------- 20 <PM&C guest name> shut off **[admusr@tvoeU17~]$ sudo /usr/bin/virsh start <PM&C guest name>** Domain <PM&C guest name> started **[admusr@tvoeU17 ~]$ sudo /usr/bin/virsh list --all** Id Name State ---------- 20 <PM&C guest name> running
11. ☐	Monitor the PM&C guest until it comes up	In a Putty session to PM&C TVOE Host, execute the following command: **[admusr@tvoeU17 ~]$ sudo /usr/bin/virsh console <PM&C guest name>** Wait for the PM&C guest login prompt to appear.
12. ☐	Login to PM&C	Login to PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

Procedure12. Post Upgrade Procedure to Edit PM&C NUMA Tuning

13. ☐	Verify the PM&C NUMA Tuning	In a Putty session to PM&C guest, execute the following command: **[admusr@pmacU17-3~]$ sudo pmaccli getVirtGuest --ip=<Guest Host Ip> --guest=<PM&C guest name>** Verify that the output contains the following: • NUMA is set to <NUMA id> • PLACEMENTRULE is set to NUMA **Note:**The following images are for illustrative purposes only. 
---End of Procedure---		

Procedure13. Post Upgrade Configuration for netConfig

S T E P #	Use this procedure to provide instructions to configure netConfig. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**

1. ☐	List and record the devices in the current netConfig repository	List the devices managed by the netConfig utility to be used in future steps.
		Execute:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo listDevices`
		Sample output:
		`Devices:`
		`Device: 6125G_IOBAY4`
		`  Vendor:  HP`
		`  Model:  6125`
		`  Access:  Network: 10.240.8.10`
		`  Access:  OOB:`
		`  Service: oa_service_en1`
		`  Console: 4`
		`  Init Protocol Configured`
		`  Live Protocol Configured`
		`Device: C3020_IOBAY8`
		`  Vendor:  Cisco`
		`  Model:  3020`
		`  Access:  Network: 10.240.8.14`
		`  Init Protocol Configured`
		`  Live Protocol Configured`
		`Device: 6120XG_IOBAY6`
		`  Vendor:  HP`
		`  Model:  6120`
		`  Access:  Network: 10.240.8.12`
		`  Init Protocol Configured`
		`  Live Protocol Configured`
		`Device: cClass-switch1B`
		`  Vendor:  Cisco`
		`  Model:  4948E`
		`  Access:  Network: 10.240.8.3`
		`  Access:  OOB:`
		`  Service: console_service`
		`  Console: switch1B_console`
		`  Init Protocol Configured`
		`  Live Protocol Configured`

Device Name	Type (Vendor & Model)

Procedure13. Post Upgrade Configuration for netConfig

2. ☐	List and record ssh services in the current netConfig repository.	List the services in the current netConfig repository. Identify the SSH services(s) for use in future steps, wherever the <ssh_service> variable is seen.
		
		Execute:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo listServices`
		
		Sample output:
		`Services:`
		
		`...`
		`Service Name: ssh_service`
		`Type: ssh`
		`Host: 10.240.8.4`
		`Options:`
		`password: 390F1FAE4A420`
		`user: admusr`
		
		`Service Name: ssh_service_mgmt2`
		`Type: ssh`
		`Host: 10.240.16.4`
		`Options:`
		`password: 390F1FAE4A420`
		`user: admusr`
		
		Service Name (ssh)
		_____
		_____

Procedure13. Post Upgrade Configuration for netConfig

<table>
<tr>
<td>3.</td>
<td>List and record OA services in the current netConfig repository.</td>
<td>
List the services in the current netConfig repository. Identify the OA service(s) for use in future steps, wherever the <oa_service> variable is seen.

Execute:
<pre>[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo listServices</pre>
Sample output:
<pre>Services:

...
    Service Name: oa_service_en1
            Type: oa
            Host: 10.240.8.5
            Options:
               password: C6BBEF35A06FCE81F7850A13525E21D3
               user: root</pre>
For each OA service, identify the OA service name, and current OA IP address. Also identify the second OA IP address if available. The following step will reconfigure the netConfig OA service with both OA IP addresses.
<table>
<tr><th>Variable</th><th>Value</th></tr>
<tr><td><OA_service_name>
(acquired above)</td><td></td></tr>
<tr><td><OA_ipAddress_A>
(acquired above)</td><td></td></tr>
<tr><td><OA_ipAddress_B>
(acquired directly from standby OA or from site IP plan documentation)</td><td></td></tr>
</table>
</td>
</tr>
</table>

Procedure13. Post Upgrade Configuration for netConfig

<table>
<tr><td>4.</td><td>Recreate OA service with both OA IP addresses.</td><td>The following step should be executed to assign both primary and secondary OA ip addresses in the netConfig repository. Use variable values acquired in the previous step to recreate the OA service in this step.

Delete the existing OA service:
[admusr@pmac ~]$ sudo netConfig --repo deleteService name=<OA_service_name>
Are you sure you want to delete <OA_service_name> (y/n)? y
Deleting service <OA_service_name>...

Recreate the OA service with both IPs:
[admusr@pmac ~]$ sudo netConfig --repo addService name=<OA_service_name>
Service type [ssh, tftp, oa, conserver]? oa
Primary OA IP? <OA_ipAddress_A>
Secondary OA IP? <OA_ipAddress_B>
OA username? : root
OA password?
Verify password:
Add service for <OA_service_name> successful

Note: If no OA services existed when inspected in the previous step, the “netConfig –repo deleteService” command is unnecessary. The OA service(s) should still be created for any managed enclosure OAs regardless.</td></tr>
<tr><td>5. ☐</td><td>Gather network access information</td><td>The following information must be identified:
<table>
<tr><th>Variable</th><th>Value</th></tr>
<tr><td><management_vlanID> (4948/4948E/4948E-F only)</td><td></td></tr>
<tr><td><switch_management_ip> (see note 1)</td><td></td></tr>
<tr><td><switch_management_netmask> (4948/4948E/4948E-F only) (see note 2)</td><td></td></tr>
<tr><td><control_vlanID> (4948/4948E/4948E-F only)</td><td></td></tr>
</table>
Note: For Platform 7.0, IPv4 address must be in CIDR notation, IPv6 address must be in address/prefix notation. For Platform 6.7, only an IPv4 and netmask is applicable.</td></tr>
<tr><td>6. ☐</td><td>Standardize switch configurations in PM&C 6.0</td><td>If the target PM&C version is 6.4 and the source prior to PM&C 6.4, execute steps 7-14 below, and Appendix I.</td></tr>
<tr><td>7. ☐</td><td>Repository changes for pre-5.7 upgrades</td><td>Use the information gathered in step 2 to update repository entries.
Note: Some upgrade paths may not require changes, but the steps may still be performed.</td></tr>
<tr><td>8.</td><td>Upgrade the repository for all 4948/4948E/</td><td>Note: If there are no 4948/4948E/4948E-F switches in the repository, skip this step.</td></tr>
</table>

Procedure13. Post Upgrade Configuration for netConfig

☐	4948E-F Switches	Execute the following commands to upgrade the repository for a 4948/4948E/4948E-F.
		Determine the current <FW_image> on the switch:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig getFirmware --device=<switch_name>`
		`Version: 122-54.XO`
		`License: entservicesk9`
		`Flash: <FW_image>`
		Note: It is important to capture the exact filename output for <FW_image>
		Edit the repository:
		Note: The output from the command below contains sample information. Only enter information that is **bold.** For all other entries, press [Enter] to use the current data from the repository.
		Example output for PM&C 6.0:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo editDevice name=<switch_name>`
		`Initialization Management Options`
		`What is the IPv4 (CIDR notation) or IPv6 (address/prefix notation) address for management? [switch_management_ip]:`
		`Access OOB service [oa_service_en#]:`
		`Access OOB console [IO_BAY#]:`
		`Firmware service [ssh_service]:`
		`Firmware filename [6125xlg-cmw710-system-r2403.bin]:`
		`<FW_image>`
		`Init OOB Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device console password [***...]:`
		`Device privileged mode password [***...]:`
		`Live Network Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device privileged mode password [***...]:`
		`Live OOB Credentials`
		`Platform access username [plat]:`
		`Device console password [***...]:`
		`Device privileged mode password [***...]:`
		`Device named <switch_name> successfully edited.`

Procedure13. Post Upgrade Configuration for netConfig

		Repeat this step for each 4948/4948E/4948E-F in the repository.

9. ☐	Upgrade the repository for all 3020 Switches	**Note:** If there are no 3020 switches in the repository, skip this step.
		Execute the following commands to upgrade the repository for a 3020.
		Determine the current <FW_image> on the switch:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig getFirmware --device=<switch_name>`
		`Version: 122-58.SE1`
		`License: ipbasek9`
		`Flash: <FW_image>`
		Note: It is important to capture the exact filename output for <FW_image>
		Edit the repository:
		Note: The output from the command below contains sample information. Only enter information that is **bold.** For all other entries, press [Enter] to use the current data from the repository.
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo editDevice name=<switch_name>`
		`Access network address [10.240.8.13]:`
		`Firmware service []: tftp_service`
		`Firmware filename [cbs30x0-ipbasek9-tar.122-58.SE1.tar]: <FW_image>`
		`Init Network Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device privileged mode password [***...]:`
		`Live Network Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device privileged mode password [***...]:`
		`Device named <switch_name> successfully edited.`
		Repeat this step for each 3020 in the repository.

10. ☐	Upgrade the repository for all 6120 Switches	**Note:** If there are no 6120 switches in the repository, skip this step.
		Execute the following commands to upgrade the repository for a 6120.
		Determine the current <FW_image> on the switch:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig getFirmware --device=<switch_name>`
		`Version: <preformatted_FW_image>`
		`Flash: Secondary`
		Note: The <preformatted_FW_image> needs to be converted to a proper filename needed for the next command. Convert any "." to an "_" and add ".swi" to the end.

Procedure13. Post Upgrade Configuration for netConfig

		For example, if the output above is "Z.14.46" the resulting filename should be "Z_14_46.swi" for the command below. The formatted FW filename shall be referred to as <FW_image> in the command below.
		Edit the repository:
		Note: The output from the command below contains sample information. Only enter information that is **bold.** For all other entries, press [Enter] to use the current data from the repository.
		Example output for PM&C 6.0:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo editDevice name=<switch_name>`
		`Initialization Management Options`
		`What is the IPv4 (CIDR notation) or IPv6 (address/prefix notation) address for management? [switch_management_ip]:`
		`Access OOB service [oa_service_en#]:`
		`Access OOB console [IO_BAY#]:`
		`Firmware service []:`**`<ssh_service>`**
		`Firmware filename [Z_14_37.swi]:` **`<FW_image>`**
		`Init OOB Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device console password [***...]:`
		`Device privileged mode password [***...]:`
		`Live Network Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device privileged mode password [***...]:`
		`Live OOB Credentials`
		`Platform access username [plat]:`
		`Device console password [***...]:`
		`Device privileged mode password [***...]:`
		`Device named <switch_name> successfully edited.`
		Repeat this step for each 6120 in the repository.

11. ☐	Upgrade the repository for all 6125G Switches	**Note:** If there are no 6125G switches in the repository, skip this step.
		Execute the following commands to upgrade the repository for a 6125G.
		Determine the current <FW_image> on the switch:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig getFirmware --device=<switch_name>`
		`Version: 5.20.99`
		`Flash:`**`<FW_image>`**
		`Release: 2106`

Procedure13. Post Upgrade Configuration for netConfig

		Note: It is important to capture the exact filename output for <FW_image>
		Edit the repository:
		Note: The output from the command below contains sample information. Only enter information that is **bold**. For all other entries, press [Enter] to use the current data from the repository.
		
		Example output for PM&C 6.0:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo editDevice name=<switch_name>`
		`Initialization Management Options`
		`What is the IPv4 (CIDR notation) or IPv6 (address/prefix notation) address for management? [switch_management_ip]:`
		`Access OOB service [oa_service_en#]:`
		`Access OOB console [IO_BAY#]:`
		`Firmware service []:`**`<ssh_service>`**
		`Firmware filename []:` **`<FW_image>`**
		`Init OOB Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device console password [***...]:`
		`Device privileged mode password [***...]:`
		`Live Network Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device privileged mode password [***...]:`
		`Live OOB Credentials`
		`Platform access username [plat]:`
		`Device console password [***...]:`
		`Device privileged mode password [***...]:`
		`Device named <switch_name> successfully edited`
		
		Repeat this step for each 6125G in the repository.

Procedure13. Post Upgrade Configuration for netConfig

12. ☐	Upgrade the repository for all 6125XLG Switches	**Note:** If there are no 6125XLG switches in the repository, skip this step.
		Execute the following commands to upgrade the repository for a 6125XLG.
		Determine the current <FW_image> on the switch:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig getFirmware --device=<switch_name>`
		`Version: 7.1.045`
		`Flash: = <FW_image>`
		`Release: 2403`
		Note: It is important to capture the exact filename output for <FW_image>
		Edit the repository:
		The output from the command below contains sample information. Depending on your specific upgrade path and current setup some information may need to be updated and some may not. Check the default values (values in brackets [ ]) carefully to decide whether update is needed. To accept default values press [Enter]. The value for Firmware service must be as listed below.
		Note: If the default management address is not in CIDR (IPv4) or address/prefix (IPv6) notation then it must be replaced with an address with correct notation
		`[admusr@host ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo editDevice name=<switch_name>`
		`Initialization Management Options`
		`What is the IPv4 (CIDR notation) or IPv6 (address/prefix notation) address for management? [switch_management_ip]:`
		`Access OOB service [oa_service_en#]:`
		`Access OOB console [IO_BAY#]:`
		`Firmware service [ssh_service]: <ssh_service>`
		`Firmware filename [6125xlg-cmw710-system-r2403.bin]: <FW_image>`
		`Init OOB Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device console password [***...]:`
		`Device privileged mode password [***...]:`
		`Live Network Credentials`
		`Platform access username [plat]:`
		`Platform user password [***...]:`
		`Device privileged mode password [***...]:`
		`Live OOB Credentials`
		`Platform access username [plat]:`
		`Device console password [***...]:`
		`Device privileged mode password [***...]:`
		`Device named <switch_name> successfully edited.`
		
		Repeat this step for each 6125XLG in the repository.

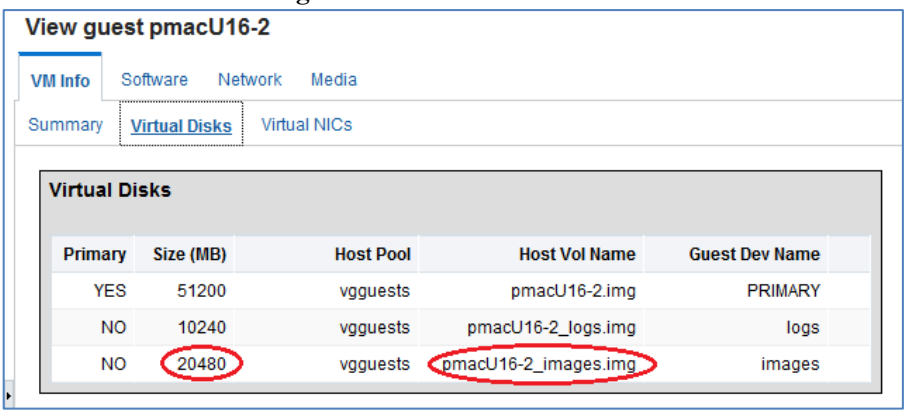
Procedure13. Post Upgrade Configuration for netConfig

13. ☐	Verify the ssh_service configuration	For each service found in Step 2, execute the following command to verify that the ssh_service is using the admusr credentials:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo showService name=<ssh_service>`
		`Service Name: <ssh_service>`
		`Type: ssh`
		`Host: 10.240.8.4`
		`Options:`
		`password: C20F7D639AE7E7`
		`user: root`
		
		Repeat this step for each <ssh_service> found in Step 2. If the user in the output is admusr, skip the rest of this procedure. Otherwise proceed to the next step for each ssh service not configured for admusr.

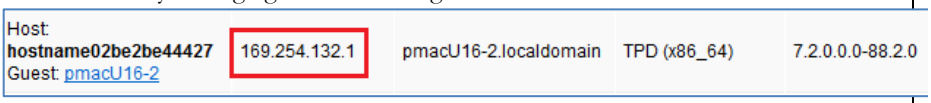
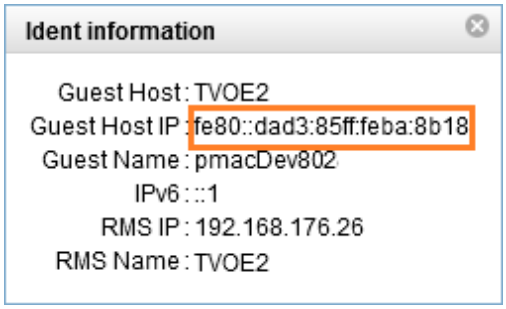
14. ☐	Recreate the ssh_service with admusr credentials on PM&C guest console	The ssh service(s) must be deleted and re-added.
		
		To delete the ssh_service:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo deleteService name=<ssh_service>`
		`Are you sure you want to delete <ssh_service> (y/n)? y`
		`Deleting device <ssh_service>...`
		
		Recreate the ssh_service with the admusr user:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo addService name=<ssh_service>`
		`Service type` [ssh, conserver, oa, tftp]? **ssh**
		SSH host IP? **<pmac_mgmtVLAN_ip_address>**
		SSH username?
		admusr
		SSH password? **<admusr_password>**
		`Verify Password:` **<admusr_password>**
		`Add service for <ssh_service> successful`
		`[admusr@pmac ~]$`

---End of Procedure---		

Procedure14. Post Upgrade Configuration of larger PM&C ISO Image Repository area

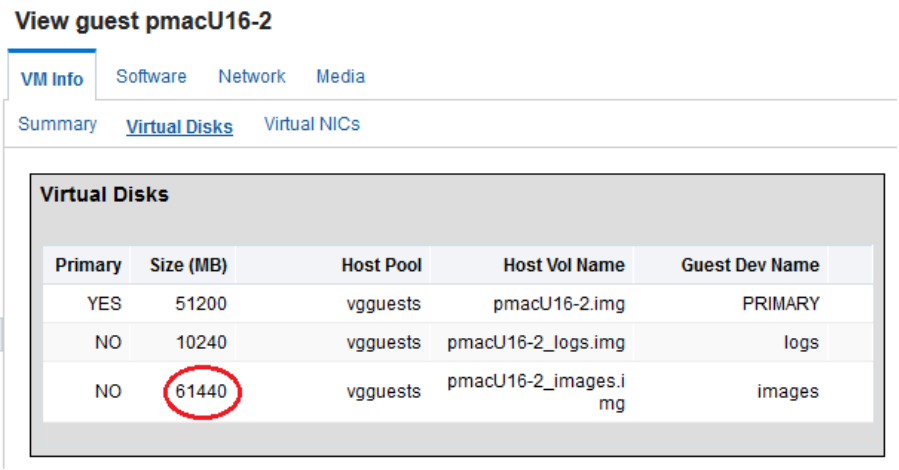
STEP #	Task	Description
	This procedure provides instructions to verify the PM&C ISO image repository size. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
1. ☐	Determine if the PM&C ISO image repository needs to be enlarged.	It is required that PM&C ISO repository is 61440 MB (60 GB) in any PM&C release. **Note:** Using the primary PM&C GUI, navigate to the **Main Menu->VM Management** page. Select the primary PM&C Guest to get to the "**View guest**" page. Click the "**Virtual Disks**" link. In the "**Virtual Disks**" table scroll to the entry with Guest Dev Name "**images**".  View guest pmacU16-2 VM Info Software Network Media Summary Virtual Disks Virtual NICs Virtual Disks Primary | Size (MB) | Host Pool | Host Vol Name | Guest Dev Name YES | 51200 | vgguests | pmacU16-2.img | PRIMARY NO | 10240 | vgguests | pmacU16-2_logs.img | logs NO | 20480 | vgguests | pmacU16-2_images.img | images Note down the following values: Size (MB) | Host Vol Name | **Note:** If the Size (MB) is smaller than 61440 MB (60 GB) proceed to the next step. Otherwise, skip the rest of this procedure.

Procedure14. Post Upgrade Configuration of larger PM&C ISO Image Repository area

2. ☐	Locate the IPv6 address of PM&C TVOE host	Using the Main Menu, navigate to **Software -> Software Inventory** page. Locate the entry belonging to the PM&C guest.  Now, click on the IP Address field of the PM&C guest entry, this will bring up "Ident Information" window:  Note down the following values: Guest Host IP: _____
3. ☐	If necessary, access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

4. ☐	Enlarge the PM&C ISO repository	Execute the following command with appropriate values gathered in steps 1 and 2:
		`[admusr@pmac2 ~]$ sudo /usr/TKLC/smac/bin/pmaccli enlargeIsoImageRepository --ip=<Guest_Host_IP> --guest=<pmac_guest_name> --volname=<Host_Vol_Name> --volpool=vgguests --volsize=61440`
		
		For example, enlarging repository of PM&C guest with name pmac2 to 61440 MB would be similar to this:
		`[admusr@pmac2 ~]$ sudo /usr/TKLC/smac/bin/pmaccli enlargeIsoImageRepository --ip=fe80::dad3:85ff:feba:8b18 --guest=pmac2 --volname=pmac2_images.img --volpool=vgguests --volsize=61440`
		
		`Successful resize of pmac2_images.img to 61440 MB.`

Procedure14. Post Upgrade Configuration of larger PM&C ISO Image Repository area

5. ☐	Verify the size of PM&C ISO repository	Using the primary PM&C GUI, navigate to the VM Management page. Select the primary PM&C Guest to get to the "View guest" page. Click the "Virtual Disks" link. In the "Virtual Disks" table, scroll to the entry with Guest Dev Name "images".  Ensure the Size(MB) now is 61440.
---End of Procedure---		

Procedure 15 Post Upgrade NetBackup Configuration

STEP #	Use this procedure to validate the post upgrade NetBackup configuration if it is present. **Note:** If the NetBackup Feature has not been configured for this system skip this step. *Check off (√) each step as it is completed.* If this procedure fails, see Section 1.2.	
	Task	**Description**
1 ☐	Validate the PM&C NetBackup configuration when applicable.	If the NetBackup Feature has been configured for this system execute Procedure "PM&C Guest Migrate NetBackup Client to New File System" in the appropriate Platform Configuration Guide for the release being upgraded to. **Note:** The NetBackup client software is delivered by default to the "/usr" partition. This partition is configured by TPD and has limited space, and is not designed to share this partition with third party applications. With a NetBackup client installed the "/usr" partition does not have sufficient room to perform upgrades of the TPD based application. The creation of a NetBackup virtual disk, partition, alleviates the upgrade issue. This procedure does not describe how to upgrade the Netbackup Client itself. That procedure would be provided by the owner (Veritas) of the Netbackup application. **Note**: If Netback is being upgraded to version 7.7 and the Client has been moved to a separate filesystem (see above note), then that filesystem must be increased in size to 5G or higher (with 5G being the recommended size). Execute Appendix P "How to Increase the PM&C Netbackup Filesystem Size" from the current version of the 7.4 Platform Configuration Guide, to increase the size of the /usr/openv filesystem on the PM&C.
---End of Procedure---		

Procedure16. Post Upgrade Configuration of larger PM&C temporary ISO import area

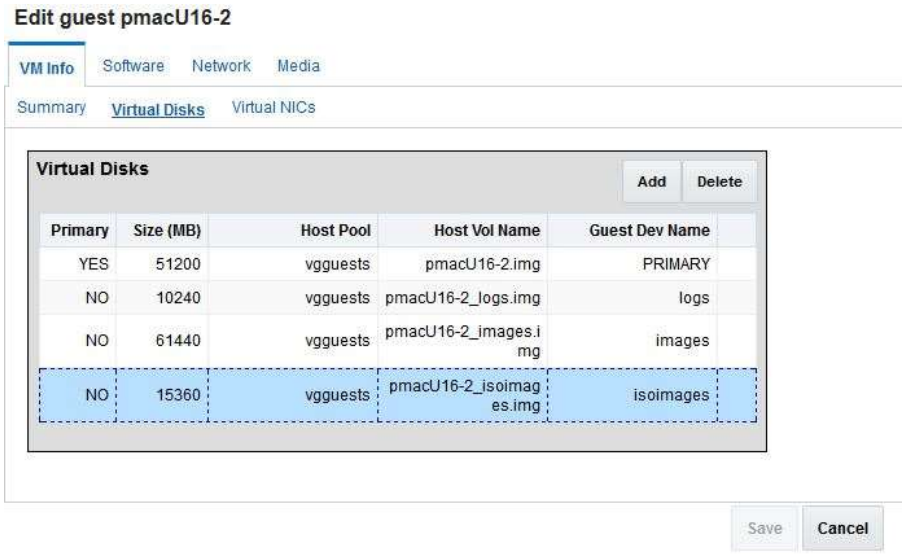
STEP #	Use this procedure to provide instructions on how to enlarge the PM&C ISO image temporary import area up to 20480 MB (20 GB). **Note:** This procedure can be executed only on PM&C 5.7 or later releases. **Note:** Only execute this procedure if it is required by application. Check off *(√)* each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console.

Procedure16. Post Upgrade Configuration of larger PM&C temporary ISO import area

2. ☐	Determine if the PM&C ISO temporary import area needs to be enlarged	Execute the following command:
		
		`[admusr@pmac ~]$ sudo /bin/df -h | grep isoimages`
		
		In the sample output below , there is no entry related to `/var/TKLC/smac/image/isoimages/home/smacftpusr`, which would be there if the ISO temporary import area was enlarged during PM&C deployment or afterwards. The ISO temporary import area in the example above has at the most 5 GB available.
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4% /var/TKLC/smac/image/isoimages`
		
		In the following sample there is an additional entry, indicating that the ISO temporary import area `/var/TKLC/smac/image/isoimages/home/smacftpusr` has altogether 20 GB available from an EVD.
		
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4% /var/TKLC/smac/image/isoimages`
		`/dev/vdd 20G 173M 19G 1%`
		`/var/TKLC/smac/image/isoimages/ home/smacftpusr`
		
		If the application requires the repository to be larger than the size reported by the command above, proceed to the next step. Otherwise, skip the rest of this procedure.
		
		Note: To be able to transfer an application ISO image to the PM&C, this area must be large enough for the largest ISO image file size anticipated at the site.

3. ☐	Log in to the primary PM&C GUI.	If needed, open IE web browser and enter: https://<PM&C Management Network IP > Log in with administrator credentials from Table 3. Software Upgrade Required Data.
4. ☐	Navigate to the "Edit guest" page of the primary PM&C guest	Using the primary PM&C GUI, navigate to the VM Management page. Select the primary PM&C Guest to get to the "View guest" page. Click "Edit".
5. ☐	Determine whether the "isoimages" virtual disk exists	Click on the "Virtual Disks" link. In the "Virtual Disks" table, locate the entry with Guest Dev Name "isoimages". If you cannot find the "isoimages" entry, skip to step 13. Otherwise, proceed to step 6.

Procedure16. Post Upgrade Configuration of larger PM&C temporary ISO import area

6. ☐	Delete the "isoimages" vdisk	**Note:** When the vdisk is deleted, any files stored on it will be destroyed, so be sure to copy any files you would like to keep to a safe location. Select the entry for the "isoimages" virtual disk. Click on the "Delete" button.  Verify that the "isoimages" vidsk is no longer listed and click on the "Save" button.
7. ☐	Confirm the change to the PM&C guest	A confirmation dialog will be presented with the message, "Changes to the PM&C guest will not take effect until after the next power cycle. Do you wish to continue?". Click "OK" to continue.

Procedure16. Post Upgrade Configuration of larger PM&C temporary ISO import area

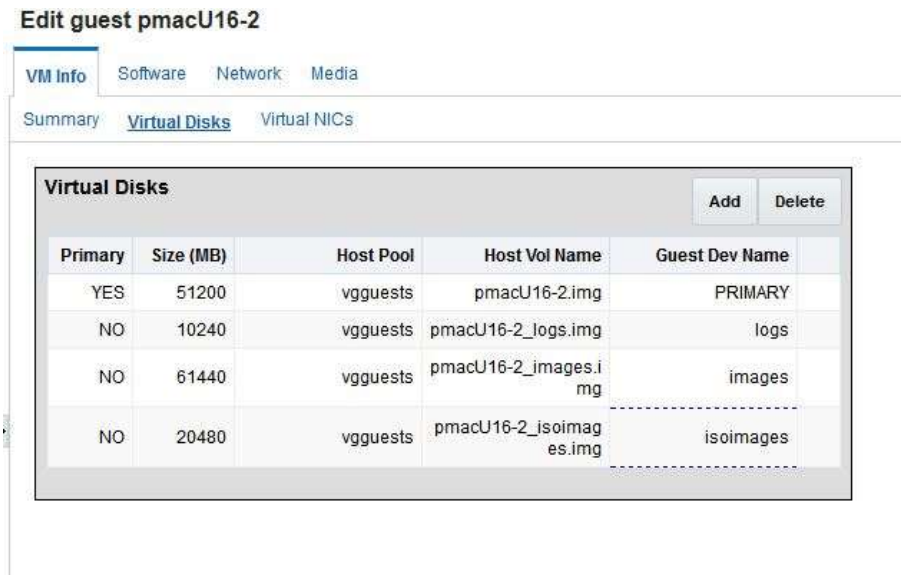
8. ☐	Wait for the Edit Guest background task to complete	Navigate to the Background Task Monitoring view. Confirm that the Edit Guest task has completed successfully.
9. ☐	Shut down the PM&C guest	Shut down the PM&C guest as detailed in Appendix H.

10. ☐	Start the PM&C guest	Using the virsh utility on the TVOE host of PM&C guest, start the PM&C guest. Query the list of guests until the PM&C guest is "running".
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac shut off`
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh start <pmac>`
		`Domain pmac started`
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac running`

11. ☐	Monitor the PM&C guest until it comes up and verify that the temporary ISO import area does not exist	Execute:
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh console <pmac>`
		
		Wait for the PM&C guest login prompt to appear.
		Log in as admusr as captured in Table 3. Software Upgrade Required Data and verify that the entry for the /var/TKLC/smac/image/isoimages/home/smacftpusr mount point is not displayed. An example is shown below:
		
		`[admusr@pmac2 ~]$ sudo /bin/df -h | grep isoimages`
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4% /var/TKLC/smac/image/isoimages`

12. ☐	Navigate to the "Edit guest" page of the primary PM&C guest	Using the primary PM&C GUI, navigate to the VM Management page. Select the primary PM&C Guest to get to the "View guest" page. Click on the "Virtual Disks" link and then click "Edit".

Procedure16. Post Upgrade Configuration of larger PM&C temporary ISO import area

13. ☐	Add the "isoimages" vdisk to the PM&C guest.	Click the "Add" button. Enter the following data for the new isoimages virtual disk. • Size (MB): <total_size_of_temporary_import_area> • Host Pool: "vgguests" • Host Vol Name: "<pmac_guest_name>_isoimages.img" • Guest Dev Name: "isoimages" **Note:** Set the Size (MB) to a value large enough for the largest ISO image file size anticipated at the site. The size can be increased up to 20480 MB. For instance, the following image illustrates what a user would enter in order to achieve a 20480 MB ISO temporary import area on pmacU16-2.  **Note:** The "Guest Dev Name" must be set to "isoimages" for the PM&C application to mount the appropriate host device. The <pmac_guest_name> variable should be set to this PM&C guest's name to create a unique volume name on the TVOE host of the PM&C. Verify the new isoimages virtual disk data and click "Save".

Procedure16. Post Upgrade Configuration of larger PM&C temporary ISO import area

14. ☐	Confirm the change to the PM&C guest	A confirmation dialog will be presented with the message, "Changes to the PM&C guest will not take effect until after the next power cycle. Do you wish to continue?". Click "OK" to continue.
15. ☐	Wait for the Edit Guest background task to complete	Navigate to the Background Task Monitoring view. Confirm that the Edit Guest task has completed successfully.
16. ☐	Shut down the PM&C guest	Shut down the PM&C guest as detailed in Appendix H.

17. ☐	Start the PM&C guest	Using the virsh utility on TVOE host of PM&C guest, start the PM&C guest. Query the list of guests until the PM&C guest is "running".
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac shut off`
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh start <pmac>`
		`Domain pmac started`
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac running`

Procedure16. Post Upgrade Configuration of larger PM&C temporary ISO import area

18. ☐	Monitor the PM&C guest until it comes up and verify the size of the "isoimages" vdisk	Execute:
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh console <pmac>`
		
		Wait for the PM&C guest login prompt to appear.
		Log in as admusr as captured in Table 3. Software Upgrade Required Data and verify the disk size using the df command. An example is shown below:
		
		`[admusr@pmac2 ~]$ sudo /bin/df -h | grep isoimages`
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4% /var/TKLC/smac/image/isoimages`
		`/dev/vdd 20G 173M 19G 1%`
		`/var/TKLC/smac/image/isoimages/ home/smacftpusr`

19. ☐	Verify the size of PM&C ISO temporary import area NOTE: It may take up to 5 minutes for the PM&C GUI to be responsive and provide a login prompt.	**Note:** It can take up to 15 minutes for the PM&C to perform sufficient software discovery and enable navigation to the "View guest" page. **Note:** Using the primary PM&C GUI, navigate to the VM Management page. Select the primary PM&C Guest to get to the "View guest" page. Click on the "Virtual Disks" link. In the table, locate the entry with Guest Dev Name "isoimages". Ensure that the Size (MB) field now reflects the new value.
---End of Procedure---		

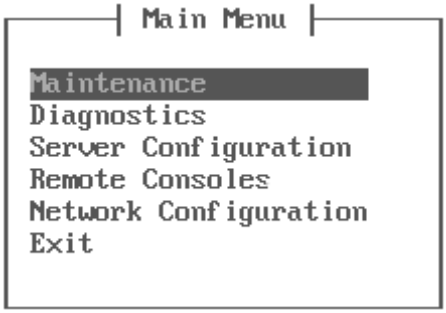
Procedure17. Post Upgrade PM&C backup

STEP #	Use this procedure to back up all necessary PM&C database data post upgrade. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Backup the PM&C database.	Execute the procedure detailed in Appendix D PM&C System Backup
Section 5.2 has been completed.		

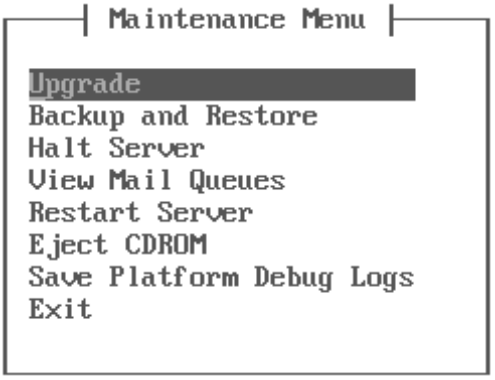
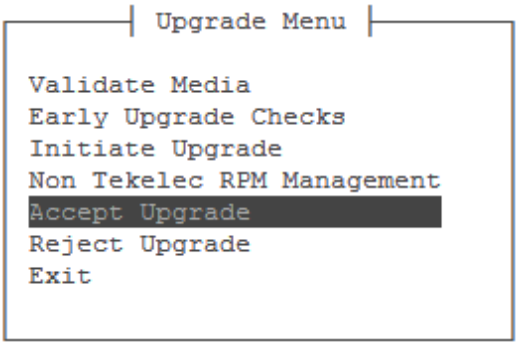
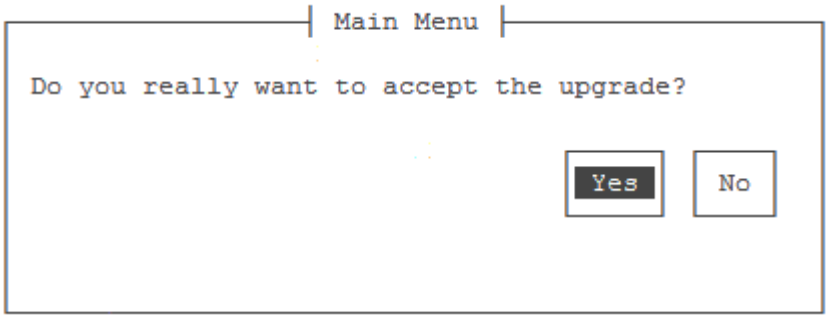
5.3 Software Upgrade Acceptance and Cleanup on the Primary PM&C

Once you verify the upgrade is complete and there are no issues on the PM&C, it is time to accept the upgrade. Please note that once you accept an upgrade, a backout to the previous release is not possible. If backout becomes necessary after an upgrade has been accepted, then a disaster recovery process is required. Keep the PM&C backup created in section 4.2 for this purpose. The following procedure identifies the steps required to accept the upgrade. Once the upgrade has been accepted it is safe to remove the media used for the upgrade.

Procedure18. Software Upgrade Acceptance on the primary PM&C

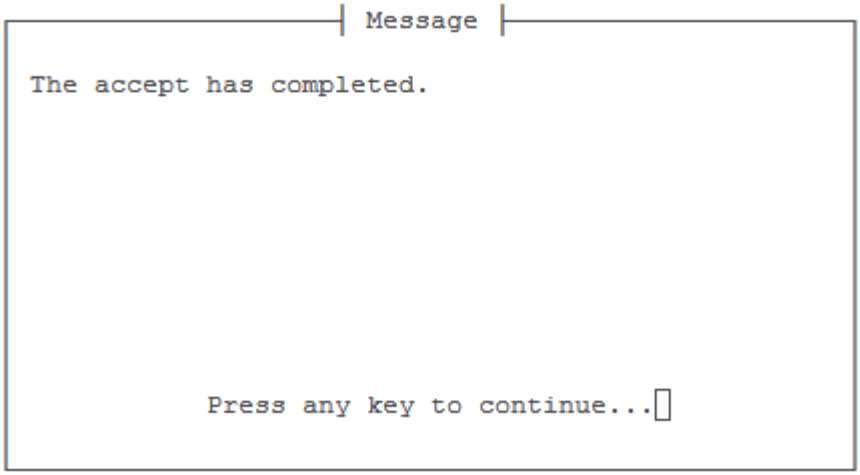
STEP #	Use this procedure to finalize the upgrade on the PM&C, once complete, the backout is no longer available/possible. **Note:** This procedure should only be performed when a backout is no longer anticipated/desired. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	If necessary, access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console
2. ☐	Run the "platcfg" utility.	Execute: `[admusr@pmac ~]$ sudo su - platcfg`
3. ☐	In "platcfg" utility Access the Maintenance menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images is for illustrative purposes only.  Select "Maintenance" to navigate to the Maintenance Menu.

Procedure18. Software Upgrade Acceptance on the primary PM&C

4. ☐	In "platcfg" utility access the Upgrade menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images is for illustrative purposes only.  Select "Upgrade" to navigate to the Upgrade Menu.
5. ☐	In "platcfg" utility, select "Accept Upgrade" to start the accept process.	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images is for illustrative purposes only.  Select "Accept Upgrade" and press the [ENTER] key to start the accept process.
6. ☐	Confirm the decision and execute the accept.	

Procedure18. Software Upgrade Acceptance on the primary PM&C

7. ☐	The "Accept Upgrade" process starts	**Note:** The following image is for illustrative purposes only.
		`Called with options: --accept`
		`Loading Upgrade::Backout::LVM`
		`Accepting Upgrade`
		`snapmgr: Logical volume "smac_root_snap" successfully removed`
		`snapmgr: Logical volume "smac_var_snap" successfully removed`
		`snapmgr: Logical volume "plat_usr_snap" successfully removed`
		`snapmgr: Logical volume "smac_backup_snap" successfully removed`
		`snapmgr: Logical volume "plat_root_snap" successfully removed`
		`snapmgr: Logical volume "plat_var_tklc_snap" successfully removed`
		`snapmgr: Logical volume "plat_var_snap" successfully removed`
		`snapmgr: Removed snapshot lv's related to tag "@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 /usr/TKLC/smac`

8. ☐	Verify the "Accept Upgrade" completes and exit the "platcfg" utility	 Press any key to return to the "Upgrade menu". Use the arrow keys to select "Exit" and press the [ENTER] key to exit from all menus until the PM&C command prompt is displayed.

Procedure18. Software Upgrade Acceptance on the primary PM&C

9. ☐	If the TVOE host was upgraded using Appendix G	The upgrade of TVOE includes acceptance of the upgrade. This acceptance may have been intentionally delayed by the PM&C upgrade during the execution of Appendix G If the TVOE upgrade was delayed, then please return to TVOE host upgrade procedures outlined in the TVOE Software Upgrade document for the given version being upgraded. Continue the upgrade process with procedure 8, Stand Alone TVOE Upgrade Accept.
--End of Procedure--		

Procedure19. Post Upgrade Cleanup of Upgrade Media

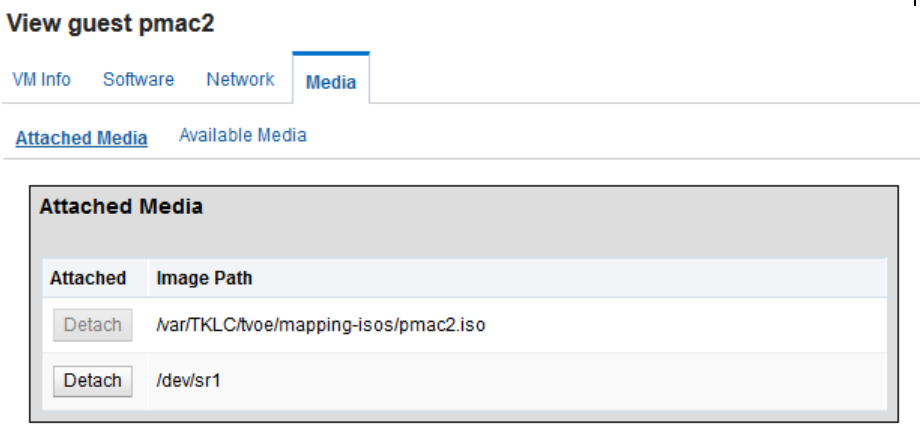
S T E P #	Use this procedure to remove the upgrade media from the PM&C **Note:** The procedure should only be performed when a backout is no longer anticipated/desired. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**

1. ☐	If this was a Remote Upgrade, then ensure images used for upgrade have been removed from PM&C	Execute the following command on the primary PM&C:
		`[admusr@pmac ~]$ sudo /bin/ls /var/TKLC/upgrade/PMAC-*-x86_64.iso`
		
		If there are images that need to be removed, using the output of the command above, specify the full path of the image to be removed:
		`[admusr@pmac ~]$ sudo /bin/rm -f /var/TKLC/upgrade/<image_name.iso>`
		For instance:
		`[admusr@pmac ~]$sudo /bin/rm -f /var/TKLC/upgrade/PMAC-6.4.0.0.0_64.1.0-x86_64.iso`
		
		Repeat this step as necessary to ensure there are no images left to be removed.

Procedure19. Post Upgrade Cleanup of Upgrade Media

2. ☐	If this was a local upgrade, Log in to the PM&C GUI.	Open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data

Procedure19. Post Upgrade Cleanup of Upgrade Media

3. ☐	If upgrade was performed using external media, then detach the media	**Note:** It can take up to 15 minutes for the PM&C to perform sufficient software discovery to locate the PM&C TVOE host and enable navigation to the "View guest" page. Using the PM&C GUI, navigate to the VM Management page. Select the PM&C Guest to get to the "View guest" page. Select the "Media" tab on the "View guest" page. Click the "Detach" button for the image previously attached. 
4. ☐	If present, remove the external media from the PM&C TVOE host server.	Remove the external media from the appropriate slot of the PM&C TVOE host server.
Section 5.3 has been completed.		

5.4 Software Upgrade Execution on the Redundant PM&C

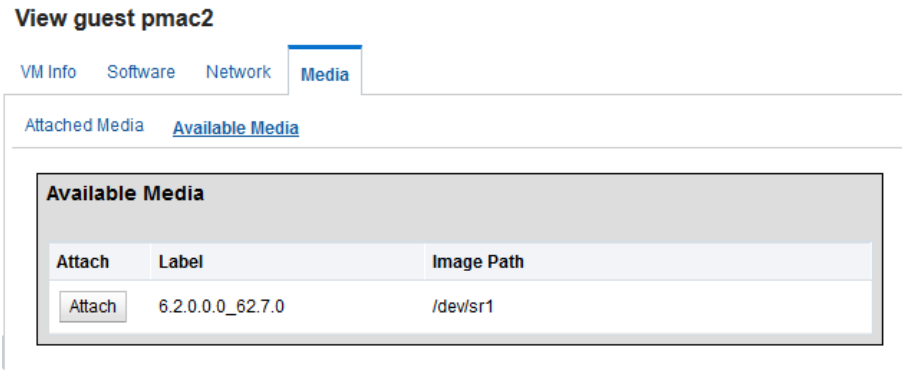
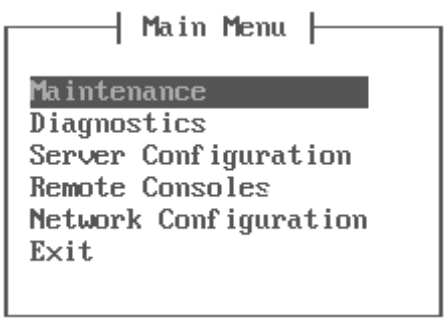
If the PM&C application ISO was delivered to the system remotely (via SCP or SFTP) then make sure the image is located in the /var/TKLC/upgrade directory prior to executing this procedure. This should have been done as part of the health check procedure.

The upgrade of the PM&C guest TVOE host may be executed in the same maintenance window as the PM&C. It is expected that the TVOE host upgrade is completed prior to the start of the PM&C upgrade. This procedure does not cover the procedural steps required for the upgrade of the TVOE host. Please see the appropriate references noted in the procedures of section 4.2.

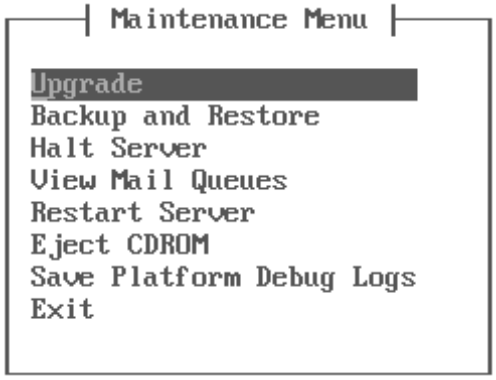
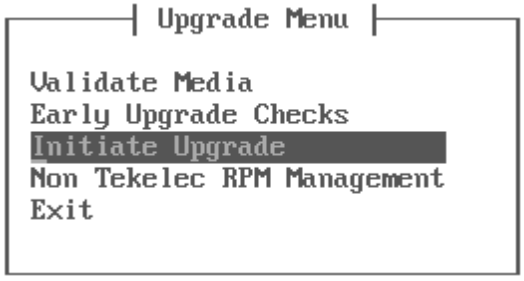
Procedure20. PM&C Upgrade Procedure on the redundant PM&C

S T E P #	Use this procedure to provide instructions to perform a software upgrade of the redundant PM&C. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Execute the system health check	Re-execute *Procedure 6: Execute the Health check Procedure for the redundant PM&C.*
2. ☐	For Remote Upgrade, verify correct ISO file is present, and then skip to Step 6	If you executed *Procedure 7: Prepare the redundant PM&C for a remote upgrade*, then verify the correct ISO has been delivered to the redundant PM&C. • Access the redundant PM&C Guest console using Appendix B • Verify the correct ISO file is located in the /var/TKLC/upgrade directory. • If the correct ISO is present, proceed to step 6. • If the correct ISO is NOT present, then redo Procedure 3 before proceeding.
3. ☐	Insert the media containing PM&C 6.0 image into the Management Server	Insert the media containing PM&C image (item **Error! Reference source not found.** in section 3.1 Required Materials) into the Management Server.
4. ☐	Log in to the PM&C GUI.	Open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data

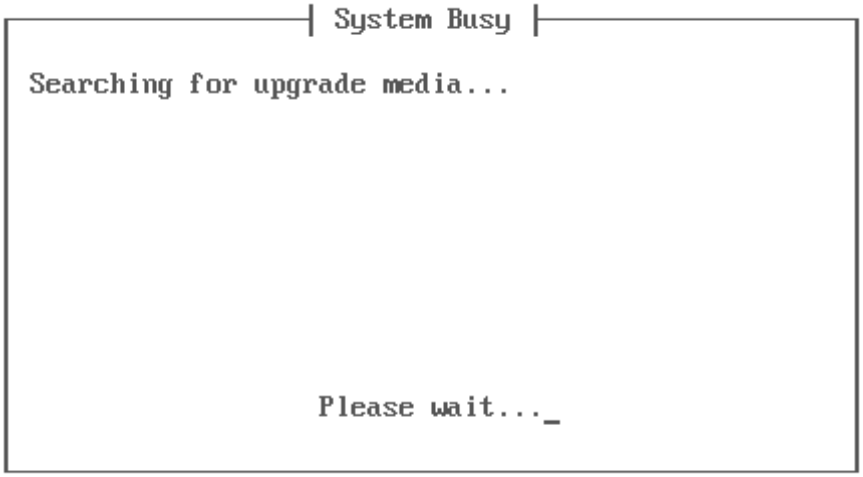
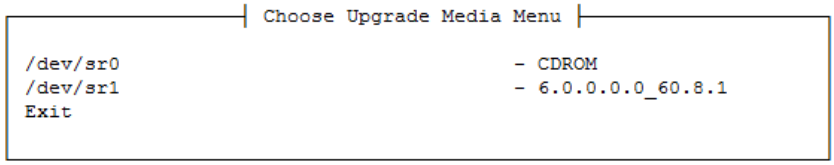
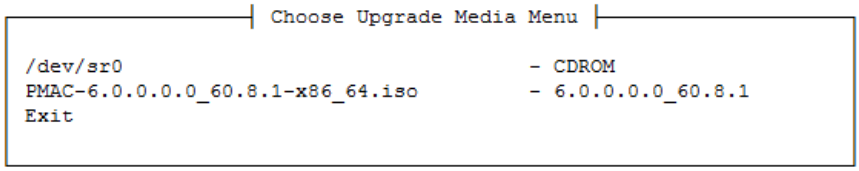
Procedure20. PM&C Upgrade Procedure on the redundant PM&C

5. ☐	Attach the PM&C ISO media to the redundant PM&C guest.	Using the primary PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View guest" page. Select the "Media" tab on the "View guest" page. Click the "Available Media" link. Click the "Attach" button for the image just inserted. **Note:** The "Label" field can help identify the PM&C upgrade media (see section 3.1). 
6. ☐	Access the redundant PM&C guest console	Execute Appendix B Accessing The PM&C Guest Console for the redundant PM&C.
7. ☐	Run the "platcfg" utility.	**Note:** If you deviated from the previous step, please ensure that you are in admusr's home directory before executing the following command. Execute (from redundant PM&C guest console): `[admusr@pmac ~]$ sudo su - platcfg`
8. ☐	In "platcfg" utility Access the Maintenance menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release.  Select "Maintenance" to navigate to the Maintenance Menu.

Procedure20. PM&C Upgrade Procedure on the redundant PM&C

9. ☐	In "platcfg" utility Access the Upgrade menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release.  Select "Upgrade" to navigate to the Upgrade Menu.
10. ☐	In "platcfg" utility select "Initiate Upgrade" to start the upgrade process.	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release.  Select "Initiate Upgrade" to start the upgrade process

Procedure20. PM&C Upgrade Procedure on the redundant PM&C

11. ☐	Wait for the "Choose Upgrade Media Menu" screen	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release.  Wait for the "Choose Upgrade Media Menu" screen to display before proceeding to the next step.
12. ☐	Start the upgrade to the target release	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release. If the image is located on virtual CD, then the menu would look similar to this:  If the image was copied to the /var/TKLC/upgrade directory of the redundant PM&C guest, then the menu would look similar to this:  Select the PM&C 6.4 target release and press the [ENTER] key.

Procedure20. PM&C Upgrade Procedure on the redundant PM&C

13. ☐	The upgrade begins
	Ensure that Early Upgrade Checks pass and the upgrade is started.
		Note: The following images are for illustrative purposes only. The actual menu content will differ based on the current PM&C release.
		
		Screen similar to the one shown below will be displayed as the upgrade progresses.
		
		`Running earlyUpgradeChecks() for Upgrade::EarlyPolicy::PMAC upgrade policy...`
		`This is an upgrade of PMAC.`
		`Check for IN-PROGRESS BG Tasks.`
		`No IN-PROGRESS BG Tasks found, we can upgrade.`
		`Running earlyUpgradeChecks() for Upgrade::EarlyPolicy::TPDEarlyChecks upgrade policy...`
		`Verified server is not pending accept of previous upgrade`
		`Hardware architectures match`
		`Install products match.`
		`Verified server is alarm free!`
		`Early Upgrade Checks Have Passed!` ⇦
		`Initializing upgrade information...`
		`Shutting down PMAC services: The runlevel transition complete RC file was created as /e`
		`Changing to run-level 3...`
		`**********`
		`* Waiting for run level 3 transition to finish *`
		`**********`
		`waiting for /etc/rc3.d/S99local_runlevel_transition_complete to disappear.`
		`waiting for /etc/rc3.d/S99local_runlevel_transition_complete to disappear.`
		`waiting for /etc/rc3.d/S99local_runlevel_transition_complete to disappear.`
		`waiting for /etc/rc3.d/S99local_runlevel_transition_complete to disappear.`
		`sending kill command...`
		`please wait up to 60 seconds`
		`waiting for /etc/rc3.d/S99local_runlevel_transition_complete to disappear.`
		`waiting for /etc/rc3.d/S99local_runlevel_transition_complete to disappear.`

14. ☐	Verify upgrade is progressing	**Note:** The following images are for illustrative purposes only.
		
		Screen similar to the one shown below will be displayed as the upgrade progresses.
		
		`Upgrade from current release 6.0.1-80.32.0 supported`
		
		`Changing platform revision so must upgrade`
		`Determining the appropriate upgrade command...`
		`Using /mnt/upgrade/upgrade/upgrade_server as the upgrade command`
		
		`    Current platform version:  6.0.1-80.32.0`
		`No backout release boundary:  4.0.0-70.0.0`
		
		`Backout will be supported...`
		
		`Running prepareUpgrade() for Upgrade::Policy::Platform upgrade policy...`
		`Preserving files so verifyUpgrade can run.`
		`preserveVerifyUpgradeFiles(): File does not exist!`
		`FILE: /mnt/upgrade/upgrade/etc/multiRpmsAllowed.sed Skipping...`
		`Adding /etc/sysconfig/iptables to RCS...`
		`Adding /etc/sysconfig/ip6tables to RCS...`
		`Adding /usr/TKLC/plat/etc/alarms/alarms.xml to RCS...`
		`Adding /usr/TKLC/plat/etc/alarms/alarms.dtd to RCS...`
		`Running prepareUpgrade() for Upgrade::Policy::MBL upgrade policy...`
		`Running prepareUpgrade() for Upgrade::Policy::PMAC upgrade policy...`
		`Running prepareUpgrade() for Upgrade::Policy::PlatformLast upgrade policy...`
		`Initializing upgrade...`
		`Verify RCS repository and checkin files...`
		`RCSCHECK REPORT:  /var/TKLC/log/upgrade/rcscheck.before.upgrade`
		`INFO: Checking rcs elements for unchecked in changes...`

Procedure20. PM&C Upgrade Procedure on the redundant PM&C

15. ☐	Upgrade completes successfully.
	NOTE: If the PM&C upgrade fails to complete, contact Oracle Customer Support
		Note: The following images are for illustrative purposes only.
		
		If the upgrade completes successfully, the screen shown below will be displayed as the upgrade progresses.
		
		`PMAC postTransactions method completed.`
		`Running post transactions script for Upgrade::Policy::PlatformLast upgrade policy...`
		`Executing ldconfig`
		`Updating RPM manifest file.`
		`FILE: /usr/TKLC/plat/etc/upgrade/rpm_manifest.`
		`RPM manifest file does not exist.`
		`Creating RPM manifest file.`
		`FILE: /usr/TKLC/plat/etc/upgrade/rpm_manifest.`
		`Adding /usr/TKLC/plat/etc/upgrade/rpm_manifest to RCS...`
		`Enabling applications on the server`
		`Running prelink`
		`Enabling applications on the server...`
		`File cleanup. MODE is --upgrade`
		`FILE is /mnt/upgrade/upgrade/etc/upg_delete_these_files`
		`rsshRebuild: Rebuilding /var/TKLC/smac/image/isoimages chroot...`
		`Applications Enabled.`
		`Running /usr/TKLC/plat/bin/service_conf reconfig`
		
		`UPGRADE IS COMPLETE`
		
		`Upgrade command returned success!`
		`Running postUpgrade() for Upgrade::Policy::Platform upgrade policy...`
		`Restarting alarmMgr.`
		
		Note: If the PM&C upgrade fails to complete, contact Oracle Customer Support for assistance.

Section 5.4 has been completed.		

5.5 Software Upgrade Completion on the Redundant PM&C

Procedure21. Post Upgrade Verification on the redundant PM&C

STEP #	Use this procedure to verify the success of the redundant PM&C upgrade. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	If necessary, access the redundant PM&C guest console	If necessary, access the redundant PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

2. ☐	After logging in, a notice similar to the one shown to the right will be displayed.	`Last login: Wed Jun 6 08:39:14 on ttyS0`
		
		`|============================================================|`
		`| This system has been upgraded but the upgrade has not yet |`
		`| been accepted or rejected. Please accept or reject the |`
		`| upgrade soon. |`
		`|============================================================|`
		`[admusr@pmac ~]$`

3. ☐	Verify that the date/time stamp of the upgrade log aligns with the time of the upgrade.	Execute the following command:
		`[admusr@pmac ~]$ **sudo /bin/ls -l /var/TKLC/log/upgrade/upgrade.log**`
		`-rw-rw-r-- 1 platcfg root 113112 Nov 11 14:16 /var/TKLC/log/upgrade/upgrade.log`
		`[admusr@pmac ~]$`

4. ☐	Verify that the release has been updated.	Execute the following command:
		`[admusr@pmac ~]$ **sudo /usr/TKLC/plat/bin/appRev**`
		`Install Time: Fri Oct 14 11:37:42 2016`
		`Product Name: PMAC`
		`Product Release: 6.4.0.0.0_64.2.0`
		`Base Distro Product: TPD`
		`Base Distro Release: 7.4.0.0.0_88.31.0`
		`Base Distro ISO: TPD.install-7.4.0.0.0_88.31.0-OracleLinux6.8-x86_64.iso`
		`ISO name: PMACBLD-6.4.0.0.0_64.2.0.iso`
		`OS: OracleLinux 6.8`
		`[admusr@pmac ~]$`
		
		If the Product Release does not match the new target release number, then upgrade was not successful. Contact Oracle Customer Support and do not proceed until instructed by an Oracle representative.

Procedure21. Post Upgrade Verification on the redundant PM&C

5. ☐	Verify upgrade completion through the upgrade log.
	NOTE: If the PM&C upgrade has failed, contact Oracle Customer Support
		Execute the following command on the redundant PM&C:
		`[admusr@pmac ~]$ grep COMPLETE /var/TKLC/log/upgrade/upgrade.log`
		`1371492983:: UPGRADE IS COMPLETE`
		
		Note: Output like above is expected (the timestamp will be different).
		Now execute the following command:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/verifyUpgrade`
		Note: This command can take over a minute to complete. No output is expected, only the prompt should return
		Note: If 'UPGRADE IS COMPLETE' is not in the output from the first command, or if any output showing errors result from the verifyUpgrade command, contact Oracle Customer Support and do not proceed until instructed by an Oracle representative.

6. ☐	Execute the redundant PM&C system health check.	Execute the Appendix C PM&C System Health Check for the redundant PM&C. **Note:** Alarm about pending accept/reject such similar to the one below can be safely ignored in this step. `SEQ: 1 UPTIME: 185 BIRTH: 1372167411 TYPE: SET ALARM: TKSPLATMI33|tpdServerUpgradePendingAccept|1.3.6.1.4.1.323.5.3.18.3.1.3.33` If any other error or failure conditions are discovered on the redundant PM&C system then do ***not*** proceed. Contact Oracle Customer Support to work to resolve the failure conditions.
End of Procedure		

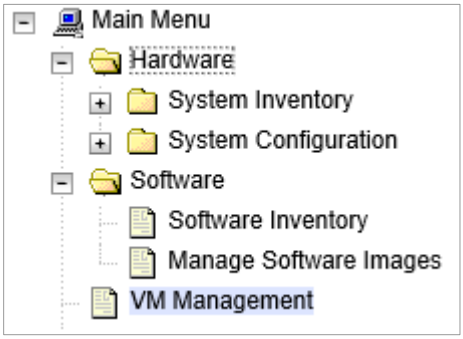
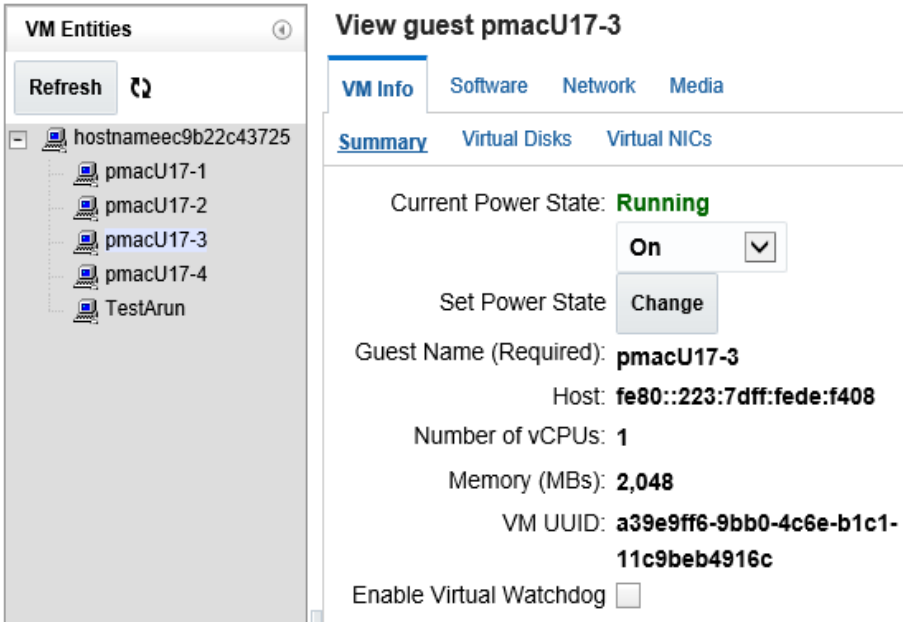
Procedure22. Post Upgrade Procedure to Enable redundant PM&C Virtual Watchdog

S T E P #	This procedure provides instructions to enable Virtual Watchdog of the redundant PM&C and should be executed after upgrade to PM&C 6.4 release. Check off *(√)* each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**

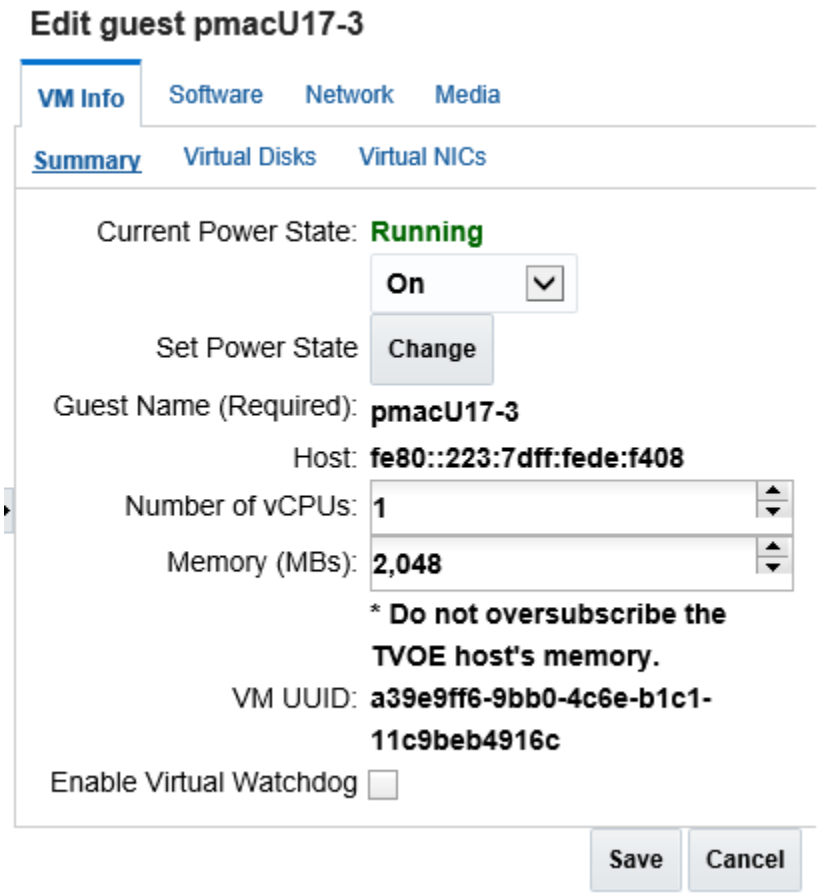
Procedure22. Post Upgrade Procedure to Enable redundant PM&C Virtual Watchdog

1. ☐	Access the redundant PM&C GUI	Open the IE web browser and enter: https://<Redundant PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data **Note:**The following images are for illustrative purposes only. Welcome message is displayed after the successful login.

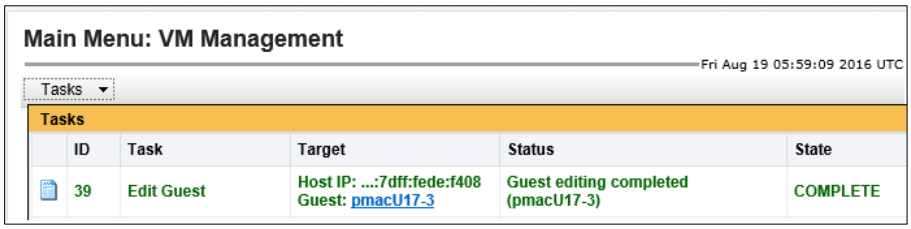
Procedure22. Post Upgrade Procedure to Enable redundant PM&C Virtual Watchdog

2. ☐	Navigate to VM Management page	Using Main Menu > VM Management navigate to VM Management page. **Note:**The following images are for illustrative purposes only.  The pane called 'Main Menu: VM Management' should load.
3. ☐	Select the redundant PM&C guest	Click on VM Host under 'VM Entities' Expand the VM Host if needed and select the redundant PM&C guest **Note:**The following images are for illustrative purposes only.  A pane called 'View guest <redundant PM&C guest name>' should load. If the 'Enable Virtual Watchdog' checkbox is not checked, proceed to the next step, otherwise exit the procedure.

Procedure22. Post Upgrade Procedure to Enable redundant PM&C Virtual Watchdog

4. ☐	Edit redundant PM&C Virtual Watchdog	Click on Edit button, check the 'Enable Virtual Watchdog' checkbox and click on the Save button. **Note:**The following images are for illustrative purposes only. 

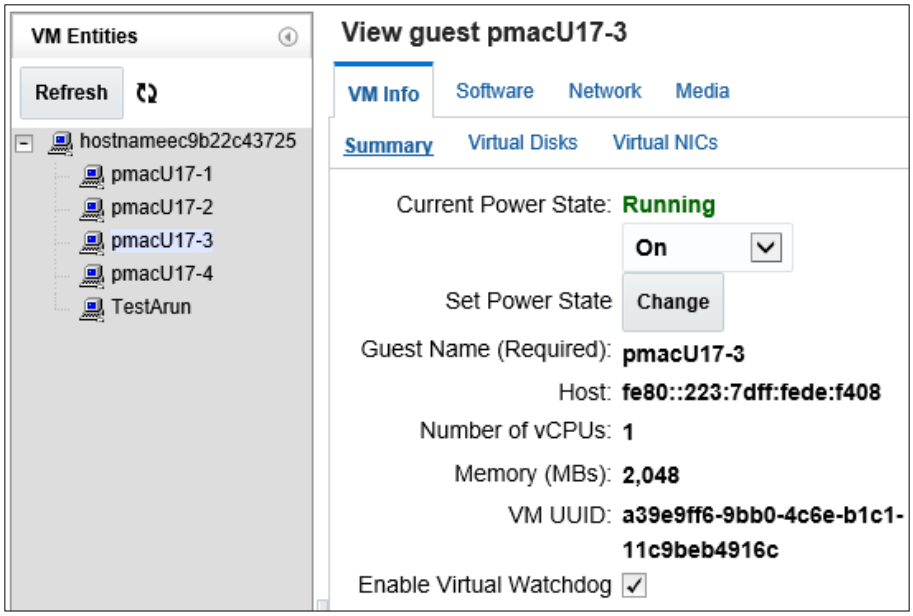
Procedure22. Post Upgrade Procedure to Enable redundant PM&C Virtual Watchdog

5. ☐	Confirm the change to the PM&C guest	A confirmation dialog will be presented with the message, "Changes to the PM&C guest will not take effect until after the next power cycle. Do you wish to continue?". Click "OK" to continue.
6. ☐	Wait for the Edit Guest background task to complete	Click on the dropdown menu, 'Tasks', on the 'View guest <redundant PM&C guest name>' pane. Verify that the 'Edit Guest' Task has completed successfully. **Note:**The following images are for illustrative purposes only. 
7. ☐	Shut down the redundant PM&C guest	Shutdown the redundant PM&C guest as detailed in Appendix H Shutdown PM&C Guest

Procedure22. Post Upgrade Procedure to Enable redundant PM&C Virtual Watchdog

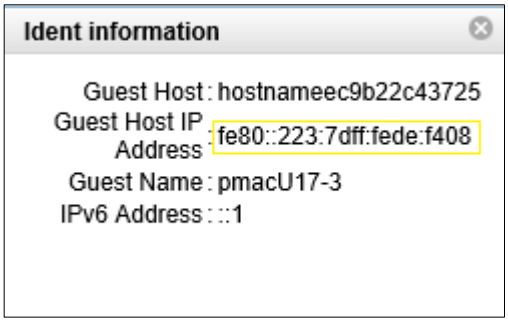
8. ☐	Start the redundant PM&C guest	Using the virsh utility on the redundant PM&C TVOE host , start the redundant PM&C guest. Query the list of guests until the redundant PM&C guest is "running". **[admusr@tvoeU17~]$ sudo /usr/bin/virsh list --all** Id Name State ---------- 20 <redundant PM&C guest name> shut off **[admusr@tvoeU17~]$ sudo /usr/bin/virsh start <pmac>** Domain <redundant PM&C guest name> started **[admusr@tvoeU17 ~]$ sudo /usr/bin/virsh list --all** Id Name State ---------- 20 <redundant PM&C guest name> running
9. ☐	Monitor the redundant PM&C guest until it comes up	In a Putty session to redundant PM&C TVOE Host, execute the following command: **[admusr@tvoeU17 ~]$ sudo /usr/bin/virsh console <Redundant PM&C guest name>** Wait for the redundant PM&C guest login prompt to appear.

Procedure22. Post Upgrade Procedure to Enable redundant PM&C Virtual Watchdog

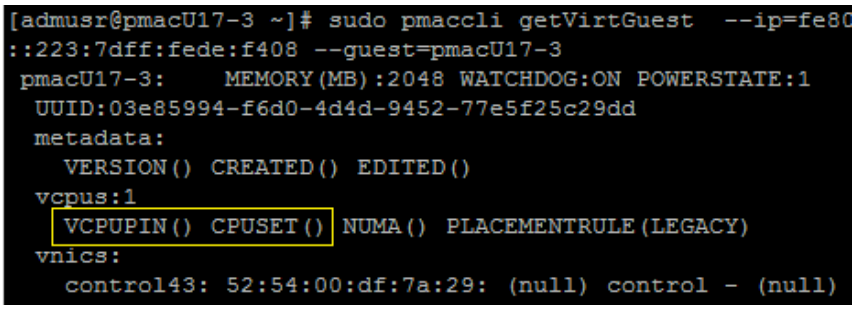
10. ☐	Verify if the Virtual Watchdog is Enabled.	In the GUI session of the redundant PM&C guest, navigate to VM Management page using Main Menu > VM Management Click on VM Host under 'VM Entities' Expand the VM Host if needed and select the redundant PM&C guest **Note:**The following images are for illustrative purposes only.  Verify in the pane 'View guest <redundant PM&C guest name>' that the 'Enable Virtual Watchdog' checkbox is checked.
---End of Procedure---		

Procedure23. Post Upgrade Procedure to Edit redundant PM&C NUMA Tuning

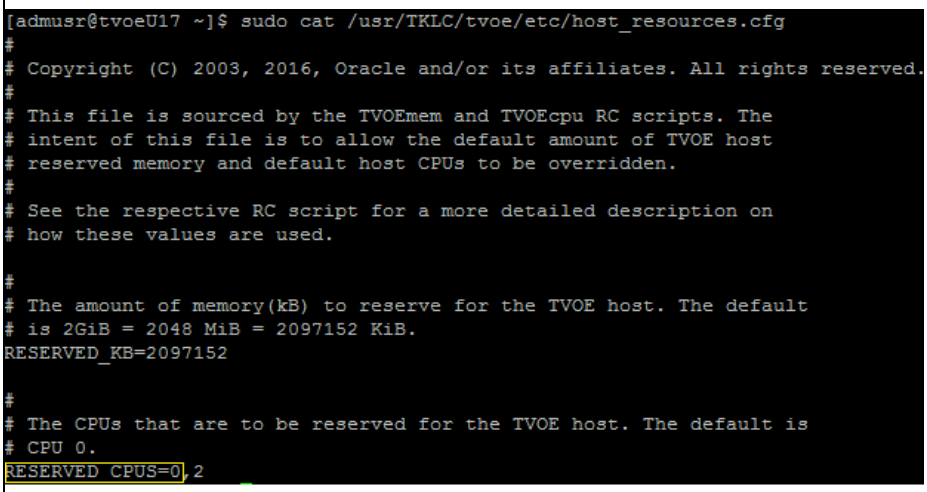
S T E P #	This procedure provides instructions to edit the NUMA tuning of the redundant PM&C and should be executed after upgrade to PM&C 6.4 release. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**

1. ☐	Locate the Ipv6 address of the redundant PM&C TVOE Host	Open the IE web browser and enter: https://<Redundant PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data **Note:**The following images are for illustrative purposes only. Using the Main Menu, navigate to **Software -> Software Inventory** page. Locate the entry belonging to the redundant PM&C guest. Now, click on the IP Address field of the redundant PM&C guest entry, this will bring up "Ident Information" window: 

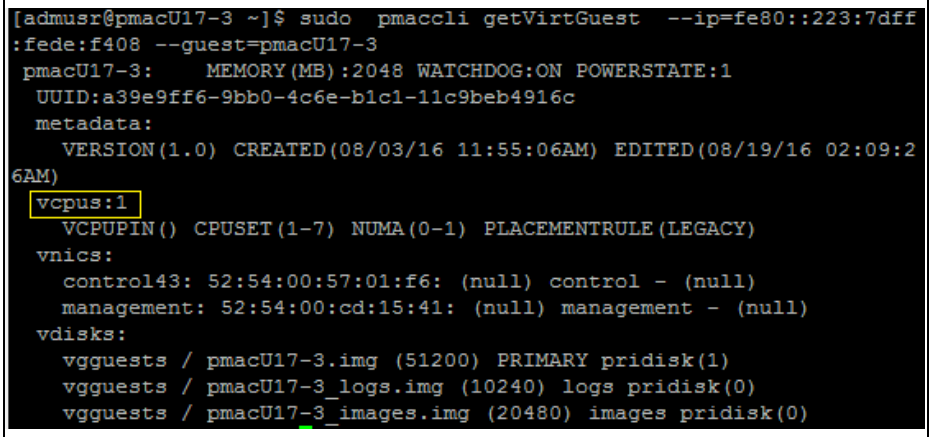
Procedure23. Post Upgrade Procedure to Edit redundant PM&C NUMA Tuning

		Note down the value next to GuestHost IP: Guest Host Ip:
2. ☐	Decide if NUMA Tuning is required	Login to PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console Execute the following command: **[admusr@pmacU17-3~]$ sudo pmaccli getVirtGuest --ip=<Guest Host Ip> --guest=<redundant PM&C guest name>** **Note:**The following images are for illustrative purposes only.  In the output of the above command, if both VCPUPIN and CPUSET have empty values, proceed to the next step, otherwise exit the procedure.
3. ☐	Login to redundant PM&C TVOE Host	Login to the redundant PM&C TVOE Host console, using Appendix A Accessing The PM&C TVOE Host Console

Procedure23. Post Upgrade Procedure to Edit redundant PM&C NUMA Tuning

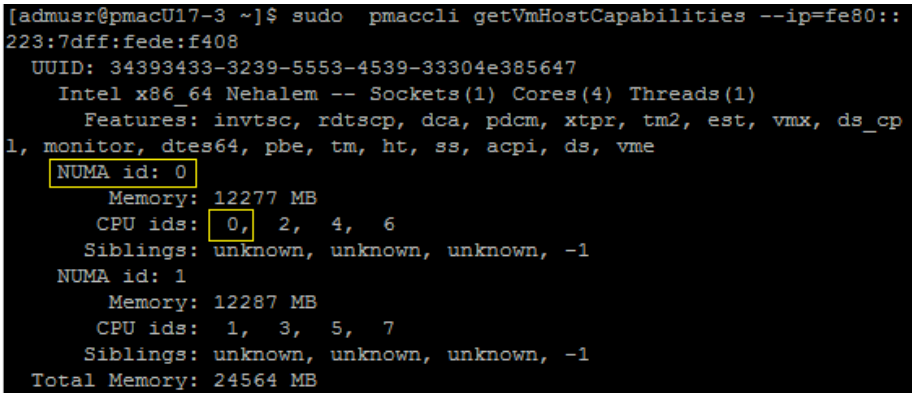
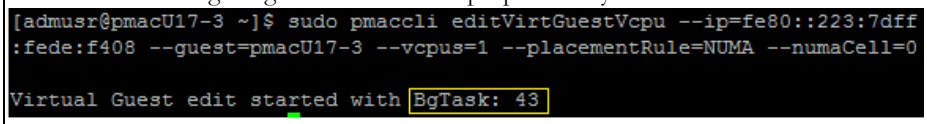
4. ☐	Get Reserved CPUs on redundant PM&C TVOE Host	In the Putty session to redundant PM&C TVOE Host, execute the following command: **[admusr@tvoeU17 ~]$ sudo cat /usr/TKLC/tvoe/etc/host_resources.cfg** Note down the first CPU number listed next to RESERVED_CPU: Reserved CPU **Note:**The following images are for illustrative purposes only.  Reserved CPU to be noted is 0, in the above screenshot.

Procedure23. Post Upgrade Procedure to Edit redundant PM&C NUMA Tuning

5. ☐	Get the allocated vcpus for the redundant PM&C	In a Putty session to redundant PM&C guest, execute the following command: **[admusr@pmacU17-3~]$ sudo pmaccli getVirtGuest --ip=<Guest Host Ip> --guest=<redundant PM&C guest name>** Note down the value next to vcpus: vcpus | **Note:**The following images are for illustrative purposes only.  Vcpus to be noted is 1, in the above screenshot.

```
[admusr@pmacU17-3 ~]$ sudo  pmaccli getVirtGuest  --ip=fe80::223:7dff
:fede:f408 --guest=pmacU17-3
 pmacU17-3:    MEMORY(MB):2048 WATCHDOG:ON POWERSTATE:1
  UUID:a39e9ff6-9bb0-4c6e-b1c1-11c9beb4916c
  metadata:
    VERSION(1.0) CREATED(08/03/16 11:55:06AM) EDITED(08/19/16 02:09:2
6AM)
  vcpus:1
    VCPUPIN() CPUSET(1-7) NUMA(0-1) PLACEMENTRULE(LEGACY)
  vnics:
    control43: 52:54:00:57:01:f6: (null) control - (null)
    management: 52:54:00:cd:15:41: (null) management - (null)
  vdisks:
    vgguests / pmacU17-3.img (51200) PRIMARY pridisk(1)
    vgguests / pmacU17-3_logs.img (10240) logs pridisk(0)
    vgguests / pmacU17-3_images.img (20480) images pridisk(0)
```

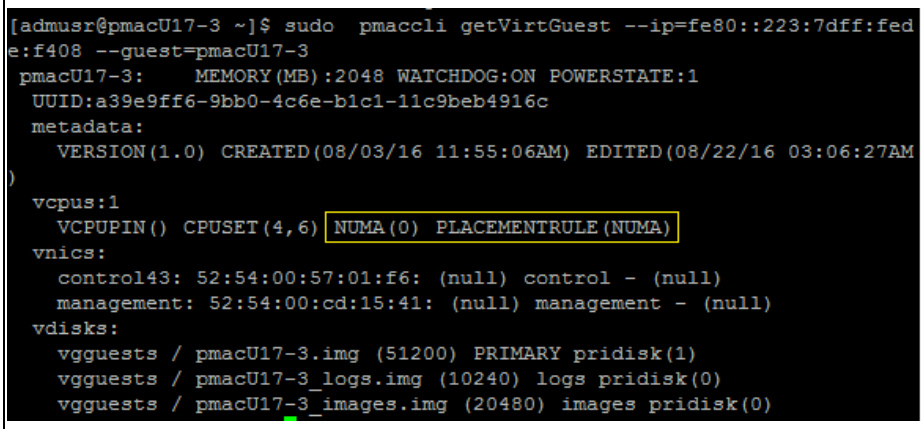
Procedure23. Post Upgrade Procedure to Edit redundant PM&C NUMA Tuning

6. ☐	Identify the NUMA where PM&C's host CPUs are reserved	In a Putty session to redundant PM&C guest, execute the following command: **[admusr@pmacU17-3~]$ sudo pmaccli getVmHostCapabilities --ip=<Guest Host Ip>** Note down the NUMA id to which the Reserved CPU (from Step# 2) belongs: NUMA id ____ **Note:**The following images are for illustrative purposes only.  NUMA id to be noted is 0 in the above screenshot as the Reserved CPU 0 (from Step# 2) belongs to the NUMA id 0.
7. ☐	Edit the redundant PM&C NUMA Tuning	In a Putty session to redundant PM&C guest, execute the following command using the NUMA id value gathered in the previous step: **[admusr@pmacU17-3~]$ sudo pmaccli editVirtGuestVcpu --ip=<Guest Host Ip> --guest=<redundant PM&C guest Name> --vcpus=<vcpus> --placementRule=NUMA --numaCell=<NUMA id>** Note down the value next the BgTask: BgTask ____ **Note:**The following image is for illustrative purposes only.  BgTask to be noted is 43, in the above screenshot.

Procedure23. Post Upgrade Procedure to Edit redundant PM&C NUMA Tuning

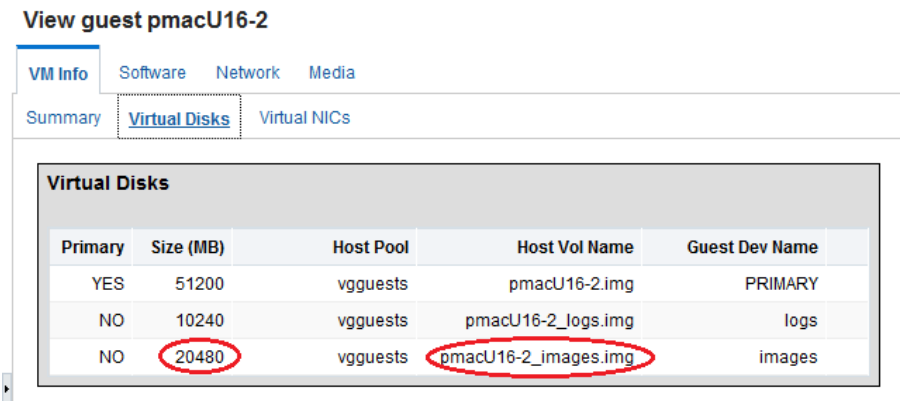
8. ☐	Wait for the Edit Guest background task to complete	In a GUI session to redundant PM&C guest, Under the Main Menu, Navigate to the 'Background Task Monitoring' view. Verify that the 'Edit Guest' task with the Id, <BgTask> has completed successfully. **Note:**The following image is for illustrative purposes only.
9. ☐	Shut down the redundant PM&C guest	Shutdown the redundant PM&C guest as detailed in Appendix H Shutdown PM&C Guest
10. ☐	Start the redundant PM&C guest	Using the virsh utility on the redundant PM&C TVOE host , start the redundant PM&C guest. Query the list of guests until the redundant PM&C guest is "running". **[admusr@tvoeU17~]$ sudo /usr/bin/virsh list --all** Id Name State ---------- 20 <redundant PM&C guest name> shut off **[admusr@tvoeU17~]$ sudo /usr/bin/virsh start <pmac>** Domain <redundant PM&C guest name> started **[admusr@tvoeU17 ~]$ sudo /usr/bin/virsh list --all** Id Name State ---------- 20 <redundant PM&C guest name> running
11. ☐	Monitor the redundant PM&C guest until it comes up	In a Putty session to redundant PM&C TVOE Host, execute the following command: **[admusr@tvoeU17 ~]$ sudo /usr/bin/virsh console <Redundant PM&C guest name>** Wait for the redundant PM&C guest login prompt to appear.
12. ☐	Login to redundant PM&C	Login to redundant PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

Procedure23. Post Upgrade Procedure to Edit redundant PM&C NUMA Tuning

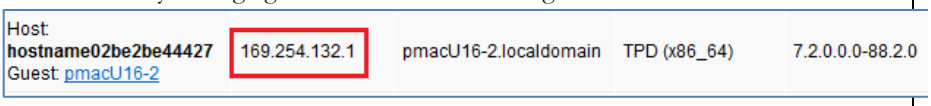
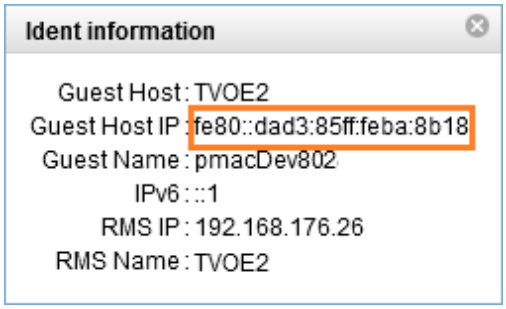
13. ☐	Verify the redundant PM&C NUMA Tuning	In a Putty session to redundant PM&C guest, execute the following command: **[admusr@pmacU17-3~]$ sudo pmaccli getVirtGuest --ip=<Guest Host Ip> --guest=<PM&C guest name>** Verify that the output contains the following: • NUMA is set to <NUMA id> • PLACEMENTRULE is set to NUMA **Note:**The following images are for illustrative purposes only. 
---End of Procedure---		

```
[admusr@pmacU17-3 ~]$ sudo  pmaccli getVirtGuest --ip=fe80::223:7dff:fed
e:f408 --guest=pmacU17-3
 pmacU17-3:    MEMORY(MB):2048 WATCHDOG:ON POWERSTATE:1
  UUID:a39e9ff6-9bb0-4c6e-b1c1-11c9beb4916c
  metadata:
    VERSION(1.0) CREATED(08/03/16 11:55:06AM) EDITED(08/22/16 03:06:27AM
)
  vcpus:1
    VCPUPIN() CPUSET(4,6) NUMA(0) PLACEMENTRULE(NUMA)
  vnics:
    control43: 52:54:00:57:01:f6: (null) control - (null)
    management: 52:54:00:cd:15:41: (null) management - (null)
  vdisks:
    vgguests / pmacU17-3.img (51200) PRIMARY pridisk(1)
    vgguests / pmacU17-3_logs.img (10240) logs pridisk(0)
    vgguests / pmacU17-3_images.img (20480) images pridisk(0)
```

Procedure24. Post Upgrade Configuration of larger redundant PM&C ISO Image Repository area

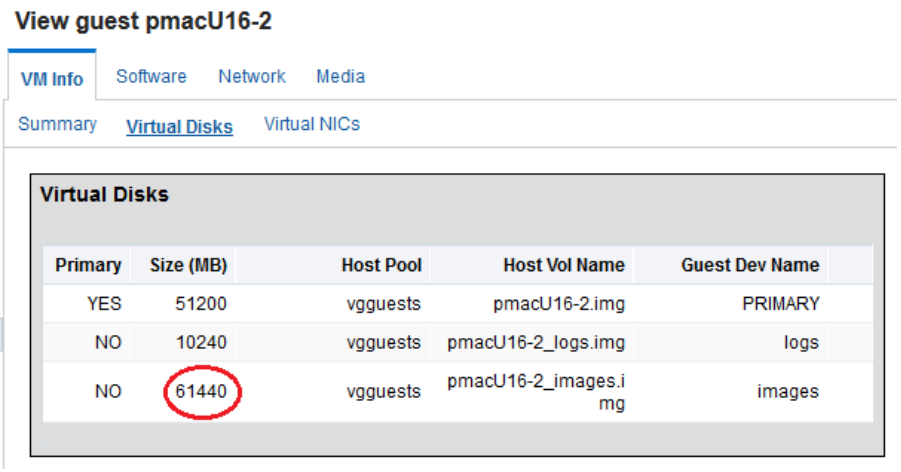
STEP #	Use this procedure to verify the PM&C ISO image repository size. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Determine if the redundant PM&C ISO image repository needs to be enlarged	**Note:** It is required that PM&C ISO repository is 61440 MB in any PM&C 6.4 release. Using the primary PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View guest" page. Click on the "Virtual Disks" link. In the "Virtual Disks" table, locate the entry with Guest Dev Name "images".  Note down the following values: Size (MB) | Host Vol Name | **Note:** If the Size (MB) is smaller than 61440 MB proceed to the next step. Otherwise, skip the rest of this procedure.

Procedure24. Post Upgrade Configuration of larger redundant PM&C ISO Image Repository area

2. ☐	Locate the IPv6 address of redundant PM&C TVOE host	Using the Main Menu, navigate to Software → Software Inventory page. Locate the entry belonging to the redundant PM&C guest.  Now, click on the IP Address field of the redundant PM&C guest entry, this will bring up "Ident information" window.  Note down the following values: Guest Host IP: _____
3. ☐	If necessary, access the primary PM&C guest console	If necessary, access the primary PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

4. ☐	Enlarge the redundant PM&C ISO repository	Execute the following command with appropriate values gathered in steps 1 and 2:
		`[admusr@pmac2 ~]$ sudo` **`pmaccli enlargeIsoImageRepository --ip=<Guest_Host_IP> --guest=<redundant_pmac_guest_name> --volname=<Host_Vol_Name> --volpool=vgguests --volsize=61440`**
		
		For example, enlarging repository of redundant PM&C guest with name pmac2 to 61440 MB would be similar to this:
		`[admusr@pmac2 ~]$ sudo /usr/TKLC/smac/bin/pmaccli enlargeIsoImageRepository --ip=fe80::dad3:85ff:feba:8b18 --guest=pmac2 --volname=pmac2_images.img --volpool=vgguests --volsize=61440`
		`Successful resize of pmac2_images.img to 61440 MB.`

Procedure24. Post Upgrade Configuration of larger redundant PM&C ISO Image Repository area

5. ☐	Verify the size of redundant PM&C ISO repository	Using the primary PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View guest" page. Click on the "Virtual Disks" link. In the "Virtual Disks" table, scroll to the entry with Guest Dev Name "images".  View guest pmacU16-2 VM Info Software Network Media Summary Virtual Disks Virtual NICs Virtual Disks Primary | Size (MB) | Host Pool | Host Vol Name | Guest Dev Name YES 51200 vgguests pmacU16-2.img PRIMARY NO 10240 vgguests pmacU16-2_logs.img logs NO 61440 vgguests pmacU16-2_images.img images Ensure the Size(MB) now is 61440.
End of Procedure		

Procedure25. Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

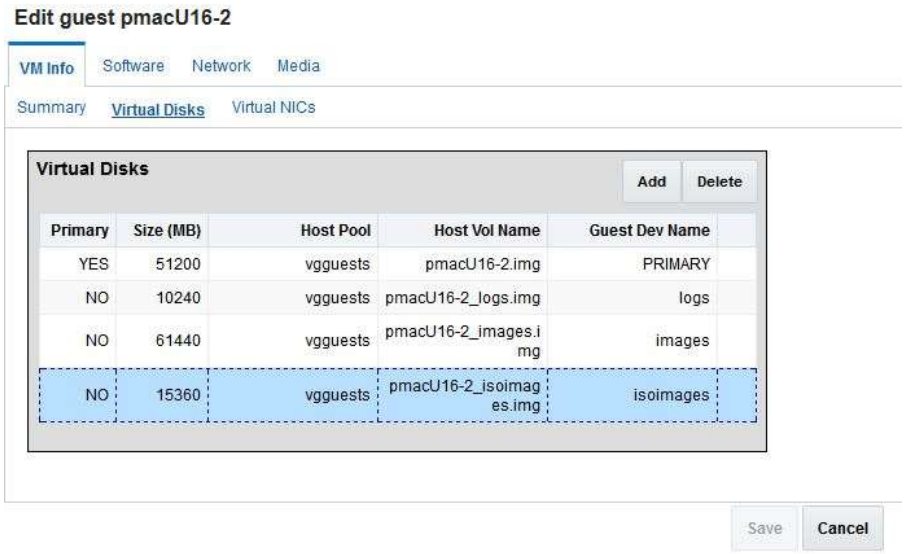
STEP #		
	Use this procedure to enlarge the redundant PM&C ISO image temporary import area up to 20480 MB (20 GB). **Note:** This procedure can be executed only on PM&C 5.7 and later releases. **Note:** Only execute this procedure if it is required by application. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console.

Procedure25. Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

2. ☐	Determine if the PM&C ISO temporary import area needs to be enlarged	Execute the following command:
		
		`[admusr@pmac ~]$ sudo /bin/df -h | grep isoimages`
		
		In the sample output below , there is no entry related to `/var/TKLC/smac/image/isoimages/home/smacftpusr`, which would be there if the ISO temporary import area was enlarged during PM&C deployment or afterwards. The ISO temporary import area in the example above has at the most 5 GB available.
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4% /var/TKLC/smac/image/isoimages`
		
		In the following sample there is an additional entry, indicating that the ISO temporary import area `/var/TKLC/smac/image/isoimages/home/smacftpusr` has altogether 20 GB available from an EVD.
		
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4% /var/TKLC/smac/image/isoimages`
		`/dev/vdd 20G 173M 19G 1%`
		`/var/TKLC/smac/image/isoimages/ home/smacftpusr`
		
		If the application requires the repository to be larger than the size reported by the command above, proceed to the next step. Otherwise, skip the rest of this procedure.
		
		Note: To be able to transfer an application ISO image to the PM&C, this area must be large enough for the largest ISO image file size anticipated at the site.

3. ☐	Log in to the redundant PM&C GUI.	If needed, open IE web browser and enter: https://<PM&C Management Network IP > Log in with administrator credentials from Table 3. Software Upgrade Required Data.
4. ☐	Navigate to the "Edit guest" page of the redundant PM&C guest	Using the redundant PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View guest" page. Click "Edit".
5. ☐	Determine whether the "isoimages" virtual disk exists	Click on the "Virtual Disks" link. In the "Virtual Disks" table, locate the entry with Guest Dev Name "isoimages". If you cannot find the "isoimages" entry, skip to step 13. Otherwise, proceed to step 6.

Procedure25. Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

6. ☐	Delete the "isoimages" vdisk	**Note:** When the vdisk is deleted, any files stored on it will be destroyed, so be sure to copy any files you would like to keep to a safe location. Select the entry for the "isoimages" virtual disk. Click on the "Delete" button.  Verify that the "isoimages" vidsk is no longer listed and click on the "Save" button.
7. ☐	Confirm the change to the PM&C guest	A confirmation dialog will be presented with the message, "Changes to the PM&C guest will not take effect until after the next power cycle. Do you wish to continue?". Click "OK" to continue.

Procedure25. Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

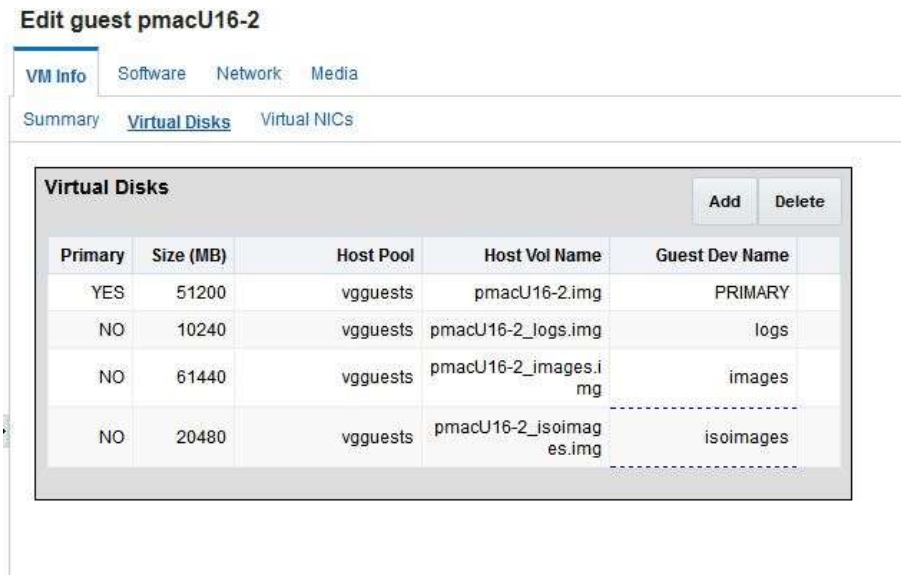
8. ☐	Wait for the Edit Guest background task to complete	Navigate to the Background Task Monitoring view. Confirm that the Edit Guest task has completed successfully.
9. ☐	Shut down the PM&C guest	Shut down the PM&C guest as detailed in Appendix H.

10. ☐	Start the PM&C guest	Using the virsh utility on the TVOE host of PM&C guest, start the PM&C guest. Query the list of guests until the PM&C guest is "running".
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac shut off`
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh start <pmac>`
		`Domain pmac started`
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac running`

11. ☐	Monitor the PM&C guest until it comes up and verify that the temporary ISO import area does not exist	Execute:
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh console <pmac>`
		
		Wait for the PM&C guest login prompt to appear.
		Log in as admusr as captured in Table 3. Software Upgrade Required Data and verify that the entry for the /var/TKLC/smac/image/isoimages/home/smacftpusr mount point is not displayed. An example is shown below:
		
		`[admusr@pmac2 ~]$ sudo /bin/df -h | grep isoimages`
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4% /var/TKLC/smac/image/isoimages`

12. ☐	Navigate to the "Edit guest" page of the redundant PM&C guest	Using the redundant PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View guest" page. Click on the "Virtual Disks" link and then click "Edit".

Procedure25. Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

13. ☐	Add the "isoimages" vdisk to the PM&C guest.	Click the "Add" button. Enter the following data for the new isoimages virtual disk. • Size (MB): <total_size_of_temporary_import_area> • Host Pool: "vgguests" • Host Vol Name: "<pmac_guest_name>_isoimages.img" • Guest Dev Name: "isoimages" **Note:** Set the Size (MB) to a value large enough for the largest ISO image file size anticipated at the site. The size can be increased up to 20480 MB. For instance, the following image illustrates what a user would enter in order to achieve a 20480 MB ISO temporary import area on pmacU16-2.  **Note:** The "Guest Dev Name" must be set to "isoimages" for the PM&C application to mount the appropriate host device. The <pmac_guest_name> variable should be set to this PM&C guest's name to create a unique volume name on the TVOE host of the PM&C. Verify the new isoimages virtual disk data and click "Save".

Procedure25. Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

14. ☐	Confirm the change to the PM&C guest	A confirmation dialog will be presented with the message, "Changes to the PM&C guest will not take effect until after the next power cycle. Do you wish to continue?". Click "OK" to continue.
15. ☐	Wait for the Edit Guest background task to complete	Navigate to the Background Task Monitoring view. Confirm that the Edit Guest task has completed successfully.
16. ☐	Shut down the PM&C guest	Shut down the PM&C guest as detailed in Appendix H.

17. ☐	Start the PM&C guest	Using the virsh utility on TVOE host of PM&C guest, start the PM&C guest. Query the list of guests until the PM&C guest is "running".
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac shut off`
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh start <pmac>`
		`Domain pmac started`
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac running`

Procedure25. Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

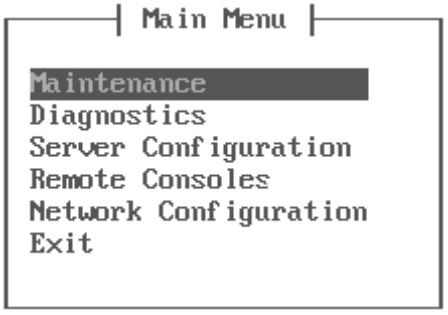
18. ☐	Monitor the PM&C guest until it comes up and verify the size of the "isoimages" vdisk	Execute:
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh console <pmac>`
		
		Wait for the PM&C guest login prompt to appear.
		Log in as admusr as captured in Table 3. Software Upgrade Required Data and verify the disk size using the df command. An example is shown below:
		
		`[admusr@pmac2 ~]$ sudo /bin/df -h | grep isoimages`
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4% /var/TKLC/smac/image/isoimages`
		`/dev/vdd 20G 173M 19G 1%`
		`/var/TKLC/smac/image/isoimages/ home/smacftpusr`

19. ☐	Verify the size of PM&C ISO temporary import area NOTE: It may take up to 5 minutes for the PM&C GUI to be responsive and provide a login prompt.	**Note:** It can take up to 15 minutes for the PM&C to perform sufficient software discovery and enable navigation to the "View guest" page. **Note:** Using the redundant PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View guest" page. Click on the "Virtual Disks" link. In the table, locate the entry with Guest Dev Name "isoimages". Ensure that the Size (MB) field now reflects the new value.
Section 5.5 has been completed		

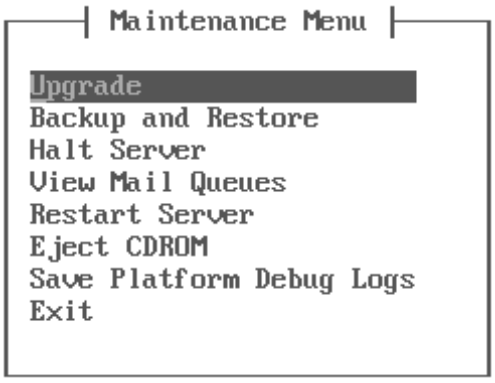
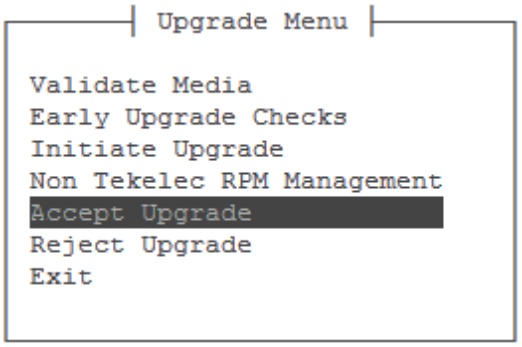
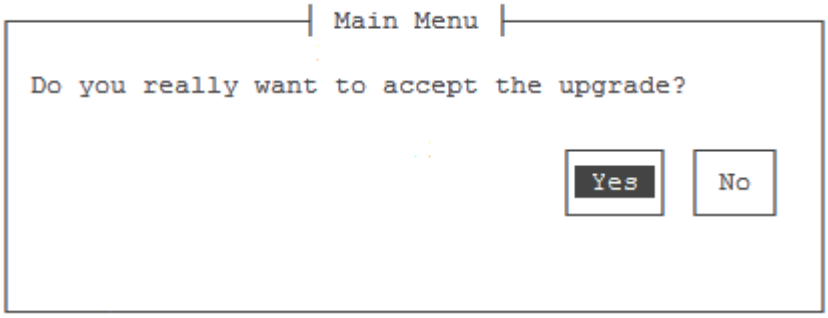
5.6 Software Upgrade Acceptance and Cleanup on the Redundant PM&C

Once you are satisfied that this release of PM&C is acceptable, it is time to accept the upgrade. Please note that once you accept an upgrade, a backout to the previous release is not possible. If backout becomes necessary after an upgrade has been accepted, then a disaster recovery process is required. The following procedure identifies the steps required to accept the upgrade. Once the upgrade has been accepted it is safe to remove the media used for the upgrade.

Procedure26. Post Upgrade Acceptance on the redundant PM&C

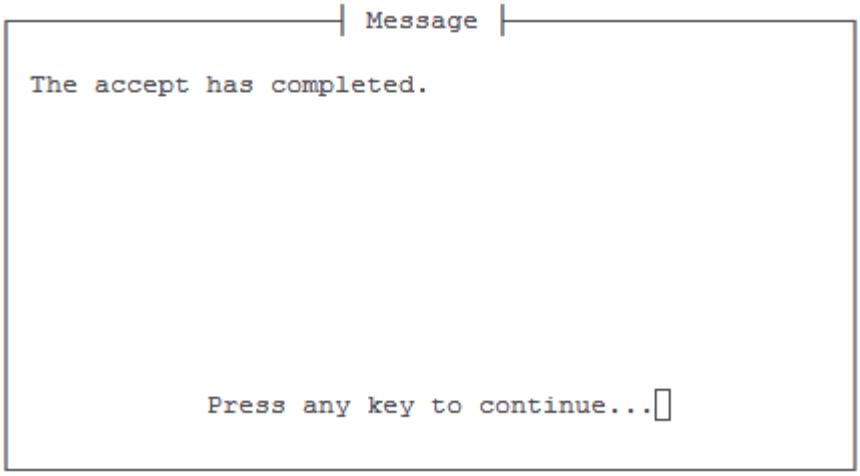
S T E P #	Task	Description
	Use this procedure to finalize the upgrade on the redundant PM&C, once complete, the backout is no longer available/possible. **Note:** This procedure should only be performed when a backout is no longer anticipated/desired. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
1. ☐	If necessary, access the redundant PM&C guest console	If necessary, access the redundant PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console
2. ☐	Run the "platcfg" utility.	Execute: `[admusr@pmac ~]$ sudo su - platcfg`
3. ☐	In "platcfg" utility Access the Maintenance menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following image is for illustrative purposes only.  Select "Maintenance" to navigate to the Maintenance Menu.

Procedure26. Post Upgrade Acceptance on the redundant PM&C

4. ☐	In "platcfg" utility access the Upgrade menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following image is for illustrative purposes only.  Select "Upgrade" to navigate to the Upgrade Menu.
5. ☐	In "platcfg" utility, select "Accept Upgrade" to start the accept process.	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following image is for illustrative purposes only.  Select "Accept Upgrade" and press the [ENTER] key to start the accept process.
6. ☐	Confirm the decision and execute the accept.	

Procedure26. Post Upgrade Acceptance on the redundant PM&C

7. ☐	The "Accept Upgrade" process starts	**Note:** The following image is for illustrative purposes only.
		`Called with options: --accept`
		`Loading Upgrade::Backout::LVM`
		`Accepting Upgrade`
		`snapmgr: Logical volume "smac_root_snap" successfully removed`
		`snapmgr: Logical volume "smac_var_snap" successfully removed`
		`snapmgr: Logical volume "plat_usr_snap" successfully removed`
		`snapmgr: Logical volume "smac_backup_snap" successfully removed`
		`snapmgr: Logical volume "plat_root_snap" successfully removed`
		`snapmgr: Logical volume "plat_var_tklc_snap" successfully removed`
		`snapmgr: Logical volume "plat_var_snap" successfully removed`
		`snapmgr: Removed snapshot lv's related to tag "@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 /usr/TKLC/smac`

8. ☐	Verify the "Accept Upgrade" completes and exit the "platcfg" utility	 Press any key to return to the "Upgrade menu". Use the arrow keys to select "Exit" and press the [ENTER] key to exit from all menus until the PM&C command prompt is displayed.

Procedure26. Post Upgrade Acceptance on the redundant PM&C

9. ☐	If the TVOE host was upgraded using **Error! Reference source not found.**.	The upgrade of TVOE includes acceptance of the upgrade. This acceptance may have been intentionally delayed by the PM&C upgrade during the execution of **Error! Reference source not found.**. If the TVOE upgrade was delayed, then please return to TVOE host upgrade procedures outlined in the TVOE Software Upgrade document for the release being upgraded. Continue the upgrade process with procedure 8, Stand Alone TVOE Upgrade Accept.
--End of Procedure--		

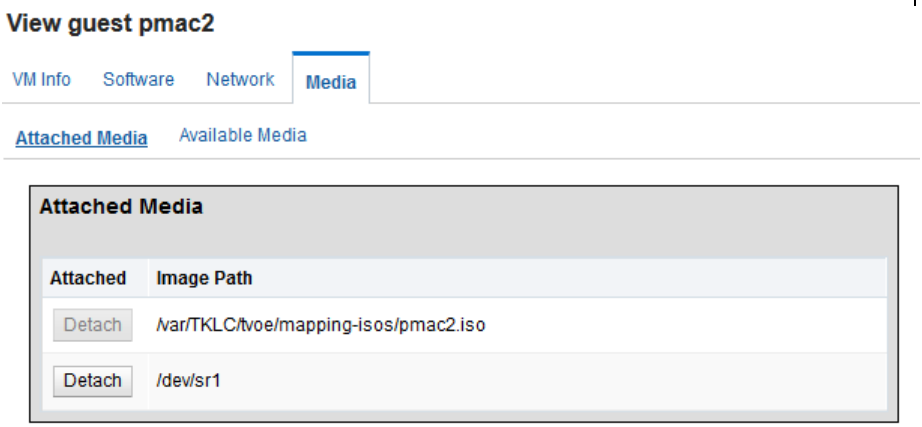
Procedure27. Post Upgrade Cleanup of Upgrade Media

STEP #	Use this procedure to remove the upgrade media from the redundant PM&C. **Note:** This procedure should only be performed when a backout is no longer anticipated/desired. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**

1. ☐	If this was a Remote Upgrade, then ensure images used for upgrade have been removed from PM&C	Execute the following command on the redundant PM&C:
		`[admusr@pmac ~]$ sudo /bin/ls /var/TKLC/upgrade/PMAC-6.4.0.0.0_64.2.0-x86_64.iso`
		
		If there are images that need to be removed, using the output of the command above, specify the full path of the image to be removed:
		`[admusr@pmac ~]$ sudo /bin/rm -f /var/TKLC/upgrade/<image_name.iso>`
		
		For instance:
		`[admusr@pmac ~]$sudo /bin/rm –f /var/TKLC/upgrade/PMAC-6.4.0.0.0_64.2.0-x86_64.iso`
		
		Repeat this step as necessary to ensure there are no images left to be removed.

2. ☐	If this was a local upgrade, Log in to the primary PM&C GUI.	If needed, open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data

Procedure27. Post Upgrade Cleanup of Upgrade Media

3. ☐	If upgrade was performed using external media, then detach the media from the redundant PM&C guest.	**Note:** It can take up to 15 minutes for the PM&C to perform sufficient software discovery to locate the PM&C TVOE host and enable navigation to the "View guest" page. Using the primary PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View guest" page. Select the "Media" tab on the "View guest" page. Click the "Detach" button for the image previously attached. 
4. ☐	If present, remove the external media from the redundant PM&C TVOE host server.	Remove the external media from the appropriate slot of the redundant PM&C TVOE host server.
Section 5.6 has been completed.		

6 Recovery Procedures

Upgrade procedure recovery issues should be directed to Oracle Customer Support. Before executing any of these procedures, contact Oracle Customer Support. In the event that a full installation is needed, the PM&C Installation Procedures also need to be performed. Persons performing the upgrade should be familiar with these documents.

6.1 Backout (reject) Setup Procedures

Execute this section only if there is a problem and it is desired to revert back to the pre-upgrade version of the software.

WARNING

***Do not attempt to perform these backout procedures without first contacting* Oracle Customer Support**

See Section 1.2

Backout of an initial installation is not supported.

The reason to execute a backout (reject) has a direct impact on any backout preparation that must be done. Since the reason cannot be known ahead of time, no definitive procedure can be written.

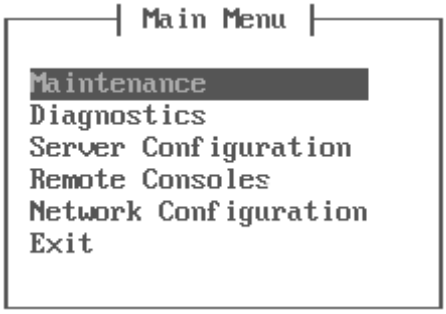
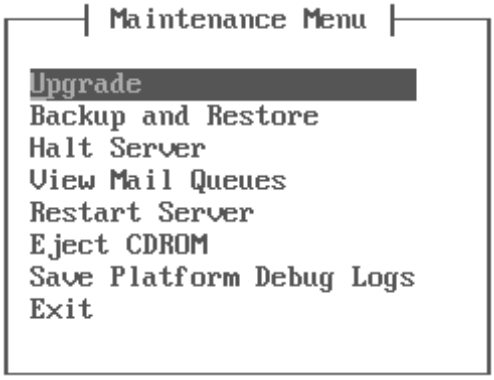
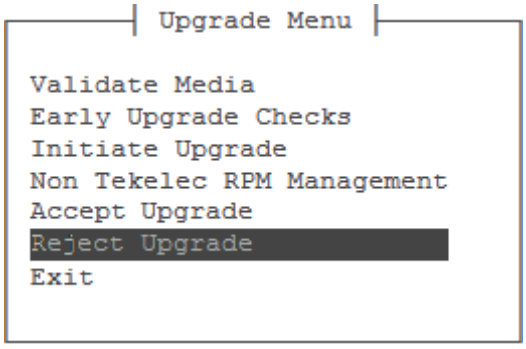
Oracle Customer Support personnel will require login access to the affected PM&C, probe the server for the root cause of the problem, and execute whatever setup or cleanup is necessary in order to prepare the PM&C for backout.

6.2 Recovery Procedures

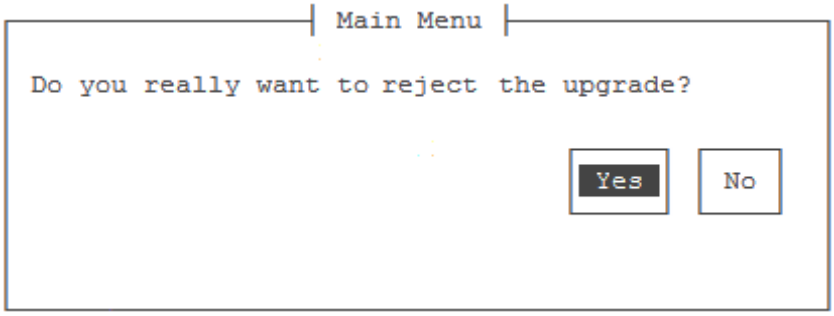
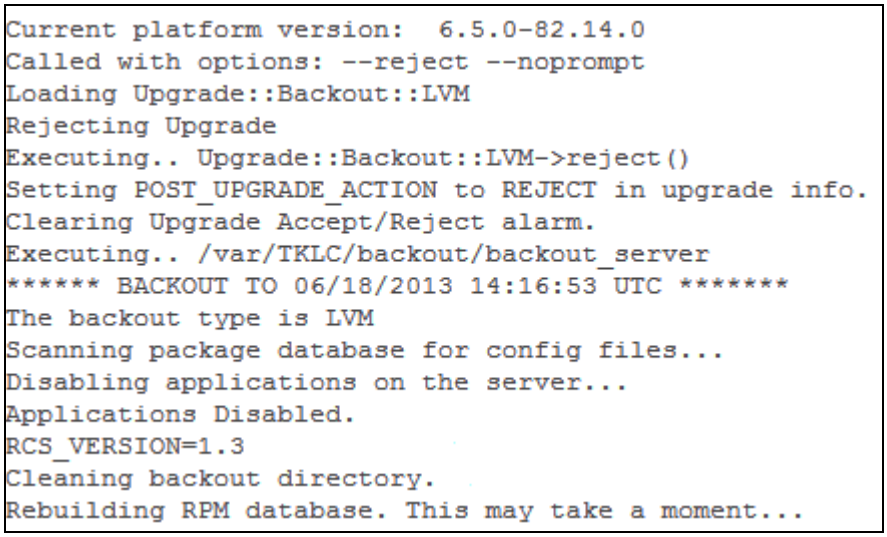
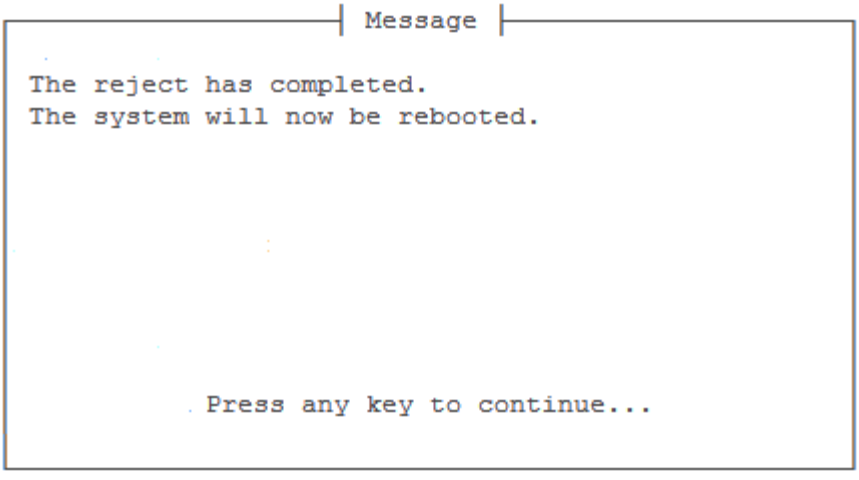
Procedure28. PM&C Backout(reject) Procedure

S T E P #	Use this procedure to execute a backout of PM&C applications software to the previous version. **Note:** No matter what the initial cause of the upgrade problem, only once all necessary corrective steps have been taken to prepare for the backout(reject), then the following procedure can be executed to perform a backout(reject). **Note:** This procedure can also be used for a failed upgrade on the redundant PM&C. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Close any active browser sessions to the PM&C.	If you have any open browsers connected to the PM&C, close them before proceeding.
2. ☐	If necessary, access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console
3. ☐	Run the "platcfg" utility.	Execute: `[admusr@pmac ~]$ sudo su – platcfg`

Procedure28. PM&C Backout(reject) Procedure

4. ☐	In "platcfg" utility Access the Maintenance menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following image is for illustrative purposes only.  Select "Maintenance" to navigate to the Maintenance Menu.
5. ☐	In "platcfg" utility access the Upgrade menu	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following image is for illustrative purposes only.  Select "Upgrade" to navigate to the Upgrade Menu.
6. ☐	In "platcfg" utility, select "Reject Upgrade" to start the reject process.	**Note:** Use the "Arrow" and the [ENTER] keys to navigate through the menu options. **Note:** The following image is for illustrative purposes only.  Select "Reject Upgrade" and press the [ENTER] key to start the reject process.

Procedure28. PM&C Backout(reject) Procedure

7. ☐	Confirm the decision and execute the backout.	
8. ☐	The "Reject Upgrade" process starts	**Note:** The following image is for illustrative purposes only. 
9. ☐	Backout requires reboot	**Note:** The following image is for illustrative purposes only. 

Procedure28. PM&C Backout(reject) Procedure

10. ☐	A revert of Logical Volume Snapshots is performed	**Note:** The following image is for illustrative purposes only.
		`1371567984:: Removing boot archive lv`
		`  Logical volume "bootarchive" successfully removed`
		`1371567984:: ############################`
		`1371567984::  reverting snapshot LVs`
		`1371567984:: ############################`
		`1371567984:: Reverting lvm snapshots`
		`  /sbin/dmeventd: stat failed: No such file or directory`
		`  Merging of volume smac_root_snap started.`
		`  smac_root: Merged: 94.1%`
		`  smac_root: Merged: 100.0%`
		`  Merge of snapshot into logical volume smac_root has finished.`
		`  Logical volume "smac_root_snap" successfully removed`
		`  /sbin/dmeventd: stat failed: No such file or directory`
		`  Merging of volume smac_var_snap started.`
		`  smac_var: Merged: 99.6%`
		Finally, after reverting LVM snapshots completes, a second reboot is performed to reload the system as it existed prior to the original upgrade.

11. ☐	Wait for PM&C login prompt	Upon successful completion of the upgrade, the user should be returned to a login prompt.
12. ☐	Login with correct credentials	Use platform admusr credentials from Table 3. Software Upgrade Required Data
13. ☐	If present, remove the external media from the PM&C TVOE host server.	Remove the external media from the appropriate slot of the PM&C TVOE host server.

14. ☐	Verify the backout completed.	Execute the following command to verify source PM&C release:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/appRev`
		`Install Time: Wed Nov  9 16:59:23 2016`
		`Product Name: PMAC`
		`Product Release: 6.4.0.0.0_64.2.0`
		`Base Distro Product: TPD`
		`Base Distro Release: 7.4.0.0.0_88.31.0`
		`Base Distro ISO: TPD.install-7.4.0.0.0_88.31.0-OracleLinux6.8-x86_64.iso`
		`ISO name: PMACBLD-6.4.0.0.0_64.2.0.iso`
		`OS: OracleLinux 6.8`
		If correct Product Release is not displayed, contact Oracle Customer Support and do not proceed until instructed by an Oracle representative.

Procedure28. PM&C Backout(reject) Procedure

15. ☐	Execute the system health check.	Execute Appendix C PM&C System Health Check Unless otherwise instructed, if any error or failure conditions are discovered on the PM&C or PM&C application then do ***not*** proceed. Contact Oracle Customer Support to work to resolve the failure conditions.
16. ☐	Clear browser cache	Clear your browser's cache to ensure that your browser has the latest client-side code loaded. Refer to your browser's documentation if necessary.
Section 6.2 has been completed.		

Appendix A. Accessing The PM&C TVOE Host Console

Procedure29. Accessing the PM&C 6.0, 6.2, 6.3 or 6.4 TVOE Host Console

S T E P #	Use this procedure to access the console of a TVOE host in PM&C 6.0, 6.2, 6.3 or 6.4 system **Note:** Be sure to capture a log of all lines appearing on the screen on the laptop, desktop, or other computer used when executing this procedure. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Login to Management Server iLO/ILOM.	Access the Management Server iLO/ILOM using *Appendix F How to Access a Server Console Remotely*, in the appropriate Platform Configuration Guide for the release being upgrade to 6.4. If necessary refer to Table 3. Software Upgrade Required Data for login credentials.
2. ☐	Login to TVOE as admusr	If necessary login with the admusr credentials captured in Table 3. Software Upgrade Required Data `[admusr@tvoe ~]$`
3. ☐	Exit this procedure and return to the procedure which referred you.	Return to the next step in the referring procedure.
This procedure has been completed.		

Appendix B. Accessing The PM&C Guest Console

Procedure30. Accessing the PM&C 6.0, 6.2, 6.3 or 6.4 Guest console

S T E P #	Use this procedure to access the virtualized PM&C 6.4 guest console running on a TVOE hypervisor. **Note:** Be sure to capture a log of all lines appearing on the screen on the laptop, desktop, or other computer used when executing this procedure. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the TVOE host console	Login to the TVOE host console, using *Appendix A* Accessing The PM&C TVOE Host Console

2. ☐	Determine the name of the PM&C guest	At the TVOE console, list the guests and locate the one representing the PM&C:
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list`
		`Id Name State`
		`----------`
		`11 pmac running`
		`[admusr@tvoe ~]$`

3. ☐	Login to PM&C guest console as the admusr.	Connect to the console and login as the admusr captured in Table 3. Software Upgrade Required Data (this example assumes the PM&C is currently at release 6.0).
		It may be necessary to press return to get a prompt
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh console <PMAC_Name>`
		`Connected to domain <PMAC_Name>`
		`Escape character is ^]`
		`Oracle Linux Server release 6.8`
		`Kernel 2.6.32-642.6.1.el6prerel7.4.0.0.0_88.31.0.x86_64 on an x86_64`
		`pmacu162 login: admusr`
		`Password:`
		`Last login: Fri Nov 18 09:38:03 from 10.75.9.112`
		`[admusr@<PMAC_Name> ~]$`

4. ☐	Exit this procedure and return to the procedure which referred you.	Return to the next step in the referring procedure.

Appendix C. PM&C System Health Check

Procedure31. PM&C 6.0, 6.2, 6.3 or 6.4 System Health Check

STEP #	Use this procedure to perform a PM&C 6.4 system health check. **Note:** Be sure to capture a log of all lines appearing on the screen on the laptop, desktop, or other computer used when executing this procedure. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

2. ☐	Run the "sentry status" command to verify the status of the PM&C application.	`[admusr@pmac ~]$ sudo /usr/TKLC/smac/bin/sentry status`
		`sending status command...`
		`PM&C Sentry Status`
		
		`sentryd started: Mon Nov 14 14:02:32 2016`
		`Current activity mode: ACTIVE`
		`Process PID Status StartTS NumR`
		`smacTalk 10047 running Mon Nov 14 14:02:32 2016 1`
		`smacMon 10115 running Mon Nov 14 14:02:32 2016 1`
		`hpiPortAudit 10247 running Mon Nov 14 14:02:32 2016 1`
		`snmpEventHandler 10388 running Mon Nov 14 14:02:32 2016 1`
		
		`Fri Nov 18 09:44:29 2016`
		`Command Complete.`
		`[admusr@pmac ~]$`

3. ☐	Run alarmMgr on PM&C instance.	`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/alarmMgr –alarmStatus` `[admusr@pmac ~]$`

Procedure31. PM&C 6.0, 6.2, 6.3 or 6.4 System Health Check

4. ☐	If any error messages are displayed by the alarmMgr command, if sentry shows any PM&C processes not running, or alarmMgr shows any failures, then there is a problem with the Management Server or PM&C application. Contact Oracle Customer Support for information on how to proceed.	If sentry shows any PM&C processes not running, then the healthcheck was not successful. Contact Oracle Customer Support for information on how to proceed. Otherwise, if alarmMgr shows no alarms and sentry shows all processes running, then PM&C appears to be running normally.

5. ☐	Verify that the backup directory contains recent backup archive files.	Execute the following command:
		
		`[admusr@pmac ~]$ sudo /bin/ls –al /var/TKLC/smac/backup/`
		`total 40`
		`drwxrwxr-x 4 pmacadmin pmacbackup  4096 Jun  5 16:18 .`
		`drwxr-xr-x 9 pmacadmin smac  4096 May 25 16:33 ..`
		`-rw-rw-r-1 pmacd  pmacd  11014 Jun  5 16:18 backupPmac_20120605_161825.pef`
		`drwx------ 2 pmacadmin pmacbackup 16384 May 25 16:32 lost+found`
		`drwxr-xr-x 2 pmacadmin pmacbackup  4096 May 25 16:32 tvoeBackup`
		`[admusr@pmac ~]$`
		
		Verify that recent backups are present. The date of the backup is coded in the backup archive file name: backupPmac_<YYYY><MM><DD>_<hh><mm><ss>.pef
		You should see backup archive files for any backups performed as part of this upgrade procedure.

6. ☐	If recent backup archive files do not exists, health check fails.	If no recent backup archive files are present, the health check fails. Contact Oracle Customer Support for resolution of the backup issue.
7. ☐	Exit the PM&C guest console	Exit the PM&C guest console following instructions in *Appendix I How to Exit a Guest Console Session on an iLO,* in the appropriate Platform Configuration Guide for the release being upgrade to 6.4.

8. ☐	Run alarmMgr on Management Server console.	`[admusr@tvoe ~]$ sudo /usr/TKLC/plat/bin/alarmMgr –alarmStatus`
		`[admusr@tvoe ~]$`
		
		If alarmMgr shows no alarms then the management server appears to be running normally. Otherwise Contact Oracle Customer Support for information on how to proceed.

This procedure has been completed.		

Appendix D. PM&C System Backup

Procedure32. Primary PM&C 6.0, 6.2, 6.3 or 6.4 backup

STEP #	Use this procedure to back up all necessary PM&C 6.0, 6.2, 6.3 or 6.4 database data. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the primary PM&C guest console	If necessary, access the primary PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

2. ☐	Perform the backup to local disk.	`[admusr@pmac ~]$ sudo /usr/TKLC/smac/bin/pmacadm backup`
		`PM&C backup been successfully initiated as task ID 7`
		`[admusr@pmac ~]$`
		
		The output of the command should be indicate success of starting a background task. Note the task ID in your command output.

3. ☐	Access the PM&C GUI	If necessary, open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data.
4. ☐	Verify the backup task succeeds in PM&C GUI.	Navigate to the Task Monitoring page on the PM&C GUI. Verify the backup task with the task ID noted in step 2 completes successfully. If the PM&C backup fails, contact Oracle Customer Support for assistance.

5. ☐	The backup file must be transferred off-host to provide recovery in the event of a disaster.	Execute the following command to locate the latest backup file (output similar to the following is observed):
		
		`[admusr@pmac ~]$ sudo /bin/ls -al /var/TKLC/smac/backup/`
		`-rw-rw-r-- 1 pmacd pmacd 11014 Jun 5 16:18 backupPmac_20120605_161825.pef`
		
		Transfer the file to a remote server using scp.

This procedure has been completed.		

Appendix E. PM&C System Backup To Redundant PM&C

Procedure33. PM&C 6.0, 6.2, 6.3 or 6.4 backup to redundant PM&C

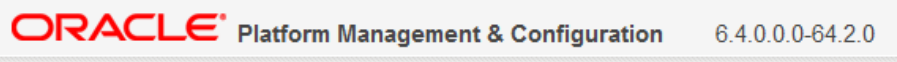
STEP #	Use this procedure to up all necessary PM&C database data from the primary PM&C 6.0, 6.2, 6.3 or 6.4 to the redundant PM&C. **Note:** The procedure requires that a redundant PM&C be installed, configured, and have network connectivity. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the primary PM&C guest console	If necessary, access the primary PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

2. ☐	In the primary PM&C guest console perform the backup to the redundant PM&C.	**Note:** The following command transfers the new backup file to the redundant PM&C. In addition, it transfers any and all of the images provisioned in the Software Inventory (not previously transferred).
		Note: The --media option must be used with the pmacadm backup command. The value assigned to the media must indicate the desire to backup data to the redundant PM&C
		Note: The IP Address of the redundant Management Sever must have been provisioned on the Manage Backup Data GUI screen.
		
		`[admusr@pmac ~]$ sudo /usr/TKLC/smac/bin/pmacadm --media="Remote Server"`
		`PM&C backup been successfully initiated as task ID 8`
		`[admusr@pmac ~]$`
		
		The output of the command should be indicate success of starting a background task. Note the task ID in your command output.

3. ☐	Access the primary PM&C GUI	If necessary, open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data
4. ☐	Verify the backup task succeeds in primary PM&C GUI.	Navigate to the Task Monitoring page on the primary PM&C GUI. Verify the backup task with the task ID noted in step 2 completes successfully. If the PM&C backup fails, contact Oracle Customer Support for assistance.
This procedure has been completed		

Appendix F. Determine The Current PM&C Version

Procedure34. Determine the current PM&C version

STEP #	Use this procedure to determine the current PM&C version. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the PM&C GUI	If necessary, open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data.
2. ☐	Determine the PM&C release running.	The top most header on the Welcome Page should contain the Release Number. It should start with "**Platform Management & Configuration**" and then indicate the PM&C release number which should start with 6.4: 
3. ☐	Return to the referring procedure	Return to the referring procedure.
This procedure has been completed.		

Appendix G. Determine If PM&C TVOE Host Requires Upgrade

Procedure35. Determine if PM&C 6.0, 6.2, 6.3 or 6.4 TVOE host requires upgrade

STEP #	Use this procedure to determine if the PM&C 6.0, 6.2, 6.3 or 6.4 TVOE host needs upgrading. **Note:** If the PM&C TVOE host cannot be upgrade at this time, then PM&C upgrade must not be attempted. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Access the TVOE host console	Login to the TVOE host console, using Appendix A Accessing The PM&C TVOE Host Console If needed, exit the PM&C guest console following instructions in *Appendix I How to Exit a Guest Console Session on an iLO,* in the appropriate Platform Configuration Guide for the release being upgraded to.

2. ☐	Determine the release of TVOE running.	`[admusr@tvoe ~]$ sudo /usr/TKLC/plat/bin/appRev`
		`Install Time: Mon Apr 27 15:47:04 2015`
		`Product Name: TVOE`
		`Product Release: 3.2.0.0.0_88.8.0`
		`Base Distro Product: TPD`
		`Base Distro Release: 7.2.0.0.0_88.8.0`
		`Base Distro ISO: TPD.install-7.0.0.0.0_86.8.0-OracleLinux6.6-x86_64.iso`
		`ISO name: TVOE-3.2.0.0.0_86.8.0-x86_64.iso`
		`OS: OracleLinux 6.6`

3. ☐	Compare the product release shown above against the supported release of TVOE noted in the Application release notes.	If a newer TVOE release is specified, then you must upgrade the PM&C TVOE host before upgrade of the PM&C can commence, using the procedure that follows.
This procedure has been completed.		

Procedure36. Upgrade the PM&C 6.0, 6.2, 6.3 or 6.4 TVOE host

STEP #	Task	Description
	Use this procedure to upgrade the PM&C 6.0, 6.2, 6.3 or 6.4 TVOE host. **Note:** This procedure is executed either during the same maintenance window or in a separate maintenance window from the PM&C upgrade. **Note:** If the PM&C TVOE host cannot be upgraded at this time, then PM&C upgrade must not be attempted. Check off (√) each step as it is completed. Boxes have been provided for this purpose under step number. If this procedure fails, see Section 1.2.	
1. ☐	Shutdown all running guests in preparation for the TVOE upgrade	An upgrade of a TVOE host will shutdown all guest OS (including PM&C) during the upgrade. However, prior to upgrading the TVOE host, ensure that all guests on that host are properly shutdown. Shutdown the PM&C guest as detailed i*n Appendix H* Shutdown PM&C Guest **Note:** Shut down all additional non-PM&C guests as detailed in application document. The upgrade of the TVOE will automatically restart each guest that was shut down.
2. ☐	Perform the TVOE upgrade	Execute all Stand Alone TVOE host upgrade procedures outlined in the TVOE Software Upgrade document for the release being upgraded.
3. ☐	Access the TVOE host console	Login to the TVOE host console, using Appendix A Accessing The PM&C TVOE Host Console

4. ☐	Ensure all images that have been used during upgrade have been removed from TVOE	Execute:
		`[admusr@tvoe ~]$ sudo /bin/ls /var/TKLC/upgrade/`
		`TVOE-3.2.0.0.0_88.9.0-x86_64.iso`
		
		If there are images that need to be removed, using the output of the command above, specify the full path of the image to be removed:
		`[admusr@tvoe ~]$ sudo /bin/rm -f`
		`/var/TKLC/upgrade/<image_name.iso>`
		
		For instance:
		`[admusr@tvoe ~]$ sudo /bin/rm –f /var/TKLC/upgrade/TVOE-3.2.0.0.0_88.9.0-x86_64.iso`
		Repeat this step as necessary to ensure there are no images left to be removed.

5. ☐	If present, remove the external media from the PM&C TVOE host server.	Remove the external media from the appropriate slot of the PM&C TVOE host server.

Procedure36. Upgrade the PM&C 6.0, 6.2, 6.3 or 6.4 TVOE host

6. ☐	Start the PM&C guest	Using virsh utility on TVOE host of PM&C guest, start the PM&C guest. Query the list of guests until the PM&C guest is "running".
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac shut off`
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh start <pmac>`
		`Domain pmac started`
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac running`

This procedure has been completed.		

Appendix H. Shutdown PM&C Guest

This appendix contains a procedure used to perform a shutdown of the PM&C guest.

Procedure37. Shutdown the PM&C 6.0, 6.2, 6.3 or 6.4 Guest

STEP #	Use this procedure to shut down a PM&C 5.7 or later Guest. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Log in to the primary PM&C GUI.	If needed, open IE web browser and enter: https://<PM&C Management Network IP > Login with administrator credentials from Table 3. Software Upgrade Required Data
2. ☐	Check for any background tasks in-progress on PM&C	On the PM&C GUI, navigate to the Task Monitoring page. Verify all tasks show as complete (either green, 100% progress or red, failed) and not in-progress (blue with <100% progress). If any tasks show as in-progress (blue) then wait for the task to complete prior to going to the next step. **Note:** If desired, you can delete all of the Complete and Failed tasks using the "Delete Completed" and "Delete Failed" buttons. This will leave only the in-progress tasks.
3. ☐	Access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B Accessing The PM&C Guest Console

Procedure37. Shutdown the PM&C 6.0, 6.2, 6.3 or 6.4 Guest

4. ☐	Shutdown PM&C Guest	Assuming no in-progress tasks exist, then it is safe to shut down the PM&C guest.
		
		Execute the following command:
		`[admusr@pmac ~]$ **sudo /usr/bin/halt -p**`
		`Broadcast message from root@pmacDev901`
		`(/dev/ttyS0) at 11:20 ...`
		
		`The system is going down for power off NOW!`
		`[admusr@pmac ~]$`
		
		Eventually the virsh console session is closed and you are returned to the TVOE host command prompt:
		
		`Halting system...`
		`Power down.`
		
		`[admusr@tvoe ~]$`

5. ☐	Verify PM&C guest is shutdown	From the TVOE host command prompt execute the following command:
		`[admusr@tvoe ~]$ **sudo /usr/bin/virsh list --all**`
		`Id Name State`
		`----------`
		`- pmac shut off`
		`[admusr@tvoe ~]$`
		
		This should show the guest state as "shut off".
		
		Note: You will want to be sure all guests are in the shut off state as well.

This procedure has been completed.		

Appendix I. Upgrade Devices For 7.2 NetConfig

This appendix contains a procedure used to perform required Platform 7.2 switch configurations with netConfig. The commands below will modify switch configurations to bring them in-line with Platform 7.2 initialized switches, without going through the disruptive process of re-initializing and restoring switch configurations of in-service switches. Though Platform 7.2 supports more than one upgrade path, the procedure below is written generically to apply to any valid Platform 7.2 upgrade path. Some commands below may have already been executed during a previous upgrade. If this is the case, some commands may return a notice that an object or setting was not found, as it was removed in a previous upgrade operation.

Procedure38. Post Upgrade Configuration of netConfig baseline level set for switch configurations

S T E P #	Use this procedure to standardize post inits switch configurations. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1. ☐	Platform 7.0 updates	Commands in this section are only applicable when upgrading to Platform 7.2 and above. **Note:** Depending on the specific upgrade path some of the commands below may have already been completed during original or subsequent initializations. If this is the case, a command line message indicating the setting already exists or does not exist may be received. Ignore these messages; no action is required beyond completion of the following commands. An example would be removing a community string from an SNMP community. In this case, the message "SNMP community not found: <community_string>" may be seen.

Procedure38. Post Upgrade Configuration of netConfig baseline level set for switch configurations

2. ☐	Reconfigure all 3020 enclosure switches	**Note:** If there are no Cisco 3020 switches in the repository, skip this step.
		Execute the following for all 3020 devices:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command=”line vty 0” commandPrompt=”config-line” subcommand=”exec-timeout 15”`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command=”aaa authentication login onconsole local”`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command="line con 0" commandPrompt="config-line" subcommand="login authentication onconsole"`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command="vtp mode transparent"`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command="vtp mode off"`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command="no service config"`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig saveConfiguration --device=<switch_name>`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig reboot --device=<switch_name>`

3. ☐	Reconfigure all 6120 enclosure switches	**Note:** If there are no 6120 switches in the repository, skip this step.
		Execute the following for all 6120 devices:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command="no web-management"`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command=" trunk-load-balance L3-based "`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command='no snmp-server community "public" unrestricted'`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig saveConfiguration --device=<switch_name>`

Procedure38. Post Upgrade Configuration of netConfig baseline level set for switch configurations

4. ☐	Reconfigure all aggregation switches	**Note:** If there are no Cisco 4948 switches in the repository, skip this step.
		Execute the following for all 4948 devices:
		For Cisco 4948:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command="vtp mode transparent"`
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig saveConfiguration --device=<switch_name>`
		For Cisco 4948E, E-F
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig userConfigureCommand --device=<switch_name> command="vtp mode off"`
		`2. [admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig saveConfiguration --device=<switch_name>`

5. ☐	6125 enclosure switches	No action is necessary for 6125G and XLG devices.

6. ☐	Backup all switch configurations	Execute the following command against each platform switch using their corresponding ssh_service:
		`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig backupConfiguration --device=<switch_name> service=<ssh_service> filename=<switch_name>-backup`
		Verify switch configuration was backed up by cat <switch_name>-backup and inspect its contents to ensure it reflects the latest known good switch configurations. Then, copy the files over to the backup directory.
		$ sudo /bin/ls -i ~<switch_backup_user>/<switch_name>-backup*
		$ sudo /bin/cat ~<switch_backup_user>/<switch_name>-backup*
		$ sudo /bin/chmod 644 <switch_name>-backup*
		$ sudo /bin/mv -i ~admusr/<switch name>-backup* /usr/TKLC/smac/etc/switch/backup/

This procedure has been completed.		

Appendix J. Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) 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 http://www.adobe.com.

1. Access the Oracle Help Center site at http://docs.oracle.com.
2. Click Industries.
3. Under the Oracle Communications subheading, click the Oracle Communications documentation link.
   The Communications Documentation page appears. Most products covered by these documentation sets will appear under the headings "Network Session Delivery and Control Infrastructure" or "Platforms."
4. Click on your Product and then the Release Number.
   A list of the entire documentation set for the selected product and release appears.
5. To download a file to your location, right-click the PDF link, select Save target as (or similar command based on your browser), and save to a local folder.

Appendix K. Whitelist Special Alarms

There are certain alarms that can cuase the early checks to fail and thus stop the Upgrade from starting. The two procedures provide a means to do the following:

- "whitelist" a given alarm prior to the upgrade which allows the upgrade early checks to succeed.
- Remove the whitelisted alarm after the upgrade has completed.

Procedure 39. Whitelist listed alarms

STEP #	This procedure prepares the PM&C for an upgrade by whitelisting the given list of alarms. This is perfrom before the upgrade takes place. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1 ☐	Whitelist alarm: TKSPLATMI1	From the PMAC shell enter the following: echo "EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI1" > /usr/TKLC/plat/etc/upgrade/upgrade.info
---End of Procedure---		

Procedure 40. Clear Whitelist listed alarms after Upgrade complete.

STEP #	This procedure is used to remove the white listed alarms that were created in Procedure 39 above. This procedure should only be run after the upgrade has completed. *Check off (√) each step as it is completed.* Boxes have been provided for this purpose under each step number. If this procedure fails, see Section 1.2.	
	Task	**Description**
1 ☐	Remove the Whitelisted alarm: TKSPLATMI1	Edit the file: /usr/TKLC/plat/etc/upgrade/upgrade.info Look for lines: "EARLY_CHECK_ALARM_WHITELIST=" Delete this line. Save the file.
---End of Procedure---		