Oracle® Communications Tekelec Platform

PM&C 5.5 Incremental Upgrade

Release 5.5

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Oracle Communications Tekelec Platform PM&C 5.5 Incremental Upgrade, Release 5.5

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

Before upgrading any system, please access Oracle’s Tekelec Customer Support site and review any Technical Service Bulletins (TSBs) that relate to this upgrade.

Refer to 6.2Appendix P for instructions on accessing this site.

Contact Oracle’s Tekelec Customer Care Center and inform them of your upgrade plans prior to beginning this or any upgrade procedure.

Phone: 1-888-FOR-TKLC (1-888-367-8552) or 919-460-2150 (international)
FAX: 919-460-2126

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1 INTRODUCTION

PM&C is an application that provides platform-level (as opposed to application-level) management functionality for HP c-Class enclosures, and rack mounted servers 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 from 5.0 to 5.5 software release, or 5.5 software release to another 5.5 software release. This is also known as a minor or incremental upgrade to 5.5 software release. Please note that a migration upgrade is also available from PM&C release 4.0 to PM&C release 5.5 [7].

The audience for this document includes these Tekelec PM&C GPS groups: Software System, Product Verification, Technical Communications, and Customer Service including Software Operations and New Product Introduction. This document provides step-by-step instructions to execute any 5.0 to 5.5 release, or 5.5 to 5.5 release incremental upgrade using appropriate platform 6.5.

1.2 REFERENCES

1.2.1 EXTERNAL

n/a

1.2.2 INTERNAL (TEKELEC)

The following are references internal to Tekelec. They are provided here to capture the source material used to create this document. Internal references are only available to Tekelec personnel.

1. *Platform 6.5 Configuration Procedure Reference*, 909-2249-001, Current version
2. *Platform 6.0 Configuration Procedure Reference*, 909-2209-001, Current version
3. *Procedure, Formal Peer Review*, PD001866.doc, Current Version
4. *Software Upgrade Procedure Template*, TM005074, Current Version
5. *Acronym Guide*, MS005077, Current Version
6. *TVOE 2.5 Software Upgrade*, 909-2276-001, Current Version
7. *PM&C Migration 4.0 to 5.5*, 909-2280-001, Current Version

1.3 SOFTWARE RELEASE NUMBERING

Refer to Application Release Notes or other appropriate document with the most recent build numbers in order to identify the proper components that comprise the product's software release.

1.4 ACRONYMS AND TERMINOLOGY

Table 1. Acronyms and Terminology

Acronym/Term	Meaning
DHCP	Dynamic Host Configuration Protocol
ESWD	Electronic Software Delivery
External Media	USB, CD, or DVD containing a software image
HP c-Class	HP blade server offering
IPM	Initial Product Manufacturing
Management Server	HP ProLiant DL 360/DL 380 server on which TVOE is installed and a PM&C guest resides.

Acronym/Term	Meaning
NetBackup Feature	Feature that provides support of the Symantec NetBackup client utility on an application server.
Redundant Management Server	HP ProLiant DL360/DL380 server on which TVOE is installed and a PM&C guest resides 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.

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.

This product recommends the latest firmware be installed as provided in the Tekelec HP Solutions Firmware Upgrade Pack (795-0000-4XX) which can be obtained from the Tekelec Customer Support Center download site (ESWD). In the Download Center follow the links for Product List, Tekelec, HP Solutions Firmware to locate and download the current release. Use the Upgrade Procedures and Release Notes documents contained in the Pack to assess whether a firmware upgrade is necessary.

This product requires that each HP c-Class enclosure that is managed by the PM&C 5.5 server has installed redundant OAs.

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.

1.6 SUPPORTED INTERNET BROWSERS AND VERSIONS

Table 2. Supported Internet Browsers and Versions

PM&C release	Supported Browsers and Versions

PM&C release	Supported Browsers and Versions
PM&C 5.0 release	Microsoft® Internet Explorer 7.0 or 8.0
PM&C 5.5 release	Microsoft® Internet Explorer 7.0, 8.0, or 9.0

1.7 PM&C RELEASE 5.5 UPGRADE PATHS

The upgrade/migration to PM&C release 5.5 is supported from the following releases:

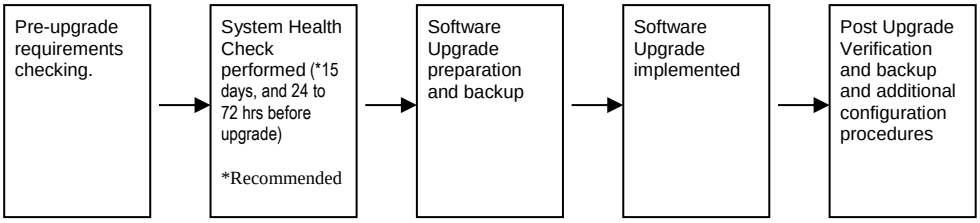
- PM&C 4.0 – migration [7]
- PM&C 5.0
- PM&C 5.5

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 – PM&C Upgrade



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.

Call the Tekelec Customer Care Center at 1-888-FOR-TKLC (1-888-367-8552); or 1-919-460-2150 (international) prior to executing this upgrade to ensure that the proper media are available for use.

Before upgrade, users must complete the 4.2 Software Upgrade Preparation 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.

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

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 Tekelec 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. PM&C 5.5.X-55.XX.X Upgrade kit (DVD or USB or ESWD)
3. TVOE 2.0.X-80.XX.X Disaster Recovery Kit (DVD/USB and Document)
4. TVOE 2.5.X-82.XX.X Disaster Recovery Kit (DVD/USB and Document)
5. Platform 6.5 Configuration Reference, 909-2249-001
6. Platform 6.0 Configuration Reference, 909-2209-001
7. Application Release Notes
8. Network access to the PM&C TVOE host iLO.
9. Capability to log into the PM&C guest via a network connection to allow remote access for Tekelec Customer Service personnel.
10. Capability to log into the PM&C's web UI.
11. Terminal device or equivalent interface.

3.1.1 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 (pmacadmin)	
Platform User IDs/password (admusr)	

OA administrator account login credentials	
iLO login credentials	

3.1.2 APPLICATION ISO IMAGE FILE / MEDIA

The Target Release ISO image file must already be at the customer site; either ESWD onto PM&C or delivered on physical media.

This file is necessary to perform the upgrade.

- The PM&C application ISO image file for PM&C 5.5 will be in the following format:
  - **872-2586-101-5.5.x_55.y.z-PMAC-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.

3.2 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 insure that the system has no error or failure conditions that would interfere with a successful upgrade.

This product recommends the latest firmware be installed. This procedure is not included in the overview and time estimates below. Determining whether a firmware upgrade is needed should be done well before the actual maintenance window to allow time for planning for the extra time needed, gathering the required materials, and performing the firmware upgrade preparations that the firmware Upgrade Document specifies if upgrades are needed.

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 Overview

Elapsed Time (Hours: Minutes)		Downtime (Hours: Minutes)		Activity	Impact
This Step	**Cum.**	**This Step**	**Cum.**	**Pre-Upgrade Procedures**	
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.
15	25			Backup PM&C provision and configuration databases.	PM&C provision and configuration databases are backed up.

3.3 UPGRADE EXECUTION OVERVIEW

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

Table 5. Upgrade Execution Overview

Elapsed Time (Hours: Minutes)		Downtime (Hours: Minutes)		Activity	Impact
This Step	**Cum.**	**This Step**	**Cum.**	**Upgrade Procedures**	
40	65	40	40	Execute the upgrade on PM&C	PM&C Software is upgraded

3.4 POST UPGRADE OVERVIEW

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

Table 6. Post Upgrade Overview

Elapsed Time (Hours: Minutes)		Downtime (Hours: Minutes)		Activity	Impact
This Step	**Cum.**	**This Step**	**Cum.**	**Post-Upgrade Procedures**	
10	75	10	50	Perform System Health check	Notify Tekelec Customer Service if system health check shows any problems with PM&C system. Backout may be necessary.
70	150			Perform SwitchConfig to netConfig Migration (optional)	The elapsed time assumes one switch pair. This step can take an additional 60min per switch pair.
15	165	15	65	Configuration of larger PM&C ISO Image Repository area (optional).	Ensures the PM&C ISO Image Repository is the appropriate size.
15	180	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	195			Backup PM&C provision and configuration databases.	PM&C provision and configuration databases are backed up post-upgrade.
10	205			Accept the upgrade	Upgrade is accepted and backout is no longer available

3.5 BACKOUT(REJECT) PROCEDURE OVERVIEW

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

Table 7. Backout Procedure Overview

Elapsed Time (Hours or Minutes)		Downtime (Minutes)		Activity	Impact
This Step	**Cum.**	**This Step**	**Cum.**	***Backout (Reject)* Setup Procedures**	
-	-	-	-	Contact Tekelec Customer Service	Apprise Tekelec Customer Service of the situation and get guidance on proceeding.
30	235	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.

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 PREPARATION

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

Determining whether a firmware upgrade is needed should be done well before the actual maintenance window to allow time for planning for the extra time needed, gathering the required materials, and performing the firmware upgrade preparations that the firmware Upgrade Document specifies if upgrades are needed.

If any error or failure conditions are discovered then ***do not proceed with the upgrade***. Contact Tekelec Technical Services 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 APPENDIX P.	
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 K,* *Determine the current PM&C version*.
4. ☐	Contact Tekelec Customer Care Center	Contact the Tekelec Customer Care Center and inform them of your plans to upgrade this system.

5. ☐	Verify this site's PM&C managed HP c-Class enclosures are configured with dual OAs.	The HP c-Class enclosures managed by PM&C are required to be configured in the dual OA configuration beginning with Platform 5.0 release. If necessary, open the IE web browser and enter: https://<PM&C Management Network IP > Login with pmacadmin credentials in *Table 3. Software Upgrade Required Data* 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, verify that each enclosure has "Bay 1 OA IP" and "Bay 1 OA IP" addresses populated. If the HP c-Class enclosures are not configured with dual OAs, contact the Tekelec Customer Care Center and ask for assistance.
6. ☐	Verify the firmware on all equipment is up to date.	The following is the basic procedure to follow for verifying and upgrading the firmware. 1) Obtain the latest HP Solutions Firmware Upgrade Pack (795-0000-4XX), where XX is the latest revision number, from ESWD. 2) Obtain and review the Release Notes document from the latest HP Solutions Firmware Upgrade Pack. 3) Obtain the Firmware Upgrade Procedure document from the latest HP Solutions Firmware Upgrade Pack. 4) Determine which firmware needs upgrading. In the Upgrade Procedures document, follow the section titled Firmware Upgrade Planning, which provides a way to assess which components/devices need to be upgraded and the approximate time it will take. The Release Notes document contains rules to follow if upgrading different hardware types simultaneously. 5) Perform the firmware upgrade procedures for each component/device requiring an upgrade. The following is the recommended order. 1. 4948, 4948E, and 4948E-F switches. 2. Onboard Administrator (OA). 3. 1Gb Ethernet Pass-Thru Modules. 4. Cisco 3020, HP 6120XG, and Brocade SAN enclosure switches. 5. BL460 and BL620 blade servers. 6. P2000 and MSA2012fc external storage controllers. 7. D2700 enclosure cascaded from a P2000. 8. DL380, DL360, and ML350 rack mount servers.
7. ☐	Verify the PM&C guest TVOE host is at the appropriate release.	**NOTE:** Upgrade of the TVOE host may require its own maintenance window. **For PM&C 5.0:** Execute *Appendix L, Determine if PM&C 5.0 TVOE Host Requires Upgrade.* **For PM&C 5.5:** Execute *Appendix M, Determine if PM&C 5.5 TVOE Host Requires Upgrade.*

8. ☐	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. **For redundant PM&C 5.0:** Execute *Appendix L, Determine if PM&C 5.0 TVOE Host Requires Upgrade*, using the IP address of redundant PM&C TVOE host. **For redundant PM&C 5.5:** Execute *Appendix M, Determine if PM&C 5.5 TVOE Host Requires Upgrade*, using the IP address of redundant PM&C TVOE host.

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

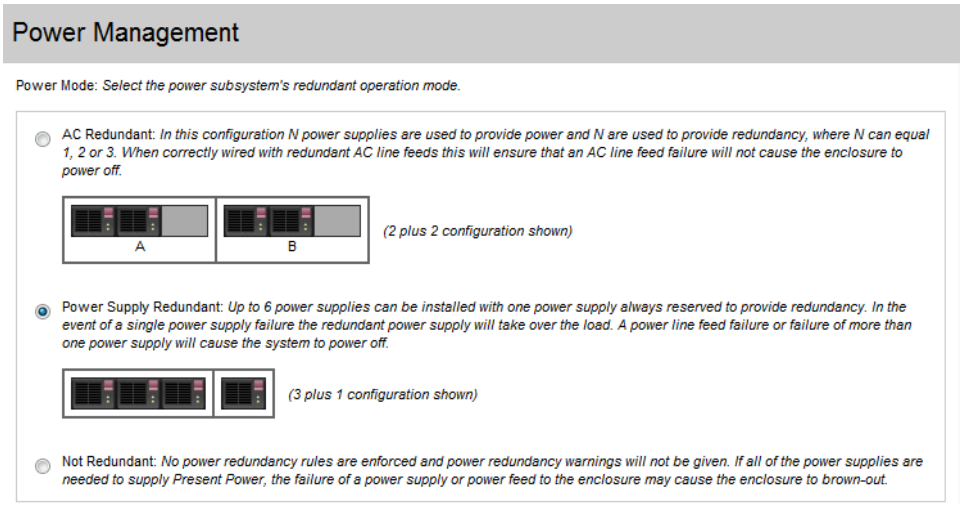
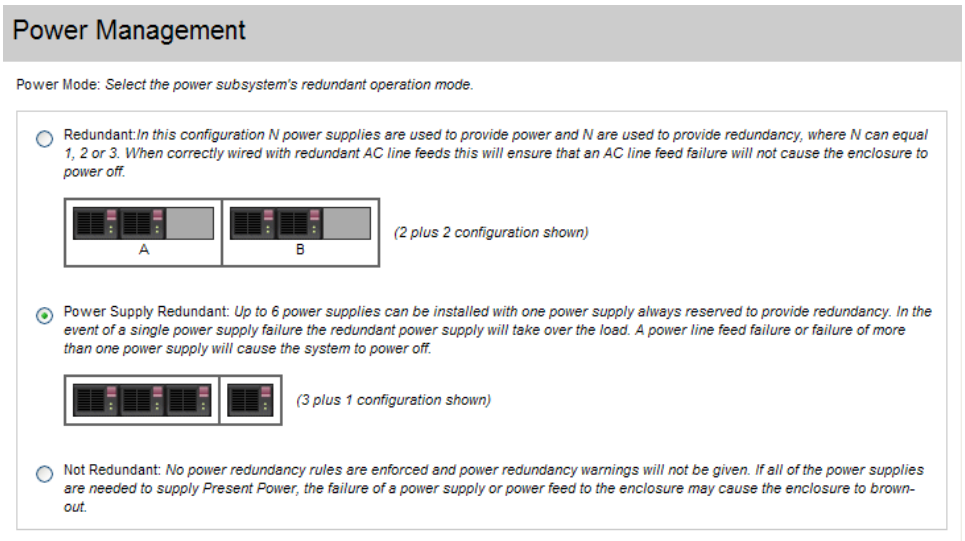
S T E P #	This procedure executes a health check on the PM&C system. **NOTE*:*** The PM&C Health check procedure should be executed • 72 to 24 hours before the scheduled upgrade, and • Immediately before executing the upgrade If any error or failure conditions are discovered then ***do not proceed with upgrade***. Contact Tekelec Customer Service 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 APPENDIX P.	
1. ☐	Execute the system health check.	**For PM&C 5.0:** Execute Appendix C, *PM&C 5.0 System Health Check*. **For PM&C 5.5:** Execute Appendix H, *PM&C 5.5 System Health Check.* If any error or failure conditions are discovered then do ***not*** proceed with upgrade. Contact Tekelec Customer Service to work to resolve the failure conditions. Upgrade will have to be rescheduled to a later date.

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

S T E P #	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 APPENDIX P.	
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 5.5 ISO image file and place that copy using SCP into the /var/TKLC/upgrade directory of the PM&C guest: **For PM&C 5.0:** Use the PM&C root credentials from *Table 3. Software Upgrade Required Data*. **For PM&C 5.5:** Use platform admusr credentials from *Table 3. Software Upgrade Required Data*.

Procedure 4: Check / Modify OA Power Supply Redundancy

S T E P #	This procedure configures 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 APPENDIX P.	
1. ☐	Access the PM&C GUI	If necessary, open the IE web browser and enter: https://<PM&C Management Network IP > Login with pmacadmin credentials in *Table 3. Software Upgrade Required Data.*
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.

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.

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 APPENDIX P.	
1. ☐	Backup the OA configuration to the PM&C.	**For PM&C 5.0:** Execute Procedure 3.6.5, "Store OA Configuration on Management Server" in *Platform 6.0 Configuration Procedure Reference*, 909-2209-001, Current version. **For PM&C 5.5:** Execute Procedure 3.5.5, "Store OA Configuration on Management Server" in *Platform 6.5 Configuration Procedure Reference*, 909-2249-001, Current version.

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 upgrade If any error or failure conditions are discovered then ***do not proceed with upgrade***. Contact Tekelec Customer Service 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 APPENDIX P.	
1. ☐	Execute the redundant PM&C system health check	**NOTE:** This procedure is only executed if the site contains a redundant PM&C **For PM&C 5.0:** Execute Appendix C, *PM&C 5.0 System Health Check* on redundant PM&C. **For PM&C 5.5:** Execute Appendix H, *PM&C 5.5 System Health Check* on redundant PM&C. If any error or failure conditions are discovered then do ***not*** proceed with upgrade. Contact Tekelec Customer Service to work to resolve the failure conditions. Upgrade will have to be rescheduled to a later date.

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

S T E P #	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 APPENDIX P.	
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 5.5 ISO image file and place that copy using SCP into the /var/TKLC/upgrade directory of the redundant PM&C guest: **For PM&C 5.0:** Use the PM&C root credentials from *Table 3. Software Upgrade Required Data.* **For PM&C 5.5:** Use platform admusr credentials from *Table 3. Software Upgrade Required Data.*

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

S T E P #	This procedure backs up all necessary PM&C database data to the 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 APPENDIX P.	
1. ☐	Backup the PM&C database to redundant PM&C.	**NOTE:** This procedure is only executed if the site contains a redundant PM&C **For PM&C 5.0:** Execute *Appendix E, PM&C 5.0 System Backup To Redundant PM&C.* **For PM&C 5.5:** Execute Appendix I, *PM&C 5.5 System Backup to Redundant PM&C.*
Section 4.2 has been completed.		

5 SOFTWARE UPGRADE PROCEDURE

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

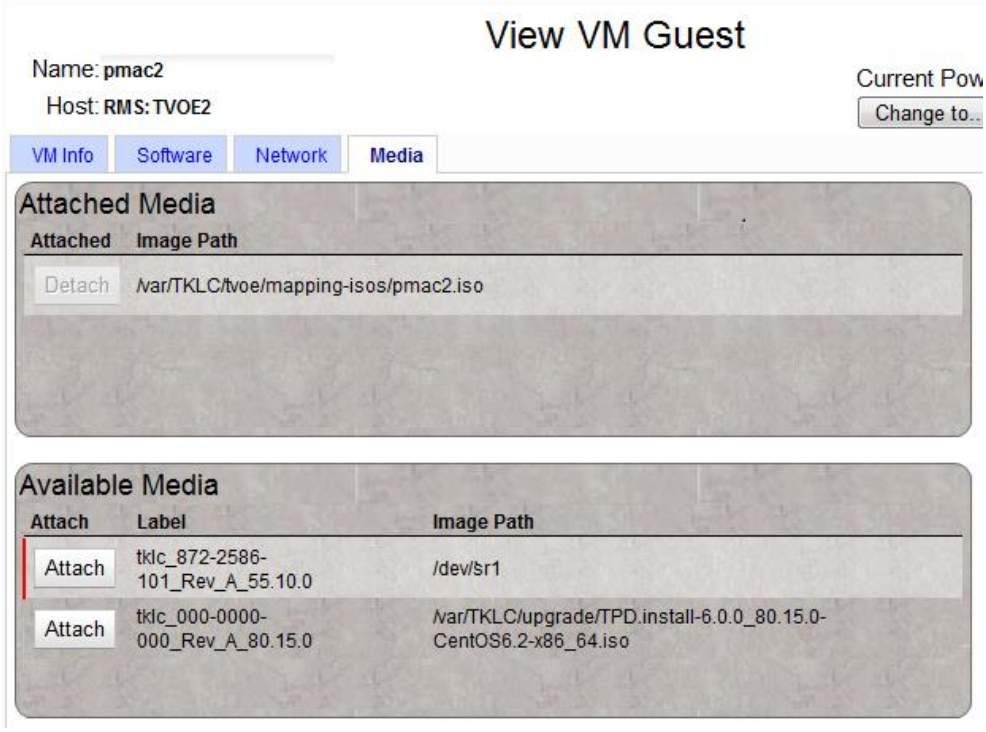
If the PM&C application ISO was delivered to the system remotely (via SCP or SFTP) then make sure the image is located in the /var/TKLC/upgrade directory prior to executing this procedure. This should have been done as part of the Software Upgrade Preparation in section 4.2.

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

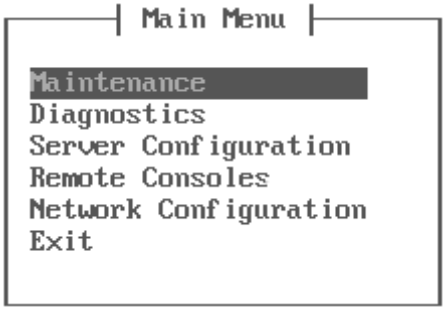
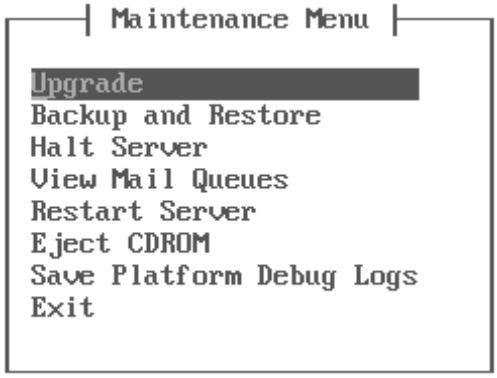
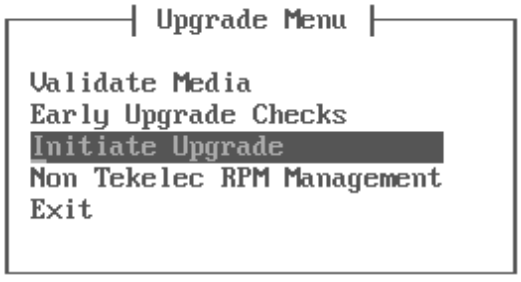
S T E P #	This procedure provides instructions to perform a software upgrade of the PM&C. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Execute the system health check	Re-execute Procedure 2: 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. **1)** Access the PM&C Guest console. a. For PM&C 5.0 use Appendix B b. For PM&C 5.5 use Appendix G **2)** Verify the correct ISO file is located in the /var/TKLC/upgrade directory. **3)** If the correct ISO is present, proceed to step 6. **4)** If the correct ISO is NOT present, then redo Procedure 3 before proceeding.
3. ☐	Insert the PM&C 5.5 media into the Management Server	Insert the PM&C 5.5 media (item 2 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 pmacadmin credentials in *Table 3. Software Upgrade Required Data*.

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

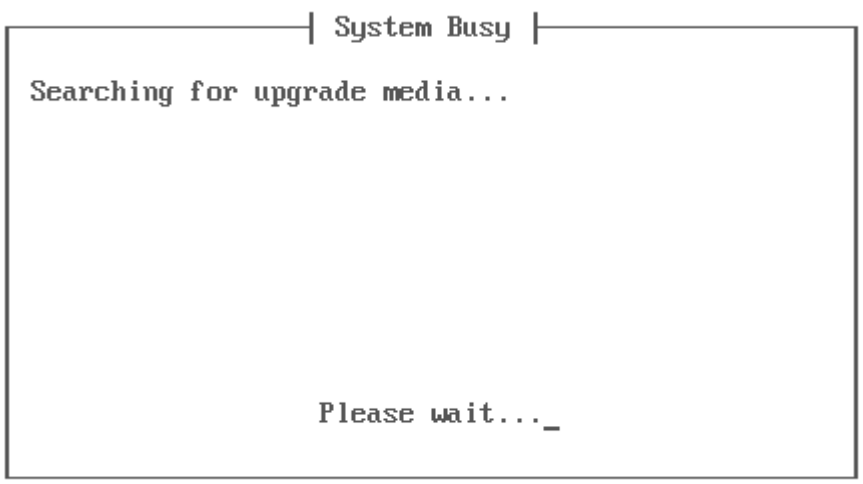
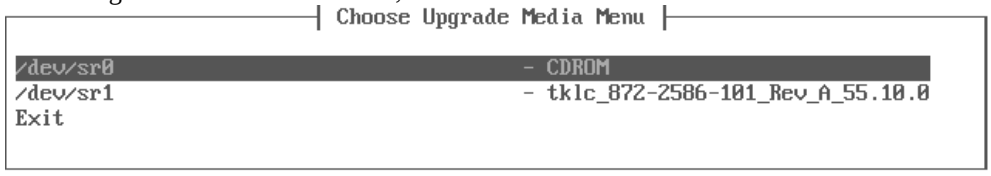
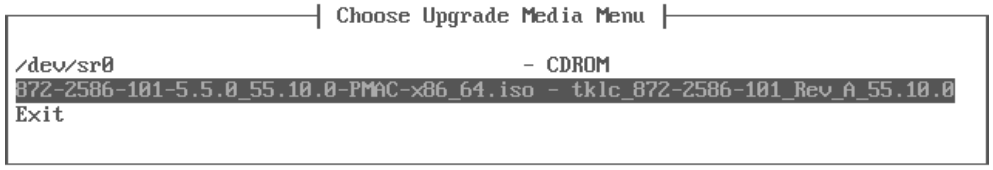
5. ☐	Attach the PM&C ISO media to the PM&C guest.	Using the PM&C GUI, navigate to the VM Management page. Select the PM&C Guest to get to the "View VM Guest" page. Select the "media" tab on the "View VM Guest" page. Click the "Attach" button for the image just inserted. **NOTE:** The "Label" field can help identify the PM&C upgrade media by part number and release level (see 3.1.2). 
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	**For PM&C 5.0:** Execute Appendix B, *Accessing the PM&C 5.0 Guest Console.* **For PM&C 5.5:** Execute Appendix G, *Accessing the PM&C 5.5 Guest Console.*

8. ☐	Run the "platcfg" utility.	Execute (from PM&C guest console):
		For PM&C 5.0:
		`[root@pmac ~]# su - platcfg`
		For PM&C 5.5:
		`[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.
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

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

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.
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:  If the image was copied to the /var/TKLC/upgrade directory of the PM&C guest, then the menu would look similar to this:  Select the PM&C 5.5 target release and press the [ENTER] key.

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

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.
		
		`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 /et`
		`Changing to run-level 3...`
		`**********`
		`* Waiting for run level 3 transistion 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.`

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.
		
		`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...`

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

16. ☐	Upgrade completes successfully.
	NOTE: If the PM&C upgrade fails to complete, contact Tekelec Customer Service for assistance;
	Tekelec Customer Care Center
	US:
	1-888-367-8552
	Intl:
	+1-919-460-2150
		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 Tekelec Customer Service for assistance.

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

S T E P #	This procedure provides instructions to verify the success of 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 APPENDIX P.	
1. ☐	If necessary, access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 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 Jun 17 14:16`
		`/var/TKLC/log/upgrade/upgrade.log`
		`[admusr@pmac ~]$`

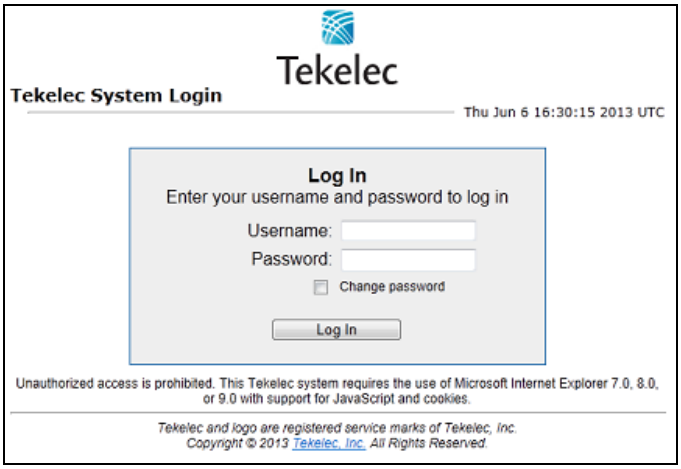
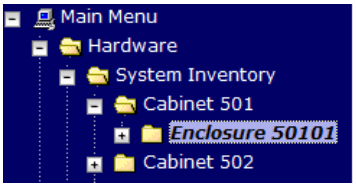
4. ☐	Verify that the release has been updated.	Execute the following command:
		`[admusr@pmac ~]$ **sudo /usr/TKLC/plat/bin/appRev**`
		`Install Time: Mon Jun 17 14:16:32 2013`
		`Product Name: PMAC`
		`Product Release: 5.5.0_55.10.0`
		`Part Number ISO: 872-2586-101`
		`Part Number USB: 872-2586-101`
		`Base Distro Product: TPD`
		`Base Distro Release: 6.5.0_82.14.0`
		`Base Distro ISO: TPD.install-6.5.0_82.14.0-CentOS6.4-x86_64.iso`
		`OS: CentOS 6.4`
		`[admusr@pmac ~]$`
		
		If the Product Release does not match the new target release number, then upgrade was not successful. Contact Tekelec Customer Service and do not proceed until instructed by a Tekelec Customer Care representative.

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

5. ☐	Verify upgrade completion through the upgrade log.
	NOTE: If the PM&C upgrade has failed, contact Tekelec Customer Service for assistance;
	Tekelec Customer Care Center
	US:
	1-888-367-8552
	Intl:
	+1-919-460-2150
		Execute the following command on the 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: When upgrading from a PM&C 5.0.X source release, there may be benign error messages reported by `verifyUpgrade`. It is safe to ignore messages mentioning:
		`Use of uninitialized value $_[0] in list assignment at /mnt/upgrade/upgrade/lib/Methods/AlarmSet.pm`
		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 Tekelec Customer Service and do not proceed until instructed by a Tekelec Customer Care representative.

6. ☐	Execute the system health check.	Execute the Appendix H, *PM&C 5.5 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 Tekelec Customer Service 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.

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

8. ☐	Log in to the PM&C GUI.	Open IE web browser and enter: https://<PM&C Management Network IP > Login with pmacadmin credentials in *Table 3. Software Upgrade Required Data*. 
9. ☐	Verify the 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 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) **Ident** | **IP Address** | **Hostname** | **Plat Name** | **Plat Version** | **App Name** | **App Version** Enc:50303 Bay:5F | 169.254.119.10 | dev1 | TPD (x86_64) | 5.0.0-72.44.0 | TVOE | 1.0.0_72.44.0

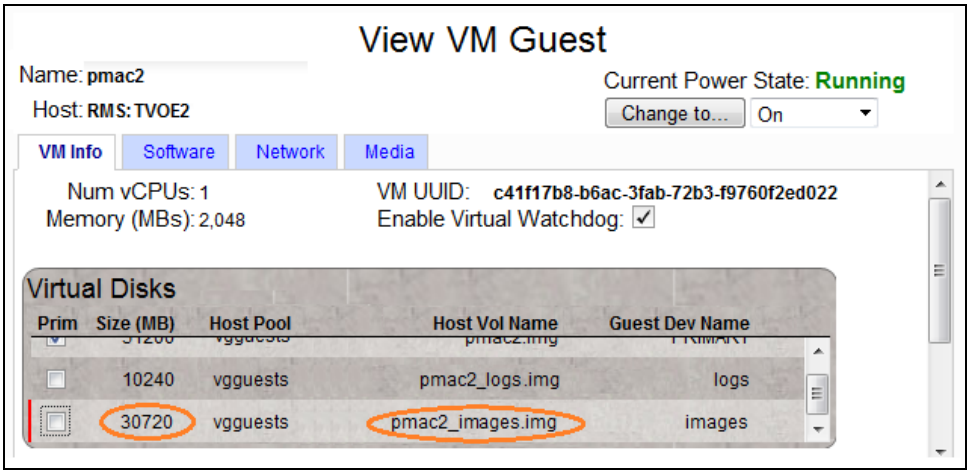
Procedure 11: Post Upgrade Configuration of netConfig Utility

S T E P #	This procedure provides instructions to verify if the netConfig utility is appropriately configured. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Determine if the netConfig utility was used in a past release to configure switches	This step will help you to determines if netConfig was used to configure all switches in the system, and will point you to the correct next step to follow based on the answer. Execute: [admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo listDevices If the netConfig utility was used to configure switches, all of the enclosure as well as aggregation switches should be represented in the ouput. If all of the enclosure and aggregation switches are represented in the ouput, this procedure is complete. Otherwise, proceed to the next step to perform SwitchConfig to netConfig Migration .
2. ☐	Perform SwitchConfig to netConfig Migration	**NOTE**: If you have determined that the netConfig Utility was used in the previous step, skip this step. Perform the following procedures in the Platform 6.5 Configuration Procedure Reference, 909-2249-001, Current version: 3.1.4.4. SwitchConfig to netConfig Repository Configuration 3.1.4.5 Cisco Switch switchconfig to netconfig Migration 3.1.4.6 HP 6120XG switchConfig to netConfig migration

Procedure 12: Post Upgrade Configuration of SSH Service on the primary PM&C

S T E P #.	This procedure provides instructions to verify ssh service has been correctly configured on the primary 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 APPENDIX P.	
1. ☐	Recreate the ssh_service with admusr creadentials on PM&C guest console	**NOTE**: If you had to execute step 2 of procedure 11, the switchConfig to netConfig Migration, skip this step. **NOTE**: If you have upgraded from PM&C 5.5 source release, skip this step. Delete ssh_service: [admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo deleteService name=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? (tftp, ssh, conserver, oa) ssh Service host? <pmac_mgmtVLAN_ip_address> Enter an option name <q to cancel>: user Enter the value for user: admusr Enter an option name <q to cancel>: password Enter the value for password: <admusr_password> Verify Password: <admusr_password> Enter an option name <q to cancel>: q Add service for ssh_service successful [admusr@pmac ~]$ To ensure that you entered the information correctly, use the following command and inspect the output, which will be similar to the one shown below. [admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/netConfig --repo showService name=ssh_service Service Name: ssh_service Type: ssh Host: 10.250.62.85 Options: password: <admusr_password> user: admusr [admusr@pmac ~]$

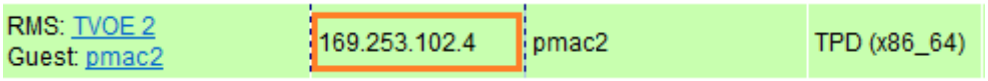
Procedure 13: Post Upgrade Configuration of larger PM&C ISO Image Repository area

S T E P #	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 APPENDIX P.	
1. ☐	Determine if the PM&C ISO image repository needs to be enlarged	**NOTE**: It is required that PM&C ISO repository is 61440 MB (60 GB) in any PM&C 5.5 release. Using the primary PM&C GUI, navigate to the VM Management page. Select the primary PM&C Guest to get to the "View VM Guest" page. In the "Virtual Disks" table scroll to 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 (60 GB) proceed to the next step. Otherwise, skip the rest of this procedure.

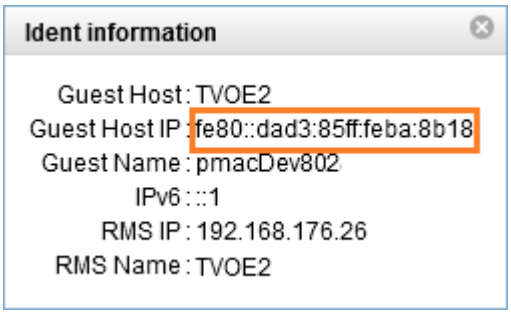
Procedure 13: Post Upgrade Configuration of larger PM&C ISO Image Repository area

<table>
<tr><td>2. ☐</td><td>Locate the IPv6 address of PM&C TVOE host</td><td>Using the Main Menu, navigate to Software → Software Inventory page.

Locate the entry belonging to the PM&C guest.

Now, double-click on the IP Address field of the PM&C guest entry, this will bring up “Ident Information” window.

Note down the following values:

<table><tr><td>Guest Host IP:</td><td></td></tr></table></td></tr>
<tr><td>3. ☐</td><td>If necessary, access the PM&C guest console</td><td>If necessary, access the PM&C guest console as detailed in Appendix G,

Accessing the PM&C 5.5 Guest Console.</td></tr>
<tr><td>4. ☐</td><td>Enlarge the PM&C ISO repository</td><td>Execute the following command with appropriate values gathered in steps 1 and 2:

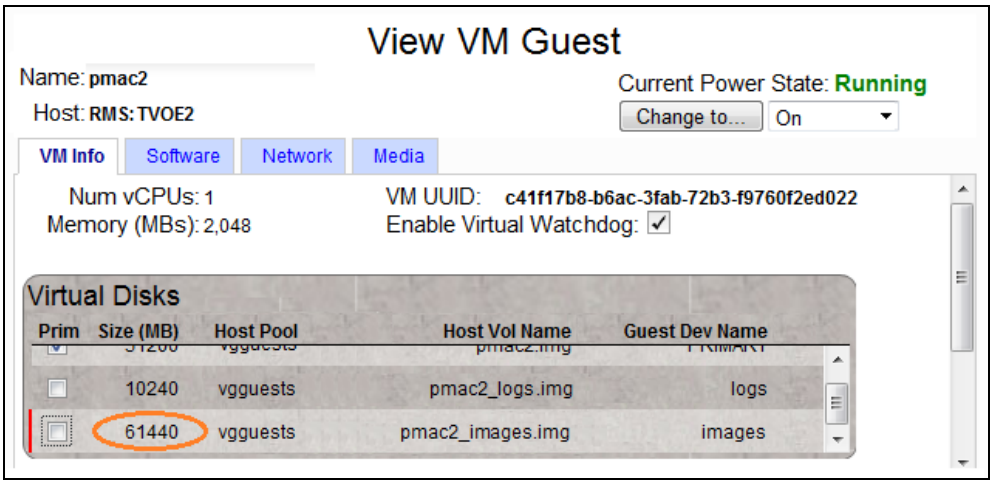
[admusr@pmac2 ~]$ sudo /usr/TKLC/smac/bin/pmaccli enlargeIsoImageRepository --ip=<Guest_Host_IP> --guest=<pmac_guest_name> --volname=<Host_Vol_Name> --volpool=vgguests –-volsize=61440

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.</td></tr>
</table>

Procedure 13: 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 VM Guest" page. In the "Virtual Disks" table of the "VM Info" tab locate the entry with Guest Dev Name "images".  Ensure the Size(MB) now is 61440.

Procedure 14: Post-Upgrade NetBackup Configuration

S T E P #	This procedure validates 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. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Validate the PM&C NetBackup configuration when applicable.	If the NetBackup Feature has been configured for this system execute Procedure 3.7.22, "PM&C Guest Migrate NetBackup Client to New File System" in *Platform 6.5 Configuration Procedure Reference*, 909-2249-001, Current version. **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.

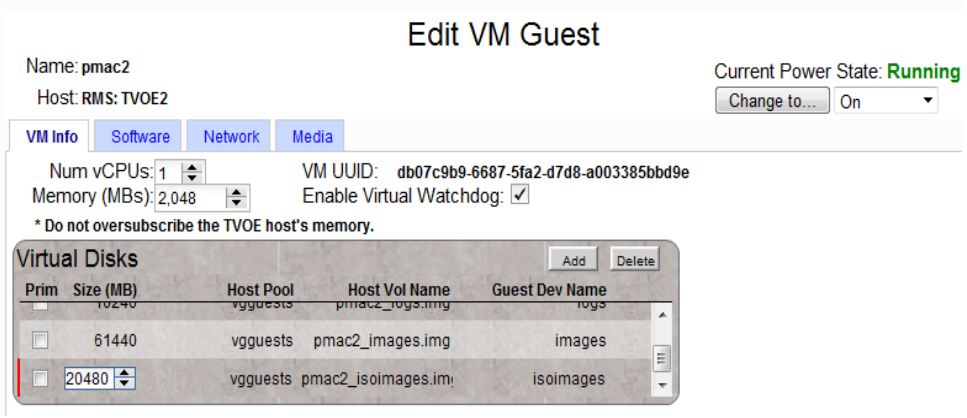
Procedure 15: Post Upgrade Configuration of larger PM&C temporary ISO import area

S T E P #	This optional procedure provides 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 5.5 release. 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 APPENDIX P.	
1. ☐	Access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 Guest Console* .

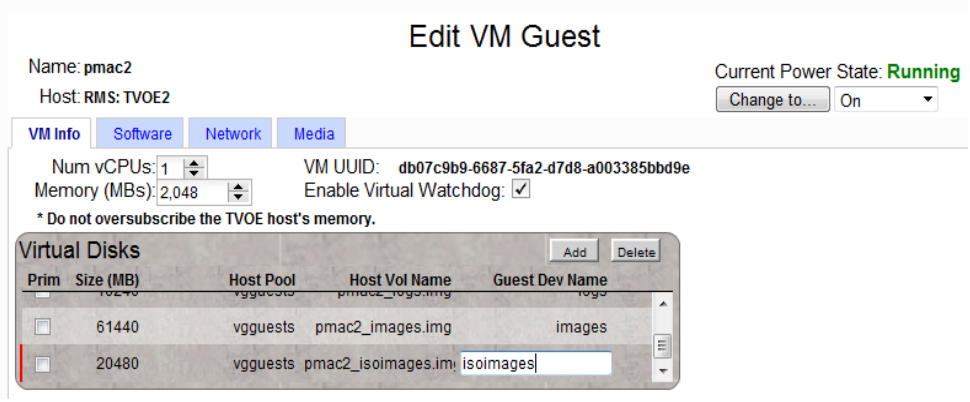
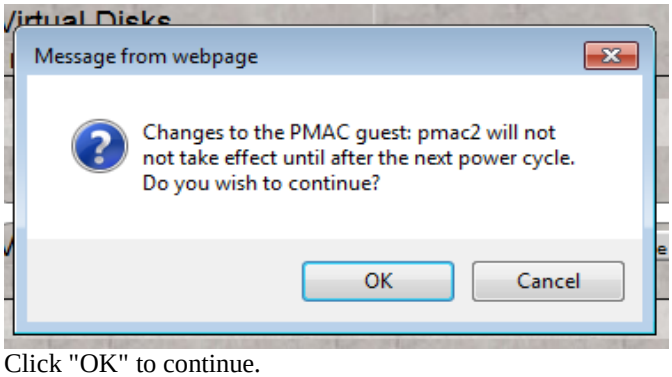
2. ☐	Determine if PM&C ISO temporary import area needs to be enlarged	Execute the following command:
		
		`[admusr@pmac ~]$ sudo /bin/df -h |grep isoimages`
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4%`
		`/var/TKLC/smac/image/isoimages`
		
		The size of the ISO temporary import area in the example above is 5 GB.
		
		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 > Login with pmacadmin credentials in *Table 3. Software Upgrade Required Data.*
4. ☐	Navigate to to the "Edit VM 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 VM Guest" page. Click "Edit.
5. ☐	Determine whether "isoimages" virtual disk exists	In the "Virtual Disks" grid of the "VM Info" tab locate the entry with " isoimages" Guest Dev Name. If you cannot find the "isoimages" entry skip to step 7. Otherwise, proceed to step 6.

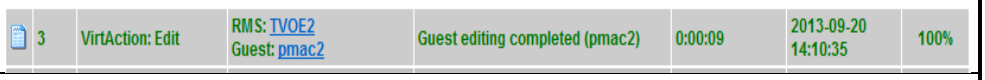
Procedure 15: Post Upgrade Configuration of larger PM&C temporary ISO import area

6. ☐	Edit the "isoimages" vdisk to the PM&C guest.	Click the on the Size(MB) field of the entry to edit it. Use the arrows to modify the the size up to 20480 MB.  Verify the new isoimages virtual disk data and click the Save button . Now proceed to step 8.

Procedure 15: Post Upgrade Configuration of larger PM&C temporary ISO import area

7. ☐	Add the "isoimages" vdisk to the PM&C guest.	In the "Virtual Disks" grid 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 Size to a value large enough for the largest ISO image file size anticipated at the site. For instance, the following image illustrates what user would enter in order to achieve 20480 MB ISO temporary import area on pmac2.  **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.
8. ☐	Confirm the change to PM&C guest	A confirmation dialog will be presented with the message, "Changes to the PMAC guest will not take effect until after the next power cycle. Do you wish to continue?".  Click "OK" to continue.

Procedure 15: Post Upgrade Configuration of larger PM&C temporary ISO import area

9. ☐	Wait for the PM&C guest Edit background task to complete	Navigate to the Background Task Monitoring view. Confirm the guest edit task has completed successfully. 
10. ☐	Shutdown the PM&C guest	Shutdown the PM&C guest as detailed in Appendix O, *Shutdown PM&C 5.5 Guest.*

11. ☐	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`

12. ☐	Monitor the PM&C guest until it comes up	Execute:
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh console <pmac>`
		
		Wait for the PM&C guest login prompt.
		login as the admusr 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`

13. ☐	Verify the size of PM&C ISO temporary import area NOTE: It may take up to 5 min 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 VM Guest" page. Using the primary PM&C GUI, navigate to the VM Management page. Select the primary PM&C Guest to get to the "View VM Guest" page. In the "Virtual Disks" table locate the entry with Guest Dev Name "isoimages". Ensure the Size(MB) now reflects the new value.

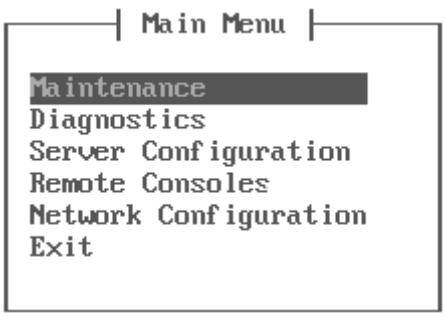
Procedure 16: Post-Upgrade PM&C Backup on the primary PM&C

S T E P #	This procedure backs 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 APPENDIX P.	
1. ☐	Backup the PM&C database.	Execute the procedure detailed in *Appendix I, PM&C 5.5 System Backup*.
Section 5.2 has been completed.		

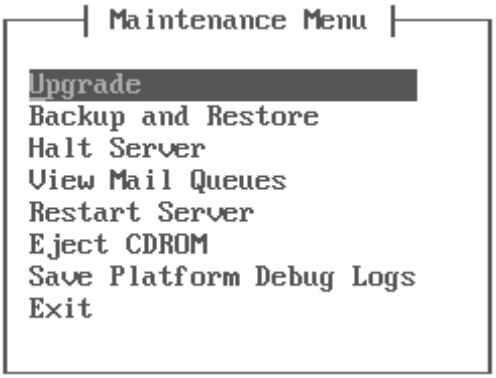
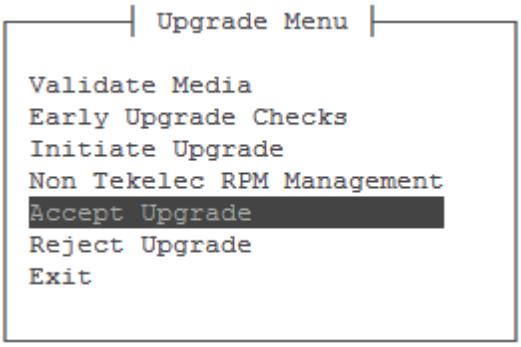
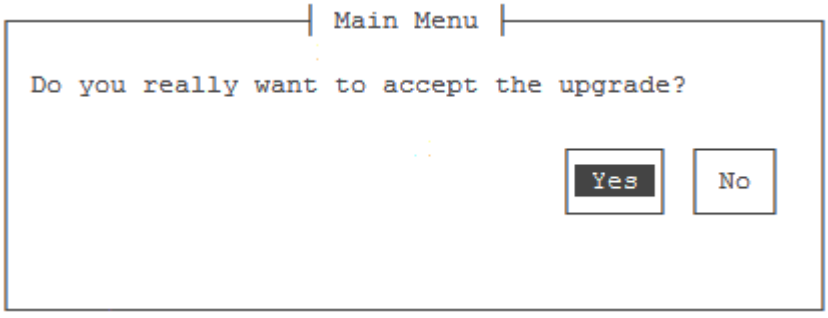
5.3 SOFTWARE UPGRADE ACCEPTANCE AND CLEANUP ON THE PRIMARY PM&C

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.

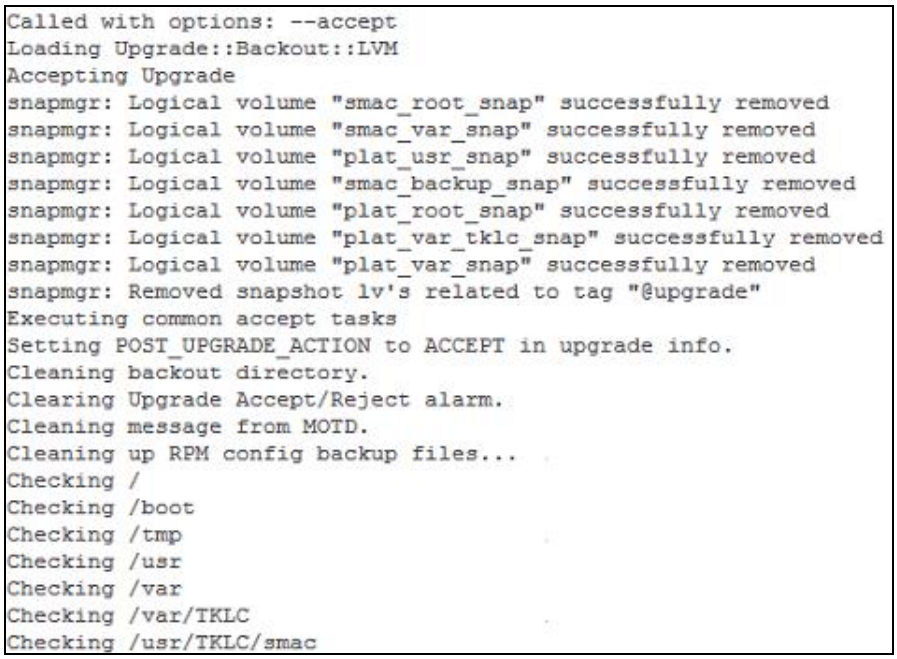
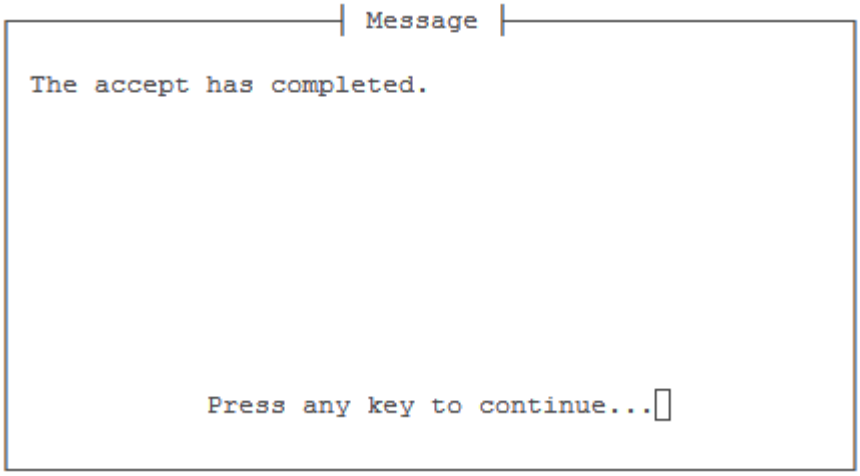
Procedure 17: Software Upgrade Acceptance on the primary PM&C

S T E P #	This procedure finalizes 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 APPENDIX P.	
1. ☐	If necessary, access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 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.

Procedure 17: 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 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.	

Procedure 17: Software Upgrade Acceptance on the primary PM&C

7. ☐	The "Accept Upgrade" process starts	**NOTE:** The following image is for illustrative purposes only. 
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.
9. ☐	If the TVOE host was upgraded using *Appendix L*.	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 L*, If the TVOE upgrade was delayed, then please return to TVOE host upgrade procedures outlined in section 2.1.1, of 909-2276-001. Continue the upgrade process with procedure 8, Stand Alone TVOE Upgrade Accept.

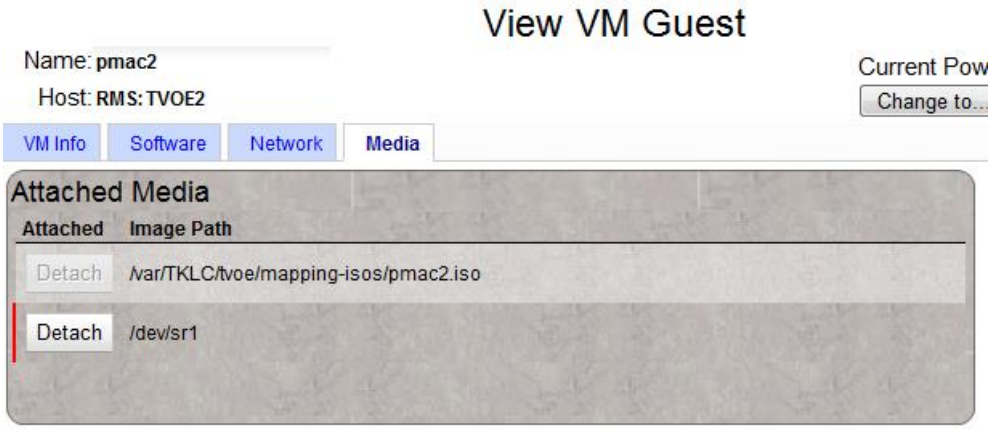
Procedure 18:Post upgrade Cleanup of upgrade media

S T E P #	This procedure removes the upgrade media from the 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 APPENDIX P.	

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/`
		`872-2586-101-5.5.0_55.10.0-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/872-2586-101-5.5.0_55.10.0-PMAC-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 PM&C GUI.	Open IE web browser and enter: https://<PM&C Management Network IP > Login with pmacadmin credentials in *Table 3. Software Upgrade Required Data*.

Procedure 18:Post upgrade Cleanup of upgrade media

3. ☐	If upgrade was performed using Media (USB or CDROM), 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 VM Guest" page. Using the PM&C GUI, navigate to the VM Management page. Select the PM&C Guest to get to the "View VM Guest" page. Select the "media" tab on the "View VM 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.

Procedure 19: PM&C Upgrade Procedure on the redundant PM&C

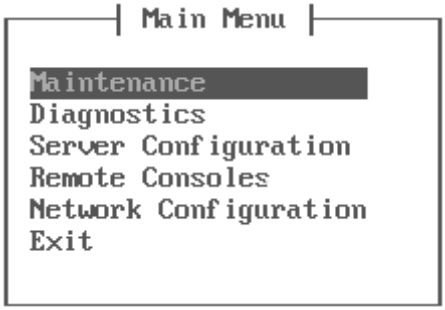
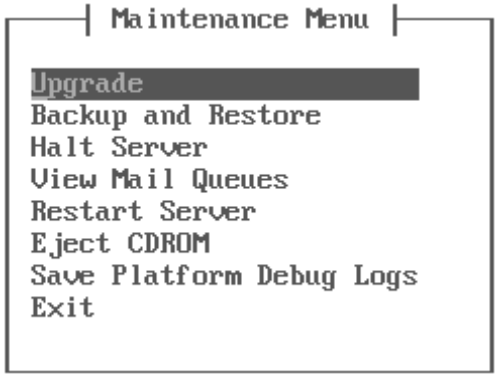
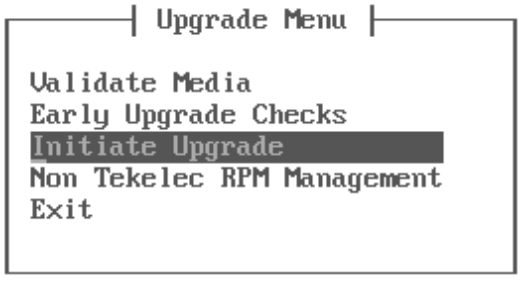
S T E P #	This procedure provides instructions to perform a software upgrade of the redundant PM&C. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Execute the system health check	Re-execute Procedure 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. **1)** Access the redundant PM&C Guest console. a. For PM&C 5.0 use Appendix B b. For PM&C 5.5 use Appendix G **2)** Verify the correct ISO file is located in the /var/TKLC/upgrade directory. **3)** If the correct ISO is present, proceed to step 6. **4)** If the correct ISO is NOT present, then redo Procedure 3 before proceeding.
3. ☐	Insert the PM&C 5.5 media into the Management Server	Insert the PM&C 5.5 media (item 2 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 pmacadmin credentials in *Table 3. Software Upgrade Required Data*.

Procedure 19: PM&C Upgrade Procedure on the redundant PM&C

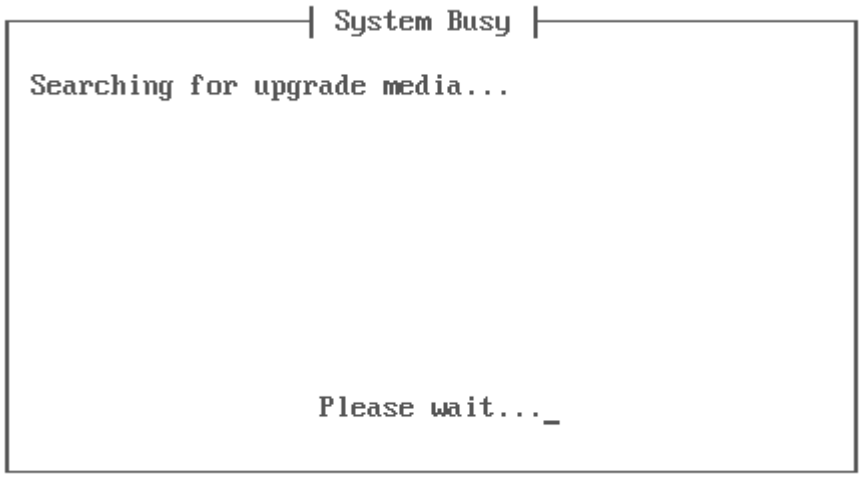
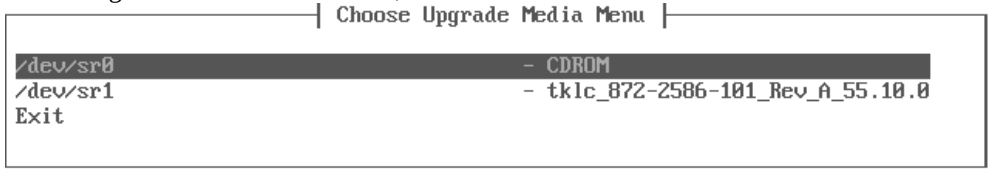
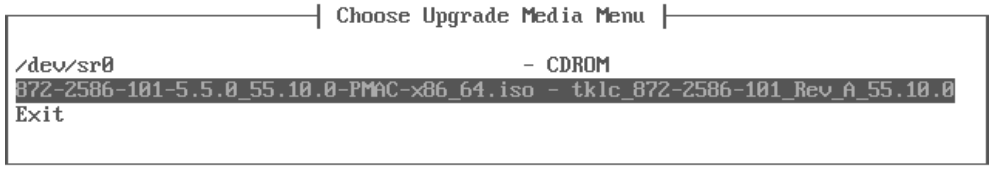
5. ☐	Attach the PM&C ISO media to the redundant PM&C guest.	Using the primary PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View VM Guest" page. Select the "Media" tab on the "View VM Guest" page. Click the "Attach" button for the image just inserted. **NOTE:** The "Label" field can help identify the PM&C upgrade media by part number and release level (see 3.1.2).
6. ☐	Access the redundant PM&C guest console	**For PM&C 5.0:** Execute Appendix B, *Accessing the PM&C 5.0 Guest Console* for the redundant PM&C. **For PM&C 5.5:** Execute Appendix G, *Accessing the PM&C 5.5 Guest Console* for the redundant PM&C.

7. ☐	Run the "platcfg" utility.	Execute (from redundant PM&C guest console):
		For PM&C 5.0:
		`[root@pmac ~]# su - platcfg`
		For PM&C 5.5:
		`[admusr@pmac ~]$ sudo su - platcfg`

Procedure 19: PM&C Upgrade Procedure on the redundant PM&C

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.
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

Procedure 19: PM&C Upgrade Procedure on the redundant PM&C

11. ☐	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.
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. 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 5.5 target release and press the [ENTER] key.

Procedure 19: 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: 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.
		
		`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 /et`
		`Changing to run-level 3...`
		`**********`
		`* Waiting for run level 3 transistion 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...`

Procedure 19: PM&C Upgrade Procedure on the redundant PM&C

15. ☐	Upgrade completes successfully.
	NOTE: If the PM&C upgrade fails to complete, contact Tekelec Customer Service for assistance;
	Tekelec Customer Care Center
	US:
	1-888-367-8552
	Intl:
	+1-919-460-2150
		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 Tekelec Customer Service for assistance.

Section 5.4 has been completed.		

5.5 SOFTWARE UPGRADE COMPLETION ON THE REDUNDANT PM&C

Procedure 20: Post Upgrade Verification on the redundant PM&C

S T E P #	This procedure provides instructions to 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 APPENDIX P.	
1. ☐	If necessary, access the redundant PM&C guest console	If necessary, access the redundant PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 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 Jun 17 14:16 /var/TKLC/log/upgrade/upgrade.log`
		`[admusr@pmac ~]$`

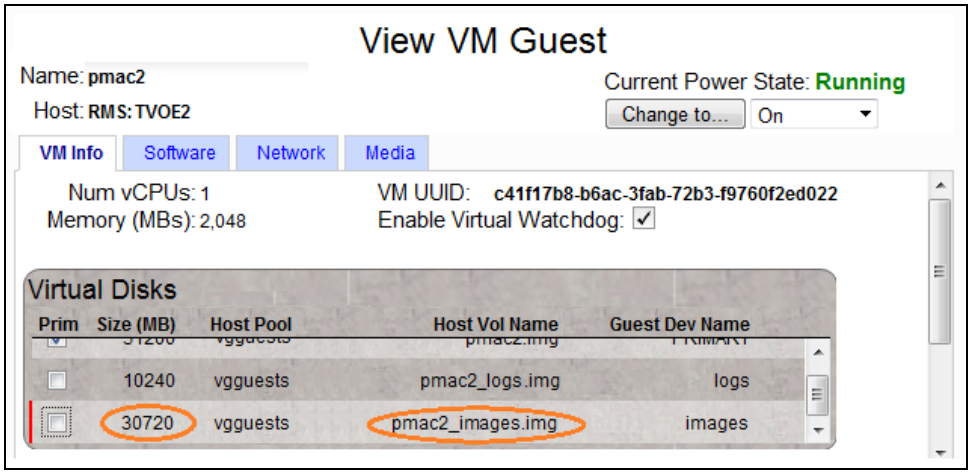
4. ☐	Verify that the release has been updated.	Execute the following command:
		`[admusr@pmac ~]$ **sudo /usr/TKLC/plat/bin/appRev**`
		`Install Time: Mon Jun 17 14:16:32 2013`
		`Product Name: PMAC`
		`Product Release: 5.5.0_55.10.0`
		`Part Number ISO: 872-2586-101`
		`Part Number USB: 872-2586-101`
		`Base Distro Product: TPD`
		`Base Distro Release: 6.5.0_82.14.0`
		`Base Distro ISO: TPD.install-6.5.0_82.14.0-CentOS6.4-x86_64.iso`
		`OS: CentOS 6.4`
		`[admusr@pmac ~]$`
		
		If the Product Release does not match the new target release number, then upgrade was not successful. Contact Tekelec Customer Service and do not proceed until instructed by a Tekelec Customer Care representative.

Procedure 20: 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 Tekelec Customer Service for assistance;
	Tekelec Customer Care Center
	US:
	1-888-367-8552
	Intl:
	+1-919-460-2150
		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: When upgrading from a PM&C 5.0.X source release, there may be benign error messages reported by `verifyUpgrade`. It is safe to ignore messages mentioning:
		`Use of uninitialized value $_[0] in list assignment at /mnt/upgrade/upgrade/lib/Methods/AlarmSet.pm`
		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 Tekelec Customer Service and do not proceed until instructed by a Tekelec Customer Care representative.

6. ☐	Execute the redundant PM&C system health check.	Execute the Appendix H, *PM&C 5.5 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 Tekelec Customer Service to work to resolve the failure conditions.

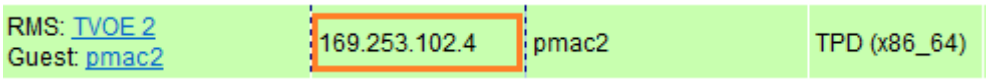
Procedure 21: Post Upgrade Configuration of larger redundant PM&C ISO Image Repository area

S T E P #	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 APPENDIX P.	
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 5.5 release. Using the primary PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View VM Guest" page. 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.

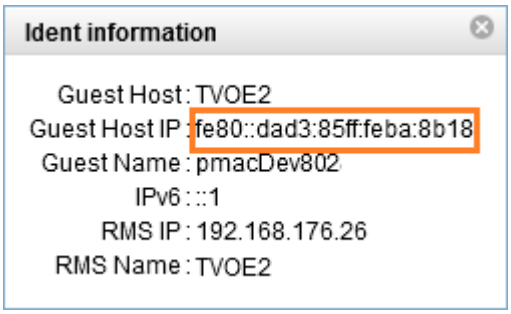
Procedure 21: Post Upgrade Configuration of larger redundant PM&C ISO Image Repository area

<table>
<tr><td>2. ☐</td><td>Locate the IPv6 address of redundant PM&C TVOE host</td><td>Using the Main Menu, navigate to Software → Software Inventory page.

Locate the entry belonging to the redundant PM&C guest.

Now, double-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:

<table><tr><td>Guest Host IP:</td><td></td></tr></table></td></tr>
<tr><td>3. ☐</td><td>If necessary, access the primary PM&C guest console</td><td>If necessary, access the primary PM&C guest console as detailed in Appendix G,

Accessing the PM&C 5.5 Guest Console.</td></tr>
<tr><td>4. ☐</td><td>Enlarge the redundant PM&C ISO repository</td><td>Execute the following command with appropriate values gathered in steps 1 and 2:

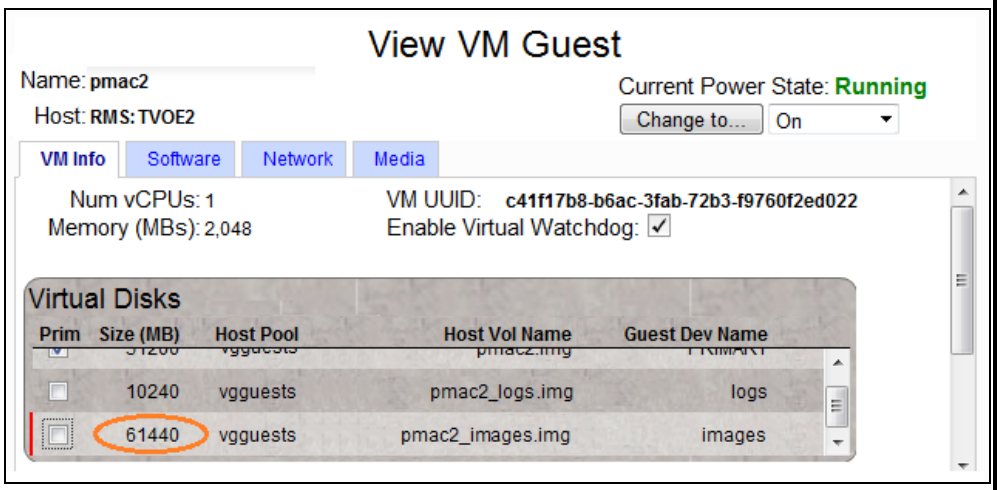
[admusr@pmac2 ~]$ pmaccli enlargeIsoImageRepository
--ip=<Guest_Host_IP> --guest=<redundant_pmac_guest_name>
--volname=<Host_Vol_Name> --volpool=vgguests
–-volsize=61440

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."</td></tr>
</table>

Procedure 21: Post Upgrade Configuration of larger redundant PM&C ISO Image Repository area

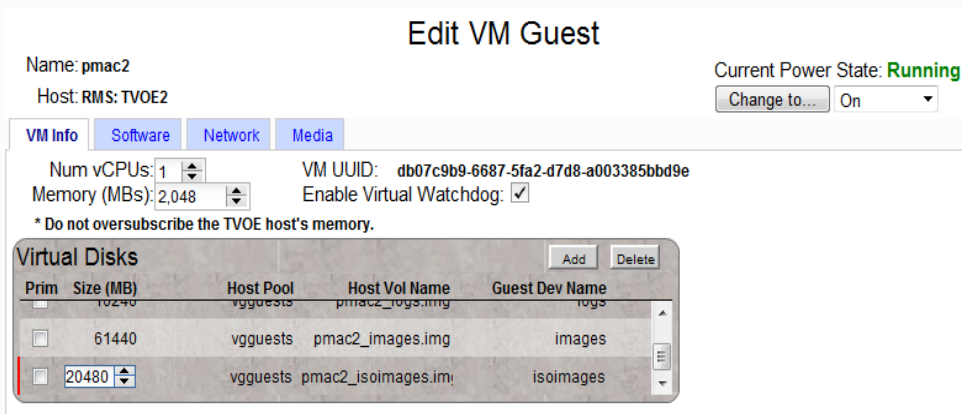
5. ☐	Verify the size of redundant PM&C ISO repository	Using the primary PM&C GUI, navigate to the VM Management page. Select the redundant PM&C Guest to get to the "View VM Guest" page. In the "Virtual Disks" table of the "VM Info" tab scroll to the entry with Guest Dev Name "images".  Ensure the Size(MB)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

Procedure 22: Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

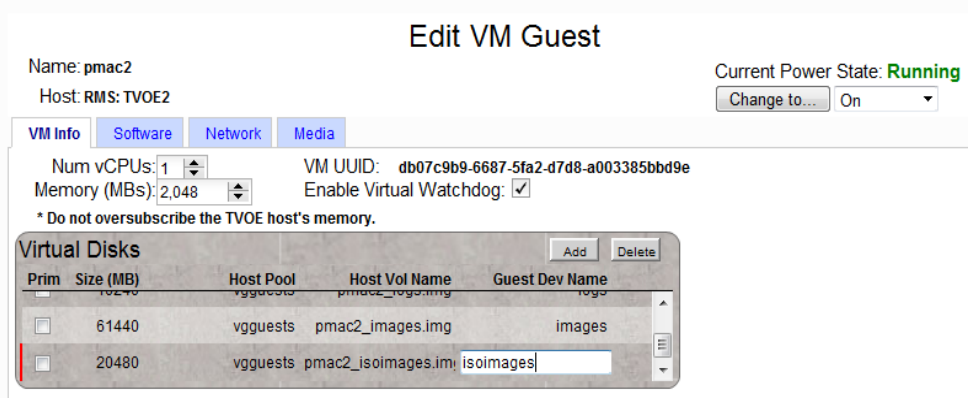
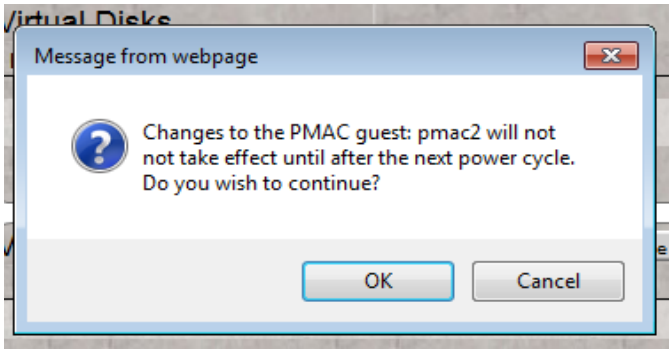
S T E P #	This optional procedure provides instructions on how to enlarge the redundant PM&C ISO image temporary import area up to 20480 MB (20 GB). NOTE: This procedure can be executed only on PM&C 5.5 release. NOTE: Only execute this procedure if it is required by application. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Access the redundant PM&C guest console	If necessary, access the redundant PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 Guest Console* .

Procedure 22: Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

2. ☐	Determine if redundant PM&C ISO temporary import area needs to be enlarged	Execute the following command:
		
		`[admusr@pmac ~]$ sudo /bin/df -h |grep isoimages`
		`/dev/mapper/vgroot-smac_isoimages`
		`5.0G 147M 4.6G 4%`
		`/var/TKLC/smac/image/isoimages`
		
		The size of the ISO temporary import area in the example above is 5 GB.
		
		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 > Login with pmacadmin credentials in *Table 3. Software Upgrade Required Data.*
4. ☐	Navigate to to the "Edit VM Guest" page of 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 VM Guest" page. Click "Edit.
5. ☐	Determine whether "isoimages" virtual disk exists	In the "Virtual Disks" grid of the "VM Info" tab locate the entry with " isoimages" Guest Dev Name. If you cannot find the "isoimages" entry skip to step 7. Otherwise, Proceed to step 6.
6. ☐	Edit the "isoimages" vdisk of the redundant PM&C guest.	Click the on the Size(MB) field of the entry to edit it. Use the arrows to modify the the size up to 20480 MB.  Verify the new isoimages virtual disk data and click the Save button . Now proceed to step 8.

Procedure 22: Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

7. ☐	Add the "isoimages" vdisk to the redundant PM&C guest.	In the "Virtual Disks" grid 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 Size to a value large enough for the largest ISO image file size anticipated at the site. For instance, the following image illustrates what user would enter in order to achieve 20480 MB ISO temporary import area on pmac2.  **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.
8. ☐	Confirm the change to redundant PM&C guest	A confirmation dialog will be presented with the message, "Changes to the PMAC guest will not take effect until after the next power cycle. Do you wish to continue?".  Click "OK" to continue.

Procedure 22: Post Upgrade Configuration of larger redundant PM&C temporary ISO import area

9. ☐	Wait for the redundant PM&C guest Edit background task to complete	Navigate to the Background Task Monitoring view. Confirm the guest edit task has completed successfully.
10. ☐	Shutdown the redundant PM&C guest	Shutdown the redundant PM&C guest as detailed in Appendix O, *Shutdown PM&C 5.5 Guest.*

11. ☐	Start the redundant PM&C guest	Using virsh utility on TVOE host of redundant PM&C guest, start the redundant PM&C guest. Query the list of guests until the redundant 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`

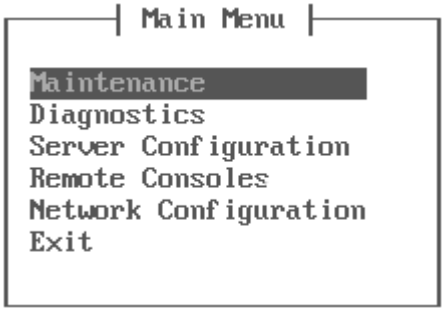
12. ☐	Monitor the PM&C guest until it comes up	Execute:
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh console <pmac>`
		
		Wait for the redundant PM&C guest login prompt.
		
		login as the admusr captured in *Table 3. Software Upgrade Required Data* and verify the disk size using the df command. An example 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`

13. ☐	Verify the size of redundant PM&C ISO temporary import area	**NOTE**: It can take up to 15 minutes for the PM&C to perform sufficient software discovery to locate the redundant PM&C and enable navigation to the "View VM 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 VM Guest" page. In the "Virtual Disks" table locate the entry with Guest Dev Name "isoimages". Ensure the Size(MB) now reflects the new value.
Section 5.5 has been completed.		

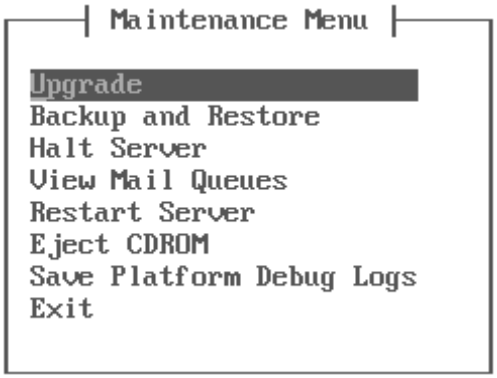
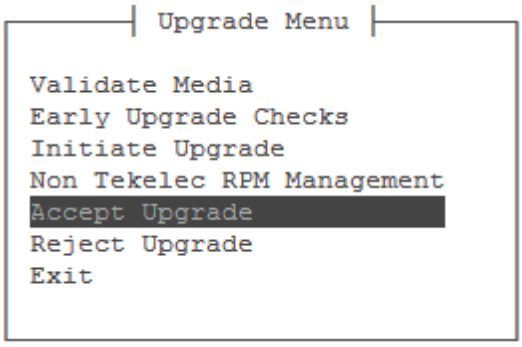
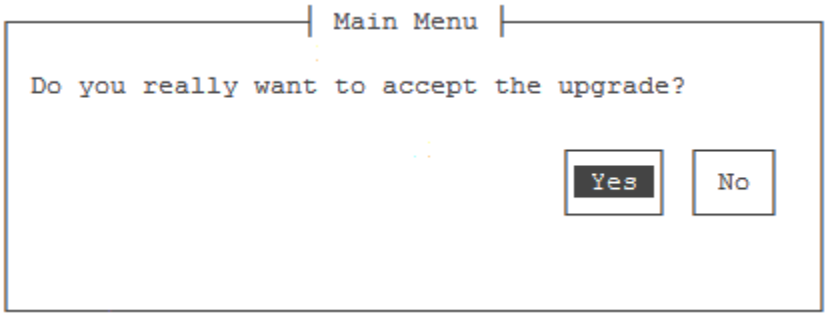
5.6 SOFTWARE UPGRADE ACCEPTANCE AND CLEANUP ON THE REDUNDANT PM&C

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.

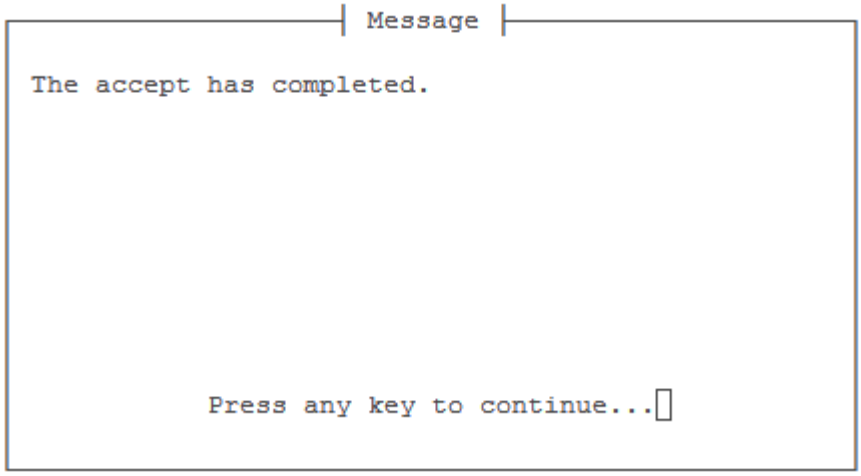
Procedure 23: Post-Upgrade Acceptance on the redundant PM&C

S T E P #		
	This procedure finalizes 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 APPENDIX P.	
1. ☐	If necessary, access the redundant PM&C guest console	If necessary, access the redundant PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 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.

Procedure 23: 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.	

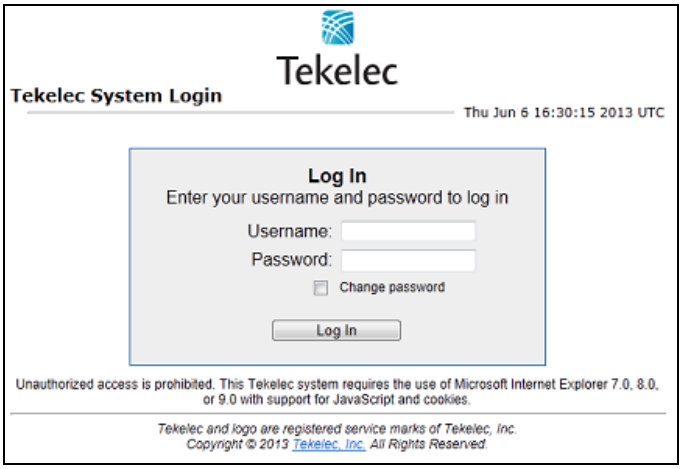
Procedure 23: Post-Upgrade Acceptance on the redundant PM&C

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.
9. ☐	If the TVOE host was upgraded using *Appendix L*.	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 L*, If the TVOE upgrade was delayed, then please return to TVOE host upgrade procedures outlined in section 2.1.1, of 909-2276-001. Continue the upgrade process with procedure 8, Stand Alone TVOE Upgrade Accept.

Procedure 24:Post upgrade Cleanup of upgrade media

S T E P #		
	This procedure removes 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 APPENDIX P.	

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/`
		`872-2586-101-5.5.0_55.10.0-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/872-2586-101-5.5.0_55.10.0-PMAC-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 pmacadmin credentials in *Table 3. Software Upgrade Required Data*. 

Procedure 24:Post upgrade Cleanup of upgrade media

3. ☐	If upgrade was performed using Media (USB or CDROM), 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 VM 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 VM Guest" page. Select the "media" tab on the "View VM 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 the Tekelec Customer Care Center. Before executing any of these procedures, contact the Tekelec Customer Care Center at 1-888-FOR-TKLC (1-888-367-8552); or 1-919-460-2150 (international). 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 the Tekelec Customer Care Center at* 1-888-FOR-TKLC (1-888-367-8552); or 1-919-460-2150 (international).**

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.

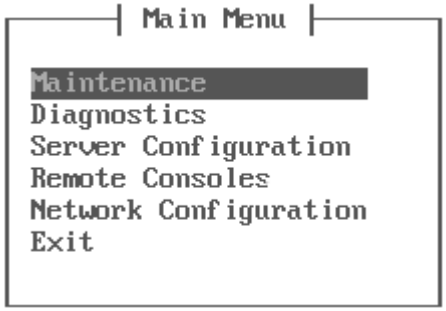
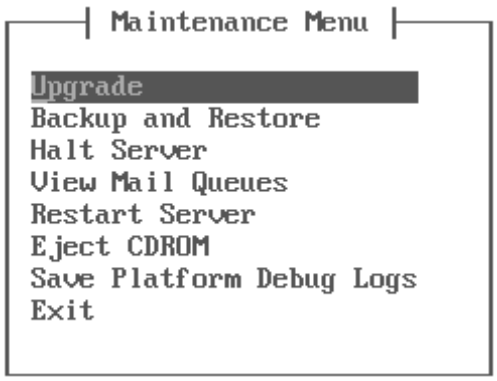
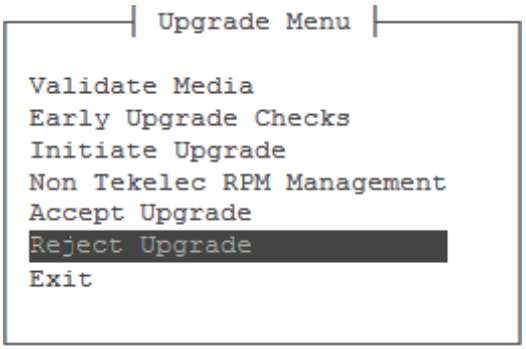
Tekelec Customer Support personnel will require login access to the affected PM&C, probe the server for the root cause of the problem, and execute whatever setup or cleanup is necessary in order to prepare the PM&C for backout.

6.2 RECOVERY PROCEDURES

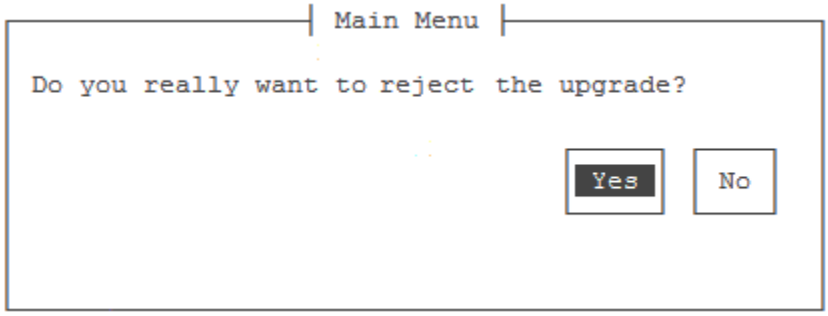
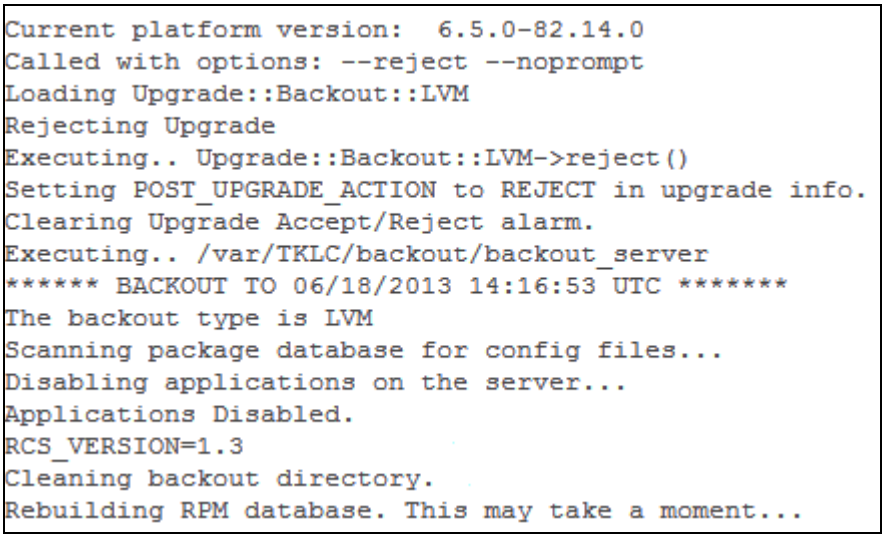
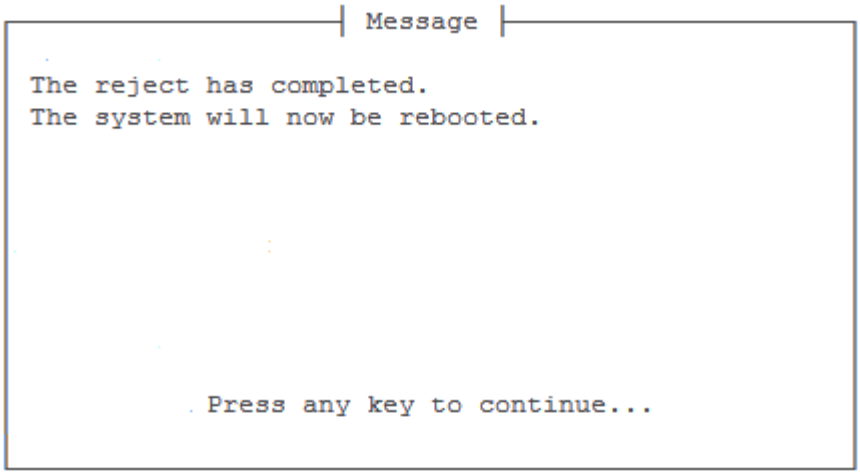
Procedure 25: PM&C Backout(reject) Procedure

S T E P #	This procedure executes a backout of PM&C application 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 APPENDIX P.	
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 G, *Accessing the PM&C 5.5 Guest Console.*
3. ☐	Run the "platcfg" utility.	Execute: `[admusr@pmac ~]$ sudo su – platcfg`

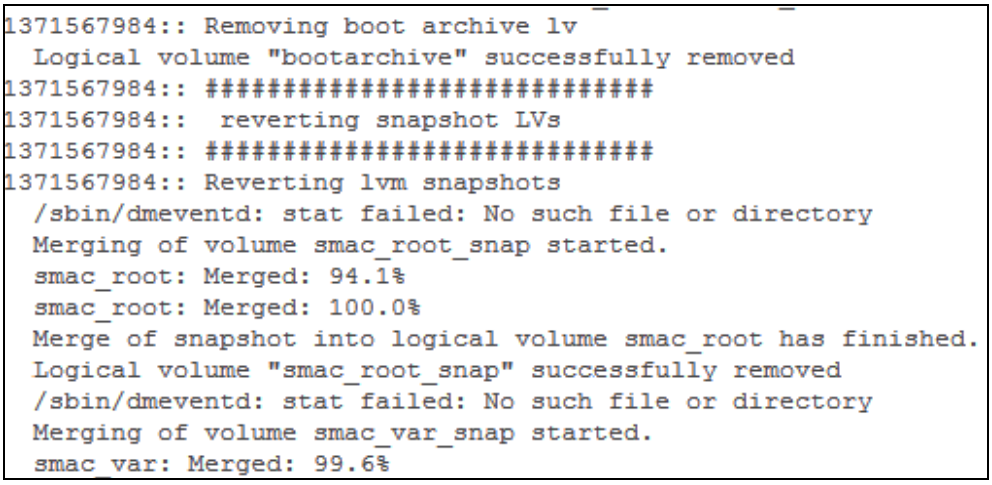
Procedure 25: PM&C Backout(reject) Procedure

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.

Procedure 25: 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. 

Procedure 25: PM&C Backout(reject) Procedure

10. ☐	A revert of Logical Volume Snapshots is performed	**NOTE:** The following image is for illustrative purposes only.  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	**For PM&C 5.0 source release:** Use the PM&C root credentials from *Table 3. Software Upgrade Required Data.* **For PM&C 5.5 source release:** Use platform admusr credentials from *Table 3. Software Upgrade Required Data*
13. ☐	If present, remove the optical media from the PM&C TVOE host server.	Remove the optical media from the appropriate slot of the PM&C TVOE host server.

Procedure 25: PM&C Backout(reject) Procedure

14. ☐	Verify the backout completed.	Execute the following command to verify source PM&C release:
		
		For PM&C 5.0 source release:
		`[root@pmac ~]# appRev`
		`Install Time: Fri Jun 7 01:48:25 2013`
		`Product Name: PMAC`
		`Product Release: 5.0.2_50.16.5`
		`Part Number ISO: 872-2441-009`
		`Part Number USB: 872-2441-109`
		`Base Distro Product: TPD`
		`Base Distro Release: 6.0.1_80.32.0`
		`Base Distro ISO: TPD.install-6.0.1_80.32.0-CentOS6.3-x86_64.iso`
		`OS: CentOS 6.3`
		
		For PM&C 5.5 source release:
		`[admusr@pmac ~]$` **`sudo /usr/TKLC/plat/bin/appRev`**
		`Install Time: Mon Jun 17 14:16:32 2013`
		`Product Name: PMAC`
		`Product Release: 5.5.0_55.10.0`
		`Part Number ISO: 872-2586-101`
		`Part Number USB: 872-2586-101`
		`Base Distro Product: TPD`
		`Base Distro Release: 6.5.0_82.14.0`
		`Base Distro ISO: TPD.install-6.5.0_82.14.0-CentOS6.4-x86_64.iso`
		`OS: CentOS 6.4`
		
		If correct Product Release is not displayed, contact Tekelec Customer Service and do not proceed until instructed by a Tekelec Customer Care representative.

15. ☐	Execute the system health check.	**For PM&C 5.0:** Execute Appendix C, *PM&C 5.0 System Health Check*. **For PM&C 5.5:** Execute Appendix H, *PM&C 5.5 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 Tekelec Customer Service 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 5.0 TVOE HOST CONSOLE

Procedure 26. Accessing the PM&C 5.0 TVOE Host Console

S T E P #	This procedure provides instructions on how to access the console of a TVOE host in PM&C 5.0 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 APPENDIX P.	
1. ☐	Login to Management Server iLO.	Access the Management Server iLO using *Appendix G How to Access a Server Console using the iLO*, in *Platform 6.5 Configuration Procedure Reference*, 909-2249-001, Current version. If necessary refer to *Table 3. Software Upgrade Required Data* for login credentials.
2. ☐	Login to TVOE as root	If necessary login using the TVOE root credentials captured in *Table 3. Software Upgrade Required Data*. `[root@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 5.0 GUEST CONSOLE**

Procedure 27. Accessing the PM&C 5.0 Guest console

S T E P #		
	This procedure provides instructions on how to access the virtualized PM&C 5.0 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 APPENDIX P.	
1. ☐	Access the TVOE host console	Login to the TVOE host console, using *Appendix A, Accessing the PM&C 5.0 TVOE Host Console.*

2. ☐	Login to PM&C guest console as the PM&C root.	Connect to the console and login as the PM&C root captured in *Table 3. Software Upgrade Required Data.*
		
		It may be necessary to press return to get a prompt
		
		`[root@tvoe ~]# virsh console <PMAC_Name>`
		`Connected to domain <PMAC_Name>`
		`Escape character is ^]`
		
		`CentOS release 6.2 (Final)`
		`Kernel 2.6.32-220.7.1.el6prerel6.0.0_80.13.0.x86_64 on an x86_64`
		
		`<PMAC_Name> login: root`
		`Password:`
		`[root@<PMAC_Name> ~]#`

3. ☐	Exit this procedure and return to the procedure which referred you.	Return to the next step in the refering procedure.
This procedure has been completed.		

Appendix C **PM&C 5.0 SYSTEM HEALTH CHECK**

Procedure 28. PM&C 5.0 System Health Check

S T E P #	This procedure provides instructions on how to perform a PM&C 5.0 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 APPENDIX P.	
1. ☐	Access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix B, *Accessing the PM&C 5.0 Guest Console* .

2. ☐	Run the "sentry status" command to verify the status of the PM&C application.	`[root@pmac ~]# sentry status`
		`sending status command...`
		`PM&C Sentry Status`
		`------------------`
		
		`sentryd started: Thu May 31 07:47:31 2012`
		`Current activity mode: ACTIVE`
		`Process PID Status StartTS NumR`
		`------------------ ------ ---------- ------------------------ ----`
		`smacTalk 5932 running Sun Dec 6 07:47:31 2009 1`
		`smacMon 5935 running Sun Dec 6 07:47:31 2009 1`
		`hpiPortAudit 5951 running Sun Dec 6 07:47:31 2009 1`
		`snmpEventHandler 5962 running Sun Dec 6 07:47:31 2009 1`
		`eclipseHelp 5971 running Sun Dec 6 07:47:31 2009 2`
		
		`Thu June 7 11:09:44 2012`
		`Command Complete.`
		`[root@pmac ~]#`

3. ☐	Run alarmMgr on PM&C instance.	`[root@pmac ~]# alarmMgr --alarmStatus` `[root@pmac ~]#`
4. ☐	If any error messages are displayed by the alarmMgr command, if sentry shows any PM&C processes not running, then there is a problem with the Management Server or PM&C application. .	If sentry shows any PM&C processes not running, then the healthcheck was not successful. Contact Tekelec Technical Services 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.

Procedure 28. PM&C 5.0 System Health Check

5. ☐	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 *Platform 6.0 Configuration Procedure Reference*, 909-2209-001, Current version.

6. ☐	Run alarmMgr on Management Server console.	`[root@tvoe ~]# alarmMgr --alarmStatus`
		`[root@tvoe ~]#`
		
		If alarmMgr shows no alarms then the management server appears to be running normally. Otherwise Contact Tekelec Technical Services for information on how to proceed.

This procedure has been completed.		

Appendix D **PM&C 5.0 SYSTEM BACKUP**

Procedure 29: Primary PM&C 5.0 backup

S T E P #	This procedure backs up all necessary PM&C 5.0 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 APPENDIX P.	
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 5.0 Guest Console* **.**

2. ☐	Perform the backup to local disk.	`[root@pmac ~]# pmacadm backup`
		`PM&C backup been successfully initiated as task ID 7`
		`[root@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 pmacadmin credentials in *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 Tekelec Customer Care Center 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):
		
		`[root@pmac ~]# cd /var/TKLC/smac/backup`
		
		`[root@pmac ~]# ls –alrt backupPmac*`
		`-rw-r--r-- 1 pmacd pmacd 14233 Aug 3 13:56`
		`backupPmac_20110803_135646.pef`
		
		Transfer the file to a remote server using scp. The command would be something like:
		`[root@pmac backup]# scp backupPmac_20110803_135646.pef`
		`user@host:path`

This procedure has been completed.		

Appendix E PM&C 5.0 SYSTEM BACKUP TO REDUNDANT PM&C

Procedure 30: PM&C 5.0 backup to redundant PM&C

S T E P #		
	This procedure backs up all necessary PM&C database data from the primary PM&C 5.0 to the redundant PM&C. NOTE: This 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 APPENDIX P.	
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 5.0 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.
		
		`[root@pmac ~]# pmacadm backup --media="Remote Server"`
		`PM&C backup been successfully initiated as task ID 8`
		`[root@pmac ~]#`
		
		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 pmacadmin credentials in *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 Tekelec Customer Care Center for assistance.
This procedure has been completed.		

Appendix F **ACCESSING THE PM&C 5.5 TVOE HOST CONSOLE**

Procedure 31. Accessing the PM&C 5.5 TVOE Host Console

S T E P #	This procedure provides instructions on how to access the console of a TVOE host in PM&C 5.5 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 APPENDIX P.	
1. ☐	Login to Management Server iLO.	Access the Management Server iLO using *Appendix G How to Access a Server Console using the iLO*, in *Platform 6.5 Configuration Procedure Reference*, 909-2249-001, Current version. 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 G **ACCESSING THE PM&C 5.5 GUEST CONSOLE**

Procedure 32. Accessing the PM&C 5.5 Guest console

S T E P #		
	This procedure provides instructions on how to access the virtualized PM&C 5.5 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 APPENDIX P.	
1. ☐	Access the TVOE host console	Login to the TVOE host console, using *Appendix F, Accessing the PM&C 5.5 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.*
		
		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 ^]`
		
		`CentOS release 6.2 (Final)`
		`Kernel 2.6.32-220.7.1.el6prerel6.0.0_80.13.0.x86_64 on an x86_64`
		
		`<PMAC_Name> login: admusr`
		`Password:`
		`[admusr@<PMAC_Name> ~]$`

4. ☐	Exit this procedure and return to the procedure which referred you.	Return to the next step in the refering procedure.
This procedure has been completed.		

Appendix H **PM&C 5.5 SYSTEM HEALTH CHECK**

Procedure 33. PM&C 5.5 System Health Check

S T E P #	This procedure provides instructions on how to perform a PM&C 5.5 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 APPENDIX P.	
1. ☐	Access the PM&C guest console	If necessary, access the PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 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: Thu May 31 07:47:31 2012`
		`Current activity mode: ACTIVE`
		`Process PID Status StartTS NumR`
		`------------------ ------ ---------- ------------------------ ----`
		`smacTalk 5932 running Sun Dec 6 07:47:31 2009 1`
		`smacMon 5935 running Sun Dec 6 07:47:31 2009 1`
		`hpiPortAudit 5951 running Sun Dec 6 07:47:31 2009 1`
		`snmpEventHandler 5962 running Sun Dec 6 07:47:31 2009 1`
		`eclipseHelp 5971 running Sun Dec 6 07:47:31 2009 2`
		
		`Thu June 7 11:09:44 2012`
		`Command Complete.`
		`[admusr@pmac ~]$`

3. ☐	Run alarmMgr on PM&C instance.	`[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/alarmMgr --alarmStatus`
		`[admusr@pmac ~]$`
		
		Note: When executed after the upgrade and before the upgrade is accepted, there will be an alarm stating that the server is pending accept/reject similar to the following:
		
		`TKSPLATMI33|tpdServerUpgradePendingAccept`
		
		This is expected and can be ignored

Procedure 33. PM&C 5.5 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 Tekelec Technical Services for information on how to proceed.	If sentry shows any PM&C processes not running, then the healthcheck was not successful. Contact Tekelec Technical Services 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 Tekelec Customer Service 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 *Platform 6.5 Configuration Procedure Reference*, 909-2249-001, Current version.

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 Tekelec Technical Services for information on how to proceed.

Procedure 33. PM&C 5.5 System Health Check

This procedure has been completed.

Appendix I **PM&C 5.5 SYSTEM BACKUP**

Procedure 34: Primary PM&C 5.5 backup

S T E P #	This procedure backs up all necessary PM&C 5.5 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 APPENDIX P.	
1. ☐	Access the primary PM&C guest console	If necessary, access the primary PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 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 pmacadmin credentials in *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 Tekelec Customer Care Center 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 J **PM&C 5.5 SYSTEM BACKUP TO REDUNDANT PM&C**

Procedure 35: PM&C 5.5 backup to redundant PM&C

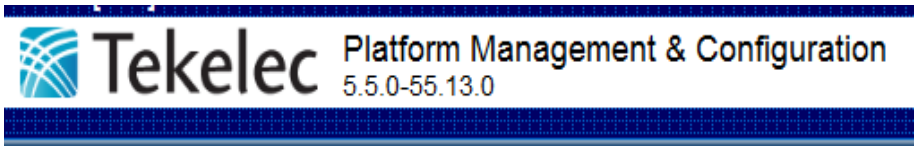
S T E P #	This procedure backs up all necessary PM&C database data from the primary PM&C 5.5 to the redundant PM&C. NOTE: This procedure requires that a redundant PM&C be installed, configured, and have network connectivity. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Access the primary PM&C guest console	If necessary, access the primary PM&C guest console as detailed in Appendix G, *Accessing the PM&C 5.5 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 pmacadmin credentials in *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 Tekelec Customer Care Center for assistance.
This procedure has been completed.		

Appendix K **DETERMINE THE CURRENT PM&C VERSION**

Procedure 36: Determine the current PM&C version

S T E P #	This procedure provides instructions on how 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 APPENDIX P.	
1. ☐	Access the PM&C GUI	If necessary, open IE web browser and enter: https://<PM&C Management Network IP > Login with pmacadmin credentials in *Table 3. Software Upgrade Required Data.*
2. ☐	Determine the PM&C release running.	Below the title "PM&C Management & Configuration" the PM&C relase number can be found. If it starts with 5.5, you are on PM&C 5.5 application. If it starts with 5.0, you are on PM&C 5.0 application. 
3. ☐	Return to the referring procedure	Return to the referring procedure.
This procedure has been completed.		

Appendix L **DETERMINE IF PM&C 5.0 TVOE HOST REQUIRES UPGRADE**

Procedure 37: Determine if PM&C5.0 TVOE host requires upgrade

S T E P #	This procedure provides instructions on how to determine if the PM&C 5.0 TVOE host needs upgrading. **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 each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Access the TVOE host console	Login to the TVOE host console, using *Appendix A, Accessing the PM&C 5.0 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 *Platform 6.5 Configuration Procedure Reference*, 909-2249-001, Current version.

2. ☐	Determine the release of TVOE running.	`[root@tvoe ~]# appRev`
		`Install Time: Thu Mar 14 14:37:20 2013`
		`Product Name: TVOE`
		`Product Release: 2.0.1_80.32.0`
		`Part Number ISO: 872-2442-109`
		`Part Number USB: 872-2442-109`
		`Base Distro Product: TPD`
		`Base Distro Release: 6.0.1_80.32.0`
		`Base Distro ISO: TPD.install-6.0.1_80.32.0-CentOS6.3-x86_64.iso`
		`OS: CentOS 6.3`

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.
This procedure has been completed.		

Procedure 38: Upgrade the PM&C 5.0 TVOE host

S T E P #		
	This procedure provides basic steps in how to upgrade the PM&C 5.0 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 each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Shutdown all running guests in preparation for the TVOE upgrade.	**NOTE:** 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 in *Appendix N, Shutdown PM&C 5.0 Guest*. **NOTE:** Shut down all additional non-PM&C guests as detailed in application document.
2. ☐	Perform the TVOE upgrade	Execute all Stand Alone TVOE host upgrade procedures outlined in section 2.1.1, of 909-2276-001. (If TVOE is being upgraded to release 2.5.x, then stop at procedure 8, Stand Alone TVOE Upgrade Accept) NOTE: Do not accept the TVOE upgrade until after the PM&C upgrade has been accepted. The PM&C 5.0 release cannot be deployed onto a TVOE 2.5.x system. If an issue occurs during the PM&C upgrade it may require disaster recovery. For disaster recovery to work the TVOE upgrade will have to be rejected to allow PM&C 5.0 to be re-deployed.
3. ☐	Access the TVOE host console	Login to the TVOE host console, using Appendix F, *Accessing the PM&C 5.5 TVOE Host Console*

4. ☐	Ensure all images that have been used during upgrade have been removed from TVOE	Execute:
		`[admusr@tvoe ~]$ ls /var/TKLC/upgrade/`
		`872-2525-101-2.5.0_82.17.0-TVOE-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/872-2525-101-2.5.0_82.17.0-TVOE-x86_64.iso`
		
		Repeat this step as necessary to ensure there are no images left to be removed.

Procedure 38: Upgrade the PM&C 5.0 TVOE host

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

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 M **DETERMINE IF PM&C 5.5 TVOE HOST REQUIRES UPGRADE**

Procedure 39: Determine if PM&C5.5 TVOE host requires upgrade

S T E P #		
	This procedure provides instructions on how to determine if the PM&C 5.5 TVOE host needs upgrading. **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 each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
1. ☐	Access the TVOE host console	Login to the TVOE host console, using *Appendix F, Accessing the PM&C 5.5 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 *Platform 6.5 Configuration Procedure Reference*, 909-2249-001, Current version.

2. ☐	Determine the release of TVOE running.	`[admusr@tvoe ~]$ sudo /usr/TKLC/plat/bin/appRev`
		`Install Time: Fri Sep 20 13:33:46 2013`
		`Product Name: TVOE`
		`Product Release: 2.5.0_82.24.0`
		`Part Number ISO: 872-2525-101`
		`Part Number USB: 872-2525-101`
		`Base Distro Product: TPD`
		`Base Distro Release: 6.5.0_82.24.0`
		`Base Distro ISO: TPD.install-6.5.0_82.24.0-CentOS6.4-x86_64.iso`
		`OS: CentOS 6.4`

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.
This procedure has been completed.		

Procedure 40: Upgrade the PM&C 5.5 TVOE host

S T E P #		
	This procedure provides basic steps in how to upgrade the PM&C 5.5 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 each step number. IF THIS PROCEDURE FAILS, SEE APPENDIX P.	
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 in Appendix O, *Shutdown PM&C 5.5 Guest.* **NOTE:** Shut down all additional non-PM&C guests as detailed in application document.
2. ☐	Perform the TVOE upgrade	Execute all Stand Alone TVOE host upgrade procedures outlined in section 2.1.1, of 909-2276-001.
3. ☐	Access the TVOE host console	Login to the TVOE host console, using *Appendix F, Accessing the PM&C 5.5 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/`
		`872-2525-101-2.5.0_82.17.0-TVOE-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/872-2525-101-2.5.0_82.17.0-TVOE-x86_64.iso`
		
		Repeat this step as necessary to ensure there are no images left to be removed.

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

Procedure 40: Upgrade the PM&C 5.5 TVOE host

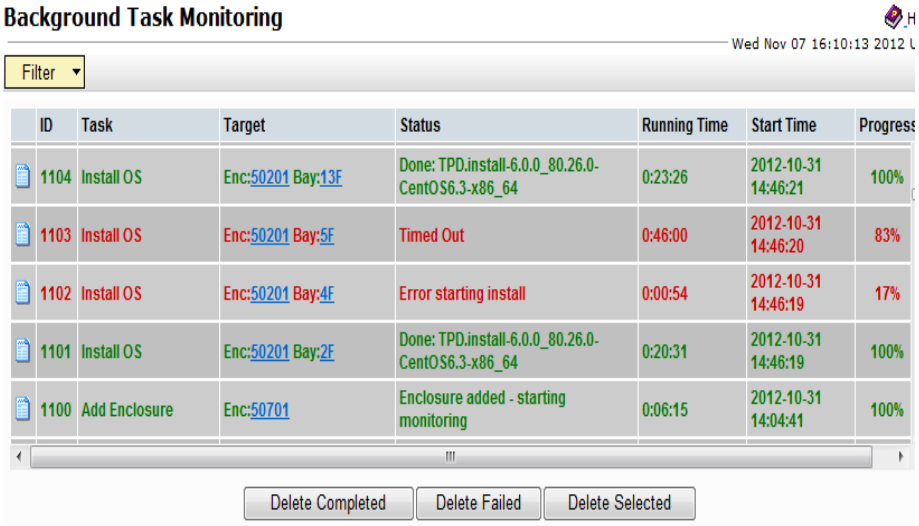
6. ☐	Start the PM&C guest	Using virsh utility on TVOE host of PM&C guest, start the PM&C guest. Query the list of guests until the PM&C guest is "running".
		
		`[admusr@tvoe ~]$ sudo /usr/bin/virsh list --all`
		`Id Name State`
		`----------------------------------`
		`20 pmac shut off`
		
		`[admusr@tvoe ~]$ 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 N **SHUTDOWN PM&C 5.0 GUEST**

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

Procedure 41: Shutdown the PM&C 5.0 Guest

S T E P #	This procedure provides instructions on how to properly shut down a PM&C 5.0 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 APPENDIX P.	
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 pmacadmin credentials in *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 Background Tasks 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 5.0 Guest Console* .

Procedure 41: Shutdown the PM&C 5.0 Guest

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

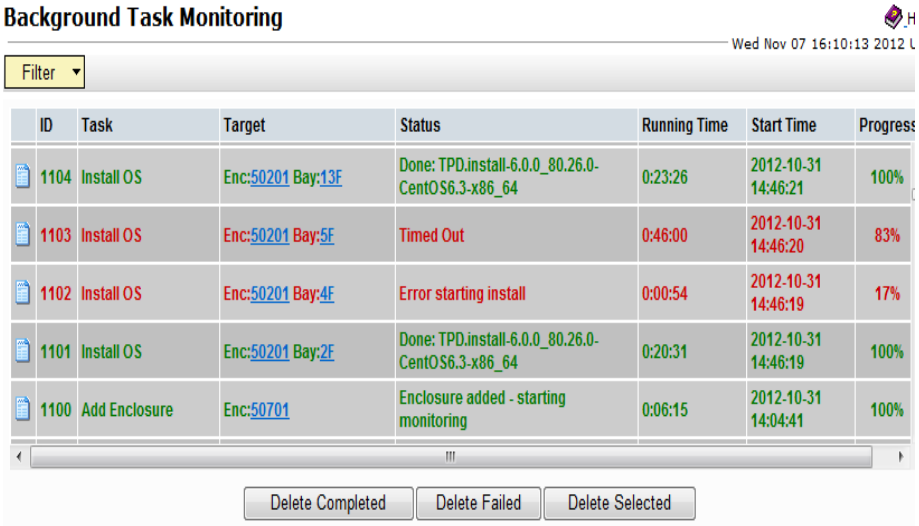
5. ☐	Verify PM&C guest is shutdown	From the TVOE host console execute the following command:
		
		`[root@tvoe ~]# virsh list --all`
		`Id Name State`
		`----------`
		`- pmac shut off`
		`[root@tvoe ~]#`
		This should show the guest state as "shut off".
		
		NOTE: You will want to be sure all guests are in the shut off state as well.

This procedure has been completed.		

Appendix O **SHUTDOWN PM&C 5.5 GUEST**

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

Procedure 42: Shutdown the PM&C 5.5 Guest

S T E P #		
	This procedure provides instructions on how to properly shut down a PM&C 5.5 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 APPENDIX P.	
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 pmacadmin credentials in *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 Background Tasks 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 G, *Accessing the PM&C 5.5 Guest Console* .

Procedure 42: Shutdown the PM&C 5.5 Guest

4. ☐	Shutdown PM&C Guest	Assuming no in-progress tasks exist, then it is safe to shutdown 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 P ACCESSING CUSTOMER SUPPORT SITE

Access to Oracle's Tekelec Customer Support site is restricted to current Tekelec customers. This section describes how to log into Oracle's Tekelec Customer Support site and how to locate upgrade procedures. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at www.adobe.com.

1. Log into the Oracle's Tekelec new Customer Support site at support.tekelec.com.

   Note: If you have not registered for this new site, click the **Register Here** link. Have your customer number available. The response time for registration requests is 24 to 48 hours.

2. Click the **Product Support** tab.
3. Use the Search field to locate a document by its part number, release number, document name, or document type. The Search field accepts both full and partial entries.
4. Click a subject folder to browse through a list of related files.
5. To download a file to your location, right-click the file name and select **Save Target As**.