Oracle® Communications
Tekelec Platform

PM&C 5.5 Disaster Recovery Procedure

Release 5.5

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Oracle Communications Tekelec Platform PM&C 5.5 Disaster Recovery Procedure, Release 5.5

⚠ **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 **Error! Reference source not found.** 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.

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1. INTRODUCTION

1.1 Purpose and Scope

In a disaster scenario in which the PM&C application has been lost, the procedures contained herein can be used to recover the PM&C application to its state at the time of the last backup. The PM&C application backup facility supports backup to a redundant PM&C Server or a NetBackup Server. If neither of these destinations is available, the backup data can be manually copied to a generic remote server. This document includes a section covering the additional option of restoring PM&C functionality on a redundant PM&C Server.

These procedures are intended to be run by Tekelec personnel. This document assumes that the user has basic knowledge of the Management Server hardware, and at least an intermediate skill set with the LINUX environment.

1.2 References

Internal (Tekelec)

Internal references are only available to Tekelec personnel.

1. Platform 6.5 Configuration Procedure Reference, 909-2249-001, Current Revision
2. PM&C 5.5 Incremental Upgrade Procedure, 909-2281-001, Current Revision
3. TVOE 2.5 Disaster Recovery Procedure, 909-2275-001, Current Revision
4. Platform 4.x+ Passwords, TR006061, Current Revision

Table 1: Acronyms

Acronym	Meaning
Backup Server	Server providing backup and recovery services.
iLO	Integrated Lights Out manager
IPM	Initial Product Manufacturing
ISO	The name *ISO* is taken from the ISO 9660 file system used with CD-ROM media, but an ISO image might also contain a UDF (ISO/IEC 13346) file system.
Management Server	The ProLiant DL 360/DL 380 on which the TVOE environment is installed.
Management Server TVOE	The TVOE running on the Management Server and hosting the PM&C guest.
NetBackup Feature	Feature that provides support of the Symantec NetBackup client utility on an application server.
PM&C	Platform Management and Configuration application
Redundant PM&C Server	An optional configuration of a second PM&C Server (Guest) running on the TVOE hypervisor on separate hardware from the Management Server
TPD	Tekelec Platform Distribution
TVOE	Tekelec Virtualization Operating Environment

2. PREREQUISITES

2.1 Required actions to enable Disaster Recovery

In order for Disaster Recovery to work, a backup of the PM&C server must have been made to a remote location, meaning a remote server, a redundant PM&C Server, or a NetBackup Server. That backup will contain the data as it existed at the time the backup was created. Take care to ensure a periodic backup is performed to prevent a loss of data. The local backup option does not preserve software/firmware ISO images that have been added on the primary PM&C, these will need to be added again after the restore (so be sure to keep this additional media as well). In addition, a backup of the Management Server TVOE must have been made and transferred to a remote location, unless a redundant PM&C server is being used to restore; in this case, the redundant PM&C server should already have TVOE properly configured. The TVOE backup contains the TVOE configuration data as it existed at the time of the backup. Take care to ensure that a TVOE backup is performed when TVOE configuration changes are made.

2.2 Required Tools for PM&C Disaster Recovery procedure

The following items/settings are required in order to perform a Disaster Recovery procedure for the PM&C application.

- Network access to the iLO of the Management Server or local access to serial console.
- iLO administrative user name and password (for Management Server).
- Password for the TVOE user "admusr".
- Password for the PM&C user "admusr".
- Name of the PM&C guest defined on the Management Server TVOE
- Username and password for a PM&C GUI Admin user (i.e. user "pmacadmin").

All of the HP c-class passwords can be retrieved by using the Password Dragon application. To install and use Password Dragon, refer to the instructions in reference 4, [TR006061].

Note: If this document refers to a password and no other instructions are given, use Password Dragon to determine the password.

Note: Additional materials may be specified in the following procedures.

2.3 Network Connections

The user must have network connectivity to the iLO of the Management Server and the management network. The restore may affect the network settings so using the iLO (or serial) prevents a loss of connectivity during the restore. If the restore is to be done on a redundant Management Server, then it is assumed that the network connections mirror the primary Management Server to facilitate the restore.

3. PM&C DISASTER RECOVERY PROCEDURE

The following procedures may require, as a prerequisite, that the Management Server TVOE, hosting the PM&C application, be rebuilt. An IPM of the management server should be performed to the Appropriate TVOE release. The TVOE may have non-PM&C guests running on it. Consult the application DR documents for details about recovering non-PM&C guests on the Management Server TVOE.

Following the TVOE restore, the PM&C instance will be deployed using the PM&C upgrade media (optical media/USB/disk image). After the PM&C is deployed, the PM&C backup data can be restored to the server using these procedures.

There are three procedures based on the Management Server, executing PM&C, you wish to restore.

1. Restoration of the primary PM&C on the Management Server TVOE in the event of Disaster Recovery (where no redundant Management Server is available).
2. Restoration of the PM&C backup data to a redundant PM&C guest on a redundant Management Server TVOE.
3. Restoration of the primary PM&C guest on the Management Server TVOE configured in a system with a Backup Server.

If none of the scenarios listed above is applicable, then a fresh installation is required. Fresh installations are beyond the scope of this document. Application-specific documents should be obtained based on the application running on the managed system.

Determine the correct procedure to follow based on the recovery desired. Also note that the second procedure requires that a redundant PM&C guest on a redundant Management Server to be installed, powered, network connected, and receiving periodic backup data from the primary PM&C. In the event that a redundant PM&C was available but did not receive periodic backup data, then use the first procedure to restore PM&C from backup media, or the third procedure to restore from a Backup Server. In the event that the Backup Server does not have the appropriate PM&C backup stored to it, then use the first procedure to restore the PM&C.

3.1 Restore PM&C Server From Backup Media

Procedure 1: Restore PM&C from backup media

S T E P #	This procedure provides instructions on how to restore the PM&C application from backup media. 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 C.
NOTE: *In addition to the requirements listed in Section 2, this procedure also requires the following:*	
• Bootable media with the TVOE release for the desired PM&C release level. • PM&C Install/Upgrade Media. • Media with the HP Firmware Maintenance. • PM&C backup data. • TVOE backup image. **NOTE:** *ISO Images will not be automatically recovered and will need to be manually reprovisioned.*	
1. ☐ Upgrade the Management Server firmware. Check each box as it is completed.	Using the sections listed below from reference 1, [909-2249-001], upgrade the Management Server firmware in accordance with the checklist shown: ☐ *"Upgrade DL360 or DL380 Server Firmware"*

Procedure 1: Restore PM&C from backup media

2. ☐	Restore the Management Server TVOE. Check each box as it is completed.	Using the sections listed below from reference 3, [909-2275-001], restore the Management Server TVOE in accordance with the checklist shown: ☐ *"Restore TVOE configuration from backup media"*
3. ☐	Deploy the PM&C guest application. Check each box as it is completed.	Using the sections listed below from reference 1, [909-2249-001], deploy the PM&C guest application in accordance with the checklist shown: ☐ *"Deploy PM&C Guest"*
4. ☐	Connect to the iLO of the Management Server	Using Appendix G, "How to Access a Server Console Using the iLO", of reference 1, [909-2249-001], establish a connection to the iLO console of the Management Server.
5. ☐	Log in to the TVOE host on the Management Server.	Log in to the TVOE console as user "admusr": ``` login as: admusr Password: Last login: Wed Jun 5 17:52:28 2013 [admusr@tvoe ~]$ ```
6. ☐	Log in to the PM&C guest.	Using 3.3Appendix B of this document, "Accessing the PM&C Command Prompt from the Management Server TVOE Console", log in to the PM&C guest console.
7. ☐	Copy the PM&C backup file to the /var/TKLC/smac /backup/ directory on the PM&C guest.	From the remote backup location, copy the backup file to the deployed PM&C. There are too many possible backup scenarios to cover them all here. The example below is a simple scp from a redundant PM&C backup location. ``` [admusr@pmac-07360004-a ~]$ sudo /usr/bin/scp -p \ <remoteserver>:/var/TKLC/smac/backup/*.pef /var/TKLC/smac/backup/ [admusr@pmac-07360004-a ~]$ ``` ***NOTE:*** *It is important to copy the correct backup file to use in the restore. The latest backup may not be the backup which contains the system data of interest. This could be the case if the automatic backup, which is scheduled in the morning, is performed on the newly installed PM&C prior to the restoration of the data.*
8. ☐	Run alarmMgr. The alarmMgr, command output should display no failures. ***NOTE:*** *Output similar to that shown will appear on the terminal window.*	``` [admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/alarmMgr --alarmStatus [admusr@pmac ~]$ ``` ***NOTE:*** *If the output of alarmMgr is not empty, see Appendix C..*

Procedure 1: Restore PM&C from backup media

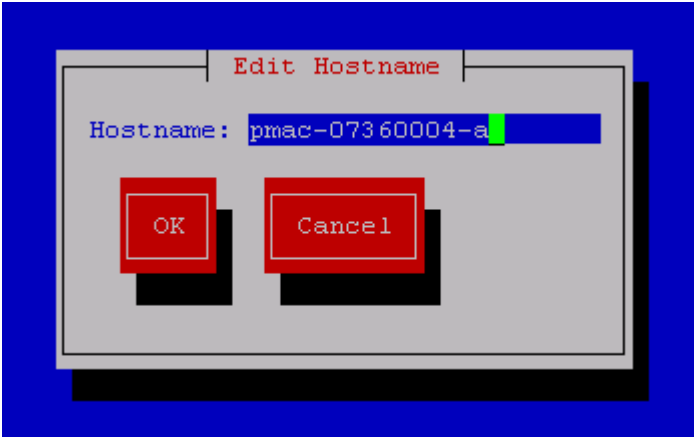| 9. ☐	From the command prompt of the PM&C guest, restore the PM&C data from backup. **NOTE:** *Output similar to that shown will appear on the terminal window.*	`[admusr@pmac-07360004-a ~]$ `**`sudo /usr/TKLC/smac/bin/pmacadm restore`** `PM&C Restore been successfully initiated as task ID 1` **NOTE:** *The restore runs as a background task. To check the status of the background task, issue the command "**sudo /usr/TKLC/smac/bin/pmaccli getBgTasks**". The result should eventually be PM&C Restore successful.* **NOTE:** *If more than one backup archive exists in the "/var/TKLC/smac/backup" directory, and the operator does not wish to restore from the latest backup, the operator must use the "**--fileName**" option on the restore to select the backup archive of interest. When using the "**--fileName**" option, the directory path of the backup should be included in the file name.*
10. ☐	Verify the status of the PM&C application.	Perform steps in **Appendix A Post-Restoration Verification** to verify the successful restoration of the data. **NOTE:** *If after the restoration of the PM&C, provisioned data does not represent the correct data, see Appendix C..*
11. ☐	Re-add required Software Images.	If the redundant PM&C was available during this procedure, the ISO images would have been restored and this step can be skipped. If needed, use the ***Adding ISO Images to the PM&C Image Repository*** procedure in reference 1, [909-2249-001] to provision any required ISO images.
Procedure 1 has been completed.		

3.2 Making the Redundant Management Server Primary

Procedure 2: Restore PM&C backup on redundant Management Server

S T E P #	This procedure provides instructions on how to restore the PM&C application from a backup onto 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 C.	
NOTE: *In addition to the requirements listed in Section* 2*, this procedure may also require the following:*		
• PM&C Install/Upgrade Media. • Media with the HP Firmware Maintenance. • PM&C backup data (This should be available via the remote backup feature).		
1. ☐	Disconnect the primary Management Server from the network and power down the unit.	Make note of the physical port locations for the console connections attached to the primary Management Server TVOE, these connections will need to be replicated on the redundant Management Server in step 2. The removal of cabling and power ensures that the IP addresses in-use by the primary Management Server are available to the redundant Management Server without potential conflict after the restore is initiated.
2. ☐	Connect to the iLO of the redundant Management Server	Using Appendix G, "How to Access a Server Console Using the iLO", of reference 1, [909-2249-001], establish a connection to the iLO console of the redundant Management Server.

3. ☐	Log in to the TVOE host on the redundant Management Server.	Log in to the TVOE console as user "admusr":
		
		 `login as:` **`admusr`**
		 `Password:`
		 `Last login: Wed Jun  5 17:52:28 2013`
		 `[admusr@tvoe ~]$`

4. ☐	Log in to the PM&C guest on the redundant Management Server	Using 3.3Appendix B of this document, "Accessing the PM&C Command Prompt from the Management Server TVOE Console", log in to the PM&C guest console on the redundant Management Server.

Procedure 2: Restore PM&C backup on redundant Management Server

| 5. ☐ | Validate the release.

NOTE: Output similar to that shown will appear on the terminal window.

NOTE: It is expected that the redundant Manager Server is kept in sync with the primary Management Server as a regular part of the upgrade procedure. | Verify the redundant Management Server release matches what the primary Management Server had installed. If not, then the redundant Management Server needs upgrading.

`[admusr@pmac ~]$ `**`sudo /usr/TKLC/plat/bin/appRev`**
`        Install Time: Mon Jun 10 18:09:30 2013`
`        Product Name: PMAC`
`     Product Release: `<mark>`5.5.0_55.10.0`</mark>
`     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`

Verify that the displayed release number matches that of the primary Management Server, if not, follow steps below:

Using the sections listed below from the *PM&C Incremental Upgrade* procedure [909-2281-001], upgrade the Management Server PM&C application in accordance with the checklist shown:

☐ *"PM&C Upgrade Procedure on the redundant PM&C"*

☐ *"Post Upgrade Verification on the redundant PM&C"* |

Procedure 2: Restore PM&C backup on redundant Management Server

6. ☐	Set the hostname to match that of the primary PM&C server.	***Reconfigure the hostname of this server to be the same as that of the PM&C guest it is replacing.***
		
		 Log in to the CLI of the redundant PM&C guest server as the user "admusr", using the PM&C admusr password. Run the following command:
		
		 `[admusr@pmac ~]$` **`sudo /bin/su - platcfg`**
		
		 `Highlight the "Server Configuration" option and press enter.`
		 `Highlight the "Hostname" option and press enter.`
		 `Select "Edit" and press enter.`
		 `Change the hostname and select "OK".`
		 `Exit the platcfg tool.`
		
		 `In this case, the hostname has been set to "pmac-07360004-a" to match`
		 `the hostname saved with the backup.`

7. ☐	Run alarmMgr. The alarmMgr, command output should display no failures. **NOTE:** *Output similar to that shown will appear on the terminal window.*	`[admusr@pmac ~]$` **`sudo /usr/TKLC/plat/bin/alarmMgr --alarmStatus`** `[admusr@pmac ~]$` **NOTE:** *If the output of alarmMgr is not empty, see Appendix C..*

Procedure 2: Restore PM&C backup on redundant Management Server

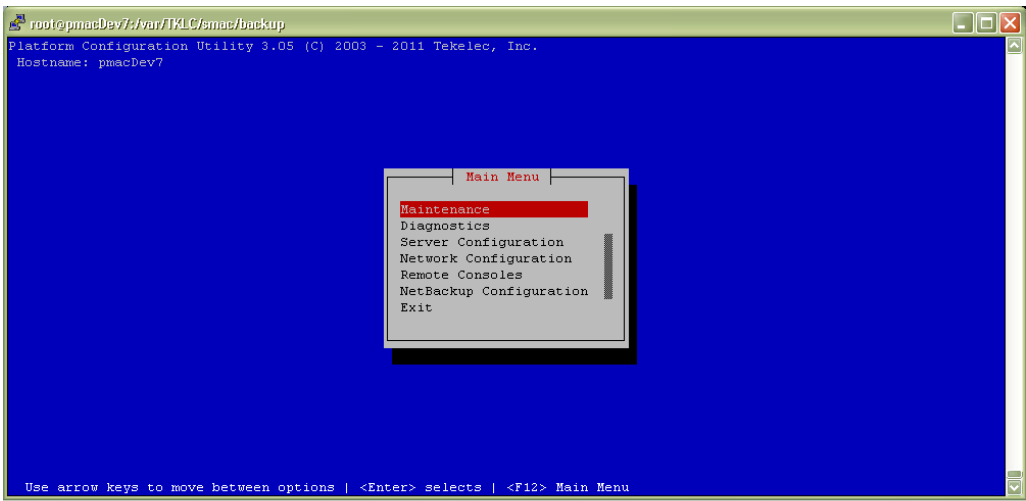| 8. ☐ | From the command prompt of the Management Server, restore the PM&C data from backup.

NOTE: Output similar to that shown will appear on the terminal window. | ```[admusr@pmac ~]$ sudo /usr/TKLC/smac/bin/pmacadm restore```
```PM&C Restore been successfully initiated as task ID 1```

*NOTE: The restore runs as a background task. To check the status of the background task, issue the command "**sudo /usr/TKLC/smac/bin/pmaccli getBgTasks**". The result should eventually be PM&C Restore successful.*

NOTE: The restore will set the IP Addresses for the control and management networks as well as perform initialization of the PM&C application.

*NOTE: It is important to restore the correct backup. The latest backup may not be the backup which contains the system data of interest. This could be the case if the automatic backup, which is scheduled in the morning, is performed on the newly installed PM&C prior to the restoration of the data. If more than one backup archive exists in the "/var/TKLC/smac/backup" directory, and the operator does not wish to restore from the latest backup, the operator must use the "**--fileName**" option on the restore to select the backup archive of interest. When using the "--fileName" option, the directory path of the backup should be included in the file name.* |
| 9. ☐ | Verify the status of the PM&C application. | Perform steps in **Appendix A Post-Restoration Verification** to verify the successful restoration of the data.

NOTE: If after the restoration of the PM&C, provisioned data does not represent the correct data, see Appendix C.. |
| **Procedure 2 has been completed.** | | |

3.3 Restore PM&C Server From Backup Server

Procedure 3: Restore PM&C Server From Backup Server

S T E P #	This procedure provides instructions on how to restore the PM&C application from a Backup Sever. 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 C.	
NOTE: *In addition to the requirements listed in Section 2, this procedure also requires the following:*		
• Bootable media with the TVOE release for the desired PM&C release level. • PM&C Install/Upgrade Media. • Media with the HP Firmware Maintenance. • PM&C backup data. • Backup Server configured to service PM&C Management Server backup client, the backup server network data, and appropriate backup server user and user password. • TVOE backup image.		
1. ☐	Upgrade the Management Server firmware. Check each box as it is completed.	Using the sections listed below from reference 1, [909-2249-001], upgrade the Management Server firmware in accordance with the checklist shown: ☐ *"Upgrade DL360 or DL380 Server Firmware"*
2. ☐	Restore the Management Server TVOE. Check each box as it is completed.	Using the sections listed below from reference 3, [909-2275-001], restore the Management Server TVOE in accordance with the checklist shown: ☐ *"Restore TVOE configuration from backup media"*
3. ☐	Deploy the PM&C guest application. Check each box as it is completed.	Using the sections listed below from reference 1, [909-2249-001], deploy the PM&C guest application in accordance with the checklist shown: ☐ *"Deploy PM&C Guest"* **Note:** This procedure is for restoring from a NetBackup server, so specify the appropriate options when deploying PM&C for use with NetBackup.
☐	Connect to the iLO of the Management Server	Using Appendix G, "How to Access a Server Console Using the iLO", of reference 1, [909-2249-001], establish a connection to the iLO console of the Management Server.

5. ☐	Log in to the TVOE host on the Management Server.	Log in to the TVOE console as user "admusr":
		
		`login as:` **`admusr`**
		`Password:`
		`Last login: Wed Jun  5 17:52:28 2013`
		`[admusr@tvoe ~]$`

Procedure 3: Restore PM&C Server From Backup Server

6. ☐	Log in to the PM&C guest.	Using Appendix B of this document, "Accessing the PM&C Command Prompt from the Management Server TVOE Console", log in to the PM&C guest console.

7. ☐	Prepare PM&C guest to transfer the appropriate backup from Backup Server. Disable iptables, and enable the TPD platcfg backup configuration menus.	Run the following commands on the PM&C:
		
		`[admusr@pmac ~] $` **`sudo /sbin/service iptables stop`**
		`iptables: Flushing firewall rules:                          [  OK  ]`
		`iptables: Setting chains to policy ACCEPT: filter           [  OK  ]`
		
		`[admusr@pmac ~]$` **`sudo /usr/TKLC/smac/etc/services/netbackup start`**
		`Modified menu NBConfig --show`
		
		`Set the following menus: NBConfig to visible=1`
		`Modified menu NBInit --show`
		
		`Set the following menus: NBInit to visible=1`
		`Modified menu NBDeInit --show`
		
		`Set the following menus: NBDeInit to visible=1`
		`Modified menu NBInstall --show`
		
		`Set the following menus: NBInstall to visible=1`
		`Modified menu NBVerifyEnv --show`
		
		`Set the following menus: NBVerifyEnv to visible=1`
		`Modified menu NBVerify --show`
		
		`Set the following menus: NBVerify to visible=1`

Procedure 3: Restore PM&C Server From Backup Server

8. ☐	Verify the TPD platcfg backup menus are visible, then exit the TPD platcfg utility.	`[admusr@pmac-07360004-a ~]$ `**`sudo /bin/su – platcfg`**
		
		``
		root@pmacDev7:/var/TKLC/smac/backup
		Platform Configuration Utility 3.05 (C) 2003 – 2011 Tekelec, Inc.
		 Hostname: pmacDev7
		
		                          ┤ Main Menu ├
		                      Maintenance
		                      Diagnostics
		                      Server Configuration
		                      Network Configuration
		                      Remote Consoles
		                      NetBackup Configuration
		                      Exit
		
		    Use arrow keys to move between options
			<Enter> selects	<F12> Main Menu
				``
				
				NOTE: In the example image above of the TPD platcfg utility Main Menu the backup menu is identified as "NetBackup Configuration".
				
				`[admusr@pmac ~]$`

9. ☐	Verify the iptables rules are disabled on the PM&C guest.	`[admusr@pmac ~]$ `**`sudo /sbin/iptables –nL`**
		`Chain INPUT (policy ACCEPT)`
		`target     prot opt source               destination`
		
		`Chain FORWARD (policy ACCEPT)`
		`target     prot opt source               destination`
		
		`Chain OUTPUT (policy ACCEPT)`
		`target     prot opt source               destination`

10. ☐	Install backup utility client software on the PM&C guest.	Using the sections listed below from the reference 1, [909-2249-001], configure the Management Server and reinstall the NetBackup client in accordance with the checklist shown: ☐ *"***PM&C NetBackup Client Installation and Configuration***"* **Note:** When executing the "PM&C NetBackup Client Installation and Configuration" procedure, start at step 4. The "Initialize PM&C Application" and "Configure PM&C application" prerequisites can be ignored.

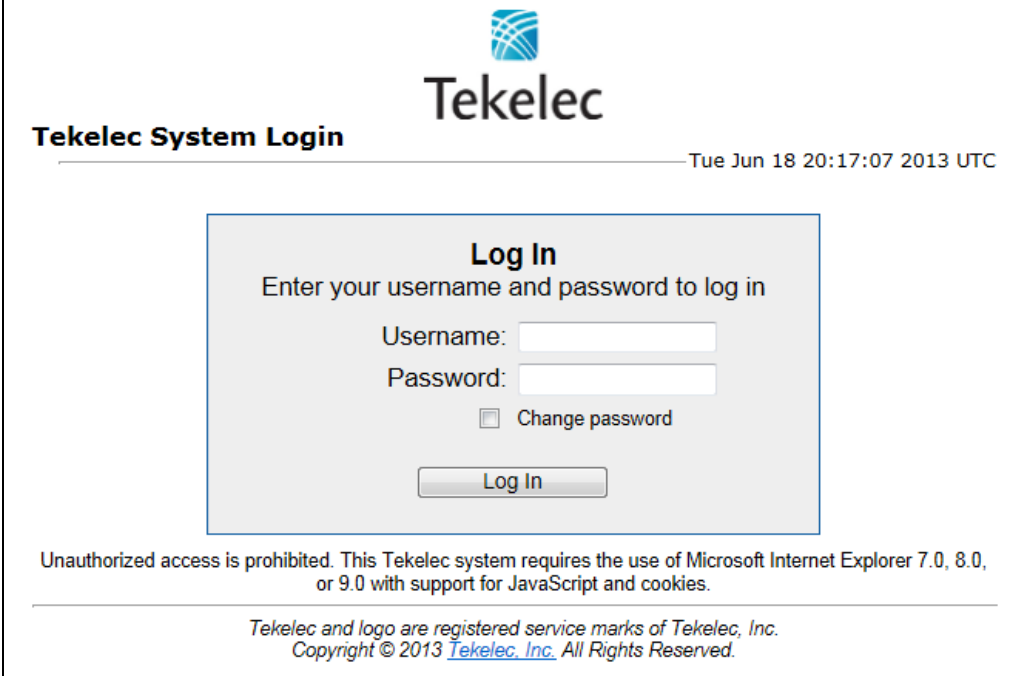**Procedure 3: Restore PM&C Server From Backup Server**

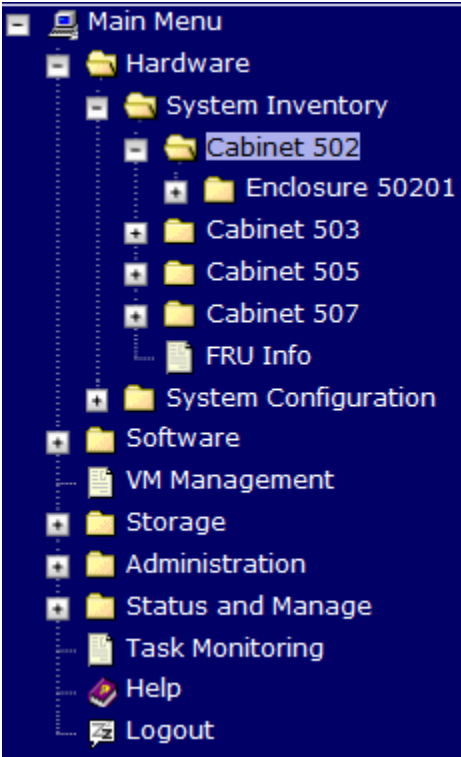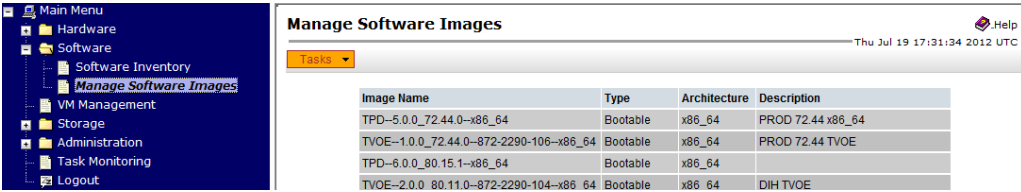| 11. ☐	At Backup Server, verify the appropriate PM&C backup exists.	***This step will likely be executed by customer IT personnel.*** Log in to the Backup Server as the appropriate user, using the user password. Execute the appropriate commands to verify the PM&C backup exists for the desired date. **NOTE:** If the appropriate backup does not exist on the Backup Server, perform the restore using procedure 1. **NOTE**: The actions and commands required to verify that the PM&C backups exist and the commands required to perform backup and restore on the Backup Server are the responsibility of the site customer. **NOTE:** It is important to choose the correct backup file to use in the restore. The latest backup may not be the backup which contains the system data of interest. This could be the case if the automatic backup, which is scheduled in the morning, is performed on the newly installed PM&C prior to the restoration of the data.
12. ☐	At the Backup Server restore the PM&C backup file to the `/var/TKLC/smac/backup/` directory on the PM&C.	***This step will likely be executed by customer IT personel.*** Log in to the Backup Server as the appropriate user, using the user password. Execute the appropriate commands to restore the PM&C Management Server backup for the desired date. **NOTE**: The actions, and commands, required to verify the PM&C backups exist, and the commands required to perform backup and restore on the Backup Server are the responsibility of the site customer.
13. ☐	Run alarmMgr. The alarmMgr, command output should display no failures. ***NOTE: Output similar to that shown will appear on the terminal window.***	```[admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/alarmMgr --alarmStatus``` ```[admusr@pmac ~]$```

Procedure 3: Restore PM&C Server From Backup Server

14. ☐	From the command prompt of the Management Server, restore the PM&C data from backup. ***NOTE:*** *Output similar to that shown will appear on the terminal window.*	`[admusr@pmac-07360004-a ~]$ `**`sudo /usr/TKLC/smac/bin/pmacadm restore`** `PM&C Restore been successfully initiated as task ID 1` ***NOTE:*** *The restore runs as a background task. To check the status of the background task, issue the command "**sudo /usr/TKLC/smac/bin/pmaccli getBgTasks**". The result should eventually be PM&C Restore successful* ***NOTE:*** *If more than one backup archive exists in the "/var/TKLC/smac/backup" directory, and the operator does not wish to restore from the latest backup, the operator must use the **"--fileName"** option on the restore to select the backup archive of interest. When using the "--fileName" option, the directory path of the backup should be included in the file name.*
15. ☐	Verify the status of the PM&C application.	Perform steps in **Appendix A Post-Restoration Verification** to verify the successful restoration of the data. ***NOTE:*** *If after the restoration of the PM&C, provisioned data does not represent the correct data, see Appendix C..*
	Procedure 3 has been completed.	

Appendix A. Post-Restoration Verification

Procedure 4: Post-restoration verification

S T E P #	This procedure provides instructions on how to verify the PM&C configuration following the restoration 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 C.
NOTE: *This procedure assumes the restoration steps have been completed.*	

1. ☐	Log in to the PM&C GUI.	If necessary, open web browser and enter: `https://{PM&C Guest Server ip}` Login as pmacadmin user.
2. ☐	Verify the Restore Task completes.	Navigate to the **Task Monitoring** page on the menu. Verify that the restore background task completes successfully. **NOTE**: After the restore is complete, you should see "Add Enclosure" tasks start for all previously provisioned enclosures. **These should be allowed to complete before continuing**. **NOTE**: After the restore is complete, you may see some tasks mentioning ISO images being deleted. This is normal behavior when executing Procedure 1. These ISO images may be re-provisioned manually.
3. ☐	Connect to the iLO of the Management Server	Using Appendix G, "How to Access a Server Console Using the iLO", of reference 1, [909-2249-001], establish a connection to the iLO console of the Management Server.

4. ☐	Log in to the TVOE host on the Management Server.	Log in to the TVOE console as user "admusr": login as: **admusr** Password: Last login: Wed Jun 5 17:52:28 2013 [admusr@tvoe ~]$
5. ☐	Log in to the PM&C guest.	Using Appendix B of this document, "Accessing the PM&C Command Prompt from the Management Server TVOE Console", log in to the PM&C guest console.

6. ☐	Verify the status of the PM&C application.
	
	NOTE: *Output similar to that shown will appear on the terminal window.*
		```[admusr@pmac ~]$ sudo /usr/TKLC/smac/bin/sentry status```
		 ```sending status command...```
		 ```PM&C Sentry Status```
		 ```-----------------```
		
		 ```sentryd started: Thu May 31 13:56:47 2012```
		 ```Current activity mode: ACTIVE```
		 ```Process PID Status StartTS NumR```
		 ```------------------ ------ ----------- ------------------------- ----```
		 ```smacTalk 21423 running Thu May 31 13:56:47 2012 1```
		 ```smacMon 21448 running Thu May 31 13:56:47 2012 1```
		 ```hpiPortAudit 21471 running Thu May 31 13:56:47 2012 1```
		 ```snmpEventHandler 21494 running Thu May 31 13:56:47 2012 1```
		 ```eclipseHelp 21691 running Thu May 31 13:57:00 2012 1```
		
		 ```Mon Jun 11 13:26:50 2012```
		 ```Command Complete.```
		 ```[admusr@pmac ~]$```

7. ☐	Run alarmMgr. The alarmMgr, command output should display no failures. **NOTE:** *Output similar to that shown will appear on the terminal window.*	``` [admusr@pmac ~]$ sudo /usr/TKLC/plat/bin/alarmMgr --alarmStatus``` ```[admusr@pmac ~]$```
8. ☐	Verify the operation of the aggregate switches.	Execute **Procedure 5: Post-Restoration Verification for Aggregate Switches** in **Appendix A** to verify the operation of the aggregate switches.
9. ☐	Exit the command line session	```[admusr@pmac ~]$ exit```

10. ☐	Verify the System Inventory looks correct through the PM&C GUI. *NOTE: Output similar to that shown will appear on the terminal window.* *NOTE: The hardware discovery may take some time to complete. The screen capture assumes discovery is complete for all enclosures.*	Select the System Inventory node and verify the previously provisioned enclosures are present.
11. ☐	Verify Software Images *NOTE: Output similar to that shown will appear on the terminal window.*	Navigate to the Manage Software Images GUI to verify all images that you wish to have are available for installation/upgrade. **NOTE: *If this was a restore performed by following Procedure 1, ISO images will need to be added manually***
12. ☐	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 (blades, RMS, VMs) are listed and have the details filled in (assuming TVOE or TPD is installed on the server).
Procedure complete, return to calling procedure.	

Procedure 5: Post-Restoration Verification for Aggregate Switches

S T E P #	This procedure provides instructions on how to verify the operation of the Aggregate switches following the restoration 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 C.
NOTE: ***This procedure assumes the restoration steps have been completed.***	
1. ☐	Connect to the iLO of the Management Server	Using Appendix G, "How to Access a Server Console Using the iLO", of reference 1, [909-2249-001], establish a connection to the iLO console of the Management Server.
2.	Log in to the TVOE host on the Management Server.	Log in to the TVOE console as user "admusr": 1. login as: **admusr** Password: Last login: Wed Jun 5 17:52:28 2013 [admusr@tvoe ~]$
3.	Log in to the PM&C guest.	Using Appendix B of this document, "Accessing the PM&C Command Prompt from the Management Server TVOE Console", log in to the PM&C guest console.

4. ☐	Determine the conserver host IP address on the PM&C Guest.	If the system has aggregation switches, continue with this step. Otherwise, skip to step 9 ("Verify netConfig operation on the PM&C Guest").
		
		From the PM&C command prompt, enter the following command:
		
		Note: Items in **<>** below should be recorded for use in future steps.
		
		```$ sudo /usr/TKLC/plat/bin/netConfig --repo showService name=console_service```
		``` Service Name: console_service```
		``` Type: conserver```
		``` Host: <host ip>```
		``` Options:```
		``` password: D8396824B3B2B9EE```
		``` user: platcfg```

5. ☐	Determine the name for the console of switch1A on the PM&C Guest.	From the PM&C command prompt, enter the following command:
		
		Note: Items in **<>** below should be recorded for use in future steps.
		
		```$ sudo /usr/TKLC/plat/bin/netConfig --repo showDevice name=switch1A```
		```Device: switch1A```
		``` Vendor: Cisco```
		``` Model: 4948E```
		``` FW Ver: 12.2(54)XO```
		``` Access: Network: 10.240.8.2```
		``` Access: OOB:```
		``` Service: console_service```
		``` Console: <switch1A console>```
		``` Init Protocol Configured```
		``` Live Protocol Configured```

6. ☐	Verify switch1A console on the PM&C Guest.	From the PM&C command prompt, enter the following command: `$ `**`sudo /usr/bin/console -M <host ip> -l platcfg <switch1A console>`** `You should receive a prompt to log in to switch1A.  Log in and verify` `you are connected to switch1A:` `     Enter platcfg@tackle's password:` `     [Enter `^Ec?' for help]` ` User Access Verification` ` Password:` ` switch1A>` `Exit switch1A console using `**`<ctrl> + <e>, then <c>, then <.>`**

7. ☐	Determine the name for the console of switch1B on the PM&C Guest.	From the PM&C command prompt, enter the following command:
		
		Note: Items in **<>** below should be recorded for use in future steps.
		
		`$ `**`sudo /usr/TKLC/plat/bin/netConfig --repo showDevice name=switch1B`**
		`Device: switch1B`
		`    Vendor:   Cisco`
		`    Model:    4948E`
		`    FW Ver:   12.2(54)XO`
		`    Access:   Network: 10.240.8.3`
		`    Access:   OOB:`
		`                 Service: console_service`
		`                 Console: `**`<switch1B console>`**
		`    Init Protocol Configured`
		`    Live Protocol Configured`

8. ☐	Verify switch1B console on the PM&C Guest.	From the PM&C command prompt, enter the following command: `$ `**`sudo /usr/bin/console -M <host ip> -l platcfg <switch1B console>`** `You should receive a prompt to log in to switch1B.  Log in and verify` `you are connected to switch1B:` `     Enter platcfg@tackle's password:` `     [Enter `^Ec?' for help]` ` User Access Verification` ` Password:` ` switch1B>` `Exit switch1A console using `**`<ctrl> + <e>, then <c>, then <.>`**

9. ☐	Verify netConfig operation on the PM&C Guest.	From the PM&C command prompt, execute the following command and record one of the **<device name>** for use in the next step:
		
		`$ `**`sudo /usr/TKLC/plat/bin/netConfig --repo  listDevices`**
		`Devices:`
		
		`Device: `**`<device name>`**
		`    Vendor:   HP`
		`    Model:    6120`
		` Access:   Network: 10.240.8.9`
		`    Init Protocol Configured`
		`    Live Protocol Configured`
		`Device: `**`<device name>`**
		`    Vendor:   Cisco`
		`    Model:    3020`
		`    Access:   Network: 10.240.8.12`
		`    Init Protocol Configured`
		`    Live Protocol Configured`

10. ☐	Verify netConfig operation on the PM&C Guest (cont.).	From the PM&C command prompt, execute the following command using the **\<device name\>** recorded from the previous step: $ **sudo /usr/TKLC/plat/bin/netConfig getHostname --device=\<device name\>** Hostname: **\<device name\>** Example: $ **sudo /usr/TKLC/plat/bin/netConfig --device=switch1A getHostname** Hostname: switch1A **Note:** The hostname and the device name should be the same.
	Procedure complete, return to calling procedure.	

Appendix B. Accessing the PM&C Command Prompt from the Management Server TVOE Console

Procedure 3. Accessing the PM&C Command Prompt from the Management Server TVOE Console

S T E P #	This procedure provides instructions on how to access the PM&C command prompt from the TVOE command prompt. **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 C.	

1. ☐	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-07360004-a`              running`
		`[admusr@tvoe ~]$`

2. ☐	Log in to the PM&C guest	At the TVOE console, log in to the console of the PM&C guest using the guest name from the previous step. It may be necessary to press return to get a login prompt. Log in to the PM&C console as usr "admusr":
		
		`[admusr@tvoe]$ `**`sudo /usr/bin/virsh console pmac-07360004-a`**
		`Connected to domain pmac-07360004-a`
		`Escape character is ^]`
		
		`CentOS release 6.4 (Final)`
		`Kernel 2.6.32-358.6.1.el6prerel6.5.0_82.14.0.x86_64 on an x86_64`
		
		`pmac-07360004-a login: `**`admusr`**
		`Password:`
		`Last login: Tue Jun 11 13:23:35 from 10.25.81.98`
		`[admusr@pmac-07360004-a ~]$`

3. ☐	Return to the procedure which referred you.	Return to the next step in the referring procedure.
The procedure has been completed.		

Appendix C. Accessing Customer Support Site

Access to the 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.

1. Go to Oracle's Tekelec Customer Support login page at https://support.tekelec.com/index.asp

2. Enter your assigned username and chosen password and click **Login.**

   Or, if you do not have access to the Customer Support site, click **Need an Account?**
   Follow instructions on the screen.

   Note: After 20 minutes of inactivity, you will be logged off, and you must repeat this step to regain access.

3. After successful login, select a product from the Product Support drop-down menu.

4. Select a release number from the Product Support Release drop-down menu.

5. Locate the Upgrade Procedures section.

6. To open the procedure in the same window, click the procedure name. To open the procedure in a new window, right-click the procedure name and select **Open in New Window**.

7. To download the procedure, right-click the procedure name and select **Save Target As**.