Oracle® Communications
EAGLE LNP Application Processor

Software Upgrade/Installation Guide

Release 10.0.1

E56994 Revision 2

July 2017

ORACLE®

CAUTION: Use only the guide downloaded from the Oracle Technology Network (OTN) (http://www.oracle.com/technetwork/indexes/documentation/oracle-comms-tekelec-2136003.html).
Before upgrading your system, access the My Oracle Support web portal (https://support.oracle.com) and review any Knowledge Alerts that may be related to the System Health Check or the Upgrade.

Before beginning this procedure, contact My Oracle Support and inform them of your upgrade plans.
Refer to 7.2Appendix D for instructions on accessing My Oracle Support.

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1. INTRODUCTION

1.1 Purpose and Scope

This document describes methods utilized and procedures executed to perform the following tasks:

a. An initial installation of the ELAP10.0.1 application software if it is not currently installed on an in-service E5-APP-B system running a release of TPD 5.5 (64-bit).
b. A software upgrade on an in-service E5-APP-B system running a release equal to TPD 5.5 (64-bit) and ELAP Release 10.X.

Please note that the ELAP 10.0.1can be upgraded only from ELAP 10.0 release.

The audience for this internal document consists of Tekelec customers and the following groups: Software System, Product Verification, Documentation, and Customer Service including Software Operations and NPI. This document provides step-by-step instructions to execute any MPS upgrade or installation using an ISO image.

This document does not address requirements relating to the interaction, if any, between EAGLE and MPS upgrades. This document does not address feature activation.

1.2 References

1.2.1 External

None

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] *TEKELEC Acronym Guide*, MS005077, Current Version, Tekelec.

[2] *Software Upgrade Procedure Template*, TM005124, Current Version, Tekelec

[3] *Tekelec Initial Product Manufacture User's Guide, 909-2229-001, Latest revision, Tekelec*

[4] *TPD support forE5-APP-B Application Server Feature Description (FD),* FD007447, Current Version, Tekelec.

1.3 Software Release Numbering

Refer to Engineering Release Notes or other appropriate document with the most recent build numbers in order to identify the proper components (software loads, GPLs, etc.) that comprise the product's software release.

1.4 Acronyms

An alphabetized list of acronyms used in the document that are not included in [1]:

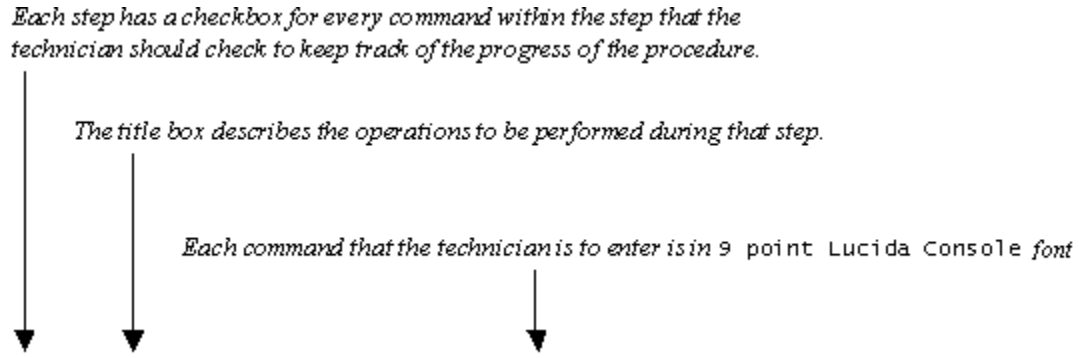
Table 1. Acronyms

E5-APP-B	E5 Based Application Card
ELAP	EAGLE LNP Application Processor
GPL	Generic Program Load
IPM	Initial Product Manufacture
LAG	Link Aggregation Group
LSMS	Local Service Management System
MPS	Multi-Purpose Server
NPI	New Product Introduction
SCP	Secure Copy
SFTP	Secure File Transfer Protocol
SM	Service Module

TPD	Tekelec Platform Distribution
UTC	Universal Time Coordinated

1.5 Terminology

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



1 ☐	**MPS A:** Verify all materials required are present	Materials are listed in Material List (Section3.1)

Figure 1: Example of a step that indicates the Server on which it needs to be executed

Other terminology follows.

Table 2. Terminology

Backout	The process to take a system back to a Source Release prior to completion of upgrade to Target release. Includes preservation of databases and system configuration.
Incremental upgrade	**Open Systems:** 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.
Incremental upgrade with Split-Mirror	An upgrade that uses split mirror technique to take target system from any given release to another release but not necessarily from the shipping baseline to the target release..
Rollback	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.
Upgrade media	USB media or ISO image for the hardware platform E-APP-B.
Accept split-mirror upgrade	The procedure performed after a split-mirror upgrade that re-mirrors disk partitions. This procedure must be run after a split-mirror upgrade (before the next upgrade) and it prevents backout to the source release.

1.6 Recommendations

This procedure should be followed thoroughly utilizing the steps as written. **When planning to upgrade the server, contact Oracle Support at least 48 hours before the upgrade process has been planned to be initiated.** In the event any unexpected results are returned while executing steps in this procedure halt the activity and contact Oracle Support for assistance.

Please read the following notes on procedures:

1. Any procedure completion times are estimates. Times may vary due to differences in database size, user experience, and user preparation.
2. The shaded area within response steps must be verified in order to successfully complete that step.
3. Output displayed in the procedures' response steps is presented. Actual output varies depending on system. Output is presented for reference only.
4. Where possible, command response outputs are shown as accurately as possible. However, exceptions may include the following:
   a. Information such as ***time*** and ***date***.
   b. ANY information marked with "***XXXX***." Where appropriate, instructions are provided to determine what output should be expected in place of "***XXXX***."
5. After completing each step and **at each point where data is recorded from the screen, *the technician performing the upgrade must check each step***. A checkbox has been provided beneath each step number for this purpose.
6. Captured data is required for future support reference if Tekelec Technical Services is not present during the upgrade.
7. In procedures that require a command to be executed on a specific MPS, the command is prefaced with MPS A: or MPS B:
8. User Interface menu items displayed in this document were correct at the time the document was published but may appear differently at time that this procedure is executed.

1.7 Requirements

- Screen logging is required throughout the procedure. These logs should be made available to Tekelec Customer Care in the event their assistance is needed.
- Target-release USB media or ISO image
- The capability to log into a server, such as a PC with null modem cable for connection to serial port.
- The capability to log into the web GUI, such as a PC with Internet Explorer.

2. GENERAL DESCRIPTION

This document defines the step-by-step actions performed to execute a software upgrade of an in-service MPS running the ELAP application from the source release to the target release. This document also defines the steps to execute the initial installation of the ELAP application on the new E5-APP-Bcard.

The ELAP application can be installed and upgraded based on the table below.

Table 3. Install-Upgrade paths

TPD Release for IPM	ELAP Initial Installation Release
5.5.1-75.20.0 or later	10.0.1
Upgrade Source Release	**Upgrade Destination Release**
10.0.0	10.0.1

The ELAP upgrade paths are shown in the figures below. The general timeline for all processes to perform a software upgrade, from pre-upgrade backups to a final system health check, is also included below.

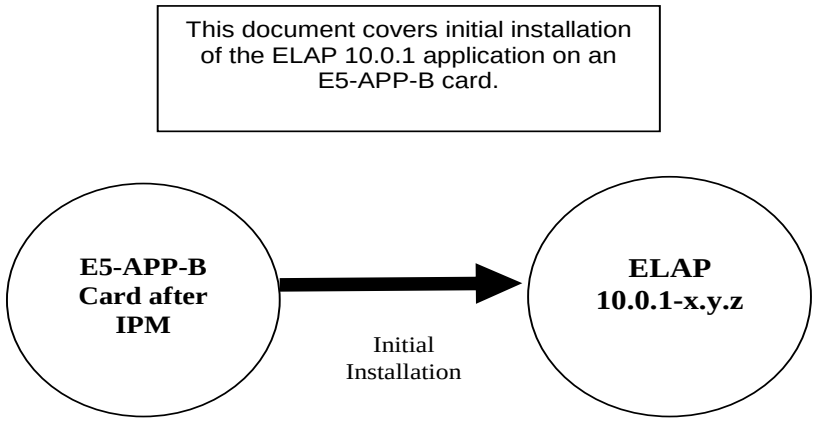


Figure 2: Initial Application Installation Path

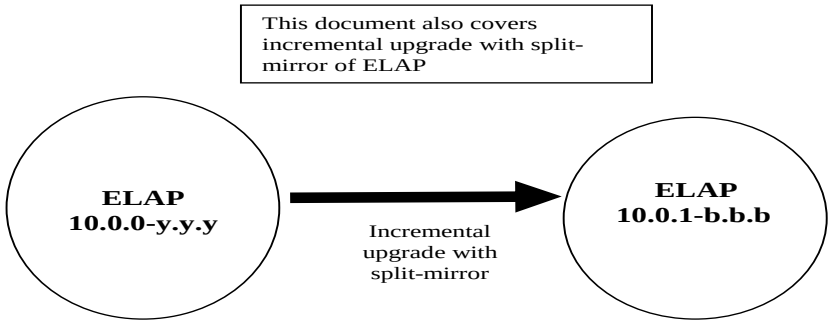


Figure 3: Incremental Upgrade with Split-Mirror Path - ELAP 10.x

3. INSTALL/UPGRADE OVERVIEW

3.1 Required Materials

1 A target-release TPD ISO (In case IPM is required) and ELAP ISO (for ELAP install/upgrade).

2 Optical media – USB flash drive

3 A terminal and null modem cable to establish a serial connection.

4 In case of fresh installation, the RTDB backup file is required to initialize the RTDB. Copy the backup file to some remote machine. Note: The RTDB backups of ELAP release 8 and 9 are compatible with ELAP 10.0.1.

5 Eagle STP login IP, user and password

6 Write down the system configuration information.

Description	Information
ELAP A IP	
ELAP B IP	
LSMS A IP	
LSMS B IP	
VIP	
NTP1 IP	
NTP2 IP	
NTP3 IP	
Provisionable Gateway	
Time Zone	
Other IPs required and their netmasks	

Table 4: System Configuration Information

7 Passwords for users on the local system:

ELAP USERS		
login	**MPS A password**	**MPS B password**
elapconfig		
elapdev		
syscheck		
root		
elapall (needed for GUI access)		
MySQL (EuiDB) root user		

Table 5. User Password Table

3.2 Installation Phases

The general installation strategy is to IPM the E5-APP-B server and then install the application.

The following table illustrates the progression of the installation process by procedure with estimated times. The estimated times and the phases that must be completed may vary due to differences in typing ability and system configuration. The phases outlined in Table 6 are to be executed in the order they are listed.

Phase	Elapsed Time (Minutes)		Activity	Procedure
	This Step	Cum.		
Connectivity setup	15	15	Set up connectivity to the MPS Servers.	**Procedure 1**
Verify install	5	20	Verify this should be an install.	**Procedure 2**
Requirements check	15	35	Verify requirements for install are met.	**Procedure 3**
IPM both servers (Optional)	90	125	IPM both ELAP servers with TPD 5.5	**Procedure 4**
Pre-install health check	5	130	Run the syscheck utility to verify that all servers are operationally sound.	**Procedure 16**
Configure both servers	10	140	Set hostname, designation, function, time zone and time on both servers	**Procedure 5**
Install Servers	30	170	Install software on sides 1A and 1B	**Procedure 6**
Configure Switches	30	200	Configure the Switches	**Procedure 7**
Post-install application processing	30	230	Perform first time configuration.	**Procedure 8**
Post-upgrade health check	5	235	Run the syscheck utility to verify all servers are operationally sound.	**Procedure 16**
The following steps only need to be performed on the customer site.				
LSMS SSH Key Exchange	10	245	Perform SSH key exchange with the LSMS.	**Procedure 9**

Table 6. Installation Phases

3.3 Incremental Upgrade with Split-Mirror Phases

The following table illustrates the progression of the upgrade process by procedure with estimated times and may vary due to differences in typing ability and system configuration. Incremental upgrade with split-mirror should be done on ELAP B first and then on ELAP A. The phases outlined in Table 7 are to be executed in the order they are listed.

Phase	Elapsed Time (Minutes)		Activity	Procedure
	This Step	Cum.		
Connectivity setup	15	15	Set up connectivity to the MPS servers.	**Procedure 1**
Verify incremental upgrade with split-mirror	5	20	Verify this should be an incremental upgrade with split-mirror upgrade.	**Procedure 2**
Requirements check	15	35	Verify requirements for upgrade are met.	**Procedure 3**
Assess readiness for upgrade	15	50	Assess the server's readiness for upgrade.	**Procedure 10**
Pre-upgrade health check	5	55	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 16**
Pre-upgrade system time check	5	60	Pre-upgrade system time check.	**Procedure 11**
Pre-upgrade Backups	15	75	Backup application databases and other pertinent information.	**Procedure 12and Procedure 13**
Perform Upgrade	60	135	Execute the upgrade procedure on MPS A and B.	**Procedure 14**
Post-upgrade health check	5	140	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 16**
Accept Upgrade on MPS B	*210	340	Accept the upgrade.	**Procedure21**
Accept Upgrade on MPS A	*210	550	Accept the upgrade.	**Procedure21**

Table 7.Incremental Upgrade with Split-Mirror Phases

*NOTE: The re-mirroring of disks after accepting a major upgrade occurs automatically. The system is rebooted and the disk will be synced in the background; it takes between 3 to 4 hours to fully sync the disks but dependent on the amount of application data. Once this activity has initiated, normal system functionality is not impacted. User should not reboot system or initiate another upgrade/backout until the process has completed.

3.4 Backout Phases

The following table illustrates the progression of the backout process by procedure with estimated times and may vary due to differences in typing ability and system configuration. The phases outlined in Table 8 are to be executed in the order they are listed.

Phase	Elapsed Time (Hours or Minutes)		Activity	Impact	Procedure
	This Step	Cum.			
Determine state of system	15-30	15-30	Investigate and determine the state of the MPS system. This may take anywhere from 15 to 30 minutes.	Cannot proceed with backout until failure analysis is complete. Some hand-fixes may be required before proceeding with backout.	**Contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.**
Backout MPS A and MPS B	60	75-90	Backout MPS A and then MPS B.	N/A	**Procedure 15**
Re-mirroring of disks on MPS A and MPS B	210*	255-270	Starts automatically after completion of backout of MPS A and MPS B respectively.	Occurs ONLY after backout of Major Upgrade. Backout of other MPS can begin as soon as this activity begins.	**Starts Automatically Execute the command "cat /proc/mdstat" to get the disk-mirroring status.**
Post-backout health check	10	85-100	Run the syscheck utility to verify the MPS server is operationally sound.	Verify that the backout was successful.	**Procedure 16**

Table 8.Backout Procedure Overview

*NOTE: The re-mirroring of disks after a backout of a major upgrade occurs automatically. The system is rebooted and the disk will be synced in the background; it takes between 3 to 4 hours to fully sync the disks but dependent on the amount of application data. Once this activity has initiated, normal system functionality is not impacted. User should not reboot system or initiate another upgrade until the process has completed.

3.5 Log Files

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

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

The technician running the procedures is responsible for enabling screen logging within the chosen connectivity application.

4. INSTALL/UPGRADE PREPARATION

4.1 Environment Setup

Procedure 1: Setting up the serial connection with E5-APP-B

S T E P #	This procedure sets up the upgrade environment. Windows are opened for both MPS servers. **NOTE: Call Tekelec Technical Services for assistance if modem access is the method use for upgrade.** Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	Establish a connection to MPS X.	If access to the MPS servers is not available through an IP network, connect to the E5-APP-B card via the serial port. For connecting the E5-APP-B A card, disconnect the console cable from the serial port on the E5-APP-B B card's adapter. The cable should be disconnected at the point where it connects to the serial port labeled 'S1' on the E5-APP-B B cards' adapter and use it for serial access. Cable part numbers - 830-1220-xx For connecting the E5-APP-B B card, disconnect the console cable from the serial port on the E5-APP-B A card's adapter. The cable should be disconnected at the point where it connects to the serial port labeled 'S1' on the E5-APP-B A cards' adapter and use it for serial access. Cable part numbers - 830-1220-xx
2. ☐	Create a terminal window for MPS X.	Open a terminal window and establish a serial connection to the E5APPB MPS console port ttyS0 with the properties - 115200,N,8,1
3. ☐	Start capture file.	Start a capture file using IsoConsole, or by starting a local screen session and capturing its output.
4. ☐	Log into MPS X.	`console login:  root` `password:<E5-APP-B root password>`
5. ☐	Procedure Complete.	This procedure is complete.

4.2 Preparation

Procedure 2: Determine if upgrade or installation is required

S T E P #	This procedure executes the steps required to determine if an upgrade of the system is required or an initial application installation is required. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TECELEC TECHNICAL SERVICES AND **ASK FOR UPGRADE ASSISTANCE**.	
1. ☐	**MPS B**: Log in as the user "root".	If not already logged-in, login at MPS B as 'root'. `<hostname> console login:  root` `password:  <password>`
2. ☐	**MPS B**:Verify the TPD release.	Execute the following command to verify the TPD release on the MPS. `# getPlatRev`

Procedure 2: Determine if upgrade or installation is required

		If no output is displayed, then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D, to know whether to perform Procedure 5 to install the operating system on the MPS. After installing the operating system, proceed with this procedure. Otherwise, if the following output is displayed, then the MPS has been installed with the correct operating system. Proceed with this procedure. **# getPlatRev** 5.5.1-75.x.0 Note: TPD version should be greater than 5.5.0-75.20.0
3. ☐	**MPS B**: Verify the hardware type.	Execute the following command to source in the hardware module: **# . /usr/TKLC/plat/lib/TKLChardware.sh** Execute the following command and examine the output: **# getHardwareID** The output will be: E5APPB If the output of the above query is E5APPB, then proceed to the next step. Otherwise, this is not the correct hardware for the install/upgrade of ELAP 10.0. Contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
4. ☐	**MPS B:** Determine if the application is currently installed on the servers.	Execute an rpm query command and examine the output: **# rpm -qi TKLCelap** **Note:** MPS B will be used to determine the current state of the servers. We will assume that the state of the A server is the same.
5. ☐	**MPS B:** Observe the output from the rpm query.	The following is an example of what the output may look like: Name : TKLCelap Relocations: (not relocatable) Version : 5.0.16 Vendor: Tekelec Release : 10.0.0_100.17.0 Build Date: Thu 27 Jun 2013 03:37:09 PM EDT Install Date: Thu 14 Aug 2014 10:57:29 AM EDT Build Host: diablo-10.tekelec.com Group : Development/Build Source RPM: TKLCelap-5.0.16-10.0.0_100.17.0.src.rpm Size : 127827675 License: © TEKELEC 2013 Signature : (none) Packager : <@tekelec.com> URL : http://www.tekelec.com/ Summary : Tekelec ELAP Package Description :

Procedure 2: Determine if upgrade or installation is required

		`This is the Tekelec ELAP Package. The package installs ELAP software.` `Eagle LNP Application Processor (ELAP) provides REALLY INCREDIBLE Database (RIDB).` `ELAP provides the LNP feature.` If the output similar to the above example is displayed, then skip to step7. Otherwise, proceed to the next step.
6. ☐	**MPS B:** Installation is required if the application is not present on the server, else upgrade is required.	If the application is not currently installed, output similar to the example below will be returned from the **rpm –qi** command in the previous step. If this is the case, then an application installation is required. Refer to section 3.2 to perform ELAP installation. `# rpm –qi TKLCelap` `package TKLCelap is not installed` Skip to step 9.
7. ☐	**MPS B:**Confirm that the upgrade from the existing version is compatible with the desired destination version. .	Document the current and destination release level: `Source Release: _____` `Target Release: _____` If the release number on the MPS is less than the release number on the upgrade media, then an upgrade is required.
8. ☐	Determine if it is an incremental upgrade with Split-mirror.	If the current release is 10.0.x and target release is 10.0.1.x.y.z (less than the number on the upgrade media), it is an incremental upgrade with split-mirror.
9. ☐	**MPS B:**Procedure Complete.	This procedure is complete.

Procedure 3: Verifying and capturing requirements

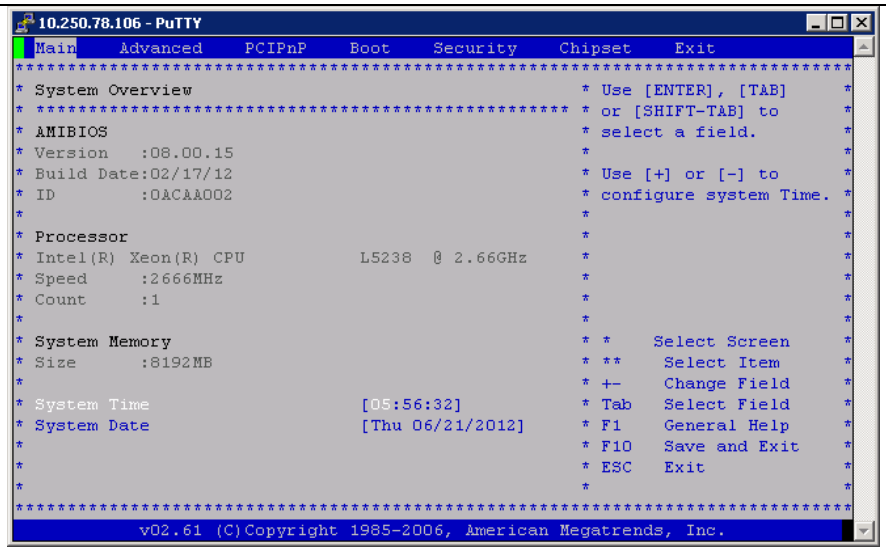
S T E P #	This procedure executes the steps required to assess the readiness of a system to be upgraded. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TECELEC TECHNICAL SERVICES AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	Verify all required materials are present.	Verify that the materials listed in Upgrade Material List (Section3.1) are present.
2. ☐	Procedure Complete.	This procedure is complete.

5. SOFTWARE INSTALLATION PROCEDURES

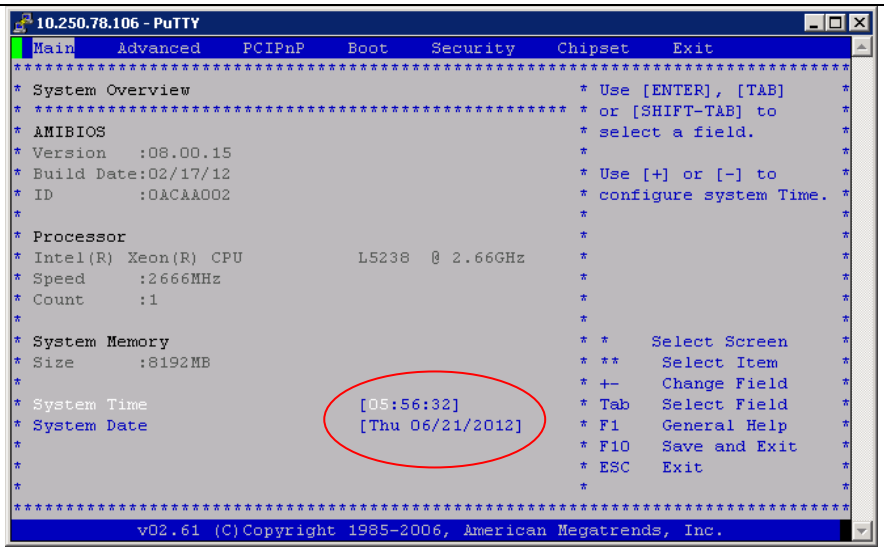
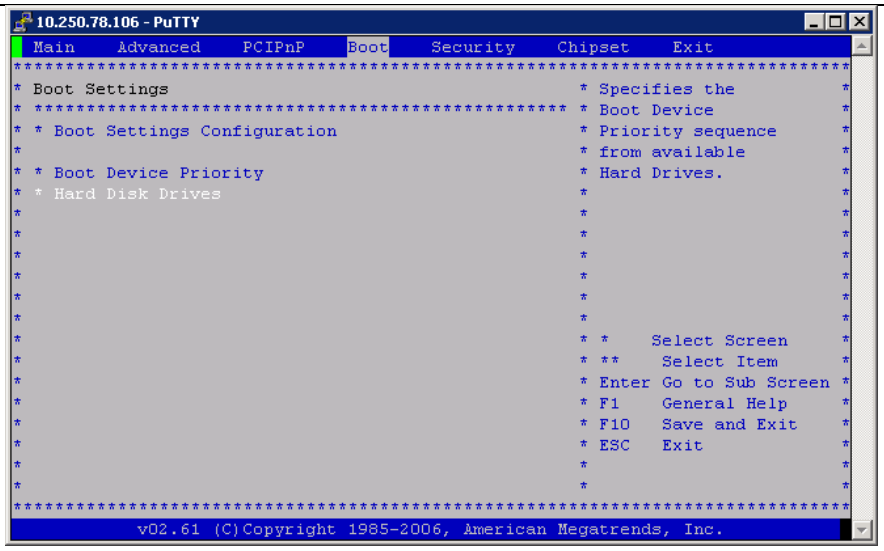
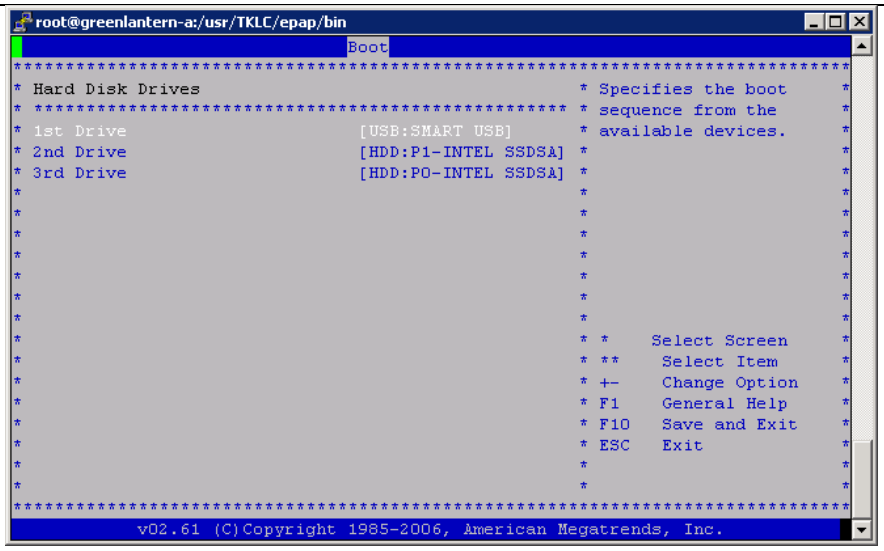
Installation of Operating System (Section 5.1), Pre install configuration (Section5.2) and initial installation of ELAP (Section 5.3) can be done simultaneously on both the servers.

5.1 Installation of Operating System

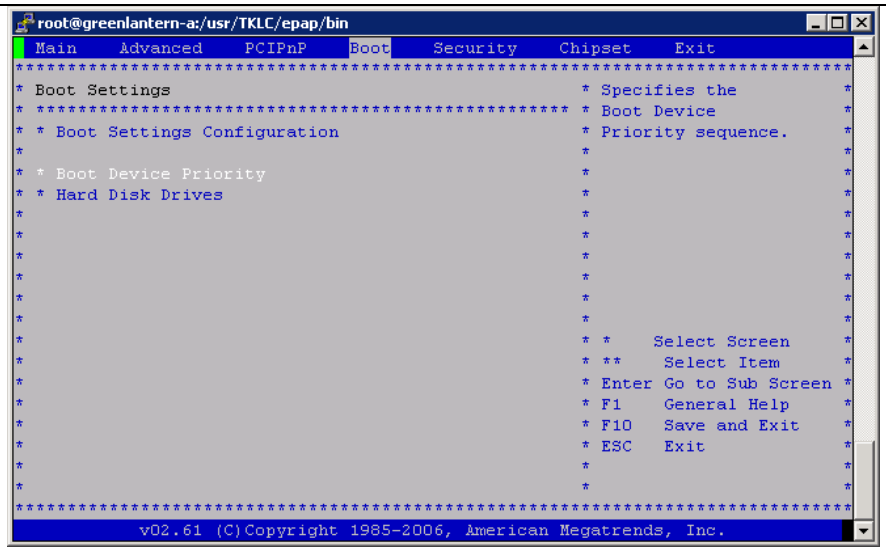
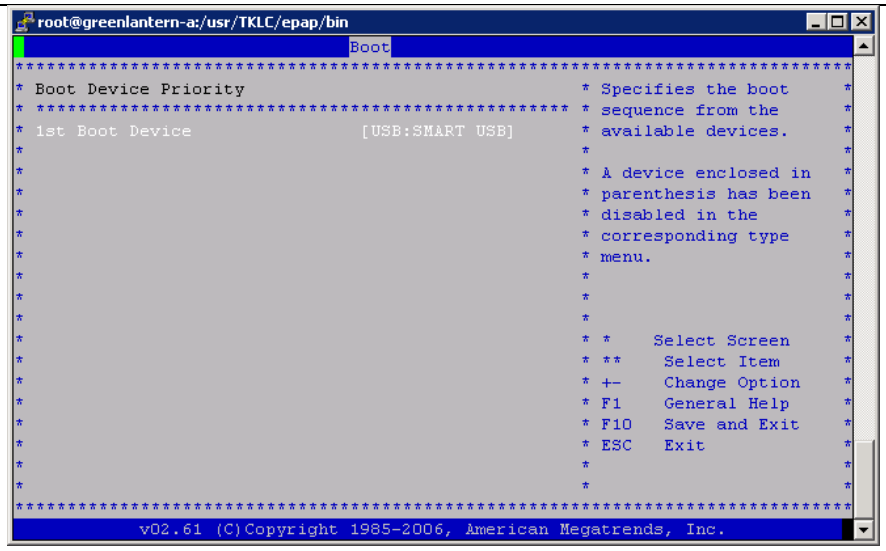
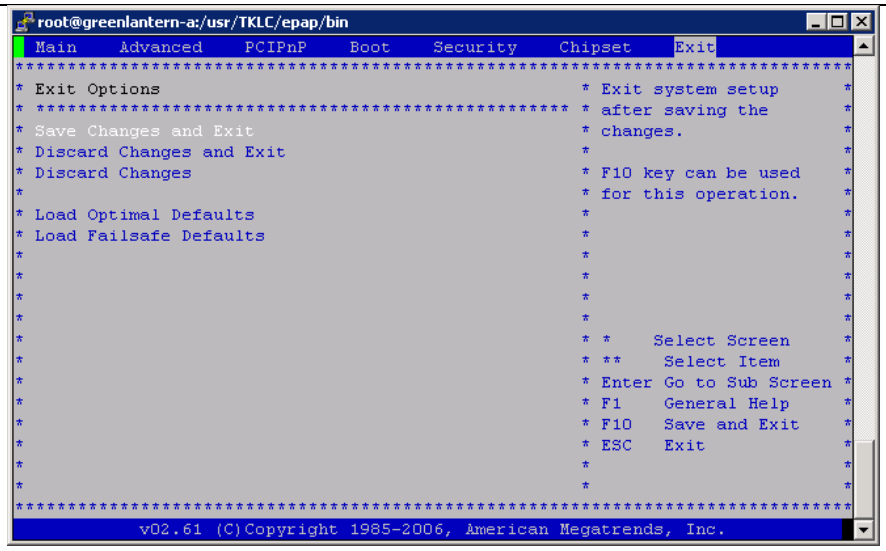
Procedure 4: IPM MPS server with TPD 5.5

S T E P #	This procedure will install TPD. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TECELEC TECHNICAL SERVICES AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS X:** Server login	If not already logged in to the MPS server, then login as user "root". `console login: root` `password: <root_password>`
2. ☐	**MPS X**: Get media	Insert TPD 5.5.1-75.20 or later(64-bit) USB media into the USB port of E5-APP-B card or use the external CD ROM with CD having the TPD 5.5.1_75.20 or later (64-bit) ISO
3. ☐	**MPS X:** Reboot server	`# reboot`
4. ☐	**MPS X:** Press 'del' key to enter the BIOS (F4 on remote keyboard)	

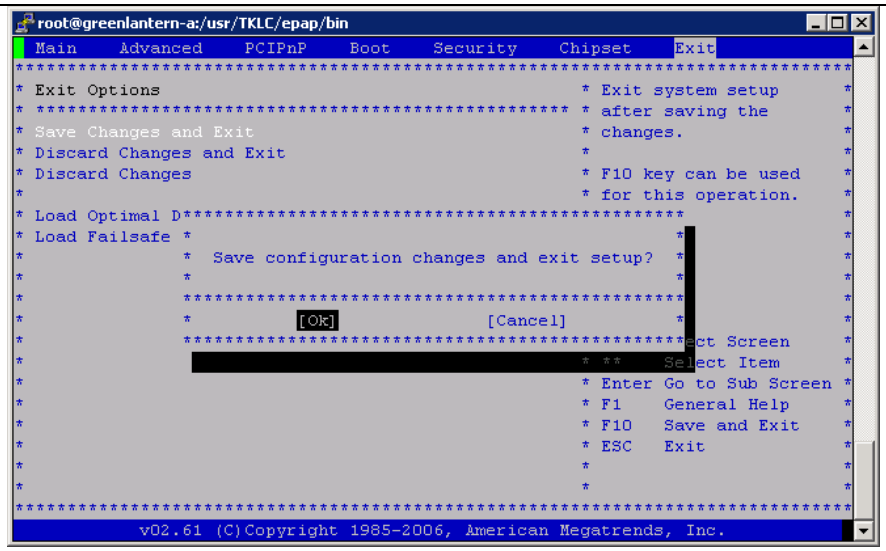
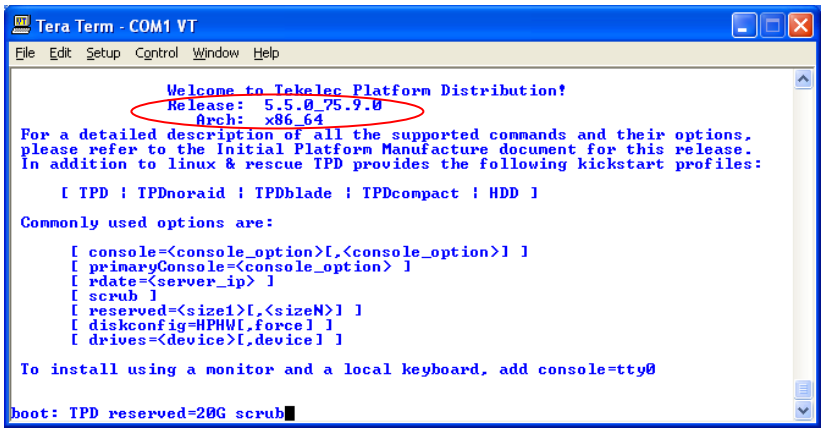
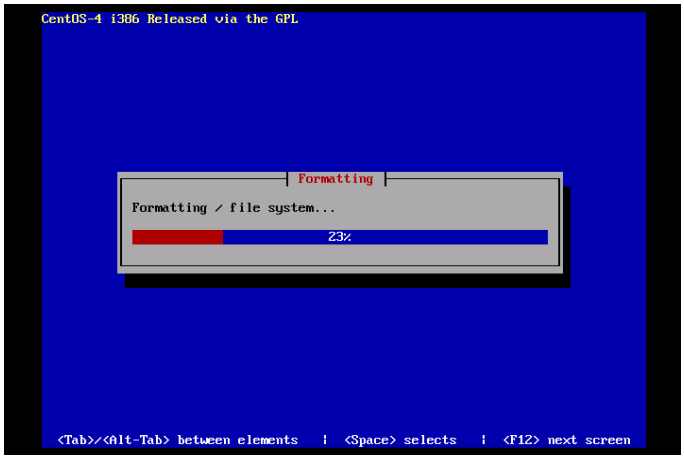
Procedure 4: IPM MPS server with TPD 5.5

5. ☐	MPS X:Set the System Time and Date to UTC time. Press 'Enter' key to select the various fields (hh/mm/ss) of system time and system date (mm/dd/yyyy). Use UP or DOWN arrow keys to select between System Time and System Date.	
6. ☐	**MPS X:** Select *Boot → Hard Disk Drives* option	
7. ☐	**MPS X:** Press 'Enter' key and select USB as the 1st Drive	

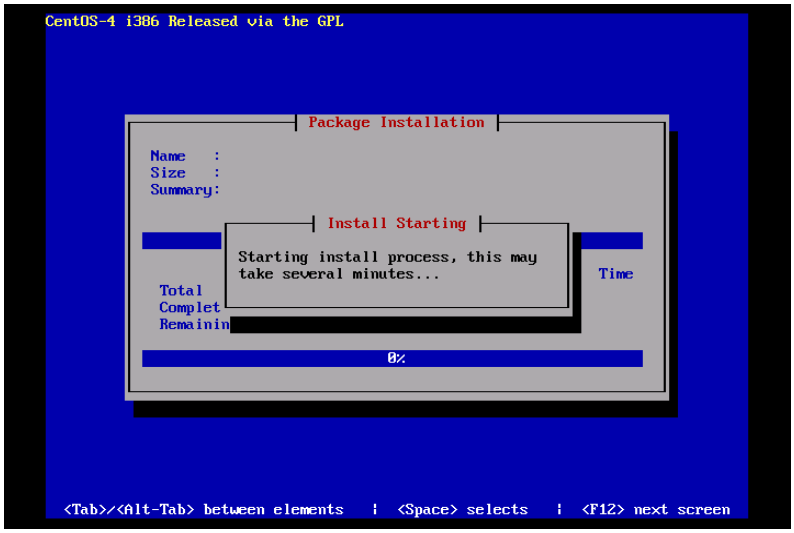
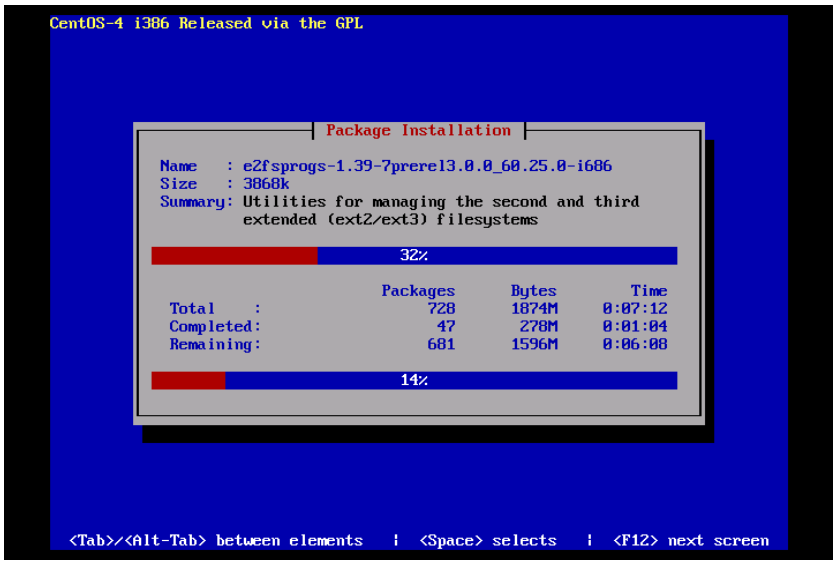
Procedure 4: IPM MPS server with TPD 5.5

8. ☐	**MPS X:** Press 'Esc' key and select Boot Device Priority	
9. ☐	**MPS X:** Verify that the 1st Boot Device is set to USB.	
10. ☐	**MPS X:** Press 'Esc' key and select *Exit* → *Save Changes and Exit* option	

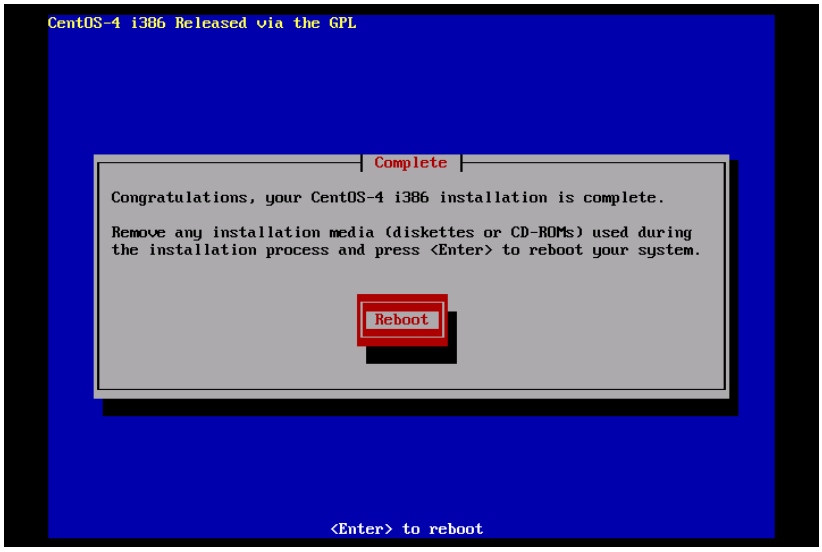
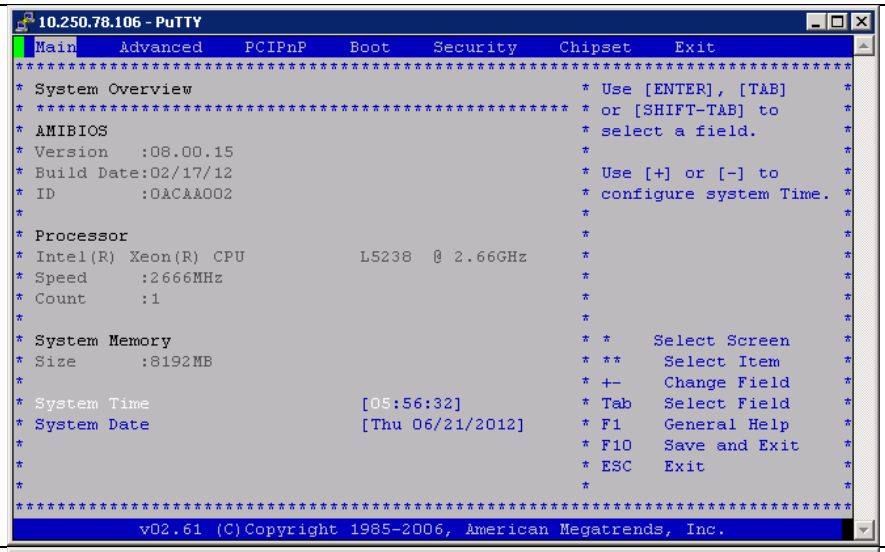
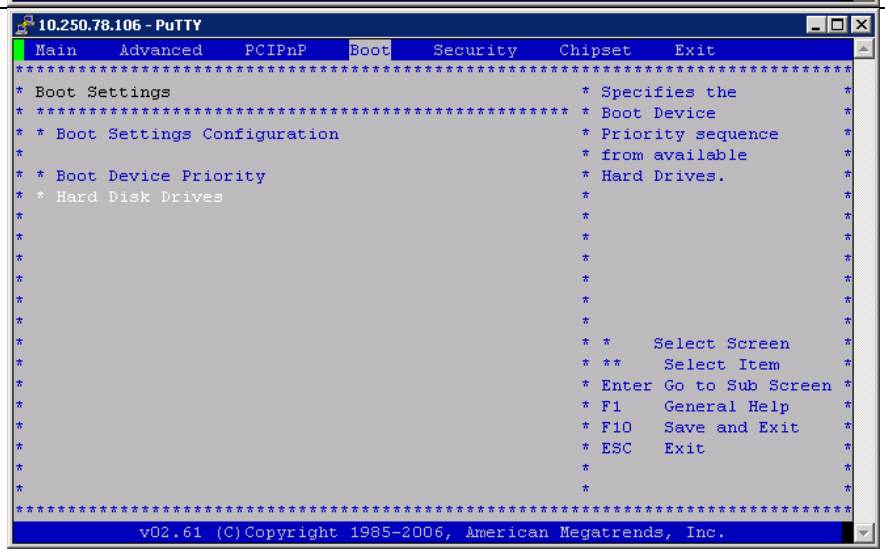
Procedure 4: IPM MPS server with TPD 5.5

11. ☐	**MPS X:** Select [OK] to save the configuration changes. The server will reboot and TPD boot prompt will appear.	
12. ☐	**MPS X:** Start the IPM process by entering the TPD command at the boot prompt, as in the screenshot at right. Verify that the 64-bit TPD ISO is used.	**boot: TPD scrub reserved=20G**  **WARNING: You must add the "reserved=20G" parameter at the TPD boot prompt. Failure to TPD using this parameter will require this procedure to be repeated!!!**
13. ☐	**MPS X:** After a few seconds, additional messages will begin scrolling by on the screen as the Linux kernel boots, and then the drive formatting and file system creation steps will begin.	

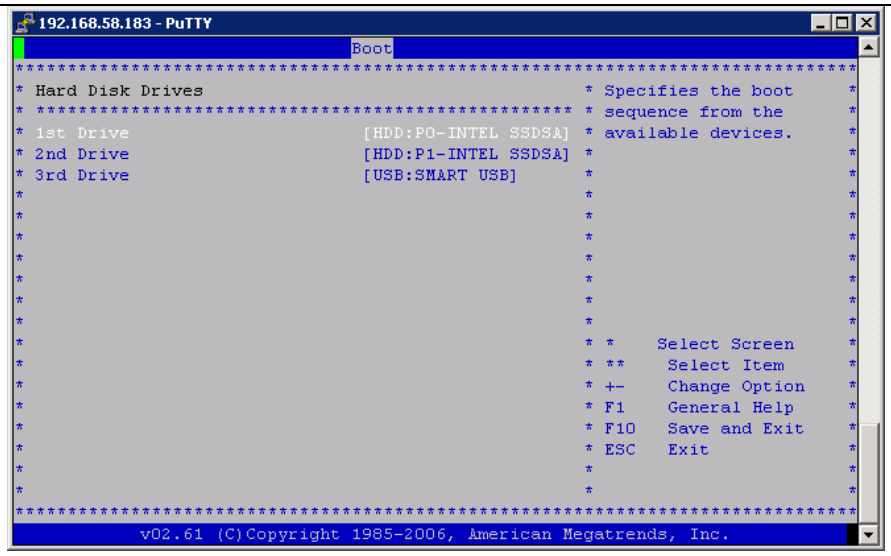
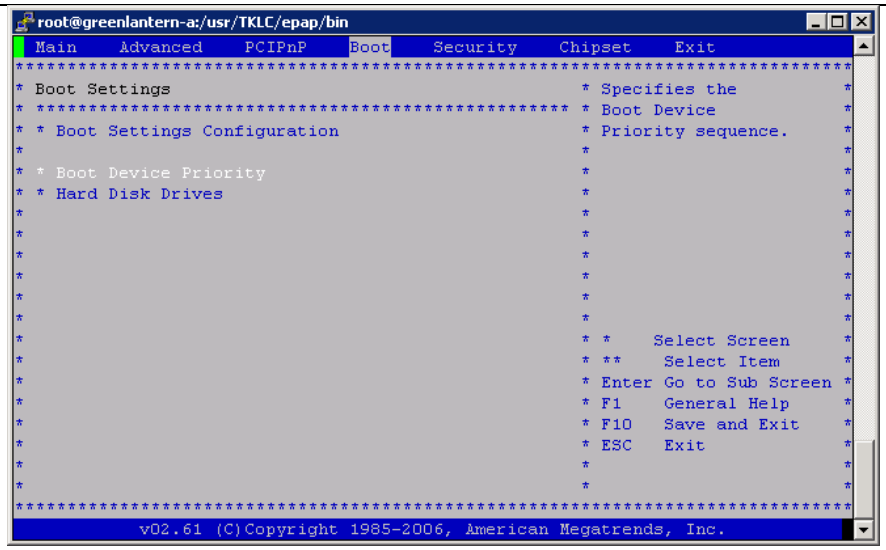
Procedure 4: IPM MPS server with TPD 5.5

14. ☐	**MPS X:** Once the drive formatting and file system creation steps are complete, the screen at right will appear indicating that the package installation step is about to begin.	
15. ☐	**MPS X:** After a few minutes, you will see a screen similar to that at right, showing the status of the package installation step. For each package, there will be a status bar at the top indicating how much of the package has been installed, with a cumulative status bar at the bottom indicating how many packages remain. In the middle, you will see text statistics indicating the total number of packages, the number of packages installed, the number remaining, and current and projected time estimates.	

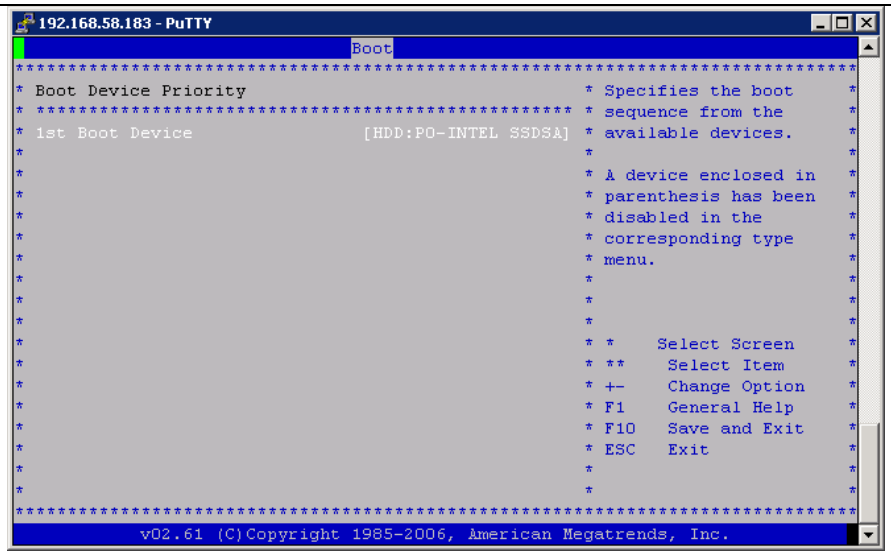
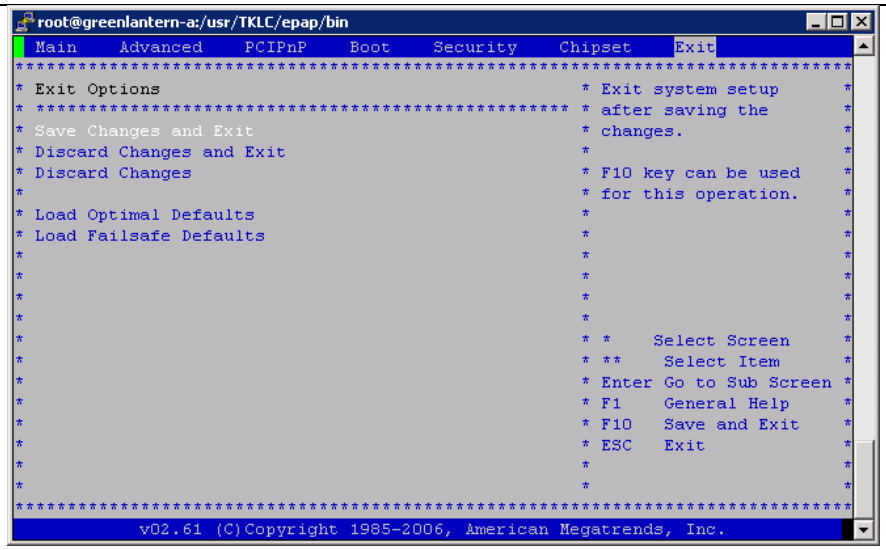
Procedure 4: IPM MPS server with TPD 5.5

16. ☐	**MPS X:** Once all the packages have been successfully installed, the screen at right will appear letting you know the installation process is complete. Remove the USB media and press <ENTER> to reboot the system and continue with the next step.	
17. ☐	**MPS X:** Press 'del' key to enter the BIOS (F4 on remote keyboard)	
18. ☐	**MPS X:** Select *Boot → Hard Disk Drives* option	

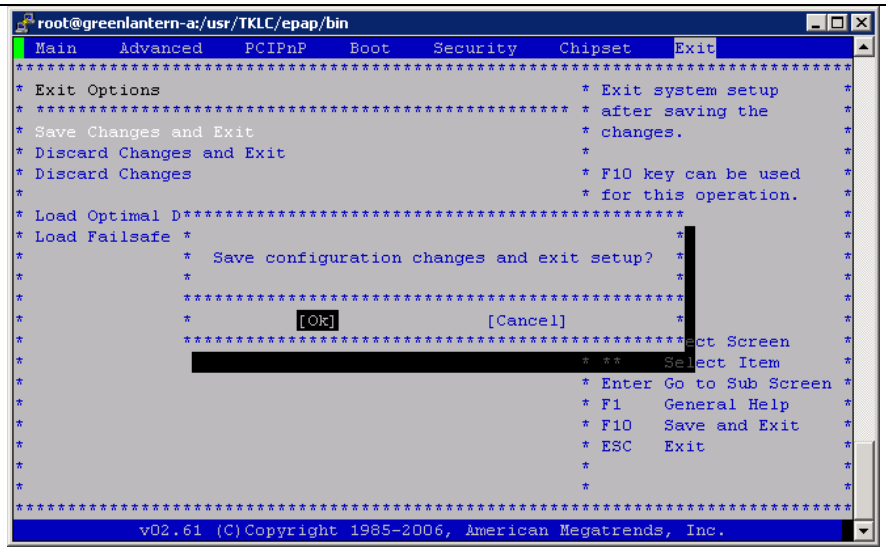
Procedure 4: IPM MPS server with TPD 5.5

19. ☐	**MPS X:** Press 'Enter' key and select HDD:P0 as the 1st Drive	
20. ☐	**MPS X:** Press 'Esc' key and select Boot Device Priority	

Procedure 4: IPM MPS server with TPD 5.5

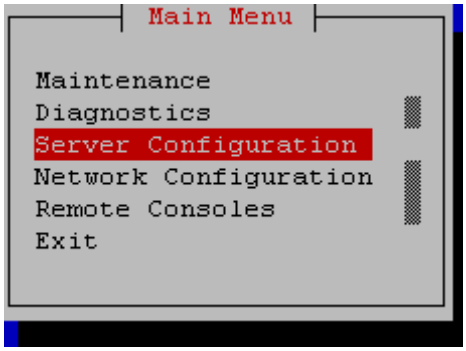
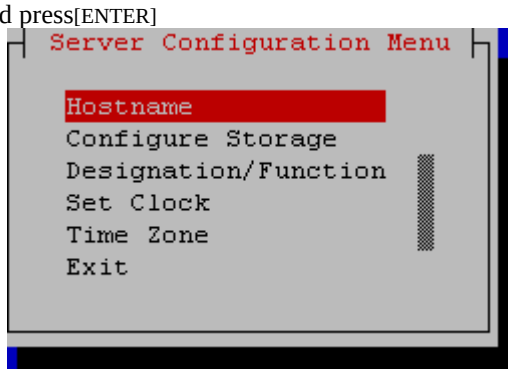
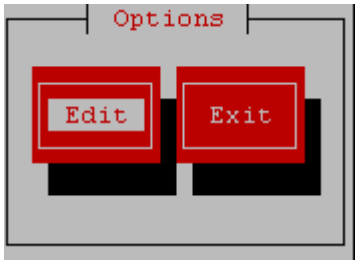
21. ☐	**MPS X:** Verify that the 1st Boot Device is set to HDD:P0.	
22. ☐	**MPS X:** Press 'Esc' key and select *Exit* → *Save Changes and Exit* option	

Procedure 4: IPM MPS server with TPD 5.5

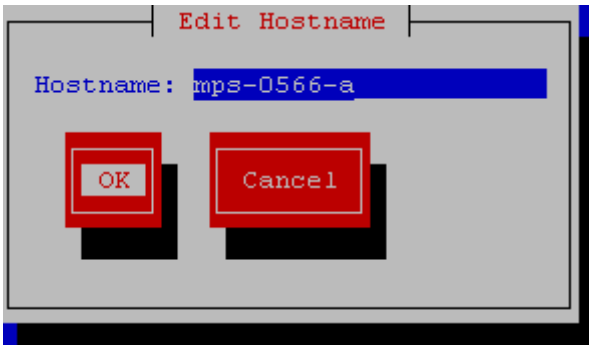
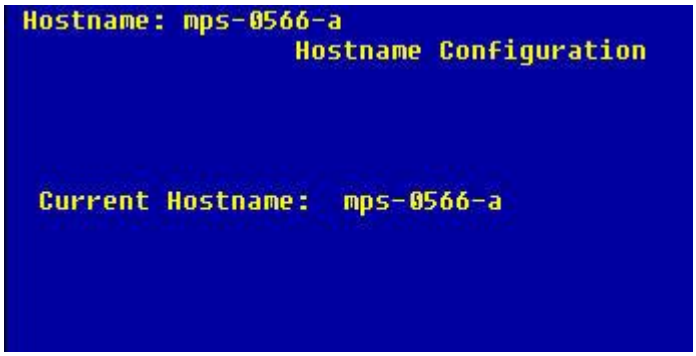
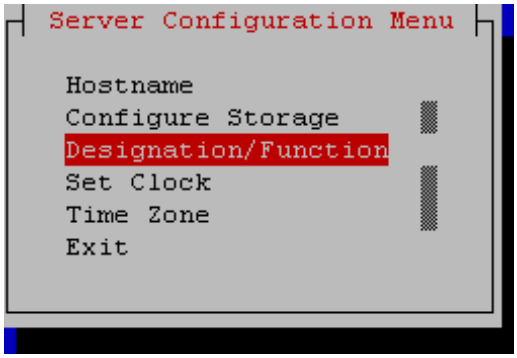
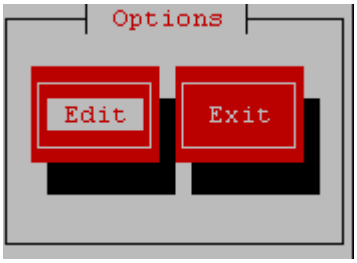
23. ☐	**MPS X:** Select [OK] to save the configuration changes. The server will reboot.	
24. ☐	**MPS X:** After a few minutes, the BIOS screen will appear, followed by several messages about each of the Ethernet ports in the system, and then by the following message printed by the boot loader, indicating that it is booting the new IPM load.	
25. ☐	**MPS X:**Log in to the server as the user "root"	**console login: root** **password: <root_password>**
26. ☐	**MPS X:** Verify that the platform revision is same as the TPD ISO used.	**# getPlatRev** 5.5.1-75.20 or later
27. ☐	Procedure complete.	This procedure is complete.

5.2 Pre Installation Configuration

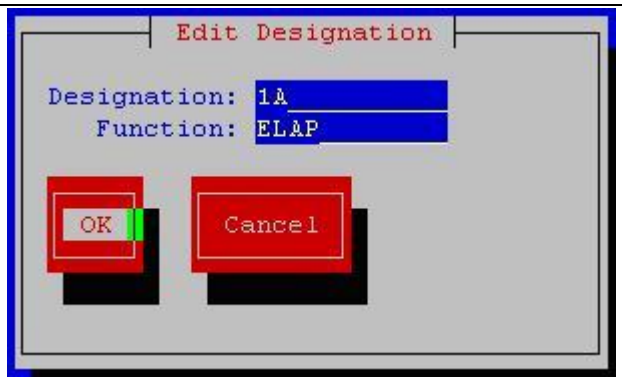
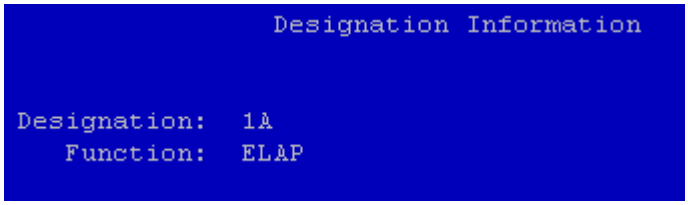
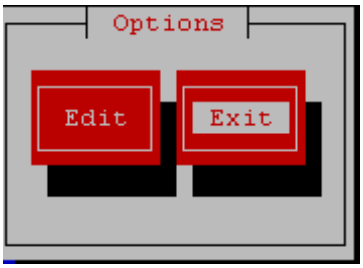
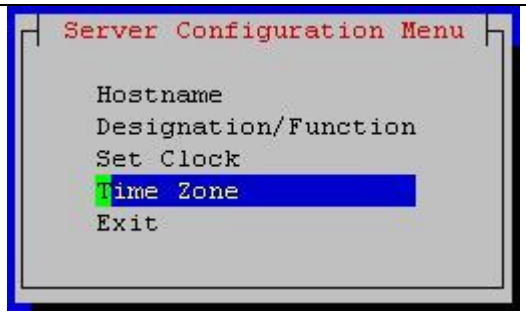
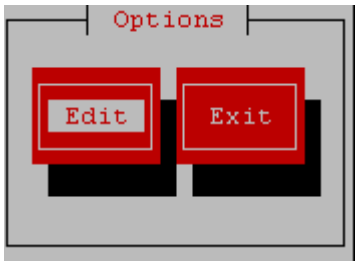
Procedure 5: Set up hostname, Server Designation and Time

S T E P #	This procedure provides instructions to perform pre configuration for an initial install of the application. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT THE TEKELEC CUSTOMER CARE CENTER AND ASK FOR ASSISTANCE.	
1. ☐	**MPS X**: Log in as "root" user.	If not already logged in, then login as "root": `[hostname] console login: root` `password: password`
2. ☐	**MPS X**:Start platcfg utility.	`# su - platcfg`
3. ☐	**MPS X**: Navigate to the **Server Configuration** screen.	Select **Server Configuration** and press[ENTER] 
4. ☐	**MPS X**: Navigate to the **Hostname** screen.	Select **Hostname** and press[ENTER] 
5. ☐	**MPS X**: Select **Edit** to edit the hostname.	Select **Edit** and press[ENTER] 
6. ☐	**MPS X**: Enter the hostname and press ok.	Delete the default entry and enter the Hostname. Press OK when done.

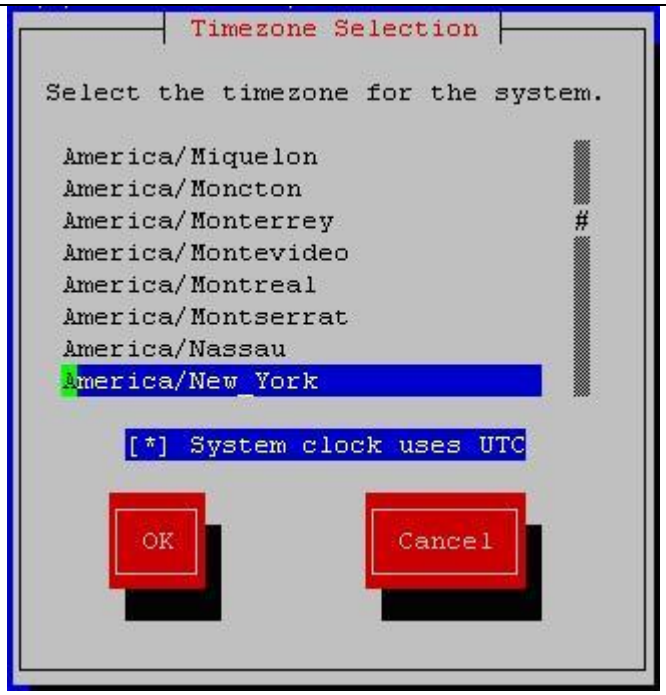
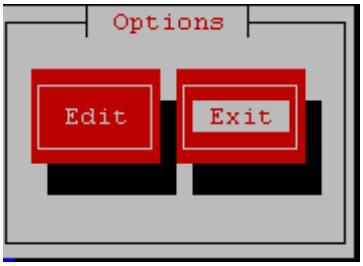
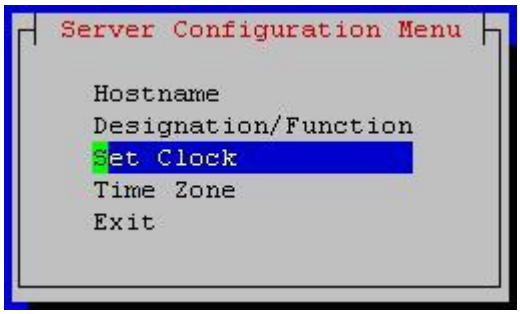
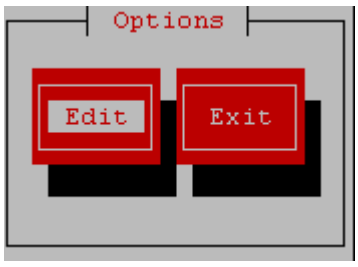
Procedure 5: Set up hostname, Server Designation and Time

		
7. ☐	**MPS X**: Exit Back to the Server Configuration Menu.	Select EXIT to exit back to the Server Configuration Menu. Verify that the hostname has been properly set. 
8. ☐	**MPS X**: Navigate to the **Designation/Function** menu option.	Select **Designation/Function** and press[ENTER] 
9. ☐	**MPS X**: Select "Edit" from the options dialogue box.Set the Designation as "1A" on Server A and as "1B" on Server B, Function as "ELAP" and press "OK".	

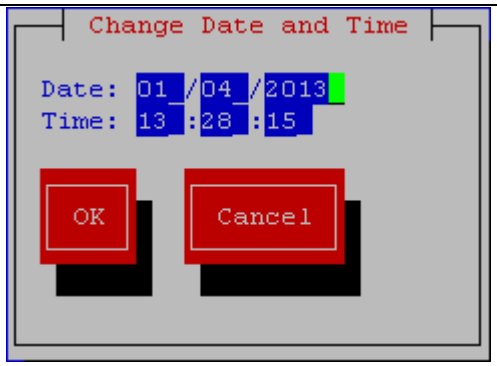
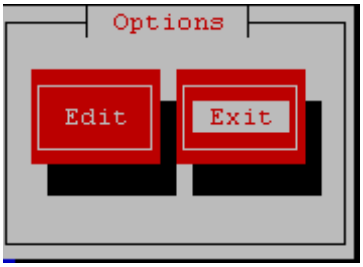
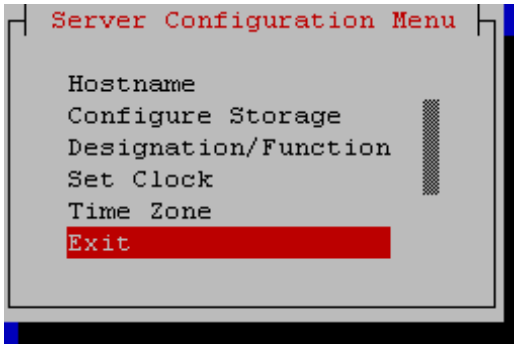
Procedure 5: Set up hostname, Server Designation and Time

	NOTE:Designation and Function should be entered in UPPERCASE.	
10. ☐	**MPS X**: Verify that the Designation and Function information is correct then select and press "Exit".	 
11. ☐	**MPS X**: Using the arrow keys navigate to the "Time Zone" menu and press Enter. Select the "Edit" button and press Enter.	 

Procedure 5: Set up hostname, Server Designation and Time

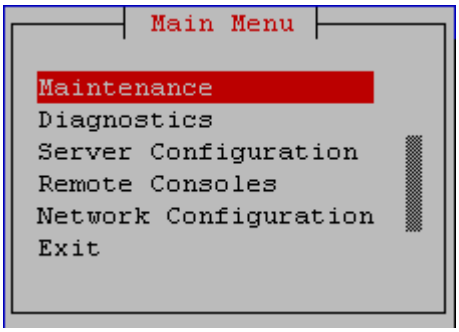
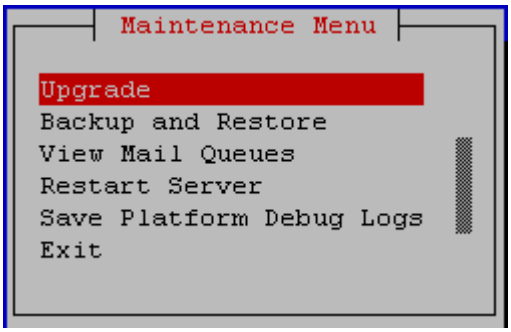
12. ☐	**MPS X**: Using the arrow keys navigate to the appropriate "Time Zone" selection. Ensure that it is highlighted. Ensure the "System clock uses UTC" is set. If it is not set use the "Tab" key to highlight it and press the "Space Bar". Once the appropriate time zone is highlighted press the "Tab" key to highlight the "OK" button and press Enter. Using the "Tab" or arrow keys highlight the "Exit" button and press Enter.	 
13. ☐	**MPS X:** Using the arrow keys navigate to the appropriate "Set Clock" menu and press Enter. Using the "Tab" key highlight the "Edit" button and press Enter.	 
14. ☐	**MPS X:** Using the "Tab" key to cycle between the fields, set the Date and	

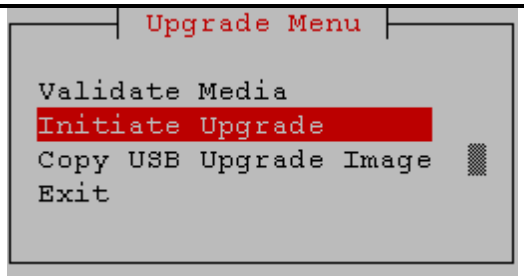
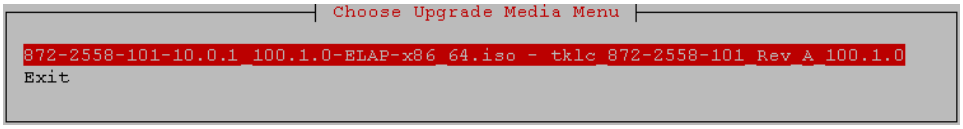
Procedure 5: Set up hostname, Server Designation and Time

	Time to the current date and time. Using the "Tab" key navigate to the "OK" button and press Enter. NOTE: All systems default to Eastern time post IPM. It is important to set the time for the time zone specified in step 12, at this time.	
15. ☐	**MPS X:** Using the "Tab" key navigate to the "Exit" button and press Enter.	
16. ☐	**MPS X**: Exit from platcfg menu.	 Select **EXIT**until the platcfg menu is closed and the command line is displayed.
17. ☐	**MPS X:**Reboot the Server.	`# reboot` `Broadcast message from root (pts/0) (Fri Aug 7 09:22:02 2009):` `The system is going down for reboot NOW!`
18. ☐	MPS B: Perform configuration	Repeat steps 1 to 17 on ELAP B.
19. ☐	Procedure complete.	This procedure is complete.

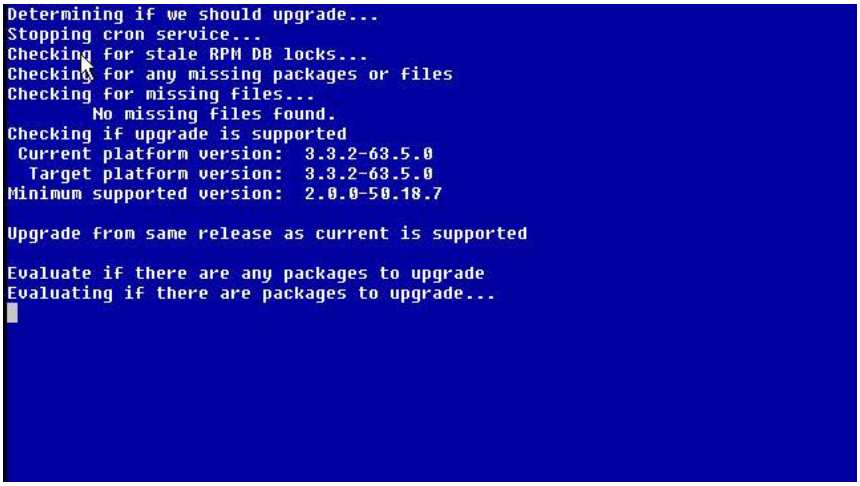
5.3 ELAP Installation

Procedure 6: Install the ELAP Application

S T E P #	This procedure installs the application on the server. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT THE TEKELEC CUSTOMER CARE CENTER AND ASK FOR ASSISTANCE.	
1. ☐	**MPS A:** Log in as "root" user.	If not already logged in, then login as "root": `Console login: root` `password: password`
2. ☐	**MPS A:** PutISO image on ELAP server.	Use any of the following methods to put ELAP 10.0.1 ISO image on the ELAP server. a. Perform ISO image generation from USB media using Procedure 18. b. Copy ISO to /var/TKLC/upgrade directory. Note: To execute this step, the provisional IP of the ELAP server must be set via platcfg menu.
3. ☐	**MPS A:**Validate the upgrade media	Follow the instructions in Appendix 7.2A.2to validate the upgrade media.
4. ☐	**MPS A:** Start platcfg utility.	`# su - platcfg`
5. ☐	**MPS A:** Select the Maintenance submenu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Maintenance** and press **[ENTER]**.  Select the **Upgrade** menu and press **[ENTER]**.  Select the **Initiate Upgrade** menu and press **[ENTER]**.

<table>
<tr><td></td><td></td><td> 
</td></tr>
<tr><td>6. ☐</td><td>MPS A: Select the Upgrade Media.</td><td>The screen displays a message that it is searching for upgrade media. When the upgrade media is found, an Upgrade Media selection menu appears similar to the example below. Select the desired upgrade media and press [ENTER]. There should only be one selection available, as in the example below.
 
</td></tr>
<tr><td>7. ☐</td><td>MPS A: Press [ENTER] to start installation.

Many informational messages will come across the terminal screen as the installation proceeds.

Finally, after successful completion of ELAP install, the server should reboot and login prompt should appear</td><td> 

(output truncated for display purpose)

login:</td></tr>
<tr><td>8. ☐</td><td>MPS A: Log in as “root” user.</td><td>If not already logged in, then login as “root”:

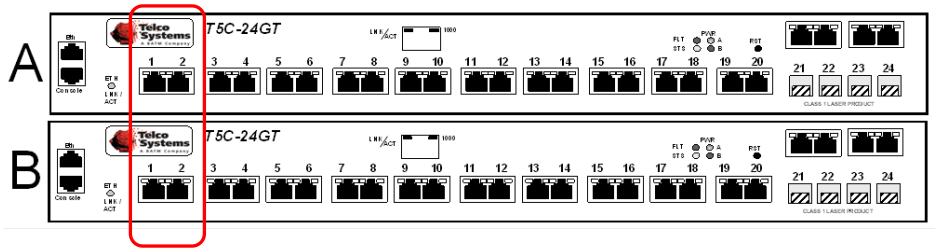
Console login: root
password: password</td></tr>
<tr><td>9. ☐</td><td>MPS A: Verify that installation is complete and no error occurred during installation.</td><td># grep "UPGRADE IS COMPLETE" /var/TKLC/log/upgrade/upgrade.log
1609483273:: UPGRADE IS COMPLETE
#

grep -i error /var/TKLC/log/upgrade/upgrade.log</td></tr>
</table>

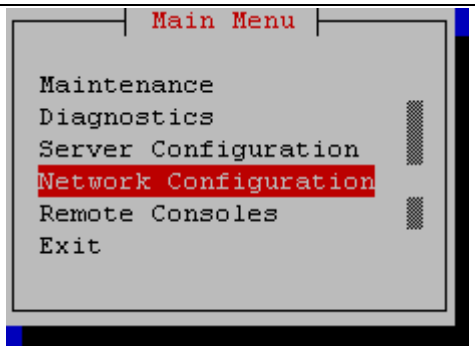
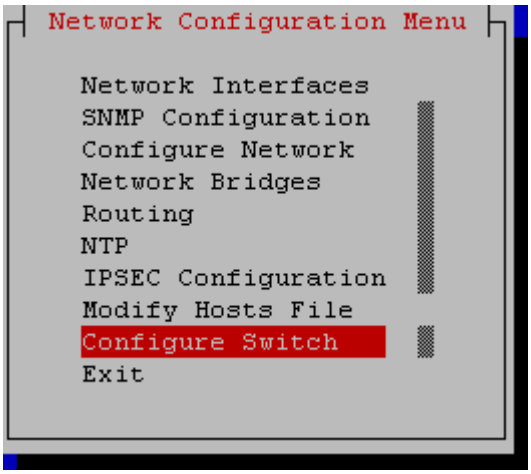
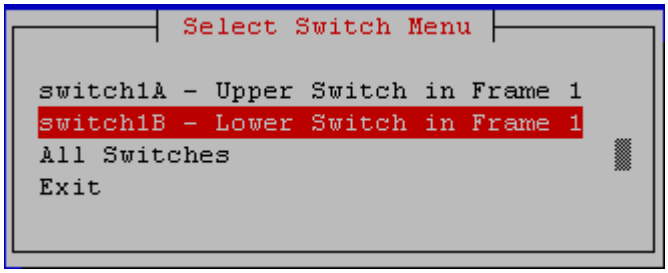
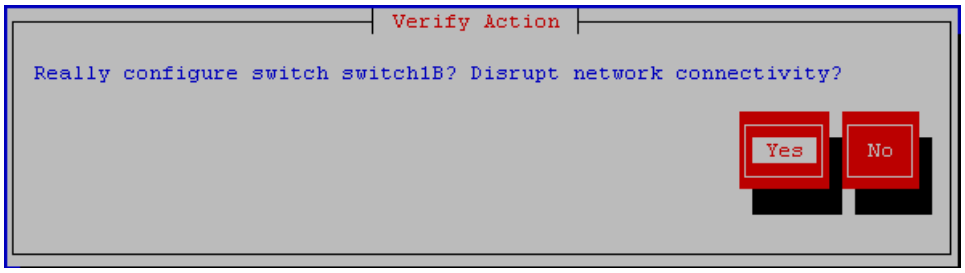
		Check the output of the upgrade log, contact the Technical Assistance Center following the instructions on the Appendix D, if the output contains any errors beside the following: Variable and RPMs that might contain the word error in them Example: `1609483240::perl-Class-ErrorHandler` `##################################################` `1609483260::Checking perl-Class-ErrorHandler-0.01-0.41060.noarch.rpm:  PASSED` All those messages are expected, and therefore aren't considered errors. **`# grep -i error /var/TKLC/log/upgrade/ugwrap.log`** Check the output of the ugwrap log. If the output contains any errors, contact the Technical Assistance Center following the instructions on the Appendix D.
10. ☐	**MPS A:**Verify ELAP release.	**`# rpm -qi TKLCelap`** `Name        : TKLCelap                      Relocations: (not relocatable)` `Version     : 5.0.21                             Vendor: Tekelec` `Release     : 10.0.1_100.23.0               Build Date: Thu 18 Sep 2014 01:38:16 PM EDT` `Install Date: Mon 22 Sep 2014 10:03:19 PM EDT      Build Host: diablo-8.tekelec.com` `Group       : Development/Build             Source RPM: TKLCelap-5.0.21-10.0.1_100.23.0.src.rpm` `Size        : 127833964                        License: © TEKELEC 2014` `Signature   : (none)` `Packager    : <@tekelec.com>` `URL         : http://www.tekelec.com/` `Summary     : Oracle Communications ELAP Package` `Description :` `This is the Oracle Communications EAGLE LNP Application Processor(ELAP) package.` `The package installs ELAP software. Eagle LNP Application Processor (ELAP)` `provides REALLY INCREDIBLE Database (RIDB). ELAP provides the LNP feature.`
11.	**MPS B:** Install ELAP on server B.	Repeat steps 1 to 10 on MPS B.
12. ☐	**MPS A and MPS B:** Procedure complete.	This procedure is complete.

5.4 Switch Configuration

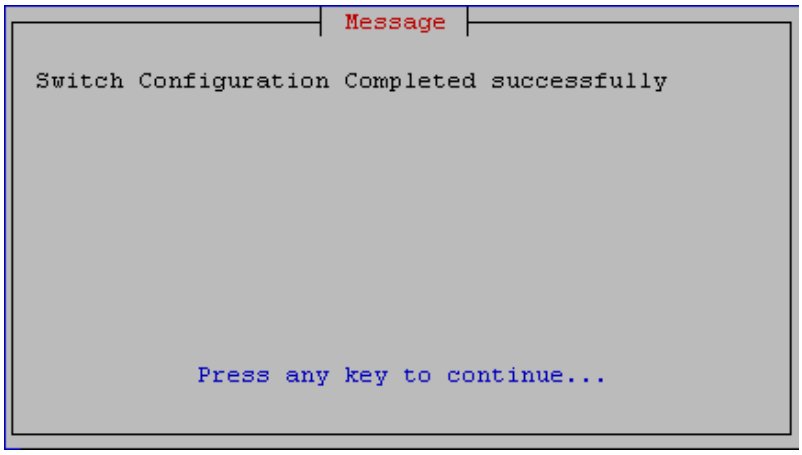
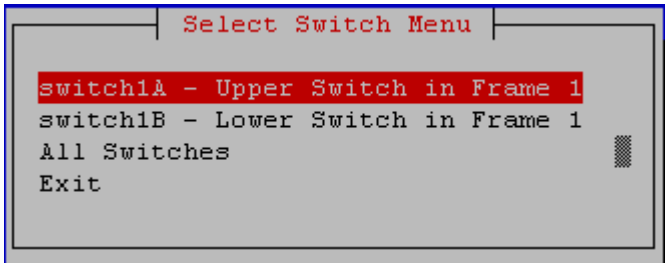
Procedure 7: Switch Configuration

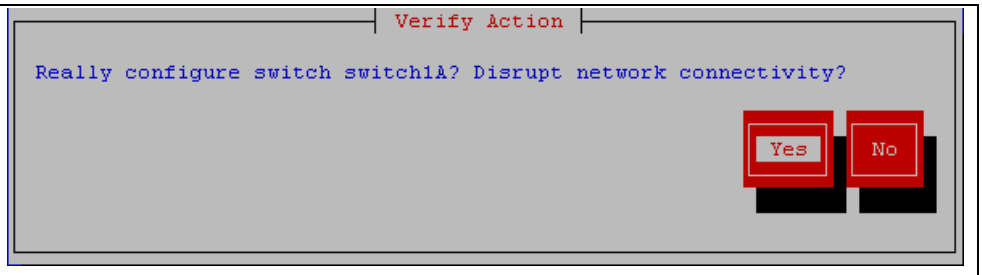
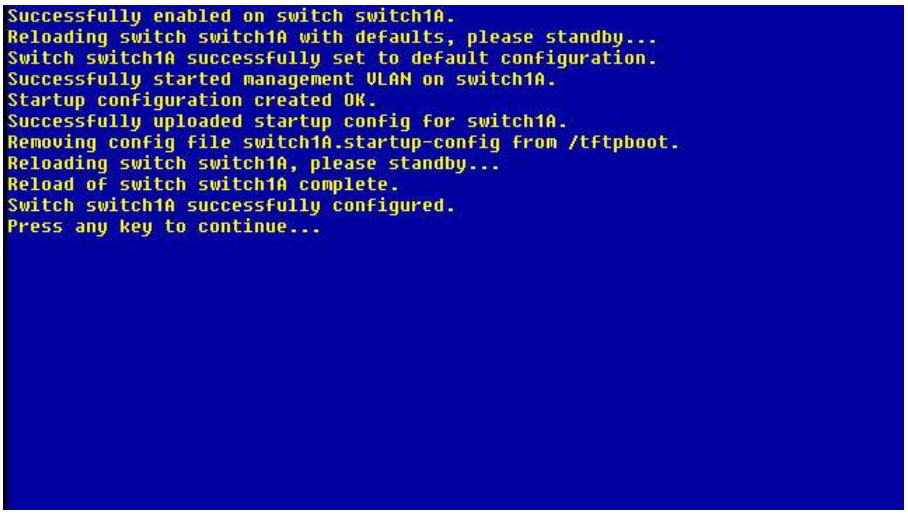
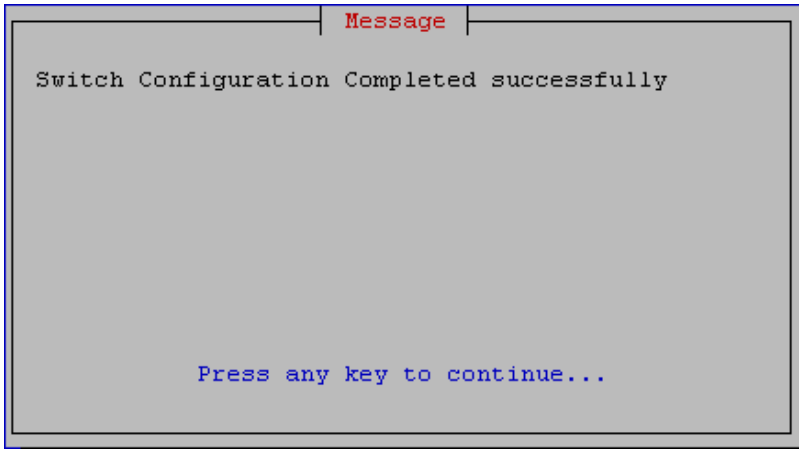
S T E P #	This procedure Configures the Switches of a newly installed E5-APP-BELAP Server Pair. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT THE TEKELEC CUSTOMER CARE CENTER AND ASK FOR ASSISTANCE.	
1. ☐	Make the cross-over cable connections.	**NOTE: THIS IS IMPORTANT** CONNECT the LAG cable from **Port 1** of **Switch1A** to **Port 1** of **Switch1B**. DISCONNECT the LAG cable from **Port** 2 of **Switch1A** to **Port 2** of **Switch1B.**  Please make a note that the switch configuration should only be attempted by a skilled technician. All uplinks should be removed while switch configuration. There should not be any loop in the switches during their configuration.
2. ☐	**MPS A: L**og in as "root" user.	If not already logged in, then login as "root": `Console login:  root` `password:  password`
3. ☐	**MPS A:** Start services for switch configuration	Change the startup information for tftp: `# chkconfigtftp on` Change the startup information for xinetd: `# chkconfigxinetd on` Start xinetd `# service xinetd start`
4. ☐	**MPS A:** Verify the bond0 configuration.	Verify that the eth03 is the default primary port of the bond0. `# cat /proc/net/bonding/bond0 | grep "Currently Active Slave"` `Currently Active Slave: eth03`
5. ☐	**MPS A:** Start platcfg utility.	`# su - platcfg`
6. ☐	**MPS A:** Navigate to the Network Configuration Menu.	On the platcfg **Main Menu**, select **Network Configuration** and press [**ENTER**].

Procedure 7: Switch Configuration

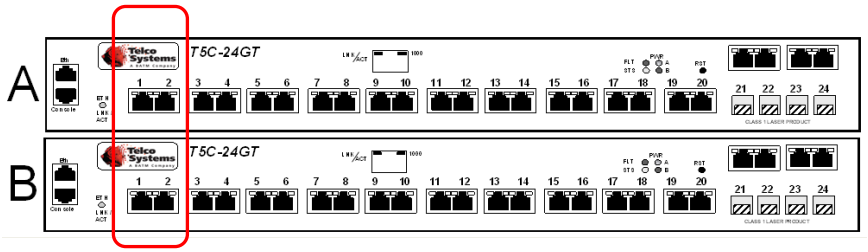
		
7. ☐	**MPS A:** Navigate to the Configure Switch Menu.	On the Network Configuration menu, select **Configure Switch** and press [**ENTER**]. 
8. ☐	**MPS A:** Select to configure "switch1B – Lower Switch in Frame **1**" and press Enter.	On the Select Switch Menu, select "**switch1B – Lower Switch in Frame 1**" and press [**ENTER**]. 
9. ☐	**MPS A:** Confirm Switch Configuration.	Select **Yes** and press **[ENTER]** to configure Switch 1B. 

Procedure 7: Switch Configuration

10. ☐	**MPS A:** Switch Configuration Screen.	Configuring the switch takes about 10 minutes, once complete press **[ENTER]** to continue. Successfully enabled on switch switch1B. Reloading switch switch1B with defaults, please standby... Switch switch1B successfully set to default configuration. Successfully started management VLAN on switch1B. Startup configuration created OK. Successfully uploaded startup config for switch1B. Removing config file switch1B.startup-config from /tftpboot. Reloading switch switch1B, please standby... Reload of switch switch1B complete. Switch switch1B successfully configured. Press any key to continue...
11. ☐	**MPS A:** Switch Configuration completion screen.	The switch configuration completion screen is displayed. Press [**ENTER**] to continue. 
12. ☐	**MPS A:** Select to configure "switch1A – UpperSwitch in Frame 1" and press Enter.	On the Select Switch Menu, select "**switch1A – Upper Switch in Frame 1**" and press [**ENTER**]. 
13. ☐	**MPS A:** Confirm Switch Configuration.	Select **Yes** and press **[ENTER]** to configure Switch 1A.

		
14. ☐	**MPS A:** Switch Configuration Screen.	Configuring the switch takes about 10 minutes, once complete press **[ENTER]** to continue. 
15. ☐	**MPS A:** Switch Configuration completion screen.	The switch configuration completion screen is displayed. Press [**ENTER**] to continue. 
16. ☐	**MPS A:** Exit out of platcfg.	Select Exit and press [**ENTER**] to return to the Network Configuration Menu. Select Exit and press [**ENTER**] to return to the Main Menu. Select Exit and press [**ENTER**] to exit out of platcfg.
17. ☐	**MPS A:** Connect the cross-over cable from **Port 2** of **Switch1A** to **Port 2** of	Make sure that the LAG cable is connected from **Port 1** of **Switch1A** to **Port 1** of **Switch1B**. CONNECT the LAG cable from **Port** 2 of **Switch1A** to **Port 2** of **Switch1B.**

Procedure 7: Switch Configuration

	Switch1B at this time.	
18. ☐	**MPS A:** Stop services after switch configuration.	Change the startup information for tftp: `# chkconfigtftp off` Change the startup information for xinetd: `# chkconfigxinetd off` Stop xinetd `# service xinetd stop`
19. ☐	Procedure complete.	This procedure is complete.

5.5 Configuring the Application

Procedure 8: Configuring the Application

S T E P #	This procedure Configures the application on the server. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT THE TEKELEC CUSTOMER CARE CENTER AND ASK FOR ASSISTANCE.	
1. ☐	**MPS A:** Login as 'root' user.	If not already logged in, then login as "root": `login: root` `password: password`
2. ☐	**MPS A:** Switch user to elapconfig.	`# su - elapconfig`

Procedure 8: Configuring the Application

3. ☐	**MPS A:** A note of caution appears. Evaluate the conditions listed. When all the conditions are satisfied, press Return to continue.	Caution: This is the first login of the text user interface. Please review the following checklist before continuing. Failure to enter complete and accurate information at this time will have unpredictable results. 1. The mate MPS servers (MPS A and MPS B) must be powered on. 2. "Initial Platform Manufacture" for the mate MPS servers must be complete. 3. The sync network between the mate MPS servers must be operational. 4. You must have the correct password for the elapdev user on the mate MPS server. Press return to continue...
☐	Enter elapdev and root password when prompted.	Password of elapdev: **<elapdev_password>** Could not get authorized keys file from remote (mate). Maybe it does not exist. Continuing... ssh is working correctly. Password of root: **<root_password>** Could not get authorized keys file from remote (mate). Maybe it does not exist. Continuing... ssh is working correctly. Performing DRBD configuration. Creating the DB Data directory. Moving DB files to the DRBD Volume. Updating my.cnf. Restarting mysqld. Building the initial database on side A. Checking if EuiDB database exists: No preexisting EuiDB database was detected. Creating EuiDB database. Creating Alarms database. Creating Ulog database. Creating EuiDB, Alarms and Ulog tables.
4. ☐	**MPS A:** The ELAP Configuration Menu is displayed. Select choice 2, Configure Network Interfaces Menu.	/-----ELAP Configuration Menu----------\ /--\ | 1 | Display Configuration | |----|----------| | 2 | Configure Network Interfaces Menu | |----|----------| | 3 | Set Time Zone | |----|----------| | 4 | Exchange Secure Shell Keys | |----|----------| | 5 | Change Password | |----|----------| | 6 | Platform Menu | |----|----------| | 7 | Configure NTP Server | |----|----------| | 8 | Mate Disaster Recovery | |----|----------| | e | Exit | \--/ Enter Choice: 2

Procedure 8: Configuring the Application

5. ☐	**MPS A:** The Configure Network Interfaces Menu is displayed. Select choice 1, Configure Provisioning Network.	/-----Configure Network Interfaces Menu-\ /---------------------------------------\ | 1 | Configure Provisioning Network | |----|-----------------------------------| | 2 | Configure DSM Network | |----|-----------------------------------| | 3 | Configure Forwarded Ports | |----|-----------------------------------| | 4 | Configure Static NAT Addresses | |----|-----------------------------------| | e | Exit | \---/ Enter Choice: **1**
6. ☐	**MPS A:** Enter the IP addresses, subnet mask, default gateway and Virtual IP address when prompted.	Verifying connectivity with mate... ELAP A provisioning network IP Address [192.168.61.104]: **192.168.61.136** ELAP B provisioning network IP Address [192.168.61.105]: **192.168.61.137** ELAP provisioning network netmask [255.255.255.0]: **255.255.255.0** ELAP provisioning network default router: 192.168.61.250 ELAP local provisioning Virtual IP Address [192.168.61.100]: **192.168.61.166** Please Wait, this may take a while... Note: The Configure Provisioning Network lets you accept the default IP address values presented by the configuration software (by pressing Return) for ELAP A and ELAP B provisioning network and network netmask, or to enter specific IP values previously received from the customer for the MPS.
7. ☐	**MPS A:** The Configure Network Interfaces menu is displayed. Select choice e, Exit.	/-----Configure Network Interfaces Menu----\ /---\ | 1 | Configure Provisioning Network | |----|-----------------------------------| | 2 | Configure Sync Network | |----|-----------------------------------| | 3 | Configure DSM Network | |----|-----------------------------------| | 4 | Configure Backup Provisioning Network | |----|-----------------------------------| | 5 | Configure Forwarded Ports | |----|-----------------------------------| | 6 | Configure Static NAT Addresses | |----|-----------------------------------| | 7 | Configure Provisioning VIP Addresses | |----|-----------------------------------| | e | Exit | \---/ EnterChoice:**e**

Procedure 8: Configuring the Application

8. ☐	**MPS A:** Configure NTP Server Menu. **NOTE:**If an NTP server does not need to be added at this time, all steps related to option 7 Configure NTP Server Menu can be skipped and proceed to the step 14.	/-----ELAP Configuration Menu----------\ /--\ | 1 | Display Configuration | |----|----------------------------------| | 2 | Configure Network Interfaces Menu | |----|----------------------------------| | 3 | Set Time Zone | |----|----------------------------------| | 4 | Exchange Secure Shell Keys | |----|----------------------------------| | 5 | Change Password | |----|----------------------------------| | 6 | Platform Menu | |----|----------------------------------| | 7 | Configure NTP Server | |----|----------------------------------| | 8 | Mate Disaster Recovery | |----|----------------------------------| | e | Exit | \--/ Enter Choice: 7
9. ☐	**MPS A:** The ELAP Configure NTP Server Menu is displayed. Enter choice 2, Add External NTP Server.	/-----ELAP Configure NTP Server Menu-\ /-------------------------------------\ | 1 | Display External NTP Server | |----|---------------------------------| | 2 | Add External NTP Server | |----|---------------------------------| | 3 | Remove External NTP Server | |----|---------------------------------| | e | Exit | \-------------------------------------/ Enter Choice: **2**
10. ☐	**MPS A:** Confirm the action of adding a new NTP Server.	Are you sure you wish to add new NTP Server? [N]: Y Enter the ELAP NTP Server IP Address: **<NTP_server_IP_Addr>** External NTP Server **[<NTP_server_IP_Addr>]** has been added. Press return to continue...<return>
11. ☐	**MPS A:** The ELAP Configure NTP Server Menu is displayed. Enter choice 1, Display External NTP Server.	/-----ELAP Configure NTP Server Menu-\ /-------------------------------------\ | 1 | Display External NTP Server | |----|---------------------------------| | 2 | Add External NTP Server | |----|---------------------------------| | 3 | Remove External NTP Server | |----|---------------------------------| | e | Exit | \-------------------------------------/ Enter Choice: **1**
12. ☐	**MPS A:** Verify the External NTP Server IP address is correct and press Return.	ntpserver1 **<Ipaddress>** Press return to continue...**<return>**

Procedure 8: Configuring the Application

13. ☐	**MPS A:** The ELAP Configure NTP Server Menu is displayed. Select choice, Exit. Otherwise, if more NTP servers are to be added, then repeat steps 9 to 12.	/-----ELAP Configure NTP Server Menu-\ /-------------------------------------\ | 1 | Display External NTP Server | |----|---------------------------------| | 2 | Add External NTP Server | |----|---------------------------------| | 3 | Remove External NTP Server | |----|---------------------------------| | e | Exit | \-------------------------------------/ EnterChoice: **e**
14. ☐	**MPS A:** The ELAP Configuration Menu is displayed. Enter choice **1** to display the configuration.	/-----ELAP Configuration Menu----------\ /---------------------------------------\ | 1 | Display Configuration | |----|---------------------------------| | 2 | Configure Network Interfaces Menu | |----|---------------------------------| | 3 | Set Time Zone | |----|---------------------------------| | 4 | Exchange Secure Shell Keys | |----|---------------------------------| | 5 | Change Password | |----|---------------------------------| | 6 | Platform Menu | |----|---------------------------------| | 7 | Configure NTP Server | |----|---------------------------------| | 8 | Mate Disaster Recovery | |----|---------------------------------| | e | Exit | \---------------------------------------/ Enter Choice: 1
15. ☐	**MPS A:** The configuration information is displayed. Verify that the configuration data displayed is correct. Output truncated for brevity. Be sure to verify all relevant data configurations.	ELAP A Provisioning Network IP Address = 192.168.61.136 ELAP B Provisioning Network IP Address = 192.168.61.137 Provisioning Network Netmask = 255.255.255.0 Provisioning Network Default Router = 192.168.61.250 Provisioning VIP = 192.168.61.166 ELAP A Sync Network Address = 169.254.1.100 ELAP B Sync Network Address = 169.254.1.200 ELAP A Main DSM Network Address = 192.168.120.100 ELAP B Main DSM Network Address = 192.168.120.200 ELAP A Backup DSM Network Address = 192.168.121.100 ELAP B Backup DSM Network Address = 192.168.121.200 ELAP A HTTP Port = 80 ELAP B HTTP Port = 80 ELAP A HTTP SuExec Port = 8001 ELAP B HTTP SuExec Port = 8001 ELAP A Banner Connection Port = 8473 ELAP B Banner Connection Port = 8473 ELAP A Static NAT Address = Not configured ELAP B Static NAT Address = Not configured ELAP A LSMS Connection Port = Not configured ELAP B LSMS Connection Port = Not configured ELAP A EBDA Connection Port = Not configured

		ELAP B EBDA Connection Port = Not configured Time Zone = America/New_York Press return to continue...
16. ☐	**MPS A:** Exit from the elapconfig menu	/-----ELAP Configuration Menu----------\ /----------\ | 1 | Display Configuration | |----|----------| | 2 | Configure Network Interfaces Menu | |----|----------| | 3 | Set Time Zone | |----|----------| | 4 | Exchange Secure Shell Keys | |----|----------| | 5 | Change Password | |----|----------| | 6 | Platform Menu | |----|----------| | 7 | Configure NTP Server | |----|----------| | 8 | Mate Disaster Recovery | |----|----------| | e | Exit | \----------/ Enter Choice: e
17. ☐	**MPS A:** Copy RTDB backup from remote machine to MPS A.	Copy RTDB database file from the remote machine to /var/TKLC/elap/free/backup directory. Refer to section 3.1, point 4 for the RTDB backup file details. [elapdev@mps-e5appb-a ~]$ **cd /var/TKLC/elap/free/backup** [elapdev@mps-e5appb-a backup]$ **sftp<IP address of remote computer>** sftp> cd <target directory> sftp> get <file_name> downloading <file_name> sftp> bye
18. ☐	**MPS A:** Restore the RTDB.	Refer to Procedure 19 to restore the RTDB database on ELAP.
19. ☐	**MPS A:**Start the ELAP Application. **Note:** ELAP will not start again if it the processes are already started.	**# /etc/init.d/Elap start** ~~ /etc/init.d/Elap start ~~ ELAP application started Successfully.
20. ☐	**MPS A and MPS B:** Obtain the status of the system.	**[root@mps-e5appb-a ~]$ hastatus** ACTIVE **[root@mps-e5appb-b ~]$ hastatus** STANDBY If status is not Active/Standby, contact the Technical Assistance Center following the instructions on the Appendix D.

Procedure 8: Configuring the Application

21. ☐	**MPS A:** Inspect the banner for any messages.	**# manageBannerInfo -l** There are currently no Banner Info messages for this side in the database. If unexpected output is returned then, contact the Technical Assistance Center following the instructions on the Appendix D.
22. ☐	**MPS A:** Verify DRBD status. Check the CS value as 'Connected'. **Note:** If CS value is other than 'Connected', periodically run drbd status until both ELAPs get synced.	Execute the following command to display the DRBD status. **# service drbd status** drbd driver loaded OK; device status: version: 8.0.11 (api:86/proto:86) GIT-hash: b3fe2bdfd3b9f7c2f923186883eb9e2a0d3a5b1b build by phil@mescal, 2008-02-12 11:56:43 m:res cs st ds p mounted fstype 0:drbd0 Connected Primary/Secondary UpToDate/UpToDate C **Expected status:** **CS:** Connected **ST:** Primary/Secondary **DS:** UpToDate/UpToDate If any status is not as expected then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
23. ☐	Procedure complete.	This procedure is complete.

5.6 SSH Key Exchange between the ELAP and LSMS

Procedure 9: SSH Key Exchange between the ELAP and LSMS

S T E P #	This procedure performs a SSH Key Exchange between the ELAP servers and the LSMS servers which is required for the LSMS SERVDI feature. **Note**: The IP addresses for the lsmspri and lsmssec host names from the LSMS /etc/hosts files and the LSMS "lsmsadm" user password will be required to complete this procedure. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAIL, CONTACT ORACLE SUPPORT REPRESENTATIVE AND **ASK FOR UPGRADE ASSISTANCE.**	
1 ☐	**ELAP A:** Login as 'elapconfig' user to start the ELAP Configuration utility.	mps-e5appb-a login: **elapconfig** Password: ********** /-----ELAP Configuration Menu----------\ /----------\ | 1 | Display Configuration | |----|----------| | 2 | Configure Network Interfaces Menu | |----|----------| | 3 | Set Time Zone |

Procedure 9: SSH Key Exchange between the ELAP and LSMS

		|----|----------------------------------| | 4 | Exchange Secure Shell Keys | |----|----------------------------------| | 5 | Change Password | |----|----------------------------------| | 6 | Platform Menu | |----|----------------------------------| | 7 | Configure NTP Server | |----|----------------------------------| | 8 | Mate Disaster Recovery | |----|----------------------------------| | e | Exit | \---/
☐	Select "4" and press Enter.	Enter Choice:4
2 ☐	**ELAP A:** Enter the "Exchange Keys with LSMS" Menu.	Verifying connectivity with mate... /-----Exchange Secure Shell Keys Menu-----\ /---\ | 1 | Exchange Keys with Mate | |----|----------------------------------| | 2 | Exchange Keys with Remote | |----|----------------------------------| | 3 | Exchange Keys with Mate as Root User | |----|----------------------------------| | 4 | Exchange Keys with LSMS | |----|----------------------------------| | e | Exit | \---/
☐	Select "4" and press Enter.	Enter Choice:**4**
3 ☐	**ELAP A:** Exchange SSH keys with the **LSMS A** (**host lsmspri**) server.	**Note**: SSH keys will first be exchanged between the MPS A and **LSMS A** servers. The user will be prompted for the password again and SSH keys will be exchanged between the MPS B and **LSMS A** servers.
☐	Enter "Y" and press Enter.	Are you sure you wish to exchange keys with LSMS? [N]:**Y**
☐	Enter the **LSMS A** (**host lsmspri**) IP address and press Enter.	LSMS IP Address: **192.168.60.70**
☐	Enter the LSMS "lsmsadm" user password and press Enter.	The server does not know of 192.168.60.70. Will just exchange host keys for the name given! Password of lsmsadm:************
☐	Verify that keys were exchanged successfully for MPS A and **LSMS A**.	Could not get authorized keys file from remote (192.168.60.70). Maybe it does not exist. Continuing... The server does not know of 192.168.60.70. Will just exchange host keys for the name given! **ssh is working correctly.**

Procedure 9: SSH Key Exchange between the ELAP and LSMS

☐	Enter the LSMS "lsmsadm" user password and press Enter.	`The server does not know of 192.168.60.70.` `Will just exchange host keys for the name given!` `Password of lsmsadm: ********`
☐	Verify that keys were exchanged successfully for MPS B and **LSMS A**.	`The server does not know of 192.168.60.70.` `Will just exchange host keys for the name given!` **`ssh is working correctly.`**
4	**ELAP A:** Enter the "Exchange Keys with LSMS" Menu.	`/-----Exchange Secure Shell Keys Menu-----\` `/-----------------------------------------\` `| 1 | Exchange Keys with Mate |` `|---|-----------------------------------|` `| 2 | Exchange Keys with Remote |` `|---|-----------------------------------|` `| 3 | Exchange Keys with Mate as Root User |` `|---|-----------------------------------|` `| 4 | Exchange Keys with LSMS |` `|---|-----------------------------------|` `| e | Exit |` `\-----------------------------------------/`
☐	Select "4" and press Enter.	`Enter Choice: 4`
5 ☐	**ELAP A:** Exchange SSH keys with the **LSMS B** (**host lsmssec**) server.	**Note**: SSH keys will first be exchanged between the MPS A and **LSMS B** servers. The user will be prompted for the password again and SSH keys will be exchanged between the MPS B and **LSMS B** servers.
☐	Enter "Y" and press Enter.	`Are you sure you wish to exchange keys with LSMS? [N]:Y`
☐	Enter the **LSMS B** (**host lsmssec**) IP address and press Enter.	`LSMS IP Address: 192.168.60.71`
☐	Enter the LSMS "lsmsadm" user password and press Enter.	`The server does not know of 192.168.60.71.` `Will just exchange host keys for the name given!` `Password of lsmsadm:********`
☐	Verify that keys were exchanged successfully for MPS A and **LSMS B**.	`Could not get authorized keys file from remote (192.168.60.71).` `Maybe it does not exist. Continuing...` `The server does not know of 192.168.60.71.` `Will just exchange host keys for the name given!` `ssh is working correctly.`
	Enter the LSMS "lsmsadm" user	`The server does not know of 192.168.60.71.` `Will just exchange host keys for the name given!`

☐ ☐	password and press Enter. Verify that keys were exchanged successfully for MPS B and **LSMS B**.	Password of lsmsadm: ********** The server does not know of 192.168.60.71. Will just exchange host keys for the name given! ssh is working correctly.
6 ☐	**ELAP A:** Exit the "Exchange Secure Shell Keys" Menu. Select "e" and press Enter.	/-----Exchange Secure Shell Keys Menu-----\ /----------\ | 1 | Exchange Keys with Mate | |----|----------| | 2 | Exchange Keys with Remote | |----|----------| | 3 | Exchange Keys with Mate as Root User | |----|----------| | 4 | Exchange Keys with LSMS | |----|----------| | e | Exit | \----------/ Enter Choice: **e**
7 ☐	**ELAP A:** Exit the "ELAP Configuration" Menu. Select "e" and press Enter.	/-----ELAP Configuration Menu----------\ /----------\ | 1 | Display Configuration | |----|----------| | 2 | Configure Network Interfaces Menu | |----|----------| | 3 | Set Time Zone | |----|----------| | 4 | Exchange Secure Shell Keys | |----|----------| | 5 | Change Password | |----|----------| | 6 | Platform Menu | |----|----------| | 7 | Configure NTP Server | |----|----------| | 8 | Mate Disaster Recovery | |----|----------| | e | Exit | \----------/ Enter Choice: **e**
8 ☐	**ELAP A:** Procedure complete.	This procedure is complete.

THIS COMPLETES THE INSTALLATION

6. SOFTWARE UPGRADE PREPARATIONS

6.1 Readiness assessment

Procedure 10: Assess the MPS Server's Readiness for Upgrade

STEP #	This procedure executes the steps required to assess the readiness of a system to be upgraded. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TECELEC TECHNICAL SERVICES AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS A**: Log in as the user "root".	If not already logged-in, then log in. **<hostname> console login: root** **password: <password>**
2. ☐	**MPS A:** Verify High Availability status.	Execute the following command to display the high availability status of the ELAP pair. **# hastatus** ACTIVE Note: HA status could be Active or Standby. If HA status is not Active/Standby, contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
3. ☐	**MPS A:** Verify DRBD status. Check the CS value as 'Connected'. **Note:** If CS value is other than 'Connected', periodically run drbd status until both ELAPs get synced.	Execute the following command to display the DRBD status. **# service drbd status** drbd driver loaded OK; device status: version: 8.0.11 (api:86/proto:86) GIT-hash: b3fe2bdfd3b9f7c2f923186883eb9e2a0d3a5b1b build by phil@mescal, 2008-02-12 11:56:43 m:res cs st ds p mounted fstype 0:drbd0 Connected Primary/Secondary UpToDate/UpToDate C **Expected status:** **CS:** Connected **ST:** Primary/Secondary **DS:** UpToDate/UpToDate If any status is not as expected then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
4. ☐	**MPS A:** For logging purposes cat the hosts file. Note: The hostname in this file will be as per the configuration.	**# cat /etc/hosts** # # Do not modify this file by hand. Refer to Tekelec # Configuration documentation. # # The order of the aliases in this file is significant # to the installation process. # 127.0.0.1 localhost loghost ELAP-78A-prova-bkup mate-provb-bkup 192.168.120.100 dsmm-a 192.168.121.100 dsmb-a 192.168.120.200 dsmm-b 192.168.121.200 dsmb-b 169.254.1.200 mate sync-b ntppeerB hasync-1a

		169.254.1.100 sync-a ntppeerA hasync-1b 192.168.123.100 dsmvip-a 192.168.123.200 dsmvip-b 169.254.1.201 mate-ipdptp0 server_ppp0 169.254.1.202 mate-ppp client_ppp0 169.254.1.101 ELAP-78A-ipdptp0 server_ppp1 169.254.1.102 ELAP-78A-ppp client_ppp1 169.254.1.1 switch1A 169.254.1.2 switch1B 10.248.10.78 ELAP-78A prova-ip 10.248.10.79 mate-provprovb-ip ELAP-79B 10.248.10.80 prov-vip
5. ☐	**MPS A:** Check the static routes.	Execute the following command to display the static routes. **# netstat -r -n** Kernel IP routing table Destination Gateway Genmask Flags MSS Window irttIface 192.168.122.1 192.168.121.1 255.255.255.255 UGH 0 0 0 bond0.3 10.248.10.0 0.0.0.0 255.255.255.0 U 0 0 0 eth01 169.254.1.0 0.0.0.0 255.255.255.0 U 0 0 0 bond0.1 192.168.120.0 0.0.0.0 255.255.255.0 U 0 0 0 eth02 192.168.121.0 0.0.0.0 255.255.255.0 U 0 0 0 bond0.3 169.254.0.0 0.0.0.0 255.255.0.0 U 0 0 0 bond0.3 0.0.0.0 10.248.10.1 0.0.0.0 UG 0 0 0 eth01
6. ☐	**MPS A:** Delete unwanted ISO images.	Execute the following command to display the presence of ELAP software ISO images. Below is an example of the output of the 'ls -la' command: **# ls -la /var/TKLC/upgrade** total 624628 dr-xr-xr-x 2 root root 4096 Aug 9 18:28 . dr-xr-xr-x 22 root root 4096 Aug 9 18:54 .. -r--r--r-- 1 root root 638969856 Aug 9 18:28 872-2558-101-10.0.0_100.1.0-ELAP-x86_64.iso Remove any ISO images that are not the target software ISO image using the following command: **# rm-f /var/TKLC/upgrade/<filename>**
7. ☐	**MPS A:** Determine when last reboot occurred. For any server up longer than 180 days would be a candidate for reboot during a maintenance window.	**# uptime** 15:19:34 up 23 days, 3:05, 2 users, load average: 0.10, 0.13, 0.09
8. ☐	**MPS A:** Executing self test on the disk.	Execute the following command: **# smartctl -t short /dev/sda**

Procedure 10: Assess the MPS Server's Readiness for Upgrade

		smartctl version 5.38 [x86_64-redhat-linux-gnu] Copyright (C) 2002-8 Bruce Allen Home page is http://smartmontools.sourceforge.net/ === START OF OFFLINE IMMEDIATE AND SELF-TEST SECTION === Sending command: "Execute SMART Short self-test routine immediately in off-line mode". Drive command "Execute SMART Short self-test routine immediately in off-line mode" successful. Testing has begun. Please wait 1 minutes for test to complete. Test will complete after Tue Jan 15 19:33:36 2013 Use smartctl -X to abort test. **Note: Please wait for 5 minutes for the test to complete.**
9. ☐	**MPS A:** Examine the results of self test on the disk. In case of any error/failure, contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.	Execute the following command: **# smartctl -l selftest/dev/sda** smartctl version 5.38 [x86_64-redhat-linux-gnu] Copyright (C) 2002-8 Bruce Allen Home page is http://smartmontools.sourceforge.net/ === START OF READ SMART DATA SECTION === SMART Self-test log structure revision number 1 NumTest_Description Status Remaining LifeTime(hours) LBA_of_first_error # 1 Reserved offline Completed without error 00% 2650 - # 2 Reserved offline Completed without error 150% 2650 -
10. ☐	**MPS A:** Disk Integrity step	Execute the following command: **# smartctl -a /dev/sda | grep -i LBA** The output would be like: NumTest_Description Status Remaining LifeTime(hours) LBA_of_first_error SPAN MIN_LBA MAX_LBA CURRENT_TEST_STATUS If any output shows "Completed: read failure" or "Error: UNC xxx sectors", contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
11. ☐	**MPS A:**Disk Integrity Test.	Repeat steps 8 to 10 for the '/dev/sdb' disk drive on the E5-APP-B card:
12. ☐	**MPS A:**Inspect the banner for any messages.	Execute the following command to display the banner messages. **# manageBannerInfo-l** There are currently no Banner Info messages for this side in the database. If unexpected output is returned, then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.

Procedure 10: Assess the MPS Server's Readiness for Upgrade

13. ☐	**MPS B:** Repeat checks on Server B.	Repeat steps 1to12 on MPS B.
14. ☐ ☐ ☐ ☐	**Active MPS:** Verify RTDB status Login to ELAP GUI using VIP. Expand the "RTDB" Folder. Select the "View RTDB Status". Ensure that the DB Status is Coherent.	ELAP49_A_E5APPB View RTDB Status **ELAP RTDB Status** DB Status: Coherent RTDB Level: 18918 RTDB Birthday: 01/09/2013 14:48:54 GMT Counts: TNs=4304454 NPBs=504 DGTTs=6 OGTTs=3 Splits=1 LRNMRs=2031 LRNs=522 MRs=1764 NPANXXs=72 TN-NPANXXs=1575 If the RTDB status is other than Coherent, contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
15. ☐	Procedure Complete.	This procedure is complete.

6.2 Pre-Upgrade System Date/Time Check

Procedure 11: Pre-upgrade system time check

S T E P #	This procedure performs the pre-upgrade system time check. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
	The MPS servers make use of NTP to keep time synchronized between servers. Under some circumstances, either at initial installation in the customer's network or due to power interruption and battery failure, it is possible for an MPS server to have a system date/time value too large for NTP to correct. If the system time is 20 minutes or more off from the real time, NTP cannot correct it. **Check the date/time on *both* MPS-A and MPS-B servers, and correct the system time on any server off by more than 15 minutes from the real time.**	
1. ☐	**MPS A:** Login as the user "root".	If not already logged-in, then login at MPS A: `login: root` `password: <password>`
2. ☐	**MPS A:** Stop Network Time Protocol daemon.	Use the service command to check the status of NTPD. `# service ntpd status` If running, use the service command to stop NTPD. `# service ntpd stop` An example output of this command is as follows:

Procedure 11: Pre-upgrade system time check

		`Shutting down ntpd [OK]`
3. ☐	**MPS A:** Verify Network Time Protocol daemon is stopped.	To verify the status of ntpd, use the following command **`# service ntpd status`** Ensure the output is as follows: `ntpd is stopped`
4. ☐	**MPS A:** Execute the "date" command.	Execute the "date" command and examine the result. **`# ssh mate date; date`** `Tue Jan 7 07:22:39 EDT 2013` `Tue Jan 7 07:22:39 EDT 2013`
5. ☐	**MPS A:** Compare result to the real time.	Compare the result from the "date" command in the previous step to the real time. If the difference is 30seconds or less, then continue with the next step, Otherwise if the difference exceeds 30 seconds, contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
6. ☐	**MPS A:** Start Network Time Protocol daemon.	Use the service command to start NTPD. **`# service ntpd start`** An example output of this command is as follows: `Starting ntpd: [ OK ]`
7. ☐	**MPS A:**Procedure Complete.	This procedure is complete

6.3 Pre Upgrade Backups

Procedure 12: Backup EuiDB

STEP #	This procedure performs the EuiDB backup. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**Active ELAP:** Login as 'root' user.	If not already logged-in, then login at MPS A: **`login: root`** **`password: <password>`**
2. ☐	**Active ELAP:** Login as "elapconfig" to start the ELAP Configuration utility and enter choice 6 to go to the platform menu.	`/-----ELAP Configuration Menu----------\` `/-----------------------------------\` `| 1 | Display Configuration |` `|----|-----------------------------|` `| 2 | Configure Network Interfaces Menu |` `|----|-----------------------------|` `| 3 | Set Time Zone |` `|----|-----------------------------|` `| 4 | Exchange Secure Shell Keys |`

		|----|-----------------------------------| | 5 | Change Password | |----|-----------------------------------| | 6 | Platform Menu | |----|-----------------------------------| | 7 | Configure NTP Server | |----|-----------------------------------| | 8 | Mate Disaster Recovery | |----|-----------------------------------| | e | Exit | \-------------------------------------/ Enter Choice: 6
3. ☐	**Active ELAP:** Select **"5"** to start the MySQL Backup.	/-----ELAP Platform Menu-\ /-------------------------\ | 1 | Initiate Upgrade | |----|--------------------| | 3 | Reboot MPS | |----|--------------------| | 5 | MySQL Backup | |----|--------------------| | 6 | RTDB Backup | |----|--------------------| | e | Exit | \-------------------------/ Enter Choice: **5** Are you sure you want to back up the MySQL database on MPS A? [N]: Y Backup will be saved as "/var/TKLC/appl/free/npdbBackup_mps-e5appb-a_20020118123143.tar"... Connecting to local MySQL server... Getting read lock... Tarring the NPDB... Backup Complete... Disconnecting from local MySQL server...
4. ☐	**Active ELAP:** Select **"e"** to exit the Platform Menu.	/-----ELAP Platform Menu-\ /-------------------------\ | 1 | Initiate Upgrade | |----|--------------------| | 3 | Reboot MPS | |----|--------------------| | 5 | MySQL Backup | |----|--------------------| | 6 | RTDB Backup | |----|--------------------| | e | Exit | \-------------------------/ Enter Choice: **e**
5. ☐	**Active ELAP:** Transfer file to the remote machine.	Using SFTP (secure-FTP), transfer the ISO to a remote, customer-provided computer. Enter "yes" when prompted if you want to continue to connect. **# cd /var/TKLC/elap/free**

Procedure 12: Backup EuiDB

		# sftp<IP address of remote computer> Connecting to <IP address of remote computer>... The authenticity of host '<IP address of remote computer>' can't be established. DSA key fingerprint is 58:a5:7e:1b:ca:fd:1d:fa:99:f2:01:16:79:d8:b4:24. Are you sure you want to continue connecting (yes/no)? **yes** Warning: Permanently added <IP address of remote computer>' (DSA) to the list of known hosts. root@**<IP address of remote computer>**'s password: sftp> cd <target directory> sftp> put npdbBackup_<hostname>_<timestamp>.tar Uploading **npdbBackup_<hostname>_<timestamp>.tar** to **npdbBackup_<hostname>_<timestamp>.tar** sftp> bye If no customer provided remote computer for backups exist, transfer the backup file to the mate using the following command: **# scp /var/TKLC/elap/free/npdbBackup_<hostname>_<timestamp>.tarelapdev@mate:/var/TKLC/ELAP/free/**
6. ☐	**Active ELAP:** Procedure Complete.	This procedure is complete.

Procedure 13: Backup RTDB

STEP #	This procedure performs the RTDB backup. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
7. ☐	**Active ELAP:** Login as 'root' user.	If not already logged-in, then login at MPS A: **login: root** **password: <password>**
8. ☐	**Active ELAP:** Login as "elapconfig" to start the ELAP Configuration utility and enter choice 6 to go to the platform menu.	/-----ELAP Configuration Menu----------\ /--\ | 1 | Display Configuration | |----|----------| | 2 | Configure Network Interfaces Menu | |----|----------| | 3 | Set Time Zone | |----|----------| | 4 | Exchange Secure Shell Keys | |----|----------| | 5 | Change Password | |----|----------| | 6 | Platform Menu | |----|----------| | 7 | Configure NTP Server | |----|----------| | 8 | Mate Disaster Recovery | |----|----------| | e | Exit |

Procedure 13: Backup RTDB

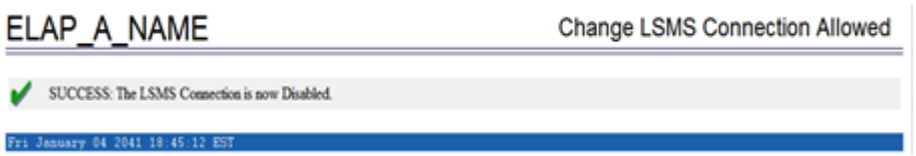
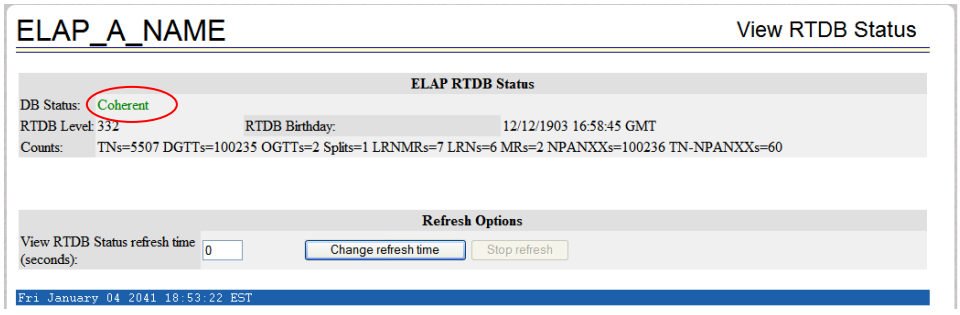
		\----------/ Enter Choice: 6
9. ☐	**Active ELAP:** Select **"6"** to start the RTDB Backup.	/-----ELAP Platform Menu-\ /----------\ | 1 | Initiate Upgrade | |----|----------| | 3 | Reboot MPS | |----|----------| | 5 | MySQL Backup | |----|----------| | 6 | RTDB Backup | |----|----------| | e | Exit | \----------/ Enter Choice: **6** Are you sure you want to back up the RTDB database on MPS B to "/var/TKLC/appl/free/backup/rtdbBackup_mps-e5appb-b_20020117201248.gz"? [N]: Y RTDB database Backup successfully started.
10. ☐	**Active ELAP:** Select **"e"** to exit the Platform Menu.	/-----ELAP Platform Menu-\ /----------\ | 1 | Initiate Upgrade | |----|----------| | 3 | Reboot MPS | |----|----------| | 5 | MySQL Backup | |----|----------| | 6 | RTDB Backup | |----|----------| | e | Exit | \----------/ Enter Choice: **e**
11. ☐	**Active ELAP:** Exit the Main Menu.	/-----ELAP Configuration Menu----------\ /----------\ | 1 | Display Configuration | |----|----------| | 2 | Configure Network Interfaces Menu | |----|----------| | 3 | Set Time Zone | |----|----------| | 4 | Exchange Secure Shell Keys | |----|----------| | 5 | Change Password | |----|----------| | 6 | Platform Menu | |----|----------| | 7 | Configure NTP Server | |----|----------| | 8 | Mate Disaster Recovery | |----|----------| | e | Exit | \----------/

Procedure 13: Backup RTDB

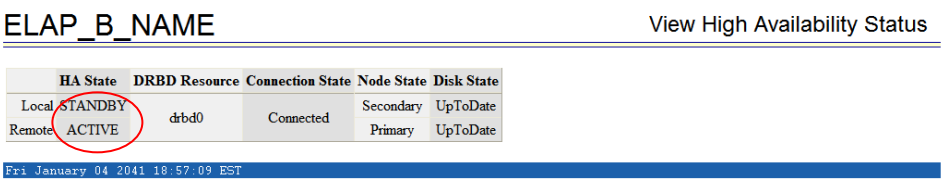
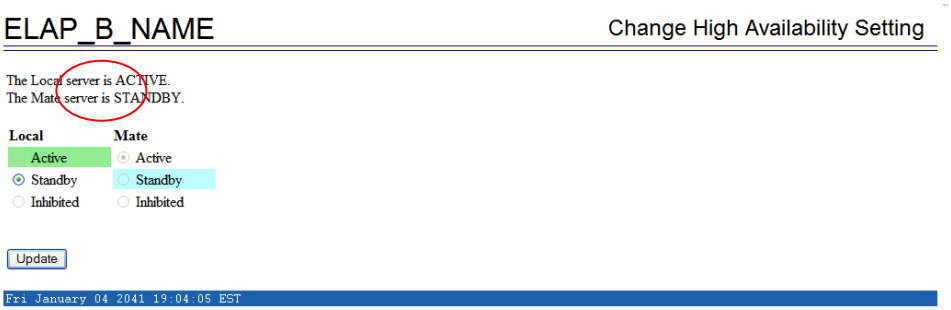
		Enter Choice:e
12. ☐	**Active ELAP:** Verify the backup is completed. Periodically run the "manageBannerInfo –l" command until the message "RTDB backup completed successfully" appears. Verify the /usr/TKLC/elap/logs/cgi.dbg log file for the status of RTDB backup.	# **manageBannerInfo -l** ID: BACKUP_RTDB_STATUS SIDE: A MSG: RTDB backup started SetTime: 2013-11-07 02:47:31 ClearTime: 0000-00-00 00:00:00 # **manageBannerInfo -l** ID: BACKUP_RTDB_STATUS SIDE: A MSG: RTDB backup completed successfully SetTime: 2013-11-07 02:45:05 Clear Time: 2013-11-07 02:46:34 Also, verify that the following logs appear in the "/usr/TKLC/elap/logs/cgi.dbg" log file. 11/07/13-02:49:05:<elapdev>::9300: backupOutfile = /var/TKLC/elap/free/backup/ rtdbBackup_mps-e5appb-b_20020117201248 11/07/13-02:49:05:<elapdev>::9300: Backup of RTDB finished successfully. 11/07/13-02:49:33:<elapdev>::7193: Compression of RTDB backup file finished successfully.
13. ☐	**Active ELAP:** Transfer file to the remote machine.	Using SFTP (secure-FTP), transfer the ISO to a remote, customer-provided computer. Enter "yes" when prompted if you want to continue to connect. **# cd /var/TKLC/elap/free/backup** **# sftp<IP address of remote computer>** Connecting to <IP address of remote computer>... The authenticity of host '<IP address of remote computer>' can't be established. DSA key fingerprint is 58:a5:7e:1b:ca:fd:1d:fa:99:f2:01:16:79:d8:b4:24. Are you sure you want to continue connecting (yes/no)? **yes** Warning: Permanently added <IP address of remote computer>' (DSA) to the list of known hosts. root@**<IP address of remote computer>**'s password: sftp> cd <target directory> sftp> put rtdbBackup_<hostname>_<timestamp>.gz Uploading rtdbBackup_<hostname>_<timestamp>.gzto rtdbBackup_<hostname>_<timestamp>.gz sftp> bye If no customer provided remote computer for backups exist, transfer the backup file to the mate using the following command: **# scp /var/TKLC/elap/free/backup/rtdbBackup_<hostname>_<timestamp>.gzelapdev@mate:/var/TKLC/elap/free/backup**
14. ☐	**Active ELAP:** Procedure Complete.	This procedure is complete.

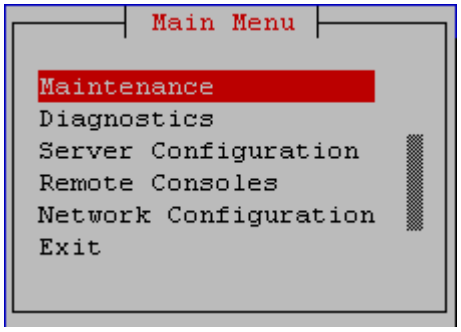
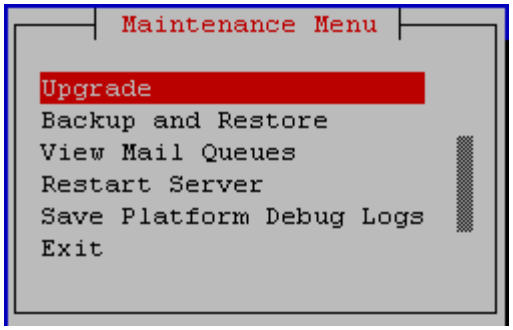
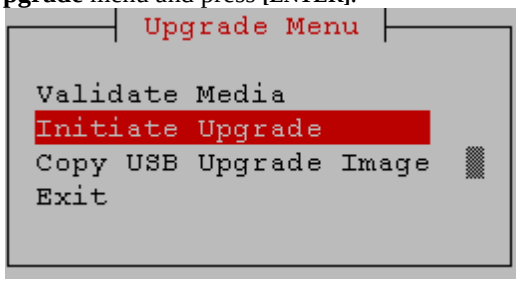
6.4 Incremental Upgrade with Split-Mirror

Procedure 14: Incremental Upgrade with Split-Mirror

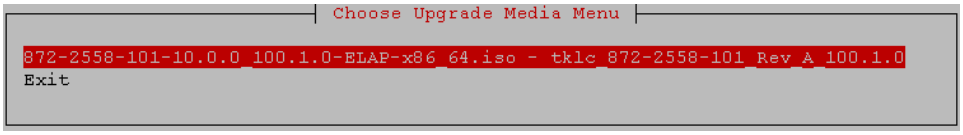
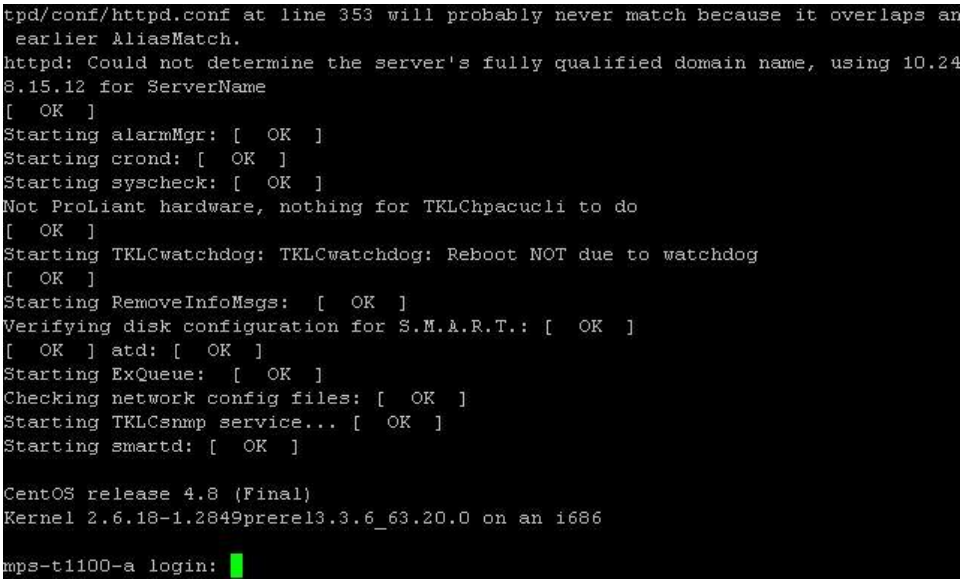
S T E P #	This procedure performs the incremental upgrade with split-mirror. ***Warning:* Incremental Upgrade with Split-Mirror should be done first on ELAP B, then on ELAP A.** Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**Active ELAP GUI:** Disable the LSMS Connection. Login to the ELAP GUI using VIP. Expand the "Maintenance" Folder. Expand the "LSMS Connection" Folder. Select the "Change Allowed" link. Click on the "Disable LSMS Connection" button. Confirmation that the connection is disabled will appear.	 
2. ☐ ☐ ☐	**Active ELAP:** Verify RTDB status Login to ELAP GUI using VIP. Expand the "RTDB" Folder. Select the "View RTDB Status".	

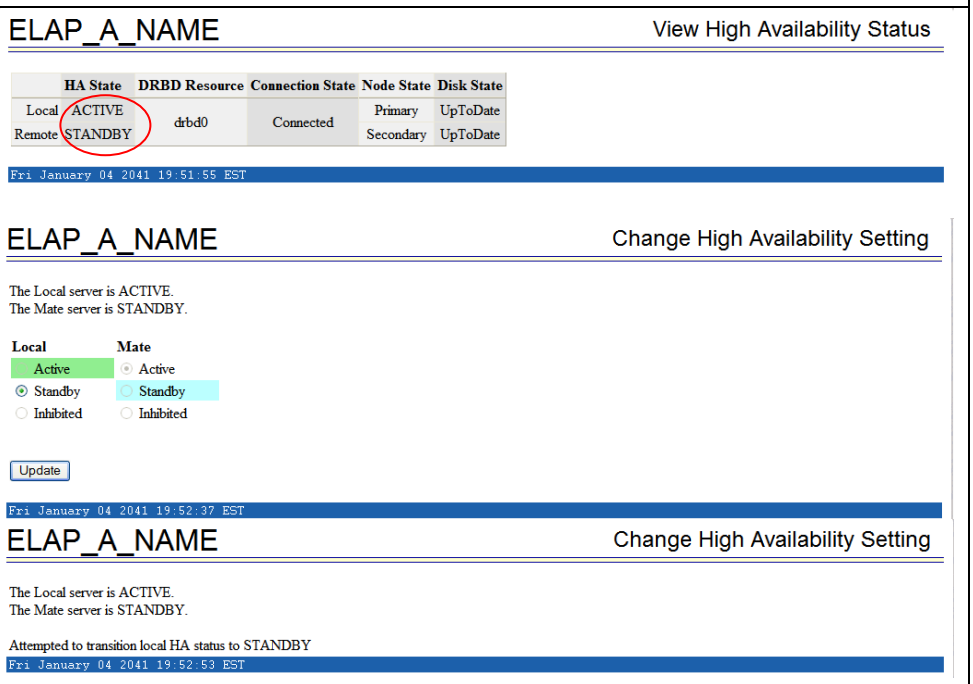
Procedure 14: Incremental Upgrade with Split-Mirror

☐	Ensure that the DB Status is Coherent.	If the RTDB status is other than Coherent, contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
3. ☐	**MPS B:** View HA status. Expand the "Maintenance" Folder. Expand the "High Availability" Folder. Select the "View Status" link.	 The HA Status of Local and Remote machine should be STANDBY and ACTIVE respectively. Note: If HA Status of Local and Remote machine is ACTIVE and STANDBY, then proceed to the next step, otherwise skip to step5.
4. ☐	**MPS B:** Failover to ELAP-A. Expand the "Maintenance" Folder. Expand the "High Availability" Folder. Select the "Change Settings" link. Select option "Standby" for Local machine. Click on the "Update" button. Confirmation that an attempt has made to transition local HA status to STANDBY will appear. Note: If lynx text GUI is used, then use the command line option to perform HA failover.	  Login to ELAP B as root user and execute the following command to perform the failover: `# /usr/TKLC/plat/sbin/hafailover --gostandby` Repeat step 3 to verify the HA status after failover.
5. ☐	**MPS B:** Log in as "root" user.	Follow the instruction in Appendix 7.2A.7 to login into the ELAP server.
6. ☐	**MPS B:** Enable SPLIT MIRROR on server	Login to ELAP B as root user and execute the following command to enable Split Mirror: `# echo "SPLIT_MIRRORS=1" >/usr/TKLC/plat/etc/upgrade/upgrade.conf`

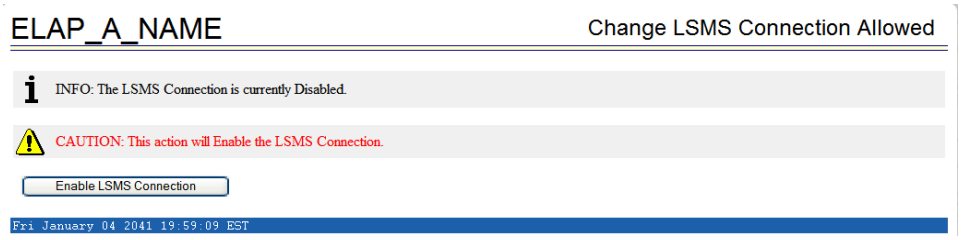
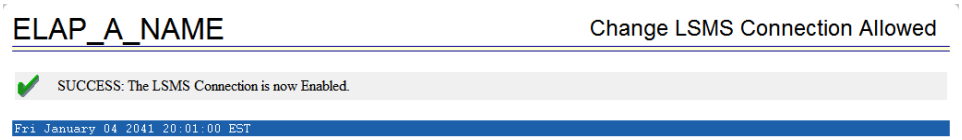
		Check whether the SPLIT MIRROR is enabled using following command: `# cat /usr/TKLC/plat/etc/upgrade/upgrade.conf` Expected Output `SPLIT_MIRRORS=1`
7. ☐	**MPS B:** Disable drbd disk module in syscheck	Disabled rdb disk checking in syscheck using following command: `# syscheckAdm --disable disk drbd`
8. ☐	**MPS B:** Put ISO image on ELAP server.	Use any of the following methods to put ELAP 10.0.1 ISO image on the ELAP server. a. Perform ISO image generation from USB media using Procedure 18. b. Copy ISO to /var/TKLC/upgrade directory.
9. ☐	**MPS B:** Validate the upgrade media.	Follow the instructions in Appendix 7.2A.2to validate the upgrade media.
10. ☐	**MPS B:** Select the Maintenance submenu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Maintenance** and press **[ENTER]**.  Select the **Upgrade** menu and press **[ENTER]**.  Select the **Initiate Upgrade** menu and press **[ENTER]**. 

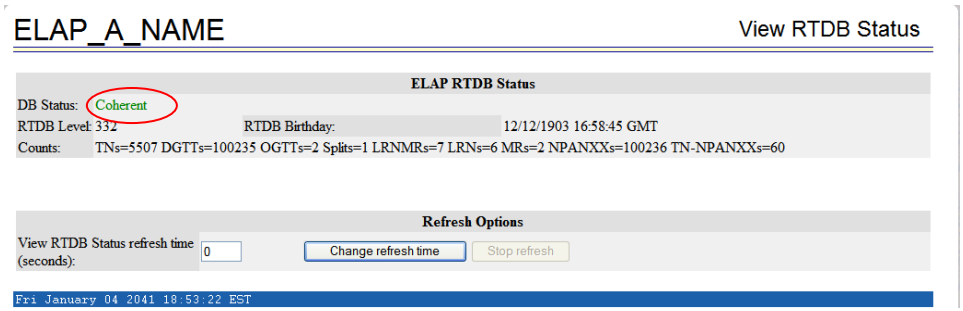
Procedure 14: Incremental Upgrade with Split-Mirror

11. ☐	**MPS B:** Select the Upgrade Media.	The screen displays a message that it is searching for upgrade media. When the upgrade media is found, an Upgrade Media selection menu appears similar to the example below. Select the desired upgrade media and press **[ENTER]**. 
12. ☐	**MPS B:** Upgrade proceeds.	Many informational messages appear on the terminal screen as the upgrade proceeds. The messages are not shown here for clarity sake. When upgrade is complete, the server reboots.
13. ☐	**MPS B:** Upgrade completed.	After the final reboot, the screen displays the login prompt as in the example below. 
14. ☐	**MPS B:** Log in as "root" user.	**consolelogin: root** **password: *password***
15. ☐	**MPS B:** Verify that upgrade is complete and no error occurred during upgrade.	**# grep "UPGRADE IS COMPLETE" /var/TKLC/log/upgrade/upgrade.log** 1609483273:: UPGRADE IS COMPLETE **# grep -i error /var/TKLC/log/upgrade/upgrade.log** **# grep -i error /var/TKLC/log/upgrade/ugwrap.log** Check the output of the above log files. Contact the Technical Assistance Center following the instructions on the Appendix D, if the output contains any errors besides the following: 1360915135::myisamchk: error: File '/var/TKLC/appl/drbd/mysql/data/*/*.MYI' doesn't exist 1360915135::myisamchk: error: File '/var/TKLC/appl/drbd/mysql/data/*/*.MYI' doesn't exist error : Table upgrade required. Please do "REPAIR TABLE All those messages are expected, and therefore aren't considered errors.

		Refer to section 3.5to know more about logging.
16. ☐	**MPS B:**Verify ELAP release.	**# rpm -qi TKLCelap** Name : TKLCelapRelocations: (not relocatable) Version : 5.0.1 Vendor: Tekelec Release : **10.0.1_100.1.0** Build Date: Wed 19 Dec 2012 05:31:28 PM EST Install Date: Mon 31 Dec 2001 09:28:29 PM EST Build Host: diablo-9.tekelec.com Group : Development/Build Source RPM: TKLCelap-5.0.1-10.0.0_100.1.0.src.rpm Size : 127154002 License: © TEKELEC 2013 Signature : (none) Packager : <@tekelec.com> URL : http://www.tekelec.com/ Summary : Tekelec ELAP Package Description : This is the Oracle Communications EAGLE LNP Application Processor(ELAP) package. The package installs ELAP software. Eagle LNP Application Processor (ELAP)provides REALLY INCREDIBLE Database (RIDB). ELAP provides the LNP feature. #
17. ☐	**MPS A:** Failover to ELAP-B. Expand the "Maintenance" Folder. Expand the "High Availability" Folder. Select the "Change Settings" link. Select option "Standby" for Local machine. Click on the "Update" button. Confirmation that an attempt has made to transition local HA status to STANDBY will appear.	

	Note: If lynx text GUI is used, then use the command line option to perform HA failover.	Login to ELAP A as root user and execute the following command to perform the failover: **# /usr/TKLC/plat/sbin/hafailover --gostandby**
18. ☐	**MPS A:** Perform upgrade	Repeat steps 5 to 16, to upgrade ELAP A.
19. ☐	**MPS A:**Recovery from DRBD split brain	Login to ELAP A as root user and execute the following commands to recover from DRBD Split Brain: **# drbdadm disconnect drbd0** **# drbdadm -- --discard-my-data connect all**
20. ☐	**MPSB:** Recovery from DRBD split brain	Login to ELAP B as root user and execute the following command to recover from DRBD Split Brain: **# drbdadm connect all**
21. ☐	**MPSA and B:**Check if DRBD Split Brain is recovered	Run following command as root user to check if split brain condition is recovered: **# cat /proc/drbd** Expected Output on Active Server: **0: cs:Connectedst:Primary/Secondary ds:UpToDate/UpToDate C r---** Expected Output on Standby Server: **0: cs:Connectedst:Secondary/Primary ds:UpToDate/UpToDate C r---** If output is not as expected repeat steps 19 and 20
22. ☐	**MPS A and B:** Enable drbd disk module in syscheck	Enabled rdb disk checking in syscheck using following command: **# syscheckAdm --enable disk drbd**
23. ☐	**MPS A and B:** Obtain the uptime of the system for logging purposes.	**# uptime** 13:19:02 up 43 min, 11:28, 1 user, load average: 0.08, 0.09, 0.08
24. ☐	**MPS A:**Start the ELAP Application. **Note:** ELAP will not start again if it is already running.	**# /etc/init.d/Elap start** ~~ /etc/init.d/Elap start ~~ ELAP application started Successfully.
25. ☐	**MPS A and B:** Obtain the status of the system.	**[root@mps-e5appb-a ~]$ hastatus** ACTIVE **[root@mps-e5appb-b ~]$ hastatus** STANDBY If status is not Active/Standby, contact the Technical Assistance Center following the instructions on the Appendix D.
26. ☐	**MPS A and B:** Inspect the banner for any messages.	**# manageBannerInfo -l** There are currently no BannerInfo messages for this side in the database.

		If unexpected output is returned then contact the Technical Assistance Center following the instructions on the Appendix D.
27. ☐	**MPS A and B:** Verify Health of MPS A and MPS B	Execute Appendix 7.2A.1on MPS B to verify the health of MPS B. If the incremental upgrade with split-mirror was performed, the syscheck utility will report the "3000000000000002 -- Server Internal Disk Error" alarm until the procedure to accept the upgrade has been performed. Verify that no unexpected alarms are noted.
28. ☐	**MPS A:** Verify DRBD status. Check the CS value as 'Connected'. **Note:** If CS value is other than 'Connected', periodically run drbd status until both ELAPs get synced.	Execute the following command to display the DRBD status. **# service drbd status** drbd driver loaded OK; device status: version: 8.0.11 (api:86/proto:86) GIT-hash: b3fe2bdfd3b9f7c2f923186883eb9e2a0d3a5b1b build by phil@mescal, 2008-02-12 11:56:43 m:res cs st ds p mounted fstype 0:drbd0 Connected Primary/Secondary UpToDate/UpToDate C **Expected status:** **CS:** Connected **ST:** Primary/Secondary **DS:** UpToDate/UpToDate If any status is not as expected then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
29. ☐	**MPS A GUI:** Enable the LSMS Connection. Expand the "Maintenance" Folder. Expand the "LSMS Connection" Folder. Select the "Change Allowed" link. Click on the "Enable LSMS Connection" button. Confirmation that the connection is enabled will appear.	 

30. ☐ ☐ ☐ ☐	**MPS A:** Verify RTDB status Login to ELAP GUI using VIP. Expand the "RTDB" Folder. Select the "View RTDB Status". Ensure that the DB Status is Coherent.	 If the RTDB status is other than Coherent, contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
31. ☐	Reboot Eagle cards.	If the DB levels on ELAP and Eagle matches and there is no alarm on Eagle related to "RTDB reload is required", skip this step to go to the next step. Otherwise, execute Appendix A.5on the Eagle STP connected to the ELAP servers to reload SM cards.
32. ☐	Procedure complete.	This procedure is complete.

THIS COMPLETES THE UPGRADE

7. BACKOUTPROCEDURES

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 following the instructions on the front page or the instructions on the Appendix D for further instructions.

Note: **These recovery procedures are provided for the backout of an Incremental Upgrade with Split-Mirror ONLY (i.e., from a failed 10.y release to the previously installed 10.x release). Backout of an initial installation is not supported.**

7.1 Backout Setup

The reason to execute a backout 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 have to have login access to the affected MPS server, probe the server for the root cause of the problem, and execute whatever setup or cleanup is necessary in order to prepare the MPS server for backout.

No matter the initial cause of the upgrade problem, once all necessary corrective steps have been taken to prepare for the backout, then the following procedure can be executed to perform a backout. On a backout of an incremental upgrade with split-mirror, the server will remain in runlevel 3 (no applications running) and no disk mirroring will occur. The user will be required to manually reboot the server to bring it back into service and a syscheck can be performed.

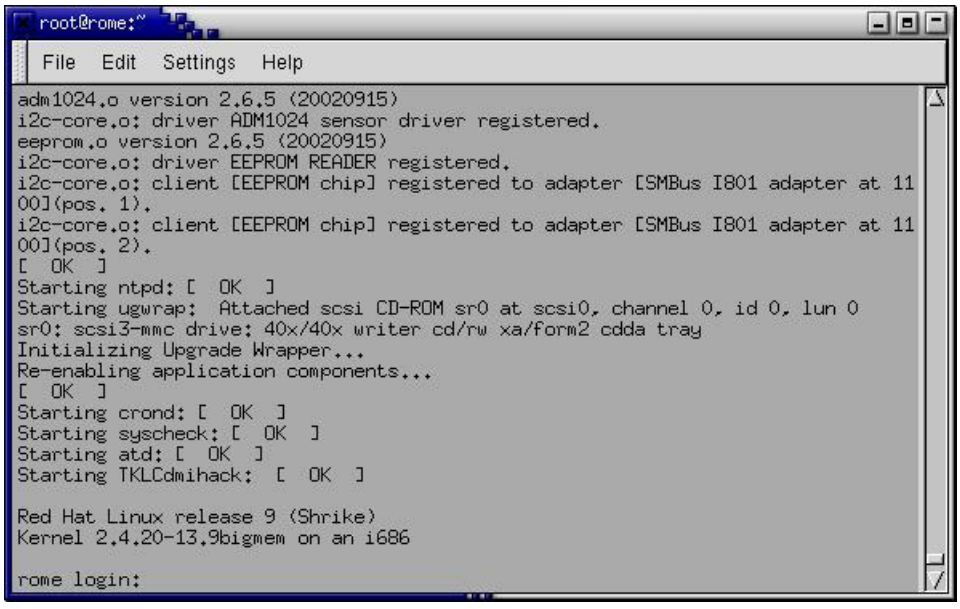
7.2 Perform Backout

Procedure 15: Both MPS A and B Backout Procedure

S T E P #	This procedure provides instructions to perform backout on both MPS A and MPS B servers. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. **Note: Execute this procedure only if both MPS A and MPS B have been upgraded or partially upgraded and you wish to backout both servers to the previous version. If only one MPS needs a backout, perform backout on that server. If both need a backout, backout MPS A first, and then MPS B. Note if the upgrade type was incremental upgrade with split-mirror and the upgrade has been accepted, this procedure cannot be executed.**	
1. ☐	**MPS A:**Log in to the server as user "root".	If not already logged in, then login as "root": `console login: root` `Password: <password>`
2. ☐	**MPS A:** Verify DRBD status. Check the CS value as 'Connected'.	Execute the following command to display the DRBD status. `# service drbd status` `drbd driver loaded OK; device status:` `version: 8.0.11 (api:86/proto:86)` `GIT-hash: b3fe2bdfd3b9f7c2f923186883eb9e2a0d3a5b1b build by phil@mescal, 2008-02-12 11:56:43` `m:res cs st ds p`

	Note: If CS value is other than 'Connected', periodically run drbd status until both ELAPs get synced.	mounted fstype 0:drbd0 Connected Primary/Secondary UpToDate/UpToDate C **Expected status:** **CS:** Connected **ST:** Primary/Secondary **DS:** UpToDate/UpToDate If any status is not as expected then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
3. ☐	**MPS A:**Verify hastatus	Check the hastatus of MPS A by executing the following command: **$ hastatus** STANDBY If the hastatus is not standby, failover the MPS by executing the following command: **$ /usr/TKLC/plat/sbin/hafailover --gostandby** **$ hastatus** STANDBY
4. ☐	**MPSA and B:**Check if DRBD Split Brain is recovered	Run following command as root user to check if split brain condition is recovered: **# cat /proc/drbd** Expected Output on Active Server: **0: cs:Connectedst:Primary/Secondary ds:UpToDate/UpToDate C r---** Expected Output on Standby Server: **0: cs:Connectedst:Secondary/Primary ds:UpToDate/UpToDate C r---** **If output as expected then skip steps 5 and 6.**
5. ☐	**MPS A:**Recovery from DRBD split brain	Login to ELAP A as root user and execute the following commands to recover from DRBD Split Brain: **# drbdadm disconnect drbd0** **# drbdadm -- --discard-my-data connect all**
6. ☐	**MPSB:** Recovery from DRBD split brain	Login to ELAP B as root user and execute the following command to recover from DRBD Split Brain: **# drbdadm connect all**
7. ☐	**MPS A:**Change directory.	Change to the backout directory. **# cd /var/TKLC/backout**
8. ☐	**MPS A:**Execute the backout.	Execute the following command to initiate the backout: **# ./backout_server**

Procedure 15: Both MPS A and B Backout Procedure

		NOTE: When backout operation asks if you would like to proceed with backout, answer "Y".
9. ☐	**MPS A**: Backout proceeds.	Many informational messages will come across the terminal screen as the backout proceeds. Finally, after backout is complete, a message will be displayed stating that a reboot is required. The server will be at runlevel 3 and no applications are running. Proceed to the next step to verify the backout and manually reboot the server.
10. ☐	**MPS A**: Verify the Backout.	Examine the upgrade logs in the directory"/var/TKLC/log/upgrade" and verify that no errors were reported. `# grep -i error /var/TKLC/log/upgrade/upgrade.log` `# grep -i error /var/TKLC/log/upgrade/ugwrap.log` Examine the output of the above commands to determine if any errors were reported. Refer to section 3.5to know more about logging.
11. ☐	**MPS A**: Verify the Backout.	If the backout was ***not*** successful and errors were recorded in the logs, then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D for further instructions. If the backout ***was*** successful, then enter continue with the following steps:
12. ☐	**MPS A**: Backout completed.	After the reboot, the screen will display the login prompt, as shown in the example below. 
13. ☐	**MPS A**: Verify Health of MPS A.	Execute AppendixA.1 on MPS A to verify the health of MPS A
14. ☐	**MPS B:**Log in to the server as user "root".	`<hostname> console login: root`

Procedure 15: Both MPS A and B Backout Procedure

		Password: <password>
15. ☐	**MPS B**: Perform backout	Repeat steps 3 to 13, to perform backout on MPS B.
16. ☐	**MPS A and MPS B:** Verify ELAP release after backout	Execute the following command to verify the ELAP release. **# rpm –qi TKLCelap** The following is an example of what the output may look like: Name : TKLCelap Relocations: (not relocatable) Version : 5.0.1 Vendor: Tekelec Release : 10.0.0_100.1.0 Build Date: Wed 19 Dec 2012 05:31:28 PM EST Install Date: Mon 07 Jan 2013 07:55:29 AM EST Build Host: diablo-9.tekelec.com Group : Development/Build Source RPM: TKLCelap-5.0.1-10.0.0_100.1.0.src.rpm Size : 127154002 License: © TEKELEC 2013 Signature : (none) Packager : <@tekelec.com> URL : http://www.tekelec.com/ Summary : Tekelec ELAP Package Description : This is the Tekelec ELAP Package. The package installs ELAP software. Eagle LNP Application Processor (ELAP) provides REALLY INCREDIBLE Database (RIDB). ELAP provides the LNP feature.
17. ☐	**MPS A:**Recovery from DRBD split brain	Login to ELAP A as root user and execute the following commands to recover from DRBD Split Brain: **# drbdadm disconnect drbd0** **# drbdadm -- --discard-my-data connect all**
18. ☐	**MPSB:** Recovery from DRBD split brain	Login to ELAP B as root user and execute the following command to recover from DRBD Split Brain: **# drbdadm connect all**
19. ☐	**MPSA and B:**Check if DRBD Split Brain is recovered	Run following command as root user to check if split brain condition is recovered: **# cat /proc/drbd** Expected Output on Active Server: **0: cs:Connectedst:Primary/Secondary ds:UpToDate/UpToDate C r---** Expected Output on Standby Server: **0: cs:Connectedst:Secondary/Primary ds:UpToDate/UpToDate C r---** **If output is not as expected then repeat steps 17 and 18.**
20. ☐	Reboot Eagle Cards.	If the DB levels on ELAP and Eagle matches and there is no alarm on Eagle related to "RTDB reload is required", go to next step. Otherwise, execute Appendix A.5on the Eagle STP connected to the ELAP servers to reload SM cards.
21. ☐	**MPS A:**Start the ELAP Application.	**# /etc/init.d/Elap start**

	Note: ELAP will not start again if it is already started.	~~ /etc/init.d/Elap start ~~ ELAP application started Successfully.
22. ☐	**MPS A and MPS B:** Obtain the status of the system.	**[root@mps-e5appb-a ~]$ hastatus** ACTIVE **[root@mps-e5appb-b ~]$ hastatus** STANDBY If status is not Active/Standby, contact the Technical Assistance Center following the instructions on the Appendix D.
23. ☐	**MPS A:** Inspect the banner for any messages.	**# manageBannerInfo -l** There are currently no BannerInfo messages for this side in the database. If unexpected output is returned then, contact the Technical Assistance Center following the instructions on the Appendix D.
24. ☐	**MPS A:** Verify DRBD status. Check the CS value as 'Connected'. **Note:** If CS value is other than 'Connected', periodically run drbd status until both ELAPs get synced.	Execute the following command to display the DRBD status. **# service drbd status** drbd driver loaded OK; device status: version: 8.0.11 (api:86/proto:86) GIT-hash: b3fe2bdfd3b9f7c2f923186883eb9e2a0d3a5b1b build by phil@mescal, 2008-02-12 11:56:43 m:res cs st ds p mounted fstype 0:drbd0 Connected Primary/Secondary UpToDate/UpToDate C **Expected status:** **CS:** Connected **ST:** Primary/Secondary **DS:** UpToDate/UpToDate If any status is not as expected then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
25. ☐	Procedure is complete.	This procedure is complete.

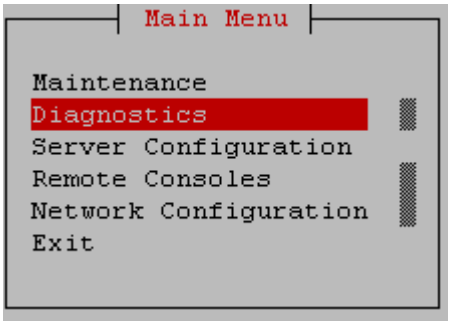
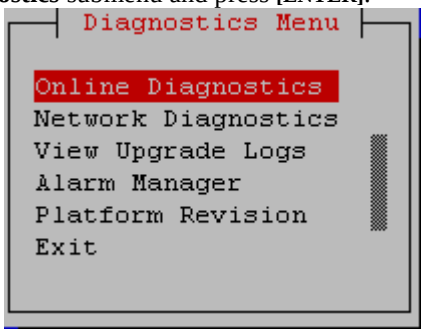
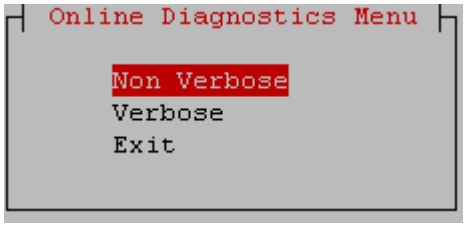
The application should now be running at the original software release level

THIS COMPLETES THE BACKOUT

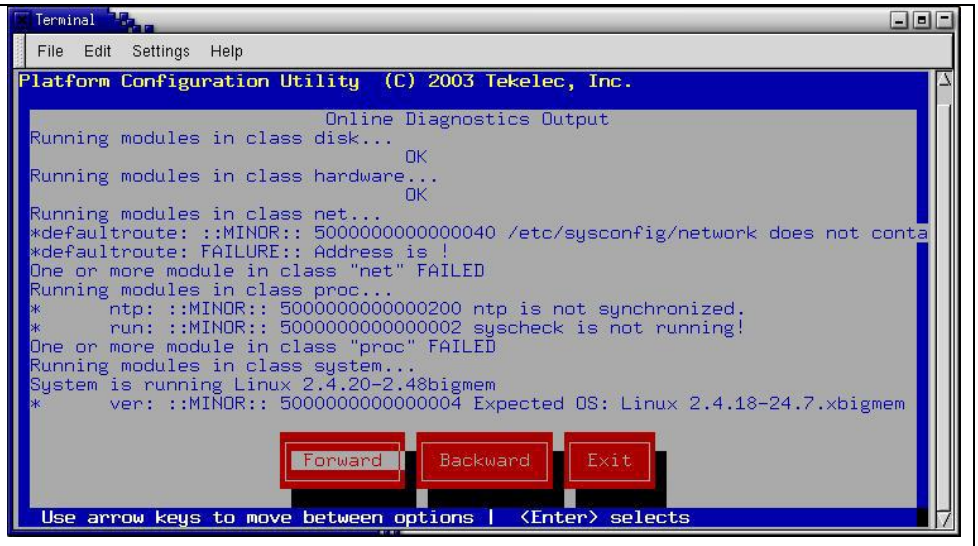
APPENDIX A. GENERIC UPGRADE PROCEDURES

A.1 Perform System Health Check

Procedure 16: Perform System Health Check

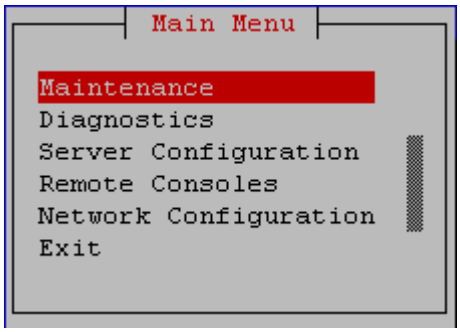
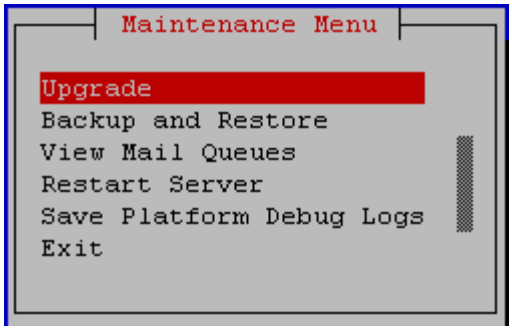
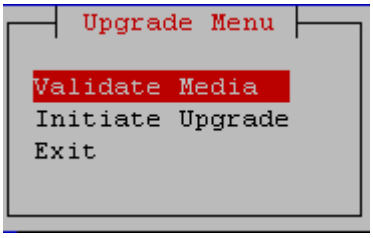
S T E P #	This procedure performs a system health check on any MPS server. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORTAND**ASK FOR UPGRADE ASSISTANCE**.	
1. ☐	Determine the server on which to execute the Health Check.	Determine which server on which you want to execute the Health Check. Execute this procedure in the window for the determined server.
2. ☐	Execute the platcfg menu.	`# su - platcfg`
3. ☐	Select the Diagnostics submenu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Diagnostics** and press **[ENTER]**. 
4. ☐	Select the Online Diagnostics submenu.	Select the **Online Diagnostics** submenu and press **[ENTER]**. 
5. ☐	Select the Non-Verbose option.	Select the **Non-Verbose** option and press **[ENTER]**. 
6. ☐	Examine the output of the Online Diagnostics.	Example output shown below. Examine the actual output of the Online Diagnostics.

Procedure 16: Perform System Health Check

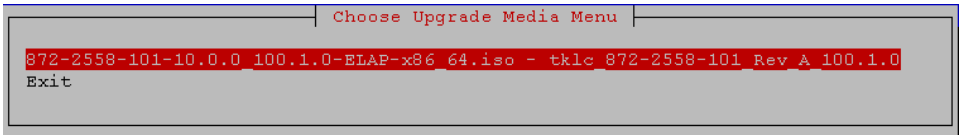
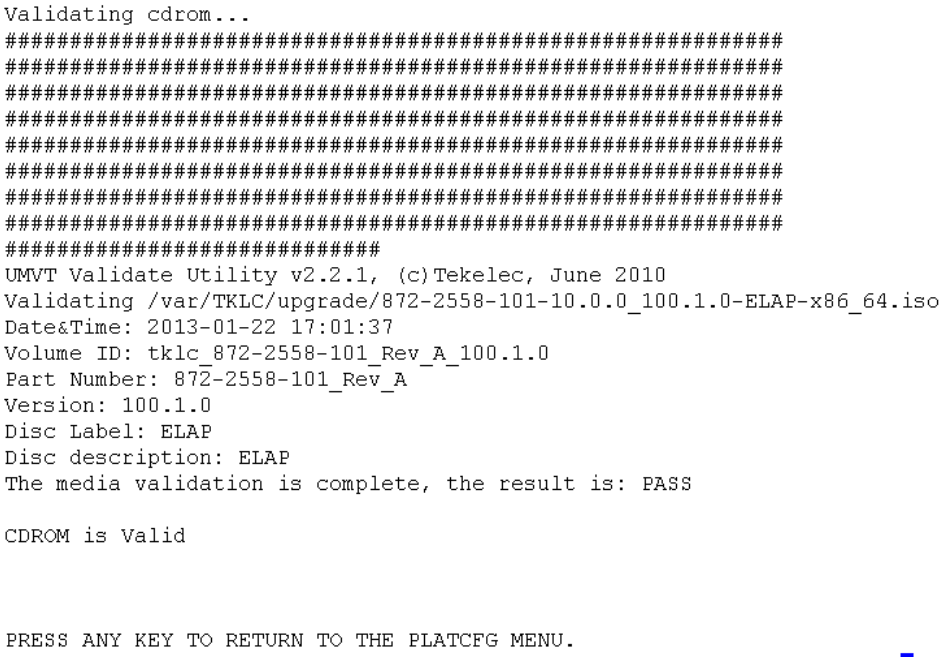
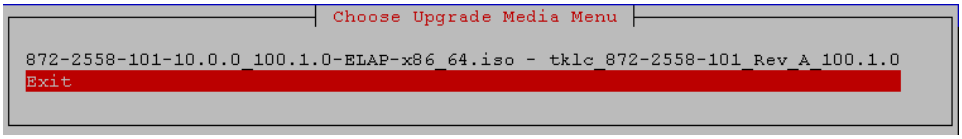
		 Note: The actual results from this example.
7. ☐	System Check Successful. System Check Failure.	Exit from the above menu. If the System Check was successful, return to the procedure that you came here from. If any other failures were detected by System Check, contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D.
8. ☐	Procedure complete.	This procedure is complete.

A.2 Validate Upgrade Media

Procedure 17: Validate the Upgrade Media on MPS

S T E P #	This procedure provides instructions to perform a validation of the upgrade media on the MPS X server. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND ASK FOR UPGRADE ASSISTANCE.	
1. ☐	**MPS X:**If necessary, log in to the server as the user "root".	`console login:  root` `password:  <password>`
2. ☐	**MPS X:**Execute the platcfg menu.	`# su - platcfg`
3. ☐	**MPS X**: Select the Maintenance submenu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Maintenance** and press **[ENTER]**. 
4. ☐	**MPS X**: Select the Upgrade submenu.	Select the **Upgrade** menu and press **[ENTER]**. 
5. ☐	**MPS X:** Select the Validate Media selection.	Select the **Validate Media** menu and press **[ENTER]**. 

Procedure 17: Validate the Upgrade Media on MPS

6. ☐	**MPS X**: Output from the Validate Media selection.	The screen will display a message that it is searching for upgrade media. Once the upgrade media is found, an Upgrade Media selection menu will be displayed similar to the example shown below. Select the upgrade media or ISO image. There should only be one selection available, as shown in the example below. If there is more than one selection available, contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix D. 
7. ☐	**MPS X**: View the Validation results.	The results of the validation will be displayed, similar to the example below. Press the "enter" key to continue. 
8. ☐	**MPS X**: Select the Exit option.	Select the **Exit** option, and keep selecting the Exit option, until you exit the platcfg menu. 
9. ☐	**MPS X**: Procedure complete.	This procedure is complete.

A.3 ISO Image copy from USB Media

Assumption: The USB media contains the desired ELAP ISO.

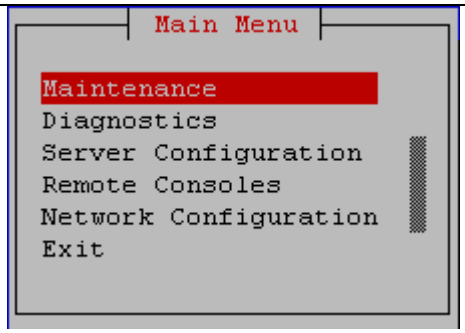
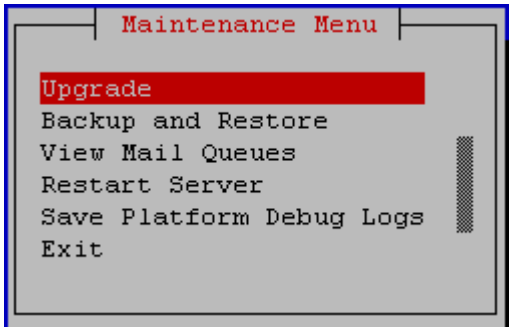
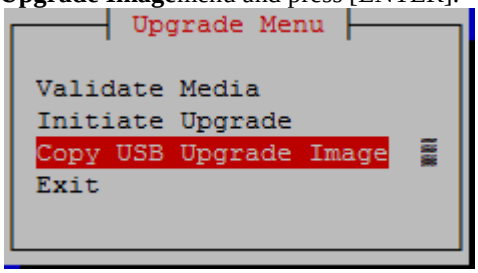
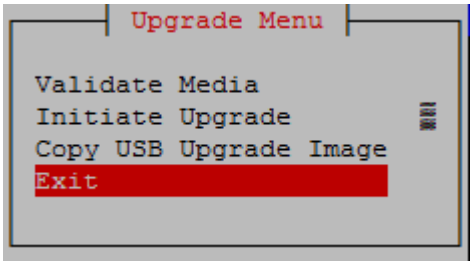
Procedure 18: ISO Image copy from USB media

S T E P #	This procedure provides instructions to copy an ISO image from an USB media. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND ASK FOR UPGRADE ASSISTANCE.	
Note: In the following procedure, the ELAP ISO used can be either with .iso or .usb extension. If ISO is being copied to the USB media using Windows machine, then copy the .iso extension, otherwise if using Unix/Linux/TPD machine to copy the ISO to the USB media, then copy the .usb extension ISO.		
1. ☐	**MPS X:** Insert USB.	Insert media in USB drive
2. ☐	**MPS X:** Log in to the server as the "root" user.	`[hostname] consolelogin: root` `password: password`
3. ☐	**MPS X:** Run syscheck to make sure there is no error.	Execute the following command: `# syscheck` The output should look like: `[root@hostname ~]# syscheck` `Running modules in class proc...` `OK` `Running modules in class services...` `OK` `Running modules in class system...` `OK` `Running modules in class disk...` `OK` `Running modules in class hardware...` `OK` `Running modules in class net...` `OK` `LOG LOCATION: /var/TKLC/log/syscheck/fail_log`
4. ☐	**MPS X:** Verify ISO image doesn't already exist.	Execute the following command to perform directory listing: `# ls -al /var/TKLC/upgrade` The output should should not contain any undesired ISO image: `[root@hostname ~]# ls -al /var/TKLC/upgrade` `total 16` `dr-xr-xr-x  2 root root 4096 Oct 22 16:31 .` `dr-xr-xr-x 21 root root 4096 Oct 18 13:40 ..` If an undesired ISO image exists, remove it by executing the following command: `# rm -f /var/TKLC/upgrade/<ISO image>`
5. ☐	**MPS X:** Delete unwanted ISOs from USB media.	Execute the following command to create a directory to mount the USB media: `# mkdir -p /mnt/usb` Execute the following command to get the USB drive name: `# fdisk -l |grep FAT`

Procedure 18: ISO Image copy from USB media

		The output should look like: `/dev/sdc1  *  1  812  831472  6  FAT16` Execute the following command to mount the USB media using the USB drive name from the output above: **`# mount /dev/sdc1 /mnt/usb`** Execute the following command to perform directory listing and verify the file name format is as expected: **`# ls -al /mnt/usb`** The output should look like: `[root@hostname ~]# # ls -al /mnt/usb` `total 629400` `dr-xr-xr-x  2 root root  4096 Oct 16 13:33 .` `dr-xr-xr-x 22 root root  4096 Oct 16 13:55 ..` `-rw-r--r--  1 root root 643852288 Oct 15 15:37 872-2433-101-10.0.0_150.17.0-ELAP-x86_64.iso` Only one ISO file should be listed, if additional files are listed, execute the following command to remove unwanted ELAP ISOs: **`# rm -f /mnt/usb/<ISO_NAME>`** For e.g., **`# rm -f /mnt/usb/872-2433-101-10.0.0_150.10.0-ELAP-x86_64.iso`** Execute the following command to unmount the USB media: **`# umount /mnt/usb`**
6. ☐	**MPS X:** Verify space exists for ISO.	Execute the following command to verify the available disk space: **`# df -h /var/TKLC`** The output should look like: `[root@hostname ~]# df -h /var/TKLC` `Filesystem  Size  Used Avail Use% Mounted on` `/dev/md8  4.0G  89M  3.7G  3% /var/TKLC` Verify that there is at least 620M in the Avail column. If not, clean up files until there is space available. **CAUTION: Make sure you know what files you can remove safely before cleaning up. It is recommended that you only clean up files in the /var/TKLC/upgrade directory as this is a platform owned directory that should only contain ISO images. This directory should not be expected to contain images for any length of time as they can get purged. Contact Technical Services beforehand if removing files other than the /var/TKLC/upgrade directory as removing files is dangerous.**
7. ☐	**MPS X:** Start platcfg utility by logging in as user "platcfg".	Execute the following command to change the user: **`# su - platcfg`**
8. ☐	**MPS X:** Select the Maintenance submenu.	On the Main Menu of the Platform Configuration Utility, select **Maintenance** and press **[ENTER]**.

Procedure 18: ISO Image copy from USB media

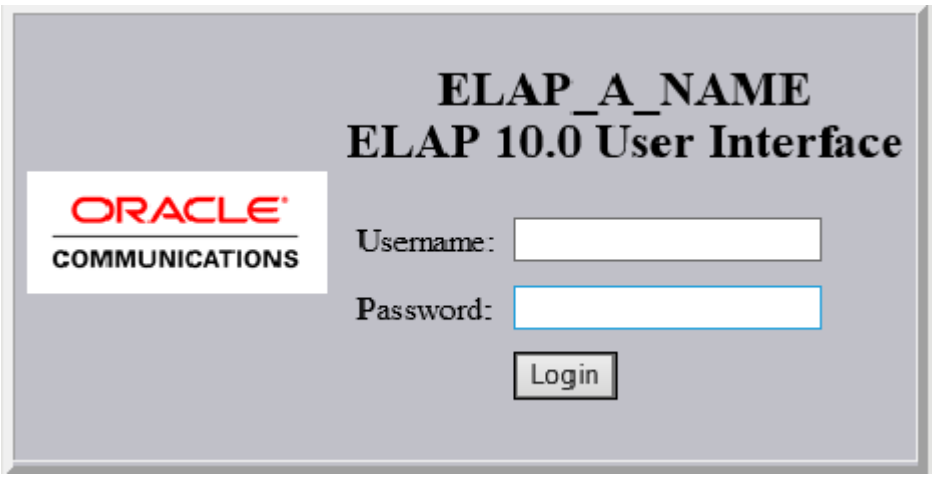
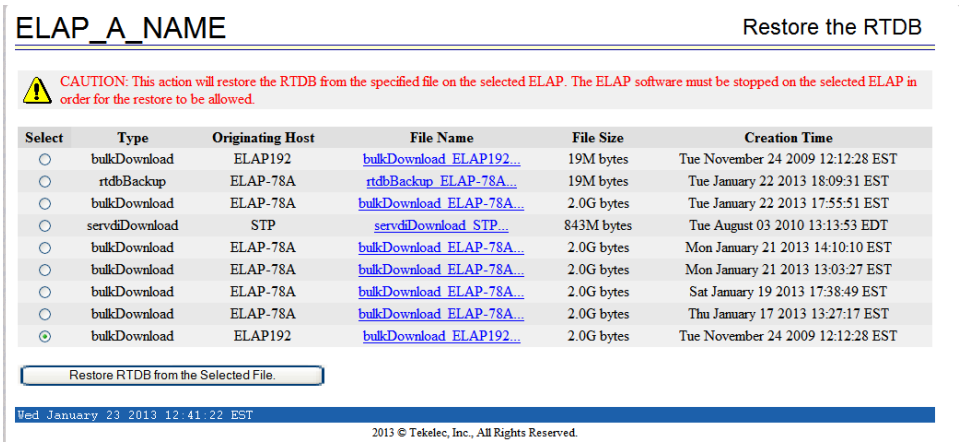
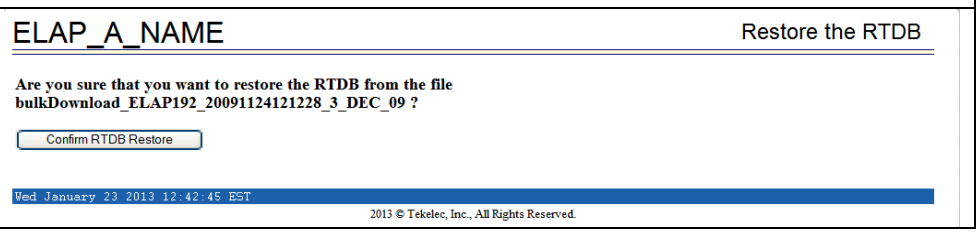
		
9. ☐	**MPS X:** Select the Upgrade submenu.	Select the **Upgrade menu** and press [ENTER]. 
10.	**MPS X:** Select Copy USB Upgrade Image submenu.	Select the **Copy USB Upgrade Image**menu and press [ENTER]. 
11. ☐	**MPS X:** The ELAP ISO will be copied from the USB media to /var/TKLC/upgrade. Press any key to return to Upgrade menu.	`Copying /mnt/upgrade/872-2433-101-10.0.0_100.1.0-ELAP-x86_64.iso...` `PRESS ANY KEY TO RETURN TO THE PLATCFG MENU.`
12. ☐	**MPS X:** Exit platcfg.	Select Exit and press [ENTER] repeatedly until the “platcfg” utility terminates. 

Procedure 18: ISO Image copy from USB media

13. ☐	**MPS X:** Verify ISO image exists.	Execute the following command to perform directory listing: # ls –al /var/TKLC/upgrade The output should look like: `[root@hostname ~]# ls -al /var/TKLC/upgrade` `total 16` `dr-xr-xr-x  2 rootroot 4096 Oct 22 16:31 .` `dr-xr-xr-x 21 rootroot 4096 Oct 18 13:40 ..` `-rw-r--r-- 1 rootroot 643852288 Oct 15 15:37 872-2433-101-10.0.0_150.17.0-ELAP-x86_64.iso` Repeat this procedure from step 5 if ELAP ISO file is not as expected.
14. ☐	**MPS X:** Logout from server.	Logout from the server by executing the following command: `# logout`
15. ☐	**MPS X:** Remove USB media.	Remove media from USB drive.
16. ☐	**MPS X:** Validate ISO file.	Validate ISO file using Procedure 17.
17. ☐	Procedure complete.	This procedure is complete.

A.4 Restore RTDB Database

Procedure 19: Restore RTDB Database

S T E P #	This procedure performs a RTDB Restore from backup database Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND ASK FOR UPGRADE ASSISTANCE.	
1. ☐	**Active ELAP:** Login to GUI as 'uiadmin'.	
2. ☐	**Active ELAP:** Restore RTDB Database Menu. Expand the "RTDB" Folder. Expand the "Maintenance" Folder. Click on "Restore RTDB". Select the database file. Click on "Restore RTDB from the Selected File".	
3. ☐	**Active ELAP:** Confirm the RTDB restore.	

Procedure 19: Restore RTDB Database

4. ☐	**Active ELAP:** Check for the RTDB restore completion banner message.	
5. ☐	**Active ELAP:** Procedure complete.	This procedure is complete.

A.5 Reload SM cards

Procedure 20: Reload SM cards

S T E P #	This procedure reloads the SM cards at the Eagle STP. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORT AND ASK FOR UPGRADE ASSISTANCE.	
1. ☐	**Eagle STP connected to ELAP servers**: Login to the Eagle STP.	login:uid=<Eagle_STP_username> password: <Eagle_STP_username_password> Note. Password is not displayed.
2. ☐	**Eagle STP connected to ELAP servers**: Verify no other RTDB reload alarms are present on the Eagle.	rept-stat-trbl
3. ☐	**Eagle STP connected to ELAP servers**: Issue the command to display SCCP status.	rept-stat-sccp
4. ☐	**Eagle STP connected to ELAP servers**: Response to SCCP status command is displayed. Note card location of all SM cards: SM _____ SM _____ SM _____ SM _____ SM _____	tekelecstp xx-03-09 19:47:19 EST Rel XX.X.X SCCP SUBSYSTEM REPORT IS-NR Active ----- SCCP Cards Configured= 4 Cards IS-NR= 4 Capacity Threshold = 60% CARD VERSION PST SST AST MSU USAGE CPU USAGE ---------- 1218 XXX-XXX-XXX IS-NR Active ----- 29% 4% 1108 XXX-XXX-XXX IS-NR Active ----- 33% 5% 1111 XXX-XXX-XXX IS-NR Active ----- 39% 6% ---------- SCCP Service Average MSU Capacity = 33% Average CPU Capacity = 5% Command Completed. ;
5. ☐	**Eagle STP connected to ELAP servers**: Issue the initialize card command for 1 SM card. Note: This step should be done for 1 SM card, where xxxx is the location of a SM card.	init-card:loc=XXXX (Where XXXX is the location of a SM card recorded in step 4)
6. ☐	**Eagle STP connected to ELAP servers**: Response to the initialize command is displayed.	tekelecstp YY-MM-DD hh:mm:ss EST PPP XX.x.x-YY.y.y * 0261.0013 * CARD XXXX Card is isolated from the system ; tekelecstp YY-MM-DD hh:mm:ss EST PPP XX.x.x-YY.y.y 5038.0014 CARD XXXX Card is present

Procedure 20: Reload SM cards

		`;`
7. ☐	**Eagle STP connected to ELAP servers**: Monitor the progress of SM card being reinitialized	Repeat steps 3 and 4 as necessary to monitor the progress of the SM card being reinitialized and until it is in normal state (IS-NR).
8. ☐	**Eagle STP connected to ELAP servers**: Issue the initialize card command for the rest of SM cards.	Repeat steps 5 to 7 for the rest of cards in 4 batches (booting 1/4 of the cards at a single time). Note: This step should be done for each SM card, where xxxx is the location of each SM card from steps 4, repeat this step until all SM cards have been reloaded but wait until the cards go IS-NR before initializing other set of cards.
9. ☐	**Eagle STP connected to ELAP servers**: Verify no other RTDB reload alarms are present on the Eagle.	`rept-stat-trbl`
10. ☐	**Eagle STP connected to ELAP servers:** Procedure complete.	This procedure is complete.

A.6 Accepting the Upgrade

Procedure 21: Accepting a Incremental Upgrade with Split-Mirror

S T E P #	This procedure provides instructions to accept an incremental upgrade with split-mirror Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORTAND**ASK FOR UPGRADE ASSISTANCE.**	
1 ☐	**MPS X:** Log in to server as the user "root"	`<hostname> console login: root` `password: <password>`
2 ☐	**MPS X:** Execute the Upgrade Accept Script	`# /var/TKLC/backout/accept` The system will reboot and the disk will be synced. It takes between an hour and two to fully sync the disks. To check the status of the sync execute the following command `# cat /proc/mdstat` Expected Output: Personalities : [raid1] md1 : active raid1 sdb1[1] sda1[0] 264960 blocks [2/2] [UU] md3 : active raid1 sdb2[1] sda2[0] 2048192 blocks [2/2] [UU] md8 : active raid1 sdb5[1] sda5[0] 270389888 blocks [2/2] [UU] md7 : active raid1 sdb6[1] sda6[0] 4192832 blocks [2/2] [UU] md4 : active raid1 sdb7[1] sda7[0] 4192832 blocks [2/2] [UU] md6 : active raid1 sdb8[1] sda8[0] 1052160 blocks [2/2] [UU] md5 : active raid1 sdb9[1] sda9[0] 1052160 blocks [2/2] [UU] md2 : active raid1 sdb3[1] sda3[0] 1052160 blocks [2/2] [UU]
3 ☐	Procedure complete	This procedure is complete.

A.7 Using Console Login During Upgrade

Procedure 22: Using Console Login During Upgrade

S T E P #	This procedure provides instructions to login using console while upgrading the server Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE SUPPORTAND**ASK FOR UPGRADE ASSISTANCE.**	
1 ☐	**MPS X:** Log in to server as the user "root"	`<hostname> console login:  root` `password:  <password>`
2 ☐	**MPS X:** Execute command	`#  screen -L`
3 ☐	**MPS X:**Login to mate serially	Use below command to login to mate serially to check progress for upgrade. `#  minicom mate`

APPENDIX B. SWOPS SIGN OFF.

Discrepancy List

Date	Test Case	Description of Failures and/or Issues. Any CSR's / RMA's issued during Acceptance. Discrepancy	Resolution and SWOPS Engineer Responsible	Resolution Date:

APPENDIX C. CUSTOMER SIGN OFF

Sign-Off Record

*** **Please review this entire document**. ***
This is to certify that all steps required for the upgrade successfully completed without failure.

Sign your name, showing approval of this procedure, and email this page and the above completed Table to Tekelec, email: upgrades@tekelec.com.

Customer: Company Name:_____ Date: _____

Site: Location:_____

Customer:(Print)_____ Phone:_____

Fax: _____

Start Date: _____ Completion Date: _____

This procedure has been approved by the undersigned. Any deviations from this procedure must be approved by both Tekelec and the customer representative. A copy of this page should be given to the customer for their records. The SWOPS supervisor will also maintain a signed copy of this completion for future reference.

Tekelec Signature: _____ Date: _____

Customer Signature: _____ Date: _____

APPENDIX D. MY ORACLE SUPPORT

 **CAUTION: Use only the guide downloaded from the Oracle Technology Network (OTN)** (http://www.oracle.com/technetwork/indexes/documentation/oracle-comms-tekelec-2136003.html).

Before upgrading your system, access the **My Oracle Support** web portal (https://support.oracle.com) and review any Knowledge Alerts that may be related to the Upgrade.

Before beginning this procedure, contact My Oracle Support and inform them of your upgrade plans. If installing for an Oracle customer on a customer site, obtain the customer's Support Identifier (SI) before requesting assistance.

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

Phone: Contact your local Oracle Global Customer Support Center (http://www.oracle.com/support/contact.html)

Make the following selections on the Support telephone menu:

1. Select '**2**' for New Service Request
2. Select '**3**' for Hardware, Networking and Solaris Operating System Support
3. Select '**1**' for Technical Issues and when talking to the agent, please indicate that you are an existing Tekelec customer