Oracle® Communications
EAGLE Application Processor

Incremental Upgrade/Installation Guide

Release 16.2

E87680-07

October 2025

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 running upgrade on 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 I Upgrade.

Before beginning this procedure, contact My Oracle Support and inform them of your upgrade plans.
Refer to Appendix Efor 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 EPAP 16.2 application software if it is not currently installed on an in-service E5-APP-B system running a release of TPD 7.4.x.
b. A major software upgrade on an in-service E5-APP-B system running a release equal to TPD 7.0.x and EPAP Release 16.1.x
c. An incremental software upgrade on an in-service E5-APP-B system running a release equal to TPD 7.4.x and EPAP Release 16.2.x

The audience for this document consists of Oracle 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 upgrade. This document does not address feature activation.

1.2 References

1.2.1 External

[1] *EAGLE Application Processor (EPAP) Administration Guide*, E54368-01, latest revision, Oracle

[2] *EPAP 16.2 Administration Manual, Oracle*

1.2.2 Internal (Oracle)

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

[1] *TEKELEC Acronym Guide*, MS005077, revision 2.35, September 2005.

[2] *Software Upgrade Procedure Template*, TM005074, Current Version

[3] *Integrating MPS into the Customer Network*, TR005014, version 3.1, October 2009

[4] *TPD Initial Product Manufacture – TPD 7.4+*, E53017-04, Latest revision

[5] *PFS EPAP 16.2*, CGBU_019468, Latest revision

[6] *EPAP Administration Manual for EPAP 16.2*, Latest version

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]:

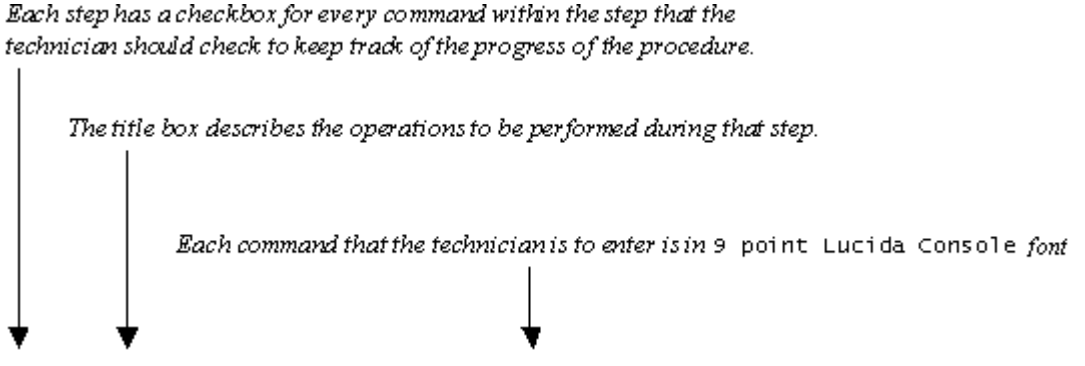
Table 1. Acronyms

AS	Application Server
E5-APP-B	E5 Based Application Card
E5APPB-01	E5 Based Application card installed with **300**G SSD Hard Drive
E5APPB-02	E5 Based Application card installed with **480**G SSD Hard Drive
OCEPAP	Oracle Communication EAGLE Provisioning Application Processor
GA	General Availability
IPM	Initial Product Manufacture

LA	Limited Availability
MPS	Multi-Purpose Server
MOS	My Oracle Support
SM	Service Module
TPD	Tekelec Platform Distribution

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 (Section 3.2)

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

Other terminology follows.

Table 2. Terminology

Backout (abort)	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.
Mixed EPAP	An EPAP where both PDB and RTDB databases reside.
Non-provisionable (Non-prov) EPAP	An EPAP server hosting a Real Time DB without any provisioning interfaces to external provisioning applications. Non-Prov servers are connected to a pair of Provisionable EPAP from where they get their updates.
Provisionable EPAP	An EPAP server hosting PDB with provisioning interfaces to AS. Both Mixed EPAP and Standalone PDB are Provisionable EPAP.
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.

Split Mirror	Systems that use software RAID instead of hardware RAID can use the software RAID mirrors as a backout mechanism. Conceptually in a software RAID1 with two disks there are two sides to the mirror; let them be side A and side B. For a system with multiple software RAID devices, each device will have an A side and a B side. For an upgrade with a BACKOUT_TYPE=SPLIT_MIRROR the upgrade will break the mirrors at the beginning of the upgrade and perform the upgrade on the ***Asides*** of the mirrors. The other sides of the mirrors (***B sides***) are left intact in their pre-upgrade state throughout the duration of the upgrade. When a backout is performed the system is rebooted into the same 'backout environment'. Inside this 'backout environment' the RAID mirrors are rebuilt from the ***B sides*** of the arrays, thus restoring the system to the pre-upgrade state
Standalone PDB	Also known as 'PDB Only', this type of EPAP shall have PDB database only. No RTDB database shall exist on the standalone PDB site.
Target release	Software release to upgrade to.
Upgrade media	USB media or ISO image for E5-APP-B.

1.6 Recommendations

This procedure should be followed thoroughly utilizing the steps as written. **When planning to run upgrade on the server, contact My 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 My 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:
   - Information such as ***time*** and ***date***.
   - 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 procedure 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 My Oracle Support is not present during the execution of procedures.
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.

1.8 Requirements

- Screen logging is required throughout the procedure. These logs should be made available to My Oracle Support in the event their assistance is needed.
- Target-release USB media or ISO image

2. GENERAL DESCRIPTION

This document defines the step-by-step actions performed to execute a software upgrade of an in-service MPS running the EPAP application from the source release to the target release on **E5-APP-B-01/02**.

For the EPAP application, some steps in this procedure refer to the PDB application feature on the MPS A of the MPS pair. The EPAP application makes it optional for a newly installed MPS A node to be configured as a Provisioning (PDB) node (upgrades of MPS A nodes already configured as a provisioning node does not change this configuration).

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

Table 3 Install-Upgrade paths

TPD Release for IPM	EPAP Initial Installation Release
7.4.0.0.0_88.31.0 or later	16.2
Major Upgrade Source Release	**Major Upgrade Destination Release**
16.1	16.2
Incremental Upgrade Source Release	**Incremental Upgrade Destination Release**
16.2.x	16.2.y

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

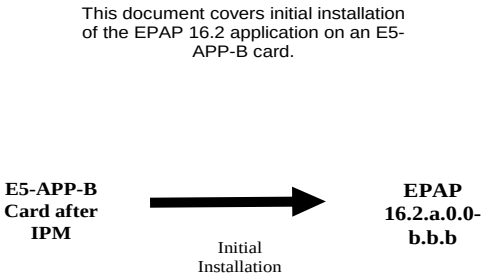


Figure 2: Initial Application Installation Path – Example shown

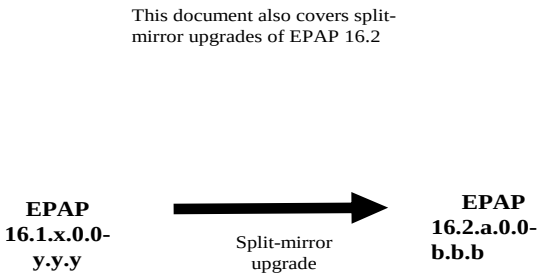


Figure 3: Major Upgrade Path – EPAP 16.2

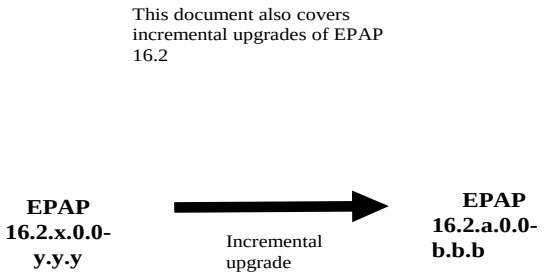


Figure 4: Incremental Upgrade Path – EPAP 16.2

2.1 Upgrading Provisionable EPAP Mated Pairs

Current deployments of the EPAP support two geographically separated EPAP systems that are "mated", meaning they communicate and replicate PDB information between the two sites. An EPAP system is a pair of MPS servers (an **A** and a **B** node). So a mated pair of EPAP systems consists of four MPS servers, an **A** and a **B** node for each EPAP system (see Figure 5: EPAP Mated Pairs). EPAP allows more than two EPAP systems in a related configuration (up to 22 Non-Provision able MPS servers).

This document describes upgrade (and, if necessary, backout) of the EPAP software on one system, that system consisting of two MPS servers (A and B). However, for mated pairs of EPAP systems, upgrades (and backouts) must be coordinated between both the local EPAP system and the remote EPAP system and performed during the same maintenance period.

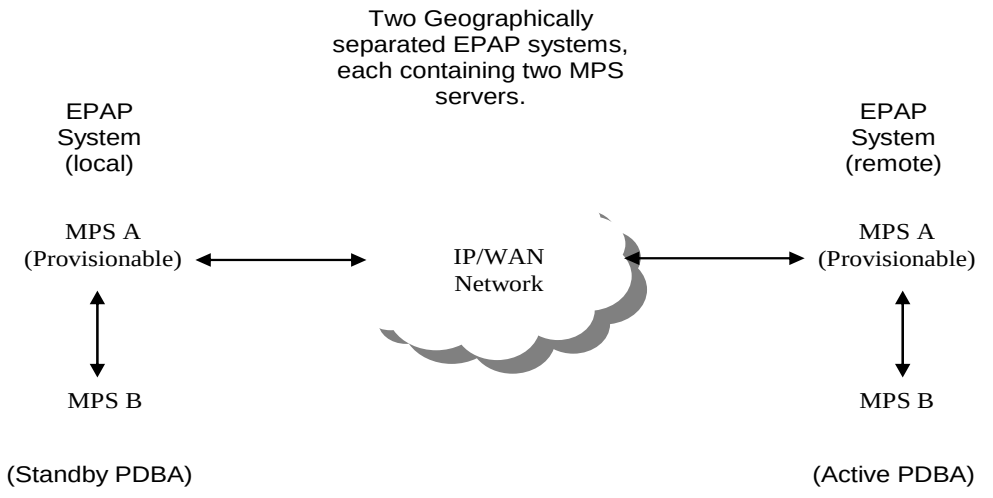


Figure 5: EPAP Mated Pairs

Upgrade of mated EPAP systems must be carried out in the following order:

1. **Ensure PDB databases are at the same level. Stop all provisioning to ensure that all PDB databases are in sync before proceeding. Also, ensure that no PDB/RTDB maintenance activity is in progress and clear all scheduled activities.**
2. Local MPS-B
3. Local MPS-A (Standby PDBA)
4. Remote MPS-B
5. Remote MPS-A (Active PDBA)

When upgrade is initiated on the local MPS-B, the scripts controlling the upgrade will cause the local MPS-B to communicate using Secure-Shell to both the local MPS-A and the remote MPS-A to stop the PDBA software. The PDBAs should be restarted only after both the local and remote EPAP systems have successfully completed the upgrade.

NOTE: Since the PDBA software is not running immediately after an upgrade, the syscheck utility will alarm the fact that the PDBA is not running on the local and remote EPAP A-servers.

2.2 Backout Provisionable EPAP Mated Pairs

Backout of Provisionable EPAP Mated Pairs should be done in the reverse order that the upgrade was performed:

1. **Identify a PDB backup that was made prior to upgrade, on the EPAP release that backout will target. Note that backout always carries the risk of losing data, should a restore from database backup become necessary.**
2. Remote MPS-A (Active PDBA)
3. Remote MPS-B
4. Local MPS-A (Standby PDBA)
5. Local MPS-B

On a backout of an upgrade, the server will remain in runlevel 3 (no applications running). The user will be required to manually reboot the server to bring it back into service and a syscheck can be performed.

2.3 Upgrading EPAP Non-Provisionable MPS Servers

EPAP Non-Provisional MPS pairs can connect to: Mixed EPAP or Standalone PDB.

2.3.1 Non-Provisional MPS pairs in Mixed EPAP configuration

EPAP provides the ability to expand the concept of a mated pair of EPAP systems to have up to 24 EPAP systems (48 MPS servers total) configured such that two of the MPS-A servers will run the PDBA software and RTDB software both and handle provisioning (Provisionable nodes) and the other 24 MPS-B and 24 MPS-A servers will only run the RTDB software, taking their updates from the two Provisionable MPS-A servers. In such a configuration, it is required that the EPAP systems containing the Provisionable MPS-A servers be upgraded first, before any EPAP systems containing non-Provisionable MPS-A servers are upgraded.

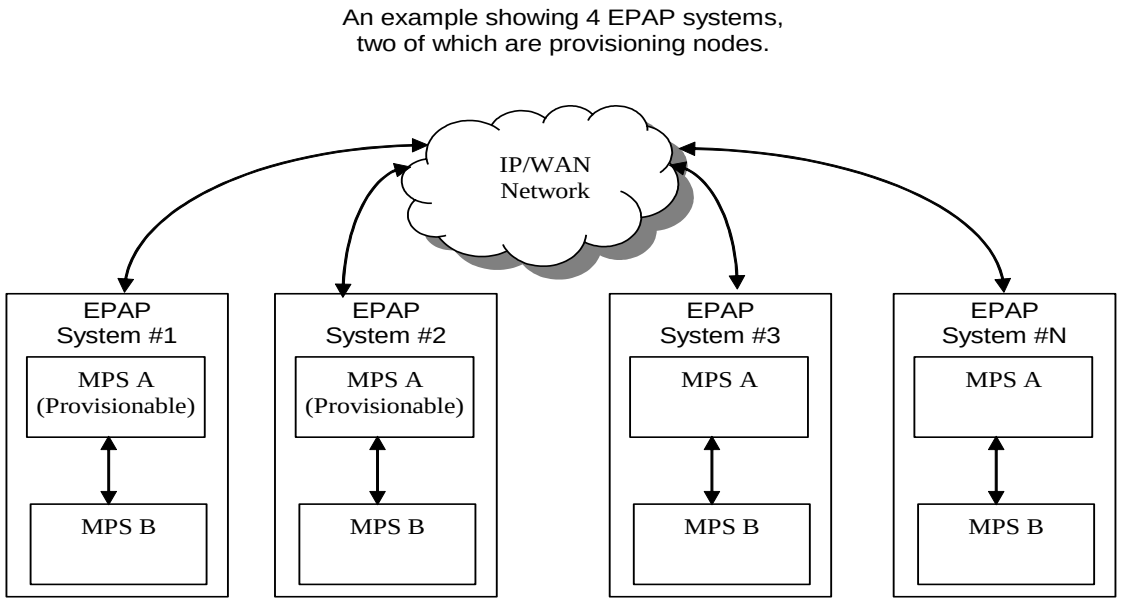


Figure 6: EPAP Mated Pairs with Non-Provisioning MPS Servers

Upgrade of such configuration must be carried out in the following order:

Mixed EPAP **(with standby PDBA)**

1. Mixed EPAP (MPS B)
2. Mixed EPAP (MPS A)

Mixed EPAP **(with active PDBA)**

3. Mixed EPAP (MPS B)
4. Mixed EPAP (MPS A)

Non-provisionable EPAPs (All Non-Provs)

5. Non-Provisionable (MPS B)
6. Non-Provisionable (MPS A)

2.3.2 Non-Provisional MPS pairs in Standalone PDB configuration

EPAP provides the ability to separate the RTDB from PDB to create two architectures: Standalone PDB running PDB process only and Non-Provisionable running RTDB only. Up to 22 Non-Provisional EPAP mated pairs are connected to 2 Standalone PDB that are configured as Active/Standby. In such a configuration, it is required that the Standalone PDB MPS servers be upgraded first, before any EPAP systems containing non-Provisionable MPS-A servers are upgraded.

Upgrade of Non-prov MPS pairs in standalone PDB configuration must be carried out in the following order:

1. Standby PDBonly
2. Active PDBonly
3. Non-Provisionable (MPS B)
4. Non-Provisionable (MPS A)

2.4 Backout EPAP Non-provisionable MPS servers

EPAP Non-Provisional MPS pairs can connect to: Mixed EPAP or Standalone PDB.

2.4.1 Backout Non-Provisionable MPS pairs in dual PDBonly configuration

Backout of Non-Provisionable MPS pairs in Standalone configuration should be done in the reverse order that the upgrade was performed. Please follow the below mentioned steps for backout:

1. Non-Provisionable (MPS - A)
2. Non-Provisionable (MPS – B)
3. Active PDBonly
4. Standby PDBonly

On a backout of an upgrade, the server will remain in runlevel 3 (no applications running). The user will be required to manually reboot the server to bring it back into service and a syscheck can be performed.

2.4.2 Backout Non-Provisionable MPS pairs in mixed EPAP configuration

Backout of EPAP Non-provisionable MPS pairs in mixed EPAP configuration should be done in the reverse order that the upgrade was performed:

Non-provisionable EPAP

1. Non-Provisionable (MPS A)
2. Non-Provisionable (MPS B)

Mixed EPAP **(with active PDBA)**

3. Mixed EPAP (MPS A)
4. Mixed EPAP (MPS B)

Mixed EPAP **(with standby PDBA)**

5. Mixed EPAP (MPS A)
6. Mixed EPAP (MPS B)

3. UPGRADE OVERVIEW

3.1 Upgrade Provisioning Rules

When a Provisionable EPAP mated pair is upgraded or backed out, the EPAP upgrade scripts disable provisioning when the upgrade is initiated on the first MPS server. The PDBA software remains disabled until the last server in the MPS in the mated pair has been upgraded or backed out. The user has to enable the PDBA software, allowing provisioning, after the upgrade/backout is complete on last MPS server in an EPAP mated pair. Provisioning is not disabled during the upgrade of a Non-Provisionable MPS.

Because EPAP MPS pairs are generally located at geographically distinct sites, significant time may elapse between the upgrade of the Provisionable EPAP pair and the upgrade of the Non-Provisionable EPAP pairs. Provisionable EPAP MPS pairs must always be upgraded before Non-Provisionable EPAP pairs.

3.2 Required Materials

- For Mixed EPAP or Non-Provisional EPAP: Two (2) target-release USB media or a target-release ISO file.
  For Standalone PDB: One (1) target-release USB media or a target-release ISO file
- A terminal and null modem cable to establish a serial connection.
- Write down the system configuration information.

Description	Information
PROVISIONABLE (Yes/No)	
PDBA state (Active/Standby)	
Provisioning IP (IPv4)	
Provisioning Mask (IPv4)	
Provisioning Default Router IP (IPv4)	
Provisioning IP (IPv6)	
Provisioning Netmask (IPv6)	
Provisioning Default Router IP (IPv6)	
NTP1 IP (IPv4/IPv6)	
NTP2 IP (IPv4/IPv6)	
NTP3 IP (IPv4/IPv6)	
Local VIP	
Remote VIP	
Local PDBA IP (IPv4)	
Local PDBA IP (IPv6)	
Remote PDBA IP (IPv4/IPv6)	
Remote PDBA B IP (IPv4/IPv6)	
RTDB Homing	
Time Zone	
PDBA Proxy Feature	
Others	

Table 4: System Configuration Information

- Passwords for users on the local system:

EPAP USERS		
login	**MPS A password**	**MPS B password**
epapconfig		
epapdev (needed for backout only)		
syscheck		
root		
epapall (needed for GUI access)		
admusr		

Table 5. User Password Table

3.3 Installation Phases

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 and Table 7 are to be executed in the order they are listed.

3.3.1 Installation Phases for Mixed and Non-Provisionable EPAP

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**
Pre-upgrade check	15	35	Verify requirements for install are met.	**Procedure 3**
Pre-install health check	5	40	Run the syscheck utility to verify that all servers are operationally sound.	**Procedure 4**
Configure Server 1A	5	45	Set hostname, designation, function and time.	**Procedure 5**
Configure Server 1B	5	50	Set hostname, designation, function and time.	**Procedure 6**
Install Servers	30	80	Install software on sides 1A and 1B	**Procedure 7** **Procedure 8**
Configure Switches	30*	110*	Configure the Switches	**Procedure 9**
Post-install application processing	30	140	Perform first time configuration.	**Procedure 11** **Procedure 12**
Post-upgrade health check	5	145	Run the syscheck utility to verify all servers are operationally sound.	**Procedure 4**
Check EPAP-EAGLE connectivity speed	20	185	Configure and verify that EAGLE SM cards are getting auto-negotiated to 1000Mbps/Full Duplex	

Table 6. Installation Phases for Mixed EPAP and Non-Provisional EPAP

***NOTE:** If configuring 4 switches, add 30 minutes to the current setup

3.3.2 Installation Phases for Standalone PDB

Note: In the procedures below, skip the steps which need to be executed on MPS B, since MPS B is not present in the Standalone PDB configuration".

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**
Pre-upgrade check	15	35	Verify requirements for install are met.	**Procedure 3**
Pre-install health check	5	40	Run the syscheck utility to verify that all servers are operationally sound.	**Procedure 4**
Configure Server 1A	5	45	Set hostname, designation, function and time.	**Procedure 5**
Install Server	30	75	Install software on sides 1A	**Procedure 7**
Post-install application processing	30	105	Perform first time configuration. Refer to Procedure A.11to configure the Standalone PDB in segmented network configuration.	**Procedure 11** **Procedure 12**
Post-upgrade health check	5	110	Run the syscheck utility to verify all servers are operationally sound.	**Procedure 4**

Table 7 Installation Phases for Standalone PDB

3.4 Major Upgrade Phases

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

Note: Before proceeding with the Major upgrade process, refer to section 2.1 to get the overview of the EPAP setup and upgrade order.

3.4.1 Major Upgrade Phases for Mixed and Non-Provisionable EPAP

Phase	Elapsed Time (Minutes)		Activity	Procedure
	This Step	Cum.		
Connectivity setup	15	15	Set up connectivity to the MPS servers.	**Procedure 1**
Verify Major upgrade	5	20	Verify this should be a Major upgrade.	**Procedure 2**
Pre-upgrade check	15	35	Verify requirements for Major Upgrade are met.	**Procedure 3**
Pre-upgrade health check	5	55	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 4**
Assess readiness for upgrade	15	50	Assess the server's readiness for upgrade.	**Procedure 13**
Pre-upgrade Backup	*See notes below	*See notes below	Backup application databases and other pertinent information.	**Procedure 14**
Pre-upgrade system time check	5	60	Pre-upgrade system time check.	**Procedure 15**
Upgrade MPS B	30	90	Execute the upgrade procedure on MPS B.	**Procedure 16**
Upgrade MPS A	30	120	Execute the upgrade procedure on MPS A.	**Procedure 17**
Post-upgrade health check	5	125	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 4**
Start the PDB software.	10	135	Step only necessary during upgrade of a Provisionable mated EPAP pair. Re-activate the PDB on the Provisionable MPS A servers.	**Procedure 21**
Verify pdbaips table in EuiDB.	5	140	Verify the pdbaips table in EuiDB. This procedure should only be executed on MPS A.	**Procedure A.21**
Post-upgrade Backups	*See notes below	*See notes below	Backup application databases and other pertinent information.	**Procedure 14**

Table 8 Major Upgrade Phases for Mixed and Non-Provisionable EPAP

3.4.2 Major Upgrade Phases for Standalone PDB

Phase	Elapsed Time (Minutes)		Activity	Procedure
	This Step	Cum.		
Connectivity setup	15	15	Set up connectivity to the MPS servers.	**Procedure 1**
Verify Major upgrade	5	20	Verify this should be a Major upgrade.	**Procedure 2**
Pre-upgrade check	15	35	Verify requirements for upgrade are met.	**Procedure 3**
Pre-upgrade health check	5	55	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 4**
Assess readiness for upgrade	15	50	Assess the server's readiness for upgrade.	**Procedure 13**
Pre-upgrade Backup	*See notes below	*See notes below	Backup application databases and other pertinent information.	**Procedure 14**
Pre-upgrade system time check	5	60	Pre-upgrade system time check.	**Procedure 15**
Upgrade MPS A	30	90	Execute the upgrade procedure on MPS A.	**Procedure 17**
Post-upgrade health check	5	95	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 4**
Start the PDB software.	10	105	Step only necessary during upgrade of a Provisionable mated EPAP pair. Re-activate the PDB on the Provisionable MPS A servers.	**Procedure 21**
Verify pdbaips table.	5	140	Verify the pdbaips table in EuiDB.	**Procedure A.21**
Post-upgrade Backups	*See notes below	*See notes below	Backup application databases and other pertinent information.	**Procedure 14**

Table 9 Major Upgrade Phases on Standalone PDB

***NOTE:** The time needed to backup application data is dependent on the amount of application data. This procedure cannot specify an exact length of time since different customers have different amounts of application data.

3.5 Incremental Upgrade Phases

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

Note: Before proceeding with the incremental upgrade process, refer to section 2.1 to get the overview of the EPAP setup and upgrade order.

3.5.1 Incremental Upgrade Phases for Mixed and Non-Provisionable EPAP

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	5	20	Verify this should be an incremental upgrade.	**Procedure 2**
Pre-upgrade check	15	35	Verify requirements for upgrade are met.	**Procedure 3**
Pre-upgrade health check	5	55	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 4**
Assess readiness for upgrade	15	50	Assess the server's readiness for upgrade.	**Procedure 13**
Pre-upgrade Backup	*See notes below	*See notes below	Backup application databases and other pertinent information.	**Procedure 14**
Pre-upgrade system time check	5	60	Pre-upgrade system time check.	**Procedure 15**
Upgrade MPS B	30	90	Execute the upgrade procedure on MPS B.	**Procedure 16**
Upgrade MPS A	30	120	Execute the upgrade procedure on MPS A.	**Procedure 17**
Post-upgrade health check	5	125	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 4**
Start the PDB software.	10	135	Step only necessary during upgrade of a Provisionable mated EPAP pair. Re-activate the PDB on the Provisionable MPS A servers.	**Procedure 21**
Post-upgrade Backups	*See notes below	*See notes below	Backup application databases and other pertinent information.	**Procedure 14**

Table 10 Incremental Upgrade Phases for Mixed and Non-Provisionable EPAP

3.5.2 Incremental Upgrade Phases for Standalone PDB

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	5	20	Verify this should be an incremental upgrade.	**Procedure 2**
Pre-upgrade check	15	35	Verify requirements for upgrade are met.	**Procedure 3**
Pre-upgrade health check	5	55	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 4**
Assess readiness for upgrade	15	50	Assess the server's readiness for upgrade.	**Procedure 13**
Pre-upgrade Backup	*See notes below	*See notes below	Backup application databases and other pertinent information.	**Procedure 14**
Pre-upgrade system time check	5	60	Pre-upgrade system time check.	**Procedure 15**
Upgrade MPS A	30	90	Execute the Upgrade procedure on MPS A.	**Procedure 17**
Post-upgrade health check	5	95	Run the syscheck utility to verify the MPS server is operationally sound.	**Procedure 4**
Start the PDB software.	10	105	Step only necessary during upgrade of a Provisionable mated EPAP pair. Re-activate the PDB on the Provisionable MPS A servers.	**Procedure 21**
Post-upgrade Backups	*See notes below	*See notes below	Backup application databases and other pertinent information.	**Procedure 14**

Table 11 Incremental Upgrade Phases on Standalone PDB

***NOTE:** The time needed to backup application data is dependent on the amount of application data. This procedure cannot specify an exact length of time since different customers have different amounts of application data.

3.6 Backout Phases

Note: Before proceeding with the backout process, refer to sections 7.1 and 7.2 to get the overview of the EPAP setup and the backout order.

3.6.1 Backout Phases for Mixed and Non-Provisionable EPAP

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 My Oracle Support following the instructions on the front page or the instructions on the Appendix E**
Backout MPS B only	30	45-60	If required, backout MPS B. If backout of MPS A and B is required, execute **Procedure 20**. Otherwise, if backout required only on MPS B, then execute **Procedure 19**		**Procedure 19**
Backout MPS A and B	100	145-160	Backout MPS A and B.		**Procedure 20**
Post-backout health check	10	155-170	Run the syscheck utility to verify the MPS server is operationally sound.	Verify that the backout was successful.	**Procedure 4**
Start the PDBA software	5	160-175	Re-activate the PDB on the Provisionable MPS A servers. **Note: Read the instructions given in Procedure A.1 before executing the procedure.**		**Procedure 21**

Table 12. Backout Phases for Mixed and Non-Provisionable EPAP

3.6.2 Backout Phases for Standalone PDB

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 My Oracle Support following the instructions on the front page or the instructions on the Appendix E.**
Backout MPS A	30	45-60	Backout MPS A.		**Procedure 20 step 1 through 14.**
Post-backout health check	10	155-170	Run the syscheck utility to verify the MPS server is operationally sound.	Verify that the backout was successful.	**Procedure 4**
Start the PDBA software	5	160-175	Re-activate the PDB on the Provisionable MPS A servers.		**Procedure 21**

Table 13. Backout Phases for Standalone PDB

3.7 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.

4. UPGRADE PREPARATION

Procedure 1 Setting up the upgrade environment

Procedure 1: Setting up the upgrade environment

S T E P #	This procedure sets up the upgrade environment. Windows are opened for both MPS servers. **NOTE: Call My Oracle Support 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 MY ORACLE SUPPORT AND **ASK FOR <u>UPGRADE ASSISTANCE</u>.**	
1. ☐	Establish a connection to MPS A.	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 card's adapter and use it for serial access. **Cable part numbers - 830-1220-xx**
2. ☐	On the workstation, open one terminal window in preparation for establishing remote connections to the MPS servers.	Create a terminal window
3. ☐	Create a terminal window for MPS A.	Create a terminal window and give it a title of **"MPS A"**
4. ☐	**MPS A**: Enable capture file and verify the correspondent file is created.	Enable the data capture and verify that the data capture file is created at the path specified.
5. ☐	Log into MPS A.	`<hostname> console login: admusr` `password: <password>`
6. ☐	**MPS A**: Start screen Session.	Execute the following command to start screen and establish a console session with MPS A. `$ screen -L` If for Standalone PDB, the procedure is complete. Otherwise, continue with the next step.
7. ☐	Establish a connection to MPS B.	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 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 card's adapter and use it for serial access. **Cable part numbers - 830-1220-xx**
8. ☐	Create a terminal window for MPS B.	Create a terminal window and give it a title of **"MPS B"**
9. ☐	**MPS B**: Enable capture file and verify a correspondent file is created.	Enable the data capture and verify that the data capture file is created at the path specified.

Procedure 1: Setting up the upgrade environment

10. ☐	Log into MPS B.	`<hostname> console login:  admusr` `password:  <password>`
11. ☐	**MPS B**: Start screen Session.	Execute the following command to start screen and establish a console session with MPS B. `$ screen -L`
6 **12.** ☐	**MPS A and B:** Procedure Complete.	This procedure is complete.

Procedure 2 Determine if upgrade or installation is required

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 MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	

1. ☐	**MPS A**: Log in to MPS A.	If not already logged-in, login at MPS A as 'admusr'.
		
		`<hostname> console login:  admusr`
		`password:  <password>`
		
		.

2. ☐	**MPS B**: Log in to MPS B.	If not already logged-in, login at MPS B as 'admusr'.
		
		`<hostname> console login:  admusr`
		`password:  <password>`

3. ☐	**MPS B:** Determine if the application is currently installed on the servers. (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).	Execute an rpm query command and examine the output: `$ rpm -qi TKLCepap`
4. ☐	**MPS B:** Observe the output from the rpm query.	The following is an example of what the output may look like: **$ appRev** Install Time: Mon Feb 6 21:33:35 2017 Product Name: EPAP Product Release: 16.2.0.0.0_162.6.0 Base Distro Product: TPD Base Distro Release: 7.4.0.0.0_88.32.0 Base Distro ISO: TPD.install-7.4.0.0.0_88.32.0-OracleLinux6.8-x86_64.iso ISO name: EPAP-16.2.0.0.0_162.6.0-x86_64.iso OS: OracleLinux 6.8

Procedure 2: Determine if upgrade or installation is required

		If the output similar to the above example is displayed, then skip to step 6. Otherwise, proceed to the next step.

5. ☐	**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 3.3 to perform EPAP installation.
		
		`$ rpm –qi TKLCepap`
		`package TKLCepap is not installed`
		
		Skip to step 10.

6. ☐	**MPS B:** Determine which version of the application is present.	Write Down the Release Number: Release Number: _____ If the release number on the MPS is less than the release number on the upgrade media, then an upgrade is required.
7. ☐	Determine if a major Upgrade is required.	If the current release is 16.1.x and target release is 16.2.y, it is a **MAJOR** UPGRADE.
8. ☐	Determine if an incremental Upgrade is required.	If the current release is 162.x.x and target release is 16.2.y.y (x.x is less than the number y.y on the upgrade media), it is an **INCREMENTAL** Upgrade.

9. ☐	**MPS A:** Determine if it is Provisionable or Non-Provisionable EPAP setup.	Execute the following command to determine if the EPAP is Provisionable or Non-Provisionable.
		
		`$ uiEdit | grep "PROVISIONABLE"`
		`"PROVISIONABLE_MPS" is set to "YES"`
		
		If the above output contains “YES”, then the EPAP is Provisionable. Otherwise, the EPAP is Non-Provisionable. Write down this information.
		
		EPAP setup type: _____

10. ☐	**MPS A and B:** Procedure Complete.	This procedure is complete.

Procedure 3 Pre-upgrade requirements

Procedure 3: Verifying Pre-Upgrade Requirements and Capturing Upgrade Data

STEP #	This procedure verifies that all pre-upgrade requirements have been met. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORTAND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	Verify all required materials are present.	Verify that the materials listed in Upgrade Material List (Section 3.2) are present.
2. ☐	Verify the availability of passwords for MPS systems.	Refer to Table 5 for the list of users.
3. ☐	Review provisioning rules.	Please review the Provisioning information as defined in Section 3.1. If you do not understand the information provided in this section, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.

4. ☐	Verify and close active GUI Sessions. On the menu, click User Administration->HTTP(s) Support->Terminate UI Sessions	Login to EPAP GUI as uiadmin user. Terminate all the active GUI sessions from EPAP GUI. A Terminate Active UI Sessions Delete? | Session Id | User Id | User Name | Admin | IP Addr | Last Access ○ | 44 | 99 | uiadmin | YES | 10.250.32.216 | 2017-06-20 07:04:11 ○ | 45 | 99 | uiadmin | YES | 10.250.32.216 | 2017-06-20 07:04:20 ○ | 46 | 99 | uiadmin | YES | 10.250.32.216 | 2017-06-20 07:04:33 Delete Selected Active Session Select all sessions and click on "Delete Selected Active Session" to delete all active sessions.
5. ☐	Procedure Complete.	This procedure is complete.

Procedure 4 System Health check

Procedure 4: System Health Check

STEP #	This procedure determines the health of the MPS System before beginning an 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 MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS A**: Verify health of MPS A.	Execute Procedure A.1 on MPS A to verify the health of MPS A.
2. ☐	**MPS B**: Verify health of MPS B.	Execute Procedure A.1 on MPS B to verify the health of MPS B.
3. ☐	Procedure Complete.	This procedure is complete.

5. SOFTWARE INSTALLATION PROCEDURES

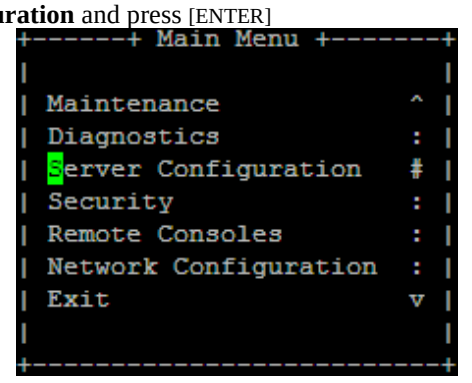
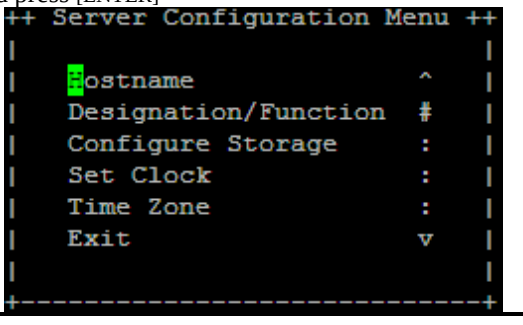
Pre install configuration and initial installation of EPAP can be done on any of the server in the mated pair in any order. These operations can be done simultaneously on both the servers.

Procedure 5 Pre-Install configuration on server A

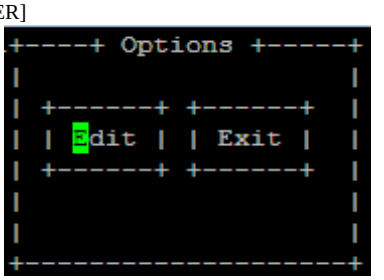
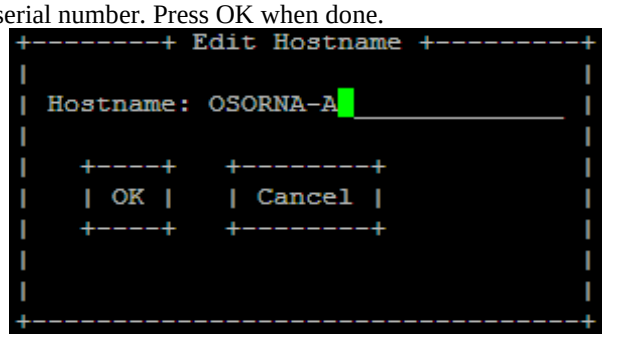
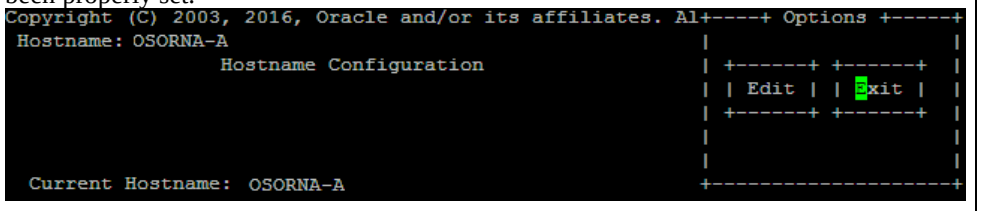
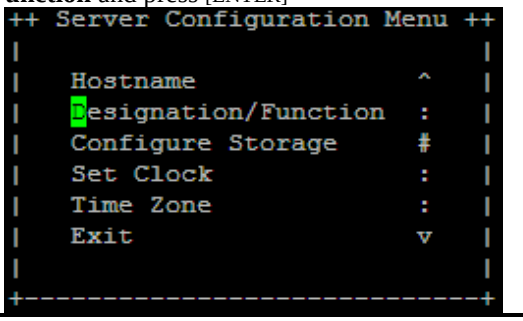
Procedure 5: Pre-Install Configuration on Server A

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 MY ORACLE SUPPORTAND ASK FOR ASSISTANCE.	
IMPORTANT: Installation of the Operating System on an Oracle Application Server should be completed before starting installation procedure. Refer to Procedure A.11 or [4] for TPD installation guide.		
1. ☐	Connect to the Server.	If not already connected, 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 card's adapter and use it for serial access. **Cable part numbers - 830-1220-xx**

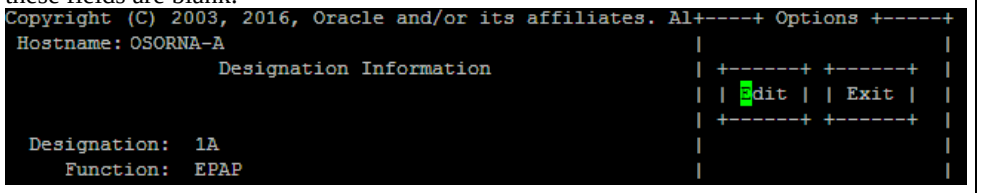
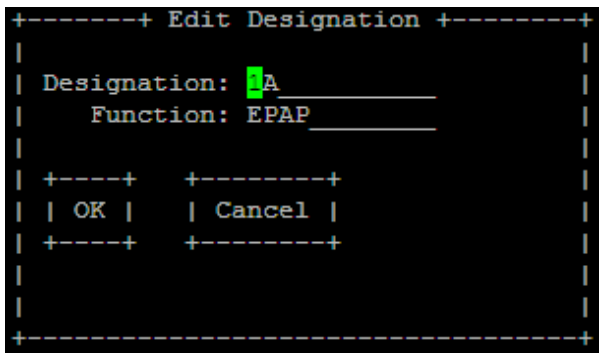
2. ☐	Log in as "admusr" user.	If not already logged in, then login as "admusr":
		`[hostname] consolelogin: admusr`
		`password: *password*`

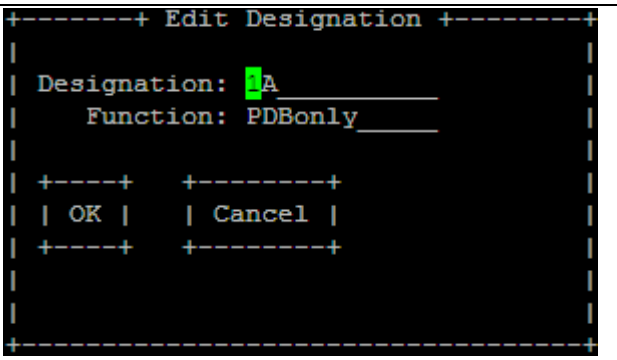
3. ☐	Start platcfg utility.	`$ sudo su - platcfg`
4. ☐	Navigate to the **Server Configuration** screen.	Select **Server Configuration** and press [ENTER] 
5. ☐	Navigate to the **Hostname** screen.	Select **Hostname** and press [ENTER] 

Procedure 5: Pre-Install Configuration on Server A

6. ☐	Select **Edit** to edit the hostname.	Select **Edit** and press [ENTER] 
7. ☐	Enter the hostname and press ok.	Delete the default entry and enter the Hostname as mps-xxxx-a where xxxx is the last 4 digits of server serial number. Press OK when done.  While connected to the serial console, some console output might come when the user is using the serial console to configure the EPAP. Those serial output are harmless and can be ignored.
8. ☐	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. 
9. ☐	Navigate to the **Designation/Function** menu option.	Select **Designation/Function** and press [ENTER] 

Procedure 5: Pre-Install Configuration on Server A

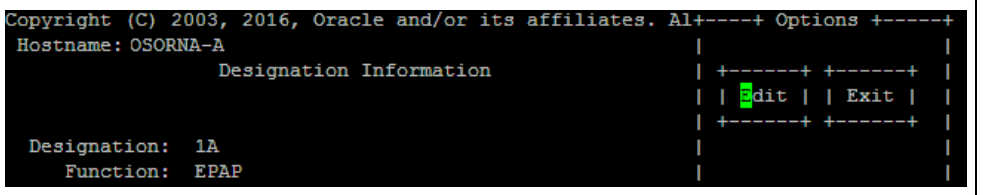
10. ☐	View the current designation and function.	The screen will show the current designation and function setting. On initial install, these fields are blank.  If not blank, the values should be as follows for Mixed EPAP or Non-Provisional EPAP. 1. The Designation is "1A" for the A server 2. The Function field should be set to EPAP. If not blank, the values should be as follows for Standalone PDB. 1. The Designation is "1A" for the A server 2. The Function field should be set to PDBonly. If both the fields are blank or either value is not correct, then select **Edit** and press [ENTER]. If both values are correct, select **Exit**, press [ENTER] and skip the next step.
11. ☐	View the current designation and function.	Skip to Step 13 if Exit was selected in the previous step, otherwise if Edit was selected, delete the current designation and function if already set, and type in the desired values. Enter the appriopriate designation in the Designation field (Note: the designation must be capitalized). Select OK and press [ENTER]. For Mixed EPAP or Non-Provisional EPAP, the following is a correct example:  For Standalone PDB, the following is a correct example:



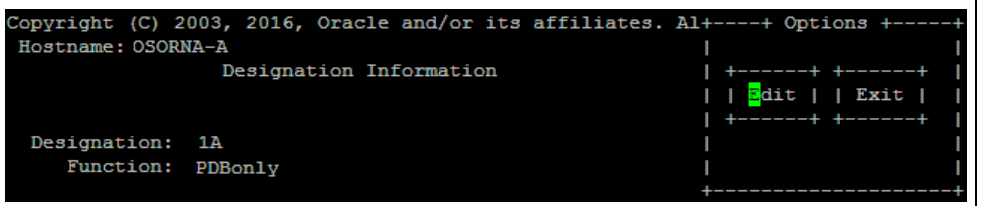
12. ☐

Verify that the Designation and Function information is correct then select and press “Exit”.

For Mixed EPAP or Non-Provisional EPAP, the following is a correct example:

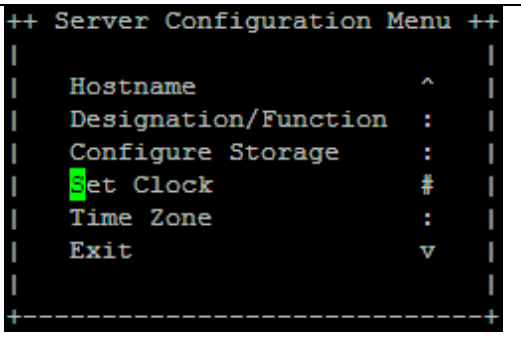


For Standalone PDB, the following is a correct example:



13. ☐

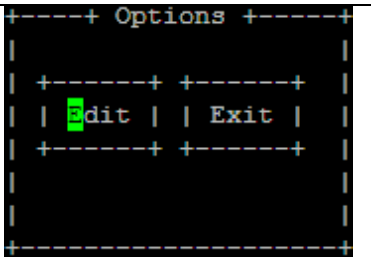
Select “Set Clock” Menu.



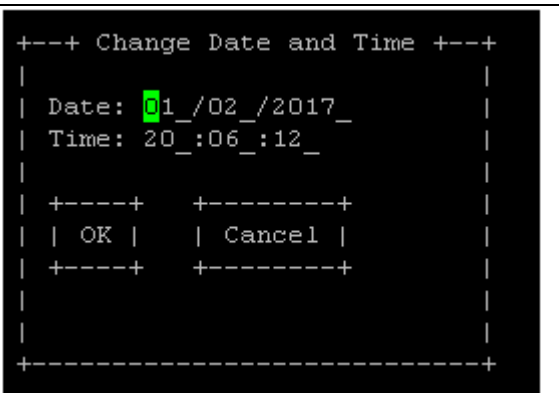
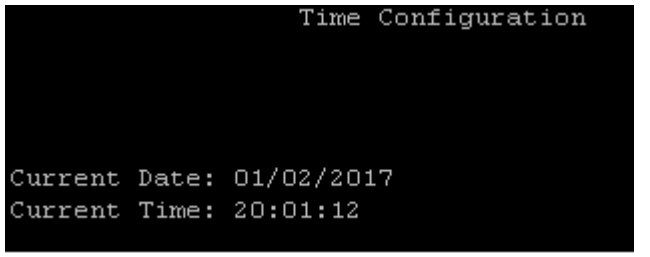
14. ☐

1) Select “Edit” from the options dialogue box.

2) Using an NTP source, set the Date/Time to be correct for the Eastern Time zone (GMT -5) and press “OK”.



Procedure 5: Pre-Install Configuration on Server A

	NOTE: All systems default to Eastern time post IPM. It is important to set the time for the Eastern Time zone at this time.	
15. ☐	Verify that the Date and Time is correct then select and press "Exit".	
16. ☐	Exit from platcfg menu.	Select **EXIT** until the platcfg menu is closed and the command line is displayed.
17. ☐	Reboot the Server.	`$ sudo reboot`
18. ☐	Procedure complete.	Procedure is complete.

Procedure 6 Pre-Install configuration on server B

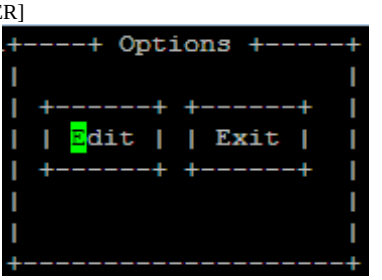
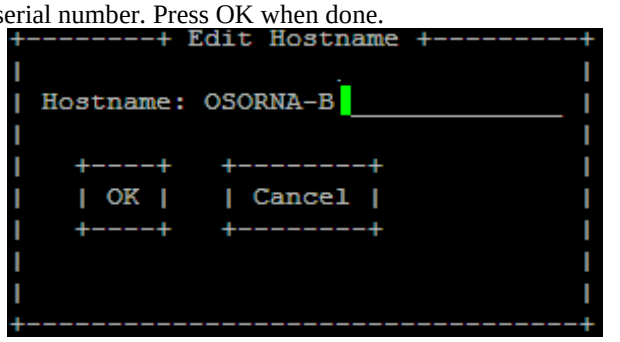
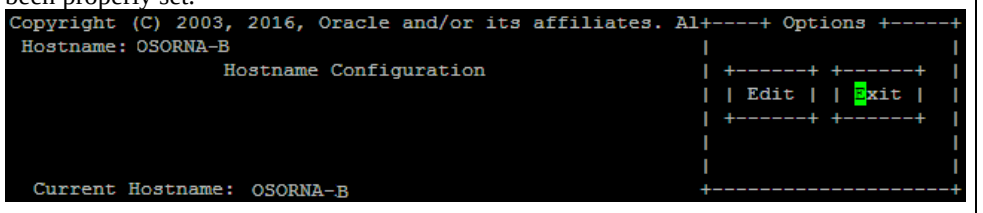
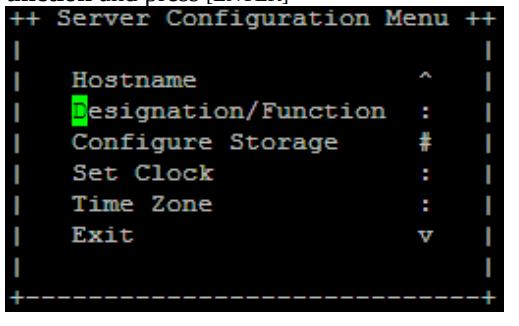
Procedure 6: Pre-Install Configuration on Server B

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 MY ORACLE SUPPORTAND ASK FOR ASSISTANCE.	
IMPORTANT: Installation of the Operating System on an Oracle Application Server should be completed before starting installation procedure. Refer to Procedure A.11 or [4] for TPD installation.		
1. ☐	Connect to the Server.	If not already connected, connect to the E5-APP-B card via the serial port. 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**

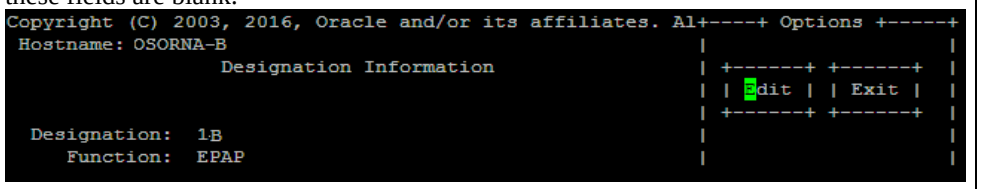
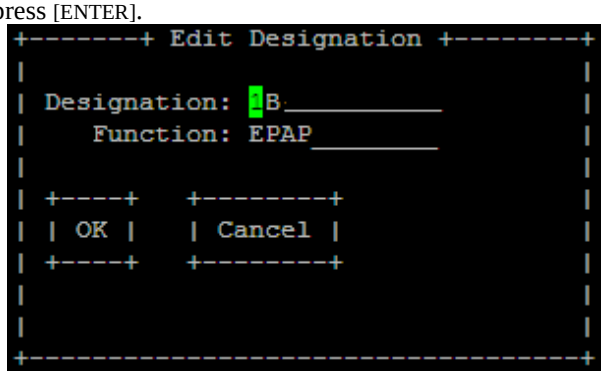
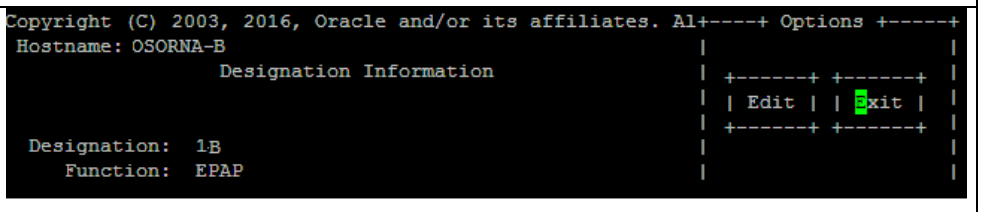
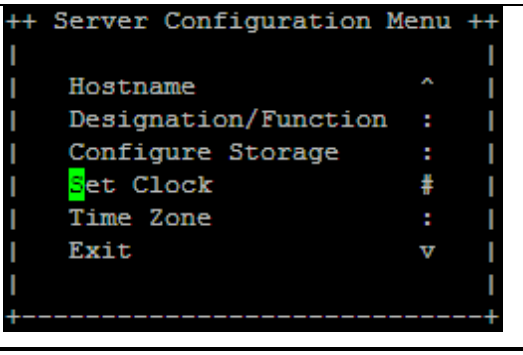
2. ☐	Log in as "admusr" user.	If not already logged in, then login as 'admusr':
		`[hostname] consolelogin: admusr`
		`password: password`

3. ☐	Start platcfg utility.	`$ sudo su - platcfg`
4. ☐	Navigate to the **Server Configuration** screen.	Select **Server Configuration** and press [ENTER] +------+ Main Menu +-------+ | | | Maintenance ^ | | Diagnostics : | | Server Configuration # | | Security : | | Remote Consoles : | | Network Configuration : | | Exit v | | | +-------------------------+
5. ☐	Navigate to the **Hostname** screen.	Select **Hostname** and press [ENTER] ++ Server Configuration Menu ++ | | | Hostname ^ | | Designation/Function # | | Configure Storage : | | Set Clock : | | Time Zone : | | Exit v | | | +-----------------------------+

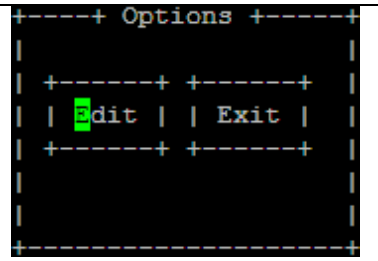
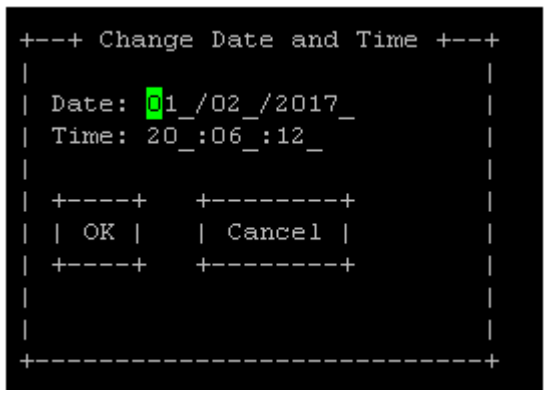
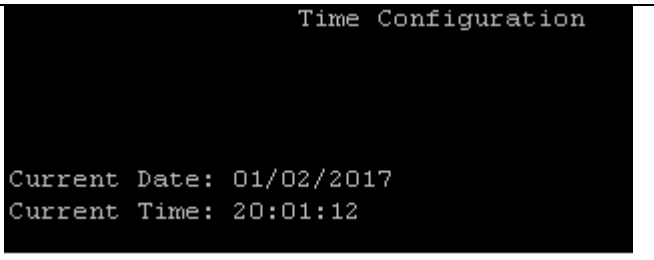
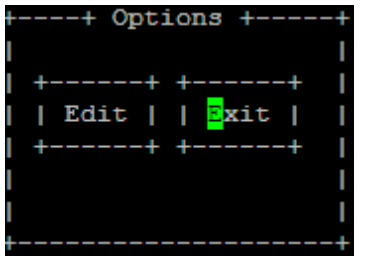
Procedure 6: Pre-Install Configuration on Server B

6. ☐	Select **Edit** to edit the hostname.	Select **Edit** and press [ENTER] 
7. ☐	Enter the hostname and press ok.	Delete the default entry and enter the Hostname as mps-xxxx-b where xxxx is the last 4 digits of server serial number. Press OK when done.  While connected to the serial console, some console output might come when the user is using the serial console to configure the EPAP. Those serial output are harmless and can be ignored.
8. ☐	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. 
9. ☐	Navigate to the **Designation/Function** menu option.	Select **Designation/Function** and press [ENTER] 

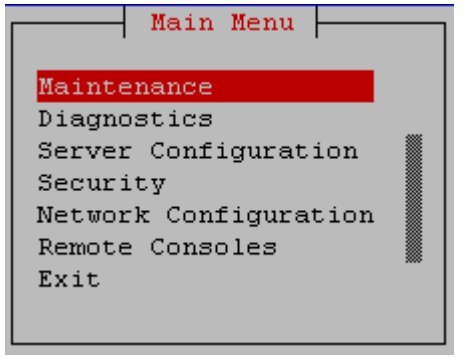
Procedure 6: Pre-Install Configuration on Server B

10. ☐	View the current designation and function.	The screen will show the current designation and function setting. On initial install, these fields are blank.  If not blank the values should be as follows. 1. The Designation is "1B" for the B server 2. The Function field should be set to EPAP. If either value is not correct, then select **Edit** and press [ENTER]. If both values are correct, select **Exit**, press [ENTER] and skip the next step.
11. ☐	View the current designation and function.	Skip to Step 13 if Exit was selected in the previous step, otherwise if Edit was selected, delete the current designation and function if already set, and type in the desired values. Enter the appriopriate designation in the Designation field (Note: The designation must be capitalized). Select **OK** and press [ENTER]. 
12. ☐	Verify that the Designation and Function information is correct then select and press "Exit".	
13. ☐	Select "Set Clock" Menu.	

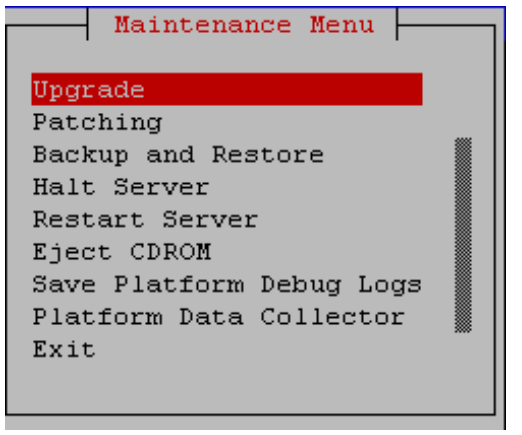
Procedure 6: Pre-Install Configuration on Server B

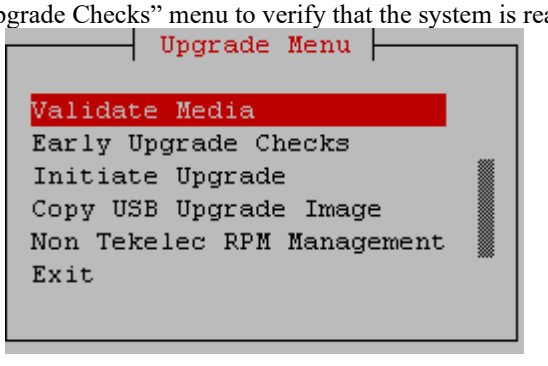
14. ☐	1) Select “Edit” from the options dialogue box. 2) Using an NTP source, set the Date/Time to be correct for the Eastern Time zone (GMT -5) and press “OK”. NOTE: All systems default to Eastern time post IPM. It is important to set the time for the Eastern Time zone at this time.	 
15. ☐	Verify that the Date and Time is correct then select and press “Exit”.	 
16. ☐	Exit from platcfg menu.	Select **EXIT** until the platcfg menu is closed and the command line is displayed.
17. ☐	Reboot the Server.	`$ sudo reboot`
18. ☐	Procedure complete.	Procedure is complete.

Procedure 7: Install the Application on Server A

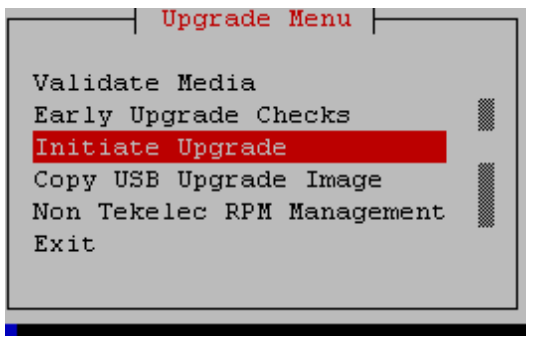
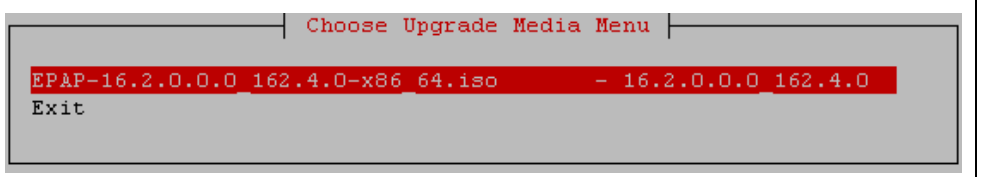
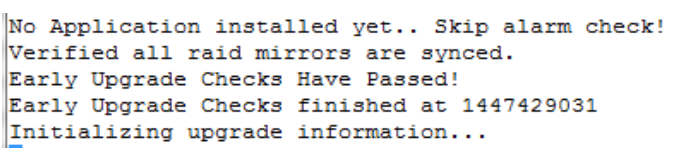
S T E P #	This procedure installs the application on the server. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORTAND ASK FOR ASSISTANCE.	
1. ☐	**MPS A:** Install EPAP on 1A.	Perform Procedure in Procedure A.10 or copy EPAP 16.2 ISO to /var/TKLC/upgrade directory.
2. ☐	Create a terminal window and log into MPS A.	If not already connected, 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 card's adapter and use it for serial access. **Cable part numbers - 830-1220-xx**
3. ☐	**MPS A**: Login prompt is displayed.	`<hostname> console login:` Note: Hit enter if no login prompt is displayed.
4. ☐	**MPS A:** log in as "admusr" user.	**`[hostname] consolelogin: admusr`** **`password: password`**
5. ☐	**MPS A:** Start platcfg utility.	**`$ sudo su - platcfg`**
6. ☐	**MPS A:** Navigate to the Upgrade menu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Maintenance** and press **[ENTER]**.  Select the **Upgrade** menu and press **[ENTER]**.

Procedure 7: Install the Application on Server A

7. ☐	**MPS A**: Select Early Upgrade Checks	Select the "Early Upgrade Checks" menu to verify that the system is ready for upgrade.
		 
		If the Early Upgrade Checks fail due to the ongoing syncing of raid mirrors, then wait until the resync is completed and run the "Early Upgrade Checks" again.
		`Early Checks failed for the next upgrade`
		`Look at earlyChecks.log for more info`
		`tarting Early Upgrade Checks at 1011413059`
		`Running earlyUpgradeChecks() for Upgrade::EarlyPolicy::TPDEarlyChecks upgrade policy...`
		`Verified server is not pending accept of previous upgrade`
		`ERROR: Raid mirrors are syncing!`
		`ERROR: md2 is syncing!`
		`ERROR: earlyUpgradeChecks() code failed for Upgrade::EarlyPolicy::TPDEarlyChecks`
		`ERROR: Failed running earlyUpgradeChecks() code`
		`Hardware architectures match`
		`Install products match.`
		`No Application installed yet.. Skip alarm check!`
		`ERROR: Early Upgrade Checks Failed!`
		`User has requested just to run early checks.`
		`No upgrade will be performed...`
		`Early Upgrade Checks finished at 1011413059`
		`[admusr@epappri ~]$ cat /proc/mdstat`
		`Personalities : [raid1]`
		`md1 : active raid1 sdb2[1] sda2[0]`
		`262080 blocks super 1.0 [2/2] [UU]`
		`md2 : active raid1 sda1[0] sdb1[1]`
		`468447232 blocks super 1.1 [2/2] [UU]`
		`[=====>.....] resync = 29.7% (139377920/468447232) finish=73.0min speed=75060K/sec`
		`bitmap: 4/4 pages [16KB], 65536KB chunk`
		`unused devices: <none>`
		Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E if the early upgrade checks fail due to any other reason

Procedure 7: Install the Application on Server A

8. ☐	**MPS A:** Navigate to the Initiate Upgrade menu	Select the **Initiate Upgrade** menu and press **[ENTER]**. 
9. ☐	**MPS A:** 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]**. 
10. ☐	**MPS A:** Upgrade proceeds.	The screen displays the output like following, indicating that the upgrade software is first running the upgrade checks, and then proceeding with the upgrade. 
11. ☐	**MPS A:** Upgrade proceeds.	Many informational messages appear on the terminal screen as the upgrade proceeds. The messages are not shown here for clarity sake. When installation is complete, the server reboots.
12. ☐	**MPS A:** Upgrade completed.	After the final reboot, the screen displays the login prompt as in the example below. Starting atd: [OK] ~~ /etc/rc4.d/S98ExQueue start ~~ ExQueue started. Starting TKLCe5appb: [OK] Checking network config files: [OK] Daemon is not running... AlarmMgr daemon is not running, delaying by 1 minute ~~ /etc/rc4.d/S99Epap start ~~ EPAP configuration data not found. Exiting... ~~ /etc/rc4.d/S99Pdba start ~~ EPAP configuration data not found. Exiting... Starting smartd: [OK] Daemon is not running... AlarmMgr daemon is not running, delaying by 1 minute TPDhpDiskStatus stop/pre-start, process 5527 TKLChwmgmtcli stop/pre-start, process 5508 Oracle Linux Server release 6.8 Kernel 2.6.32-642.6.2.el6prerel7.4.0.0.0_88.32.0.x86_64 on an x86_64

Procedure 7: Install the Application on Server A

13. ☐	**MPS A:** log in as "epapdev" user.	`[hostname] consolelogin: epapdev` `password: password`

14. ☐	**MPS A:** Check the Upgrade log.	Examine the upgrade logs in the directory /var/TKLC/log/upgrade and verify that no errors and warnings were reported.
		
		`$ grep -i error /var/TKLC/log/upgrade/upgrade.log`
		
		Check the output of the upgrade log, Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any errors beside the following:
		
		1487820277::2017-02-23T03:24:40.278652Z 0 [Warning] 'NO_ZERO_DATE', 'NO_ZERO_IN_DATE' and 'ERROR_FOR_DIVISION_BY_ZERO' sql modes should be used with strict mode. They will be merged with strict mode in a future release. All those messages are expected, and therefore aren't considered errors.
		
		Also note that sometime a carriage return is inserted in the log file causing some of the error messages to appear truncated, for example in "1252687151::myisamchk: error: File '" case, "1252687169::myisa" might show up on one line while the rest "mchk: error: File '/" might show up on the next line. This is acceptable and should be ignored.
		
		`$ grep -i warning /var/TKLC/log/upgrade/upgrade.log`
		
		Examine the output of the above command to determine if any warnings were reported. Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any warnings beside the following:
		`[1487820277::2017-02-23T03:24:40.278652Z 0 [Warning] 'NO_ZERO_DATE', 'NO_ZERO_IN_DATE' and 'ERROR_FOR_DIVISION_BY_ZERO' sql modes should be used with strict mode. They will be merged with strict mode in a future release.`
		`[root@hvar-A ~]# grep -i warning /var/TKLC/log/upgrade/upgrade.log`
		`1487820160::WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...reparsing xml...`
		`1487820270::* write: WARNING:: Could not find configured path "/var/TKLC/epap/rt".`
		`1487820270::* write: WARNING:: Could not find configured path "/var/TKLC/epap/db".`
		`1487820270::* write: WARNING:: Could not find configured path "/var/TKLC/epap/logs".`
		`1487820270::* write: WARNING:: Could not find configured path "/var/TKLC/epap/free".`
		`1487820270::* write: WARNING:: Could not find configured path "/var/TKLC/epap/rt".`
		`1487820270::* write: WARNING:: Could not find configured path "/var/TKLC/epap/db".`
		`1487820270::* write: WARNING:: Could not find configured path "/var/TKLC/epap/logs".`
		`1487820270::* write: WARNING:: Could not find configured path "/var/TKLC/epap/free".`
		`1487820272::useradd: warning: the home directory already exists.`
		`1487820277::2017-02-23T03:24:40.278652Z 0 [Warning] 'NO_ZERO_DATE', 'NO_ZERO_IN_DATE' and 'ERROR_FOR_DIVISION_BY_ZERO' sql modes should be used with strict mode. They will be merged with strict mode in a future release.`
		`1487820280::2017-02-23T03:24:40.278694Z 0 [Warning] 'NO_AUTO_CREATE_USER' sql mode was not set.`
		`1487820709::2017-02-23T03:31:55.022227Z 0 [Warning] InnoDB: New log files created, LSN=45792`
		`1487820715::2017-02-23T03:31:55.116112Z 0 [Warning] InnoDB: Creating foreign key constraint system tables.`
		`1487820715::2017-02-23T03:31:55.187777Z 0 [Warning] No existing UUID has been found, so we assume that this is the first time that this server has been started. Generating a new UUID: 9fafedc2-f978-11e6-a8a8-0010e0850417.`
		`1487820715::2017-02-23T03:31:55.190473Z 0 [Warning] Gtid table is not ready to be used. Table 'mysql.gtid_executed' cannot be opened.`
		`1487820715::2017-02-23T03:31:56.233157Z 0 [Warning] CA certificate ca.pem is self signed.`

Procedure 7: Install the Application on Server A

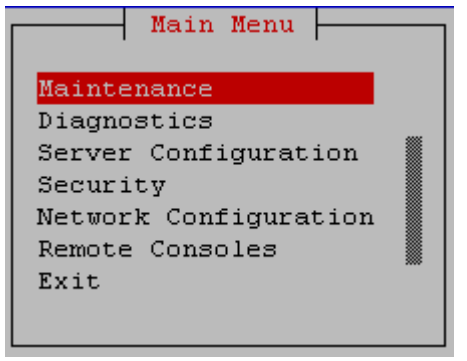
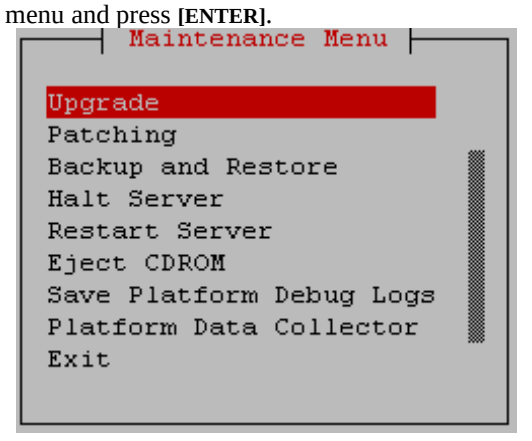
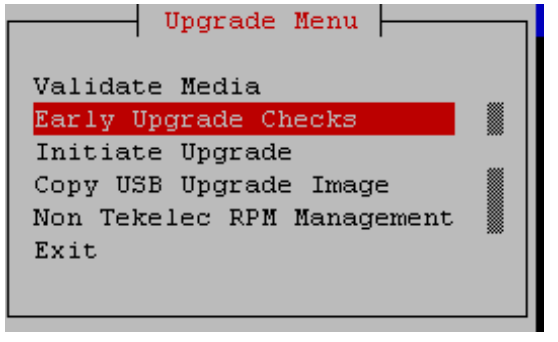
		1487820716::2017-02-23T03:31:56.702769Z 1 [Warning] root@localhost is created with an empty password ! Please consider switching off the --initialize-insecure option. 1487820720::2017-02-23T03:32:03.451408Z 0 [Warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use --explicit_defaults_for_timestamp server option (see documentation for more details). 1487820723::2017-02-23T03:32:04.023504Z 0 [Warning] InnoDB: New log files created, LSN=45790 1487820724::2017-02-23T03:32:04.116918Z 0 [Warning] InnoDB: Creating foreign key constraint system tables. 1487820724::2017-02-23T03:32:04.178096Z 0 [Warning] No existing UUID has been found, so we assume that this is the first time that this server has been started. Generating a new UUID: a50bbe8f-f978-11e6-bcbc-0010e0850417. 1487820724::2017-02-23T03:32:04.178895Z 0 [Warning] Gtid table is not ready to be used. Table 'mysql.gtid_executed' cannot be opened. 1487820724::2017-02-23T03:32:05.957583Z 0 [Warning] CA certificate ca.pem is self signed. 1487820726::2017-02-23T03:32:06.165059Z 1 [Warning] root@localhost is created with an empty password ! Please consider switching off the --initialize-insecure option. 1487820753::WARNING: A new file was added to xml alarm files...reparsing xml... 1487820754::WARNING: FILE: /usr/TKLC/plat/etc/alarms/alarms_mps.xml 1487820761::TKLCepap-HA ##################################warning: group root} does not exist - using root Refer to section 3.7 to know more about logging.
15. ☐	**MPS A:** Check that the upgrade completed successfully.	**$ grep "Upgrade returned success" /var/TKLC/log/upgrade/upgrade.log**
16. ☐	**MPS A:** Check that the upgrade completed successfully.	Verify that the message “Upgrade returned success!” is displayed. If it is not, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E. 1399367207:: Upgrade returned success!
17. ☐	**MPS A:** Install Complete.	Install Procedure is complete.

Procedure 8 Install Application on server B

Procedure 8: Install the Application on Server B

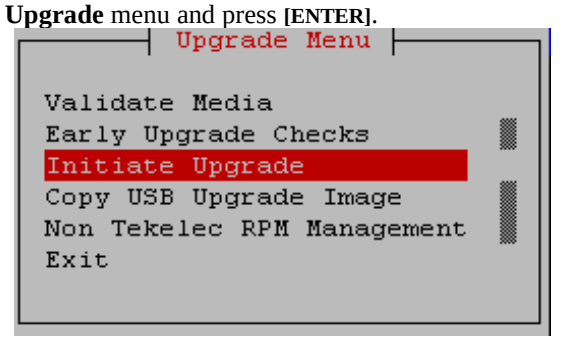
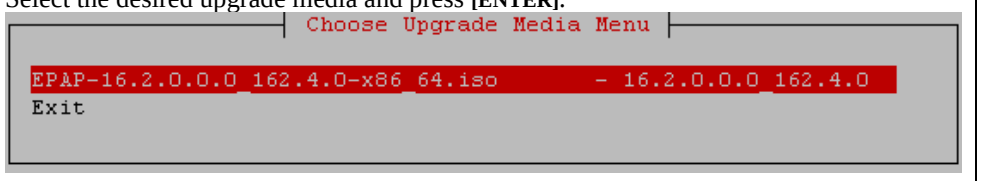
S T E P #	This procedure installs the application on the server. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORTAND ASK FOR ASSISTANCE.	
1. ☐	**MPS B:** Install 1B.	Perform Procedure in Procedure A.10 or copy EPAP 16.2 ISO to /var/TKLC/upgrade directory.
2. ☐	Create a terminal window log into MPS B.	If not already connected, connect to the E5-APP-B card via the serial port. 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 card’s adapter and use it for serial access. **Cable part numbers - 830-1220-xx**
3. ☐	**MPS B**: Login prompt is displayed.	<hostname> console login: Note: Hit enter if no login prompt is displayed.

Procedure 8: Install the Application on Server B

4. ☐	**MPS B:** log in as "admusr" user.	`[hostname] consolelogin: admusr` `password: password`
5. ☐	**MPS B:** Start platcfg utility.	`$ sudo su - platcfg`
6. ☐	**MPS B:** Navigate to the Upgrade menu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Maintenance** and press **[ENTER]**.  Select the **Upgrade** menu and press **[ENTER]**. 
7. ☐	**MPS A**: Select Early Upgrade Checks	Select the "Early Upgrade Checks" menu to verify that the system is ready for upgrade. 

Procedure 8: Install the Application on Server B

		If the Early Upgrade Checks fail due to the ongoing syncing of raid mirrors, then wait until the resync is completed and run the "Early Upgrade Checks" again.
		
		`Early Checks failed for the next upgrade`
		`Look at earlyChecks.log for more info`
		`tarting Early Upgrade Checks at 1011413059`
		`Running earlyUpgradeChecks() for Upgrade::EarlyPolicy::TPDEarlyChecks upgrade policy...`
		`Verified server is not pending accept of previous upgrade`
		`ERROR: Raid mirrors are syncing!`
		`ERROR: md2 is syncing!`
		`ERROR: earlyUpgradeChecks() code failed for Upgrade::EarlyPolicy::TPDEarlyChecks`
		`ERROR: Failed running earlyUpgradeChecks() code`
		`Hardware architectures match`
		`Install products match.`
		`No Application installed yet.. Skip alarm check!`
		`ERROR: Early Upgrade Checks Failed!`
		`User has requested just to run early checks.`
		`No upgrade will be performed...`
		`Early Upgrade Checks finished at 1011413059`
		
		`[admusr@epappri ~]$ cat /proc/mdstat`
		`Personalities : [raid1]`
		`md1 : active raid1 sdb2[1] sda2[0]`
		`262080 blocks super 1.0 [2/2] [UU]`
		
		`md2 : active raid1 sda1[0] sdb1[1]`
		`468447232 blocks super 1.1 [2/2] [UU]`
		`[=====>.....] resync = 29.7% (139377920/468447232) finish=73.0min speed=75060K/sec`
		`bitmap: 4/4 pages [16KB], 65536KB chunk`
		
		`unused devices: <none>`
		
		Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the early upgrade checks fail due to any other reason.

8. ☐	**MPS A:** Navigate to the Initiate Upgrade menu	Select the **Initiate Upgrade** menu and press **[ENTER]**. 
9. ☐	**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]**. 
10. ☐	**MPS B:** Upgrade proceeds.	The screen displays the following, indicating that the upgrade software is first validating the media, and then proceeding with the upgrade.

Procedure 8: Install the Application on Server B

		No Application installed yet.. Skip alarm check! Verified all raid mirrors are synced. Early Upgrade Checks Have Passed! Early Upgrade Checks finished at 1447429031 Initializing upgrade information...
11. ☐	**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 installation is complete, the server reboots.
12. ☐	**MPS B:** Upgrade completed.	After the final reboot, the screen displays the login prompt as in the example below. Cleaning up chroot environment... Stopping remoteExec background process Shutting down /mnt/upgrade/upgrade/remoteExec... Verifying disk configuration for S.M.A.R.T.: [OK] Starting atd: [OK] ~~ /etc/rc4.d/S98ExQueue start ~~ ExQueue started. Starting TKLCe5appb: [OK] Checking network config files: [OK] Daemon is not running... AlarmMgr daemon is not running, delaying by 1 minute ~~ /etc/rc4.d/S99Epap start ~~ EPAP configuration data not found. Exiting... Starting smartd: [OK] Daemon is not running... AlarmMgr daemon is not running, delaying by 1 minute TPDhpDiskStatus stop/pre-start, process 5393 TKLChwmgmtcli stop/pre-start, process 5369 Oracle Linux Server release 6.8 Kernel 2.6.32-642.6.2.el6prerel7.4.0.0.0_88.32.0.x86_64 on an x86_64
13. ☐	**MPS B:** log in as "epapdev" user.	**[hostname] consolelogin: epapdev** **password: password**
14. ☐	**MPS B:** Check the Upgrade log.	Examine the upgrade logs in the directory /var/TKLC/log/upgrade and verify that no errors and warnings were reported. **$ grep -i error /var/TKLC/log/upgrade/upgrade.log** Check the output of the upgrade log, Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any error except the following: 1487896226:: 2017-02-24T00:30:28.652213Z 0 [Warning] 'NO_ZERO_DATE', 'NO_ZERO_IN_DATE' and 'ERROR_FOR_DIVISION_BY_ZERO' sql modes should be used with strict mode. They will be merged with strict mode in a future release. All those messages are expected, and therefore aren't considered errors. Also note that sometime a carriage return is inserted in the log file causing some of the error messages to appear truncated. This is acceptable and should be ignored. **$ grep -i warning /var/TKLC/log/upgrade/upgrade.log**

Procedure 8: Install the Application on Server B

		Examine the output of the above command to determine if any warnings were reported. Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any warnings beside the following: 1487896226::2017-02-24T00:30:28.652213Z 0 [Warning] 'NO_ZERO_DATE', 'NO_ZERO_IN_DATE' and 'ERROR_FOR_DIVISION_BY_ZERO' sql modes should be used with strict mode. They will be merged with strict mode in a future release. [epapdev@hvar-b ~]$ grep -i warning /var/TKLC/log/upgrade/upgrade.log 1487896106::WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...reparsing xml... 1487896218::* write: WARNING:: Could not find configured path "/var/TKLC/epap/rt". 1487896219::* write: WARNING:: Could not find configured path "/var/TKLC/epap/db". 1487896219::* write: WARNING:: Could not find configured path "/var/TKLC/epap/logs". 1487896219::* write: WARNING:: Could not find configured path "/var/TKLC/epap/free". 1487896219::* write: WARNING:: Could not find configured path "/var/TKLC/epap/rt". 1487896219::* write: WARNING:: Could not find configured path "/var/TKLC/epap/db". 1487896219::* write: WARNING:: Could not find configured path "/var/TKLC/epap/logs". 1487896219::* write: WARNING:: Could not find configured path "/var/TKLC/epap/free". 1487896220::useradd: warning: the home directory already exists. 1487896226::2017-02-24T00:30:28.652213Z 0 [Warning] 'NO_ZERO_DATE', 'NO_ZERO_IN_DATE' and 'ERROR_FOR_DIVISION_BY_ZERO' sql modes should be used with strict mode. They will be merged with strict mode in a future release. 1487896229::2017-02-24T00:30:28.652254Z 0 [Warning] 'NO_AUTO_CREATE_USER' sql mode was not set. 1487896242::2017-02-24T00:30:46.762649Z 0 [Warning] InnoDB: New log files created, LSN=45791 1487896247::2017-02-24T00:30:46.856447Z 0 [Warning] InnoDB: Creating foreign key constraint system tables. 1487896247::2017-02-24T00:30:46.918223Z 0 [Warning] No existing UUID has been found, so we assume that this is the first time that this server has been started. Generating a new UUID: 7c1b5ac5-fa28-11e6-ac40-0010e08503fb. 1487896247::2017-02-24T00:30:46.919104Z 0 [Warning] Gtid table is not ready to be used. Table 'mysql.gtid_executed' cannot be opened. 1487896247::2017-02-24T00:30:48.561021Z 0 [Warning] CA certificate ca.pem is self signed. 1487896249::2017-02-24T00:30:49.018012Z 1 [Warning] root@localhost is created with an empty password ! Please consider switching off the --initialize-insecure option. 1487896252::2017-02-24T00:30:55.321537Z 0 [Warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use --explicit_defaults_for_timestamp server option (see documentation for more details). 1487896255::2017-02-24T00:30:55.888792Z 0 [Warning] InnoDB: New log files created, LSN=45790 1487896256::2017-02-24T00:30:55.977153Z 0 [Warning] InnoDB: Creating foreign key constraint system tables. 1487896256::2017-02-24T00:30:56.040240Z 0 [Warning] No existing UUID has been found, so we assume that this is the first time that this server has been started. Generating a new UUID: 818b4391-fa28-11e6-946c-0010e08503fb. 1487896256::2017-02-24T00:30:56.041013Z 0 [Warning] Gtid table is not ready to be used. Table 'mysql.gtid_executed' cannot be opened. 1487896256::2017-02-24T00:30:56.765311Z 0 [Warning] CA certificate ca.pem is self signed. 1487896257::2017-02-24T00:30:57.213158Z 1 [Warning] root@localhost is created with an empty password ! Please consider switching off the --initialize-insecure option. 1487896284::WARNING: A new file was added to xml alarm files...reparsing xml... 1487896285::WARNING: FILE: /usr/TKLC/plat/etc/alarms/alarms_mps.xml 1487896292::TKLCepap-HA ##################################warning: group root} does not exist - using root
15. ☐	**MPS B:** Check that the upgrade completed successfully.	**$ grep "Upgrade returned success" /var/TKLC/log/upgrade/upgrade.log**
16. ☐	**MPS B:** Check that the upgrade completed successfully.	Verify that the message “Upgrade returned success!” is displayed. If it is not, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.

Procedure 8: Install the Application on Server B

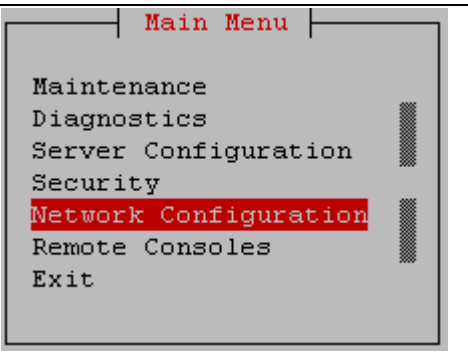
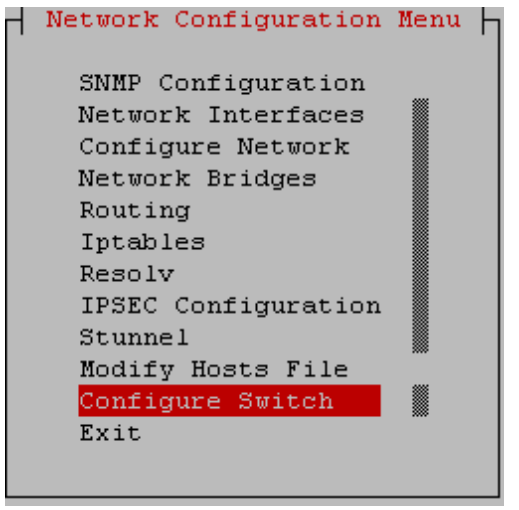
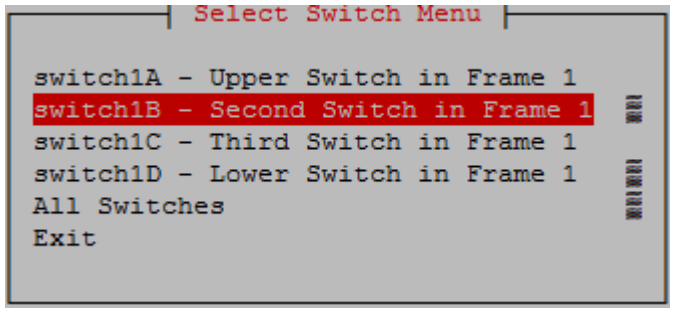
		`1399367207::  Upgrade returned success!`
17. ☐	**MPS B:** Install Complete.	Install Procedure is complete.

Procedure 9 Switch Configuration

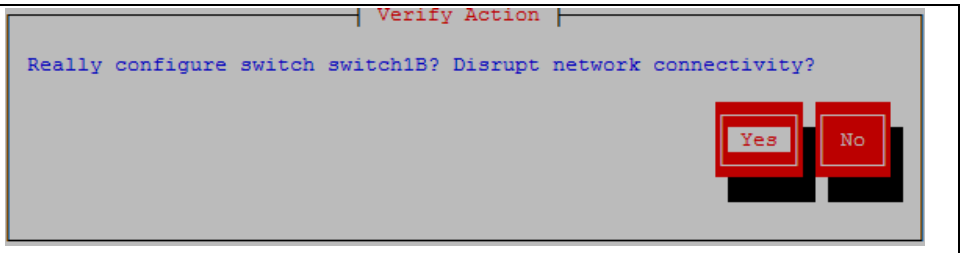
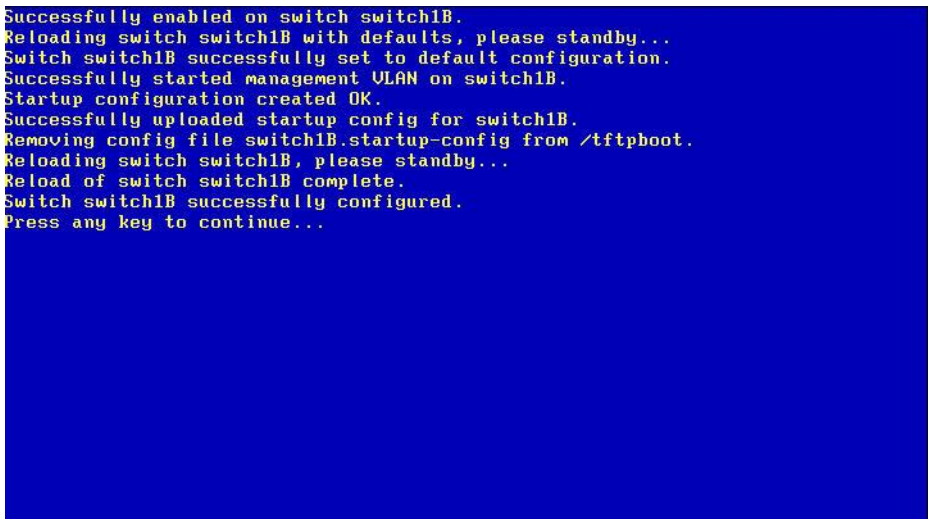
Procedure 9: Switch Configuration

S T E P #	This procedure Configures the Switches of a new Installed E5-APP-B EPAP 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 MY ORACLE SUPPORTAND ASK FOR ASSISTANCE.	
1. ☐	Make the cross-over cable connections.	**NOTE: THIS IS IMPORTANT** CONNECT the cross-over cable from **Port 1** of **Switch1A** to **Port 1** of **Switch1B**. DISCONNECT the cross-over 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 and not all. All uplinks should be removed while switch configuration. There should not be any loop in the switches during their configuration.
2. ☐	**MPS B:** log in as "admusr" user.	`[hostname] consolelogin:  admusr` `password:  password`
3. ☐	**MPS B:** Set Telco Switch with non-default speed.	Note: The default speed to be set on the switch is 100Mbps. However, the recommended setting can be changed to 'auto'. At the EAGLE end, the operator can set the IP LINK to 'auto' and at the EPAP side, follow below steps to set the Telco switch speed. Otherwise proceed to step 4. To set the speed to auto `$ cd /usr/TKLC/plat/etc` `$ sudo cp vlan.auto.sm4g.e5appb.conf vlan.conf` `cp: overwrite `vlan.conf'? y`  In case the EAGLE set IP LINK speed=1000, duplex=full, follow the below steps to set the Telco switch speed to 1000 Mbps. `$ cd /usr/TKLC/plat/etc` `$ sudo cp vlan.1000.sm4g.e5appb.conf vlan.conf` `cp: overwrite `vlan.conf'? y`
4. ☐	**MPS B:** Start platcfg utility.	`$ sudo su - platcfg`
5. ☐	**MPS B:** Navigate to the Network Configuration Menu.	On the platcfg **Main Menu**, select **Network Configuration** and press [**ENTER**].

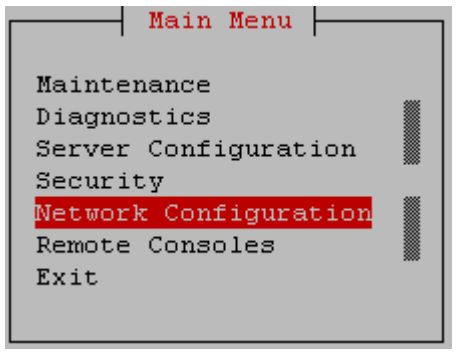
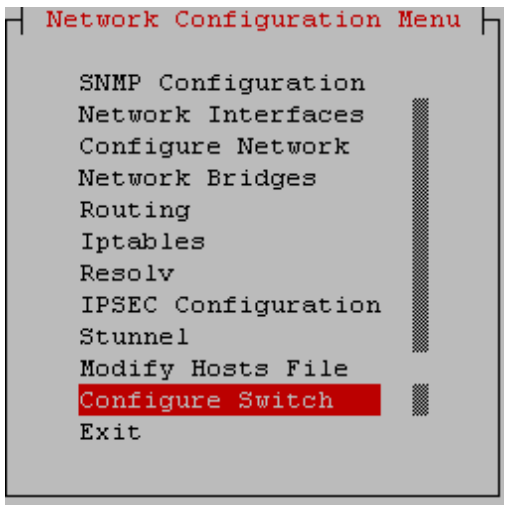
Procedure 9: Switch Configuration

		
6. ☐	**MPS B:** Navigate to the Configure Switch Menu.	On the Network Configuration menu, select **Configure Switch** and press [**ENTER**]. 
7. ☐	**MPS B:** Select Switch1B.	On the Select Switch Menu, select **Switch1B – Second Switch in Frame 1** and press [**ENTER**]. 
8. ☐	**MPS B:** Confirm Switch 1B Configuration.	Select **Yes** and press **[ENTER]** to configure Switch 1B.

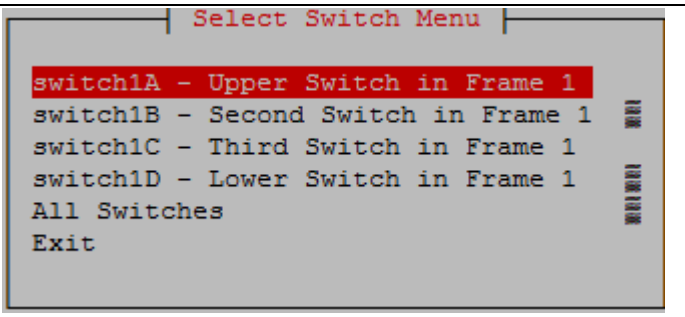
Procedure 9: Switch Configuration

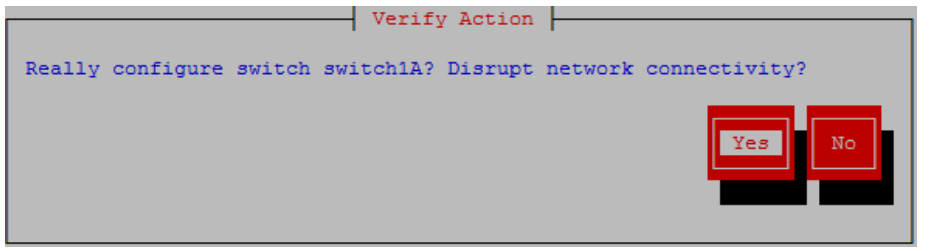
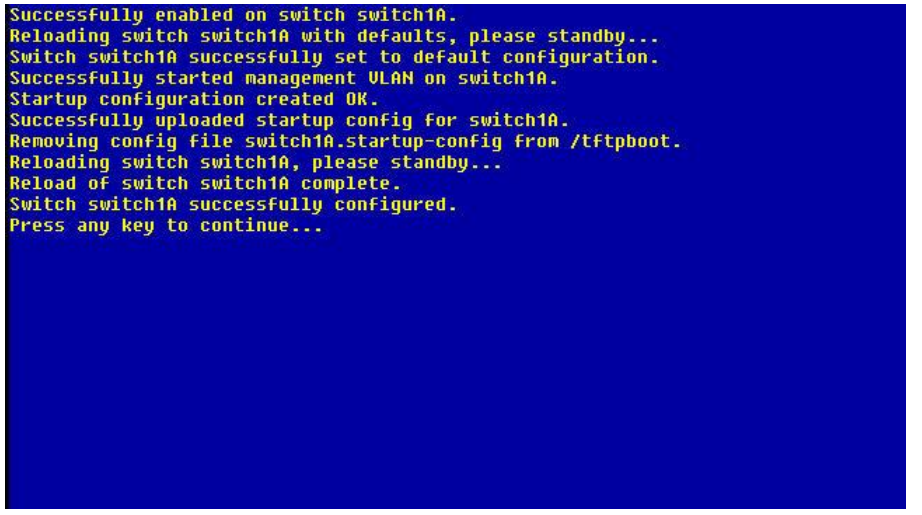
		
9. ☐	**MPS B:** Switch Configuration Screen.	Configuring the switch takes about 10 minutes, once complete press **[ENTER]** to continue.  
10. ☐	**MPS B:** Exit out of platcfg.	Select Exit and press [**ENTER**] to return to the Network Configuration Menu. Select Exit and press [**ENTER**] to return to the Main Menu. Select Exit and press [**ENTER**] to exit out of platcfg.
11. ☐	**MPS A:** Connect to Server 1A.	Now that Switch 1B is configured, we need to configure switch 1A. Connect to server 1A to configure switch 1A **[hostname] consolelogin: admusr** **password: *password***
12. ☐	**MPS A:** Set Telco Switch with non-default speed.	Note: The default speed to be set on the switch is 100Mbps. However, the recommended setting can be changed to ‘auto’.

Procedure 9: Switch Configuration

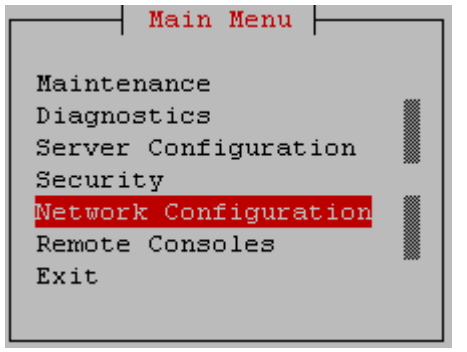
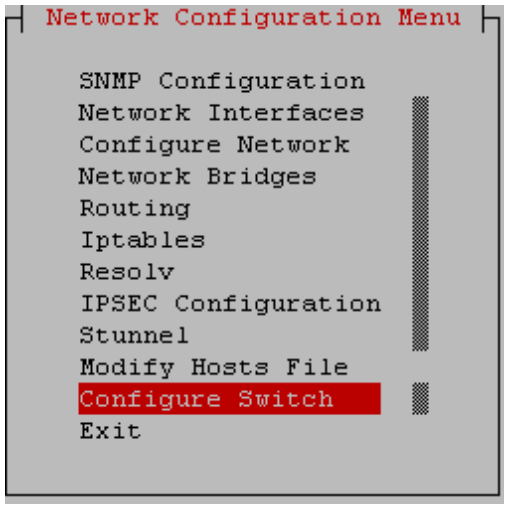
		At the EAGLE end, the operator can set the IP LINK to 'auto' and at the EPAP side, follow below steps to set the Telco switch speed. Otherwise proceed to step 13. To set the speed auto: `$ cd /usr/TKLC/plat/etc` `$ sudo cp vlan.auto.sm4g.e5appb.conf vlan.conf` `cp: overwrite `vlan.conf'? y`  In case the EAGLE set IP LINK speed=1000, duplex=full, follow the below steps to set the Telco switch spped to 1000 Mbps. `$ cd /usr/TKLC/plat/etc` `$ sudo cp vlan.1000.sm4g.e5appb.conf vlan.conf` `cp: overwrite `vlan.conf'? y`
13. ☐	**MPS A:** Start platcfg. utility	`$ sudo su - platcfg`
14. ☐	**MPS A:** Navigate to the Network Configuration Menu.	On the platcfg **Main Menu**, select **Network Configuration** and press [**ENTER**]. 
15. ☐	**MPS A:** Navigate to the Configure Switch Menu.	On the Network Configuration menu, select **Configure Switch** and press [**ENTER**]. 
16. ☐	**MPS A:** Select Switch1A.	On the Select Switch Menu, select **Switch1A – Upper Switch in Frame 1** and press [**ENTER**].

Procedure 9: Switch Configuration

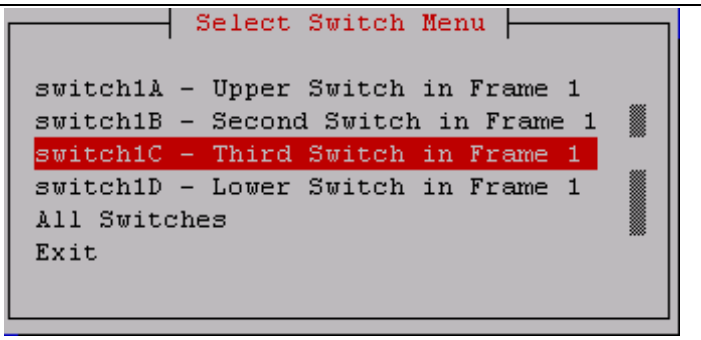
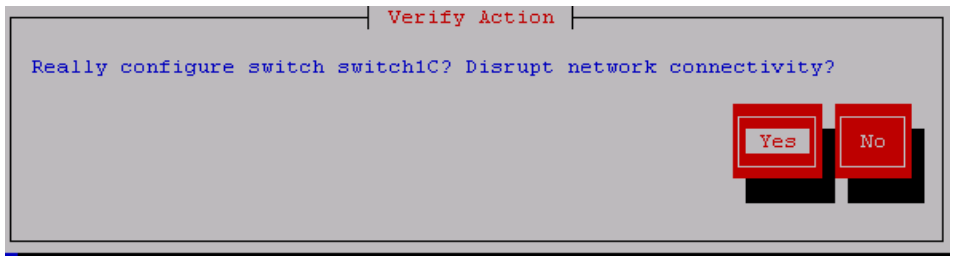
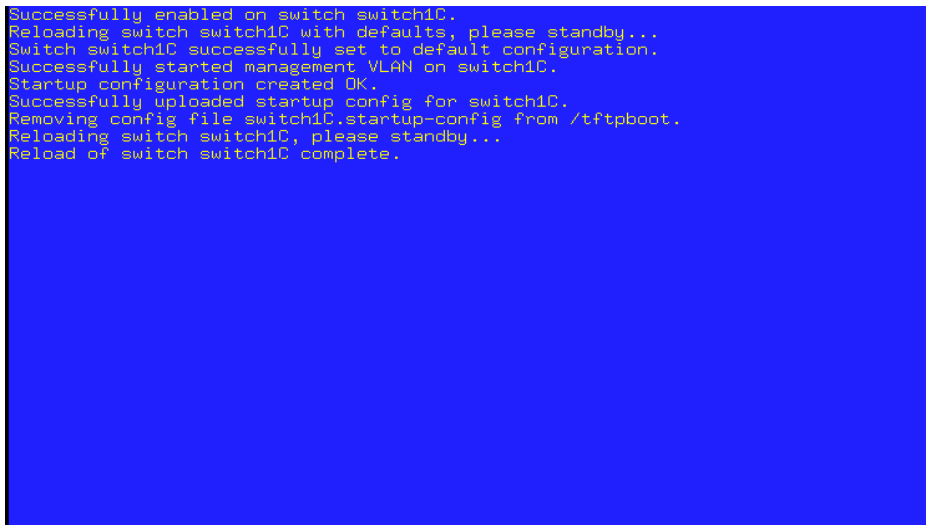


17. ☐	**MPS A:** Confirm Switch 1A Configuration.	Select **Yes** and press **[ENTER]** to configure Switch 1A. 
18. ☐	**MPS A:** Navigate to the Configure Switch Menu.	Configuring the switch takes about 10 minutes, once complete press **[ENTER]** to continue.  

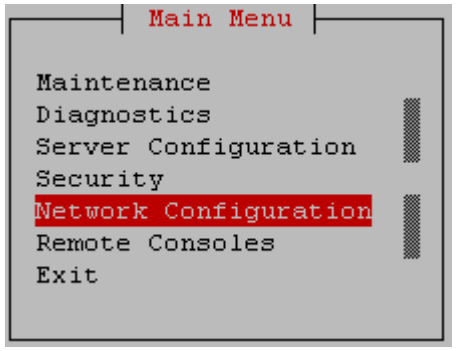
Procedure 9: Switch Configuration

19. ☐	**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.
20. ☐	**MPS A:** Optional Configuration of Switch 1C.	If the system is installed with 4 switches, proceed with the next step, otherwise skip to step 37.
21. ☐	Move Serial Cables.	On the front of switches 1A and 1B, unplug the serial cables connected to Console port and plug them in switches 1C and 1D Console port respectively.
22. ☐	**MPS A:** Start platcfg utility.	`$ sudo su - platcfg`
23. ☐	**MPS A:** Navigate to the Network Configuration Menu.	On the platcfg **Main Menu**, select **Network Configuration** and press [**ENTER**]. 
24. ☐	**MPS A:** Navigate to the Configure Switch Menu.	On the Network Configuration menu, select **Configure Switch** and press [**ENTER**]. 
25. ☐	**MPS A:** Select Switch1C.	On the Select Switch Menu, select **Switch1C – Third Switch in Frame 1** and press [**ENTER**].

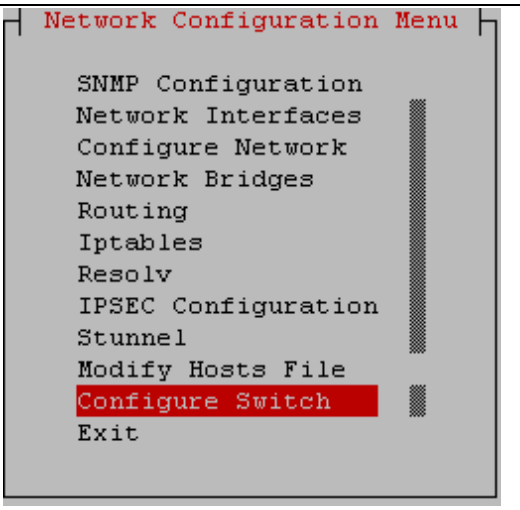
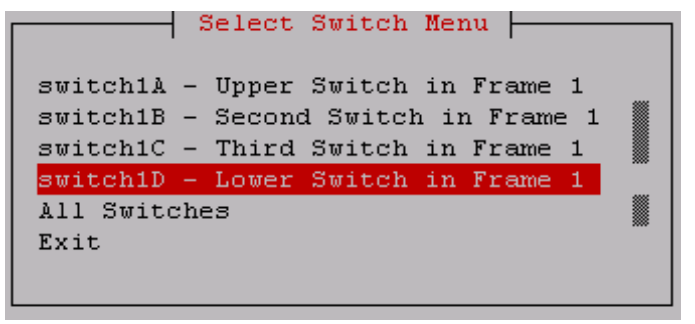
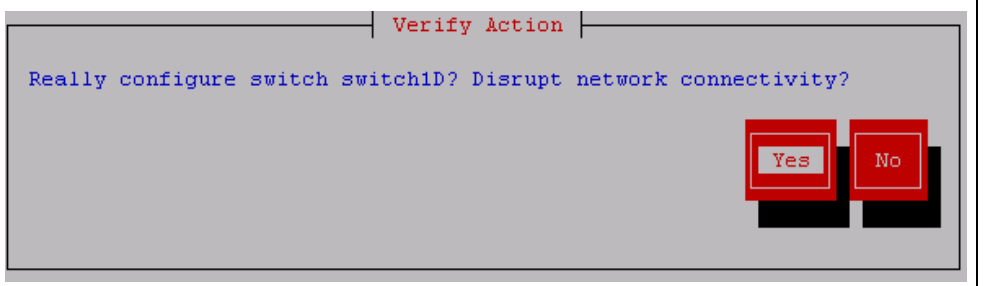
Procedure 9: Switch Configuration

		
26. ☐	**MPS A:** Confirm Switch 1C Configuration.	Select **Yes** and press **[ENTER]** to configure Switch 1C 
27. ☐	**MPS A:** Navigate to the Configure Switch Menu.	Configuring the switch takes about 10 minutes, once complete press **[ENTER]** to continue. 

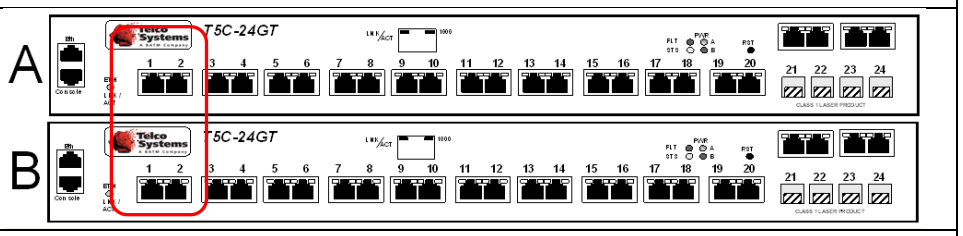
Procedure 9: Switch Configuration

		
28. ☐	**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.
29. ☐	**MPS B:** Connect to Server 1B.	`[hostname] consolelogin: admusr` `password: ` *`password`*
30. ☐	**MPS B:** Start platcfg utility.	`$ sudo su - platcfg`
31. ☐	**MPS B:** Navigate to the Network Configuration Menu.	On the platcfg **Main Menu**, select **Network Configuration** and press [**ENTER**]. 
32. ☐	**MPS B:** Navigate to the Configure Switch Menu.	On the Network Configuration menu, select **Configure Switch** and press [**ENTER**].

Procedure 9: Switch Configuration

		 .
33. ☐	**MPS B:** Select Switch1D.	On the Select Switch Menu, select **Switch1D – Lower Switch in Frame 1** and press [**ENTER**]. 
34. ☐	**MPS B:** Confirm Switch 1D Configuration.	Select **Yes** and press **[ENTER]** to configure Switch 1D. 
35. ☐	**MPS B:** Switch Configuration Screen.	Configuring the switch takes about 10 minutes, once complete press **[ENTER]** to continue.

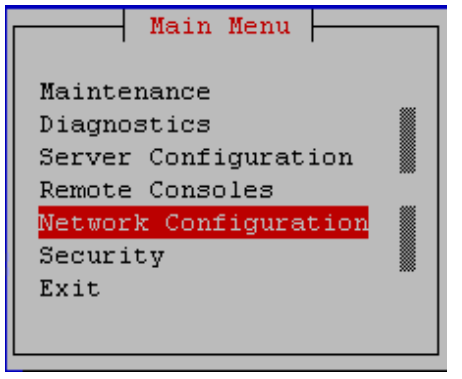
Procedure 9: Switch Configuration

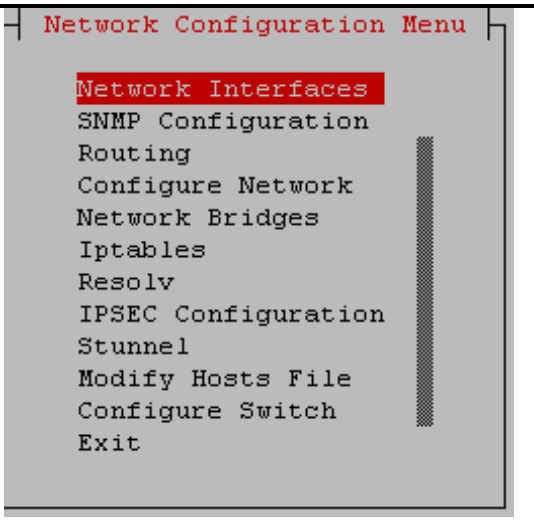
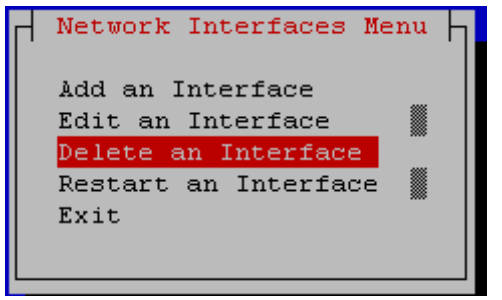
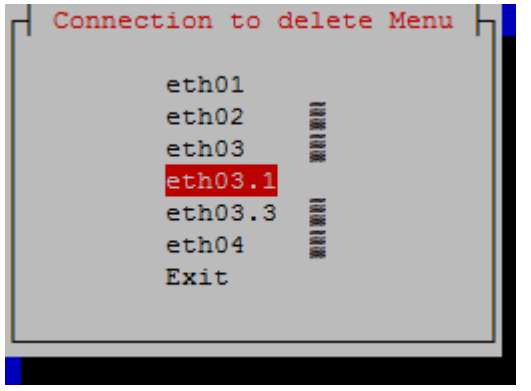
		Successfully enabled on switch switch1D. Reloading switch switch1D with defaults, please standby... Switch switch1D successfully set to default configuration. Successfully started management VLAN on switch1D. Startup configuration created OK. Successfully uploaded startup config for switch1D. Removing config file switch1D.startup-config from /tftpboot. Reloading switch switch1D, please standby... Reload of switch switch1D complete. 
36. ☐	**MPS B:** 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.
37. ☐	Connect the cross-over cable from **Port 2** of **Switch1A** to **Port 2** of **Switch1B**.	
38. ☐	Procedure complete.	Procedure is complete.

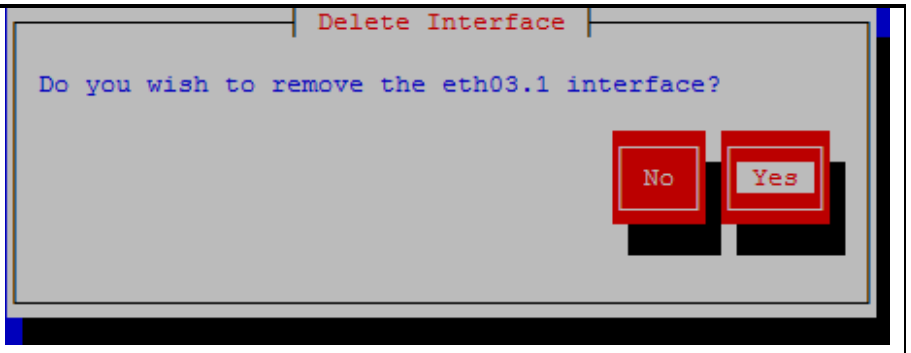
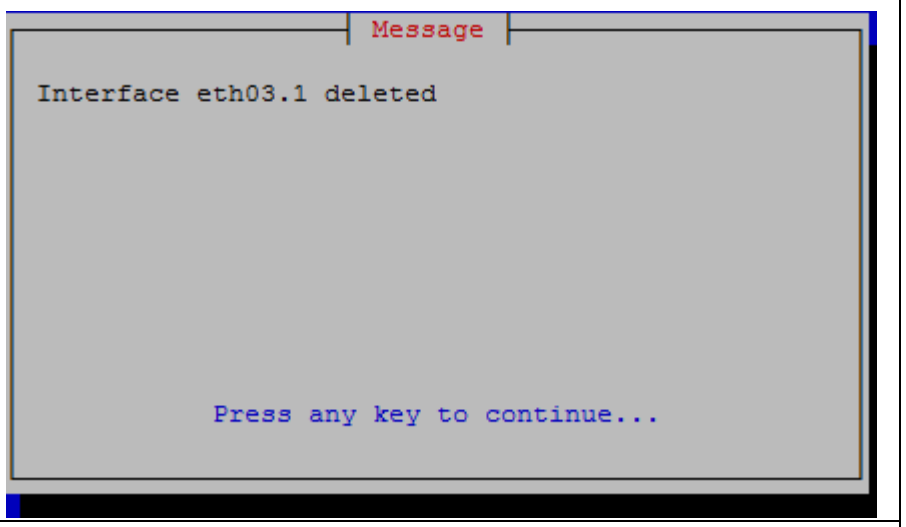
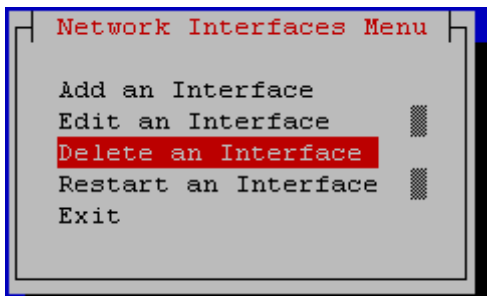
Procedure 10 Procedure to Configure Sync Network Redundancy

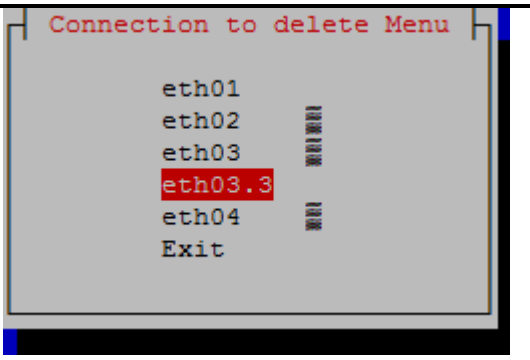
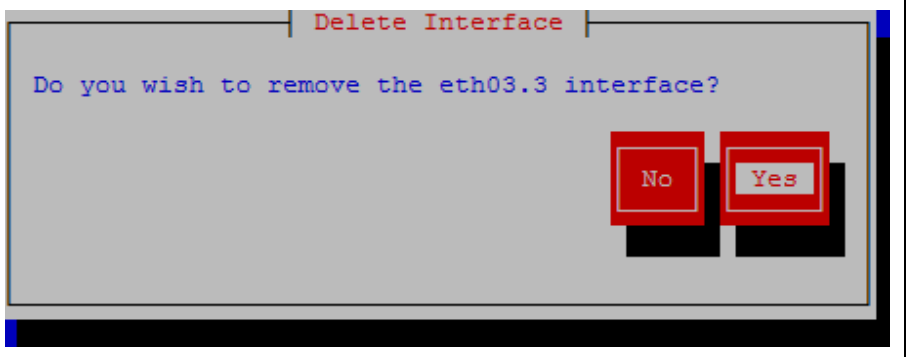
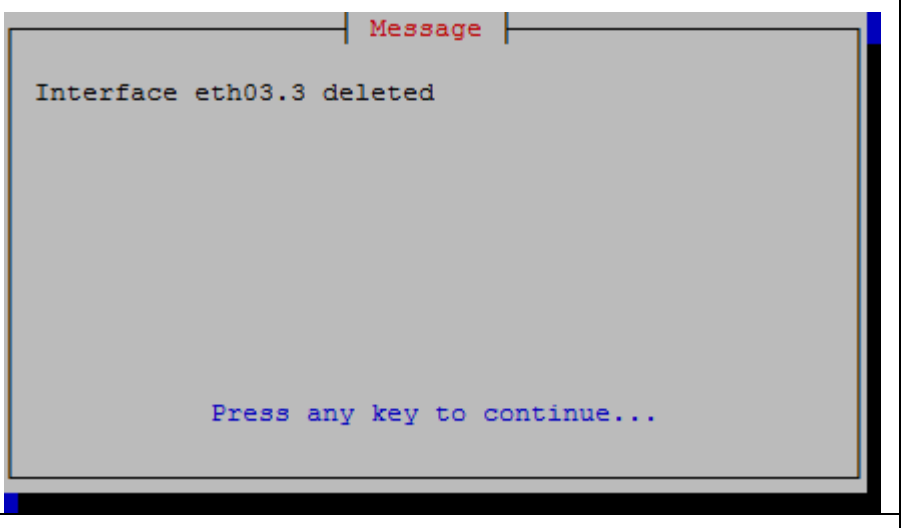
Note: This procedure will configure the E5-APP-B EPAP cards with the Sync Network Redundancy feature. This will use the Backup Provisioning Network ports, therefor the Backup Provisioning Network feature cannot be used.

Procedure 10: Procedure to Configure Sync Network Redundancy

S T E P #	This procedure will sync network redundancy in place of backup provisioning network. Note: Estimated time of completion is 90 minutes.	
1. ☐	**MPS A:** Log in as "admusr" user to the serial console of E5-APP-B card.	`[hostname] consolelogin: admusr` `password:` *`password`*
2. ☐	**MPS A:** Start platcfg utility.	`$ sudo su - platcfg`
3. ☐	**MPS A:** Navigate to the Network Configuration Menu.	On the platcfg **Main Menu**, select **Network Configuration** and press [**ENTER**]. 
4. ☐	**MPS A:** Navigate to the Network Interfaces Menu.	On the Network Configuration menu, select **Network Interfaces** and press [**ENTER**].

		
5. ☐	**MPS A:** Navigate to the Delete an Interface Menu.	On the Network Interfaces Menu, select **Delete an Interface** and press [**ENTER**]. 
6. ☐	**MPS A:** Select to delete eth03.1 and press Enter.	On the Connection to delete Menu, select **eth03.1** and press [**ENTER**]. 
7. ☐	**MPS A:** Confirm eth03.1 interface deletion.	Select **Yes** and press **[ENTER]** to delete the eth03.1 interface.

		 
8. ☐	**MPS A:** Press any key to continue. Navigate to the Delete an Interface Menu.	On the Network Interfaces Menu, select **Delete an Interface** and press [**ENTER**]. 
9. ☐	**MPS A:** Select to delete eth03.3 and press Enter.	On the Connection to delete Menu, select **eth03.3** and press [**ENTER**].

		
10. ☐	**MPS A:** Confirm eth03.3 interface deletion.	Select **Yes** and press **[ENTER]** to delete the eth03.3 interface.  
11. ☐	**MPS A:** Press any key to continue and 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.
12. ☐	**MPS A:** Verify that eth03.1 and eth03.3 are deleted.	`$ sudo netAdm show` eth01 eth02 eth03

		eth04 The interfaces eth03.1 and eth03.3 should not be listed.
13. ☐	**MPS A:** Take the backup of original net.conf.	`$ sudo cp /usr/TKLC/plat/etc/net.conf /usr/TKLC/plat/etc/net.conf_orig`
14. ☐	**MPS A:** Replace the network configuration file for sync network redundancy.	`$ sudo cp /usr/TKLC/plat/etc/net.sync.conf /usr/TKLC/plat/etc/net.conf` cp: overwrite `/usr/TKLC/plat/etc/net.conf'? y
15. ☐	**MPS A A:** Take the backup of original vlan.conf.	`$ sudo p /usr/TKLC/plat/etc/vlan.conf /usr/TKLC/plat/etc/vlan.conf_orig`
16. ☐	**MPS A:** Replace the vlan configuration file for sync network redundancy.	E5-APP-B Card: Single Pair of Switch(18 SM Cards): **vlan.sync.single_pair_switch.e5appb.conf** (Ports 7 to 24 on switch 1A and ports 5 to 24 on switch 1B can be used for SM card connectivity) Two Pair of switches (40 SM Cards): **vlan.sync.e5appb.conf** (Ports 7 to 22 on switch 1A and ports 5 to 22 on switch 1B can be used for SM card connectivity, no change for switch 1C and 1D) For e.g., on T1200 server for Single pair of switches: `$ sudo cp /usr/TKLC/plat/etc/vlan.sync.single_pair_switch.t1200.conf /usr/TKLC/plat/etc/vlan.conf` cp: overwrite `/usr/TKLC/plat/etc/vlan.conf'? y
17. ☐	**MPS A:** Reconfigure the network interfaces.	`$ sudo netAdm init` Interface bond0 added Interface eth01 added Interface eth02 added Interface bond0.3 added Interface eth03 added Interface eth04 added Interface bond0.1 added Successfully configured network
18. ☐	**MPS A:** Restart network service.	`$ sudo service network restart`
19. ☐	**MPS B**	Repeat all the above steps on the MPS B.
20. ☐	**Network Connectivity**	Connect eth04 on MPS A to port 5 on Switch 1A and connect eth04 on MPS B to port 6 on Switch 1A.

21. ☐	Configure Switch 1B first and then Switch 1A using Procedure 9.	Perform **Procedure 9** – Switch1B and Switch1A Configuration to configure Switch1B and then Switch1A.
22. ☐	**MPS A:** Verify that ping mate is working. Also ensure that the sync redundancy is working fine by turning off one switch and running ping mate.	`$ ping -c 4 mate` PING mate (192.168.2.100) 56(84) bytes of data. 64 bytes from mate (192.168.2.100): icmp_seq=1 ttl=64 time=0.189 ms 64 bytes from mate (192.168.2.100): icmp_seq=2 ttl=64 time=0.188 ms 64 bytes from mate (192.168.2.100): icmp_seq=3 ttl=64 time=0.166 ms 64 bytes from mate (192.168.2.100): icmp_seq=4 ttl=64 time=0.143 ms --- mate ping statistics --- 4 packets transmitted, 4 received, 0% packet loss, time 3001ms rtt min/avg/max/mdev = 0.143/0.171/0.189/0.022 ms
23. ☐	**MPS A:** Reconfigure EPAP using epapconfig menu if the configuration was done before configuring sync network redundancy.	`$ su - epapconfig` Please follow the instructions written in Procedure 11.
24. ☐	Procedure complete.	Procedure is complete.

Procedure 11 Configuring the application

Procedure 11: 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 MY ORACLE SUPPORTAND ASK FOR ASSISTANCE.	
NOTE: This procedure configures the application in the IPv4 configuration. To configure the application in the IPv6 configuration, refer to [6].		
1. ☐	**MPS A:** Log on Server A.	`[hostname] consolelogin: admusr` `password: password`
2. ☐	**MPS A:** Switch user to epapconfig.	`$ sudo su - epapconfig`

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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 epapdev user on the mate MPS server. 5. You must be prepared to designate this MPS as provisionable or non-provisionable. Press return to continue…
4. ☐	**MPS A:** Upon pressing Return you can now abort or proceed with the initial configuration. To continue with the configuration, enter Y.	Are you sure you wish to continue? [N]: Y

5. ☐	**MPS A:**
	For Mixed EPAP or Non-Provisionable EPAP: You are prompted for the **epapdev**, **root and admusr** user password on the mate MPS server in order to confirm the secure shell keys are successfully exchanged. The example shows the output generated when the correct password is entered, the secure shell keys are successfully exchanged, and the UI database is set up on **MPS A and MPS B** at this site.
	Type **Y if this site is Provisionable, otherwise Type N.**
	
	For Standalone PDB: You are prompted for the **System Number** and **Network Configuration Type.**
		Password of epapdev:
		ssh is working correctly.
		Password of root:
		ssh is working correctly.
		Password of admusr:
		ssh is working correctly.
		Password of root:
		ssh is working correctly.
		Building the initial database on side A.
		  Stopping local slave
		  Stopping remote slave
		EuiDB already exists.
		FIPS integrity verification test failed.
		  Starting local slave
		  Starting remote slave
		
		The provisioning architecture of the EPAP software allows for exactly 2 customer provisionable sites. Additional sites that are to receive the data provisioned to the provisionable sites should answer 'N' here.
		
		If there are only 2 mated sites, it is safe to answer `Y' here.
		
		Is this site provisionable? [Y]: Y
		
		Caution: This is the first login of the text user interface.
		
		Press return to continue...
		Are you sure you wish to continue? [N]: Y
		Building the initial database on side A.
		  Stopping local slave
		No preexisting EuiDB database was detected.
		Set EPAP System Number: ES12345678
		Enter the Network Configuration Type (1 for Single, 2 for Segmented): 2

Procedure 11: Configuring the Application

6. ☐	**MPS A**: The EPAP Configuration Menu is displayed. Select choice 2, Configure Network Interfaces Menu.	/-----EPAP 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 | PDB Configuration Menu | |---|---| | 9 | Security | |---|---| | 10 | SNMP Configuration | |---|---| | 11 | Configure Alarm Feed | |---|---| | 12 | Configure Query Server | |---|---| | 13 | Configure Query Server Alarm Feed | |---|---| | 14 | Configure SNMP Agent Community | |---|---| | 15 | Mate Disaster Recovery | |---|---| | e | Exit | \--/ Enter Choice: **2**
7. ☐	**MPS A:** The Configure Network Interfaces Menu is displayed. Select choice 1, Configure Provisioning Network.	**Configuration Menu for Mixed EPAP and Non-Provisionable EPAP:** /-----Configure Network Interfaces Menu----\ /--\ | 1 | Configure Provisioning Network | |---|---| | 2 | Configure Sync Network | |---|---| | 3 | Configure DSM Network | |---|---| | 4 | Configure Backup Provisioning Network | |---|---| | 5 | Configure Static NAT Addresses | |---|---| | 6 | Configure Provisioning VIP Addresses | |---|---| | e | Exit | \--/ Enter Choice: **1** **Configuration Menu for Standalone PDB:** /-----Configure Network Interfaces Menu----\ /--\ | 1 | Configure Provisioning Network | |---|---| | 2 | Configure Backup Provisioning Network | |---|---| | 3 | Configure Static NAT Addresses |

		```|----|-------------------------------------|| e | Exit |\\--/Enter Choice: 1```

8. ☐	**MPS A:** The submenu for configuring communications networks and other information is displayed.
	
	Note: Enter choice "1" for IPv4 configuration. Otherwise, enter choice "2" for IPv6 configuration.
		```/-----Configure Provisiong Network Menu-\/--\\| 1 | IPv4 Configuration ||----|-------------------------------------|| 2 | IPv6 Configuration ||----|-------------------------------------|| e | Exit |\\--/Enter Choice:```
		
		Example output for Mixed EPAP and Non-Provisionable EPAP in IPv4 configuration:
		
		```Enter Choice: 1Verifying connectivity with mate...EPAP A provisioning network IP Address: 10.75.141.47EPAP B provisioning network IP Address: 10.75.141.48EPAP provisioning network netmask: 255.255.255.128EPAP provisioning network default router: 10.75.141.1```
		
		Example output Standalone PDB in IPv4 configuration:
		
		```EPAP A provisioning network IP Address:10.75.141.47EPAP provisioning network netmask:255.255.255.128EPAP provisioning network default router:10.75.141.1```

9. ☐	**MPS A:** The Configure Network Interfaces menu is displayed. Select choice e, Exit.	Configuration Menu for Mixed EPAP and Non-Provisionable EPAP:
		
		```/-----Configure Network Interfaces Menu----\/---\\| 1 | Configure Provisioning Network ||----|-------------------------------------|| 2 | Configure Sync Network ||----|-------------------------------------|| 3 | Configure DSM Network ||----|-------------------------------------|| 4 | Configure Backup Provisioning Network ||----|-------------------------------------|| 5 | Configure Static NAT Addresses ||----|-------------------------------------|| 6 | Configure Provisioning VIP Addresses ||----|-------------------------------------|| e | Exit |\\---/Enter Choice: e```
		
		Configuration Menu for Standalone PDB:
		
		```/-----Configure Network Interfaces Menu----\/---\\| 1 | Configure Provisioning Network ||----|-------------------------------------|| 2 | Configure Backup Provisioning Network ||----|-------------------------------------|| 3 | Configure Static NAT Addresses ||----|-------------------------------------|| e | Exit |\\---/```

Procedure 11: Configuring the Application

		`Enter Choice: e`
10. ☐	**MPS A:** The EPAP Configuration Menu is displayed. Select choice 3, Set Time Zone.	`Enter Choice: 3`

11. ☐	**MPS A:** An important Caution statement is displayed. After noting the caution, press Return to continue.
	You are prompted for confirmation on setting the time zone for the MPS A and MPS B at this site for Mixed EPAP or Non-provisionable EPAP. For Standalone PDB, time zone for MPS A is prompted only. Enter y to confirm the change. (Pressing Return accepts the default of 'N' (no), cancels the action and you are returned to the EPAP Configuration Menu). Type **Y** to set the time zone.
		`Caution: This action requires a reboot of the affected MPS servers to activate the change. Operation of the EPAP software before the MPS servers are rebooted may have unpredictable consequences.`
		
		`Press return to continue...<return>`
		
		`Are you sure you wish to change the timezone for MPS A and B? [N]: Y`

12. ☐	**MPS A:** The following prompt is displayed. If the time zone is known, it can be entered at the prompt. If the exact time zone value is not known, press Return, and a list of the valid names is displayed.	`Enter a time zone:`

13. ☐	If an incorrect time zone is entered or if only the Return key is pressed, a list of all available time zone values is displayed.
	
	Note: The time zone change does not take effect until the next time the MPS is rebooted.
		`Valid time zone files are:`
		`Australia/Broken_Hill Australia/LHI Australia/NSW`
		`Australia/North Australia/Queensland Australia/South`
		`Australia/Tasmania Australia/Victoria Australia/West`
		`Australia/Yancowinna Australia/ACT Brazil/Acre`
		`Brazil/DeNoronha Brazil/East Brazil/West`
		`Canada/Atlantic Canada/Central Canada/East-Saskatchewan`
		`Canada/Eastern Canada/Mountain Canada/Newfoundland`
		`Canada/Pacific Canada/Yukon Chile/Continental`
		`Chile/EasterIsland Etc/GMT Etc/GMT+1`
		`--------Sample Output continues---------`
		`---------------End of output below----------------`
		`MST MST7MDT NZ`
		`NZ-CHAT PRC PST8PDT`

		Poland Portugal ROC ROK Singapore Turkey W-SU WET africa asia australasia backward etcetera europe factory northamerica pacificnew solar87 solar88 solar89 southamerica GB-Eire GMT GMT+0 GMT+1 GMT+10 GMT+11 GMT+12 GMT+13 GMT+2 GMT+3 GMT+4 GMT+5 GMT+6 GMT+7 GMT+8 GMT+9 GMT-0 GMT-1 GMT-10 GMT-11 GMT-12 GMT-2 GMT-3 GMT-4 GMT-5 GMT-6 GMT-7 GMT-8 GMT-9 Greenwich Jamaica Navajo UCT UTC Universal Zulu Enter a time zone file (relative to /usr/share/lib/zoneinfo): **US/Eastern**
14. ☐	**NOTE: If an NTP server does not need to be added at this time, you can skip all steps related to option 7 Configure NTP Server Menu, and proceed to the PDB Configuration Menu at step 20.** **SERVER A:** Enter choice 7, Configure NTP Server Menu.	/-----EPAP 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 | PDB Configuration Menu | |----|----------| | 9 | Security | |----|----------| | 10 | SNMP Configuration | |----|----------| | 11 | Configure Alarm Feed | |----|----------| | 12 | Configure Query Server | |----|----------| | 13 | Configure Query Server Alarm Feed | |----|----------| | 14 | Configure SNMP Agent Community | |----|----------| | 15 | Mate Disaster Recovery | |----|----------| | e | Exit | \----------/ Enter Choice: 7
15. ☐	**MPS A:** The EPAP Configure NTP Server Menu is displayed. Enter choice 2, Add External NTP Server.	/-----EPAP Configure NTP Server Menu-\ /----------\ | 1 | Display External NTP Server | |----|----------| | 2 | Add External NTP Server | |----|----------| | 3 | Remove External NTP Server | |----|----------| | e | Exit |

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	Note: Enter choice "1" to configure IPv4 NTP server. Otherwise, enter choice "2" to configure IPv6 NTP server.	\------------------------------------/ Enter Choice: **2** /-----Add External NTP Server Menu-\ /------------------------------------\ | 1 | IPv4 Configuration | |----|-------------------------------| | 2 | IPv6 Configuration | |----|-------------------------------| | e | Exit | \------------------------------------/ Enter Choice:
16. ☐	**MPS A:** You are prompted to confirm the action of adding a new NTP Server. (Pressing Return would accept the default of '**N**' or 'no', and would cancel the action to add an external NTP server.) Type **Y** and press return. **NOTE:** All NTP Server IP addresses shown are only examples.	Are you sure you wish to add new NTP Server? [N]: Y Enter the EPAP NTP Server IP Address: <NTP_server_IP_Addr> External NTP Server [<NTP_server_IP_Addr>] has been added. Press return to continue...<return>
17. ☐	**MPS A:** The EPAP Configure NTP Server Menu is displayed. Enter choice 1, Display External NTP Server.	/-----EPAP Configure NTP Server Menu-\ /------------------------------------\ | 1 | Display External NTP Server | |----|-------------------------------| | 2 | Add External NTP Server | |----|-------------------------------| | 3 | Remove External NTP Server | |----|-------------------------------| | e | Exit | \------------------------------------/ Enter Choice: 1
18. ☐	**MPS A:** Verify the External NTP Server IP address is correct and press Return. **NOTE**: All NTP Server IP addresses shown are only examples.	ntpserver1 <Ipaddress> Press return to continue...**<return>**
19. ☐	**MPS A:** The EPAP Configure NTP Server Menu is displayed. Select choice e, Exit.	/-----EPAP Configure NTP Server Menu-\ /------------------------------------\ | 1 | Display External NTP Server | |----|-------------------------------| | 2 | Add External NTP Server | |----|-------------------------------| | 3 | Remove External NTP Server | |----|-------------------------------|

		| e | Exit | \\----------/ Enter Choice: **e**
20. ☐	**MPS A:** The EPAP Configuration Menu is displayed. Select choice 8, PDB Configuration Menu. **Note: Execute the PDB Configuration Menu (except step 26) even if the EPAP is to be configured as Non-Provisionable.**	/-----EPAP 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 | PDB Configuration Menu | |----|----------| | 9 | Security | |----|----------| | 10 | SNMP Configuration | |----|----------| | 11 | Configure Alarm Feed | |----|----------| | 12 | Configure Query Server | |----|----------| | 13 | Configure Query Server Alarm Feed | |----|----------| | 14 | Configure SNMP Agent Community | |----|----------| | 15 | Mate Disaster Recovery | |----|----------| | e | Exit | \\----------/
21. ☐	**MPS A:** The Configure PDB Menu is displayed. Select choice 1.	Configuration Menu for Mixed EPAP and Non-Provisionable EPAP: /-----Configure PDB Menu-----------\ /----------\ | 1 | Configure PDB Network | |----|----------| | 2 | RTDB Homing Menu | |----|----------| | 3 | Change MPS Provisionable State | |----|----------| | 4 | Create PDB | |----|----------| | 5 | Change Auto DB Recovery State | |----|----------| | 6 | Change PDBA Proxy State | |----|----------| | e | Exit | \\----------/ Enter Choice: 1 Configuration Menu for Standalone PDB: /-----Configure PDB Menu----------\ /----------\ | 1 | Configure PDB Network | |----|----------| | 2 | Create PDB | |----|----------|

		`| 3 | Change Auto DB Recovery State |`
		`|---|---|`
		`| e | Exit |`
		`\-----/`
		
		`Enter Choice: 1`
		
		`/-----PDB Network Configuration Menu-\`
		`/-----\`
		`| 1 | IPv4 Configuration |`
		`|---|---|`
		`| 2 | IPv6 Configuration |`
		`|---|---|`
		`| e | Exit |`
		`\-----/`
		
		`Enter Choice:`

22. ☐	**MPS A:** Provide the IP address of the MPS A on EAGLE A and the IP address for the MPS A on EAGLE B where the remote PDBA database is to reside. Enter the password for MPS A on EAGLE B. If configuration of the PDB network is successful, the output confirms the secure shell keys are successfully exchanged, as shown in the output for Provisionable MPSs
	Note: If the default values shown are correct press return to accept them. Otherwise, enter the values and press Return.
	
	In case of Non-Provisionable EPAP provide the IP address of Active and Standby PDBA.
	
	In case of Standalone PDB, provide remote PDBA IP address.
		Following is the output on Mixed EPAP.
		
		`Verifying connectivity with mate...`
		`This MPS is configured to be provisionable. The EPAP local PDBA IPv4 address is currently set to <IP>. The EPAP local PDBA IPv6 address is currently not configured.`
		`The EPAP local PDBA IPv4 Address is <IP>.`
		`EPAP remote PDBA IP Address [0.0.0.0]: <A IP Address>`
		`EPAP remote PDBA B machine IP Address [0.0.0.0]: <B IP Address>`
		`The server does not know of <A IP Address>`
		`Will just exchange host keys for the name given!`
		`Password of epapdev: <epapdev password>`
		
		Following is the output on Non-Provisionable EPAP.
		
		`Verifying connectivity with mate...`
		`This MPS is configured to be non-provisionable. You will be prompted for both of the remote PDBA addresses. Order does not matter.`
		
		`Enter one of the two PDBA IP addresses [0.0.0.0]: <IP Address>`
		`Enter the other of the two PDBA IP addresses [0.0.0.0]: <IP Address>`
		
		Following is the output on Standalone PDB.
		`This MPS is configured to be provisionable. The EPAP local PDBA IPv4 address is currently set to <IP>`
		`The EPAP local PDBA IPv6 address is currently not set.`
		`The EPAP local PDBA IPv4 Address is <IP>.`
		`EPAP remote PDBA IP Address [0.0.0.0]:`

23. ☐	**MPS A**: Press Return to return to the Configure PDB Menu.
	Enter choice 2, RTDB Homing Menu.
		Skip this step if EPAP configured as Standalone PDB.
		
		`/-----Configure PDB Menu----------\`
		`/-----\`
		`| 1 | Configure PDB Network |`
		`|---|---|`
		`| 2 | RTDB Homing Menu |`
		`|---|---|`
		`| 3 | Change MPS Provisionable State |`

		|----|--------------------------------| | 4 | Create PDB | |----|--------------------------------| | 5 | Change Auto DB Recovery State | |----|--------------------------------| | 6 | Change PDBA Proxy State | |----|--------------------------------| | e | Exit | \----------------------------------/ Enter Choice: **2**
24. ☐	**MPS A**: The RTDB Homing Menu is displayed. Enter choice 3, Configure Standby RTDB Homing.	Skip this step if for Standalone PDB. /-------RTDB Homing Menu------------\ /----------------------------------\ | 1 | Configure Specific RTDB Homing | |----|--------------------------------| | 2 | Configure Active RTDB Homing | |----|--------------------------------| | 3 | Configure Standby RTDB Homing | |----|--------------------------------| | e | Exit | \----------------------------------/ Enter Choice: **3** In the event that the Standby PDB is unavailable, should updates be allowed to the RTDBs from the Active MPS? [Y]: **Y** The RTDBs will home to the Standby and will allow updates from the Active PDB. Press return to continue...**<return>**
25. ☐	**MPS A**: The RTDB Homing Menu is displayed. Enter **e** to exit.	Skip this step if for Standalone PDB. /-------RTDB Homing Menu------------\ /----------------------------------\ | 1 | Configure Specific RTDB Homing | |----|--------------------------------| | 2 | Configure Active RTDB Homing | |----|--------------------------------| | 3 | Configure Standby RTDB Homing | |----|--------------------------------| | e | Exit | \----------------------------------/ Enter Choice: **e**
26. ☐	**MPS A**: Enter choice 4, Create PDB. **NOTE:** It may be asked to stop the EPAP software if it is running. Stop it by answering 'Y'.	**Note: Perform this step only for the Provisionable EPAP (Mixed EPAP or Standalone PDB). Skip this step if the EPAP is configured as Non-Provisionable.** The Menu for Mixed EPAP. /-----Configure PDB Menu------------\ /----------------------------------\ | 1 | Configure PDB Network | |----|--------------------------------| | 2 | RTDB Homing Menu | |----|--------------------------------| | 3 | Change MPS Provisionable State | |----|--------------------------------| | 4 | Create PDB | |----|--------------------------------| | 5 | Change Auto DB Recovery State | |----|--------------------------------| | 6 | Change PDBA Proxy State |

Procedure 11: Configuring the Application

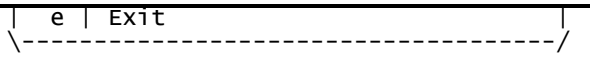
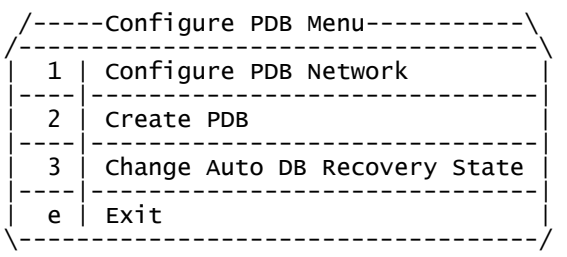
```
|----|--------------------------------|
|  e | Exit                           |
\------------------------------------/

Enter Choice: 4
```

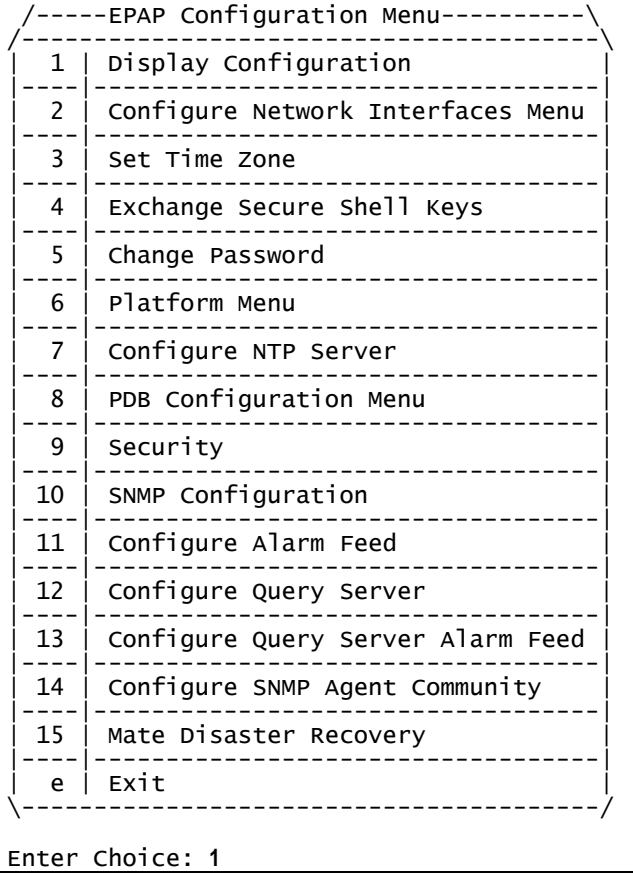
The Menu for Standalone PDB.

```
 /-----Configure PDB Menu-----------\
/------------------------------------\
|  1 | Configure PDB Network         |
|----|-------------------------------|
|  2 | Create PDB                    |
|----|-------------------------------|
|  3 | Change Auto DB Recovery State |
|----|-------------------------------|
|  e | Exit                          |
\------------------------------------/

Enter Choice: 2

localIp = 10.75.141.47
localName=Natal-47A
remoteIp = 0.0.0.0
There is no remote PDB

remoteBIp = 0.0.0.0
There is no remote B PDB
mysqld is alive
Local PDB database does not exist.
Creating the local database
~~ /etc/init.d/Pdba stop ~~
PDBA process is already stopped.
Removing local pdba status file.

Creating the remote database
```

27. ☐	NOTE:
	The example output to the right has been truncated for brevity.
		TRUNCATED OUTPUT
		
		`MyISAM file: /var/TKLC/epap/db/pdb/stats/pdbaStats.MYI is already checked`
		`Waiting for mysqlpdb to start done`
		`Removing local pdba status file.`
		`Removing remote pdba status file.`

28. ☐	**MPS A**: The Configure PDB Menu is displayed.
	Enter choice **e**, Exit.
	The Configure PDB Menu is displayed.
	Enter choice **e**, Exit.
		The Configure PDB Menu for Mixed EPAP:
		
		`/-----Configure PDB Menu------------\`
		`/-------------------------------------\`
		`|  1 | Configure PDB Network          |`
		`|----|--------------------------------|`
		`|  2 | RTDB Homing Menu               |`
		`|----|--------------------------------|`
		`|  3 | Change MPS Provisionable State |`
		`|----|--------------------------------|`
		`|  4 | Create PDB                    |`
		`|----|--------------------------------|`
		`|  5 | Change Auto DB Recovery State  |`
		`|----|--------------------------------|`
		`|  6 | Change PDBA Proxy State        |`
		`|----|--------------------------------|`

		
		`|  e | Exit |`
		`\-----------------------------------/`
		
		`Enter Choice: e`
		
		The Configure PDB Menu for Standalone PDB:
		 
		`/-----Configure PDB Menu-----------\`
		`/-----------------------------------\`
		`|  1 | Configure PDB Network |`
		`|----|-----------------------------|`
		`|  2 | Create PDB |`
		`|----|-----------------------------|`
		`|  3 | Change Auto DB Recovery State |`
		`|----|-----------------------------|`
		`|  e | Exit |`
		`\-----------------------------------/`
		
		`Enter Choice: e`

29. ☐	**MPS A**: The EPAP Configuration Menu is displayed. Enter choice **1**, Display Configuration.	
		`/-----EPAP 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 | PDB Configuration Menu |`
		`|----|---------------------------------|`
		`|  9 | Security |`
		`|----|---------------------------------|`
		`| 10 | SNMP Configuration |`
		`|----|---------------------------------|`
		`| 11 | Configure Alarm Feed |`
		`|----|---------------------------------|`
		`| 12 | Configure Query Server |`
		`|----|---------------------------------|`
		`| 13 | Configure Query Server Alarm Feed |`
		`|----|---------------------------------|`
		`| 14 | Configure SNMP Agent Community |`
		`|----|---------------------------------|`
		`| 15 | Mate Disaster Recovery |`
		`|----|---------------------------------|`
		`|  e | Exit |`
		`\---------------------------------------/`
		
		`Enter Choice: 1`

30. ☐	**MPS A:** The configuration information is displayed. Verify that the configuration data displayed is correct.	**For Mixed EPAP and Non-Provisionable EPAP configured in IPv4 configuration, the configuration data shall look like:**
		
		`EPAP A Provisioning Network IP Address = 10.75.141.55`
		`EPAP A Provisioning Network IP Address v6 = Not configured`
		`EPAP B Provisioning Network IP Address = 10.75.141.56`
		`EPAP B Provisioning Network IP Address v6 = Not configured`
		`Provisioning Network Netmask = 255.255.255.128`
		`Provisioning Network Prefix = Not configured`
		`Provisioning Network Default Router = 10.75.141.1`
		`Provisioning Network Default Router v6 = Not configured`
		`EPAP A Backup Prov Network IP Address = Not configured`
		`EPAP A Backup Prov Network IP Address v6 = Not configured`

```
EPAP B Backup Prov Network IP Address     = Not configured
EPAP B Backup Prov Network IP Address v6  = Not configured
Backup Prov Network Netmask               = Not configured
Backup Prov Network Prefix v6             = Not configured
Backup Prov Network Default Router        = Not configured
Backup Prov Network Default Router v6     = Not configured
EPAP A Sync Network Address               = 192.168.2.100
EPAP B Sync Network Address               = 192.168.2.200
EPAP A Main DSM Network Address           = 192.168.120.100
EPAP B Main DSM Network Address           = 192.168.120.200
EPAP A Backup DSM Network Address         = 192.168.121.100
EPAP B Backup DSM Network Address         = 192.168.121.200
EPAP IP Version                           = IPv4
EPAP A HTTP Port                          = 80
EPAP B HTTP Port                          = 80
EPAP A HTTP SuExec Port                   = 8001
EPAP B HTTP SuExec Port                   = 8001
EPAP A Banner Connection Port             = 8473
EPAP B Banner Connection Port             = 8473
EPAP A Static NAT Address                 = Not configured
EPAP B Static NAT Address                 = Not configured
PDBI Port                                 = 5873
Remote MPS A Static NAT Address           = Not configured
Remote MPS A HTTP Port                    = 80
Local Provisioning VIP                    = Not configured
Remote Provisioning VIP                   = Not configured
Local PDBA Address                        = 10.75.141.55
Local PDBA Address v6                     =
0000:0000:0000:0000:0000:0000:0000:0000
Remote PDBA Address                       = 0.0.0.0
Remote PDBA B Address                     = 0.0.0.0
Time Zone                                 = America/New_York
PDB Database                              = Exists
Preferred PDB                             = 10.75.141.55
Allow updates from alternate PDB          = Yes
Auto DB Recovery Enabled                  = No
PDBA Proxy Enabled                        = No

Press return to continue...<return>
```

For Standalone PDB, the configuration data shall look like:

```
EPAP A Provisioning Network IP Address    = 10.250.51.130
EPAP B Provisioning Network IP Address    = Not configured
Provisioning Network Netmask              = 255.255.255.128
Provisioning Network Prefix               = Not configured
Provisioning Network Default Router       = 10.250.51.1
Provisioning Network Default Router v6    = Not configured
EPAP A Backup Prov Network IP Address     = Not configured
EPAP A Backup Prov Network IP Address v6  = Not configured
Backup Prov Network Netmask               = Not configured
Backup Prov Network Prefix v6             = Not configured
Backup Prov Network Default Router        = Not configured
Backup Prov Network Default Router v6     = Not configured
Network Configuration Type                = SINGLE
EPAP IP Version                           = IPv4
EPAP A HTTP Port                          = 80
EPAP A HTTP SuExec Port                   = 8001
EPAP A Banner Connection Port             = 8473
EPAP A Static NAT Address                 = Not configured
PDBI Port                                 = 5873
Remote MPS A Static NAT Address           = Not configured
Remote MPS A HTTP Port                    = Not configured
Local PDBA Address                      = 10.250.51.130
Local PDBA Address v6                   = Not configured
Remote PDBA Address                     = 0.0.0.0
Time Zone                               = US/Eastern
PDB Database                            = Exists
Auto DB Recovery Enabled                = No

Press return to continue... <return>
```

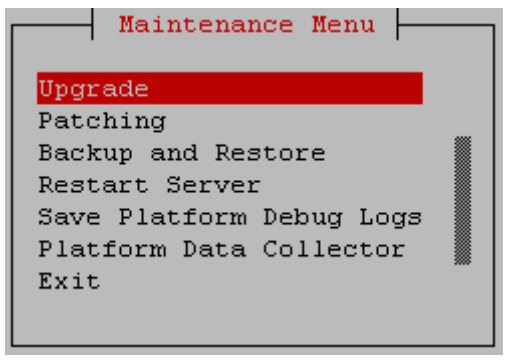
Procedure 11: Configuring the Application

31. ☐	**MPS A**: The EPAP Configuration Menu is displayed. Select choice **6**, Platform Menu.	/-----EPAP 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 | PDB Configuration Menu | |----|----------------------------------| | 9 | Security | |----|----------------------------------| | 10 | SNMP Configuration | |----|----------------------------------| | 11 | Configure Alarm Feed | |----|----------------------------------| | 12 | Configure Query Server | |----|----------------------------------| | 13 | Configure Query Server Alarm Feed | |----|----------------------------------| | 14 | Configure SNMP Agent Community | |----|----------------------------------| | 15 | Mate Disaster Recovery | |----|----------------------------------| | e | Exit | \--/ Enter Choice: **6**
32. ☐	**MPS A**: The Platform Menu is displayed. Enter Choice 2, Reboot MPS.	Menu for Mixed EPAP and Non-Provisionable EPAP: /-----EPAP Platform Menu-\ /--------------------------\ | 1 | Initiate Upgrade | |----|---------------------| | 2 | Reboot MPS | |----|---------------------| | 3 | MySQL Backup | |----|---------------------| | 4 | RTDB Backup | |----|---------------------| | 5 | PDB Backup | |----|---------------------| | e | Exit | \--------------------------/ Enter Choice: **2** Menu for Standalone PDB: /-----EPAP Platform Menu-\ /--------------------------\ | 1 | Initiate Upgrade | |----|---------------------| | 2 | Reboot MPS | |----|---------------------| | 3 | MySQL Backup | |----|---------------------| | 4 | PDB Backup | |----|---------------------| | e | Exit | \--------------------------/ Enter Choice: **2**

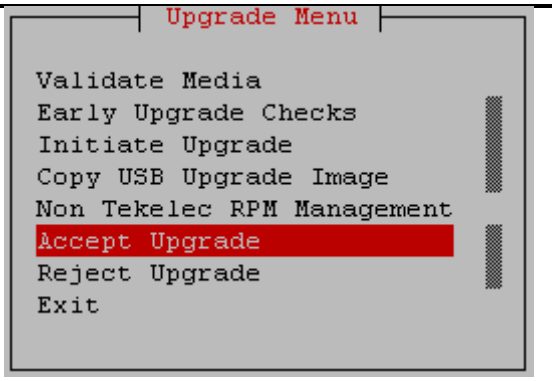
Procedure 11: Configuring the Application

33. ☐	**MPS A**: For Mixed EPAP and Non-Provisionable EPAP you are prompted whether MPS A, MPS B or BOTH sides are to be rebooted. Select the default value of **BOTH** by pressing Return.
	
	In case of the Standalone PDB, no prompt is given and the server goes down for a reboot.
		For Mixed EPAP and Non-Provisionable EPAP, a prompt is displayed:
		`Reboot MPS A, MPS B or [BOTH]: <return>`
		
		For Standalone PDB, the following is displayed.
		`Reboot local MPS...`
		`Broadcast message from root (pts/1) (Thu May 29 16:13:51 2014):`
		`The system is going down for reboot NOW!`

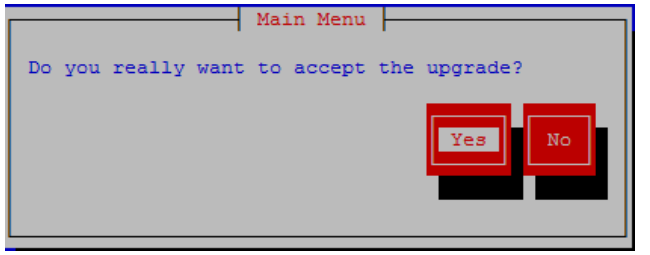
34. ☐	**MPS A**: The console logon appears at the system prompt signifying the EPAP initial configuration is completed.	`<hostname> login: admusr`
		`Password:`
		
		Note: The console logon will be preceded by many lines of reboot output.

35. ☐	**MPS A**: Accept Upgrade	`$ sudo su - platcfg` 

Procedure 11: Configuring the Application



Note: The “Reject Upgrade” menu is also available after the EPAP installation. However, this option should not be used after the first installation of application. It should be used in subsequent upgrades to return to a previous application release.



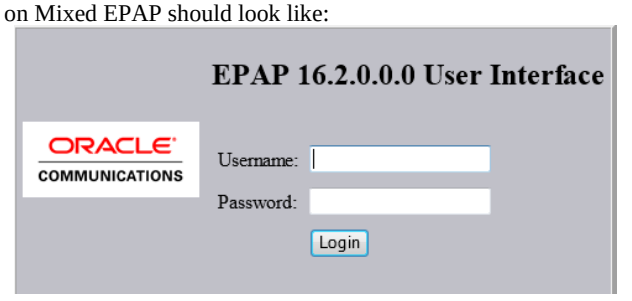

```
Called with options: --accept
Loading Backout::BackoutType::RPM
Accepting Upgrade
Executing common accept tasks
Setting POST_UPGRADE_ACTION to ACCEPT in upgrade info.
Cleaning backout directory.
Clearing Upgrade Accept/Reject alarm.
Cleaning message from MOTD.
No patch pending alarm on server so no MOTD update.
Removing SWAP /dev/mapper/vgroot-plat_swap from fstab.
Removed 1 swap entries from fstab
Cleaning up RPM config backup files...
Checking /
Checking /boot
Checking /tmp
Checking /usr
Checking /var
Checking /var/TKLC
Checking /var/TKLC/epap/db
Checking /var/TKLC/epap/free
Checking /var/TKLC/epap/logs
Checking /var/TKLC/epap/rt
Starting cleanup of RCS repository.
 INFO: Removing '/etc/sysconfig/network-scripts/ifcfg-eth0' from RCS repository
 INFO: Removing '/etc/pam.d/system-auth' from RCS repository
 INFO: Removing '/etc/pam.d/password-auth' from RCS repository
 INFO: Removing '/var/lib/prelink/force' from RCS repository
```

Procedure 11: Configuring the Application

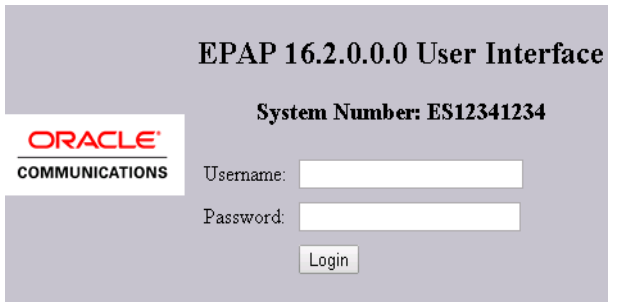
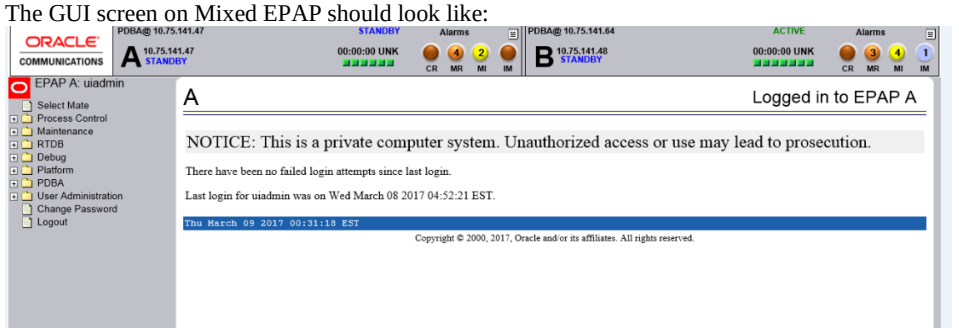
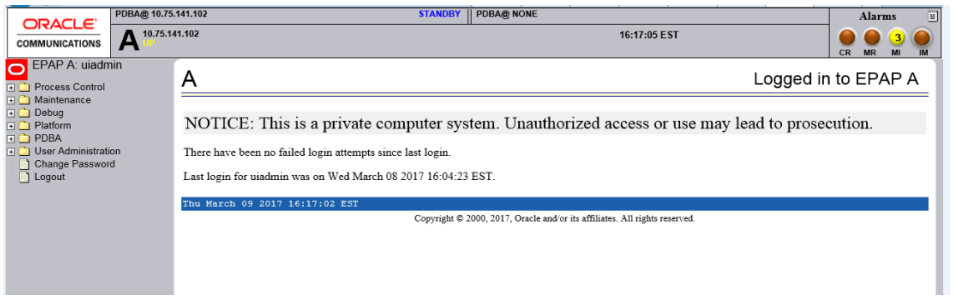
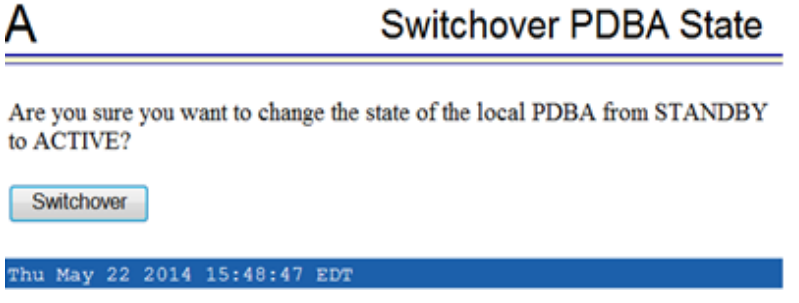
		
36. ☐	**MPS B**: Accept Upgrade	Repeat the above step on MPS B to accept upgrade.
37. ☐	**Connected PDBonly:** Configure DSM Min Mem Size	Execute Procedure A.19 only if the Non-Prov EPAP is installed and is connected to Standalone PDB server. Otherwise, skip this step if – a. This is Mixed EPAP b. This is non-prov EPAP and connected to mixed EPAP.
38. ☐	Reconnect console cables.	On E5-APP-B card, reconnect the console cable between the serial port labeled 'S0' on E5-APP-B B card's adapter and the serial port labeled ‘S1’ on the E5-APP-B A card’s adapter and the console cable between the serial port labeled 'S0' on E5-APP-B A card's adapter and the serial port labeled ‘S1’ on the E5-APP-B B card’s adapter. **Cable part numbers - 830-1220-xx**
39. ☐	Procedure complete.	Procedure is complete.

Procedure 12 PDB Configuration

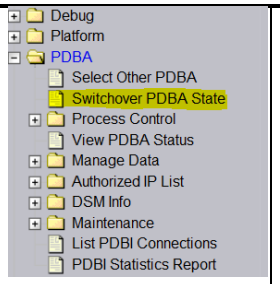
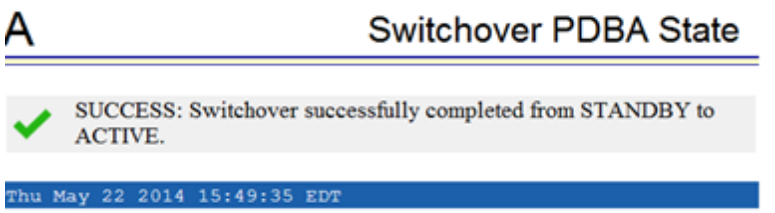
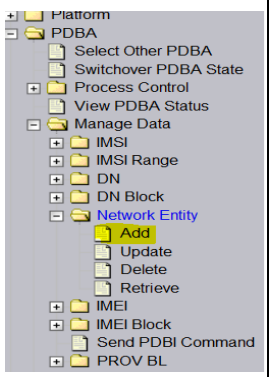
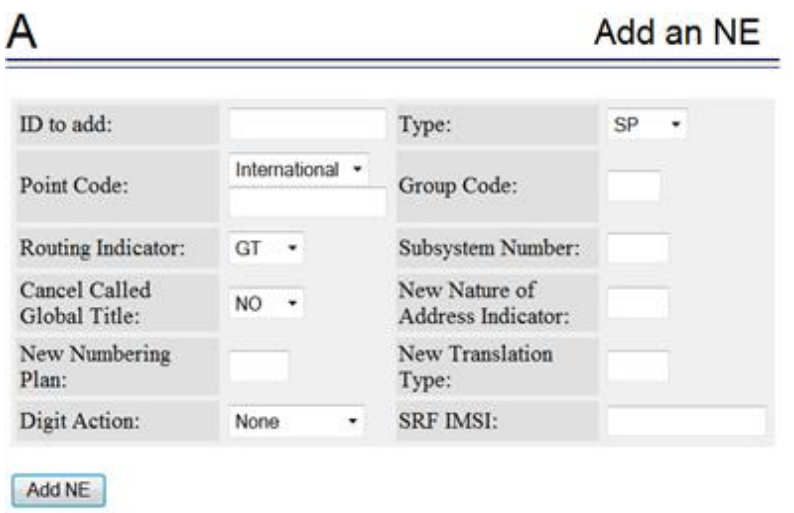
Procedure 12: PDB Configuration (Active Provisionable Site as designated by customer)

S T E P #	This procedure configuring the PDB databases on Active Site Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORTAND ASK FOR ASSISTANCE.	
1. ☐	Access the EPAP GUI by opening a web browser (Preferably IE) via HTTPS and providing the IP address of Server A. The EPAP LOGIN screen should appear.	The GUI screen on Mixed EPAP should look like:  The GUI screen on Standalone PDB should look like:

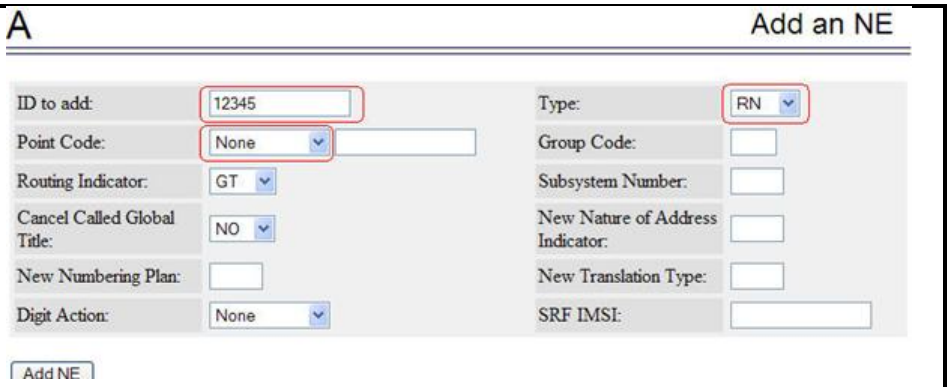
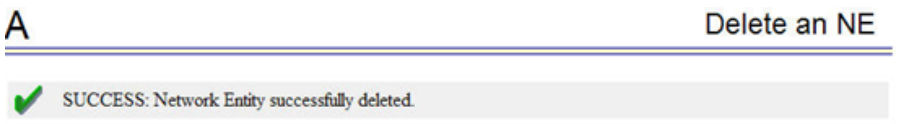
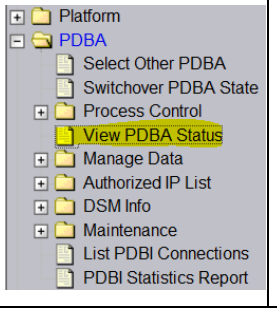
Procedure 12: PDB Configuration (Active Provisionable Site as designated by customer)

		
2. ☐	Login as uiadmin.	The GUI screen on Mixed EPAP should look like:  The GUI screen on Standalone PDB should look like: 
3. ☐	On the Site designated by the customer Active PDB GUI select “Switchover PDBA State” to make the PDBA Active.	The screen should look like: 

Procedure 12: PDB Configuration (Active Provisionable Site as designated by customer)

		
4. ☐	Click on the "Switchover" button.	The screen should look like: 
5. ☐	PDBA should become ACTIVE.	The screen should look like: 
6. ☐	On the ACTIVE PDBA site, select PDBA→Manage Data→Network Entity→Add 	The screen should look like: 
7. ☐	Enter ID as "12345", select Type "RN" and select Point Code as "None".	The screen should look like:

Procedure 12: PDB Configuration (Active Provisionable Site as designated by customer)

		
8. ☐	Click on the "Add NE" button. Network Entity should be successfully added.	The screen should look like: 
9. ☐	Select PDBA→Manage Data→Network Entity→Delete	The screen should look like: 
10. ☐	Enter ID as "12345" and select Type "RN".	The screen should look like: 
11. ☐	Click on the "Delete NE" button. Network Entity should be successfully deleted.	The screen should look like: 
12. ☐	View PDBA Status 	The screen should look like:

Procedure 12: PDB Configuration (Active Provisionable Site as designated by customer)

		A View PDBA Status **PDBA@10.253.103.18 Status** Status: ACTIVE — Version: 1.0 Level: 2 — Birthday: 07/23/2009 15:56:51 GMT DN Prefix: — IMSI Prefix: Counts: IMSIs=0, DNs=0, DN Blocks=0, NEs=0, IMEIs=0, IMEI Blocks=0, ASDs=0, DN_DNs=0, DNB_DNs=0 RTDB Clients: Address — Level 10.253.103.18 — 2 192.168.2.200 (mate) — 2 **PDB@10.253.103.18 Status** Status: Database daemon is running Counts: IMSIs=0, DNs=0, DNBlocks=0, NEs=0, IMEIs=0, IMEIBlocks=0, ASDs=0, DN_DNs=0, DNB_DNs=0
13. ☐	Procedure complete	Procedure is complete.

6. SOFTWARE UPGRADE PROCEDURES

Procedure 13 Assess MPS server's readiness for upgrade

Procedure 13: Assess the MPS Server's Readiness for Upgrade

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 MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	

1. ☐	**MPS B**: Log in as the user "epapdev".	If not already logged-in, then log in.
		
		`<hostname> console login: epapdev`
		`password: <password>`

2. ☐	**MPS B:** Display the /etc/hosts configuration for the pdb entities.	If upgrading the first MPS B of a Provisionable mated pair, execute the following command to display the configuration of pdb entries: `$ grep pdb /etc/hosts` Otherwise, skip to step 4.

3. ☐	**MPS B:** Verify the correct configuration for pdb entities in the /etc/hosts file.	Below is an example of the output of the grep command:
		
		`192.168.55.176 host1-a pdba`
		`192.168.61.76 host2-a prova-ip pdbb`
		
		If the command output contains 2 entries (pdba and pdbb are both configured), continue to the next step .
		
		If the command output does not contain unique entries for pdba and pdbb, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.

4. ☐	**MPS B:** Determine the mysqld multi log file permissions are correct.	Execute the following command to display the file properties of the mysqld_multi log file: `$ ls -l /var/TKLC/epap/db/mysqld_multi.log`

5. ☐	**MPS B:** Verify the file permissions.	If the ownerships & permissions are not set mysql:mysql and 664, as illustrated below, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.
		
		`-rw-rw-r-- 1 mysql mysql 5460 Jun 21 05:37`
		`/var/TKLC/epap/db/mysqld_multi.log`

6. ☐	**MPS B:** Display the contents of the /var/TKLC/upgrade directory.	Execute the following command to display the presence of EPAP software ISO images: `$ ls -la /var/TKLC/upgrade`

7. ☐	**MPS B:** Delete old ISO images.	Below is an example of the output of the 'ls -la' command:
		
		`total 1548424`
		`dr-xr-xr-x 2 root 4096 May 20 15:27 .`
		`dr-xr-xr-x 22 root root 4096 May 20 13:25 ..`
		`-rw-r--r-- 1 root root 942241792 May 20 15:27 872-2712-`
		`101-16.0.0_160.8.0-EPAP-x86_64.iso`

Procedure 13: Assess the MPS Server's Readiness for Upgrade

		Switch user to root. **$ su - root** **Password:** Remove any ISO images that are not the target software ISO image using the following command: **# rm –f /var/TKLC/upgrade/<filename>** Switch to epapdev user. **# su - epapdev**
8. ☐	**MPS B:** 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
9. ☐	**MPS B**: Log in as the user "admusr".	**$ su - admusr** **Password:**
10. ☐	**MPS B:** Disk Integrity step: Executing self-test on the disk.	Execute the following command: **$ sudo smartctl -t short /dev/sda** The output on E5-APP-B card would be like: smartctl 5.43 2012-06-30 r3573 [x86_64-linux-2.6.32-642.6.2.el6prerel7.4.0.0.0_88.32.0.x86_64] (local build) Copyright (C)2002-12 by Bruce Allen, 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 Sat Feb 25 22:08:20 2017 Use smartctl -X to abort test. **Note: Please wait for 5 minutes for the test to complete.**
11. ☐	**MPS B:** Disk Integrity step. Contact My Oracle Support if the output shows any error/failure.	Execute the following command: **$ sudo smartctl -l selftest /dev/sda** The output on E5-APP-B card would be like: smartctl 5.43 2012-06-30 r3573 [x86_64-linux-2.6.32-642.6.2.el6prerel7.4.0.0.0_88.32.0.x86_64] (local build) Copyright (C) 2002-12 by Bruce Allen, http://smartmontools.sourceforge.net === START OF READ SMART DATA SECTION === SMART Self-test log structure revision number 1

Procedure 13: Assess the MPS Server's Readiness for Upgrade

		Num Test_Description Status Remaining LifeTime(hours) LBA_of_first_error # 1 Short offline Completed without error 00% 12435
12. ☐	**MPS B:** Disk Integrity step Contact My Oracle Support if any output shows **"Completed: read failure"** or **"Error: UNC xxx sectors".**	Execute the following command: **$ sudo smartctl -a /dev/sda | grep -i LBA** The output would be like: 241 Total_LBAs_Written 0x0032 100 100 000 Old_age Always - 340851 242 Total_LBAs_Read 0x0032 100 100 000 Old_age Always - 1689714 Num Test_Description Status Remaining LifeTime(hours) LBA_of_first_error SPAN MIN_LBA MAX_LBA CURRENT_TEST_STATUS
13. ☐	**MPS B:** Disk Integrity Test.	Repeat steps 10 to 12 for the /dev/sdb disk drive on E5-APP-B card:
14. ☐	**MPS B:** Logout from "admusr".	Logout from the "admusr" user by executing the following command: **$ exit**
15. ☐	**MPS A:** Log in to the server as user "epapdev".	If not already logged-in, login at MPS A as 'epapdev'. **<hostname> console login: epapdev** **password: <password>**
16. ☐	**MPS A:** Repeat checks on Server A.	Repeat steps-2 to 14 on MPS A.
17. ☐	Procedure Complete.	This procedure is complete.

Procedure 14 Pre and Post Upgrade Backups

Procedure 14: Pre and Post Upgrade Backups

S T E P #	This procedure performs the pre and post upgrade backups. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS A:** Backup system configuration on MPS A.	Execute Procedure A.3 to backup the system configuration on MPS A.
2. ☐	**MPS B:** Backup system configuration on MPS B.	Execute Procedure A.3 to backup the system configuration on MPS B.
3. ☐	**MPS B:** Backup RTDB database.	Execute Procedure A.5 to backup the RTDB database on MPS B.
4. ☐	**MPS A:** Backup PDB database.	Execute Procedure A.4 to backup the PDB on MPS A of the Active PDBA. **NOTE: Only execute this step if the MPS-A is configured as a Provisionable node. Check the output of Procedure 2, step 9 to verify if MPS A is Provisionable or not.**
5. ☐	**MPS A:** Backup EuiDB database.	Execute Procedure A.6 to backup the EuiDB database on MPS A.

Procedure 14: Pre and Post Upgrade Backups

6. ☐	**MPS A:** Procedure Complete.	This procedure is complete.

Procedure 15 Pre-upgrade system time check

Procedure 15: 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 MY 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 "epapdev".	If not already logged-in, then login at MPS A:
		`<hostname> console login: epapdev`
		`password: <password>`

2. ☐	**MPS A:** Execute the "date" command.	Execute the "date" command and examine the result.
		`$ date`
		`Sat Feb 25 22:09:58 EST 2017`

3. ☐	**MPS B:** Login as the user "epapdev".	If not already logged-in, then login at MPS B:
		`<hostname> console login: epapdev`
		`password: <password>`

4. ☐	**MPS B:** Execute the "date" command.	Execute the "date" command and examine the result. `$ date` Sat Feb 25 22:09:58 EST 2017
5. ☐	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 15 minutes or less, then this procedure is complete, otherwise if the difference exceeds 15 minutes, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.
6. ☐	Procedure Complete.	This procedure is complete.

Procedure 16 Upgrade Server B

Procedure 16: Upgrade Server B

S T E P #		
	This procedure upgrades MPS B 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 MY ORACLE SUPPORT AND **ASK FOR <u>UPGRADE ASSISTANCE</u>**.	
1. ☐	**Notify potential users not to start the PDBA software during the duration of the upgrade.** **It is required that the Provisionable EPAP mated pair be upgraded first, before any Non-Provisionable EPAP systems.** Refer to section 2.4 for more details on upgrading non-provisional EPAP systems.	
2. ☐	Establish a connection to MPS B.	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 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 card's adapter and use it for serial access. **Cable part numbers - 830-1220-xx** Skip to step 7, if connected through serial console.

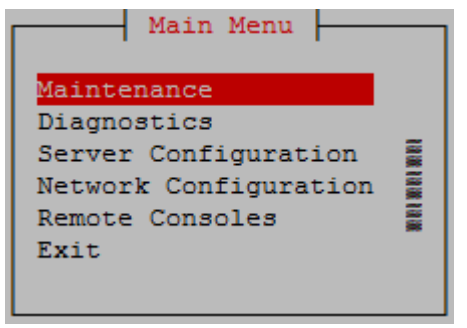
3. ☐	Create a terminal window and establish a connection by logging into MPS A.
	
	Log in to MPS A.
		In a newly created terminal window labeled "MPS B – from MPS A", connect directly into MPS A.
		
		`# ssh admusr@<MPS A>`
		`Password: <password>`

4. ☐	**MPS A**: Start screen session.
	
	MPS A: Connect to the console of MPS B.
		Execute the following commands to start screen and establish a console session to MPS B.
		
		`$ screen -L`
		
		Execute the following command on E5-APP-B:
		
		`$ sudo minicom mate`
		OR
		`$ sudo cu -l /dev/ttyS1 -s 115200`

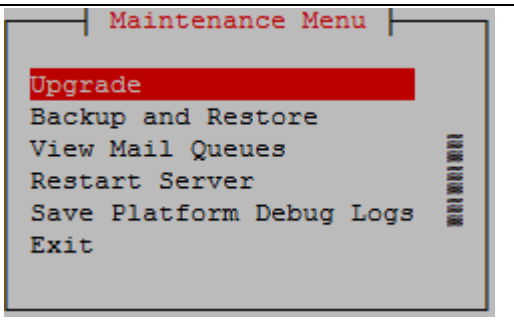
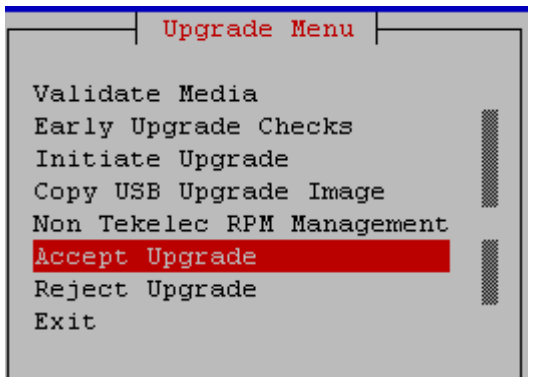
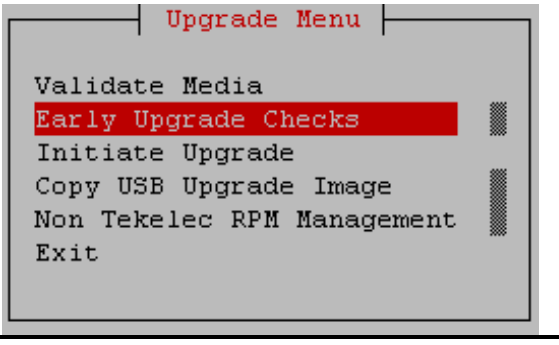
5. ☐	**MPS B**: Login prompt is displayed.	`<hostname> console login:` Note: Hit enter if no login prompt is displayed.
6. ☐	**MPS B:** Log in to the server as the user "epapdev".	`<hostname> console login: epapdev` `password: <password>`
7.	**MPS B**: Determine media available for upgrade.	Perform Procedure A.10 or use an EPAP ISO image to perform upgrade.
8.	**MPS B:** Verify that it is an Incremental Upgrade or a Major upgrade	Check Procedure 2, Step 7 and 8. If the upgrade type is a major upgrade, proceed with the following step. If it's Incremental, proceed to step 11.

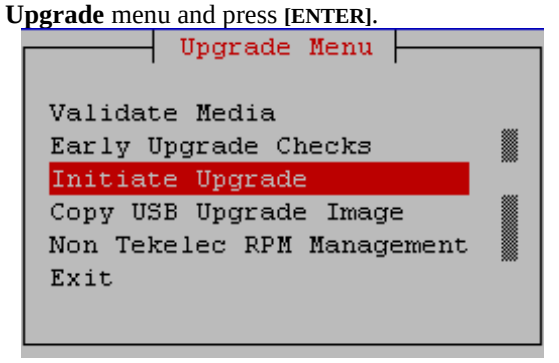
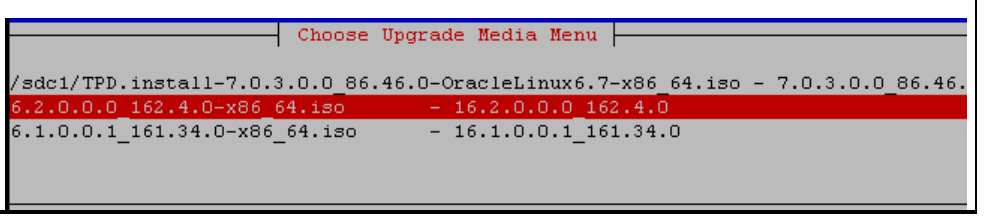
Procedure 16: Upgrade Server B

9. ☐	**MPS B**: Disable syscheck fs module.	Execute the following command to disable the syscheck fs module. **$ su - root** **Password:** **# syscheckAdm --disable disk fs**
10.	**MPS B:** Create upgrade.conf for splitting mirrors.	Create a file and add the line "BACKOUT_TYPE=SPLIT_MIRROR" (to trigger the split mirror upgrade) by executing the following command: **# echo "BACKOUT_TYPE=SPLIT_MIRROR" >/usr/TKLC/plat/etc/upgrade/upgrade.conf** NOTE: Not performing this step will prevent any successful backout. Execute the following command to verify that the above command has been executed successfully: **# cat /usr/TKLC/plat/etc/upgrade/upgrade.conf** The output should be: [root@MPS-B ~]# cat /usr/TKLC/plat/etc/upgrade/upgrade.conf BACKOUT_TYPE=SPLIT_MIRROR **# su - admusr**
11.	**MPS B:** Verify that the state of PDBA Proxy Feature is No.	**# su - epapconfig** /-----EPAP 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 | PDB Configuration Menu | |---|---| | 9 | Security | |---|---| | 10 | Configure EMS Server | |---|---| | 11 | Configure Alarm Feed | |---|---| | 12 | Configure Query Server | |---|---| | 13 | Configure Query Server Alarm Feed | |---|---| | 14 | Configure SNMP Agent Community | |---|---| | e | Exit | \-----------------------------------/ Enter Choice: 1 EPAP A Provisioning Network IP Address = 192.168.61.115 EPAP B Provisioning Network IP Address = 192.168.61.116

		Provisioning Network Netmask = 255.255.255.0 Provisioning Network Default Router = 192.168.61.1 EPAP A Backup Prov Network IP Address = Not configured EPAP B Backup Prov Network IP Address = Not configured Backup Prov Network Netmask = Not configured Backup Prov Network Default Router = Not configured EPAP A Sync Network Address = 192.168.2.100 EPAP B Sync Network Address = 192.168.2.200 EPAP A Main DSM Network Address = 192.168.120.100 EPAP B Main DSM Network Address = 192.168.120.200 EPAP A Backup DSM Network Address = 192.168.121.100 EPAP B Backup DSM Network Address = 192.168.121.200 EPAP A HTTP Port = 80 EPAP B HTTP Port = 80 EPAP A HTTP SuExec Port = 8001 EPAP B HTTP SuExec Port = 8001 EPAP A Banner Connection Port = 8473 EPAP B Banner Connection Port = 8473 EPAP A Static NAT Address = Not configured EPAP B Static NAT Address = Not configured PDBI Port = 5873 Remote MPS A Static NAT Address = Not configured Remote MPS A HTTP Port = 80 Local Provisioning VIP = 192.168.15.152 Remote Provisioning VIP = 192.168.15.172 Local PDBA Address = 192.168.15.115 Remote PDBA Address = 192.168.16.115 Remote PDBA B Address = 192.168.16.116 Time Zone = America/New_York PDB Database = Exists Preferred PDB = Standby Allow updates from alternate PDB = Yes Auto DB Recovery Enabled = Yes PDBA Proxy Enabled = **Yes** If `PDBA Proxy Enabled = Yes then` Execute Procedure A.17 to disable EPAP VIP and PDBA proxy features. Otherwise, if PDBA Proxy Enabled = No, then proceed with the next step.
12. ☐	**MPS B:** Execute the platcfg menu.	`$ sudo su - platcfg`
13. ☐	**MPS B**: Select the Maintenance submenu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Maintenance** and press **[ENTER]**. 
14. ☐	**MPS B**: Select the Upgrade submenu.	Select the **Upgrade** menu and press **[ENTER]**.

Procedure 16: Upgrade Server B

		
15.	**MPS B**: Select the Upgrade submenu.	If you have not already accepted the upgrade, do so now, otherwise skip this step.  
16. ☐	**MPS B**: Select Early Upgrade Checks	Select the "Early Upgrade Checks" menu to verify that the system is ready for upgrade. 

		If the Early Upgrade Checks fail due to the NTP related alarms, then execute step 16. Otherwise, skip to step 17. Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the early upgrade checks fail due to any other reason.
17. ☐	**MPS B:** White List NTP Alarms	1) If the Early Upgrade Checks fail due to the NTP related alarms, then ignore the NTP alarms using the following commands: a. Exit the platcfg menu b. Change to root user using the "su –" command. c. vim /usr/TKLC/plat/etc/upgrade/upgrade.conf d. Edit the following line to include the NTP related alarms. EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI2 For example – To whitelist the NTP alarm "tpdNTPDaemonNotSynchronizedWarning" which has the alarm code TKLCPLATMI10, the above mentioned line should be edited as EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI2,TKSPLATMI10 Note: There should not be any space between two alarms i.e. between TKSPLATMI2 and TKSPLATMI10 2) If the Early Upgrade Checks fail due to "Server Default Route Network Error", then this alarm shall be whitelisted in upgrade.conf file. To whitelist this alarm which has the alarm code TKSPLATMA14, the above mentioned line should be edited as EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI2,TKSPLATMI10, TKSPLATMA14
18. ☐	**MPS B**: Select Initiate Upgrade.	Select the **Initiate Upgrade** menu and press **[ENTER]**. 
19. ☐	**MPS B**: Select the Upgrade Media.	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 on ISO image. There should only be one selection available, as shown in the example below. If there is more than one selection available, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E. 

20. ☐	**MPS B**: Upgrade proceeds.	The screen displays the following, indicating that the upgrade software is first running the early upgrade checks, and then proceeding with the upgrade. Replacing <seconds> with the value from the log. Starting Early Upgrade Checks at 1448399773 Running earlyUpgradeChecks() for Upgrade::EarlyPolicy::TPDEarlyChecks upgrade policy... Verified server is not pending accept of previous upgrade Hardware architectures match Install products match. Whitelisted alarms: Verified server is alarm free! Verified all raid mirrors are synced. Early Upgrade Checks Have Passed! Early Upgrade Checks finished at 1448399780 Initializing upgrade information...
21. ☐	**MPS B**: Upgrade proceeds.	Many informational messages will come across the terminal screen as the upgrade proceeds. Finally, after upgrade is complete, the server will reboot.
22. ☐	**MPS B**: Upgrade completed.	After the final reboot, Press Enter the screen will display the login prompt, as shown in the example below. Oracle Linux Server release 6.8 Kernel 2.6.32-642.6.2.el6prerel7.4.0.0.0_88.32.0.x86_64 on an x86_64 osorna-A login:
23. ☐	**MPS B**: Log in to the server as the user “epapdev”.	**After upgrade, exit from the console and open new console using EPAP IP and login by epapdev user.** **<hostname> console login: epapdev** **password: <password>** Note: The SSH login for root shall get enabled after the upgrade.
24. ☐	**MPS B**: Verify the Upgrade.	Examine the upgrade logs in the directory /var/TKLC/log/upgrade and verify that no errors and warnings were reported. Check Procedure 2, Steps 7 and 8 to determine whether it is incremental or major upgrade. If it is major upgrade, then consider following error and warning. **$ grep -i error /var/TKLC/log/upgrade/upgrade.log** Following errors shall be observed: 1494304768::ERROR: Config file is currently checked out! 1494304781::ERROR: LOCKED BY: platcfg 1494304781::ERROR: CONFIG: /usr/TKLC/plat/etc/vlan.conf 1494304781::ERROR: ELEMENT: /var/TKLC/rcs/usr/TKLC/plat/etc/vlan.conf,v 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist

		Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any error other than the above mentioned errors. Also note that sometime a carriage return is inserted in the log file causing some of the error messages to appear truncated. This is acceptable and should be ignored. **$ grep -i warning /var/TKLC/log/upgrade/upgrade.log** Examine the output of the above command to determine if any warnings were reported. Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any warnings beside the following: 1488951825::WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...rep arsing xml... 1488951890::warning: erase unlink of /lib/modules/2.6.32-573.18.1.el6prerel7. 0.3.0.0_86.44.0.x86_64/weak-updates failed: No such file or directory 1488951902::warning: erase unlink of /lib/modules/2.6.32-573.18.1.el6prerel7. 0.3.0.0_86.44.0.x86_64/modules.softdep failed: No such file or directory 1488951902::warning: erase unlink of /lib/modules/2.6.32-573.18.1.el6prerel7. 0.3.0.0_86.44.0.x86_64/modules.order failed: No such file or directory 1488951902::warning: erase unlink of /lib/modules/2.6.32-573.18.1.el6prerel7. 0.3.0.0_86.44.0.x86_64/modules.networking failed: No such file or directory 1488951902::warning: erase unlink of /lib/modules/2.6.32-573.18.1.el6prerel7. 0.3.0.0_86.44.0.x86_64/modules.modesetting failed: No such file or directory 1488951902::warning: erase unlink of /lib/modules/2.6.32-573.18.1.el6prerel7. 0.3.0.0_86.44.0.x86_64/modules.drm failed: No such file or directory 1488951902::warning: erase unlink of /lib/modules/2.6.32-573.18.1.el6prerel7. 0.3.0.0_86.44.0.x86_64/modules.block failed: No such file or directory 1488951903::kexec-tools #warning: /etc/kdump.conf created as /et c/kdump.conf.rpmnew 1488952115::ca-certificates ################warning: /etc/pki/tls/ce rts/ca-bundle.crt created as /etc/pki/tls/certs/ca-bundle.crt.rpmnew 1488952136::samhain warning: /etc/samhainrc created as /etc/ samhainrc.rpmnew 1488952138::php-common #warning: /etc/php.ini created as /etc/p hp.ini.rpmnew 1488952209::initscripts ##warning: /etc/sysctl.conf created as / etc/sysctl.conf.rpmnew 1488952260::mysql-commercial-server warning: /etc/my.cnf created as /etc/my. cnf.rpmnew 1488952291::ntp warning: /etc/ntp.conf created as /etc/n tp.conf.rpmnew 1488952302::TKLCplat ################warning: /usr/TKLC/plat/ etc/pid_conf created as /usr/TKLC/plat/etc/pid_conf.rpmnew 1488952302::#warning: /usr/TKLC/plat/etc/service_conf created as /usr/TKLC/plat/ etc/service_conf.rpmnew 1488952320::TKLCalarms ###warning: /usr/TKLC/plat/etc/alarms/al arms.xml saved as /usr/TKLC/plat/etc/alarms/alarms.xml.rpmsave 1488952328::alarmMgr ###warning: /usr/TKLC/plat/etc/alarmMgr/ alarmMgr.conf created as /usr/TKLC/plat/etc/alarmMgr/alarmMgr.conf.rpmnew 1488952471::WARNING: This capability is not defined in the default capabilities. 1488952471::WARNING: Nor is it defined in the current hardware ID's capabilities . 1488952471::WARNING: CAPABILITY: service__disabled 1488952471::WARNING: HARDWARE ID: E5APPB 1488952602::sudo warning: /etc/sudoers created as /etc/su doers.rpmnew

		1488952709::WARNING: /usr/TKLC/plat/etc/alarms/alarms_mps.xml has been updated.. .reparsing xml... 1488952718::TKLCepap-HA ##################################warnin g: group root} does not exist - using root 1488952942::warning: erase unlink of /usr/TKLC/epap/bin/dbMigration failed: N o such file or directory 1488952949::WARNING: Module variable EXPECTED_CPUS is deprecated! 1488952951::WARNING: CONFIG: /usr/TKLC/plat/lib/Syscheck/modules/system/cpu/conf ig 1488952951::WARNING: Module variable EXPECTED_CPU_ALM is deprecated! 1488952951::WARNING: CONFIG: /usr/TKLC/plat/lib/Syscheck/modules/system/cpu/conf ig **If it is an incremental upgrade, then consider following error and warning** **$ grep –i error /var/TKLC/log/upgrade/upgrade.log** Following errors shall be observed: 1494304768::ERROR: Config file is currently checked out! 1494304781::ERROR: LOCKED BY: platcfg 1494304781::ERROR: CONFIG: /usr/TKLC/plat/etc/vlan.conf 1494304781::ERROR: ELEMENT: /var/TKLC/rcs/usr/TKLC/plat/etc/vlan.conf,v 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any error other than the above mentioned errors. Also note that sometime a carriage return is inserted in the log file causing some of the error messages to appear truncated. This is acceptable and should be ignored. **$ grep –i warning /var/TKLC/log/upgrade/upgrade.log** Examine the output of the above command to determine if any warnings were reported. Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any warnings beside the following: 1489042076::WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...rep arsing xml... 1489042124::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/weak-updates failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.order failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.networking failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.modesetting failed: No such file or directory

Procedure 16: Upgrade Server B

		1489042136::warning: erase unlink of /lib/modules/2.6.32-642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.drm failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32-642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.block failed: No such file or directory 1489042197::WARNING: /usr/TKLC/plat/etc/alarms/alarms_mps.xml has been updated.. .reparsing xml... Refer to section 3.7 to know more about logging.
25. ☐	**MPS B**: Verify the Upgrade.	**$ grep "Upgrade returned success" /var/TKLC/log/upgrade/upgrade.log** Verify that the message "Upgrade returned success!" is displayed. If it is not, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E. 1400786220:: Upgrade returned success!
26. ☐	**MPS B:** Verify that it is an Incremental Upgrade or Major upgrade	Check Procedure 2, Steps 7 and 8. If the upgrade type is a Major upgrade, proceed with the following step. If it's Incremental, proceed to step 27.
27. ☐	MPS B: Enable syscheck fs module.	Execute the following command to enable the syscheck fs module. **$ syscheckAdm --enable disk fs**
28. ☐	**MPS B**: Upgrade is complete. Verify Health of MPS B.- check if this step is needed	Execute Procedure A.1 on MPS B to verify the health of MPS B. If this is a Major Upgrade, the syscheck utility will report the "3000000000000002 – Server Internal Disk Error" alarm as the disk mirroring is in progress. The alarm will be cleared after the completion of disk mirroring. Also, the syscheck utility will report the "5000000000000002 - Server Application Process Error" alarm as the Epap processes are not running after the upgrade. Verify that no unexpected alarms are noted. Note: Disk mirroring does not start until the upgrade is accepted. If it is major upgrade Proceed with Procedure A.16 to upgrade SSL certificate.
29. ☐	**MPS B:** Verify that if alarm to accept upgrade is present.	To verify alarm to accept upgrade execute following command: **$ alarmMgr --alarmStatus | grep tpdServerUpgradePendingAccept** Following output shall be observed: SEQ: 5 UPTIME: 112 BIRTH: 1498203542 TYPE: SET ALARM: TKSPLATMI33|tpdServerUpgradePendingAccept|1.3.6.1.4.1.323.5.3.18.3.1.3.33|32532|Processing Error|Configuration Error To resolve this alarm, execute step 14. Note: If the upgrade is accepted, Backout cannot be performed.

Procedure 16: Upgrade Server B

30. ☐	Reconnect console cable.	On E5-APP-B card, reconnect the console cable between the serial port labeled 'S0' on E5-APP-B B card's adapter and the serial port labeled ‘S1’ on the E5-APP-B A card’s adapter. **Cable part numbers - 830-1220-xx**
31. ☐	Procedure complete.	Procedure is complete.

Procedure 17 Upgrade server A

Procedure 17: Upgrade Server A

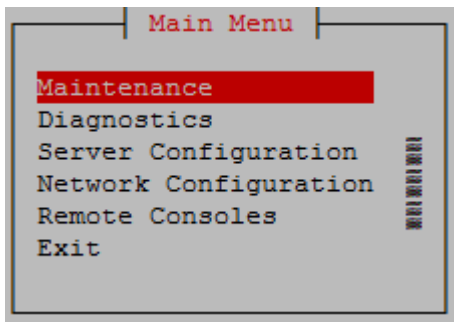
STEP #	This procedure upgrades the MPS-A server in the EPAP System. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND ASK FOR UPGRADE ASSISTANCE.	
1. ☐	**MPS A**: Determine media available for upgrade.	Perform Procedure A.10 or use an EPAP ISO image to perform upgrade.
2. ☐	Establish a connection to MPS A.	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 card’s adapter and use it for serial access. **Cable part numbers - 830-1220-xx** Skip to step 6, if connected through serial console.

3. ☐	Create a terminal window and establish a connection by logging into MPS B.
	
	Log in to MPS B.
		In a newly created terminal window labeled “MPS B”, connect directly into MPS B.
		
		`# ssh epapdev@<MPS B>`
		`Password: <password>`

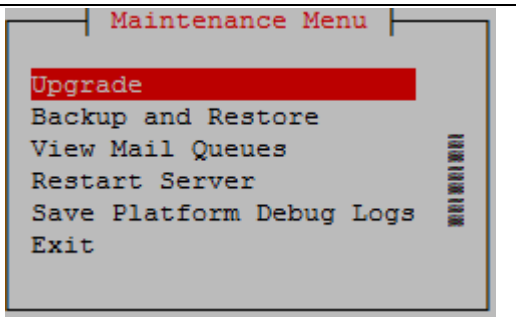
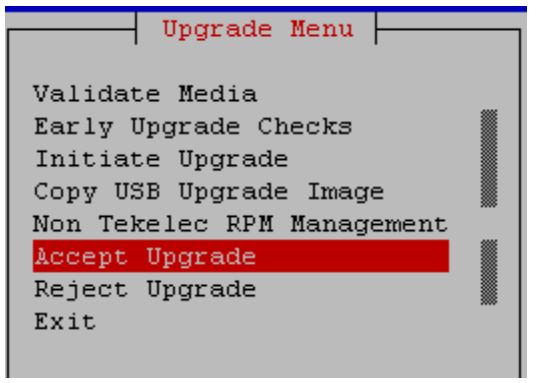
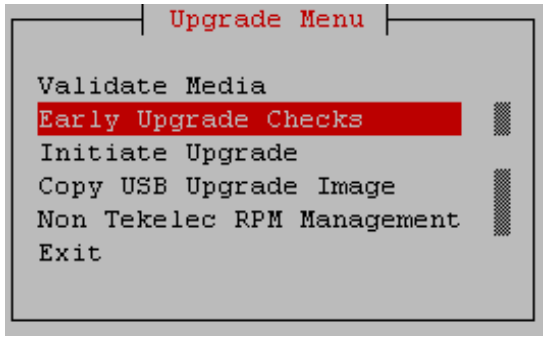
4. ☐	**MPS B**: Start screen session.
	
	MPS B: Connect to the console of MPS A.
		Execute the following commands to start screen and establish a console session to MPS A.
		
		#su - root
		Password:
		
		`$ screen -L`
		
		Execute the following command on E5-APP-B:
		
		`$ sudo minicom mate`
		OR
		`$ sudo cu -l /dev/ttyS1 -s 115200`

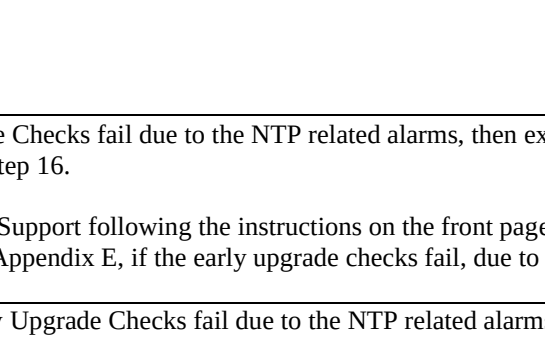
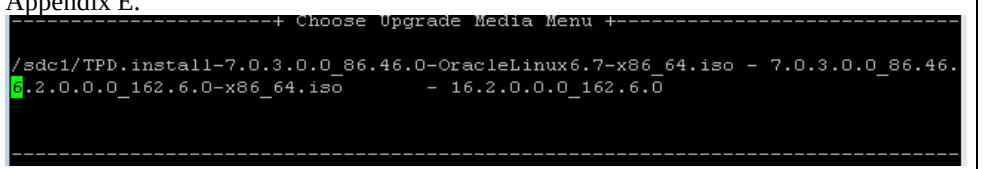
5. ☐	**MPS A**: Login prompt is displayed.	`<hostname> console login:` Note: Hit enter if no login prompt is displayed.

Procedure 17: Upgrade Server A

6. ☐	**MPS A:** Log in to the server as the user "epapdev".	**<hostname> console login: epapdev** **password: <password>**
7.	**MPS A:** Verify that it is an Incremental Upgrade. or a Major Upgrade	Check Procedure 2, Steps 7 and 8. If the upgrade type is Major upgrade, proceed with the following step. If it's Incremental, proceed to step 10.
8. ☐	**MPS A**: Disable syscheck fs module.	**$ su - root** **Password:** Execute the following command to disable the syscheck fs module. **# syscheckAdm --disable disk fs**
9.	**MPS A:** Create upgrade.conf for splitting mirrors if this is a Major upgrade.	Create a file and add the line "BACKOUT_TYPE=SPLIT_MIRROR" (to trigger the split mirror upgrade) by executing the following command: **# su – root** **Password:** **# echo "BACKOUT_TYPE=SPLIT_MIRROR" >/usr/TKLC/plat/etc/upgrade/upgrade.conf** NOTE: Not performing this step will prevent any successful backout. Execute the following command to verify that the above command has been executed successfully: **# cat /usr/TKLC/plat/etc/upgrade/upgrade.conf** The output should be: [root@MPS-B ~]# cat /usr/TKLC/plat/etc/upgrade/upgrade.conf BACKOUT_TYPE=SPLIT_MIRROR **# su - admusr**
10. ☐	**MPS A:** Execute the platcfg menu.	**$ sudo su - platcfg**
11. ☐	**MPS A**: Select the Maintenance submenu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Maintenance** and press **[ENTER]**. 
12. ☐	**MPS A**: Select the Upgrade submenu.	Select the **Upgrade** menu and press **[ENTER]**.

Procedure 17: Upgrade Server A

		
13.	**MPS A**: Select the Upgrade submenu	Select the Accept Upgrade menu and press **[ENTER]**.  
14. ☐	**MPS A**: Select the Early Upgrade Checks submenu.	Select the "Early Upgrade Checks" menu to verify that the system is ready for upgrade. 

		If the Early Upgrade Checks fail due to the NTP related alarms, then execute step 15. Otherwise, skip to step 16. Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the early upgrade checks fail, due to any other reason.
15. ☐	**MPS A:** White List NTP Alarms	1) If the Early Upgrade Checks fail due to the NTP related alarms, then ignore the NTP alarms using the following commands: e. Exit the platcfg menu f. Change to root user using the "su –" command. g. vim /usr/TKLC/plat/etc/upgrade/upgrade.conf h. Edit the following line to include the NTP related alarms. EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI2 For example – To whitelist the NTP alarm "tpdNTPDaemonNotSynchronizedWarning" which has the alarm code TKLCPLATMI10, the above mentioned line should be edited as EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI2,TKSPLATMI10 Note: There should not be any space between two alarms i.e. between TKSPLATMI2 and TKSPLATMI10 2) If the Early Upgrade Checks fail due to "Server Default Route Network Error", then this alarm shall be whitelisted in upgrade.conf file. To whitelist this alarm which has the alarm code TKSPLATMA14, the above mentioned line should be edited as EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI2,TKSPLATMI10, TKSPLATMA14
16. ☐	**MPS A**: Select Initiate Upgrade.	Select the **Initiate Upgrade** menu and press **[ENTER]**. 
17. ☐	**MPS A**: Select the Upgrade Media.	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 on ISO image. There should only be one selection available, as shown in the example below. If there is more than one selection available, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E. 

Procedure 17: Upgrade Server A

18. ☐ **MPS A**: Upgrade proceeds.

The screen displays the following, indicating that the upgrade software is first running the early upgrade checks, and then proceeding with the upgrade.

```
Replacing <seconds> with the value from the log.
Starting Early Upgrade Checks at 1448399773
Running earlyUpgradeChecks() for Upgrade::EarlyPolicy::TPDEarlyChecks upgrade policy...
Verified server is not pending accept of previous upgrade
Hardware architectures match
Install products match.
Whitelisted alarms:
Verified server is alarm free!
Verified all raid mirrors are synced.
Early Upgrade Checks Have Passed!
Early Upgrade Checks finished at 1448399780
Initializing upgrade information...
```

19. ☐ **MPS A**: Upgrade proceeds.

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

Finally, after upgrade is complete, the server will reboot.

20. ☐ **MPS A**: Upgrade completed.

After the final reboot, Press Enter , the screen will display the login prompt, as shown in the example below.

```
Starting smartd: [  OK  ]
TKLChwmgmtcli stop/pre-start, process 10078

Oracle Linux Server release 6.7
Kernel 2.6.32-573.3.1.el6prerel7.0.3.0.0_86.37.0.x86_64 on an x86_64

devloan03 login:
```

21. ☐ **MPS A**: Log in to the server as the user "epapdev".

```
<hostname> console login:  epapdev
password:   <password>
```

Note: The SSH login for root shall get enabled after the upgrade.

22. ☐ **MPS A**: Verify the Upgrade.

Examine the upgrade logs in the directory /var/TKLC/log/upgrade and verify that no errors and warnings were reported.
Check Procedure 2, Steps 7 and 8to determine whether it is incremental or major upgrade.

If it is major upgrade then consider following

```
$  grep -i error /var/TKLC/log/upgrade/upgrade.log
```

Following errors shall be observed:

```
1496215832::Error    : Table 'mysql.innodb_index_stats' doesn't exist
1496215832::Error    : Table 'mysql.innodb_table_stats' doesn't exist
1496215832::Error    : Table 'mysql.slave_master_info' doesn't exist
1496215832::Error    : Table 'mysql.slave_relay_log_info' doesn't exist
1496215832::Error    : Table 'mysql.slave_worker_info' doesn't exist
1496215832::Error    : Table 'mysql.innodb_index_stats' doesn't exist
1496215832::Error    : Table 'mysql.innodb_table_stats' doesn't exist
1496215832::Error    : Table 'mysql.slave_master_info' doesn't exist
1496215832::Error    : Table 'mysql.slave_relay_log_info' doesn't exist
1496215832::Error    : Table 'mysql.slave_worker_info' doesn't exist
1496215832::Error    : Table 'mysql.innodb_index_stats' doesn't exist
1496215832::Error    : Table 'mysql.innodb_table_stats' doesn't exist
1496215832::Error    : Table 'mysql.slave_master_info' doesn't exist
1496215832::Error    : Table 'mysql.slave_relay_log_info' doesn't exist
1496215832::Error    : Table 'mysql.slave_worker_info' doesn't exist
```

Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any error other than the above mentioned errors.

Also note that sometime a carriage return is inserted in the log file causing some of the error messages to appear truncated. This is acceptable and should be ignored.

```
$  grep -i warning /var/TKLC/log/upgrade/upgrade.log
```

Examine the output of the above command to determine if any warnings were reported. Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any warnings beside the following:

```
1488951825::WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been
updated...rep
arsing xml...
1488951890::warning:    erase unlink of /lib/modules/2.6.32-
573.18.1.el6prerel7.
0.3.0.0_86.44.0.x86_64/weak-updates failed: No such file or directory
1488951902::warning:    erase unlink of /lib/modules/2.6.32-
573.18.1.el6prerel7.
0.3.0.0_86.44.0.x86_64/modules.softdep failed: No such file or directory
1488951902::warning:    erase unlink of /lib/modules/2.6.32-
573.18.1.el6prerel7.
0.3.0.0_86.44.0.x86_64/modules.order failed: No such file or directory
1488951902::warning:    erase unlink of /lib/modules/2.6.32-
573.18.1.el6prerel7.
0.3.0.0_86.44.0.x86_64/modules.networking failed: No such file or directory
1488951902::warning:    erase unlink of /lib/modules/2.6.32-
573.18.1.el6prerel7.
0.3.0.0_86.44.0.x86_64/modules.modesetting failed: No such file or directory
1488951902::warning:    erase unlink of /lib/modules/2.6.32-
573.18.1.el6prerel7.
0.3.0.0_86.44.0.x86_64/modules.drm failed: No such file or directory
1488951902::warning:    erase unlink of /lib/modules/2.6.32-
573.18.1.el6prerel7.
0.3.0.0_86.44.0.x86_64/modules.block failed: No such file or directory
1488951903::kexec-tools                 #warning: /etc/kdump.conf created as
/et
c/kdump.conf.rpmnew
1488952115::ca-certificates             ################warning:
/etc/pki/tls/ce
rts/ca-bundle.crt created as /etc/pki/tls/certs/ca-bundle.crt.rpmnew
1488952136::samhain                     warning: /etc/samhainrc created as
/etc/
samhainrc.rpmnew
1488952138::php-common                  #warning: /etc/php.ini created as
/etc/p
hp.ini.rpmnew
1488952209::initscripts                 ##warning: /etc/sysctl.conf created as
/
etc/sysctl.conf.rpmnew
1488952260::mysql-commercial-server     warning: /etc/my.cnf created as
/etc/my.
cnf.rpmnew
1488952291::ntp                         warning: /etc/ntp.conf created as
/etc/n
tp.conf.rpmnew
1488952302::TKLCplat                    ################warning:
/usr/TKLC/plat/
etc/pid_conf created as /usr/TKLC/plat/etc/pid_conf.rpmnew
1488952302::#warning: /usr/TKLC/plat/etc/service_conf created as
/usr/TKLC/plat/
etc/service_conf.rpmnew
1488952320::TKLCalarms                  ###warning:
/usr/TKLC/plat/etc/alarms/al
arms.xml saved as /usr/TKLC/plat/etc/alarms/alarms.xml.rpmsave
1488952328::alarmMgr                    ###warning:
/usr/TKLC/plat/etc/alarmMgr/
alarmMgr.conf created as /usr/TKLC/plat/etc/alarmMgr/alarmMgr.conf.rpmnew
1488952471::WARNING: This capability is not defined in the default
capabilities.
1488952471::WARNING: Nor is it defined in the current hardware ID's
capabilities
.
1488952471::WARNING:  CAPABILITY: service__disabled
1488952471::WARNING: HARDWARE ID: E5APPB
1488952602::sudo                        warning: /etc/sudoers created as
/etc/su
doers.rpmnew
1488952709::WARNING: /usr/TKLC/plat/etc/alarms/alarms_mps.xml has been
updated..
.reparsing xml...
```

		1488952718::TKLCepap-HA #################################warnin g: group root} does not exist - using root 1488952942::warning: erase unlink of /usr/TKLC/epap/bin/dbMigration failed No such file or directory 1488952949::WARNING: Module variable EXPECTED_CPUS is deprecated! 1488952951::WARNING: CONFIG: /usr/TKLC/plat/lib/Syscheck/modules/system/cpu/conf ig 1488952951::WARNING: Module variable EXPECTED_CPU_ALM is deprecated! 1488952951::WARNING: CONFIG: /usr/TKLC/plat/lib/Syscheck/modules/system/cpu/conf ig If it is an incremental upgrade then consider following **$ grep –i error /var/TKLC/log/upgrade/upgrade.log** Following errors shall be observed: 1494304768::ERROR: Config file is currently checked out! 1494304781::ERROR: LOCKED BY: platcfg 1494304781::ERROR: CONFIG: /usr/TKLC/plat/etc/vlan.conf 1494304781::ERROR: ELEMENT: /var/TKLC/rcs/usr/TKLC/plat/etc/vlan.conf,v 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist 1496215832::Error : Table 'mysql.innodb_index_stats' doesn't exist 1496215832::Error : Table 'mysql.innodb_table_stats' doesn't exist 1496215832::Error : Table 'mysql.slave_master_info' doesn't exist 1496215832::Error : Table 'mysql.slave_relay_log_info' doesn't exist 1496215832::Error : Table 'mysql.slave_worker_info' doesn't exist Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any error other than the above mentioned errors. Also note that sometime a carriage return is inserted in the log file causing some of the error messages to appear truncated. This is acceptable and should be ignored. **$ grep –i warning /var/TKLC/log/upgrade/upgrade.log** Examine the output of the above command to determine if any warnings were reported. Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E, if the output contains any warnings beside the following: 1489042076::WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...rep arsing xml... 1489042124::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/weak-updates failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.order failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.networking failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.modesetting failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.drm failed: No such file or directory 1489042136::warning: erase unlink of /lib/modules/2.6.32- 642.6.2.el6prerel7.4 .0.0.0_88.32.0.x86_64/modules.block failed: No such file or directory 1489042197::WARNING: /usr/TKLC/plat/etc/alarms/alarms_mps.xml has been updated.. .reparsing xml...

Procedure 17: Upgrade Server A

		Refer to section 3.7 to know more about logging.

23. ☐	**MPS A:** Verify the Upgrade.	`$ grep "Upgrade returned success" /var/TKLC/log/upgrade/upgrade.log`
		
		Verify that the message "Upgrade returned success!" is displayed. If it is not, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.
		
		`1400793814::  Upgrade returned success!`

24. ☐	**MPS A:** Verify that it is an Incremental Upgrade. or Major Upgrade	Check Procedure 2, Steps 7 and 8. If the upgrade type is Major upgrade, proceed with the following step. If it's Incremental, proceed to step 26.

25. ☐	**MPS A:** Enable syscheck fs module.	`$ su - root`
		`Password:`
		
		Execute the following command to enable the syscheck fs module.
		# syscheckAdm --enable disk fs

26. ☐	**MPS A**: Upgrade is complete. Verify Health of MPS A.- check if this step is needed	Execute Procedure A.1 on MPS A to verify the health of MPS A. On a Provisionable MPS, expect that the syscheck utility will alarm the fact that the PDBA software is not running. This will appear as a "5000000000000002 – Server Application Process Error" alarm. If this is a Major Upgrade, the syscheck utility will report the "3000000000000002 – Server Internal Disk Error" alarm as the disk mirroring is in progress. The alarm will be cleared after the completion of disk mirroring. Verify that no unexpected alarms are noted. If it is major upgrade, Proceed with Procedure A.16 to upgrade SSL certificate.
27. ☐	**MPS A:** Verify that if alarm to accept upgrade is present.	To verify alarm to accept upgrade execute following command: **$ alarmMgr --alarmStatus | grep tpdServerUpgradePendingAccept** Following output shall be observed: `SEQ: 5 UPTIME: 112 BIRTH: 1498203542 TYPE: SET ALARM: TKSPLATMI33|tpdServerUpgradePendingAccept|1.3.6.1.4.1.323.5.3.18.3.1.3.33|32532 |Processing Error|Configuration Error` To resolve this alarm, execute step 13. Note: If the upgrade is accepted, Backout cannot be performed.
28. ☐	**MPS B:** Enable PDBA proxy and VIP features.	If PDBA Proxy Enabled = Yes, in the step 11 of Procedure 16, then execute Procedure A.18 to enable Epap PDBA Proxy and VIP Features. Otherwise, skip this step.
29. ☐	**MPS B:** Check services for query server.	`$ epapdb -c queryserver`

Procedure 17: Upgrade Server A

		If query server is not configured i.e. INFO: No Query Server Configured, then skip this step otherwise Execute Procedure A.20 to restart MYSQL service for PDB on query server.
30. ☐	Reconnect console cable.	On E5-APP-B card, reconnect the console cable between the serial port labeled 'S0' on E5-APP-B A card's adapter and the serial port labeled 'S1' on the E5-APP-B B card's adapter. **Cable part numbers - 830-1220-xx**
31. ☐	Procedure is complete.	Procedure is complete. **Note: If upgrading an EPAP Provisionable mated pair and you have just completed this procedure for the Local MPS A and MPS B. Repeat the same procedures to upgrade the Remote Pair. See Section 2.1 for more information.**

Procedure 18 Reboot EAGLE Cards

Procedure 18: Reboot EAGLE Cards

S T E P #	This procedure reboots EAGLE cards to reload new RTDB. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**EAGLE**: reboot all SM cards to reload new RTDB.	Login onto the connected EAGLE. Reboot 1 SM card on the EAGLE and verify that it comes back to an IS-NR/Active state. Then boot the rest of the EAGLE SM cards over 4 batches (booting 1/4 of the cards at a single time).
2. ☐	Procedure is complete	Procedure is complete.

THIS COMPLETES THE UPGRADE

7. SOFTWARE RECOVERY PROCEDURES

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

Warning: Do not attempt to perform these backout procedures without first contacting the My Oracle Support, following the instructions on the front page or the instructions on the Appendix E.

NOTE: These recovery procedures are provided for the backout of an Upgrade ONLY (i.e., from a failed 16.2.y release to the previously installed 16.2.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.

My Oracle 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.

7.2 Perform 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. Refer to section 2.2 for the Backout process overview.

Procedure 19 Server B Backout

Procedure 19: Server B Backout

S T E P #	This procedure provides instructions to perform backout on MPS B server. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **Note: Execute this procedure if only MPS B has been upgraded successfully and MPS A is still at the pre-upgrade release.** **Note: If the upgrade has been accepted, this procedure cannot be executed.**	
1. ☐	Terminate all previous connections (ssh).	If not already connected, connect to the E5-APP-B card via the serial port. 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**

Procedure 19: Server B Backout

		Skip to step 5, if connected through serial console.

2. ☐	Create a terminal window and establish a connection by logging into MPS A.
	
	Log in to MPS A.
		In a newly created terminal window labeled "MPS B – from MPS A", connect directly into MPS A.
		
		`# ssh admusr@<MPS A>`
		`Password: <password>`

3. ☐	**MPS A**: Start screen session
	
	MPS A: Connect to the console of MPS B.
		Execute the following commands to start screen and establish a console session to MPS B.
		
		`$ screen -L`
		
		Execute the following command on E5-APP-B:
		
		`$ sudo minicom mate`
		OR
		`$ sudo cu -l /dev/ttyS1 -s 115200`

4. ☐	**MPS B**: Login prompt is displayed.	`<hostname> console login:` Note: Hit enter if no login prompt is displayed.

5. ☐	**MPS B**: Log in to the server as user "admusr".	If not already logged-in, then log in.
		
		`<hostname> console login: admusr`
		`Password: <password>`

6. ☐	**MPS B:** Change directory.	Change to root user.
		`$ su - root`
		`Password:`
		
		Change to the backout directory.
		
		`# cd /var/TKLC/backout`

7. ☐	**MPS B:** Execute the backout.	Execute the following command to initiate the backout:
		Note: Before starting the backout, make sure that all USB devices are removed from the card.
		`# ./reject`
		
		NOTE: When backout operation asks if you would like to proceed with backout, answer "Y".
		
		`Verifying that backout is possible.`
		`Checking for stale RPM DB locks...`
		
		`Current platform version:  7.4.0.0.0-88.32.0`
		`Continue backout?  [y/N]:`
		`##########################`

8. ☐	**MPS B**: 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.

Procedure 19: Server B Backout

		If this is a backout of a *major* upgrade, skip to step 12. **DO NOT INITIATE A REBOOT MPS-B at this time.** If this is a backout of an *incremental* upgrade, 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.
9. ☐	**MPS B**: 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` Examine the output of the above commands to determine if any errors were reported. Refer to section 3.7 to know more about logging.
10. ☐	**MPS B**: Verify the Backout.	If the backout was ***not*** successful and errors were recorded in the logs, then contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E for further instructions. If the backout ***was*** successful, then continue with the following step.
11. ☐	**MPS B**: Reboot the MPS.	Perform the following commands to reboot the MPS: `# init 6`
12. ☐	**MPS B**: Reboot completed.	On a backout of a major upgrade, the server will reboot several times as part of backout. Re-mirroring of the disks will occur in the background – do not initiate a reboot until this process has completed. On a backout of an incremental upgrade, the user has initiated a reboot.
13. ☐	**MPS B**: Login to MPS B.	If the login prompt appears, continue on to step 16. If the login prompt does not appear due to disconnect, go to step 14.

14. ☐	Create a terminal window and establish a connection by logging into MPS A.
	
	Log into MPS A.
		In a newly created terminal window labeled "**MPS B – from MPS A**", connect directly into MPS A.
		
		`# ssh epapdev@<MPS A>`
		`Password: <password>`

15. ☐	**MPS A**: Rejoin previous screen session on MPS B.	Execute the following command to disconnect and then rejoin previous screen session: `$ screen -dr`
16. ☐	**MPS B**: Verify Health of MPS B.	Execute Procedure A.1 on MPS B to verify the health of MPS B.
17. ☐	**MPS B**: Clear MySQL replication error banner message, if any	Execute the following command to check for MySQL replication error: `$ manageBannerInfo -l` Examine the output of the above command to determine if any errors were reported related to MySQL replication such as: MySQL data replication error detected; Attempting to restart Attempt to restart MySQL replication failed

Procedure 19: Server B Backout

		Execute the following command to copy the EuiDB database from B server to A server to clear any of the above observed MySQL replication error. Note: This utility should be executed only with epapdev user. **$ /usr/TKLC/epap/config/resetReplication** Resetting MySql Replication This script will fix EuiDB replication by copying the database from one side of the pair to the other side and then resetting the MySql replication pointers. Are you sure you want to reset replication? (y/n) y Which side do you want to copy FROM? (A/B) [B]: B Copy the EuiDB from B to A? (y/n) y Removing the index and info files from EPAP A Replication files successfully removed from the mate server. Connecting to local DB Connecting to mate DB Copying EuiDB to mate Stopping local slave Stopping mate slave Resetting local master Resetting mate master Resetting local slave Resetting mate slave Starting local slave Starting mate slave Resetting MySql Replication Completed If there is a failure in resetReplication, execute following commands: **$ mysql -uroot -p<MySQL password> -e "GRANT ALL ON EuiDB.* to elapdev@localhost IDENTIFIED by '<password>'"** **$ mysql -uroot -p<MySQL password> -e "GRANT ALL ON EuiDB.* to elapdev@mate IDENTIFIED by '<password>'"** Execute the following command to verify that the banner messages related to the replication error are cleared after some time. **# manageBannerInfo -l**
18. ☐	**MPS B**: Verify Health of MPS B	Execute Procedure A.1 on MPS B to verify the health of MPS B. If backout of major upgrade was performed, the syscheck utility will report the "3000000000000002 – Server Internal Disk Error" alarm as the disk mirroring is in progress. The alarm will be cleared after the completion of disk mirroring.
19. ☐	Reconnect console cable.	On E5-APP-B card, reconnect the console cable between the serial port labeled 'S0' on E5-APP-B B card's adapter and the serial port labeled 'S1' on the E5-APP-B A card's adapter. **Cable part numbers - 830-1220-xx**
20. ☐	Procedure complete.	This procedure is complete.

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

Procedure 20 Backout both Server A and B

Procedure 20: Backout both MPS A and B

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.** **Note: If the upgrade has been accepted, this procedure cannot be performed.**	
1. ☐	Terminate all previous connections (ssh).	If not already connected, 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 card's adapter and use it for serial access. **Cable part numbers - 830-1220-xx** Skip to step 6, if connected through serial console.

2. ☐	Create a terminal window and establish a connection by logging into MPS B.
	
	Log into MPS B.
		In a newly created terminal window labeled "**MPS A – from MPS B**", connect directly into MPS B.
		
		`# ssh admusr@<MPS B>`
		`Password: <password>`

3. ☐	**MPS B**: Start screen session.
	
	MPS B: Connect to the console of MPS A.
		Execute the following commands to start screen and establish a console session to MPS A.
		
		`$ screen -L`
		
		Execute the following command on E5-APP-B:
		
		`$ sudo minicom mate`
		OR
		`$ sudo cu -l /dev/ttyS1 -s 115200`

4. ☐	**MPS A**: Login prompt is displayed.	`<hostname> console login:` Note: Hit enter if no login prompt is displayed.

5. ☐	**MPS A:** Log in to the server as user "admusr".	Log in as 'epapdev'
		`<hostname> console login: epapdev`
		`Password: <password>`

Procedure 20: Backout both MPS A and B

6. ☐	**MPS A:** Check if RTDB and PDBA databases are synchronized. - update this	Execute the following command to check the RTDB and PDB database levels: **$ sudo dbstattool** The outlook may look like: DBSTATTOOL Platform=EPAP ------------------------ pdb_birthdate = 1399621904 (Fri May 9 03:51:44 2014) pdb_level = 1 rtdb_pdb_birthdate = 1399621904 (Fri May 9 03:51:44 2014) rtdb_begin_dsm_level = 1 rtdb_end_dsm_level = 1 rtdb_dsm_birthdate = 1400784912 (Thu May 22 14:55:12 2014) rtdb_dsm_status = 1 rtdb_load_state = 0 EAGLE_fmt_pdb_birthdate = 2152386348 (EAGLE format - be careful!) EAGLE_fmt_rtdb_pdb_birthdate = 1981720860 (EAGLE format - be careful!) EAGLE_fmt_rtdb_dsm_birthdate = 4003650604 (EAGLE format - be careful!) pdba_last_upd_ipaddr = 0 pdba_last_upd_timestamp = 0 (Wed Dec 31 19:00:00 1969) dbstattool_pad1 = 0 dbstattool_pad2 = 0 dbstattool_pad3 = 0 dbstattool_pad4 = 0 dbstattool_timestamp = 0 (Wed Dec 31 19:00:00 1969) rtdb_version = 4 Note down the RTDB and PDBA database levels. If they are not the same prior to backout, an RTDB reload from PDBA must be performed after backout!
7.	**MPS A:** Change directory.	**$ su - root** Change to the backout directory. **# cd /var/TKLC/backout**
8.	**MPS A:** Execute the backout.	Execute the following command to initiate the backout: **Note: Before starting the backout, make sure that all USB devices are removed from the card.** **# ./reject** NOTE: When backout operation asks if you would like to proceed with backout, answer "Y". Verifying that backout is possible. Checking for stale RPM DB locks... Current platform version: 7.4.0.0.0-88.32.0 Continue backout? [y/N]: ##########################
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. If this is a backout of a *major* upgrade, skip to step 13. **DO NOT INITIATE A REBOOT MPS-A at this time.**

Procedure 20: Backout both MPS A and B

		If this is a backout of an *incremental* upgrade, 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 3.7 to 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 My Oracle Support following the instructions on the front page or the instructions on the Appendix E for further instructions. If the backout ***was*** successful, then enter continue with the following steps:
12. ☐	**MPS A**: Reboot the MPS.	**Perform this step only on a backout of an incremental upgrade.** Perform the following commands to reboot the MPS: `# init 6`
13. ☐	**MPS A**: Backout completed.	On a backout of a major upgrade, the server will reboot several times as part of backout. Re-mirroring of the disks will occur in the background – do not initiate a reboot until this process has completed. On a backout of an incremental upgrade, the user has initiated a reboot.
14. ☐	**MPS A**: Login to MPS A.	If the login prompt appears, skip to step 17. If the login prompt does not appear due to disconnect, go to step 15.

15. ☐	Create a terminal window and establish a connection by logging into MPS B.
	
	Log into MPS B.
		In a newly created terminal window labeled "**MPS A – from MPS B**", connect directly into MPS B.
		
		`# ssh epapdev@<MPS B>`
		`Password: <password>`

16. ☐	**MPS B**: Rejoin previous screen session on MPS A.	Execute the following command to disconnect and then rejoin previous screen session: `$ screen -dr`
17. ☐	**MPS A**: Verify Health of MPS A.	Execute Procedure A.1 on MPS A to verify the health of MPS A The syscheck utility may report the "5000000000000002 - Server Application Process Error" for PDBA, if the pdba software is not running.
18. ☐	Terminate all previous connections (ssh).	If not already connected, connect to the E5-APP-B card via the serial port. 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.

Procedure 20: Backout both MPS A and B

		Skip to step 21, if connected through serial console.
19. ☐	Create a terminal window and establish a connection by logging into MPS A. Log into MPS A.	In a newly created terminal window labeled "**MPS B – from MPS A**", connect directly into MPS A. **# ssh epapdev@<MPS A>** **Password: <password>**
20. ☐	**MPS A**: Start screen session. **MPS A**: Connect to the console of MPS B.	Execute the following commands to start screen and establish a console session to MPS B. **$ screen -L** Execute the following command on E5-APP-B: **$ sudo minicom mate** OR **$ sudo cu -l /dev/ttyS1 -s 115200**
21. ☐	**MPS B**: Login prompt is displayed.	<hostname> console login: Note: Hit enter if no login prompt is displayed.
22. ☐	**MPS B:** Log in to the server as user "epapdev".	**<hostname> console login: epapdev** **Password: <password>**
23. ☐	**MPS B:** Change directory.	Change to the backout directory. $ **su – root** **Password: <password** **# cd /var/TKLC/backout**
24. ☐	**MPS B:** Execute the backout.	**Note: Before starting the backout, make sure that all USB devices are removed from the card.** Execute the following command to initiate the backout: **# ./reject** NOTE: When backout operation asks if you would like to proceed with backout, answer "Y". Verifying that backout is possible. Checking for stale RPM DB locks... Current platform version: 7.4.0.0.0-88.32.0 Continue backout? [y/N]:
25. ☐	**MPS B**: 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. If this is a backout of a *major* upgrade, skip to step 30. **DO NOT INITIATE A REBOOT MPS-B at this time.**

		If this is a backout of an *incremental* upgrade, 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.

26. ☐	**MPS B**: 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`
		
		Following errors shall be observed:
		
		`@ [root@Cusco-A ~]# grep -i error /var/TKLC/log/upgrade/upgrade.log`
		`@ 1497252414::Error    : Table 'mysql.innodb_index_stats' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.innodb_table_stats' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_master_info' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_relay_log_info' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_worker_info' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.innodb_index_stats' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.innodb_table_stats' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_master_info' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_relay_log_info' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_worker_info' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.innodb_index_stats' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.innodb_table_stats' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_master_info' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_relay_log_info' doesn't exist`
		`@ 1497252414::Error    : Table 'mysql.slave_worker_info' doesn't exist`
		`@ mdadm: error opening /dev/md1: No such file or directory`
		`$   grep –i error /var/TKLC/log/upgrade/ugwrap.log`
		
		Examine the output of the above command to determine if any errors were reported.
		
		Refer to section 3.7 to know more about logging.

27. ☐	**MPS B**: Verify the Backout.	If the backout was ***not*** successful and errors were recorded in the logs, then contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E for further instructions. If the backout ***was*** successful, then enter continue with the following steps:
28. ☐	**MPS B**: Reboot the MPS.	Perform the following commands to reboot the MPS: **`$ init 6`**
29. ☐	**MPS B**: Login to MPS B.	If the login prompt appears, skip to step 32. If the login prompt does not appear due to disconnect, go to step 30.
30. ☐	Create a terminal window and establish a connection by logging into MPS A. Log into MPS A	In a newly created terminal window labeled “MPS B – from MPS A”, connect directly into MPS A. **`# ssh epapdev@<MPS A>`** **`Password: <password>`**
31. ☐	**MPS A**: Rejoin previous screen session on MPS B	Execute the following command to disconnect and then rejoin previous screen session: **`$ screen -dr`**
32. ☐	**MPS B:** Log in to the server as user “epapdev”.	**`<hostname> console login:  epapdev`** **`Password: <password>`**

Procedure 20: Backout both MPS A and B

33. ☐	**MPS B**: Clear MySQL replication error banner message, if any	Execute the following command to check for MySQL replication error:
		$ manageBannerInfo -l
		
		Examine the output of the above command to determine if any errors were reported related to MySQL replication such as:
		
		MySQL data replication error detected; Attempting to restart
		Attempt to restart MySQL replication failed
		
		Execute the following command to copy the EuiDB database from B server to A server to clear any of the above observed MySQL replication error.
		
		Note: This utility should be executed only with epapdev user
		
		$ /usr/TKLC/epap/config/resetReplication
		`Resetting MySql Replication`
		`This script will fix EuiDB replication by copying the database from one side of the pair to the other side and then resetting the MySql replication pointers.`
		`Are you sure you want to reset replication? (y/n) y`
		`Which side do you want to copy FROM? (A/B) [B]: B`
		`Copy the EuiDB from B to A? (y/n) y`
		`Removing the index and info files from EPAP A`
		`Replication files successfully removed from the mate server.`
		`Connecting to local DB`
		`Connecting to mate DB`
		`Copying EuiDB to mate`
		`Stopping local slave`
		`Stopping mate slave`
		`Resetting local master`
		`Resetting mate master`
		`Resetting local slave`
		`Resetting mate slave`
		`Starting local slave`
		`Starting mate slave`
		`Resetting MySql Replication Completed`
		
		If there is a failure in resetReplication, execute following commands:
		
		$ mysql -uroot -p<MySQL password> -e "GRANT ALL ON EuiDB.* to elapdev@localhost IDENTIFIED by '<password>'"
		
		$ mysql -uroot -p<MySQL password> -e "GRANT ALL ON EuiDB.* to elapdev@mate IDENTIFIED by '<password>'"
		
		Execute the following command to verify that the banner messages related to the replication error are cleared after some time.
		$ manageBannerInfo -l

34. ☐	**MPS B**: Verify Health of MPS B	Execute Procedure A.1 on MPS B to verify the health of MPS B.
35. ☐	**MPS A:** Check RTDB and PDB database levels.	Check the result of Step 6. If the RTDB and PDBA database levels were NOT same prior to backout, execute Procedure A.7 to perform an RTDB reload from PDBA.
36. ☐	Reboot EAGLE Cards.	If the DB levels on EPAP and EAGLE matches and there is no alarm on EAGLE related to “RTDB reload is required”, go to step 37. Reboot 1 SM card on the EAGLE and verify that it comes back to an IS-NR/Active state.

Procedure 20: Backout both MPS A and B

		If this is a Non-Provisionable EPAP, boot the rest of the EAGLE SM cards over 4 batches (booting 1/4 of the cards at a single time). If this is a Provisionable EPAP, and the second MPS A on which backout has been executed, reboot the rest of the cards on both local and remote sides over 4 batches (booting 1/4 of the cards at a single time).
37. ☐	Procedure is complete.	This procedure is complete.

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

Procedure 21 Restart PDBA Software (Post-Backout and Post-Upgrade)

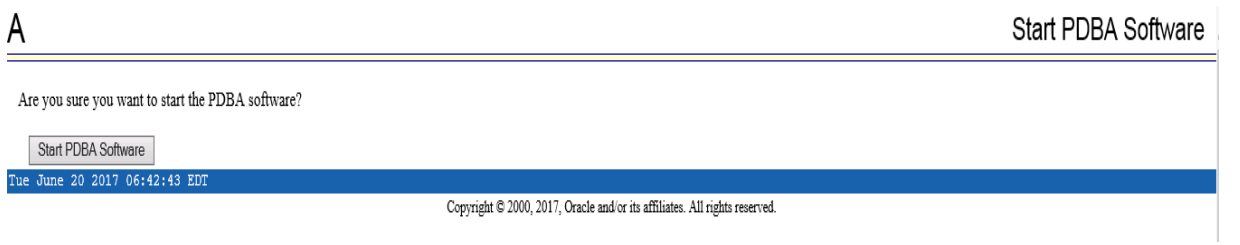
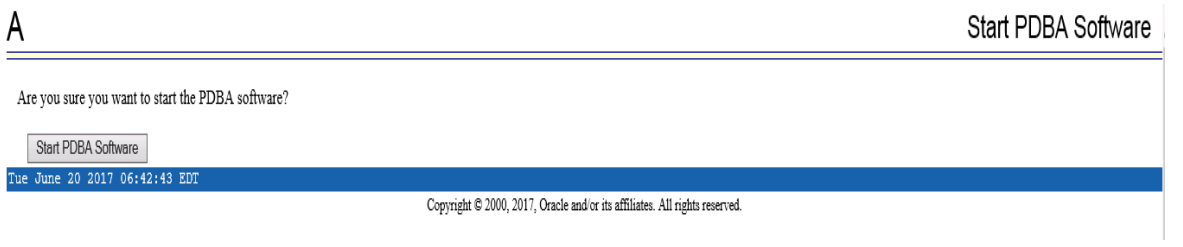
When upgrade is initiated on the first MPS-B, the PDBA software process is stopped on the MPS-A servers configured as **Provisionable**. The PDBA software is intentionally left stopped, and so the operator performing the upgrade must restart the PDBA software after all MPS servers in a set of EPAP systems have been upgraded.

WARNING: If a backout of the MPS A and B units is conducted sometime after an upgrade has successfully completed and after Provisioning has been re-enabled, then the only method of PDB restoration is from backup file. In this case, any new data provisioned since the successful completion of the upgrade will be lost and will need to be re-provisioned.

Procedure 21: Restart the PDBA Software Post-Backout and Post-Upgrade

S T E P #	This procedure restarts the PDBA software after upgrade of all associated MPS systems has been completed. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR <u>UPGRADE ASSISTANCE</u>.**	
If backout has been performed, then execute this procedure ONLY after backout on all MPS servers in the entire set of EPAP systems. Otherwise, skip this procedure until all MPS servers have been backed out.		
1. ☐	**Local MPS A:** Log in to the server as user "epapdev".	`<hostname> console login: epapdev` `Password: <password>`
2. ☐	**Local MPS A**: Verify Health of MPS A.	If not done already, execute Procedure A.1 on MPS A to verify the health of MPS A. Expect that the syscheck utility will report the 'Server Application Process Error' alarm for the fact that the PDBA software is not running. Besides the PDBA not running alarm, verify that no other abnormalities are noted.
3. ☐	**Local MPS A:** Restart the PDBA software. On the menu, click PDBA->Process	Execute the command below to find if the pdba is running or not: `$ ps –aef | grep pdba | grep –v "grep"` If the output contains an entry for the pdba, as shown below, then skip to the next step.

Procedure 21: Restart the PDBA Software Post-Backout and Post-Upgrade

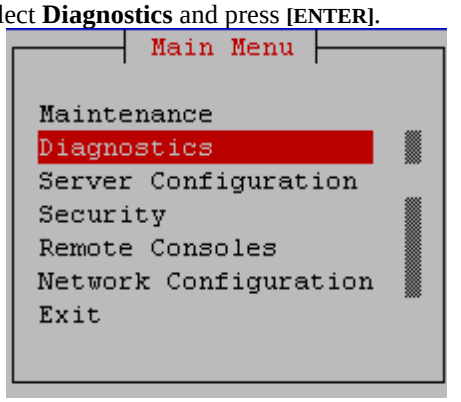
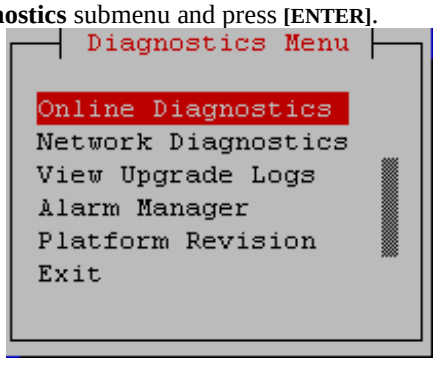
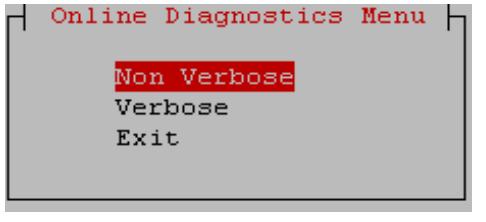
	Control->Start PDBA software	[epapdev@MPS A ~]$ ps -aef | grep pdba epapdev 23890 10248 0 Apr07 ? 00:01:18 /opt/TKLCappl/bin/pdba Otherwise, Login to EPAP GUI by uiadmin user and start PDBA software. 
4. ☐	**Local MPS A**: Verify PDBA is running.	Execute Procedure A.1 on MPS A to verify the health of MPS A Verify that syscheck does ***not*** show that the PDBA is ***not*** running.
5. ☐	**Remote MPS A:** Log in to the server as user "epapdev".	**<hostname> console login: epapdev** **Password: <password>**
6. ☐	**Remote MPS A**: Verify Health of MPS A.	Execute Procedure A.1 on MPS A to verify the health of MPS A. Expect that the syscheck utility will alarm the fact that the PDBA software is not running. This will appear as a "5000000000000002 -- Server Application Process Error" alarm. Besides the PDBA not running alarm, verify that no other abnormalities are noted.
7. ☐	**Remote MPS A:** Restart the PDBA software. On the menu, click PDBA->Process Control->Start PDBA software	Execute the command below to find if the pdba is running or not: **$ ps -aef | grep pdba | grep -v "grep"** If the output contains an entry for the pdba, as shown below, then skip to the next step. epapdev 23890 10248 0 Apr07 ? 00:01:18 /opt/TKLCappl/bin/pdba Otherwise, Login to EPAP GUI by uiadmin user and start PDBA software. 
8. ☐	**Remote MPS A**: Verify PDBA is running.	Execute Procedure A.1 on MPS A to verify the health of MPS A. Verify that syscheck does *not* show that the PDBA is *not* running.
9. ☐	Procedure complete.	This procedure is complete.

THIS COMPLETES THE BACKOUT

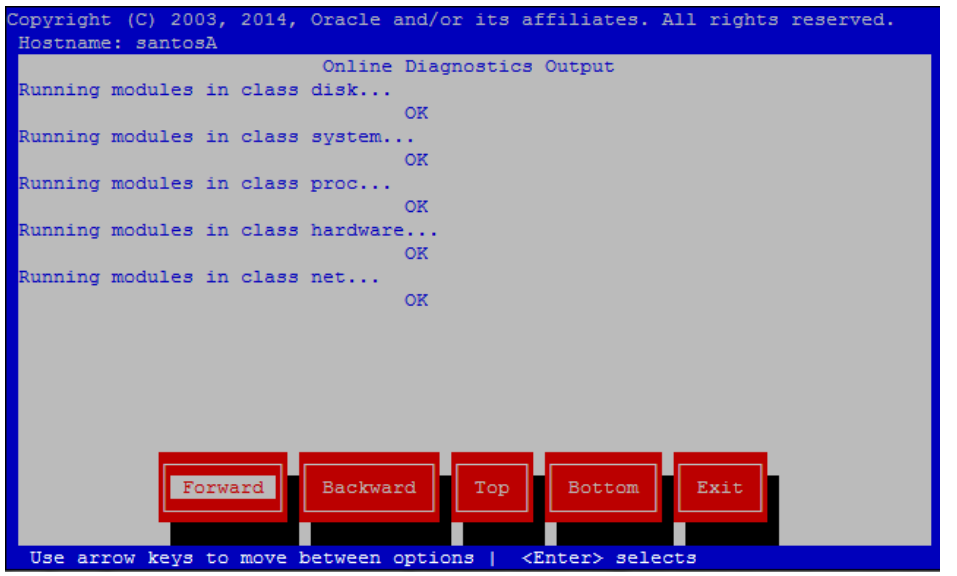
APPENDIX A GENERIC PROCEDURES

Procedure A.1 Perform System Health Check

ProcedureA.1: 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 MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	Log in as the admusr user.	`<hostname> console login:  admusr` `Password: <password>`
2. ☐	Execute the platcfg menu.	`$ sudo 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]**. 

ProcedureA.1: Perform System Health Check

6. ☐	Examine the output of the Online Diagnostics.	Example output shown below. Examine the actual output of the Online Diagnostics. 
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 the "Server Disk Space Shortage Error" was there in the output, proceed to step 8 to clean up the '/' directory. If any other failures were detected by System Check, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.

8. ☐	Server clean-up to create space.	Execute the following command:
		$ df -h /var/TKLC
		
		The output may look like:
		
		`[admusr@hostname ~]$ df -h /var/TKLC`
		`Filesystem Size Used Avail Use% Mounted on`
		`/dev/mapper/vgroot-plat_var_tklc`
		`3.9G 2.2G 1.5G 60% /var/TKLC`
		Verify that there is at least 600M 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.
		
		Also, execute the following command to check space in '/lib/module' directory.
		$ df -h /lib/modules
		
		`[admusr@hostname ~]$ df -h /lib/modules`
		`Filesystem Size Used Avail Use% Mounted on`
		`/dev/mapper/vgroot-plat_root`
		`976M 397M 529M 43% /`

ProcedureA.1: Perform System Health Check

		Verify that the Use% column does not exceed the value 80%.
9. ☐	Procedure complete.	Return to the procedure that you came here from.

Procedure A.2 Validate Upgrade Media

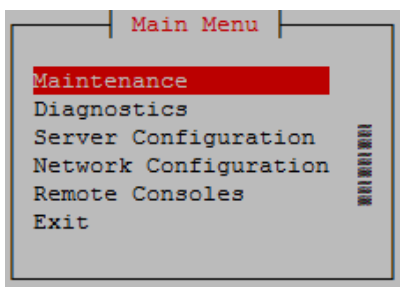
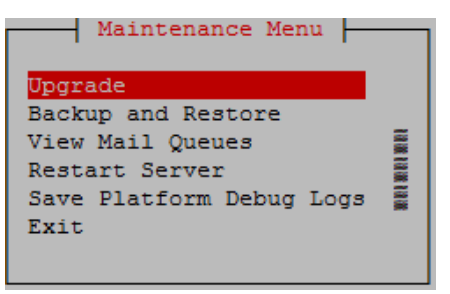
This procedure is used to execute a validation of the Upgrade Media (typically an ISO image) separately from executing an upgrade. The upgrade process automatically validates the upgrade media. However, sometime the user may wish to perform just a validation before proceeding with upgrade, thus the reason for this separate process.

Validation could be performed on MPS A or B, however, this procedure specifies MPS X for simplicity.

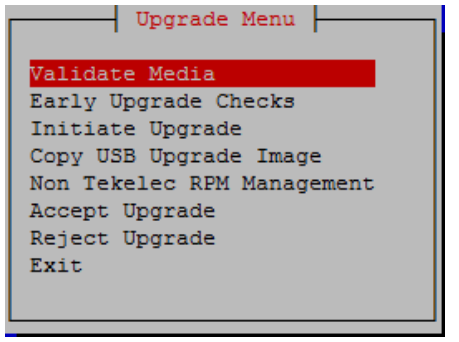
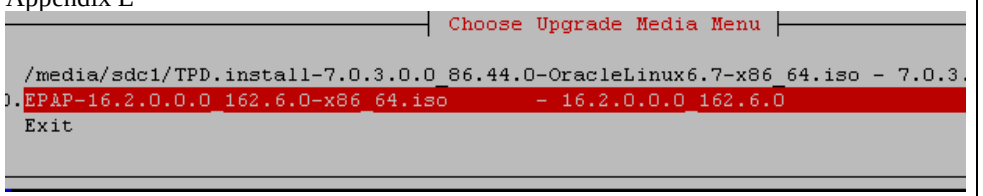
ProcedureA.2: Validate the Upgrade Media

S T E P #	This procedure provides instructions to perform a validation of the upgrade media on the MPS X server. This procedure assumes that the E5-APP-B card IPM procedure has been executed and the user has an EPAP Upgrade ISO image available. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR <u>UPGRADE ASSISTANCE</u>.**

1. ☐	**MPS X:** If necessary, log in to the server as the user "admusr".	If not already logged in to the MPS server, then login as user "admusr".
		
		`<hostname> console login: admusr`
		`password: <password>`

2. ☐	**MPS X:** Execute the platcfg menu.	`$ sudo 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]**. 

ProcedureA.2: Validate the Upgrade Media

5. ☐	**MPS X:** Select the Validate Media selection.	Select the **Validate Media** menu and press **[ENTER]**. 
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. If the upgrade media is not found, follow Procedure A.10 to copy the upgrade ISO. 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 My Oracle Support following the instructions on the front page or the instructions on the Appendix E 
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.

ProcedureA.2: Validate the Upgrade Media

		root@Naxos-A:~ ## ## ## ## ## ## ## ##################################### UMVT Validate Utility v2.3.4, (c)Tekelec, May 2014 Validating /var/TKLC/upgrade/EPAP-16.2.0.0.0_162.6.0-x86_64.iso Date&Time: 2017-02-20 06:31:48 Volume ID: 16.2.0.0.0_162.6.0 Part Number: N/A Version: 16.2.0.0.0_162.6.0 Disc Label: EPAP Disc description: EPAP The media validation is complete, the result is: PASS CDROM is Valid PRESS ANY KEY TO RETURN TO THE PLATCFG MENU.
8. ☐	**MPS X**: Select the Exit option.	Select the **Exit** option, and keep selecting the Exit option, until you reach the command line prompt or you return to another menu that you wish to use. Choose Upgrade Media Menu /media/sdc1/TPD.install-7.0.3.0.0_86.44.0-OracleLinux6.7-x86_64.iso - 7.0.3.0.0_86.44.0 EPAP-16.2.0.0.0_162.6.0-x86_64.iso - 16.2.0.0.0_162.6.0 Exit
9. ☐	**MPS X**: Procedure complete.	Media Validation is complete. Return to the procedure that you came here from.

Procedure A.3 System Configuration Backup

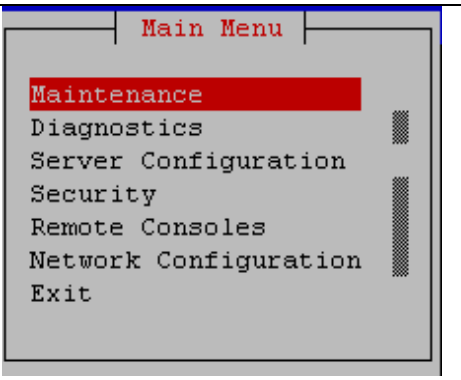
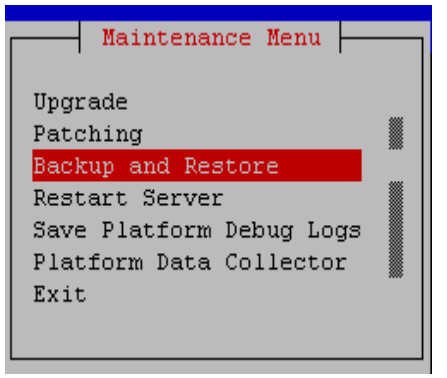
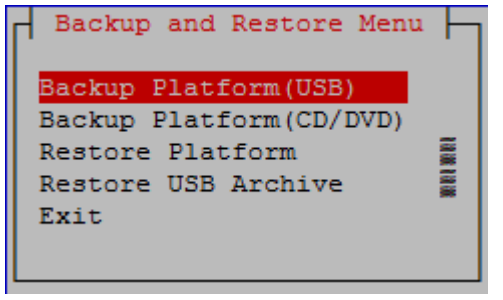
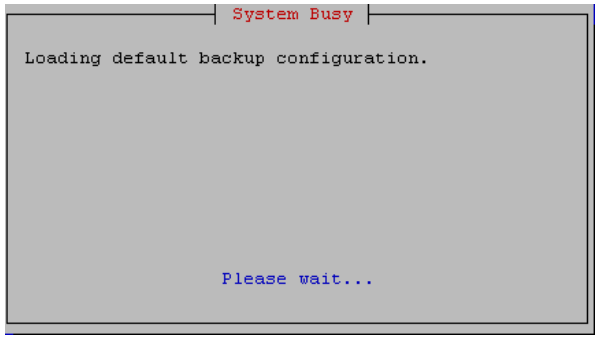
ProcedureA.3: System Configuration Backup

STEP #	This procedure performs configuration backup on an 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 MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	

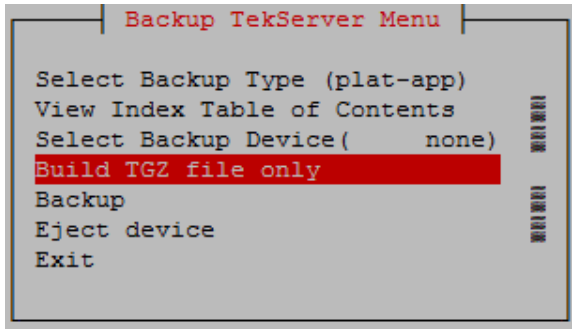
1. ☐	**MPS X:** If necessary, log in to the server as the user "epapdev".	If not already logged in to the MPS server, then login as user "admusr".
		
		`<hostname> console login: admusr`
		`password: <password>`

2. ☐	**MPS X:** Execute the platcfg menu.	`$ sudo su - platcfg`
3. ☐	**MPS X**: Select the Maintenance submenu.	The platcfg **Main Menu** appears. On the **Main Menu**, select **Maintenance** and press **[ENTER]**.

ProcedureA.3: System Configuration Backup

		
4. ☐	**MPS X**: Select the Backup Platform submenu.	Select the **Backup and Restore** menu and press **[ENTER]**. . 
5. ☐	**MPS X**: Select the Backup Platform submenu.	Select the **Backup Platform (USB)** submenu and press **[ENTER]**. 
6. ☐	**MPS X**: Backup continues.	The backup continues. The following busy screen may appear. 

ProcedureA.3: System Configuration Backup

7. ☐	**MPS X**: Select the Build TGZ file only selection.	Select the **Build TGZ file only** selection and press **[ENTER]**. 
8. ☐	**MPS X**: Backup complete – select exit.	Once the TGZ has been created, the "**Backup TekServer Menu**" will be displayed again. Select the Exit option, and keep selecting the Exit option, until you reach the command line prompt.
9. ☐	**MPS X**: Transfer the backup file.	The backup file is in the `/var/TKLC/bkp` directory and will have a name like `<hostname>-plat-app-[date][time].tgz` Execute the following command to view the backup file: **$ ls -l /var/TKLC/bkp**
10. ☐	**MPS X:** Transfer file to 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/bkp** **$ 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 **<hostname>-plat-app-[date][time].tgz** Uploading <hostname>-plat-app-[date][time].tgz to <hostname>-plat-app-[date][time].tgz sftp> bye If no customer provided remote computer for backups exist, transfer the backup file to the mate using the following command: **$ su - epapdev** **$ scp /var/TKLC/bkp/<TGZ file> epapdev@mate:/var/TKLC/epap/free/** **$ chmod 667 /var/TKLC/bkp/<TGZ file>**
11. ☐	Procedure complete.	Return to the procedure that you came here from.

Procedure A.4 PDB Backup

Procedure A.4: PDB Backup

S T E P #	This procedure performs a PDB backup on the EPAP server configured as a Provisionable node. This procedure should only be performed on the active PDBA. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS A:** Log in to the server.	If not already logged-in, then login at MPS A: **<hostname> console login: epapdev** **Password: <password>**
2. ☐	Run syscheck.	Execute the following Command: **$ syscheck**
3. ☐	Verify the System Check executed successfully. In particular, verify that the PDBA process is running by noting that syscheck does not generate an alarm against the PDBA process.	Running modules in class disk... OK Running modules in class net... OK Running modules in class proc... OK Running modules in class system... OK Running modules in class hardware... OK The log is available at: -->/var/TKLC/log/syscheck/fail_log If the syscheck utility reports the "5000000000000002 – Server Application Process Error" alarm, restart the PDBA and execute syscheck again. The above alarm should be removed. If the above alarm is not removed, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.
4. ☐	System Check Verifies that PDBA is running.	If the syscheck does not report any errors, proceed to the next step. Otherwise, if any other failures were detected by System Check, contact My Oracle Support following the instructions on the front page or the instructions on the Appendix E.
5. ☐	Log into epapconfig.	**$ su – admusr** **$ sudo su – epapconfig**
6. ☐	Main menu is displayed. Select Platform Menu.	/-----EPAP 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 | PDB Configuration Menu | |----|----------| | 9 | Security | |----|----------| | 10 | SNMP Configuration | |----|----------| | 11 | Configure Alarm Feed | |----|----------| | 12 | Configure Query Server | |----|----------|

		```| 13 | Configure Query Server Alarm Feed ||----|----------------------------------|| 14 | Configure SNMP Agent Community ||----|----------------------------------|| 15 | Mate Disaster Recovery ||----|----------------------------------|| e | Exit |\-------------------------------------/Enter Choice: 6```
7. ☐	Platform menu is displayed. Select PDB Backup.	```Menu for standard EPAP designation:/-----EPAP Platform Menu-\/--------------------------\\| 1 | Initiate Upgrade ||----|----------------------|| 2 | Reboot MPS ||----|----------------------|| 3 | MySQL Backup ||----|----------------------|| 4 | RTDB Backup ||----|----------------------|| 5 | PDB Backup ||----|----------------------|| e | Exit |\--------------------------/Enter Choice: 5Menu for PDB-only designation: /-----EPAP Platform Menu-\/--------------------------\\| 1 | Initiate Upgrade ||----|----------------------|| 2 | Reboot MPS ||----|----------------------|| 3 | MySQL Backup ||----|----------------------|| 4 | PDB Backup ||----|----------------------|| e | Exit |\--------------------------/Enter Choice: 4```
8. ☐	Menu will prompt for a "yes" to continue. Enter a **Y**.	```Are you sure you want to backup the PDB to/var/TKLC/epap/free/pdbBackup_Recife-A_20170220010541_DBBirthdate_20170215103030GMT_DBLevel_7_v7.50.bkp.tar.gz? [N]:```
9. ☐	While the backup is begin performed, the following output will be displayed to the screen.	```Successfully started backup of PDB.Status will be displayed on the GUI banner.Press return to continue...```
10. ☐	Exit this menu and return to the login prompt.	```Enter Choice: e``` Note: If this menu is not exited properly, then the SSH login with root shall remain enabled.
11. ☐	Monitor GUI banner.	Monitor the GUI banner. When the backup has completed successfully, continue to the next step.
12. ☐	Use SFTP to transfer the backup file to a remote customer provided computer.	Using SFTP (secure-FTP), transfer the PDB backup file to a remote, customer-provided computer. Enter "yes" when prompted if you want to continue to connect.

Procedure A.4: PDB Backup

		$ cd /var/TKLC/epap/free **$ 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 pdbBackup_<hostname>_20140530151806_DBBirthdate_20140530144717GMT_DBLevel_<DBLevel>.bkp.tar.gz Uploading pdbBackup_<hostname>_20140530151806_DBBirthdate_20140530144717GMT_DBLevel_<DBLevel>.bkp.tar.gz to pdbBackup_<hostname>_20140530151806_DBBirthdate_20140530144717GMT_DBLevel_<DBLevel>.bkp.tar.gz sftp> bye If no customer provided remote computer for backups exist, transfer the backup file to the mate using the following command **$ su - epapdev** **$ scp /var/TKLC/epap/free/<pdb backup file> epapdev@mate:/var/TKLC/epap/free/**
13. ☐	Procedure complete.	Return to the procedure that you came here from.

Procedure A.5 RTDB Backup

ProcedureA.5: RTDB Backup

STEP #	This procedure performs an RTDB backup on the EPAP 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 MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS B:** Log in to the server.	If not already logged-in, then login at the MPS B. **<hostname> console login: admusr** **Password: <password>**
2. ☐	Enter the epapconfig menu.	Execute the following command: **$ sudo su - epapconfig**
3. ☐	Main menu is displayed. Select Platform Menu.	/-----EPAP 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 | PDB Configuration Menu | |----|----------| | 9 | Security | |----|----------| | 10 | SNMP Configuration | |----|----------| | 11 | Configure Alarm Feed | |----|----------| | 12 | Configure Query Server | |----|----------| | 13 | Configure Query Server Alarm Feed | |----|----------| | 14 | Configure SNMP Agent Community | |----|----------| | 15 | Mate Disaster Recovery | |----|----------| | e | Exit | \----------/ Enter Choice:6
4. ☐	Platform menu is displayed. Select RTDB Backup.	/-----EPAP Platform Menu-\ /----------\ | 1 | Initiate Upgrade | |----|----------| | 2 | Reboot MPS | |----|----------| | 3 | MySQL Backup | |----|----------| | 4 | RTDB Backup | |----|----------| | 5 | PDB Backup | |----|----------| | e | Exit | \----------/ Enter Choice: 4
5. ☐	The Application software must be stopped.	If the EPAP application software is running, you will be prompted to stop the software for the RTDB backup. Select with a "Y". EPAP software is running. Stop it? [N]: **Y**
6. ☐	Menu will prompt for a "yes" to continue. Enter a **Y**.	Are you sure you want to backup the PDB to /var/TKLC/epap/free/ rtdbBackup_Recife-A_20140530151806.tar.gz? [N]:
7. ☐	While the backup is begin performed, the following output will be displayed to the screen.	Successfully started backup of RTDB. Status will be displayed on the GUI banner. Press return to continue...

ProcedureA.5: RTDB Backup

8. ☐	Exit this menu and return to the login prompt. Continue exiting until you get to the login prompt.	`Enter Choice: e` `Enter Choice: e` Note: If this menu is not exited properly, then the SSH login with root shall remain enabled.
9. ☐	Monitor GUI banner.	Monitor the GUI banner. When the backup has completed successfully, continue to the next step.
10. ☐	Restart the EPAP Software.	Restart the EPAP application software. **`$ /etc/init.d/Epap start`**

11. ☐	Use SFTP to transfer the backup file to a remote customer provided computer.	Using SFTP (secure-FTP), transfer the RTDB backup file to a remote, customer-provided computer. Enter "yes" when prompted if you want to continue to connect.
		
		`$ cd /var/TKLC/epap/free`
		
		`$ 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>_20140530151806.tar.gz`
		`Uploading rtdbBackup_<hostname>_20140530151806.tar.gz to rtdbBackup_<hostname>_20140530151806.tar.gz`
		`sftp> bye`
		
		If no customer provided remote computer for backups exist, transfer the backup file to the mate using the following command
		`$ su - epapdev`
		
		`$ scp /var/TKLC/epap/free/<rtdb backup file> epapdev@mate:/var/TKLC/epap/free`

12. ☐	Procedure complete.	Return to the procedure that you came here from.

Procedure A.6 EuiDB Backup

ProcedureA.6: EuiDB Backup

S T E P #	This procedure performs a backup of the User database on the 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 MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE**.	
1. ☐	**MPS A:** Log in to the server as user "admusr".	**`<hostname> console login: admusr`** **`Password: <password>`**

ProcedureA.6: EuiDB Backup

2. ☐	Enter the epapconfig menu.	Execute the following Command: **$ sudo su - epapconfig**
3. ☐	Master menu is displayed. Select Platform Menu.	/-----EPAP 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 | PDB Configuration Menu | |----|----------------------------------| | 9 | Security | |----|----------------------------------| | 10 | SNMP Configuration | |----|----------------------------------| | 11 | Configure Alarm Feed | |----|----------------------------------| | 12 | Configure Query Server | |----|----------------------------------| | 13 | Configure Query Server Alarm Feed | |----|----------------------------------| | 14 | Configure SNMP Agent Community | |----|----------------------------------| | 15 | Mate Disaster Recovery | |----|----------------------------------| | e | Exit | \--/ Enter Choice: 6
4. ☐	Platform menu is displayed. Select MySQL Backup.	/-----EPAP Platform Menu-\ /--------------------------\ | 1 | Initiate Upgrade | |----|---------------------| | 2 | Reboot MPS | |----|---------------------| | 3 | MySQL Backup | |----|---------------------| | 4 | RTDB Backup | |----|---------------------| | 5 | PDB Backup | |----|---------------------| | e | Exit | \--------------------------/ Enter Choice: 3
5. ☐	You will then be prompted to verify that	Are you sure you want to backup the MySQL database on MPS A? [N]:

ProcedureA.6: EuiDB Backup

	you want to backup the MySQL Database.	
6. ☐	Type "Y" and press enter.	`Press Y`
7. ☐	While the backup is begin performed, the following output will be displayed to the screen.	`NPDB Backed up Successfully to /var/TKLC/appl/free/<file name>`
8. ☐	Exit this menu and return to the Unix login prompt. Continue exiting until you get to the Unix login prompt.	`Enter Choice: e` Note: If this menu is not exited properly, then the SSH login with root shall remain enabled.

9. ☐	Use SFTP to transfer the backup file to a remote customer provided computer.	Using SFTP (secure-FTP), transfer the NPDB backup file to a remote, customer-provided computer. Enter "yes" when prompted if you want to continue to connect.
		
		$ cd /var/TKLC/epap/free
		
		$ 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>_20140530151806.sql.gz`
		`Uploading npdbBackup_<hostname>_20140530151806.sql.gz to npdbBackup_<hostname>_20140530151806.sql.gz`
		`sftp> bye`
		
		If no customer provided remote computer for backups exist, transfer the backup file to the mate using the following command
		$ su - epapdev
		
		$ scp /var/TKLC/epap/free/<npdb backup file> epapdev @mate:/var/TKLC/epap/free

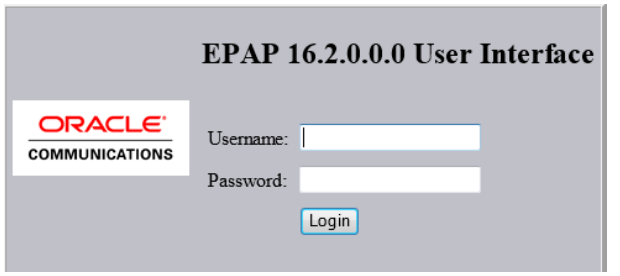
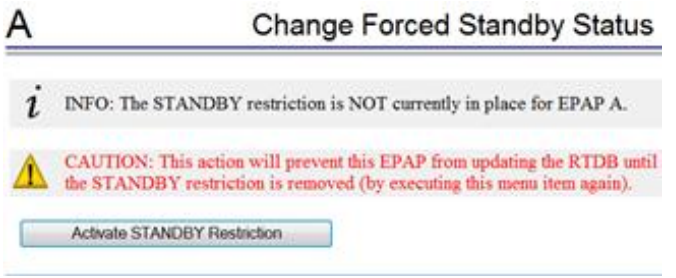
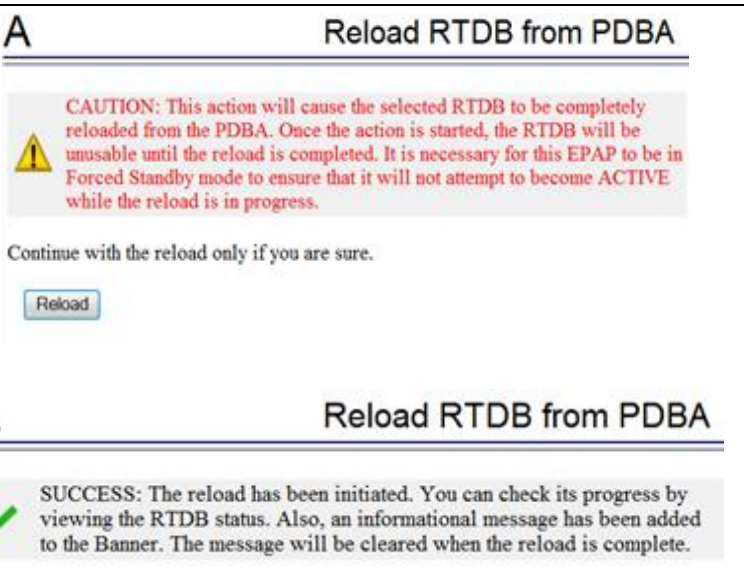
10. ☐	Procedure complete.	Return to the procedure that you came here from.

Procedure A.7 RTDB Reload from PDBA

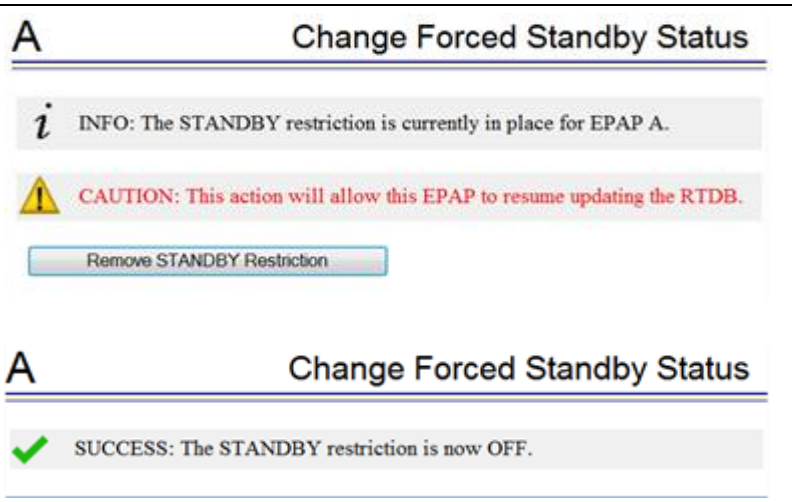
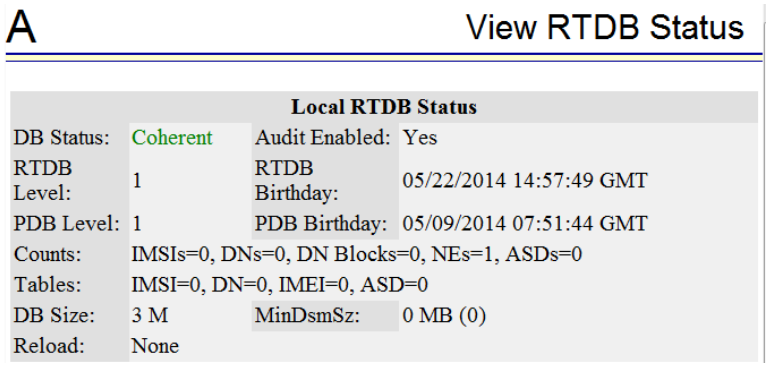
ProcedureA.7: RTDB Reload from PDBA

S T E P #	This procedure provides instructions to reload RTDB from PDBA. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND ASK FOR ASSISTANCE.

ProcedureA.7: RTDB Reload from PDBA

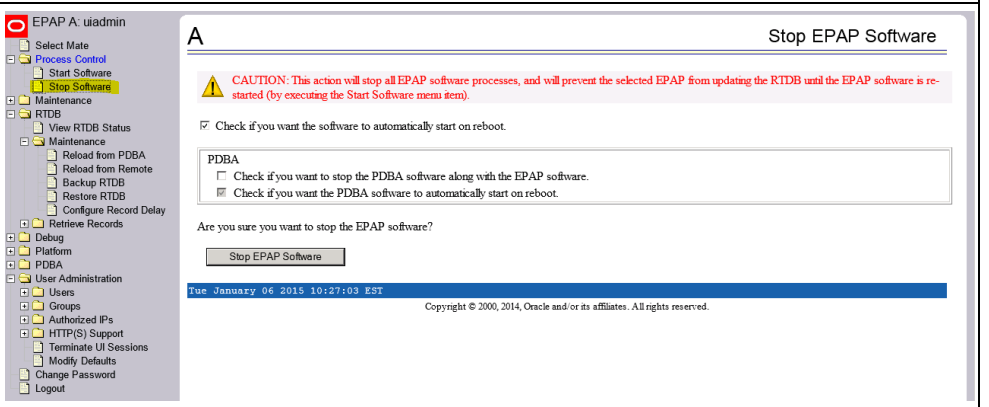
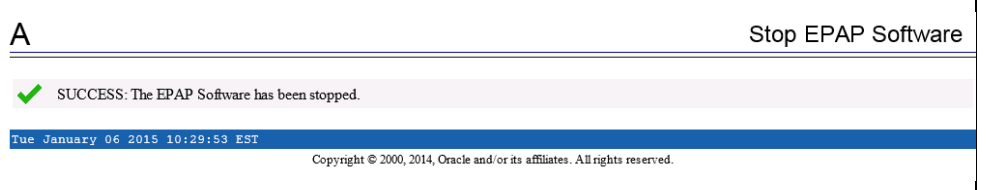
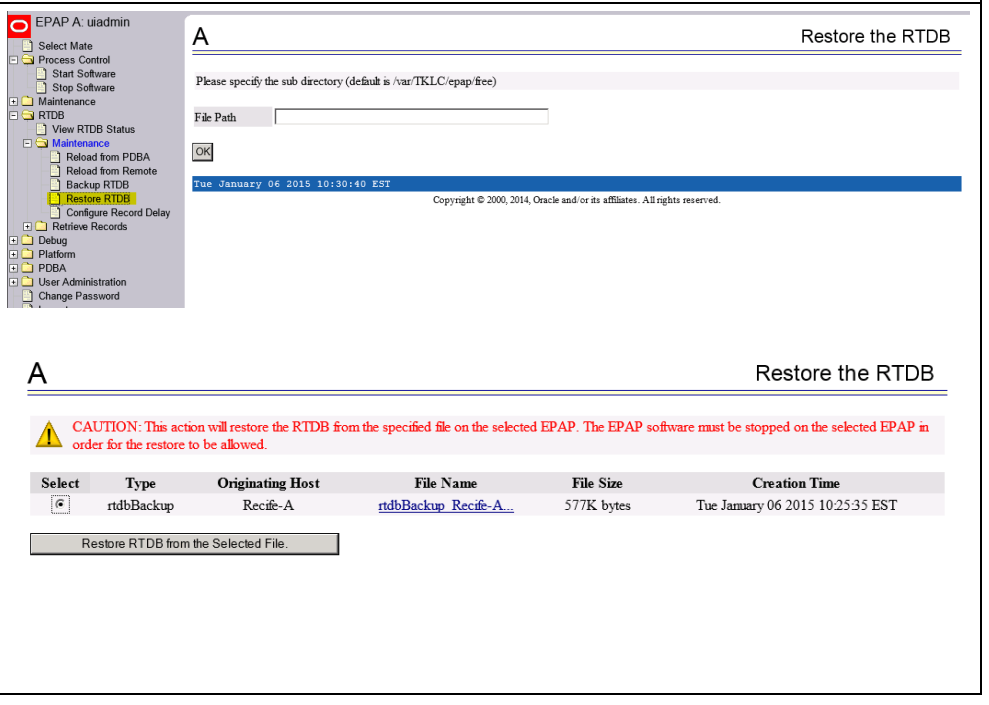
1. ☐	**EPAP A:** Log in to the web GUI as user "uiadmin".	
2. ☐	**EPAP A:** Put EPAP in Force Standby Mode. Expand the "Maintenance" Folder. Expand the "Force Standby" Folder. Select the "Change Status" link. Click on "Activate STANDBY Restriction" Button.	
3. ☐	**EPAP A:** Reload RTDB from PDBA. Expand the "RTDB" Folder. Expand the "Maintenance" Folder. Select the "Reload from PDBA" link. Click on the "Reload" Button. Observe the "SUCCESS" Status.	
4. ☐	**EPAP A:** Wait for completion. Observe the GUI informational message and wait for the RTDB Reload completion message before proceeding.	

ProcedureA.7: RTDB Reload from PDBA

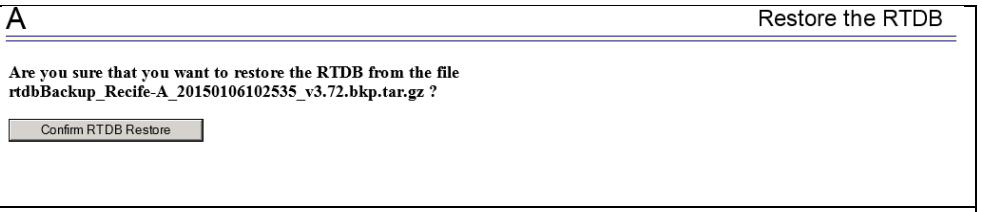
		
5. ☐	**EPAP A:** Remove EPAP from Force Standby Mode. Expand the "Maintenance" Folder. Expand the "Force Standby" Folder. Select the "Change Status" link. Click on "Remove STANDBY Restriction" Button.	
6. ☐	**EPAP A:** Verify RTDB status. Expand the "RTDB" Folder. Select the "View RTDB Status" link.	 The RTDB Status must be Coherent.
7. ☐	Procedure complete.	Return to the procedure that you came here from.

Procedure A.8 RTDB Restore

ProcedureA.8: RTDB Restore

S T E P #	This procedure provides instructions to restore RTDB from a backup file. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND ASK FOR ASSISTANCE.	
1. ☐	**EPAP A:** Log in to the web GUI as user "uiadmin".	
2. ☐	**EPAP A:** Stop Software. On the menu, click Process Control->Stop Software. Click "Stop EPAP Software" Button	 
3. ☐	**EPAP A:** Restore RTDB. On the menu, click RTDB->Maintenance->Restore RTDB Select the backup file, then click "Restore RTDB from the Selected File" Button Click "Confirm RTDB Restore" Button	

ProcedureA.8: RTDB Restore

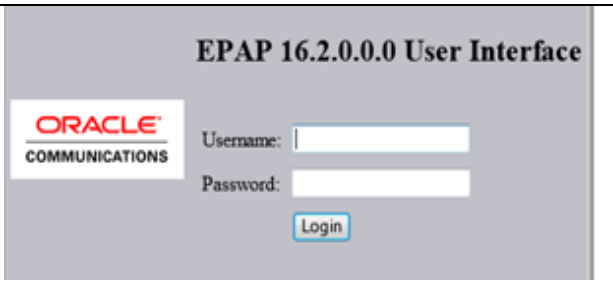
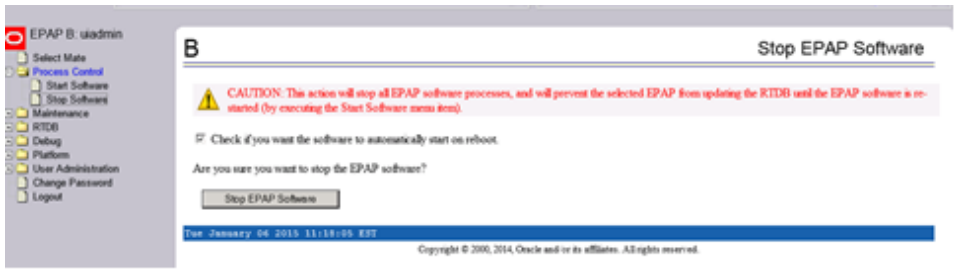
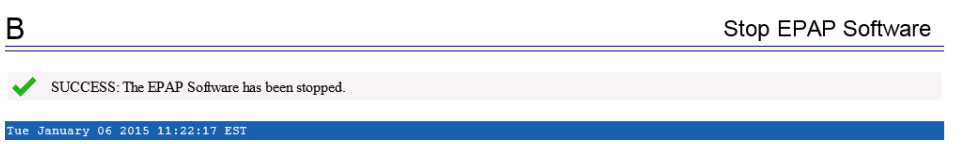
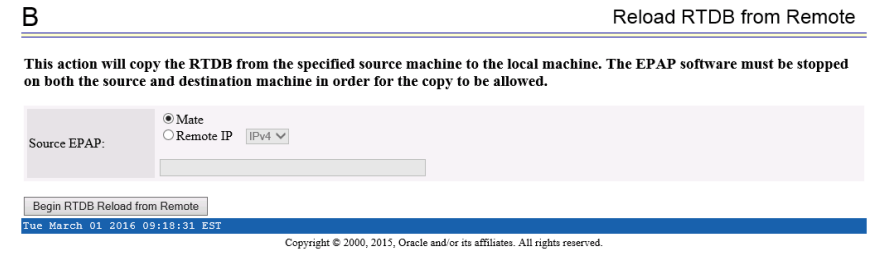
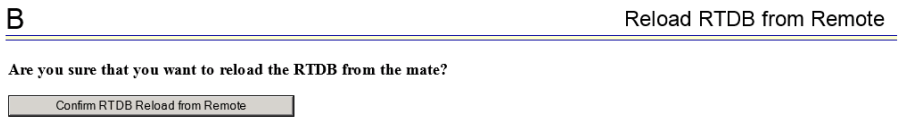
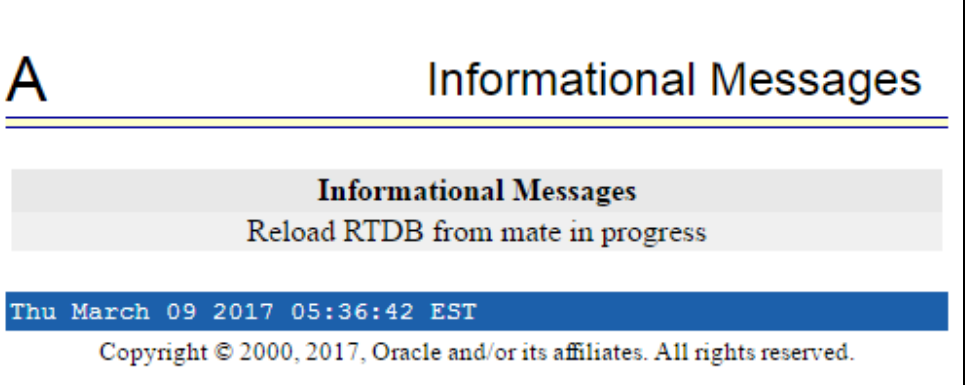
		
4. ☐	**EPAP A:** Make EPAP down. An IM alarm should be observed with informational message on EPAP GUI confirming that restore RTDB is in progress. An IM alarm should be observed with informational message on EPAP GUI confirming that restore RTDB completed successfully. Click "Confirm RTDB Restore" Button	
5. ☐	Procedure complete.	Return to the procedure that you came here from.

Procedure A.9 RTDB Reload from Remote

ProcedureA.9: RTDB Reload from Remote

S T E P #	This procedure provides instructions to restore RTDB from a backup file. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND ASK FOR ASSISTANCE.	
1. ☐	**EPAP B:** Log in to the web GUI as user "uiadmin".	

ProcedureA.9: RTDB Reload from Remote

		
2. ☐	**EPAP B:** Stop Software. On the menu, click Process Control->Stop Software. Click "Stop EPAP Software" Button	 
3. ☐	**EPAP B:** Reload RTDB from Remote. On the menu, click RTDB->Maintenance->Reload from Remote Select Mate. Click "Begin RTDB Reload from Remote" Button Click "Confirm RTDB Reload from Remote" Button	 
4. ☐	**EPAP B:** Reload RTDB from Mate An IM alarm should be observed with informational message on EPAP GUI confirming the start of the reload process An informational alarm should be displayed with informational message when the reload is complete	

ProcedureA.9: RTDB Reload from Remote

		A Informational Messages **Informational Messages** Reload RTDB from mate completed successfully Thu March 09 2017 05:39:38 EST Copyright © 2000, 2017, Oracle and/or its affiliates. All rights reserved.
5. ☐	MPS A and B: Restart the GUI Server process.	`$ pkill gs` `$ ssh mate pkill gs`
6. ☐	**MPS B:** Start the Epap software on EPAP A and B.	`$ ssh mate /etc/init.d/Epap start` ~~ /etc/init.d/Epap start ~~ EPAP application started. **$ service Epap start** ~~ /etc/init.d/Epap start ~~ EPAP application started.
7. ☐	**MPS B:** Checking the RTDB Status Log onto the GUI of the B server and select RTDB, View RTDB Status**.** **Verify that the DB status for the local and the mate is Coherent**	`$ pkill gs` B View RTDB Status **Local RTDB Status** DB Status: Coherent — Audit Enabled: Yes RTDB Level: 8 — RTDB Birthday: 12/31/2014 15:01:20 GMT PDB Level: 8 — PDB Birthday: 12/31/2014 15:02:16 GMT Counts: IMSIs=0, DNs=7, DN Blocks=0, NEs=1, ASDs=0 Tables: IMSI=0, DN=1, IMEI=0, ASD=0 DB Size: 403 M — MinDsmSz: 14336 MB (1105 on epap240m) Reload: Unknown **Mate RTDB Status** DB Status: Coherent — Audit Enabled: Yes RTDB Level: 8 — RTDB Birthday: 12/31/2014 15:01:20 GMT PDB Level: 8 — PDB Birthday: 12/31/2014 15:02:16 GMT Counts: IMSIs=0, DNs=7, DN Blocks=0, NEs=1, ASDs=0 Tables: IMSI=0, DN=1, IMEI=0, ASD=0 DB Size: 403 M — MinDsmSz: 14336 MB (1105 on epap240m) Reload: Unknown
8. ☐	Procedure complete.	Procedure Complete.

Procedure A.10 ISO Image copy from USB Media

This procedure defines the steps to perform an upgrade or application installation using an ISO image of the USB rather than an actual USB.

Assumption: The USB media contains the desired EPAP ISO.

ProcedureA.10: 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 MY ORACLE SUPPORT AND ASK FOR UPGRADE ASSISTANCE.	
1. ☐	**MPS X:** Insert USB.	Insert media in USB drive
2. ☐	**MPS X:** Log in to the server as the "admusr" user.	**[hostname] consolelogin: admusr** **password: <admusr_password>**

3. ☐	**MPS X:** Run syscheck to make sure there is no error.	Execute the following command:
		$ sudo syscheck
		The output should look like:
		`[admusr@hostname ~]$ syscheck`
		`Running modules in class disk...`
		`OK`
		`Running modules in class hardware...`
		`OK`
		`Running modules in class net...`
		`OK`
		`Running modules in class proc...`
		`OK`
		`Running modules in class system...`
		`OK`
		`Running modules in class upgrade...`
		`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 –alrt /var/TKLC/upgrade
		The output should look like:
		`[admusr@hostname ~]$ ls -alrt /var/TKLC/upgrade`
		`total 16`
		`dr-xr-xr-x  2 root 4096 Oct 22 16:31 .`
		`dr-xr-xr-x  21 root root 4096 Oct 18 13:40 ..`
		If an 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: **$ sudo mkdir -p /mnt/usb** Execute the following command to get the USB drive name: **$ sudo fdisk -l |grep FAT** The output should look like: `/dev/sdc1  *  1  812  831472  6  FAT32` Execute the following command to mount the USB media using the USB drive name from the output above: **$ sudo mount /dev/sdc1 /mnt/usb** Execute the following command to perform directory listing and verify the file name format is as expected:

ProcedureA.10: ISO Image copy from USB media

		$ ls -al /mnt/usb
		
		The output should look like:
		`[admusr@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 1101334528 May  6 04:53 EPAP-16.2.0.0.0_162.6.0-x86_64.iso`
		Only one ISO file should be listed, if additional files are listed, execute the following command to remove unwanted EPAP ISOs:
		$ sudo rm -f /mnt/usb/<ISO_NAME>.iso
		
		Execute the following command to unmount the USB media:
		$ sudo umount /mnt/usb

6. ☐	**MPS X:** Verify space exists for ISO.	Execute the following command to verify the available disk space:
		
		$ sudo df -h /var/TKLC
		
		The output should look like:
		`[admusr@hostname ~]$ df -h /var/TKLC`
		`Filesystem            Size  Used Avail Use% Mounted on`
		`/dev/md7             3.9G  902M  2.8G  24% /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 My Oracle Support beforehand if removing files other than the /var/TKLC/upgrade directory as removing files is dangerous.

7. ☐	**MPS X:** Copy iso from mounted path to the destination path	Execute the following command to copy ISO: **$ cp /mnt/usb/<xyz.iso> /var/TKLC/upgrade/**

8. ☐	**MPS X:** Verify ISO image exists.	Execute the following command to perform directory listing:
		$ ls -alrt /var/TKLC/upgrade
		
		The output should look like:
		`[admusr@hostname ~]$ ls -alrt /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 ..`
		`-rw-r--r--  1 root root  May  6 04:53 EPAP-16.2.0.0.0_162.6.0-x86_64.iso`
		
		Repeat this procedure from step 5 if EPAP ISO file is not as expected.

9. ☐	**MPS X:** Logout from server.	Logout from the server by executing the following command: **$ sudo logout**
10. ☐	**MPS X:** Remove USB media.	Remove media from USB drive.

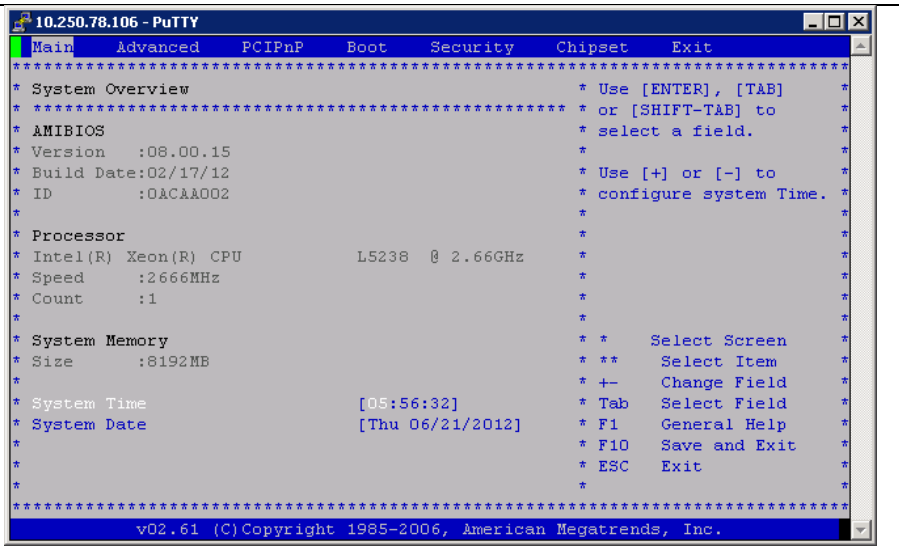
ProcedureA.10: ISO Image copy from USB media

11. ☐	**MPS X:** Validate ISO file.	Validate ISO file using Procedure A.2.
12. ☐	**Procedure complete.**	This procedure is complete.

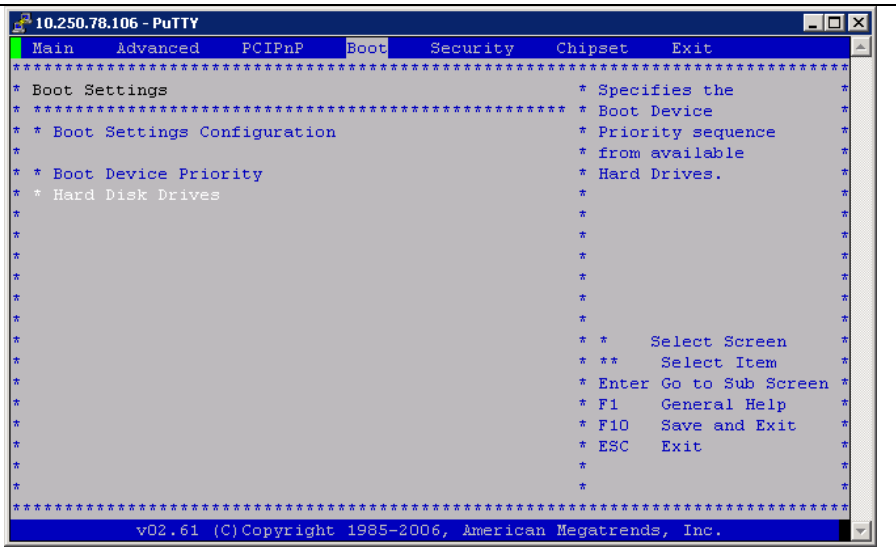
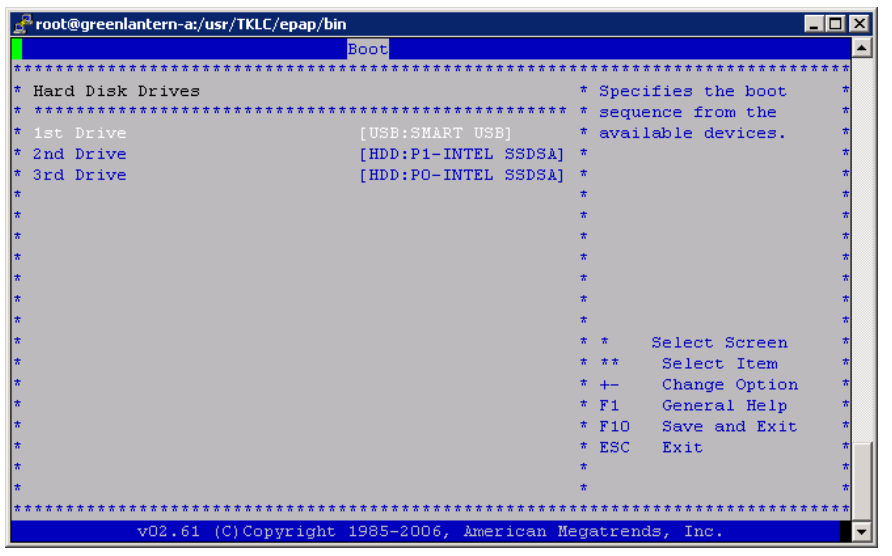
Procedure A.11 IPM MPS Server with TPD 7.4.X

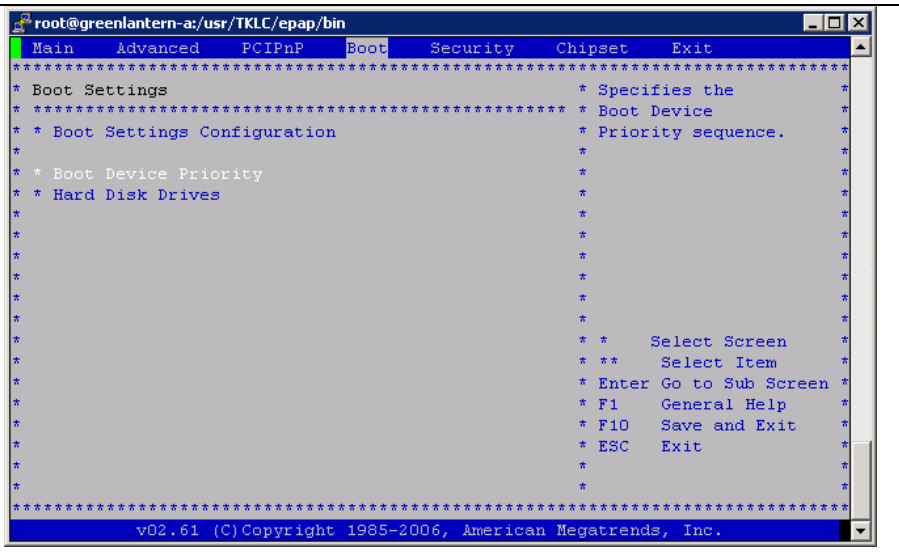
Note: Both the MPS-A and MPS-B servers can be IPM'ed at the same time.

Procedure A.11: IPM with TPD 7.4.x

S T E P #	This procedure will IPM the E5-APP-B 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 MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS X:** Insert TPD 7.0.x USB media into the USB port (E5-APP-B)	Reboot server `# reboot`
2. ☐	**MPS X:** Press 'del' key to enter the BIOS, set System Time to EST time, and System Date.	
3. ☐	**MPS X:** Select *Boot* → *Hard Disk Drives* option	

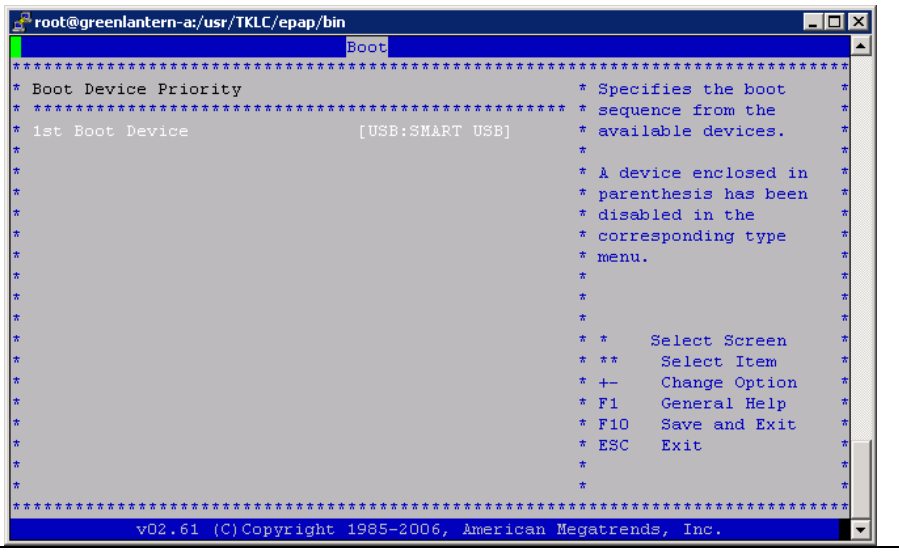
Procedure A.11: IPM with TPD 7.4.x

		
4. ☐	**MPS X:** Press 'Enter' key and select USB as the 1st Drive	
5. ☐	**MPS X:** Press 'Esc' key and select Boot Device Priority	



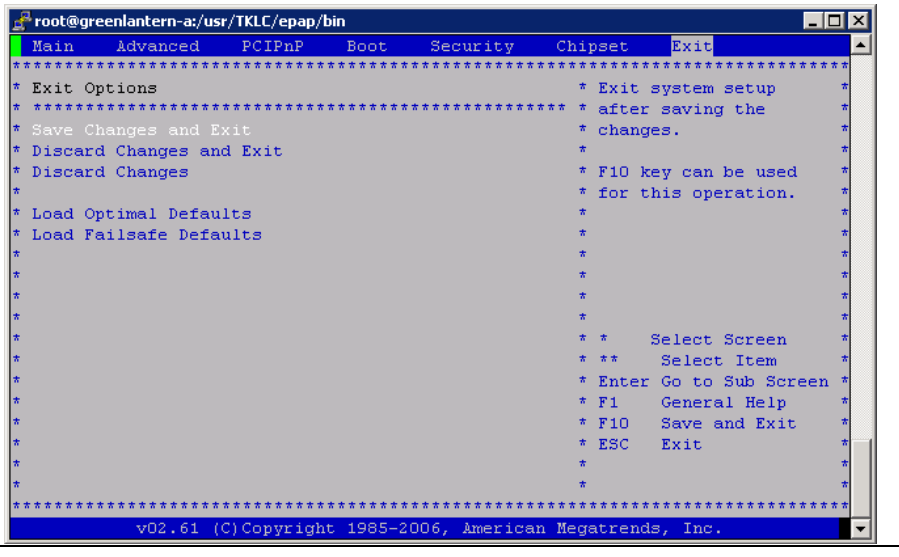
6. ☐ **MPS X:**

Verify that the 1st Boot Device is set to USB.

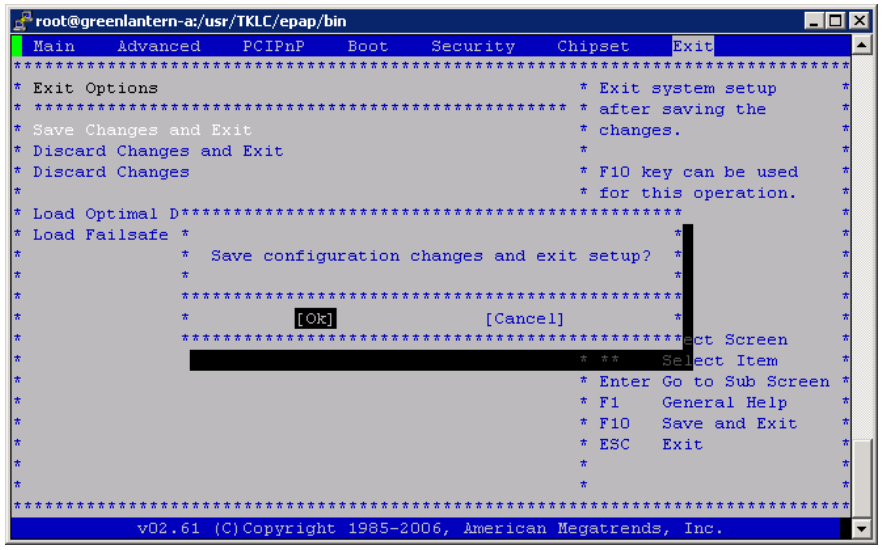
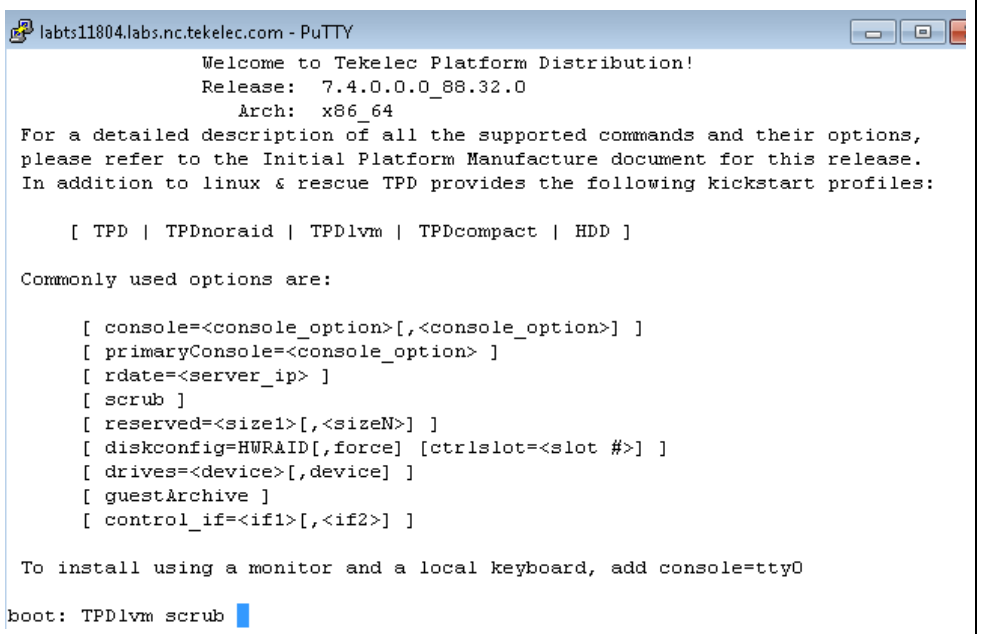


7. ☐ **MPS X:**

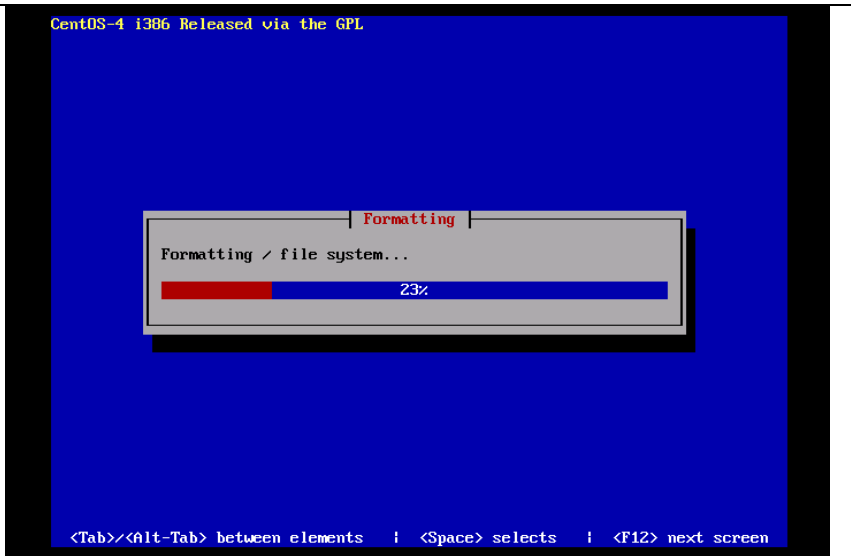
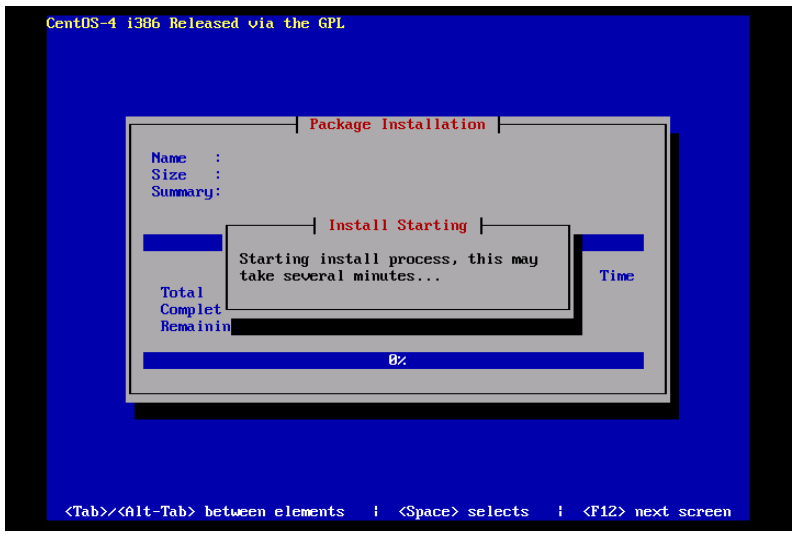
Press 'Esc' key and select *Exit → Save Changes and Exit* option



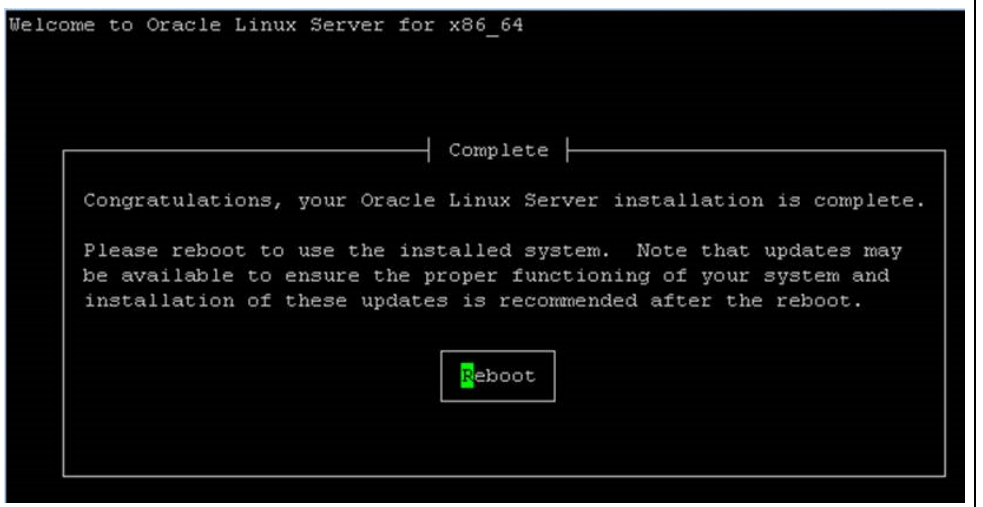
Procedure A.11: IPM with TPD 7.4.x

8. ☐	**MPS X:** Select [OK] to save the configuration changes. The server will reboot and TPD boot prompt will appear.	
9. ☐	**MPS X:** Start the IPM process by entering the TPDlvm command at the boot prompt.	
10. ☐	**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.	

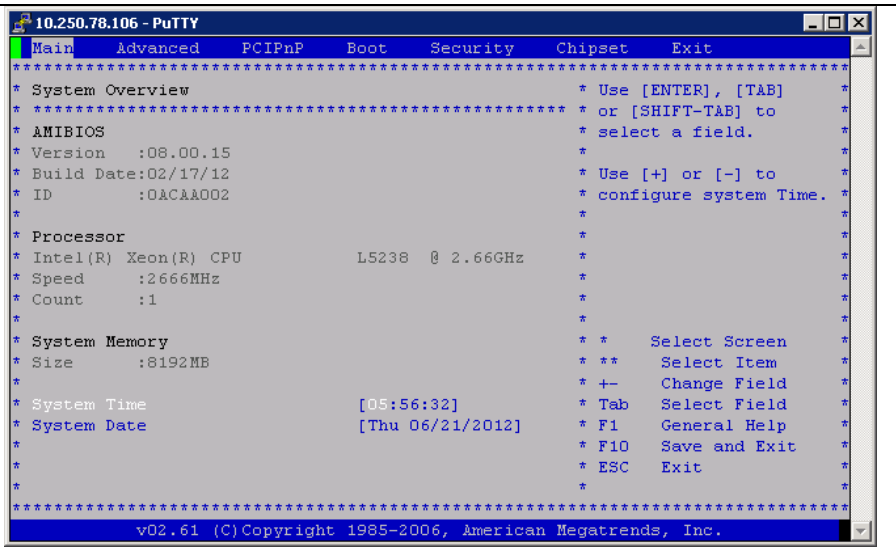
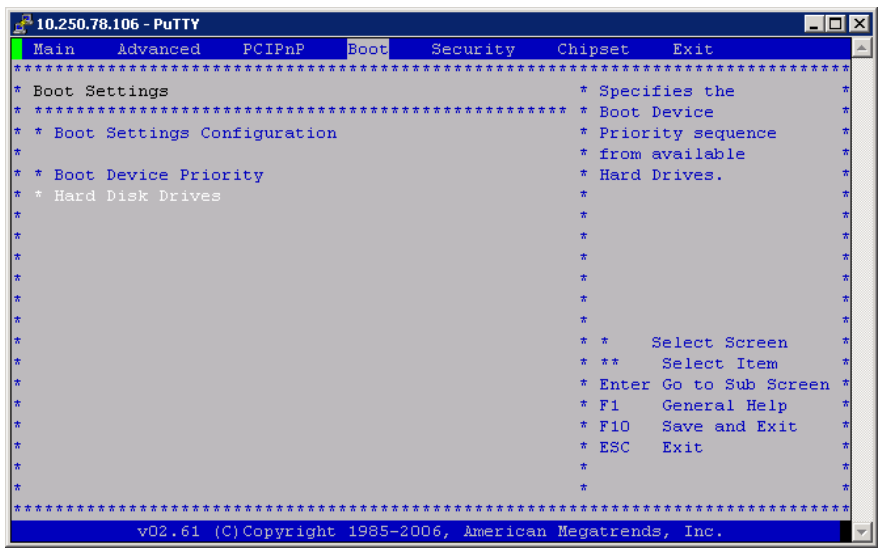
Procedure A.11: IPM with TPD 7.4.x

		
11. ☐	**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.	
12. ☐	**MPS X:**	

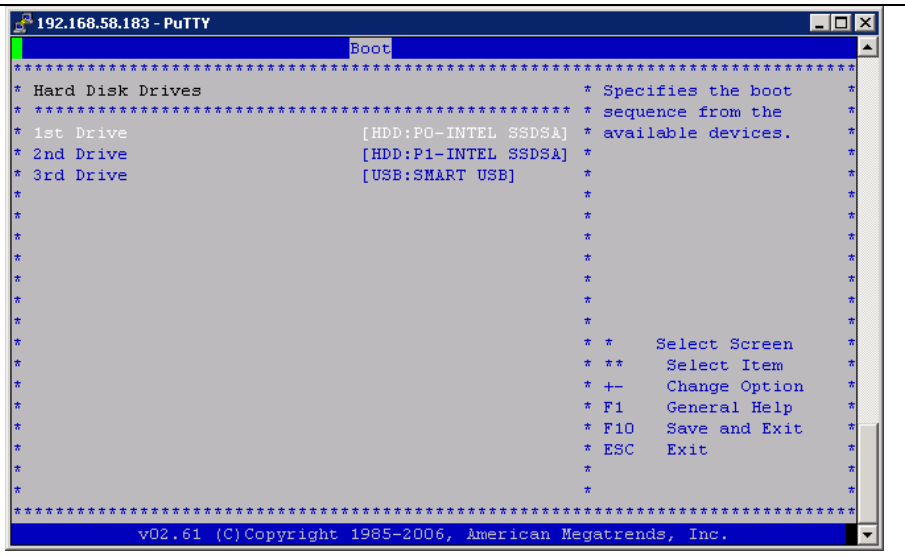
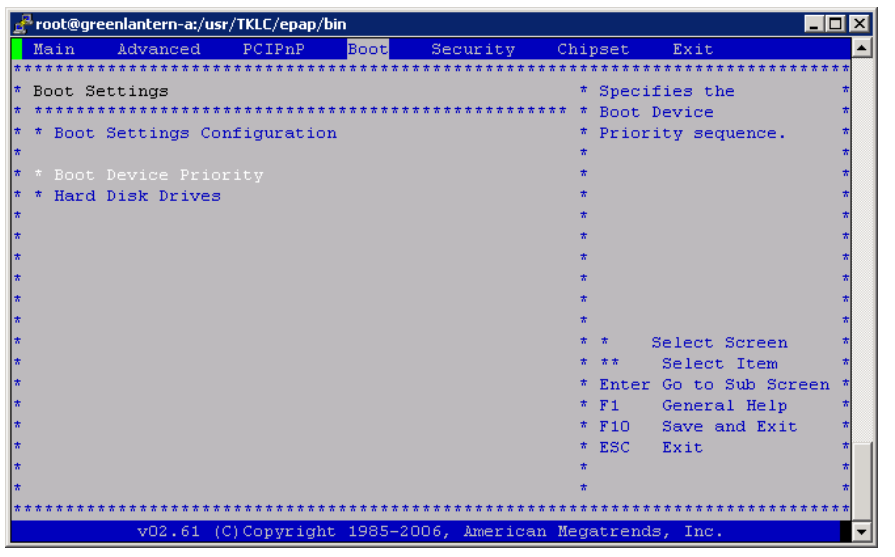
Procedure A.11: IPM with TPD 7.4.x

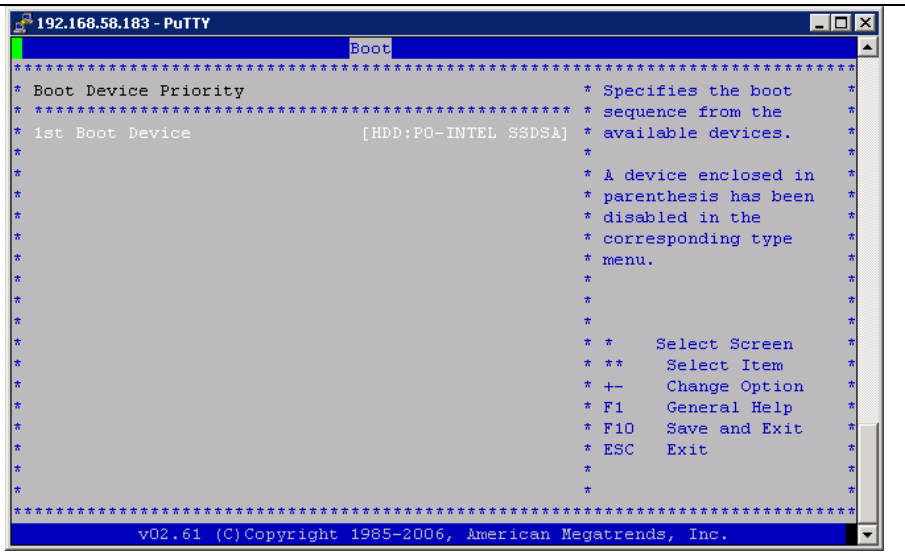
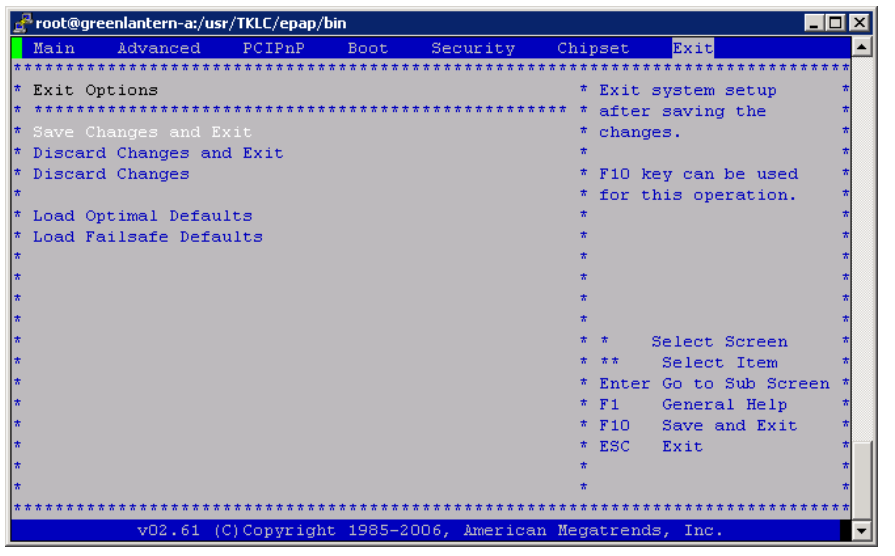
	After a few minutes, you will see a screen similar to that at right, showing the status of the package installation step. For each package, there will be a status bar at the top indicating how much of the package has been installed, with a cumulative status bar at the bottom indicating how many packages 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.	
13. ☐	**MPS X:** Once all the packages have been successfully installed, the screen at right will appear letting you know the installation process is complete. **On E5-APP-B server remove the installation media (USB) and press <ENTER> to reboot the system and continue with the next step.**	

Procedure A.11: IPM with TPD 7.4.x

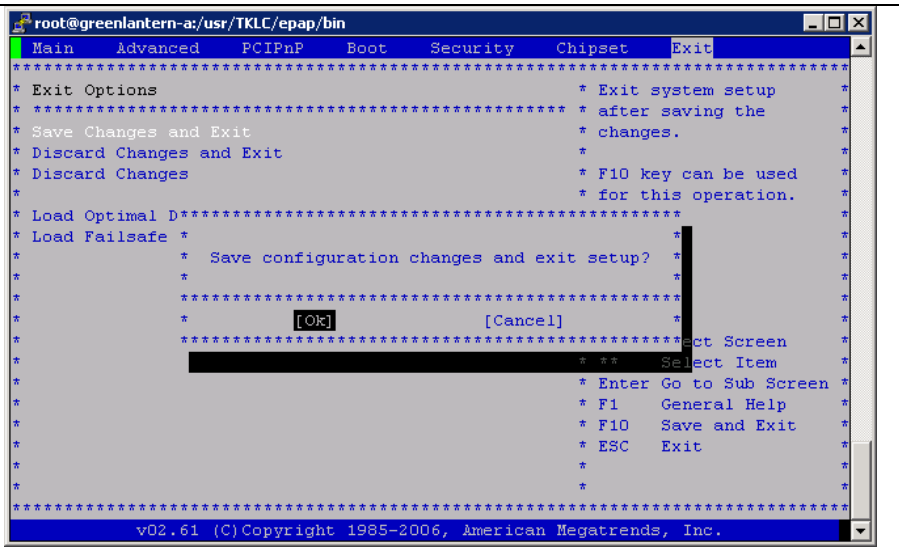
14. ☐	**MPS X:** Press ‘del’ key to enter the BIOS, set correct System Time in GMT and System Date.	
15. ☐	**MPS X:** Select *Boot* → *Hard Disk Drives* option	
16. ☐	**MPS X:** Press ‘Enter’ key and select HDD:P0 as the 1st Drive	

Procedure A.11: IPM with TPD 7.4.x

		
17. ☐	**MPS X:** Press 'Esc' key and select Boot Device Priority	
18. ☐	**MPS X:** Verify that the 1st Boot Device is set to HDD:P0.	

		
19. ☐	**MPS X:** Press 'Esc' key and select *Exit* → *Save Changes and Exit* option	
20. ☐	**MPS X:** Select [OK] to save the configuration changes. The server will reboot. Remove USB media from USB drive.	

Procedure A.11: IPM with TPD 7.4.x

		 When the message "Upstart Job ntdMgr: started", is displayed, press the Enter Key to get the Login prompt.
21. ☐	**MPS X:** Log in to the server as the user "admusr"	**console login: admusr** **password: <admusr_password>**
22. ☐	**MPS X:** Verify that the platform revision is same as the TPD DVD or ISO used.	`$ getPlatRev` `7.4.x.0.0-y.z.0`
23. ☐	**MPS X:** Verify the system date.	`$ date -u` Wed Mar 21 11:04:54 UTC 2018 Verify that the output time matches the time set in step 14. If mismatch is found, then Refer to Appendix E for instructions on accessing My Oracle Support.
24. ☐	**Procedure complete.**	Return to the procedure that you came here from.

Procedure A.12 Standalone PDB Segmented Configuration

Note: All the networks (Prov, GUI and OAM) should be in different subnets. The networks can be a mix of IPv4 and IPv6 IPs.

ProcedureA.12: Standalone PDB Segmented Configuration

S T E P #	This procedure will configure the standalone PDB in segmented configuration. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**

ProcedureA.12: Standalone PDB Segmented Configuration

1. ☐	**MPS A:** Log on Server A.	**[hostname] consolelogin: admusr** **password: *password***
2. ☐	**MPS A:** Switch user to epapconfig.	**$ sudo su - epapconfig**
3. ☐	**MPS A:** A note of caution appears. Press Return to continue.	Caution: This is the first login of the text user interface. **Press return to continue...**
4. ☐	**MPS A:** Upon pressing Return you can now abort or proceed with the initial configuration. To continue with the configuration, enter Y.	Are you sure you wish to continue? [N]: Y
5. ☐	**MPS A:** Enter the System Number and Network Configuration Type as "Segmented".	Building the initial database on side A. Stopping local slave No preexisting EuiDB database was detected. Set EPAP System Number: **<Enter the System Number here>** Enter the Network Configuration Type (1 for Single, 2 for Segmented): **2**
6. ☐	**MPS A:** The EPAP Configuration Menu is displayed. Select choice 2, Configure Network Interfaces Menu.	/-----EPAP 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 | PDB Configuration Menu | |----|----------| | 9 | Security | |----|----------| | 10 | SNMP Configuration | |----|----------| | 11 | Configure Alarm Feed | |----|----------| | 12 | Configure Query Server | |----|----------| | 13 | Configure Query Server Alarm Feed | |----|----------| | 14 | Configure SNMP Agent Community | |----|----------| | 15 | Mate Disaster Recovery | |----|----------| | e | Exit | \----------/ Enter Choice: 2
7. ☐	**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 GUI Network | |----|----------|

ProcedureA.12: Standalone PDB Segmented Configuration

		`| 3 | Configure Operations and Maintenance Network |`
		`| 4 | Configure Backup Provisioning Network |`
		`| 5 | Configure Static NAT Addresses |`
		`| e | Exit |`
		`Enter Choice: 1`

	Note: Enter choice "1" for IPv4 configuration. Otherwise, enter choice "2" for IPv6 configuration.	`/-----Configure Provisiong Network Menu-\`
		`| 1 | IPv4 Configuration |`
		`| 2 | IPv6 Configuration |`
		`| e | Exit |`
		`Enter Choice:`
		Example output Standalone PDB in IPv4 configuration:
		`EPAP A provisioning network IP Address: 192.168.61.35`
		`EPAP provisioning network netmask: 255.255.255.0`
		`EPAP provisioning network default router: 192.168.61.250`
		Select choice e to exit to the "Configure Network Interfaces" menu.

8. ☐	**MPS A:** The Configure Network Interfaces Menu is displayed. Select choice 2, Configure GUI Network.
	
	Note: Enter choice "1" for IPv4 configuration. Otherwise, enter choice "2" for IPv6 configuration.
		`/-----Configure Network Interfaces Menu----------\`
		`| 1 | Configure Provisioning Network |`
		`| 2 | Configure GUI Network |`
		`| 3 | Configure Operations and Maintenance Network |`
		`| 4 | Configure Backup Provisioning Network |`
		`| 5 | Configure Static NAT Addresses |`
		`| e | Exit |`
		`Enter Choice: 2`
		`/-----Configure GUI Network-\`
		`| 1 | IPv4 Configuration |`
		`| 2 | IPv6 Configuration |`
		`| e | Exit |`
		`Enter Choice: 1`
		Example output Standalone PDB in IPv4 configuration:
		`EPAP A GUI network IP Address: 192.168.59.27`
		`EPAP GUI network netmask: 255.255.255.0`
		`EPAP GUI network route: 192.168.59.250`

		Select choice e to exit to the “Configure Network Interfaces” menu.
9. ☐	**MPS A:** The Configure Network Interfaces Menu is displayed. Select choice 3, Configure Operations and Maintenance Network. Note: Enter choice “1” for IPv4 configuration. Otherwise, enter choice “2” for IPv6 configuration.	/-----Configure Network Interfaces Menu----------\ /--\ | 1 | Configure Provisioning Network | |----|----------| | 2 | Configure GUI Network | |----|----------| | 3 | Configure Operations and Maintenance Network | |----|----------| | 4 | Configure Backup Provisioning Network | |----|----------| | 5 | Configure Static NAT Addresses | |----|----------| | e | Exit | \--/ Enter Choice: 3 /-----Configure Operations and Maintenance Network-\ /--\ | 1 | IPv4 Configuration | |----|----------| | 2 | IPv6 Configuration | |----|----------| | e | Exit | \--/ Enter Choice: 1 EPAP A Operations and Maintenance network IP Address: 192.168.60.26 EPAP Operations and Maintenance network netmask: 255.255.255.0 EPAP Operations and Maintenance network route: 192.168.60.250 Select choice e to exit to the “Configure Network Interfaces” menu.
10. ☐	**MPS A:** Select choice e to exit from the epapconfig menu.	/-----Configure Network Interfaces Menu----------\ /--\ | 1 | Configure Provisioning Network | |----|----------| | 2 | Configure GUI Network | |----|----------| | 3 | Configure Operations and Maintenance Network | |----|----------| | 4 | Configure Backup Provisioning Network | |----|----------| | 5 | Configure Static NAT Addresses | |----|----------| | e | Exit | \--/ Enter Choice: e /-----EPAP 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 |

ProcedureA.12: Standalone PDB Segmented Configuration


```
|----|---------------------------------|
|  8 | PDB Configuration Menu          |
|----|---------------------------------|
|  9 | Security                        |
|----|---------------------------------|
| 10 | SNMP Configuration              |
|----|---------------------------------|
| 11 | Configure Alarm Feed            |
|----|---------------------------------|
| 12 | Configure Query Server          |
|----|---------------------------------|
| 13 | Configure Query Server Alarm Feed |
|----|---------------------------------|
| 14 | Configure SNMP Agent Community  |
|----|---------------------------------|
| 15 | Mate Disaster Recovery          |
|----|---------------------------------|
|  e | Exit                            |
\-----------------------------------/

Enter Choice: 2

Enter Choice: e
```

Note: If this menu is not exited properly, then the SSH login with root shall remain enabled.

11. ☐	**MPS A:** Procedure is complete.	Procedure is complete.

Procedure A.13 Password change for EPAP System Users

ProcedureA.13: Password change for EPAP System Users

STEP #	This procedure will change the password for the EPAP System User(s). Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS A:** Log on Server A with the EPAP System User for which the password is to be changed.	`[hostname]: <EPAP System User>` `password: <epapdev` ***password***`>`

2. ☐	**MPS A:** Change Password for an EPAP system user	Execute the command to change to password of an existing EPAP user.
		
		`$ passwd`
		Changing password for user <EPAP System User>.
		Changing password for <EPAP System User>.
		(current) UNIX password: **<Enter the current password here>**
		New password: **<Enter the new password here>**
		Retype new password: **<Retype the new password here>**
		passwd: all authentication tokens updated successfully.
		
		Note: The Linux "passwd" command used to change the password of Linux users, follows the Linux PAM rules. Refer to the Linux manual for the PAM rules.
		
		`# man pam_cracklib`

ProcedureA.13: Password change for EPAP System Users

3. ☐	**MPS B:** Change Password	Repeat steps 1and 2 on MPS B also. Note: The new password on MPS A and B should be same.
4. ☐	**MPS A: Procedure Complete**	This procedure is complete.

Procedure A.14 E5-APP-B Halt/Shutdown

ProcedureA.14: E5-APP-B Halt/Shutdown

S T E P #	This procedure will halt the E5-APP-B hardrware. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**E5APPB Card:** Slide the ejector switch	On the APP-B card, slide the Ejector switch (4) up to the UNLOCKED position. Refer to Figure 7. Caution: If the Ejector switch goes from locked to unlocked and the E5-APP-B card is in service, the card will halt.
2. ☐	**E5APPB Card:** Monitor the Eject Status LED	WAIT for the E5-APP-B Eject Status LED to go from blinking red to a steady red.
3. ☐	**E5APPB Card:** Lever Release	Grasp the upper and lower card Inject/Eject (I/E) lever release (3) just underneath the I/E lever, and press it to meet the I/E lever. This is the mechanical interlock for the card. Refer to Figure 8.
4. ☐	**E5APPB Card:** Pull out the levers	While holding the I/E interlock and lever, pull the levers (2) away from the shelf until they are parallel to the floor. Refer to Figure 8.
5. ☐	**E5APPB Card:** Slide the ejector switch	Remove the E5-APP-B card from the EAGLE shelf.
6. ☐	**MPS A: Procedure Complete**	This procedure is complete.

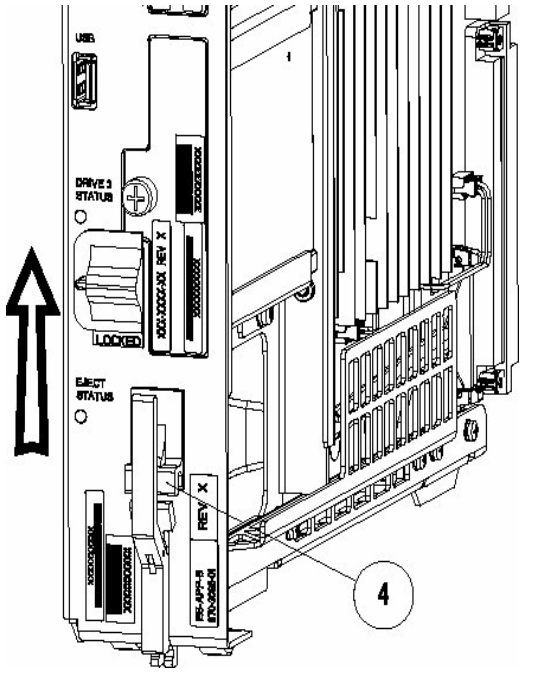


Figure 7: Slide the Ejector Switch

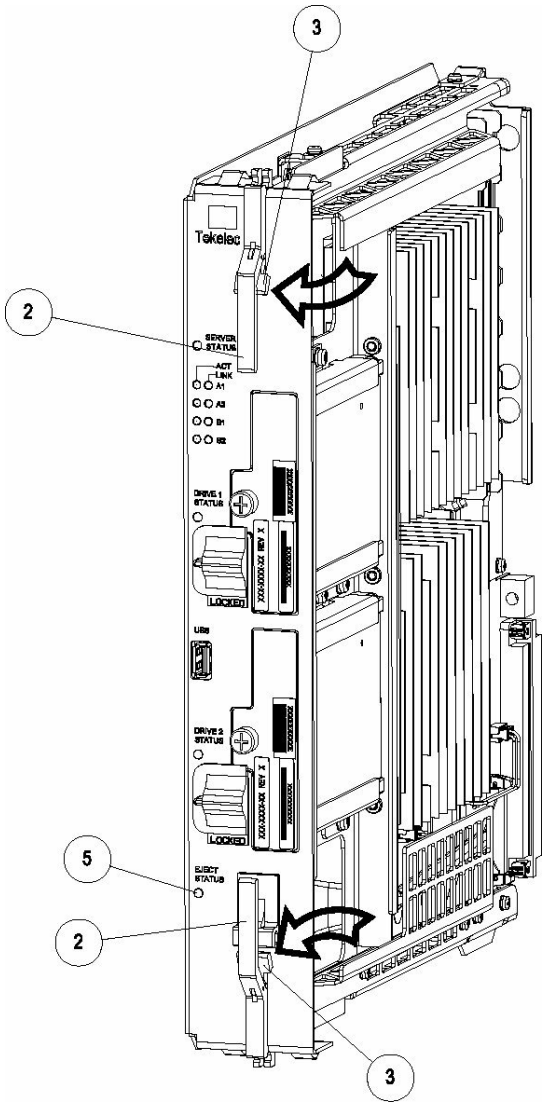


Figure 8: Release Lever

Procedure A.15 Procedure to Configure EPAP switch ports and EAGLE SM cards to support 1G EPAP-to-Eagle RTDB download speed

Note: This needs to be done in coordination with the EAGLE team.

ProcedureA.15: Procedure to Configure EPAP switch ports and EAGLE SM cards to support 1G EPAP-to-Eagle RTDB download speed

S T E P #	
	This procedure will configure EPAP Switch ports and Eagle SM cards to support 1G EPAP-to-EAGLE download speed. Note: Estimated time of completion is 20 minutes.

1. ☐	**E5-APP-B A/B:** Configure the SM ports on EPAP switch to 1000 Mbps.	Follow Procedure 9 to Configure the SM ports on EPAP switch to 1000 Mbps
2. ☐	**EAGLE:** Configure Ethernet port on EAGLE SM cards that connects to EPAP to Auto-negotiate.	Eagle Command to configure an Ethernet port on EAGLE SM cards that connects to EPAP: CHG-IP-LNK:LOC=<SM card location>:PORT=<Port>:IPADDR=<IP Address>:SUBMASK=<Subnet Mask>:MCAST=YES:AUTO=YES
3. ☐	**EAGLE:** Verify the auto negotiation status of the Ethernet ports on EAGLE SM cards that connects to EPAP. Make sure the ports are getting auto-negotiated to 1000Mbps/Full Duplex.	Eagle Command to verify auto negotiation status of an Ethernet port on EAGLE SM cards that connects to EPAP: PASS: LOC=<SM card location>:CMD="NETSTAT -I" Please go through the “Identifying the Ethernet port status on SM cards using "NETSTAT -I" display” section below. If ports on SM cards are getting auto-negotiated to 1000Mbps/Full Duplex correctly, then stop here. Otherwise continue with next step.
4. ☐	**E5-APP-B A/B:** Configure the SM ports on EPAP switch to auto-negotiate.	Follow Procedure 9 to Configure the SM ports on EPAP switch to ‘auto’.
5. ☐	**EAGLE:** Verify the auto negotiation status of a Ethernet port on EAGLE SM cards that connects to EPAP. Make sure the ports are getting auto-negotiated to 1000Mbps/Full Duplex.	Eagle Command to verify auto negotiation status of an Ethernet port on EAGLE SM cards that connects to EPAP: PASS: LOC=<SM card location>:CMD="NETSTAT -I" Please go through the “Identifying the Ethernet port status on SM cards using "NETSTAT -I" display” section below

Identifying the Ethernet port status on SM cards using "NETSTAT -I" display:

SM8G-B card running SCCPHC:

```
gei (unit number 2) = ExAP Port A
gei (unit number 3) = ExAP Port B


> rept-stat-card:mode=full:loc=1307

    eagle1 17-05-04 16:43:49 MST  EAGLE 46.5.0.0.0-70.29.0
    CARD   VERSION      TYPE      GPL        PST            SST        AST
    1307   140-029-000  DSM       SCCPHC     IS-ANR         MPS Unavl  -----
      ALARM STATUS        = No Alarms.
      BLMCAP  GPL version = 140-029-000
      IMT BUS A           = Conn
      IMT BUS B           = Disc
      CLOCK A             = Fault
      CLOCK B             = Active
      CLOCK I             = Idle
      MBD BIP STATUS      = Valid
      MOTHER BOARD ID     = SMXG B
      DBD STATUS          = Valid
      DBD TYPE            = None
      DBD MEMORY SIZE     = 8192M
      HW VERIFICATION CODE= ----
      FPGA VERSION        = 9
      BIOS VERSION        = 0ABSV01
      PSOC VERSION        = 0.1
```

```
      CURRENT TEMPERATURE =  34C ( 94F)
      PEAK TEMPERATURE:   =  34C ( 94F)     [17-05-04 15:49]
      SCCP % OCCUP        = 0%
      SCCP SM DATA TYPE   = DN
      APPLICATION SERVICING
                                       MFC          MFC
          SNM     REQ STATUS =   24 hr: ---, 5 min: ---
          INM     REQ STATUS =   24 hr: ---, 5 min: ---
          MTP3    REQ STATUS =   24 hr: ---, 5 min: ---
          SFLOG   REQ STATUS =   24 hr: ---, 5 min: ---
      IPLNK STATUS
          IPLNK  IPADDR             STATUS     PST
          A      192.168.120.21     DOWN       OOS-MT
          B      192.168.121.21     DOWN       OOS-MT
      DSM IP CONNECTION
          PORT   PST             SST
          A      OOS-MT          Unavail
          B      OOS-MT          Unavail

    Command Completed.
;

> pass:loc=1307:cmd="netstat -i"


    eagle1 17-05-04 16:44:26 MST  EAGLE 46.5.0.0.0-70.29.0
    SDS Shell Output

    -> tklc_ifShow
    lo (unit number 0):
         Flags: (0x48049) UP LOOPBACK MULTICAST TRAILERS ARP RUNNING INET_UP
         Type: SOFTWARE_LOOPBACK
         inet: 127.0.0.1
         Netmask 0xff000000 Subnetmask 0xff000000
         Metric is 0
         Maximum Transfer Unit size is 1536
         0 packets received; 1 packets sent
         0 multicast packets received
         0 multicast packets sent
         0 input errors; 0 output errors
         0 collisions; 0 dropped
         0 output queue drops
    DPLend (unit number 0):
         Flags: (0x20043) UP BROADCAST ARP RUNNING
         Type: ETHERNET_CSMACD
         Ethernet address is 00:00:00:00:00:00
         Metric is 0
         Maximum Transfer Unit size is 485
         0 octets received
         0 octets sent
         0 unicast packets received
         0 unicast packets sent
         0 non-unicast packets received
         0 non-unicast packets sent
         0 incoming packets discarded
         0 outgoing packets discarded
         0 incoming errors
         0 outgoing errors
         0 unknown protos
         0 collisions; 0 dropped
         0 output queue drops
    gei (unit number 2):
         Flags: (0x78043) UP BROADCAST MULTICAST ARP RUNNING INET_UP
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
         Type: ETHERNET_CSMACD
         inet: 192.168.120.21
```

```
     Broadcast address: 192.168.120.255
     Netmask 0xffffff00 Subnetmask 0xffffff00
     Ethernet address is 00:00:17:0e:b7:d2
     Metric is 0
     Maximum Transfer Unit size is 1500
     250214 octets received
     122200 octets sent
     0 unicast packets received
     0 unicast packets sent
     0 multicast packets received
     0 multicast packets sent
     2075 broadcast packets received
     940 broadcast packets sent
     0 incoming packets discarded
     0 outgoing packets discarded
     0 incoming errors
     0 outgoing errors
     0 unknown protos
     0 collisions; 0 dropped
     0 output queue drops
gei (unit number 3):
     Flags: (0x78043) UP BROADCAST MULTICAST ARP RUNNING INET_UP
     PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
     Type: ETHERNET_CSMACD
     inet: 192.168.121.21
     Broadcast address: 192.168.121.255
     Netmask 0xffffff00 Subnetmask 0xffffff00
     Ethernet address is 00:00:17:0e:b7:d3
     Metric is 0
     Maximum Transfer Unit size is 1500
     248920 octets received
     121290 octets sent
     0 unicast packets received
     0 unicast packets sent
     0 multicast packets received
     0 multicast packets sent
     2062 broadcast packets received
     933 broadcast packets sent
     0 incoming packets discarded
     0 outgoing packets discarded
     0 incoming errors
     0 outgoing errors
     0 unknown protos
     0 collisions; 0 dropped
     0 output queue drops
    value = 26 = 0x1a

;


    eagle1 17-05-04 16:44:36 MST  EAGLE 46.5.0.0.0-70.29.0

    NETSTAT command complete

;

SM8G-B card running SCCP64:

gei (unit number 4) = ExAP Port A
gei (unit number 5) = ExAP Port B


> rept-stat-card:mode=full:loc=1307


    eagle1 17-05-04 17:00:01 MST  EAGLE 46.5.0.0.0-70.29.0
```

```
CARD   VERSION      TYPE      GPL        PST            SST        AST
1307   140-029-000  DSM       SCCP64     IS-ANR         MPS Unavl  -----
  ALARM STATUS        = No Alarms.
  BLDC64  GPL version = 140-029-000
  IMT BUS A           = Conn
  IMT BUS B           = Disc
  CLOCK A             = Fault
  CLOCK B             = Active
  CLOCK I             = Idle
  MBD BIP STATUS      = Valid
  MOTHER BOARD ID     = SMXG B
  DBD STATUS          = Valid
  DBD TYPE            = None
  DBD MEMORY SIZE     = 8192M
  HW VERIFICATION CODE= ----
  FPGA VERSION        = 9
  BIOS VERSION        = 0ABSV01
  PSOC VERSION        = 0.1
  CURRENT TEMPERATURE =  34C ( 94F)
  PEAK TEMPERATURE:   =  34C ( 94F)     [17-05-04 15:49]
  SCCP % OCCUP        = 0%
  SCCP SM DATA TYPE   = DN
  APPLICATION SERVICING
                                    MFC          MFC
      SNM     REQ STATUS =   24 hr: ---, 5 min: ---
      INM     REQ STATUS =   24 hr: ---, 5 min: ---
      MTP3    REQ STATUS =   24 hr: ---, 5 min: ---
      SFLOG   REQ STATUS =   24 hr: ---, 5 min: ---
  IPLNK STATUS
      IPLNK  IPADDR             STATUS     PST
      A      192.168.120.21     DOWN       OOS-MT
      B      192.168.121.21     DOWN       OOS-MT
  DSM IP CONNECTION
      PORT   PST             SST
      A      OOS-MT          Unavail
      B      OOS-MT          Unavail

    Command Completed.
;


> pass:loc=1307:cmd="netstat -i"

    eagle1 17-05-04 17:00:14 MST  EAGLE 46.5.0.0.0-70.29.0
    SDS Shell Output

    shellLib: unknown LED mode vi.
    -> tklc_ifShow
    lo0 Link type:Local loopback  Queue:none
        inet 127.0.0.1  mask 255.255.255.255
        inet6 unicast fe80::1%lo0  prefixlen 64  automatic
        inet6 unicast ::1  prefixlen 128
        UP RUNNING LOOPBACK MULTICAST NOARP ALLMULTI
        MTU:1500  metric:1  VR:0  ifindex:1
        RX packets:761 mcast:3 errors:0 dropped:0
        TX packets:761 mcast:3 errors:0
        collisions:0 unsupported proto:0
        RX bytes:85k  TX bytes:85k

    gei4        Link type:Ethernet  HWaddr 00:00:17:0e:b7:d2  Queue:none
        capabilities: TXCSUM TX6CSUM
        inet 192.168.120.21  mask 255.255.255.0  broadcast 192.168.120.255
        inet6 unicast fe80::200:17ff:fe0e:b7d2%gei4  prefixlen 64  automatic
        UP RUNNING SIMPLEX BROADCAST MULTICAST
        MTU:1500  metric:1  VR:0  ifindex:2
```

```
        RX packets:791 mcast:0 errors:0 dropped:0
        TX packets:386 mcast:6 errors:0
        collisions:0 unsupported proto:0
        RX bytes:92k  TX bytes:48k

    gei5        Link type:Ethernet  HWaddr 00:00:17:0e:b7:d3  Queue:none
        capabilities: TXCSUM TX6CSUM
        inet 192.168.121.21  mask 255.255.255.0  broadcast 192.168.121.255
        inet6 unicast fe80::200:17ff:fe0e:b7d3%gei5  prefixlen 64  automatic
        UP RUNNING SIMPLEX BROADCAST MULTICAST
        MTU:1500  metric:1  VR:0  ifindex:3
        RX packets:783 mcast:0 errors:0 dropped:0
        TX packets:386 mcast:6 errors:0
        collisions:0 unsupported proto:0
        RX bytes:91k  TX bytes:48k

    gei (unit number 4):
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
    gei (unit number 5):
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
    value = 1 = 0x1

;

SM8G-B card running ENUMHC/DEIRHC/SIPHC:

gei (unit number 2) = ExAP Port
gei (unit number 3) = Signaling Port

> rept-stat-card:mode=full:loc=1317

    eagle1 17-05-04 15:46:06 MST  EAGLE 46.5.0.0.0-70.29.0
    CARD   VERSION      TYPE      GPL        PST            SST        AST
    1317   140-029-000  DSM       ENUMHC     IS-ANR         MPS Unavl  -----
      ALARM STATUS        = No Alarms.
    BLMCAP  GPL version = 140-029-000
    IMT BUS A           = Conn
    IMT BUS B           = Disc
    CLOCK A             = Fault
    CLOCK B             = Active
    CLOCK I             = Idle
    MBD BIP STATUS      = Valid
    MOTHER BOARD ID     = SMXG B
    DBD STATUS          = Valid
    DBD TYPE            = None
    DBD MEMORY SIZE     = 8192M
    HW VERIFICATION CODE= ----
    FPGA VERSION        = 9
    BIOS VERSION        = 0ABSV01
    PSOC VERSION        = 0.1
    CURRENT TEMPERATURE =  34C ( 94F)
    PEAK TEMPERATURE:   =  34C ( 94F)     [17-05-02 09:31]
    ENUM SM DATA TYPE   = DN
    IPLNK STATUS
        IPLNK  IPADDR             STATUS     PST
        A      192.168.120.13     UP         IS-NR
        B      10.75.49.21        UP         IS-NR
        C      ---------------    ----       ----
        D      ---------------    ----       ----
    DSM IP CONNECTION
        PORT   PST             SST
        A      OOS-MT          Unavail
        D      OOS-MA          Ueq
    ENUM CONNECTION STATUS
       CNAME               PROT      STATUS
```

```
    Command Completed.
;

> pass:loc=1317:cmd="netstat -i"

Command Accepted - Processing

    eagle1 17-05-04 15:46:46 MST  EAGLE 46.5.0.0.0-70.29.0
    pass:loc=1317:cmd="netstat -i"
    Command entered at terminal #13.
;

    eagle1 17-05-04 15:46:46 MST  EAGLE 46.5.0.0.0-70.29.0
    PASS: Command sent to card
;

    eagle1 17-05-04 15:46:46 MST  EAGLE 46.5.0.0.0-70.29.0
    SDS Shell Output

    -> tklc_ifShow
    lo (unit number 0):
         Flags: (0x48049) UP LOOPBACK MULTICAST TRAILERS ARP RUNNING INET_UP
         Type: SOFTWARE_LOOPBACK
         inet: 127.0.0.1
         Netmask 0xff000000 Subnetmask 0xff000000
         Metric is 0
         Maximum Transfer Unit size is 1536
         0 packets received; 1 packets sent
         0 multicast packets received
         0 multicast packets sent
         0 input errors; 0 output errors
         0 collisions; 0 dropped
         0 output queue drops
    DPLend (unit number 0):
         Flags: (0x20043) UP BROADCAST ARP RUNNING
         Type: ETHERNET_CSMACD
         Ethernet address is 00:00:00:00:00:00
         Metric is 0
         Maximum Transfer Unit size is 485
         0 octets received
         0 octets sent
         0 unicast packets received
         0 unicast packets sent
         0 non-unicast packets received
         0 non-unicast packets sent
         0 incoming packets discarded
         0 outgoing packets discarded
         0 incoming errors
         0 outgoing errors
         0 unknown protos
         0 collisions; 0 dropped
         0 output queue drops
    gei (unit number 2):
         Flags: (0x78043) UP BROADCAST MULTICAST ARP RUNNING INET_UP
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
         Type: ETHERNET_CSMACD
         inet: 192.168.120.13
         Broadcast address: 192.168.120.255
         Netmask 0xffffff00 Subnetmask 0xffffff00
         Ethernet address is 00:00:17:0e:b7:d2
         Metric is 0
         Maximum Transfer Unit size is 1500
         16128 octets received
         102048 octets sent
         0 unicast packets received
         0 unicast packets sent
```

```
      0 multicast packets received
      0 multicast packets sent
      252 broadcast packets received
      786 broadcast packets sent
      0 incoming packets discarded
      0 outgoing packets discarded
      0 incoming errors
      0 outgoing errors
      0 unknown protos
      0 collisions; 0 dropped
      0 output queue drops
gei (unit number 3):
      Flags: (0x70043) UP BROADCAST ARP RUNNING INET_UP
      PHY Flags: (0x12012) AUTONEG 1000MB FDX DIX
      Type: ETHERNET_CSMACD
      inet: 10.75.49.21
      Broadcast address: 10.75.49.255
      Netmask 0xff000000 Subnetmask 0xffffff00
      Ethernet address is 00:00:17:0e:b7:d3
      Metric is 0
      Maximum Transfer Unit size is 1500
      0 octets received
      128 octets sent
      0 unicast packets received
      0 unicast packets sent
      0 multicast packets received
      0 multicast packets sent
      0 broadcast packets received
      2 broadcast packets sent
      0 incoming packets discarded
      0 outgoing packets discarded
      0 incoming errors
      0 outgoing errors
      0 unknown protos
      0 collisions; 0 dropped
           0 output queue drops
    value = 26 = 0x1a

;

    eagle1 17-05-04 15:46:56 MST  EAGLE 46.5.0.0.0-70.29.0

;

    eagle1 17-05-04 15:46:56 MST  EAGLE 46.5.0.0.0-70.29.0

    NETSTAT command complete

;
```

SM8G-B card running ENUM64/DEIR64/SIP64:

```
gei (unit number 4) = ExAP Port
gei (unit number 5) = Signaling Port


> rept-stat-card:mode=full:loc=1317


    eagle1 17-05-04 15:23:31 MST  EAGLE 46.5.0.0.0-70.29.0
    CARD   VERSION      TYPE      GPL        PST            SST        AST
    1317   140-029-000  DSM       ENUM64     IS-ANR         MPS Unavl  -----
      ALARM STATUS        = **  0080 Shelf FAN bit is OFF
      BLDC64  GPL version = 140-029-000
      IMT BUS A           = Conn
      IMT BUS B           = Disc
```

```
      CLOCK A             = Fault
      CLOCK B             = Active
      CLOCK I             = Idle
      MBD BIP STATUS      = Valid
      MOTHER BOARD ID     = SMXG B
      DBD STATUS          = Valid
      DBD TYPE            = None
      DBD MEMORY SIZE     = 8192M
      HW VERIFICATION CODE= ----
      FPGA VERSION        = 9
      BIOS VERSION        = 0ABSV01
      PSOC VERSION        = 0.1
      CURRENT TEMPERATURE =  34C ( 94F)
      PEAK TEMPERATURE:   =  34C ( 94F)     [17-05-02 09:31]
      ENUM SM DATA TYPE   = DN
      IPLNK STATUS
          IPLNK  IPADDR             STATUS     PST
          A      192.168.120.13     UP         IS-NR
          B      10.75.49.21        UP         IS-NR
          C      ---------------    ----       ----
          D      ---------------    ----       ----
      DSM IP CONNECTION
          PORT   PST             SST
          A      OOS-MT          Unavail
          D      OOS-MA          Ueq
      ENUM CONNECTION STATUS
         CNAME               PROT      STATUS

    Command Completed.
;


> pass:loc=1317:cmd="netstat -i"

    eagle1 17-05-04 15:23:59 MST  EAGLE 46.5.0.0.0-70.29.0
    SDS Shell Output

    shellLib: unknown LED mode vi.
    -> tklc_ifShow
    lo0 Link type:Local loopback  Queue:none
        inet 127.0.0.1  mask 255.255.255.255
        inet6 unicast fe80::1%lo0  prefixlen 64  automatic
        inet6 unicast ::1  prefixlen 128
        UP RUNNING LOOPBACK MULTICAST NOARP ALLMULTI
        MTU:1500  metric:1  VR:0  ifindex:1
        RX packets:885990 mcast:3 errors:0 dropped:0
        TX packets:885990 mcast:3 errors:0
        collisions:0 unsupported proto:0
        RX bytes:99M  TX bytes:99M

    gei4        Link type:Ethernet  HWaddr 00:00:17:0e:b7:d2  Queue:none
        capabilities: TXCSUM TX6CSUM
        inet 192.168.120.13  mask 255.255.255.0  broadcast 192.168.120.255
        inet6 unicast fe80::200:17ff:fe0e:b7d2%gei4  prefixlen 64  automatic
        UP RUNNING SIMPLEX BROADCAST MULTICAST
        MTU:1500  metric:1  VR:0  ifindex:2
        RX packets:35807 mcast:0 errors:0 dropped:0
        TX packets:877952 mcast:12 errors:0
        collisions:0 unsupported proto:0
        RX bytes:2148k  TX bytes:110M

    gei5        Link type:Ethernet  HWaddr 00:00:17:0e:b7:d3  Queue:none
        capabilities: TXCSUM TX6CSUM
        inet 10.75.49.21  mask 255.255.255.0  broadcast 10.75.49.255
        inet6 unicast fe80::200:17ff:fe0e:b7d3%gei5  prefixlen 64  automatic
        UP RUNNING SIMPLEX BROADCAST MULTICAST
```

```
        MTU:1500  metric:1  VR:0  ifindex:3
        RX packets:526 mcast:0 errors:0 dropped:0
        TX packets:7 mcast:6 errors:0
        collisions:0 unsupported proto:0
        RX bytes:57k  TX bytes:510

    gei (unit number 4):
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
    gei (unit number 5):
         PHY Flags: (0x12012) AUTONEG 1000MB FDX DIX
    value = 1 = 0x1

;

    eagle1 17-05-04 15:24:09 MST  EAGLE 46.5.0.0.0-70.29.0

;

    eagle1 17-05-04 15:24:09 MST  EAGLE 46.5.0.0.0-70.29.0

    NETSTAT command complete

;
```

SLIC card running SCCPHC:

```
gei (unit number 2) is ExAP Port A
gei (unit number 0) is ExAP Port B

> REPT-STAT-CARD:MODE=FULL:LOC=1307


    eagle1 17-05-04 15:10:21 MST  EAGLE 46.5.0.0.0-70.29.0
    CARD   VERSION      TYPE      GPL        PST            SST        AST
    1307   140-029-000  SLIC      SCCPHC     IS-ANR         Standby     98%
    ALARM STATUS        = **  0080 Shelf FAN bit is OFF
    BLSLC32 GPL version = 140-029-000
    IMT BUS A           = Conn
    IMT BUS B           = Disc
    CLOCK A             = Fault
    CLOCK B             = Active
    CLOCK I             = Idle
    MBD BIP STATUS      = Valid
    MOTHER BOARD ID     = SLIC
    DBD STATUS          = Valid
    DBD TYPE            = None
    DBD MEMORY SIZE     = 16384M
    HW VERIFICATION CODE= ----
    FPGA VERSION        = 9400036
    BIOS VERSION        = 0ACFP00
    PSOC VERSION        = 1.0
    CURRENT TEMPERATURE =  40C (104F)
    PEAK TEMPERATURE:   =  40C (104F)     [17-05-04 15:05]
    SCCP % OCCUP        = 0%
    SCCP SM DATA TYPE   = DN
    APPLICATION SERVICING
                                    MFC          MFC
        SNM     REQ STATUS =   24 hr: ---, 5 min: ---
        INM     REQ STATUS =   24 hr: ---, 5 min: ---
        MTP3    REQ STATUS =   24 hr: ---, 5 min: ---
        SFLOG   REQ STATUS =   24 hr: ---, 5 min: ---
    IPLNK STATUS
        IPLNK  IPADDR             STATUS     PST
        A      192.168.120.21     DOWN       OOS-MT
        B      192.168.121.21     DOWN       OOS-MT
    DSM IP CONNECTION
```

```
          PORT   PST            SST
          A      OOS-MT         Unavail
          B      OOS-MT         Unavail

    Command Completed.
;

> PASS:LOC=1307:CMD="NETSTAT -I"


    eagle1 17-05-04 15:10:27 MST  EAGLE 46.5.0.0.0-70.29.0
    SDS Shell Output

    -> tklc_ifShow
    lo (unit number 0):
         Flags: (0x48049) UP LOOPBACK MULTICAST TRAILERS ARP RUNNING INET_UP
         Type: SOFTWARE_LOOPBACK
         inet: 127.0.0.1
         Netmask 0xff000000 Subnetmask 0xff000000
         Metric is 0
         Maximum Transfer Unit size is 1536
         0 packets received; 1 packets sent
         0 multicast packets received
         0 multicast packets sent
         0 input errors; 0 output errors
         0 collisions; 0 dropped
         0 output queue drops
    DPLend (unit number 0):
         Flags: (0x20043) UP BROADCAST ARP RUNNING
         Type: ETHERNET_CSMACD
         Ethernet address is 00:00:00:00:00:00
         Metric is 0
         Maximum Transfer Unit size is 485
         0 octets received
         0 octets sent
         0 unicast packets received
         0 unicast packets sent
         0 non-unicast packets received
         0 non-unicast packets sent
         0 incoming packets discarded
         0 outgoing packets discarded
         0 incoming errors
         0 outgoing errors
         0 unknown protos
         0 collisions; 0 dropped
         0 output queue drops
    gei (unit number 2):
         Flags: (0x78043) UP BROADCAST MULTICAST ARP RUNNING INET_UP
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
         Type: ETHERNET_CSMACD
         inet: 192.168.120.21
         Broadcast address: 192.168.120.255
         Netmask 0xffffff00 Subnetmask 0xffffff00
         Ethernet address is 00:10:e0:bb:26:d2
         Metric is 0
         Maximum Transfer Unit size is 1500
         0 octets received
         2014 octets sent
         0 unicast packets received
         0 unicast packets sent
         0 multicast packets received
         0 multicast packets sent
         0 broadcast packets received
         16 broadcast packets sent
         0 incoming packets discarded
         0 outgoing packets discarded
```

```
          0 incoming errors
          0 outgoing errors
          0 unknown protos
          0 collisions; 0 dropped
          0 output queue drops
     gei (unit number 0):
          Flags: (0x78043) UP BROADCAST MULTICAST ARP RUNNING INET_UP
          PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
          Type: ETHERNET_CSMACD
          inet: 192.168.121.21
          Broadcast address: 192.168.121.255
          Netmask 0xffffff00 Subnetmask 0xffffff00
          Ethernet address is 00:10:e0:bb:26:d0
          Metric is 0
          Maximum Transfer Unit size is 1500
          0 octets received
          1884 octets sent
          0 unicast packets received
          0 unicast packets sent
          0 multicast packets received
          0 multicast packets sent
          0 broadcast packets received
          15 broadcast packets sent
          0 incoming packets discarded
          0 outgoing packets discarded
          0 incoming errors
          0 outgoing errors
          0 unknown protos
          0 collisions; 0 dropped
          0 output queue drops
     value = 26 = 0x1a

;

     eagle1 17-05-04 15:10:37 MST  EAGLE 46.5.0.0.0-70.29.0
     NETSTAT command complete

;
```

SLIC card running SCCP64:

```
gei (unit number 0) = ExAP Port A
gei (unit number 2) = ExAP Port B

> REPT-STAT-CARD:MODE=FULL:LOC=1307

     eagle1 17-05-04 14:55:03 MST  EAGLE 46.5.0.0.0-70.29.0
     CARD   VERSION      TYPE      GPL        PST            SST        AST
     1307   140-029-000  SLIC      SCCP64     IS-ANR         MPS Unavl  -----
       ALARM STATUS        = **  0080 Shelf FAN bit is OFF
       BLSLC64 GPL version = 140-029-000
       IMT BUS A           = Conn
       IMT BUS B           = Disc
       CLOCK A             = Fault
       CLOCK B             = Active
       CLOCK I             = Idle
       MBD BIP STATUS      = Valid
       MOTHER BOARD ID     = SLIC
       DBD STATUS          = Valid
       DBD TYPE            = None
       DBD MEMORY SIZE     = 16384M
       HW VERIFICATION CODE= ----
       FPGA VERSION        = 9400036
       BIOS VERSION        = 0ACFP00
```

```
      PSOC VERSION        = 1.0
      CURRENT TEMPERATURE =  36C ( 97F)
      PEAK TEMPERATURE:   =  38C (101F)     [17-05-04 14:47]
      SCCP % OCCUP        = 0%
      SCCP SM DATA TYPE   = DN
      APPLICATION SERVICING
                                      MFC          MFC
          SNM     REQ STATUS =   24 hr: ---, 5 min: ---
          INM     REQ STATUS =   24 hr: ---, 5 min: ---
          MTP3    REQ STATUS =   24 hr: ---, 5 min: ---
          SFLOG   REQ STATUS =   24 hr: ---, 5 min: ---
      IPLNK STATUS
          IPLNK  IPADDR             STATUS     PST
          A      192.168.120.21     DOWN       OOS-MT
          B      192.168.121.21     DOWN       OOS-MT
      DSM IP CONNECTION
          PORT   PST             SST
          A      OOS-MT          Unavail
          B      OOS-MT          Unavail

    Command Completed.
;

> PASS:LOC=1307:CMD="NETSTAT -I"

Command Accepted - Processing

    eagle1 17-05-04 14:56:03 MST  EAGLE 46.5.0.0.0-70.29.0
    PASS:LOC=1307:CMD="NETSTAT -I"
    Command entered at terminal #11.
;

    eagle1 17-05-04 14:56:03 MST  EAGLE 46.5.0.0.0-70.29.0
    PASS: Command sent to card
;

    eagle1 17-05-04 14:56:03 MST  EAGLE 46.5.0.0.0-70.29.0
    SDS Shell Output

    shellLib: unknown LED mode vi.
    -> tklc_ifShow
    lo0 Link type:Local loopback  Queue:none
        inet 127.0.0.1  mask 255.255.255.255
        inet6 unicast fe80::1%lo0  prefixlen 64  automatic
        inet6 unicast ::1  prefixlen 128
        UP RUNNING LOOPBACK MULTICAST NOARP ALLMULTI
        MTU:1500  metric:1  VR:0  ifindex:1
        RX packets:2213 mcast:3 errors:0 dropped:0
        TX packets:2213 mcast:3 errors:0
        collisions:0 unsupported proto:0
        RX bytes:247k  TX bytes:247k

    gei0        Link type:Ethernet  HWaddr 00:10:e0:bb:26:d0  Queue:none
        capabilities: TXCSUM TX6CSUM VLAN_MTU VLAN_TXHWTAG VLAN_RXHWTAG
        inet 192.168.120.21  mask 255.255.255.0  broadcast 192.168.120.255
        inet6 unicast fe80::210:e0ff:febb:26d0%gei0  prefixlen 64  automatic
        UP RUNNING SIMPLEX BROADCAST MULTICAST
        MTU:1500  metric:1  VR:0  ifindex:2
        RX packets:695 mcast:0 errors:0 dropped:0
        TX packets:634 mcast:12 errors:0
        collisions:0 unsupported proto:0
        RX bytes:74k  TX bytes:79k

    gei2        Link type:Ethernet  HWaddr 00:10:e0:bb:26:d2  Queue:none
        capabilities: TXCSUM TX6CSUM VLAN_MTU VLAN_TXHWTAG VLAN_RXHWTAG
        inet 192.168.121.21  mask 255.255.255.0  broadcast 192.168.121.255
```

```
        inet6 unicast fe80::210:e0ff:febb:26d2%gei2  prefixlen 64  automatic
        UP RUNNING SIMPLEX BROADCAST MULTICAST
        MTU:1500  metric:1  VR:0  ifindex:3
        RX packets:702 mcast:0 errors:0 dropped:0
        TX packets:639 mcast:6 errors:0
        collisions:0 unsupported proto:0
        RX bytes:75k  TX bytes:80k

    gei (unit number 0):
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
    gei (unit number 2):
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
    value = 1 = 0x1

;
    eagle1 17-05-04 14:56:13 MST  EAGLE 46.5.0.0.0-70.29.0

    NETSTAT command complete

;


SLIC card running ENUMHC/DEIRHC/SIPHC:
gei (unit number 2) = ExAP Port A
gei (unit number 0) = Signaling Port #1
gei (unit number 3) = Signaling Port #2
gei (unit number 1) = ExAP Port B


> rept-stat-card:mode=full:loc=1317


    eagle1 17-05-04 17:34:35 MST  EAGLE 46.5.0.0.0-70.29.0
    CARD   VERSION      TYPE      GPL        PST            SST        AST
    1317   140-029-000  SLIC      ENUMHC     IS-ANR         MPS Unavl  -----
    ALARM STATUS        = No Alarms.
    BLSLC32 GPL version = 140-029-000
    IMT BUS A           = Conn
    IMT BUS B           = Disc
    CLOCK A             = Fault
    CLOCK B             = Active
    CLOCK I             = Idle
    MBD BIP STATUS      = Valid
    MOTHER BOARD ID     = SLIC
    DBD STATUS          = Valid
    DBD TYPE            = None
    DBD MEMORY SIZE     = 16384M
    HW VERIFICATION CODE= ----
    FPGA VERSION        = 9400036
    BIOS VERSION        = 0ACFP00
    PSOC VERSION        = 1.0
    CURRENT TEMPERATURE =  43C (110F)
    PEAK TEMPERATURE:   =  43C (110F)     [17-05-04 17:27]
    ENUM SM DATA TYPE   = DN
    IPLNK STATUS
        IPLNK  IPADDR             STATUS     PST
        A      192.168.120.13     UP         IS-NR
        B      10.75.49.21        DOWN       OOS-MT
        C      10.75.50.21        UP         IS-NR
        D      192.168.121.13     UP         IS-NR
    DSM IP CONNECTION
        PORT   PST             SST
        A      OOS-MT          Unavail
        D      OOS-MT          Unavail

  Command Completed.
```

```
;


> pass:loc=1317:cmd="netstat -i"

Command Accepted - Processing

    eagle1 17-05-04 17:34:52 MST  EAGLE 46.5.0.0.0-70.29.0
    pass:loc=1317:cmd="netstat -i"
    Command entered at terminal #13.
;

    eagle1 17-05-04 17:34:52 MST  EAGLE 46.5.0.0.0-70.29.0
    PASS: Command sent to card
;

    eagle1 17-05-04 17:34:52 MST  EAGLE 46.5.0.0.0-70.29.0
    SDS Shell Output

    -> tklc_ifShow
    lo (unit number 0):
         Flags: (0x48049) UP LOOPBACK MULTICAST TRAILERS ARP RUNNING INET_UP
         Type: SOFTWARE_LOOPBACK
         inet: 127.0.0.1
         Netmask 0xff000000 Subnetmask 0xff000000
         Metric is 0
         Maximum Transfer Unit size is 1536
         0 packets received; 1 packets sent
         0 multicast packets received
         0 multicast packets sent
         0 input errors; 0 output errors
         0 collisions; 0 dropped
         0 output queue drops
    DPLend (unit number 0):
         Flags: (0x20043) UP BROADCAST ARP RUNNING
         Type: ETHERNET_CSMACD
         Ethernet address is 00:00:00:00:00:00
         Metric is 0
         Maximum Transfer Unit size is 485
         0 octets received
         0 octets sent
         0 unicast packets received
         0 unicast packets sent
         0 non-unicast packets received
         0 non-unicast packets sent
         0 incoming packets discarded
         0 outgoing packets discarded
         0 incoming errors
         0 outgoing errors
         0 unknown protos
         0 collisions; 0 dropped
         0 output queue drops
    gei (unit number 2):
         Flags: (0x78043) UP BROADCAST MULTICAST ARP RUNNING INET_UP
         PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
         Type: ETHERNET_CSMACD
         inet: 192.168.120.13
         Broadcast address: 192.168.120.255
         Netmask 0xffffff00 Subnetmask 0xffffff00
         Ethernet address is 00:10:e0:bb:26:d2
         Metric is 0
         Maximum Transfer Unit size is 1500
         13736 octets received
         16118 octets sent
         0 unicast packets received
         0 unicast packets sent
```

```
      0 multicast packets received
      0 multicast packets sent
      128 broadcast packets received
      125 broadcast packets sent
      0 incoming packets discarded
      0 outgoing packets discarded
      0 incoming errors
      0 outgoing errors
      0 unknown protos
      0 collisions; 0 dropped
      0 output queue drops
gei (unit number 0):
      Flags: (0x70043) UP BROADCAST ARP RUNNING INET_UP
      PHY Flags: (0x2012) DIX
      Type: ETHERNET_CSMACD
      inet: 10.75.49.21
      Broadcast address: 10.75.49.255
      Netmask 0xff000000 Subnetmask 0xffffff00
      Ethernet address is 00:10:e0:bb:26:d0
      Metric is 0
      Maximum Transfer Unit size is 1500
      0 octets received
      0 octets sent
      0 unicast packets received
      0 unicast packets sent
      0 multicast packets received
      0 multicast packets sent
      0 broadcast packets received
      0 broadcast packets sent
      0 incoming packets discarded
      0 outgoing packets discarded
      0 incoming errors
      0 outgoing errors
      0 unknown protos
      0 collisions; 0 dropped
      0 output queue drops
gei (unit number 3):
      Flags: (0x70043) UP BROADCAST ARP RUNNING INET_UP
      PHY Flags: (0x12012) 100MB FDX DIX
      Type: ETHERNET_CSMACD
      inet: 10.75.50.21
      Broadcast address: 10.75.50.255
      Netmask 0xff000000 Subnetmask 0xffffff00
      Ethernet address is 00:10:e0:bb:26:d3
      Metric is 0
      Maximum Transfer Unit size is 1500
      25708 octets received
      128 octets sent
      0 unicast packets received
      0 unicast packets sent
      0 multicast packets received
      0 multicast packets sent
      214 broadcast packets received
      2 broadcast packets sent
      0 incoming packets discarded
      0 outgoing packets discarded
      0 incoming errors
      0 outgoing errors
      0 unknown protos
      0 collisions; 0 dropped
      0 output queue drops
gei (unit number 1):
      Flags: (0x78043) UP BROADCAST MULTICAST ARP RUNNING INET_UP
      PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
      Type: ETHERNET_CSMACD
      inet: 192.168.121.13
```

```
          Broadcast address: 192.168.121.255
          Netmask 0xffffff00 Subnetmask 0xffffff00
          Ethernet address is 00:10:e0:bb:26:d1
          Metric is 0
          Maximum Transfer Unit size is 1500
          13544 octets received
          16118 octets sent
          0 unicast packets received
          0 unicast packets sent
          0 multicast packets received
          0 multicast packets sent
          125 broadcast packets received
          125 broadcast packets sent
          0 incoming packets discarded
          0 outgoing packets discarded
          0 incoming errors
          0 outgoing errors
          0 unknown protos
          0 collisions; 0 dropped
          0 output queue drops
      value = 26 = 0x1a

;

      eagle1 17-05-04 17:35:02 MST  EAGLE 46.5.0.0.0-70.29.0

;

      eagle1 17-05-04 17:35:02 MST  EAGLE 46.5.0.0.0-70.29.0

      NETSTAT command complete

;
```

SLIC card running DEIR64/ENUM64/SIP64:

```
gei (unit number 0) = ExAP Port A
gei (unit number 2) = Signaling Port #1
gei (unit number 1) = Signaling Port #2
gei (unit number 3) = ExAP Port B


> rept-stat-card:mode=full:loc=1317

Command Accepted - Processing

    eagle1 17-05-04 16:20:40 MST  EAGLE 46.5.0.0.0-70.29.0
    rept-stat-card:mode=full:loc=1317
    Command entered at terminal #13.
;

    eagle1 17-05-04 16:20:40 MST  EAGLE 46.5.0.0.0-70.29.0
    CARD   VERSION      TYPE      GPL        PST            SST        AST
    1317   140-029-000  SLIC      ENUM64     IS-ANR         MPS Unavl  -----
      ALARM STATUS        = No Alarms.
      BLSLC64 GPL version = 140-029-000
      IMT BUS A           = Conn
      IMT BUS B           = Disc
      CLOCK A             = Fault
      CLOCK B             = Active
      CLOCK I             = Idle
      MBD BIP STATUS      = Valid
      MOTHER BOARD ID     = SLIC
      DBD STATUS          = Valid
      DBD TYPE            = None
      DBD MEMORY SIZE     = 16384M
```

```
      HW VERIFICATION CODE= ----
      FPGA VERSION        = 9400036
      BIOS VERSION        = 0ACFP00
      PSOC VERSION        = 1.0
      CURRENT TEMPERATURE =  40C (104F)
      PEAK TEMPERATURE:   =  42C (108F)     [17-05-04 15:51]
      ENUM SM DATA TYPE   = DN
      IPLNK STATUS
          IPLNK  IPADDR             STATUS     PST
          A      192.168.120.13     UP         IS-NR
          B      10.75.49.21        DOWN       OOS-MT
          C      10.75.50.21        DOWN       OOS-MT
          D      192.168.121.13     UP         IS-NR
      DSM IP CONNECTION
          PORT   PST             SST
          A      OOS-MT          Unavail
          D      OOS-MT          Unavail

    Command Completed.
;

> pass:loc=1317:cmd="netstat -i"

Command Accepted - Processing

    eagle1 17-05-04 16:25:06 MST  EAGLE 46.5.0.0.0-70.29.0
    pass:loc=1317:cmd="netstat -i"
    Command entered at terminal #13.
;

    eagle1 17-05-04 16:25:06 MST  EAGLE 46.5.0.0.0-70.29.0
    PASS: Command sent to card
;

    eagle1 17-05-04 16:25:06 MST  EAGLE 46.5.0.0.0-70.29.0
    SDS Shell Output

    shellLib: unknown LED mode vi.
    -> tklc_ifShow
    lo0 Link type:Local loopback  Queue:none
        inet 127.0.0.1  mask 255.255.255.255
        inet6 unicast fe80::1%lo0  prefixlen 64  automatic
        inet6 unicast ::1  prefixlen 128
        UP RUNNING LOOPBACK MULTICAST NOARP ALLMULTI
        MTU:1500  metric:1  VR:0  ifindex:1
        RX packets:1487 mcast:3 errors:0 dropped:0
        TX packets:1487 mcast:3 errors:0
        collisions:0 unsupported proto:0
        RX bytes:165k  TX bytes:165k

    gei0        Link type:Ethernet  HWaddr 00:10:e0:bb:26:d0  Queue:none
        capabilities: TXCSUM TX6CSUM VLAN_MTU VLAN_TXHWTAG VLAN_RXHWTAG
        inet 192.168.120.13  mask 255.255.255.0  broadcast 192.168.120.255
        inet6 unicast fe80::210:e0ff:febb:26d0%gei0  prefixlen 64  automatic
        UP RUNNING SIMPLEX BROADCAST MULTICAST
        MTU:1500  metric:1  VR:0  ifindex:2
        RX packets:929 mcast:0 errors:0 dropped:0
        TX packets:745 mcast:6 errors:0
        collisions:0 unsupported proto:0
        RX bytes:101k  TX bytes:93k

    gei2        Link type:Ethernet  HWaddr 00:10:e0:bb:26:d2  Queue:none
        capabilities: TXCSUM TX6CSUM VLAN_MTU VLAN_TXHWTAG VLAN_RXHWTAG
        inet 10.75.49.21  mask 255.255.255.0  broadcast 10.75.49.255
        inet6 unicast fe80::210:e0ff:febb:26d2%gei2  prefixlen 64  automatic
        UP RUNNING SIMPLEX BROADCAST MULTICAST
```

```
    MTU:1500  metric:1  VR:0  ifindex:3
    RX packets:37 mcast:0 errors:0 dropped:0
    TX packets:7 mcast:6 errors:0
    collisions:0 unsupported proto:0
    RX bytes:4596  TX bytes:510

gei1        Link type:Ethernet  HWaddr 00:10:e0:bb:26:d1  Queue:none
    capabilities: TXCSUM TX6CSUM VLAN_MTU VLAN_TXHWTAG VLAN_RXHWTAG
    inet 10.75.50.21  mask 255.255.255.0  broadcast 10.75.50.255
    inet6 unicast fe80::210:e0ff:febb:26d1%gei1  prefixlen 64  tentative  automatic
    UP SIMPLEX BROADCAST MULTICAST
    MTU:1500  metric:1  VR:0  ifindex:4
    RX packets:0 mcast:0 errors:0 dropped:0
    TX packets:0 mcast:0 errors:0
    collisions:0 unsupported proto:0
    RX bytes:0  TX bytes:0

gei3        Link type:Ethernet  HWaddr 00:10:e0:bb:26:d3  Queue:none
    capabilities: TXCSUM TX6CSUM VLAN_MTU VLAN_TXHWTAG VLAN_RXHWTAG
    inet 192.168.121.13  mask 255.255.255.0  broadcast 192.168.121.255
    inet6 unicast fe80::210:e0ff:febb:26d3%gei3  prefixlen 64  automatic
    UP RUNNING SIMPLEX BROADCAST MULTICAST
    MTU:1500  metric:1  VR:0  ifindex:5
    RX packets:921 mcast:0 errors:0 dropped:0
    TX packets:745 mcast:6 errors:0
    collisions:0 unsupported proto:0
    RX bytes:101k  TX bytes:93k

gei (unit number 0):
     PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
gei (unit number 2):
     PHY Flags: (0x12012) 100MB FDX DIX
gei (unit number 1):
     PHY Flags: (0x2012) DIX
gei (unit number 3):
     PHY Flags: (0x12114) AUTONEG 1000MB FDX DIX
    value = 1 = 0x1

;

    eagle1 17-05-04 16:25:16 MST  EAGLE 46.5.0.0.0-70.29.0

    NETSTAT command complete

;
```

Procedure A.16 Upgrade SSL certificate from SHA-1 to SHA-512

Procedure A.16: Upgrade SSL certificate from SHA-1 to SHA-512

S T E P #	This procedure upgrade SSL certificate from SHA-1 to SHA-512. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT AND **ASK FOR UPGRADE ASSISTANCE.**	
1. ☐	**MPS A:** Log in to the server.	If not already logged-in, then login at MPS A: **<hostname> console login: epapdev** **Password: <password>** Change to root user. $ su – root
2. ☐	Verify SSL certificate	To verify SSL certificate execute the following command: **# /usr/bin/openssl x509 -in /usr/TKLC/plat/etc/ssl/server.crt -text -noout | grep "Signature Algorithm"** Signature Algorithm: **sha512**WithRSAEncryption Signature Algorithm: **sha512**WithRSAEncryption If signature algorithm is SHA 512 skip this procedure,otherwise proceed with the following step.
3. ☐	Find the IP for which the certificate has been generated in server.crt	**# openssl verify /usr/TKLC/plat/etc/ssl/server.crt** /usr/TKLC/plat/etc/ssl/server.crt: CN = **10.248.11.14** error 18 at 0 depth lookup:self signed certificate OK
4. ☐	Upgrade to SHA-512 in server.crt	Note: The IP Address to be used in the below command is the IP displayed in the output of step 3. To upgrade SHA-1 to SHA-512 execute the following command: **# /usr/bin/openssl req -x509 -sha512 -nodes -days 4015 -subj "/CN=<IP Addr>" -newkey rsa:2048 -keyout /usr/TKLC/plat/etc/ssl/server.key -out /usr/TKLC/plat/etc/ssl/server.crt** Generating a 2048 bit RSA private key .....+++ .....+++ writing new private key to '/usr/TKLC/plat/etc/ssl/server.key'
5. ☐	Find the IP for which the certificate has been generated in server_dual.crt	**# openssl verify /usr/TKLC/plat/etc/ssl/server_dual.crt** /usr/TKLC/plat/etc/ssl/server_dual.crt: CN = **10.248.11.14** error 18 at 0 depth lookup:self signed certificate OK
6. ☐	Upgrade to SHA-512 in server_dual.crt	Note: The IP Address to be used in the below command is the IP displayed in the output of step 5. To upgrade SHA-1 to SHA-512 execute the following command: **# /usr/bin/openssl req -x509 -sha512 -nodes -days 4015 -subj "/CN=<IP Addr>" -newkey rsa:2048 -keyout /usr/TKLC/plat/etc/ssl/server_dual.key -out /usr/TKLC/plat/etc/ssl/server_dual.crt** Generating a 2048 bit RSA private key .....+++

		....+++ writing new private key to '/usr/TKLC/plat/etc/ssl/server_dual.key'
7. ☐	Procedure Complete.	Return to the procedure that you came here from.

Procedure A.17 Disable Epap VIP And Deactivate PDBA Proxy Feature

If PDBA Proxy feature is NOT enabled and VIP is NOT configured, this procedure can be skipped.

Ensure the provisioning activity has been halted before proceeding!!!

STEP #		
	This procedure outlines the steps to disable the PDBA proxy feature. Estimated time: 5 minutes	
1. ☐	**MPS A**: Choose option "8" to display "PDB Configuration Menu.	MPS Side A: /-----EPAP 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 | PDB Configuration Menu | |---|----------------------------------| | 9 | Security | |---|----------------------------------| | 10 | Configure EMS Server | |---|----------------------------------| | 11 | Configure Alarm Feed | |---|----------------------------------| | 12 | Configure Query Server | |---|----------------------------------| | 13 | Configure Query Server Alarm Feed | |---|----------------------------------| | 14 | Configure SNMP Agent Community | |---|----------------------------------| | e | Exit | \--/ Enter Choice: 8

2. ☐	**MPS A**: Choose option "6" to "Change PDBA Proxy State".	MPS Side A: /-----Configure PDB Menu----------\ /-----------------------------------\ | 1 | Configure PDB Network | |---|---------------------------| | 2 | RTDB Homing Menu | |---|---------------------------| | 3 | Change MPS Provisionable State | |---|---------------------------| | 4 | Create PDB | |---|---------------------------| | 5 | Change Auto DB Recovery State | |---|---------------------------| | 6 | Change PDBA Proxy State | |---|---------------------------| | e | Exit | \-----------------------------------/ Enter Choice: 6
3. ☐	**MPS A**: Enter "Y" to stop PDBA / EPAP software and disable PDBA Proxy.	PDBA PROXY is currently ENABLED. Do you want to DISABLE PDBA Proxy? [N]: **Y**
4. ☐	**MPS A**: Enter "1" to "Display Configuration"	MPS Side A: /-----EPAP 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 | PDB Configuration Menu | |---|---------------------------| | 9 | Security | |---|---------------------------| | 10 | Configure EMS Server | |---|---------------------------| | 11 | Configure Alarm Feed | |---|---------------------------| | 12 | Configure Query Server | |---|---------------------------| | 13 | Configure Query Server Alarm Feed | |---|---------------------------| | 14 | Configure SNMP Agent Community | |---|---------------------------| | e | Exit | \-----------------------------------/ Enter Choice: 1
5. ☐	**MPS A**: Verify that the state of PDBA Proxy Feature is No.	MPS Side A: EPAP A Provisioning Network IP Address = 192.168.61.115 EPAP B Provisioning Network IP Address = 192.168.61.116 Provisioning Network Netmask = 255.255.255.0 Provisioning Network Default Router = 192.168.61.1

```
EPAP A Backup Prov Network IP Address  = Not
configured
EPAP B Backup Prov Network IP Address  = Not
configured
Backup Prov Network Netmask            = Not
configured
Backup Prov Network Default Router     = Not
configured
EPAP A Sync Network Address            = 192.168.2.100
EPAP B Sync Network Address            = 192.168.2.200
EPAP A Main DSM Network Address        =
192.168.120.100
EPAP B Main DSM Network Address        =
192.168.120.200
EPAP A Backup DSM Network Address      =
192.168.121.100
EPAP B Backup DSM Network Address      =
192.168.121.200
EPAP A HTTP Port                       = 80
EPAP B HTTP Port                       = 80
EPAP A HTTP SuExec Port                = 8001
EPAP B HTTP SuExec Port                = 8001
EPAP A Banner Connection Port          = 8473
EPAP B Banner Connection Port          = 8473
EPAP A Static NAT Address              = Not
configured
EPAP B Static NAT Address              = Not
configured
PDBI Port                              = 5873
Remote MPS A Static NAT Address        = Not
configured
Remote MPS A HTTP Port                 = 80
Local Provisioning VIP                 =
192.168.15.152
Remote Provisioning VIP                =
192.168.15.172
Local PDBA Address                     =
192.168.15.115
Remote PDBA Address                    =
192.168.16.115
Remote PDBA B Address                  =
192.168.16.116
Time Zone                              =
America/New_York
PDB Database                           = Exists
Preferred PDB                          = Standby
Allow updates from alternate PDB       = Yes
Auto DB Recovery Enabled               = Yes
PDBA Proxy Enabled                     = NO

Press return to continue...
```

6. ☐	**MPS A**: Choose option "2" to enter the "Configure Network Interfaces Menu".	MPS Side A: /-----EPAP 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 | PDB Configuration Menu | |----|---------------------------------| | 9 | Security | |----|---------------------------------| | 10 | Configure EMS Server | |----|---------------------------------| | 11 | Configure Alarm Feed | |----|---------------------------------| | 12 | Configure Query Server | |----|---------------------------------| | 13 | Configure Query Server Alarm Feed | |----|---------------------------------| | 14 | Configure SNMP Agent Community | |----|---------------------------------| | e | Exit | \---------------------------------------/ Enter Choice: 2
7. ☐	**MPS A**: Choose option "7" to enter the "Configure Provisioning VIP Addresses Menu".	MPS Side A: /-----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 | \---/ Enter Choice: 7
8. ☐	**MPS A**: Remove the local provisioning VIP and remote provisioning VIP, by entering 0.0.0.0.	Verifying root connectivity with mate... EPAP local provisioning Virtual IP Address [192.168.15.152]: **0.0.0.0** EPAP remote provisioning Virtual IP Address [192.168.15.172]: **0.0.0.0**

9. ☐	**MPS A**: Choose option "e" to exit.	MPS Side A: /-----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 | \---/ Enter Choice: e
10. ☐	**MPS A**: Choose option "1" to "Display Configuration.	MPS Side A: /-----EPAP 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 | PDB Configuration Menu | |----|-----------------------------| | 9 | Security | |----|-----------------------------| | 10 | Configure EMS Server | |----|-----------------------------| | 11 | Configure Alarm Feed | |----|-----------------------------| | 12 | Configure Query Server | |----|-----------------------------| | 13 | Configure Query Server Alarm Feed | |----|-----------------------------| | 14 | Configure SNMP Agent Community | |----|-----------------------------| | e | Exit | \-----------------------------------/ Enter Choice: 1
11. ☐	**MPS A**: Verify VIP addresses are set to **0.0.0.0.**	MPS Side A: EPAP A Provisioning Network IP Address = 192.168.61.115 EPAP B Provisioning Network IP Address = 192.168.61.116 Provisioning Network Netmask = 255.255.255.0 Provisioning Network Default Router = 192.168.61.1 EPAP A Backup Prov Network IP Address = Not configured EPAP B Backup Prov Network IP Address = Not configured Backup Prov Network Netmask = Not configured Backup Prov Network Default Router = Not configured

```
EPAP A Sync Network Address            = 192.168.2.100
EPAP B Sync Network Address            = 192.168.2.200
EPAP A Main DSM Network Address        =
192.168.120.100
EPAP B Main DSM Network Address        =
192.168.120.200
EPAP A Backup DSM Network Address      =
192.168.121.100
EPAP B Backup DSM Network Address      =
192.168.121.200
EPAP A HTTP Port                       = 80
EPAP B HTTP Port                       = 80
EPAP A HTTP SuExec Port                = 8001
EPAP B HTTP SuExec Port                = 8001
EPAP A Banner Connection Port          = 8473
EPAP B Banner Connection Port          = 8473
EPAP A Static NAT Address              = Not
configured
EPAP B Static NAT Address              = Not
configured
PDBI Port                              = 5873
Remote MPS A Static NAT Address        = Not
configured
Remote MPS A HTTP Port                 = 80
Local Provisioning VIP                 = 0.0.0.0
Remote Provisioning VIP                = 0.0.0.0
Local PDBA Address                     =
192.168.15.115
Remote PDBA Address                    =
192.168.16.115
Remote PDBA B Address                  =
192.168.16.116
Time Zone                              =
America/New_York
PDB Database                           = Exists
Preferred PDB                          = Standby
Allow updates from alternate PDB       = Yes
Auto DB Recovery Enabled               = Yes
PDBA Proxy Enabled                     = No

Press return to continue...
```

12. ☐	**MPS A**: Choose “e” to exit.	MPS Side A: /-----EPAP 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 | PDB Configuration Menu | |----|----------------------------| | 9 | Security | |----|----------------------------| | 10 | Configure EMS Server | |----|----------------------------| | 11 | Configure Alarm Feed | |----|----------------------------| | 12 | Configure Query Server | |----|----------------------------| | 13 | Configure Query Server Alarm Feed | |----|----------------------------| | 14 | Configure SNMP Agent Community | |----|----------------------------| | e | Exit | \-----------------------------------/ Enter Choice: e
13. ☐	Return to the procedure that you came here from.	

Procedure A.18 Enable EPAP PDBA Proxy and EPAP VIP Optional Features

Ensure the provisioning activity has been halted before proceeding!!!

STEP #		
	This procedure outlines the steps for provisioning the PDBA proxy VIP. Estimated time: 10 minutes	
1.	**MPS A**: Login as epapdev to 1A server.	Login: **epapdev** Password: **<epapdev_password>**
2.	**MPS A**: Perform “syscheck” on the 1A server.	**$ syscheck** Running modules in class hardware... OK Running modules in class proc... OK Running modules in class net... OK Running modules in class disk... OK Running modules in class services... OK Running modules in class system... OK

		LOG LOCATION: /var/TKLC/log/syscheck/fail_log #
3.	**MPS A**: SSH to EPAP 1B.	**$ssh mate**
4.	**MPS B**: Perform "syscheck" on the 1B.	**$ syscheck** Running modules in class hardware... OK Running modules in class proc... OK Running modules in class net... OK Running modules in class disk... OK Running modules in class services... OK Running modules in class system... OK LOG LOCATION: /var/TKLC/log/syscheck/fail_log #
5.	**MPS B**: Exit back to the 1A server	**$ exit**
6.	**MPS A**: Log into epapconfig	$**su – epapconfig** **Password:**
7.	**MPS A**: Choose option "1" to display Configuration.	See menu below

```
MPS Side A:

 /-----EPAP 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 | PDB Configuration Menu            |
|----|-----------------------------------|
|  9 | Security                          |
|----|-----------------------------------|
| 10 | SNMP Configuration                |
|----|-----------------------------------|
| 11 | Configure Alarm Feed              |
|----|-----------------------------------|
| 12 | Configure Query Server            |
|----|-----------------------------------|
| 13 | Configure Query Server Alarm Feed |
|----|-----------------------------------|
| 14 | Configure SNMP Agent Community    |
|----|-----------------------------------|
| 15 | Mate Disaster Recovery            |
|----|-----------------------------------|
|  e | Exit                              |
\----------------------------------------/

Enter Choice: 1
```

8.	**MPS A**: Verify that the VIP is not configured.	MPS Side A: EPAP A Provisioning Network IP Address = 192.168.61.115 EPAP B Provisioning Network IP Address = 192.168.61.116 Provisioning Network Netmask = 255.255.255.0 Provisioning Network Default Router = 192.168.61.1 EPAP A Backup Prov Network IP Address = Not configured EPAP B Backup Prov Network IP Address = Not configured Backup Prov Network Netmask = Not configured Backup Prov Network Default Router = Not configured EPAP A Sync Network Address = 192.168.2.100 EPAP B Sync Network Address = 192.168.2.200 EPAP A Main DSM Network Address = 192.168.120.100 EPAP B Main DSM Network Address = 192.168.120.200 EPAP A Backup DSM Network Address = 192.168.121.100 EPAP B Backup DSM Network Address = 192.168.121.200 EPAP A HTTP Port = 80 EPAP B HTTP Port = 80 EPAP A HTTP SuExec Port = 8001 EPAP B HTTP SuExec Port = 8001 EPAP A Banner Connection Port = 8473 EPAP B Banner Connection Port = 8473 EPAP A Static NAT Address = Not configured EPAP B Static NAT Address = Not configured PDBI Port = 5873 Remote MPS A Static NAT Address = Not configured Remote MPS A HTTP Port = 80 **Local Provisioning VIP = Not configured** **Remote Provisioning VIP = Not configured** Local PDBA Address = 192.168.61.115 Remote PDBA Address = 192.168.61.181 Remote PDBA B Address = 192.168.61.182 Time Zone = America/New_York PDB Database = Exists Preferred PDB = Standby Allow updates from alternate PDB = Yes Auto DB Recovery Enabled = Yes PDBA Proxy Enabled = No Press return to continue...
9.	**MPS A**: Choose option "2" to enter the "Configure Network Interfaces Menu".	MPS Side A:

		/-----EPAP 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 | PDB Configuration Menu | |----|----------------------------------| | 9 | Security | |----|----------------------------------| | 10 | SNMP Configuration | |----|----------------------------------| | 11 | Configure Alarm Feed | |----|----------------------------------| | 12 | Configure Query Server | |----|----------------------------------| | 13 | Configure Query Server Alarm Feed | |----|----------------------------------| | 14 | Configure SNMP Agent Community | |----|----------------------------------| | 15 | Mate Disaster Recovery | |----|----------------------------------| | e | Exit | \--/ Enter Choice: 2
10.	**MPS A**: Choose option “6” to enter the “Configure Provisioning VIP Addresses Menu”.	MPS Side A: /-----Configure Network Interfaces Menu----\ /--\ | 1 | Configure Provisioning Network | |----|----------------------------------| | 2 | Configure Sync Network | |----|----------------------------------| | 3 | Configure DSM Network | |----|----------------------------------| | 4 | Configure Backup Provisioning Network | |----|----------------------------------| | 5 | Configure Static NAT Addresses | |----|----------------------------------| | 6 | Configure Provisioning VIP Addresses | |----|----------------------------------| | e | Exit | \--/ Enter Choice: 6
11.	**MPS A**: Enter “Y” to stop PDBA / EPAP software then enter VIP address for the local and remote PDBA sites.	Verifying root connectivity with mate... EPAP software and PDBA are running. Stop them? [N]: **Y** EPAP software is running on mate MPS. Stop it? [N]: **Y** EPAP local provisioning Virtual IP Address [0.0.0.0]: **192.168.15.152** EPAP remote provisioning Virtual IP Address [0.0.0.0]: **192.168.15.172**

12.	**MPS A**: Choose option “e” to exit.	MPS Side A: /-----Configure Network Interfaces Menu----\ /---\ | 1 | Configure Provisioning Network | |----|-----------------------------------| | 2 | Configure Sync Network | |----|-----------------------------------| | 3 | Configure DSM Network | |----|-----------------------------------| | 4 | Configure Backup Provisioning Network | |----|-----------------------------------| | 5 | Configure Static NAT Addresses | |----|-----------------------------------| | 6 | Configure Provisioning VIP Addresses | |----|-----------------------------------| | e | Exit | \---/ Enter Choice: e
13.	**MPS A**: Choose option “1” to “Display Configuration.	MPS Side A: /-----EPAP 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 | PDB Configuration Menu | |----|-----------------------------| | 9 | Security | |----|-----------------------------| | 10 | SNMP Configuration | |----|-----------------------------| | 11 | Configure Alarm Feed | |----|-----------------------------| | 12 | Configure Query Server | |----|-----------------------------| | 13 | Configure Query Server Alarm Feed | |----|-----------------------------| | 14 | Configure SNMP Agent Community | |----|-----------------------------| | 15 | Mate Disaster Recovery | |----|-----------------------------| | e | Exit | \-------------------------------------/ Enter Choice: 1
14.	**MPS A**: Verify VIP addresses	MPS Side A: EPAP A Provisioning Network IP Address = 192.168.61.115 EPAP B Provisioning Network IP Address = 192.168.61.116 Provisioning Network Netmask = 255.255.255.0 Provisioning Network Default Router = 192.168.61.1 EPAP A Backup Prov Network IP Address = Not configured EPAP B Backup Prov Network IP Address = Not configured Backup Prov Network Netmask = Not configured Backup Prov Network Default Router = Not configured EPAP A Sync Network Address = 192.168.2.100 EPAP B Sync Network Address = 192.168.2.200 EPAP A Main DSM Network Address = 192.168.120.100 EPAP B Main DSM Network Address = 192.168.120.200

		EPAP A Backup DSM Network Address = 192.168.121.100 EPAP B Backup DSM Network Address = 192.168.121.200 EPAP A HTTP Port = 80 EPAP B HTTP Port = 80 EPAP A HTTP SuExec Port = 8001 EPAP B HTTP SuExec Port = 8001 EPAP A Banner Connection Port = 8473 EPAP B Banner Connection Port = 8473 EPAP A Static NAT Address = Not configured EPAP B Static NAT Address = Not configured PDBI Port = 5873 Remote MPS A Static NAT Address = Not configured Remote MPS A HTTP Port = 80 **Local Provisioning VIP = 192.168.15.152** **Remote Provisioning VIP = 192.168.15.172** Local PDBA Address = 192.168.15.115 Remote PDBA Address = 192.168.16.115 Remote PDBA B Address = 192.168.16.116 Time Zone = America/New_York PDB Database = Exists Preferred PDB = Standby Allow updates from alternate PDB = Yes Auto DB Recovery Enabled = Yes PDBA Proxy Enabled = No Press return to continue...
15.	**MPS A**: Choose “e” to exit	/-----EPAP 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 | PDB Configuration Menu | |----|----------| | 9 | Security | |----|----------| | 10 | SNMP Configuration | |----|----------| | 11 | Configure Alarm Feed | |----|----------| | 12 | Configure Query Server | |----|----------| | 13 | Configure Query Server Alarm Feed | |----|----------| | 14 | Configure SNMP Agent Community | |----|----------| | 15 | Mate Disaster Recovery | |----|----------| | e | Exit | \----------/ Enter Choice: e
16.	**MPS A**: Verify that you can ping both VIP addresses.	$ **ping <local VIP>** **$ ping <remote VIP>**
17.	**MPS A**: Log into epapconfig	$ **su - epapconfig**

18.	**MPS A**: Enter "1" to "Display Configuration"	/-----EPAP 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 | PDB Configuration Menu | |----|----------| | 9 | Security | |----|----------| | 10 | SNMP Configuration | |----|----------| | 11 | Configure Alarm Feed | |----|----------| | 12 | Configure Query Server | |----|----------| | 13 | Configure Query Server Alarm Feed | |----|----------| | 14 | Configure SNMP Agent Community | |----|----------| | 15 | Mate Disaster Recovery | |----|----------| | e | Exit | \--/ Enter Choice: 1
19.	**MPS A**: Verify that the state of PDBA Proxy Feature is No.	MPS Side A: EPAP A Provisioning Network IP Address = 192.168.61.115 EPAP B Provisioning Network IP Address = 192.168.61.116 Provisioning Network Netmask = 255.255.255.0 Provisioning Network Default Router = 192.168.61.1 EPAP A Backup Prov Network IP Address = Not configured EPAP B Backup Prov Network IP Address = Not configured Backup Prov Network Netmask = Not configured Backup Prov Network Default Router = Not configured EPAP A Sync Network Address = 192.168.2.100 EPAP B Sync Network Address = 192.168.2.200 EPAP A Main DSM Network Address = 192.168.120.100 EPAP B Main DSM Network Address = 192.168.120.200 EPAP A Backup DSM Network Address = 192.168.121.100 EPAP B Backup DSM Network Address = 192.168.121.200 EPAP A HTTP Port = 80 EPAP B HTTP Port = 80 EPAP A HTTP SuExec Port = 8001 EPAP B HTTP SuExec Port = 8001 EPAP A Banner Connection Port = 8473 EPAP B Banner Connection Port = 8473 EPAP A Static NAT Address = Not configured EPAP B Static NAT Address = Not configured PDBI Port = 5873 Remote MPS A Static NAT Address = Not configured Remote MPS A HTTP Port = 80 Local Provisioning VIP = Not configured Remote Provisioning VIP = Not configured Local PDBA Address = 192.168.61.115 Remote PDBA Address = 192.168.61.181 Remote PDBA B Address = 192.168.61.182 Time Zone = America/New_York PDB Database = Exists

		Preferred PDB = Standby Allow updates from alternate PDB = Yes Auto DB Recovery Enabled = Yes PDBA Proxy Enabled = **NO** Press return to continue...
20.	**MPS A**: Choose option "8" to display "PDB Configuration Menu	MPS Side A: /-----EPAP 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 | PDB Configuration Menu | |----|----------| | 9 | Security | |----|----------| | 10 | SNMP Configuration | |----|----------| | 11 | Configure Alarm Feed | |----|----------| | 12 | Configure Query Server | |----|----------| | 13 | Configure Query Server Alarm Feed | |----|----------| | 14 | Configure SNMP Agent Community | |----|----------| | 15 | Mate Disaster Recovery | |----|----------| | e | Exit | \----------/ Enter Choice: 8
21.	**MPS A**: Choose option "6" to "Change PDBA Proxy State".	MPS Side A: /-----Configure PDB Menu----------\ /----------\ | 1 | Configure PDB Network | |----|----------| | 2 | RTDB Homing Menu | |----|----------| | 3 | Change MPS Provisionable State | |----|----------| | 4 | Create PDB | |----|----------| | 5 | Change Auto DB Recovery State | |----|----------| | 6 | Change PDBA Proxy State | |----|----------| | e | Exit | \----------/ Enter Choice: 6
22.	**MPS A**:	EPAP software and PDBA are running. Stop them? [N]: **Y** EPAP software is running on mate MPS. Stop it? [N]: **Y** PDBA PROXY is currently DISABLED. Do you want to ENABLE PDBA Proxy? [N]: **Y**

	Enter **"Y"** to stop PDBA / EPAP software and enable PDBA Proxy.	
23.	**MPS A**: Enter "e" to exit	MPS Side A: /-----Configure PDB Menu----------\ /--------------------------------------\ | 1 | Configure PDB Network | |----|-------------------------------| | 2 | RTDB Homing Menu | |----|-------------------------------| | 3 | Change MPS Provisionable State | |----|-------------------------------| | 4 | Create PDB | |----|-------------------------------| | 5 | Change Auto DB Recovery State | |----|-------------------------------| | 6 | Change PDBA Proxy State | |----|-------------------------------| | e | Exit | \--------------------------------------/ Enter Choice: e
24.	**MPS A**: Enter "1" to "Display Configuration"	
25.	**MPS A**: Verify that the state of PDBA Proxy Feature is Yes.	MPS Side A EPAP A Provisioning Network IP Address = 192.168.61.115 EPAP B Provisioning Network IP Address = 192.168.61.116 Provisioning Network Netmask = 255.255.255.0 Provisioning Network Default Router = 192.168.61.1 EPAP A Backup Prov Network IP Address = Not configured EPAP B Backup Prov Network IP Address = Not configured Backup Prov Network Netmask = Not configured Backup Prov Network Default Router = Not configured EPAP A Sync Network Address = 192.168.2.100 EPAP B Sync Network Address = 192.168.2.200 EPAP A Main DSM Network Address = 192.168.120.100 EPAP B Main DSM Network Address = 192.168.120.200 EPAP A Backup DSM Network Address = 192.168.121.100 EPAP B Backup DSM Network Address = 192.168.121.200 EPAP A HTTP Port = 80 EPAP B HTTP Port = 80 EPAP A HTTP SuExec Port = 8001 EPAP B HTTP SuExec Port = 8001 EPAP A Banner Connection Port = 8473 EPAP B Banner Connection Port = 8473 EPAP A Static NAT Address = Not configured EPAP B Static NAT Address = Not configured PDBI Port = 5873 Remote MPS A Static NAT Address = Not configured Remote MPS A HTTP Port = 80 Local Provisioning VIP = 192.168.15.152 Remote Provisioning VIP = 192.168.15.172 Local PDBA Address = 192.168.15.115 Remote PDBA Address = 192.168.16.115 Remote PDBA B Address = 192.168.16.116 Time Zone = America/New_York PDB Database = Exists Preferred PDB = Standby Allow updates from alternate PDB = Yes Auto DB Recovery Enabled = Yes **PDBA Proxy Enabled = Yes**
26.	**MPS A**:	MPS Side A:

	Enter “e” to exit	/-----EPAP 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 | PDB Configuration Menu | |----|----------------------------------| | 9 | Security | |----|----------------------------------| | 10 | SNMP Configuration | |----|----------------------------------| | 11 | Configure Alarm Feed | |----|----------------------------------| | 12 | Configure Query Server | |----|----------------------------------| | 13 | Configure Query Server Alarm Feed | |----|----------------------------------| | 14 | Configure SNMP Agent Community | |----|----------------------------------| | 15 | Mate Disaster Recovery | |----|----------------------------------| | e | Exit | \--/ Enter Choice: e
27.	**MPS A**: Start Epap software	**$ service Epap start**
28.	**MPS A**: Start PDBA software	**$ service Pdba start**
29.	**MPS A**: Perform “syscheck” on MPS-A.	**$ syscheck** Running modules in class hardware... OK Running modules in class proc... OK Running modules in class net... OK Running modules in class disk... OK Running modules in class services... OK Running modules in class system... OK LOG LOCATION: /var/TKLC/log/syscheck/fail_log
30.	**MPS A**: SSH to MPS 1B.	**$ ssh mate**
31.	**MPS B**: Start Epap software on MPS 1B.	**$ service Epap start**
32.	**MPS B**:	**$ syscheck** Running modules in class hardware... OK Running modules in class proc...

	Perform "syscheck" on MPS 1B.	OK Running modules in class net... OK Running modules in class disk... OK Running modules in class services... OK Running modules in class system... OK LOG LOCATION: /var/TKLC/log/syscheck/fail_log
33.	Return to the procedure that you came here from.	

Procedure A.19 Configure DSM Min Mem Size

S T E P #	This procedure configures DSM Min Mem Size on standalone PDB 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 MY ORACLE SUPPORTAND **ASK FOR INSTALL ASSISTANCE.**	
1. ☐	Standalone PDB : Login as epapdev to standalone PDB server.	Login: **epapdev** **Password:** <epapdev_password>
2. ☐	Execute getDsmMinMemSize.pl	Go to the bin directory to execute the getDsmMinMemSize.pl perl script **$ cd /usr/TKLC/epap/bin** Execute getDsmMinMemSize.pl script **$ ./ getDsmMinMemSize.pl**
3. ☐	Restart the pdb Software.	**$ service Pdba stop** ~~ /etc/init.d/Pdba stop ~~ PDBA application stopped. **$ service Pdba start** Starting PDBA in 528M configuration. "PDB_SUB_CAPACITY" is set to "528000000" PDBA application started. **$ service Pdba status** ~~ /etc/init.d/Pdba status ~~ PDBA application is running.
4. ☐	Verify that the uiEdit "DSM_MIN_MEM_SIZE" variable is added and updated correctly.	**$ uiEdit | grep DSM_MIN_MEM_SIZE** "DSM_MIN_MEM_SIZE" is set to "3235"
5. ☐	Procedure Complete	Procedure is complete.

Procedure A.20 Restart Mysql service for PDB on Query Server.

Procedure 20: Restart MySQL service for PDB on Query Server **NOTE: The MySQL services should be started as non-root admin user only.**		
S T E P #	This procedure restarts the MySQL service for PDB on Query 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 MY ORACLE SUPPORTAND **ASK FOR INSTALL ASSISTANCE.**	
1. ☐	Login to EAGLE QS as QS admin.	login: <**admin_user**> Password: <**admin_password**>
2. ☐	Start the mysqlpdb service.	`$ sudo service mysqlpdb stop` . . . Waiting for mysqlpdb to stop
3. ☐	Verify that mysqlpdb service is running.	`$ sudo service mysqlpdb start` Waiting for mysqlpdb to start done
4. ☐	Start the mysqlpdb service.	`$sudo service mysqlpdb status` PID:8841 mysqlpdb is running.
5. ☐	Procedure Complete	Procedure is complete.

Procedure A.21 Verify pdbaips table in EuiDB.

Procedure 21: Verify pdbaips table in EuiDB.

NOTE: This procedure should be executed on provisionable MPS .

S T E P #	This procedure verifies the type of ipaddr field in pdbaips table of EuiDB. Check off (√)each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT.	
1. ☐	**MPS 1A:** Login as epapdev.	login: **epapdev** Password: **<epapdev_password>**
2. ☐	**MPS 1A:** Verify the current type of ipaddr field in pdbaips table.	$ **mysql -uroot -p EuiDB -e "desc pdbaips;"** **Enter Password:** <MySQL Password> +------------+------------+--------+-----+---------+-------+ | Field | Type | Null | Key | Default | Extra | +------------+------------+--------+-----+---------+-------+ | ipaddr | char(50) | NO | PRI | NULL | | | permission | char(10) | YES | | NULL | | | sshtunnel | int(11) | YES | | 0 | | | username | char(20) | YES | | NULL | | | port | int(11) | YES | | 0 | | +-------------+------------+-------+-----+---------+-------+ **Note:** If the current type of ipaddr field is char(50) , skip rest of the steps in this procedure otherwise proceed to next step and update the pdbaips table.
3. ☐	**MPS 1A:** Update the pdbaips table	$ **mysql -uroot -p EuiDB -e "alter table pdbaips change ipaddr ipaddr char(50);"** **Enter Password:** <MySQL Password>
4. ☐	**MPS 1A:** Verify the changes	$ **mysql -uroot -p EuiDB -e "desc pdbaips;"** **Enter Password:** <MySQL Password> +------------+------------+--------+-----+---------+-------+ | Field | Type | Null | Key | Default | Extra | +------------+------------+--------+-----+---------+-------+ | ipaddr | char(50) | NO | PRI | NULL | | | permission | char(10) | YES | | NULL | | | sshtunnel | int(11) | YES | | 0 | | | username | char(20) | YES | | NULL | | | port | int(11) | YES | | 0 | | +-------------+------------+-------+-----+---------+-------+ **Note:** If these changes are not reflected, then Refer to Appendix E for intructions on accessing My Oracle Support.
5. ☐	Procedure Complete	Procedure is complete.

APPENDIX B INTERCONNECTION DIAGRAM

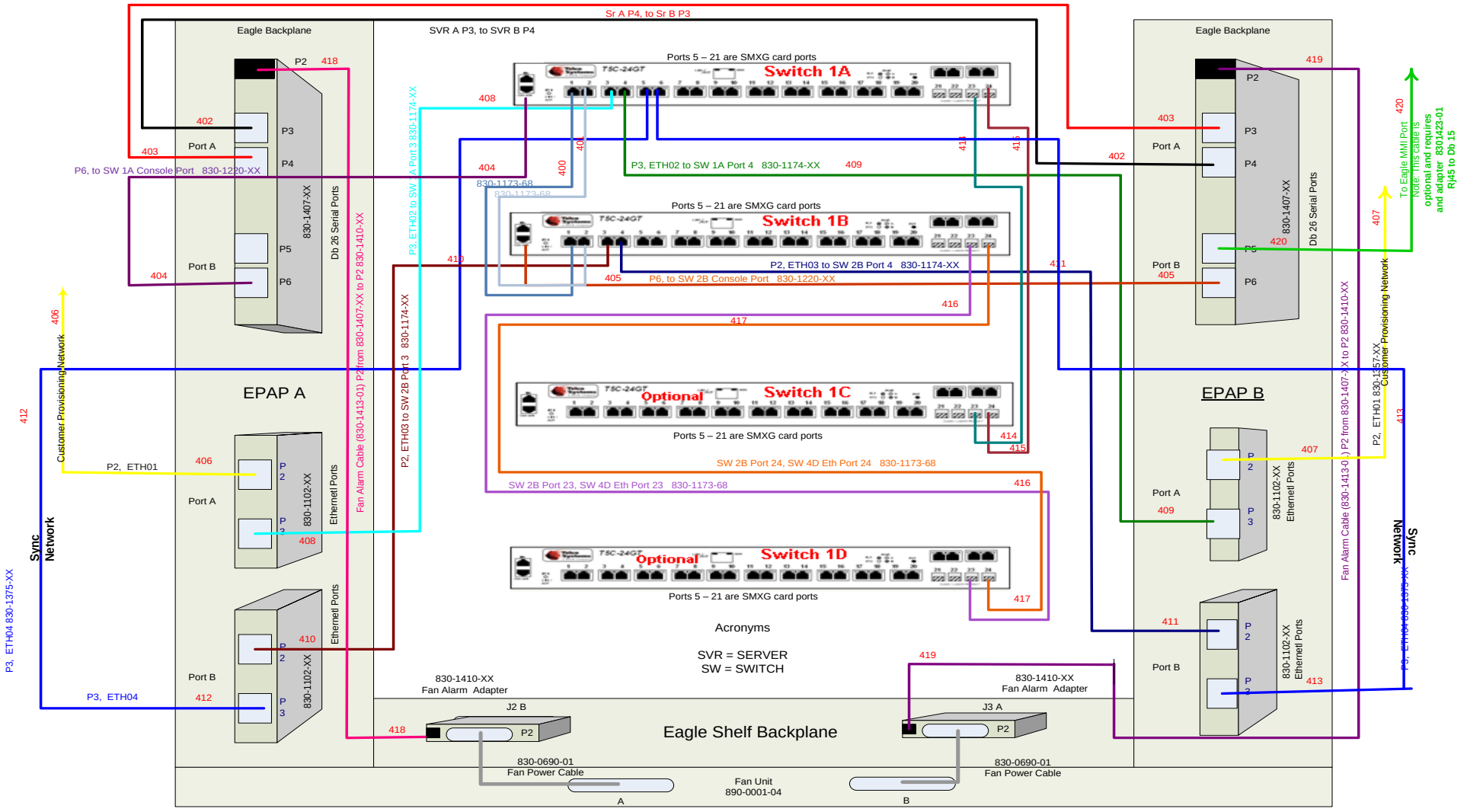


Figure 9: Interconnectivity Diagram for Sync Network Redundancy (Eth04 used for Sync Network)

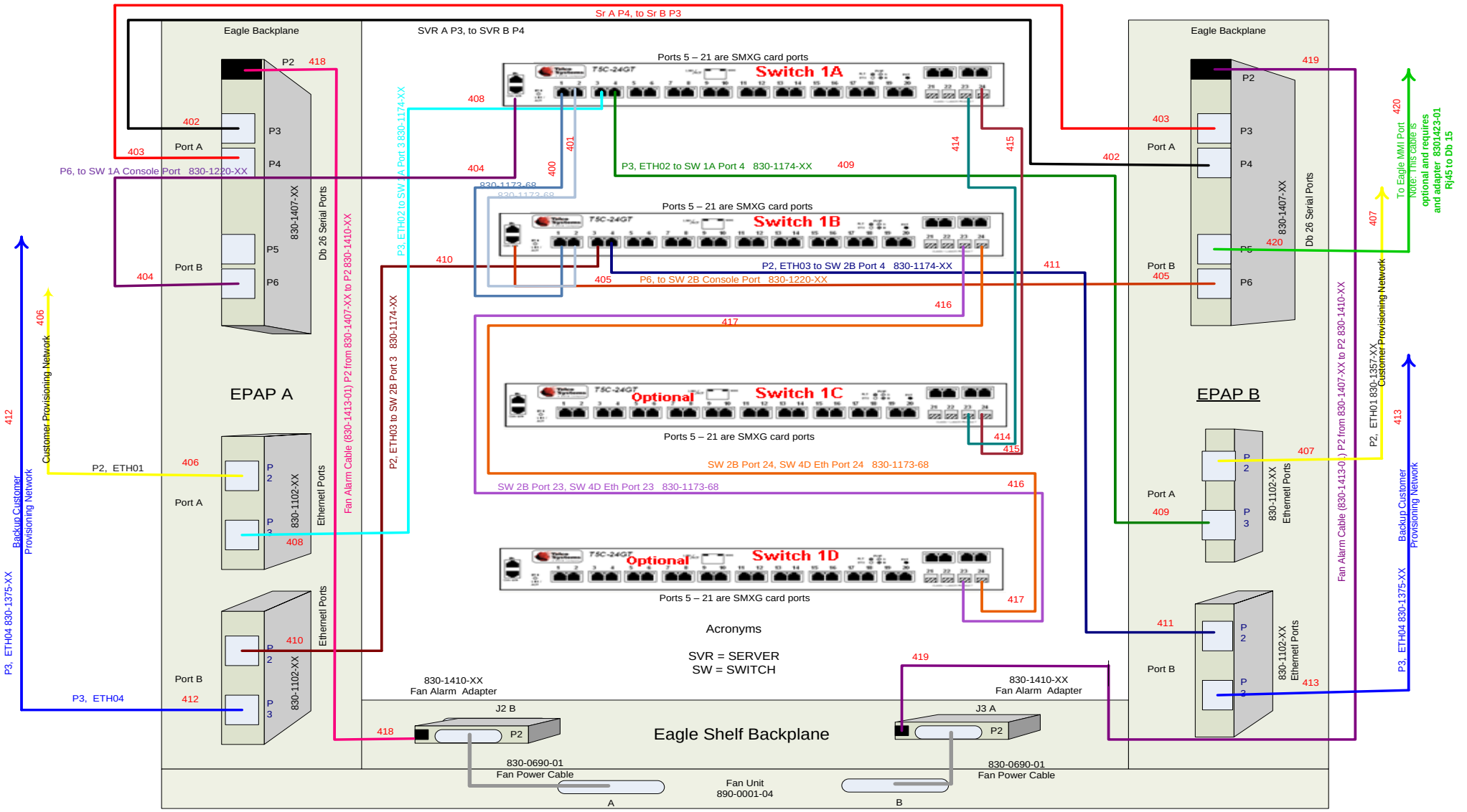


Figure 10: Default Interconnectivity Diagram (Eth04 used for Backup Provisioning Network)

APPENDIX C 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 D 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 Oracle, 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 Oracle 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.

Oracle Signature: _____ **Date: _____**

Customer Signature: _____ **Date: _____**

APPENDIX E 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 System Health Check or 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 Oracle customer