

**Oracle® Communications
LSMS**

Incremental Upgrade/Installation Guide

Release 13.2.1

E76242 Revision 2

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

Before beginning this procedure, contact My Oracle Support and inform them of your upgrade plans.

Refer to Appendix D for instructions on accessing My Oracle Support.

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1. INTRODUCTION

1.1 Purpose and Scope

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

- a. An initial installation of the LSMS 13.2.1 application software if it is not currently installed on an in-service E5-APP-B-02 system running a release of 64-bit version of TPD 7.4.x.
- b. A split-mirror software upgrade on an in-service E5-APP-B-02 system running a release equal to 64-bit version of TPD 7.0.3 and LSMS Release 13.2.0.

The audience for this internal 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 split mirror upgrade or installation using an ISO image.

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

1.2 References

1.2.1 External

None

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] Software Upgrade Procedure Template, TM005074, Latest version, Oracle
- [2] TPD Initial Product Manufacture User's Guide, 909-2130-001, Latest revision, Oracle
- [3] LSMS 13.2.1 Maintenance Manual, Latest version, Oracle
- [4] LSMS 13.2.1 Configuration Manual, Latest version, Oracle
- [5] Full Upgrade to LSMS 13.2, Latest Version, Oracle

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 etc.) that comprise the product's software release.

1.4 Acronyms

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

Table 1. Acronyms

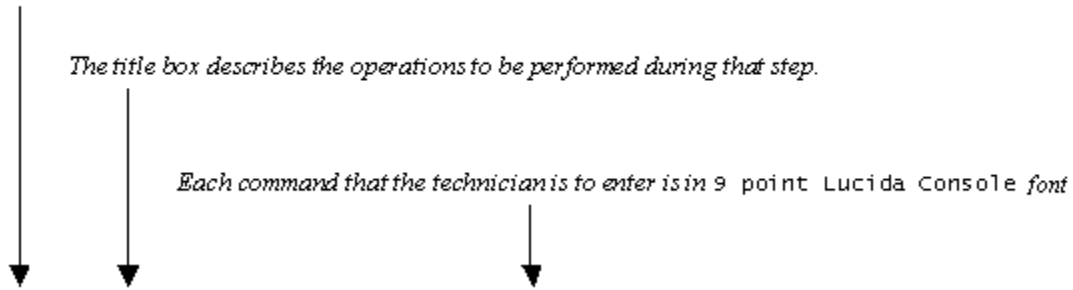
| | |
|----------|---|
| E5-APP-B | E5 Based Application Card |
| GA | General Availability |
| IPM | Initial Product Manufacture |
| LA | Limited Availability |
| LSMS | Local Service Management System |
| OCELAP | Oracle Communications EAGLE LNP Application Processor |
| OCLSMS | Oracle Communication Local Service Management System |
| MPS | Multi-Purpose System |
| NPAC | Number Portability Administration Centre |
| NPI | New Product Introduction |
| NTP | Network Time Protocol |

| | |
|--------|--|
| SCP | Secure Copy |
| SERVDI | Support ELAP Reload Via Database Image |
| SM | Service Module |
| TPD | Tekelec Platform Distribution |
| UTC | Universal Time Coordinated |

1.5 Terminology

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

Each step has a checkbox for every command within the step that the technician should check to keep track of the progress of the procedure.



| | | |
|---|--|---|
| 1 | MPS A: Verify all materials required are present | Materials are listed in Material List (Section 3.1) |
|---|--|---|

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

| | | |
|---|-----------------------------------|-----------|
| 1 | MPS X: Execute syscheck | #syscheck |
|---|-----------------------------------|-----------|

Figure 2: Example of a step that needs to be executed on both MPS A and MPS B server

Other terminology follows.

Table 2. Terminology

| | |
|-------------------------------|--|
| Backout (abort) | The process to take a system back to a Source Release prior to completion of split mirror upgrade to Target release. Includes preservation of databases and system configuration. |
| Split Mirror Upgrade | 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 <i>Asides</i> of the mirrors. The other sides of the mirrors (<i>Bsides</i>) 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 <i>Bsides</i> of the arrays, thus restoring the system to the pre-upgrade state. |
| Non-preserving upgrade | "Upgrade" that does not adhere to the standard goals of software upgrade methodology. The outcome of the execution is that the system is running on the Target Release, however the Source Release database is not preserved. |

| | |
|-----------------------|---|
| 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 split mirror upgrade from. |
| Target release | Software release to split mirror 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 upgrade the server, contact My Oracle Support at least 48 hours before the split mirror upgrade process has been planned to be initiated.** In the event any unexpected results are returned while executing steps in this procedure halt the activity and contact Oracle My Oracle Support for assistance.

Please read the following notes on procedures:

- Any procedure completion times are estimates. Times may vary due to differences in database size, user experience, and user preparation.
- The shaded area within response steps must be verified in order to successfully complete that step.
- Output displayed in the procedures' response steps is presented. Actual output varies depending on system. Output is presented for reference only.
- 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."
- After completing each step and **at each point where data is recorded from the screen, the technician performing the split mirror upgrade must check each step.** A checkbox has been provided beneath each step number for this purpose.
- Captured data is required for future support reference if My Oracle Support is not present during the split mirror upgrade.
- In procedures that require a command to be executed on a specific LSMS, the command is prefaced with "MPS A:" or "MPS B:"
- User Interface menu items displayed in this document were correct at the time the document was published but may appear differently at time that this procedure is executed.

1.7 Requirements

- Screen logging is required throughout the procedure. These logs should be made available to 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 split mirror upgrade of an in-service MPS running the LSMS application from the source release to the target release on **E5-APP-B 02**.

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

Table 3. Install-Upgrade paths

| TPD Release for IPM | LSMS Initial Installation Release |
|-------------------------------------|--|
| 7.4.0.0.0_88.37.0 or later (64-bit) | 13.2.1 |
| Split Mirror Upgrade Source Release | Split Mirror Upgrade Destination Release |
| 13.2.0.x | 13.2.1.y |

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

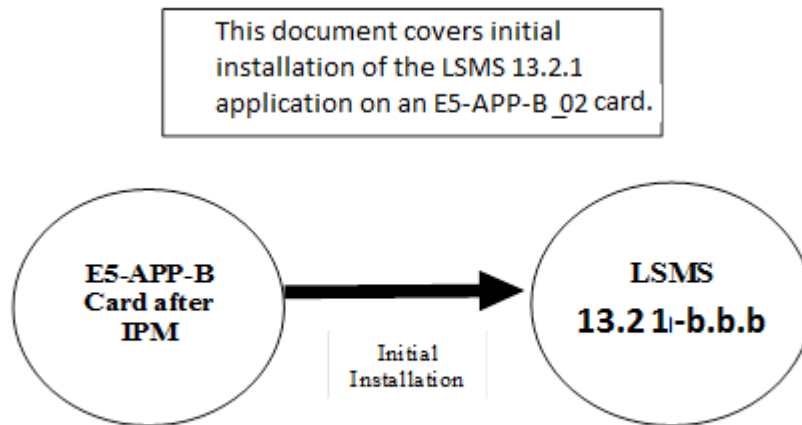


Figure 3: Initial Application Installation Path – Example shown

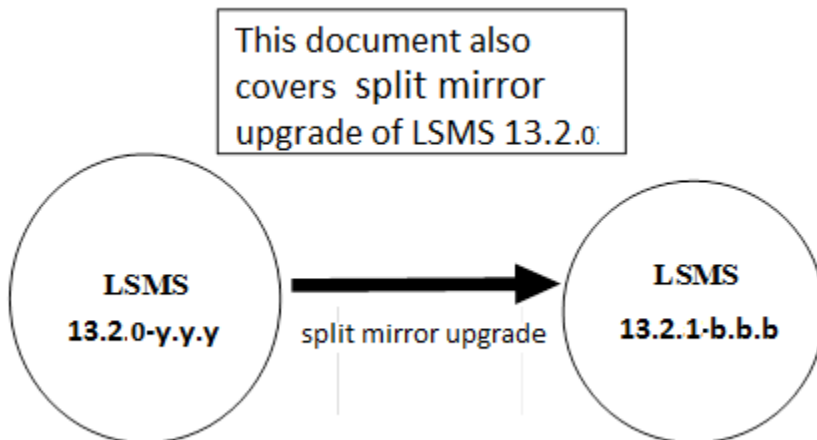


Figure 4: Split Mirror Upgrade Path - LSMS 13.2.1

Note: Same procedure of split mirror upgrade will be followed for all intermediate releases of 13.2.0.

3. INSTALL UPGRADE OVERVIEW

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

3.1 Required Materials

- Target-release TPD-USB media and a target-release LSMS ISO file.
- A terminal and null modem cable to establish a serial connection.

System configuration information like NTP Server IP, App IP, ELAP IP etc. Write down the system configuration information.

App IP: _____

App Gateway: _____

NTP Server IPs: _____

ELAP Server IPs: _____

NPAC Server IPs: _____

Other IPs required: _____

- Passwords for users on the local system:

| LSMS USERS | | |
|-------------------|----------------|----------------|
| login | MPS A password | MPS B password |
| lsmsmgr | | |
| lsmsadm | | |
| root | | |
| mysql dbroot user | | |
| admusr | | |

Table 4: User Password Table

3.2 Installation Phases

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

The following table illustrates the progression of the installation process by procedure with estimated times. The estimated times and the phases that must be completed may vary due to differences in typing ability and system configuration. The phases outlined in Table 5 are to be executed in the order they are listed.

| Phase | Elapsed Time (Minutes) | | Activity | Procedure |
|--------------------------|------------------------|------|--|--|
| | This Step | Cum. | | |
| Connectivity setup | 15 | 15 | Set up connectivity to the MPS Servers. | Procedure 1 |
| Verify install | 5 | 20 | Verify this should be an install. | Procedure 2 |
| Pre-install 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 simultaneously. | Procedure 7 Procedure 8 |

| Phase | Elapsed Time (Minutes) | | Activity | Procedure |
|--|------------------------|------|---|---|
| | This Step | Cum. | | |
| Post-install application processing | 15 | 95 | Perform first time configuration and configure time zone and clock. | Procedure 9 Procedure 10 |
| Network Configuration for LSMS Cards. | 10 | 105 | Perform the Network Configuration on MPS A server. *Note: For Single Subnet Configuration execute Procedure 11 and for Segmented Subnet Configuration execute Procedure 12 . | Procedure 11 OR Procedure 12 |
| Install TMN Toolkit and Marben OSI License Installation | 10 | 115 | Install TMN Toolkit and Marben OSI License | Procedure 13 |
| Starting LSMS services | 10 | 125 | Start LSMS services | Procedure 17 |
| Post-upgrade health check | 5 | 130 | Run the syscheck utility to verify all servers are operationally sound. | Procedure 18 |
| Accept upgrade | 5 | 135 | Accept the upgrade on both sides 1A and 1B. Note: This is not a mandatory procedure but this needs to be executed if further split mirror upgrade is required. | Procedure 24 |
| The following steps only need to be performed on the customer site. | | | | |

Table 5. Installation Phases

3.3 Split Mirror Upgrade Phases

The following table illustrates the progression of the split mirror upgrade process by procedure with estimated times and may vary due to differences in typing ability and system configuration. Split mirror upgrade should be done on Server 1B first and then on Server 1A. The phases outlined in Table 6 are to be executed in the order they are listed.

| Phase | Elapsed Time (Minutes) | | Activity | Procedure |
|--|------------------------|------|---|---------------------|
| | This Step | Cum. | | |
| Connectivity setup | 15 | 15 | Set up connectivity to the MPS servers. | Procedure 1 |
| Verify split mirror upgrade | 5 | 20 | Verify this should be a split mirror upgrade. | Procedure 2 |
| Pre-upgrade check | 15 | 35 | Verify requirements for split mirror upgrade are met. | Procedure 3 |
| Pre-upgrade health check | 5 | 40 | Run the syscheck utility to verify that all servers are operationally sound. | Procedure 4 |
| Pre-upgrade LSMS Node status | 5 | 45 | Run the LSMS Node Status to verify that the server's HA states are operationally sound. | Procedure 14 |
| Split Mirror upgrade on Server B | 30 | 75 | Execute the split mirror upgrade procedure on MPS B. | Procedure 15 |
| Split Mirror upgrade on Server A | 30 | 105 | Execute the split mirror upgrade procedure on MPS A. | Procedure 16 |
| Start LSMS Services | 10 | 115 | Start LSMS Services | Procedure 17 |
| Post-upgrade health check | 5 | 120 | Run the syscheck utility to verify that all servers are operationally sound. | Procedure 18 |
| Accept upgrade on both servers A and B | 5 | 125 | Accept the upgrade on both servers. Note: This is not mandatory procedure. Once Accept Upgrade is executed, backout cannot be performed. | Procedure 24 |

Table 6. Split Mirror Upgrade Phases

3.4 Backout Phases

The following table illustrates the progression of the backout process by procedure with estimated times and may vary due to differences in typing ability and system configuration. The phases outlined in Table 7 are to be executed in the order they are listed.

| Phase | Elapsed Time (Hours or Minutes) | | Activity | Impact | Procedure |
|-----------------------------|---------------------------------|---------|--|---|--|
| | This Step | Cum. | | | |
| Determine state of system | 15-30 | 15-30 | Investigate and determine the state of the LSMS system. | 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 D. |
| Backout MPS B server 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 Servers A and B | 100 | 145-160 | Backout MPS A and B. | | Procedure 20 |
| Post-backout health check | 5 | 150-165 | Run the syscheck utility to verify the MPS server is operationally sound. | Verify that the backout was successful. | Procedure 18 |
| Start LSMS services | 10 | 160-175 | Start LSMS services | | Procedure 17 |

Table 7. Backout Procedure Overview

3.5 Log Files

All commands executed during split mirror upgrade or installation, are logged in the “/var/TKLC/log/upgrade/upgrade.log” file. This log file is automatically initiated when split mirror 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

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 SPPPORT AND ASK FOR UPGRADE ASSISTANCE.

Procedure 1: Setting up the upgrade environment

| | | |
|----------------------------------|---|--|
| S T E P # | This procedure sets up the split mirror upgrade environment. Windows are opened for both the MPS servers. Estimated time: 15 minutes NOTE: Call My Oracle Support for assistance if modem access is the method use for split mirror upgrade. | |
| 1. <input type="checkbox"/> | Verify all materials required are present | Required materials: * Target-release USB or ISO image if software is being provided electronically. * The capability to log into a server, such as a PC with null modem cable for connection to serial port. |
| 2. <input type="checkbox"/> | Establish a connection to MPS A. | If access to the LSMS servers is not available through an IP network, connect to the E5-APP-B card via the serial port as follows: 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. <input type="checkbox"/> | Create a terminal window for MPS A. | Create a terminal window, establish a serial connection to the E5APPB MPS console port ttyS0 with the properties - 115200,N,8,1 and give it a title of "MPS A" |
| 4. <input type="checkbox"/> | 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. <input type="checkbox"/> | MPS A: Login as a root user. | Login: root Password: <root_password> |
| 6. <input type="checkbox"/> | MPS A: Start screen Session. | Execute the following command to start screen and establish a console session with MPS A. # screen -L |
| 7. <input type="checkbox"/> | Establish a connection to MPS B. | If access to the LSMS servers is not available through an IP network, connect to the E5-APP-B card via the serial port as follows: 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. <input type="checkbox"/> | Create a terminal window for MPS B. | Create a terminal window, establish a serial connection to the E5APPB MPS console port ttyS0 with the properties - 115200,N,8,1 and give it a title of "MPS B" |
| 9. <input type="checkbox"/> | MPS B: Enable capture file and verify | Enable the data capture and verify that the data capture file is created at the path specified. |

| | | |
|---------------------------------|-------------------------------------|---|
| | a correspondent file is created. | |
| 10. <input type="checkbox"/> | MPS B: Login as a root user. | Login: root Password: <root_password> |
| 11. <input type="checkbox"/> | MPS B: Start screen Session. | Execute the following command to start screen and establish a console session with MPS B. # screen -L |
| 12. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

Procedure 2 Determine if split mirror upgrade or installation is required

Procedure 2: Determine if split mirror upgrade or installation is required

| | | |
|----------------------------------|--|---|
| S T E P # | This procedure provides instructions to determine if this will be an initial installation or an split mirror upgrade of existing software. Estimated time: 5 minutes | |
| 1. <input type="checkbox"/> | MPS B: Log in as the user "root" | Login: root Password: <root_password> |
| 2. <input type="checkbox"/> | <p>MPS B: Determine if the application is correctly installed on the server.</p> <p>(MPS B will be used to determine the current state of the servers. We will assume the state of the A server is the same.)</p> | <p>Execute an rpm query command and examine the output:</p> <pre># rpm -qi TKLClsms</pre> <pre>[root@lsmspri ~]# rpm -qi TKLClsms Name : TKLClsms Relocations: (not relocatable) Version : 13.30.0 Vendor: Tekelec Release : 13.2.0.0.0_132.6.0 Build Date: wed 13 Apr 2016 01:57:12 PM EDT Install Date: wed 20 Apr 2016 04:20:09 PM EDT Build Host: diablo-9.tekelec.com Group : TKLC/Application Source RPM: TKLClsms- 13.30.0-13.2.0.0.0_132.6.0.src.rpm Size : 217882134 License: © TEKELEC 2004-2016 Signature : (none) Packager : <Open Systems> URL : http://www.tekelec.com/ Summary : Oracle Communications LSMS Package Description : This is the Oracle Communications LSMS Package. The package installs LSMS software. Local Service Management System (LSMS) is a secure and reliable Local Number Portability (LNP) system.</pre> <p>If the output similar to the above example is displayed, then proceed with next step. Otherwise, proceed to step 4.</p> |

Procedure 2: Determine if split mirror upgrade or installation is required

| | | |
|--------------------------------|--|--|
| 3. <input type="checkbox"/> | MPS B: Determine the LSMS release currently installed. | Execute the following command and examine the output <pre># cat /usr/TKLC/lsmc/bin/LSMSversion; ssh mate "cat /usr/TKLC/lsmc/bin/LSMSversion"</pre> <pre>[root@lsmcpr1 root]# cat /usr/TKLC/lsmc/bin/LSMSversion; ssh mate "cat /usr/TKLC/lsmc/bin/LSMSversion"</pre> <pre>13.2.0.0_132.6.0 Tekelec build 2016-04-13-13-49</pre> <pre>13.2.0.0_132.6.0 Tekelec build 2016-04-13-13-49</pre> If the output similar to the above example is displayed, then skip to step 5. |
| 4. <input type="checkbox"/> | MPS B: Initiate an installation if the application is not present on the server | If the application is not currently installed, output similar to the examples 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 no. 3.2 for LSMS installation. <pre># rpm -qi TKLClsmc</pre> <pre>package TKLClsmc is not installed</pre> Skip to step 7. |
| 5. <input type="checkbox"/> | MPS B: Determine which version of the application is present. | If the application is currently installed, get the Release number from step 3. Write down the release level now if this is a split mirror upgrade. Release Level: _____ |
| 6. <input type="checkbox"/> | MPS B: Determine if it is a Full Upgrade or split mirror Upgrade. | If the current release is 13.0.x or 13.1.y and target release is 13.2.z, it is a Full Upgrade. Refer to document [5] for the LSMS FULL UPGRADE procedure, instead of this document. If the current release is 13.2.0 and target release is 13.2.1, it is a Split Mirror Upgrade . |
| 7. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

Procedure 3 Pre-upgrade requirements

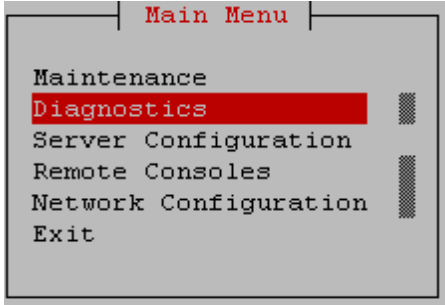
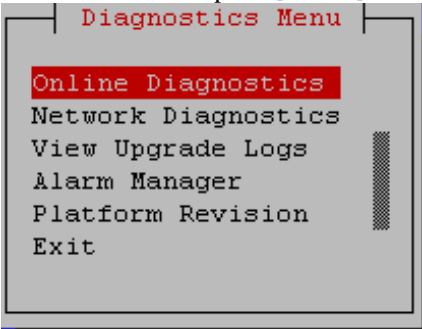
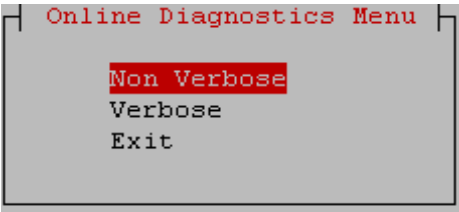
Procedure 3: Verifying Pre-Upgrade Requirements

| | | |
|----------------------------------|--|--|
| S T E P # | This procedure verifies that all pre-upgrade requirements have been met. Estimated time: 15 minutes | |
| 1. <input type="checkbox"/> | MPS X: Verify all required materials are present. | Verify that the materials listed in Split Mirror Upgrade Material List (Section3.1) are present. |
| 2. <input type="checkbox"/> | MPS X: Verify the availability of passwords for MPS systems. | Refer to Table 4 for the list of users. |

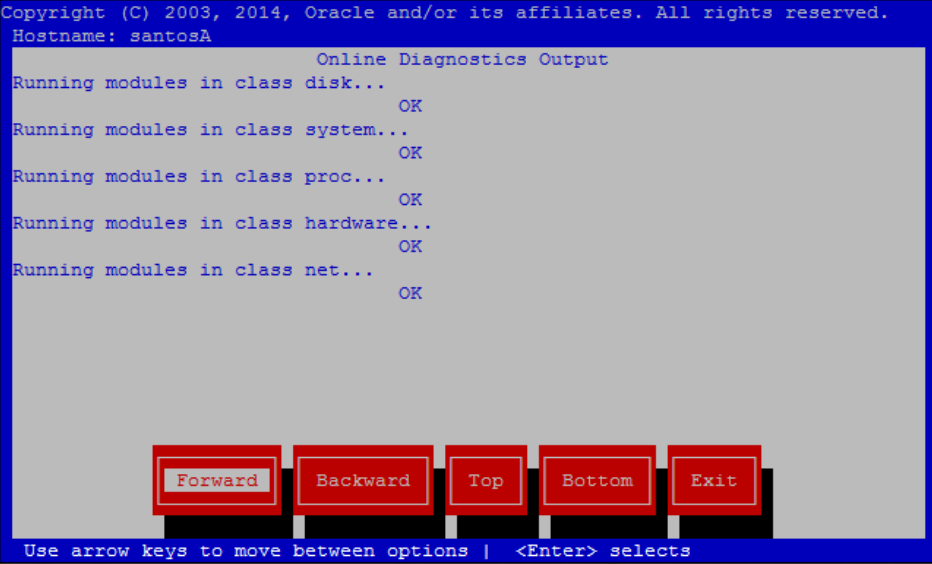
| | | |
|--------------------------------|----------------------------|-----------------------------|
| 3. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |
|--------------------------------|----------------------------|-----------------------------|

Procedure 4 System Health check

Procedure 4: Perform System Health Check

| | | |
|----------------------------------|---|--|
| S T E P # | This procedure performs a system health check on any MPS server. Estimated time: 5 minutes | |
| 1. <input type="checkbox"/> | MPS X: Log in as the root user. | <hostname> console login: root Password: <root_password> |
| 2. <input type="checkbox"/> | MPS X: Execute the platcfg menu. | # su - platcfg |
| 3. <input type="checkbox"/> | MPS X: Select the Diagnostics submenu. | The platcfg Main Menu appears. On the Main Menu , select Diagnostics and press [ENTER].  |
| 4. <input type="checkbox"/> | MPS X: Select the Online Diagnostics submenu. | Select the Online Diagnostics submenu and press [ENTER].  |
| 5. <input type="checkbox"/> | MPS X: Select the Non-Verbose option. | Select the Non-Verbose option and press [ENTER].  |

Procedure 4: Perform System Health Check

| | | |
|---|--|---|
| <p>6.</p> <p><input type="checkbox"/></p> | <p>MPS X: Examine the output of the Online Diagnostics.</p> | <p>Example output shown below. Examine the actual output of the Online Diagnostics.</p>  <pre> Copyright (C) 2003, 2014, Oracle and/or its affiliates. All rights reserved. Hostname: santosA Online Diagnostics Output Running modules in class disk... OK Running modules in class system... OK Running modules in class proc... OK Running modules in class hardware... OK Running modules in class net... OK </pre> |
| <p>7.</p> <p><input type="checkbox"/></p> | <p>MPS X: System Check Successful.</p> <p>System Check Failure.</p> | <p>Exit from the above menu.</p> <p>If the System Check was successful, return to the procedure that you came here from.</p> <p>If the “Server Disk Space Shortage Error” was there in the output, proceed to step 8 to clean up the ‘/’ directory.</p> <p>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 7.2Appendix D.</p> |
| <p>8.</p> <p><input type="checkbox"/></p> | <p>MPS X: Server clean-up to create space.</p> | <p>Execute the following command:</p> <pre># df -h /var/TKLC</pre> <p>The output may look like:</p> <pre>[root@hostname ~]\$ df -h /var/TKLC Filesystem Size Used Avail Use% Mounted on /dev/md7 3.9G 1.2G 2.6G 32% /var/TKLC</pre> <p>Verify that there is at least 600M in the Avail column. If not, clean up files until there is space available.</p> <p>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.</p> <p>Also, execute the following command to check space in ‘/lib/module’ directory.</p> <pre># df -h /lib/modules</pre> <pre>[root@hostname ~]\$ df -h /lib/modules Filesystem Size Used Avail Use% Mounted on /dev/md2 996M 353M 592M 38% /</pre> |

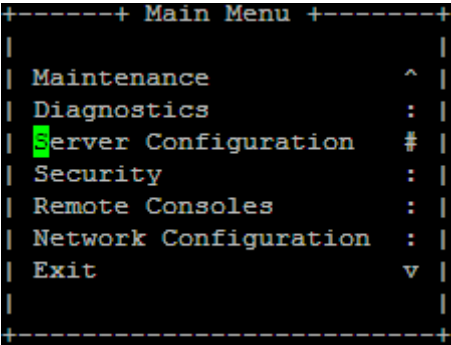
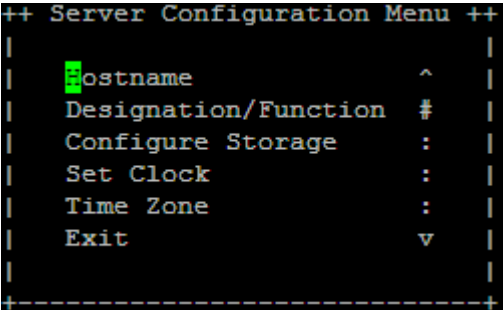
Procedure 4: Perform System Health Check

| | | |
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| | | Verify that the Use% column does not exceed the value 80%. |
| 9. <input type="checkbox"/> | Procedure complete. | This procedure is complete. |

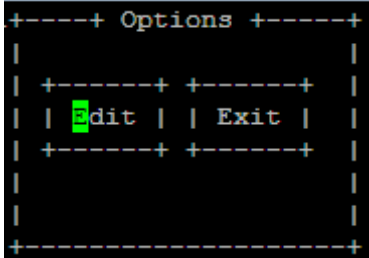
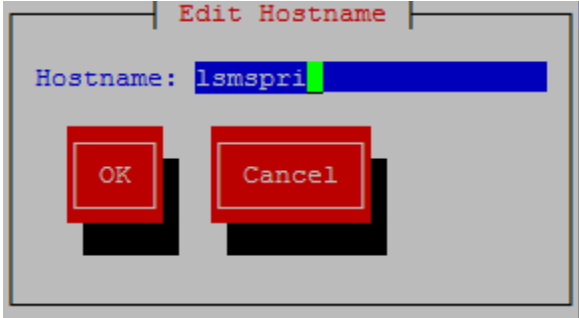
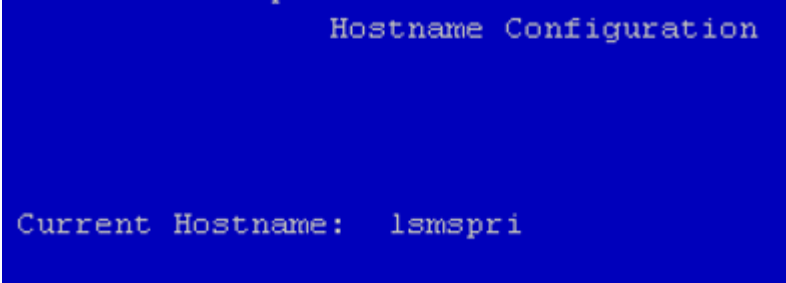
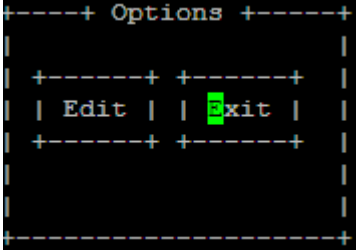
5. SOFTWARE INSTALLATION PROCEDURES

Procedure 5 Pre-Install configuration on server A

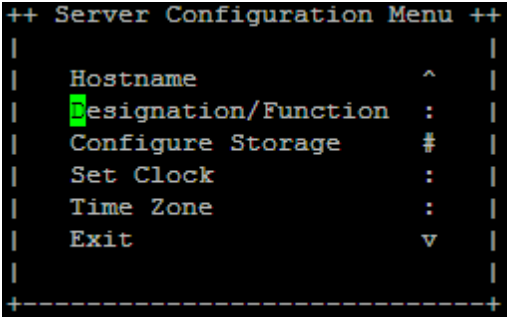
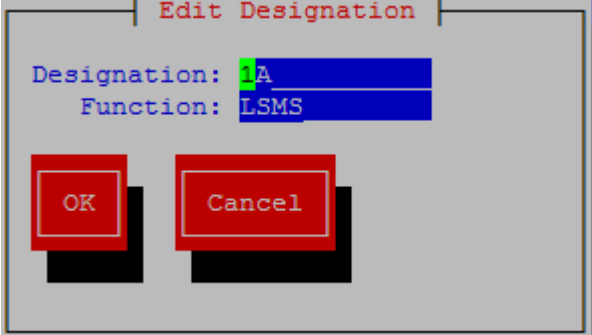
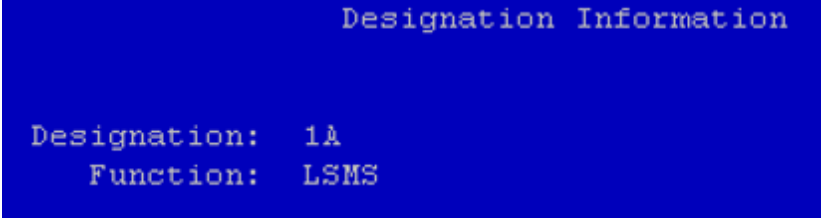
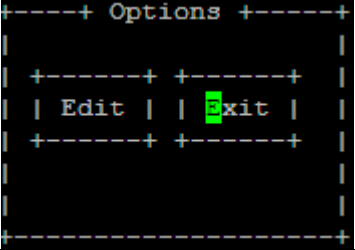
Procedure 5: Pre-Install configuration on server A

| | | |
|---|---|--|
| S T E P # | This procedure provides instructions to perform pre configuration for an initial install of the application. Estimated time: 5 minutes | |
| IMPORTANT: Installation of the Operating System on an Oracle Application Server should be completed before starting installation procedure. Refer to Procedure 26 or [2] for TPD installation guide. | | |
| 1. <input type="checkbox"/> | 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. <input type="checkbox"/> | MPS A: Log in as "admusr" user. | If not already logged in, then login as "admusr": [hostname] consolelogin: admusr password: <admusr_password> |
| 3. <input type="checkbox"/> | MPS A: Start platcfg utility. | \$ sudo su - platcfg |
| 4. <input type="checkbox"/> | MPS A: Select "Server Configuration" Menu | Select Server Configuration and press [ENTER].  <pre> +-----+ Main Menu +-----+ Maintenance ^ Diagnostics : Server Configuration # Security : Remote Consoles : Network Configuration : Exit v +-----+ </pre> |
| 5. <input type="checkbox"/> | MPS A: Navigate to the Hostname screen. | Select Hostname and press[ENTER]  <pre> ++ Server Configuration Menu ++ Hostname ^ Designation/Function # Configure Storage : Set Clock : Time Zone : Exit v +-----+ </pre> |
| 6. <input type="checkbox"/> | MPS A: Change the host name. | Select Edit and press[ENTER] |

Procedure 5: Pre-Install configuration on server A

| | | |
|------------------------------------|---|--|
| | |  <p>Type in the host name. For example change hostname to lsmspri on A server.</p>  <p>Select OK and press [ENTER].</p> <p>Note: While connected to the serial console, some console output might come when the user is using the serial console to configure the LSMS. Those serial output are harmless and can be ignored.</p> <p>Note: Only lsmspri is allowed as hostname for A server</p> |
| <p>7. <input type="checkbox"/></p> | <p>MPS A: Verify that the Hostname is correct then select and press “Exit”.</p> <p>Otherwise repeat the step above.</p> |   |
| <p>8. <input type="checkbox"/></p> | <p>MPS A: Navigate to the Designation Information screen.</p> | <p>Select Designation/Function and press[ENTER]</p> |

Procedure 5: Pre-Install configuration on server A

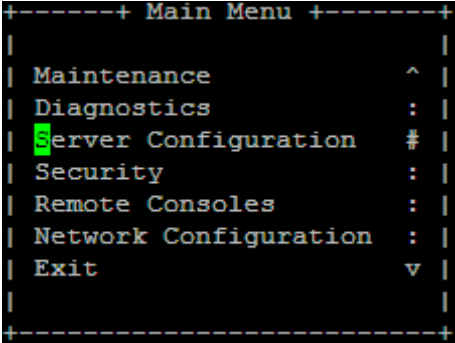
| | | |
|-------------------------------------|--|---|
| | |  <pre> ++ Server Configuration Menu ++ Hostname ^ Designation/Function : Configure Storage # Set Clock : Time Zone : Exit v +-----+ </pre> |
| <p>9. <input type="checkbox"/></p> | <p>MPS A: 1) Select “Edit” from the options dialogue box.</p> <p>2) Set the Designation as “1A” on Server A, Function as “LSMS” and press “OK”.</p> <p>NOTE:</p> <p>Designation and Function should be entered in UPPERCASE.</p> |  |
| <p>10. <input type="checkbox"/></p> | <p>MPS A: Verify that the Designation and Function is correct then select and press “Exit”.</p> <p>Otherwise repeat the step above.</p> |  <pre> Designation Information ----- Designation: 1A Function: LSMS ----- </pre>  <pre> +-----+ Options +-----+ -----+ +-----+ Edit Exit -----+ +-----+ </pre> |
| <p>11. <input type="checkbox"/></p> | <p>MPS A: Exit from platcfg menu</p> <p>NOTE:</p> <p>DO NOT set the time zone in platcfg.</p> | <p>Select EXIT until the platcfg menu is closed and the command line is displayed.</p> |

Procedure 5: Pre-Install configuration on server A

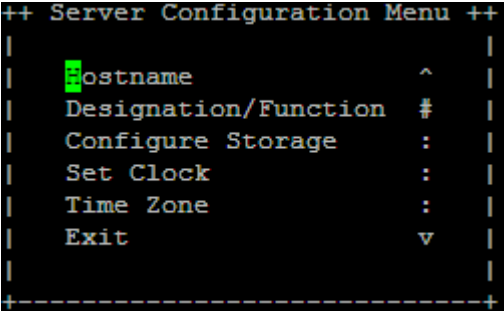
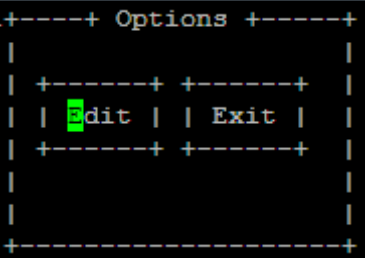
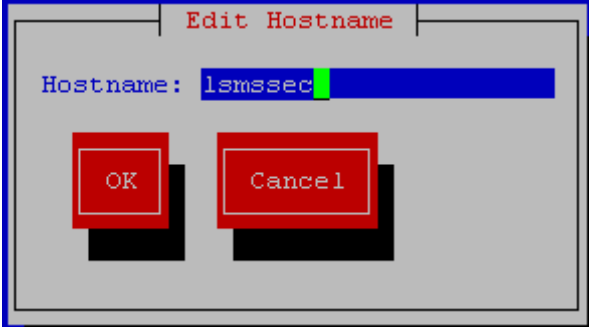
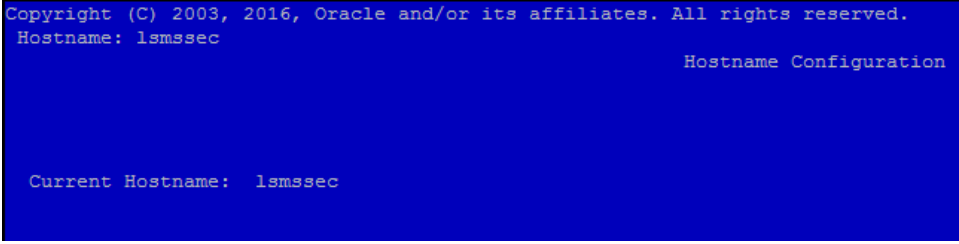
| | | |
|---------------------------------|--|-----------------------------|
| | The time zone will be set later in initial configurations. | |
| 12. <input type="checkbox"/> | Procedure complete. | This procedure is complete. |

Procedure 6 Pre-Install configuration on server B

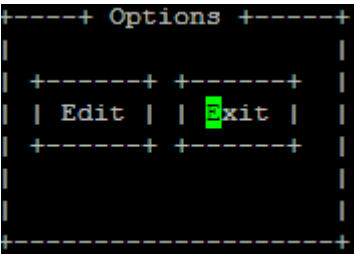
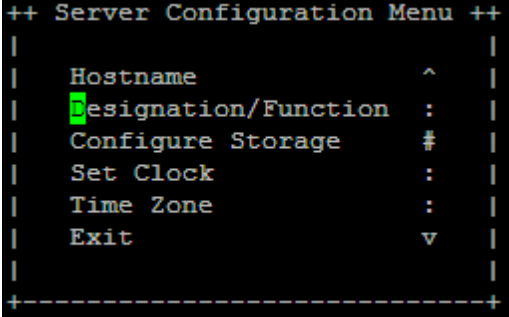
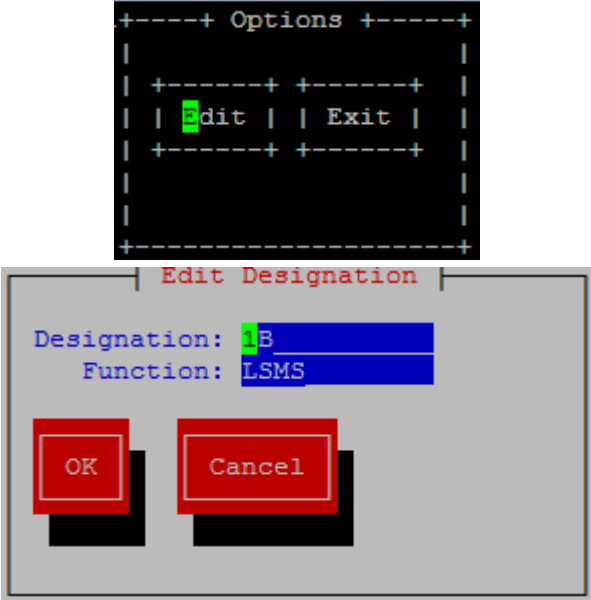
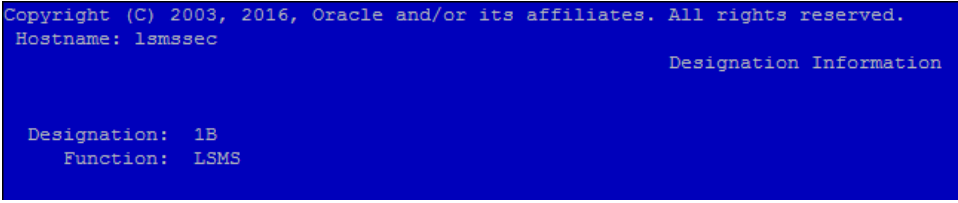
Procedure 6: Pre-Install configuration on server B

| | | |
|--|--|---|
| S T E P # | This procedure provides instructions to perform pre configuration for an initial install of the application. | |
| | Estimated time: 5 minutes | |
| IMPORTANT: Installation of the Operating System on an Oracle Application Server should be completed before starting installation procedure. Refer to Procedure 26. or [2] for TPD installation guide. | | |
| 1. <input type="checkbox"/> | 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 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. <input type="checkbox"/> | MPS B: Log in as "admusr" user. | If not already logged in, then login as "admusr": [hostname] consolelogin: admusr password: <admusr_password> |
| 3. <input type="checkbox"/> | MPS B: Start platcfg utility. | \$sudo su - platcfg |
| 4. <input type="checkbox"/> | MPS B: Navigate to the Server Configuration screen. | Select Server Configuration and press[ENTER]  <pre> +-----+ Main Menu +-----+ Maintenance ^ Diagnostics : Server Configuration # Security : Remote Consoles : Network Configuration : Exit v +-----+ </pre> |
| 5. <input type="checkbox"/> | MPS B: Navigate to the Hostname screen. | Select Hostname and press[ENTER] |

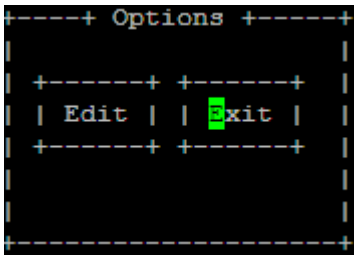
Procedure 6: Pre-Install configuration on server B

| | | |
|------------------------------------|---|--|
| | |  |
| <p>6. <input type="checkbox"/></p> | <p>MPS B: Select Edit to edit the host name.</p> | <p>Select Edit and press [ENTER]</p>  <p>Type in the host name. For example change hostname to lsmssec on B server.</p>  <p>Select OK and press [ENTER].</p> <p>Note: While connected to the serial console, some console output might come when the user is using the serial console to configure the LSMS. Those serial output are harmless and can be ignored. Note: Only lsmssec is allowed as hostname for B server</p> |
| <p>7. <input type="checkbox"/></p> | <p>MPS B: Verify that the Hostname is correct then select and press “Exit”.</p> <p>Otherwise repeat the step above.</p> |  |

Procedure 6: Pre-Install configuration on server B

| | | |
|-------------------------------------|--|---|
| | |  |
| <p>8. <input type="checkbox"/></p> | <p>MPS B: Navigate to the Designation Information screen.</p> | <p>Select Designation/Function and press[ENTER]</p>  |
| <p>9. <input type="checkbox"/></p> | <p>MPS B: 1) Select "Edit" from the options dialogue box.</p> <p>2) Set the Designation as "1B" on Server B, Function as "LSMS" and press "OK".</p> <p>NOTE:</p> <p>Designation and Function should be entered in UPPERCASE.</p> |  |
| <p>10. <input type="checkbox"/></p> | <p>MPS B: Verify that the Designation and Function is correct then select and press "Exit".</p> <p>Otherwise repeat the step above.</p> |  |

Procedure 6: Pre-Install configuration on server B

| | | |
|---------------------------------|---|--|
| | |  |
| 11. <input type="checkbox"/> | <p>MPS B: Exit the platcfg menu</p> <p>NOTE: DO NOT set the time zone in platcfg. The time zone will be set later in initial configurations.</p> | Select EXIT until the platcfg menu is closed and the command line is displayed. |
| 12. <input type="checkbox"/> | Procedure complete. | This procedure is complete. |

Procedure 7 Install Application on server A

Procedure 7: Install Application on server A

| | | |
|--------------------------------|---|---|
| S | This procedure installs the application on the server. | |
| T | Estimated time: 30 minutes | |
| E | | |
| P | | |
| # | NOTE: Application can be installed simultaneously on both A and B servers | |
| 1. <input type="checkbox"/> | MPS A: Install LSMS on 1A. | Perform Procedure in Procedure 22 or copy LSMS 13.2.1 ISO to /var/TKLC/upgrade directory. |
| 2. <input type="checkbox"/> | 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. <input type="checkbox"/> | MPS A: Login prompt is displayed. | <hostname> console login: Note: Hit enter if no login prompt is displayed. |
| 4. <input type="checkbox"/> | MPS A: log in as "admusr" user. | [hostname] console login: admusr password: password |
| 5. <input type="checkbox"/> | MPS A: Start platcfg utility. | \$ sudo su - platcfg |
| 6. <input type="checkbox"/> | MPS A: Early upgrade checks | The platcfg Main Menu appears. On the "Main Menu", select Maintenance and press [ENTER]. |

Procedure 7: Install Application on server A

```
      Main Menu
-----
Maintenance
Diagnostics
Server Configuration
Remote Consoles
Network Configuration
Security
Exit
```

Select the “Upgrade” menu and press [ENTER].

```
      Maintenance Menu
-----
Upgrade
Backup and Restore
View Mail Queues
Restart Server
Save Platform Debug Logs
Exit
```

Select the “Early Upgrade Checks” menu to verify that the system is ready for upgrade.

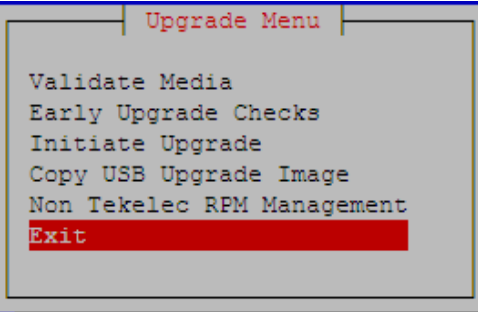
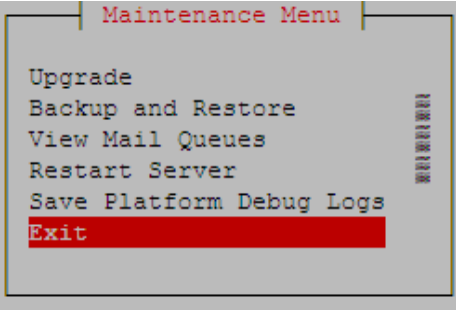
```
      Upgrade Menu
-----
Validate Media
Early Upgrade Checks
Initiate Upgrade
Copy USB Upgrade Image
Non Tekelec RPM Management
Exit
```

Select the desired upgrade media and press [ENTER].

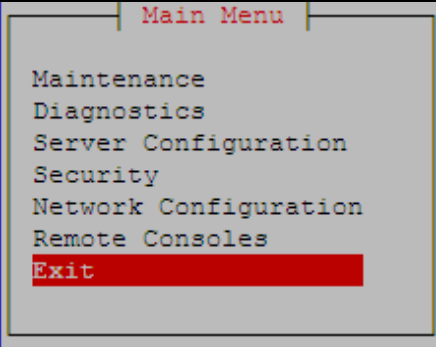
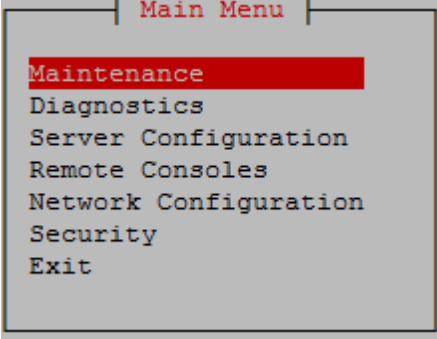
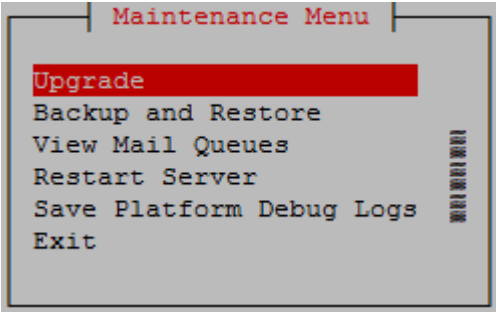
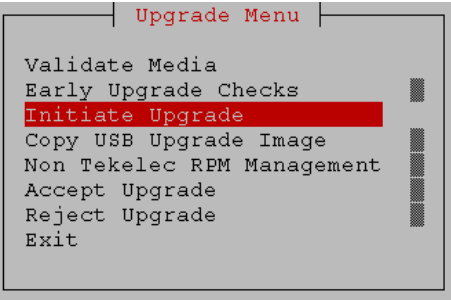
```
      Choose Upgrade Media Menu
-----
LSMS-13.2.1.0.0 132.18.0-x86 64.iso - 13.2.1.0.0 132.18.0
Exit
```

If the Early Upgrade Checks fail due to the ongoing syncing of raid mirrors, then please wait for the disk mirroring to be completed.

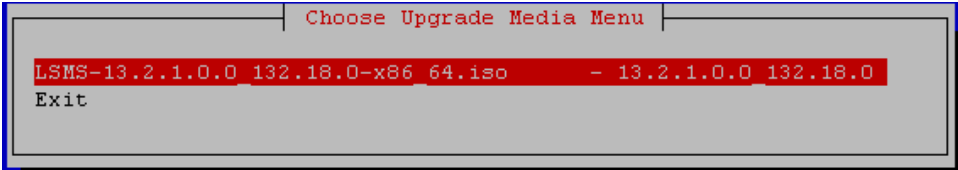
Procedure 7: Install Application on server A

| | | |
|--|--|--|
| | | <pre> 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 [admsr@epappri ~]\$ cat /proc/mdstat Personalities : [raid1] md1 : active raid1 sdb2[1] sda2[0] 262080 blocks super 1.0 [2/2] [UU] md2 : active raid1 sdal[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> </pre> <p>Contact My Oracle Support following the instructions on the 7.2Appendix D, if the early upgrade checks fail due to any other reason.</p> |
| <p>7. <input type="checkbox"/></p> | <p>MPS A: Exit the platcfg menu</p> | <p>Select Exit and press [ENTER] to return to the Maintenance Menu.</p>  <p>Select Exit and press [ENTER] to return to the Main Menu.</p>  <p>Select Exit and press [ENTER]. The “platcfg” utility terminates.</p> |

Procedure 7: Install Application on server A

| | | |
|-------------------------------------|--|---|
| | |  |
| <p>8. <input type="checkbox"/></p> | <p>MPS A: Validate the upgrade media</p> | <p>Perform Procedure 23 to validate the media (typically ISO image).</p> |
| <p>9. <input type="checkbox"/></p> | <p>MPS A: Select the Maintenance submenu</p> <p>Use the “Arrow” and the [ENTER] keys to navigate the Menu options as shown to choose the upgrade media.</p> | <p>The platcfg Main Menu appears.</p> <p>On the Main Menu, select Maintenance and press [ENTER].</p>  |
| <p>10. <input type="checkbox"/></p> | <p>MPS A: Navigate to the Upgrade menu.</p> | <p>Select the Upgrade menu and press [ENTER].</p>  |
| <p>11. <input type="checkbox"/></p> | <p>MPS A: Navigate to the Initiate Upgrade menu</p> | <p>Select the Initiate Upgrade menu and press [ENTER].</p>  |

Procedure 7: Install Application on server A

| | | |
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| <p>12. <input type="checkbox"/></p> | <p>MPS A: Select the Upgrade Media</p> | <p>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].</p>  |
| <p>13. <input type="checkbox"/></p> | <p>MPS A: Upgrade proceeds</p> | <p>The screen displays the following, indicating that the upgrade software is first running the upgrade checks and then proceeding with the upgrade.</p> <pre>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...</pre> <p>Many informational messages appear on the terminal screen as the upgrade proceeds. The messages are not shown here for clarity sake.</p> <p>When installation is complete, the server reboots.</p> |
| <p>14. <input type="checkbox"/></p> | <p>MPS A: Upgrade completed</p> | <p>After the final reboot, the screen displays the login prompt as in the example below.</p> <pre>1503471288: Upstart Job alarmMgr: started ##### 1503471288: Upstart Job tpdProv: started ##### 1503471289: Upstart Job syscheck: started ##### 1503471290: Upstart Job ntdMgr: started ##### Oracle Linux Server release 6.8 Kernel 2.6.32-642.15.1.el6prere17.4.0.0_88.37.0.x86_64 on an x86_64 lsmspri login:</pre> |
| <p>15. <input type="checkbox"/></p> | <p>MPS A: log in as "root" user.</p> | <pre>Login: root Password: <root_password></pre> |
| <p>16. <input type="checkbox"/></p> | <p>MPS A: Check the upgrade logs and warnings.</p> | <pre># grep "Upgrade returned success" /var/TKLC/log/upgrade/upgrade.log 1400786220:: Upgrade returned success!</pre> <p>The expected output is similar to the following:</p> |

Procedure 7: Install Application on server A

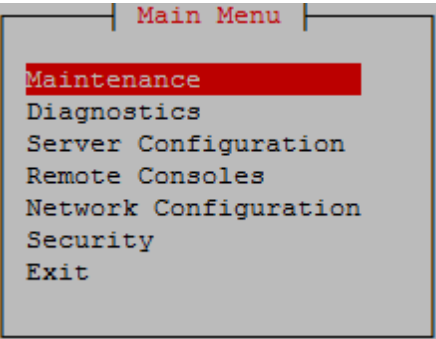
| | | |
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| | | <p>Note: Verify that the message “Upgrade returned success!” is displayed. If it is not, contact the Technical Assistance Center following the instructions on the front page.</p> <pre># grep -i error /var/TKLC/log/upgrade/upgrade.log There should be no error output. # grep -i error /var/TKLC/log/upgrade/ugwrap.log There should be no error output. # grep -i warning /var/TKLC/log/upgrade/upgrade.log The following warning are expected: 1503470805::WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...rearsing xml... 1503470874::WARNING: TKLC\lsms-Config-1.4.7-13.2.1.0.0_132.18.0: Current hostname "lsmssec" being reset to default. 1503470875::WARNING: Hostname not changed because it is the same. 1503470915::warning: user mysql does not exist - using root 1503470915::warning: group mysql does not exist - using root 1503470915::warning: user mysql does not exist - using root 1503470915::warning: group mysql does not exist - using root 1503470915::2017-08-23 02:48:35 0 [warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use --explicit_defaults_for_timestamp server option (see documentation for more details). 1503470916::2017-08-23 02:48:35 31087 [warning] InnoDB: New log files created, LSN=45781 1503470916::2017-08-23 02:48:35 31087 [warning] InnoDB: Creating foreign key constraint system tables. 1503470918::2017-08-23 02:48:37 0 [warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use --explicit_defaults_for_timestamp server option (see documentation for more details). 1503470920::WARNING: Default config file /etc/my.cnf exists on the system 1503470923::WARNING: Could not write to config file /usr/my-new.cnf: Permission denied 1503470923::Installing MySQL system tables...2017-08-23 02:48:42 0 [warning] 'THREAD_CONCURRENCY' is deprecated and will be removed in a future release. 1503470923::2017-08-23 02:48:43 31232 [warning] The option innodb (skip-innodb) is deprecated and will be removed in a future release 1503470923::Filling help tables...2017-08-23 02:48:43 0 [warning] 'THREAD_CONCURRENCY' is deprecated and will be removed in a future release. 1503470923::2017-08-23 02:48:43 31235 [warning] The option innodb (skip-innodb) is deprecated and will be removed in a future release 1503470923::WARNING: Could not copy config file template /usr/share/mysql/my-default.cnf to 1503470923::WARNING: Default config file /etc/my.cnf exists on the system 1503470942::WARNING: A new file was added to xml alarm files...rearsing xml... 1503470942::WARNING: FILE: /usr/TKLC/plat/etc/alarms/lsmsAlarms.xml</pre> |
| 17. | <p>MPSA: <input type="checkbox"/> Verify LSMS release.</p> | <pre># rpm -qi TKLC\lsms</pre> |

Procedure 7: Install Application on server A

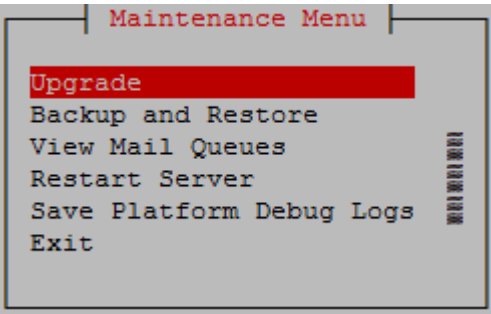
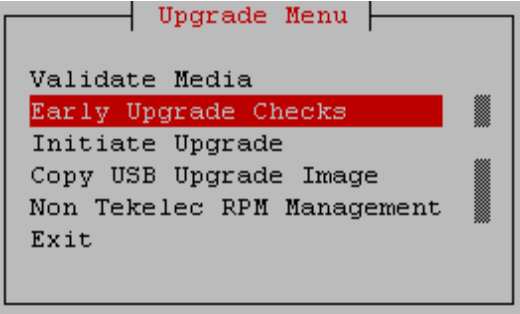
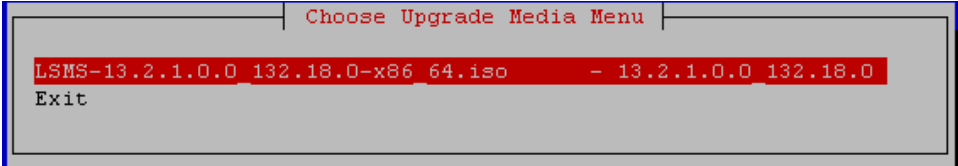
| | | |
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| | | <pre>Name : TKLClsms Relocations: (not relocatable) Version : 13.41.0 Vendor: Tekelec Release : 13.2.1.0.0_132.18.0 Build Date: Thu 27 Jul 2017 06:54:10 PM EDT Install Date: Mon 31 Dec 2001 09:05:42 PM EST Build Host: coach-5.tekelec.com Group : TKLC/Application Source RPM: TKLClsms-13.41.0-13.2.1.0.0_132.18.0.src.rpm Size : 215863815 License: © TEKELEC 2004-2017 Signature : (none) Packager : <Open Systems> URL : http://www.tekelec.com/ Summary : Oracle Communications LSMS Package Description: This is the Oracle Communications LSMS Package. The package installs LSMS software. Local Service Management System (LSMS) is a secure and reliable Local Number Portability (LNP) system.</pre> |
| 18. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

Procedure 8 Install Application on server B

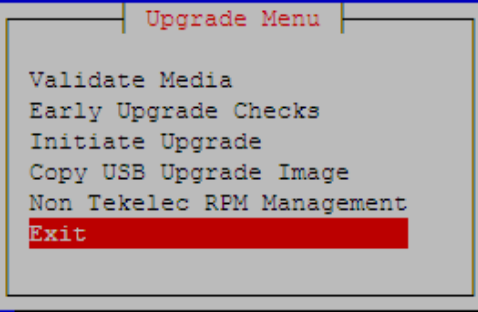
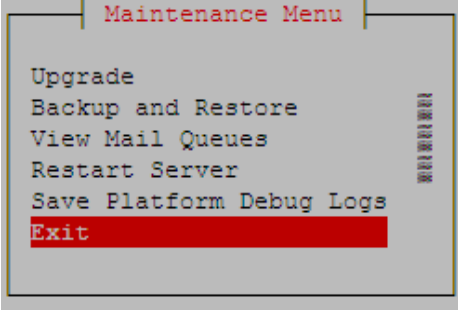
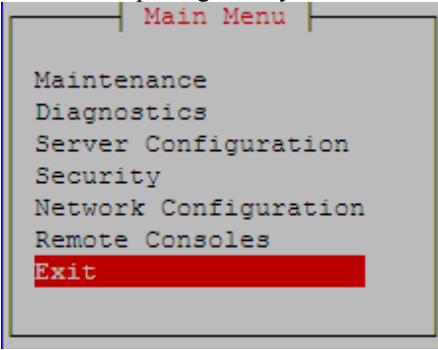
Procedure 8: Install Application on server B

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| S T E P # | This procedure installs the application on the server. | | |
| | Estimated time: 30 minutes | | |
| | 1. <input type="checkbox"/> | MPS B: Install LSMS on 1B. | Perform Procedure 22 or copy LSMS 13.2.1 ISO to /var/TKLC/upgrade directory. |
| | 2. <input type="checkbox"/> | 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. <input type="checkbox"/> | MPS B: Login prompt is displayed. | <hostname> console login: Note: Hit enter if no login prompt is displayed. |
| | 4. <input type="checkbox"/> | MPS B: log in as "admusr" user. | [hostname] consolelogin: admusr password: <admusr_password> |
| | 5. <input type="checkbox"/> | MPS B: Start platcfg utility by logging in as platcfg user. | \$ sudo su - platcfg |
| 6. <input type="checkbox"/> | MPS B: Navigate to the Maintenance Menu | The platcfg Main Menu appears. On the Main Menu , select Maintenance and press [ENTER].  <pre> Main Menu ----- Maintenance Diagnostics Server Configuration Remote Consoles Network Configuration Security Exit </pre> | |

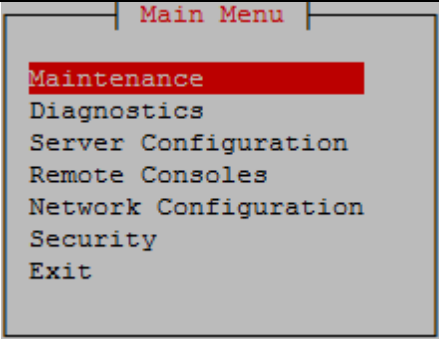
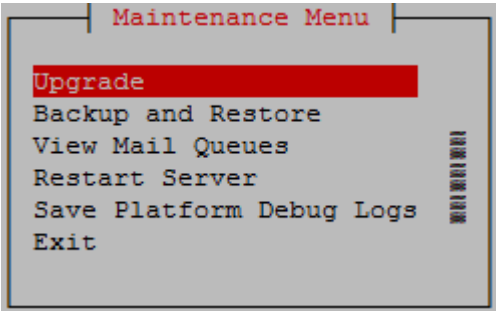
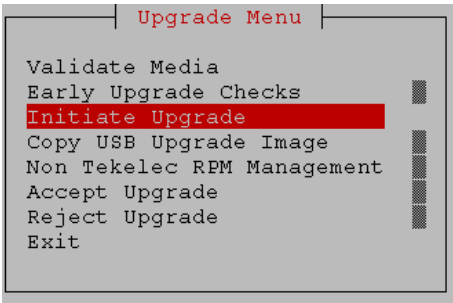
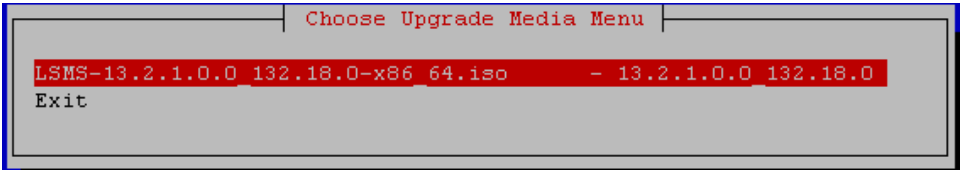
Procedure 8: Install Application on server B

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| <p>7. <input type="checkbox"/></p> | <p>MPS B: Navigate to the Upgrade menu.</p> | <p>Select the Upgrade menu and press [ENTER].</p>  |
| <p>8. <input type="checkbox"/></p> | <p>MPS B: Select Early Upgrade Checks</p> | <p>Select the “Early Upgrade Checks” menu to verify that the system is ready for upgrade.</p>  <p>Select the desired upgrade media and press [ENTER].</p>  <p>If the Early Upgrade Checks fail due to the ongoing syncing of raid mirrors, then please wait for the disk mirroring to be completed.</p> <pre> 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 </pre> |

Procedure 8: Install Application on server B

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| | | <pre>[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></pre> <p>Contact My Oracle Support following the instructions on the 7.2Appendix D, if the early upgrade checks fail due to any other reason.</p> |
| <p>9. <input type="checkbox"/></p> | <p>MPS B: Exit the platcfg menu</p> | <p>Select Exit and press [ENTER] to return to the Maintenance Menu.</p>  <p>Select Exit and press [ENTER] to return to the Main Menu.</p>  <p>Select Exit and press [ENTER]. The “platcfg” utility terminates.</p>  |
| <p>10. <input type="checkbox"/></p> | <p>MPS B: Validate the upgrade media</p> | <p>Perform Procedure 23 to validate the media (typically ISO image).</p> |
| <p>11. <input type="checkbox"/></p> | <p>MPS B: Select the Maintenance submenu</p> | <p>The platcfg Main Menu appears. On the Main Menu, select Maintenance and press [ENTER].</p> |

Procedure 8: Install Application on server B

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| | |  <p>Main Menu</p> <ul style="list-style-type: none"> Maintenance Diagnostics Server Configuration Remote Consoles Network Configuration Security Exit |
| <p>12. <input type="checkbox"/></p> | <p>MPS B: Navigate to the Upgrade menu.</p> | <p>Select the Upgrade menu and press [ENTER].</p>  <p>Maintenance Menu</p> <ul style="list-style-type: none"> Upgrade Backup and Restore View Mail Queues Restart Server Save Platform Debug Logs Exit |
| <p>13. <input type="checkbox"/></p> | <p>MPS B: Navigate to the Initiate Upgrade menu</p> | <p>Select the Initiate Upgrade menu and press [ENTER].</p>  <p>Upgrade Menu</p> <ul style="list-style-type: none"> Validate Media Early Upgrade Checks Initiate Upgrade Copy USB Upgrade Image Non Tekelec RPM Management Accept Upgrade Reject Upgrade Exit |
| <p>14. <input type="checkbox"/></p> | <p>MPS B: Select the Upgrade Media</p> | <p>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].</p>  <p>Choose Upgrade Media Menu</p> <ul style="list-style-type: none"> LSMS-13.2.1.0.0 132.18.0-x86 64.iso - 13.2.1.0.0 132.18.0 Exit |
| <p>15. <input type="checkbox"/></p> | <p>MPS B: Upgrade proceeds</p> | <p>The screen displays the following, indicating that the upgrade software is first validating the media, and then proceeding with the upgrade.</p> |

Procedure 8: Install Application on server B

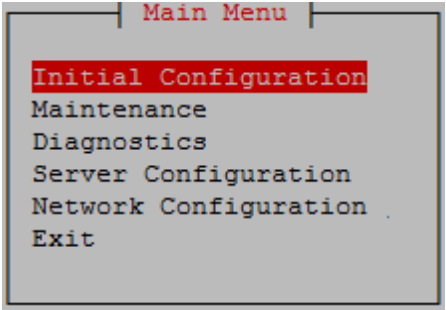
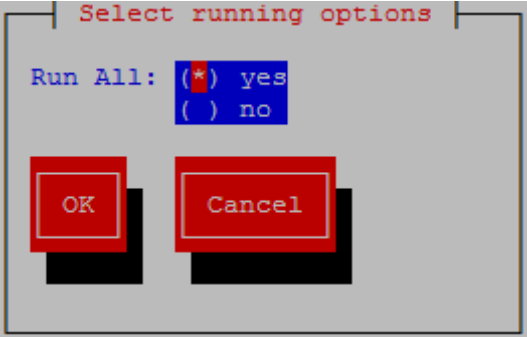
| | | |
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| | | <pre>No Application installed yet.. Skip alarm check! Verified all raid mirrors are synced. Early Upgrade Checks Have Passed! Early Upgrade Checks finished at 1447429031 Initializing upgrade information...</pre> <p>Many informational messages appear on the terminal screen as the upgrade proceeds. The messages are not shown here for clarity sake.</p> <p>When installation is complete, the server reboots.</p> |
| <p>16. <input type="checkbox"/></p> | <p>MPS B: Upgrade completed</p> | <p>After the final reboot, the screen displays the login prompt as in the example below.</p> <pre>1503471288: Upstart Job alarmMgr: started ##### 1503471288: Upstart Job tpdProv: started ##### 1503471289: Upstart Job syscheck: started ##### 1503471290: Upstart Job ntdMgr: started ##### Oracle Linux Server release 6.8 Kernel 2.6.32-642.15.1.el6prere17.4.0.0_88.37.0.x86_64 on an x86_64 lsmssec login:</pre> |
| <p>17. <input type="checkbox"/></p> | <p>MPS B: log in as “root” user.</p> | <pre>Login: root Password: <root_password></pre> |
| <p>18. <input type="checkbox"/></p> | <p>MPS B: Check the upgrade logs and warnings.</p> | <pre># grep "Upgrade returned success" /var/TKLC/log/upgrade/upgrade.log The expected output is similar to the following: 1400786220:: upgrade returned success!</pre> <p>Note: Verify that the message “Upgrade returned success!” is displayed. If it is not, contact the Technical Assistance Center following the instructions on the front page.</p> <pre># grep -i error /var/TKLC/log/upgrade/upgrade.log Only below error should be observed: 1503473419::ERROR: Command returned non-zero exit code 768 (/sbin/service TKLCpldhcp start)</pre> <pre># grep -i error /var/TKLC/log/upgrade/ugwrap.log There should be no error output.</pre> <pre># grep -i warning /var/TKLC/log/upgrade/upgrade.log The following warning are expected: 1503470805::WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...reparsing xml...</pre> |

Procedure 8: Install Application on server B

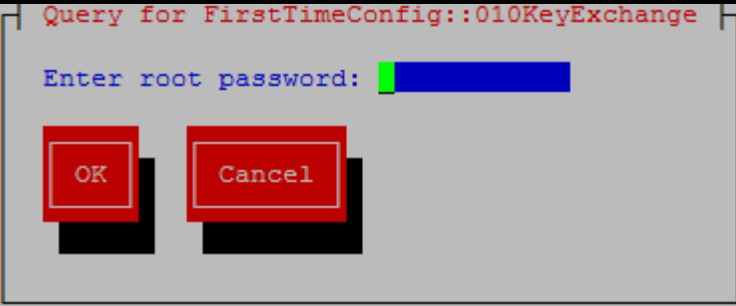
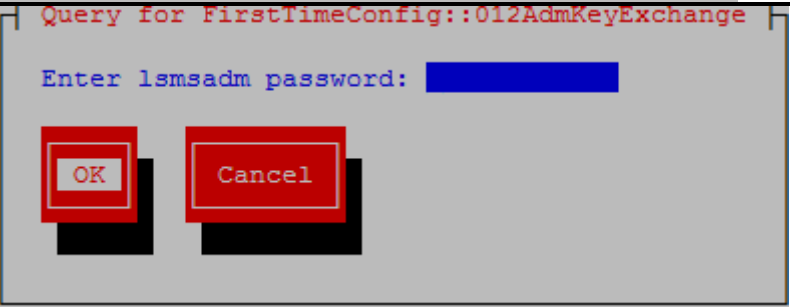
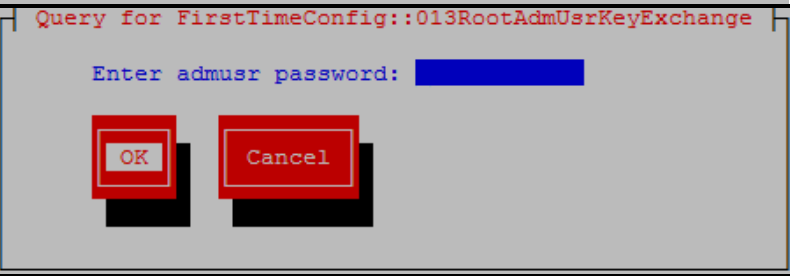
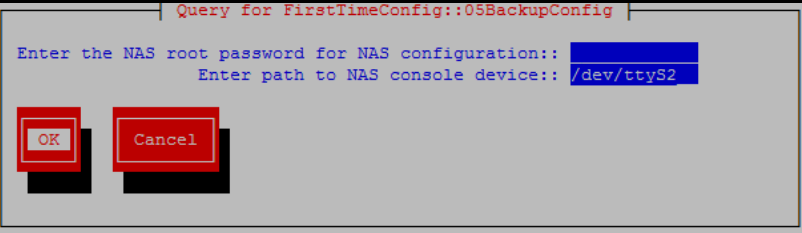
| | | |
|--|---|--|
| | | <pre> 1503470874::WARNING: TKLClsms-Config-1.4.7-13.2.1.0.0_132.18.0: Current hostname "lsmssec" being reset to default. 1503470875::WARNING: Hostname not changed because it is the same. 1503470915::warning: user mysql does not exist - using root 1503470915::warning: group mysql does not exist - using root 1503470915::warning: user mysql does not exist - using root 1503470915::warning: group mysql does not exist - using root 1503470915::2017-08-23 02:48:35 0 [warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use -- explicit_defaults_for_timestamp server option (see documentation for more details). 1503470916::2017-08-23 02:48:35 31087 [warning] InnoDB: New log files created, LSN=45781 1503470916::2017-08-23 02:48:35 31087 [warning] InnoDB: Creating foreign key constraint system tables. 1503470918::2017-08-23 02:48:37 0 [warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use -- explicit_defaults_for_timestamp server option (see documentation for more details). 1503470920::WARNING: Default config file /etc/my.cnf exists on the system 1503470923::WARNING: Could not write to config file /usr/my- new.cnf: Permission denied 1503470923::Installing MySQL system tables...2017-08-23 02:48:42 0 [warning] 'THREAD_CONCURRENCY' is deprecated and will be removed in a future release. 1503470923::2017-08-23 02:48:43 31232 [warning] The option innodb (skip-innodb) is deprecated and will be removed in a future release 1503470923::Filling help tables...2017-08-23 02:48:43 0 [warning] 'THREAD_CONCURRENCY' is deprecated and will be removed in a future release. 1503470923::2017-08-23 02:48:43 31235 [warning] The option innodb (skip-innodb) is deprecated and will be removed in a future release 1503470923::WARNING: Could not copy config file template /usr/share/mysql/my-default.cnf to 1503470923::WARNING: Default config file /etc/my.cnf exists on the system 1503470942::WARNING: A new file was added to xml alarm files...reparsing xml... 1503470942::WARNING: FILE: /usr/TKLC/plat/etc/alarms/lsmsAlarms.xml </pre> |
| <p>19.</p> <p><input type="checkbox"/></p> | <p>MPSB:</p> <p>Verify LSMS release.</p> | <pre> # rpm -qi TKLClsms Name : TKLClsms Relocations: (not relocatable) Version : 13.41.0 Vendor: Tekelec Release : 13.2.1.0.0_132.18.0 Build Date: Thu 27 Jul 2017 06:54:10 PM EDT Install Date: Mon 31 Dec 2001 09:05:42 PM EST Build Host: coach-5.tekelec.com Group : TKLC/Application Source RPM: TKLClsms-13.41.0-13.2.1.0.0_132.18.0.src.rpm Size : 215863815 License: © TEKELEC 2004-2017 Signature : (none) Packager : <Open Systems> URL : http://www.tekelec.com/ Summary : Oracle Communications LSMS Package Description: This is the Oracle Communications LSMS Package. The package installs LSMS software. Local Service Management System (LSMS) is a secure and reliable Local Number Portability (LNP) system. </pre> |
| <p>20.</p> <p><input type="checkbox"/></p> | <p>Procedure Complete.</p> | <p>This procedure is complete.</p> |

Procedure 9 Post-Initial Application Processing

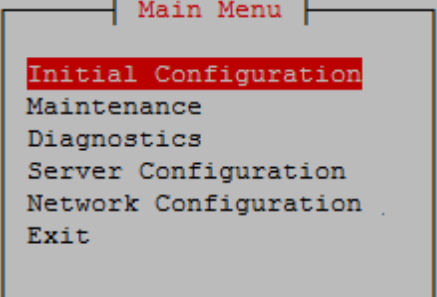
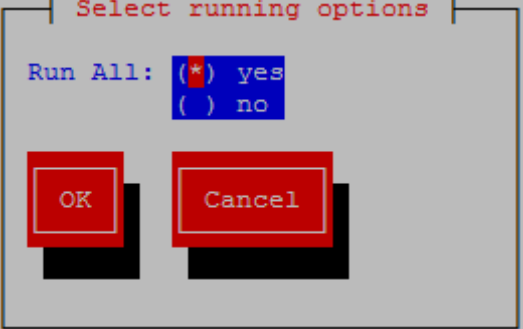
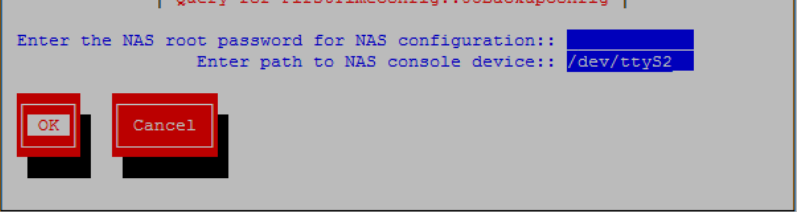
Procedure 9: Post-Initial Application Processing

| | | |
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| S T E P # | This procedure performs the post-install activity required by the LSMS application. Estimated time: 10 minutes NOTE: This procedure should not be completed if this is an split mirror upgrade. This procedure is only for initial installations of the application. | |
| 1. <input type="checkbox"/> | MPS A: Log in to the server as the user "root". | Login: root Password: <root_password> |
| 2. <input type="checkbox"/> | MPS A: Start lsmsmgr utility by logging in as lsmsmgr user | #su - lsmsmgr |
| 3. <input type="checkbox"/> | MPS A: Check serial connection with NAS is working fine | #minicom nas Press CTRL-A Z for help on special keys Oracle Linux Server release 6.7 Kernel 2.6.32-573.26.1.el6prere17.0.3.0.0_86.46.0.x86_64 on an x86_64 The IPM FAILED on this server. Run verifyIPM for details. hostname702eb88fb7e4 login: Check serial connection if this screen is not displayed |
| 4. <input type="checkbox"/> | MPS A: Select "Initial Configuration" |  <p>The screenshot shows a terminal window titled "Main Menu" with the following options: Initial Configuration (highlighted in red), Maintenance, Diagnostics, Server Configuration, Network Configuration, and Exit.</p> |
| 5. <input type="checkbox"/> | MPS A: Select "yes" Select OK and press [ENTER] |  <p>The screenshot shows a terminal window titled "Select running options" with the following text: "Run All: (*) yes" and "() no". Below the text are two red buttons labeled "OK" and "Cancel".</p> |
| 6. <input type="checkbox"/> | MPS A: | |

Procedure 9: Post-Initial Application Processing

| | | |
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| | <p>Enter password for “root”</p> <p>Select OK and press [ENTER]</p> |  |
| <p>7. <input type="checkbox"/></p> | <p>MPS A:</p> <p>Enter password for “lsmsadm”</p> <p>Select OK and press [ENTER]</p> |  |
| <p>8. <input type="checkbox"/></p> | <p>MPS A:</p> <p>Enter password for “lsmsadm”</p> <p>Select OK and press [ENTER]</p> |  |
| <p>9. <input type="checkbox"/></p> | <p>MPS A:</p> <p>Enter the NAS password used to login into NAS console. Accept the default serial port (ttyS2) when prompted for the path to the NAS console device.</p> <p>Select OK and press [ENTER]</p> |  |
| <p>10. <input type="checkbox"/></p> | <p>MPS A: Successful Key Exchange</p> | <p>A message is displayed indicating the root Key Exchange was successful.</p> <p>A message is displayed indicating the lsmsadm Key Exchange was successful.</p> <p>A message is displayed indicating the admusr Key Exchange was successful.</p> <p>A message is displayed indicating the Time Synchronization was successful.</p> <p>A message is displayed indicating the Database creation was successful.</p> <p>A message is displayed indicating the NAS Backup Configuration was successful.</p> <p>A message is displayed indicating the inhibiting of node was successful.</p> <p>Select Exit and press [ENTER] repeatedly to exit lsmsmgr</p> |

Procedure 9: Post-Initial Application Processing

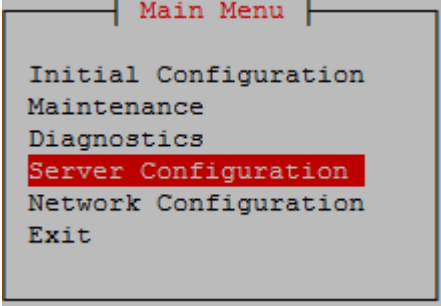
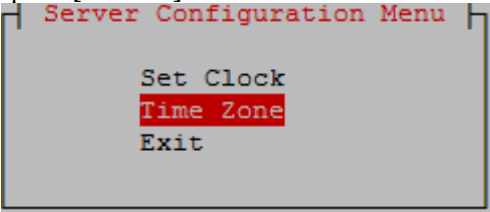
| | | |
|---------------------------------|--|--|
| 11. <input type="checkbox"/> | MPS A: Switch to mate | # ssh mate |
| 12. <input type="checkbox"/> | MPS B: Start lsmsmgr | # su - lsmsmgr |
| 13. <input type="checkbox"/> | MPS B: Select “Initial Configuration” |  <p>The screenshot shows a terminal window titled "Main Menu" with the following text: "Initial Configuration" (highlighted in red), "Maintenance", "Diagnostics", "Server Configuration", "Network Configuration", and "Exit".</p> |
| 14. <input type="checkbox"/> | MPS B: Select “yes” Select OK and press [ENTER] |  <p>The screenshot shows a terminal window titled "Select running options" with the text: "Run All: (*) yes" and "() no". Below the text are two red buttons labeled "OK" and "Cancel".</p> |
| 15. <input type="checkbox"/> | MPS B: Enter the NAS password used to login into NAS console. Select OK and press [ENTER] |  <p>The screenshot shows a terminal window titled "Query for FirsttimeConfig::USBackupConfig" with the text: "Enter the NAS root password for NAS configuration::" (with a redacted password) and "Enter path to NAS console device:: /dev/ttyS2". Below the text are two red buttons labeled "OK" and "Cancel".</p> |
| 16. | MPS B: Database Creation and NAS Backup Configuration | A message is displayed indicating the Database creation was successful. A message is displayed indicating the NAS Backup Configuration was successful. Select Exit and press [ENTER] repeatedly to exit lsmsmgr |
| 17. <input type="checkbox"/> | MPS B: Log into the LSMS B server via minicom. | # minicom mate |
| 18. <input type="checkbox"/> | MPS A: Perform init 6 to reboot the LSMS B card. | # init 6 Watch for errors during boot process. When the login prompt is displayed, exit from minicom. |
| 19. <input type="checkbox"/> | MPS A: Log into the LSMSA server via minicom. | # minicom mate |

Procedure 9: Post-Initial Application Processing

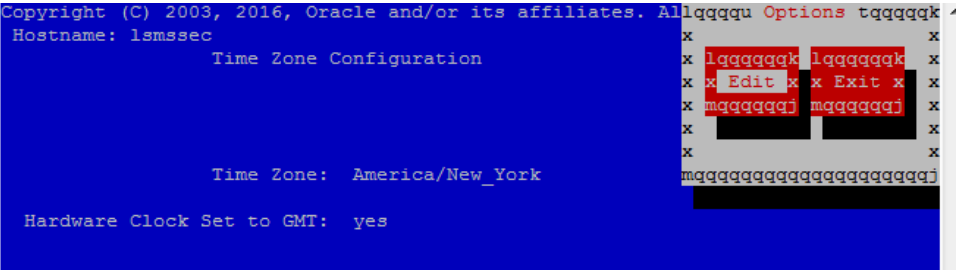

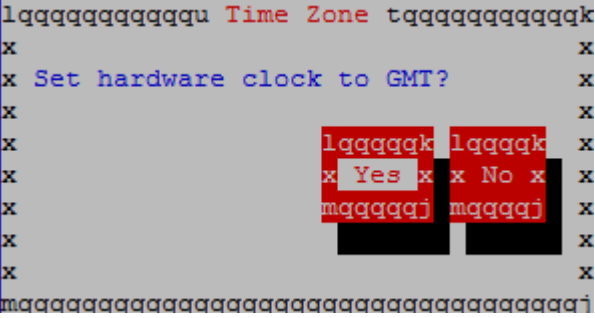
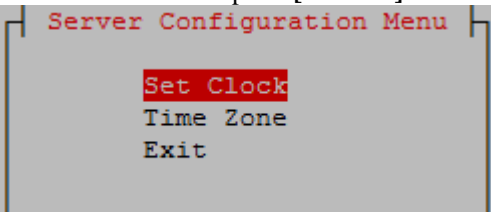
| | | |
|---------------------------------|--|--|
| | | |
| 20. <input type="checkbox"/> | MPS B: Perform init 6 to reboot the LSMS A card. | # init 6 Watch for errors during boot process. When the login prompt is displayed, exit from minicom. |
| 21. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

Procedure 10 Configure Time zone and clock

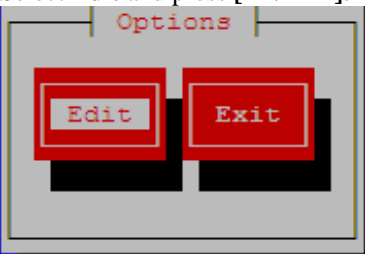
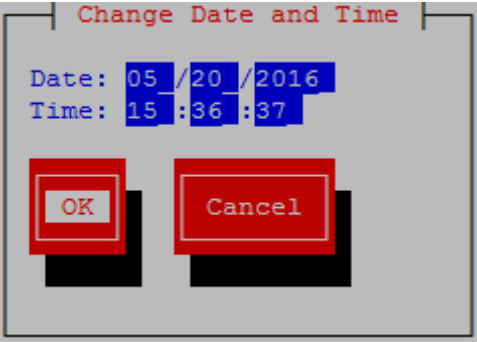
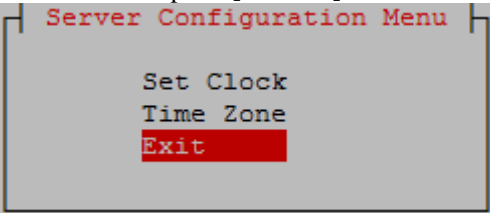
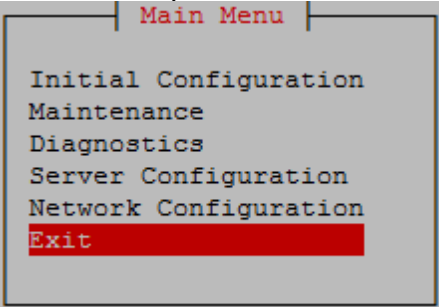
Procedure 10: Configure Time Zone and Clock

| | | |
|----------------------------------|---|---|
| S T E P # | This procedure configures the time zone and clock. Estimated time: 5 minutes | |
| 1. <input type="checkbox"/> | MPS X: Log in to the server as the user "root". | Login: root Password: <root_password> |
| 2. <input type="checkbox"/> | MPSX: Start lsmsmgr utility by logging in as lsmsmgr user. | # su - lsmsmgr |
| 3. <input type="checkbox"/> | MPSX:: Verify time zone. | <p>Select Server Configuration and press [ENTER].</p>  <p>Select Time Zone and press [ENTER].</p>  <p>The screen shows the current time zone setting.</p> |

Procedure 10: Configure Time Zone and Clock

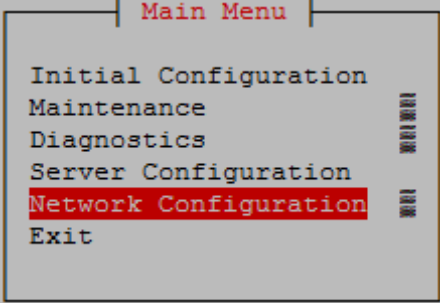
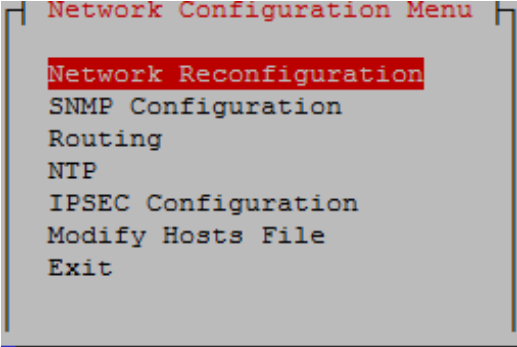
| | | |
|------------------------------------|---------------------------------------|--|
| | |  <p>Copyright (C) 2003, 2016, Oracle and/or its affiliates. All rights reserved. Options tqqqqqk Hostname: lsmssec Time Zone Configuration Time Zone: America/New_York Hardware Clock Set to GMT: yes</p> |
| <p>4. <input type="checkbox"/></p> | <p>MPSX: Change time zone.</p> | <p>Select appropriate time zone and press [ENTER].</p>  <p>lqqqqqqq Select Time Zone Menu tqqqqqqk x America/Mazatlan x x America/Mendoza a x x America/Menominee a x x America/Merida a x x America/Metlakatla a x x America/Mexico_City x x America/Miquelon a x x America/Moncton a x x America/Monterrey a x x America/Montevideo a x x America/Montreal a x x America/Montserrat a x x America/Nassau a x x America/New York a x x America/Nipigon a x x America/Nome a x x America/Noronha x x x mqqqqqqqj</p> <p>Select Yes to set the hardware clock to GMT and press [ENTER].</p>  <p>lqqqqqqqqqqq Time Zone tqqqqqqqqqqk x Set hardware clock to GMT? x x lqqqqqk lqqqqk x x x Yes x x No x x x mqqqqqqj mqqqqqj x x x x x mqqqqqqqqqqqj</p> |
| <p>5. <input type="checkbox"/></p> | <p>MPS X: Set clock.</p> | <p>Select Set Clock and press [ENTER].</p>  <p>Server Configuration Menu Set Clock Time Zone Exit</p> |

Procedure 10: Configure Time Zone and Clock

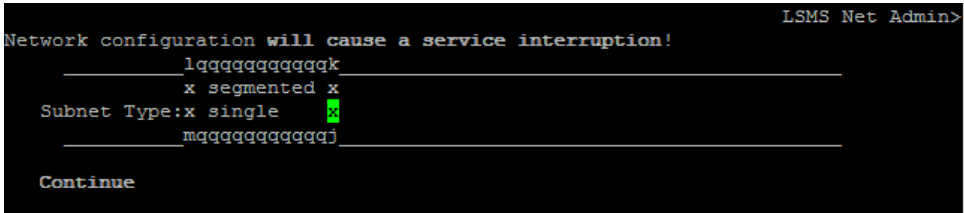
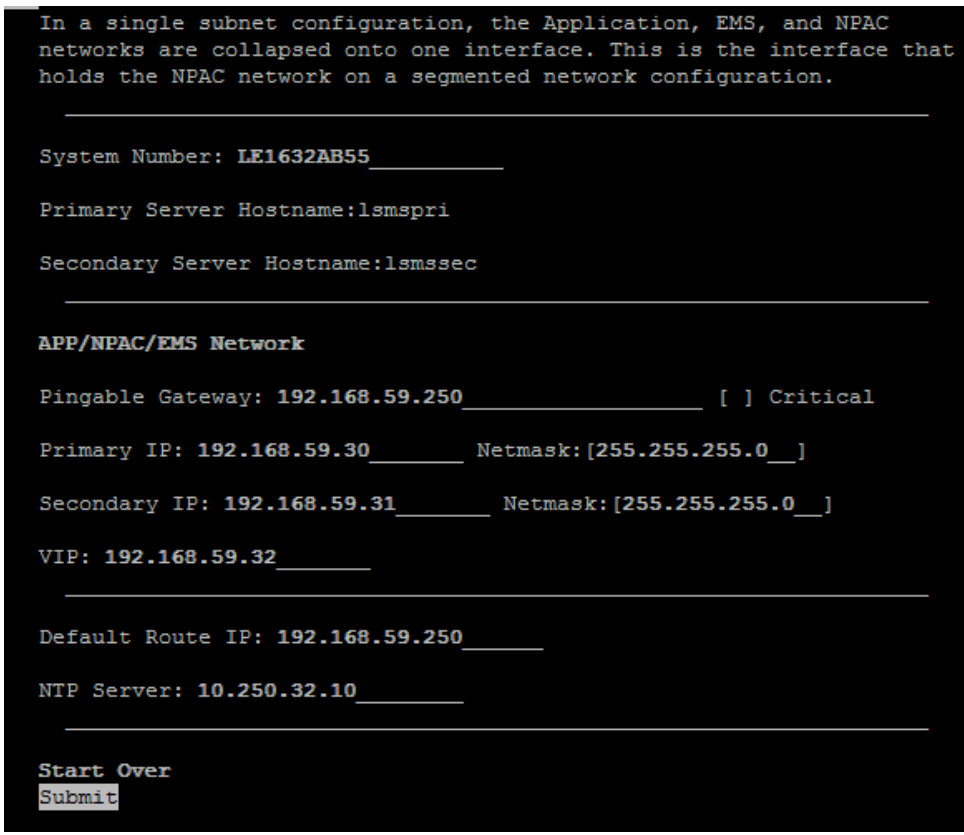
| | | |
|------------------------------------|--|--|
| | | <p>Select Edit and press [ENTER].</p>  <p>Enter correct time.</p>  <p>Use right arrow to get to OK and press [ENTER].</p> |
| <p>6. <input type="checkbox"/></p> | <p>MPS X: Exit the Ismsmgr menu</p> | <p>Select Exit and press [ENTER] to return to the Main Menu.</p>  <p>Select Exit and press [ENTER]. The “Ismsmgr” utility terminates.</p>  |
| <p>7. <input type="checkbox"/></p> | <p>Procedure Complete.</p> | <p>This procedure is complete.</p> |

Procedure 11 Single Subnet Network Configuration

Procedure 11: Single Subnet Network Configuration

| | | |
|----------------------------------|---|--|
| S T E P # | This procedure configures the system as single subnet at the customer site. Estimated time: 10 minutes | |
| 1. <input type="checkbox"/> | MPSA: Log in to the server as the user "root". | Login: root Password: <root_password> |
| 2. <input type="checkbox"/> | MPS A: Start lsmsmgr utility as lsmsmgr user. | # su - lsmsmgr |
| 3. <input type="checkbox"/> | MPS A: Change the network configuration | <p>Select Network Configuration and press [ENTER].</p>  <p>Select Network Reconfiguration and press [ENTER].</p>  <p>Select Yes to proceed to Network configuration.</p> <pre> lqqqqqqqqqqqqqqqqqqqqqq Network Reconfiguration tqqqqqqqqqqqqqqqqqqqqqq x x x WARNING: This action is service impacting. Are you sure? x x x x x x x x x x x x x x x x x x x mqq </pre> <p>A lynx driven screen will appear with the following prompt;</p> <p>Do you want to execute "/usr/TKLC/lsmstools/lsmstnetAdm-bin/lsmstnetadm.cgi"?</p> |

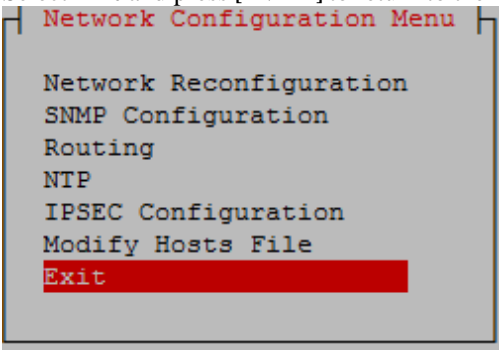
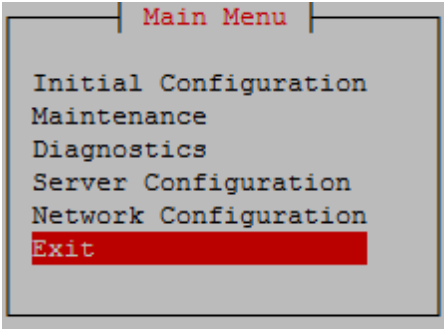
Procedure 11: Single Subnet Network Configuration

| | | |
|------------------------------------|--|--|
| | | <p>Type “Y/y” to continue and the next screen will appear and press the right arrow key to follow the link</p> <p>Select Single from the Subnet Type menu and then select Continue.</p>  |
| <p>4. <input type="checkbox"/></p> | <p>MPS A: Enter network values.</p> | <p>Using the up and down arrows, scroll through the text fields, entering the desired values (to enter the netmask, highlight the field and then use the enter key or right arrow key to display the dropdown menu, choose the desired value from the list) for each fields:</p>  <p>Once the values are entered press the down arrow to select the “Submit” button and press the right arrow to follow the link.</p> <p>Note:</p> <ol style="list-style-type: none"> 1. IP of NTP server should be valid as it is required for the working of comcol HA. 2. The System Number shall be as follows: |

Procedure 11: Single Subnet Network Configuration

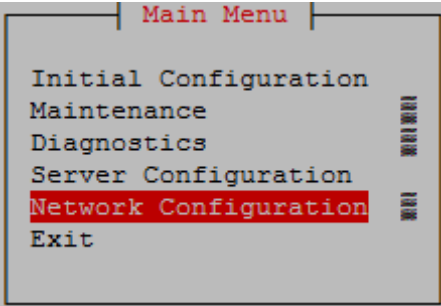
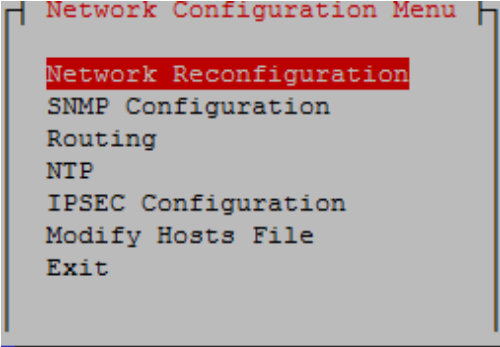
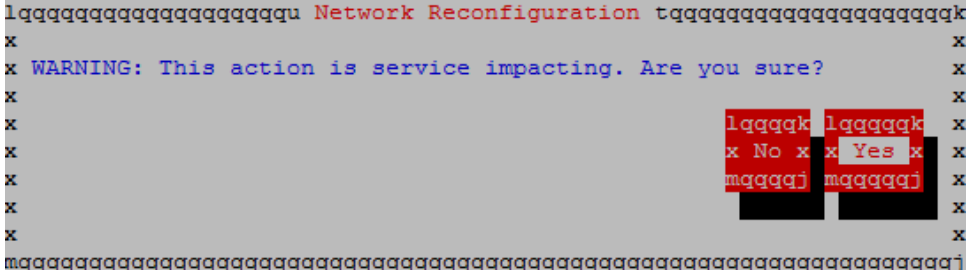
| | | |
|------------------------------------|---|--|
| | | <ul style="list-style-type: none"> • LEYYWMMXX • Where: <ul style="list-style-type: none"> ○ LE is the new System Number Prefix for LSMS. ○ YY = YEAR – year of the system shipment ○ WW= WEEK – calendar week of the YY year when the system is shipped ○ MM = MANUFACTURER (if other than TKLC) – Here 00 as Manufacturer is Oracle ○ XX = number in line of systems shipped that week |
| <p>5. <input type="checkbox"/></p> | <p>MPS A: Apply network settings</p> | <p>If the values pass a sanity test for validity, then the “Confirm” button will be visible. Use the down arrow to select “Confirm” and press the right arrow to apply the changes. If the sanity tests failed, the reasons will be stated. Use the left arrow key to go back to the edit screen.</p> <pre style="background-color: black; color: white; padding: 10px;"> SYSTEM_NUM = LE1632AB55 SUBNET_TYPE = single HOSTNAME_PRI = lsmspri HOSTNAME_SEC = lsmssec NPACPINGGW = 192.168.59.250 NPAC_CRIT = NPACIP_PRI = 192.168.59.30 NPACMASK_PRI = 255.255.255.0 NPACIP_SEC = 192.168.59.31 NPACMASK_SEC = 255.255.255.0 VIP = 192.168.59.32 DEFROUTEIP = 192.168.59.250 NTPSERVER = 10.250.32.10 The data is sane... OK to continue!!! Network configuration will cause a service interruption! Start Over Confirm </pre> <p>The execution could take a few minutes, be patient. The screen will eventually report the status of the completion. If an error occurs, contact My Oracle Support following the instructions on the 7.2 Appendix D.</p> <p>Type “q” and then “y” to exit the Network Configuration.</p> |

Procedure 11: Single Subnet Network Configuration

| | | |
|------------------------------------|---|---|
| | | <pre> <<< SYSTEM_NUM = LE1111111 SUBNET_TYPE = single HOSTNAME_PRI = lmspri HOSTNAME_SEC = lmssec NPACPINGGW = 192.168.59.250 NPAC_CRIT = NPACIP_PRI = 192.168.59.30 NPACMASK_PRI = 255.255.255.0 NPACIP_SEC = 192.168.59.31 NPACMASK_SEC = 255.255.255.0 VIP = 192.168.59.32 DEFROUTEIP = 192.168.59.250 NTPSERVER = 10.250.32.10 Performing remote configuration... Performing local configuration... OK to close utility (press 'q' 'y' to exit) Commands: Use arrow keys to move, '?' for help, 'q' to quit, '<->' to go back. </pre> |
| <p>6. <input type="checkbox"/></p> | <p>MPS A: Exit the lmsmgr menu</p> | <p>Select Exit and press [ENTER] to return to the Main Menu.</p>  <p>Select Exit and press [ENTER]. The “platcfg” utility terminates.</p>  |
| <p>7. <input type="checkbox"/></p> | <p>Procedure complete.</p> | <p>Procedure is complete.</p> |

Procedure 12 Segmented Subnet Configuration

Procedure 12: Segmented Subnet Network Configuration

| | | |
|----------------------------------|--|---|
| S T E P # | This procedure configures the system as segmented subnet at the customer site. Estimated time: 10 minutes | |
| 1. <input type="checkbox"/> | MPS A: Log in to the server as the user "root". | Login: root Password: <root_password> |
| 2. <input type="checkbox"/> | MPS A: Start lsmsmgr utility by login as lsmsmgr user | # su - lsmsmgr |
| 3. <input type="checkbox"/> | MPS A: Change the network configuration | Select Network Configuration and press [ENTER].  <p style="text-align: center;">Select Network Reconfiguration and press [ENTER].</p>  <p>Select Yes to proceed to Network configuration.</p>  <p>A lynx driven screen will appear with the following prompt;</p> <p>Do you want to execute "//usr/TKLC/lsms/tools/lsmsnetAdm-bin/lsmsnetadm.cgi"?</p> |

Procedure 12: Segmented Subnet Network Configuration

| | | |
|------------------------------------|--|--|
| | | <p>Type “Y/y” to continue and the next screen will appear and press the right arrow key to follow the link</p> <p>Select Segmented from the Subnet Type menu and then select Continue.</p> <pre> Network configuration will cause a service interruption! lqqqqqqqqqqqk x segmented x Subnet Type:x single x mqqqqqqqqqqqj Continue </pre> |
| <p>4. <input type="checkbox"/></p> | <p>MPS A: Enter network values.</p> | <p>Using the up and down arrows, scroll through the text fields, entering the desired values (to enter the netmask, highlight the field and then use the enter key or right arrow key to display the dropdown menu, choose the desired value from the list) for each fields:</p> <pre> System Number: LE11111111_____ Primary Server Hostname:lsmspri Secondary Server Hostname:lsmsec _____ NPAC Network NPAC Pingable Gateway: 192.168.60.250_____ [] Critical Primary NPAC IP: 192.168.60.3_____ Netmask:[255.255.255.0_] Secondary NPAC IP: 192.168.60.4_____ Netmask:[255.255.255.0_] _____ APP Network APP VLAN ID: 159_____ APP Pingable Gateway: 192.168.59.250_____ [] Critical Primary APP IP: 192.168.59.3_____ Netmask:[255.255.255.0_] Secondary APP IP: 192.168.59.4_____ Netmask:[255.255.255.0_] APP VIP: 192.168.59.5_____ _____ EMS Network EMS VLAN ID: 161_____ EMS Pingable Gateway: 192.168.61.250_____ [] Critical Primary EMS IP: 192.168.61.38_____ Netmask:[255.255.255.0_] Secondary EMS IP: 192.168.61.51_____ Netmask:[255.255.255.0_] _____ Default Route IP: 192.168.59.250_____ NTP Server: 10.250.32.10_____ _____ Start Over Submit </pre> <p>Note:</p> <ol style="list-style-type: none"> IP of NTP server should be valid as it is required for the working of comcol HA. |

Procedure 12: Segmented Subnet Network Configuration

| | | |
|---|---|---|
| | | <p>2. The System Number shall be as follows: LEYYWMMXX Where:</p> <ul style="list-style-type: none"> ○ LE is the new System Number Prefix for LSMS ○ YY = YEAR – year of the system shipment ○ WW= WEEK – calendar week of the YY year when the system is shipped ○ MM = MANUFACTURER (if other than TKLC) – Here 00 as Manufacturer is Oracle ○ XX = number in line of systems shipped that week <p>3. Default route should be the route of the APP IP address.</p> <p>Once the values are entered press the down arrow to select the “Submit” button and press the right arrow to follow the link.</p> |
| <p>5. <input type="checkbox"/></p> | <p>MPS A: Apply network settings</p> | <p>If the values pass a sanity test for validity, then the “Confirm” button will be visible. Use the down arrow to select “Confirm” and press the right arrow to apply the changes. If the sanity tests failed, the reasons will be stated. Use the left arrow key to go back to the edit screen.</p> |

Procedure 12: Segmented Subnet Network Configuration

```
SYSTEM_NUM = LE11111111
SUBNET_TYPE = segmented
HOSTNAME_PRI = lmspri
HOSTNAME_SEC = lmssec
NPACPINGGW = 192.168.60.250
NPAC_CRIT =
NPACIP_PRI = 192.168.60.3
NPACMASK_PRI = 255.255.255.0
NPACIP_SEC = 192.168.60.4
NPACMASK_SEC = 255.255.255.0
APPPINGGW = 192.168.59.250
APP_CRIT =
APPIP_PRI = 192.168.59.3
APPMASK_PRI = 255.255.255.0
APPIP_SEC = 192.168.59.4
APPMASK_SEC = 255.255.255.0
VIP = 192.168.59.5
APP_VLANID = 159
EMSPINGGW = 192.168.61.250
EMS_CRIT =
EMSIP_PRI = 192.168.61.38
EMSMASK_PRI = 255.255.255.0
EMSIP_SEC = 192.168.61.51
EMSMASK_SEC = 255.255.255.0
EMS_VLANID = 161
DEFROUTEIP = 192.168.59.250
NTPSERVER = 10.250.32.10
```

The data is sane... OK to continue!!!

Network configuration will cause a service interruption!

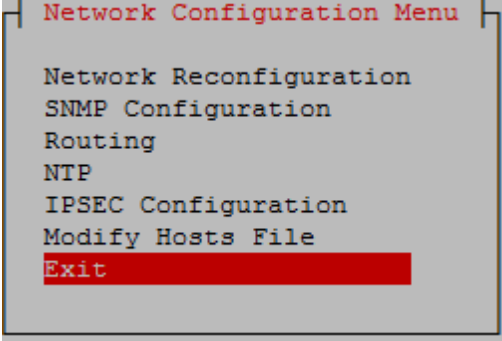
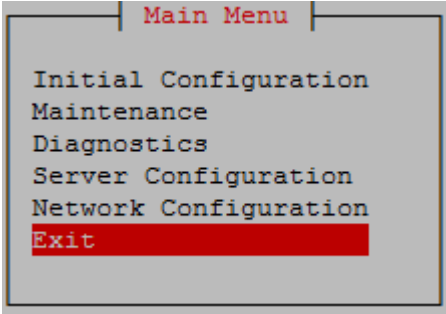
Start Over

Confirm

The execution could take a few minutes, be patient. The screen will eventually report the status of the completion. If an error occurs, contact My Oracle Support following the instructions on the Appendix D.

Type “q” and then “y” to exit the Network Configuration.

Procedure 12: Segmented Subnet Network Configuration

| | | |
|------------------------------------|---|--|
| | | <pre> <<< SYSTEM_NUM = LE1111111 SUBNET_TYPE = single HOSTNAME_PRI = lmspri HOSTNAME_SEC = lmssec NPACPINGGW = 192.168.59.250 NPAC_CRIT = NPACIP_PRI = 192.168.59.30 NPACMASK_PRI = 255.255.255.0 NPACIP_SEC = 192.168.59.31 NPACMASK_SEC = 255.255.255.0 VIP = 192.168.59.32 DEFROUTEIP = 192.168.59.250 NTPSERVER = 10.250.32.10 Performing remote configuration... Performing local configuration... OK to close utility (press 'q' 'y' to exit) Commands: Use arrow keys to move, '?' for help, 'q' to quit, '<' to go back. </pre> |
| <p>6. <input type="checkbox"/></p> | <p>MPS A: Exit the lmsmgr menu</p> | <p>Select Exit and press [ENTER] to return to the Main Menu.</p>  <p>Select Exit and press [ENTER]. The “platfg” utility terminates.</p>  |
| <p>7. <input type="checkbox"/></p> | <p>Procedure Complete.</p> | <p>This procedure is complete .</p> |

Procedure 13 TMN Toolkit and Marben OSI License Installation

Note: Valid Licenses need to be installed on both A and B LSMS servers.

Note: Contact NE Technologies Inc. to get a valid license file by providing

- 1. host name, lsmspri for A and lsmsec for B; and**
- 2. Mac address for Ethernet interface eth01 (interface name after IPMed but before LSMS installation) or eth0 (interface name after LSMS installation).**

Procedure 13: TMN Toolkit and Marben OSI License Installation

| | | |
|----------------------------------|--|--|
| S T E P # | This procedure will install the TMN ToolkitLicense to both A and B LSMS servers. Estimated time: 10 minutes | |
| 1. <input type="checkbox"/> | MPS X: Log in to the server as the user "root" | console login: root password: <root_password> |
| 2. <input type="checkbox"/> | MPS X: Install the TMN toolkit license file | Copy the TMN Toolkit license file to /usr/local/netech/etc/license path following any steps mentioned in Procedure 28. |
| 3. <input type="checkbox"/> | MPS X: Install the Marben OSI License file | Execute the below command: # echo "<Marben OSI license string>" >/usr/TKLC/osi/conf/license |
| 4. <input type="checkbox"/> | MPS X: Reboot the server | Reboot the system to take effect of the installed license # reboot |
| 5. <input type="checkbox"/> | Procedure complete. | Procedure is complete. |

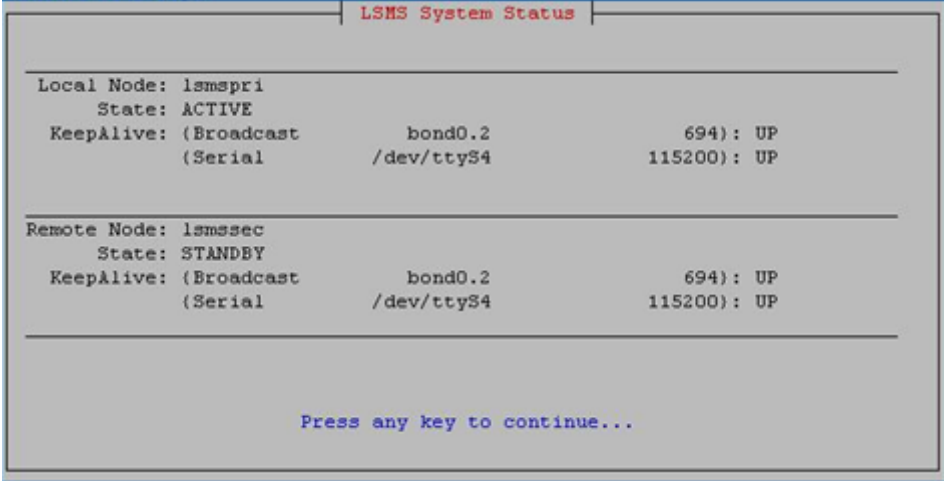
6. SOFTWARE SPLIT MIRROR UPGRADE PROCEDURES

Procedure 14 Pre-Upgrade LSMS Node Status

Procedure 14: Pre-Upgrade LSMS Node Status

| | | |
|----------------------------------|---|---|
| S T E P # | <p>This procedure performs a Node Status on any MPS running the LSMS application.</p> <p>Estimated time: 5 minutes</p> <p>NOTE: This procedure verifies that the 1A server is in the ACTIVE state and the 1B server is in the STANDBY state prior to beginning the split mirror upgrade. If it is determined that the servers are not in the previously described states, please contact MY ORACLE SPPPORT and ask for assistance in performing a system failover.</p> <p>WARNING: If a system failover is to be performed then it <i>must</i> be verified that replication between the ACTIVE and STANDBY servers is functioning correctly before attempting the failover.</p> | |
| 1. <input type="checkbox"/> | LSMS Active server: Log in to the server as the user "root". | Login: root Password: <root_password> |
| 2. <input type="checkbox"/> | LSMS Active server: Start the lsmsmgr utility by logging in as the lsmsmgr user. | # su - lsmsmgr |
| 3. <input type="checkbox"/> | LSMS Active server: Make selections on the Main Menu of the Platform Configuration Utility. | <p>On the Main Menu, select the Maintenance submenu, and press [ENTER].</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <pre> Main Menu ----- Initial Configuration Maintenance Diagnostics Server Configuration Network Configuration Exit </pre> </div> <p>Select LSMS Node Status, and press [ENTER].</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <pre> Maintenance Menu ----- LSMS Node Status Start Node Stop Node Inhibit Node Backup and Restore Exit </pre> </div> |
| 4. <input type="checkbox"/> | LSMS Active server: | The LSMS System Status results appear on the screen, the "State:" information <i>must</i> match exactly with the following example. |

Procedure 14: Pre-Upgrade LSMS Node Status

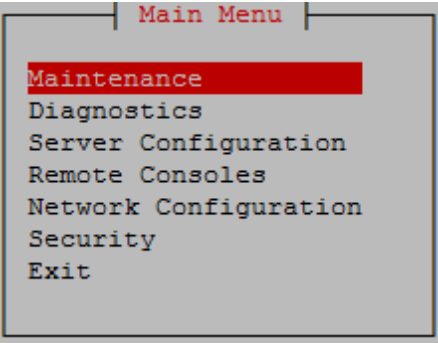
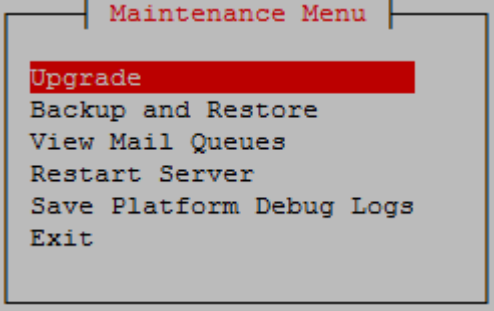
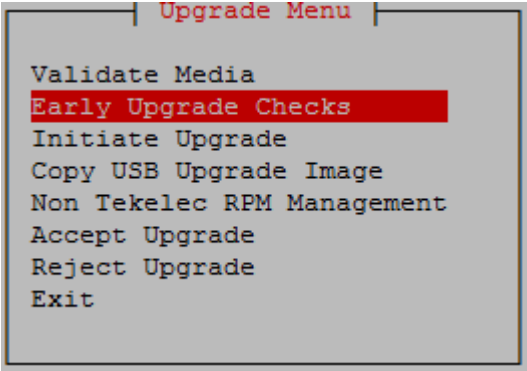
| | | |
|------------------------------------|--|---|
| | <p>Examine the output of the LSMS Node Status and verify that the states of the Server lsmspri and lsmssec LSMS servers are “ACTIVE” and “STANDBY” respectively.</p> | <p>The following screen shot is an example of acceptable states for continuing an split mirror upgrade:</p>  <p>The following are examples of unacceptable states for continuing a split mirror upgrade: ACTIVE “lsmssec->TO_STANDBY” STANDBY “lsmssec->TO_STANDBY”</p> |
| <p>5. <input type="checkbox"/></p> | <p>LSMS System Status Successful</p> <p>LSMS System Status Failure</p> | <p>If the LSMS System Status was successful return to Table 6.</p> <p>If LSMS System Status detected any failures, please contact MY ORACLE SUPPORT following the instruction on the 7.2Appendix D and ask for assistance.</p> |
| <p>6. <input type="checkbox"/></p> | <p>Procedure Complete.</p> | <p>This procedure is complete.</p> |

Procedure 15 Split Mirror Upgrade on Server B

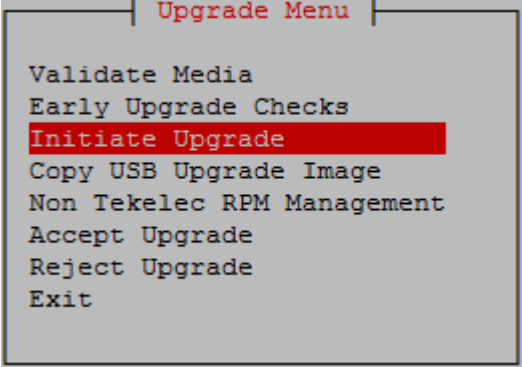
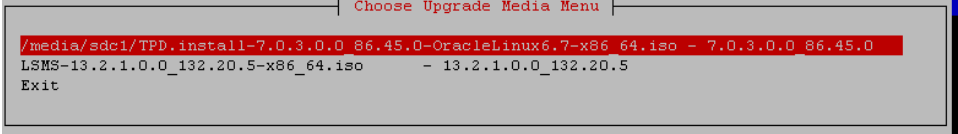
Procedure 15: Split mirror upgrade on Server B

| | | |
|---|--|---|
| <p>S T E P #</p> | <p>This procedure performs the split mirror upgrade on the MPS-B server.</p> <p>Estimated time: 30 minutes</p> | |
| <p>1. <input type="checkbox"/></p> | <p>MPS B: Split Mirror upgrade MPS server B</p> | <p>Perform Procedure in Procedure 22 or copy LSMS 13.2.1 ISO to /var/TKLC/upgrade directory.</p> |
| <p>2. <input type="checkbox"/></p> | <p>MPS B: : Create upgrade.conf for splitting mirrors. Use root user</p> | <p>Create a file and add the line “BACKOUT_TYPE=SPLIT_MIRROR” (to trigger the split mirror upgrade) by executing the following command:</p> <pre># echo "BACKOUT_TYPE=SPLIT_MIRROR" >/usr/TKLC/plat/etc/upgrade/upgrade.conf</pre> |

Procedure 15: Split mirror upgrade on Server B

| | | |
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| | | <p>Execute the following command to verify that the above command has been executed successfully:</p> <pre># cat /usr/TKLC/plat/etc/upgrade/upgrade.conf</pre> <p>The output should be:</p> <pre>[root@MPS-B ~]# cat /usr/TKLC/plat/etc/upgrade/upgrade.conf BACKOUT_TYPE=SPLIT_MIRROR</pre> <p>NOTE: Not performing this step will prevent any successful backout.</p> |
| <p>3. <input type="checkbox"/></p> | <p>MPS B: Start platcfg utility by logging in as platcfg user</p> | <pre># su - platcfg</pre> <p>On the Main Menu, select Maintenance and press [ENTER].</p>  <p>The screenshot shows a terminal window titled "Main Menu" with the following options: Maintenance (highlighted in red), Diagnostics, Server Configuration, Remote Consoles, Network Configuration, Security, and Exit.</p> |
| <p>4. <input type="checkbox"/></p> | <p>MPS B: Select the Upgrade submenu.</p> | <p>Select the Upgrade menu and press [ENTER].</p>  <p>The screenshot shows a terminal window titled "Maintenance Menu" with the following options: Upgrade (highlighted in red), Backup and Restore, View Mail Queues, Restart Server, Save Platform Debug Logs, and Exit.</p> |
| <p>5. <input type="checkbox"/></p> | <p>MPS B: Select Early Upgrade Checks</p> | <p>Select the “Early Upgrade Checks” menu to verify that the system is ready for upgrade.</p>  <p>The screenshot shows a terminal window titled "Upgrade Menu" with the following options: Validate Media, Early Upgrade Checks (highlighted in red), Initiate Upgrade, Copy USB Upgrade Image, Non Tekelec RPM Management, Accept Upgrade, Reject Upgrade, and Exit.</p> |

Procedure 15: Split mirror upgrade on Server B

| | | |
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| | | <p>NOTE: If the Early Upgrade Checks fail due to the NTP related alarms, then execute step 6, otherwise skip to step 7.</p> <p>Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix D, if the early upgrade checks fail due to the reason other than NTP related alarms.</p> |
| <p>6. <input type="checkbox"/></p> | <p>MPS B: White List NTP Alarms</p> | <p>If the Early Upgrade Checks fail due to the NTP related alarms, then ignore the NTP alarms using the following commands:</p> <ol style="list-style-type: none"> Exit the platcfg menu Change to root user using the “su –“ command. vim /usr/TKLC/plat/etc/upgrade/upgrade.conf Edit the following line to include the NTP related alarms. EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI2 <p>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</p> <p>Note: There should not be any space between two alarms i.e. between TKSPLATMI2 and TKSPLATMI10</p> |
| <p>7. <input type="checkbox"/></p> | <p>MPS B: Navigate to the Initiate Upgrade menu.</p> | <p>Select the Initiate Upgrade menu and press [ENTER].</p>  <p>The screenshot shows a terminal window titled "Upgrade Menu" with the following options: Validate Media, Early Upgrade Checks, Initiate Upgrade (highlighted in red), Copy USB Upgrade Image, Non Tekelec RPM Management, Accept Upgrade, Reject Upgrade, and Exit.</p> |
| <p>8. <input type="checkbox"/></p> | <p>MPS B: Select the Upgrade Media</p> | <p>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].</p>  <p>The screenshot shows a terminal window titled "Choose Upgrade Media Menu" with the following options: /media/sdci/TPD.install-7.0.3.0.0_86.45.0-OracleLinux6.7-x86_64.iso - 7.0.3.0.0_86.45.0, LSMS-13.2.1.0.0_132.20.5-x86_64.iso - 13.2.1.0.0_132.20.5, and Exit. The first option is highlighted in red.</p> |
| <p>9. <input type="checkbox"/></p> | <p>MPS B: Split Mirror upgrade proceeds</p> | <p>The screen displays the following, indicating that the split mirror upgrade software is first running the upgrade checks, and then proceeding with the split mirror upgrade.</p> |

Procedure 15: Split mirror upgrade on Server B

| | | |
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| | | <pre>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...</pre> <p>Many informational messages appear on the terminal screen as the split mirror upgrade proceeds. The messages are not shown here for clarity sake.</p> <p>When split mirror upgrade is complete, the server reboots.</p> |
| <p>10. <input type="checkbox"/></p> | <p>MPS B: Upgrade completed</p> | <p>After the final reboot, the screen displays the login prompt as in the example below.</p> <pre>1503471288: Upstart Job alarmMgr: started ##### 1503471288: Upstart Job tpdProvd: started ##### 1503471289: Upstart Job syscheck: started ##### 1503471290: Upstart Job ntdMgr: started ##### Oracle Linux Server release 6.8 Kernel 2.6.32-642.15.1.el6prere17.4.0.0.0_88.37.0.x86_64 on an x86_64 lsmssec login:</pre> |
| <p>11. <input type="checkbox"/></p> | <p>MPS B: : Log in to the server as the user "root".</p> | <pre>Login: root Password: <root_password></pre> |
| <p>12. <input type="checkbox"/></p> | <p>MPS B: Verify the upgrade.</p> | <p>Examine the upgrade logs in the directory /var/TKLC/log/upgrade.</p> <pre># grep -i error /var/TKLC/log/upgrade/upgrade.log Following Errors are expected: 1462270310::Master 'bond0', Slave 'eth2': Error: Change active failed 1462270311::ERROR: Could not change current interface. 1462270311::Master 'bond0', Slave 'eth2': Error: Change active failed 1462270311::ERROR: Could not change interface of lsmspri. 1462270685::Master 'bond0', Slave 'eth2': Error: Change active failed 1462270686::ERROR: Could not change current interface. 1462270686::Master 'bond0', Slave 'eth2': Error: Change active failed</pre> |

Procedure 15: Split mirror upgrade on Server B

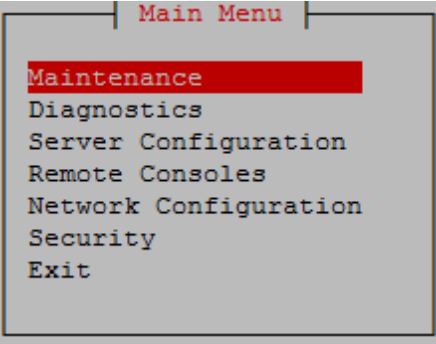
| | | |
|---|--|---|
| | | <pre>1462270687::ERROR: Could not change interface of lsmcpri. 1465475856::ERROR: Config file is currently checked out! 1465475858::ERROR: LOCKED BY: root 1465475858::ERROR: CONFIG: /etc/motd 1465475858::ERROR: ELEMENT: /var/TKLC/rcs/etc/motd,v 1503473419::ERROR: Command returned non-zero exit code 768 (/sbin/service TKLCpldhcp start)</pre> <p>Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix D, if the output contains any error other than the above-mentioned errors.</p> <p>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.</p> <pre># grep -i warning /var/TKLC/log/upgrade/upgrade.log</pre> <p>The following warning are expected:</p> <pre>1462270311::warning: Permanently added 'lsmcpri,192.168.59.30' (RSA) to the list of known hosts. 1462871367::checking network config files: WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...reparsing xml... Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix D, if the output contains any warnings other than the above- mentioned warnings.</pre> |
| <p>13. <input type="checkbox"/></p> | <p>MPS B: Verify the Upgrade.</p> | <pre># grep "Upgrade returned success" /var/TKLC/log/upgrade/upgrade.log</pre> <pre>1400786220:: Upgrade returned success!</pre> <p>Note: 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 D.</p> |
| <p>14. <input type="checkbox"/></p> | <p>MPS B: View the ugwrap log</p> | <p>Execute the following commands from a prompt to view the ugwrap log:</p> <pre># vi /var/TKLC/log/upgrade/ugwrap.log</pre> <p>Execute the following commands from a prompt to view errors/warnings:</p> <pre># grep -i error /var/TKLC/log/upgrade/ugwrap.log</pre> <pre>06:11:50 ERROR: Could not change current interface. 05/03/2016 06:11:51 ERROR: Could not change interface of lsmcpri. 05/03/2016 06:18:06 ERROR: Could not change current interface. 05/03/2016 06:18:06 ERROR: Could not change interface of lsmcpri.</pre> <pre># grep -i warning /var/TKLC/log/upgrade/ugwrap.log</pre> <p>No warnings should be displayed.</p> |
| <p>15. <input type="checkbox"/></p> | <p>MPS B: Verify raid is broken</p> | <pre>[root@lsmsec ~]# cat /proc/mdstat</pre> <pre>Personalities : [raid1] md1 : active raid1 sda2[0] 262080 blocks super 1.0 [2/1] [U_] md2 : active raid1 sda1[0]</pre> |

Procedure 15: Split mirror upgrade on Server B

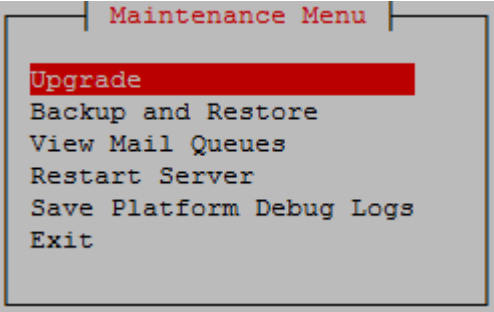
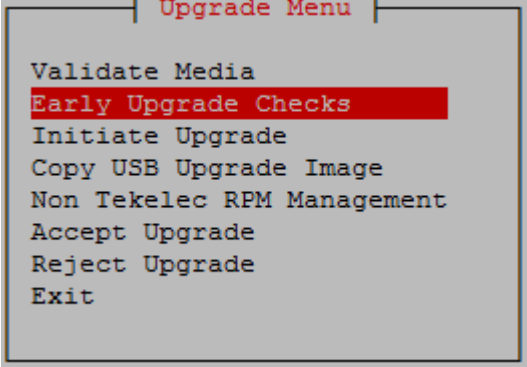
| | | |
|---------------------------------|----------------------------|--|
| | | 468447232 blocks super 1.1 [2/1] [U_] bitmap: 3/4 pages [12KB], 65536KB chunk unused devices: <none> |
| 16. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

Procedure 16 Split mirror upgrade on Server A

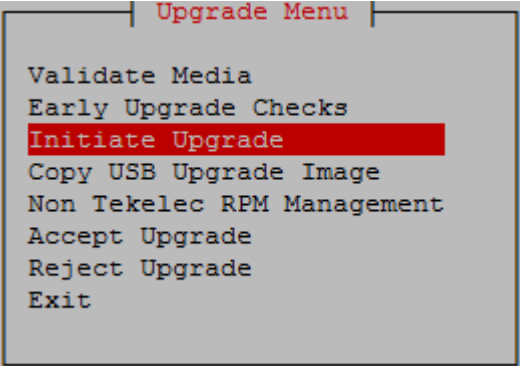
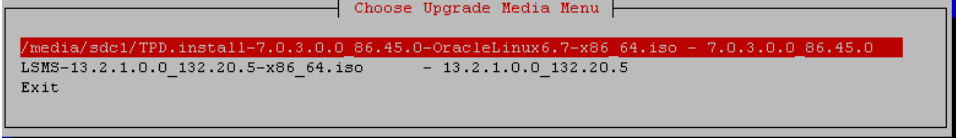
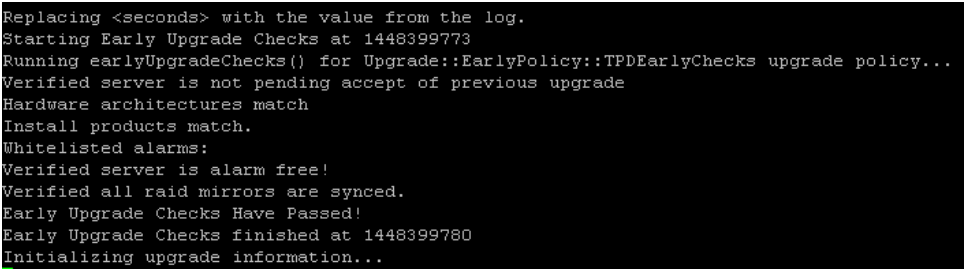
Procedure 16: Split mirror upgrade on Server A

| | | |
|----------------------------------|---|---|
| S T E P # | This procedure performs the split mirror upgrade on the MPS-A server. Estimated time: 30 minutes | |
| 1. <input type="checkbox"/> | MPS A: Split mirror upgrade MPS server A | Perform Procedure 22 or copy LSMS 13.2.1 ISO to /var/TKLC/upgrade directory. |
| 2. <input type="checkbox"/> | MPS A: : Create upgrade.conf for splitting mirrors. Use root user | <p>Create a file and add the line “BACKOUT_TYPE=SPLIT_MIRROR” (to trigger the split mirror upgrade) by executing the following command:</p> <pre># echo "BACKOUT_TYPE=SPLIT_MIRROR" >/usr/TKLC/plat/etc/upgrade/upgrade.conf</pre> <p>Execute the following command to verify that the above command has been executed successfully:</p> <pre># cat /usr/TKLC/plat/etc/upgrade/upgrade.conf</pre> <p>The output should be: [root@MPS-B ~]# cat /usr/TKLC/plat/etc/upgrade/upgrade.conf BACKOUT_TYPE=SPLIT_MIRROR</p> <p>NOTE: Not performing this step will prevent any successful backout.</p> |
| 3. <input type="checkbox"/> | MPS A: Start platcfg utility by logging in as platcfg user | <pre># su - platcfg</pre> <p>On the Main Menu, select Maintenance and press [ENTER].</p>  |

Procedure 16: Split mirror upgrade on Server A

| | | |
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| <p>4. <input type="checkbox"/></p> | <p>MPS A: Select the Upgrade submenu.</p> | <p>Select the Upgrade menu and press [ENTER].</p>  |
| <p>5. <input type="checkbox"/></p> | <p>MPS A: Select Early Upgrade Checks</p> | <p>Select the “Early Upgrade Checks” menu to verify that the system is ready for upgrade.</p>  <p>NOTE: If the Early Upgrade Checks fail due to the NTP related alarms, then execute step 6, otherwise skip to step 7.</p> <p>Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix D, if the early upgrade checks fail due to the reason other than NTP related alarms.</p> |
| <p>6. <input type="checkbox"/></p> | <p>MPS A: White List NTP Alarms</p> | <p>If the Early Upgrade Checks fail due to the NTP related alarms, then ignore the NTP alarms using the following commands:</p> <ol style="list-style-type: none"> Exit the platcfg menu Change to root user using the “su -“ command. vim /usr/TKLC/plat/etc/upgrade/upgrade.conf Edit the following line to include the NTP related alarms. EARLY_CHECK_ALARM_WHITELIST=TKSPLATMI2 <p>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</p> <p>Note: There should not be any space between two alarms i.e. between TKSPLATMI2 and TKSPLATMI10</p> |

Procedure 16: Split mirror upgrade on Server A

| | | |
|--|---|--|
| <p>7.</p> <p><input type="checkbox"/></p> | <p>MPS A: Navigate to the Initiate Upgrade menu.</p> | <p>Select the Initiate Upgrade menu and press [ENTER].</p>  |
| <p>8.</p> <p><input type="checkbox"/></p> | <p>MPS A: Select the Upgrade Media</p> | <p>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].</p>  |
| <p>9.</p> <p><input type="checkbox"/></p> | <p>MPS A: Split Mirror upgrade proceeds</p> | <p>The screen displays the following, indicating that the split mirror upgrade software is first validating the media, and then proceeding with the split mirror upgrade.</p>  <p>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...</p> <p>Many informational messages appear on the terminal screen as the split mirror upgrade proceeds. The messages are not shown here for clarity sake.</p> <p>When split mirror upgrade is complete, the server reboots.</p> |
| <p>10.</p> <p><input type="checkbox"/></p> | <p>MPS A: Split Mirror upgrade completed</p> | <p>After the final reboot, the screen displays the login prompt as in the example below.</p> <pre>1503471288: Upstart Job alarmMgr: started ##### 1503471288: Upstart Job tpdProvd: started ##### 1503471289: Upstart Job syscheck: started ##### 1503471290: Upstart Job ntdMgr: started #####</pre> |

Procedure 16: Split mirror upgrade on Server A

| | | |
|---|---|---|
| | | <p>Oracle Linux Server release 6.8 Kernel 2.6.32-642.15.1.el6prere17.4.0.0_88.37.0.x86_64 on an x86_64</p> <p>lsmspri login:</p> |
| <p>11. <input type="checkbox"/></p> | <p>MPS A: Log in to the server as the user "root".</p> | <p>Login: root Password: <root_password></p> |
| <p>12. <input type="checkbox"/></p> | <p>MPS A: Verify the split mirror upgrade.</p> | <p>Examine the split mirror upgrade logs in the directory /var/TKLC/log/upgrade.</p> <pre># grep -i error /var/TKLC/log/upgrade/upgrade.log</pre> <p>Following Errors are expected: 1462270310::Master 'bond0', Slave 'eth2': Error: Change active failed 1462270311::ERROR: Could not change current interface. 1462270311::Master 'bond0', Slave 'eth2': Error: Change active failed 1462270311::ERROR: Could not change interface of lsmspri. 1462270685::Master 'bond0', Slave 'eth2': Error: Change active failed 1462270686::ERROR: Could not change current interface. 1462270686::Master 'bond0', Slave 'eth2': Error: Change active failed 1462270687::ERROR: Could not change interface of lsmspri. 1465475856::ERROR: Config file is currently checked out! 1465475858::ERROR: LOCKED BY: root 1465475858::ERROR: CONFIG: /etc/motd 1465475858::ERROR: ELEMENT: /var/TKLC/rcs/etc/motd,v</p> <p>Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix D, if the output contains any error other than the above-mentioned errors.</p> <p>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.</p> <pre># grep -i warning /var/TKLC/log/upgrade/upgrade.log</pre> <p>The following warning are expected: 1462270311::warning: Permanently added 'lsmspri 192.168.59.30' (RSA) to the list of known hosts. 1462871367::checking network config files: WARNING: /usr/TKLC/plat/etc/alarms/alarms.xml has been updated...reparsing xml...</p> <p>Contact My Oracle Support following the instructions on the front page or the instructions on the Appendix D, if the output contains any warnings other than the above-mentioned warnings.</p> |
| <p>13. <input type="checkbox"/></p> | <p>MPS A: Verify the Upgrade.</p> | <pre># grep "Upgrade returned success" /var/TKLC/log/upgrade/upgrade.log</pre> <p>1400786220:: upgrade returned success!</p> <p>Note: 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 D.</p> |

Procedure 16: Split mirror upgrade on Server A

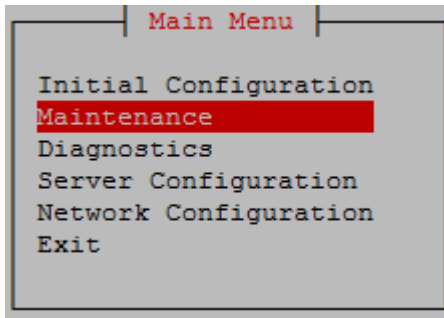
| | | |
|---------------------------------|-------------------------------------|---|
| 14. <input type="checkbox"/> | MPS A: View the ugwrap log | <p>Execute the following commands from a prompt to view the ugwrap log: # vi /var/TKLC/log/upgrade/ugwrap.log</p> <p>Execute the following commands from a prompt to view errors/warnings: # grep -i error /var/TKLC/log/upgrade/ugwrap.log 06:11:50 ERROR: Could not change current interface. 05/03/2016 06:11:51 ERROR: Could not change interface of lsmspri. 05/03/2016 06:18:06 ERROR: Could not change current interface. 05/03/2016 06:18:06 ERROR: Could not change interface of lsmspri.</p> <p># grep -i warning /var/TKLC/log/upgrade/ugwrap.log No warnings should be displayed.</p> |
| 15. <input type="checkbox"/> | MPS A: Verify raid is broken | <pre>[root@lsmspri ~]# cat /proc/mdstat Personalities : [raid1] md1 : active raid1 sda2[0] 262080 blocks super 1.0 [2/1] [U_] md2 : active raid1 sda1[0] 468447232 blocks super 1.1 [2/1] [U_] bitmap: 3/4 pages [12KB], 65536KB chunk unused devices: <none></pre> |
| 16. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

Procedure 17 Start LSMS Services

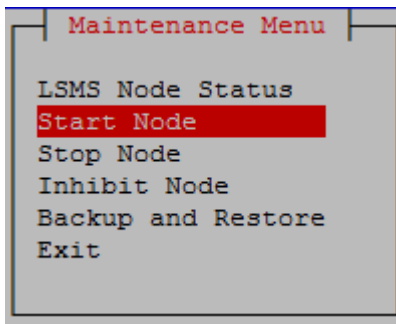
Procedure 17: Start LSMS services

| | | |
|----------------------------------|---|--|
| S T E P # | <p>This procedure starts the LSMS services.</p> <p>Estimated time: 10 minutes</p> | |
| 1. <input type="checkbox"/> | MPS A: Log in to the server as the user “root”. | <p>Login: root Password: <root_password></p> |
| 2. <input type="checkbox"/> | MPS A: Start lsmsmgr | # su - lsmsmgr |
| 3. <input type="checkbox"/> | MPS A: Start Node - This will make node active and start application | On the “Main Menu”, select Maintenance and press [ENTER] . |

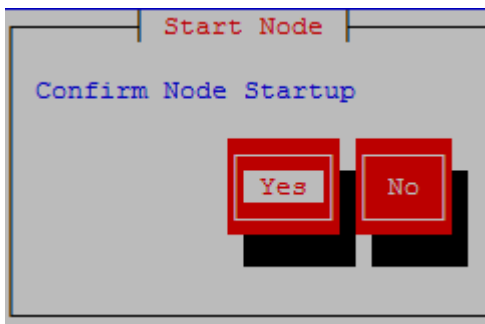
Procedure 17: Start LSMS services



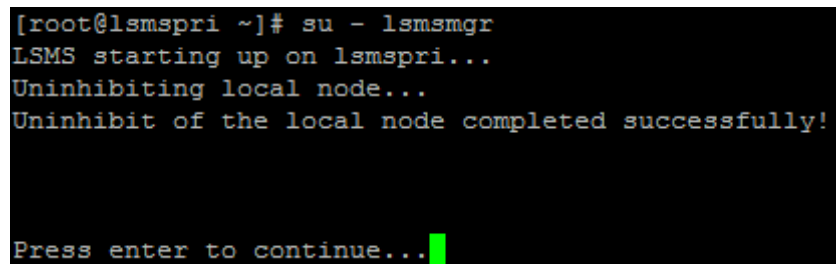
Select **Start Node** and press [ENTER].



Select **Yes** to confirm node startup press [Enter].

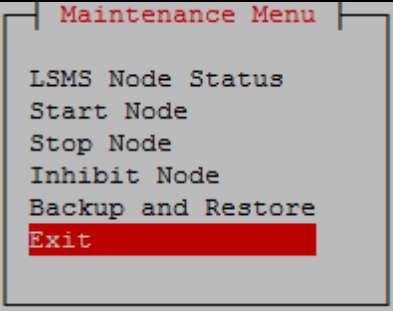
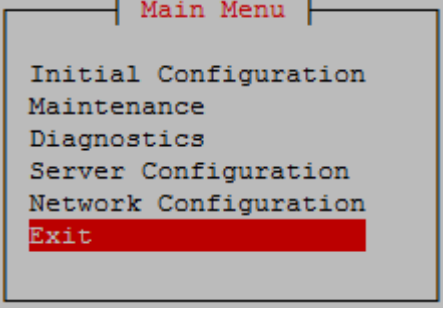
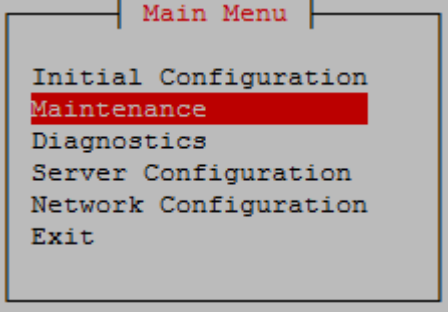
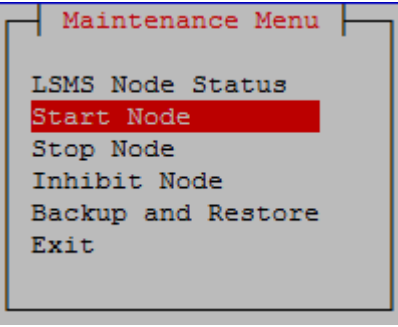


Press **Enter** once the node is uninhibited successfully.



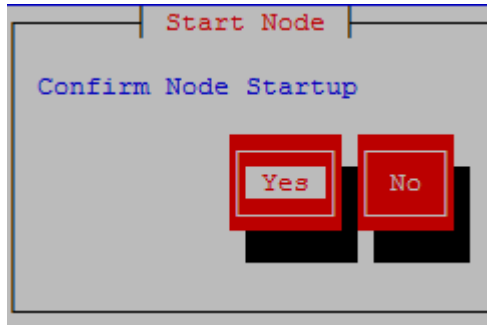
Select **Exit** and press [ENTER] to return to Main Menu.

Procedure 17: Start LSMS services

| | | |
|----|--|--|
| | |  <pre> Maintenance Menu LSMS Node Status Start Node Stop Node Inhibit Node Backup and Restore Exit </pre> <p>Select Exit and press [Enter] to exit the lsmsmgr menu.</p>  <pre> Main Menu Initial Configuration Maintenance Diagnostics Server Configuration Network Configuration Exit </pre> |
| 4. | <input type="checkbox"/> MPS A: Switch to mate | #ssh mate |
| 5. | <input type="checkbox"/> MPS B: Log in to the server as the user "root". | Login: root Password: <root_password> |
| 6. | <input type="checkbox"/> MPS B: Start lsmsmgr | # su - lsmsmgr |
| 7. | <input type="checkbox"/> MPS B: Start Node - This will make node standby and start application | <p>On the "Main Menu", select Maintenance and press [ENTER].</p>  <pre> Main Menu Initial Configuration Maintenance Diagnostics Server Configuration Network Configuration Exit </pre> <p>Select Start Node and press [ENTER].</p>  <pre> Maintenance Menu LSMS Node Status Start Node Stop Node Inhibit Node Backup and Restore Exit </pre> |

Procedure 17: Start LSMS services

Select **Yes** to confirm node startup press **[Enter]**.

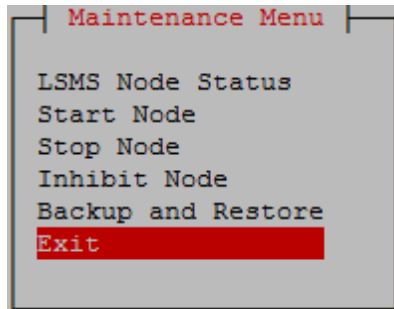


Press **Enter** once the node is uninhibited successfully.

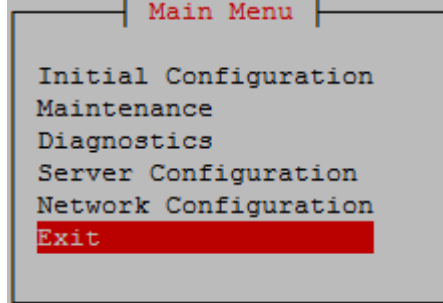
```
[root@lsmsec ~]# su - lsmmgr
LSMS starting up on lsmsec...
Checking status from active mate...
Running status on lsmspri node
Copying DB from active mate. Local node will become standby.
  This may take a while
LSMS shutting down lsmsec...
Syncing Binary Logs ...
Syncing mate:/mnt/snap/ to /var/TKLC/lsm/db/
Sync'ed
LSMS starting up on lsmsec...
Uninhibiting node lsmsec...
Startup of local node successful

Press enter to continue... █
```

Select **Exit** and press **[Enter]** to return to Main Menu.



Select **Exit** and press **[Enter]** to exit the lsmmgr menu.



Procedure 17: Start LSMS services

| | | |
|----|----------------------------|-----------------------------|
| 8. | Procedure Complete. | This procedure is complete. |
|----|----------------------------|-----------------------------|

Procedure 18 Post-Upgrade Health Check

Procedure 18: Post-Upgrade Health Check

| | | |
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| S T E P # | | This procedure determines the health of the Server after a split mirror upgrade. This procedure will perform a syscheck on each LSMS server, verify that MySQL replication is functioning correctly between the two LSMS servers, and capture command output to be used later. Estimated time: 5 minutes |
| 1. <input type="checkbox"/> | MPS A and B: Login to the server as the user “root”. | Login: root Password: <root_password> |
| 2. <input type="checkbox"/> | MPS A and B : Verify Health of the Server | Execute Procedure 21 on the 1A and 1B servers to verify the health of the server. NOTE: If this upgrade is an initial installation of the LSMS application. Some errors will be present until the system is fully configured and installed at the customer site. Only verify that the following syscheck classes pass (the first 3 classes in the output): <ul style="list-style-type: none"> • disk • hardware • net |
| 3. <input type="checkbox"/> | MPS A and B: Execute the “hastatus” command to verify the HA state of this server. | Execute the following command on both LSMS A and B to verify the HA state of mated LSMS pair. # hastatus Verify that the hastatus of one of the servers is Active and the other is Standby. WARNING: If the output from the above command is anything else other than “ACTIVE” and “STANDBY”, do not proceed with this procedure and contact My Oracle Support following the instructions on the Appendix D. |
| 4. <input type="checkbox"/> | LSMS Standby Server: Verify that the STANDBY server’s MySQL replication is functioning properly | Execute the following command to verify that MySQL replication is working correctly on the STANDBY LSMS server: # tail /var/TKLC/lms/logs/dbrep1Mon.log If MySQL replication is functioning correctly then the following output will be observed, make sure that at least the last line of your output matches the lines below. Thu May 12 05:58:12 2016 All tests passed on STANDBY FIPS integrity verification test failed. FIPS integrity verification test failed. Thu May 12 05:59:19 2016 All tests passed on STANDBY |

Procedure 18: Post-Upgrade Health Check

| | | |
|--------------------------------|---|---|
| | | <p>FIPS integrity verification test failed. FIPS integrity verification test failed. Thu May 12 06:00:25 2016 All tests passed on STANDBY FIPS integrity verification test failed. FIPS integrity verification test failed. Thu May 12 06:01:32 2016 All tests passed on STANDBY</p> <p>WARNING: If at least the last line of your output does not match the lines above then do not proceed with this upgrade and contact My Oracle Support for assistance.</p> |
| 5. <input type="checkbox"/> | <p>LSMS Active Server: Login as the user “lsmsadm” on the ACTIVE server.</p> | <p># su - lsmsadm</p> |
| 6. <input type="checkbox"/> | <p>LSMS Active Server: Capture the output of the “lsmsdb -c counts” command.</p> | <p>Execute the following command on the ACTIVE LSMS server to display the current LSMS database counts:</p> <p># lsmsdb -c counts</p> <p>NOTE: Capture the output from this command and make it available to My Oracle Support if required.</p> |
| 7. <input type="checkbox"/> | <p>LSMS Active Server: Capture the output of the “lsmsdb -c features” command.</p> | <p>Execute the following command on the ACTIVE LSMS server to display the current LSMS feature configuration:</p> <p># lsmsdb -c features</p> <p>NOTE: Capture the output from this command and make it available to My Oracle Support if required.</p> |
| 8. <input type="checkbox"/> | <p>LSMS Active Server: Capture the output of the “sentry status” command.</p> | <p>Execute the following command on the ACTIVE LSMS server to display the current LSMS sentry status:</p> <p># sentry status</p> <p>NOTE: Verify that the output displays a Status of “running” for all processes; the regional processes (npacagents) may or may not be associated in the Comment field. If the output from this command displays any other Status than “running” contact My Oracle Support and ask for assistance.</p> <p>Capture the output from this command and make it available to My Oracle Support if required.</p> |
| 9. <input type="checkbox"/> | <p>Procedure Complete.</p> | <p>This procedure is complete.</p> |

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 instruction on the front page or the instructions on the 7.2Appendix D.

NOTE: These recovery procedures are provided for the backout of a split mirror upgrade ONLY (i.e., from an split mirror upgraded system). 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

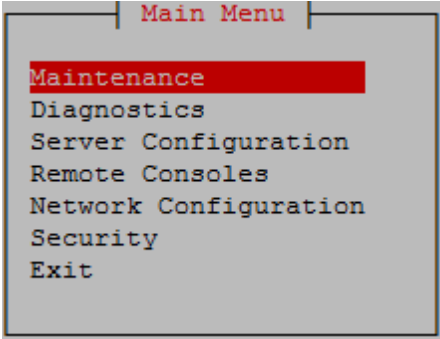
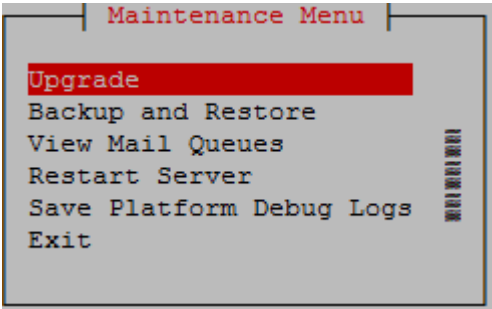
No matter the initial cause of the upgrade problem, once all necessary corrective steps have been taken to prepare for the backout, then the following procedure can be executed to perform a backout.

Procedure 19 Server B Backout

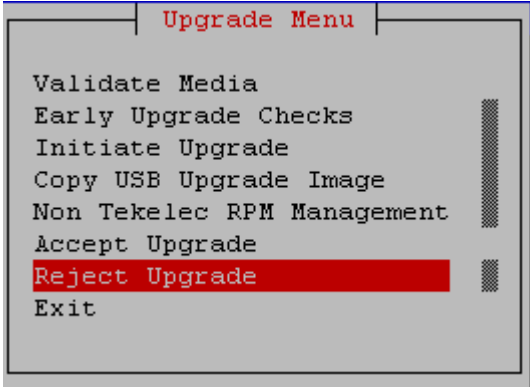
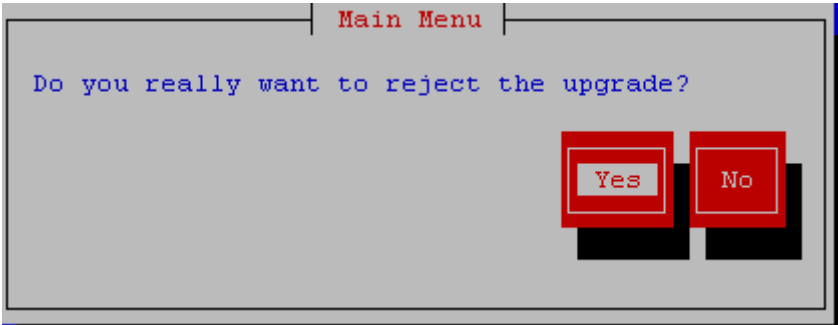
Procedure 19: Server B Backout

| | | |
|--------------------------------|--|---|
| S T E P # | This procedure provides instructions to perform backout on MPS B server. | |
| | Estimated time: 30 minutes | |
| | Note: Execute this procedure if only MPS B has been upgraded or partially upgraded and MPS A is still at the pre-upgrade release. Note: If the upgrade has been accepted, this procedure cannot be executed. Note: Make sure USB is not connected with the setup before running this procedure. | |
| 1. <input type="checkbox"/> | 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 Skip to step 5 if connected through serial console. |

Procedure 19: Server B Backout

| | | |
|--|---|--|
| <p>2. <input type="checkbox"/></p> | <p>Create a terminal window and establish a connection by logging into MPS A.</p> <p>Log in to MPS A.</p> | <p>In a newly created terminal window labeled “MPS B – from MPS A”, connect directly into MPS A.</p> <pre># ssh root@<MPS A> Password: <password></pre> |
| <p>3. <input type="checkbox"/></p> | <p>MPS A: Start screen session</p> <p>MPS A: Connect to the console MPS B.</p> | <p>Execute the following commands to start screen and establish a console session to MPS B.</p> <pre># screen -L</pre> <p>Execute the following command on MPS:</p> <pre># minicom mate OR # cu -l /dev/ttys1 -s 115200</pre> |
| <p>4. <input type="checkbox"/></p> | <p>MPS B: Login prompt is displayed.</p> | <p><hostname> console login:</p> <p>Note: Hit enter if no login prompt is displayed</p> |
| <p>5. <input type="checkbox"/></p> | <p>MPS B: Log in to the server as user “root”.</p> | <p>If not already logged-in, then log in.</p> <pre>Login: root Password: <root_password></pre> |
| <p>6. <input type="checkbox"/></p> | <p>MPS B: Execute the platcfg menu.</p> | <pre># su - platcfg</pre> |
| <p>7. <input type="checkbox"/></p> | <p>MPS B: Select the Maintenance submenu.</p> | <p>The platcfg Main Menu appears. On the Main Menu, select Maintenance and press [ENTER].</p>  <pre> Main Menu ----- Maintenance Diagnostics Server Configuration Remote Consoles Network Configuration Security Exit </pre> |
| <p>8. <input type="checkbox"/></p> | <p>MPS B: Select the Upgrade submenu.</p> | <p>Select the Upgrade menu and press [ENTER].</p>  <pre> Maintenance Menu ----- Upgrade Backup and Restore View Mail Queues Restart Server Save Platform Debug Logs Exit </pre> |

Procedure 19: Server B Backout

| | | |
|---|---|---|
| <p>9. <input type="checkbox"/></p> | <p>MPS B: Reject Split Mirror upgrade</p> | <p>Select the “Reject Upgrade” menu and press [ENTER].</p>   |
| <p>10. <input type="checkbox"/></p> | <p>MPS B: Backout proceeds.</p> | <p>Many informational messages will come across the terminal screen as the backout proceeds. After Backout a message “Backout is Complete System will reboot now” will be displayed on screen wait for system to reboot. After reboot disk will start to sync, wait for sync to complete.</p> |
| <p>11. <input type="checkbox"/></p> | <p>MPS B: Verify that raid is repaired</p> | <pre>[root@lsmsec ~]# cat /proc/mdstat Personalities : [raid1] md1 : active raid1 sdb2[2] sda2[0] 262080 blocks super 1.0 [2/2] [UU] md2 : active raid1 sdb1[1] sda1[0] 468447232 blocks super 1.1 [2/2] [UU] bitmap: 1/4 pages [4KB], 65536KB chunk unused devices: <none></pre> |
| <p>12. <input type="checkbox"/></p> | <p>MPS B: Verify the Backout</p> | <p>Examine the logs in the directory /var/TKLC/log/upgrade and verify that no errors were reported.</p> <pre># grep -i error /var/TKLC/log/upgrade/upgrade.log # grep -i error /var/TKLC/log/upgrade/ugwrap.log</pre> <p>Examine the output of the above commands to determine if any errors were reported.</p> <p>Refer to section 3.5 to know more about logging.</p> |
| <p>13. <input type="checkbox"/></p> | <p>MPS B: Verify the Backout.</p> | <p>If the backout was <i>not</i> 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 D for further instructions.</p> <p>If the backout <i>was</i> successful, then continue with the following step.</p> |

Procedure 19: Server B Backout

| | | |
|---------------------------------|---|--|
| 14. <input type="checkbox"/> | MPS B: Reboot the MPS. | Perform the following commands to reboot the MPS: # init 6 |
| 15. <input type="checkbox"/> | 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. |
| 16. <input type="checkbox"/> | 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 root@<MPS A> Password: <password> |
| 17. <input type="checkbox"/> | MPS A: Rejoin previous screen session on MPS B. | Execute the following command to disconnect and then rejoin previous screen session: # screen -dr |
| 18. <input type="checkbox"/> | MPS B: Verify Health of MPS B. | Execute Procedure 21 on MPS B to verify the health of the server |
| 19. <input type="checkbox"/> | 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. <input type="checkbox"/> | Procedure complete. | This procedure is complete. |

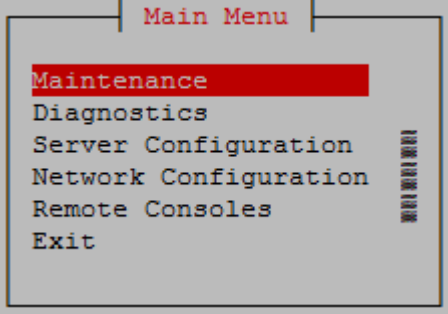
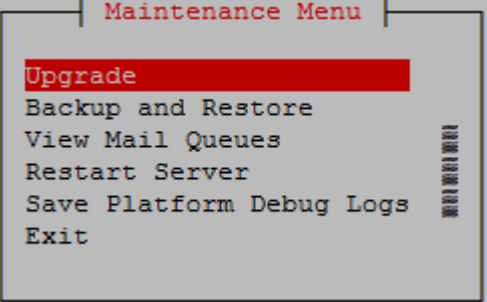
The application should now be running at the original software release level

Procedure 20 Backout both Server A and B

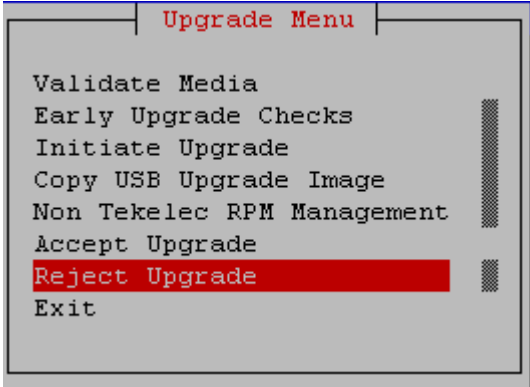
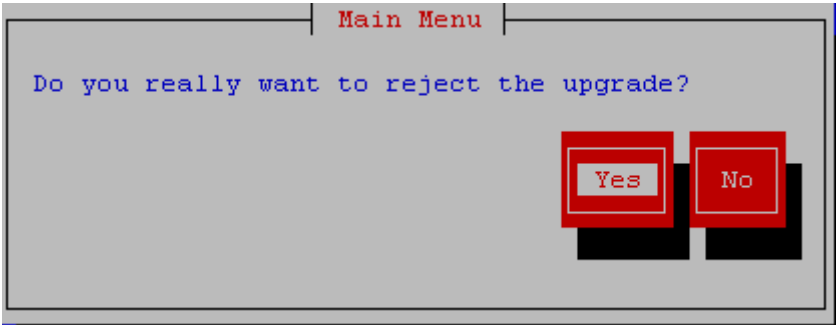
Procedure 20: Backout both Server A and B

| | | |
|--|--|---|
| S T E P # | <p>This procedure provides instructions to perform backout on both servers MPS A and B.</p> <p>Estimated time: 100 minutes</p> <p>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.</p> <p>Note: If the upgrade has been accepted, this procedure cannot be performed.</p> <p>Note: Make sure USB is not connected with the setup before running this procedure.</p> | |
| 1. <input type="checkbox"/> | Terminate all previous connections (ssh). | <p>If not already connected, connect to the E5-APP-B card via the serial port.</p> <p>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</p> <p>Skip to step 5 if connected through serial console.</p> |

Procedure 20: Backout both Server A and B

| | | |
|--|--|---|
| <p>2. <input type="checkbox"/></p> | <p>Create a terminal window and establish a connection by logging into MPS B.</p> <p>Log into MPS B.</p> | <p>In a newly created terminal window labeled “MPS A – from MPS B”, connect directly into MPS B.</p> <pre># ssh root@< MPS B> Password: <root_password></pre> |
| <p>3. <input type="checkbox"/></p> | <p>MPS B: Start screen session.</p> <p>MPS B: Connect to the console of MPS A.</p> | <p>Execute the following commands to start screen and establish a console session to MPS A.</p> <pre># screen -L</pre> <p>Execute the following command on MPS:</p> <pre># minicom mate OR # cu -l /dev/ttyS1 -s 115200</pre> |
| <p>4. <input type="checkbox"/></p> | <p>MPS A: Login prompt is displayed.</p> | <p><hostname> console login:</p> <p>Note: Hit enter if no login prompt is displayed.</p> |
| <p>5. <input type="checkbox"/></p> | <p>MPS A: Log in to the server as user “root”.</p> | <pre>Login: root Password: <root_password></pre> |
| <p>6. <input type="checkbox"/></p> | <p>MPS A: Execute the platcfg menu.</p> | <pre># su - platcfg</pre> |
| <p>7. <input type="checkbox"/></p> | <p>MPS A: Select the Maintenance submenu.</p> | <p>The platcfg Main Menu appears. On the Main Menu, select Maintenance and press [ENTER].</p>  <p>The screenshot shows a terminal window titled "Main Menu" with a list of options: Maintenance (highlighted in red), Diagnostics, Server Configuration, Network Configuration, Remote Consoles, and Exit.</p> |
| <p>8. <input type="checkbox"/></p> | <p>MPSA: Select the Upgrade submenu.</p> | <p>Select the Upgrade menu and press [ENTER].</p>  <p>The screenshot shows a terminal window titled "Maintenance Menu" with a list of options: Upgrade (highlighted in red), Backup and Restore, View Mail Queues, Restart Server, Save Platform Debug Logs, and Exit.</p> |

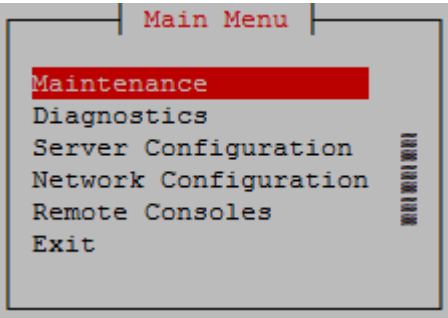
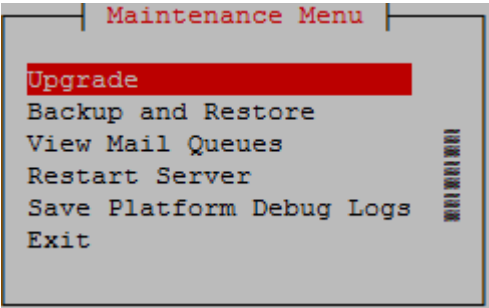
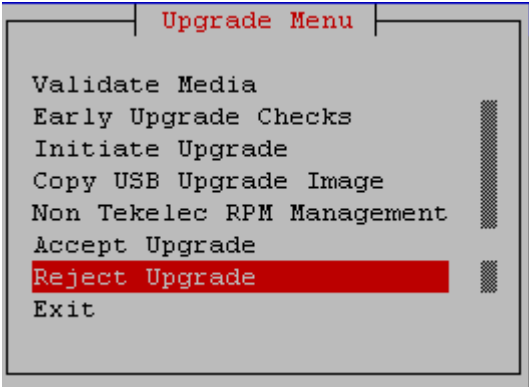
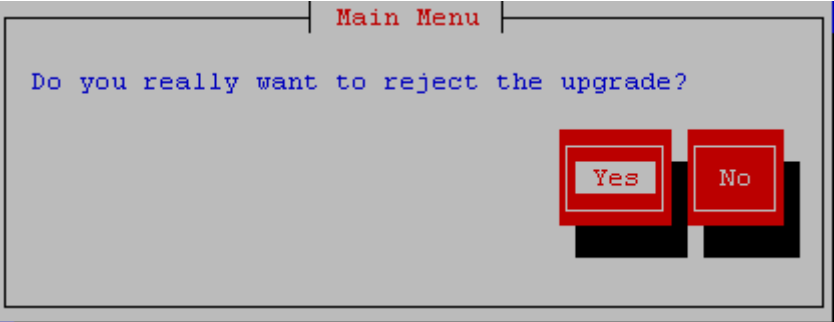
Procedure 20: Backout both Server A and B

| | | |
|-------------------------------------|---|---|
| <p>9. <input type="checkbox"/></p> | <p>MPS A: Reject Split Mirror Upgrade</p> | <p>Select the “Reject Upgrade” menu and press [ENTER].</p>   |
| <p>10. <input type="checkbox"/></p> | <p>MPS A: Backout proceeds.</p> | <p>Many informational messages will come across the terminal screen as the backout proceeds.</p> <p>After Backout a message “Backout is Complete System will reboot now” will be displayed on screen wait for system to reboot.</p> <p>After reboot disk will start to sync, wait for sync to complete.</p> |
| <p>11. <input type="checkbox"/></p> | <p>MPS A: Verify that raid is repaired</p> | <pre>[root@lsmstri ~]# cat /proc/mdstat Personalities : [raid1] md1 : active raid1 sdb2[2] sda2[0] 262080 blocks super 1.0 [2/2] [UU] md2 : active raid1 sdb1[1] sda1[0] 468447232 blocks super 1.1 [2/2] [UU] bitmap: 1/4 pages [4KB], 65536KB chunk unused devices: <none></pre> |
| <p>12. <input type="checkbox"/></p> | <p>MPS A: Verify the Backout.</p> | <p>Examine the logs in the directory /var/TKLC/log/upgrade and verify that no errors were reported.</p> <pre># grep -i error /var/TKLC/log/upgrade/upgrade.log # grep -i error /var/TKLC/log/upgrade/ugwrap.log</pre> <p>Examine the output of the above commands to determine if any errors were reported.</p> <p>Refer to section 3.5 to know more about logging.</p> |
| <p>13. <input type="checkbox"/></p> | <p>MPS A: Verify the Backout.</p> | <p>If the backout was <i>not</i> 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 D for further instructions.</p> |

Procedure 20: Backout both Server A and B

| | | |
|---------------------------------|---|---|
| | | If the backout <i>was</i> successful, then continue with the following steps. |
| 14. <input type="checkbox"/> | MPS A: Reboot the MPS. | Perform the following commands to reboot the MPS: #init 6 |
| 15. <input type="checkbox"/> | MPS A: Login to MPS A. | If the login prompt appears, skip to step 16. If the login prompt does not appear due to disconnect, go to step 14. |
| 16. <input type="checkbox"/> | 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 root@< MPS B> Password: <root_password> |
| 17. <input type="checkbox"/> | MPS B: Rejoin previous screen session on MPS A. | Execute the following command to disconnect and then rejoin previous screen session: # screen -dr |
| 18. <input type="checkbox"/> | MPS A: Verify Health of MPS A. | Execute Procedure 21 on MPS A to verify the health of the server. |
| 19. <input type="checkbox"/> | 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. Skip to step 23, if connected through serial console. |
| 20. <input type="checkbox"/> | 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 root@< MPS A> Password: <root_password> |
| 21. <input type="checkbox"/> | 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 MPS: # minicom mate OR # cu -l /dev/ttyS1 -s 115200 |
| 22. <input type="checkbox"/> | MPS B: Login prompt is displayed. | <hostname> console login: Note: Hit enter if no login prompt is displayed. |
| 23. <input type="checkbox"/> | MPS B: Log in to the server as user “root”. | Login: root Password: <root_password> |
| 24. <input type="checkbox"/> | MPS B: Execute the platcfg menu. | # su - platcfg |

Procedure 20: Backout both Server A and B

| | | |
|---------------------------------|--|---|
| <input type="checkbox"/> 25. | MPS B: Select the Maintenance submenu. | The platcfg Main Menu appears. On the Main Menu , select Maintenance and press [ENTER].  |
| <input type="checkbox"/> 26. | MPSB: Select the Upgrade submenu. | Select the Upgrade menu and press [ENTER].  |
| <input type="checkbox"/> 27. | MPSB: Reject Split Mirror upgrade | Select the “Reject Upgrade” menu and press [ENTER].   |

Procedure 20: Backout both Server A and B

| | | |
|---|---|---|
| <p>28. <input type="checkbox"/></p> | <p>MPS B: Backout proceeds.</p> | <p>Many informational messages will come across the terminal screen as the backout proceeds. After Backout a message “Backout is Complete System will reboot now” will be displayed on screen wait for system to reboot.</p> <p>After reboot disk will start to sync, wait for sync to complete.</p> |
| <p>29. <input type="checkbox"/></p> | <p>MPS B: Verify that raid is repaired</p> | <pre>[root@lsmsec ~]# cat /proc/mdstat Personalities : [raid1] md1 : active raid1 sdb2[2] sda2[0] 262080 blocks super 1.0 [2/2] [UU] md2 : active raid1 sdb1[1] sda1[0] 468447232 blocks super 1.1 [2/2] [UU] bitmap: 1/4 pages [4KB], 65536KB chunk unused devices: <none></pre> |
| <p>30. <input type="checkbox"/></p> | <p>MPS B: Verify the Backout.</p> | <p>Only perform this step on a backout of a split mirror upgrade.</p> <p>Examine the logs in the directory/var/TKLC/log/upgrade and verify that no errors were reported.</p> <pre># grep -i error /var/TKLC/log/upgrade/upgrade.log # grep -i error /var/TKLC/log/upgrade/ugwrap.log</pre> <p>Examine the output of the above command to determine if any errors were reported.</p> <p>Refer to section 3.5 to know more about logging.</p> |
| <p>31. <input type="checkbox"/></p> | <p>MPS B: Verify the Backout.</p> | <p>If the backout was <i>not</i> successful and errors were recorded in the logs, then contact the Technical Assistance Center following the instructions on the front page or the instructions on the Appendix for further instructions.</p> <p>If the backout <i>was</i> successful, then enter continue with the following steps:</p> |
| <p>32. <input type="checkbox"/></p> | <p>MPS B: Reboot the MPS.</p> | <p>Perform the following commands to reboot the MPS:</p> <pre># init 6</pre> |
| <p>33. <input type="checkbox"/></p> | <p>MPS B: Login to MPS B.</p> | <p>If the login prompt appears, skip to step 36 .</p> <p>If the login prompt does not appear due to disconnect, go to step 34</p> |
| <p>34. <input type="checkbox"/></p> | <p>Create a terminal window and establish a connection by logging into MPS A.</p> <p>Log into MPS A</p> | <p>In a newly created terminal window labeled “MPS B – from MPS A”, connect directly into MPS A.</p> <pre># ssh root@< MPS A> Password: <root_password></pre> |
| <p>35. <input type="checkbox"/></p> | <p>MPS A: Rejoin previous screen session on MPS B</p> | <p>Execute the following command to disconnect and then rejoin previous screen session:</p> <pre># screen -dr</pre> |
| <p>36. <input type="checkbox"/></p> | <p>MPS B: Log in to the server as user “root”.</p> | <pre><hostname> console login: root Password: <root_password></pre> |
| <p>37.</p> | <p>MPS B: Verify Health of MPS B</p> | <p>Execute Procedure 21 on MPS B to verify the health of the server.</p> |

Procedure 20: Backout both Server A and B

| | | |
|--------------------------|----------------------------|-----------------------------|
| <input type="checkbox"/> | | |
| 38. | Procedure complete. | This procedure is complete. |
| <input type="checkbox"/> | | |

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

APPENDIX A. GENERIC PROCEDURES

Procedure 21 Perform System Health Check

Procedure 21: Perform System Health Check

| | | |
|----------------------------------|--|--|
| S T E P # | This procedure performs a system health check on any MPS. Estimated time: 5 minutes | |
| 1. <input type="checkbox"/> | MPS X: Execute syscheck | <pre># syscheck Running modules in class disk... OK Running modules in class services... OK Running modules in class system... OK Running modules in class lsmshc... OK Running modules in class hardware... OK Running modules in class proc... OK Running modules in class net... LOG LOCATION: /var/TKLC/log/syscheck/fail_log OK In case of Split Mirror Upgrade below error will be observed in syscheck output: Running modules in class disk... * meta: FAILURE:: MAJOR::3000000000000002 -- Server Internal Disk Error * meta: FAILURE:: md status check failed. * meta: FAILURE:: MAJOR::3000000000000002 -- Server Internal Disk Error * meta: FAILURE:: md configuration check failed. Active md config doesn't match /etc/raidtab. One or more module in class "disk" FAILED</pre> |
| 2. <input type="checkbox"/> | MPS X: Verify contents of survMon last state file. | Execute the following command to verify that the last state/status of the "lsmsurv" process is stop: <pre>[root@lsmspri ~]# cat /usr/TKLC/lsms/config/lsmsSurv.last STOP</pre> |
| 3. <input type="checkbox"/> | MPS X: Start Surveillance (survMon). | Execute the following command to "lsmsurv" process, this will start the LSMS survMon: <pre>[root@lsmspri ~]# /usr/TKLC/lsms/bin/lsmsurv start LSMS Surveillance feature started</pre> |

Procedure 21: Perform System Health Check

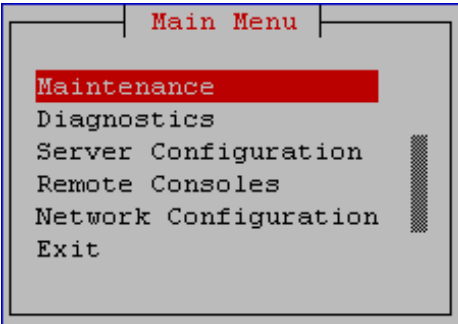
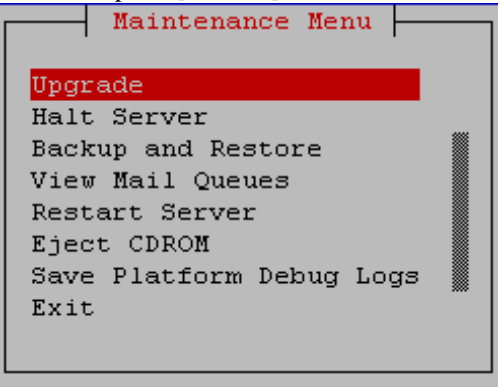
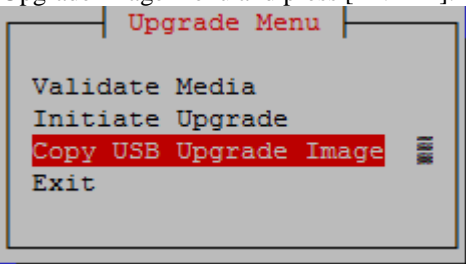
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| 4. <input type="checkbox"/> | MPS X: Verify contents of survMon last state file. | Execute the following command to verify that the last state/status of the “lsmsurv” process is start, this will ensure that the crond daemon will restart it upon a failure: <pre>[root@lsmspri ~]# cat /usr/TKLC/lsms/config/lsmsSurv.last START</pre> You have successfully completed this procedure, return to the procedure from which you came. |
| | MPS X: System Check Failure | .If System Check detected any failures, please contact the My Oracle Support and ask for assistance. Any errors must be well understood before proceeding with the upgrade, errors concerning core files may be ignored. Note: that if no application is installed, the message "No alarm dispatch utility available" is not a failure. |
| 5. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

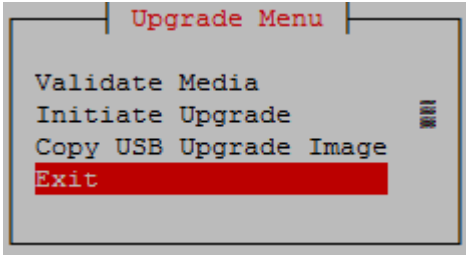
Procedure 22 ISO Image copy from USB Media

Procedure 22: ISO Image copy from USB Media

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| S T E P # | This procedure provides instructions to copy an ISO image from an USB media. Estimated time: 5 minutes | |
| 1. <input type="checkbox"/> | MPS X: Insert USB. | Insert media in USB drive |
| 2. <input type="checkbox"/> | MPS X: Log in to the server as the “root” user. | <pre>[hostname] consolelogin: root password: password</pre> |
| 3. <input type="checkbox"/> | MPS X: Run syscheck to make sure there is no error. | Execute the following command: <pre># syscheck</pre> The output should look like: <pre>[root@hostname ~]# syscheck Running modules in class proc... OK Running modules in class services... OK Running modules in class system... OK Running modules in class disk... OK Running modules in class hardware... OK Running modules in class net... OK LOG LOCATION: /var/TKLC/log/syscheck/fail_log</pre> |
| 4. <input type="checkbox"/> | MPS X: Verify ISO image doesn't already exist. | Execute the following command to perform directory listing: <pre># ls -al /var/TKLC/upgrade</pre> The output should look like: |

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| | | <pre>[root@hostname ~]# ls -al /var/TKLC/upgrade total 16 dr-xr-xr-x 2 root root 4096 Oct 22 16:31 . dr-xr-xr-x 21 root root 4096 Oct 18 13:40 ..</pre> <p>If an ISO image exists, remove it by executing the following command:</p> <pre># rm -f /var/TKLC/upgrade/<ISO image></pre> |
| 5. <input type="checkbox"/> | MPS X: Delete unwanted ISOs from USB media. | <p>Execute the following command to create a directory to mount the USB media:</p> <pre># mkdir -p /mnt/usb</pre> <p>Execute the following command to get the USB drive name:</p> <pre># fdisk -l grep FAT</pre> <p>The output should look like:</p> <pre>/dev/sdc1 * 1 812 831472 6 FAT16</pre> <p>Execute the following command to mount the USB media using the USB drive name from the output above:</p> <pre># mount /dev/sdc1 /mnt/usb</pre> <p>Execute the following command to perform directory listing and verify the file name format is as expected:</p> <pre># ls -al /mnt/usb</pre> <p>The output should look like:</p> <pre>[root@hostname ~]# # ls -al /mnt/usb total 629400 dr-xr-xr-x 2 root root 4096 Dec 5 13:33 . dr-xr-xr-x 22 root root 4096 Dec 5 13:55 .. -rw-r--r-- 1 root root 853002240 Dec 5 16:20 LSMS- 13.2.1.0.0_132.18.0-x86_64.iso</pre> <p>Only one ISO file should be listed, if additional files are listed, execute the following command to remove unwanted ISOs:</p> <pre># rm -f /mnt/usb/<ISO_NAME>.iso</pre> <p>For e.g.,</p> <pre># rm -f /mnt/usb/LSMS-13.2.1.0.0_132.18.0-x86_64.iso</pre> |
| 6. <input type="checkbox"/> | MPS X: Verify space exists for ISO. | <p>Execute the following command to verify the available disk space:</p> <pre># df -h /var/TKLC</pre> <p>The output should look like:</p> <pre>[root@slmspri log]# df -h /var/TKLC Filesystem Size Used Avail Use% Mounted on /dev/mapper/vgroot-plat_var_tklc 3.9G 1.2G 2.5G 32% /var/TKLC</pre> <p>Verify that there is at least 1G in the Avail column. If not, clean up files until there is space available.</p> <p>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.</p> |

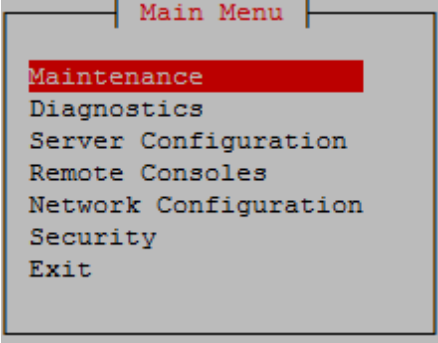
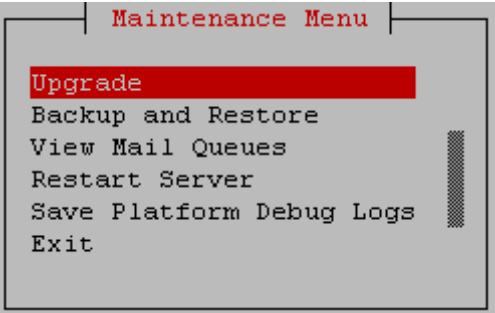
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| 7. <input type="checkbox"/> | MPS X: Start platcfg utility. | Execute the following command to change the user: # su - platcfg |
| 8. <input type="checkbox"/> | MPS X: Select the Maintenance submenu. | On the Main Menu of the Platform Configuration Utility, select Maintenance and press [ENTER].  |
| 9. <input type="checkbox"/> | MPS X: Select the Upgrade submenu. | Select the Upgrade menu and press [ENTER].  |
| 10. <input type="checkbox"/> | MPS X: Select Copy USB Upgrade Image submenu. | Select the Copy USB Upgrade Image menu and press [ENTER].  |
| 11. <input type="checkbox"/> | MPS X: The ISO will be copied from the USB media to /var/TKLC/upgrade. Press any key to return to Upgrade menu. | Copying /mnt/upgrade/ LSMS-13.2.1.0.0_132.18.0-x86_64.iso PRESS ANY KEY TO RETURN TO THE PLATCFG MENU. |
| 12. <input type="checkbox"/> | MPS X: Exit platcfg. | Select Exit and press [ENTER] repeatedly until the “platcfg” utility terminates. |

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| 13. <input type="checkbox"/> | MPS X: Unmount USB media | Execute the following command to unmount the USB media: # umount /mnt/usb |
| 14. <input type="checkbox"/> | MPS X: Verify ISO image exists. | Execute the following command to perform directory listing: # ls -al /var/TKLC/upgrade The output should look like: [root@lsmspri log]# ls -al /var/TKLC/upgrade total 895152 drwxrwxr-x. 2 root admgrp 4096 Apr 20 17:16 . dr-xr-xr-x. 20 root root 4096 Apr 20 18:01 .. -r----- 1 admusr admgrp 916621312 Apr 20 17:16 LSMS-13.2.1.0.0_132.18.0-x86_64.iso Repeat this procedure from step 5 if LSMS ISO file is not as expected. |
| 15. <input type="checkbox"/> | MPS X: Logout from server. | Logout from the server by executing the following command: # logout |
| 16. <input type="checkbox"/> | MPS X: Remove USB media. | Remove media from USB drive. |
| 17. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

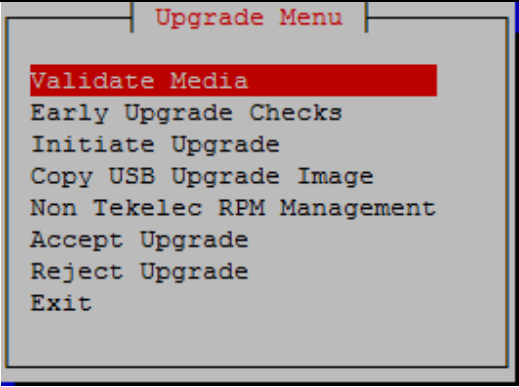
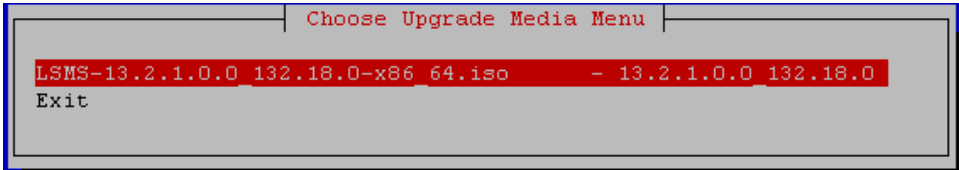
Procedure 23 Validate Upgrade Media

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.

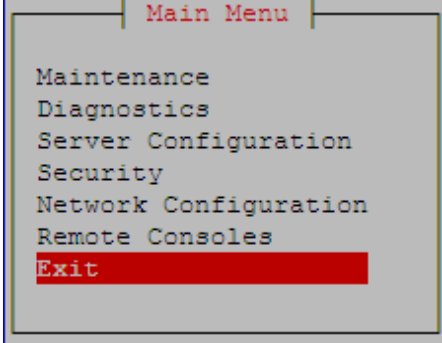
Procedure 23: Validate Upgrade Media

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| S T E P # | This procedure provides instructions to perform a validation of the upgrade media on the server. This procedure assumes that the E5-APP-B IPM procedure has been executed and the user has LSMS Upgrade ISO image available. Estimated time: 5 minutes | |
| 1. <input type="checkbox"/> | MPS X: Start platcfg utility by logging as platcfg user. | # su - platcfg |
| 2. <input type="checkbox"/> | MPS X: Select the Maintenance submenu | On the Main Menu of the Platform Configuration Utility, select Maintenance and press [ENTER] .  |
| 3. <input type="checkbox"/> | MPS X: Navigate to the media validation function. | Select the Upgrade menu and press [ENTER] .  |
| | | Select the Validate Media menu and press [ENTER] . |

Procedure 23: Validate Upgrade Media

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| <p>4. <input type="checkbox"/></p> | <p>MPS X: Output from the Validate Media selection.</p> | <p>The screen displays a message that it is searching for upgrade media. Once the upgrade media is found, an Upgrade Media selection menu appears similar to the example below. Select the desired upgrade media and press [ENTER]. There should only be one selection available, as in the example below.</p>  |
| <p>5. <input type="checkbox"/></p> | <p>MPS X: View the Validation results</p> | <p>The results of the validation are displayed, similar to the example below. Press [ENTER] to continue.</p> |

Procedure 23: Validate Upgrade Media

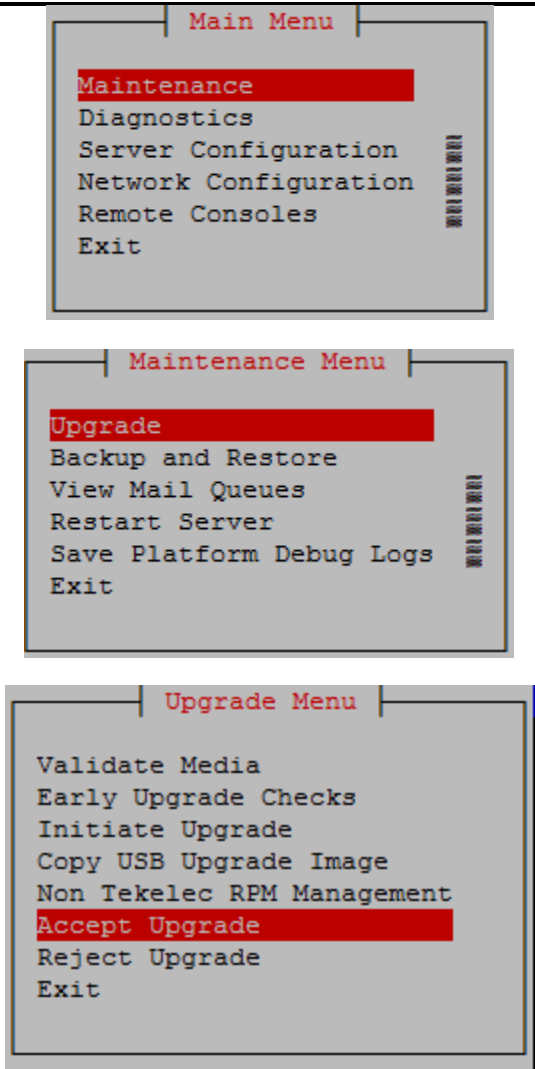
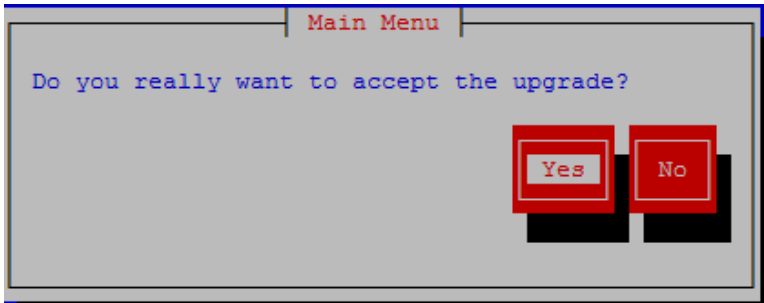
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| 7. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

Procedure 24 Accept the Upgrade

Procedure 24: Accept the Upgrade

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| S T E P # | <p>This procedure provides instructions to accept an upgrade with split-mirror</p> <p>Estimated time: 5 minutes</p> <p>Note: There is no need to accept the upgrade immediately after upgrade. Check the system for a couple of days to verify that the system is working fine after the upgrade. After finding that the system is working fine, accept the upgrade. If something not working as intended or breaking frequently (Should not be the case), then after a couple of days one can reject the upgrade to go back to the previous release.</p> | |
| 1. <input type="checkbox"/> | MPS A: Accept Upgrade | # su - platcfg |

Procedure 24: Accept the Upgrade

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| | |  <p>The first screenshot, titled "Main Menu", shows a list of options: Maintenance (highlighted), Diagnostics, Server Configuration, Network Configuration, Remote Consoles, and Exit. The second screenshot, titled "Maintenance Menu", shows: Upgrade (highlighted), Backup and Restore, View Mail Queues, Restart Server, Save Platform Debug Logs, and Exit. The third screenshot, titled "Upgrade Menu", shows: Validate Media, Early Upgrade Checks, Initiate Upgrade, Copy USB Upgrade Image, Non Tekelec RPM Management, Accept Upgrade (highlighted), Reject Upgrade, and Exit.</p> <p>Note: The "Reject Upgrade" menu is also available after the LSMS 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.</p>  <p>The final screenshot, titled "Main Menu", displays the question "Do you really want to accept the upgrade?" in blue text. Below the question are two red buttons labeled "Yes" and "No".</p> |
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Procedure 25 Stopping an LSMS backup in progress

Procedure 25: Stopping an LSMS backup in process

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| S T E P # | <p>This procedure explains how to terminate an LSMS backup if one is running prior to performing an upgrade. The backup cannot be stopped currently via a stop command or specific signal but will have to be manually terminated. If the user reboots the server prior to executing steps 2-6 that will terminate the backup, but then steps 7-17 should be executed immediately after the reboot to ensure things are properly cleaned up.</p> <p>Estimated time: 5 minutes</p> <p>Note: The user should perform all of the following commands as the LSMS root user. The snapshot is only mounted during the db portion of the backup but this phase will consume the majority of the time required to perform a backup. The snapshot will not be mounted during the platform and logs portion of the backup but terminating it may leave TOC file and backup server LOCK file cleanup necessary as described in step 11, 13, and 16 below.</p> | |
| <input type="checkbox"/> | 1. MPS X: Login as the user "root". | <pre>[hostname] console login: root password: <root_password></pre> |
| <input type="checkbox"/> | 2. MPS X: Determine the PID of the "lsmsbkp" process. | <p>Execute the following command to determine if the "lsmsbkp" process is actively running:</p> <pre>[root@lsmsssec ~]# ps -ef grep lsmsbkp grep -v grep root 25938 11126 0 15:08 pts/3 00:00:00 /bin/bash /usr/TKLC/lsmss/tools/lsmsbkp_wrapper root 25976 25938 0 15:08 pts/3 00:00:00 /bin/sh /usr/TKLC/lsmss/tools/lsmsbkp</pre> <p>If a LSMS backup is in progress the output will show two processes running. Record the PID(process id) of the "lsmsbkp" process and proceed to the next step of this procedure.</p> <p>PID: _____</p> <p>If the above command returns no output then proceed to Step 7 of this procedure to verify that the logical volume does not exist and is not mounted.</p> |
| <input type="checkbox"/> | 3. MPS X: Terminate the "lsmsbkp" process. | <p>Execute the following command to terminate the "lsmsbkp" process:</p> <pre>[root@lsmsssec ~]# kill -9 <lsmsbkp PID></pre> |
| <input type="checkbox"/> | 4. MPS X: Monitor the "lsmsbkp_wrapper" process until it terminates. | <p>After the lsmsbkp process is terminated the lsmsbkp_wrapper should also terminate, Execute the following command to monitor this until no output is displayed.</p> <pre>[root@lsmsssec ~]# ps -ef grep lsmsbkp_wrapper grep -v grep</pre> <p>If after several minutes the "lsmsbkp_wrapper" process does not terminate then it can be terminated using the method described previously in step 3 this time for the "lsmsbkp_wrapper" process.</p> |
| <input type="checkbox"/> | 5. MPS X: Check the "netbackup" process | <p>Most likely the backup will be terminated during the database phase of the backup as this is the longest running phase. We need to check for and terminate the netbackup routine which is actually doing the work:</p> <p>Execute the following command to determine if the "netbackup" process is actively running:</p> <pre>[root@lsmsssec mnt]# ps -ef grep netbackup grep -v grep</pre> |

Procedure 25: Stopping an LSMS backup in process

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| | | <pre>root 14937 13435 5 15:35 pts/3 00:00:00 /usr/bin/perl -T /usr/TKLC/plat/bin/netbackup -- config=/usr/TKLC/plat/etc/BackupTK/lmsdb.xml --repository=db</pre> |
| 6. | <input type="checkbox"/> MPS X: Terminate the “netbackup” process. | <p>Execute the following command to terminate the “netbackup” process:</p> <pre>[root@lmssec mnt]# kill -9 <netbackup PID></pre> |
| 7. | <input type="checkbox"/> MPS X: Verify the mount point for the backup snapshot exists. | <p>Execute the following command to verify that the dbbackup logical volume is mounted at the mount point /mnt/backup/var/TKLC/lms/db :</p> <pre>[root@lmssec ~]# df -h Filesystem Size Used Avail Use% Mounted on /dev/mapper/vgroot-plat_root 976M 287M 639M 31% / tmpfs 3.9G 0 3.9G 0% /dev/shm /dev/md1 244M 48M 184M 21% /boot /dev/mapper/vgroot-plat_tmp 976M 1.7M 924M 1% /tmp /dev/mapper/vgroot-plat_usr 3.9G 2.4G 1.3G 65% /usr /dev/mapper/vgroot-plat_var 976M 210M 716M 23% /var /dev/mapper/vgroot-plat_var_tklc 3.9G 1.2G 2.5G 32% /var/TKLC /dev/mapper/vgroot-lms_root 3.9G 8.2M 3.7G 1% /var/TKLC/lms /dev/mapper/vgroot-lms_db 210G 63M 199G 1% /var/TKLC/lms/db /dev/mapper/vgroot-lms_external 2.0G 3.0M 1.9G 1% /var/TKLC/lms/external /dev/mapper/vgroot-lms_free 138G 61M 131G 1% /var/TKLC/lms/free /dev/mapper/vgroot-lms_logs 36G 49M 34G 1% /var/TKLC/lms/logs /dev/sdc1 1.1G 1.1G 7.5M 100% /media/sdc1/dev/mapper/vgroot-dbbbackup 82G 1.2G 77G 2% /mnt/backup/var/TKLC/lms/db</pre> <p>If /mnt/backup/var/TKLC/lms/db is not mounted proceed to Step 9 of this procedure.</p> |
| 8. | <input type="checkbox"/> MPS X: Umount the mount point for the backup snapshot. | <p>Execute the following command to un-mount the mount point for the snapshot:</p> <pre>[root@lmssec mnt]#umount /mnt/backup/var/TKLC/lms/db</pre> <p>Execute the following command to verify that the mount point for the snapshot has been unmounted. The commands output will look like the following when mount point for the snapshot has been unmounted:</p> <pre>[root@lmssec ~]# df -h Filesystem Size Used Avail Use% Mounted on /dev/mapper/vgroot-plat_root 976M 287M 639M 31% / tmpfs 3.9G 0 3.9G 0% /dev/shm /dev/md1 244M 48M 184M 21% /boot /dev/mapper/vgroot-plat_tmp 976M 1.7M 924M 1% /tmp /dev/mapper/vgroot-plat_usr 3.9G 2.4G 1.3G 65% /usr /dev/mapper/vgroot-plat_var 976M 210M 716M 23% /var /dev/mapper/vgroot-plat_var_tklc 3.9G 1.2G 2.5G 32% /var/TKLC /dev/mapper/vgroot-lms_root</pre> |

Procedure 25: Stopping an LSMS backup in process

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| | | <pre> 3.9G 8.2M 3.7G 1% /var/TKLC/lSMS /dev/mapper/vgroot-lSMS_db 210G 63M 199G 1% /var/TKLC/lSMS/db /dev/mapper/vgroot-lSMS_external 2.0G 3.0M 1.9G 1% /var/TKLC/lSMS/external /dev/mapper/vgroot-lSMS_free 138G 61M 131G 1% /var/TKLC/lSMS/free /dev/mapper/vgroot-lSMS_logs 36G 49M 34G 1% /var/TKLC/lSMS/logs /dev/sdc1 1.1G 1.1G 7.5M 100% /media/sdc1 </pre> |
| <p>9. <input type="checkbox"/></p> | <p>MPS X: Verify that the dbbackup logical volume exists.</p> | <p>Execute the following command to verify that the backup snapshot logical volume exists:</p> <pre> [root@lSMSsec ~]# lvsdisplay --- Logical volume --- LV Name plat_root . (output omitted) . --- Logical volume --- LV Name plat_swap . (output omitted) . --- Logical volume --- LV Name plat_var . (output omitted) . --- Logical volume --- LV Name plat_usr . (output omitted) . --- Logical volume --- LV Name plat tmp . (output omitted) . --- Logical volume --- LV Name plat_var_tklc . (output omitted) . --- Logical volume --- LV Name lSMS_root . (output omitted) . --- Logical volume --- LV Name lSMS_logs . (output omitted) . --- Logical volume --- LV Name lSMS_external . (output omitted) . --- Logical volume --- LV Name lSMS_free . (output omitted) . --- Logical volume --- LV Name lSMS_db . (output omitted) . --- Logical volume --- </pre> |

Procedure 25: Stopping an LSMS backup in process

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| | | <pre> LV Name /dev/vgroot/dbbackup VG Name vgroot LV UUID DFmRiq-00sz-o3bZ-M2mB-huaD-EE7M-KH3mOF LV Write Access read/write LV snapshot status active destination for /dev/vgroot/lsms-db LV Status available # open 1 LV Size 83.00 GB Current LE 2656 COW-table size 8.00 GB COW-table LE 256 Allocated to snapshot 0.00% Snapshot chunk size 8.00 KB Segments 1 Allocation inherit Read ahead sectors 0 Block device 253:5 </pre> <p>If the logical volume/dev/vgroot/dbbackup does not exist proceed to Step 11 of this procedure.</p> |
| <p>10. <input type="checkbox"/></p> | <p>MPS X: Remove the dbbackup logical volume using lvremove.</p> | <p>Execute the following command to remove the /dev/vgroot/dbbackup logical volume:</p> <pre> [root@lsmssec mnt]# lvremove /dev/vgroot/dbbackup </pre> <p>Do you really want to remove active logical volume "dbbackup"? [y/n]: y</p> <p>Logical volume "dbbackup" successfully removed</p> <p>Execute the following command to verify that the logical volume has been removed. The commands output will look like the following when the snapshot lv have been removed:</p> <pre> [root@lsmssec ~]# lvsdisplay --- Logical volume --- LV Name plat root . (output omitted) . --- Logical volume --- LV Name plat_swap . (output omitted) . --- Logical volume --- LV Name plat_var . (output omitted) . --- Logical volume --- LV Name plat_usr . (output omitted) . --- Logical volume --- LV Name plat_tmp . (output omitted) . --- Logical volume --- LV Name plat var tklc . (output omitted) . --- Logical volume --- LV Name lsms root </pre> |

Procedure 25: Stopping an LSMS backup in process

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| | | <pre> (output omitted) . --- Logical volume --- LV Name lsms_logs . (output omitted) . --- Logical volume --- LV Name lsms_external . (output omitted) . --- Logical volume --- LV Name lsms_free . (output omitted) . --- Logical volume --- LV Name lsms_db . (output omitted) . </pre> |
| 11. <input type="checkbox"/> | MPS X: Verify the existence of a TOC file in the “/mnt/backup” directory. | <p>Execute the following command to change directory to “/mnt/backup”:</p> <pre>[root@lsmsec mnt]# cd /mnt/backup</pre> <p>Execute the following command to verify the existence of a TOC (Table Of Contents) file exists in “/mnt/backup”;</p> <pre>[root@lsmsec backup]# ls TOC var</pre> <p>Note: If no TOC file exists proceed to the Step 13 of this procedure.</p> |
| 12. <input type="checkbox"/> | MPS X: Remove the TOC file in the “/mnt/backup” directory. | <p>Execute the following command to remove the TOC file in “/mnt/backup”:</p> <pre>[root@lsmsec backup]# rm TOC rm: remove regular file `TOC'? y</pre> |
| 13. <input type="checkbox"/> | MPS X: Verify the existence of a TOC file in the “/” directory. | <p>Execute the following command to change directory to “/”:</p> <pre>[root@lsmsec backup]# cd /</pre> <p>Execute the following command to verify the existence of a TOC (Table Of Contents) file exists in “/”;</p> <pre>[root@lsmsec backup]# ls bin etc lib misc proc selinux tftpboot us r boot home lost+found mnt root srv tmp va r dev initrd media opt sbin sys TOC</pre> <p>Note: If no TOC file exists proceed to the Step 15 of this procedure.</p> |
| 14. <input type="checkbox"/> | MPS X: Remove the TOC file in the “/” directory. | <p>Execute the following command to remove the TOC file in “/mnt/backup”:</p> <pre>[root@lsmsec backup]# rm TOC rm: remove regular file `TOC'? y</pre> |

Procedure 25: Stopping an LSMS backup in process

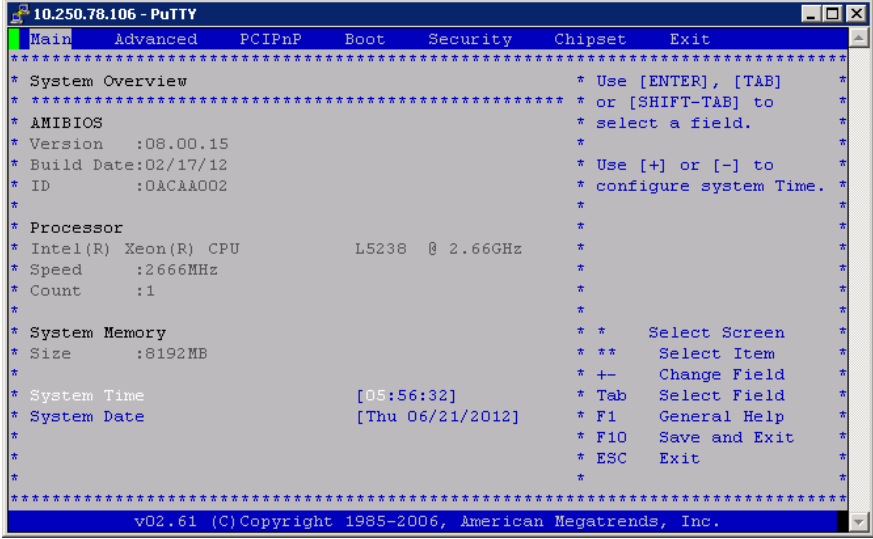

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| 15. <input type="checkbox"/> | MPS X: SSH to the backup server. | Execute the following command to SSH to the NAS: [root@lsmsec backup]# ssh backupserver |
| 16. <input type="checkbox"/> | MPS X: Verify the existence of any LOCK.* files in the “/Volumes/LVstorage” directory on the NAS. | On the NAS execute the following command to change directory to “/Volumes/LVstorage”: [root@CE64CDAE root]# cd /Volumes/LVstorage Execute the following command to verify the existence of a LOCK file exists in “/Volumes/LVstorage”: [root@CE64CDAE LVstorage]# ls db LOCK.db logs_lsmspri logs_lsmsec lsmspri lsmsec Note: In this example a db directory LOCK file exists, but it is possible for a lock file to exist for any of the five directories listed: LOCK.db, LOCK.logs_lsmspri, LOCK.logs_lsmsec, LOCK.lsmspri, and/or LOCK.lsmsec Note: If no LOCK file exists proceed to Step 18 of this procedure. |
| 17. <input type="checkbox"/> | MPS X: Remove any LOCK.* files in the “/Volumes/LVstorage” directory on the NAS. | Execute the following command to remove the LOCK.* files in “/Volumes/LVstorage”: [root@CE64CDAE LVstorage]# rm LOCK.db rm: remove regular file `LOCK.db'? y Note: In the following example a db directory LOCK file is being removed, it is possible for a lock file to exist for any of the five directories listed. |
| 18. <input type="checkbox"/> | Procedure complete. | This procedure is complete. |

Procedure 26 IPM with TPD 7.4.X

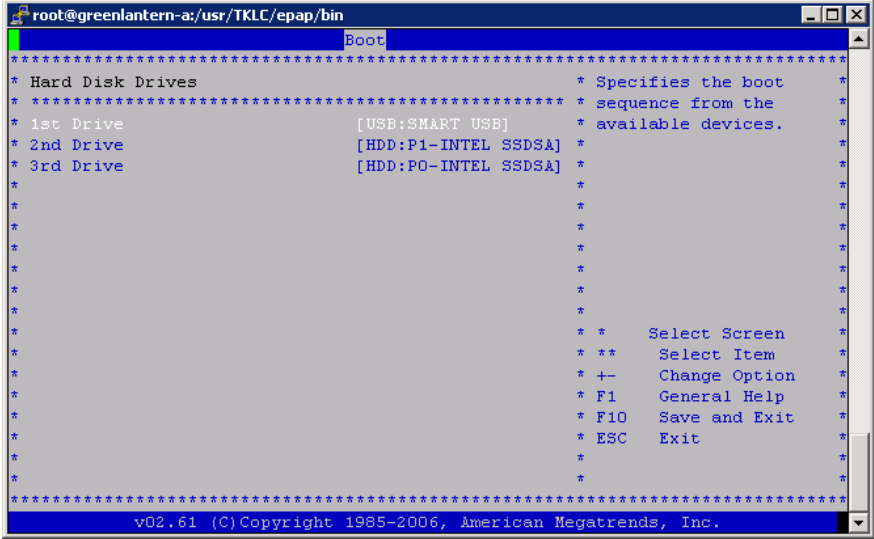
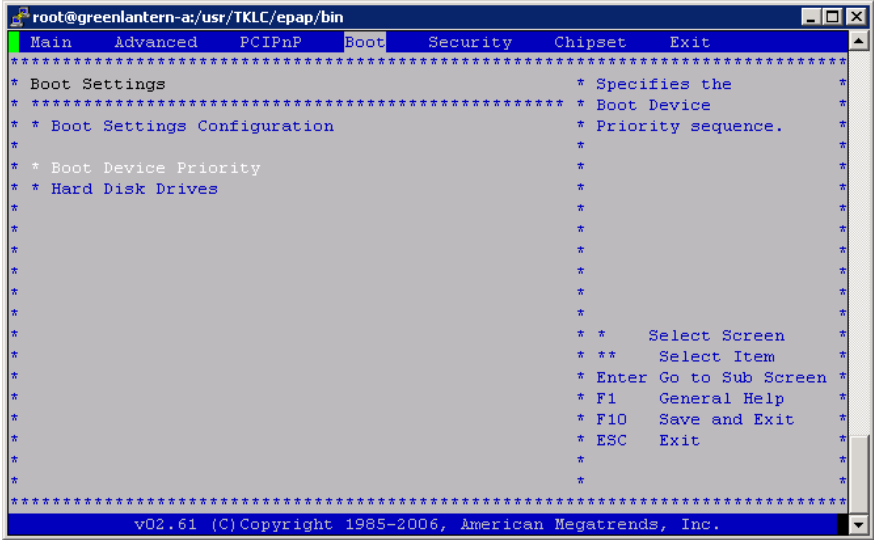
Procedure 26: IPM with TPD 7.4.x

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| S T E P # | This procedure will IPM the E5-APP-B Server. Estimated time: 5 minutes | |
| 1. <input type="checkbox"/> | MPS X: Insert TPD 7.0.3 USB media into the USB port | IPM LSMS servers with 7.4.x.0.0-y.z.0. |
| 2. <input type="checkbox"/> | MPS X: If necessary, log in to the server as the user “root” | If not already logged in to the MPS server, then login as user “root”. console login: root |


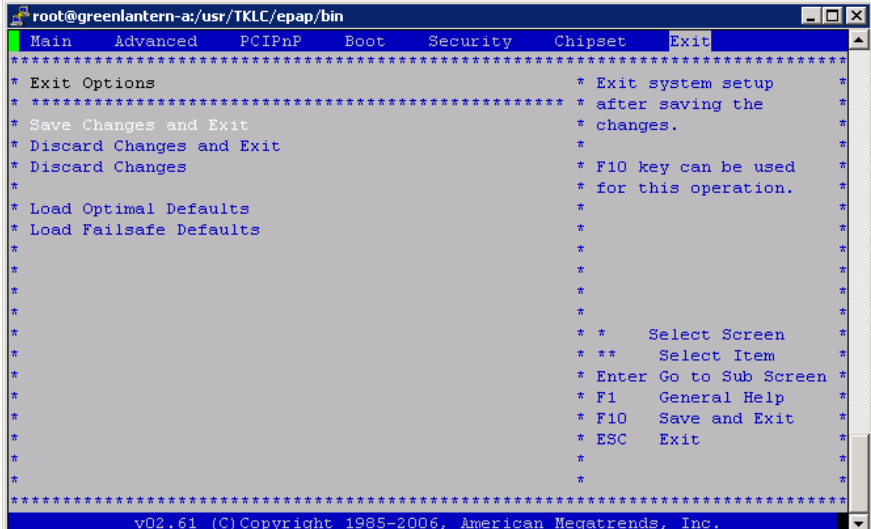
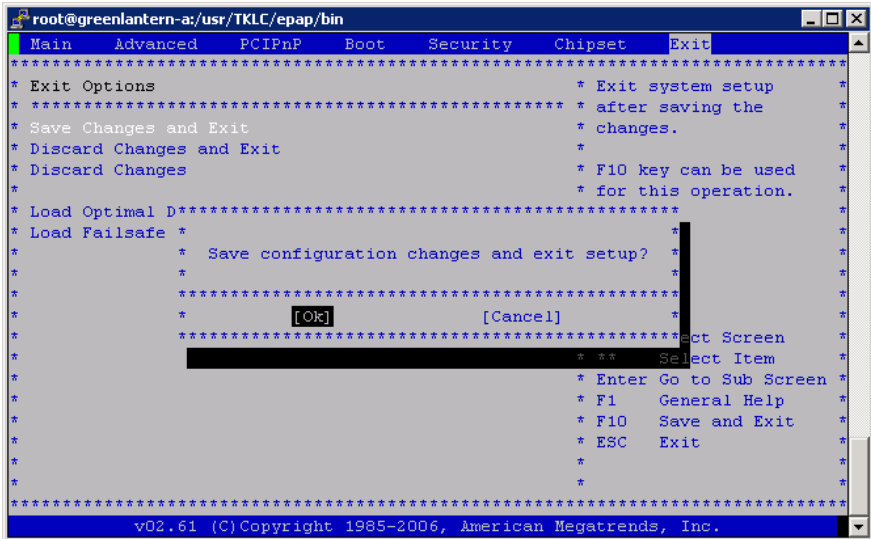
Procedure 26: IPM with TPD 7.4.x

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| | | password: <root_password> |
| 3. | MPS X: <input type="checkbox"/> Reboot server | # reboot |
| 4. | MPS X: <input type="checkbox"/> Press 'del' key to enter the BIOS |  <p>The screenshot shows the BIOS 'System Overview' screen. The menu bar at the top includes 'Main', 'Advanced', 'PCIPnP', 'Boot', 'Security', 'Chipset', and 'Exit'. The screen displays system information: AMIBIOS Version 08.00.15, Build Date 02/17/12, ID 0ACAA002, Processor Intel(R) Xeon(R) CPU L5238 @ 2.66GHz, System Memory Size 8192MB, System Time [05:56:32], and System Date [Thu 06/21/2012]. Navigation instructions are provided on the right side of the screen.</p> |
| 5. | MPS X: <input type="checkbox"/> Set System Time and Date | Set the System Time and Date and time to GMT (Greenwich Mean Time). |
| 6. | MPS X: <input type="checkbox"/> Select <i>Boot</i> → <i>Hard Disk Drives</i> option |  <p>The screenshot shows the BIOS 'Boot Settings' screen. The menu bar at the top includes 'Main', 'Advanced', 'PCIPnP', 'Boot', 'Security', 'Chipset', and 'Exit'. The screen displays boot configuration options: Boot Settings, Boot Settings Configuration, Boot Device Priority, and Hard Disk Drives. Navigation instructions are provided on the right side of the screen.</p> |
| 7. | MPS X: <input type="checkbox"/> Press 'Enter' key and select USB as the 1 st Drive | |

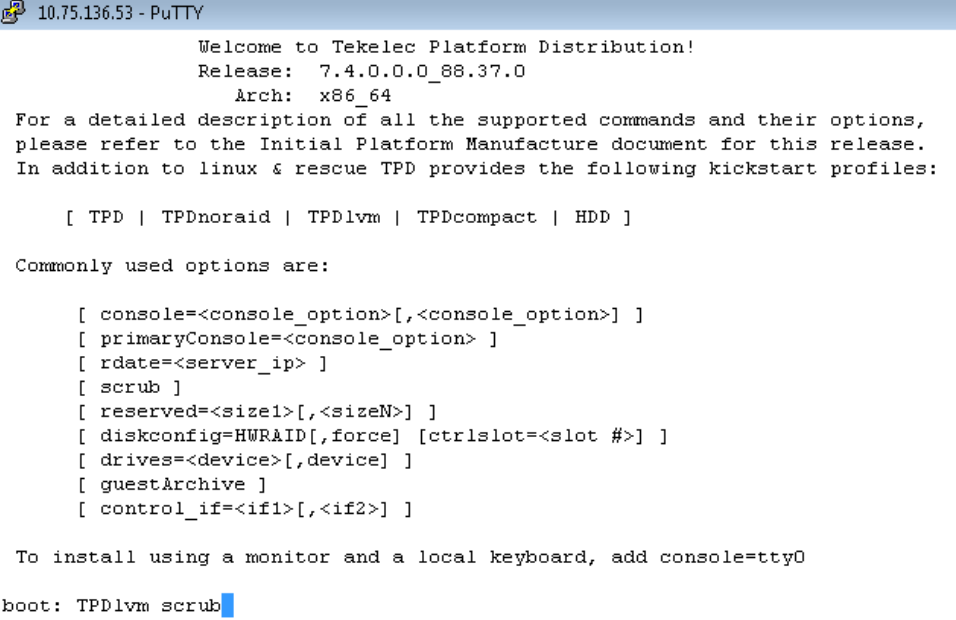
Procedure 26: IPM with TPD 7.4.x

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| | |  |
| <p>8. <input type="checkbox"/></p> | <p>MPS X: Press 'Esc' key and select Boot Device Priority</p> |  |
| <p>9. <input type="checkbox"/></p> | <p>MPS X: Verify that the 1st Boot Device is set to USB.</p> | |

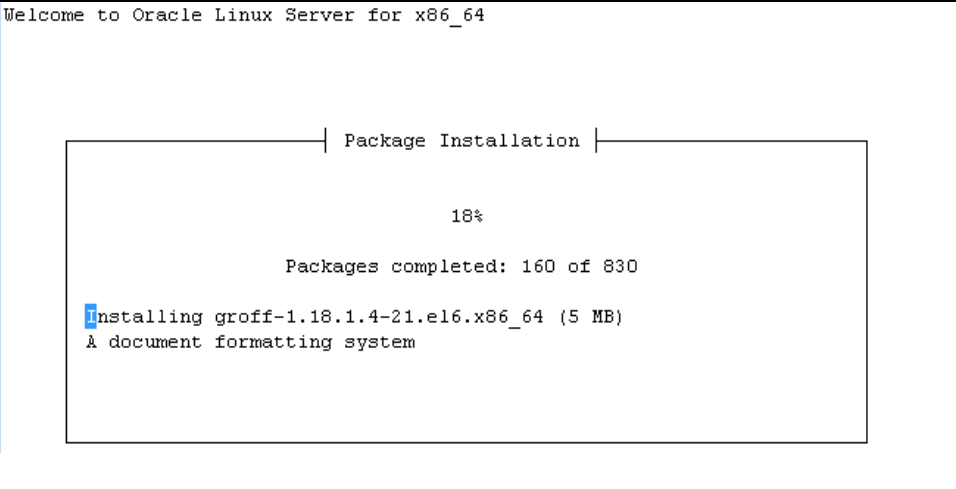
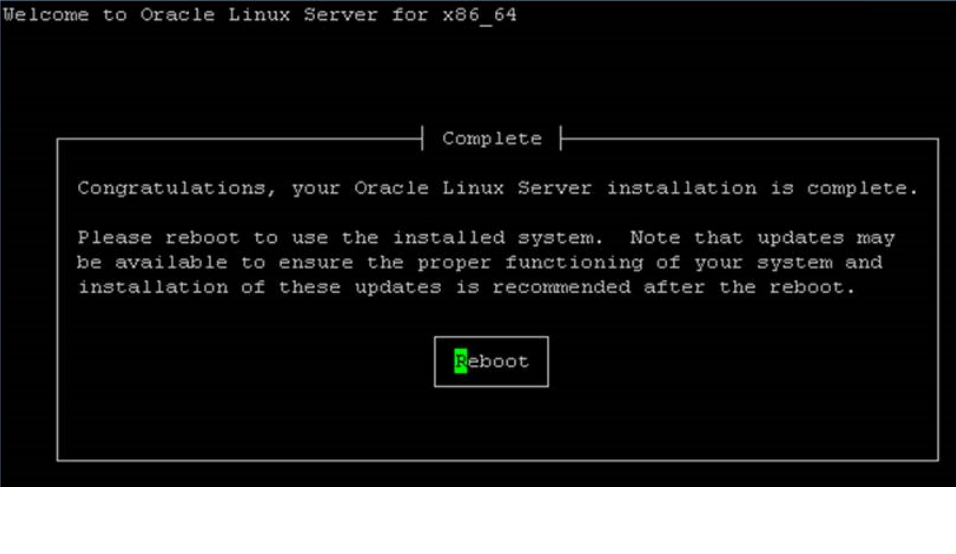
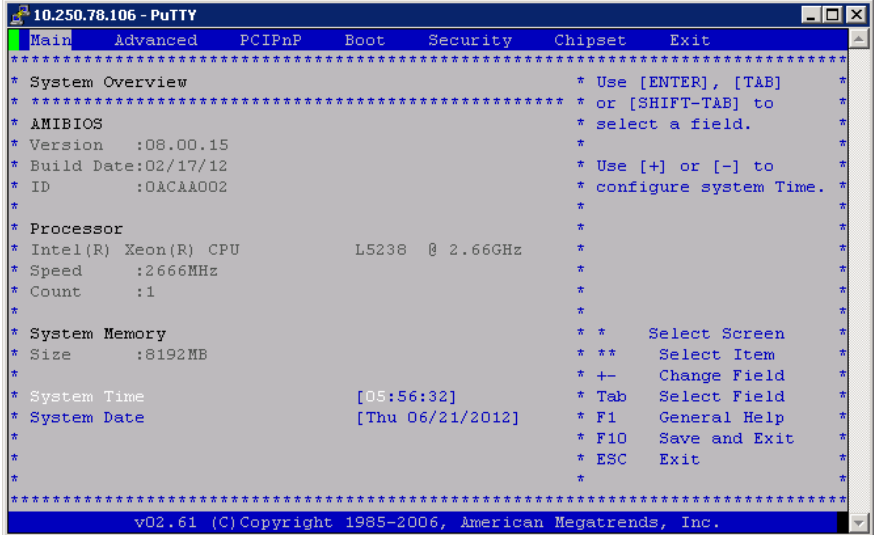
Procedure 26: IPM with TPD 7.4.x

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| <p>10. <input type="checkbox"/></p> | <p>MPS X: Press 'Esc' key and select <i>Exit</i> → <i>Save Changes and Exit</i> option</p> |  |
| <p>11. <input type="checkbox"/></p> | <p>MPS X: Select [OK] to save the configuration changes. The server will reboot and TPD boot prompt will appear.</p> |  |

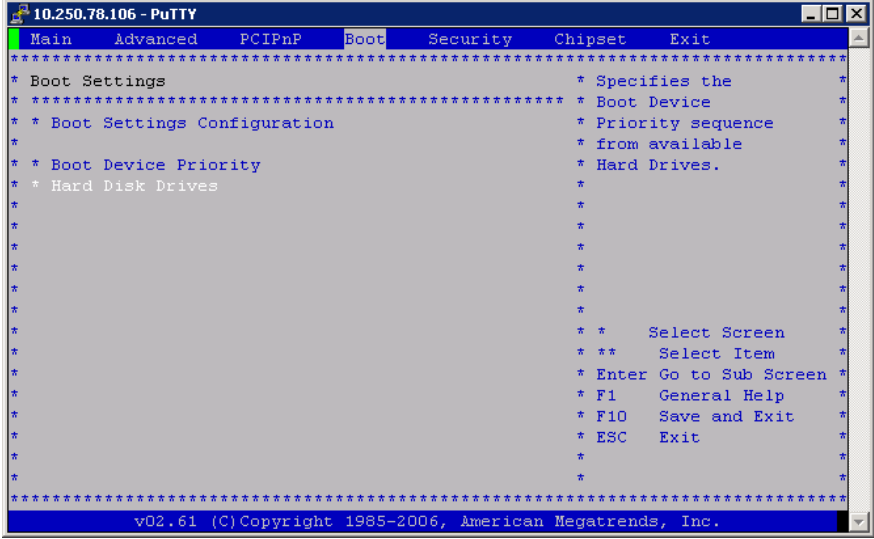
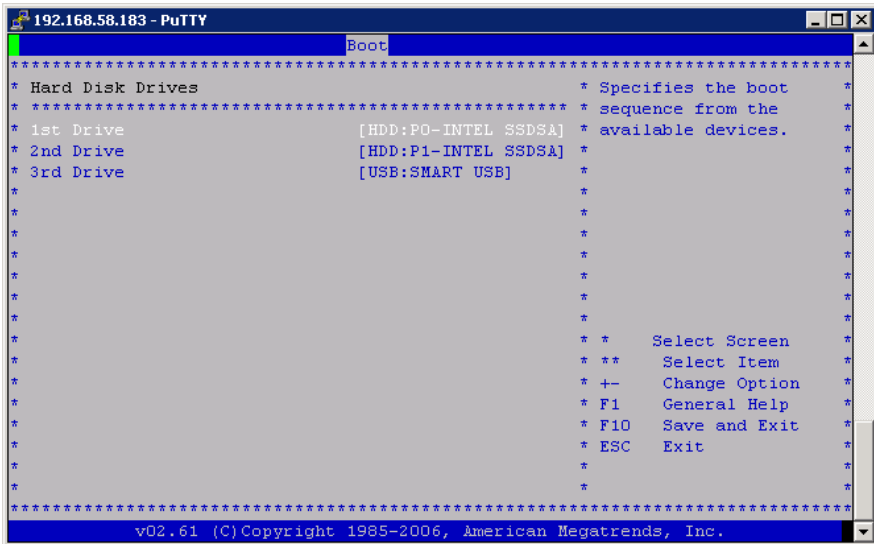
Procedure 26: IPM with TPD 7.4.x

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| <p>12. <input type="checkbox"/></p> | <p>MPS X: Start the IPM process by entering the TPD command at the boot prompt.</p> | <p>boot: TPDlvm scrub</p> |
| <p>13. <input type="checkbox"/></p> | <p>MPS X: Start the IPM process by entering the TPDlvm command at the boot prompt.</p> |  <pre> 10.75.136.53 - PuTTY Welcome to Tekelec Platform Distribution! Release: 7.4.0.0.0_88.37.0 Arch: x86_64 For a detailed description of all the supported commands and their options, please refer to the Initial Platform Manufacture document for this release. In addition to linux & rescue TPD provides the following kickstart profiles: [TPD TPDnoraaid TPDlvm TPDcompact HDD] Commonly used options are: [console=<console_option>[,<console_option>]] [primaryConsole=<console_option>] [rdate=<server_ip>] [scrub] [reserved=<size1>[,<sizeN>]] [diskconfig=HWRaid[,force] [ctrlslot=<slot #>]] [drives=<device>[,device]] [guestArchive] [control_if=<if1>[,<if2>]] To install using a monitor and a local keyboard, add console=tty0 boot: TPDlvm scrub </pre> |
| <p>14. <input type="checkbox"/></p> | <p>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.</p> | <pre> mounting /dev/pts (unix98 pty) filesystem... done mounting /sys filesystem... done anaconda installer init version 13.21.239 using a serial console trying to remount root filesystem read write... done mounting /tmp as tmpfs... done running install... running /sbin/loader detecting hardware... waiting for hardware to initialize... </pre> |
| <p>15. <input type="checkbox"/></p> | <p>MPS X: Once the drive formatting and file system creation steps are complete, the screen at right will appear indicating that the package installation has begin.</p> | |

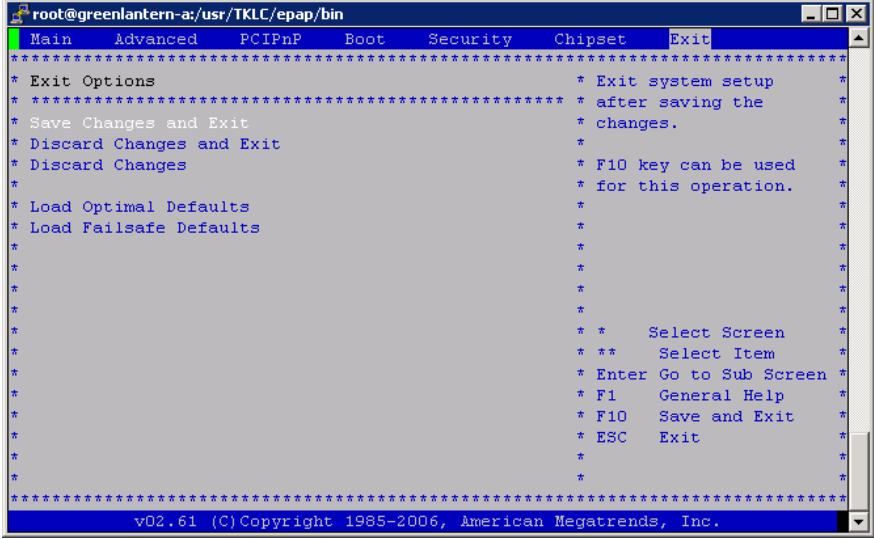
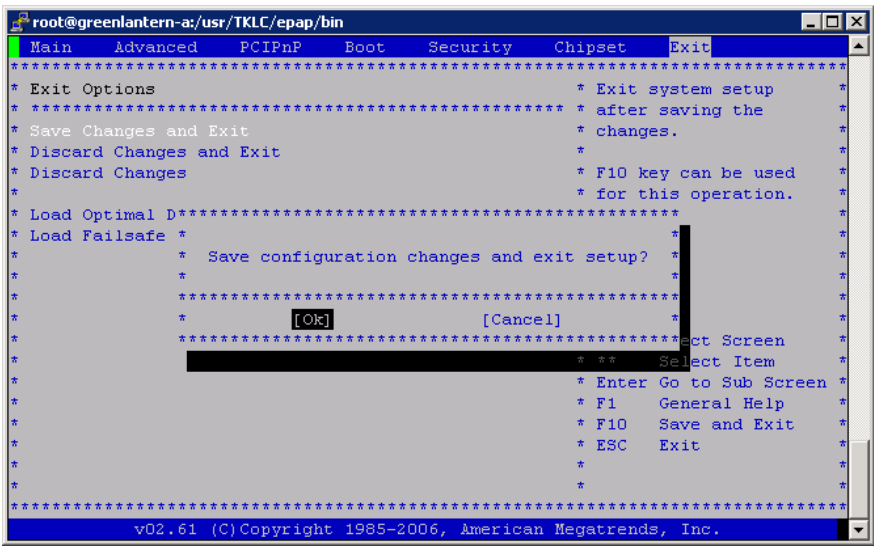
Procedure 26: IPM with TPD 7.4.x

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| <p>16. <input type="checkbox"/> MPS X:</p> <p>Once all the packages have been successfully installed, the screen at right will appear letting you know the installation process is complete.</p> <p>Remove USB media before Reboot.</p> <p>Press <ENTER> to reboot the system and continue with the next step.</p> | |  |
| <p>17. <input type="checkbox"/> MPS X:</p> <p>Press 'del' key to enter the BIOS</p> | |  |
| <p>18. MPS X:</p> | | |

Procedure 26: IPM with TPD 7.4.x

| | | |
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| <input type="checkbox"/> | <p>Select <i>Boot</i> → <i>Hard Disk Drives</i> option</p> |  |
| <p>19.</p> <input type="checkbox"/> | <p>MPS X: Press 'Enter' key and select HDD:P0 as the 1st Drive</p> |  |
| <p>20.</p> <input type="checkbox"/> | <p>MPS X: Press 'Esc' key and select Boot Device Priority</p> | |

Procedure 26: IPM with TPD 7.4.x

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| <p>23. <input type="checkbox"/></p> | <p>MPS X: Select [OK] to save the configuration changes. The server will reboot.</p> <p>Remove USB media from USB drive.</p> |  <p>When the message "Upstart Job ntdMgr: started", is displayed, press the Enter Key to get the Login prompt.</p> |
| <p>24. <input type="checkbox"/></p> | <p>MPS X: Log in to the server as the user "root"</p> | <p>Login: root Password: <root_password></p> |
| <p>25. <input type="checkbox"/></p> | <p>MPS X: Verify that the platform revision is same as the ISO used.</p> | <p># getPlatRev 7.4.x.0.0-y.z.0<LSMS></p> |
| <p>26. <input type="checkbox"/></p> | <p>Procedure complete.</p> | <p>This procedure is complete.</p> |

Procedure 27 Copying License File using SCP

Procedure 27: Copying License File using SCP

| | | |
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| S T E P # | This procedure will help copying the license file from a desktop to LSMS server | |
| | Estimated time: 5 minutes | |
| | 1. <input type="checkbox"/> | Server X: Login to server where license file is present Logging to server using ID and password where license file is copied |
| | 2. <input type="checkbox"/> | Server X: SCP the file from server to LSMS server <pre>scp <license file> root@<LSMS IP>:/usr/local/netech/etc/license</pre> |
| 3. <input type="checkbox"/> | LSMS MPS: Check if the license file has been copied correctly Run command to check for license file : # cat /usr/local/netech/etc/license Expected Output : Contents of license file should be displayed | |
| 4. <input type="checkbox"/> | Procedure complete. This procedure is complete. | |

Procedure 28 Copying License File from USB

Procedure 28: Copying License File from USB

| | | |
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| S T E P # | This procedure will help copying the license file from a desktop to LSMS server. | |
| | Estimated time: 5 minutes | |
| | 1. <input type="checkbox"/> | Server X: Copy license file to USB Connect USB to desktop and copy the license file from desktop to USB. |
| | 2. <input type="checkbox"/> | LSMS MPS: Confirm how the USB is enumerated on LSMS server Connect the USB to LSMS MPS which contains the license file and check on how it is enumerated using command : #dmesg grep -i "removable disk" Expected output sd 6:0:0:0: Attached scsi removable disk sdc This shows USB is enumerated as /dev/sdc |
| 3. <input type="checkbox"/> | LSMS MPS: Determine the partition name Run command fdisk -l on enumerated name device to determine partition name : #fdisk -l /dev/sdc Expected Output : Disk /dev/sdc: 2013 MB, 2013265920 bytes 256 heads, 63 sectors/track, 243 cylinders Units = cylinders of 16128 * 512 = 8257536 bytes Device Boot Start End Blocks Id System /dev/sdc1 * 1 110 887008+ b W95 FAT32 This shows that partition name is /dev/sdc1 | |

Procedure 28: Copying License File from USB

| | | |
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| 4. <input type="checkbox"/> | LSMS MPS: Copy license file from USB to MPS | Run below command to copy the license file from USB #mkdir -p /tmp/usb #mount /dev/sdc1 / tmp/usb |
| 5. <input type="checkbox"/> | LSMS MPS: Copy license file from /tmp directory | # cp /tmp/usb/<license-file>/usr/local/netech/etc/license |
| 6. <input type="checkbox"/> | LSMS MPS: Check if the license file has been copied correctly | Run command to check for license file : #cat /usr/local/netech/etc/license Expected Output : Contents of license file should be displayed |
| 7. <input type="checkbox"/> | LSMS MPS: Unmount the USB | Unmount the USB using command : #umount /tmp/usb |
| 8. <input type="checkbox"/> | Procedure Complete. | This procedure is complete. |

Procedure 29 Password change for LSMS System Users

Procedure 29: Password change for LSMS System Users

| | | |
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| S T E P # | This procedure will change the password for the LSMS System User(s). | |
| 1. <input type="checkbox"/> | MPS A: Log on Server A with the LSMS System User for which the password is to be changed. | [hostname]: <LSMS System User> password: <lsmsadm_password> |
| 2. <input type="checkbox"/> | MPS A: Change Password for an LSMS system user | Execute the command to change to password of an existing LSMS user. \$ passwd Changing password for user <LSMS System User>. Changing password for <LSMS 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 |

Procedure 29: Password change for LSMS System Users

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| 3. <input type="checkbox"/> | MPS B: Change Password | Repeat steps 1 and 2 on MPS B also. Note: The new password on MPS A and B should be same. |
| 4. <input type="checkbox"/> | Procedure Complete | This procedure is complete. |

Procedure 30 E5-APP-B Halt/Shutdown

Procedure 30: E5-APP-B Halt/Shutdown

| | | |
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| S T E P # | This procedure will halt the E5-APP-B hardware. | |
| 1. <input type="checkbox"/> | E5APPB Card: Slide the ejector switch | On the APP-B card, slide the Ejector switch (4) up to the UNLOCKED position. Refer to Figure 5. Caution: If the Ejector switch goes from locked to unlocked and the E5-APP-B card is in service, the card will halt. |
| 2. <input type="checkbox"/> | 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. <input type="checkbox"/> | 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 6. |
| 4. <input type="checkbox"/> | 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 6. |
| 5. <input type="checkbox"/> | E5APPB Card: Slide the ejector switch | Remove the E5-APP-B card from the EAGLE shelf. |
| 6. <input type="checkbox"/> | Procedure Complete | This procedure is complete. |

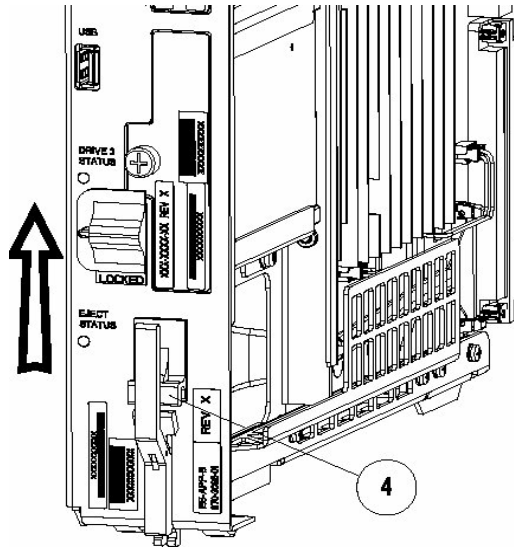


Figure 5: Slide the Ejector Switch

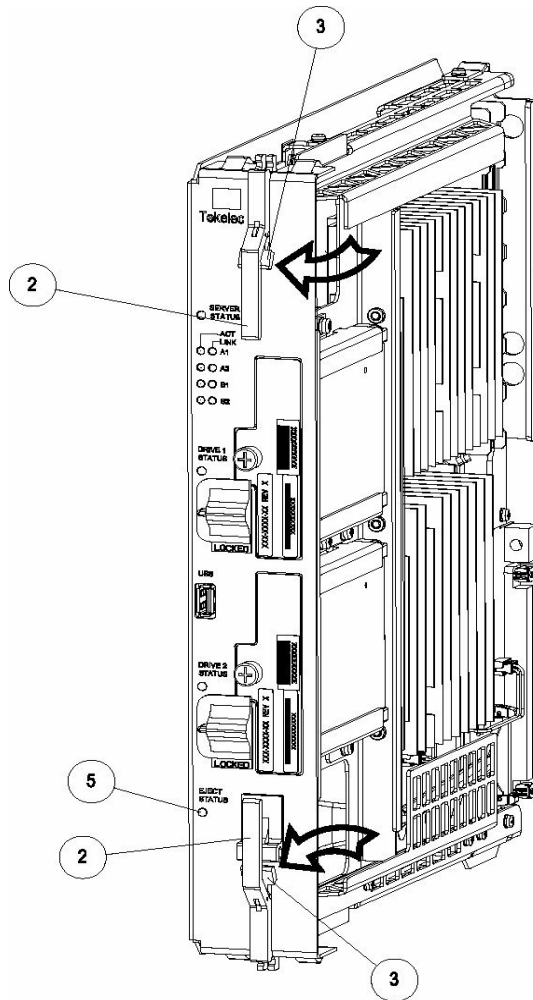


Figure 6: Slide the Ejector Switch

APPENDIX C. CUSTOMER SIGN OFF

Sign-Off Record

*** Please review this entire document. ***

This is to certify that all steps required for the upgrade successfully completed without failure.

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

Customer: Company Name: _____ **Date:** _____

Site: Location: _____

Customer :(Print) _____ **Phone:** _____

Fax: _____

Start Date: _____

Completion Date: _____

This procedure has been approved by the undersigned. Any deviations from this procedure must be approved by both 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 D. MY ORACLE SUPPORT



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

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