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EAGLE LNP Application Processor

Alarms and Maintenance

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Chapter 1

Introduction

Topics:

- *Overview.....13*
- *Scope and Audience.....13*
- *Documentation Admonishments.....13*
- *Manual Organization.....14*
- *My Oracle Support (MOS).....14*
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This chapter provides a brief description of this manual. This chapter also includes the scope, audience, and organization of the manual; how to find related publications; and how to contact documentation for assistance.

Overview

This manual contains the information necessary for the maintenance of the E5-APP-B that supports the EAGLE LNP Application Processor (ELAP). Included are an overview of the E5-APP-B architecture and functions, routine operational procedures, preventative maintenance techniques, and corrective maintenance procedures.





Scope and Audience

The scope of this manual covers platform and application alarms, troubleshooting and recovery procedures, and the System Healthcheck Utility, an application that generates a log file that can be provided to *My Oracle Support (MOS)* for alarm resolution. It is intended to aid maintenance personnel in resolution of ELAP alarms. When instructed by the application, use this manual to locate the platform alarm number and its recovery procedure.

Documentation Admonishments

Admonishments are icons and text throughout this manual that alert the reader to assure personal safety, to minimize possible service interruptions, and to warn of the potential for equipment damage.

Table 1: Admonishments

Icon	Description
 DANGER	Danger: (This icon and text indicate the possibility of <i>personal injury</i> .)
 WARNING	Warning: (This icon and text indicate the possibility of <i>equipment damage</i> .)
 CAUTION	Caution: (This icon and text indicate the possibility of <i>service interruption</i> .)
 TOPPLE	Topple: (This icon and text indicate the possibility of <i>personal injury and equipment damage</i> .)

Manual Organization

This manual is organized into the following chapters:

Introduction contains general information about manual organization, scope and audience, related documentation, how to locate customer documentation on the Customer Support site, how to get technical assistance, and RMA requirements.

Maintenance provides the preventative maintenance procedures and system health checks.

Problem Detection and Reporting provides information about problem detection and reporting.

Recovery Support describes the recommended backing up of the RTDB and presents additional recovery support procedures that may be referred to by alarms recovery actions.

Platform and Application Alarms provides recovery procedures for platform and application alarms.

Field Replaceable Units (FRUs) provides instruction on replacing E5-APP-B cards and FRUs

General Procedures contains miscellaneous general procedures that are referred to within this manual.

My Oracle Support (MOS)

MOS (<https://support.oracle.com>) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. When calling, make the selections in the sequence shown below 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 one of the following options:
 - For Technical issues such as creating a new Service Request (SR), Select **1**
 - For Non-technical issues such as registration or assistance with MOS, Select **2**

You will be connected to a live agent who can assist you with MOS registration and opening a support ticket.

MOS is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at 1-800-223-1711 (toll-free in the US), or by calling the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Related Specifications

For information about additional publications that are related to this document, refer to the Oracle Help Center site. See [Locate Product Documentation on the Oracle Help Center Site](#) for more information on related product publications.

Customer Training

Oracle University offers training for service providers and enterprises. Visit our web site to view, and register for, Oracle Communications training:

<http://education.oracle.com/communication>

To obtain contact phone numbers for countries or regions, visit the Oracle University Education web site:

www.oracle.com/education/contacts

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, <http://docs.oracle.com>. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at <http://www.adobe.com>.

1. Access the Oracle Help Center site at <http://docs.oracle.com>.
2. Click **Industries**.
3. Under the Oracle Communications subheading, click the **Oracle Communications documentation** link.

The Communications Documentation page appears. Most products covered by these documentation sets will appear under the headings “Network Session Delivery and Control Infrastructure” or “Platforms.”

4. Click on your Product and then the Release Number.
A list of the entire documentation set for the selected product and release appears.
5. To download a file to your location, right-click the **PDF** link, select **Save target as** (or similar command based on your browser), and save to a local folder.

Chapter 2

Maintenance

Topics:

- *Introduction.....18*
- *Preventive Maintenance.....18*
- *System Health Check Overview.....24*
- *Running the System Health Check.....30*

This chapter provides maintenance information, problem detection description, and general recovery procedures for the E5-APP-B.

Introduction

This chapter provides preventive and corrective maintenance information. Customers perform a small number of daily preventive maintenance tasks. The ELAP application performs automatic monitoring and problem reporting.

Detailed information about recovery procedures is contained in the remaining chapters of this manual.

Preventive Maintenance

This section describes the following recommended periodic maintenance:

- Daily maintenance procedures:
 - [Backing Up the RTDB](#)
 - [Transferring RTDB Backup File](#)
 - [Automatic RTDB Backup](#)

Daily Maintenance Procedures

Use the Automatic RTDB Backup feature to backup all data stored in the RTDB. The manual backup procedures are included in this section in case the database backup needs to be performed manually. Storing database backups in a secure off-site location ensures the ability to recover from system failures.

This section describes the following recommended daily maintenance procedures:

- [Backing Up the RTDB](#)
- [Transferring RTDB Backup File](#)

Backing Up the RTDB

For ELAP 8.0 or later, a daily RTDB backup is created automatically. For automatic RTDB Backup, see [Automatic RTDB Backup](#).

1. Log in to the ELAPGUI on MPS A as the **elapall** user.
For information about how to log in to the ELAPGUI, see [Accessing the ELAP GUI Interface](#).
Note: For ELAP 8.0 or later, the ELAP software can continue to operate while performing the RTDB backup.
2. From the ELAP menu, select **RTDB > Maintenance > Backup RTDB**.
The window in [Figure 1: Backup the RTDB](#) is displayed.

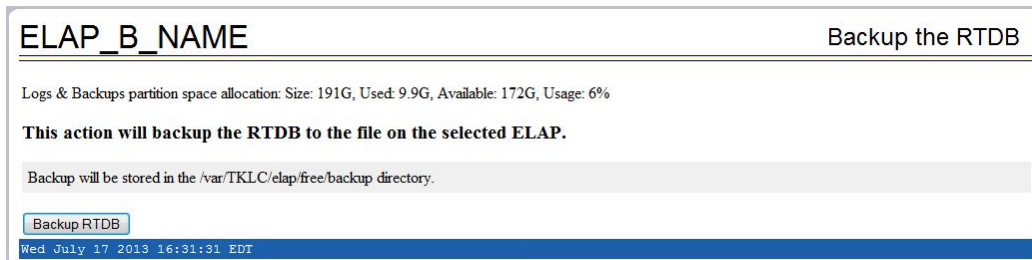


Figure 1: Backup the RTDB

3. Click **Backup RTDB**.

The window in [Figure 2: Backup the RTDB Confirmation](#) displays a request for confirmation.

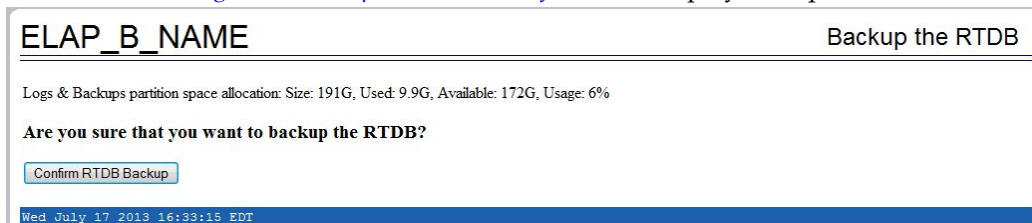


Figure 2: Backup the RTDB Confirmation

4. Click **Confirm RTDB Backup**.

If the backup starts successfully, the following message will scroll through the GUI banner:

Backup RTDB in progress.

After the backup completes successfully, the success window is displayed.

5. The RTDB backup procedure is complete.

6. Select **Process Control > Start Software** from the ELAP Menu.

7. On the Start ELAP Software screen as shown in [Figure 3: Start ELAP Software](#), click **Start ELAP Software**.

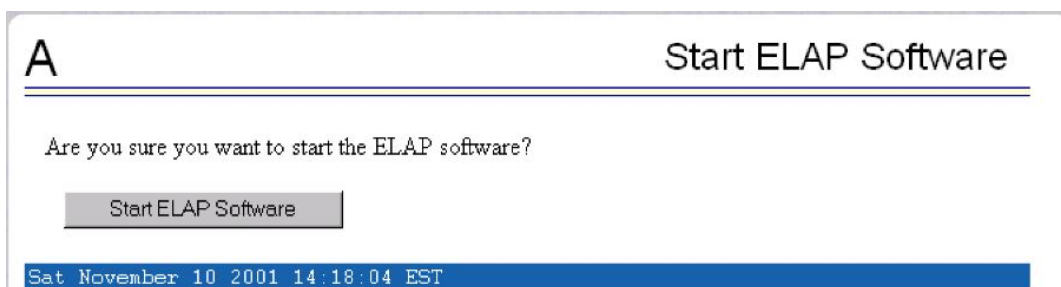


Figure 3: Start ELAP Software

After the ELAP software has started successfully, the screen in [Figure 4: Start ELAP Software - Success](#) is displayed.

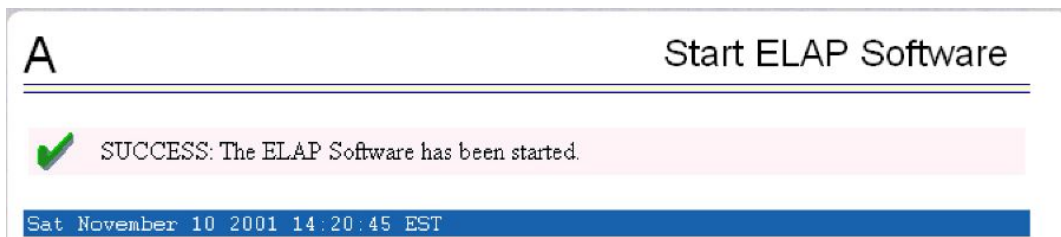


Figure 4: Start ELAP Software - Success

Transferring RTDB Backup File

Perform this procedure once each day. The estimated time required to complete this procedure depends on network bandwidth. File sizes can be several gigabytes for the database.

1. Log in to the ELAP command line interface with user name `elapdev` and the password associated with that name.
2. Use the Secure File Transfer Protocol (`sftp`) to transfer to a remote, secure location the RTDB backup file created by the procedure [Backing Up the RTDB](#).

Automatic RTDB Backup

Automatic RTDB Backup can be scheduled during off-peak provisioning hours, eliminated the need for human intervention. Automatic ELAP RTDB backup intervals are scheduled at 6:a.m. every morning in the Active Server.

User Interface

The menu item circled in [Figure 5: Automatic RTDB Backup Menu Item](#) is available on the ELAP GUI of the Active ELAP server only:

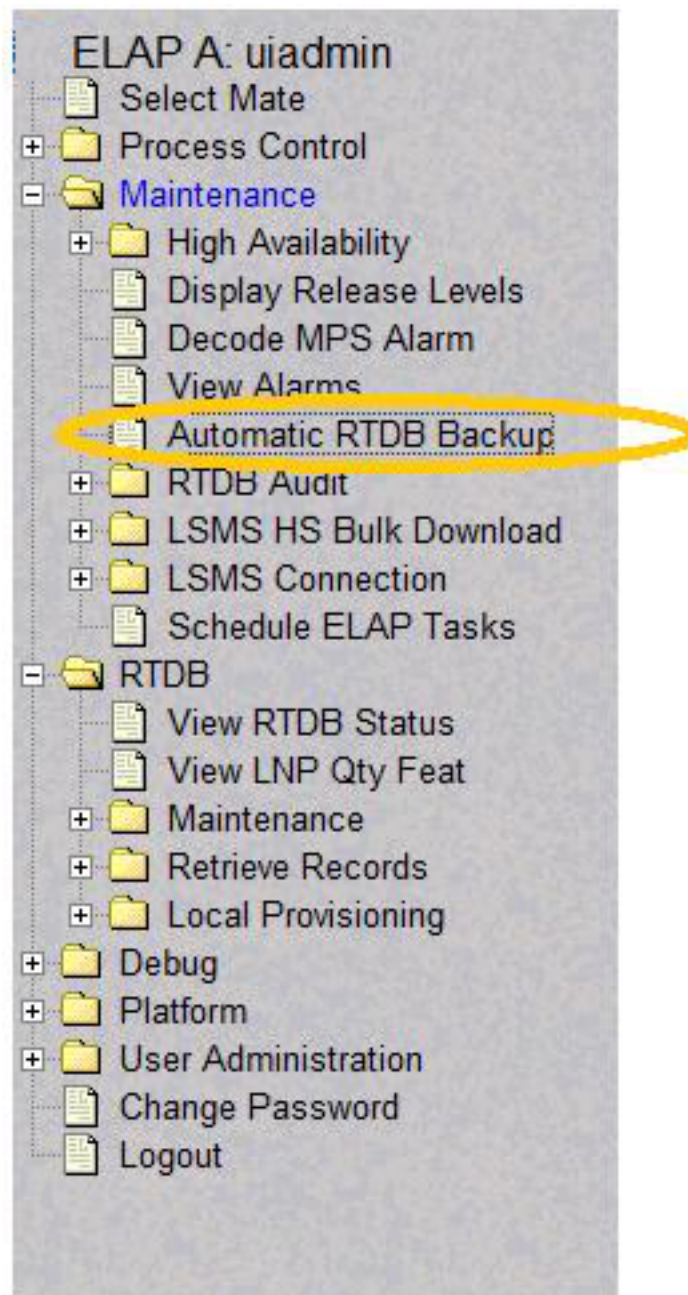


Figure 5: Automatic RTDB Backup Menu Item

Clicking Automatic RTDB Backup opens the page shown in [Figure 6: Automatic RTDB Backup GUI Screen](#).

ELAP_A_NAME		Automatic RTDB Backup
Backup Type (Select None to Cancel Backups)	<input type="text" value="Local and Mate"/>	
Time of the day to start the Backup	<input type="text" value="6:00"/>	
Frequency	<input type="text" value="1 Day"/>	
File Path (Directory only)	<input type="text"/>	
Remote Machine IP Address (xxx.yyy.zzz.aaa)	<input type="text"/>	
Login Name	<input type="text"/>	
Password	<input type="text"/>	
Save the local copies in the default path	<input type="radio"/> Yes <input type="radio"/> No	
Option to delete old backups Note If you select Yes, by default 5 backup files will be maintained	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Specify the number of files to maintain	<input type="text" value="5"/>	
<input type="button" value="Submit Schedule"/>		
Wed January 13 2021 08:53:57 EST		

Figure 6: Automatic RTDB Backup GUI Screen

The Backup Type field has five options:

1. Local
2. Mate
3. Local and Mate
4. Remote
5. None

By default, backups shall be stored on both local and mate ELAP servers. If Automatic RTDB Backup is not configured, "None" option will not be available in the Backup Type field.

Note: The following semantic rules must be followed:

- Time of day must be in hh:mm 24-hour format. Example: 14:03
- File path (in remote only) must be the absolute path from root
- IP address must be in xxx.yyy.zzz.aaa format. Example: 192.168.210.111
- Password entered will be displayed with asterisks (*)

Backup Type: Local

Selecting the Backup Type "Local" creates the backup on the same ELAP server. The user must provide the following inputs:

- Time of day to start Local Backup
- Frequency:
 - 12 hours
 - 1 day (daily)
 - 2 days
 - 3 days
 - 5 days
 - 7 days

Note: Daily backup frequency is the default. Selecting an option other than 1 day prompts the user for reconfirmation of the backup frequency, as daily is the recommended frequency.

- File path where the user can provide the subdirectories created within the directory
"/var/TKLC/elap/free/backup/"

Note: By default, Backup file is saved in the Default File path.

- Option to delete old backups. When the user selects "yes," server will delete the old backups, except the latest number of backup files specified by the user in the "Specify the number of files to maintain" field. By default, 5 backup files are maintained. If this option is "yes," a maximum of 7 and minimum of 1 backup file may be maintained.
- Specify the number of files to maintain

Backup Type: Mate

Selecting the Backup Type "Mate" creates the backup on the local ELAP server and transfers (moves) the same backup on the mate ELAP server. The user must provide the following inputs:

- Time of day to start Backup
- Frequency (same configuration as Local)
- File path (same configuration as Local)
- Option to delete old backups (same configuration as Local)
- Specify the number of files to maintain

Backup Type: Local and Mate

Selecting the Backup Type "Local and Mate" creates the backup on the local ELAP server and transfers (moves) the same on the mate ELAP server. The user must provide the following inputs:

- Time of day to start Backup
- Frequency (same configuration as Local)
- File path (same configuration as Local)
- Option to delete old backups (same configuration as Local)
- Specify the number of files to maintain

Backup Type: Remote

Selecting the Backup Type "Remote" creates the backup on the local ELAP server and transfers (moves) the same on the remote ELAP server. The user must provide the following inputs:

- Time of day to start Backup
- Frequency (same configuration as Local)
- File path, which includes the absolute path for storing the backup file. If the user provides a non-existent directory, the directory will not be created and transfer of RTDB Backup file to the Remote Machine will fail.
- IP address of the Remote Machine
- User Login
- User Password
- Save the local copies in the default path. When the user selects "yes," the server will also save the RTDB Backup files in the local machine.

Backup Type: None

Selecting the Backup Type "None" cancels all currently scheduled backups All items on the form will be disabled except the submit button.

System Health Check Overview

The server runs a self-diagnostic utility program called `syscheck` to monitor itself. The system health check utility `syscheck` tests the server hardware and platform software. Checks and balances verify the health of the server and platform software for each test, and verify the presence of required application software.

If the `syscheck` utility detects a problem, an alarm code is generated. The alarm code is a 16-character data string in hexadecimal format. All alarm codes are ranked by severity: critical, major, and minor. [Alarm Categories](#) lists the platform alarms and their alarm codes.

The `syscheck` output can be in either of the following forms (see [Health Check Outputs](#) for output examples):

- Normal—results summary of the checks performed by `syscheck`
- Verbose—detailed results for each check performed by `syscheck`

The `syscheck` utility can be run in the following ways:

- The operator can invoke `syscheck` :
 - From the ELAPGUI Platform Menu (see [Accessing the ELAP GUI Interface](#)). The user can request **Normal** or **Verbose** output.
 - By logging in as a `syscheck` user (see [Running syscheck Using the syscheck Login](#)). Only **Normal** output is produced.
 - By logging in as `admusr` and using `sudo` to run `syscheck` on the command line (see [Running syscheck from the Command line](#)).
- `syscheck` runs automatically by timer at the following frequencies:
 - Tests for critical platform errors run automatically every 30 seconds.
 - Tests for major and minor platform errors run automatically every 60 seconds.

Functions Checked by `syscheck`

[Table 2: System Health Check Operation](#) summarizes the functions checked by `syscheck`.

Table 2: System Health Check Operation

System Check	Function
Disk Access	Verify disk read and write functions continue to be operable. This test attempts to write test data in the file system to verify disk operability. If the test shows the disk is not usable, an alarm is reported to indicate the file system cannot be written to.
Smart	Verify that the <code>smartd</code> service has not reported any problems.
File System	Verify the file systems have space available to operate. Determine what file systems are currently

System Check	Function
	mounted and perform checks accordingly. Failures in the file system are reported if certain thresholds are exceeded, if the file system size is incorrect, or if the partition could not be found. Alarm thresholds are reported in a similar manner.
Memory	Verify that 8 GB of RAM is installed.
Network	Verify that all ports are functioning by pinging each network connection (provisioning, sync, and DSM networks). Check the configuration of the default route.
Process	Verify that the following critical processes are running. If a program is not running the minimum required number of processes, an alarm is reported. If more than the recommended processes are running, an alarm is also reported. <ul style="list-style-type: none"> • sshd (Secure Sheld daemon) • ntpd (NTP daemon) • syscheck (System Health Check daemon)
Hardware Configuration	Verify that the processor is running at an appropriate speed and that the processor matches what is required on the server. Alarms are reported when a processor is not available as expected.
Cooling Fans	Verifies no fan alarm is present. Fan alarm will be issued if fans are outside expected RPM.
Voltages	Measure all monitored voltages on the server main board. Verify that all monitored voltages are within the expected operating range.
Temperature	Measure the following temperatures and verify that they are within a specified range. <ul style="list-style-type: none"> • Inlet and Outlet temperatures • Processor internal temperature • MCH internal temperature
MPS Platform	Provide alarm if internal diagnostics detect any other error, such as server syscheck script failures.

Health Check Outputs

System health check utility *syscheck* output can be either Normal (brief) or Verbose (more detailed), depending upon how *syscheck* was initiated. The following examples show Normal and Verbose output formats:

Normal Output

```
Running modules in class disk...      OK
Running modules in class hardware...  OK
Running modules in class net...       OK
Running modules in class proc...      OK
Running modules in class services...  OK
Running modules in class system...    OK
Running modules in class upgrade...   OK
```

Verbose Output Containing Errors

If an error occurs, the system health check utility *syscheck* provides alarm data strings and diagnostic information for platform errors in its output. The following is an example of Verbose *syscheck* output:

```
Running modules in class disk...
drbd: Checking DRBD status file, /proc/drbd
drbd: line #1: DRBD version=[8.3.11]
drbd: line #2 contains DRBD compilation info
drbd: line #3: resource=[0]
drbd: line #3: cs{0}=[Connected]
drbd: line #3: st_self{0}=[Primary] st_peer{0}=[Secondary]
drbd: line #3: ds_self{0}=[UpToDate] ds_peer{0}=[UpToDate]
drbd: line #4 contains network stats
drbd: processing alarms for resource=0
fs: Current file space use in "/" is 43%.
fs: Current Inode used in "/" is 14%.
fs: Current file space use in "/boot" is 41%.
fs: Current Inode used in "/boot" is 0%.
fs: Current file space use in "/usr" is 57%.
fs: Current Inode used in "/usr" is 20%.
fs: Current file space use in "/var" is 34%.
fs: Current Inode used in "/var" is 4%.
fs: Current file space use in "/var/TKLC" is 40%.
fs: Current Inode used in "/var/TKLC" is 1%.
fs: Current file space use in "/tmp" is 0%.
fs: Current Inode used in "/tmp" is 0%.
fs: Current file space use in "/usr/TKLC/elap" is 6%.
fs: Current Inode used in "/usr/TKLC/elap" is 0%.
fs: Current file space use in "/var/TKLC/elap/drbd/mysql" is 4%.
fs: Current Inode used in "/var/TKLC/elap/drbd/mysql" is 0%.
fs: Current file space use in "/var/TKLC/elap/logs" is 0%.
fs: Current Inode used in "/var/TKLC/elap/logs" is 0%.
fs: Current file space use in "/var/TKLC/elap/free" is 3%.
fs: Current Inode used in "/var/TKLC/elap/free" is 0%.
hpdisk: Only HP ProLiant servers support hpdisk diagnostics.
```

```

    lsi: Could not find LSI controller. Not running test.
    meta: Checking md status on system.
    meta: md Status OK, with 3 active volumes.
    meta: Checking md configuration on system.
    meta: Server md configuration OK.
multipath: No multipath devices configured to be checked.
    sas: Only T1200 supports SAS diagnostics.
smart: Finished examining logs for disk: sdb.
smart: Finished examining logs for disk: sda.
smart: SMART status OK.
write: Successfully read from file system "/".
write: Successfully read from file system "/boot".
write: Successfully read from file system "/usr".
write: Successfully read from file system "/var".
write: Successfully read from file system "/var/TKLC".
write: Successfully read from file system "/tmp".
write: Successfully read from file system "/usr/TKLC/elap".
write: Successfully read from file system "/var/TKLC/elap/logs".
write: Successfully read from file system "/var/TKLC/elap/free".
Running modules in class hardware...
cmosbattery: This hardware does not support monitoring the CMOS battery.
cmosbattery: The test will not be ran.
    ecc: Checking ECC hardware.
    ecc: Correctible Error Count: 0
    ecc: Uncorrectible Error Count: 0
06/20/2016 05:11:30 EDT | inf | Discarding cache...
    fan: Checking Status of Server Fans.
    fan: Fan is OK. fana: 1, CHIP: FAN
    fan: Server Fan Status OK.
fancontrol: EAGLE_E5APPB does not support Fan Controls
fancontrol: Will not run the test.
flashdevice: Checking programmable devices.
flashdevice: PSOC OK.
flashdevice: CPLD OK.
flashdevice: BIOS OK.
flashdevice: ALL Programmable Devices OK.
    mezz: Checking Status of Serial Mezzanine.
    mezz: Serial Mezzanine is OK. mezza: 1, CHIP: MEZZ
    mezz: Serial Mezzanine is OK. mezzb: 1, CHIP: MEZZ
    mezz: Server Serial Mezz Status OK.
oemHW: Only Oracle servers support hwmgmt.
    psu: This hardware does not support power feed monitoring.
    psu: Will not run test.
    psu: This hardware does not support PSU monitoring.
    psu: Will not run test.
serial: Running serial port configuration test
serial: EAGLE_E5APPB does not support serial port configuration monitoring

serial: Will not run test.
    temp: Checking server temperature.
    temp: Server Temp OK. Inlet Air Temp: +25.0 C (high = +70.0 C, warn =
+66 C, hyst = +75.0 C), CHIP: lm75-i2c-0-48
    temp: Server Temp OK. Outlet Air Temp: +30.0 C (high = +70.0 C, warn =
+66 C, hyst = +75.0 C), CHIP: lm75-i2c-0-49
    temp: Server Temp OK. MCH Diode Temp: +41.0 C (high = +95.0 C, warn =
+90 C, low = +10.0 C), CHIP: sch311x-isa-0a70
    temp: Server Temp OK. Internal Temp: +26.8 C (high = +95.0 C, warn =
+90 C, low = +10.0 C), CHIP: sch311x-isa-0a70
    temp: Server Temp OK. Core 0: +30.0 C (high = +71.0 C, crit = +95.0 C,
warn = +67 C), CHIP: coretemp-isa-0000
    temp: Server Temp OK. Core 1: +24.0 C (high = +71.0 C, crit = +95.0 C,
warn = +67 C), CHIP: coretemp-isa-0000
    voltage: Checking server voltages.
    voltage: Voltage is OK. V2.5: +2.44 V (min = +2.37 V, max = +2.63 V), CHIP:

```

```
sch311x-isa-0a70
  voltage: Voltage is OK. Vccp: +1.04 V (min = +0.85 V, max = +1.35 V), CHIP:
sch311x-isa-0a70
  voltage: Voltage is OK. V3.3: +3.27 V (min = +3.13 V, max = +3.47 V), CHIP:
sch311x-isa-0a70
  voltage: Voltage is OK. V5: +4.97 V (min = +4.74 V, max = +5.26 V), CHIP:
sch311x-isa-0a70
  voltage: Voltage is OK. V1.8: +1.81 V (min = +1.69 V, max = +1.88 V), CHIP:
sch311x-isa-0a70
  voltage: Voltage is OK. V3.3stby: +3.28 V (min = +3.13 V, max = +3.47 V),
CHIP: sch311x-isa-0a70
  voltage: Voltage is OK. V3.3: +3.29 V (min = +3.13 V, max = +3.46 V), CHIP:
cy8c27x43-i2c-0-28
  voltage: Voltage is OK. V1.8: +1.81 V (min = +1.71 V, max = +1.89 V), CHIP:
cy8c27x43-i2c-0-28
  voltage: Voltage is OK. V1.5: +1.50 V (min = +1.42 V, max = +1.57 V), CHIP:
cy8c27x43-i2c-0-28
  voltage: Voltage is OK. V1.2: +1.20 V (min = +1.14 V, max = +1.26 V), CHIP:
cy8c27x43-i2c-0-28
  voltage: Voltage is OK. V1.05: +1.04 V (min = +1.00 V, max = +1.10 V),
CHIP: cy8c27x43-i2c-0-28
  voltage: Voltage is OK. V1.0: +1.00 V (min = +0.95 V, max = +1.05 V), CHIP:
cy8c27x43-i2c-0-28
  voltage: Server Voltages OK.
Running modules in class net...
  defaultroute: Checking default route(s)
  defaultroute: Checking static default route through device eth01 to gateway
192.168.61.250...
    ping: Checking ping hosts
    ping: prova-ip network connection OK
    ping: provb-ip network connection OK
    ping: dsmm-a network connection OK
    ping: dsmm-b network connection OK
    ping: dsmb-a network connection OK
    ping: dsmb-b network connection OK
    ping: sync-a network connection OK
    ping: sync-b network connection OK
                                OK
Running modules in class proc...
  run: Checking RTctimeStampd...
  run: Found 1 instance(s) of the RTctimeStampd process.
  run: Checking ntdMgr...
  run: Found 1 instance(s) of the ntdMgr process.
  run: Checking smartd...
  run: Found 1 instance(s) of the smartd process.
  run: Checking switchMon...
  run: Found 1 instance(s) of the switchMon process.
  run: Checking atd...
  run: Found 1 instance(s) of the atd process.
  run: Checking crond...
  run: Found 1 instance(s) of the crond process.
  run: Checking snmpd...
  run: Found 1 instance(s) of the snmpd process.
  run: Checking sshd...
  run: Found 7 instance(s) of the sshd process.
  run: Checking syscheck...
  run: Found 1 instance(s) of the syscheck process.
  run: Checking rsyslogd...
  run: Found 1 instance(s) of the rsyslogd process.
  run: Checking tklcTpdCardCfgS...
  run: Found 1 instance(s) of the tklcTpdCardCfgS process.
  run: Checking alarmMgr...
  run: Found 1 instance(s) of the alarmMgr process.
  run: Checking tpdProvd...
```

```

run: Found 1 instance(s) of the tpdProvd process.
run: Checking trpd...
run: Found 1 instance(s) of the trpd process.
run: Checking prov...
run: Found 1 instance(s) of the prov process.
run: Checking ebdad...
run: Found 1 instance(s) of the ebdad process.
run: Checking hsopd...
run: Found 1 instance(s) of the hsopd process.
run: Checking maint...
run: Found 1 instance(s) of the maint process.
run: Checking exinit...
run: Found 1 instance(s) of the syscheck process.
run: Checking rsyslogd...
run: Found 1 instance(s) of the rsyslogd process.
run: Checking tklcTpdCardCfgS...
run: Found 1 instance(s) of the tklcTpdCardCfgS process.
run: Checking alarmMgr...
run: Found 1 instance(s) of the alarmMgr process.
run: Checking tpdProvd...
run: Found 1 instance(s) of the tpdProvd process.
run: Checking trpd...
run: Found 1 instance(s) of the trpd process.
run: Checking prov...
run: Found 1 instance(s) of the prov process.
run: Checking ebdad...
run: Found 1 instance(s) of the ebdad process.
run: Checking hsopd...
run: Found 1 instance(s) of the hsopd process.
run: Checking maint...
run: Found 1 instance(s) of the maint process.
run: Checking exinit...
run: Found 1 instance(s) of the exinit process.
run: Checking gs...
run: Found 1 instance(s) of the gs process.
run: Checking mysqld...
run: Found 1 instance(s) of the mysqld process.
run: Checking hamond...
run: Found 1 instance(s) of the hamond process.
OK
Running modules in class services...
ha_keepalive: HA Keepalive Syscheck Test Start
ha_keepalive: { Broadcast eth04 17401}: UP
ha_keepalive: HA Keepalive Test Complete
ha_transition: HA Transition Syscheck Test Start
ha_transition: HA ACTIVE, no transition in progress.
ha_transition: HA Transition Syscheck Test Complete
OK
Running modules in class system...
core: Checking for core files.
cpu: Found "2" CPU(s)... OK
cpu: CPU 0 is on-line... OK
cpu: CPU 0 speed: 2660.017 MHz... OK
cpu: CPU 1 is on-line... OK
cpu: CPU 1 speed: 2660.017 MHz... OK
kdump: Checking for kernel dump files.
mem: Skipping expected memory check.
mem: Minimum expected memory found.
mem: 8252936192 bytes (~7871 Mb) of RAM installed.
OK
Running modules in class upgrade...
snapshots: No snapshots found. Not running test.
OK

```

Running the System Health Check

The operator can run `syscheck` to obtain the operational platform status with one of the following procedures:

- [Running syscheck from the Command line](#)
- [Running syscheck Through the ELAP GUI](#)
- [Running syscheck Using the syscheck Login](#)

Running syscheck from the Command line

The `admusr` can use `sudo` to run `syscheck` from the command line. This method can be used whether an application is installed or whether the GUI is available.

1. Log in to the MPS as the `admusr`:

```
Login:  admusr
Password:  <Enter admusr password>
```

2. Run `syscheck` with any command line arguments.

```
$ sudo syscheck
```

For help on command syntax, use the `-h` option.

Running syscheck Through the ELAP GUI

Refer to *ELAP Administration and LNP Feature Activation* for more details and information about logins and permissions.

1. Log in to the User Interface of the ELAPGUI (see [Accessing the ELAP GUI Interface](#)).
2. Check the banner information above the menu to verify that the ELAP about which system health information is sought is the one that is logged into.

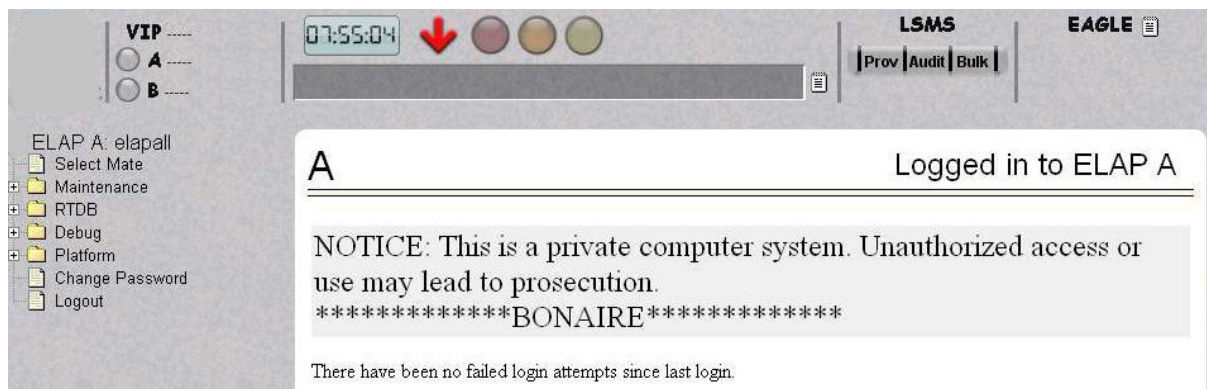


Figure 7: Login Window

3. If it is necessary to switch to the other ELAP, click the **Select Mate** menu item.
4. When the GUI shows you are logged into the ELAP about which you want system health information, select **Platform>Run Health Check**, as shown in the following window.

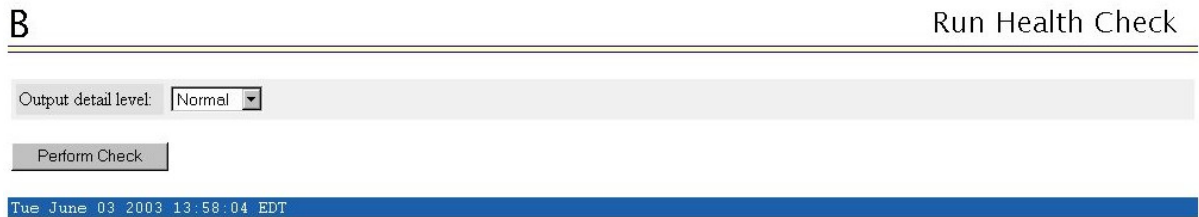


Figure 8: Run Health Check

5. On the Run Health Check window, use the pull-down menu to select Normal or Verbose for the **Output detail level** desired.
6. Click the **Perform Check** button to run the system health check on the selected server.

The system health check output data is displayed, as shown in [Figure 9: Displaying System Health Check on ELAP GUI](#).



Figure 9: Displaying System Health Check on ELAP GUI

Running syscheck Using the syscheck Login

If the ELAP application has not been installed on the server or you are unable to log in to the ELAP user interface, you cannot run `syscheck` through the GUI. Instead, you can run `syscheck` from the `syscheck` login, and report the results to [My Oracle Support \(MOS\)](#).

1. Connect the Local Access Terminal to the server whose status you want to check (see [Connecting a Local Access Terminal to Server's Serial Port](#)).

2. Log in as the syscheck user.

```
Login: syscheck  
Password: syscheck
```

The syscheck utility runs and its output is displayed to the screen.

Chapter 3

Problem Detection and Reporting

Topics:

- *Detecting and Reporting Problems.....34*
- *E5-APP-B Card LEDs.....34*
- *Displaying Errors on ELAP GUI.....37*
- *Unsolicited Alarm and Information Messages...38*

This chapter provides information about problem detection and reporting by the platform operating system and the ELAP application.

Detecting and Reporting Problems

Problems are detected and reported by the platform operating system and the ELAP application.

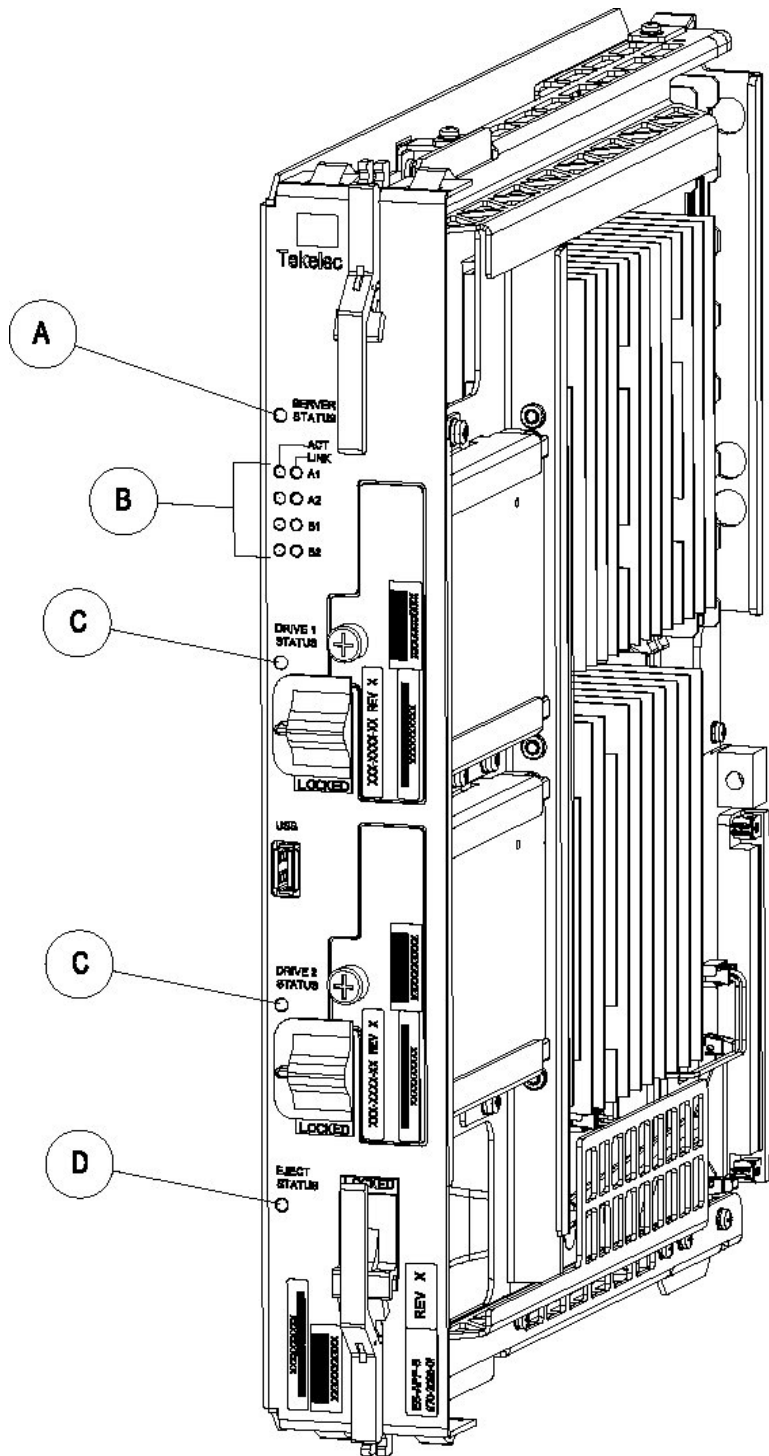
The E5-APP-B card platform constantly monitors its operational status using the System Health Check utility `syscheck`. This utility can be initiated also by the user. For more details about `syscheck`, see [System Health Check Overview](#).

E5-APP-B Card LEDs

This section describes the LEDs found on the front face of the E5-APP-B card.

Server Panel LEDs

[Figure 10: E5-APP-B Card LEDs](#) shows the E5-APP-B card LEDs on the front panel



The following light-emitting diode (LED) status indicators can be found on the E5-APP-B card:

- One Server Status indicator (A)
- Four E-Net link and Active LED status indicators (B)
- Two drive module status indicators (C)

- One Card Eject status indicator (D)

Figure 10: E5-APP-B Card LEDs

Table 3: E5-APP-B LED Table

LED Name	HW/SW Controlled	Description
Server Status	SW	Solid Red - Server is halted Flashing Red - Server is booting Solid Amber - TKLC configuration beginning Solid Green - TPD loaded/operational state Flashing Green - Server is shutting down
Drive 1 Status	SW/HW	HW: Flashing Green - Drive activity SW: Flashing Red - Impending drive removal SW: Steady red - Drive ready for removal
Drive 2 Status	SW/HW	HW: Flashing Green - Drive activity SW: Flashing Red - Impending drive removal SW: Steady red - Drive ready for removal
Eject Status	SW	Red - Card ready for extraction Flashing Red - Card preparing for extraction Off - Card is not ready for extraction
Act LED A1	HW	Flashing Green - Link Activity
Act LED A2	HW	Flashing Green - Link Activity
Act LED B1	HW	Flashing Green - Link Activity
Act LED B2	HW	Flashing Green - Link Activity
Link LED A1	HW	Green - 10/100 Link Speed Amber - 1000 Link Speed
Link LED A2	HW	Green - 10/100 Link Speed Amber - 1000 Link Speed
Link LED B1	HW	Green - 10/100 Link Speed Amber - 1000 Link Speed
Link LED B2	HW	Green - 10/100 Link Speed Amber - 1000 Link Speed

Displaying Errors on ELAP GUI

If the ELAP application detects an application error or receives an alarm message from the platform layer, the ELAP application displays the error on the graphical user interface (GUI):

- With a text message running across the banner.
- By illuminating the alarm level indicator on the GUI that corresponds to the alarm level of the error. If that alarm level indicator is already illuminated, the number shown on the indicator is incremented. For details about the alarms represented by the indicator, click the alarm button.

Figure 11: Errors Displayed on ELAP GUI shows an example of errors displayed on the ELAP GUI.

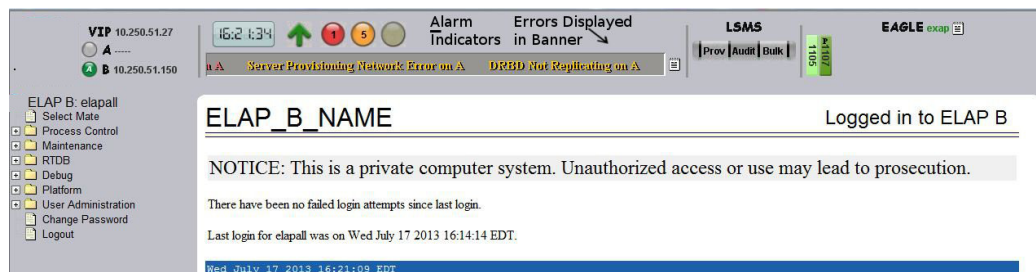


Figure 11: Errors Displayed on ELAP GUI

To obtain additional information about the alarms, click any lighted alarm indicator. A pop-up window is displayed, showing the number of each type of alarm and listing the text of each existing alarm in each type. Figure 12: Viewing Alarm Details shows an example.

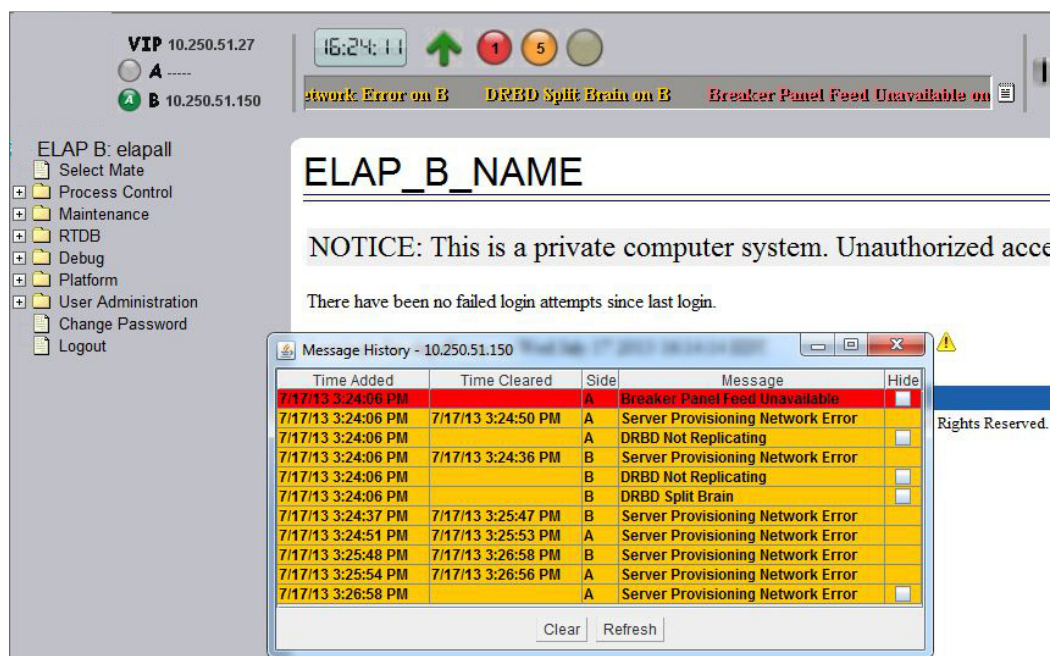


Figure 12: Viewing Alarm Details

Alarm values reported in [Figure 12: Viewing Alarm Details](#) may represent multiple alarms. To determine which alarms are indicated, perform [Decode Alarm Strings](#). After determining which alarms are being reported, find the individual alarm numbers in [Platform and Application Alarms](#).

Unsolicited Alarm and Information Messages

The EAGLE displays only one alarm per ELAP at a time based on the highest priority. If a single error is detected, the ELAP application sends an error message to the EAGLE terminal to report the active alarm category. If multiple errors are detected, the ELAP application sends an error message to the EAGLE terminal to report the most severe active alarm category.

If multiple alarms of the same severity exist and their severity is the highest alarm severity currently active, a combination alarm code is sent to the EAGLE. The EAGLE issues the appropriate UAM to the operator.

Errors detected in the hardware and software are reported by the following UAMs, which are described in greater detail in the EAGLE *Unsolicited Alarm and Information Messages Reference*.

- Critical Platform Alarms are reported by the EAGLE in UAM 0370.
- Critical Application Alarms are reported to the EAGLE in UAM 0371.
- Major Platform Alarms are reported to the EAGLE in UAM 0372.
- Major Application Alarms are reported to the EAGLE in UAM 0373.
- Minor Platform Alarms are reported to the EAGLE in UAM 0374.
- Minor Application Alarms are reported to the EAGLE in UAM 0375.

When all error conditions are corrected for all platform and application errors, the operator receives this UAM:

```
UAM 0250 MPS available.
```

For information about the alarm data contained in UAMs, see [Platform and Application Alarms](#).

Chapter 4

Recovery Support

Topics:

- [Recovering from Problems.....40](#)
- [Recovering From Alarms.....42](#)

The information in this section describes the recommended backing up of the RTDB and presents additional recovery support procedures that may be referred to by alarms recovery actions.

Recovering from Problems

This section describes the following recovery procedures:

- [Restoring the RTDB from Backup Files](#)
- [Recovering From Alarms](#)

Restoring the RTDB from Backup Files

This section describes the procedure for restoring the RTDB from backup files.

Note: It is recommended that the RTDB be backed up daily (see section, [Daily Maintenance Procedures](#)). For ELAP 8.0 or later, daily backups are created automatically.

Use the following procedure to restore the RTDB from a previously prepared backup file.



Caution:

Contact [My Oracle Support \(MOS\)](#) before performing this procedure.

CAUTION

1. Contact [My Oracle Support \(MOS\)](#).
2. Log in to the ELAP command line interface with user name `elapdev` and the password associated with that user name.
3. Use the Secure File Transfer Protocol (`sftp`) to transfer the RTDB backup file, created by the procedure [Backing Up the RTDB](#), to the following location:

```
/var/TKLC/elap/free/backup
```

4. Log in to the ELAP GUI (see [Accessing the ELAP GUI Interface](#)).
5. Select **Process Control>Stop Software** to ensure that no other updates are occurring.

The screen shown in [Figure 13: Stop ELAP Software](#) is displayed.

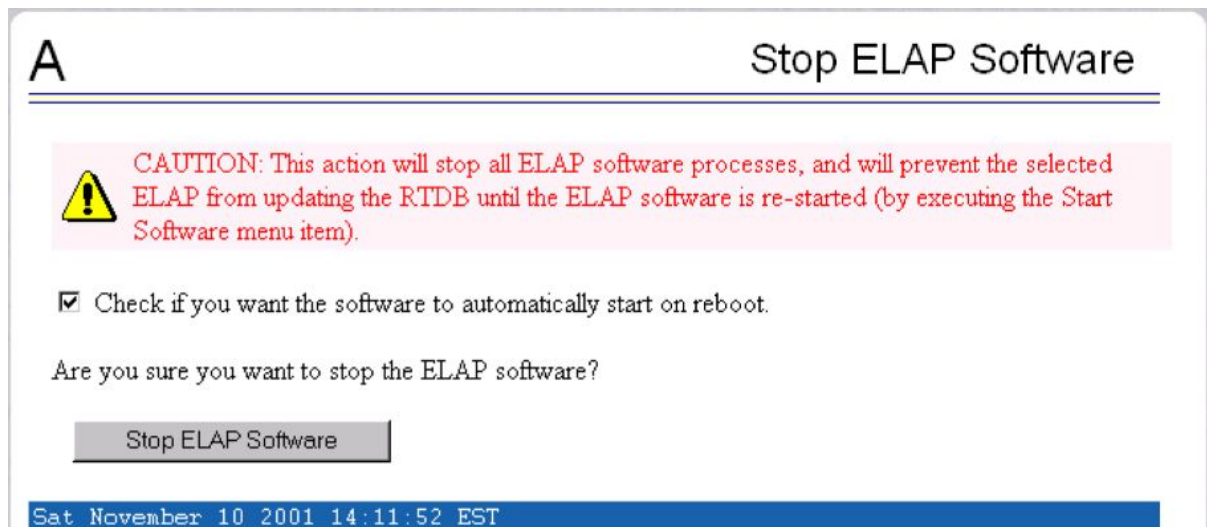


Figure 13: Stop ELAP Software

After the software on the selected ELAP has stopped, the screen shown in [Figure 14: Stop ELAP Software - Success](#) is displayed.

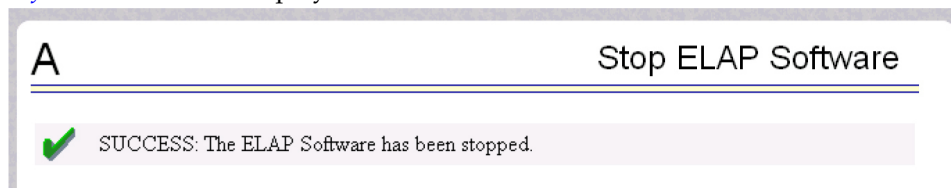


Figure 14: Stop ELAP Software - Success

6. Select **RTDB>Maintenance>Restore RTDB**.

The screen shown in [Figure 15: Restoring the RTDB](#) is displayed.

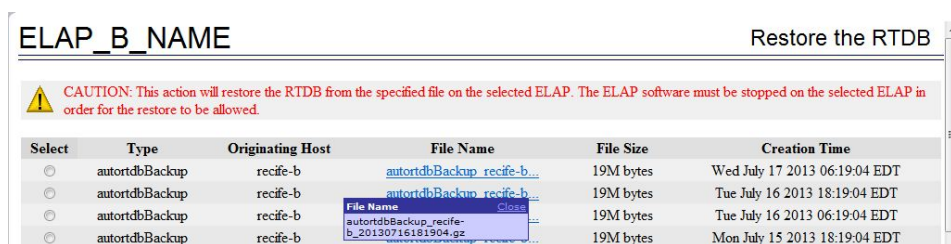


Figure 15: Restoring the RTDB

7. On the screen shown in [Figure 15: Restoring the RTDB](#), select the file that was transferred in [Step 3](#). Click **Restore the RTDB from the Selected File**.
8. To confirm restoring a file, click **Confirm RTDB Restore** shown in [Figure 16: Restore the RTDB Confirm](#).

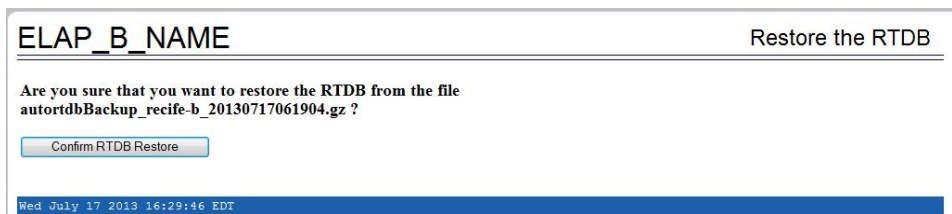


Figure 16: Restore the RTDB Confirm

After the file is successfully restored, the success screen is displayed.

Recovering From Alarms

Alarms are resolved in order of severity level from highest to lowest. When combination alarms are decoded into their individual component alarms, the customer can decide in which order to resolve the alarms because all alarms are of equal severity. For assistance in deciding which alarm to resolve first or how to perform a recovery procedure, contact *My Oracle Support (MOS)*.

Evaluate the following problems to find the appropriate recovery procedure as follows:

- If the problem being investigated is **no longer displayed** on the ELAP GUI, perform the following:
 1. Procedure [Decode Alarm Strings](#)
 2. Procedure [Determine Alarm Cause](#)
 3. Recovery procedure to which you are directed by procedure [Determine Alarm Cause](#)
- If the problem being investigated is **being reported currently** on the ELAP GUI, perform the following:
 1. Procedure [Decode Alarm Strings](#)

Decode Alarm Strings

Use the following procedure to decode alarm strings that consist of multiple alarms.

1. Log in to the **User Interface** screen of the ELAP GUI (see [Accessing the ELAP GUI Interface](#)).
2. After logging in to the ELAP, select **Maintenance>Decode MPSAlarm** from the menu.
3. Enter the 16-digit alarm string into the window on the **Decode MPSAlarm** screen, as shown in [Figure 17: Decode MPS Alarm Screen](#).

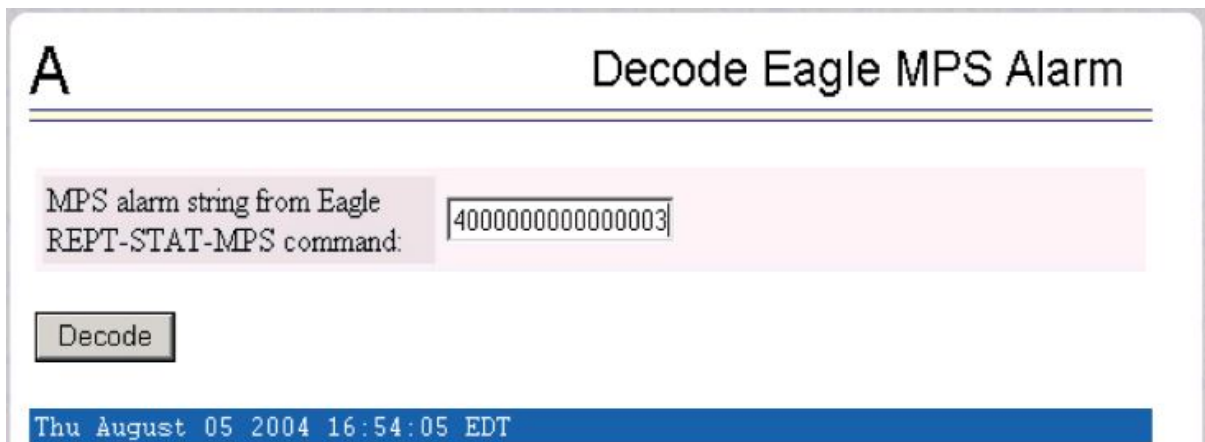


Figure 17: Decode MPS Alarm Screen

4. Click the **Decode** button.

The system returns information on the Alarm Category (Critical Application, Major Platform) and error text, as shown in [Figure 18: Decoded MPS Alarm Information](#).

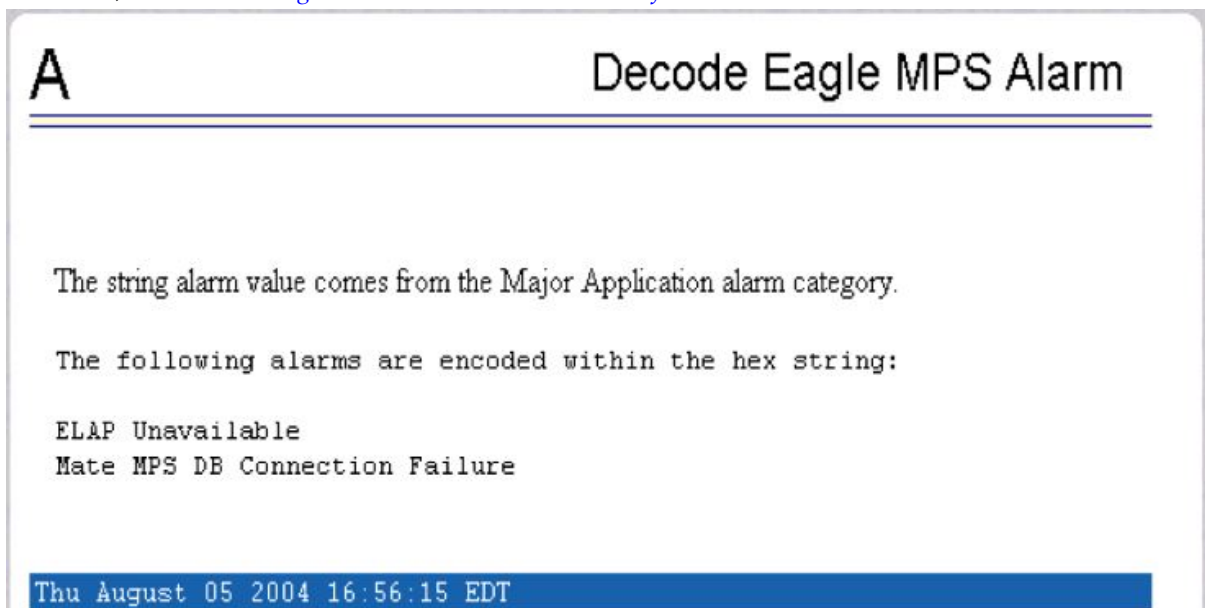


Figure 18: Decoded MPS Alarm Information

5. Find the alarm text string shown on the GUI in [Table 4: Platform and Application Alarms](#). Note the corresponding alarm number change. Perform procedure [Determine Alarm Cause](#).

Note: For combination errors, multiple procedures may be required to resolve the problem.

Determine Alarm Cause

Use this procedure to find information about recovering from an alarm.

1. Record the alarm data string shown in the banner or the Alarm View on the ELAPGUI , or as decoded from *Decode Alarm Strings*.
2. Run syscheck in Verbose mode (see *Running syscheck Through the ELAP GUI*).
3. Examine the syscheck output for specific details about the alarm.
4. Find the recovery procedure for the alarm in the procedures shown in *Platform and Application Alarms*. The alarms are ordered by ascending alarm number.

Other procedures may be required to complete an alarm recovery procedure:

- Refer to procedures for replacing Field Replaceable Units (FRUs) in *Field Replaceable Units* if instructed by an alarm recovery procedure to replace a FRU.
 - Refer to general procedures used in a number of alarm recovery procedures in *Platform and Application Alarms*
5. If the alarm persists after performing the appropriate procedure, call *My Oracle Support (MOS)*.

Chapter 5

Platform and Application Alarms

Topics:

- *Alarm Categories.....46*
- *MPS Alarm Recovery Procedures.....50*
- *Critical Platform Alarms.....50*
- *Critical Application Alarms.....51*
- *Major Platform Alarms.....51*
- *Major Application Alarms.....74*
- *Minor Platform Alarms.....79*
- *Minor Application Alarms.....90*

This chapter provides recovery procedures for platform and application alarms related to the E5-APP-B.

Alarm Categories

This chapter describes recovery procedures to use when an alarm condition or other problem exists on the MPS system. For information about how and when alarm conditions are detected and reported, see *Detecting and Reporting Problems*.

When an alarm code is reported, locate the alarm in *Table 4: Platform and Application Alarms*. The procedures for correcting alarm conditions are described in *Platform and Application Alarms*.

Platform and application errors are grouped by category and severity. The categories are listed from most to least severe:

- Critical Platform Alarms
- Critical Application Alarms
- Major Platform Alarms
- Major Application Alarms
- Minor Platform Alarms
- Minor Application Alarms

Table 4: Platform and Application Alarms shows the alarm numbers and alarm text for all alarms generated by the MPS platform and the ELAP application. The order within a category is not significant. Some of the alarms described in this chapter are not available with specific configurations.

Table 4: Platform and Application Alarms

Alarm Codes and Error Descriptor	UAM Number
Critical Platform Alarm	
<i>100000000002000 - Uncorrectable ECC Memory Error</i>	0370
<i>100000000008000 – Server NTP Daemon lost NTP synchronization for extended time</i>	0370
<i>100000000010000 – Server’s time has gone backwards</i>	0370
Critical Application Alarms	
<i>200000000000001 - LSMS DB Maintenance Required</i>	0371
Major Platform Alarms	
<i>300000000000001 – Server fan failure</i>	0372
<i>300000000000002 - Server Internal Disk Error</i>	0372
<i>300000000000008 - Server Platform Error</i>	0372
<i>300000000000010 - Server File System Error</i>	0372

Alarm Codes and Error Descriptor	UAM Number
3000000000000020 - <i>Server Platform Process Error</i>	0372
3000000000000080 - <i>Server Swap Space Shortage Failure</i>	0372
3000000000000100 - <i>Server provisioning network error</i>	0372
3000000000000200 - <i>Server Eagle Network A error</i>	0372
3000000000000400 - <i>Server Eagle Network B error</i>	0372
3000000000000800 - <i>Server Sync network error</i>	0372
3000000000001000 - <i>Server Disk Space Shortage Error</i>	0372
3000000000002000 - <i>Server Default Route Network Error</i>	0372
3000000000004000 - <i>Server Temperature Error</i>	0372
3000000000008000 - <i>Server Mainboard Voltage Error</i>	0372
3000000000010000 - <i>Server Power Feed Error</i>	0372
3000000000020000 - <i>Server Disk Health Test Error</i>	0372
3000000000040000 - <i>Server Disk Unavailable Error</i>	0372
3000000000080000 - <i>Device Error</i>	0372
3000000000100000 - <i>Device Interface Error</i>	0372
3000000000200000 - <i>Correctable ECC Memory Error</i>	0372
3000000400000000 - <i>Multipath device access link problem</i>	0372
3000000800000000 - <i>Switch Link Down Error</i>	0372
3000001000000000 - <i>Half-open Socket Limit</i>	0372
3000002000000000 - <i>Flash Program Failure</i>	0372
3000004000000000 - <i>Serial Mezzanine Unseated</i>	0372
3000000008000000 - <i>Server HA Keepalive Error</i>	0372
3000000010000000 - <i>DRBD block device can not be mounted</i>	0372
3000000020000000 - <i>DRBD block device is not being replicated to peer</i>	0372
3000000040000000 - <i>DRBD peer needs intervention</i>	0372
3000020000000000 - <i>Server NTP Daemon never synchronized</i>	0372
Major Application Alarms	

Alarm Codes and Error Descriptor	UAM Number
<i>4000000000000001 - Mate ELAP Unavailable</i>	0373
<i>4000000000000004 - Congestion</i>	0373
<i>4000000000000008 - File System Full</i>	0373
<i>4000000000000010 - Log Failure</i>	0373
<i>4000000000000040 - Fatal Software Error</i>	0373
<i>4000000000000080 - RTDB Corrupt</i>	0373
<i>4000000000000100 - RTDB Inconsistent</i>	0373
<i>4000000000000200 - RTDB Incoherent</i>	0373
<i>4000000000000800 - Transaction Log Full</i>	0373
<i>4000000000001000 - RTDB 100% Full</i>	0373
<i>4000000000002000 - RTDB Resynchronization In Progress</i>	0373
<i>4000000000004000 - RTDB Reload Is Required</i>	0373
<i>4000000000400000 - LVM Snapshot detected that is too old</i>	0373
<i>4000000000800000 - LVM Snapshot detected that is too full</i>	0373
<i>4000000001000000 - LVM Snapshot detected with invalid attributes</i>	0373
<i>4000000002000000 - DRBD Split Brain</i>	0373
<i>4000000010000000 - An instance of Snapmon already running</i>	0373
Minor Platform Alarms	
<i>1000000000000001 - Breaker panel feed unavailable</i>	0374
<i>5000000000000001 - Server Disk Space Shortage Warning</i>	0374
<i>5000000000000002 - Server Application Process Error</i>	0374
<i>5000000000000004 - Server Hardware Configuration Error</i>	0374
<i>5000000000000020 - Server Swap Space Shortage Warning</i>	0374
<i>5000000000000040 - Server Default Router Not Defined</i>	0374
<i>5000000000000080 - Server temperature warning</i>	0374

Alarm Codes and Error Descriptor	UAM Number
<i>500000000000100 - Server Core File Detected</i>	0374
<i>500000000000200 - Server NTP Daemon Not Synchronized</i>	0374
<i>500000000000800 - Server Disk Self Test Warning</i>	0374
<i>500000000001000 - Device Warning</i>	0374
<i>500000000002000 - Device Interface Warning</i>	0374
<i>500000000004000 - Server Reboot Watchdog Initiated</i>	0374
<i>500000000008000 - Server HA Failover Inhibited</i>	0374
<i>500000000010000 - Server HA Active To Standby Transition</i>	0374
<i>500000000020000 - Server HA Standby To Active Transition</i>	0374
<i>500000000080000 - NTP Offset Check Failure</i>	0374
<i>500000000100000 - NTP Stratum Check Failure</i>	0374
<i>500000020000000 - Server Kernel Dump File Detected</i>	0374
<i>500000040000000 - TPD Upgrade Failed</i>	0374
<i>500000080000000 - Half Open Socket Warning Limit</i>	0374
<i>500000000800000 - DRBD failover busy</i>	0374
<i>500000040000000 - NTP Source Server is not able to provide correct time</i>	0374
Minor Application Alarms	
<i>600000000000010 - Minor Software Error</i>	0375
<i>600000000000200 - RTDB Backup Failed</i>	0375
<i>600000000000400 - Automatic RTDB Backup Failed</i>	0375
<i>600000000002000 - Configurable Quantity Threshold Exceeded</i>	0375
<i>600000000020000 - Automatic RTDB Backup is not configured</i>	0375
NOTE: The order within a category is not significant.	

MPS Alarm Recovery Procedures

This section provides recovery procedures for the MPS and ELAP alarms, listed by alarm category and Alarm Code (alarm data string) within each category.

Critical Platform Alarms

Critical platform alarms are issued if uncorrectable memory problems are detected.

100000000002000 - Uncorrectable ECC Memory Error

This alarm indicates that chipset has detected an uncorrectable (multiple-bit) memory error that the Error-Correcting Code (ECC) circuitry in the memory is unable to correct.

Recovery

Contact [My Oracle Support \(MOS\)](#) to request hardware replacement.

100000000008000 – Server NTP Daemon lost NTP synchronization for extended time

Alarm Type: TPD

Description: This alarm indicates that a TPD syscheck test determined that the time last synchronized with an NTP server has exceeded the critical threshold (LAST_SYNCHRONIZED_TIME_PERIOD_CRITICAL), as configured by the application.

Severity: Critical

Alarm ID: TKSPLATCR16

Recovery

Contact [My Oracle Support \(MOS\)](#).

1000000000010000 – Server's time has gone backwards

Alarm Type: TPD

Description: This alarm indicates that syscheck determined that a server's time has gone backwards.

Severity: Critical

Alarm ID: TKSPLATCR17

Recovery

Contact [My Oracle Support \(MOS\)](#).

Critical Application Alarms

This section describes the critical application alarms.

2000000000000001 - LSMS DB Maintenance Required

This alarm indicates that database maintenance is required.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

Major Platform Alarms

Major platform alarms involve hardware components, memory, and network connections.

3000000000000001 – Server fan failure

Alarm Type: TPD

Description: This alarm indicates that a fan on the application server is either failing or has failed completely. In either case, there is a danger of component failure due to overheating.

Description: This alarm indicates that a fan in the EAGLE fan tray in the EAGLE shelf where the E5-APP-B is "jacked in" is either failing or has failed completely. In either case, there is a danger of component failure due to overheating.

Severity: Major

OID: TpdFanErrorNotify 1.3.6.1.4.1.323.5.3.18.3.1.2.1

Alarm ID: TKSPLATMA1300000000000001

Recovery

Note:

1. Run syscheck in Verbose mode to verify a fan failure using the following command:

```
[admusr@hostname1351690497 ~]$ sudo syscheck -v hardware fan
Running modules in class hardware...
      fan: Checking Status of Server Fans.
*          fan: FAILURE:: MAJOR::3000000000000001 -- Server Fan Failure. This
test uses the leaky bucket algorithm.
*          fan: FAILURE:: Fan RPM is too low, fana: 0, CHIP: FAN
One or more module in class "hardware" FAILED

LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

2. Refer to the procedure for determining the location of the fan assembly that contains the failed fan and replacing a fan assembly in the appropriate hardware manual. After you have opened the

front lid to access the fan assemblies, determine whether any objects are interfering with the fan rotation. If some object is interfering with fan rotation, remove the object.

3. Run "syscheck -v hardware fan" (see [Running syscheck Through the ELAP GUI](#))
 - If the alarm has been cleared (as shown below), the problem is resolved

```
[admusr@hostname1351691862 ~]$ sudo syscheck -v hardware fan
Running modules in class hardware...
Discarding cache...
    fan: Checking Status of Server Fans.
    fan: Fan is OK. fana: 1, CHIP: FAN
    fan: Server Fan Status OK.
        OK
```

- If the alarm has not been cleared (as shown below) continue with the next step

```
[admusr@hostname1351690497 ~]$ sudo syscheck -v hardware fan
Running modules in class hardware...
    fan: Checking Status of Server Fans.
*    fan: FAILURE:: MAJOR::300000000000000001 -- Server Fan Failure. This
test uses the leaky bucket algorithm.
*    fan: FAILURE:: Fan RPM is too low, fana: 0, CHIP: FAN
One or more module in class "hardware" FAILED

LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

4. Contact [My Oracle Support \(MOS\)](#).

3000000000000002 - Server Internal Disk Error

This alarm indicates that the server is experiencing issues replicating data to one or more of its mirrored disk drives. This could indicate that one of the server disks has failed or is approaching failure.

Recovery

1. Run syscheck in Verbose mode.
2. Call [My Oracle Support \(MOS\)](#) and provide the system health check output.

3000000000000008 - Server Platform Error

This alarm indicates a major platform error such as a corrupt system configuration or missing files, or indicates that syscheck itself is corrupt.

Recovery

1. Run syscheck in Verbose mode.
2. Call [My Oracle Support \(MOS\)](#) and provide the system health check output.

3000000000000010 - Server File System Error

This alarm indicates that syscheck was unsuccessful in writing to at least one of the server file systems.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

3000000000000020 - Server Platform Process Error

This alarm indicates that either the minimum number of instances for a required process are not currently running or too many instances of a required process are running.

Recovery

Contact [My Oracle Support \(MOS\)](#) for recovery procedures.

3000000000000080 - Server Swap Space Shortage Failure

This alarm indicates that the server's swap space is in danger of being depleted. This is usually caused by a process that has allocated a very large amount of memory over time.

Note: In order for this alarm to clear, the underlying failure condition must be consistently undetected for a number of polling intervals. Therefore, the alarm may continue to be reported for several minutes after corrective actions are completed.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

3000000000000100 - Server provisioning network error

Alarm Type: TPD

Description: This alarm indicates that the connection between the server's eth01 ethernet interface and the customer network is not functioning properly. The eth01 interface is at the upper right port on the rear of the server on the EAGLE backplane.

Note: The interface identified as eth01 on the hardware is identified as eth91 by the software (in syscheck output, for example).

Severity: Major

OID: TpdProvNetworkErrorNotify 1.3.6.1.4.1.323.5.3.18.3.1.2.9

Alarm ID: TKSPLATMA9300000000000100

Recovery

1. Perform the following substeps to verify that the network configuration is correct.

a) Log in as elapconfig on the E5-APP-B server.

Enter option 1, Display Configuration, from the ELAP Configuration Menu.

```

/-----ELAP Configuration Menu-----\
|-----|-----|
| 1 | Display Configuration |
|-----|-----|
| 2 | Configure Network Interfaces Menu |
|-----|-----|
| 3 | Set Time Zone |
|-----|-----|

```

```

-----
| 4 | Exchange Secure Shell Keys |
| 5 | Change Password             |
| 6 | Platform Menu               |
| 7 | Configure NTP Server        |
| e | Exit                         |
-----
\-----/
Enter Choice:  1

```

Output similar to the following is displayed. The network configuration information related to the provisioning network is highlighted in bold.

```

MPS Side A:  hostname: bahamas-a  hostid: a8c0ca3d
              Platform Version: 2.0.2-4.0.0_50.26.0
              Software Version: ELAP 1.0.1-4.0.0_50.31.0
              Wed Sep  7 15:05:55 EDT 2005
ELAP A Provisioning Network IP Address = 192.168.61.202
ELAP B Provisioning Network IP Address = 192.168.61.203
Provisioning Network Netmask = 255.255.255.0
Provisioning Network Default Router = 192.168.61.250
ELAP A Backup Prov Network IP Address = Not configured
ELAP B Backup Prov Network IP Address = Not configured
Backup Prov Network Netmask           = Not configured
Backup Prov Network Default Router    = Not configured
ELAP A Sync Network Address           = 192.168.2.100
ELAP B Sync Network Address           = 192.168.2.200
ELAP A Main DSM Network Address       = 192.168.120.100
ELAP B Main DSM Network Address       = 192.168.120.200
ELAP A Backup DSM Network Address     = 192.168.121.100
ELAP B Backup DSM Network Address     = 192.168.121.200
ELAP A HTTP Port                      = 80
ELAP B HTTP Port                      = 80
ELAP A HTTP SuExec Port               = 8001
ELAP B HTTP SuExec Port               = 8001
ELAP A Banner Connection Port         = 8473
ELAP B Banner Connection Port         = 8473
ELAP A Static NAT Address              = Not configured
ELAP B Static NAT Address              = Not configured
ELAP A LSMS Connection Port           = 7483
ELAP B LSMS Connection Port           = 7483
ELAP A EBDA Connection Port           = 1030
ELAP B EBDA Connection Port           = 1030
Time Zone                             = America/New_York

Press return to continue...

```

- b) Verify that the provisioning network IP address, netmask, and network default router IP address for the server reporting this alarm are correct.

If configuration changes are needed, refer to the *Administration and LNP Feature Activation Guide* for ELAP.

2. Verify that a customer-supplied cable labeled TO CUSTOMER NETWORK is securely connected to the appropriate server. Follow the cable to its connection point on the local network and verify this connection is also secure.

3. Test the customer-supplied cable labeled TO CUSTOMER NETWORK with an Ethernet Line Tester. If the cable does not test positive, replace it.
4. Have your network administrator verify that the network is functioning properly.
5. If no other nodes on the local network are experiencing problems and the fault has been isolated to the server or the network administrator is unable to determine the exact origin of the problem, contact *My Oracle Support (MOS)*.

3000000000000200 – Server Eagle Network A error

Alarm Type: TPD

Description: This alarm is generated by the MPS syscheck software package and is not part of the TPD distribution.

Description:

Note: If these three alarms exist, the probable cause is a failed mate server.

- 3000000000000200-Server Eagle Network A Error
- 3000000000000400-Server Eagle Network B Error
- 3000000000000800-Server Sync Network Error

This alarm indicates an error in the Main SM network, which connects to the SM A ports. The error may be caused by one or more of the following conditions:

- One or both of the servers is not operational.
- One or both of the switches is not powered on.
- The link between the switches is not working.
- The connection between server A and server B is not working.

Some of the connections between the servers of the SM networks (main and backup).

- The **eth01** interface (top ethernet port on the rear of the server) connects to the customer provisioning network.
- The **eth02** interface (2nd from top ethernet port on the rear of the server) connects to port 3 of switch A.
- The **eth03** interface (2nd from bottom ethernet port on the rear of the server) connects to port 3 of switch B.
- The **eth04** interface (bottom ethernet port on the rear of the server) connects to port 5 of switch A
- The interfaces on the switch are ports 1 through 20 (from left to right) located on the front of the switch.
- Ports 1 and 2 of switch A connect to ports 1 and 2 of switch B.
- Ports 7 to 24 of switch A and ports 5 through 24 of switch B can be used for links to the Main SM ports (SM A ports) on the EAGLE.

Severity: Major

OID: 1.3.6.1.4.1.323.5.3.18.3.1.2.10

Alarm ID: TKSPLATMA103000000000000200

Recovery

1. Perform the following:
 - a) Verify that both servers are powered on by ensuring that the **POWER** LEDs on both servers are illuminated green.
 - b) Verify that the Ethernet hubs or switches are powered on.
 - c) Verify that no fault lights on the Ethernet hubs or switches are illuminated.
2. Perform the following substeps to verify that the network configuration is correct.
 - a) Log in as elapconfig on the E5-APP-B server.
Enter option 1, **Display Configuration**, from the ELAP Configuration Menu.

```

/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|---|-----|
| 2 | Configure Network Interfaces Menu |
|---|-----|
| 3 | Set Time Zone |
|---|-----|
| 4 | Exchange Secure Shell Keys |
|---|-----|
| 5 | Change Password |
|---|-----|
| 6 | Platform Menu |
|---|-----|
| 7 | Configure NTP Server |
|---|-----|
| 8 | Mate Disaster Recovery |
|---|-----|
| e | Exit |
\-----/
Enter Choice:  1

```

Output similar to the following is displayed. The network configuration information related to the EAGLE Network A (the Main DSM network) is highlighted in bold.

```

MPS Side A:  hostname: bahamas-a  hostid: a8c0ca3d
              Platform Version: 2.0.2-4.0.0_50.26.0
              Software Version: ELAP 1.0.1-4.0.0_50.31.0
              Wed Sep  7 15:05:55 EDT 2005

ELAP A Provisioning Network IP Address = 192.168.61.202
ELAP B Provisioning Network IP Address = 192.168.61.203
Provisioning Network Netmask           = 255.255.255.0
Provisioning Network Default Router    = 192.168.61.250
ELAP A Backup Prov Network IP Address  = Not configured
ELAP B Backup Prov Network IP Address  = Not configured
Backup Prov Network Netmask            = Not configured
Backup Prov Network Default Router      = Not configured
ELAP A Sync Network Address            = 192.168.2.100
ELAP B Sync Network Address            = 192.168.2.200
ELAP A Main DSM Network Address = 192.168.120.100
ELAP B Main DSM Network Address = 192.168.120.200
ELAP A Backup DSM Network Address      = 192.168.121.100

```



```

ELAP B Backup DSM Network Address      = 192.168.121.200
ELAP A HTTP Port                       = 80
ELAP B HTTP Port                       = 80
ELAP A HTTP SuExec Port                 = 8001
ELAP B HTTP SuExec Port                 = 8001
ELAP A Banner Connection Port          = 8473
ELAP B Banner Connection Port          = 8473
ELAP A Static NAT Address               = Not configured
ELAP B Static NAT Address               = Not configured
ELAP A LSMS Connection Port             = 7483
ELAP B LSMS Connection Port             = 7483
ELAP A EBDA Connection Port             = 1030
ELAP B EBDA Connection Port             = 1030
Time Zone                               = America/New_York

Press return to continue...

```

- b) Verify that the Main DSM Network IP address for the server reporting this alarm is correct.
If configuration changes are needed, refer to the *Administration and LNP Feature Activation Guide* for ELAP.
3. Verify that both servers are powered on by confirming that the **POWER** LEDs on both servers are illuminated green.
 - a) Verify that the switch is powered on.
 - b) Verify that the switch does not have any fault lights illuminated.
 - c) Verify that the **eth01** cable is securely connected to the top port on the server that is reporting the error.
 - d) Trace the **eth01** cable to the switch. Verify that the **eth01** cable is securely connected at correct point of the customer uplink.
 - e) Verify that the cable connecting the switches is securely connected at both switches.
4. Run syscheck.
 - a) If the alarm is cleared, the problem is resolved.
 - b) If the alarm is not cleared, continue with the next step.
5. Verify that the cable from **eth01** to the switch tests positive with an Ethernet Line Tester. Replace any faulty cables.
6. If the problem persists, call [My Oracle Support \(MOS\)](#).

3000000000000400 – Server Eagle Network B error

Alarm Type: TPD

Description: This alarm is generated by the MPS syscheck software package and is not part of the TPD distribution.

Description:

Note: If these three alarms exist, the probable cause is a failed mate server.

- 3000000000000200-Server Eagle Network A Error
- 3000000000000400-Server Eagle Network B Error
- 3000000000000800-Server Sync Network Error

This alarm indicates an error in the Backup SM network, which connects to the SM B ports. The error may be caused by one or more of the following conditions:

- One or both of the servers is not operational.
- One or both of the switches is not powered on.
- The link between the switches is not working.
- The connection between server A and server B is not working.

Some of the connections between the servers of the SM networks (main and backup).

- The **eth01** interface (top ethernet port on the rear of the server) connects to the customer provisioning network.
- The **eth02** interface (2nd from top ethernet port on the rear of the server) connects to port 4 of switch A.
- The **eth03** interface (2nd from bottom ethernet port on the rear of the server) connects to port 4 of switch B.
- The **eth04** interface (bottom ethernet port on the rear of the server) connects to port 6 of switch A.
- The interfaces on the switch are ports 1 through 20 (from left to right) located on the front of the switch.
- Ports 1 and 2 of switch A connect to ports 1 and 2 of switch B.
- Ports 7 to 24 of switch A and ports 5 through 24 of switch B can be used for links to the Main SM ports (SM A ports) on the EAGLE.

Severity: Major

OID: 1.3.6.1.4.1.323.5.3.18.3.1.2.11

Alarm ID: TKSPLATMA113000000000000400

Recovery

1. Perform the following:
 - a) Verify that both servers are powered on by ensuring that the **POWER** LEDs on both servers are illuminated green.
 - b) Verify that the Ethernet hubs or switches are powered on.
 - c) Verify that no fault lights on the Ethernet hubs or switches are illuminated.
2. Perform the following substeps to verify that the network configuration is correct.
 - a) Log in as `elapconfig` on the E5-APP-B server.

Enter option 1, Display Configuration, from the ELAP Configuration Menu.

```

/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration              |
|-----|
| 2 | Configure Network Interfaces Menu  |
|-----|
| 3 | Set Time Zone                      |
\-----/

```

```

-----
| 4 | Exchange Secure Shell Keys |
-----
| 5 | Change Password            |
-----
| 6 | Platform Menu              |
-----
| 7 | Configure NTP Server       |
-----
| 8 | Mate Disaster Recovery     |
-----
| e | Exit                        |
-----
\-----/
Enter Choice:  1

```

Output similar to the following is displayed. The network configuration information related to the EAGLE Network B (the Backup DSM network) is highlighted in bold.

```

MPS Side A:  hostname: bahamas-a  hostid: a8c0ca3d
              Platform Version: 2.0.2-4.0.0_50.26.0
              Software Version: ELAP 1.0.1-4.0.0_50.31.0
              Wed Sep  7 15:05:55 EDT 2005

ELAP A Provisioning Network IP Address = 192.168.61.202
ELAP B Provisioning Network IP Address = 192.168.61.203
Provisioning Network Netmask          = 255.255.255.0
Provisioning Network Default Router   = 192.168.61.250
ELAP A Backup Prov Network IP Address = Not configured
ELAP B Backup Prov Network IP Address = Not configured
Backup Prov Network Netmask           = Not configured
Backup Prov Network Default Router    = Not configured
ELAP A Sync Network Address           = 192.168.2.100
ELAP B Sync Network Address           = 192.168.2.200
ELAP A Main DSM Network Address       = 192.168.120.100
ELAP B Main DSM Network Address       = 192.168.120.200
ELAP A Backup DSM Network Address = 192.168.121.100
ELAP B Backup DSM Network Address = 192.168.121.200
ELAP A HTTP Port                      = 80
ELAP B HTTP Port                      = 80
ELAP A HTTP SuExec Port               = 8001
ELAP B HTTP SuExec Port               = 8001
ELAP A Banner Connection Port         = 8473
ELAP B Banner Connection Port         = 8473
ELAP A Static NAT Address              = Not configured
ELAP B Static NAT Address              = Not configured
ELAP A LSMS Connection Port           = 7483
ELAP B LSMS Connection Port           = 7483
ELAP A EBDA Connection Port           = 1030
ELAP B EBDA Connection Port           = 1030
Time Zone                              = America/New_York

Press return to continue...

```

b) Verify that the Backup DSM Network IP address for the server reporting this alarm is correct.

If configuration changes are needed, refer to the *Administration and LNP Feature Activation Guide* for ELAP.

3. Verify that both servers are powered on by confirming that the **POWER** LEDs on both servers are illuminated green.

- a) Verify that the switch is powered on.
 - b) Verify that the switch does not have any fault lights illuminated.
 - c) Verify that the **eth01** cable is securely connected to the top port of the server that is reporting the error.
 - d) Trace the **eth01** cable to the switch. Verify that the **eth01** cable is securely connected to the correct point of the customer uplink.
 - e) Verify that the cable connecting the switches is securely connected at both switches.
4. Run syscheck.
 - a) If the alarm is cleared, the problem is resolved.
 - b) If the alarm is not cleared, continue with the next step.
 5. Verify that the cable from **eth01** to the hub tests positive with an Ethernet Line Tester. Replace any faulty cables.
 6. If the problem persists, call *My Oracle Support (MOS)* for assistance.

3000000000000800 – Server Sync network error

Alarm Type: TPD

Description: This alarm is generated by the MPS syscheck software package and is not part of the TPD distribution.

Description:

Note: If these three alarms exist, the probable cause is a failed mate server.

- 3000000000000200-Server Eagle Network A Error
- 3000000000000400-Server Eagle Network B Error
- 3000000000000800-Server Sync Network Error

This alarm indicates that the **eth03** connection between the two servers is not functioning properly. The **eth03** connection provides a network path over which the servers synchronize data with one another. The **eth03** interface is the 2nd from the bottom ethernet port on the rear of the server.

Note: The sync interface uses **eth03** and goes through switch B. All pairs are required.

Severity: Major

OID: 1.3.6.1.4.1.323.5.3.18.3.1.2.12

Alarm ID: TKSPLATMA12300000000000800

Recovery

1. Verify that both servers are booted up by ensuring that the **POWER** LEDs on both servers are illuminated green.
2. Perform the following substeps to verify that the network configuration is correct.
 - a) Log in as elapconfig on the E5-APP-B server.

Enter option 1, Display Configuration, from the ELAP Configuration Menu.

```
/-----ELAP Configuration Menu-----\
```

```

/-----\
| 1 | Display Configuration |
|---|-----|
| 2 | Configure Network Interfaces Menu |
|---|-----|
| 3 | Set Time Zone |
|---|-----|
| 4 | Exchange Secure Shell Keys |
|---|-----|
| 5 | Change Password |
|---|-----|
| 6 | Platform Menu |
|---|-----|
| 7 | Configure NTP Server |
|---|-----|
| 8 | Mate Disaster Recovery |
|---|-----|
| e | Exit |
\-----/
Enter Choice: 1

```

Output similar to the following is displayed. The network configuration information related to the Sync Network is highlighted in bold.

```

MPS Side A:  hostname: bahamas-a  hostid: a8c0ca3d
              Platform Version: 2.0.2-4.0.0_50.26.0
              Software Version: ELAP 1.0.1-4.0.0_50.31.0
              Wed Sep  7 15:05:55 EDT 2005
ELAP A Provisioning Network IP Address = 192.168.61.202
ELAP B Provisioning Network IP Address = 192.168.61.203
Provisioning Network Netmask           = 255.255.255.0
Provisioning Network Default Router    = 192.168.61.250
ELAP A Backup Prov Network IP Address  = Not configured
ELAP B Backup Prov Network IP Address  = Not configured
Backup Prov Network Netmask            = Not configured
Backup Prov Network Default Router     = Not configured
ELAP A Sync Network Address = 192.168.2.100
ELAP B Sync Network Address = 192.168.2.200
ELAP A Main DSM Network Address        = 192.168.120.100
ELAP B Main DSM Network Address        = 192.168.120.200
ELAP A Backup DSM Network Address      = 192.168.121.100
ELAP B Backup DSM Network Address      = 192.168.121.200
ELAP A HTTP Port                       = 80
ELAP B HTTP Port                       = 80
ELAP A HTTP SuExec Port                = 8001
ELAP B HTTP SuExec Port                = 8001
ELAP A Banner Connection Port          = 8473
ELAP B Banner Connection Port          = 8473
ELAP A Static NAT Address               = Not configured
ELAP B Static NAT Address               = Not configured
ELAP A LSMS Connection Port            = 7483
ELAP B LSMS Connection Port            = 7483
ELAP A EBDA Connection Port            = 1030
ELAP B EBDA Connection Port            = 1030
Time Zone                               = America/New_York

Press return to continue...

```

b) Verify that the Sync Network IP address for the server reporting this alarm is correct.

If configuration changes are needed, refer to *ELAP Administration and LNP Feature Activation*.

3. If the problem persists, contact [My Oracle Support \(MOS\)](#).

300000000001000 - Server Disk Space Shortage Error

This alarm indicates that one of the following conditions has occurred:

- A file system has exceeded a failure threshold, which means that more than 90% of the available disk storage has been used on the file system.
- More than 90% of the total number of available files have been allocated on the file system.
- A file system has a different number of blocks than it had when installed.

Recovery

1. Run `syscheck` (see [Running syscheck Through the ELAP GUI](#)).
2. Examine the `syscheck` output to determine if the file system `/var/TKLC/elap/free` is low on space. If it is, continue to the next step; otherwise go to [Step 4](#).
3. If possible, recover space on the free partition by deleting unnecessary files:
 - a) Log in to the ELAP GUI (see [Running syscheck Through the ELAP GUI](#)).
 - b) Select **Debug>Manage Logs & Backups**.

A screen similar to [Figure 19: Manage Logs and Backups](#) is displayed. This screen displays information about the total amount of space allocated for and currently used by logs and backups. The display includes logs and backup files which might be selected for deletion to recover additional disk space.

The screenshot shows the 'Manage Logs & Backups' interface. On the left is a tree view with 'Debug' expanded to 'Manage Logs & Backups'. The main window displays the following information:

Logs & Backups partition space allocation: Size: 142G, Used: 7.6G, Available: 127G, Usage: 6%

Select	Type	Originating Host	File Name	File Size	Creation Time
<input type="checkbox"/>	logsCapture	aruba-a	logsCapture_aruba-a...	5.4M bytes	Fri August 19 2005 13:27:03 EDT
<input checked="" type="checkbox"/>	logsCapture	aruba-a	logsCapture_aruba-a...	5.7M bytes	Wed August 24 2005 13:25:03 EDT
<input type="checkbox"/>	rtdbBackup	aruba-a	rtdbBackup_aruba-a...	3.8G bytes	Wed August 10 2005 13:50:54 EDT
<input type="checkbox"/>	rtdbBackup	aruba-b	rtdbBackup_aruba-b...	3.8G bytes	Thu August 11 2005 10:36:52 EDT

Buttons: Delete Selected File(s), Copy to Mate Selected File(s)

Status: Wed August 24 2005 13:48:48 EDT

Figure 19: Manage Logs and Backups

- c) Click the checkbox of each file to be deleted, then click **Delete Selected File(s)**.
4. Call [My Oracle Support \(MOS\)](#) for assistance.

300000000002000 - Server Default Route Network Error

This alarm indicates that the default network route of the server is experiencing a problem. Running `syscheck` in Verbose mode will provide information about which type of problem.



Caution: When changing the network routing configuration of the server, verify that the modifications will not impact the method of connectivity for the current login session. The route information must be entered correctly and set to the correct values. Incorrectly modifying the routing configuration of the server may result in total loss of remote network access.

Recovery

1. Run `syscheck` in Verbose mode (see [Running the System Health Check](#)).

The output should indicate one of the following errors:

```
The default router at <IP_address> cannot be pinged.
```

This error indicates that the router may not be operating or is unreachable. If the `syscheck Verbose` output returns this error, go to [Step 2](#).

```
The default route is not on the provisioning network.
```

This error indicates that the default route has been defined in the wrong network. If the `syscheck Verbose` output returns this error, go to [Step 3](#).

```
An active route cannot be found for a configured default route.
```

This error indicates that a mismatch exists between the active configuration and the stored configuration. If the `syscheck Verbose` output returns this error, go to [Step 4](#).

Note: If the `syscheck Verbose` output does not indicate one of the errors above, go to step 5.

2. Perform the following substeps when `syscheck Verbose` output indicates:

```
The default router at <IP_address> cannot be pinged
```

- a) Verify that the network cables are firmly attached to the server, network switch, router, Ethernet switch or hub, and any other connection points.
- b) Verify that the configured router is functioning properly.
 - Request that the network administrator verify the router is powered on and routing traffic as required.
- c) Request that the router administrator verify that the router is configured to reply to pings on that interface.
- d) Run `syscheck`.
 - If the alarm is cleared, the problem is resolved and this procedure is complete.
 - If the alarm is not cleared, go to [Step 5](#).

3. Perform the following substeps when `syscheck Verbose` output indicates:

```
The default route is not on the provisioning network
```

- a) Obtain the proper Provisioning Network netmask and the IP address of the appropriate Default Route on the provisioning network.

This information is maintained by the customer network administrators.

- b) Log in to the MPS with user name `elapconfig`.

The server designation at this site is displayed as well as **hostname**, **hostid**, **Platform Version**, **Software Version**, and the date. Verify that the side displayed is the MPS that is reporting the problem. In this example, it is MPS A. Enter option 2, Configure Network Interfaces Menu, from the ELAP Configuration Menu.

```
MPS Side A:  hostname: mpsa-d1a8f8  hostid: 80d1a8f8
              Platform Version: x.x.x-x.x.x
              Software Version: ELAP x.x.x-x.x.x
              Wed Jul 17 09:51:47 EST 2005
/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration
|---|-----\
| 2 | Configure Network Interfaces Menu
|---|-----\
| 3 | Set Time Zone
|---|-----\
| 4 | Exchange Secure Shell Keys
|---|-----\
| 5 | Change Password
|---|-----\
| 6 | Platform Menu
|---|-----\
| 7 | Configure NTP Server
|---|-----\
| 8 | Mate Disaster Recovery
|---|-----\
| e | Exit
\-----/
Enter Choice:  2
```

- c) Enter option 1, Configure Provisioning Network, from the Configure Network Interfaces Menu.

The submenu for configuring communications networks and other information is displayed.

```
/-----Configure Network Interfaces Menu-\
/-----\
| 1 | Configure Provisioning Network
|---|-----\
| 2 | Configure DSM Network
|---|-----\
| 3 | Configure Forwarded Ports
|---|-----\
| 4 | Configure Static NAT Addresses
|---|-----\
| e | Exit
\-----/
Enter choice:  1
```

This warning is displayed.

```
ELAP software is running. Stop it? [N] Y
```


- d) Type **Y** and press **Enter**.
- e) If the LSMS Connection has not been previously disabled, the following prompt is displayed. Type **Y** and press **Enter**.

```
The LSMS Connection is currently enabled. Do you want to disable it? [Y] Y
```

This confirmation is displayed.

```
The LSMS Connection has been disabled.
```

The ELAP A provisioning network IP address is displayed.

```
Verifying connectivity with mate ...
Enter the ELAP A provisioning network IP Address [192.168.61.90]:
```

- f) Press **Enter** after each address is displayed until the Default Route address displays.

```
Verifying connectivity with mate ...
Enter the ELAP A provisioning network IP Address [192.168.61.90]: Enter the ELAP
  B provisioning network IP Address [192.168.61.91]: Enter the ELAP provisioning
  network netmask [255.255.255.0]:
Enter the ELAP provisioning network default router IP Address: 192.168.61.250
```

- g) If the default router IP address is incorrect, type the correct address and press **Enter**.
- h) After the Provisioning Network configuration information is verified and corrected, type **e** to return to the Configure Network Interfaces Menu.
- i) Type **e** again to return to the ELAP Configuration Menu.
- j) Run `syscheck`.
- If the alarm is cleared, the problem is resolved. Restart the ELAP software and enable the connection to the LSMS as described in [Substep k](#), [Substep l](#), and [Substep m](#).
 - If the alarm is not cleared, go to [Step 5](#).
- k) Restart the ELAP software.
- l) Select **Maintenance>LSMS Connection>Change Allowed**: a window similar to the example shown in [Figure 22: Enable LSMS Connection Window](#) displays.

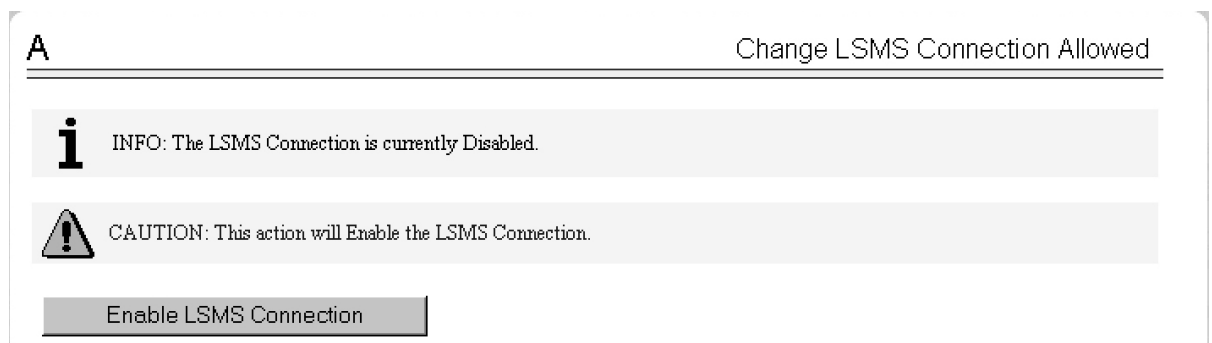


Figure 20: Enable LSMS Connection Window

- m) Click the **Enable LSMS Connection** button.

After the connection is enabled, the workspace displays the information shown in [Figure 21: LSMS Connection Enabled](#).

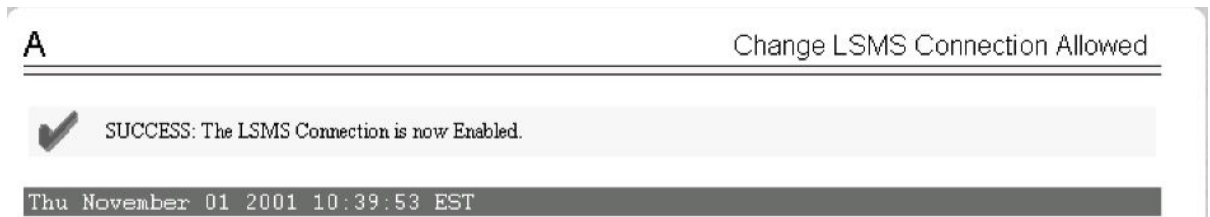


Figure 21: LSMS Connection Enabled

This procedure is complete.

4. Perform the following substeps to reboot the server if the `syscheck` Verbose output indicates the following error:

```
An active route cannot be found for a configured default route, . .
```

- a) Log in as `elapconfig` on the E5-APP-B server.

Enter option 6, Platform Menu, from the ELAP Configuration Menu.

```

/-----ELAP Configuration Menu-----\
|-----\
| 1 | Display Configuration
|-----\
| 2 | Configure Network Interfaces Menu
|-----\
| 3 | Set Time Zone
|-----\
| 4 | Exchange Secure Shell Keys
|-----\
| 5 | Change Password
|-----\
| 6 | Platform Menu
|-----\
| 7 | Configure NTP Server
|-----\
| 8 | Mate Disaster Recovery
|-----\
| e | Exit
\-----/
Enter Choice: 6

```

- b) Enter option 2, Reboot MPS, from the ELAP Platform Menu.

At the prompt, enter the identifier of the MPS to which you are logged in (A or B); in this example, A is used.

```

/-----ELAP Platform Menu-\
|-----\
| 1 | Initiate Upgrade
|-----\
| 2 | Reboot MPS
|-----\

```

```

-----
| 3 | MySQL Backup |
-----
| 4 | RTDB Backup  |
-----
| e | Exit          |
-----
Enter Choice:  2

Are you sure you want to reboot the MPS?
Reboot MPS A, MPS B or BOTH? [BOTH]:  A
Reboot local MPS...

```

- c) Wait for the reboot to complete.
- d) Run syscheck.
 - If the alarm is cleared, the problem is resolved. Restart the ELAP software and enable the connection to the LSMS as described in [Substep e](#), [Substep f](#), and [Substep g](#).
 - If the alarm is not cleared, go to [Step 5](#).
- e) Restart the ELAP software.
- f) Select **Maintenance>LSMS Connection>Change Allowed**: a window similar to the example shown in [Figure 22: Enable LSMS Connection Window](#) displays.

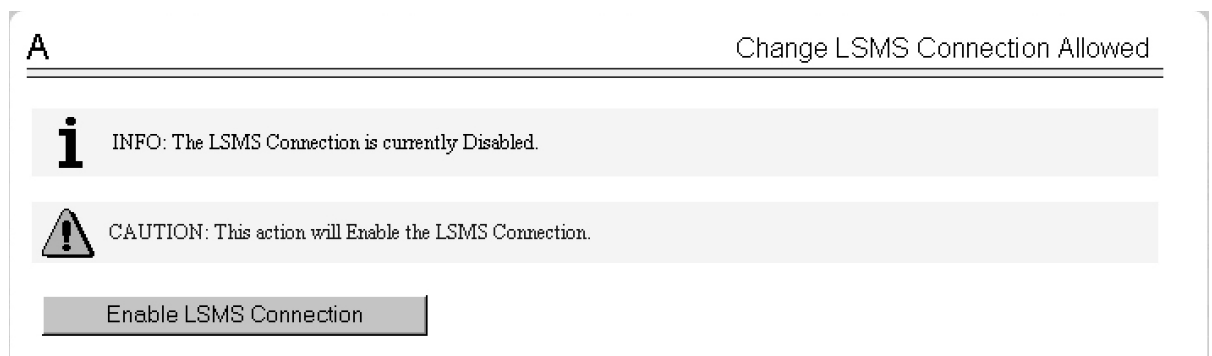


Figure 22: Enable LSMS Connection Window

- g) Click the Enable LSMS Connection button.

After the connection is enabled, the workspace displays the information shown in [Figure 23: LSMS Connection Enabled](#).

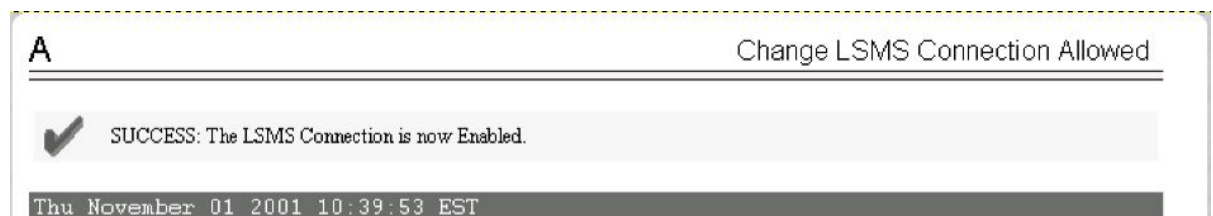


Figure 23: LSMS Connection Enabled

This procedure is complete.

- Contact [My Oracle Support \(MOS\)](#) for further assistance. Provide the syscheck output collected in the previous steps.

300000000004000 - Server Temperature Error

Alarm Type: TPD

Description: The internal temperature within the server is unacceptably high.

Severity: Major

OID: TpdTemperatureErrorNotify 1.3.6.1.4.1.323.5.3.18.3.1.2.15

Alarm ID: TKSPLATMA15300000000004000

Recovery

- Ensure that nothing is blocking the fan's intake. Remove any blockage.
- Verify that the temperature in the room is normal with the following table. If it is too hot, lower the temperature in the room to an acceptable level.

Table 5: Server Environmental Conditions

Ambient Temperature	Operating: 5 degrees C to 40 degrees C Exceptional Operating Limit: 0 degrees C to 50 degrees C Storage: -20 degrees C to 60 degrees C
Ambient Temperature	Operating: 5° C to 35° C Storage: -20° C to 60° C
Relative Humidity	Operating: 5% to 85% non-condensing Storage: 5% to 95% non-condensing
Elevation	Operating: -300m to +300m Storage: -300m to +1200m
Heating, Ventilation, and Air Conditioning	Capacity must compensate for up to 5100 BTUs/hr for each installed frame. Calculate HVAC capacity as follows: Determine the wattage of the installed equipment. Use the formula: watts x 3.143 = BTUs/hr

Note: Be prepared to wait the appropriate period of time before continuing with the next step. Conditions need to be below alarm thresholds consistently for the alarm to clear. The alarm may take up to five minutes to clear after conditions improve. It may take about ten minutes after the room returns to an acceptable temperature before syscheck shows the alarm cleared.

3. Verify that the temperature in the room is normal. If it is too hot, lower the temperature in the room to an acceptable level.

Note: Be prepared to wait the appropriate period of time before continuing with the next step. Conditions need to be below alarm thresholds consistently for the alarm to clear. It may take about ten minutes after the room returns to an acceptable temperature before the alarm cleared.

4. Run syscheck Check to see if the alarm has cleared
 - If the alarm has been cleared, the problem is resolved.
 - If the alarm has not been cleared, continue with the next step.
5. Run syscheck Check to see if the alarm has cleared
 - If the alarm has been cleared, the problem is resolved.
 - If the alarm has not been cleared, continue with the next step.

6. Replace the filter (refer to the appropriate hardware manual).

Note: Be prepared to wait the appropriate period of time before continuing with the next step. Conditions need to be below alarm thresholds consistently for the alarm to clear. The alarm may take up to five minutes to clear after conditions improve. It may take about ten minutes after the filter is replaced before syscheck shows the alarm cleared.

7. Run syscheck.
 - If the alarm has been cleared, the problem is resolved.
 - If the alarm has not been cleared, continue with the next step.
8. If the problem has not been resolved, contact [My Oracle Support \(MOS\)](#).

300000000008000 - Server Mainboard Voltage Error

This alarm indicates that at least one monitored voltages on the server mainboard is not within the normal operating range.

Recovery

Contact [My Oracle Support \(MOS\)](#) for assistance.

3000000000010000 - Server Power Feed Error

This alarm indicates that one of the power feeds to the server has failed.

Recovery

1. Locate the server supplied by the faulty power feed. Verify that all connections to the power supply units are connected securely. To determine where the cables connect to the servers, see the Power Connections and Cables page of the ELAP E5-APP-B Interconnect.
2. Run syscheck (see [Running syscheck Through the ELAP GUI](#)).
 - a) If the alarm is cleared, the problem is resolved.
 - b) If the alarm is not cleared, go to [Step 3](#).
3. Trace the power feed to its connection on the power source.

Verify that the power source is on and that the power feed is properly secured.

4. Run `syscheck` (see [Running syscheck Through the ELAP GUI](#)).
 - a) If the alarm is cleared, the problem is resolved.
 - b) If the alarm is not cleared, go to [Step 5](#).
5. If the power source is functioning properly and all connections are secure, request that an electrician check the voltage on the power feed.
6. Run `syscheck` (see [Running syscheck Through the ELAP GUI](#)).
 - a) If the alarm is cleared, the problem is resolved.
 - b) If the alarm is not cleared, go to [Step 7](#).
7. If the problem is not resolved, call [My Oracle Support \(MOS\)](#) for assistance.

300000000020000 - Server Disk Health Test Error

This alarm indicates that the hard drive has failed or failure is imminent.

Recovery

Immediately contact [My Oracle Support \(MOS\)](#) for assistance with a disk replacement.

300000000040000 - Server Disk Unavailable Error

This alarm indicates that the `smartd` service is not able to read the disk status because the disk has other problems that are reported by other alarms. This alarm appears only while a server is booting.

Recovery

Perform the recovery procedures for the other alarms that accompany this alarm.

300000000080000 - Device Error

This alarm indicates that the offboard storage server has a problem with its disk volume filling.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

300000000100000 - Device Interface Error

This alarm indicates that the IP bond is either not configured or not functioning.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

300000000200000 - Correctable ECC Memory Error

This alarm indicates that chipset has detected a correctable (single-bit) memory error that has been corrected by the Error-Correcting Code (ECC) circuitry in the memory.

Recovery

No recovery necessary.

If the condition persists, contact [My Oracle Support \(MOS\)](#) to request hardware replacement.

3000000400000000 - Multipath device access link problem

Alarm Type: TPD

Description: One or more "access paths" of a multipath device are failing or are not healthy, or the multipath device does not exist.

Severity: Major

OID: TpdMpathDeviceProblemNotify1.3.6.1.4.1.323.5.3.18.3.1.2.35

Alarm ID: TKSPLATMA353000000400000000

Recovery

1. [My Oracle Support \(MOS\)](#) should do the following:
 - a) Check in the MSA administration console (web-application) that correct "volumes" on MSA exist, and read/write access is granted to the blade server.
 - b) Check if multipath daemon/service is running on the blade server: service multipathd status.
Resolution:
 1. start multipathd: service multipathd start
 - c) Check output of "multipath -ll": it shows all multipath devices existing in the system and their access paths; check that particular /dev/sdX devices exist. This may be due to SCSI bus and/or FC HBAs haven't been rescanned to see if new devices exist. Resolution:
 1. run "/opt/hp/hp_fibreutils/hp_rescan -a",
 2. "echo 1 > /sys/class/fc_host/host*/issue_lip",
 3. "echo '- -' > /sys/class/scsi_host/host*/scan"
 - d) Check if syscheck::disk::multipath test is configured to monitor right multipath devices and its access paths: see output of "multipath -ll" and compare them to "syscheckAdm disk multipath -get -var=MPATH_LINKS" output. Resolution:
 1. configure disk::multipath check correctly.
2. Contact [My Oracle Support \(MOS\)](#).

3000000800000000 – Switch Link Down Error

This alarm indicates that the switch is reporting that the link is down. The link that is down is reported in the alarm. For example, port 1/1/2 is reported as 1102.

Recovery Procedure:

1. Verify cabling between the offending port and remote side.
2. Verify networking on the remote end.
3. If problem persists, contact [My Oracle Support \(MOS\)](#) to verify port settings on both the server and the switch.

3000001000000000 - Half-open Socket Limit

Alarm Type: TPD

Description: This alarm indicates that the number of half open TCP sockets has reached the major threshold. This problem is caused by a remote system failing to complete the TCP 3-way handshake.

Severity: Major

OID: tpdHalfOpenSocketLimit 1.3.6.1.4.1.323.5.3.18.3.1.2.37

Alarm ID: TKSPLATMA37 3000001000000000

Recovery

Contact [My Oracle Support \(MOS\)](#).

3000002000000000 - Flash Program Failure

Alarm Type: TPD

Description: This alarm indicates there was an error while trying to update the firmware flash on the E5-APP-B cards.

Severity: Major

OID: tpdFlashProgramFailure 1.3.6.1.4.1.323.5.3.18.3.1.2.38

Alarm ID: TKSPLATMA383000002000000000

Recovery

Contact [My Oracle Support \(MOS\)](#).

3000004000000000 - Serial Mezzanine Unseated

Alarm Type: TPD

Description: This alarm indicates the serial mezzanine board was not properly seated.

Severity: Major

OID: tpdSerialMezzUnseated 1.3.6.1.4.1.323.5.3.18.3.1.2.39

Alarm ID: TKSPLATMA393000004000000000

Recovery

Contact [My Oracle Support \(MOS\)](#).

3000000080000000 - Server HA Keepalive Error

This alarm indicates that heartbeat process has detected that it has failed to receive a heartbeat packet within the timeout period.

Recovery

1. Determine if the mate server is currently operating. If the mate server is not operating, attempt to restore it to operation.
2. Determine if the keepalive interface is operating.
3. Determine if heartbeat is running (service TKLCha status).
4. Call *My Oracle Support (MOS)* for assistance.

3000000010000000 - DRBD block device can not be mounted

This alarm indicates that DRBD is not functioning properly on the local server. The DRBD state (disk state, node state, or connection state) indicates a problem.

Recovery

Call *My Oracle Support (MOS)* for assistance.

3000000020000000 - DRBD block device is not being replicated to peer

This alarm indicates that DRBD is not replicating to the peer server. Usually this alarm indicates that DRBD is not connected to the peer server. A DRBD Split Brain may have occurred.

Recovery

1. Determine if the mate server is currently operating.
2. Call *My Oracle Support (MOS)* for assistance.

3000000040000000 - DRBD peer needs intervention

This alarm indicates that DRBD is not functioning properly on the peer server. DRBD is connected to the peer server, but the DRBD state on the peer server is either unknown or indicates a problem.

Recovery

Call *My Oracle Support (MOS)* for assistance.

3000020000000000 - Server NTP Daemon never synchronized

Alarm Type: TPD

Description: This alarm indicates that the NTP sync file (/var/TKLC/log/syscheck/ntp_sync_config) and the NTP last known good time file (/var/TKLC/log/syscheck/ntp_last_good_time) have not been synchronized.

Severity: Major

Alarm ID: TKSPLATMA42

Recovery

Contact *My Oracle Support (MOS)*.

Major Application Alarms

The major application alarms involve the ELAP software, RTDBs, file system, and logs.

4000000000000001 - Mate ELAP Unavailable

One ELAP has reported that the other ELAP is unreachable.

Recovery

1. Log in to the ELAPGUI (see [Accessing the ELAP GUI Interface](#)).
2. View the ELAP status on the banner.
 - If the mate ELAP status is DOWN, go to [Step 4](#).
 - If the mate ELAP status is ACTIVE or STANDBY, go to [Step 7](#).
3. Select the **Select Mate** menu item to change to the mate ELAP.
4. Select **Process Control>Start Software** to start the mate ELAP software.
5. View the ELAP status on the banner.
 - If the mate ELAP status is ACTIVE or STANDBY, the problem is resolved.
 - If the mate ELAP status is still DOWN, continue with [Step 6](#).
6. Select the **Select Mate** menu item to change back to the side that reported the alarm.
7. Stop and start the software on the side that is reporting the alarm (see [Restarting the ELAP Software](#)).
8. If the problem persists, run `saveLogs` to gather system information for further troubleshooting (see [Saving Logs Using the ELAP GUI](#)), and contact [My Oracle Support \(MOS\)](#).

4000000000000002 - RTDB Mate Unavailable

The local ELAP cannot use the direct link to the Standby for RTDB database synchronization.

Recovery

1. Log in to the ELAPGUI (see [Accessing the ELAP GUI Interface](#)).
2. View the ELAP status on the banner.
 - If the mate ELAP status is DOWN, go to [Step 4](#).
 - If the mate ELAP status is ACTIVE or STANDBY, go to [Step 7](#).
3. Select the **Select Mate** menu item to change to the mate ELAP.
4. Select **Process Control>Start Software** to start the mate ELAP software.
5. Determine whether the alarm has cleared by verifying whether it is still being displayed in the banner or in the Alarm View window.
 - If the alarm has cleared, the problem is resolved.
 - If the alarm has not yet cleared, continue with [Step 6](#).
6. Ensure that you are logged into the side opposite from the side reporting the alarm.

If it is necessary to change sides, select the **Select Mate** menu item to change to the side opposite the side that reported the alarm.

7. Stop and start the software on the side that is reporting the alarm (see [Restarting the ELAP Software](#)).
8. Select **RTDB>View RTDB Status** to verify that the RTDB status on both sides is coherent, as shown in [Figure 24: Coherent RTDB Status](#).

B
View RTDB Status

ELAP RTDB Status

DB Status:	Coherent		
RTDB Level:	208848	RTDB Birthday:	09/10/2008 17:27:52 GMT
Counts:	TNs=10567518 NPBs=1610 DGTTs=10000 OGTTs=1 Splits=1 LRNMRs=1781639 LRNs=502 MRs=408026	NPANXXs=10802 TN-NPANXXs=1408	

Refresh Options

View RTDB Status refresh time (seconds):	<input type="text" value="0"/>	<input type="button" value="Change refresh time"/>	<input type="button" value="Stop refresh"/>
--	--------------------------------	--	---

Tue October 14 2008 07:11:38 EDT

Figure 24: Coherent RTDB Status

9. If the problem persists, run `savelogs` to gather system information for further troubleshooting (see [Saving Logs Using the ELAP GUI](#)), and contact [My Oracle Support \(MOS\)](#).

4000000000000004 - Congestion

The ELAP RTDB database record cache used to keep updates currently being provisioned is above 80% capacity.

Recovery

1. At the EAGLE input terminal, enter the `rept-stat-mps` command to verify the status.
Refer to *Commands User's Guide* to interpret the output.
2. If the problem does not clear within 2 hours with an "ELAP Available" notice, capture the log files on both ELAPs (see [Saving Logs Using the ELAP GUI](#)) and contact [My Oracle Support \(MOS\)](#).

4000000000000008 - File System Full

This alarm indicates that the server file system is full.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

400000000000010 - Log Failure

This alarm indicates that the system was unsuccessful in writing to at least one log file.

Call [My Oracle Support \(MOS\)](#) for assistance.

400000000000040 - Fatal Software Error

A major software component on the ELAP has failed.

Recovery

1. Perform [Restarting the ELAP Software](#)
2. Capture the log files on both ELAPs (see [Saving Logs Using the ELAP GUI](#)) and contact [My Oracle Support \(MOS\)](#).

400000000000080 - RTDB Corrupt

A real-time database is corrupt. The calculated checksum did not match the checksum value stored for one or more records.

Recovery

Capture the log files on both ELAPs (see [Saving Logs Using the ELAP GUI](#)) and contact [My Oracle Support \(MOS\)](#).

400000000000100 - RTDB Inconsistent

The real-time database for one or more Service Module cards is inconsistent with the current real-time database on the Active ELAP fixed disks.

Recovery

Capture the log files on both ELAPs (see [Saving Logs Using the ELAP GUI](#)) and contact [My Oracle Support \(MOS\)](#).

400000000000200 - RTDB Incoherent

This message usually indicates that the RTDB database download is in progress.

When the download is complete, the following UIM message will appear:

```
0452 - RTDB reload complete
```

Recovery

1. If this alarm displays while an RTDB download is in progress, no further action is necessary.
2. If this alarm displays when an RTDB download is not in progress, capture the log files on both ELAPs (see [Saving Logs Using the ELAP GUI](#)) and contact [My Oracle Support \(MOS\)](#).

4000000000000800 - Transaction Log Full

The transaction log is full.

Recovery

Contact [My Oracle Support \(MOS\)](#).

4000000000001000 - RTDB 100% Full

The RTDB on the ELAP is at capacity. The ELAP RTDB is not updating.

You may be able to free up space by deleting unnecessary data in the database. The ELAP must be upgraded in order to add disk capacity.

Recovery

Contact [My Oracle Support \(MOS\)](#) for assistance.

4000000000002000 - RTDB Resynchronization In Progress

This message indicates that the RTDB resynchronization is in progress.

Recovery

No further action is necessary.

4000000000004000 - RTDB Reload Is Required

This message indicates that the RTDB reload is required because the transaction logs did not contain enough information to resynchronize the databases (the transaction logs may be too small).

**Caution:**

If both sides are reporting this error, contact [My Oracle Support \(MOS\)](#).

CAUTION

If only one side is reporting this error, use the following procedure.

Recovery

1. Log in to the User Interface screen of the ELAP (see [Accessing the ELAP Text Interface](#)).
2. Refer to *LNP Database Synchronization* for the correct procedures.
3. If the problem persists, contact [My Oracle Support \(MOS\)](#).

4000000000400000 - LVM Snapshot detected that is too old

Note: LVM alarms are valid for ELAP 8.0 and later.

This alarm indicates that an LVM snapshot has been present on the system for longer than 30 minutes. LVM snapshots should not exist for longer than 15 minutes or performance may be degraded as the LVM snapshot overfills with data.

The Logical Volume Manager (LVM) creates read-only snapshots of the database. These LVM snapshots are present when an audit of the LSMS database is active and when the database is being downloaded to EAGLE. An LVM snapshot provides rollback and recovery capability to the active database. All LVM snapshots are removed when no longer needed, or are removed and recreated when in continuous use such as during an LSMS audit which may last several hours.

Recovery

Contact [My Oracle Support \(MOS\)](#).

400000000800000 - LVM Snapshot detected that is too full

This alarm usually occurs when an LVM snapshot has remained in existence too long and has a higher full percentage than expected; however, the alarm may occur also if an unusually large number of updates, distributed evenly across the entire database, have been received.

The Logical Volume Manager (LVM) creates read-only snapshots of the database. These LVM snapshots are present when an audit of the LSMS database is active and when the database is being downloaded to EAGLE. An LVM snapshot provides rollback and recovery capability to the active database. All LVM snapshots are removed when no longer needed, or are removed and recreated when in continuous use such as during an LSMS audit which may last several hours.

Recovery

Contact [My Oracle Support \(MOS\)](#).

400000000100000 - LVM Snapshot detected with invalid attributes

An LVM snapshot has been detected with invalid attributes. This alarm may occur if an LVM snapshot cannot be removed completely due to an error in the LVM subsystem. Restarting the ELAP software may clear this condition.

Recovery

Contact [My Oracle Support \(MOS\)](#).

400000000200000 - DRBD Split Brain

This alarm occurs when the ELAP A and B servers have simultaneous outages or if the three heartbeat paths are lost between the two servers. If either condition occurs, neither server can determine which server has the most recent copy of the database. The first system to recover becomes the HA active system. Manual action is required to determine which copy of the shared data is valid and to resynchronize with the other system.

Recovery

Contact [My Oracle Support \(MOS\)](#).

4000000010000000 - An instance of Snapmon already running

This is an indication that the ELAP snapshot monitoring of LVM snapshots is in progress. The monitoring is done every 10 minutes via snapmon cron job. The following Inpdbs snapshots are monitored:

- prov1snap
- prov2snap
- auditsnap
- backupsnap

Recovery

Contact [My Oracle Support \(MOS\)](#)

Minor Platform Alarms

Minor platform alarms involve disk space, application processes, RAM, and configuration errors.

1000000000000001 – Breaker panel feed unavailable

Alarm Type: TPD

Description: This alarm is generated by the MPS syscheck software package and is not part of the TPD distribution. Refer to MPS-specific documentation for information regarding this alarm.

Severity: Critical

OID: 1.3.6.1.4.1.323.5.3.18.3.1.1.1

Alarm ID: TKSPLATCR1

Recovery

1. See 910-5129-001 Rev. A, PM&C/T5100 Platform Troubleshooting Guide.
2. Contact [My Oracle Support \(MOS\)](#).

5000000000000001 - Server Disk Space Shortage Warning

This alarm indicates that one of the following conditions has occurred:

- A file system has exceeded a warning threshold, which means that more than 80% (but less than 90%) of the available disk storage has been used on the file system.
- More than 80% (but less than 90%) of the total number of available files have been allocated on the file system.

Recovery

1. Run syscheck (see [Running syscheck Through the ELAP GUI](#))

2. Examine the `syscheck` output to determine if the file system `/var/TKLC/elap/free` is the one that is low on space. If the file system is low on disk space, continue to [Step 3](#); otherwise go to [Step 4](#).
3. You may be able to free up space on the free partition by deleting unnecessary files, as follows:
 - a) Log in to the ELAPGUI (see [Accessing the ELAP GUI Interface](#))
 - b) Select **Debug>Manage Logs & Backups**.

A screen similar to [Figure 25: Manage Logs and Backups](#) is displayed. This screen displays information about the total amount of space allocated for and currently used by logs and backups. The display includes logs and backup files which might be selected for deletion to recover additional disk space.

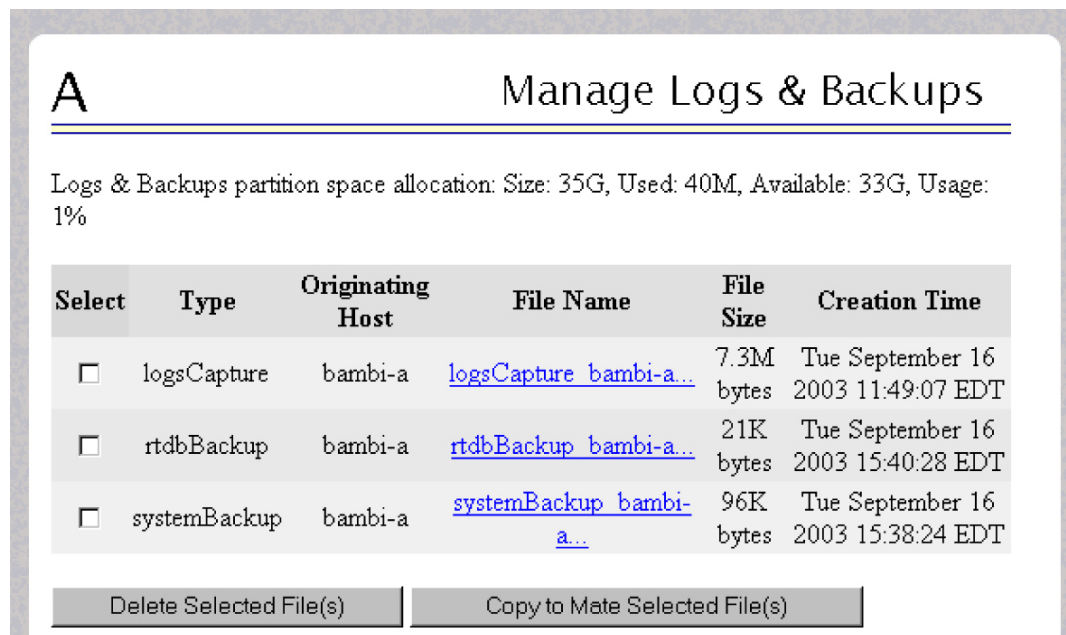


Figure 25: Manage Logs and Backups

- c) Click the checkbox of each file to be deleted, then click **Delete Selected File(s)**.
4. Call [My Oracle Support \(MOS\)](#) for assistance.

5000000000000002 - Server Application Process Error

This alarm indicates that either the minimum number of instances for a required process are not currently running or too many instances of a required process are running.

Recovery

1. If a [3000000000000020 - Server Platform Process Error](#) alarm is also present, execute the recovery procedure associated with that alarm before proceeding.
2. Log in to the User Interface screen of the ELAPGUI (see [Accessing the ELAP GUI Interface](#))
3. Check the banner information above the menu to verify that you are logged into the problem ELAP indicated in the UAM.

If it is necessary to switch to the other side, select **Select Mate**.

4. Open the Process Control folder, and select the **Stop Software** menu item.
5. Open the Process Control folder, and select the **Start Software** menu item.
6. Capture the log files on both ELAPs (see *Saving Logs Using the ELAP GUI*) and contact *My Oracle Support (MOS)*.

5000000000000004 - Server Hardware Configuration Error

This alarm indicates that one or more of the server's hardware components are not in compliance with proper specifications (refer to *Application B Card Hardware and Installation Guide*).

Recovery

1. Run syscheck in verbose mode.
2. Call *My Oracle Support (MOS)* for assistance.

5000000000000008 - Server RAM Shortage Warning

This alarm indicates one of two conditions:

- Less memory than the expected amount is installed.
- The system is swapping pages in and out of physical memory at a fast rate, indicating a possible degradation in system performance.

This alarm may not clear immediately when conditions fall below the alarm threshold. Conditions must be below the alarm threshold consistently for the alarm to clear. The alarm may take up to five minutes to clear after conditions improve.

Recovery

Call *My Oracle Support (MOS)* for assistance.

5000000000000020 - Server Swap Space Shortage Warning

This alarm indicates that the swap space available on the server is less than expected. This is usually caused by a process that has allocated a very large amount of memory over time.

Note: In order for this alarm to clear, the underlying failure condition must be consistently undetected for a number of polling intervals. Therefore, the alarm may continue to be reported for several minutes after corrective actions are completed.

Recovery

Call *My Oracle Support (MOS)* for assistance.

5000000000000040 - Server Default Router Not Defined

This alarm indicates that the default network route is either not configured or the current configuration contains an invalid IP address or hostname.

**Caution:**

When changing the server's network routing configuration it is important to verify that the modifications will not impact the method of connectivity for the current login session. It is also crucial that this information not be entered incorrectly or set to improper values. Incorrectly modifying the server's routing configuration may result in total loss of remote network access.

Recovery

1. Perform the following substeps to define the default router:
 - a) Obtain the proper Provisioning Network netmask and the IP address of the appropriate Default Route on the provisioning network.

These are maintained by the customer network administrators.

- b) Log in to the MPS with username elapconfig (see [Accessing the ELAP Text Interface](#)).

The server designation at this site is displayed as well as **hostname**, **hostid**, **Platform Version**, **Software Version**, and the date. Ensure that the side displayed is the MPS that is reporting the problem. In this example, it is MPS A. Enter option 2, Configure Network Interfaces Menu, from the ELAP Configuration Menu.

```
MPS Side A:  hostname: mpsa-dla8f8  hostid: 80dla8f8
              Platform Version: x.x.x-x.x.x
              Software Version: ELAP x.x.x-x.x.x
              Wed Jul 17 09:51:47 EST 2005
```

```
/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|---|-----|
| 2 | Configure Network Interfaces Menu |
|---|-----|
| 3 | Set Time Zone |
|---|-----|
| 4 | Exchange Secure Shell Keys |
|---|-----|
| 5 | Change Password |
|---|-----|
| 6 | Platform Menu |
|---|-----|
| 7 | Configure NTP Server |
|---|-----|
| 8 | Mate Disaster Recovery |
|---|-----|
| e | Exit |
\-----/
Enter Choice:  2
```

- c) Enter option 1, Configure Provisioning Network from the Configure Network Interfaces Menu. This displays the submenu for configuring communications networks and other information.

```
/-----Configure Network Interfaces Menu-----\
/-----\
| 1 | Configure Provisioning Network |
|---|-----|
```

```

 2 | Configure DSM Network
---|-----
 3 | Configure Forwarded Ports
---|-----
 4 | Configure Static NAT Addresses
---|-----
 e | Exit
\-----/
Enter choice: 1

```

The following warning appears:

ELAP software is running. Stop it?

d) Type Y and press Enter.

If the LSMS Connection has not been previously disabled, the following prompt appears:

```
The LSMS Connection is currently enabled. Do you want to disable it? [Y] Y
```

e) Type Y and press Enter.

The following confirmation appears:

```
The LSMS Connection has been disabled.
```

The ELAP A provisioning network IP address displays:

```
Verifying connectivity with mate ...
Enter the ELAP A provisioning network IP Address [192.168.61.90]:
```

f) Press Enter after each address is displayed until the Default Route address displays:

```
Verifying connectivity with mate ...
Enter the ELAP A provisioning network IP Address [192.168.61.90]: Enter the ELAP
B provisioning network IP Address [192.168.61.91]: Enter the ELAP provisioning
network netmask [255.255.255.0]:
Enter the ELAP provisioning network default router IP Address: 192.168.61.250
```

g) If the default router IP address is incorrect, correct it, and press Enter.

h) After verifying or correcting the Provisioning Network configuration information, enter e to return to the Configure Network Interfaces Menu.

i) Enter e again to return to the ELAP Configuration Menu.

2. Rerun syscheck.

- If the alarm has not been cleared, contact [My Oracle Support \(MOS\)](#) for further assistance. Make the syscheck output available to them. This procedure is complete.
- If the alarm has been cleared, the problem is solved, and you can restart the ELAP software and enable the connection to the LSMS as described in [Step 3](#).

3. Perform the following substeps to restart the ELAP and enable the LSMS connection.

a) Restart the ELAP software (see [Restarting the ELAP Software](#)).

b) Select **Maintenance>LSMS Connection>Change Allowed**: a window similar to the example shown in [Figure 26: Enable LSMS Connection Window](#) displays.

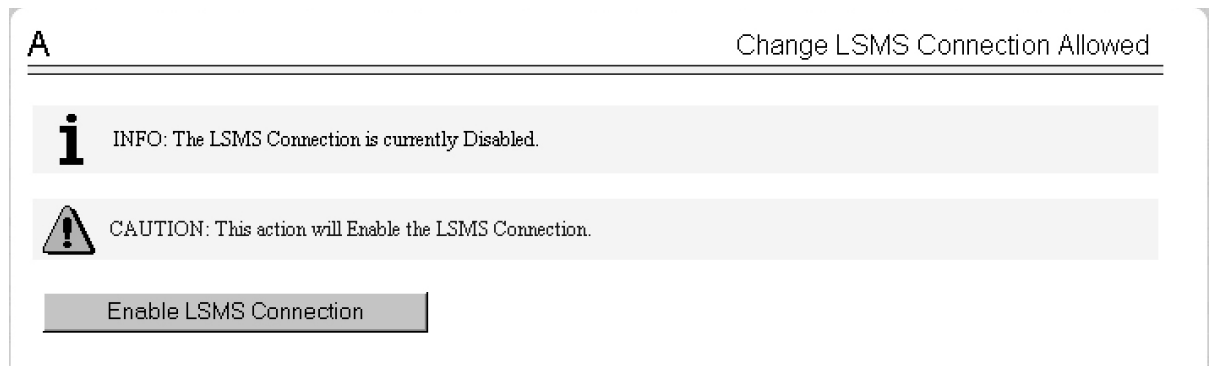


Figure 26: Enable LSMS Connection Window

- c) Click the Enable LSMS Connection button.

When the connection has been enabled, the workspace displays the information shown in [Figure 27: LSMS Connection Enabled.sw](#)

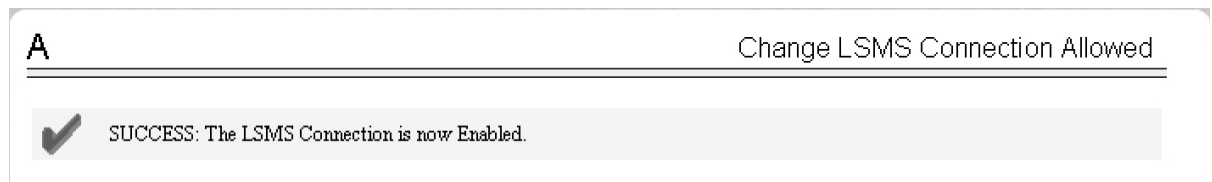


Figure 27: LSMS Connection Enabled

500000000000080 – Server temperature warning

Alarm Type: TPD

Description: This alarm indicates that the internal temperature within the server is outside of the normal operating range. A server Fan Failure may also exist along with the Server Temperature Warning.

Severity: Minor

OID: tpdTemperatureWarningNotify 1.3.6.1.4.1.323.5.3.18.3.1.3.8

Alarm ID: TKSPLATMI85000000000000080

Recovery

1. Ensure that nothing is blocking the fan's intake. Remove any blockage.
2. Verify that the temperature in the room is normal. If it is too hot, lower the temperature in the room to an acceptable level.

Table 6: Server Environmental Conditions

Ambient Temperature	Operating: 5 degrees C to 40 degrees C
---------------------	--

	Exceptional Operating Limit: 0 degrees C to 50 degrees C Storage: -20 degrees C to 60 degrees C
Relative Humidity	Operating: 5% to 85% non-condensing Storage: 5% to 950% non-condensing
Elevation	Operating: -300m to +300m Storage: -300m to +1200m
Heating, Ventilation, and Air Conditioning	Capacity must compensate for up to 5100 BTUs/hr for each installed frame. Calculate HVAC capacity as follows: Determine the wattage of the installed equipment. Use the formula: watts x 3.143 = BTUs/hr

Note: Be prepared to wait the appropriate period of time before continuing with the next step. Conditions need to be below alarm thresholds consistently for the alarm to clear. The alarm may take up to five minutes to clear after conditions improve. It may take about ten minutes after the room returns to an acceptable temperature before syscheck shows the alarm cleared.

3. Verify that the temperature in the room is normal. If it is too hot, lower the temperature in the room to an acceptable level.

Note: Be prepared to wait the appropriate period of time before continuing with the next step. Conditions need to be below alarm thresholds consistently for the alarm to clear. It may take about ten minutes after the room returns to an acceptable temperature before the alarm cleared.

4. Run syscheck to see if the alarm has cleared
 - If the alarm has been cleared, the problem is resolved.
 - If the alarm has not been cleared, continue with the next step.
5. Replace the filter (refer to the appropriate hardware manual).

Note: Be prepared to wait the appropriate period of time before continuing with the next step. Conditions need to be below alarm thresholds consistently for the alarm to clear. It may take about ten minutes after the filter is replaced before the alarm cleared.

6. Run syscheck to see if the alarm has cleared
 - If the alarm has been cleared, the problem is resolved.
 - If the alarm has not been cleared, contact [My Oracle Support \(MOS\)](#) and provide the system health check output.

500000000000100 - Server Core File Detected

This alarm indicates that an application process has failed and debug information is available.

Recovery

1. Run `savelogs` to gather system information (see [Running syscheck Through the ELAP GUI](#))
2. Contact [My Oracle Support \(MOS\)](#).

They will examine the files in `/var/TKLC/core` and remove them after all information has been extracted.

500000000000200 - Server NTP Daemon Not Synchronized

This alarm indicates that the NTP daemon (background process) has been unable to locate a server to provide an acceptable time reference for synchronization.

Severity: Minor

Alarm ID: TKSPLATMI10

Recovery

Contact [My Oracle Support \(MOS\)](#).

500000000000400 - Server CMOS Battery Voltage Low

The presence of this alarm indicates that the CMOS battery voltage has been detected to be below the expected value. This alarm is an early warning indicator of CMOS battery end-of-life failure which will cause problems in the event the server is powered off.

Recovery

Contact [My Oracle Support \(MOS\)](#).

500000000000800 - Server Disk Self Test Warning

A non-fatal disk issue (such as a sector cannot be read) exists.

Recovery

Contact [My Oracle Support \(MOS\)](#).

500000000001000 - Device Warning

This alarm indicates that either a `snmpget` cannot be performed on the configured SNMP OID or the returned value failed the specified comparison operation.

Recovery

1. Run `syscheck` in Verbose mode. (See [Running the System Health Check](#).)
2. Call [My Oracle Support \(MOS\)](#) for assistance.

500000000002000 - Device Interface Warning

This alarm can be generated by either an SNMP trap or an IP bond error. If `syscheck` is configured to receive SNMP traps, this alarm indicates that a SNMP trap was received with the `set` state. If

`syscheck` is configured for IP bond monitoring, this alarm can mean that a slave device is not operating, a primary device is not active, or `syscheck` is unable to read bonding information from interface configuration files.

Recovery

1. Run `syscheck` in Verbose mode. (See [Running the System Health Check](#).)
2. Call [My Oracle Support \(MOS\)](#) for assistance.

500000000004000 - Server Reboot Watchdog Initiated

This alarm indicates that the server has been rebooted due to a hardware watchdog.

Recovery

Contact [My Oracle Support \(MOS\)](#).

500000000008000 - Server HA Failover Inhibited

This alarm indicates that the server has been inhibited and HA failover is prevented from occurring.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

500000000010000 - Server HA Active To Standby Transition

This alarm indicates that the server is in the process of transitioning HA state from Active to Standby.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

500000000020000 - Server HA Standby To Active Transition

This alarm indicates that the server is in the process of transitioning HA state from Standby to Active.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

500000000040000 - Platform Health Check Failure

This alarm indicates a `syscheck` configuration error.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

500000000080000 - NTP Offset Check Failure

This alarm indicates that time on the server is outside the acceptable range or offset from the NTP server. The alarm message provides the offset value of the server from the NTP server and the offset limit set for the system by the application.

Alarm Type: TPD

Severity: Minor

Alarm ID: TKSPLATMI20

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

5000000000100000 - NTP Stratum Check Failure

This alarm indicates that NTP is syncing to a server, but the stratum level of the NTP server is outside the acceptable limit. The alarm message provides the stratum value of the NTP server and the stratum limit set for the system by the application.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

5000000020000000 – Server Kernel Dump File Detected

Alarm Type: TPD

Description: This alarm indicates that the kernel has crashed and debug information is available.

Severity: Minor

OID: 1.3.6.1.4.1.323.5.3.18.3.1.3.30

Alarm ID: TKSPLATMI305000000020000000

Recovery

1. Run syscheck in Verbose mode (see [Running the System Health Check](#)).
2. Contact [My Oracle Support \(MOS\)](#).

5000000040000000 – TPD Upgrade Failed

Alarm Type: TPD

Description: This alarm indicates that a TPD upgrade has failed.

Severity: Minor

OID: tpdServerUpgradeFailDetectedNotify 1.3.6.1.4.1.323.5.3.18.3.1.3.31

Alarm ID: TKSPLATMI315000000040000000

Recovery

1. Run the following command to clear the alarm.
`/usr/TKLCL/plat/bin/alarmMgr -clear TKSPLATMI31`
2. Contact [My Oracle Support \(MOS\)](#).

5000000080000000– Half Open Socket Warning Limit

Alarm Type: TPD

This alarm indicates that the number of half open TCP sockets has reached the major threshold. This problem is caused by a remote system failing to complete the TCP 3-way handshake.

Severity: Minor

OID: tpdHalfOpenSocketWarningNotify1.3.6.1.4.1.323.5.3.18.3.1.3.32

Alarm ID: TKSPLATMI325000000080000s000

Recovery

1. Run syscheck in verbose mode (see [Running the System Health Check](#)).
2. Run syscheck (see [Running syscheck Using the syscheck Login](#))
3. Contact [My Oracle Support \(MOS\)](#) and provide the system health check output.

5000000000200000 - SAS Presence Sensor Missing

This alarm indicates that the server drive sensor is not working.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance with a replacement server.

5000000000400000 - SAS Drive Missing

This alarm indicates that the number of drives configured for this server is not being detected.

Recovery

Call [My Oracle Support \(MOS\)](#) to determine if the alarm is caused by a failed drive or failed configuration.

5000000000800000 - DRBD failover busy

This alarm indicates that a DRBD sync is in progress from the peer server to the local server. The local server is not ready to be the primary DRBD node because its data is not current.

Recovery

1. Wait for approximately 20 minutes, then check if the DRBD sync has completed. A DRBD sync should take no more than 15 minutes to complete.
2. If the alarm persists longer than this time interval, call [My Oracle Support \(MOS\)](#) for assistance.

5000000001000000 - HP disk resync

This alarm indicates that the HP disk subsystem is currently resyncing after a failed or replaced drive, or after another change in the configuration of the HP disk subsystem. The output of the message will include the disk that is resyncing and the percentage complete. This alarm eventually clears after the resync of the disk is completed. The time to clear is dependant on the size of the disk and the amount of activity on the system..

Recovery

1. Run syscheck in Verbose mode.
2. If the percent recovering is not updating, wait at least 5 minutes between subsequent runs of syscheck, then call [My Oracle Support \(MOS\)](#) with the syscheck output.

5000000400000000 – NTP Source Server is not able to provide correct time

This alarm indicates that an NTP server was not able to provide a good time.

Severity: Minor

Alarm ID: TKSPLATMI35

Recovery

Contact [My Oracle Support \(MOS\)](#).

Minor Application Alarms

Minor application alarms involve RTDB capacity and software errors.

4000000000020000 - Automatic RTDB Backup is not configured

This is an indication that the Automatic RTDB Backup is not configured on the system, i.e., the Backup Type is "None."

Recovery

Configure the Automatic RTDB backup with backup type other than None. Refer to [Automatic RTDB Backup](#) for details on how to configure the Automatic RTDB Backup.

6000000000000010 - Minor Software Error

A minor software error has been detected.

Recovery

1. Run syscheck.
2. Contact [My Oracle Support \(MOS\)](#).
Have the system health check data available.

6000000000000200 - RTDB Backup Failed

This alarm indicates that the system was unable to complete an RTDB backup.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

6000000000000400 - Automatic RTDB Backup Failed

This alarm indicates that the system was unable to complete an automatic RTDB backup.

Recovery

Call [My Oracle Support \(MOS\)](#) for assistance.

6000000000000800 - Automatic Backup cron entry modified

This alarm indicates that the cron entry for automatic backups has been modified. No further action is required.

6000000000002000 - Configurable Quantity Threshold Exceeded

This alarm indicates that the RTDB file system has reached the user-configured threshold.

Recovery

1. If the user-configurable threshold is set to less than 90%, then the user may increase the threshold to a higher value.
 - a) Log in to the User Interface of the ELAP GUI. See [Accessing the ELAP GUI Interface](#).
 - b) Select **User Administration > Modify Defaults** to change the threshold value (1-99). See *ELAP Administration and LNP Feature Activation* for additional information.
2. If the user-configurable threshold is set to 90% or higher, call [My Oracle Support \(MOS\)](#) for assistance.

6000000000002000 - Automatic RTDB Backup is not configured

This is an indication that the Automatic RTDB Backup is not configured on the system, i.e., the Backup Type is "None."

Recovery

Configure the Automatic RTDB backup with backup type other than None. Refer to [Automatic RTDB Backup](#) for details on how to configure the Automatic RTDB Backup.

Chapter 6

Field Replaceable Units

Topics:

- *Introduction.....93*
- *Safety Information.....93*
- *E5-APP-B Card FRUs and Part Numbers.....93*
- *Removing and Replacing E5-APP-B Cards.....94*
- *Removing and Replacing a Drive Module Assembly.....99*

This chapter describes the components of an E5-APP-B card that can be replaced in the field and includes procedures for replacing each type of field replaceable unit (FRU).

Introduction

Oracle Communication EAGLE Application B Cards (E5-APP-B) are complete application server platforms and are designed for the high-availability environments required by telephony networks. They are installed in an EAGLE shelf.

Even with the advanced reliability of the E5-APP-B design, hardware failures may still occur. The E5-APP-B card is designed for easy maintenance when replacements are needed.

This chapter highlights the E5-APP-B card components that are field replaceable units (FRU) and provides procedures for replacing them.

This chapter explains how to remove a card from the EAGLE. The procedures include the administrative commands required to take a card out of service and place it back into service.

In the event a numbered event message is encountered, refer to the appropriate procedure in the *Unsolicited Alarm and Information Messages Reference*.

Additional information about each command can be found in the *EAGLE Commands User's Guide*.

Safety Information

Safety icons and text are used throughout this manual to warn the reader of the potential of personal injury, service interruption, and equipment damage. For information about what each of the icons mean, see [Documentation Admonishments](#).

Before beginning any procedure described in this manual, make sure that you are familiar with each of the following safety admonishments. Additional safety admonishments may be included, or repeated, for specific procedures.



Caution: All personnel associated with the installation of these systems must adhere to all safety precautions and use required protection equipment, to avoid the possibility of injury to personnel, service degradation, and/or service interruption.



Caution: Always wear a wrist strap or other electrostatic protection when handling an E5-APP-B card.



Caution: Always place removed cards into an electrostatic protection bag before sending to Oracle or storing in inventory (unless the card is being stored in the optional spare card storage shelf).

E5-APP-B Card FRUs and Part Numbers

The following E5-APP-B card components can be replaced in the field:

- E5-APP-B cards (P/N 870-3096-01 and P/N 870-3096-02)
- Drive modules (P/N 870-3097-01 and P/N 870-3097-02)

Removing and Replacing E5-APP-B Cards

This section gives procedures on removing and replacing the E5-APP-B card and drive modules.

Removing an E5-APP-B Card

Procedure - Remove E5-APP-B card

Note: The shutdown, init 6 or halt commands will not shut down the E5-APP-B card.

1. On the E5-APP-B card, slide the Ejector switch (4) up to the UNLOCKED position (see [Figure 28: E5-APP-B Card Eject Hardware Switch, UNLOCKED](#)).



Caution: When the Ejector switch goes from locked to unlocked and the E5-APP-B card is in service, the card will halt.

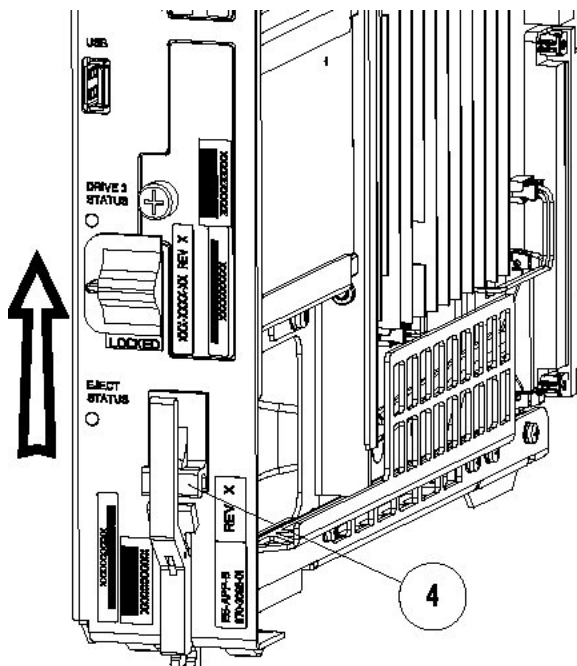


Figure 28: E5-APP-B Card Eject Hardware Switch, UNLOCKED

2. WAIT for the E5-APP-B Eject Status LED to go from blinking red to a steady red. When the Eject Status LED is steady red, the E5-APP-B card is in shutdown state. If the Ejector switch is put into the LOCKED position now, the E5-APP-B card will reboot.

3. 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.

See [Figure 29: E5-APP-B Card UNLOCKED](#)

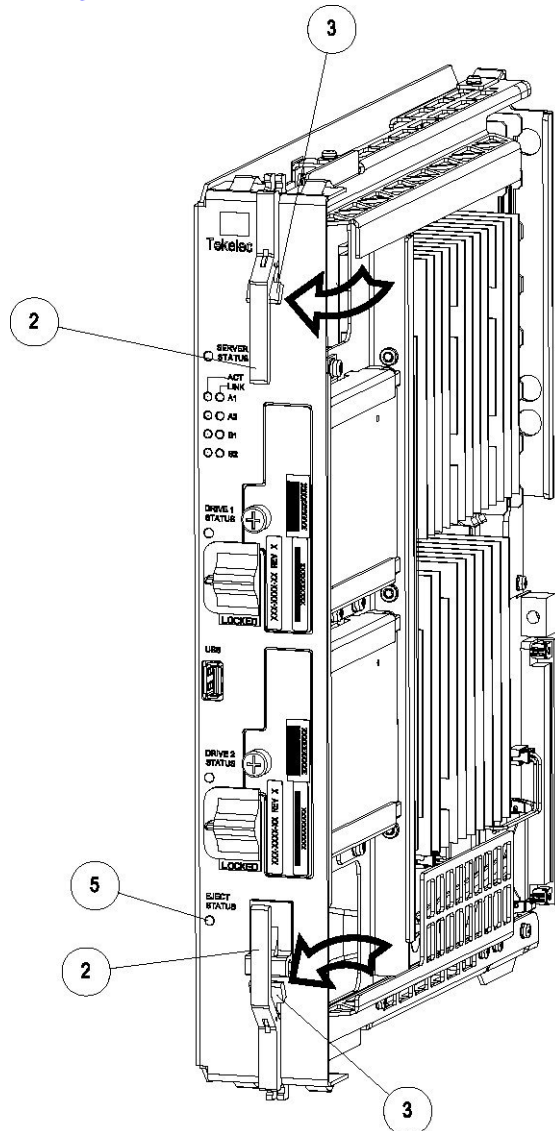


Figure 29: E5-APP-B Card UNLOCKED

4. While holding the I/E interlock and lever, pull the levers (2) away from the shelf until they are parallel to the floor.
5. Remove the E5-APP-B card from the EAGLE shelf.

Replacing an E5-APP-B Card

Procedure - Replace E5-APP-B card

1. While holding the I/E interlock and lever, pull the levers (2) away from the card until they are parallel to the floor.

Figure 30: E5-APP-B Card UNLOCKED illustrates the angle of the interlocks and levers just before inserting E5-APP-B Card into the EAGLE shelf.



Figure 30: E5-APP-B Card UNLOCKED

2. Insert the E5-APP-B card into the EAGLE shelf.

Carefully align the edges of the card with the top and bottom card guides. Then, push the card along the length of the card guides until the rear connectors on the card engage the mating connectors on the target shelf backplane.

3. Push in the top and bottom inject/eject clamps (see [Figure 31: E5-APP-B Card Inject Levers](#)).

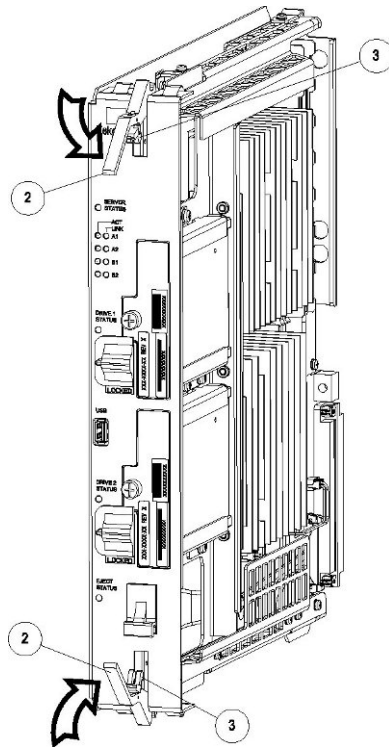


Figure 31: E5-APP-B Card Inject Levers

This locks the card in place and ensures a strong connection with the pins on the target shelf backplane.

4. Slide the E5-APP-B Ejector switch (4) down to the LOCKED position (see [Figure 32: E5-APP-B Card Inject Hardware Switch, LOCKED](#)).

Note: When the Ejector switch goes from UNLOCKED to LOCKED, the E5-APP-B Eject Status LED blinks red as the E5-APP-B card goes online.

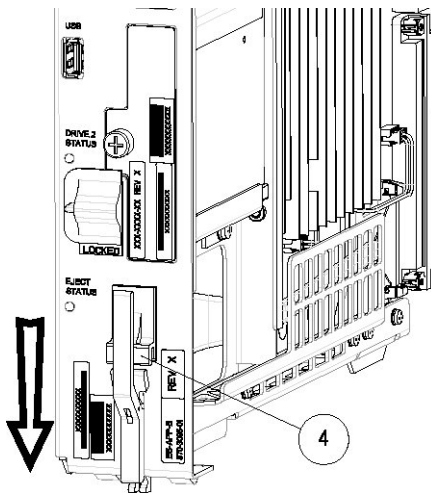


Figure 32: E5-APP-B Card Inject Hardware Switch, LOCKED

5. WAIT for the E5-APP-B Eject Status LED to go from blinking red to off.

Removing and Replacing a Drive Module Assembly

E5-APP-B cards are designed for high-availability environments, but even with the advanced reliability of the E5-APP-B card, hardware failures can occur. The E5-APP-B card is designed for easy maintenance when drive module replacement is needed. Since there are two drive modules configured with RAID in an E5-APP-B card, if one becomes corrupt the other drive continues to function. No down time is required to replace a drive module as this procedure can be used on a setup that is up and running.

Oracle now provides 480G drive modules that allow for a larger data capacity. When upgrading from 300G to 480G drive modules, both drive modules should be replaced one after the other.

Procedure - Remove and Replace a Drive Module Assembly

1. Use the `smartd` command to verify the drive module names.

```
$ ls /var/TKLC/log/smartd
lock log.sda log.sdb sda sdb
```

In this example, the drive module names are `sda` and `sdb`.

2. Use the `mdstat` command to determine whether a drive module is corrupt:

```
$ sudo cat /proc/mdstat
```

- On a healthy system where both drive modules (`sda` and `sdb`) are functioning properly, the `mdstat` output will include both drive modules:

```
$ sudo cat /proc/mdstat
Personalities : [raid1]
md2 : active raid1 sda2[0] sdb2[1]
      26198016 blocks super 1.1 [2/2] [UU]
      bitmap: 1/1 pages [4KB], 65536KB chunk
```

```
md1 : active raid1 sda3[0] sdb3[1]
      262080 blocks super 1.0 [2/2] [UU]

md3 : active raid1 sdb1[1] sda1[0]
      442224640 blocks super 1.1 [2/2] [UU]
      bitmap: 1/4 pages [4KB], 65536KB chunk

unused devices: <none>
```

- On a system where one of the drive modules is healthy and one is corrupt, only the healthy drive module is displayed:

```
$ sudo cat /proc/mdstat
Personalities : [raid1]
md2 : active raid1 sdb2[1]
      26198016 blocks super 1.1 [2/1] [_U]
      bitmap: 1/1 pages [4KB], 65536KB chunk

md1 : active raid1 sdb3[1]
      262080 blocks super 1.0 [2/1] [_U]

md3 : active raid1 sdb1[1]
      442224640 blocks super 1.1 [2/1] [_U]
      bitmap: 3/4 pages [12KB], 65536KB chunk

unused devices: <none>
```

In this example, the `mdstat` output shows only `sdb`, which indicates that `sda` is corrupt.

3. Log in as `admusr` and run the `failDisk` command to mark the appropriate drive module to be replaced.

If you are replacing a healthy drive module with a higher capacity drive module, the `force` option is required. The `force` option is not required when replacing a corrupt drive module.

- Replacing a corrupt drive module:

```
$ sudo /usr/TKLC/plat/sbin/failDisk <disk to be removed>
```

For example:

```
$ sudo /usr/TKLC/plat/sbin/failDisk /dev/sda
```

- Replacing a healthy drive module with a higher capacity drive module:

```
$ sudo /usr/TKLC/plat/sbin/failDisk --force <disk to be removed>
```

For example:

```
$ sudo /usr/TKLC/plat/sbin/failDisk --force /dev/sda
```

4. After `failDisk` runs successfully, remove the drive module assembly.
See [Removing a Drive Module Assembly](#).
5. Insert the new drive module assembly.

See [Replacing a Drive Module Assembly](#).

6. If you are replacing a 300G drive module with a 480G drive module, repeat these steps to replace the other 300G drive module with a 480G drive module.

Removing a Drive Module Assembly

Procedure - Remove Drive Module Assembly

1. Verify that the drive module is locked in position and in use.

The switch lock release (C) is in the LOCKED position and the Status LED on the E5-APP-B card is OFF.

Move the switch lock release (C) to the "released" position by pressing in the direction indicated. Refer to [Figure 33: Drive Module Released](#).

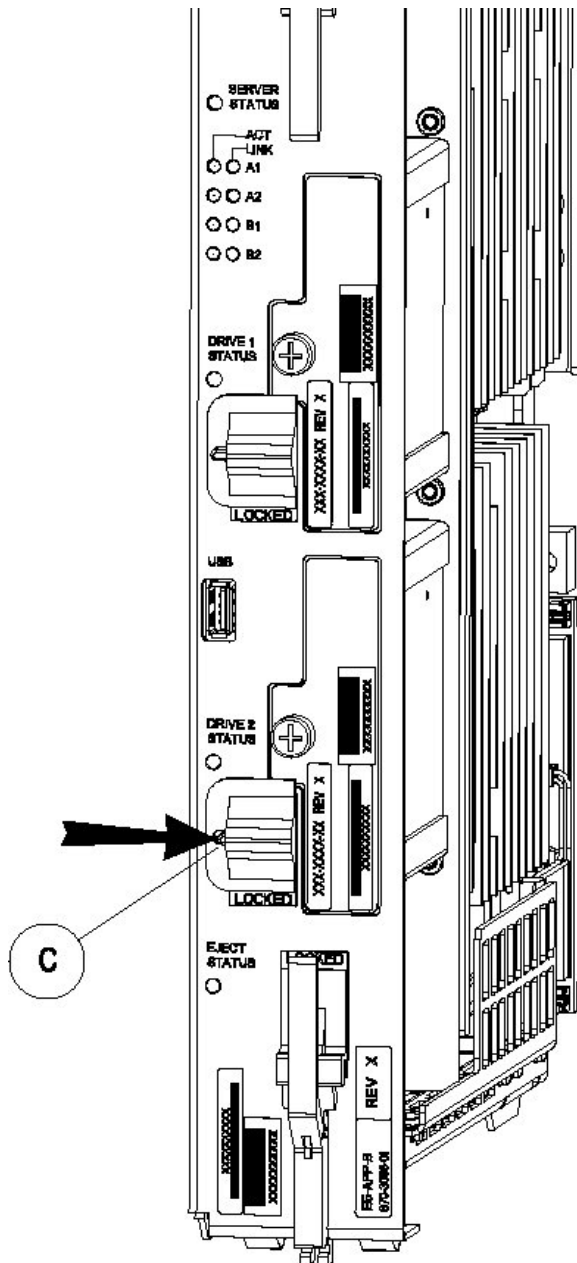


Figure 33: Drive Module Released

2. Move drive module locking switch (D) from the LOCKED to the unlocked position and wait for the LED (B) to indicate a steady red state. See [Figure 34: Drive Module UNLOCKED](#) and [Figure 35: Drive Module Status](#), respectively.

When drive module locking switch (D) is transitioned from locked to unlocked, the LED will flash red to indicate the drive is unlocked and in process of shutting down.

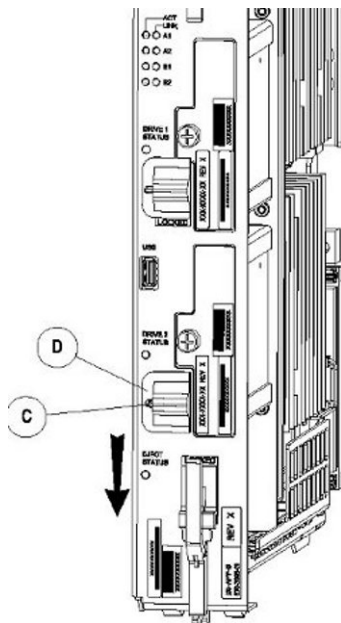


Figure 34: Drive Module UNLOCKED



Caution: Removal of the drive prior to the LED indicating steady red could result in drive corruption.

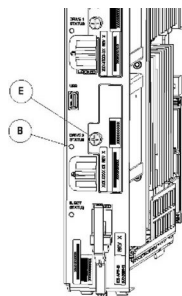


Figure 35: Drive Module Status

3. When the LED indicates a steady red, the drive module can be safely removed.
4. Loosen the drive module screw (E) (see [Figure 35: Drive Module Status](#)).
5. Grasp the screw (E) and pull the drive out slowly until it is free from the card (see [Figure 36: Drive Module Removal](#)).

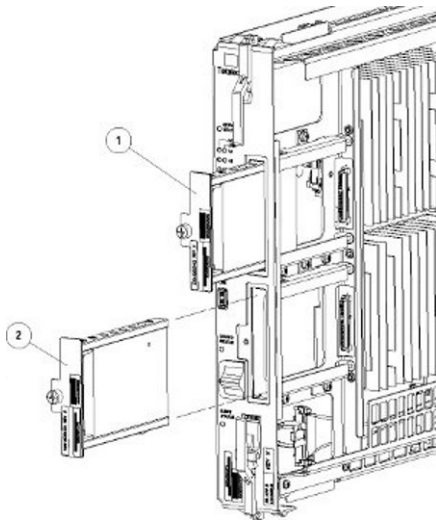


Figure 36: Drive Module Removal

Replacing a Drive Module Assembly

Procedure - Replace Drive Module Assembly

1. Slide a new drive(s) module into the drive slot on the card (see [Figure 37: Drive Module Replacement](#)).

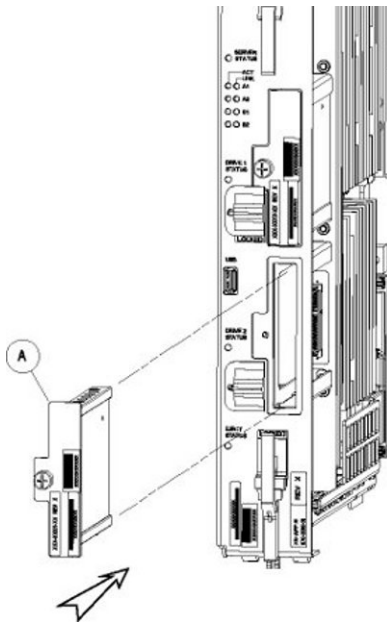


Figure 37: Drive Module Replacement

2. Gently push the drive (A) in slowly until it is properly seated.
3. Tighten the mounting screw until the Drive Status LED is in a steady red state ((B), from [Figure 35: Drive Module Status](#)).
4. Move the drive module locking switch (D) from the unlocked to the LOCKED position.

When drive module locking switch (D) is transitioned from unlocked to locked, the LED will flash red to indicate the drive is locked and in process of coming online (see [Figure 38: Drive Module Locked](#)).

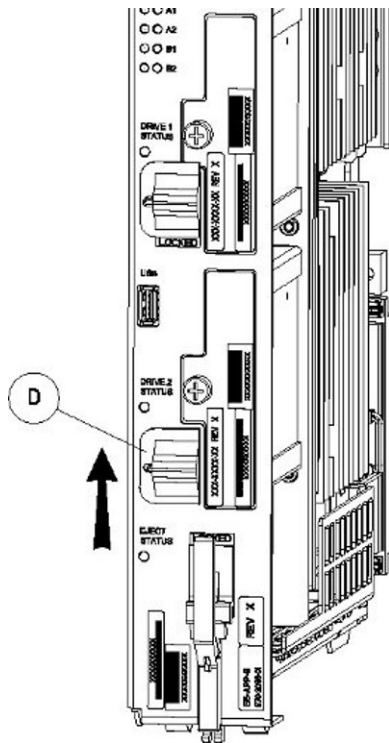


Figure 38: Drive Module Locked

- When the LED turns off, log in as admusr and run the `cpDiskCfg` command to copy the partition table from the good drive module to the new drive module.

```
$ sudo /usr/TKLC/plat/sbin/cpDiskCfg <source disk> <destination disk>
```

For example:

```
$ sudo /usr/TKLC/plat/sbin/cpDiskCfg /dev/sdb /dev/sda
```

- After successfully copying the partition table, use the `mdRepair` command to replicate the data from the good drive module to the new drive module.

```
$ sudo /usr/TKLC/plat/sbin/mdRepair
```

This step takes 45 to 90 minutes and runs in the background without impacting functionality.

- Use the `cat /proc/mdstat` command to confirm whether RAID repairs are successful. After the RAID is repaired successfully, output showing both drive modules is displayed:

```
Personalities : [raid1]
md2 : active raid1 sda2[0] sdb2[1]
      26198016 blocks super 1.1 [2/2] [UU]
      bitmap: 1/1 pages [4KB], 65536KB chunk
```

```
md1 : active raid1 sda3[0] sdb3[1]
      262080 blocks super 1.0 [2/2] [UU]

md3 : active raid1 sdb1[1] sda1[0]
      442224640 blocks super 1.1 [2/2] [UU]
      bitmap: 1/4 pages [4KB], 65536KB chunk

unused devices: <none>
```

Appendix

A

General Procedures

Topics:

- *Introduction.....108*
- *Accessing the ELAP GUI Interface.....108*
- *Connecting to the Server Command Line.....109*
- *Accessing the ELAP Text Interface.....111*
- *Saving Logs Using the ELAP GUI.....112*
- *Restarting the ELAP Software.....113*
- *Rebooting the MPS.....115*

This chapter includes general procedures for the E5-APP-B.

Introduction

This chapter contains miscellaneous general procedures that are referred to within this manual.

Accessing the ELAP GUI Interface

ELAP employs a web-based user interface. It uses the typical client-server paradigm. The front end appears on an Internet browser. The back end operates on the platform. The front end is officially supported on Microsoft® Internet Explorer, versions 8.0 or 9.0, and on Mozilla® Firefox®, version 3.0.0 or later.:

CAUTION: The User Interface may not function correctly with the browser you are using. Microsoft® Internet Explorer, versions 8.0 and 9.0, have been certified for this application

Use the following procedure to access the main screen of the ELAP GUI interface.

1. Using the selected browser (Microsoft® Internet Explorer 8.0 or 9.0, or Mozilla® Firefox® 3.0.0 or later), type the IP address for your ELAP application into the URL field.

The login screen shown in [Figure 39: ELAP User Interface Screen](#) appears.



Figure 39: ELAP User Interface Screen

If using Firefox®, the following message will be displayed when logging into the ELAP GUI:

CAUTION: The User Interface may not function correctly with the browser you are using. Microsoft® Internet Explorer, versions 8.0 and 9.0, have been certified for this application

Note: [Figure 39: ELAP User Interface Screen](#) does not show the release number that appears on the ELAP User Interface Login window because this manual covers multiple ELAP releases.

2. Enter the appropriate username and password.

Specify a username that has permission to access the menu items indicated in the procedure to be performed. [Table 7: Usernames](#) shows the default usernames. Additional usernames can be defined by selecting the User Administration menu item. For more information about assigning usernames, refer to *ELAP Administration and LNP Feature Activation*.

Table 7: Usernames

ELAP UI Login Name	Access Granted
elapmaint	Maintenance menu and all sub menus
elapdebug	Debug menu and all sub menus
elapplatform	Platform menu and all sub menus
uiadmin	User Administration menu
elapall	All of the menus in this Table

3. Continue with the procedure that invoked this procedure.

Connecting to the Server Command Line

You can connect to the ELAP server command line for the following purposes:

- Accessing the ELAP text interface (see [Accessing the ELAP Text Interface](#))
- Running `syscheck` (see [Running the System Health Check](#))

It is possible to connect to the ELAP server command line in any of the following ways:

- Use a secure shell (`ssh`) utility to connect to either server's IP address. This connection will be made through the port that is identified as **eth01** on the ELAP E5-APP-B Interconnect and is identified as **eth91** by the software. For more information, see [Using ssh to Connect to the Server Command Line](#).
- Use a secure shell (`ssh`) utility to accessible ELAP server. Use command `minicom mate` to log on to the mate ELAP server's command line.
- If access to the MPS server is not available through an IP network, connect to the E5-APP-B card via the serial port:

For connecting the E5-APP-B A card, disconnect the console cable from the serial port on the E5-APP-B 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 card's adapter and use it for serial access. Cable part numbers - 830-1220-xx.

- Connect a cable, Part Number 830-0058-xx (xx represents the cable length), to serial port `ttyS0` on either the A or B server (see [Connecting a Local Access Terminal to Server's Serial Port](#)).

Using ssh to Connect to the Server Command Line

You can log into either ELAP server from any terminal using a `ssh` (Secure Shell) utility.

Note:

If your terminal does not already have `ssh` installed, PuTTY is a free `ssh` utility for Windows that you can download from the web.

Use the following procedure to `ssh` to the server command line.

From a command-line prompt on your terminal, enter the following command to start a secure shell session with an ELAP server: `ssh <username>@<server_IP_address>`

where `<server_IP_address>` is the IP address of the server and `<username>` is either of the following:

- `ELAPconfig`—for accessing the ELAP text interface, enter the `ELAPconfig` username and the password provided by your system administrator. For more information about the ELAP text interface, see [Accessing the ELAP Text Interface](#).
- `syscheck`—for running the `syscheck` utility, enter `syscheck` as the username and `syscheck` as the password. For more information about running `syscheck` from this interface, see [Running syscheck Using the syscheck Login](#).

Connecting a Local Access Terminal to Server's Serial Port

Port `ttyS0` is the port used on both ELAP A and B servers to connect to the console.

1. Connect the workstation you will use as the Local Access Terminal to Serial port `ttyS0` on the server (see [Figure 40: E5-APP-B on ELAP Console Connectivity](#)).

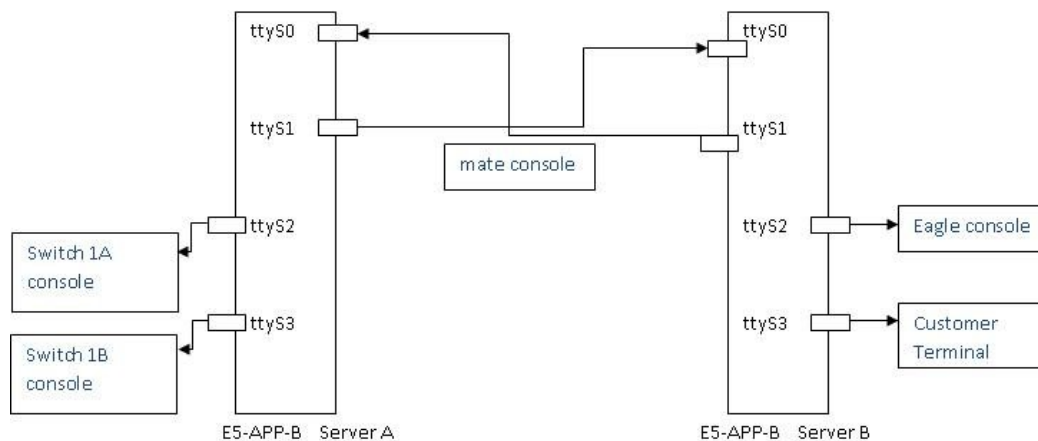


Figure 40: E5-APP-B on ELAP Console Connectivity

2. Reconnect the original cables as shown in [Figure 40: E5-APP-B on ELAP Console Connectivity](#).
3. If using a laptop, refer to [Figure 41: Laptop Connection Settings](#) for the correct settings needed for the local console connection to the `ttyS0` port:

The image shows a configuration window for a laptop connection. It contains five dropdown menus, each with a label and a value:

- Bits per second: 115200
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

Figure 41: Laptop Connection Settings

4. When the prompt appears on the Local Access Terminal, enter either of the following usernames and associated passwords:
 - To access the ELAP text interface, enter the ELAPconfig username and the password provided by your system administrator. For more information about the ELAP text interface, see [Accessing the ELAP Text Interface](#).
 - To run the `syscheck` utility, enter `syscheck` as the username and `syscheck` as the password. For more information about running `syscheck` from this interface, see [Running syscheck Using the syscheck Login](#)

Once a server has been installed with ELAP application and cabling has been completed, the subsequent upgrades can be done via serial connectivity from the mate ELAP server.

Accessing the ELAP Text Interface

The ELAP text-based user interface is accessed through the Local Access Terminal. The text-based user interface is used for initial configuration of the ELAP application. Some errors described in this manual result from errors in the initial configuration, and recovery from them requires that you access the text interface.

For information about the initial configuration of the ELAP application, refer to *ELAP Administration and LNP Feature Activation*.

1. Connect the Local Access Terminal to the server you need to access (see [Connecting a Local Access Terminal to Server's Serial Port](#)).
2. Log in with username `elapconfig` and the password provided by your system administrator.
3. Continue with the procedure that invoked this procedure.

Saving Logs Using the ELAP GUI

During some corrective procedures, it may be necessary to provide Tekelec with information about the ELAP for help in clearing an alarm. These log files are used to aid *My Oracle Support (MOS)* when troubleshooting the ELAP.

Use the following procedure to save logs using menu selections from the ELAP GUI.

1. Log in to the User Interface screen of the ELAP GUI (see [Accessing the ELAP GUI Interface](#)).
2. Check the banner information above the menu to verify that you are logged into the problem ELAP indicated in the UAM.

If it is necessary to switch to the problem ELAP, click the **Select Mate** menu item.

3. From the menu, select **Debug>Capture Log Files**.
4. Deselect (if necessary) the box labeled Check if you want to capture core files with the Logs, as shown in [Figure 42: Capture Logs File Screen](#).

Note: Contact *My Oracle Support (MOS)* for assistance before capturing core files with the log files.



Figure 42: Capture Logs File Screen

5. Click the **Capture Logs** button to capture the log files.

After completion, verify the following response:

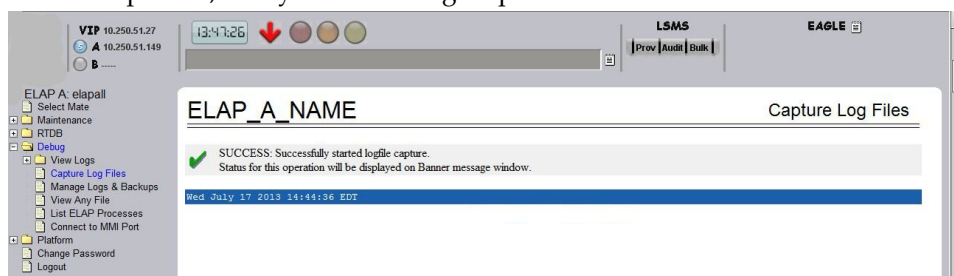


Figure 43: Capture Logs Success

6. Contact *My Oracle Support (MOS)* to analyze and check the log files.
7. When *My Oracle Support (MOS)* has finished analyzing the logs files, delete them from the server by selecting **Debug>Manage Logs Files and Backups** to open the **Manage Logs and Backups** Screen.

- Click the checkboxes for the files you want to delete and then click the **Delete Selected File(s)** button.

An example is shown in [Figure 44: Deleting Captured Log Files](#).

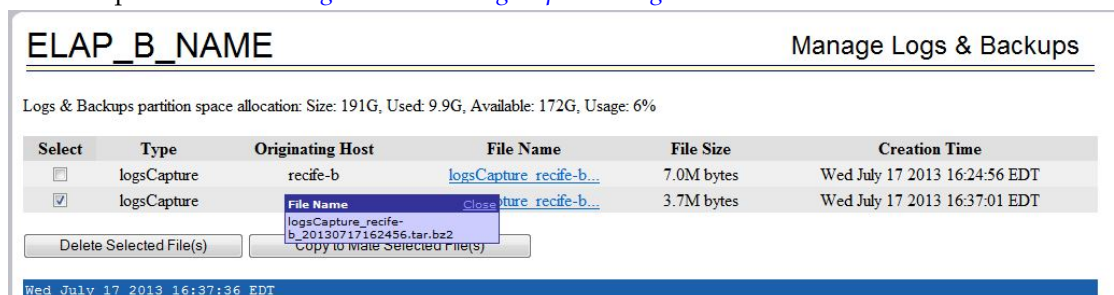


Figure 44: Deleting Captured Log Files

When the log files have been deleted, the GUI displays confirmation, as shown in [Figure 45: Delete Log Files Success](#).

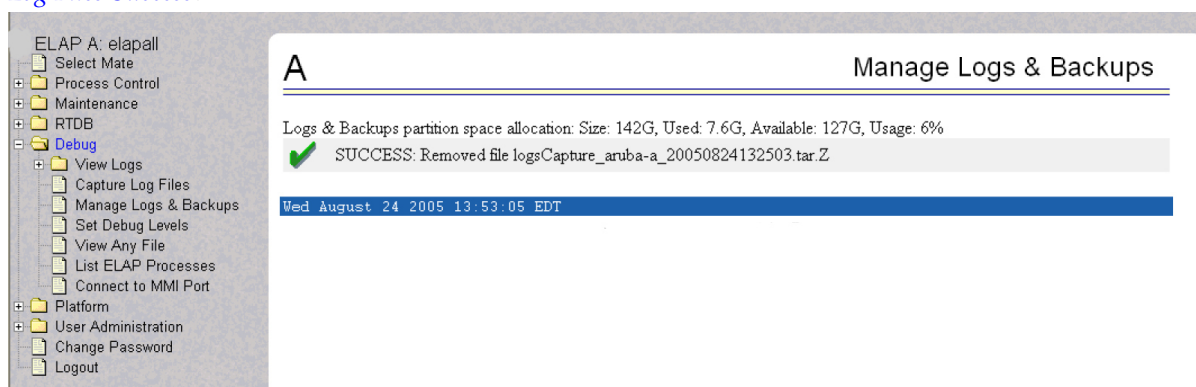


Figure 45: Delete Log Files Success

Restarting the ELAP Software

This procedure is used when referenced by one of the procedures in [Platform and Application Alarms](#).



CAUTION

Caution: Perform this procedure only when directed to by one of the procedures in . This is not a standalone procedure.

- Log in to the User Interface screen of the ELAPGUI (see Accessing the [Accessing the ELAP GUI Interface](#)).
- Check the banner information above the menu to verify that you are logged into the problem ELAP indicated in the UAM.

If it is necessary to switch to the problem ELAP, select **Select Mate**.

- From the **elapmaint** screen, select **Process Control>Stop Software**.

The screen shown in [Figure 46: Stop Software Confirmation](#) appears:

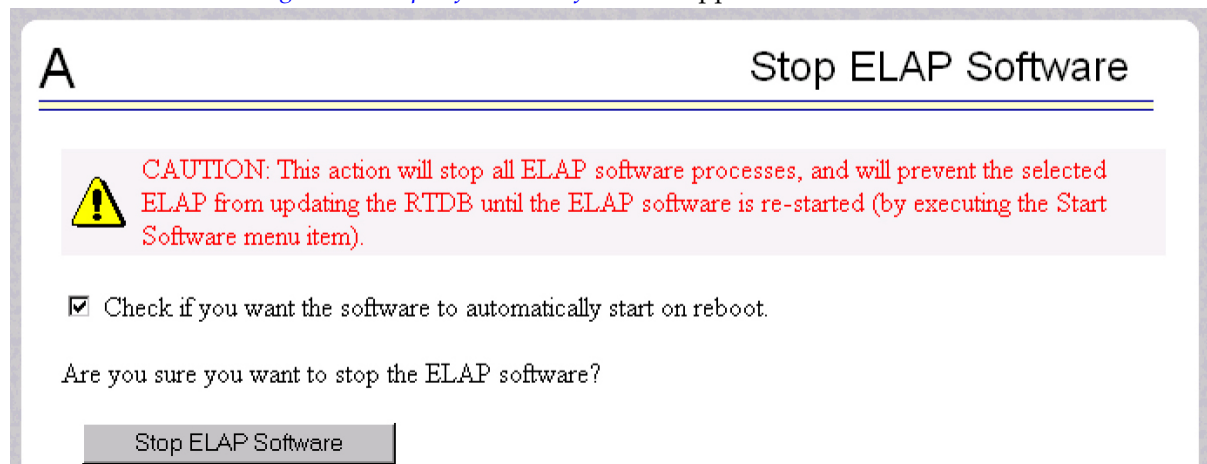


Figure 46: Stop Software Confirmation

- On the **Stop ELAP Software** screen, make sure the checkbox is checked as shown in [Figure 47: Stop Software Completion Screen](#).
- Click the **Stop ELAP Software** button to stop the software.

The screen shown in [Figure 47: Stop Software Completion Screen](#) appears.

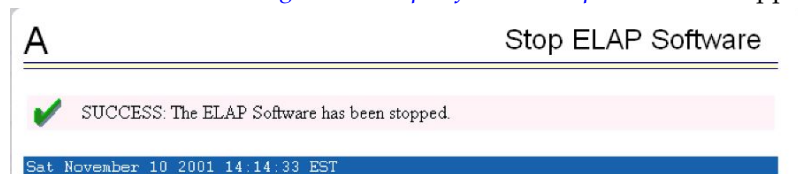


Figure 47: Stop Software Completion Screen

- Select **Process Control>Start Software**.
- From the **Start ELAP Software** screen, make sure the check boxes are checked as shown in [Figure 48: Start ELAP Software](#):

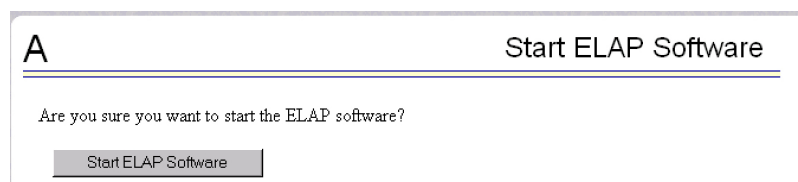


Figure 48: Start ELAP Software

- Click the **Start ELAP Software** button to start the software.
- The screen shown in [Figure 49: Start Software Completion Screen](#) confirms that the software has started:



Figure 49: Start Software Completion Screen

Rebooting the MPS

This procedure is used when referenced by one of the procedures in [Platform and Application Alarms](#).



Caution: Perform this procedure only when directed to by one of the procedures in [Platform and Application Alarms](#). This is not a standalone procedure.

CAUTION

1. Login to the **User Interface** screen of the ELAPGUI (see [Accessing the ELAP GUI Interface](#)).
2. Check the banner information above the menu to verify that you are logged into the problem ELAP indicated in the UAM.

Select **Select Mate** if necessary to switch to the problem ELAP.

3. Select **Platform>Reboot the MPS**.

The screen shown in [Figure 50: Request Reboot of the MPS](#) appears:

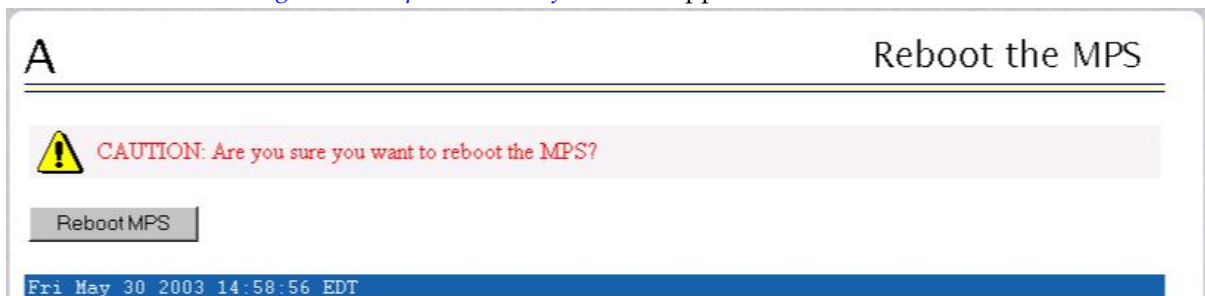


Figure 50: Request Reboot of the MPS

4. Click the **Reboot the MPS** button to restart the MPS.
The screen shown in [Figure 51: Confirm Requested Reboot the MPS](#) is displayed.

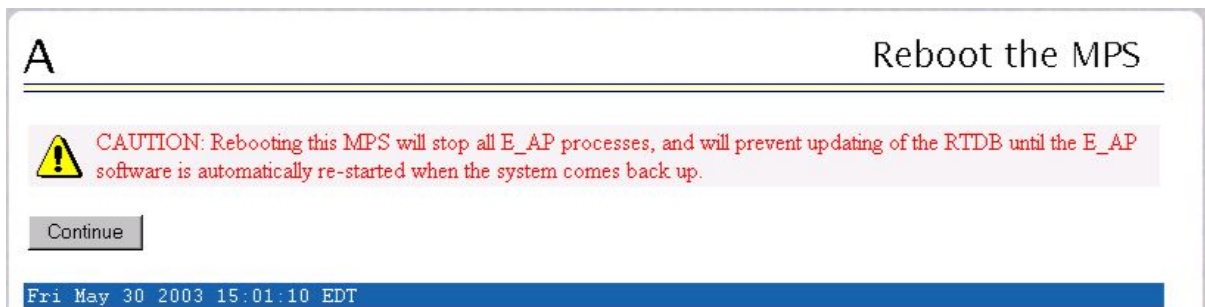


Figure 51: Confirm Requested Reboot the MPS

5. Click the **Continue** button.

The screen shown in [Figure 52: Reboot Information](#) is displayed.

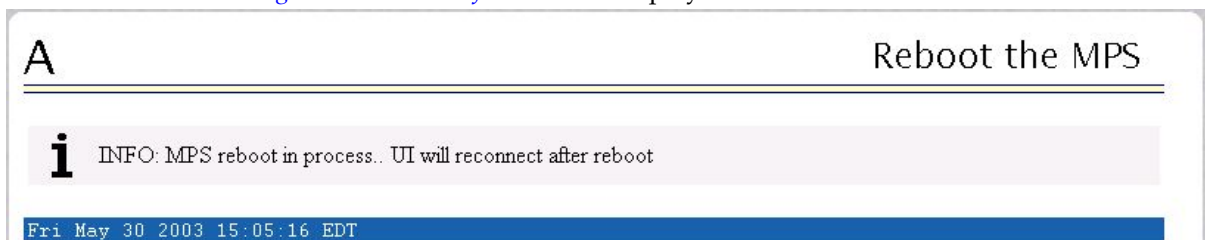


Figure 52: Reboot Information

This will reboot the ELAP and also start the ELAP software. The connection to the ELAP will be lost.

6. At the EAGLE input terminal, enter the `rept-stat-mps` command to verify the status of the ELAP.
Refer to *Commands User's Guide* to interpret the output.
7. If the problem has not been resolved, contact [My Oracle Support \(MOS\)](#) for assistance.
Have the system health check data available.
8. Return to the procedure that directed you to perform this procedure.

C

CMOS

Complementary Metal Oxide Semiconductor

CMOS semiconductors use both NMOS (negative polarity) and PMOS (positive polarity) circuits. Since only one of the circuit types is on at any given time, CMOS chips require less power than chips using just one type of transistor.

D

daemon

A process that runs in the background (rather than under the direct control of a user) and performs a specified operation at predefined times or in response to certain events. Generally speaking, daemons are assigned names that end with the letter "d." For example, sentryd is the daemon that runs the Sentry utility.

DSM

Database Service Module.

The DSM provides large capacity SCCP/database functionality. The DSM is an application card that supports network specific functions such as EAGLE Application Processor (EPAP), Global System for Mobile Communications (GSM), EAGLE Local Number Portability (ELAP), and interface to Local Service Management System (LSMS).

E

E5-APP-B

The E5-APP-B card is a complete application server platform

E

designed to operate within a heavy duty EAGLE shelf. An E5-APP-B card consists of the card, a microprocessor, 8 GB RAM, and two removable drive modules with an operating system and an application, such as EPAP, loaded.

ECC

Error Correction Coded

Elastic Charging Controller

The ECE command-line application used for operational management of ECE nodes in the cluster.

ELAP

EAGLE Local Number Portability Application Processor

The EAGLE LNP Application Processor (ELAP) platform provides capacity and performance required to support the ported number database.

F

FRU

Field Replaceable Unit

A circuit board or part that can be quickly and easily removed and replaced by the user or by a technician without having to send the entire product or system to a repair facility.

G

GB

Gigabyte

1,073,741,824 bytes

GUI

Graphical User Interface

The term given to that set of items and facilities which provides you with a graphic means for

G

manipulating screen data rather than being limited to character based commands.

I

IP

Intelligent Peripheral

Internet Protocol - IP specifies the format of packets, also called datagrams, and the addressing scheme. The network layer for the TCP/IP protocol suite widely used on Ethernet networks, defined in STD 5, RFC 791. IP is a connectionless, best-effort packet switching protocol. It provides packet routing, fragmentation and re-assembly through the data link layer.

L

LED

Light Emitting Diode

An electrical device that glows a particular color when a specified voltage is applied to it.

LSMS

Local Service Management System

An interface between the Number Portability Administration Center (NPAC) and the LNP service databases. The LSMS receives LNP data from the NPAC and downloads that data to the service databases. LNP data can be entered into the LSMS database. The data can then be downloaded to the LNP service databases and to the NPAC.

M

MPS

Multi-Purpose Server

The Multi-Purpose Server provides database/reload functionality and

M

a variety of high capacity/high speed offboard database functions for applications. The MPS resides in the General Purpose Frame.

Messages Per Second

A measure of a message processor's performance capacity. A message is any Diameter message (Request or Answer) which is received and processed by a message processor.

N

NTP

Network Time Protocol

R

RAM

Random Access Memory

A type of computer memory that can be accessed randomly; that is, any byte of memory can be accessed without touching the preceding bytes.

Route

A signaling path from an LSP to an RSP using a specified Link Set.

RTDB

Real Time Database

S

Secure Shell

See SSH.

SM

Short Message

T

TPD

Tekelec Platform Development

The Oracle Communications Tekelec Platform (TPD) is a standard Linux-based operating system packaged and distributed

T

by Oracle. TPD provides value-added features for managing installations and upgrades, diagnostics, integration of 3rd party software (open and closed source), build tools, and server management tools.

U

UAM

Unsolicited Alarm Message

A message sent to a user interface whenever there is a fault that is service-affecting or when a previous problem is corrected. Each message has a trouble code and text associated with the trouble condition.

UI

User Interface

UIM

Unsolicited Information Message

A message sent to a user interface whenever there is a fault that is not service-affecting or when a previous problem is corrected. Each message has a trouble code and text associated with the trouble condition.

Unified Inventory Management