

**Oracle® Communications
EAGLE LSMS**

System Health Check Guide

Release 13.2 and later

F42045-01

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ORACLE®

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Refer to Appendix 5 for instructions on accessing My Oracle Support.

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1 Introduction

1.1 Purpose and Scope

This document describes the Oracle recommended methods and procedures to evaluate the health of the setup. This document is intended for use for systems running on LSMS release 13.2 or higher.

This document is intended for EAGLE engineering, integration, documentation, technical services, and any craft person who has completed LSMS training and is familiar with LSMS interface.

The document is written to support all customer configurations. All of the commands specified in the procedures should be executed unless explicitly stated otherwise in the individual procedure. Not doing so may result in a delay in the analysis performed by Oracle support.

1.2 Acronyms

This section lists terms and acronyms specific to this document.

Table 1. Acronyms

Acronym/Term	Definition
OC-LSMS	Oracle Communication Local Service Management System
MPS	Multi-Purpose Server
OC-ELAP	Oracle Communications EAGLE LNP Application Processor
TPD	Tekelec Platform Distribution

1.3 Terminology

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

Each step has a checkbox 1A for every command within the step that the technician should check to keep track of the progress of the procedure

Each step has a checkbox 1B for every command within the step that the technician should check to keep track of the progress of the procedure

The title box describes the operations to be performed during that +step

Each command that the technician is to enter is in 9 point Lucida Console font

Output displayed only for reference actual output may differ

1A ☐	1B ☐	MPS 1A: Verify date	\$ date Mon Jul 17 11:48:24 EDT 2017
--------------------------------	--------------------------------	---------------------	---

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

2 Health Check Overview

An LSMS system is a pair of MPS servers (an A and a B node). One MPS server running LSMS is referred to as `lmspri`, while the mate MPS server running LSMS is referred to as `lmssec`. The two MPS servers running LSMS have exactly the same software installed. The main functions of LSMS are:

- a. Receives LNP data from Number Portability Administration Center (NPAC).
- b. Enables customers to enter locally provisioned data such as Override Global Title Translation (OGTT) data.
- c. Forwards all NPAC and locally provisioned data to up to eight ELAP systems.

Therefore, a mated pair of LSMS systems consists of `lmspri` and `lmssec` node. This document describes how to conduct the health check of the LSMS software on one system, that system consisting of two MPS servers (A (`lmspri`) and B (`lmssec`)).

3 Pre-Health Check Requirements

- User shall have the access to the server on which health check is to be performed via Securelink, VPN and/or via Modem or a PC with null modem cable for connection to serial port.
- User shall be able to log into the web GUI, such as a PC with Internet Explorer, or via lynx text GUI.
- User shall have the terminal capture enabled to allow review of the output.
- User shall have the passwords for the following users as mentioned in table below:

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

4 LSMS Health Check

4.1 System Status

These steps can be performed on any of the LSMS configurations as mentioned in section 2. For mated pairs, commands should be run on both of the servers.

Step #	Steps To Be Completed	Expected output/command to be executed
1. ☐	MPS X: Login as admusr	<code>login: admusr</code> <code>password: <admusr_password></code>
2. ☐	MPS X: Record the TPD version	<code>\$ getPlatRev</code> <code>7.4.0.0.0_88.37.0</code>
3. ☐	MPS X: Verify that the time difference between servers is 30 seconds or less.	<code>\$ sudo date ; sudo clock</code> Tue Sep 12 18:49:26 EDT 2017 Tue 12 Sep 2017 06:49:55 PM EDT -0.234883 seconds
4. ☐	MPS X: Verify that the ntp server is in sync Delay should be less than 30 seconds Output is in milliseconds	<code>\$ ntpq -p</code> remote refid st t when poll reach delay offset jitter =====
		ntpsrvr1 .LCL. 1 u 423 1024 377 0.368 -395022 1876.89
		lsmsssec-heartbeat-a 192.168.1.1 14 u 513 1024 0 50.483 -16087.0.000
		lsmsssec-heartbeat-b 192.168.1.1 14 u 54 1024 0 107.601 -16110.0.000
5. ☐	MPS X: Record the last reboot occurred	<code>\$ uptime</code> 18:56:18 up 5 days, 2:24, 1 user, load average: 1.11, 0.86, 0.70 Note: A server reboot is recommended after every 180 days.
6. ☐	MPS X: Record the LSMS release number from rpm query.	<code>\$ rpm -qi TKLClsm</code> Name : TKLClsm Relocations: (not relocatable) Version : 13.43.0 Vendor: Tekelec Release : 13.2.1.0.0_132.21.0 Build Date: Mon 28 Aug 2017 05:19:53 PM EDT Install Date: Sat 02 Sep 2017 04:01:10 AM EDT Build Host: coach-

		12.tekelec.com Group : TKLC/Application Source RPM: TKLClsms-13.43.0-13.2.1.0.0_132.21.0.src.rpm Size : 215874493 License:  TEKELEC 2004-2017 Signature : (none) Packager : <Open Systems> URL : http://www.tekelec.com/ Summary : Oracle Communications LSMS Package Description : This is the Oracle Communications LSMS Package. The package installs LSMS software. Local Service Management System (LSMS) is a secure and reliable Local Number Portability (LNP) system.
7. ☐	MPS X: Verify system health check	\$ sudo syscheck Running modules in class disk... OK Running modules in class hardware... OK Running modules in class net... OK Running modules in class proc... OK Running modules in class services... OK Running modules in class system... OK Running modules in class upgrade... OK LOG LOCATION: /var/TKLC/log/syscheck/fail_log Note: Incase one or more modules FAILED, rerun the command with verbose option like: \$ sudo syscheck -v Record the output and contact My Oracle Support.

8. ☐	MPS X: Retrieve alarm status from alarm manager.	<pre>\$ alarmMgr --alarmStatus</pre> Note: No output will be displayed if there are no alarms on the system. Incase any output is observed record the output. Sample alarms are displayed below: <pre>\$ alarmMgr --alarmStatus</pre> SEQ: 17272594 UPTIME: 14280330 BIRTH: 1356031430 TYPE: SET ALARM: TKSPLATMA1 tpdFanError 1.3.6.1.4.1.323.5.3.18.3.1.2.1
9. ☐	MPS X: Record the last lines of alarm log	<pre>\$ sudo tail -40 /var/TKLC/log/lsms/alarm/LsmsAlarm.log.0912</pre> ALARM LOG << 20170912185911 >> [4100:LSMS] lsmsec: Minor Platform Alarm (50000004001C2000): Device Interface Warning, Platform Health Check Failure, NTP Offset Check Failure, NTP Stratum Check Failure, NTP Source Server Is Not Able To Provide Correct Time ALARM LOG << 20170912185946 >> [4100:LSMS] Minor Platform Alarm (5000000000002200): Server NTP Daemon Not Synchronized, Device Interface Warning ALARM LOG << 20170912185946 >> [4100:LSMS] lsmsec: Minor Platform Alarm (5000000400182000): Device Interface Warning, NTP Offset Check Failure, NTP Stratum Check Failure, NTP Source Server Is Not Able To Provide Correct Time ALARM LOG << 20170912190016 >> [4100:LSMS] Minor Platform Alarm (50000000000042200): Server NTP Daemon Not Synchronized, Device Interface Warning, Platform Health Check Failure
10. ☐	MPS X: Record the last lines of messages log	<pre>\$ sudo tail -40 /var/log/messages</pre> Sep 12 19:00:16 lsmcpri sudo: lsmadm : TTY=unknown ; PWD=/usr/TKLC/lms/bin ; USER=root ; COMMAND=/usr/TKLC/lms/tools/pass_fetch pass1 Sep 12 19:00:40 lsmcpri sudo: lsmadm : TTY=unknown ; PWD=/usr/TKLC/lms/bin ; USER=root ; COMMAND=/usr/TKLC/lms/tools/pass_fetch pass1

11. ☐	MPS X: Verify the attributes of volume groups If the output does not contain the “logical volume” sections, contact My Oracle Support so that corrective procedures can be scheduled to be performed.	<pre>\$ sudo vgdisplay -v</pre> Using volume group(s) on command line. <pre>--- Volume group --- VG Name vgroot System ID Format lvm2 Metadata Areas 1 Metadata Sequence No 104 VG Access read/write VG Status resizable MAX LV 0 Cur LV 11 Open LV 11 Max PV 0 Cur PV 1 Act PV 1 VG Size 446.72 GiB PE Size 32.00 MiB Total PE 14295 Alloc PE / Size 13055 / 407.97 GiB Free PE / Size 1240 / 38.75 GiB VG UUID AlsBKN-nqKn-kUZD-0K0X-Nz54-r293-cybHI1 --- Logical volume --- LV Path /dev/vgroot/plat_root LV Name plat_root VG Name vgroot LV UUID CaxkPU-1vWU-JAFH-BF0r-u4at-xwXL-RjZ4J3 LV Write Access read/write LV Creation host, time localhost.localdomain, 2017-09-02 02:47:32 -0400 LV Status available # open 1 LV Size 1.00 GiB Current LE 32</pre>
------------------------------	--	--

		<pre> Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:0 --- Logical volume --- LV Path /dev/vgroot/plat_swap LV Name plat_swap VG Name vgroot LV UUID 6pB5XH-juQq-fMns-sL7k-b4eX-Dh21-xyUOpd LV Write Access read/write LV Creation host, time localhost.localdomain, 2017-09-02 02:47:33 -0400 LV Status available # open 1 LV Size 1.97 GiB Current LE 63 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:1 --- Logical volume --- LV Path /dev/vgroot/plat_var LV Name plat_var VG Name vgroot LV UUID BLSR5N-NDAv-xW7n-S4nI-cPg6-PMlI-LPijvc LV Write Access read/write LV Creation host, time localhost.localdomain, 2017-09-02 02:47:33 -0400 LV Status available # open 1 LV Size 1.00 GiB Current LE 32 </pre>
--	--	--

		<pre> Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:2 --- Logical volume --- LV Path /dev/vgroot/plat_usr LV Name plat_usr VG Name vgroot LV UUID b39mVM-YaBW-e7Iy-zwxM-8UkZ-k45K-9RQ17s LV Write Access read/write LV Creation host, time localhost.localdomain, 2017-09-02 02:47:34 -0400 LV Status available # open 1 LV Size 4.00 GiB Current LE 128 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:3 --- Logical volume --- LV Path /dev/vgroot/plat_tmp LV Name plat_tmp VG Name vgroot LV UUID 6TZ2wy-l0QR-HnTu-2bzC-ECta-S5a2-8xTMI0 LV Write Access read/write LV Creation host, time localhost.localdomain, 2017-09-02 02:47:35 -0400 LV Status available # open 1 LV Size 1.00 GiB Current LE 32 </pre>
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	Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:4 --- --- Logical volume --- LV Path /dev/vgroot/plat_var_tklc LV Name plat_var_tklc VG Name vgroot LV UUID YTz4gK-LstQ-RS7R-DPth-RoZF-fnRF-0vuq0G LV Write Access read/write LV Creation host, time localhost.localdomain, 2017-09-02 02:47:36 -0400 LV Status available # open 1 LV Size 4.00 GiB Current LE 128 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:5 --- --- Logical volume --- LV Path /dev/vgroot/lms_root LV Name lms_root VG Name vgroot LV UUID aXq7eJ-OV53-OMP0-Cxss-oSCi-kImQ-fS3Hbh LV Write Access read/write LV Creation host, time lmspri, 2017-09-02 03:59:01 -0400 LV Status available # open 1 LV Size 4.00 GiB Current LE 128
--	--

		Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:6 --- Logical volume --- LV Path /dev/vgroot/lsms_external LV Name lsms_external VG Name vgroot LV UUID REF15A-ShrB-0GJW-MRRf-ZNJ8-pnsq-POsO6d LV Write Access read/write LV Creation host, time lsmspri, 2017-09-02 03:59:02 -0400 LV Status available # open 1 LV Size 2.00 GiB Current LE 64 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:7 --- Logical volume --- LV Path /dev/vgroot/lsms_logs LV Name lsms_logs VG Name vgroot LV UUID Vklv59-Zaf1-qh7k-Qw2Y-4AeE-NIem-PTpfsq LV Write Access read/write LV Creation host, time lsmspri, 2017-09-02 03:59:03 -0400 LV Status available # open 1 LV Size 36.00 GiB Current LE 1152
--	--	---

		<pre> Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:8 --- Logical volume --- LV Path /dev/vgroot/lsms_db LV Name lsms_db VG Name vgroot LV UUID BfF1te-Cc3o-9orz-Vruk-xr9P-xBzA-DZzYLE LV Write Access read/write LV Creation host, time lsmspri, 2017-09-02 03:59:07 -0400 LV Status available # open 1 LV Size 213.00 GiB Current LE 6816 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:9 --- Logical volume --- LV Path /dev/vgroot/lsms_free LV Name lsms_free VG Name vgroot LV UUID aZgNdR-31YF-jTwe-pBFW-3Ma0-zjAz-RT3ZAu LV Write Access read/write LV Creation host, time lsmspri, 2017-09-02 03:59:32 -0400 LV Status available # open 1 LV Size 140.00 GiB Current LE 4480 </pre>
--	--	--

		<pre> Segments 1 Allocation inherit Read ahead sectors auto - currently set to 256 Block device 253:10 --- Physical volumes --- PV Name /dev/md2 PV UUID 3RMk1T-fj6y-nETi-T7jU-HdTc-tXnX-Pd26dn PV Status allocatable Total PE / Free PE 14295 / 1240 </pre>
12. ☐	MPS X: Record the total amount of free and used physical and swap memory in the system.	<pre> \$ free total used free shared buffers cached Mem: 8059380 7423640 635740 32356 470128 4574864 -/+ buffers/cache: 2378648 5680732 Swap: 2064380 26764 2037616 </pre>
13. ☐	MPS X: Verify db filesystem use is less than 90%. Note any other filesystem at 80% or higher use. Output will vary for each server.	<pre> \$ df -h Filesystem Size Used Avail Use% Mounted on /dev/mapper/vgroot-plat_root 976M 286M 640M 31% / tmpfs 3.9G 0 3.9G 0% /dev/shm /dev/md1 244M 40M 192M 17% /boot /dev/mapper/vgroot-plat_tmp 976M 1.3M 924M 1% /tmp /dev/mapper/vgroot-plat_usr 3.9G 2.2G 1.5G 60% /usr /dev/mapper/vgroot-plat_var 976M 330M 596M 36% /var /dev/mapper/vgroot-plat_var_tklc 3.9G 2.5G 1.3G 67% /var/TKLC /dev/mapper/vgroot-lsms_root 3.9G 8.2M 3.7G 1% /var/TKLC/lms /dev/mapper/vgroot-lsms_db 210G 8.5G 191G 5% /var/TKLC/lms/db </pre>

		<pre> /dev/mapper/vgroot-lsms_external 2.0G 3.0M 1.9G 1% /var/TKLC/lsms/external /dev/mapper/vgroot-lsms_free 138G 3.2G 128G 3% /var/TKLC/lsms/free /dev/mapper/vgroot-lsms_logs 36G 634M 33G 2% /var/TKLC/lsms/logs </pre>
14. ☐	MPS X: Verify disk mirroring configuration and RAID status	<pre> \$ cat /proc/mdstat Personalities : [raid1] md1 : active raid1 sdb2[1] sda2[0] 262080 blocks super 1.0 [2/2] [UU] md2 : active raid1 sda1[0] sdb1[1] 468447232 blocks super 1.1 [2/2] [UU] bitmap: 3/4 pages [12KB], 65536KB chunk unused devices: <none> </pre>
15. ☐	MPS X: Record the hard drive and partition size	<pre> \$ sudo fdisk -l /dev/sd[a-z] Disk /dev/sda: 480.1 GB, 480103981056 bytes 255 heads, 63 sectors/track, 58369 cylinders Units = cylinders of 16065 * 512 = 8225280 bytes Sector size (logical/physical): 512 bytes / 512 bytes I/O size (minimum/optimal): 512 bytes / 512 bytes Disk identifier: 0x000c8e91 Device Boot Start End Blocks Id System /dev/sda1 1 58336 468578304 fd Linux raid autodetect /dev/sda2 * 58336 58369 262144 fd Linux raid autodetect Disk /dev/sdb: 480.1 GB, 480103981056 bytes 255 heads, 63 sectors/track, 58369 cylinders Units = cylinders of 16065 * 512 = 8225280 bytes Sector size (logical/physical): 512 bytes / 512 bytes I/O size (minimum/optimal): 512 bytes / 512 bytes </pre>

		Disk identifier: 0x000e5bf1 <pre> Device Boot Start End Blocks Id System /dev/sdb1 1 58336 468578304 fd Linux raid autodetect /dev/sdb2 * 58336 58369 262144 fd Linux raid autodetect </pre>
16. ☐	MPS X: Verify smartctl output	<pre> \$ sudo smartctl -A -l error /dev/sda smartctl 5.43 2012-06-30 r3573 [x86_64-linux-2.6.32- 642.15.1.el6prere17.4.0.0_88.37.0.x86_64] (local build) Copyright (C) 2002-12 by Bruce Allen, http://smartmontools.sourceforge.net === START OF READ SMART DATA SECTION === SMART Attributes Data Structure revision number: 1 Vendor Specific SMART Attributes with Thresholds: ID# ATTRIBUTE_NAME FLAG VALUE WORST THRESH TYPE UPDATED WHEN_FAILED RAW_VALUE 5 Reallocated_Sector_Ct 0x0032 098 098 000 Old_age Always - 2 9 Power_On_Hours 0x0032 100 100 000 Old_age Always - 28524 12 Power_Cycle_Count 0x0032 100 100 000 Old_age Always - 70 170 Unknown_Attribute 0x0033 099 099 010 Pre-fail Always - 0 171 Unknown_Attribute 0x0032 100 100 000 Old_age Always - 4 172 Unknown_Attribute 0x0032 100 100 000 Old_age Always - 0 174 Unknown_Attribute 0x0032 100 100 000 Old_age Always - 56 175 Program_Fail_Count_Chip 0x0033 100 100 010 Pre-fail Always - 661521629813 183 Runtime_Bad_Block 0x0032 100 100 000 Old_age Always - 0 184 End-to-End_Error 0x0033 100 100 090 Pre-fail Always - 0 187 Reported_Uncorrect 0x0032 100 100 000 Old_age Always - 0 190 Airflow_Temperature_Cel 0x0022 086 083 000 Old_age Always </pre>

		- 14 (Min/Max 13/17) 192 Power-Off_Retract_Count 0x0032 100 100 000 Old_age Always - - 56 194 Temperature_Celsius 0x0022 100 100 000 Old_age Always - 14 197 Current_Pending_Sector 0x0032 100 100 000 Old_age Always - - 0 199 UDMA_CRC_Error_Count 0x003e 100 100 000 Old_age Always - 0 225 Load_Cycle_Count 0x0032 100 100 000 Old_age Always - 4728030 226 Load-in_Time 0x0032 100 100 000 Old_age Always - 65535 227 Torq-amp_Count 0x0032 100 100 000 Old_age Always - 4294967295 228 Power-off_Retract_Count 0x0032 100 100 000 Old_age Always - 65535 232 Available_Reservd_Space 0x0033 099 099 010 Pre-fail Always - 0 233 Media_Wearout_Indicator 0x0032 088 088 000 Old_age Always - 0 234 Unknown_Attribute 0x0032 100 100 000 Old_age Always - 0 241 Total_LBAs_Written 0x0032 100 100 000 Old_age Always - 4728030 242 Total_LBAs_Read 0x0032 100 100 000 Old_age Always - 3782315 SMART Error Log Version: 1 No Errors Logged Note: If any error is observed record the error and contact My Oracle Support.
17. ☐	MPS X: Start Disk Integrity Check	<pre>\$ sudo smartctl -t short /dev/sda</pre> smartctl 5.43 2012-06-30 r3573 [x86_64-linux-2.6.32-642.15.1.el6prere] 7.4.0.0_88.37.0.x86_64] (local build) Copyright (C) 2002-12 by Bruce Allen, http://smartmontools.sourceforge.net === START OF OFFLINE IMMEDIATE AND SELF-TEST SECTION

		=== Sending command: "Execute SMART Short self-test routine immediately in off-line mode". Drive command "Execute SMART Short self-test routine immediately in off-line mode" successful. Testing has begun. Please wait 1 minutes for test to complete. Test will complete after Tue Sep 12 19:09:27 2017 Use smartctl -X to abort test.																																																								
18. ☐	MPS X: Verify and record Disk Integrity Check results	\$ sleep 60; sudo smartctl -l selftest /dev/sda smartctl 5.43 2012-06-30 r3573 [x86_64-linux-2.6.32-642.15.1.el6prere] 7.4.0.0_88.37.0.x86_64] (local build) Copyright (C) 2002-12 by Bruce Allen, http://smartmontools.sourceforge.net === START OF READ SMART DATA SECTION === SMART Self-test log structure revision number 1 <table><thead><tr><th>Num</th><th>Test_Description</th><th>Status</th><th>Remaining</th><th>LifeTime(hours)</th><th>LBA_of_first_error</th></tr></thead><tbody><tr><td># 1</td><td>Short offline</td><td>Completed without error</td><td>00%</td><td>28524</td><td>-</td></tr></tbody></table> Note: Record if any error is reported and contact My Oracle Support.	Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error	# 1	Short offline	Completed without error	00%	28524	-																																												
Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error																																																					
# 1	Short offline	Completed without error	00%	28524	-																																																					
19. ☐	MPS X: Record any hard disk sector error	\$ sudo smartctl -a /dev/sda grep -i LBA <table><tbody><tr><td>241</td><td>Total_LBAs_Written</td><td>0x0032</td><td>100</td><td>100</td><td>000</td><td>Old_age</td><td>Always</td></tr><tr><td>-</td><td>4728040</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>242</td><td>Total_LBAs_Read</td><td>0x0032</td><td>100</td><td>100</td><td>000</td><td>Old_age</td><td>Always</td></tr><tr><td>-</td><td>3782494</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> <table><thead><tr><th>Num</th><th>Test_Description</th><th>Status</th><th>Remaining</th><th>LifeTime(hours)</th><th>LBA_of_first_error</th></tr></thead><tbody><tr><td colspan="6">SPAN MIN_LBA MAX_LBA CURRENT_TEST_STATUS</td></tr></tbody></table> Note: No error should be observed in case any error is observed output will be like as mentioned below, record the output and contact My Oracle Support 40 51 a0 11 8e 57 e0 Error: UNC 160 sectors at LBA = 0x00578e11 = 538001 40 51 a8 11 8e 57 e0 Error: UNC 168 sectors at LBA = 0x00578e11 = 538001 <table><thead><tr><th>Num</th><th>Test_Description</th><th>Status</th><th>Remaining</th><th>LifeTime(hours)</th><th>LBA_of_first_error</th></tr></thead><tbody><tr><td colspan="6"></td></tr></tbody></table>	241	Total_LBAs_Written	0x0032	100	100	000	Old_age	Always	-	4728040							242	Total_LBAs_Read	0x0032	100	100	000	Old_age	Always	-	3782494							Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error	SPAN MIN_LBA MAX_LBA CURRENT_TEST_STATUS						Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error						
241	Total_LBAs_Written	0x0032	100	100	000	Old_age	Always																																																			
-	4728040																																																									
242	Total_LBAs_Read	0x0032	100	100	000	Old_age	Always																																																			
-	3782494																																																									
Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error																																																					
SPAN MIN_LBA MAX_LBA CURRENT_TEST_STATUS																																																										
Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error																																																					

		If UNC errors are found, execute following command: \$ sudo smartctl -a /dev/sda
20. ☐	MPS X: Disk integrity step on second HDD	Repeat steps from 16 to 19 for "/dev/sdb" disk drive.
21. ☐	MPS X: Repeat the procedure for mate LSMS	Repeat steps from 1 to 20 on mate LSMS server.

4.2 System Configuration

These steps can be performed on LSMS system. For mated pairs, commands should be run on both of the servers.
Assuming that MPS A is ACTIVE server.

S T E P #	Steps To Be Completed	Expected output/command to be executed
1. ☐	MPS X: Login as admusr	login: admusr password: <admusr_password>
2. ☐	MPS X: Record /etc/hosts configuration	\$ cat /etc/hosts 127.0.0.1 localhost localhost4 localhost4.localdomain4 ::1 localhost localhost6 localhost6.localdomain6 192.168.1.1 lsmspri-heartbeat-a heartbeat-a 192.168.1.2 lsmsec-heartbeat-a mate-heartbeat-a ntppeerA mate 192.168.2.1 lsmspri-heartbeat-b heartbeat-b hasync-1a 192.168.2.2 lsmsec-heartbeat-b mate-heartbeat-b ntppeerB hasync-1b mate- ha 192.168.3.1 lsmspri-backup backup 192.168.4.1 lsmsec-backup mate-backup 192.168.3.2 backupserver-lsmspri backupserver 192.168.4.2 backupserver-lsmsec mate-backupserver 10.248.11.122 lsmspri lsmspri-ems ems lsmspri-app app lsmspri-npac npac 10.248.11.123 lsmsec lsmsec-ems mate-ems lsmsec-app mate-app lsmsec- npac mate-npac 10.248.11.124 lmsactive-app lmsactive 10.248.13.17 ntpserver1
3. ☐	MPS X: Verify and Record IPs configured on each interface	\$ ifconfig -a bond0 Link encap:Ethernet HWaddr 00:00:17:0F:2D:36 inet addr:192.168.1.1 Bcast:192.168.1.255 Mask:255.255.255.0 inet6 addr: fe80::200:17ff:fe0f:2d36/64 Scope:Link UP BROADCAST RUNNING MASTER MULTICAST MTU:1500 Metric:1 RX packets:40906546 errors:0 dropped:0 overruns:0 frame:0 TX packets:45125575 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0

		RX bytes:6104529725 (5.6 GiB) TX bytes:15266072489 (14.2 GiB) bond0.2 Link encap:Ethernet HWaddr 00:00:17:0F:2D:36 inet addr:192.168.2.1 Bcast:192.168.2.255 Mask:255.255.255.0 inet6 addr: fe80::200:17ff:fe0f:2d36/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:30552973 errors:0 dropped:0 overruns:0 frame:0 TX packets:30178620 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX bytes:4477305241 (4.1 GiB) TX bytes:2765906476 (2.5 GiB) bond1 Link encap:Ethernet HWaddr 42:E1:3E:F8:6C:A6 BROADCAST MASTER MULTICAST MTU:1500 Metric:1 RX packets:0 errors:0 dropped:0 overruns:0 frame:0 TX packets:0 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX bytes:0 (0.0 b) TX bytes:0 (0.0 b) bond2 Link encap:Ethernet HWaddr A6:57:A4:45:D8:C6 BROADCAST MASTER MULTICAST MTU:1500 Metric:1 RX packets:0 errors:0 dropped:0 overruns:0 frame:0 TX packets:0 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX bytes:0 (0.0 b) TX bytes:0 (0.0 b) bond3 Link encap:Ethernet HWaddr CE:1E:89:16:5D:02 BROADCAST MASTER MULTICAST MTU:1500 Metric:1 RX packets:0 errors:0 dropped:0 overruns:0 frame:0 TX packets:0 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX bytes:0 (0.0 b) TX bytes:0 (0.0 b) eth0 Link encap:Ethernet HWaddr 00:00:17:0F:2D:34 inet addr:10.248.11.122 Bcast:192.168.61.255 Mask:255.255.255.0 inet6 addr: fd66:f550:5939:b:200:17ff:fe0f:2d34/64 Scope:Global inet6 addr: fe80::200:17ff:fe0f:2d34/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:4803345 errors:0 dropped:0 overruns:0 frame:0 TX packets:4822838 errors:2377 dropped:0 overruns:0 carrier:2377 collisions:53965 txqueuelen:1000 RX bytes:3614293501 (3.3 GiB) TX bytes:1682375735 (1.5 GiB) Memory:fdee0000-fdefffff eth1 Link encap:Ethernet HWaddr 00:00:17:0F:2D:35 inet addr:192.168.3.1 Bcast:192.168.3.255 Mask:255.255.255.0 inet6 addr: fe80::200:17ff:fe0f:2d35/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:8780 errors:0 dropped:0 overruns:0 frame:0 TX packets:8815 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:980056 (957.0 KiB) TX bytes:987006 (963.8 KiB) Memory:fde60000-fde7ffff eth2 Link encap:Ethernet HWaddr 00:00:17:0F:2D:36 UP BROADCAST SLAVE MULTICAST MTU:1500 Metric:1
--	--	---

		RX packets:0 errors:0 dropped:0 overruns:0 frame:0 TX packets:0 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:0 (0.0 b) TX bytes:0 (0.0 b) Memory:fdfe0000-fdffffff eth3 Link encap:Ethernet HWaddr 00:00:17:0F:2D:36 UP BROADCAST RUNNING SLAVE MULTICAST MTU:1500 Metric:1 RX packets:40906546 errors:0 dropped:0 overruns:0 frame:0 TX packets:45125575 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:6104529725 (5.6 GiB) TX bytes:15266072489 (14.2 GiB) Memory:fd60000-fdf7ffff lo Link encap:Local Loopback inet addr:127.0.0.1 Mask:255.0.0.0 inet6 addr: ::1/128 Scope:Host UP LOOPBACK RUNNING MTU:65536 Metric:1 RX packets:8557266 errors:0 dropped:0 overruns:0 frame:0 TX packets:8557266 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX bytes:690513650 (658.5 MiB) TX bytes:690513650 (658.5 MiB)
4. ☐	MPS X: Record features settings Note: This command will be run only on ACTIVE server	\$ lsmsdb -c features N AFT N ALARM_FILTERING N ALT_SPID 98 BINLOGS_THRESHOLD N CANADA_SPID_RECOVERY N COMMAND_CLASS 0 DEFAULT_PASSWORD_TIMEOUT N EDR Y ENHANCED_FILTERS N ERROR_CODES_FOR_ACTIONS N ERROR_CODES_FOR_NON_ACTIONS Y HSOP_BUNDLING Y HTTP Y HTTPS N INACTIVITY_TIMEOUT N LOGIN_MSG N LOG_EAGLE_SUCCESS_RESP 16 MAX_EAGLES 32 MAX_SPIDS 8 MAX_USERS N MYSQL_PORT N NANC_3_2_ENHANCEMENTS N NANC_3_3_FEATURE_SET 900 NPAC_HEARTBEAT_QUIET_PERIOD_TIMEOUT 100000 NPAC_HEARTBEAT_QUIET_PERIOD_TIMEOUT_CANADA 3 NPAC_HEARTBEAT_RETRY_NUMBER 60 NPAC_HEARTBEAT_TIMEOUT 60 NPAC_RECOVERY_PERIOD Y QUERY_SERVER N REPORT_GEN 0 REPORT_GEN_QUERY_ACTIVE

		Y RESYNCDDB_QUERY_SERVER Y SERVDI_ENABLED N SERVICE_PROV_TYPE N SNMP Y SNMP_ALARM_FEED N SPID_SECURITY N SURV_OK_TRAP N SV_TYPE N SWIM_RECOVERY 15 SYSTEM_INACTIVITY_TIMEOUT N WSMSC N WSMSC_TO_EAGLE
5. ☐	MPS X: Record the DB Counts Note: This command will be run only on ACTIVE server	\$ lsmsdb -c counts 0 CanadaDB.NumberPoolBlock 2 CanadaDB.ServiceProvLRN 0 CanadaDB.ServiceProvNPA_NXX 0 CanadaDB.ServiceProvNPA_NXX_X 406 CanadaDB.ServiceProvNetwork 48,915,526 CanadaDB.SubscriptionVersion 0 MidAtlanticDB.NumberPoolBlock 0 MidAtlanticDB.ServiceProvLRN 0 MidAtlanticDB.ServiceProvNPA_NXX 0 MidAtlanticDB.ServiceProvNPA_NXX_X 1 MidAtlanticDB.ServiceProvNetwork 11,100 MidAtlanticDB.SubscriptionVersion 0 NortheastDB.NumberPoolBlock 0 NortheastDB.ServiceProvLRN 0 NortheastDB.ServiceProvNPA_NXX 0 NortheastDB.ServiceProvNPA_NXX_X 0 NortheastDB.ServiceProvNetwork 0 NortheastDB.SubscriptionVersion 1 ReplTestDB.ReplTestTbl 1 ResyncDB.LastTimestamp 2,043,494 ResyncDB.ResyncRecord 0 ResyncDB.ResyncRecordModel 1,168,305 ResyncDB.resync1 875,189 ResyncDB.resync2 0 SoutheastDB.NumberPoolBlock 0 SoutheastDB.ServiceProvLRN 0 SoutheastDB.ServiceProvNPA_NXX 0 SoutheastDB.ServiceProvNPA_NXX_X 0 SoutheastDB.ServiceProvNetwork 11 SoutheastDB.SubscriptionVersion

		0 SouthwestDB.NumberPoolBlock 0 SouthwestDB.ServiceProvLRN 0 SouthwestDB.ServiceProvNPA_NXX 0 SouthwestDB.ServiceProvNPA_NXX_X 0 SouthwestDB.ServiceProvNetwork 0 SouthwestDB.SubscriptionVersion 0 WestCoastDB.NumberPoolBlock 0 WestCoastDB.ServiceProvLRN 0 WestCoastDB.ServiceProvNPA_NXX 0 WestCoastDB.ServiceProvNPA_NXX_X 0 WestCoastDB.ServiceProvNetwork 0 WestCoastDB.SubscriptionVersion 0 WesternDB.NumberPoolBlock 0 WesternDB.ServiceProvLRN 0 WesternDB.ServiceProvNPA_NXX 0 WesternDB.ServiceProvNPA_NXX_X 0 WesternDB.ServiceProvNetwork 0 WesternDB.SubscriptionVersion 2,043,342 logDB.TransactionLog 0 noreplDB.EbdaProcessList 0 noreplDB.ServdiProcessList 4 performance_schema.accounts 0 performance_schema.cond_instances 0 performance_schema.events_stages_current 0 performance_schema.events_stages_history 0 performance_schema.events_stages_history_long 432 performance_schema.events_stages_summary_by_account_by_event_name 324 performance_schema.events_stages_summary_by_host_by_event_name 2,160 performance_schema.events_stages_summary_by_thread_by_event_name 324 performance_schema.events_stages_summary_by_user_by_event_name 108 performance_schema.events_stages_summary_global_by_event_name 18 performance_schema.events_statements_current 0 performance_schema.events_statements_history 0 performance_schema.events_statements_history_long 660 performance_schema.events_statements_summary_by_account_by_event_name 440 performance_schema.events_statements_summary_by_digest 495 performance_schema.events_statements_summary_by_host_by_event_name 3,300 performance_schema.events_statements_summary_by_thread_by_event_name 495
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	performance_schema.events_statements_summary_by_user_by_event_name 165 performance_schema.events_statements_summary_global_by_event_name 0 performance_schema.events_waits_current 0 performance_schema.events_waits_history 0 performance_schema.events_waits_history_long 876 performance_schema.events_waits_summary_by_account_by_event_name 657 performance_schema.events_waits_summary_by_host_by_event_name 460 performance_schema.events_waits_summary_by_instance 4,380 performance_schema.events_waits_summary_by_thread_by_event_name 657 performance_schema.events_waits_summary_by_user_by_event_name 219 performance_schema.events_waits_summary_global_by_event_name 460 performance_schema.file_instances 43 performance_schema.file_summary_by_event_name 460 performance_schema.file_summary_by_instance 1 performance_schema.host_cache 3 performance_schema.hosts 0 performance_schema.mutex_instances 178 performance_schema.objects_summary_global_by_type 5 performance_schema.performance_timers 0 performance_schema.rwlock_instances 82 performance_schema.session_account_connect_attrs 93 performance_schema.session_connect_attrs 1 performance_schema.setup_actors 12 performance_schema.setup_consumers 495 performance_schema.setup_instruments 4 performance_schema.setup_objects 4 performance_schema.setup_timers 0 performance_schema.socket_instances 3 performance_schema.socket_summary_by_event_name 0 performance_schema.socket_summary_by_instance 391 performance_schema.table_io_waits_summary_by_index_usage 178 performance_schema.table_io_waits_summary_by_table 178 performance_schema.table_lock_waits_summary_by_table 20 performance_schema.threads 3 performance_schema.users 0 supDB.AlarmFilter 55 supDB.AlarmInfo 745 supDB.Authorization 10 supDB.CanadaNpacMeasurements 1,000 supDB.CanadaPrivateKey 1,000 supDB.CanadaPublicKey 97 supDB.DbConfig 0 supDB.DefaultGtt 12 supDB.ELAP21EagleMeasurements 1 supDB.EmsInterface 1 supDB.GttGroup 1 supDB.GttGroupSpid 2 supDB.LsmsServiceProvider 6 supDB.LsmsUser 0 supDB.LsmsUserSpid 1 supDB.MidAtlanticNpacMeasurements
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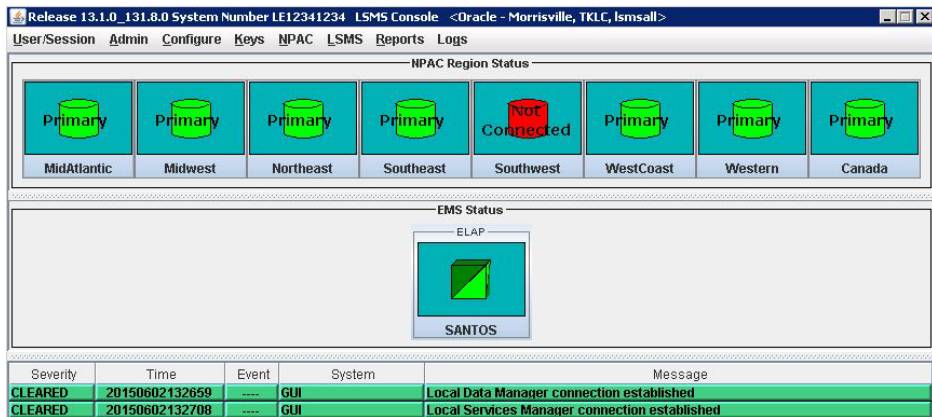
		1,000 supDB.MidAtlanticPrivateKey 1,000 supDB.MidAtlanticPublicKey 0 supDB.MidwestNpacMeasurements 0 supDB.MidwestPrivateKey 0 supDB.MidwestPublicKey 0 supDB.NortheastNpacMeasurements 0 supDB.NortheastPrivateKey 0 supDB.NortheastPublicKey 0 supDB.NpaSplit 0 supDB.NpacMeasurementsModel 8 supDB.NpacRegion 0 supDB.OverrideGtt 0 supDB.PrivateKeyModel 0 supDB.PublicKeyModel 0 supDB.STPAEagleMeasurements 20 supDB.SoutheastNpacMeasurements 1,000 supDB.SoutheastPrivateKey 1,000 supDB.SoutheastPublicKey 0 supDB.SouthwestNpacMeasurements 0 supDB.SouthwestPrivateKey 0 supDB.SouthwestPublicKey 1 supDB.TnFilter 0 supDB.WestCoastNpacMeasurements 0 supDB.WestCoastPrivateKey 0 supDB.WestCoastPublicKey 0 supDB.WesternNpacMeasurements 0 supDB.WesternPrivateKey 0 supDB.WesternPublicKey 0 supDB.snmpGrpCfg 0 supDB.snmpNmsCfg 0 supDB.snmpUserCfg 1 supDB.snmpVerMode 1 supDB.snmpViewCfg																																																	
6. ☐	MPS X: Verify operational status of LSMS software Note: This command will be run only on ACTIVE server	\$ sudo sentry status sending status command.. LSMS Sentry Status ----- sentryd started: Thu Sep 7 05:35:07 2017 Current activity mode: ACTIVE Debug is not enabled <table><tr><th>Process</th><th>PID</th><th>Status</th><th>StartTS</th><th>LastPingTS</th><th>NumR</th><th>Comment</th></tr><tr><td colspan="7">-----</td></tr><tr><td>osisk6</td><td>7820</td><td>running</td><td>20170907053523</td><td>---</td><td>1</td><td>No Comment Specified</td></tr><tr><td>lsmslogd</td><td>7826</td><td>running</td><td>20170907053512</td><td>---</td><td>1</td><td>No Comment Specified</td></tr><tr><td>rmtpmgr</td><td>7837</td><td>running</td><td>20170907053514</td><td>20170913153214</td><td>1</td><td>No Comment Specified</td></tr><tr><td>rmtpagent</td><td>8177</td><td>running</td><td>20170907053514</td><td>---</td><td>1</td><td>No Comment Specified</td></tr><tr><td>lsman</td><td>25914</td><td>running</td><td>20170907083254</td><td>20170913153210</td><td>3</td><td></td></tr></table> /usr/TKLC/lsms/bin/lsman	Process	PID	Status	StartTS	LastPingTS	NumR	Comment	-----							osisk6	7820	running	20170907053523	---	1	No Comment Specified	lsmslogd	7826	running	20170907053512	---	1	No Comment Specified	rmtpmgr	7837	running	20170907053514	20170913153214	1	No Comment Specified	rmtpagent	8177	running	20170907053514	---	1	No Comment Specified	lsman	25914	running	20170907083254	20170913153210	3	
Process	PID	Status	StartTS	LastPingTS	NumR	Comment																																													

osisk6	7820	running	20170907053523	---	1	No Comment Specified																																													
lsmslogd	7826	running	20170907053512	---	1	No Comment Specified																																													
rmtpmgr	7837	running	20170907053514	20170913153214	1	No Comment Specified																																													
rmtpagent	8177	running	20170907053514	---	1	No Comment Specified																																													
lsman	25914	running	20170907083254	20170913153210	3																																														

		<pre> supman 8181 running 20170907053517 20170913153212 1 /usr/TKLC/lms/bin/supman reportman 7885 running 20170907053512 20170913153213 1 /usr/TKLC/lms/bin/reportman apache 5576 running 20170907053508 --- 0 No Comment Specified N MidAtlantic 16092 running 20170907053810 20170913153206 2 PRIMARY NPAC: Not Associated RMTP failure times:0 0 0 N Northeast 9101 running 20170907053529 20170913153206 1 PRIMARY NPAC: Not Associated RMTP failure times:0 0 0 N Southeast 13487 running 20170911055923 20170913153206 4 PRIMARY NPAC: Not Associated RMTP failure times:0 0 0 N Southwest 9252 running 20170907053530 20170913153206 1 PRIMARY NPAC: Not Associated RMTP failure times:0 0 0 N Western 9281 running 20170907053530 20170913153206 1 PRIMARY NPAC: Not Associated RMTP failure times:0 0 0 N WestCoast 9285 running 20170907053530 20170913153206 1 PRIMARY NPAC: Not Associated RMTP failure times:0 0 0 N Canada --- stopped --- --- 1 PRIMARY NPAC: Not Associated RMTP failure times:0 0 0 E ELAP21 8475 running 20170907053520 20170913153213 1 VIP=DOWN Pending=0% lmgrd 8004 running 20170907053512 --- 1 No Comment Specified Wed Sep 13 15:32:14 2017 Command Complete. </pre>
7. ☐	MPS X: Verify sup status of LSMS software Note: This command will be run only on ACTIVE server	<pre> \$ cd /usr/TKLC/lms/bin \$ sudo sup status supman : MEM : 522748 kbytes PCPU : 0.0 % lsman : MEM : 670004 kbytes PCPU : 0.0 % reportman : MEM : 967300 kbytes PCPU : 0.0 % </pre>
8. ☐	MPS X: Verify HA status	<pre> \$ hastatus; ssh mate hastatus ACTIVE STANDBY </pre>
9. ☐	MPS X: Verify that MySQL replication is working	<pre> # tail /var/TKLC/lms/logs/dbrep1Mon.log If MySQL replication is functioning correctly then the following output will be observed, make sure that at least the last line of your output matches the lines below. Wed Sep 13 15:52:27 2017 All tests passed on ACTIVE Wed Sep 13 15:53:30 2017 All tests passed on ACTIVE Wed Sep 13 15:54:32 2017 All tests passed on ACTIVE Wed Sep 13 15:55:34 2017 All tests passed on ACTIVE Wed Sep 13 15:56:35 2017 All tests passed on ACTIVE Wed Sep 13 15:57:37 2017 All tests passed on ACTIVE Wed Sep 13 15:58:39 2017 All tests passed on ACTIVE </pre>

		Wed Sep 13 15:59:40 2017 All tests passed on ACTIVE Wed Sep 13 16:00:42 2017 All tests passed on ACTIVE Wed Sep 13 16:01:44 2017 All tests passed on ACTIVE
10. ☐	MPS X: Record /etc/passwd file	<pre>\$ cat /etc/passwd root:x:0:0:root:/root:/bin/bash bin:x:1:1:bin:/bin:/sbin/nologin daemon:x:2:2:daemon:/sbin:/sbin/nologin adm:x:3:4:adm:/var/adm:/sbin/nologin lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin sync:x:5:0:sync:/sbin:/bin/sync shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown halt:x:7:0:halt:/sbin:/sbin/halt mail:x:8:12:mail:/var/spool/mail:/sbin/nologin uucp:x:10:14:uucp:/var/spool/uucp:/sbin/nologin operator:x:11:0:operator:/root:/sbin/nologin games:x:12:100:games:/usr/games:/sbin/nologin gopher:x:13:30:gopher:/var/gopher:/sbin/nologin ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin nobody:x:99:99:Nobody:/:/sbin/nologin dbus:x:81:81:System message bus:/:/sbin/nologin rpc:x:32:32:Rpcbind Daemon:/var/cache/rpcbind:/sbin/nologin admusr:x:4996:4996:Platform remote admin user:/home/admusr:/bin/bash nscd:x:28:28:NSCD Daemon:/:/sbin/nologin vcsa:x:69:69:virtual console memory owner:/dev:/sbin/nologin apache:x:48:48:Apache:/var/www:/sbin/nologin sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin ntp:x:38:38:/:etc/ntp:/sbin/nologin saslauth:x:499:76:Saslauthd user:/var/empty/saslauth:/sbin/nologin postfix:x:89:89:/:var/spool/postfix:/sbin/nologin platcfg:x:5000:5000:Platform Configuration User:/home/platcfg:/usr/TKLC/plat/bin/platcfg tpdProvd:x:5010:5010:TPD Provisioning Daemon:/home/tpdProvd:/usr/bin/false syscheck:x:71:71:System Health Check User:/home/syscheck:/bin/false hids:x:4995:4995:HIDS admin user:/home/hids:/sbin/nologin dhcpcd:x:177:177:DHCP server:/:/sbin/nologin nslcd:x:65:55:LDAP Client User:/:/sbin/nologin rtkit:x:498:450:RealtimeKit:/proc:/sbin/nologin rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin nfsnobody:x:65534:65534:Anonymous NFS User:/var/lib/nfs:/sbin/nologin named:x:25:25:Named:/var/named:/sbin/nologin tcpdump:x:72:72:/:/sbin/nologin dbadm:x:1001:1007:/:var/TKLC/lms/dbadm:/bin/bash lmsadm:x:1002:1001:/:var/TKLC/lms/lmsadm:/bin/bash lmsall:x:1005:1001:/:var/TKLC/lms/lmsall:/bin/bash lmsuext:x:1007:1001:/:var/TKLC/lms/lmsuext:/bin/bash lmsuser:x:1003:1001:/:var/TKLC/lms/lmsuser:/bin/bash lmsview:x:1004:1001:/:var/TKLC/lms/lmsview:/bin/bash lmsmgr:x:5011:5011:/:usr/TKLC/plat/etc/home.platcfg/lmsmgr:/usr/TKLC/plat /bin/platcfg mysql:x:497:449:MySQL server:/var/lib/mysql:/bin/bash</pre>
11. ☐	MPS X: Verify backups are being taken properly on NAS	<pre>\$ ssh root@backupserver # ls /Volumes/LVstorage/logs_lmspri/ 00-Aug29_23:55 current</pre>

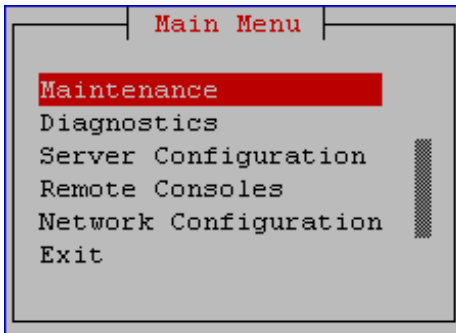
		<pre># ls /Volumes/LVstorage/db/ 00-Aug29_23:55 current # ls /Volumes/LVstorage/logs_lsmssec/ 00-Aug29_23:55 current # ls /Volumes/LVstorage/lsmspri 00-Aug29_23:55 current # ls /Volumes/LVstorage/lsmssec 00-Aug29_23:55 current # exit</pre>
12. ☐	MPS X: LSMS backups are scheduled for 23:55 everyday (default, customer may have changed it). If the maintenance window time collides with backup time then please disable the backup prior to upgrade. Please also remember to enable the backup after the upgrade is done. NOTE: Same steps are mentioned in the Install/Upgrade doc.	Command to disable the backup: <pre>\$ sed -i '/^#!/ {/lsmbkp_wrapper/ s/^#!/}' /etc/cron.d/lsmbkp.cron</pre> Command to enable the backup: <pre>\$ sed -i '/^#/ {/lsmbkp_wrapper/ s/^#//}' /etc/cron.d/lsmbkp.cron</pre>
13. ☐	MPS X: Gather application log files	<pre>\$ sudo savelogs -n <numberof days> \$ sudo savelogs -n 7</pre> Size of final tar file will be 9.7602 MB. Do you want to continue with this logs size ?[Y N] Y Logs Captured Successfully. Tar of logs placed at : /var/TKLC/lsms/free/savelogs/logsCapture_lsmspri_20170913154421.tar.bz2 GUI Notification sent.
14. ☐	MPS X: Gather system log files	<pre>\$ sudo /usr/TKLC/plat/sbin/savelogs_plat</pre> Logs will be save in /tmp directory /tmp/savelogs_plat.lsmspri.13563.tar.bz2
15. ☐	MPS X: Login to lsms GUI and verify NPAC and ELAP are connected.	Note: Connected NPAC regions and ELAP will be displayed in Green while not connected will be displayed in Red with status.

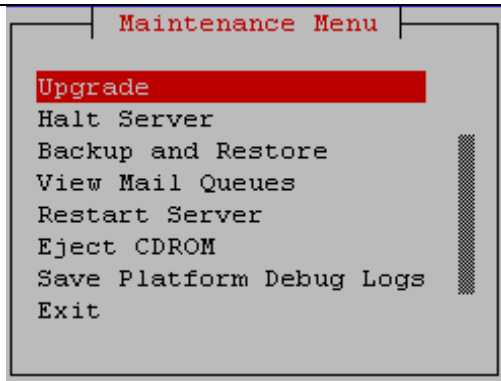
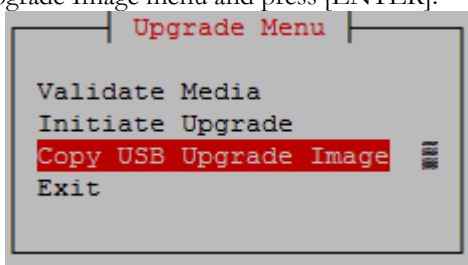
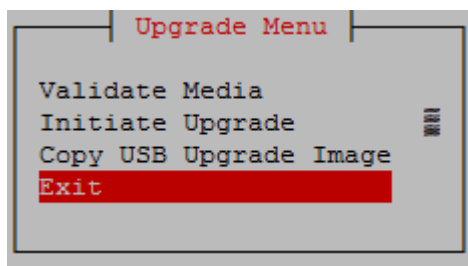
		 
16. ☐	MPS X: Verify LSMS Query server connectivity NOTE: This should be run only from Active server	<pre>\$ /usr/TKLC/lsmstools/lmsdb -c queryservers</pre> /usr/TKLC/lsmstools/lmsdb: Query Server Feature is not enabled. ---OR--- cs2-bss2 (<LSMS Query Server IP>) Connected ---OR--- cs2-bss2 (<LSMS Query Server IP>) Disconnected Verify replication is working on Query server. Login into Query Servers's as root user and run following command. <pre># cd /opt/mysql/mysql/bin # mysql -u root -p Enter password:<password> mysql> SHOW SLAVE STATUS \G; Relay_Master_Log_File: mysql-bin.000056 Slave_IO_Running: Yes Slave_SQL_Running: Yes</pre> Note: Verify slave IO Running and slave SQL running status. If this is not Yes contact My Oracle Support. <pre>mysql> exit;</pre>
17. ☐	MPS X: Repeat the procedure for mate LSMS	Run steps 1 to 16 on mate server unless stated that step can be run only on active server.

4.3 Upgrade Media Check

4.3.1 ISO Image copy from USB Media

S T E P #	This procedure provides instructions to copy an ISO image from an USB media. Estimated time: 5 minutes	
1. ☐	MPS X: Insert USB.	Insert media in USB drive
2. ☐	MPS X: Log in to the server as the “root” user.	[hostname] console login: root password: password
3. ☐	MPS X: Run syscheck to make sure there is no error.	Execute the following command: # syscheck The output should look like: <pre>[root@hostname ~]# syscheck Running modules in class proc... OK Running modules in class services... OK Running modules in class system... OK Running modules in class disk... OK Running modules in class hardware... OK Running modules in class net... OK LOG LOCATION: /var/TKLC/log/syscheck/fail_log</pre>
4. ☐	MPS X: Verify ISO image doesn't already exist.	Execute the following command to perform directory listing: # ls -al /var/TKLC/upgrade The output should look like: <pre>[root@hostname ~]# ls -al /var/TKLC/upgrade total 16 dr-xr-xr-x 2 root root 4096 Oct 22 16:31 . dr-xr-xr-x 21 root root 4096 Oct 18 13:40 ..</pre> If an ISO image exists, remove it by executing the following command: # rm -f /var/TKLC/upgrade/<ISO image>
5. ☐	MPS X: Delete unwanted ISOs from USB media.	Execute the following command to create a directory to mount the USB media: # mkdir -p /mnt/usb Execute the following command to get the USB drive name: # fdisk -l grep FAT The output should look like: <pre>/dev/sdc1 * 1 812 831472 6 FAT16</pre> Execute the following command to mount the USB media using the USB drive name from the output above: # mount /dev/sdc1 /mnt/usb

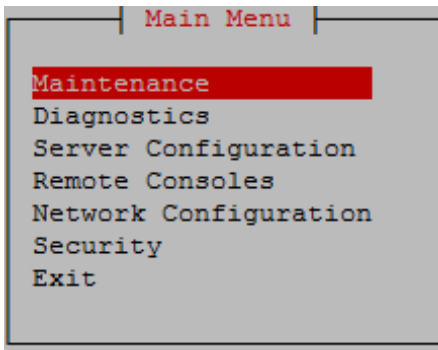
		Execute the following command to perform directory listing and verify the file name format is as expected: <pre># ls -al /mnt/usb</pre> The output should look like: <pre>[root@hostname ~]# # ls -al /mnt/usb total 629400 dr-xr-xr-x 2 root root 4096 Dec 5 13:33 . dr-xr-xr-x 22 root root 4096 Dec 5 13:55 .. -rw-r--r-- 1 root root 853002240 Dec 5 16:20 LSMS- 13.2.1.0.0_132.18.0-x86_64.iso</pre> Only one ISO file should be listed, if additional files are listed, execute the following command to remove unwanted ISOs: <pre># rm -f /mnt/usb/<ISO_NAME>.iso</pre> For e.g., <pre># rm -f /mnt/usb/LSMS-13.3.0.0.0_133.4.0-x86_64.iso</pre>
6. ☐	MPS X: Verify space exists for ISO.	Execute the following command to verify the available disk space: <pre># df -h /var/TKLC</pre> The output should look like: <pre>[root@lsmspri log]# df -h /var/TKLC Filesystem Size Used Avail Use% Mounted on /dev/mapper/vgroot-plat_var_tklc 3.9G 1.2G 2.5G 32% /var/TKLC</pre> Verify that there is at least 1G in the Avail column. If not, clean up files until there is space available. CAUTION: Make sure you know what files you can remove safely before cleaning up. It is recommended that you only clean up files in the /var/TKLC/upgrade directory as this is a platform owned directory that should only contain ISO images. This directory should not be expected to contain images for any length of time as they can get purged. Contact My Oracle Support beforehand if removing files other than the /var/TKLC/upgrade directory as removing files is dangerous.
7. ☐	MPS X: Start platcfg utility.	Execute the following command to change the user: <pre># su - platcfg</pre>
8. ☐	MPS X: Select the Maintenance submenu.	On the Main Menu of the Platform Configuration Utility, select Maintenance and press [ENTER]. 
9.	MPS X: Select the Upgrade submenu.	Select the Upgrade menu and press [ENTER].

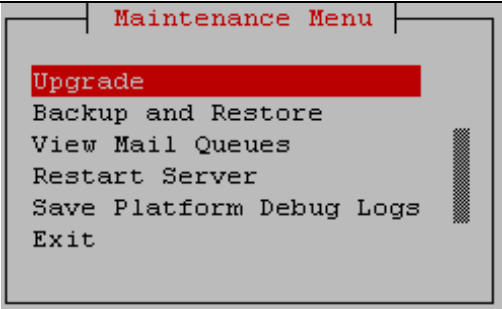
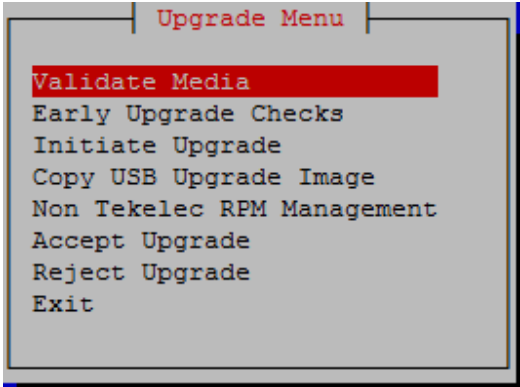
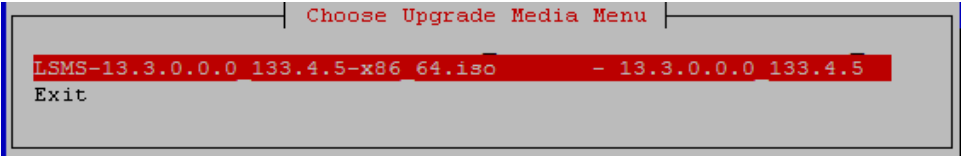
☐				
10. ☐	MPS X: Select Copy USB Upgrade Image submenu.	Select the Copy USB Upgrade Image menu and press [ENTER].		
11. ☐	MPS X: The ISO will be copied from the USB media to /var/TKLC/upgrade. Press any key to return to Upgrade menu.	Copying /mnt/upgrade/ LSMS-13.3.0.0.0_133.4.0-x86_64.iso PRESS ANY KEY TO RETURN TO THE PLATCFG MENU.		
12. ☐	MPS X: Exit platcfg.	Select Exit and press [ENTER] repeatedly until the “platcfg” utility terminates.		
13. ☐	MPS X: Unmount USB media	Execute the following command to unmount the USB media: # umount /mnt/usb		
14. ☐	MPS X: Verify ISO image exists.	Execute the following command to perform directory listing: # ls -al /var/TKLC/upgrade The output should look like: [root@lsmspri log]# ls -al /var/TKLC/upgrade total 895152 drwxrwxr-x. 2 root admgrp 4096 Apr 20 17:16 . dr-xr-xr-x. 20 root root 4096 Apr 20 18:01 .. -r----- 1 admusr admgrp 916621312 Apr 20 17:16 LSMS-13.3.0.0.0_133.4.0-x86_64.iso		

		Repeat this procedure from step 5 if LSMS ISO file is not as expected.
15. ☐	MPS X: Logout from server.	Logout from the server by executing the following command: # logout
16. ☐	MPS X: Remove USB media.	Remove media from USB drive.
17. ☐	Procedure Complete.	This procedure is complete.

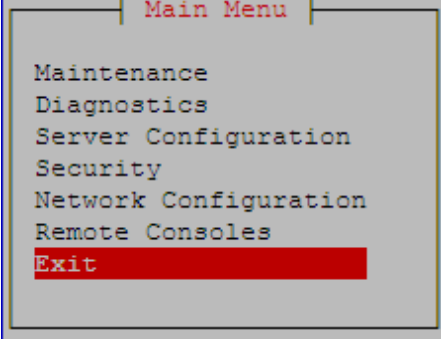
4.3.2 Validate Upgrade Media

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

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

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

[illegible]

		Select Exit and press [ENTER]. The “platcfg” utility terminates.  The screenshot shows a terminal window titled "Main Menu" with a list of options: Maintenance, Diagnostics, Server Configuration, Security, Network Configuration, Remote Consoles, and Exit. The "Exit" option is highlighted with a red bar.
7. ☐	Procedure Complete.	This procedure is complete.

5 My Oracle Support

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

Call the Customer Access Support 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:

- For Technical issues such as creating a new Service Request (SR), select **1**.
- For Non-technical issues such as registration or assistance with My Oracle Support, select **2**.
- For Hardware, Networking and Solaris Operating System Support, select **3**.

You are connected to a live agent who can assist you with My Oracle Support registration and opening a support ticket.

My Oracle Support is available 24 hours a day, 7 days a week, 365 days a year.