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EAGLE Element Management System
System Health Check Guide
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Oracle Communications EAGLE Element Management System System Health Check Guide, Release 47.0

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

What's New in This Guide

This section introduces the documentation updates for Release 47.0 in Oracle Communications EMS System Health Check Guide.

Release 47.0.0.2.0 – G62211-01, October 2026

There are no updates in this document for this release.

Release 47.0 – F99750-01, June 2024

Updated the command to record the OS version in the [System Status](#) section.

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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 system running OCEEMS release 46.5 and later. This document describes a procedure for analyzing system health before and after upgrade to release 46.5 and later. A comparison can also be established between the system health before and after upgrade. As an example, the upgrade analysis from release 46.2 to 46.5 is documented here. However, this document is not release specific. Health of system can also be analyzed while upgrade from 46.3 to 46.5.

This document is intended for EAGLE® engineering, integration, documentation, technical services, and any craft person who is familiar with OCEEMS 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
OCEEMS	Oracle Communications Eagle Element Management System

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

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 Consile font

Output displayed only for reference actual output may differ

1A	verify date	\$ date Thu Apr 20 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

2.1.1 Configuration I: Health Check on Failover OCEEMS Server

An OCEEMS system is a pair of Linux Servers (Primary and Secondary). Current deployments of OCEEMS support two geographically separated OCEEMS failover systems, meaning they communicate and replicate MySQL information. When the primary server is up and running, the standby server monitors the primary server. Once the primary server is down, the standby server detects a shutdown and takes over as primary.

This document describes the health check of the OCEEMS failover setup, system consisting of two servers (primary and standby).

2.1.2 Configuration II: Health Check on Standalone OCEEMS Server

OCEEMS also provides a Standalone OCEEMS system. Only one Linux server is required for this configuration. There is no other system to cater any failure in system.

This document describes the health check of the OCEEMS standalone server, system consisting of only one server.

Note: Most of the steps to perform health check are common for both configurations except a few steps which will be exclusively highlighted to run on particular configuration.

3 Pre-Health Check Requirements

- User shall have the access to the server on which health check is to be performed.
- User shall have access to OCEEMS client.
- 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:

User	Password
root	
emsadmuser	

4 OCEEMS Health Check

4.1 System Status

These steps can be performed on any of the OCEEMS configuration mentioned in section 2. **For failover setup commands should be run on both the servers.** Note that upgrade from release 46.2 to 46.5 is given as example here. If the user wants to perform health check of current running OCEEMS system, then the steps to upgrade the system can be skipped and rest all configurations can be recorded.

S T E P #	Steps To Be Completed	Expected output/command to be executed
1. ☐	Log in as root	login: root password: <root_password>
2. ☐	Record the OS Version	# cat /etc/oracle-release Oracle Linux Server release 8.8
3. ☐	Record the current date and time on the system.	# date Thu May 18 07:40:55 IST 2017 # clock Thu 18 May 2017 07:40:52 PM IST -0.906329 seconds
4. ☐	Record the last reboot occurred	# uptime 16:32:58 up 118 days, 18:36, 4 users, load average: 0.53, 0.32, 0.20
5. ☐	Record the OCEEMS release number from rpm query.	# rpm -qi E5-MS Name : E5-MS Version : 46.2.0.0.1 Release : 462.16.0 Architecture: x86_64 Install Date: Thu 18 May 2017 10:23:39 AM IST Group : Applications/System Size : 1190516288 License : Restricted Signature : (none) Source RPM : E5-MS-46.2.0.0.1-462.16.0.src.rpm Build Date : wed 30 Mar 2016 02:07:48 AM IST

		Build Host : diablo-7 Relocations : (not relocatable) Packager : Surendra Vendor : Oracle URL : http://www.oracle.com/ Summary : E5-MS RPM Description : Tekelec E5-MS RPM
6. ☐	Verify the attributes of volume groups If the output does not contain the “logical volume” sections, contact Oracle Support so that corrective procedures can be scheduled to be performed.	<pre># vgdisplay -v using volume group(s) on command line. --- Volume group --- VG Name ol System ID Format lvm2 Metadata Areas 1 Metadata Sequence No 4 VG Access read/write VG Status resizable MAX LV 0 Cur LV 3 Open LV 3 Max PV 0 Cur PV 1 Act PV 1 VG Size 465.27 GiB PE Size 4.00 MiB Total PE 119109 Alloc PE / Size 119108 / 465.27 GiB Free PE / Size 1 / 4.00 MiB VG UUID ajkUn0-gJ0G-qvTx-4Jpt-1nfE-Lvmc- Mx9azb --- Logical volume --- LV Path /dev/ol/root LV Name root</pre>

		<pre> VG Name ol LV UUID 0bR1jk-asnS-vQ2v-t9IO-ZEhn-jen2- eYtHnM LV Write Access read/write LV Creation host, time localhost, 2016-11-19 00:18:38 +0530 LV Status available # open 1 LV Size 432.06 GiB Current LE 110608 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 8192 Block device 252:0 --- Logical volume --- LV Path /dev/ol/home LV Name home VG Name ol LV UUID IwiL42-Mr1x-b8B1-vikm-FQc8-UoAd- J1E13n LV Write Access read/write LV Creation host, time localhost, 2016-11-19 00:18:40 +0530 LV Status available # open 1 LV Size 25.33 GiB Current LE 6484 Segments 1 Allocation inherit Read ahead sectors auto - currently set to 8192 Block device 252:2 --- Logical volume --- LV Path /dev/ol/swap </pre>
--	--	---

		LV Nameswap VG Nameol LV UUIDtmuuOV-2ICl-Jgu9-K7PN-D26D-wSrP-g74Kag LV Write Accessread/write LV Creation host, time localhost, 2016-11-19 00:18:41 +0530 LV Statusavailable # open2 LV Size7.88 GiB Current LE2016 Segments1 Allocationinherit Read ahead sectorsauto - currently set to8192 Block device252:1 --- Physical volumes --- PV Name/dev/sda2 PV UUIDbdkClf-rSR0-f6p0-7SHg-EtKX-z54M-AQNshy PV Statusallocatable Total PE / Free PE119109 / 1																									
7. ☐	Record the total amount of free and used physical and swap memory in the system before starting the OCEEMS server.	# service e5msService status OCEEMS server is not started! # free <table><thead><tr><th></th><th>total</th><th>used</th><th>free</th><th>shared</th></tr></thead><tbody><tr><td>buff/cache</td><td>available</td><td></td><td></td><td></td></tr><tr><td>Mem:</td><td>7871188</td><td>2390700</td><td>2196952</td><td>213360</td></tr><tr><td>3283536</td><td>5132481</td><td></td><td></td><td></td></tr><tr><td>Swap:</td><td>8257532</td><td>7520</td><td>8250012</td><td></td></tr></tbody></table>		total	used	free	shared	buff/cache	available				Mem:	7871188	2390700	2196952	213360	3283536	5132481				Swap:	8257532	7520	8250012	
	total	used	free	shared																							
buff/cache	available																										
Mem:	7871188	2390700	2196952	213360																							
3283536	5132481																										
Swap:	8257532	7520	8250012																								
8.	Record the output of ‘top’ command to see current CPU utilization. Note: Press ‘q’ to exit.	# top top - 19:26:15 up 118 days, 21:29, 4 users, load average: 0.15, 0.20, 0.13 Tasks: 167 total, 1 running, 166 sleeping, 0 stopped, 0 zombie																									

		<pre>%Cpu(s): 0.1 us, 0.1 sy, 0.0 ni, 99.8 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st KiB Mem : 7871188 total, 2202416 free, 2390928 used, 3277844 buff/cache KiB Swap: 8257532 total, 8250012 free, 7520 used. 5133397 avail Mem</pre> <pre> PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND 20521 root 20 0 6271816 703816 42608 S 1.0 8.9 31:22.37 java 17462 root 20 0 0 0 0 S 0.3 0.0 1:02.54 kworker/2:1 35713 root 20 0 146136 2120 1416 R 0.3 0.0 0:00.04 top 1 root 20 0 208228 22664 2164 S 0.0 0.3 5:57.49 systemd 2 root 20 0 0 0 0 S 0.0 0.0 0:02.82 kthreadd 3 root 20 0 0 0 0 S 0.0 0.0 0:16.57 ksoftirqd/0 5 root 0 -20 0 0 0 S 0.0 0.0 0:00.00 kworker/0:0H 7 root 0 -20 0 0 0 S 0.0 0.0 0:00.00 kworker/u:0H 8 root rt 0 0 0 0 S 0.0 0.0 0:07.52 migration/0 9 root 20 0 0 0 0 S 0.0 0.0 0:00.00 rcu_bh</pre>
9.	Record the output of netstat command to see what all ports are occupied on the system.	<pre># netstat -tulpn Active Internet connections (only servers) Proto Recv-Q Send-Q Local Address Foreign Address PID/Program name tcp 0 0 127.0.0.1:199 0.0.0.0:* LISTEN 44727/snmpd tcp 0 0 192.168.122.1:53 0.0.0.0:* LISTEN 2693/dnsmasq tcp 0 0 0.0.0.0:22 0.0.0.0:* LISTEN 1316/sshd</pre>

		<pre> tcp 0 0 127.0.0.1:631 0.0.0.0:* LISTEN 1320/cupsd tcp6 0 0 :::22 :::* LISTEN 1316/sshd tcp6 0 0 :::1:631 :::* LISTEN 1320/cupsd udp 0 0 0.0.0.0:55230 0.0.0.0:* 724/avahi-daemon: r udp 0 0 192.168.122.1:53 0.0.0.0:* 2693/dnsmasq udp 0 0 0.0.0.0:67 0.0.0.0:* 2693/dnsmasq udp 0 0 0.0.0.0:161 0.0.0.0:* 44727/snmpd udp 0 0 0.0.0.0:5353 0.0.0.0:* 724/avahi-daemon: r </pre>
10.	Start OCEEMS server and record the total amount of free and used physical and swap memory in the system.	<pre> # service e5msService start Starting OCEEMS server... Starting mysql / 170518 17:05:08 mysqld_safe Logging to '/Tekelec/webNMS/mysql/data/e5ms9.err'. 170518 17:05:08 mysqld_safe Starting mysqld daemon with databases from /Tekelec/webNMS/mysql/data Warning: Using a password on the command line interface can be insecure. 170518 17:05:15 mysqld_safe mysqld from pid file /Tekelec/webNMS/mysql/data/e5ms9.pid ended / Oracle Corporation. Starting Oracle Communications EAGLE Element Management System "Primary" Server Modules, please wait This edition of Oracle Communications EAGLE Element Management System with release 46.2.0.0.1 is a registered version in name of EMS in company Aricent. </pre>

		Process : NmsAuthenticationManager]	[Started
		Process : ParseMeasReports]	[Started
		Process : CheckReplication]	[Started
		Process : MeasurementScheduler]	[Started
		Process : TL1CustomViewsMgr]	[Started
		Process : NmsConfigurationServer]	[Started
		Process : CommunicationBEProcess]	[Started
		Process : WebNMSAgentApp]	[Started
		Process : SnmpAgentProcess]	[Started
		Process : StartProvModule]	[Started
		Process : NmsTftpServer]	[Started
		Process : WebNMSMgmtBEProcess]	[Started
		Process : UtilizationScheduler]	[Started
		Process : TL1DiscProcess]	[Started
		Process : NMSTAServer]	[Started
		Process : StorageServer]	[Started
		Process : EMSInitializationProcess]	[Started
		Process : UserConfigProcess]	[Started
		Process : E5msSchedulerProcess]	[Started

	Process : WebNMSBackup]	[Started
	Process : RunJSPModule]	[Started
	Process : MapServerBE]	[Started
	Process : ProcessTest]	[Started
	Process : CLIFactoryBinder]	[Started
	Process : RunRmiRegistry]	[Started
	Process : EventMgr]	[Started
	Process : DBServer]	[Started
	Process : StartTelnetClient]	[Started
	Process : NmsPolicyMgr]	[Started
	Process : NMSMServer]	[Started
	Process : NbiProcess]	[Started
	Process : TL1EventProcess]	[Started
	Process : Collector]	[Started
	Process : TL1GatewayProcess]	[Started
	Process : CMISchedulerInitiator]	[Started
	Process : ParsingScheduler]	[Started
	Process : AdminModuleInit]	[Started
	Process : DataMgmtRPI]	[Started
	Process : NMSSAServer]	[Started

		Process : NmsAuthManager]	[Started
		Process : NmsMainFE]	[Started
		Process : TAServerFE]	[Started
		Process : SAServerFE]	[Started
		Process : AuthenticationManagerFE]	[Started
		Process : NmsSAServerFE]	[Started
		Process : EventFE]	[Started
		Process : MapFE]	[Started
		Process : PolicyFE]	[Started
		Process : AlertFE]	[Started
		Process : UserConfigProcessFE]	[Started
		Process : ConfigFE]	[Started
		Process : StorageServerFE]	[Started
		Process : AuthorizationManagerFE]	[Started
		Process : StartTelnetClientFE]	[Started
		Process : PollFE]	[Started
		Process : ExampleFE]	[Started
		Process : TopoFE]	[Started
		Process : MServerFE]	[Started
		Process : ProvisioningFE]	[Started

		<pre> Process : CommunicationFEProcess [Started] Process : webNMSMgmtFEProcess [Started] Verifying connection with web server ... verified OCEEMS Server modules started successfully at May 18,2017 05:05:31 PM Please connect your client to the web server on port: 8443 # free total used free shared buff/cache available Mem: 7871188 2947748 1122236 213416 3801204 4574333 Swap: 8257532 7484 8250048 </pre>
11.	Record the output of 'top' command to see CPU utilization after server startup. Note: Press 'q' to exit.	<pre> # top top - 10:29:03 up 119 days, 29 min, 5 users, load average: 0.29, 0.34, 0.23 Tasks: 174 total, 1 running, 173 sleeping, 0 stopped, 0 zombie %Cpu(s): 0.5 us, 0.3 sy, 0.0 ni, 99.2 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st KiB Mem : 7871188 total, 1121396 free, 2949052 used, 3800740 buff/cache KiB Swap: 8257532 total, 8250048 free, 7484 used. 4573445 avail Mem PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND 62792 root 20 0 9594524 426584 15936 S 3.3 5.4 0:32.57 java 17462 root 20 0 0 0 0 S 0.3 0.0 1:13.98 kworker/2:1 </pre>

		<pre> 63035 mysql 20 0 7193564 798476 8992 s 0.3 10.1 0:01.73 mysqld 1 root 20 0 208228 22692 2164 s 0.0 0.3 5:58.01 systemd 2 root 20 0 0 0 0 s 0.0 0.0 0:02.82 kthreadd 3 root 20 0 0 0 0 s 0.0 0.0 0:16.61 ksoftirqd/0 5 root 0 -20 0 0 0 s 0.0 0.0 0:00.00 kworker/0:0H 7 root 0 -20 0 0 0 s 0.0 0.0 0:00.00 kworker/u:0H 8 root rt 0 0 0 0 s 0.0 0.0 0:07.53 migration/0 9 root 20 0 0 0 0 s 0.0 0.0 0:00.00 rcu_bh 10 root 20 0 0 0 0 s 0.0 0.0 10:52.88 rcu_sched 11 root rt 0 0 0 0 s 0.0 0.0 0:31.00 watchdog/0 12 root rt 0 0 0 0 s 0.0 0.0 0:30.74 watchdog/1 13 root 20 0 0 0 0 s 0.0 0.0 0:15.95 ksoftirqd/1 </pre>
12. ☐	Record the total amount of free and used disk space on the server.	<pre> # df -kh Filesystem Size Used Avail Use% Mounted on /dev/mapper/ol-root 432G 50G 383G 12% / devtmpfs 3.8G 0 3.8G 0% /dev tmpfs 3.8G 84K 3.8G 1% /dev/shm tmpfs 3.8G 210M 3.6G 6% /run tmpfs 3.8G 0 3.8G 0% /sys/fs/cgroup /dev/sda1 497M 196M 301M 40% /boot /dev/mapper/ol-home 26G 33M 26G 1% /home tmpfs 769M 16K 769M 1% /run/user/42 tmpfs 769M 4.0K 769M 1% /run/user/0 tmpfs 769M 0 769M 0% /run/user/986 </pre>

13.	Record the output of netstat command to see occupied ports. The difference in the output before and after starting server will give the ports used by OCEEMS.	# netstat -tulpn
		Active Internet connections (only servers)
		Proto Recv-Q Send-Q Local Address Foreign Address State PID/Program name
		tcp 0 0 127.0.0.1:199 0.0.0.0:* LISTEN 44727/snmpd
		tcp 0 0 192.168.122.1:53 0.0.0.0:* LISTEN 2693/dnsmasq
		tcp 0 0 0.0.0.0:22 0.0.0.0:* LISTEN 1316/sshd
		tcp 0 0 127.0.0.1:631 0.0.0.0:* LISTEN 1320/cupsd
		tcp6 0 0 :::36001 :::* LISTEN 63806/java
		tcp6 0 0 10.248.21.70:36003 :::* LISTEN 63806/java
		tcp6 0 0 127.0.0.1:8005 :::* LISTEN 63806/java
		tcp6 0 0 :::3306 :::* LISTEN 64049/mysqld
		tcp6 0 0 10.248.21.70:1099 :::* LISTEN 63806/java
		tcp6 0 0 :::2000 :::* LISTEN 63806/java
		tcp6 0 0 :::6000 :::* LISTEN 63806/java
		tcp6 0 0 :::22 :::* LISTEN 1316/sshd
		tcp6 0 0 :::4567 :::* LISTEN 63806/java
		tcp6 0 0 ::1:631 :::* LISTEN 1320/cupsd
		tcp6 0 0 :::3000 :::* LISTEN 63806/java
		tcp6 0 0 :::8443 :::* LISTEN 63806/java
		tcp6 0 0 :::2300 :::* LISTEN 63806/java
		udp 0 0 0.0.0.0:55230 0.0.0.0:* 724/avahi- daemon: r
		udp 0 0 192.168.122.1:53 0.0.0.0:* 2693/dnsmasq
		udp 0 0 0.0.0.0:67 0.0.0.0:* 2693/dnsmasq
		udp 0 0 0.0.0.0:161 0.0.0.0:* 44727/snmpd
		udp 0 0 0.0.0.0:5353 0.0.0.0:* 724/avahi- daemon: r
		udp6 0 0 :::55542 :::* 63806/java

		<pre> udp6 0 0 :::44358 :::* 63806/java udp6 0 0 :::8001 :::* 63806/java udp6 0 0 10.248.21.70:8002 :::* 63806/java udp6 0 0 :::69 :::* 63806/java udp6 0 0 10.248.21.70:16500 :::* 63806/java udp6 0 0 :::162 :::* 63806/java udp6 0 0 :::1234 :::* 63806/java udp6 0 0 :::55153 :::* 63806/java </pre>
14.	Record the MySQL configurations.	<pre> # cd /Tekelec/WebNMS/mysql/bin/ [root@e5ms9 bin]# ./mysql -uroot -p<password> WebNmsDB Warning: Using a password on the command line interface can be insecure. Reading table information for completion of table and column names You can turn off this feature to get a quicker startup with -A Welcome to the MySQL monitor. Commands end with ; or \g. Your MySQL connection id is 6819 Server version: 5.6.31-enterprise-commercial-advanced-log MySQL Enterprise Server - Advanced Edition (Commercial) Copyright (c) 2000, 2016, Oracle and/or its affiliates. All rights reserved. Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners. Type 'help;' or '\h' for help. Type '\c' to clear the current input statement. mysql> SHOW VARIABLES; +-----+-----+ Variable_name Value +-----+-----+ </pre>

		auto_increment_increment 1
		auto_increment_offset 1
		autocommit ON
		automatic_sp_privileges ON
		avoid_temporal_upgrade OFF
		back_log 80
		basedir /Tekelec/WebNMS/mysql
		big_tables OFF
		bind_address *
		binlog_cache_size 32768
		binlog_checksum CRC32
		binlog_direct_non_transactional_updates OFF
		binlog_error_action IGNORE_ERROR
		binlog_format MIXED
		binlog_gtid_simple_recovery OFF
		binlog_max_flush_queue_time 0
		binlog_order_commits ON
		binlog_row_image FULL

		binlog_rows_query_log_events OFF
		binlog_stmt_cache_size 32768
		binlogging_impossible_mode IGNORE_ERROR
		block_encryption_mode aes-128-ecb
		bulk_insert_buffer_size 8388608
		character_set_client utf8
		character_set_connection utf8
		character_set_database latin1
		character_set_filesystem binary
		character_set_results utf8
		character_set_server latin1
		character_set_system utf8
		character_sets_dir
		/Tekelec/WebNMS/mysql/share/charsets/
		collation_connection utf8_general_ci
		collation_database latin1_swedish_ci
		collation_server latin1_swedish_ci
		completion_type NO_CHAIN
		concurrent_insert AUTO
		connect_timeout 10

		core_file OFF
		datadir /Tekelec/WebNMS/mysql/data/
		date_format %Y-%m-%d
		datetime_format %Y-%m-%d %H:%i:%s
		default_storage_engine InnoDB
		default_tmp_storage_engine InnoDB
		default_week_format 0
		delay_key_write ON
		delayed_insert_limit 100
		delayed_insert_timeout 300
		delayed_queue_size 1000
		disconnect_on_expired_password ON
		div_precision_increment 4
		end_markers_in_json OFF
		enforce_gtid_consistency OFF
		eq_range_index_dive_limit 10
		error_count 0
		event_scheduler OFF
		expire_logs_days 0
		explicit_defaults_for_timestamp OFF

		external_user
		flush OFF
		flush_time 0
		foreign_key_checks ON
		ft_boolean_syntax + -><()~*:"'&
		ft_max_word_len 84
		ft_min_word_len 4
		ft_query_expansion_limit 20
		ft_stopword_file (built-in)
		general_log OFF
		general_log_file
		/Tekelec/WebNMS/mysql/data/e5ms9.log
		group_concat_max_len 1024
		gtid_executed
		gtid_mode OFF
		gtid_next AUTOMATIC
		gtid_owned
		gtid_purged
		have_compress YES
		have_crypt YES

		have_dynamic_loading	YES
		have_geometry	YES
		have_openssl	DISABLED
		have_profiling	YES
		have_query_cache	YES
		have_rtree_keys	YES
		have_ssl	DISABLED
		have_symlink	YES
		host_cache_size	279
		hostname	e5ms9
		identity	0
		ignore_builtin_innodb	OFF
		ignore_db_dirs	
		init_connect	
		init_file	
		init_slave	
		innodb_adaptive_flushing	ON
		innodb_adaptive_flushing_lwm	10
		innodb_adaptive_hash_index	ON
		innodb_adaptive_max_sleep_delay	150000

		innodb_additional_mem_pool_size	8388608
		innodb_api_bk_commit_interval	5
		innodb_api_disable_rowlock	OFF
		innodb_api_enable_binlog	OFF
		innodb_api_enable_mdls	OFF
		innodb_api_trx_level	0
		innodb_autoextend_increment	64
		innodb_autoinc_lock_mode	1
		innodb_buffer_pool_dump_at_shutdown	OFF
		innodb_buffer_pool_dump_now	OFF
		innodb_buffer_pool_filename	ib_buffer_pool
		innodb_buffer_pool_instances	8
		innodb_buffer_pool_load_abort	OFF
		innodb_buffer_pool_load_at_startup	OFF
		innodb_buffer_pool_load_now	OFF
		innodb_buffer_pool_size	4294967296
		innodb_change_buffer_max_size	25
		innodb_change_buffering	all
		innodb_checksum_algorithm	innodb
		innodb_checksums	ON

		innodb_cmp_per_index_enabled	OFF
		innodb_commit_concurrency	0
		innodb_compression_failure_threshold_pct	5
		innodb_compression_level	6
		innodb_compression_pad_pct_max	50
		innodb_concurrency_tickets	5000
		innodb_data_file_path	ibdata1:12M:autoextend
		innodb_data_home_dir	
		innodb_disable_sort_file_cache	OFF
		innodb_doublewrite	ON
		innodb_fast_shutdown	1
		innodb_file_format	Antelope
		innodb_file_format_check	ON
		innodb_file_format_max	Antelope
		innodb_file_per_table	ON
		innodb_flush_log_at_timeout	1
		innodb_flush_log_at_trx_commit	1
		innodb_flush_method	
		innodb_flush_neighbors	1
		innodb_flushing_avg_loops	30

		innodb_force_load_corrupted	OFF
		innodb_force_recovery	0
		innodb_ft_aux_table	
		innodb_ft_cache_size	8000000
		innodb_ft_enable_diag_print	OFF
		innodb_ft_enable_stopword	ON
		innodb_ft_max_token_size	84
		innodb_ft_min_token_size	3
		innodb_ft_num_word_optimize	2000
		innodb_ft_result_cache_limit	2000000000
		innodb_ft_server_stopword_table	
		innodb_ft_sort_pll_degree	2
		innodb_ft_total_cache_size	640000000
		innodb_ft_user_stopword_table	
		innodb_io_capacity	200
		innodb_io_capacity_max	2000
		innodb_large_prefix	OFF
		innodb_lock_wait_timeout	50
		innodb_locks_unsafe_for_binlog	OFF
		innodb_log_buffer_size	8388608

		innodb_log_compressed_pages	ON
		innodb_log_file_size	50331648
		innodb_log_files_in_group	2
		innodb_log_group_home_dir	./
		innodb_lru_scan_depth	1024
		innodb_max_dirty_pages_pct	75
		innodb_max_dirty_pages_pct_lwm	0
		innodb_max_purge_lag	0
		innodb_max_purge_lag_delay	0
		innodb_mirrored_log_groups	1
		innodb_monitor_disable	
		innodb_monitor_enable	
		innodb_monitor_reset	
		innodb_monitor_reset_all	
		innodb_old_blocks_pct	37
		innodb_old_blocks_time	1000
		innodb_online_alter_log_max_size	134217728
		innodb_open_files	2000
		innodb_optimize_fulltext_only	OFF
		innodb_page_size	16384

		innodb_print_all_deadlocks	OFF
		innodb_purge_batch_size	300
		innodb_purge_threads	1
		innodb_random_read_ahead	OFF
		innodb_read_ahead_threshold	56
		innodb_read_io_threads	4
		innodb_read_only	OFF
		innodb_replication_delay	0
		innodb_rollback_on_timeout	OFF
		innodb_rollback_segments	128
		innodb_sort_buffer_size	1048576
		innodb_spin_wait_delay	6
		innodb_stats_auto_recalc	ON
		innodb_stats_method	nulls_equal
		innodb_stats_on_metadata	OFF
		innodb_stats_persistent	ON
		innodb_stats_persistent_sample_pages	20
		innodb_stats_sample_pages	8
		innodb_stats_transient_sample_pages	8
		innodb_status_output	OFF

		innodb_status_output_locks	OFF
		innodb_strict_mode	OFF
		innodb_support_xa	ON
		innodb_sync_array_size	1
		innodb_sync_spin_loops	30
		innodb_table_locks	ON
		innodb_thread_concurrency	0
		innodb_thread_sleep_delay	10000
		innodb_tmpdir	
		innodb_undo_directory	.
		innodb_undo_logs	128
		innodb_undo_tablespaces	0
		innodb_use_native_aio	ON
		innodb_use_sys_malloc	ON
		innodb_version	5.6.31
		innodb_write_io_threads	4
		insert_id	0
		interactive_timeout	28800
		join_buffer_size	262144
		keep_files_on_create	OFF

		key_buffer_size 8388608
		key_cache_age_threshold 300
		key_cache_block_size 1024
		key_cache_division_limit 100
		large_files_support ON
		large_page_size 0
		large_pages OFF
		last_insert_id 0
		lc_messages en_US
		lc_messages_dir
		/Tekelec/WebNMS/mysql/share/
		lc_time_names en_US
		license Commercial
		local_infile ON
		lock_wait_timeout 31536000
		locked_in_memory OFF
		log_bin ON
		log_bin_basename
		/Tekelec/WebNMS/mysql/data/log-bin
		log_bin_index
		/Tekelec/WebNMS/mysql/data/log-bin.index

		log_bin_trust_function_creators OFF
		log_bin_use_v1_row_events OFF
		log_error
		/Tekelec/WebNMS/mysql/data/e5ms9.err
		log_output FILE
		log_queries_not_using_indexes OFF
		log_slave_updates ON
		log_slow_admin_statements OFF
		log_slow_slave_statements OFF
		log_throttle_queries_not_using_indexes 0
		log_warnings 1
		long_query_time 10.000000
		low_priority_updates OFF
		lower_case_file_system OFF
		lower_case_table_names 0
		master_info_repository FILE
		master_verify_checksum OFF
		max_allowed_packet 4194304
		max_binlog_cache_size 18446744073709547520
		max_binlog_size 1073741824

		max_binlog_stmt_cache_size 18446744073709547520
		max_connect_errors 100
		max_connections 151
		max_delayed_threads 20
		max_digest_length 1024
		max_error_count 64
		max_heap_table_size 16777216
		max_insert_delayed_threads 20
		max_join_size 18446744073709551615
		max_length_for_sort_data 1024
		max_prepared_stmt_count 16382
		max_relay_log_size 0
		max_seeks_for_key 18446744073709551615
		max_sort_length 1024
		max_sp_recursion_depth 0
		max_tmp_tables 32
		max_user_connections 0
		max_write_lock_count 18446744073709551615
		metadata_locks_cache_size 1024

		metadata_locks_hash_instances	8
		min_examined_row_limit	0
		multi_range_count	256
		myisam_data_pointer_size	6
		myisam_max_sort_file_size	9223372036853727232
		myisam_mmap_size	18446744073709551615
		myisam_recover_options	OFF
		myisam_repair_threads	1
		myisam_sort_buffer_size	8388608
		myisam_stats_method	nulls_unequal
		myisam_use_mmap	OFF
		net_buffer_length	16384
		net_read_timeout	30
		net_retry_count	10
		net_write_timeout	60
		new	OFF
		old	OFF
		old_alter_table	OFF
		old_passwords	0
		open_files_limit	5000

		optimizer_prune_level 1 optimizer_search_depth 62 optimizer_switch index_merge=on,index_merge_union=on,index_merge_sort_union=on, index_merge_intersection=on,engine_condition_pushdown=on, index_condition_pushdown=on,mrr=on,mrr_cost_based=on, block_nested_loop=on,batched_key_access=off,materialization=on, semijoin=on,loosescan=on,firstmatch=on, subquery_materialization_cost_based=on,use_index_extensions=on optimizer_trace enabled=off,one_line=off optimizer_trace_features greedy_search=on,range_optimizer=on,dynamic_range=on, repeated_subselect=on optimizer_trace_limit 1 optimizer_trace_max_mem_size 16384 optimizer_trace_offset -1 performance_schema ON performance_schema_accounts_size 100 performance_schema_digests_size 10000 performance_schema_events_stages_history_long_size 10000 performance_schema_events_stages_history_size 10 performance_schema_events_statements_history_long_size 10000 performance_schema_events_statements_history_size 10 performance_schema_events_waits_history_long_size 10000 performance_schema_events_waits_history_size 10
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		performance_schema_hosts_size 100
		performance_schema_max_cond_classes 80
		performance_schema_max_cond_instances 3504
		performance_schema_max_digest_length 1024
		performance_schema_max_file_classes 50
		performance_schema_max_file_handles 32768
		performance_schema_max_file_instances 7693
		performance_schema_max_mutex_classes 200
		performance_schema_max_mutex_instances 15906
		performance_schema_max_rwlock_classes 40
		performance_schema_max_rwlock_instances 9102
		performance_schema_max_socket_classes 10
		performance_schema_max_socket_instances 322
		performance_schema_max_stage_classes 150
		performance_schema_max_statement_classes 168
		performance_schema_max_table_handles 4000
		performance_schema_max_table_instances 12500
		performance_schema_max_thread_classes 50
		performance_schema_max_thread_instances 402
		performance_schema_session_connect_attrs_size 512

		performance_schema_setup_actors_size 100
		performance_schema_setup_objects_size 100
		performance_schema_users_size 100
		pid_file
		/Tekelec/WebNMS/mysql/data/e5ms9.pid
		plugin_dir
		/Tekelec/WebNMS/mysql/lib/plugin/
		port 3306
		preload_buffer_size 32768
		profiling OFF
		profiling_history_size 15
		protocol_version 10
		proxy_user
		pseudo_slave_mode OFF
		pseudo_thread_id 6819
		query_alloc_block_size 8192
		query_cache_limit 1048576
		query_cache_min_res_unit 4096
		query_cache_size 1048576
		query_cache_type OFF
		query_cache_wlock_invalidate OFF

		query_prealloc_size 8192
		rand_seed1 0
		rand_seed2 0
		range_alloc_block_size 4096
		read_buffer_size 131072
		read_only OFF
		read_rnd_buffer_size 262144
		relay_log
		/Tekelec/WebNMS/mysql/data/relay-bin
		relay_log_basename
		/Tekelec/WebNMS/mysql/data/relay-bin
		relay_log_index
		/Tekelec/WebNMS/mysql/data/relay-bin.index
		relay_log_info_file relay-log.info
		relay_log_info_repository FILE
		relay_log_purge ON
		relay_log_recovery OFF
		relay_log_space_limit 0
		report_host
		report_password
		report_port 3306

		report_user	
		repl_stop_slave_timeout	31536000
		secure_auth	ON
		secure_file_priv	
		server_id	1
		server_id_bits	32
		server_uuid	cd82c312-3b87-11e7-9c61-00151a6e04d8
		sha256_password_private_key_path	private_key.pem
		sha256_password_public_key_path	public_key.pem
		show_old_temporals	OFF
		simplified_binlog_gtid_recovery	OFF
		skip_external_locking	ON
		skip_name_resolve	OFF
		skip_networking	OFF
		skip_show_database	OFF
		slave_allow_batching	OFF
		slave_checkpoint_group	512
		slave_checkpoint_period	300
		slave_compressed_protocol	OFF

		slave_exec_mode	STRICT
		slave_load_tmpdir	/tmp
		slave_max_allowed_packet	1073741824
		slave_net_timeout	3600
		slave_parallel_workers	0
		slave_pending_jobs_size_max	16777216
		slave_rows_search_algorithms	
		TABLE_SCAN,INDEX_SCAN	
		slave_skip_errors	
		1032,1050,1054,1060,1061,1062,1065,1146,1396	
		slave_sql_verify_checksum	ON
		slave_transaction_retries	10
		slave_type_conversions	
		slow_launch_time	2
		slow_query_log	OFF
		slow_query_log_file	
		/Tekelec/WebNMS/mysql/data/e5ms9-slow.log	
		socket	/tmp/mysql.sock
		sort_buffer_size	262144
		sql_auto_is_null	OFF
		sql_big_selects	ON

		sql_buffer_result	OFF
		sql_log_bin	ON
		sql_log_off	OFF
		sql_mode	
		NO_ENGINE_SUBSTITUTION	
		sql_notes	ON
		sql_quote_show_create	ON
		sql_safe_updates	OFF
		sql_select_limit	18446744073709551615
		sql_slave_skip_counter	0
		sql_warnings	OFF
		ssl_ca	
		ssl_capath	
		ssl_cert	
		ssl_cipher	
		ssl_crl	
		ssl_crlpath	
		ssl_key	
		storage_engine	InnoDB
		stored_program_cache	256

		sync_binlog	0
		sync_frm	ON
		sync_master_info	10000
		sync_relay_log	10000
		sync_relay_log_info	10000
		system_time_zone	IST
		table_definition_cache	1400
		table_open_cache	2000
		table_open_cache_instances	1
		thread_cache_size	9
		thread_concurrency	10
		thread_handling	one-thread-per-connection
		thread_stack	262144
		time_format	%H:%i:%s
		time_zone	SYSTEM
		timed_mutexes	OFF
		timestamp	1495149911.103216
		tmp_table_size	16777216
		tmpdir	/tmp
		transaction_alloc_block_size	8192

		<pre> transaction_allow_batching OFF transaction_prealloc_size 4096 tx_isolation REPEATABLE-READ tx_read_only OFF unique_checks ON updatable_views_with_limit YES version 5.6.31-enterprise-commercial- advanced-log version_comment MySQL Enterprise Server - Advanced Edition (Commercial) version_compile_machine x86_64 version_compile_os linux-glibc2.5 wait_timeout 28800 warning_count 0 +-----+-----+ +-----+ </pre>
15.	Record CPU information (number of CPUs, core etc.)	<pre> # cat /proc/cpuinfo processor : 0 vendor_id : GenuineIntel cpu family : 6 model : 42 model name : Intel(R) Xeon(R) CPU E31220 @ 3.10GHz stepping : 7 microcode : 0x29 </pre>

	cpu MHz : 3092.962 cache size : 8192 KB physical id : 0 siblings : 4 core id : 0 cpu cores : 4 apicid : 0 initial apicid : 0 fpu : yes fpu_exception : yes cpuid level : 13 wp : yes flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic popcnt tsc_deadline_timer aes xsave avx lahf_lm ida arat xsaveopt pln pts dtherm tpr_shadow vnmi flexpriority ept vpid bogomips : 6185.92 clflush size : 64 cache_alignment : 64 address sizes : 36 bits physical, 48 bits virtual power management: processor : 1 vendor_id : GenuineIntel cpu family : 6 model : 42 model name : Intel(R) Xeon(R) CPU E31220 @ 3.10GHz stepping : 7 microcode : 0x29 cpu MHz : 3092.962 cache size : 8192 KB physical id : 0
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	siblings : 4 core id : 1 cpu cores : 4 apicid : 2 initial apicid : 2 fpu : yes fpu_exception : yes cpuid level : 13 wp : yes flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic popcnt tsc_deadline_timer aes xsave avx lahf_lm ida arat xsaveopt pln pts dtherm tpr_shadow vnmi flexpriority ept vpid bogomips : 6185.92 clflush size : 64 cache_alignment : 64 address sizes : 36 bits physical, 48 bits virtual power management: processor : 2 vendor_id : GenuineIntel cpu family : 6 model : 42 model name : Intel(R) Xeon(R) CPU E31220 @ 3.10GHz stepping : 7 microcode : 0x29 cpu MHz : 3092.962 cache size : 8192 KB physical id : 0 siblings : 4 core id : 2 cpu cores : 4
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	apicid : 4 initial apicid : 4 fpu : yes fpu_exception : yes cpuid level : 13 wp : yes flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic popcnt tsc_deadline_timer aes xsave avx lahf_lm ida arat xsaveopt pln pts dtherm tpr_shadow vnmi flexpriority ept vpid bogomips : 6185.92 clflush size : 64 cache_alignment : 64 address sizes : 36 bits physical, 48 bits virtual power management: processor : 3 vendor_id : GenuineIntel cpu family : 6 model : 42 model name : Intel(R) Xeon(R) CPU E31220 @ 3.10GHz stepping : 7 microcode : 0x29 cpu MHz : 3092.962 cache size : 8192 KB physical id : 0 siblings : 4 core id : 3 cpu cores : 4 apicid : 6 initial apicid : 6 fpu : yes
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		<pre>fpu_exception : yes cpuid level : 13 wp : yes flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic popcnt tsc_deadline_timer aes xsave avx lahf_lm ida arat xsaveopt pln pts dtherm tpr_shadow vnmi flexpriority ept vpid bogomips : 6185.92 clflush size : 64 cache_alignment : 64 address sizes : 36 bits physical, 48 bits virtual power management:</pre>
16. ☐	Record the hard drive and partition size	<pre># fdisk -l /dev/sd[a-z] Disk /dev/sda: 500.1 GB, 500107862016 bytes, 976773168 sectors Units = sectors of 1 * 512 = 512 bytes Sector size (logical/physical): 512 bytes / 512 bytes I/O size (minimum/optimal): 512 bytes / 512 bytes Disk label type: dos Disk identifier: 0x00015701 Device Boot Start End Blocks Id System /dev/sda1 * 2048 1026047 512000 83 Linux /dev/sda2 1026048 976773119 487873536 8e Linux LVM</pre>
17. ☐	Verify smartctl output	<pre># smartctl -A -l error /dev/sda smartctl 6.2 2013-07-26 r3841 [x86_64-linux-3.8.13- 98.7.1.el7uek.x86_64] (local build) Copyright (C) 2002-13, Bruce Allen, Christian Franke, www.smartmontools.org === START OF READ SMART DATA SECTION === SMART Attributes Data Structure revision number: 16 Vendor Specific SMART Attributes with Thresholds:</pre>

ID#	ATTRIBUTE_NAME	FLAG	VALUE	WORST	THRESH
TYPE	UPDATED	WHEN_FAILED	RAW_VALUE		
1	Raw_Read_Error_Rate	0x002f	200	198	051
Pre-fail	Always	-	121		
3	Spin_Up_Time	0x0027	173	171	021
Pre-fail	Always	-	2333		
4	Start_Stop_Count	0x0032	100	100	000
old_age	Always	-	75		
5	Reallocated_Sector_Ct	0x0033	199	199	140
Pre-fail	Always	-	25		
7	Seek_Error_Rate	0x002f	200	200	051
Pre-fail	Always	-	0		
9	Power_On_Hours	0x0032	086	086	000
old_age	Always	-	10948		
10	Spin_Retry_Count	0x0033	100	253	051
Pre-fail	Always	-	0		
11	Calibration_Retry_Count	0x0033	100	253	051
Pre-fail	Always	-	0		
12	Power_Cycle_Count	0x0032	100	100	000
old_age	Always	-	74		
180	Unknown_HDD_Attribute	0x002f	200	200	100
Pre-fail	Always	-	0		
184	End-to-End_Error	0x0033	100	100	097
Pre-fail	Always	-	0		
187	Reported_Uncorrect	0x0032	100	001	000
old_age	Always	-	126		
188	Command_Timeout	0x0032	100	069	000
old_age	Always	-	31		
190	Airflow_Temperature_Cel	0x0022	070	056	045
old_age	Always	-	30		
192	Power-Off_Retract_Count	0x0032	200	200	000
old_age	Always	-	67		
193	Load_Cycle_Count	0x0032	200	200	000
old_age	Always	-	7		
194	Temperature_Celsius	0x0022	113	099	000
old_age	Always	-	30		
195	Hardware_ECC_Recovered	0x0036	200	200	000
old_age	Always	-	0		
196	Reallocated_Event_Count	0x0032	178	178	000
old_age	Always	-	22		

		<pre> 197 Current_Pending_Sector 0x0032 200 200 000 old_age Always - 0 198 offline_Uncorrectable 0x0030 200 200 000 old_age offline - 0 199 UDMA_CRC_Error_Count 0x0032 200 200 000 old_age Always - 0 200 Multi_Zone_Error_Rate 0x0008 200 200 000 old_age offline - 2 SMART Error Log Version: 1 No Errors Logged </pre>
18. ☐	Start Disk Integrity Check	<pre> # smartctl -t short /dev/sda smartctl 6.2 2013-07-26 r3841 [x86_64-linux-3.8.13- 98.7.1.el7uek.x86_64] (local build) Copyright (C) 2002-13, Bruce Allen, Christian Franke, www.smartmontools.org === 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 2 minutes for test to complete. Test will complete after Thu May 18 17:21:04 2017 Use smartctl -x to abort test. </pre>

19. ☐	Verify and record Disk Integrity Check results	<pre># sleep 100; smartctl -l selftest /dev/sda</pre> <pre>smartctl 6.2 2013-07-26 r3841 [x86_64-linux-3.8.13-98.7.1.el7uek.x86_64] (local build)</pre> Copyright (C) 2002-13, Bruce Allen, Christian Franke, www.smartmontools.org <pre>=== START OF READ SMART DATA SECTION ===</pre> <pre>SMART Self-test log structure revision number 1</pre> <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>10948</td><td>-</td></tr></tbody></table> Note: Record if any error is reported and contact Oracle Support.	Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error	# 1	Short offline	Completed without error	00%	10948	-																		
Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error																											
# 1	Short offline	Completed without error	00%	10948	-																											
20. ☐	Record any hard disk sector error	<pre># smartctl -a /dev/sda grep -i LBA</pre> <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 Oracle Support <pre>40 51 a0 11 8e 57 e0 Error: UNC 160 sectors at LBA = 0x00578e11 = 538001</pre> <pre>40 51 a8 11 8e 57 e0 Error: UNC 168 sectors at LBA = 0x00578e11 = 538001</pre> <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">If UNC errors are found, execute following command:</td></tr><tr><td colspan="6">\$ smartctl -a /dev/sda</td></tr></tbody></table>	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:						\$ smartctl -a /dev/sda					
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\$ smartctl -a /dev/sda																																
21. ☐	Repeat the procedure for standby server	Repeat steps from 1 to 27 on standby server if it is a failover configuration.																														

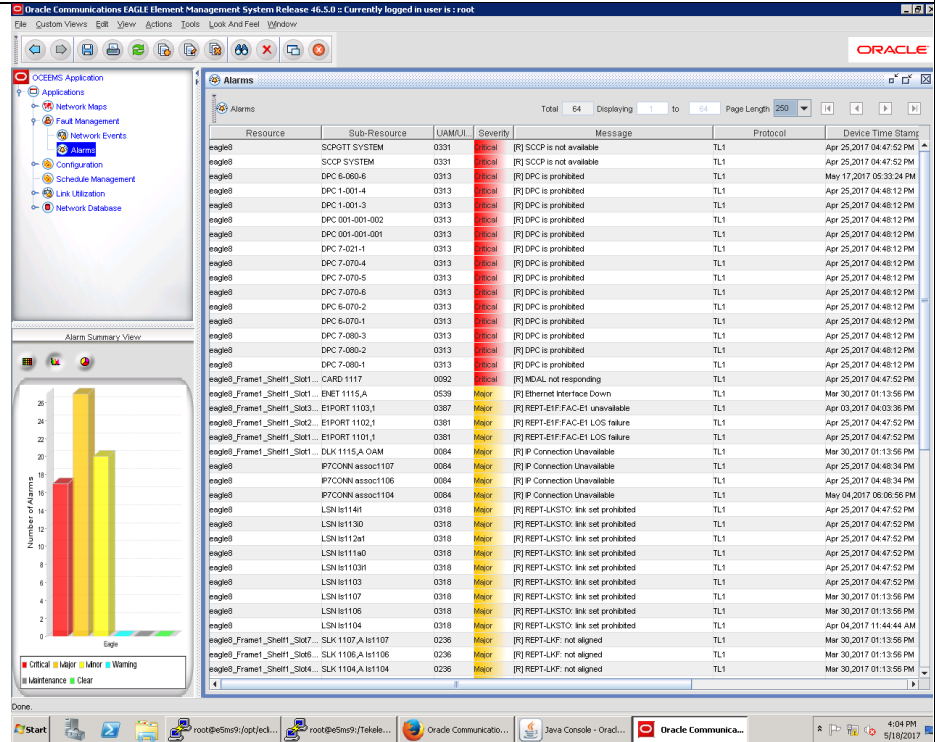
4.2 System Configuration

These steps can be performed on any of the OCEEMS configuration as mentioned in section 2. For failover setup commands should be run on both the servers.

S T E P #	Steps To Be Completed	Expected output/command to be executed
1. ☐	Login as root or non-root user(if non-root user is configured for OCEEMS operations)	login: root/emsadmuser password: <root/emsadmuser password>
2. ☐	Record /etc/hosts configuration	<pre>\$ cat /etc/hosts # # Do not modify this file by hand. Refer to Oracle Configuration # documentation. # # The order of the aliases in this file is significant # to the installation process. # 127.0.0.1 localhost 10.248.9.3 e5ms3 10.248.10.21 e5ms7 10.248.10.25 e5ms10 10.248.21.74 e5ms1 10.248.21.70 e5ms9 10.248.21.76 e5ms12 10.248.9.5 e5ms8 10.248.10.25 e5ms10</pre>
3. ☐	Verify and Record IPs configured on each interface	<pre># ifconfig eno1: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500 ether a0:b3:cc:e7:41:35 txqueuelen 1000 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 device interrupt 17 memory 0xfbee0000-fbf00000 enp2s0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500 ether a0:b3:cc:e7:41:34 txqueuelen 1000 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 device interrupt 16 memory 0xfbbe0000-fbe00000 ens2f0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500 inet 10.248.21.70 netmask 255.255.255.0 broadcast 10.248.21.255 inet6 fe80::215:1aff:fe6e:4d8 prefixlen 64 scopeid 0x20<link> ether 00:15:1a:6e:04:d8 txqueuelen 1000 (Ethernet) RX packets 73620479 bytes 42456180136 (39.5 GiB) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 74825240 bytes 50525619210 (47.0 GiB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 device interrupt 16 memory 0xfbf00000-fc000000</pre>

		<pre> ens2f1: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500 ether 00:15:1a:6e:04:d9 txqueuelen 1000 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 device interrupt 17 memory 0xfbfa0000-fbfc0000 lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536 inet 127.0.0.1 netmask 255.0.0.0 inet6 ::1 prefixlen 128 scopeid 0x10<host> loop txqueuelen 0 (Local Loopback) RX packets 183376340 bytes 127904309653 (119.1 GiB) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 183376340 bytes 127904309653 (119.1 GiB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500 inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255 ether 52:54:00:be:9a:cf txqueuelen 0 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 5 bytes 1203 (1.1 KiB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 </pre>
4. ☐	Verify and record the output of Netstat (Network Statistic) command	<pre> # netstat -r Kernel IP routing table Destination Gateway Genmask Flags MSS Window irtt Iface default 10.248.21.1 0.0.0.0 UG 0 0 0 ens2f0 10.248.21.0 0.0.0.0 255.255.255.0 U 0 0 0 ens2f0 192.168.122.0 0.0.0.0 255.255.255.0 U 0 0 0 virbr0 </pre>
5. ☐	Verify operational status of OCEEMS Server	<pre> # service e5msService status OCEEMS server is running. </pre>
6. ☐	Check the iptables service if non-root user is being used for OCEEMS operations.	<pre> # service iptables status Redirecting to /bin/systemctl status iptables.service iptables.service - IPv4 firewall with iptables Loaded: loaded (/usr/lib/systemd/system/iptables.service; disabled) Active: active (exited) since Thu 2016-12-22 22:16:27 IST; 3 months 22 days ago Main PID: 11509 (code=exited, status=0/SUCCESS) CGroup: /system.slice/iptables.service Dec 22 22:16:27 e5ms1 iptables.init[11509]: iptables: Applying firewall rules: [OK] Dec 22 22:16:27 e5ms1 systemd[1]: Started IPv4 firewall with iptables. </pre>
7.	Check the status of snmpd service for SNMP related operations.	<pre> # service snmpd status Redirecting to /bin/systemctl status snmpd.service snmpd.service - Simple Network Management Protocol (SNMP) Daemon. Loaded: loaded (/usr/lib/systemd/system/snmpd.service; disabled) Active: active (running) since Sat 2017-04-15 21:21:17 IST; 2s ago Main PID: 39248 (snmpd) CGroup: /system.slice/snmpd.service └─39248 /usr/sbin/snmpd -LS0-6d -f Apr 15 21:21:17 e5ms1 snmpd[39248]: NET-SNMP version 5.7.2 Apr 15 21:21:17 e5ms1 systemd[1]: Started Simple Network Management Protocol (SNMP) Daemon.. </pre>

8. ☐	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 operator:x:11:0:operator:/root:/sbin/nologin games:x:12:100:games:/usr/games:/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 polkitd:x:999:999:User for polkitd:/:/sbin/nologin usbmuxd:x:113:113:usbmuxd user:/:/sbin/nologin ntp:x:38:38:/:etc/ntp:/sbin/nologin pegasus:x:66:65:tog-pegasus OpenPegasus WBEM/CIM services:/var/lib/Pegasus:/sbin/nologin named:x:25:25:Named:/var/named:/sbin/nologin saslauth:x:998:76:"Saslauthd user"/run/saslauthd:/sbin/nologin libstoragemgmt:x:997:996:daemon account for libstoragemgmt:/var/run/lsm:/sbin/nologin avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi- daemon:/sbin/nologin avahi-autoipd:x:170:170:Avahi IPv4LL Stack:/var/lib/avahi- autoipd:/sbin/nologin rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin memcached:x:996:995:Memcached daemon:/run/memcached:/sbin/nologin rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin chrony:x:995:994:/:var/lib/chrony:/sbin/nologin radvd:x:75:75:radvd user:/:/sbin/nologin unbound:x:994:993:Unbound DNS resolver:/etc/unbound:/sbin/nologin colord:x:993:992:User for colord:/var/lib/colord:/sbin/nologin amandabackup:x:33:6:Amanda user:/var/lib/amanda:/bin/bash qemu:x:107:107:qemu user:/:/sbin/nologin apache:x:48:48:Apache:/usr/share/httpd:/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 abrt:x:173:173:/:etc/abrt:/sbin/nologin pulse:x:171:171:PulseAudio System Daemon:/var/run/pulse:/sbin/nologin hsqldb:x:96:96:/:var/lib/hsqldb:/sbin/nologin tomcat:x:91:91:Apache Tomcat:/usr/share/tomcat:/sbin/nologin gdm:x:42:42:/:var/lib/gdm:/sbin/nologin gnome-initial-setup:x:992:990:/:run/gnome-initial- setup:/sbin/nologin pcp:x:991:989:Performance Co-Pilot:/var/lib/pcp:/sbin/nologin sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin postgres:x:26:26:PostgreSQL Server:/var/lib/pgsql:/bin/bash postfix:x:89:89:/:var/spool/postfix:/sbin/nologin dovecot:x:97:97:Dovecot IMAP server:/usr/libexec/dovecot:/sbin/nologin dovenuil:x:990:988:Dovecot's unauthorized user:/usr/libexec/dovecot:/sbin/nologin oprofile:x:16:16:Special user account to be used by OProfile:/var/lib/oprofile:/sbin/nologin tcpdump:x:72:72:/:/sbin/nologin deepak:x:1000:1000:deepak:/home/deepak:/bin/bash emsuser:x:1001:1001:/:home/emsuser:/bin/bash ems:x:1003:1004:/:home/ems:/bin/bash emsadmuser:x:1007:1007:/:home/emsadmuser:/bin/bash emsuser10:x:1009:1009:/:home/emsuser10:/bin/bash yogesh:x:1011:1011:/:home/yogesh:/bin/bash mysql:x:1012:1017:/:home/mysql:/bin/bash </pre>
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9. ☐	Take backup of the OCEEMS database and configuration files.	<pre># cd /Tekelec/webNMS/bin/backup # sh BackupDB.sh -d /tmp/backup/ Please wait! OCEEMS Backup is in progress... OCEEMS database backup file "E5MS_Database_BackUp.sql" successfully created. \ Backup of directories successfully created. OCEEMS Backup is completed.</pre>
10. ☐	Verify backups are being taken properly	<pre># ls -lrt /tmp/backup/ total 1232 -rw-r--r--. 1 root root 1252531 May 18 08:15 E5MS_Database_BackUp.sql drwxr-xr-x. 4 root root 29 May 18 08:15 users drwxr-xr-x. 2 root root 66 May 18 08:15 linkUtilizationScripts drwxr-xr-x. 7 root root 67 May 18 08:15 commandManagersScripts drwxr-xr-x. 2 root root 4096 May 18 08:15 reportingStudio drwxr-xr-x. 2 root root 34 May 18 08:15 defaultconf drwxr-xr-x. 3 root root 19 May 18 08:15 classes drwxr-xr-x. 2 root root 31 May 18 08:15 html drwxr-xr-x. 3 root root 4096 May 18 08:15 conf</pre>
11. ☐	Gather application log files	<pre># tar -cvf Application_logs.tar /var/E5-MS</pre>
12. ☐	Gather system log files	<pre># tar -cvf NMS_logs.tar /Tekelec/webNMS/logs</pre>
13. ☐	Record alarms on the system from the OCEEMS client	

14.	Gather the configuration files of OCEEMS setup.	<pre># ls -ltr /Tekelec/WebNMS/conf/tekelec/ -rw-r--r--. 1 root root 493 May 17 21:19 tekmeas.conf -rw-r--r--. 1 root root 2625 May 17 21:19 server_conf.properties -rw-r--r--. 1 root root 1980 May 17 21:19 security.properties -rw-r--r--. 1 root root 577 May 17 21:19 reporting.properties -rw-r--r--. 1 root root 694 May 17 21:19 NbiParameters.conf -rw-r--r--. 1 root root 994 May 17 21:19 ModulesConf.xml -rw-r--r--. 1 root root 929 May 17 21:19 lui_template_script.txt -rw-r--r--. 1 root root 572 May 17 21:19 lui.properties -rw-r--r--. 1 root root 420 May 17 21:19 InventoryCommands.txt -rw-r--r--. 1 root root 3392 May 17 21:19 fault.properties -rw-r--r--. 1 root root 18399 May 17 21:19 EagleCardNameNumMap.xml -rw-r--r--. 1 root root 12451 May 17 21:19 ContinentZonalMap.xml -rw-r--r--. 1 root root 2656 May 17 21:19 common.config -rw-r--r--. 1 root root 1688 May 17 21:19 CmiParameters.conf</pre>
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5 My Oracle Support

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

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

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

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

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

Make the following selections on the Support telephone menu:

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