



Field Services Guide Supplement

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This supplement supports Messaging Operating System (MOS) release 4.4.2-FCS and later MOS releases until replaced by a newer edition.

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8-Series Hardware information.

Getting started

This document describes supplemental information for fault parts replacement of 8 series hardware. Please visit Mirapoint Support Site (<https://support.mirapoint.com>) for more information.

Common information

Fault information collection

Ensure that you collect information for RMA in advance, should a part require replacement. The information is displayed in either the CLI , Level 1 diagnostic data and system event log from iDRAC.

Preparation

Before starting replacement, ensure that you verify the system's "normal" condition. These configurations are available in the installation logs.

Hard Disk Drive

Preparation

1. Verify hardware component and array configuration for the system in advance from the installation logs.
2. It is recognized as "normal" if all the disks are in 'Optimal' status.
3. Check the following information to specify which disk is faulty.
 - LED status
 - [MOS]storage arrays CLI result
 - [MOS]storage disks CLI result
 - [AOS]miradmin->advanced menu->(h)System health summary output
 - Which physical disk must be replaced.
 - Array status (Optimal, Rebuild, Degraded)

During replacement

Confirm if the new disk is correctly recognized by verifying the following:

- [MOS]storage arrays CLI result
- [MOS]storage disks CLI result
- [AOS]miradmin->advanced menu->(h)System health summary output

After replacement

Confirm if the new disk is correctly recognized by verifying the following:

- [MOS]storage arrays CLI result
- [MOS]storage disks CLI result
- [AOS]miradmin->advanced menu->(h)System health summary output



If the array status is "Degraded" before replacement, rebuild is automatically started if a hot spare drive is assigned.

MOS

Figure 1 RG800 Output

```

rg000> storage arrays
0.0.0.0 RAID-1 ( 0.32.1.0 0.32.0.0 ) Optimal Inuse
OK Completed
rg000> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Unused Optimal ( ECC no ) 0 0
OK Completed
rg000> storage addspare
0.0.4.0
OK Completed
rg000> storage arrays
0.0.0.0 RAID-1 ( 0.32.1.0 0.32.0.0 ) Optimal Inuse
0.0.4.0 Spare ( 0.32.2.0 ) Optimal Unused
OK Completed
rg000> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Spare Optimal ( ECC no ) 0 0
OK Completed

```

Not all models have a hotspare drive. The models that have a hotspare drive are M/RG800 and S8000. The models that do not have a hotspare drive are RG180, RG280, M8000 and M8800.

The following example shows a drive replacement after one drive has failed in a RAID 1 array with 2 drives. (Figure 2)

Figure 2 RG280 Output

```

rg280> storage arrays
0.0.0.0 RAID-1 ( 0.32.1.0 0.32.0.0 ) Optimal Inuse
OK Completed
rg280> storage disks
0.32.0.0 476416 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 476416 Inuse Optimal ( ECC no ) 0 0
OK Completed
rg280> storage arrays
0.0.0.0 RAID-1 ( 0.X.X.0 0.32.0.0 ) Degraded Inuse
OK Completed
rg280> storage disks
0.32.0.0 476416 Inuse Optimal ( ECC no ) 0 0
OK Completed
rg280> storage arrays
0.0.0.0 RAID-1 ( 0.32.1.0 0.32.0.0 ) Rebuild Inuse 4%
OK Completed
rg280> storage disks
0.32.0.0 476416 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 476416 Inuse Rebuild ( ECC no ) 0 0
OK Completed

```

The following example shows drive replacement after one and two drives failed in a M8000 with a RAID 6 configuration.

Figure 3 M8000 with single drive failed.

```

s Show Current Network Settings
c Access Administration CLI
t Switch Terminal Type [to vt100]
w Switch Console Type [to vgal]
b Reboot system
? Help

OK m8000.mirapoint.com admin@ 4.3 server ready

OK User logged in
m8000> storage arrays
0.0.0.0 RAID-6 ( 0.32.7.0 0.32.6.0 0.32.5.0 0.32.3.0 0.32.1.0 0.32.4.0 0.32.2.0
0.32.0.0 ) Optimal Inuse
OK Completed
m8000> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.6.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.7.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed
m8000> _

```

Figure 4 M8000 after replacing one hard drive.

```

m8000> storage arrays
0.0.0.0 RAID-6 ( 0.32.7.0 0.X.X.0 0.32.5.0 0.32.3.0 0.32.1.0 0.32.4.0 0.32.2.0 0
.32.0.0 ) Partially Degraded Inuse
OK Completed
m8000> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.7.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

Figure 5 M8000 with two drives failed.

```

m8000> storage arrays
0.0.0.0 RAID-6 ( 0.32.7.0 0.32.6.0 0.32.5.0 0.32.3.0 0.32.1.0 0.32.4.0 0.32.2.0
0.32.0.0 ) Rebuild Inuse 17%
OK Completed
m8000> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.6.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.7.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

Figure 6 M8000 after replacing two drives.

```

m8000> storage arrays
0.0.0.0 RAID-6 ( 0.X.X.0 0.X.X.0 0.32.5.0 0.32.3.0 0.32.1.0 0.32.4.0 0.32.2.0 0.
32.0.0 ) Degraded Inuse
OK Completed
m8000> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

The rebuild percentage only shows for the first drive being rebuilt. Once the first drive rebuild is completed, the rebuild percentage will show for the second drive.

The following example shows drive replacement after single and multiple drives failed in a M8800 with two RAID 6 configurations. The M8800 has two drive enclosures with one RAID 6 array per enclosure. Each drive enclosure can have a maximum of 2 failed drives at a time. Since the M8800 has two RAID 6 enclosures, it can have a maximum of 4 failed drives at a time as long as each RAID 6 does not have more than 2 drives failed at a time.

Figure 7 M8800 with single drive failed.

```

m8800> storage arrays
0.0.0.0 RAID-6 ( 0.32.7.0 0.X.X.0 0.32.5.0 0.32.4.0 0.32.3.0 0.32.2.0 0.32.0.0 0
.32.1.0 ) Partially Degraded Inuse
0.0.2.0 RAID-6 ( 0.32.8.0 0.32.9.0 0.32.10.0 0.32.11.0 0.32.12.0 0.32.13.0 0.32.
14.0 0.32.15.0 ) Optimal Inuse
OK Completed
m8800> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.7.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.8.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.9.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.10.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.11.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.12.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.13.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.14.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.15.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

Figure 8 M8800 after replacing one hard drive.

```

m8800> storage arrays
0.0.0.0 RAID-6 ( 0.32.7.0 0.32.6.0 0.32.5.0 0.32.4.0 0.32.3.0 0.32.2.0 0.32.0.0
0.32.1.0 ) Rebuild Inuse 3%
0.0.2.0 RAID-6 ( 0.32.8.0 0.32.9.0 0.32.10.0 0.32.11.0 0.32.12.0 0.32.13.0 0.32.
14.0 0.32.15.0 ) Optimal Inuse
OK Completed
m8800> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.6.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.7.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.8.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.9.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.10.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.11.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.12.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.13.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.14.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.15.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

Figure 9 M8800 with two drives failed.

```

m8800> storage arrays
0.0.0.0 RAID-6 ( 0.X.X.0 0.X.X.0 0.32.5.0 0.32.4.0 0.32.3.0 0.32.2.0 0.32.0.0 0.
32.1.0 ) Degraded Inuse
0.0.2.0 RAID-6 ( 0.32.8.0 0.32.9.0 0.32.10.0 0.32.11.0 0.32.12.0 0.32.13.0 0.32.
14.0 0.32.15.0 ) Optimal Inuse
OK Completed
m8800> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.8.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.9.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.10.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.11.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.12.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.13.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.14.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.15.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

Figure 10 M8800 after replacing two drives.

```

m8800> storage arrays
0.0.0.0 RAID-6 ( 0.32.7.0 0.32.6.0 0.32.5.0 0.32.4.0 0.32.3.0 0.32.2.0 0.32.0.0
0.32.1.0 ) Rebuild Inuse 4%
0.0.2.0 RAID-6 ( 0.32.8.0 0.32.9.0 0.32.10.0 0.32.11.0 0.32.12.0 0.32.13.0 0.32.
14.0 0.32.15.0 ) Optimal Inuse
OK Completed
m8800> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.6.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.7.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.8.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.9.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.10.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.11.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.12.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.13.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.14.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.15.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

The rebuild percentage only shows the drive that is inserted first. Once the first drive rebuild is completed, the rebuild percentage will show for the second drive.

Figure 11 M8800 with three drives failed.

```

m8800> storage arrays
0.0.0.0 RAID-6 ( 0.X.X.0 0.X.X.0 0.32.5.0 0.32.4.0 0.32.3.0 0.32.2.0 0.32.0.0 0.
32.1.0 ) Degraded Inuse
0.0.2.0 RAID-6 ( 0.32.8.0 0.32.9.0 0.32.10.0 0.32.11.0 0.32.12.0 0.32.13.0 0.X.X
.0 0.32.15.0 ) Partially Degraded Inuse
OK Completed
m8800> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.8.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.9.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.10.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.11.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.12.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.13.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.15.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

Figure 12 M8800 after replacing 3 drives.

```

m8800> storage arrays
0.0.0.0 RAID-6 ( 0.32.7.0 0.32.6.0 0.32.5.0 0.32.4.0 0.32.3.0 0.32.2.0 0.32.0.0
0.32.1.0 ) Rebuild Inuse 4%
0.0.2.0 RAID-6 ( 0.32.8.0 0.32.9.0 0.32.10.0 0.32.11.0 0.32.12.0 0.32.13.0 0.32.
14.0 0.32.15.0 ) Rebuild Inuse 4%
OK Completed
m8800> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.6.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.7.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.8.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.9.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.10.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.11.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.12.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.13.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.14.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.15.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

Figure 13 M8800 with four drives failed.

```

m8800> storage arrays
0.0.0.0 RAID-6 ( 0.X.X.0 0.X.X.0 0.32.5.0 0.32.4.0 0.32.3.0 0.32.2.0 0.32.0.0 0.
32.1.0 ) Degraded Inuse
0.0.2.0 RAID-6 ( 0.32.8.0 0.32.9.0 0.32.10.0 0.32.11.0 0.32.12.0 0.32.13.0 0.X.X
.0 0.X.X.0 ) Degraded Inuse
OK Completed
m8800> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.8.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.9.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.10.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.11.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.12.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.13.0 571776 Inuse Optimal ( ECC no ) 0 0
OK Completed

```

Figure 14 M8800 after replacing 4 drives.

```

m8800> storage arrays
0.0.0.0 RAID-6 ( 0.32.7.0 0.32.6.0 0.32.5.0 0.32.4.0 0.32.3.0 0.32.2.0 0.32.0.0
0.32.1.0 ) Rebuild Inuse 3%
0.0.2.0 RAID-6 ( 0.32.8.0 0.32.9.0 0.32.10.0 0.32.11.0 0.32.12.0 0.32.13.0 0.32.
14.0 0.32.15.0 ) Rebuild Inuse 3%
OK Completed
m8800> storage disks
0.32.0.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.1.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.2.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.3.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.4.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.5.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.6.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.7.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.8.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.9.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.10.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.11.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.12.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.13.0 571776 Inuse Optimal ( ECC no ) 0 0
0.32.14.0 571776 Inuse Rebuild ( ECC no ) 0 0
0.32.15.0 571776 Inuse Rebuild ( ECC no ) 0 0
OK Completed

```

Procedure to replace hard disk drive on AOS for RS800 and RS8000

1. On the Configuration Utility screen enter Advanced and press return.

Figure 15 Configuration Utility screen

```

+-----+
| Configuration Utility |
| Mon Nov 19 20:00:05 UTC 2012 |
+-----+
|
| -(MAIN)
| 1) View Current Network Setting (and Start/Stop SSHD)
| 2) Setup DHCP
| 3) Setup Static IP
| 4) Network Diagnostic Tools (Ping/Traceroute)
| 5) System Diagnostic Tools (CPU/Disk)
| 6) Change Password
| 7) Power Control (Reboot/Shutdown)
| 8) Security Reset Options
| 0) Quit
|
| Your Choice? [0-8] i> advanced_

```

The advanced screen is displayed.

Figure 16 Advanced screen.

```

Configuration Utility
Mon Nov 19 20:01:02 UTC 2012

--(ADVANCED)
c) Use tape changer for backups
d) Use tape drive for backups
h) System health summary
o) Outbound ssh connection for support
t+) Enable tech_support account in Web UI
t-) Disable tech_support account in Web UI
s+) Restart supervisor
s-) Stop supervisor
fc) View parse failure counts
fl) View parse failure list
0) Return to MAIN

Your Choice? |> h_

```

2. Enter 'h' and press return.
The RAID status screen is displayed.

Figure 17 RS800 RAID status screen.

```

RAID status says:
RSKdebug: calist [(0, [(0, 'Optimal', 'Primary-5, Secondary-0, RAID Level Qualif
ier-3')])]
RSKdebug: cdlist [(0, [(0, 'SATA', 'Online', '1.819 TB', 'PA07', 0), (1, 'SATA',
'Online', '1.819 TB', 'PA07', 0), (2, 'SATA', 'Online', '1.819 TB', 'PA07', 0),
(3, 'SATA', 'Online', '1.819 TB', 'PA07', 0)])]
RSKdebug: clist []
Optimal
--ARRAY STATUS-- (Controller 0)
Array 0 (Primary-5, Secondary-0, RAID Level Qualifier-3): Optimal

--DRIVE STATUS-- (Controller 0)
Drive 0 (Array 0, 1.819 TB #PA07): SATA, Online
Drive 1 (Array 0, 1.819 TB #PA07): SATA, Online
Drive 2 (Array 0, 1.819 TB #PA07): SATA, Online
Drive 3 (Array 0, 1.819 TB #PA07): SATA, Online

Self-test results:
hostname 'localhost' maps to 127.0.0.1 [ OK ]
machine hostname maps to a local address [ OK ]
hostname 'master' maps to this machine [ OK ]
FS is running trouble-free [ OK ]
Press [ENTER] to return to main menu.

```

Figure 18 RS8000 RAID status screen.

```

Optimal
--ARRAY STATUS-- (Controller 0)
Array 0 (Primary-6, Secondary-0, RAID Level Qualifier-3): Optimal

--DRIVE STATUS-- (Controller 0)
Drive 0 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 1 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 2 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 3 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 4 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 5 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 6 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 7 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 8 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 9 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 10 (Array 0, 931.512 GB #AA07): SATA, Online
Drive 11 (Array 0, 931.512 GB #AA07): SATA, Online

Self-test results:
hostname 'localhost' maps to 127.0.0.1 [ OK ]
machine hostname maps to a local address [ OK ]
hostname 'master' maps to this machine [ OK ]
FS is running trouble-free [ OK ]
Press [ENTER] to return to main menu.
_

```

Memory

Preparation

1. Before attempting to replace memory, ensure that you locate the position of memory slot for the system. The position of the memory slot is different in each system.
2. Confirm memory operating mode via BIOS.
3. You can enter BIOS configuration menu by type F2 during the system boot up. After entering BIOS menu, select “Memory Setting” and note the information.
4. Verify which memory module needs to be replaced.

During replacement

Insert new memory into exactly the same position that the faulty memory card was inserted.

After replacement

Confirm the system has boot up correctly with POST pass. Check memory capacity and configuration via BIOS.

PERC RAID controller

Preparation



It is necessary to update the RAID controller's firmware of maintenance parts in advance.



The system may not boot up correctly if the RAID controller is faulty.



Ensure that you save the installation log in case the system fails to boot up.

1. Record necessary information like disk array information and boot disk from the RAID controller BIOS.
2. Enter the RAID controller BIOS menu by entering <Ctrl><R> when the following message is displayed during initialization of RAID controller.
Press<Ctrl><R> to Run Configuration Utility
3. You can move the cursor down/up by pressing <Ctrl><N> or <Ctrl><P> in the BIOS menu.
4. You can verify array configuration on VD Mgmt screen, physical disk configuration on PD Mgmt screen and boot array configuration on Ctrl Mgmt screen.

After replacement

If array configuration is different on the RAID controller has and that stored on disk during system boot, the following message prompts you to import array configuration on disk (Foreign configuration).

Foreign configuration(s) found on adapter

Press any key to continue or 'C' load the configuration utility, or 'F' to import foreign configuration(s) and continue.

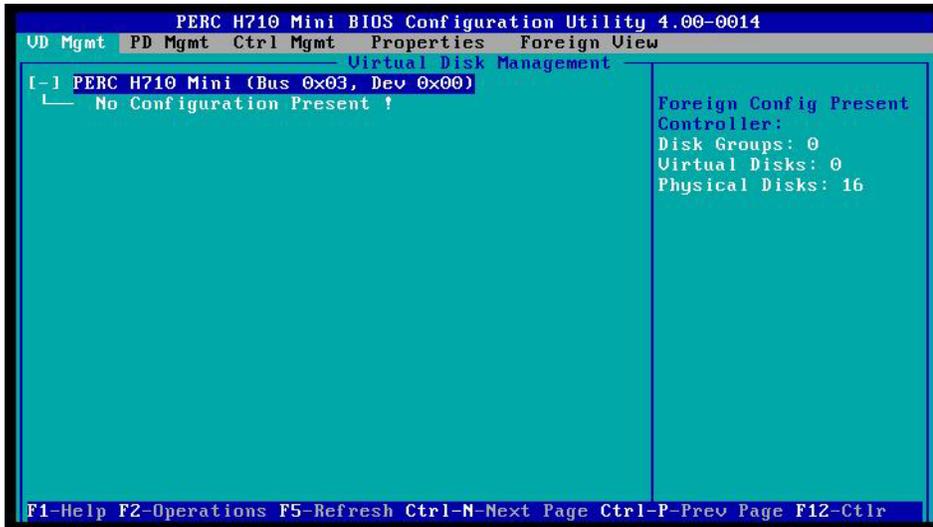
Ensure that you import the configuration that is stored on the disk. Type 'F' to import when you are prompted.



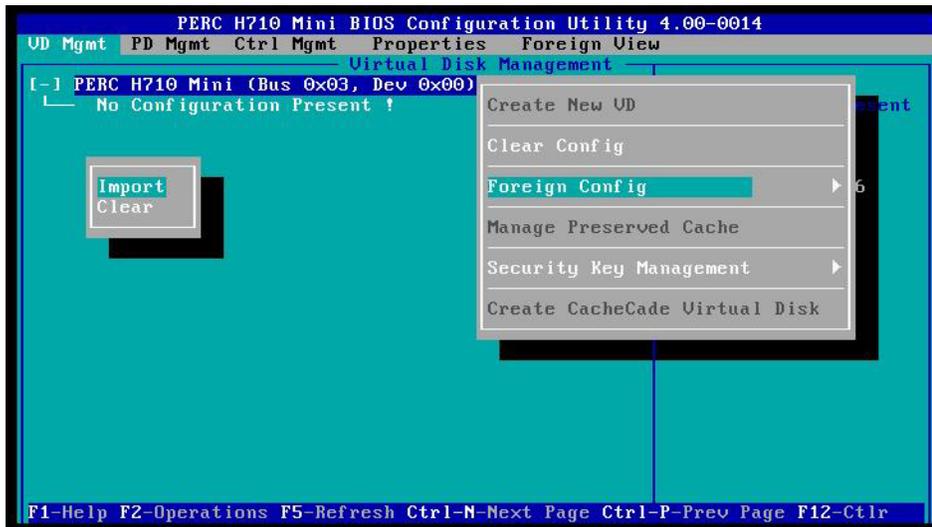
You can also import through RAID controller BIOS menu after rebooting.

Complete the following steps to import the configuraiton manually through the RAID controller BIOS menu.

1. Go to 'VD Mgmt' menu



2. Select 'PERC H800 Mini' and type 'F2'



3. Select 'Foreign Config'
4. Select 'Import'



- Confirmation screen is displayed, select 'YES' to proceed.



- Verify array configuration, disk configuration and boot configuration once import is complete.

Battery for PERC RAID controller

It is recommended that you replace the RAID controller battery annually.

After replacement

Battery calibration is required after RAID controller battery is replaced. The 'Storage battery startcalibration' CLI command completes calibration.

The battery is recharged during calibration.



System performance can be slow during under low battery condition because RAID controller cache is disabled.



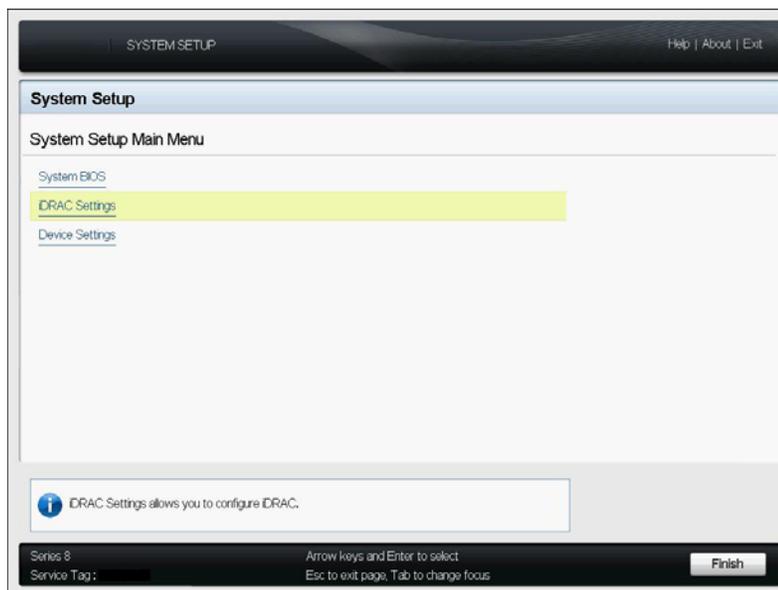
Battery calibration is automatically started after 90 days if it is not started manually.

iDRAC Enterprise Module

Preparation

1. Check each iDrac setting.
2. To enter the Idrac menu, select <F2> during POST.
 - iDRAC 7 NIC should be Enabled.

```
Entering System Setup
F10 = Lifecycle Controller
F11 = BIOS Boot Manager
F12 = PXE Boot
```





After replacement

Check each configuration via iDRAC and modify if necessary.

CMOS backup battery

Preparation

Check and store each BIOS configuration.

After replacement

Check date, time and other configuration via BIOS menu and update if necessary.