

# Blade Replacement Instruction for Native Deployment

Ericsson Dynamic Activation 1

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INSTRUCTION

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# 1 Introduction

This document provides instructions for replacing hardware (HW) parts, Payload (PL) or Control (SC) blades, on an Ericsson™ Dynamic Activation (EDA) system, using GEP3 or GEP5 blades.

## 1.1 Purpose and Scope

The scope of this document is to provide instructions for how to replace and configure a PL or SC blade in a Dynamic Activation cabinet.

## 1.2 Target Group

The target group for this document is as follows:

- System Administrator
- Technician who will perform the hardware replacement

The target groups are described in more detail in the *Library Overview*, Reference [2], document.

## 1.3 Typographic Conventions

Typographic conventions are described in the document *Library Overview*, Reference [2].

For information about abbreviations used throughout this document refer to *Glossary of Terms and Acronyms*, Reference [1].





## 2 Prerequisites

Replacement of a Dynamic Activation GEP3 or GEP5 blade system requires that the user of this document has:

- Linux™ system administration skills.
- Switch and router administration skills.

### 2.1 Tools

The following tools are required:

- A screwdriver of type TORX T5, or torque screwdriver with TORX T5 bit is needed for the cables.
- A screwdriver of type TORX T8, or torque screwdriver with TORX T8 bit is needed for the GEP blade.
- A Console Server is required to remotely login to GEP and SCX blades. An alternative to a Console Server could be a terminal or a PC with a serial port.

### 2.2 GEP Blade Requirement

To get the cluster to fully work, before replacing the faulty SC blade, a new license needs to be ordered.

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#### **Caution!**

The instructions throughout this document require that the GEP blades that will be used for replacing the old ones is a new GEP blade. That is, not previously used in a cluster setup.

Make sure that the new blade has the same ROJ number as the one that is going to be replaced.

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## 3 Blade Replacement

This section contains information on how to replace a Dynamic Activation PL or SC blade using either a GEP5 or GEP3 blades. The procedures in this section can be performed in runtime, for both PL and SC blades.

**Note:** When a node has been down for more than three hours, the Cassandra consistency will be impacted.

To avoid losing log consolidation data during blade replacement, if the disk size is more than 50% of the available disk space in the `/var/cassandra/data` directory, follow the instructions in section **Exporting Logs** in *System Administrators Guide for Native Deployment*, Reference [3] to export the oldest days stored, until the disk size is decreased to below 50%.

The following chart depicts the replacement flow for both PL and SC blades, see Figure 1.

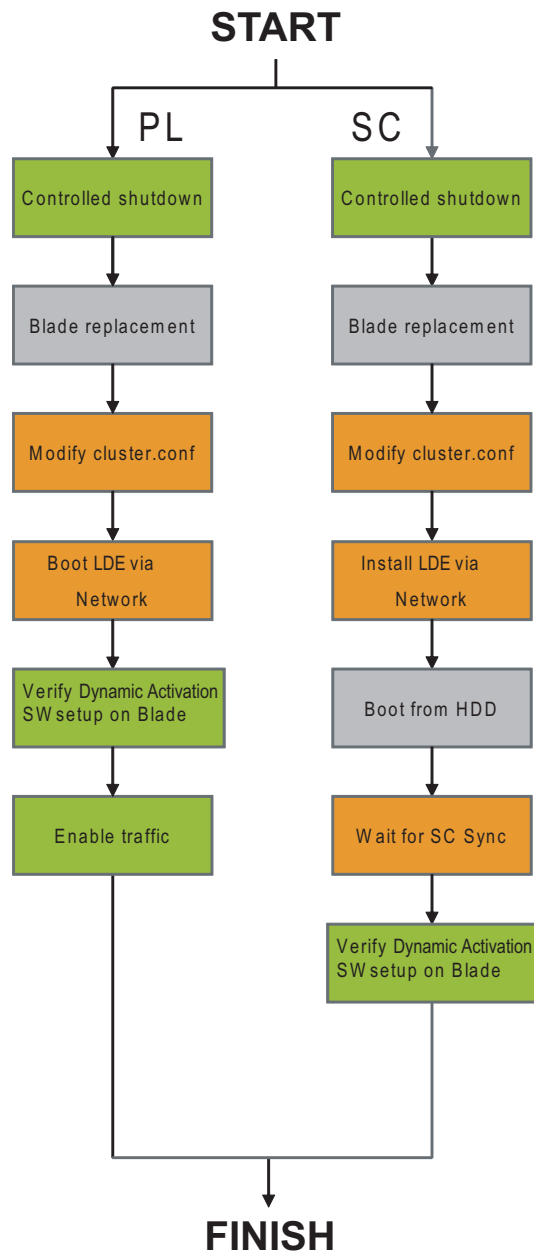


Figure 1 Blade Replacement Flow Chart

### 3.1 GEP5 Blade Replacement

This section contains information on how to replace SC and PL blades (GEP5).



## Attention!

All commands throughout these sections are run as user `root`.

### 3.1.1 PL Blade Replacement

This section contains information on how to replace a PL blade.

#### 3.1.1.1 Blade Replacement

Perform a controlled shutdown on the faulty PL blade and manually replace it according to instructions in the step-list below:

1. Log on to an SC node, and if possible, stop all applications, Cassandra and Zookeeper that are running on the faulty PL blade.

Stop all applications:

```
# bootloader.py node stop --host <hostname>
```

Stop Cassandra:

```
# 3ppmon stopcassandra --host <hostname>
```

Check and stop ZooKeeper if it is running:

```
# 3ppmon status --host <hostname>
```

```
# 3ppmon stopzookeeper --host <hostname>
```

**Note:** `<hostname>` is the host name of the PL node that is to be stopped.

2. Remove the faulty PL node from the Cassandra ring.

- a. Check the Cassandra nodes status.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load          Tokens  Owns  Host ID                               Rack
DN  169.254.100.4  76.77 GB      256    ?     5100b6ba-a90f-4ca2-ac40-eef26915a56b rack1
UN  169.254.100.2  74.9 GB       256    ?     de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN  169.254.100.3  72.34 GB      256    ?     f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
UN  169.254.100.1  74.44 GB      256    ?     004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

- b. Find the Cassandra node whose status is down (DN), and copy its Host ID.



This Cassandra node is running on the faulty blade.

- c. Remove the node from the Cassandra ring.

```
# nodetool removenode <Host ID>
```

In this example:

```
# nodetool removenode 5100b6ba-a90f-4ca2-ac40-ee
f26915a56b
```

- d. After prompt is returned, check whether the removal command is finished.

```
# nodetool removenode status
RemovalStatus: No token removals in process.
```

- e. Check whether the node has been removed.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
-- State=Normal/Leaving/Joining/Moving
-- Address      Load      Tokens   Owns    Host ID                               Rack
UN 169.254.100.2  74.9 GB   256      ?       de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN 169.254.100.3  72.34 GB  256      ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
UN 169.254.100.1  74.44 GB  256      ?       004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

3. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

4. Enter password for user advanced

5. Turn off the power for the GEP blade to be replaced.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot
position>,Blade=1,administrativeState=LOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP blade slot position. As an example, PL4 needs to be replaced which in this case corresponds to slot position 7, circle marked, see Figure 2.

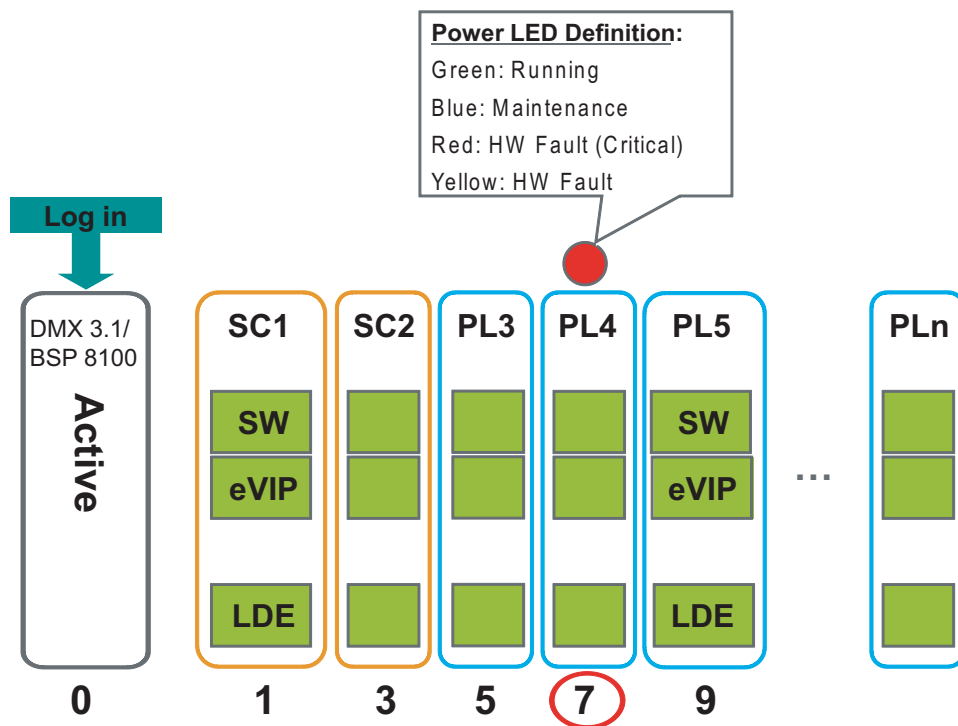


Figure 2 PL GEP Blade Replacement

6. Remove the faulty blade and remember the positions of the cables when replacing the blade.

### Caution!

Always wear an Electrostatic Discharge (ESD) strap when touching the hardware in the rack. Sensitive components, such as Integrated Circuits (ICs), can be damaged by discharges of static electricity.

**Note:** Use the screwdriver of type TORX T5, or torque screwdriver with TORX T5 bit for the cables.

Use the screwdriver of type TORX T8, or torque screwdriver with TORX T8 bit for the blade.

7. Insert the new blade and connect the cables in the same positions as before.
8. Log on to the CLI:  

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```
9. Enter password for user `advanced`



10. Prepare for a serial connection towards the new PL blade:

```
# telnet <Console Server IP-address> <port number connected  
to PL Blade>
```

11. Turn on the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot  
position>,Blade=1,administrativeState=UNLOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP blade slot position. As an example, PL4 has been replaced, which in this case corresponds to slot position 7, circle marked, see Figure 3.

**Note:** Do not boot up the blade without a Console Server connected. This in order to monitor the process, change BIOS settings and more.

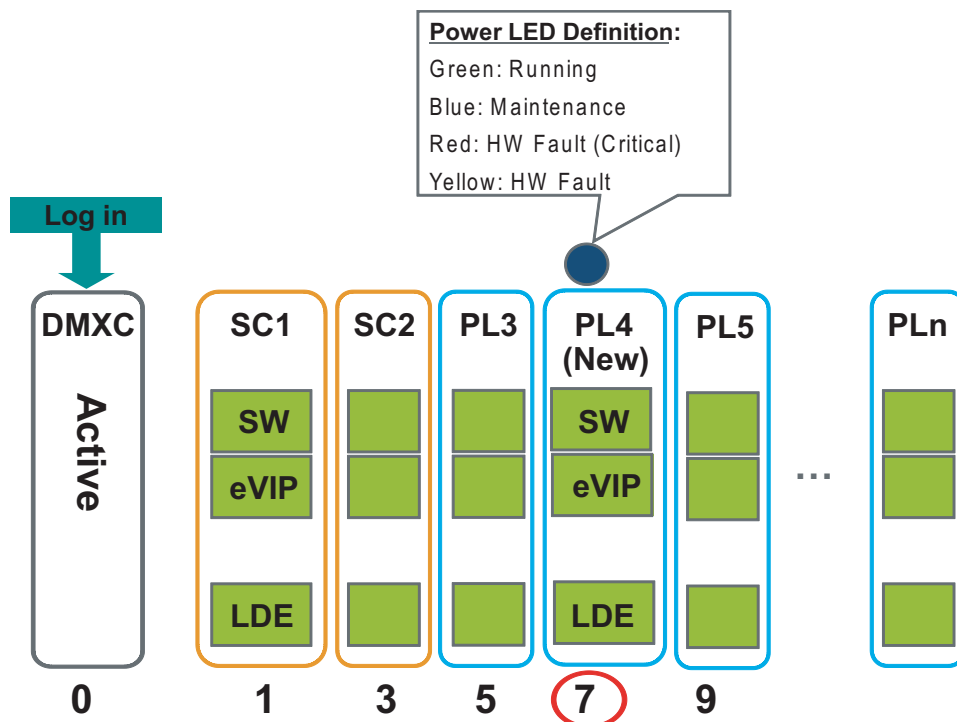


Figure 3 New PL GEP Blade

12. Disable the Power Technology in the GEP BIOS.

During the BIOS startup sequence, wait for the following console printout:

Press <DEL> or <F4> to enter set up.

Press **F4**



**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the **F<x>** keys.

13. In the **Main** window, use the arrow keys to navigate to **Advanced > CPU Configuration**, tab down to **CPU Power Management Configuration >**, and tab down to the **Power Technology** menu, press **Enter**, choose **Disable** and press **Enter** again.

14. To save and exit:

Press **F4**

Use the arrow keys to choose **Yes** and press:

**Enter**

15. Turn off the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=LOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP Blade slot position. As an example, PL4 has been replaced, which in this case corresponds to slot position 7, circle marked, see Figure 3.

### 3.1.1.2 Modify LDEwS Configuration

Get the MAC address of the new PL GEP blade.

The MAC address is used as input to the `cluster.conf` file used by LDEwS. The MAC address is fetched through the DMXC Management System CLI.

1. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

2. Enter password for user `advanced`

3. Enter the command to show the MAC addresses.

```
> ManagedElement=1,DmxcFunction=1,Eqm=1,VirtualEquipment=pg
```

```
> show-table -m Blade -p bladeId,firstMacAddr
```

4. A printout shows all MAC addresses of all blades in the Applications/PG group. Figure 4 is just an example.

[How to check MAC address]

&lt;Printout Result&gt;

SUBRACK 0

SHELF

SLOT BLADE FIRST MAC

ID ID ADDRESS

0- 1 1 c8:35:b8:26:e8:c5

0- 3 1 c8:35:b8:26:e9:15

0- 5 1 c8:35:b8:26:ea:55

0- 7 1 c8:35:b8:26:ea:19

0- 9 1 c8:35:b8:26:ea:9b

0- 12 1 c8:35:b8:26:ea:37

:

Calculation	Eth	Answer
<BASE MAC>+ 1	eth3	c8:35:b8:26:ea:1a
<BASE MAC>+ 2	eth4	c8:35:b8:26:ea:1b
<BASE MAC>+ 5	eth5	c8:35:b8:26:ea:1e
<BASE MAC>+ 6	eth6	c8:35:b8:26:ea:1f

Figure 4 Example of MAC Address Printout

- Log in to SC1 and edit the `cluster.conf` file. Replace all the MAC addresses from the faulty blade to the new blade:

```
# vi /cluster/etc/cluster.conf
```

- Validate and reload the cluster configuration:

```
# cluster config --validate
```

```
# cluster config --reload --all
```

## 3.1.1.3

**BIOS Settings, eVIP and LDEwS Installation**

Install LDEwS by booting from network according to instructions in this section.

- Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

- Enter password for user `advanced`

- Prepare for a serial connection towards the still powered off PL blade:

```
# telnet <Console Server IP-address> <port number connected to PL Blade>
```

- Turn on the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=UNLOCKED
```

```
> commit -s
```

The `<slot position>` variable corresponds to the GEP Blade slot position. As an example, PL4 has been replaced, which in this case corresponds to slot position 7, circle marked, see Figure 3.





5. During the BIOS startup sequence, wait for the console printout `Press F3 for GEP PopUp` and then press:

**F3** to login to `PBIST` mode.

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the `F<x>` keys.

6. Choose the option `40 - UEFI Shell (PBIST)` by entering the value:

`> 40`

In the next screen shown, press any key within a few seconds to proceed to the `UEFI` shell.

7. Clear the present boot device order with command:

`> ipmi bo erase`

8. Check the result by command:

`> ipmi bo display`

The following printout should be displayed:

`BootList is empty`

9. Set boot device order to `Backplane left device` by command:

`> ipmi bo insert 1 00`

(1=priority, 00=Backplane left device).

10. Set boot device order to `Backplane right device` by command:

`> ipmi bo insert 2 01`

(2=priority 2, 01=Backplane right device).

11. Check the result by command:

`> ipmi bo display`

Should display the newly added boot device settings.

12. Reset the blade:

`> pbist -r`

The blade is booted up and installed through the network automatically.

After `LDEwS` has been booted, `LDEwS`, `eVIP`, and the application RPMs are loaded.



Wait until the blade has booted. That is, when the prompt reappears in the Console Server.

**Note:** The time duration to complete the boot is approximately 10 minutes.

When the blade has booted up, log in to the replaced node.

13. Perform the following procedure to manually create partitions for the GEP5 PL node.

- a. Identify which disks to be raided by using the following four commands. An example output is given under each command.

```
# ls -la /dev/disk/by-path/pci-0000:03:00.0-sas-phy0-0x4433221100000000-lun-0
lrwxrwxrwx 1 root root 9 Jan 24 15:37
/dev/disk/by-path/pci-0000:03:00.0-sas-phy0
-0x4433221100000000-lun-0 -> ../../sda
```

```
# ls -la /dev/disk/by-path/pci-0000:03:00.0-sas-phy1-0x4433221101000000-lun-0
lrwxrwxrwx 1 root root 9 Jan 24 15:37
/dev/disk/by-path/pci-0000:03:00.0-sas-phy1
-0x4433221101000000-lun-0 -> ../../sdb
```

```
# ls -la /dev/disk/by-path/pci-0000:03:00.0-sas-phy2-0x4433221102000000-lun-0
lrwxrwxrwx 1 root root 9 Jan 24 15:37
/dev/disk/by-path/pci-0000:03:00.0-sas-phy2
-0x4433221102000000-lun-0 -> ../../sdc
```

```
# ls -la /dev/disk/by-path/pci-0000:03:00.0-sas-phy3-0x4433221103000000-lun-0
ls: cannot access /dev/disk/by-path/pci-0000:03:00.0-sas-phy3-0x4433221103000000-lun-0: No such file or directory
```

**Note:** The four commands always output three disk identities and a No such file or directory notification.

In this example, the three disks are identified as sda, sdb, and sdc.

- b. Create a md0 raid based on the three identified disks. For example:

```
# mdadm --create --run /dev/md0 --chunk=4
--level=0 --raid-devices=3 /dev/sda /dev/sdb
/dev/sdc
```

- c. Define partitions table name and sizes.

```
# parted /dev/md0 mklabel gpt
```



```
# parted -s /dev/md0 mkpart primary ext3 1GB
10.7GB

# parted -s /dev/md0 mkpart primary ext3 10.7GB
21.4GB

# parted -s /dev/md0 mkpart primary ext3 21.4GB
1095.7GB
```

- d. Create partition labels.

```
# mkfs.ext3 -L DVE_LOGS /dev/md0p1

# mkfs.ext3 -L CAS_COMLOG /dev/md0p2

# mkfs.ext3 -L CAS_DATA /dev/md0p3
```

- e. From the replaced node, reboot the node to install Cassandra.

```
# reboot
```

When the node is up again, check that all disk partitions are mounted correctly.

```
# df -h
..
/dev/md0p1      8.8G    49M    8.3G    1% /var/dve
/dev/md0p2      9.7G   577M    8.7G    7% /var/cassandra/commi
/dev/md0p3     985G   176M   935G    1% /var/cassandra/data
```

14. Run the following command to make sure Cassandra has joined the ring:

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address          Load        Tokens     Owns    Host ID                               Ra
UN 169.254.100.4    254.97 MB   256        ?       58ecf956-1196-4875-8f31-fcd51d4d61ff ra
UN 169.254.100.2    74.9 GB     256        ?       de177bc5-3142-436d-b1c2-0bbf13410267 ra
UN 169.254.100.3    72.34 GB    256        ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 ra
UN 169.254.100.1    74.44 GB    256        ?       004eb495-da8e-47eb-b6d0-0750ed5f5a50 ra
```

The replaced PL node status is **UJ**.

15. Wait until the Cassandra status on the replaced node has changed to **UN**.
16. Check the deployment status of all 3PP processes in all nodes.

```
# 3ppmon status --host all
```

17. From an SC node, run the following command to start all the modules on the replaced PL node:



```
# bootloader.py node start --host <hostname of replaced blade>
```

18. Check the the status of Dynamic Activation application.

```
# bootloader.py node status --host all
```

19. On all nodes in the cluster, one by one, run the following command:

```
# nodetool cleanup
```

### 3.1.2 SC Blade Replacement

This section contains information on how to replace an SC blade.

#### 3.1.2.1 Blade Replacement

Perform a controlled shutdown on the faulty SC blade and manually replace it according to the instructions in the step-list below:

1. Log in to a working SC node, and if possible, stop all applications, Cassandra and Zookeeper that are running on the faulty SC node.

Stop all applications:

```
# bootloader.py node stop --host <hostname>
```

Stop Cassandra:

```
# 3ppmon stopcassandra --host <hostname>
```

Check and stop ZooKeeper if it is running:

```
# 3ppmon status --host <hostname>
```

```
# 3ppmon stopzookeeper --host <hostname>
```

**Note:** <hostname> is the host name of the SC node that is to be stopped.

2. Remove the faulty SC node from the Cassandra ring.

- a. Check the Cassandra nodes status.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load          Tokens       Owns    Host ID                               Rack
UN 169.254.100.4  76.77 GB      256         ?       5100b6ba-a90f-4ca2-ac40-eef26915a56b rack1
UN 169.254.100.2  74.9 GB       256         ?       de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN 169.254.100.3  72.34 GB      256         ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
DN 169.254.100.1  74.44 GB      256         ?       004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

- b. Find the Cassandra node whose status is down (DN), and copy its Host ID.



This Cassandra node is running on the faulty blade.

- c. Remove the node from the Cassandra ring.

```
# nodetool removemode <Host ID>
```

In this example:

```
# nodetool removemode 004eb495-da8e-47eb-b6d0-0750ed5f5a50
```

- d. After prompt is returned, check whether the removal command is finished.

```
# nodetool removemode status
RemovalStatus: No token removals in process.
```

- e. Check whether the node has been removed.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load      Tokens   Owns    Host ID                               Rack
UN  169.254.100.4  76.77 GB  256     ?       5100b6ba-a90f-4ca2-ac40-eef26915a56b rack1
UN  169.254.100.3  72.34 GB  256     ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
UN  169.254.100.2  74.44 GB  256     ?       de177bc5-3142-436d-b1c2-0bbf13410267 rack1
```

3. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

4. Enter password for user advanced

5. Turn off the power for the GEP Blade to be replaced.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=LOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP blade slot position. As an example, SC1 needs to be replaced which in this case corresponds to slot position 1, circle marked, see Figure 5.

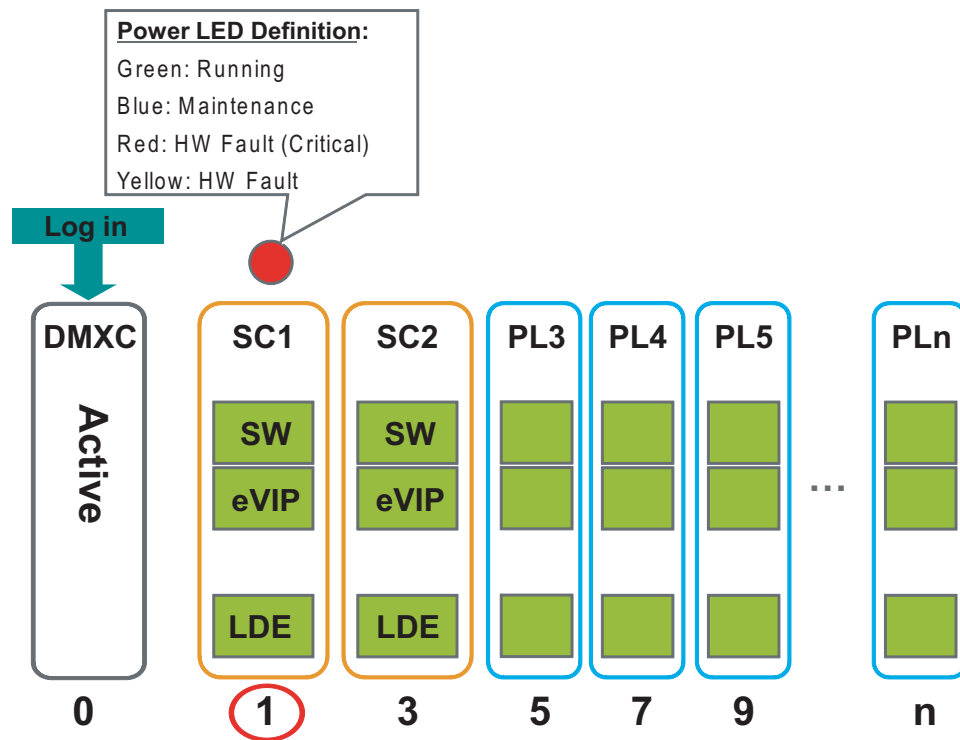


Figure 5 SC GEP Blade Replacement

6. Remove the faulty blade and remember the positions of the cables when replacing the blade.

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---

### Caution!

Always wear an Electrostatic Discharge (ESD) strap when touching the hardware in the rack. Sensitive components, such as Integrated Circuits (ICs), can be damaged by discharges of static electricity.

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**Note:** Use the screwdriver of type TORX T5, or torque screwdriver with TORX T5 bit for the cables.

Use the screwdriver of type TORX T8, or torque screwdriver with TORX T8 bit for the blade.

7. Insert the new blade and insert the cables in the same positions as in the faulty blade.
8. Log on to the CLI:



```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

9. Enter password for user advanced

10. Prepare for a serial connection towards the still powered off SC blade:

```
# telnet <Console Server IP-address> <port number connected  
to SC Blade>
```

11. Turn on the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot  
position>,Blade=1,administrativeState=UNLOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP blade slot position. As an example, SC1 has been replaced, which in this case corresponds to slot position 1, circle marked, see Figure 6.

**Note:** Do not boot up the blade without a Console Server connected. This in order to monitor the process, change BIOS settings and more.

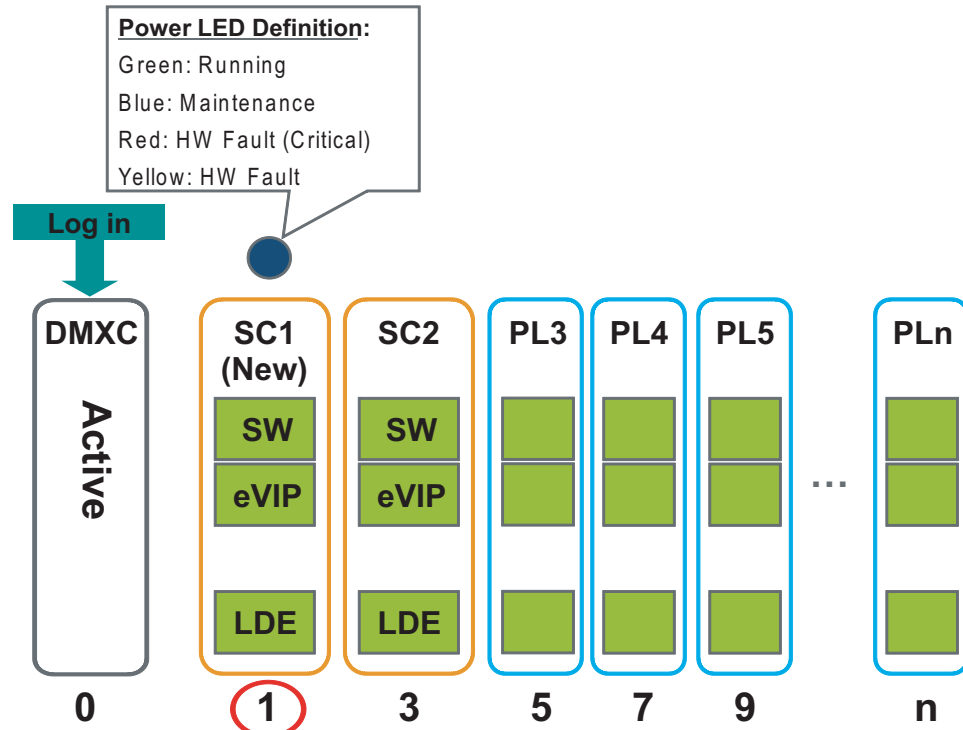


Figure 6 New SC GEP Blade



12. Disable the Power Technology in the GEP BIOS.

During the BIOS startup sequence, wait for the following console printout:

Press <DEL> or <F4> to enter set up.

Press **F4**

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the **F<x>** keys.

13. In the **Main** window, use the arrow keys to navigate to **Advanced > CPU Configuration**, tab down to **CPU Power Management Configuration >**, and tab down to the **Power Technology** menu, press **Enter**, choose **Disable** and press **Enter** again.

14. To save and exit:

Press **F4**

Use the arrow keys to choose **Yes** and press:

**Enter**

15. Turn off the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=LOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP blade slot position. As an example, SC1 has been replaced, which in this case corresponds to slot position *1*, circle marked, see Figure 6.

### 3.1.2.2 Modify LDEwS Configuration

Get the MAC address of the new SC GEP blade.

The MAC address is used as input to the `cluster.conf` file used by LDEwS. The MAC address is fetched through the DMXC Management System CLI.

1. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

2. Enter password for user `advanced`
3. Enter the command to show the MAC addresses.





```
> ManagedElement=1,DmxcFunction=1,Eqm=1,VirtualEquipment=pg
```

```
> show-table -m Blade -p bladeId,firstMacAddr
```

- A printout shows all MAC addresses of all blades in the PG group. Figure 7 is just an example.

[How to check MAC address]

<Printout Result>

SUBRACK 0

SHELF

SLOT BLADE FIRST MAC

ID ID ADDRESS

-----

0- 1 1 c8:35:b8:26:ea:c5

0- 3 1 c8:35:b8:26:ea:15

0- 5 1 c8:35:b8:26:ea:55

0- 7 1 c8:35:b8:26:ea:19

0- 9 1 c8:35:b8:26:ea:9b

0-12 1 c8:35:b8:26:ea:37

:

Cal culation	Eth	Ans wer
<BASE MAC>+ 1	eth3	c8:35:b8:26:ea:c6
<BASE MAC>+ 2	eth4	c8:35:b8:26:ea:c7
<BASE MAC>+ 5	eth5	c8:35:b8:26:ea:ca
<BASE MAC>+ 6	eth6	c8:35:b8:26:ea:cb

Figure 7 Example of MAC Address Printout

- Log in to SC2 and edit the `cluster.conf` file. Replace all the MAC addresses from the faulty blade to the new blade:

```
# vi /cluster/etc/cluster.conf
```

- Validate and reload the cluster configuration:

```
# cluster config --validate
```

```
# cluster config --reload --all
```

### 3.1.2.3

#### LDEwS Installation from the Other SC Blade

Install LDEwS by booting from the other SC blade and prepare the disks.

- Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

- Enter password for user `advanced`

- Prepare for a serial connection towards the still powered off SC1 blade:

```
# telnet <Console Server IP-address> <port number connected to SC1 Blade>
```

- Turn on the power for the new GEP blade.

```
> configure
```



```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=UNLOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP blade slot position.

5. During the BIOS startup sequence, wait for the console printout `Press F3 for GEP PopUp` and then press:

**F3** to login to PBIST mode.

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the **F<x>** keys.

6. Choose the option `40 - UEFI Shell (PBIST)` by entering the value:

```
> 40
```

In the next screen shown, press any key within a few seconds to proceed to the UEFI shell.

7. Clear the present boot device order with command:

```
> ipmi bo erase
```

8. Check the result by command:

```
> ipmi bo display
```

The following printout should be displayed:

```
BootList is empty
```

9. Set boot device order to `Backplane left device` by command:

```
> ipmi bo insert 1 00
```

(1=priority, 00=Backplane left device).

10. Check the result by command:

```
> ipmi bo display
```

Should display the newly added boot device settings.

11. Reset the blade:

```
> pbist -r
```

**Note:** Wait until LDEwS has been installed.

Once LDEwS installation has finished, the GEP blade will automatically reboot.



12. During the BIOS startup sequence wait for the console printout `Press F3 for GEP PopUp` and then press:

**F3** to login to `PBIST` mode.

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the `F<x>` keys.

13. Choose the option `40 - UEFI Shell (PBIST)` by entering the value:

`> 40`

In the next screen shown, press any key within a few seconds to proceed to the `UEFI` shell.

14. Clear the present boot device order with command:

`> ipmi bo erase`

15. Check the result by command:

`> ipmi bo display`

The following printout should be displayed:

`BootList is empty`

16. Edit the boot device setting to boot from `Internal SAS Disk`:

`> ipmi bo insert 1 10`

(1=priority, 10=SAS Disk device).

17. Check the result by command:

`> ipmi bo display`

18. Reset the new SC blade:

`> pbist -r`

19. Run the following command to see the synchronization progress:

`# drbd-overview`

20. After the disk synchronization has finished, `LDEwS`, `eVIP` and the Application RPMs are loaded.

### 3.1.2.4

### Licenses

**Note:** Make sure that the new license has been ordered.




---

## Caution!

Do not reboot the other SC blade which is not replaced, before the new license is installed successfully.

---

To install the licenses for Dynamic Activation follow the instructions in section **License Administration** in *System Administrators Guide for Native Deployment*, Reference [3].

### 3.1.2.5 Dynamic Activation Software Status

1. Log in to the replaced node. Perform the following procedure to start data transfer from other Cassandra nodes.
  - a. In `cassandra.yaml` file, located in the `/cluster/home/cassandra/nodes/<nodeId>/cassandra/conf/` directory, remove the IP address of the replaced node from `seeds` parameter. For example:

```
#- seeds: "169.254.100.1,169.254.100.2"
- seeds: "169.254.100.2"
```

- b. Stop Cassandra.

```
# 3ppmon stopcassandra
```

- c. From other SC node, remove the replaced node from Cassandra ring.

Check the Cassandra nodes status.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
-- State=Normal/Leaving/Joining/Moving
-- Address      Load      Tokens   Owns    Host ID                               Rack
UN 169.254.100.4  74.44 GB   256     ?       5100b6ba-a90f-4ca2-ac40-eef26915a56b rack1
UN 169.254.100.2  74.90 GB   256     ?       de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN 169.254.100.3  72.34 GB   256     ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
DN 169.254.100.1  74.44 GB   256     ?       004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

Find the replaced Cassandra node and copy its `Host ID`.

Remove the replaced node from the Cassandra ring.

```
# nodetool removenode <Host ID>
```

In this example:



```
# nodetool removemode 004eb495-da8e-47eb-b6d0-07
50ed5f5a50
```

After prompt is returned, check whether the removal command is finished.

```
# nodetool removemode status
```

Expected result: RemovalStatus: No token removals in process.

Check whether the node has been removed.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load      Tokens  Owns  Host ID                               Ra
UN  169.254.100.4  74.44 GB   256    ?    5100b6ba-a90f-4ca2-ac40-eef26915a56b  ra
UN  169.254.100.3  72.34 GB   256    ?    f760ea56-71f5-4b55-8e79-9e7821a3e785  ra
UN  169.254.100.2  74.44 GB   256    ?    de177bc5-3142-436d-b1c2-0bbf13410267  ra
```

- d. On the replaced node, remove all data from commitlog and data directory.

```
# cd /var/cassandra/commitlog
# rm -rf *
```

```
# cd /var/cassandra/data
# rm -rf *
```

- e. Start Cassandra.

```
# 3ppmon startcassandra
```

When Cassandra is started, the replaced node is joining in to the ring.

2. Run the following command to make sure Cassandra has joined the ring:

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load      Tokens  Owns  Host ID                               Ra
UN  169.254.100.4  76.77 GB   256    ?    5100b6ba-a90f-4ca2-ac40-eef26915a56b  ra
UN  169.254.100.2  74.44 GB   256    ?    de177bc5-3142-436d-b1c2-0bbf13410267  ra
UN  169.254.100.3  72.34 GB   256    ?    f760ea56-71f5-4b55-8e79-9e7821a3e785  ra
UJ  169.254.100.1  254.9 MB   256    ?    7b71585e-778f-424b-9ed2-813ef5867b01  ra
```

The replaced SC node status is UJ.



3. Wait until the Cassandra status on the replaced node has changed to UN.
4. In `cassandra.yaml` file, located in the `/cluster/home/casadm/nodes/<nodeId>/cassandra/conf/` directory, write back the previously removed IP addresses of the replaced node in `seeds` parameter. For example:

```
- seeds: "169.254.100.1,169.254.100.2"
#-seeds: "169.254.100.2"
```

5. To check the deployment status of all 3PPs, in all nodes, run the following command:

```
# 3ppmon status --host all
```

6. Start the Dynamic Activation application on the new SC blade:

```
# bootloader.py node start --host <hostname of replaced blade>
```

7. Execute the following command to check the status of the Dynamic Activation application:

```
# bootloader.py node status --host all
```

8. On all nodes in the cluster, one by one, run the following command:

```
# nodetool cleanup
```

## 3.2 GEP3 Blade Replacement

This section contains information on how to replace SC and PL blades (GEP3).

### 3.2.1 PL Blade Replacement

This section contains information on how to replace a PL blade.

---

---

#### Attention!

All commands throughout these sections are run as user `root`.

---

---

#### 3.2.1.1 Blade Replacement

Perform a controlled shutdown on the faulty PL blade and manually replace it according to the instructions in the step-list below:

1. Log in to an SC node, and if possible, stop all applications, Cassandra and Zookeeper that are running on the faulty PL blade.



Stop all applications:

```
# bootloader.py node stop --host <hostname>
```

Stop Cassandra:

```
# 3ppmon stopcassandra --host <hostname>
```

Check and stop ZooKeeper if it is running:

```
# 3ppmon status --host <hostname>
```

```
# 3ppmon stopzookeeper --host <hostname>
```

**Note:** <hostname> is the host name of the PL node that is to be stopped.

## 2. Remove the faulty PL node from the Cassandra ring.

### a. Check the Cassandra nodes status.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address          Load        Tokens      Owns    Host ID                               Rack
DN  169.254.100.4    76.77 GB    256         ?       5100b6ba-a90f-4ca2-ac40-eef26915a56b rack1
UN  169.254.100.2    74.9 GB     256         ?       de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN  169.254.100.3    72.34 GB    256         ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
UN  169.254.100.1    74.44 GB    256         ?       004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

### b. Find the Cassandra node whose status is down (DN), and copy its Host ID.

This Cassandra node is running on the faulty blade.

### c. Remove the node from the Cassandra ring.

```
# nodetool removemode <Host ID>
```

In this example:

```
# nodetool removemode 5100b6ba-a90f-4ca2-ac40-ee
f26915a56b
```

### d. After prompt is returned, check whether the removal command is finished.

```
# nodetool removemode status
```

```
RemovalStatus: No token removals in process.
```

### e. Check whether the node has been removed.

```
# nodetool status
```



```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load      Tokens   Owns    Host ID                               Rack
UN  169.254.100.2  74.9 GB   256      ?       de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN  169.254.100.3  72.34 GB  256      ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
UN  169.254.100.1  74.44 GB  256      ?       004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

3. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

4. Enter password for user advanced

5. Turn off the power for the GEP blade to be replaced.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot
position>,Blade=1,administrativeState=LOCKED
```

```
> commit -s
```

The <slot position> variable corresponds to the GEP blade slot position. As an example, PL4 needs to be replaced which in this case corresponds to slot position 7, circle marked, see Figure 8.

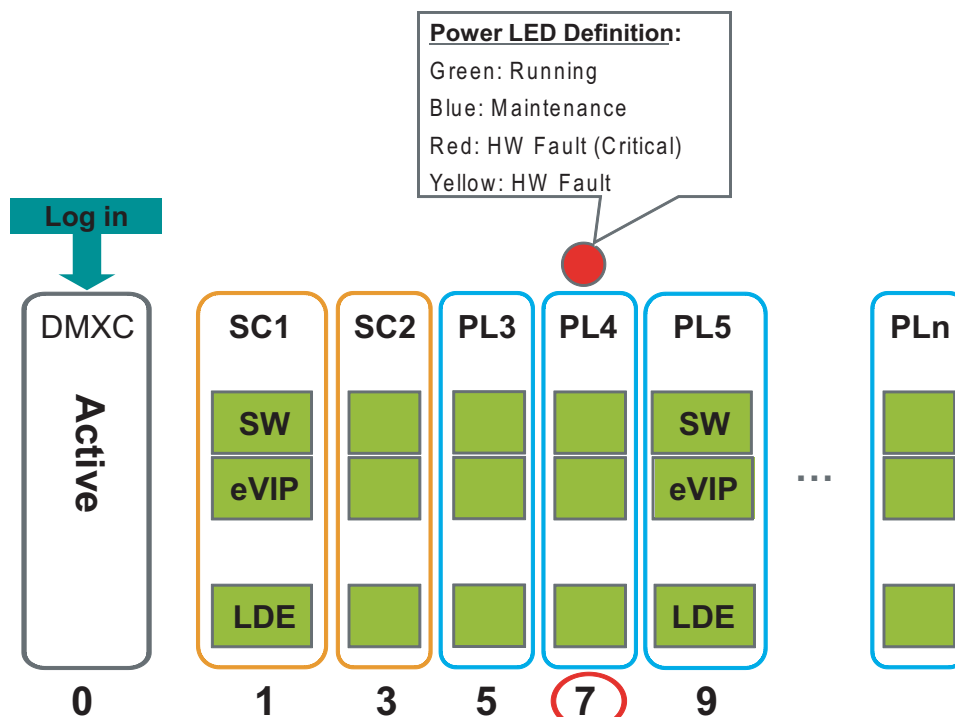


Figure 8 PL GEP Blade Replacement





6. Remove the faulty blade and remember the positions of the cables when replacing the blade.

---

### Caution!

Always wear an Electrostatic Discharge (ESD) strap when touching the hardware in the rack. Sensitive components, such as Integrated Circuits (ICs), can be damaged by discharges of static electricity.

---

**Note:** Use the screwdriver of type TORX T5, or torque screwdriver with TORX T5 bit for the cables.

Use the screwdriver of type TORX T8, or torque screwdriver with TORX T8 bit for the blade.

7. Insert the new blade and connect the cables in the same positions as before.
8. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

9. Enter password for user `advanced`

10. Prepare for a serial connection towards the new PL blade:

```
# telnet <Console Server IP-address> <port number connected to PL Blade>
```

11. Turn on the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=UNLOCKED
```

```
> commit -s
```

The `<slot position>` variable corresponds to the GEP blade slot position. As an example, PL4 has been replaced, which in this case corresponds to slot position 7, circle marked, see Figure 9.

**Note:** Do not boot up the blade without a Console Server connected. This in order to monitor the process, change BIOS settings and more.

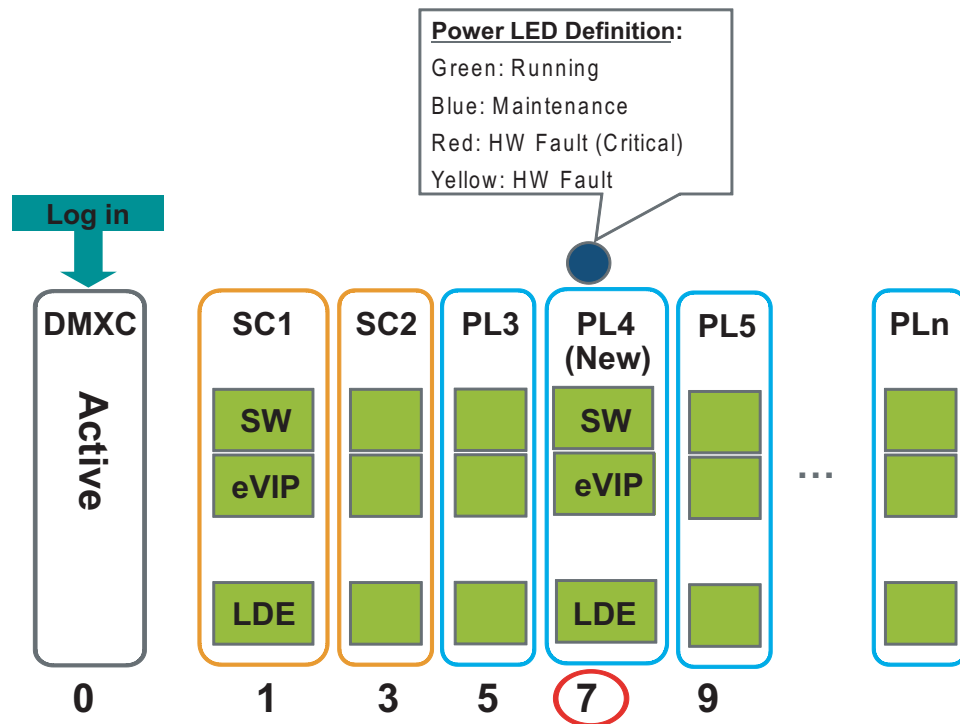


Figure 9 New PL GEP Blade

12. Disable the Power Technology in the GEP BIOS.

During the BIOS startup sequence, wait for the following console printout:

Press <DEL> or <F4> to enter set up.

Press **F4**

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the **F<x>** keys.

13. In the **Main** window, use the arrow keys to navigate to **Advanced**, > tab down to **CPU Power Management Configuration**, and > tab down to the **Power Technology** menu, press **Enter**, choose **Disable** and press **Enter** again.

14. To save and exit:

Press **F4**

Use the arrow keys to choose **Yes** and press:

**Enter**

15. Turn off the power for the new GEP blade.

> **configure**



```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=LOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP Blade slot position. As an example, PL4 has been replaced, which in this case corresponds to slot position 7, circle marked, see Figure 9.

### 3.2.1.2 Modify LDEwS Configuration

Get the MAC address of the new PL GEP blade.

The MAC address is used as input to the `cluster.conf` file used by LDEwS. The MAC address is fetched through the DMXC Management System CLI.

1. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

2. Enter password for user advanced

3. Enter the command to show the MAC addresses.

```
> ManagedElement=1,DmxcFunction=1,Eqm=1,VirtualEquipment=pg
```

```
> show-table -m Blade -p bladeId,firstMacAddr
```

4. The printout shows all MAC addresses of all blades in the PG group. Figure 10 presents the MAC addresses for each interface.

[How to check MAC address]

<Printout Result>

SUBRACK 0

SHELF

SLOT	BLADE	FIRST MAC
ID	ID	ADDRESS
0-1	1	c8:35:b8:26:e8:c5
0-3	1	c8:35:b8:26:e9:15
0-5	1	c8:35:b8:26:ea:55
0-7	1	c8:35:b8:26:ea:19
0-9	1	c8:35:b8:26:ea:9b
0-12	1	c8:35:b8:26:ea:37

⋮

Calculation	Eth	CMX/GEP3
<FIRST MAC> + 1	eth3	c8:35:b8:26:ea:1a
<FIRST MAC> + 2	eth4	c8:35:b8:26:ea:1b
<FIRST MAC> + 8	eth5	c8:35:b8:26:ea:21
<FIRST MAC> + 9	eth6	c8:35:b8:26:ea:22

Figure 10 Example of MAC Address Printout

5. Log in to SC1 and edit the `cluster.conf` file. Replace all the MAC addresses from the faulty blade to the new blade:

```
# vi /cluster/etc/cluster.conf
```

6. Validate and reload the cluster configuration:



```
# cluster config --validate

# cluster config --reload --all
```

### 3.2.1.3 BIOS Settings, eVIP and LDEwS Installation

Install LDEwS by booting from network according to instructions in this section.

1. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

2. Enter password for user `advanced`
3. Prepare for a serial connection towards the still powered off PL blade:

```
# telnet <Console Server IP-address> <port number connected
to PL Blade>
```

4. Turn on the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot
position>,Blade=1,administrativeState=UNLOCKED
```

```
> commit -s
```

The `<slot position>` variable corresponds to the GEP Blade slot position. As an example, PL4 has been replaced, which in this case corresponds to slot position 7, circle marked, see Figure 9.

5. During the BIOS startup sequence, wait for the console printout `Press F3 for GEP PopUp` and then press:

**F3** to login to PBIST mode.

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the **F<x>** keys.

6. Choose the option `40 - UEFI Shell (PBIST)` by entering the value:

```
> 40
```

In the next screen shown, press any key within a few seconds to proceed to the UEFI shell.

7. Clear the present boot device order with command:

```
> ipmi -o erase
```

8. Check the result by command:

```
> ipmi -o display
```



The following printout should be displayed:

```
BootList is empty
```

9. Set boot device order to Backplane left device by command:

```
> ipmi -o insert 1 00
```

(1=priority, 00=Backplane left device).

10. Set boot device order to Backplane right device by command:

```
> ipmi -o insert 2 01
```

(2=priority 2, 01=Backplane right device).

11. Check the result by command:

```
> ipmi -o display
```

Should display the newly added boot device settings.

12. Reset the blade:

```
> pbist -r
```

LDEwS is booted through the network automatically.

After LDEwS has been booted, eVIP will be installed but the Dynamic Activation application RPMs will fail to install due to lack of disk labels. This will be handled in the next coming steps.

Wait until the blade has booted. That is, when the prompt reappears in the Console Server.

**Note:** The time duration to complete the boot is approximately 10 minutes.

13. Partition the disks and label them according to instructions in section **Partitioning on PL Nodes** in *Hardware Installation and IP Infrastructure Setup for Native Deployment GEP3*, Reference [4].

**Note:** Depending on the revision of the new GEP3 blade, the 300 GB disk can be either on the `sda` or `sdb` device.

14. Perform a controlled reboot of the replaced blade:

```
# cluster reboot -n <nodeId of replaced blade>
```

15. Check the deployment status for all 3PPs in all nodes:

Execute the following command on any node, to check the deployment status for all 3PPs in all nodes:

```
# 3ppmon status --host all
```



16. Run the following command to make sure Cassandra has joined the ring:

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address            Load            Tokens          Owns          Host ID                               Rack
UJ  169.254.100.4      254.97 MB       256             ?             58ecf956-1196-4875-8f31-fcd51d4d61ff rack1
UN  169.254.100.2      74.9 GB         256             ?             de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN  169.254.100.3      72.34 GB        256             ?             f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
UN  169.254.100.1      74.44 GB        256             ?             004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

The replaced PL node status is UJ.

17. Wait until the Cassandra status on the replaced node has changed to UN.  
18. Check the deployment status of all 3PPs, in all nodes.

```
# 3ppmon status --host all
```

19. From an SC node, run the following command to start all modules on the replaced PL node:

```
# bootloader.py node start --host <hostname of replaced blade>
```

20. Check the status of the Dynamic Activation applications:

```
# bootloader.py node status --host all
```

21. On all nodes in the cluster, one by one, run the following command:

```
# nodetool cleanup
```

## 3.2.2 SC Blade Replacement

This section contains information on how to replace an SC blade.

### 3.2.2.1 Blade Replacement

Perform a controlled shutdown on the faulty SC blade and manually replace it according to the instructions in the step-list below:

1. Log on to a working SC node, and if possible, stop all applications, Cassandra and Zookeeper that are running on the faulty SC node.

Stop all applications:

```
# bootloader.py node stop --host <hostname>
```

Stop Cassandra:

```
# 3ppmon stopcassandra --host <hostname>
```



Check and stop ZooKeeper if it is running:

```
# 3ppmon status --host <hostname>
```

```
# 3ppmon stopzookeeper --host <hostname>
```

**Note:** <hostname> is the host name of the SC node that is to be stopped.

## 2. Remove the faulty SC node from the Cassandra ring.

- a. Check the Cassandra nodes status.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load       Tokens     Owns    Host ID                               Rack
UN 169.254.100.4  76.77 GB   256        ?       5100b6ba-a90f-4ca2-ac40-eef26915a56b rack1
UN 169.254.100.2  74.9 GB    256        ?       de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN 169.254.100.3  72.34 GB   256        ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
DN 169.254.100.1  74.44 GB   256        ?       004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

- b. Find the Cassandra node whose status is down (DN), and copy its Host ID.

This Cassandra node is running on the faulty blade.

- c. Remove the node from the Cassandra ring.

```
# nodetool removemode <Host ID>
```

In this example:

```
# nodetool removemode 004eb495-da8e-47eb-b6d0-0750ed5f5a50
```

- d. After prompt is returned, check whether the removal command is finished.

```
# nodetool removemode status
```

```
RemovalStatus: No token removals in process.
```

- e. Check whether the node has been removed.

```
# nodetool status
```

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load       Tokens     Owns    Host ID                               Rack
UN 169.254.100.4  76.77 GB   256        ?       5100b6ba-a90f-4ca2-ac40-eef26915a56b rack1
UN 169.254.100.3  72.34 GB   256        ?       f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
UN 169.254.100.2  74.44 GB   256        ?       de177bc5-3142-436d-b1c2-0bbf13410267 rack1
```

## 3. Log on to the CLI:



```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

4. Enter password for user advanced
5. Turn off the power for the GEP Blade to be replaced.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=LOCKED
```

```
> commit -s
```

The `<slot position>` variable corresponds to the GEP blade slot position. As an example, SC1 needs to be replaced which in this case corresponds to slot position 1, circle marked, see Figure 11.

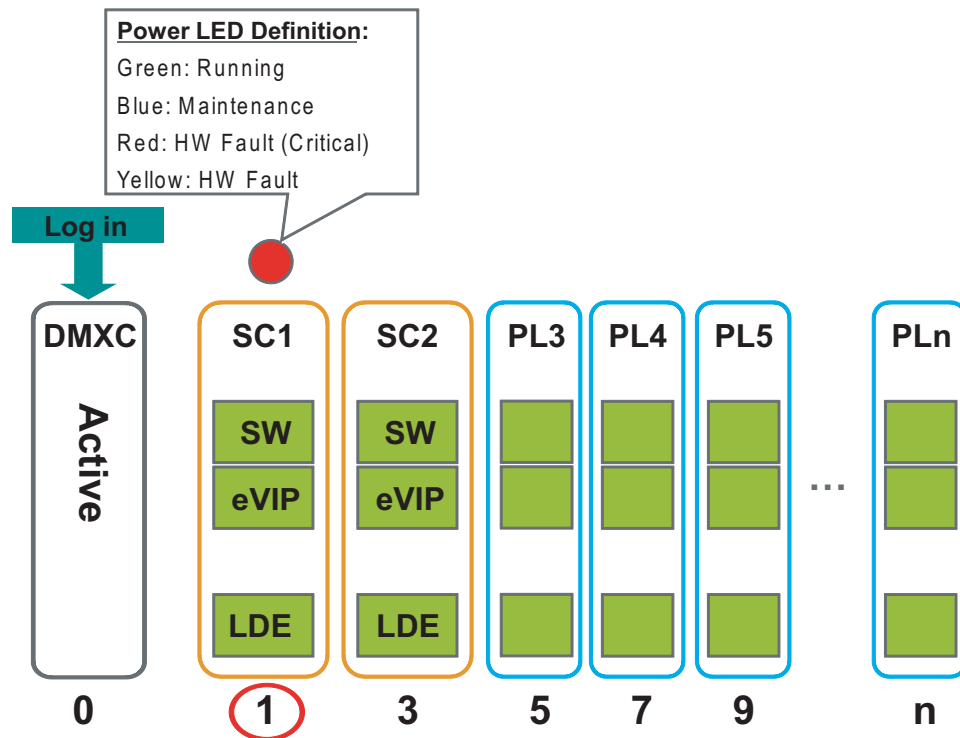


Figure 11 SC GEP Blade Replacement

6. Remove the faulty blade and remember the positions of the cables when replacing the blade.






---

## Caution!

Always wear an Electrostatic Discharge (ESD) strap when touching the hardware in the rack. Sensitive components, such as Integrated Circuits (ICs), can be damaged by discharges of static electricity.

---

**Note:** Use the screwdriver of type TORX T5, or torque screwdriver with TORX T5 bit for the cables.

Use the screwdriver of type TORX T8, or torque screwdriver with TORX T8 bit for the blade.

7. Insert the new blade and insert the cables in the same positions as in the faulty blade.

8. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

9. Enter password for user advanced

10. Check the `productRevisionState` of the replaced GEP3 blade:

```
> show ManagedElement=1,DmxcFunction=1,Eqm=1,VirtualEquipment=pg,Blade=0-<slot position for SC1 or SC2>
```

*<slot position for SC1 or SC2>* is the slot position for the SC blade that was exchanged.

### Example printout:

**Note:** Look for the `productRevisionState` revision, see emphasized text in the printout below.

```
.
.
.
  productName="GEP3-HD300"
  productNumber="ROJ 208 840/3"
  productRevisionState="R9A"
.
.
.
```

If the hardware revision of the new blade is R9A or higher, edit the `installation.conf` file with the following value option `bd-sdb path=/dev/sda` according to the sub-step below:

- a Log in to the working SC blade and edit the `installation.conf` file.



Change option `bd-sdb path=/dev/sdb` to option `bd-sdb path=/dev/sda`:

```
# vi /cluster/etc/installation.conf
```

11. Prepare for a serial connection towards the still powered off SC blade:

```
# telnet <Console Server IP-address> <port number connected to SC Blade>
```

12. Turn on the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=UNLOCKED
```

```
> commit -s
```

The `<slot position>` variable corresponds to the GEP blade slot position. As an example, SC1 has been replaced, which in this case corresponds to slot position `1`, circle marked, see Figure 12.

**Note:** Do not boot up the blade without a Console Server connected. This in order to monitor the process, change BIOS settings and more.

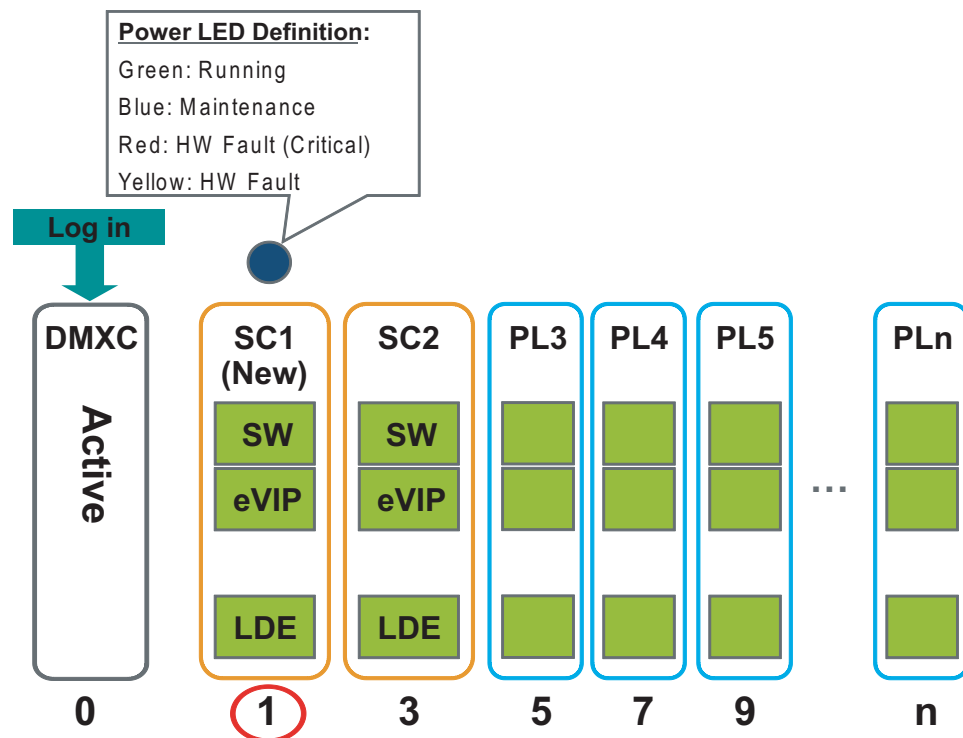


Figure 12 New SC GEP Blade

13. Disable the Power Technology in the GEP BIOS.

During the BIOS startup sequence, wait for the following console printout:

Press <DEL> or <F4> to enter set up.

Press **F4**

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the **F<x>** keys.

14. In the **Main** window, use the arrow keys to navigate to **Advanced**, > tab down to **CPU Power Management Configuration**, and > tab down to the **Power Technology** menu, press **Enter**, choose **Disable** and press **Enter** again.

15. To save and exit:

Press **F4**

Use the arrow keys to choose **Yes** and press:

**Enter**

16. Turn off the power for the new GEP blade.



```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot position>,Blade=1,administrativeState=LOCKED
```

```
> commit -s
```

The `<slot position>` variable corresponds to the GEP blade slot position. As an example, SC1 has been replaced, which in this case corresponds to slot position 1, circle marked, see Figure 12.

### 3.2.2.2 Modify LDEwS Configuration

Get the MAC address of the new SC GEP blade.

The MAC address is used as input to the `cluster.conf` file used by LDEwS. The MAC address is fetched through the DMXC Management System CLI.

1. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

2. Enter password for user `advanced`

3. Enter the command to show the MAC addresses.

```
> ManagedElement=1,DmxcFunction=1,Eqm=1,VirtualEquipment=pg
```

```
> show-table -m Blade -p bladeId,firstMacAddr
```

4. The printout shows all MAC addresses of all blades in the PG group. Figure 13 presents the MAC addresses for each interface.

[How to check MAC address]

<Printout Result>

SUBRACK 0

SHELF

SLOT	BLADE	FIRST MAC
ID	ID	ADDRESS
0-1	1	c8:35:b8:26:e8:c5
0-3	1	c8:35:b8:26:e9:15
0-5	1	c8:35:b8:26:ea:55
0-7	1	c8:35:b8:26:ea:19
0-9	1	c8:35:b8:26:ea:9b
0-12	1	c8:35:b8:26:ea:37

⋮

Calculation	Eth	CMX/GEP3
<FIRST MAC> + 1	eth3	c8:35:b8:26:e8:c6
<FIRST MAC> + 2	eth4	c8:35:b8:26:e8:c7
<FIRST MAC> + 8	eth5	c8:35:b8:26:e8:cd
<FIRST MAC> + 9	eth6	c8:35:b8:26:e8:ce

Figure 13 Example of MAC Address Printout

5. Log in to SC2 and edit the `cluster.conf` file. Replace all the MAC addresses from the faulty blade to the new blade:

```
# vi /cluster/etc/cluster.conf
```



6. Validate and reload the cluster configuration:

```
# cluster config --validate
# cluster config --reload --all
```

### 3.2.2.3 LDEwS Installation from the Other SC Blade

Install LDEwS by booting from the other SC blade and prepare the disks.

1. Log on to the CLI:

```
# ssh -p 2024 advanced@<BSP_NBI_IP>
```

2. Enter password for user advanced

3. Prepare for a serial connection towards the still powered off SC1 blade:

```
# telnet <Console Server IP-address> <port number connected
to SC1 Blade>
```

4. Turn on the power for the new GEP blade.

```
> configure
```

```
(config)> ManagedElement=1,Equipment=1,Shelf=0,Slot=<slot
position>,Blade=1,administrativeState=UNLOCKED
```

```
> commit -s
```

The *<slot position>* variable corresponds to the GEP blade slot position.

5. During the BIOS startup sequence, wait for the console printout Press F3 for GEP PopUp and then press:

**F3** to login to PBIST mode.

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the **F<x>** keys.

6. Choose the option 40 - UEFI Shell (PBIST) by entering the value:

```
> 40
```

In the next screen shown, press any key within a few seconds to proceed to the UEFI shell.

7. Clear the present boot device order with command:

```
> ipmi -o erase
```

8. Check the result by command:

```
> ipmi -o display
```



The following printout should be displayed:

```
BootList is empty
```

9. Set boot device order to Backplane left device by command:

```
> ipmi -o insert 1 00
```

(1=priority, 00=Backplane left device).

10. Check the result by command:

```
> ipmi -o display
```

Should display the newly added boot device settings.

11. Reset the blade:

```
> pbist -r
```

**Note:** This step will initiate a system reboot.

12. The software installation will now start and the following text is shown:

```
Installing, please wait...
```

The software installation is completed once the following text is shown:

```
Installation completed successfully
```

If anything went wrong during the installation, the following message is shown instead:

```
Installation failed (see /root/install.log)
```

13. During the BIOS startup sequence wait for the console printout `Press F3 for GEP PopUp` and then press:

**F3** to login to PBIST mode.

**Note:** If Putty is used as terminal, the keyboard should be set to Xterm R6 to enable the **F<x>** keys.

14. Choose the option `40 - UEFI Shell (PBIST)` by entering the value:

```
> 40
```

In the next screen shown, press any key within a few seconds to proceed to the UEFI shell.

15. Clear the present boot device order with command:

```
> ipmi -o erase
```



16. Check the result by command:

```
> ipmi -o display
```

The following printout should be displayed:

```
BootList is empty
```

17. Edit the boot device setting to boot from Internal SAS Disk:

```
> ipmi -o insert 1 10
```

(1=priority, 10=SAS Disk device).

18. Check the result by command:

```
> ipmi -o display
```

19. Reset the new SC blade:

```
> pbist -r
```

**Note:** This step will initiate a system reboot.

The boot sequence of the new SC blade will take a long time (usually somewhere between half an hour and several hours) due to the need for a full disk synchronization at first boot after installation. The actual time it takes to complete the disk synchronization depends on hardware properties (disk size, disk speed and network speed). Avoid rebooting either SC blade until the disk synchronization has completed, as that will only prolong the time it takes to complete the synchronization.

20. Run the following command to see the synchronization progress:

```
# drbd-overview
```

21. After the disk synchronization has finished, LDEwS, eVIP and the Application RPMs are loaded.

#### 3.2.2.4

#### Licenses

**Note:** Make sure that the new license has been ordered.

---

---

### Caution!

Do not reboot the other SC blade which is not replaced, before the new license is installed successfully.

---

---



To install the licenses for Dynamic Activation follow the instructions in section **License Administration** in *System Administrators Guide for Native Deployment*, Reference [3].

### 3.2.2.5 Dynamic Activation Software Setup

1. Log on to the replaced node. Perform the following procedure to start data transfer from other Cassandra nodes.

- a. In `cassandra.yaml` file, located in the `/cluster/home/cassandra/nodes/<nodeId>/cassandra/conf/` directory, remove the IP address of the replaced node from `seeds` parameter. For example:

```
#- seeds: "169.254.100.1,169.254.100.2"
- seeds: "169.254.100.2"
```

- b. Stop Cassandra.

```
# 3ppmon stopcassandra
```

- c. From other SC node, remove the replaced node from Cassandra ring.

Check the Cassandra nodes status.

```
# nodetool status
```

```
Datcenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address          Load        Tokens  Owns  Host ID                               Rack
UN  169.254.100.4     74.44 GB    256    ?    5100b6ba-a90f-4ca2-ac40-eef26915a56b rack1
UN  169.254.100.2     74.90 GB    256    ?    de177bc5-3142-436d-b1c2-0bbf13410267 rack1
UN  169.254.100.3     72.34 GB    256    ?    f760ea56-71f5-4b55-8e79-9e7821a3e785 rack1
DN  169.254.100.1     74.44 GB    256    ?    004eb495-da8e-47eb-b6d0-0750ed5f5a50 rack1
```

Find the replaced Cassandra node and copy its `Host ID`.

Remove the replaced node from the Cassandra ring.

```
# nodetool removemode <Host ID>
```

In this example:

```
# nodetool removemode 004eb495-da8e-47eb-b6d0-0750ed5f5a50
```

After prompt is returned, check whether the removal command is finished.

```
# nodetool removemode status
```





Expected result: RemovalStatus: No token removals in process.

Check whether the node has been removed.

**# nodetool status**

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load      Tokens  Owns  Host ID
UN  169.254.100.4  74.44 GB   256    ?    5100b6ba-a90f-4ca2-ac40-eef26915a56b
UN  169.254.100.3  72.34 GB   256    ?    f760ea56-71f5-4b55-8e79-9e7821a3e785
UN  169.254.100.2  74.44 GB   256    ?    de177bc5-3142-436d-b1c2-0bbf13410267
```

- d. On the replaced node, remove all data from commitlog and data directory.

```
# cd /var/cassandra/commitlog
# rm -rf *

# cd /var/cassandra/data
# rm -rf *
```

- e. Start Cassandra.

**# 3ppmon startcassandra**

When Cassandra is started, the replaced node is joining in to the ring.

2. Run the following command to make sure Cassandra has joined the ring:

**# nodetool status**

```
Datacenter: datacenter1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address      Load      Tokens  Owns  Host ID
UN  169.254.100.4  76.77 GB   256    ?    5100b6ba-a90f-4ca2-ac40-eef26915a56b
UN  169.254.100.2  74.44 GB   256    ?    de177bc5-3142-436d-b1c2-0bbf13410267
UN  169.254.100.3  72.34 GB   256    ?    f760ea56-71f5-4b55-8e79-9e7821a3e785
UJ  169.254.100.1  254.9 MB   256    ?    7b71585e-778f-424b-9ed2-813ef5867b01
```

The replaced SC node status is UJ.

3. Wait until the Cassandra status on the replaced node has changed to UN.
4. In `cassandra.yaml` file, write back the previously removed IP addresses of the replaced node in `seeds` parameter. For example:

```
-seeds: "169.254.100.1,169.254.100.2"
#-seeds: "169.254.100.2"
```



5. To check the deployment status of all 3PPs, in all nodes, run the following command:

```
# 3ppmon status --host all
```

6. Start the Dynamic Activation application on the new SC blade:

```
# bootloader.py node start --host <hostname of replaced blade>
```

7. Check the Dynamic Activation status:

On an SC node, execute the following command to check the status of the Dynamic Activation applications:

```
# bootloader.py node status --host all
```

8. On all nodes in the cluster, one by one, run the following command:

```
# nodetool cleanup
```



## Reference List

### Ericsson Documents

- [1] *Glossary of Terms and Acronyms*, 0033-CSH 109 628 Uen
- [2] *Library Overview*, 18/1553-CSH 109 628 Uen
- [3] *System Administrators Guide for Native Deployment*, 1/1543-CSH 109 628 Uen
- [4] *Hardware Installation and IP Infrastructure Setup for Native Deployment GEP3*, 2/1531-CSH 109 628 Uen
- [5] *Hardware Specification*, 1/2135-CSH 109 628 Uen

### Other Documents

- [6] *BSP Hardware Description*, 1/1551-APP 111 01 Uen