Huawei CloudEngine 6850
Switch Configuration Guide for Dell EMC SC Series SANs

Abstract
This document illustrates how to configure Huawei® CloudEngine 6850 series switches for use with Dell EMC™ SC Series storage using Dell EMC best practices.

February 2018
Revisions

<table>
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<tr>
<th>Date</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>February 2018</td>
<td>Initial release</td>
</tr>
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</table>

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1 Introduction

This document illustrates how to configure Huawei® CloudEngine 6850 (CE6850) series switches for use with Dell EMC™ SC Series storage using Dell EMC best practices.

1.1 Document conventions

Table 1 lists the formatting conventions used in this document.

<table>
<thead>
<tr>
<th>Item</th>
<th>Convention</th>
<th>Example</th>
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<tr>
<td>Code samples</td>
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<td>System configuration has been modified.</td>
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<td>Command-line user-supplied</td>
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1.2 Audience

This switch configuration guide describes a verified configuration following Dell EMC best practices for an SC Series iSCSI SAN and is intended for storage or network administrators and deployment personnel.

1.3 Switch details

Table 2 provides an overview of the switch configuration. This switch configuration guide covers setup instructions for all CE6850 switch models.

<table>
<thead>
<tr>
<th>Switch specifications</th>
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<tbody>
<tr>
<td><strong>Huawei CloudEngine 6850</strong></td>
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<tr>
<td><strong>Switch vendor</strong></td>
</tr>
<tr>
<td><strong>Switch model</strong></td>
</tr>
<tr>
<td><strong>Switch firmware</strong></td>
</tr>
</tbody>
</table>

*Note:* For proper functionality, the switch must be at the firmware version shown in Table 2 before proceeding with configuration. Using previous firmware versions may have unpredictable results.

*Note:* The latest firmware updates and documentation can be found at: [www.huawei.com](http://www.huawei.com). This site requires a login.
1.4 Cabling diagram

The cabling diagram shown in Figure 1 represents the Dell EMC recommend method for deploying servers and SC Series storage arrays.

![Cabling diagram](image)

Figure 1  Cabling diagram
2 Dell EMC recommended switch configuration

These steps show how to configure two Huawei CE6850 switches.

**Note:** The configuration steps in this section are only recommended when the switch is used as a dedicated SAN for iSCSI traffic.

2.1 Hardware configuration

1. Power on both switches.
2. Connect a serial cable to the management port.
3. Using any terminal utility, open a serial connection session to the switch.
4. Open your terminal emulator and configure it to use the serial port (usually COM1 but this may vary depending on your system). Configure serial communications for 9600,N,8,1 and no flow control.

2.2 Startup configuration file

**Note:** This example assumes a switch at its default configuration settings. Always back up configuration settings prior to performing any configuration changes.

```
<HUAWEI> reset saved-configuration
The action will delete the saved configuration on the device.
The configuration will be erased to reconfigure. Continue? [Y/N]: y
Warning: Now the configuration on the device is being deleted.
Info: Succeeded in clearing the configuration in the device.
<HUAWEI> reboot
Warning: The current configuration will be saved to the next startup saved-configuration file. Continue? [Y/N]: n
Warning: The system will reboot. Continue? [Y/N]: y
```

2.3 Basic system configuration

The following steps set up the initial configuration for the switch.

Press CTRL+C to abort Zero Touch Provisioning in 10 seconds...

```
[CTRL+C]
Please Press ENTER.
An initial password is required for the first login via the console.
Continue to set it? [Y/N]: y
Set a password and keep it safe! Otherwise you will not be able to login via the console.
```
2.4 Configure management network

Connect the management port on the switch to an appropriate network and perform the following steps to set up the management network for the switch.

```plaintext
< HUAWEI > system-view
Enter system view, return user view with return command.
[*HUAWEI] interface MEth 0/0/0
[*HUAWEI-MEth0/0/0] ip address <IP address> <Mask>
[*HUAWEI-MEth0/0/0] undo shutdown
[*HUAWEI-MEth0/0/0] quit
[*HUAWEI] undo telnet server disable
[*HUAWEI] user-interface vty 0 4
[*HUAWEI-ui-vty0-4] user privilege level 15
[*HUAWEI-ui-vty0-4] authentication-mode aaa
Warning: The level of the user-interface(s) will be the default level of AAA users, please check whether it is correct.
[*HUAWEI-ui-vty0-4] quit
[*HUAWEI] aaa
[*HUAWEI-aaa] local-user <username> password irreversible-cipher <password>
Info: A new user is added.
[*HUAWEI-aaa] local-user <username> level 15
[*HUAWEI-aaa] local-user <username> service-type telnet
Warning: The service type configured contains unsecured protocol(telnet). It is recommended to configure the secure service type only.
[*HUAWEI-aaa] quit
```

2.5 Configure LLDP and spanning tree

```plaintext
[*HUAWEI] stp enable
[*HUAWEI] stp mode rstp
[*HUAWEI] lldp enable
```

2.6 Configuring edge-ports

Perform this step for each individual port that is connected to a storage controller or a host interface port, or specify a range of ports to configure. This section enables link-level flow control (802.3x), STP edge-ports, and Jumbo frames.

```plaintext
[*HUAWEI] interface range 10GE 1/0/1 to 10GE 1/0/48
[*HUAWEI-port-group] undo shutdown
[*HUAWEI-port-group] flow-control
```

**Note:** The `flow-control` command enables RX and TX flow control.

```plaintext
[*HUAWEI-port-group] jumboframe enable 9216
[*HUAWEI-port-group] stp edged-port enable
[*HUAWEI-port-group] quit
```
2.7 Disable link flapping protection

The Huawei CE6850 switch has an inbuilt link flap protection, which by default turns off an interface if five link flapping events occur within an interval of ten seconds. The default values might cause interfaces on certain edge-devices to be turned off. To avoid this, change the settings for link flapping protection or disable it completely. Refer support.huawei.com for further information.

To disable link flapping protection, set the threshold value to 0.

[*HUAWEI] interface range 10GE 1/0/1 to 10GE 1/0/48
[*HUAWEI-port-group] port link-flap threshold 0
[*HUAWEI-port-group] quit

2.8 Save configuration

[*HUAWEI] commit
[~HUAWEI] quit
<HUAWEI> save
Warning: The current configuration will be written to the device. Continue? [Y/N]: y
Info: Please input the file name(*.cfg, *.zip, *.dat)[vrpcfg.zip]: <ENTER>
Now saving the current configuration to the slot 1 ..
Info: Save the configuration successfully.

2.9 Configure breakout ports

Perform this step if using the QSFP 40GbE ports as 4 x 10GbE breakout ports. The following command splits the 40GbE port 1/0/3. The same action can be performed for each of the 40GbE QSFP ports on the switch.

<HUAWEI> system-view
Enter system view, return user view with return command.
[~HUAWEI] port split dimension interface 40GE 1/0/3 split-type 4*10GE
Warning: This operation will delete current port(s) and create new port(s). New port(s) will be offline before the board of slot 1 is reset. Continue? [Y/N]: y
Info: Operating, please wait for a moment...done.
[*HUAWEI] commit
[~HUAWEI] quit
<HUAWEI> reboot
Warning: The current configuration will be saved to the next startup saved-configuration file. Continue? [Y/N]: Y
Warning: The system will reboot. Continue? [Y/N]: Y

Repeat the steps in section 2.9 to configure the breakout ports as needed. Reboot the switch to bring the breakout ports into effect. The breakout ports will be listed as 40GE 1/0/3:1 to 40GE 1/0/3:4. To configure these ports, repeat the steps in sections 2.6 to 2.8.

2.10 Configure additional switch

Repeat the commands from sections 2.1 through 2.9 to configure the second switch.
2.11 Calibrate link flapping protection setting (optional)

Huawei CE 6850 has an inbuilt link flap protection, which by default turns off an interface if five link flapping events occur within an interval of ten seconds. The default values might cause interfaces on certain edge-devices to be turned off. To avoid this, change the settings for link flapping protection or disable it completely.

Section 2.7 shows the commands to disable link flapping protection, or if choosing to keep the link flapping protection turned on, use the following steps to calibrate the link flapping protection setting. Refer to support.huawei.com for further information.

```
<HUAWEI> system-view
Enter system view, return user view with return command.
[-HUAWEI] interface range 10GE 1/0/1 to 10GE 1/0/48
[-HUAWEI-port-group] port link-flap interval <5 to 60 seconds>
[*HUAWEI-port-group] port link-flap threshold <5 to 10>
[*HUAWEI-port-group] quit
```

With port link flapping protection enabled, use the following command for auto recovery of an interface which was brought down due to link flap.

```
[*HUAWEI] error-down auto-recovery cause link-flap interval <30 to 86400 sec>
[*HUAWEI] commit
[-HUAWEI] quit
<HUAWEI> save
Warning: The current configuration will be written to the device. Continue? [Y/N]: y
```
A Technical support and resources

Dell.com/support is focused on meeting your needs with proven services and support.

Huawei.com for support and information regarding Huawei networking products.

Dell TechCenter is an online technical community where IT professionals have access to numerous resources for Dell EMC software, hardware, and services.

Storage Solutions Technical Documents on Dell TechCenter provide expertise that helps to ensure customer success on Dell EMC storage platforms.

Additional referenced or recommended Dell publications:

- Dell EMC Storage Compatibility Matrix
- SC Series Technical Documents