Dell Networking S3048-ON

Switch Configuration Guide for Dell SC Series iSCSI SANs

Dell Storage Engineering
July 2015

A Dell Deployment and Configuration Guide
## Revisions

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2015</td>
<td>Initial release</td>
</tr>
</tbody>
</table>

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1 Introduction
This document illustrates how to configure the Dell Networking S3048-ON switch as a dedicated iSCSI SAN with Dell™ SC Series storage while using Dell best practices.

1.1 Document conventions
Table 1 lists the formatting conventions used in this document.

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bold</td>
<td>User input</td>
<td>Dell&gt;enable</td>
</tr>
<tr>
<td>Italic</td>
<td>Placeholder or variable</td>
<td>your password</td>
</tr>
</tbody>
</table>

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

1.3 Switch details
The table below provides an overview of the switch configuration.

<table>
<thead>
<tr>
<th>Dell Networking S3048-ON</th>
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</thead>
<tbody>
<tr>
<td>Switch vendor: Dell</td>
</tr>
<tr>
<td>Switch model: S3048-ON</td>
</tr>
<tr>
<td>Switch firmware: 9.8.0.0 or later</td>
</tr>
</tbody>
</table>

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

The latest firmware updates and documentation can be found at: [www.force10networks.com](http://www.force10networks.com). This site requires a login.
1.4 Cabling diagram

The cabling diagram shown below represents the Dell recommended method for deploying your servers and SC Series arrays.

![Cabling diagram](image-url)

Figure 1 Cabling diagram
2 Dell recommended switch configuration
Follow the steps to configure two S3048-ON switches for use within an SC Series iSCSI SAN.

2.1 Hardware configuration
1. Power on the two switches.
2. Connect a serial cable to the serial port of the first switch.
3. Using PuTTY or another 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 115200,N,8,1 and no flow control.

2.2 Delete startup configuration

Note: This example assumes a switch is using the default configuration settings. Using the delete startup-config command will set the startup configuration file to its default settings. Always backup your configuration settings prior to performing any configuration changes.

Dell>enable
Dell#delete startup-config
Proceed to delete startup-config [confirm yes/no]yes
Dell#reload
System configuration has been modified. Save? [yes/no]no
Proceed with reload [confirm yes/no]yes

Note: The switch will reboot.

2.3 Configure out of band (OOB) management port

Dell>enable

After the startup configuration is deleted, the factory default Enable mode password is calvin.

Dell>config
Dell(conf)#interface ManagementEthernet 1/1
Dell(conf-if-ma-1/1)#no shutdown
Dell(conf-if-ma-1/1)#ip address ipaddress mask
Dell(conf-if-ma-1/1)#exit

2.4 Configure route for OOB management port (optional)

Dell(conf)#management route X.Y.Z.0 /24 A.B.C.1
2.5 Configure login credentials

Dell(conf)#username admin privilege 15 password 0 yourpassword
Dell(conf)#enable password level 15 0 yourpassword

2.6 Enable switch ports

Option 1: You can enable ports individually by entering the port number.

Dell(conf)#interface gigabitethernet 1/1
Dell(conf-if-gi-1/1)#switchport
Dell(conf-if-gi-1/1)#no shutdown
Dell(conf-if-gi-1/1)#no ip address
Dell(conf-if-gi-1/1)#exit
Dell(conf)#exit

Option 2: You can enable multiple ports at once using the ‘range’ parameter.

Dell(config)#configure
Dell(config)#interface range gigabitethernet 1/1-1/48
Dell(config-if-range-gi-1/1-1/48)#switchport
Dell(config-if-range-gi-1/1-1/48)#no shutdown
Dell(config-if-range-gi-1/1-1/48)#no ip address
Dell(config-if-range-gi-1/1-1/48)#exit
Dell(config)#exit

2.7 Configure LLDP

Dell(config)#configure
Dell(config)#protocol lldp
Dell(config-lldp)#no disable
Dell(config-lldp)#exit

2.8 Enable Jumbo Frames

Dell(config)#interface range gigabitethernet 1/1-1/48
Dell(config-if-range-gi-1/1-1/48)#mtu 12000
2.9 Configure flow control
Dell(conf-if-range-gi-1/1-1/48)#flowcontrol rx on tx off

2.10 Configure spanning tree on edge ports

**Note:** Make sure that the following command is used only on server- and storage-connected edge ports.

Dell(conf-if-range-gi-1/1-1/48)#spanning-tree rstp edge-port
Dell(conf-if-range-gi-1/1-1/48)#exit
Dell(conf)# protocol spanning-tree rstp
Dell(conf-rstp)#no disable
Dell(conf-rstp)#exit

2.11 Configure VLAN
Dell recommends assigning a unique *vlan_id* (between 2-4094) for each switch fabric. For example, assign VLAN 100 on the first switch and VLAN 200 on the second switch. The following example assigns all the ports to the VLAN, however, you may also assign individual ports to the VLAN after they are enabled (Section 2.6). If you prefer to use the default VLAN, then you may skip this section entirely.

In addition, edge devices (server NIC ports and the storage NIC ports) need to be configured with the corresponding VLAN tag.

Dell(config)#interface vlan vlan_id
Dell#(config-if-vl-###)#no shutdown
Dell#(config-if-vl-###)#tagged gigabitethernet 1/1-1/48
Dell#(config-if-vl-###)#exit

2.12 Save configuration
Dell#copy running-config startup-config

2.13 Configure additional switch
Repeat the commands from sections 2.2–2.12 to configure the second switch. Be sure to use a different VLAN number for the second switch.
Additional resources

Support.dell.com is focused on meeting your needs with proven services and support.

DellTechCenter.com is an IT Community where you can connect with Dell customers and Dell employees for the purpose of sharing knowledge, best practices, and information about Dell products and your installations.

Referenced or recommended Dell publications:

- Dell Storage Compatibility Matrix:
  http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/20438558/download.aspx
- For SC Series best practices white papers, reference architectures, and sizing guidelines for enterprise applications and SANs, refer to: