## Revisions

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 2014</td>
<td>Initial release</td>
</tr>
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</table>

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### Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revisions</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>1  Introduction</strong></td>
<td>4</td>
</tr>
<tr>
<td>1.1 Audience</td>
<td>4</td>
</tr>
<tr>
<td>1.2 Switch details</td>
<td>4</td>
</tr>
<tr>
<td><strong>2  Dell recommended switch configuration for 7048 and 7024</strong></td>
<td>5</td>
</tr>
<tr>
<td>2.1 Cabling diagram for 7048</td>
<td>6</td>
</tr>
<tr>
<td>2.2 Hardware configuration</td>
<td>7</td>
</tr>
<tr>
<td>2.3 Check firmware version</td>
<td>7</td>
</tr>
<tr>
<td>2.4 Delete startup configuration</td>
<td>7</td>
</tr>
<tr>
<td>2.5 Configure out of band (OOB) management port</td>
<td>7</td>
</tr>
<tr>
<td>2.6 Configure login credentials</td>
<td>8</td>
</tr>
<tr>
<td>2.7 Configure Jumbo Frames</td>
<td>8</td>
</tr>
<tr>
<td>2.8 Enable flow control</td>
<td>8</td>
</tr>
<tr>
<td>2.9 Configure spanning tree portfast on edge ports</td>
<td>8</td>
</tr>
<tr>
<td>2.10 Configure port channel for LAG</td>
<td>9</td>
</tr>
<tr>
<td>2.11 Configure SFP+ ports for LAG</td>
<td>9</td>
</tr>
<tr>
<td>2.12 Save configuration</td>
<td>9</td>
</tr>
<tr>
<td>2.13 Configure additional switch</td>
<td>9</td>
</tr>
<tr>
<td><strong>3  Optional stack configuration for 7048 and 7024</strong></td>
<td>10</td>
</tr>
<tr>
<td>3.1 Check firmware version</td>
<td>10</td>
</tr>
<tr>
<td>3.2 Delete startup configuration</td>
<td>10</td>
</tr>
<tr>
<td>3.3 Configure out of band (OOB) management port</td>
<td>11</td>
</tr>
<tr>
<td>3.4 Configure login credentials</td>
<td>11</td>
</tr>
<tr>
<td>3.5 Configure Jumbo Frames</td>
<td>11</td>
</tr>
<tr>
<td>3.6 Configure spanning tree portfast on edge ports</td>
<td>11</td>
</tr>
<tr>
<td>3.7 Enable flow control</td>
<td>11</td>
</tr>
<tr>
<td>3.8 Save configuration</td>
<td>12</td>
</tr>
<tr>
<td><strong>Additional resources</strong></td>
<td>13</td>
</tr>
</tbody>
</table>
1 Introduction

This document shows how to configure Dell™ PowerConnect™ 7048 and 7024 switches for use with EqualLogic™ PS Series storage using Dell best practices. The recommended configuration uses link aggregation groups (LAGs) for inter-switch connections. An optional configuration is provided for 7048 and 7024 switches using the stacking feature.

For more information on EqualLogic SAN design recommendations, see the EqualLogic Configuration Guide at: [http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19852516/download.aspx](http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19852516/download.aspx).

1.1 Audience

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

1.2 Switch details

The table below provides an overview of the switch configuration.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Switch specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dell PowerConnect 7048 and 7024</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Switch vendor</strong></td>
<td>Dell PowerConnect</td>
</tr>
<tr>
<td><strong>Switch models</strong></td>
<td>PowerConnect 7048, PowerConnect 7024</td>
</tr>
<tr>
<td><strong>Switch firmware</strong></td>
<td>5.1.2.3 and 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: [support.dell.com](http://support.dell.com).
2 Dell recommended switch configuration for 7048 and 7024

These steps show how to configure two PowerConnect 7048 or 7024 series switches with a LAG. The switches are interconnected using the optional 10 GbE Small Form-factor Pluggable (SFP+) ports modules, and the LAG is configured for Dynamic Link Aggregation Control Protocol (LACP).

For configuring PowerConnect 7048 or 7024 series switches in a stack configuration, skip to Section 3.
2.1 Cabling diagram for 7048

The cabling diagram shown below represents the Dell recommend method for deploying your servers and EqualLogic arrays.

PowerEdge R710 server shown as an example

A minimum of 2 iSCSI initiator ports required

PowerConnect 7048 (shown as an example)

EqualLogic PS4100

Connections for the management network.

Figure 1 Cabling diagram
2.2 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 9600,N,8,1 and no flow control.
5. Connect the LAG cables between the switches. See this configuration in Figure 1.

2.3 Check firmware version
console>enable
console#show version

Note: If the active version displayed here is not 5.1.2.3 or later, please visit support.dell.com and download the latest update for your switches.

2.4 Delete startup configuration

Note: All configuration settings will be deleted.

console#clear config
Are you sure you want to clear the running configuration? (y/n) y
console>enable
console#copy running-config startup-config
Are you sure you want to save? (y/n) y
console#reload
Are you sure you want to reload the stack? (y/n) y

Note: The switch will reboot.

2.5 Configure out of band (OOB) management port
console(config)#interface out-of-band
console(config-if)#ip address ipaddress mask gateway
console(config-if)#exit
2.6 Configure login credentials
console(config)#line telnet
console(config-telnet)#login authentication default
console(config-telnet)#exit
console(config)#ip http authentication local
console(config)#username admin password yourpassword privilege 15
console(config)#enable password yourpassword

2.7 Configure Jumbo Frames
console(config)#interface range gigabitethernet all
console(config-if)#mtu 9216
console(config-if)#exit

2.8 Enable flow control
console(config)#flowcontrol
This operation may take a few minutes.
Management interfaces will not be available during this time.
Are you sure you want to continue? (y/n)y

2.9 Configure spanning tree portfast on edge ports
console(config)#interface range gigabitethernet all
console(config-if)#spanning-tree portfast
console(config-if)#exit
2.10 Configure port channel for LAG
These commands configure the switch interconnect as a LAG.

console(config)#interface Port-channel 1
console(config-if-Pol)#mtu 9216
console(config-if-Pol)#exit

2.11 Configure SFP+ ports for LAG
These commands assign 10Gb SFP+ ports to the Port Channel.

console(config)#interface range Tengigabitethernet 1/2/1-2
console(config-if)#channel-group 1 mode active
console(config-if)#exit
console(config)#exit

2.12 Save configuration

console#copy running-config startup-config
This operation may take a few minutes.
Management interfaces will not be available during this time.

Are you sure you want to save? (y/n)y

2.13 Configure additional switch
Repeat the commands from Section 2 to configure the second switch.

Note: The preceding procedure places all switch ports in the default VLAN. If you prefer to place ports in a non-default VLAN, refer to the documentation for your switch.
Optional stack configuration for 7048 and 7024

Note: If you wish to use a stack configuration instead of LAG, follow the instruction below instead of Section 2.

These steps show how to configure two PowerConnect 7048 or 7024 series switches with a stack. The switches are interconnected using the optional Stacking/10GE modules.

One advantage of stacked switches is that they can be managed as a single switch; however firmware updates will update all members of the stack simultaneously and therefore should only be done during planned downtime.

Do not connect the cables between the stacked switches (this will be done in a later step).

On both switches, enter the following commands:

3.1 Check firmware version
console>enable
console#show version

Note: If the active version displayed is not 5.1.2.3 or later, please visit support.dell.com and download the latest update for your switches.

3.2 Delete startup configuration
Note: All configuration settings will be deleted
console#clear config
console>enable
console#copy running-config startup-config
console#reload
Are you sure you want to reload the stack? (y/n) y

Note: The switch will reboot.

Connect the two stacking cables between both switches Stacking/10GE module ports. The stack will be created automatically. One unit will take the Stack Master role. You can identify it by checking the LED marked with a M in the front of the switch. After this, you will be able to apply commands only to the Master unit.
3.3 Configure out of band (OOB) management port
console(config)#interface out-of-band
console(config-if)#ip address ipaddress mask gateway
console(config-if)#exit

3.4 Configure login credentials
console(config)#line telnet
console(config-telnet)#login authentication default
console(config-telnet)#exit
console(config)#ip http authentication local
console(config)#username admin password yourpassword privilege 15
console(config)#enable password yourpassword

3.5 Configure Jumbo Frames
console(config)#interface range gigabitethernet all
console(config-if)#mtu 9216

3.6 Configure spanning tree portfast on edge ports
console(config-if)#spanning-tree portfast
console(config-if)#exit

3.7 Enable flow control
console(config)#flowcontrol
This operation may take a few minutes. Management interfaces will not be available during this time.
Are you sure you want to continue? (y/n)y
console(config)#exit
3.8 Save configuration

```console
console(config) copy running-config startup-config
```

This operation may take a few minutes.

Management interfaces will not be available during this time.

**Note**: The preceding procedure places all switch ports in the default VLAN. If you prefer to place ports in a non-default VLAN, refer to the documentation for your 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 EqualLogic Configuration Guide:
  [http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19852516/download.aspx](http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19852516/download.aspx)
- Dell EqualLogic Compatibility Matrix:
  [http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19856862/download.aspx](http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19856862/download.aspx)

For EqualLogic best practices white papers, reference architectures, and sizing guidelines for enterprise applications and SANs, refer to Storage Infrastructure and Solutions Team Publications at:

- [http://dell.to/sM4hJT](http://dell.to/sM4hJT)