



Juniper EX4200-48T Series

Switch Configuration Guide for EqualLogic SANs

Dell Storage Engineering
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Revisions

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1 Introduction

This document illustrates how to configure Juniper™ EX4200 Series switches for use with EqualLogic™ PS Series storage using Dell best practices. The recommended configuration uses link aggregation groups (LAGs) for inter-switch connections.

If you are following the **Rapid EqualLogic Configuration** steps at <http://en.community.dell.com/techcenter/storage/w/wiki/3615.rapid-equallogic-configuration-portal-by-sjs.aspx>, use Sections 1 and 2 in this Switch Configuration Guide.

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>.

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 1 Switch specifications

Juniper EX4200-48T Series	
Switch vendor	Juniper
Switch model	Juniper EX4200-48T series
Switch firmware	13.2X50-D15.3 and later

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: <https://www.juniper.net/customers/support/>. This site requires a login.



1.3 Cabling diagram

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

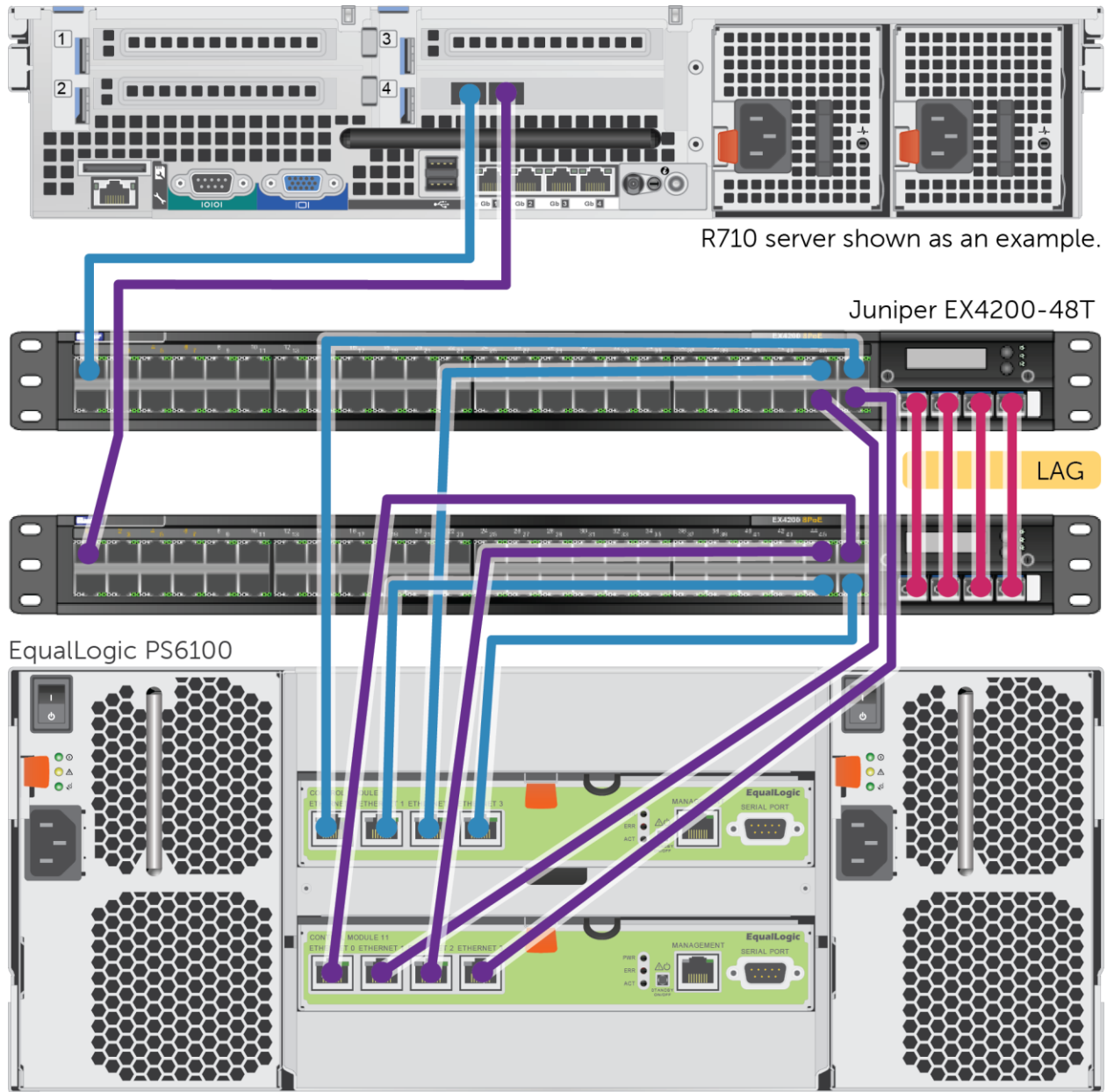


Figure 1 Cabling diagram

2 Dell recommended switch configuration

These steps show you how to configure two Juniper EX4200-48T series switches with a Link Aggregation Group (LAG). The switches are interconnected using the fixed 10 GbE SFP+ module on the front and the LAG is configured for Dynamic Link Aggregation Control Protocol (LACP).

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 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.
5. Connect the optical cables between the fixed 10GbE modules on the front of the EX4200-48T series switches. See this configuration in Figure 1.

2.2 Delete startup configuration

Note: This example assumes a switch at its default configuration settings. Using the commands below sets the startup configuration file to its default settings. You should always backup your configuration settings prior to performing any configuration changes

```
root@:RE:0% cd /config

root@:RE:0% rm *

rm: db: is a directory
rm: rc.d: is a directory

override rw-r--r-- root/wheel sunlnk for usage.db? yes
```

Note: On the switch LCD, enter to the maintenance menu and reload the switch to the 'factory defaults'. Upon completion start the ezsetup from the CLI.

```
root@:RE:0% ezsetup

EZSetup Initializing..done.

Initial Setup Configuration
-----

Enter System hostname [Optional]: EX4200

Enter new root password: your_password
```



```

Re-enter the new password: your_password

Enable Telnet service? [yes|no]. Default [no]:yes

Enable SSH service? [yes|no]. Default [yes]:[ENTER]

Switch Management

1: Configure in-band Management [interface vlan.XX]

2: Configure out-of-band management [vme.0]

Choose Option [1 or 2], default [1]:2

Configuring vme.0

Enter Management IP address [192.168.1.1]:your_ipaddress

Enter Subnetmask [255.255.255.0]:your_subnetmask

Enter Gateway IP address:your_gateway

Configure SNMP [yes|no], default [yes]:no

Enter System Time and Date YYYY:MM:DD:hh:mm:ss [Optional]: [ENTER]

Time Zone [Optional], Enter "yes" to choose Timezone from list: [ENTER]

Commit the new configuration?
Choosing option "yes" will add new configuration to existing configuration.
Option "No" will allow user to come out of EZSetup wizard.

Choose option [yes|no], default [yes]:[ENTER]

```

2.3 Entering configuration mode

In order to perform switch configuration, you need to enter configuration mode on the switch. From the prompt type the following:

```

root@:RE:0% cli

root@:RE:0> configure

```

2.4 Initial configuration preparation steps

By default, Juniper includes xe ports in Ethernet family-switching.

Perform the following steps for each **xe port** that will be added to the LAG configuration:

```

root@MTRX1# edit interfaces xe-0/1/0

```



```
root@MTRX1# delete unit 0
```

```
root@MTRX1# exit
```

```
root@MTRX1# commit
```

2.5 Prepare switch for Layer2 switching

```
root@MTRX1# set interfaces interface-range ge0range member-range ge-0/0/0 to ge-0/0/47
```

```
root@MTRX1# set interfaces interface-range ge0range unit 0 family ethernet-switching
```

```
root@MTRX1# commit
```

2.6 Enable flow control

```
root@MTRX1# set interfaces interface-range ge0range ether-options flow-control
```

```
root@MTRX1# commit
```

2.7 Configure Jumbo MTU for all ports

```
root@MTRX1# set interfaces interface-range ge0range mtu 9216
```

```
root@MTRX1# commit
```

2.8 Configure spanning tree portfast on edge ports

```
root@MTRX1# set protocols rstp interface all edge
```

```
root@MTRX1# commit
```

2.9 Configure 10GbE ports for LAG

To configure aggregated Ethernet high-speed uplinks perform the following:

```
root@MTRX1# set chassis aggregated-devices ethernet device-count 1
```

```
root@MTRX1# set interfaces ae0 aggregated-ether-options minimum-links 1
```

```
root@MTRX1# set interfaces ae0 aggregated-ether-options link-speed 10g
```

```
root@MTRX1# set interfaces xe-0/1/0 ether-options 802.3ad ae0
```

```
root@MTRX1# set interfaces xe-0/1/2 ether-options 802.3ad ae0
```

```
root@MTRX1# set interfaces ae0 mtu 9216
```




```
root@MTRX1# set interfaces ae0 aggregated-ether-options lacp active periodic fast  
root@MTRX1# commit
```

2.10 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.



Additional resources

[Support.dell.com](http://support.dell.com) is focused on meeting your needs with proven services and support.

[DellTechCenter.com](http://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>
- Dell EqualLogic Compatibility Matrix:
<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>

