Planning and Preparation Guide

Rapid EqualLogic Configuration Series
Switch: Dell Networking N4000 Series or PowerConnect 8100 Series
Array: PS4110, 6110, or 6510
Host: VMware ESXi, Windows, FS7610 NAS, or Red Hat Enterprise Linux

February 2016

Revisions

Date	Status
Nov. 2012	Initial release
April 2013	Combined all PowerConnect 8132 and 8132F Introductions into one document
December 2013	Added FS7610 NAS and PS6210
February 2014	Added N4000
May 2014	Added RHEL configuration information
February 2016	Table corrections

1   Introduction

This document is one part of a complete installation guide series from the Rapid EqualLogic Configuration Portal. Please make sure that you have the complete set for your configuration before proceeding.
Full link to document site:
http://en.community.dell.com/techcenter/storage/w/wiki/3615.rapid-equallogic-configuration-portal-by-sis.aspx

1.1   Document use

Keyboard keys are shown in brackets with the actual key bolded.
Example: [**Enter**]

Commands that are to be typed are bolded and shown after the appropriate prompt.
Example:

```
console>enable
```

1.2   Intended audience

This implementation guide for new systems is intended for System or Storage Administrators with experience deploying Windows®, VMware® vSphere® ESXi™, or Red Hat Enterprise Linux® servers, storage systems, and Ethernet networking. If you are unsure about completing the installation, Dell support is available and ready to assist you.

1.3   List of references

- TR1050 – Monitoring Your PS Series SAN with SAN HeadQuarters
  https://support.equallogic.com/WorkArea/DownloadAsset.aspx?id=8749

Note: A login is required to access the EqualLogic support site. If you do not have a login, go to https://eqlsupport.dell.com/ and register.

- *SAN HQ User Guide,* available for download at: https://eqlsupport.dell.com/

- *Dell EqualLogic Compatibility Matrix*, available for download at:
  http://en.community.dell.com/techcenter/storage/w/wiki/2661.equallogic-compatibility-matrix-07262013.aspx

- *Dell EqualLogic Configuration Guide*, available for download at:
  http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19852516/download.aspx

2 Prerequisites

2.1 Serial cable

- A null-modem DB9 serial cable (included with the array)
- A switch serial console management cable (included with the switch)

2.2 Software

> **Note**: A login is required to access the EqualLogic support site. If you do not have a login, go to https://eqlsupport.dell.com/ and register.

2.2.1 VMware host operating system

- Latest EqualLogic Multipathing Extension Module for VMware® vSphere installation package (https://eqlsupport.dell.com/).
- Latest SAN HeadQuarters installation package (https://eqlsupport.dell.com/).
- The VMware vSphere® Command-Line Interface (vCLI) environment must be installed on the management server (vmware.com/downloads).
- Latest network device driver update (vmware.com/downloads).

> Before proceeding, you may need to download a driver update package for your network adapter. Refer to the readme.txt contained in the update file for instructions on updating from the ESXi command line or using VMware Update Manager (VUM).

2.2.2 Windows host operating system

- Latest network adapter device driver update (support.dell.com)
- Latest Host Integration Tools (HIT) kit installation package (https://eqlsupport.dell.com/)
- Latest SAN HeadQuarters installation package (https://eqlsupport.dell.com/)

2.2.3 Red Hat Enterprise Linux operating system

- Latest network adapter device driver update (support.dell.com)
- Latest Host Integration Tools (HIT) kit installation package (https://eqlsupport.dell.com/)

2.2.4 FS7610 – Fluid File System

- Fluid File System (or FluidFS) version 3, or later (https://eqlsupport.dell.com/)
- Refer to the *Dell EqualLogic FS7610 Installation and Setup Guide* (on https://eqlsupport.dell.com/) for information on installing and configuring the FS7610 NAS appliance.

2.3   Configuration settings

2.3.1   VMware host operating system

This document assumes that you have already installed VMware ESXi and have applied the latest critical patches available through VMware Update Manager.

To properly configure your vSphere ESXi system, you must also have a management system available. This system must be running Windows (2008, Windows 7, etc.)

2.3.2   Windows host operating system

This document assumes that you have already installed Windows 2008 R2 with Service Pack 1 or later and have applied the latest critical security updates available through Windows Update.

2.3.3   Red Hat Enterprise Linux operating system

This document assumes that you have already installed RHEL 6.5 or later and have applied the latest critical security updates available through Linux.

2.3.4   FS7610 NAS with Fluid File System

If you have a FS7610 appliance, you must be running FluidFS version 3 or later. This document assumes that all BIOS and firmware are up to data as required and that the FS7610 appliance is not configured (or has been re-initialized if previously configured).

Refer to Chapter 7 of the *Dell EqualLogic Group Manager Administrator's Manual* for complete details on configuring the FS7610 NAS appliance. It can be downloaded from https://eqlsupport.dell.com/

2.3.5   Switch

Reference the *EqualLogic Compatibility Matrix* at http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19856862/download.aspx to determine the recommended switch firmware version. To get the latest update, visit http://support.dell.com. Installation instructions are provided as part of the download. The switch user manual can also be downloaded for reference.

2.3.6   Array

Reference the *EqualLogic Compatibility Matrix* at http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/19856862/download.aspx to determine the recommended array firmware version. To get the latest update, visit https://eqlsupport.dell.com/. Update instructions and release notes are available with the latest downloads.

2.4   Configuration information

Your iSCSI SAN configuration requires several static IP addresses. Complete this form and have it available for reference during the configuration.

Table 1   IP addresses needed for SAN configuration

Host iSCSI Initiator	Host #1 or FS7610 NAS controller #1	Additional host or FS7610 NAS controller	…
Port 1			
Port 2			
Array Target	Array #1	Additional array	…
Port 1 (eth0)			
Port 2 (eth1) (PS6510/PS6210 only)			
Management (Out-of-Band/eth1 or eth2)			
Array Group Management IP (Out-of-Band)			
Array Group Management IP (In-Band)			
Out-of-Band Switch Management Port			
FS7610 NAS Cluster IP		**Hint:** use "Autofill" to complete the IP addresses for the NAS controllers.	
FS7610 NAS Cluster Management IP		**Hint:** use "Autofill" to complete the IP addresses for the NAS controllers.	
Internal Network initial IP address		**Hint:** A private subnet such as 172.16.1.0 can be used	

Switch admin password: _____

Array Group admin password: _____*

Array Group membership password: _____*

*These may be the same password – see the Dell EqualLogic Group Manager online help for more information.

3 Connectivity Diagrams

Use the appropriate diagram and following point-to-point table when cabling the SAN.

Note: Add servers and arrays to the configurations as needed using the same connection patterns.

Figure 1   Dell NetworkingN4000 or PowerConnect 8100 series and EqualLogic PS4110 or PS6110 (tables on page 13)

R710 server shown as an example
A minimum of 2 iSCSI initiator ports required

PowerConnect 8132F
(shown as an example)

QSFP+
cables

Connections for the
management network.

EqualLogic PS4110 or PS6110

Figure 2   Dell Networking N4000 or PowerConnect 8100 series with EqualLogic PS7610 and PS4110 or PS6110 (tables on page 13)

Dell Networking N4000 Series and PowerConnect 8100 Series | Planning and Preparation Guide | Rapid EqualLogic Configuration Series

Figure 3   Dell Networking N4000 series or 8100 series and EqualLogic PS6210 (tables on page 14)

R710 server shown as an example
A minimum of 2 iSCSI initiator ports required

PowerConnect 8132F
(shown as an example)

QSFP+
cables

Connections for the
management network.

EqualLogic PS6210
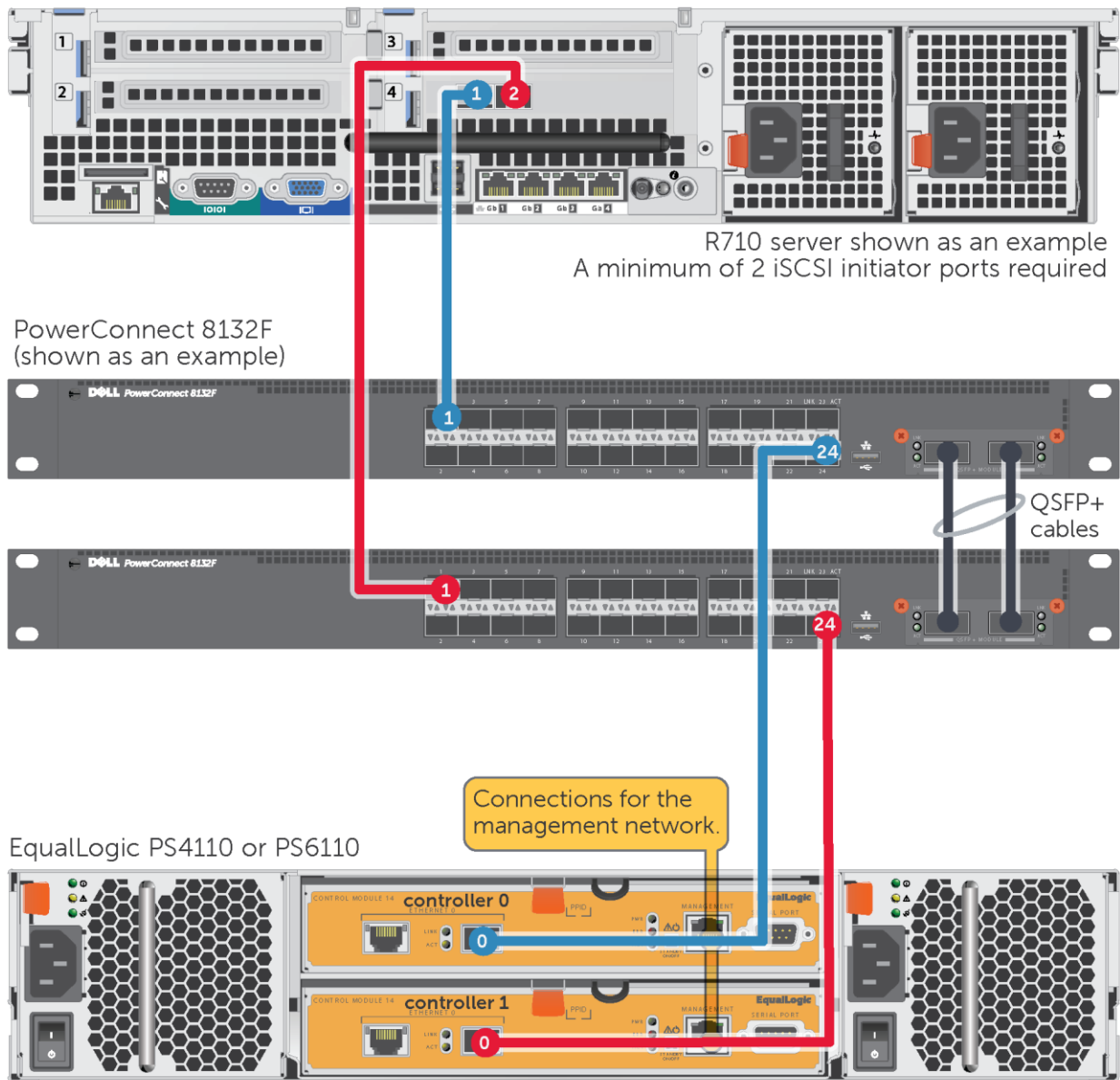
Figure 4   Dell Networking N4000 or PowerConnect 8100 series with EqualLogic PS7610 and PS6210
            (tables on page 15)

Figure 5   Dell NetworkingN4000 or PowerConnect 8100 series and EqualLogic PS6510 (tables on page 15)

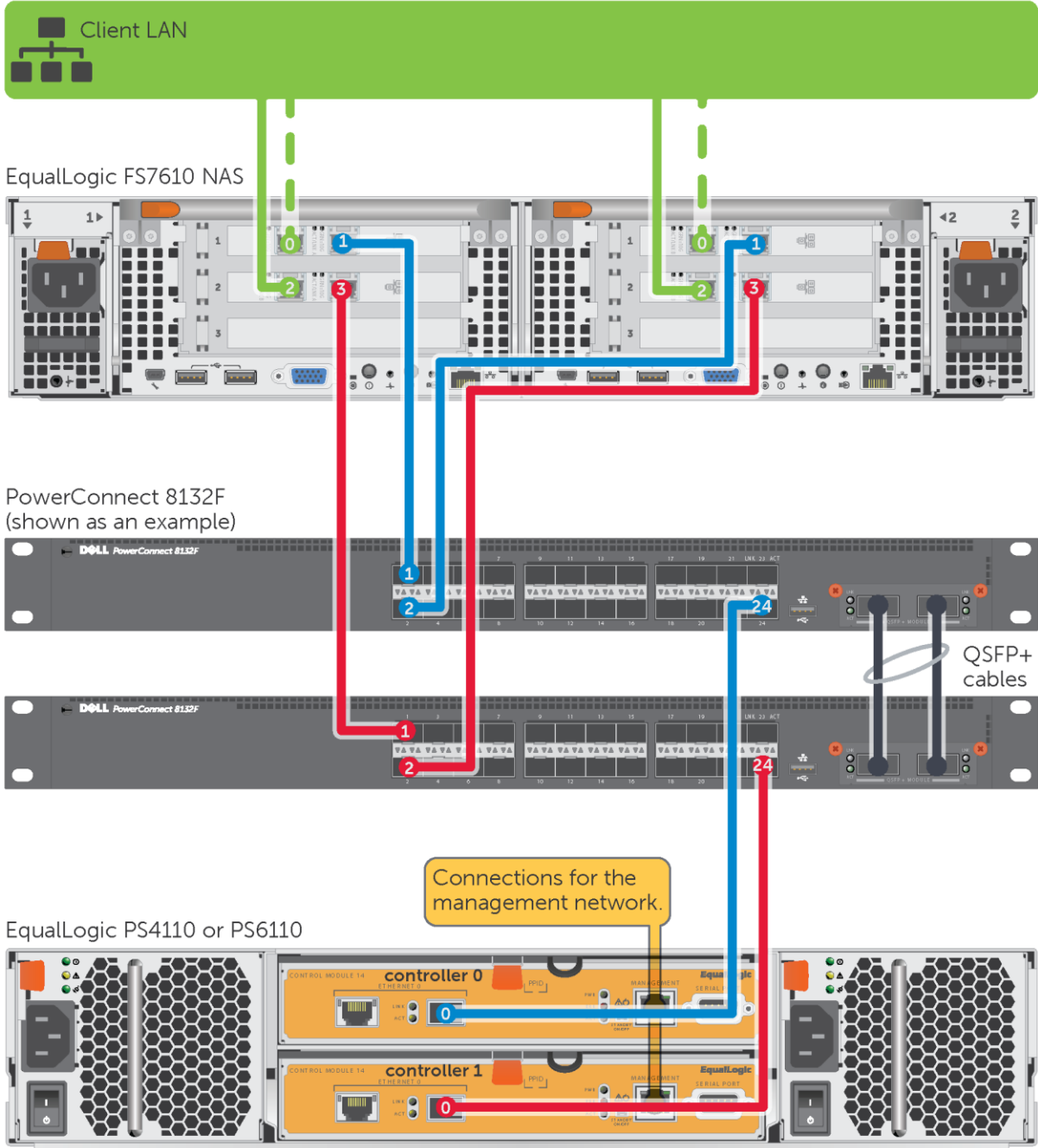PowerEdge R710 server shown as an example
A minimum of 2 iSCSI initiator ports required

PowerConnect 8132F
(shown as an example)

QSFP+ cables

EqualLogic PS6510

Connections for the management network

controller 0   controller 1

Note: The PowerConnect 8132 and 8164 switches only provide 10GBASE-T ports and are not compatible with this configuration. The above configuration(s) require 10Gb SFP+ ports, only available with the PowerConnect 8132F and 8164F switches.
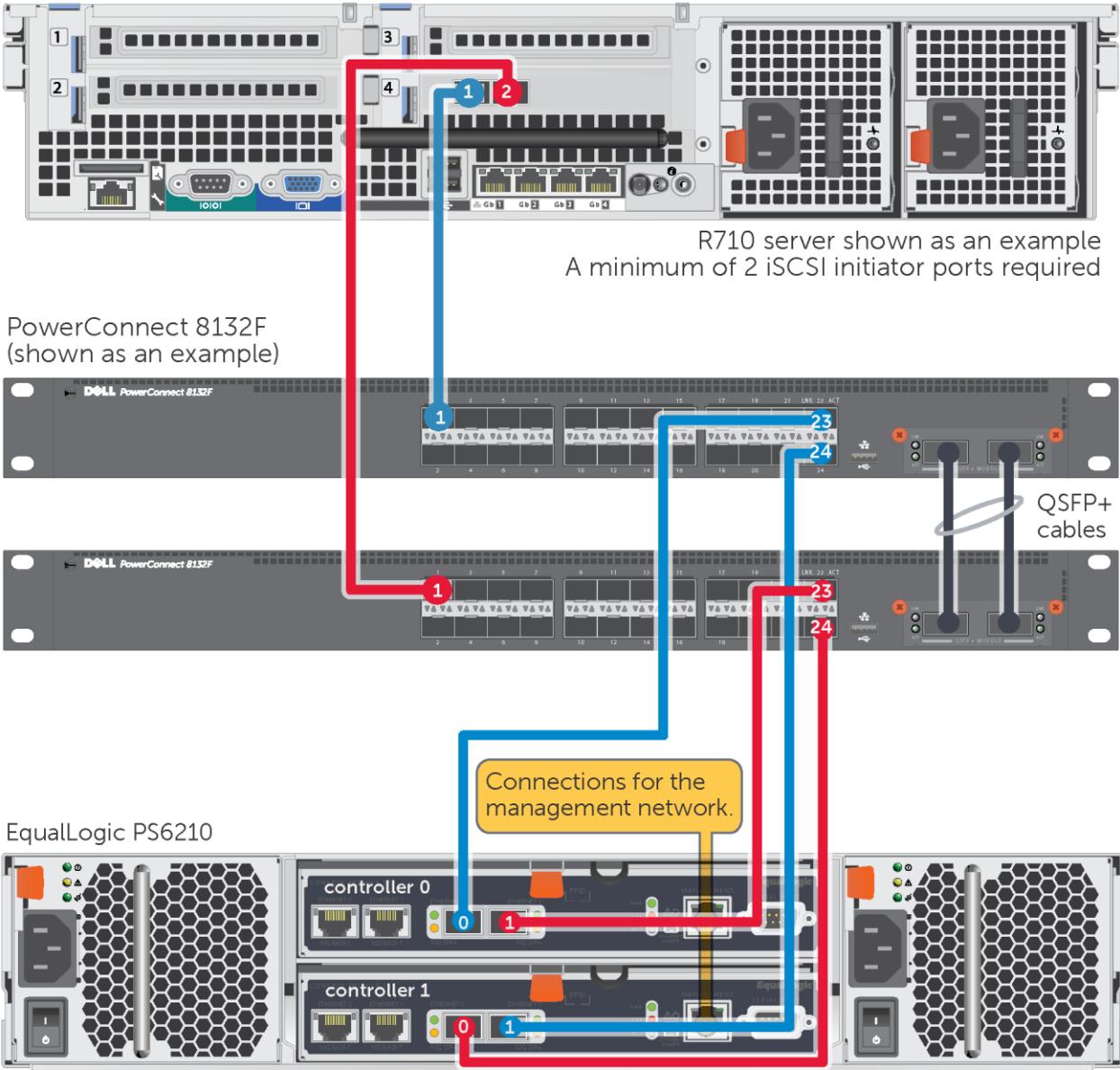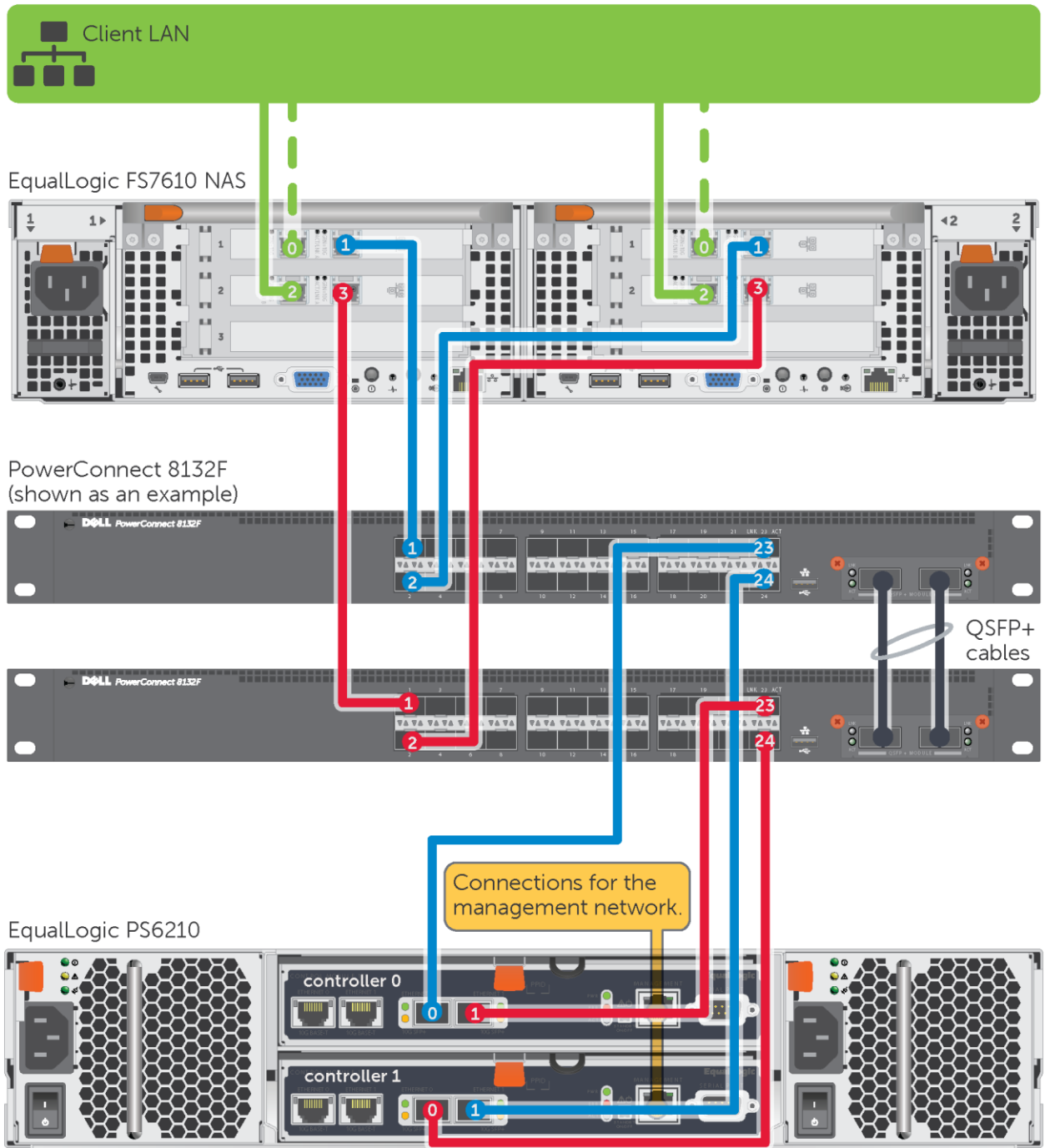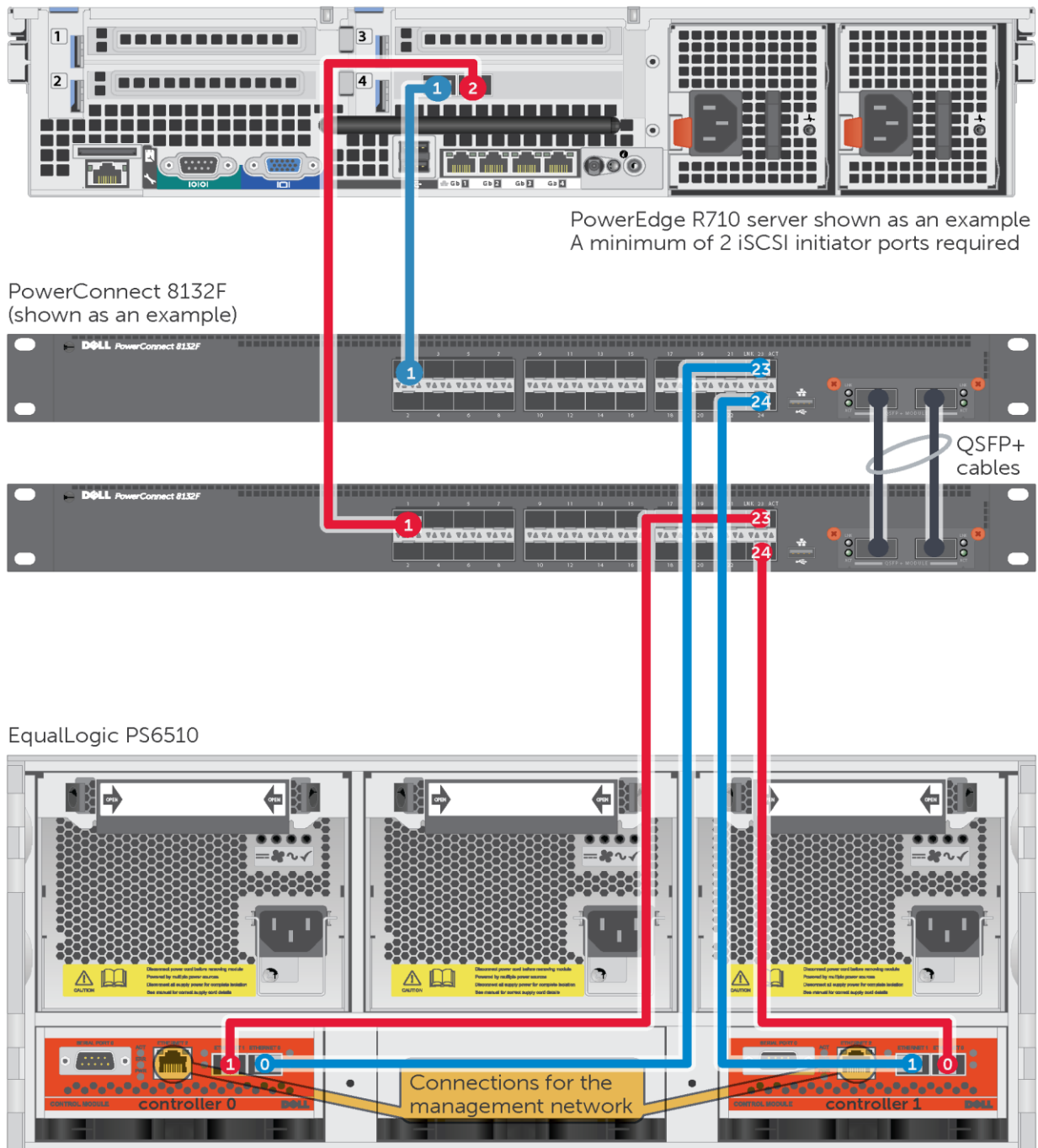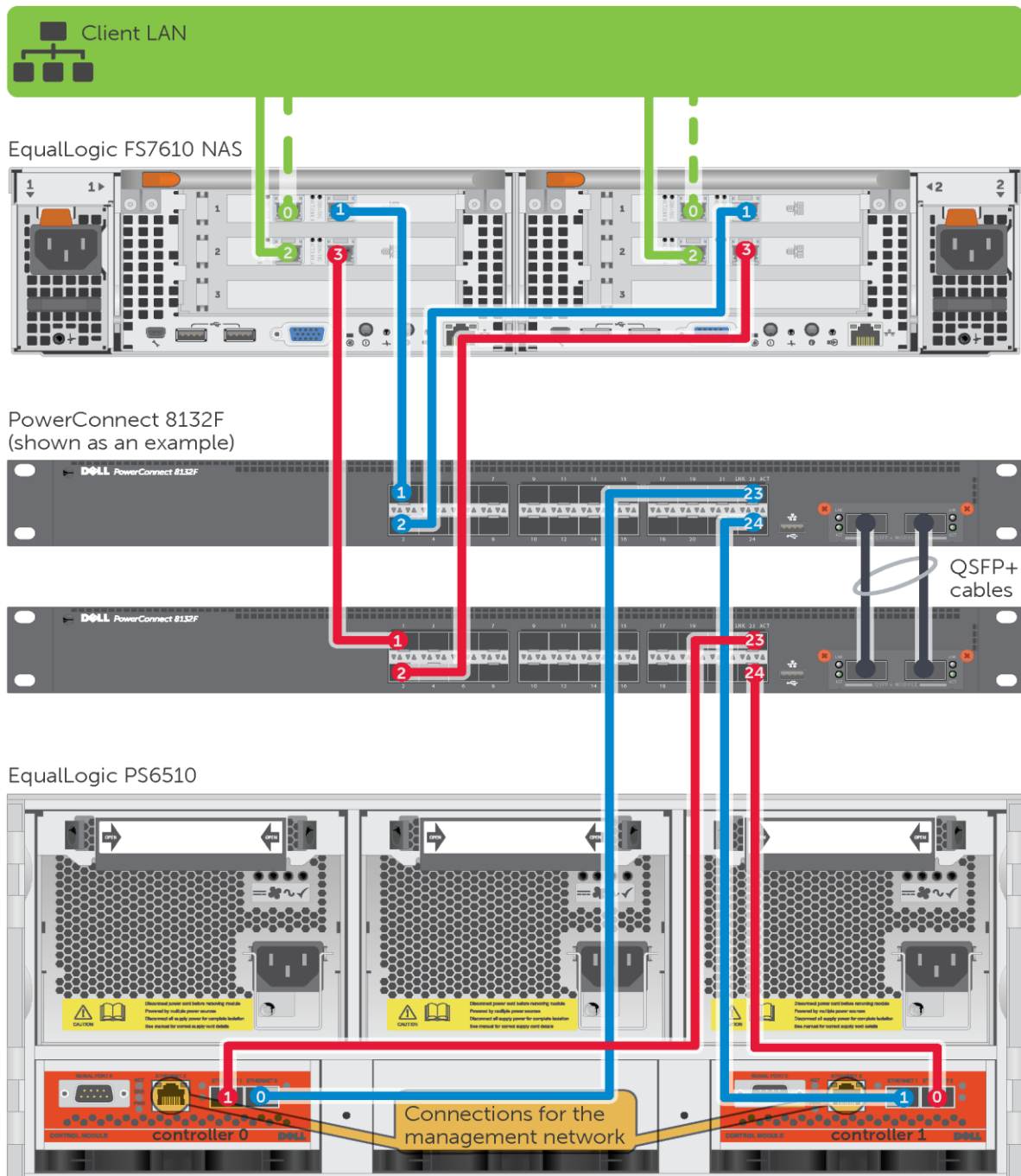
Figure 6   Dell Networking N4000 or PowerConnect 8100 series with EqualLogic PS7610 and PS6510
(tables on page 16)

Note: The PowerConnect 8132 and 8164 switches only provide 10GBASE-T ports and are not compatible with this configuration. The above configuration(s) require 10Gb SFP+ ports, only available with the PowerConnect 8132F and 8164F switches.

3.1   Point to point connection tables

Table 2   Dell Networking N4000 series or PowerConnect 8132(F) with EqualLogic PS4110 or PS6110

	Switch 1 Port	To		Switch 2 Port	To
	1	Server 1, port 1		1	Server 1, port 2
Array 1	24	Controller 0, port 0		24	Controller 1, port 0

Table 3   Dell Networking N4000 series or PowerConnect 8164(F) and EqualLogic PS4110 or PS6110

	Switch 1 Port	To		Switch 2 Port	To
	1	Server 1, port 1		1	Server 1, port 2
Array 1	48	Controller 0, port 0		48	Controller 1, port 0

Table 4   Dell Networking 8132 or 8132F with EqualLogic FS7610 NAS and PS4110 or PS6110

	Switch 1 Port	To		Switch 2 Port	To
FS7610 NAS	1	Controller 1, port 1		1	Controller 1, port 3
	2	Controller 2, port 1		2	Controller 2, port 3
Array 1	24	Controller 0, port 0		24	Controller 1, port 0

Table 5   Dell Networking 8164 or 8164F with EqualLogic FS7610 NAS and the PS4110 or PS6110

	Switch 1 Port	To		Switch 2 Port	To
FS7610 NAS	1	Controller 1, port 1		1	Controller 1, port 2
	2	Controller 2, port 1		2	Controller 2, port 2
Array 1	48	Controller 0, port 0		48	Controller 1, port 0

Table 6   Dell Networking N4000 series or PowerConnect 8132(F) with EqualLogic PS6210

	Switch 1 Port	To		Switch 2 Port	To
	1	Server 1, port 1		1	Server 1, port 2
Array 1	23	Controller 0, port 0		23	Controller 0, port 1
	24	Controller 1, port 1		24	Controller 1, port 0

Table 7   Dell Networking N4000 series or PowerConnect 8164(F) with EqualLogic PS6210

	Switch 1 Port	To		Switch 2 Port	To
	1	Server 1, port 1		1	Server 1, port 2
Array 1	47	Controller 0, port 0		47	Controller 0, port 1
	48	Controller 1, port 1		48	Controller 1, port 0

Table 8   Dell Networking N4000 series or PowerConnect 8132(F) with EqualLogic 7610 NAS and PS6210

	Switch 1 Port	To		Switch 2 Port	To
FS7610 NAS	1	Controller 1, port 1		1	Controller 1, port 3
	2	Controller 2, port 1		2	Controller 2, port 3
Array 1	23	Controller 0, port 0		23	Controller 0, port 1
	24	Controller 1, port 1		24	Controller 1, port 0

Table 9   Dell Networking N4000 series or PowerConnect 8164(F) with EqualLogic FS7610 NAS and the PS6210

	Switch 1 Port	To		Switch 2 Port	To
FS7610 NAS	1	Controller 1, port 1		1	Controller 1, port 3
	2	Controller 2, port 1		2	Controller 2, port 3
Array 1	47	Controller 0, port 0		47	Controller 0, port 1
	48	Controller 1, port 1		48	Controller 1, port 0

Table 10   Dell Networking N4000 series or PowerConnect 8132F with the EqualLogic PS6510

	Switch 1 Port	To		Switch 2 Port	To
	1	Server 1, port 1		1	Server 1, port 2
Array 1	23	Controller 0, port 0		23	Controller 0, port 1
	24	Controller 1, port 1		24	Controller 1, port 0

Table 11   Dell Networking N4000 series or PowerConnect 8164F with EqualLogic PS6510

	Switch 1 Port	To		Switch 2 Port	To
	1	Server 1, port 1		1	Server 1, port 2
Array 1	47	Controller 0, port 0		47	Controller 0, port 1
	48	Controller 1, port 1		48	Controller 1, port 0

Note: There is no figure associated with Table 11's configuration. The above table references a PowerConnect 8164F that has 48 physical SFP+ ports which is not detailed in any of the figures within Section 3.

Table 12   Dell Networking N4000 series or PowerConnect 8132F with EqualLogic FS7610 NAS and PS6510

	Switch 1 Port	To		Switch 2 Port	To
FS7610 NAS	1	Controller 1, port 1		1	Controller 1, port 2
	2	Controller 2, port 1		2	Controller 2, port 2
Array 1	24	Controller 0, port 0		24	Controller 1, port 0

Table 13   Dell Networking N4000 series or PowerConnect 8164F with EqualLogic FS7610 NAS and the PS6510

	Switch 1 Port	To		Switch 2 Port	To
FS7610 NAS	1	Controller 1, port 1		1	Controller 1, port 2
	2	Controller 2, port 1		2	Controller 2, port 2
Array 1	47	Controller 1, port 1		47	Controller 0, port 1
	48	Controller 0, port 0		48	Controller 1, port 0

Note: There is no figure associated with Table 13's configuration. The above table references a PowerConnect 8164F that has 48 physical SFP+ ports which is not detailed in any of the figures within Section 3.

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