Dell X4012

Quick Setup Guide

This document provides information around the Dell X4012 switch for use with the Scale HC3 cluster. Any information listed here is not a substitute for the product's user guide or support and is not covered under the support and warranty for the HC3 cluster. Check for additional information on this topic at http://www.scalecomputing.com/support/login/ or at the manufacturer's website.

SCALE COMPUTING

You can find the most up-to-date technical documentation on the Scale Computing Portal at:
http://www.scalecomputing.com/support/login/

The Scale Computing site also provides the latest product updates and information:
http://www.scalecomputing.com/

Provide feedback on this document at:
documentation@scalecomputing.com

Contact support at:
support@scalecomputing.com
http://www.scalecomputing.com/support/login/
US: +1-877-SCALE-59 (877-722-5359)
Europe: 0808 234 0699

Document Revision History:
Version 1.0: 8/2015 Document created

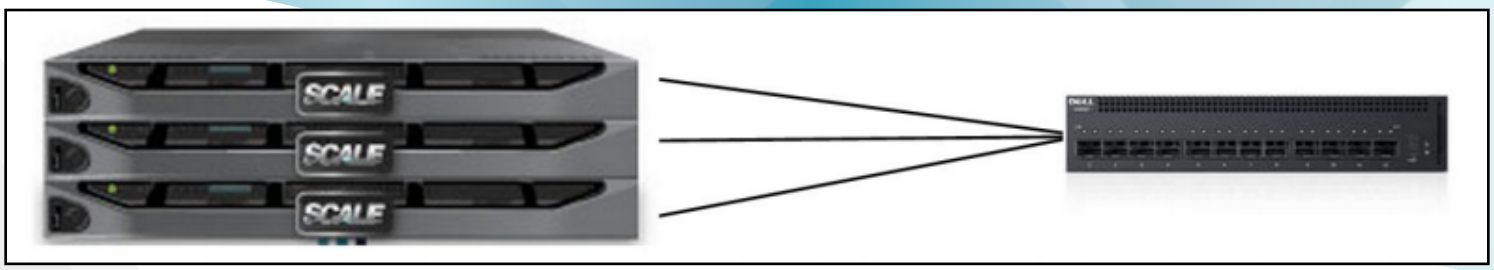
Corporate Headquarters
5225 Exploration Drive
Indianapolis, IN 46241
P. +1 317-856-9559

West Coast Office
795 Folsom Street
Suite 1038
San Francisco, CA 94107

EMEA Office
Saunders House
52-53 The Mall
London
W5 3TA
United Kingdom

www.scalecomputing.com 1-877-SCALE-59 (877-722-5359)

Contents



Introduction

This guide provides a basic overview and information on how to configure and deploy the Dell X4012 switch with a Scale Computing HC3 cluster. Specifics for mounting hardware and installation of brackets are provided with guides inside the box the switch was delivered in.

About the Dell X4012 Switch

The Dell Networking X4012 switch is a compact and affordable switch that provides 12 ten-gigabit (10 Gb) ethernet SFP+ interfaces. With a small form-factor and low power consumption, the X4012 is a perfect entry into a 10 Gb ethernet deployment with a Scale Computing HC3 cluster.

About the HC3 Cluster

HC3 combines the benefits of server virtualization and shared storage into a converged IT infrastructure platform where virtualized workloads have direct access to a distributed, scalable pool of shared storage and computing resources. The cluster eliminates complex virtualization and storage architectures for greater cost savings while greatly simplifying management of your IT resources.

Requirements and Assumptions

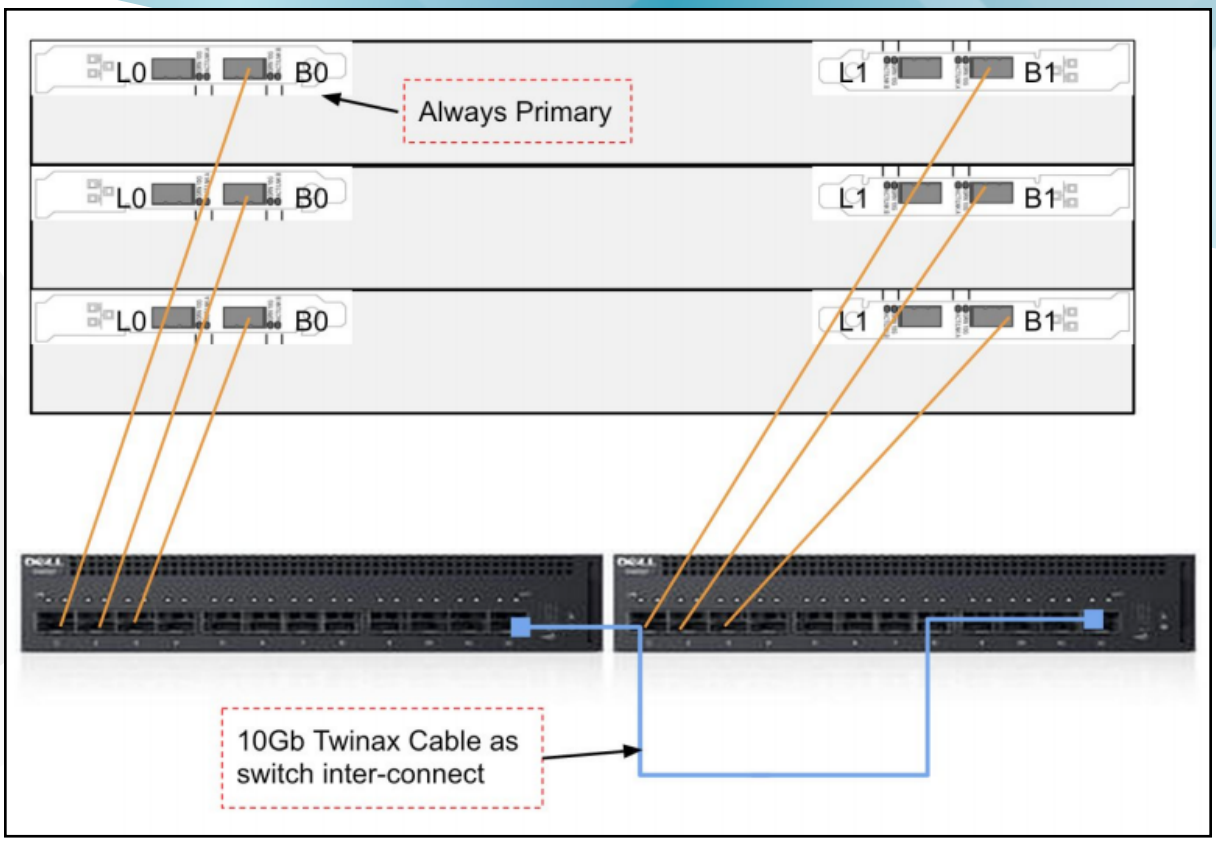
- Windows, Linux, or Mac workstation with a USB port and a terminal emulation program (puTTY, screen, HyperTerminal, etc.).
- 10 GbE SFP+ Twinax cables for connecting the HC3 nodes to the switch.
- The switch[es] have been mounted and are within 15 meters of the cluster.
- The X4012 switch will be installed in an appropriately cooled environment with adequate power and airflow.
- The switch will be deployed with a single VLAN (default) as a switching fabric for the HC3 backplane network only.
- This guide assumes a 3 node Hz (10 GbE) HC3 cluster.

Best Practice Configuration

The Dell X4012 switches are ideally suited as a dedicated backplane-only switch. This minimizes the configuration requirements and ensures the backplane switching fabric has dedicated resources.

In order to achieve full fault tolerance and high availability for the cluster, each node has independent, redundant Network Interface Cards (NICs). As the X4012 switch does not have redundancy in power supplies, in order to mitigate a single point-of-failure, two switches are recommended to ensure a single switch disruption does not cause a loss of access to guest VMs on the HC3 cluster.

See the diagram below for a visualization of the ideal cabling and setup with two switches:



For both backplane and LAN networks on the cluster, the interfaces are in an Active/Passive bond, and not in a team or Active/Active bond.

Looking at the back of the node, the interfaces labeled "L0" and "B0" are the primary LAN and Backplane interfaces respectively (L0 is the primary LAN and B0 is the primary backplane interface). These interfaces will always be primary. The secondary interfaces are "L1" and "B1." It is vital to ensure that all primary interfaces and secondary interfaces are connected to separate switches to avoid loops or additional network hops for backplane traffic.

Cable the Nodes

Using 10 GbE SFP+ Twinax cabling, connect the backplane interfaces "B0" on each node to ports 1, 2, and 3 on the X4012 switch.

Then, connect the second "B1" interfaces to ports 1, 2, and 3 on the second X4012 switch. An example is shown in the image on the next page.

You can connect the power to the switch now, which will automatically power on. The default configuration for the X4012 is an isolated (default) single VLAN. The switch will not require any configuration as the goal is to have an isolated, non-routed network for node-to-node backplane communication only.

For the LAN Network, you can connect the interfaces "L0" and "L1" to your existing LAN infrastructure. As this guide focuses on the deployment of the X4012 switches as a backplane-only switching fabric, configuration for the X4012s serving in a multi-VLAN capacity (LAN and backplane) is not covered in this guide.

Once the LAN and Backplane interfaces are connected, you can power on the nodes. From this point, you can validate the connectivity with link lights (as seen in the image above) for the backplane and LAN interfaces.

If you have not done so, please schedule the installation process outlined in the "Welcome to Scale Computing" email that you have already received. If you have not already received credentials, please create an account in our portal at: **http://customerportal.scalecomputing.com/** and contact Scale Computing Support to schedule an installation.

Provide Feedback or Contact Support

If you have comments or suggestions regarding this document or other Scale Computing documentation, you can send them to **documentation@scalecomputing.com**.

If you need help, call +1-877-SCALE-59 (877-722-5359), and someone from the Scale Computing Technical Support Team will be happy to help you. You can also email Scale Computing Technical Support at **support@scalecomputing.com** or find them on the web at **www.scalecomputing.com**.

Disclaimer

Any information listed here is not a substitute for the product's user guide or support and is not covered under the support and warranty for the HC3 cluster. Scale Computing is not responsible for any issues or damages arising out of the use of this guide. If you need assistance troubleshooting issues with your switch you can contact Dell technical support.