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Introduction
This guide provides basic information on proper switch configuration for use with a Hewlett-Packard (HP) 2920-24G switch (or switches) and the Scale HC3 cluster. The command line interface (cli) menu is used for all commands. If you are a more advanced user, you can reference switch guides from their manufacturers.

About the HP2920-24G
The HP 2920-24G switch is a high-performance Gigabit Ethernet 24 port switch. It supports up to four optional 10 Gigabit Ethernet (SFP+ and/or 10GBASE-T). It combines simple setup with robust performance to meet the needs for customers setting up a Scale HC3 cluster.

About the HC3 Cluster
The HC3 cluster 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 compute resources. The cluster eliminates complex virtualization and storage architectures for greater cost savings and improved management efficiency.

Software Requirements for this Application Note
Prior to configuring the HP 2920-24G for use you will need to ensure the following software requirements are met:
- A computer with terminal emulator software configured for a baud rate of 9600, 8 data bits, 1 stop bit, no parity, and no flow control.

Equipment Requirements for this Application Note
Prior to configuring the HP 2920-24G for use you will need to ensure the following environmental requirements are met:
- USB to Serial adapter
- Network cables with a minimum rating of CAT-5e

Switch Configuration Planning
This section provides information on the switch configuration example used in this guide and the additional planning that may be required for your network requirements.

Example Used: Two Switches, Local Area Network (LAN) and Backplane
- This example uses a very basic setup with two switches configured for High Availability (HA). The backplane is isolated on a separate VLAN. The remaining switch ports are put on the default VLAN for LAN network use. We do not have an interconnect set up between the two switches in this example. If you would like to use an interconnect between the switches we recommend purchasing the dedicated interconnect kit (Part#J9733A) from HP.

In addition to this setup you may need to plan for additional configuration such as creating a separate VLAN for your LAN ports that match your existing LAN network or configuring a trunk link for additional VLANs. This type of setup is beyond the scope of this guide.

NOTE: Any changes made to the switch could potentially cause downtime. It is recommended to only make changes to the switch during the initial install or during a maintenance window.
**Configuring the Switch**

This section describes how to log into the cli menu and begin configuration.

1. Connect to your switch using the console cable and terminal emulator. Wait for the prompt to appear.
2. Type `menu`.
3. Press Enter. The **Console - Manager Mode Main Menu** screen opens, showing you options for configuring your switch.
4. Use the arrow keys to highlight **Run Setup**.
5. Press Enter. The **Switch Setup** screen appears.
6. Use the arrow keys to navigate through the **Actions ->** choices and highlight **Edit**.
7. Press Enter. You can now edit the information on this screen.
8. Enter the **System Name**, **System Contact**, **Manager Password**, **Logon Default** (this is the menu that opens automatically on startup instead of the cli menu), **Default Gateway**, and **IP Configuration**. Make sure **Spanning Tree** is set to **No**.
9. If all the information looks correct, use the arrow keys to go to the **Actions ->** menu and highlight **Save**.
10. Press Enter. You are returned to the **Main Menu**.

**Apply an IP Configuration to the Switch for Management and Updates (Optional)**

This section describes how to complete the optional task of applying an IP configuration to the switch for management and updates. This can be useful for gathering logs and managing the switch.

1. On the **Switch Configuration Menu**, use the arrow keys to scroll to and highlight **IP Configuration**. Press Enter. The **IP Configuration** screen opens.
2. On the **Action ->** menu, use the arrow keys to highlight **Edit** and press Enter. You can now edit information on the screen as needed.

**NOTE:** Keep **IP Routing** disabled and only change the **IP Config** to **Manual** if you wish to use the web-agent or SSH to access the switch.

**Virtual Local Area Network (VLAN) Creation**

VLANs should be used to divide the LAN and backplane networks of the HC3 cluster into separate broadcast domains. This section describes how to create VLANs.

1. On the **Switch Configuration Menu**, scroll to and highlight **VLAN Menu**. Press Enter. The **VLAN Menu** opens.
2. Highlight **VLAN Names** and press Enter. The **VLAN Names** screen appears.
3. Use the arrow keys to highlight **Add** and press Enter. An **Edit** box appears, allowing you to add a new VLAN.
4. Add a new VLAN with an **802.1Q** VLAN ID for the backplane network. We are creating a backplane VLAN only in this example and will leave the LAN side connections to the DEFAULT_VLAN. Ensure no existing traffic elsewhere in the network can possibly cross with backplane traffic on the VLAN ID you choose to assign. An example of a simple configuration would be:
   
   **802.1Q VLAN ID : 100**
   **Name : Scale BACKPLANE**

5. Use the arrow keys on the **Action ->** menu to highlight **Save** and press Enter. You are returned to the **VLAN Names** menu. The VLAN you created should be displayed with a name and associated ID.

When you complete this step you are ready to assign ports to your VLANs.
Assigning Ports to VLANs
This section describes how to assign ports to your newly created VLANs. Your configuration determines how ports are assigned. We recommend configuring 8 ports on each switch as backplane ports to allow for future expansion even if you do not currently have 8 nodes.

Example VLAN Port Assignment:
Two Switches, Local Area Network (LAN) and Backplane

To assign ports, take the following steps:
1. On the VLAN Menu, highlight VLAN Port Assignment and press Enter. The Port Assignment screen opens.
2. Use the arrow keys on the Action -> menu to highlight Edit and press Enter. You can now edit the information on this screen.
3. Port 17-24 will be set as Untagged for the SCALE BACKPLANE VLAN and Forbid for the DEFAULT_VLAN. This ensures general traffic cannot be seen across the SCALE BACKPLANE VLAN.
4. Ports 1-16 will be set as Untagged for the DEFAULT_VLAN and Forbid for the SCALE BACKPLANE VLAN. This ensures node backplane traffic cannot be crossed into general LAN traffic.
5. Use the arrow keys to go to the Actions -> menu and highlight Save.
6. Press Enter. You are returned to the Main Menu.

NOTE: As stated previously, additional configuration may be required for LAN access with your existing network. This type of configuration is beyond the scope of this guide.

Enable Flow Control (Recommended)
This section describes how to complete the task of enabling Flow Control. Flow Control is useful for managing the data rate between two links. Scale recommends enabling Flow Control on LAN ports when working with a Scale cluster. To enable Flow Control take the following steps:
1. Use the arrow keys to scroll to and highlight Port/Trunk Settings. Press Enter. The Port/Trunk Settings screen opens.
2. On the Action -> menu, use the arrow keys to highlight Edit and press Enter. You can now edit the information on the screen.
3. Navigate to the **Flow Control** column and enable it on ports 1-16.
4. Use the arrow keys to highlight **Save** and press **Enter**. Your work is saved and you are returned to the **Switch Configuration Menu**.

**NOTE:** Changing flow control will momentarily disable the ports that are being modified so it is recommended to do this during initial setup or during a maintenance window.

**Provide Feedback or Contact Support**
If you have comments or suggestions regarding this document or other Scale Computing documentation, you can send them to  .

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**
This document provides information about using the Scale HC3 cluster with an HP 2920-24G switch. The HP 2920-24G switch is not a product of Scale Computing and is not covered under the support and warranty for the HC3 cluster. Scale Computing is not responsible for, and expressly disclaims all liability for, any issues or damages of any kind arising out of use of the HP 2920-24G switch. If you need assistance troubleshooting issues with your switch, you can contact HP technical support.