Fabric Manager for XC Xpress User's Guide

Dell Engineering
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A Dell User's Guide

Revisions

Date	Description
June 2017	Initial release
September	Updated most references to Fabric Manager naming conventions, and limiting guide to XC Xpress.

Table of contents

1 About Fabric Manager

Fabric Manager is a network validation tool. Run the tool using your management workstation. This tool confirms if your network switch is on the recommended switch list and confirms network configuration settings are ready to begin deployment. Currently, this tool is only validated on a Windows workstation and for use with XC Xpress appliances.

Note: If Fabric Manager does not validate your switch, this may not mean your switch is unsupported by XC solutions. It means that the following list of requirements must be manually in place for the switch to be validated.

Running this tool verifies the following necessary features are in place on your switch:

- Determines 1 G/10 G capability of the Top-Of-Rack(TOR) switch
- Determines switch models
- Determines switch/network IPv6 capabilities
- Determines if IPv6 is enabled
- Determines switch VLAN capabilities
- Checks for any VLANs configured
- Gathers VLAN mapping, if possible
- Gathers IP subnet information including routing
- Performs TCP/UDP port filter check on XC appliance (internal)
- Performs TCP/UDP port filter check on XC appliance (external)

2 Prerequisites

The following information is required before running Fabric Manager:

- Switch IP address
- User ID and password for the switch
- Enable SSH feature in the switch. (Refer to the Deployment Guide to enable/disable SSH)
- A Windows workstation

Note: After running this validation tool, for security reasons disable SSH.

2.1 Supported network switch list

Table 1 shows verified network switches that are easily validated by Fabric Manager.

Table 1 Validated switch list

Switch Model	Type	OS Version
Dell PowerConnect	PC 8024, PC 8024F	5.1.10.1
	PC6024	3.3.15.1
Dell Networking	S4810 / S60 / S4048 / S5000	9.11.0.0
Cisco	Nexus 3016, Nexus 3048, Nexus 3064	7.0.3.14
Arista	7050 SX / QX	4.17.3

2.2 Downloading Fabric Manager

Fabric Manager is a network validation tool. To download to your management workstation:

1. Go to https://dell.com/xcseriesmanuals
2. From the dialog box, select the XC430 Xpress appliance.
3. On the left side, click **Drivers & downloads.**
4. Next to **View all available updates for Dell XC430 Xpress Hyper-converge Appliance**, click **Change OS.**
5. Click **Windows Server2012 R2.**
6. Scroll down and click **Applications**.
7. Download `DellPowerToolsFabricManager_X.X.X.XXXX-Win.zip`, save it to a location, and install the tool on your management workstation.

The installer copies three files to `C:\Dell_OEM\DellPowerToolsFabricManager folder: README, libssh2.dll and ptfmcli.exe`

Note: The executable and dll must remain in the same directory.

2.3 Launching Fabric Manager

XC Xpress supports a list of validated switches. To validate the design of your switch and its configured switch settings, run Fabric Manager using your management workstation.

1. At the command prompt, navigate to the location where the tool is installed and run the executable.

   a. On windows the executable `ptfmcli.exe` is located at:

   ```
   C:\Dell_OEM\DellPowerToolsFabricManager
   ```

   Usage:
   `Windows : ptfmcli.exe [OPTIONS]`
   OPTIONS*:*

-h	**Print this help message and exit**
-i <switch-IP>	Switch IP address
-u <username>	Username to use in switch SSH login
-f <file-name>	File containing list of IPv4 addresses of XC nodes to check the reachability (line by line).
-l <log-file>	Log file to write (default: DellPowerToolsFabricManager.log)
-v <verbose-level>	Verbose level to use in log write (default: 3)

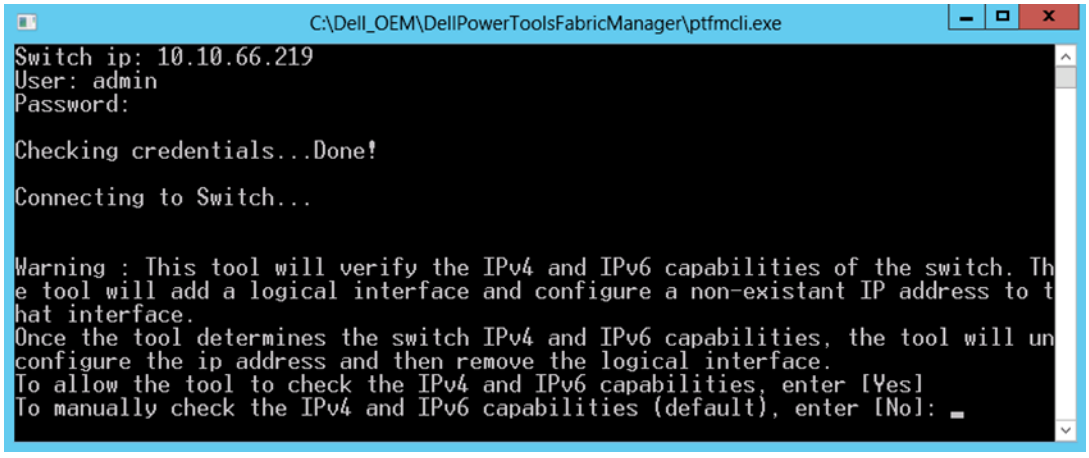


Figure 1 Initial screen when Fabric Manager connects to the switch IP address.

2. At the command prompt, enter the **switch IP address**.
3. At the command prompt, enter the **User Name for the switch SSH login**.
4. At the command prompt, enter the **Password for the switch SSH login**.

   After authentication is established, the tool verifies all the required switch capabilities.

5. The tool prompts your permission to configure a logical interface to verify the IPv4/IPv6 capability and remove the configured logical interface after the test. If you select “yes”, the tool continues with all the tests including verifying ipv4/v6 capabilities.

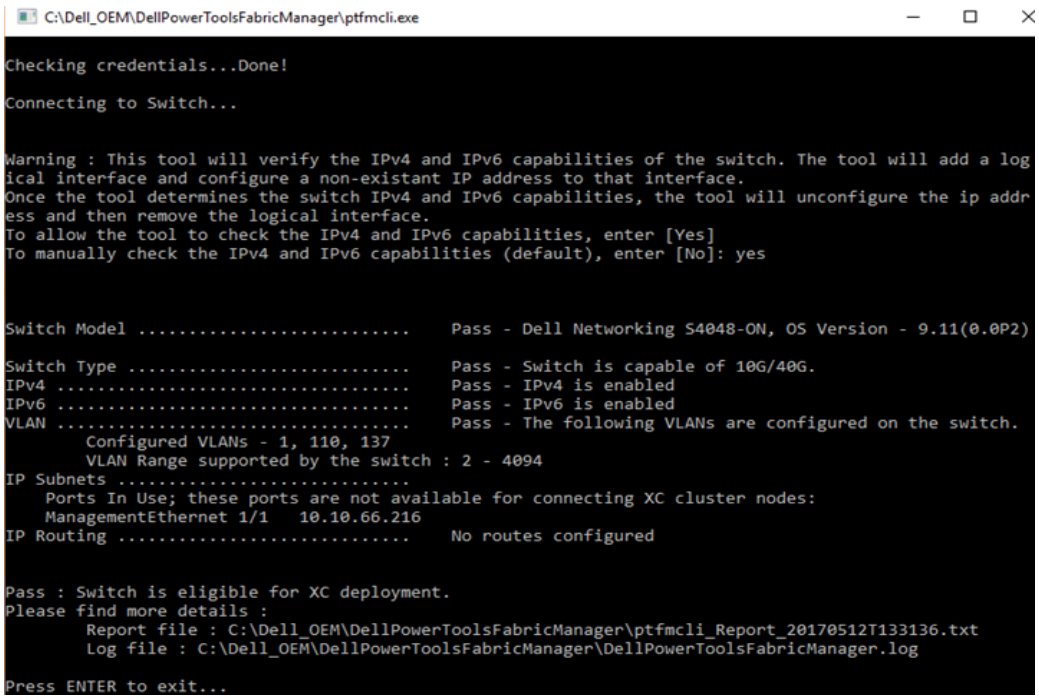
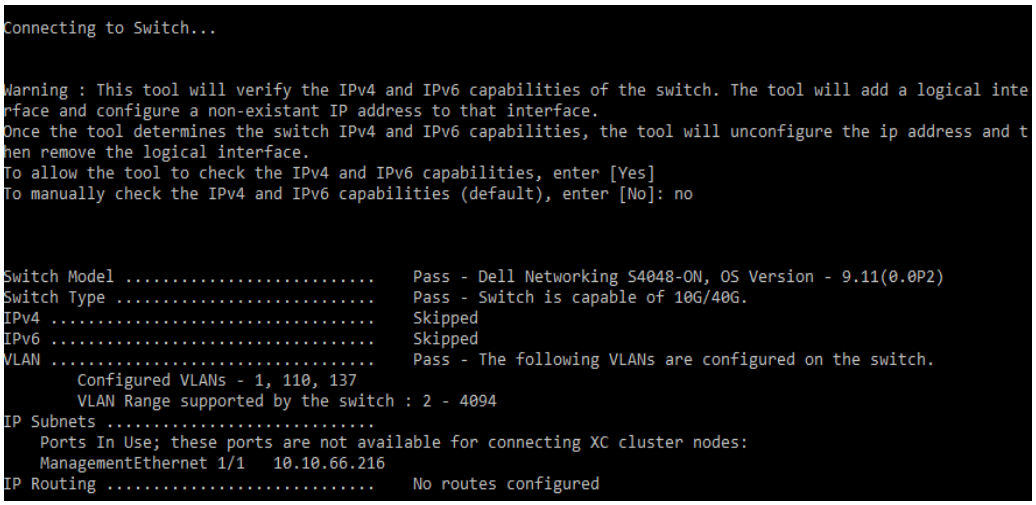


Figure 2 Screen display if you select yes.

6. If you select “no” for this option, the tool skips the two tests (IPv4 and IPv6 capability) and continue with the remaining steps.



If your switch is not a validated switch by Fabric Manager, you see the screen in Figure 3.

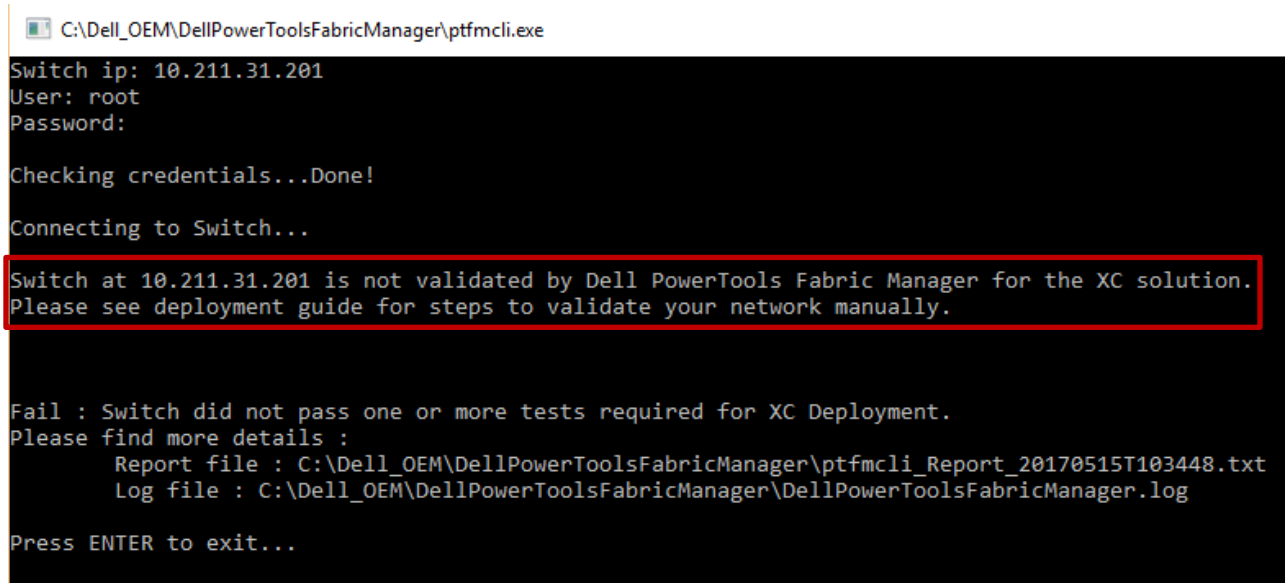


Figure 3 Fabric Manager output when the switch is not a validated switch.

7. When you have completed and passed the test, Dell recommends that you disable SSH. SSH is only required to run the test.

2.4 Viewing the Fabric Manager report

After Fabric Manager runs all the tests, it updates the log file and creates a report file in the same directory location of where Fabric Manager is located.

Fabric Manager logs all the messages, commands and outputs in detail in the log file (default name: `DellPowerToolsFabricManager.log`).

The report file is used to determine any warnings or errors that occurred and what corrective actions are required before you can create the XC clusters. The file is in a `.txt` file format and the file name includes the date and time, the report was run.

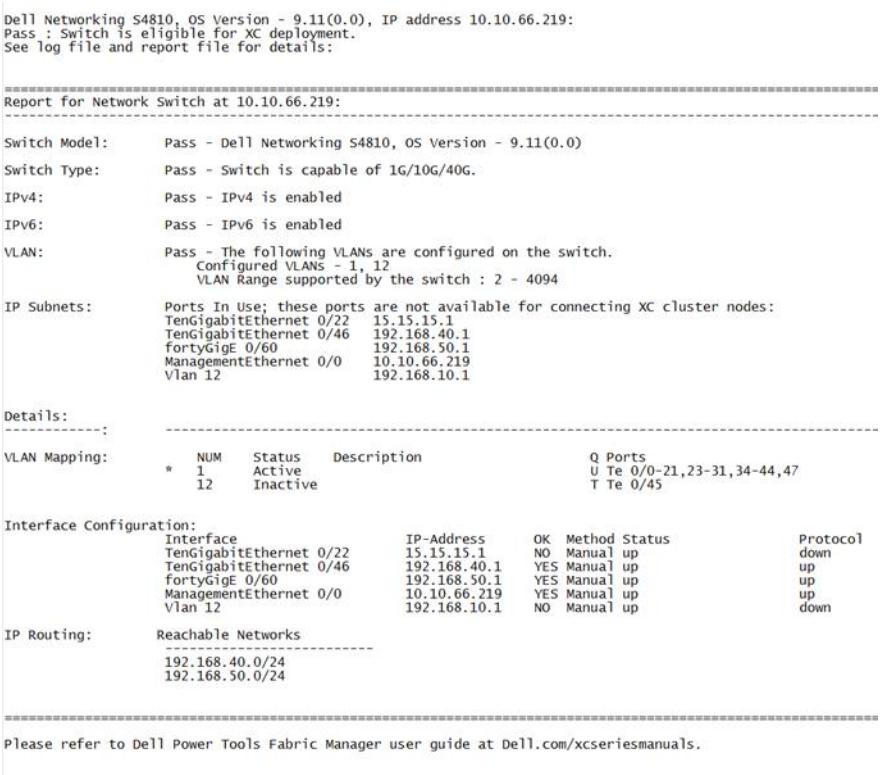


Figure 4 Sample report message.

Table 2 Report messages definition

Term	Definition
Switch Model	Displays the switch type, model and the current operating system version on the switch. If your switch is not a validated switch by Fabric Manager, manually verify you have the items in section 1.3. If that fails, contact your Dell sales representative to purchase the proper switch.
Switch Type	Specifies whether the switch is capable of 1 G, 10 G or 40 G. XC deployment requires a minimum of 1 G. If the switch does not supports the minimum, then the test results fail.
IPv4	If the switch is IPv4 capable, the test results pass. If the switch is not IPv4 capable, the test results fail.
IPv6	If the switch is IPv6 capable, the test results pass. If the switch is not IPv6 capable, the test results fail.
VLAN	Displays the VLAN capability and configured VLANs on the switch. If the switch is capable of VLAN, the test results pass, otherwise results fail.
IP Subnet	The tool reports all the configured interfaces as “Ports in use.” These ports are not available for connecting XC cluster nodes.

Term	Definition
IP routing	Tool that reports the configured routes on the switch.
Firewall Check	This test only executes if the tool detects that it is running on Windows XC node. XC needs the following ports to be open for the foundation and discovery to work properly. The tool will open these ports on Windows firewall. • UDP on port 13000 (Nutanix discovery protocol) • TCP on ports 8000 (Foundation GUI) • TCP on 9442 (proxy) • TCP on 9443 (applet control)
Details	The Details section reports the configured interfaces with IP address and VLANs to port mapping.

If your switch is not a validated switch, do the following manual steps:

1. Verify you have a 1/10 G capable network.
2. Verify you have IPv6 enabled.
3. Verify your management workstation is on the same subnet as your appliances.
4. Verify that the TCP/UDP ports are enabled.

If the above verifications fail, correct any issues or contact your Dell sales representative to purchase a validated switch.