HPE GreenLake

Technical white paper

HPE C-series switches and management software

Log collection and HPE support services best practices

Contents

Introduction

This document provides best practices to collect the necessary logs and open a service request with the HPE Support Center when you need support on HPE C-series switches and management software. In case of any errors or issues, HPE C-series switches have a method of gathering wide variety of switch information through a single command called **tech-support**. A tech-support file is an aggregation of many, mostly show, commands. Some tech-support files are for a specific component or service in the HPE C-series switches, such as FSPF or FLOGI. Some tech-support files point to specific module-level information, and other tech-support files are aggregations of multiple other tech-support files. All tech-support files are gathered by issuing the show tech-support <type> command.

There are several ways to collect tech-support files and prepare them for sharing or future examination. The most used approach is by using the NX-OS command-line interface (CLI) and its specific set of commands. This is the historical and well-known approach when dealing with switches one by one. There are two main commands used to gather information for troubleshooting:

- The show tech-support command
- The show logging onboard command

The alternative approach would be through the HPE C-series management software DCNM/NDFC graphical user interface.

This document is divided into suitable sections to collect the switch logs using appropriate commands and screenshots for navigating to collect logs from HPE C-series management software, copy files to/from the switch, and contact HPE Support Center.

The show tech-support command

The **show tech-support** command collects excessive amount of information about your switch using one command and is helpful while troubleshooting a problem. The output from this command varies depending on your device and its configuration. HPE highly recommends you provide this output when reporting a problem.

The **show tech-support** command generates a tech-support file rather than displaying details on a terminal. The show tech-support command is sort of comprehensive with various types, as mentioned in the following.

- **details** — Used for many issues except congestion or performance-related issues
- **module** — Used when there are problems specific to switch ports or switching module
- **slowdrain** — Used for when there are performance, congestion, and slow-drain problems
- **fcip** — Used when issues are related to FCIP interfaces

You can try the command **switch# show tech-support** commands if you would like to understand what commands are used to generate the output of the technical support file.

The show logging onboard command

Onboard Failure Logging (OBFL) is the capability of logging numerous data of each module in an HPE C-series (Cisco MDS 9000) switch to its NVRAM. This information is time-stamped giving the power to look back in time and investigate a problem that occurred in the past. The **show logging onboard** command displays that information on a per-module basis. For fabric switches, there is just one module: module 1. For directors, there are up to 18 separate modules.

Some of the most important OBFL types are as follows:

- **txwait** — Shows OBFL txwait log
- **rxwait** — Shows OBFL rxwait log
- **counter-stats** — Shows OBFL counter statistics
- **datarate** — Shows OBFL datarate log
- **error-stats** — Shows OBFL error statistics

You can attempt the command **switch# show logging onboard?** to see the list of available options for this command.

What logs to collect for different problem types

See the following table to collect logs for different types of issues.

Table 1. Recommended commands for different types of issues

No.	Issue description	Logs to be collected
1	For all issues except congestion or performance issues	`show tech-support details` `show logging onboard`

2	For specific switching module or port-level problems	`show tech-support details`
		`show logging onboard`
		`show tech-support module <num>`
		`show tech-support port`

3	For FCIP-related issues	`show tech-support details`
		`show logging onboard`
		`show tech-support fcip`

4	For performance, congestion, or slow-drain problems	`show tech-support slowdrain` — Collect this output from all the switches in the fabric using DCNM-SAN Java client Run CLI Commands

Note

When there are more than one log files to be collected, name these suitably and zip together into one file with an appropriate name and date. For example, Fabric_1_sh_tech_slowdrain_Oct_07_2021.zip. See the "Nomenclature to be followed while collecting logs" section for more information.

Contacting HPE Support Center

This section summaries the steps that the administrator should perform before contacting the HPE Support Center, as this will reduce the amount of time needed to resolve the issue. Note that, the support files collected from switches should be plain text. Rich Text Format (RTF), Word processing formats, email formats, PDF formats, and similar formats are not valid.

Ensure the following information is available before contacting HPE Support Center:

Step 1. If possible, before any recovery efforts or attempts are made, collect the proper logs for the problem type. As mentioned in the Table 1, for most non-performance / congestion issues, this is a minimum of **show tech-support details** and **show logging onboard**. If it is a problem dealing with one or more ports, a **show tech-support module** <**num**> would also be good. In general, we do not recommend reloading modules or switches. Some logs and counters are kept in volatile storage and will not survive a reload.

Step 2. Collect switch information and configuration. Do this before the issue is resolved and after it is resolved. Use the method you prefer, choosing between NX-OS CLI or DCNM-SAN Java client (see Collecting tech-support files for HPE C-series switches)

Step 3. Answer the following questions before placing a call to the HPE Support Center:

- In which switch, HBA, or storage port is the problem occurring?
- List HPE C-series firmware; HBA driver versions; server vendor and operating system versions; and storage device vendor, model, and firmware version.
- What is the network topology?
- Were any changes being made to the environment (zoning, adding line cards, upgrades) before or at the time of this event?
- Are there other similarly configured devices that could have this problem but do not have it?
- Where is this problematic device connected (MDS 9000 switch <switch name>, interface x/y)?
- When did this problem first occur?
- When did this problem last occur?
- How often does this problem occur?
- How many devices have this problem?

- Were any traces or debug outputs captured during the problem time?
- What troubleshooting steps have already been done?
- Were any of the following tools used?
  - FC analyzer, Wireshark, local or remote SPAN
  - CLI debug commands
  - FC traceroute, FC ping

Step 4. Is your problem related to a software upgrade attempt?

- What was the original Cisco NX-OS version?
- What is the new Cisco NX-OS version?
- Did you use DCNM/NDFC or the CLI to attempt this upgrade?
- Please collect the output from the following commands and forward them to your customer support representative:

  show install all status
  show system internal log install
  show system internal log install details
  show log nvram

Step 5. If your problem is related to zoning, use the **show tech-support zone** CLI command to gather relevant information.

Collecting tech-support files for HPE C-series switches

Collecting tech-support files using NX-OS CLI

You need to access the switch in Secure Shell by using a terminal application to gather tech-support files from HPE C-series switches using Cisco NX-OS CLI. You'll be able to use **PuTTY** or a similar application installed on your Windows laptop (use similar application for different operating system). Open a new SSH connection to your switch and provide credentials.

Terminal output redirection from Secure Shell

In this session, we will show how to collect the tech-support file using the NX-OS CLI option and terminal output redirection. Since the output from the **show tech-support** command is very long, you can redirect the screen output of your terminal application to a text file; hence, all the interaction with the switch will be logged to a file. In this document, we will be showing the method using PuTTY tool.

To begin with, connect to the switch using PuTTY terminal application, right-click the top bar of the PuTTY application window and go to **Change Settings...**.

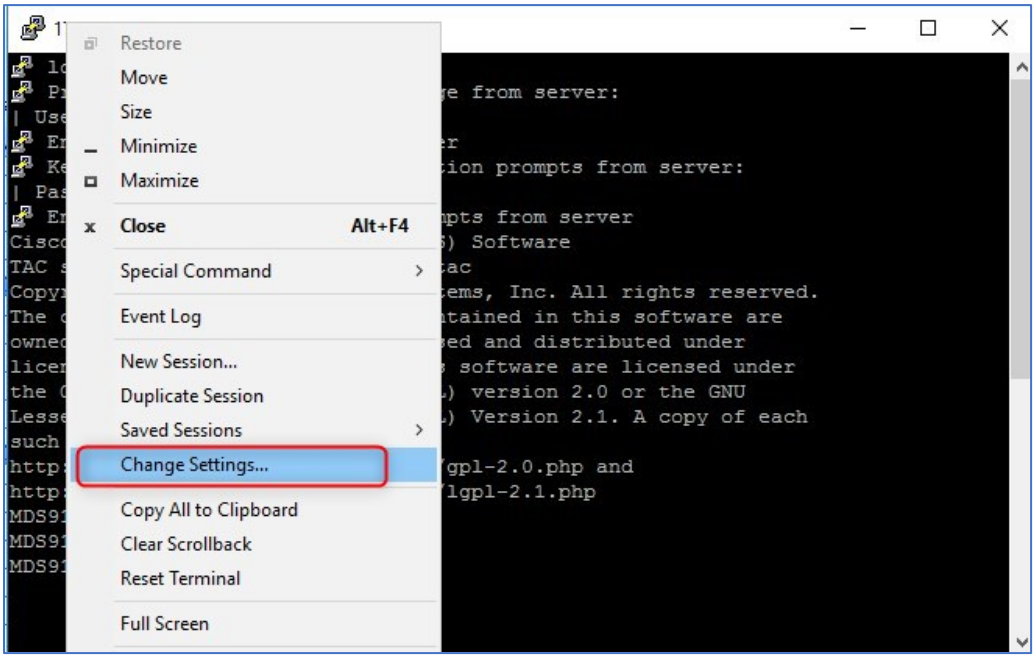

Figure 1. Change settings on PuTTY terminal

From the configuration panel, select **Session > Logging** and the radio button **Printable output**. Choose an appropriate file name (see "Nomenclature to be followed while collecting logs" section) and location for the content to be stored. Since we have chosen the option **Printable output**, only printable text will be saved into the log file.

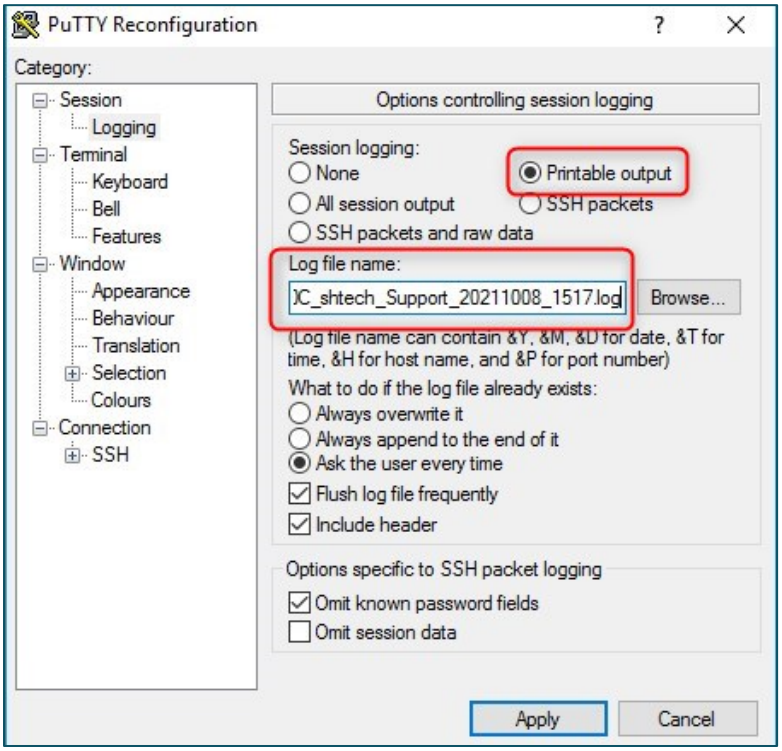

Figure 2. Configure session logging to a file on PuTTY terminal

If you would like to see the whole log content on screen, then go to Window on the left menu and set the **Lines of scrollback** to a higher value by adding few zeroes at the end, and then click the **Apply** button. Since we want to send the log content to a file, changing the **Lines of scrollback** value is not necessary.

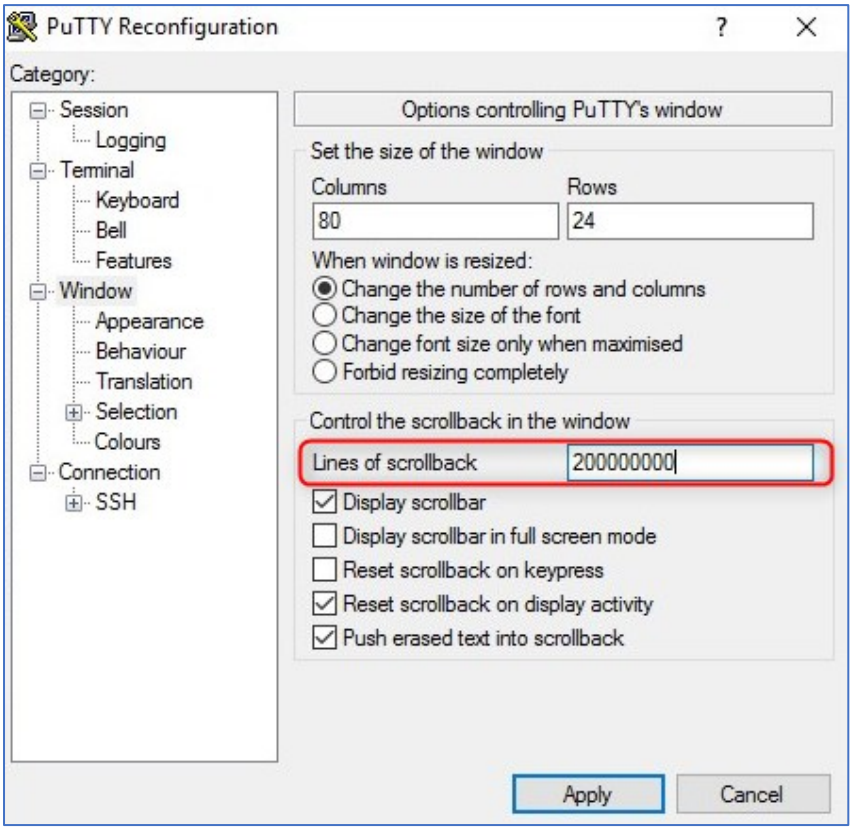

Figure 3. Change screen visualization on PuTTY terminal

Now that your terminal output is mapped to a file, you are ready to send these commands to the switch:

```
MDS9396T-1# terminal length 0
MDS9396T-1# terminal width 300
MDS9396T-1# show tech-support details
---- show tech-support details ----
Show tech details will take 4-8 minutes to complete. Please Wait ...
Collecting show-tech at Fri Oct  8 16:02:15 2021
```

Wait until the logs are collected.

Note

The command **terminal length 0** allows the text output to scroll indefinitely. If this command is not used and not only the show tech-support command is sent to the switch, but the collected text file will also contain all the **---- MORE ----** statements, making the output harder to read. The command **terminal width 300** helps avoid lines to wrap and makes reading easy. The time it takes to collect the tech-support file can vary from one minute to ten minutes approximately, and the file size can vary from 20 MB to 300 MB, depending on the switch model and its configuration.

After you have issued the terminal length and width commands once, they do not have to be issued once more in that same SSH session because the settings will persist. Instead, a new SSH session will resend those commands.

To collect additional logs, follow a similar procedure and provide the most appropriate file name (see "Nomenclature to be followed while collecting logs" section) for the destination log file every time you collect the logs.

Table 2. Recommended steps to collect logs for different types of issues

No.	Issue description	Steps to be followed

1	For all issues except congestion or performance issues	a. Issue the following commands on the switch console
		`terminal length 0`
		`terminal width 300`
		`show tech-support details`
		b. Change log file name accordingly and issue the following command
		`show logging onboard`
		c. Compress these files into a single file and name it appropriately

2	For specific switching module or port-level problems	a. Issue the following commands on the switch console
		`terminal length 0`
		`terminal width 300`
		`show tech-support details`
		b. Change log file name accordingly and issue the following command
		`show logging onboard`
		c. Change log file name accordingly and issue the following command
		`show tech-support port`
		d. Change log file name accordingly and issue the following command
		`show tech-support module <num>`
		e. Compress these files into a single file and name it appropriately

3	For FCIP-related issues	a. Issue the following commands on the switch console
		`terminal length 0`
		`terminal width 300`
		`show tech-support details`
		b. Change log file name accordingly and issue the following command
		`show logging onboard`
		c. Change log file name accordingly and issue the following command
		`show tech-support fcip`
		d. Compress these files into a single file and name it appropriately

4	For performance, congestion, or slow-drain problems	a. Issue the following commands on the switch console
		`terminal length 0`
		`terminal width 300`
		`show tech-support slowdrain`
		Collect this output from all the switches in the fabric approximately at the same time. See DCNM-SAN Java client Run CLI Commands
		b. Compress these files into a single file and name it appropriately

Nomenclature to be followed while collecting logs

Hewlett Packard Enterprise recommends you follow the suggestions while collecting logs:

`<switchname>_techsupport_type_YYYYMMDD_HHMM.log`

Example:

```
SN6620C1_sh_tech_support_det_20211008_1517.log
SN6630C2_sh_logging_onboard_20211008_1517.log
SN8700C3_sh_tech_support_mod4_20211008_1517.log
SN6500C1_sh_tech_support_fcip_20211008_1517.log
SN6010C4_sh_tech_support_slowdrain_20211008_1517.log
```

For fabric-wide issues, such as congestion or performance issues, collect logs from all the switches in the fabric (approximately at the same time) and add them into a single compressed file. Collect these logs from each fabric where you have seen issues.

```
Fabric_1_tech_support_slowdrain_20211008_1517.zip
```

Clear statistics on a switch

If the problem repeats or is ongoing, it's better to clear statistics after collecting logs and then collect again so that whoever looking at the logs can easily identify the changes.

Use the following commands to clear error counters and statistics on a switch:

```
MDS9396T-1# clear counters interface all (Clears the port counters)
MDS9396T-1# debug system internal clear-counters all (Clears the ASIC counters)
MDS9396T-1# clear ips stats all (Clears FCIP counters only needed on FCIP enabled switches)
```

Native NX-OS command redirection

In this session, we will show how to redirect the output of the show tech-support and show logging onboard commands to the switch bootflash or a remote system with TFTP, FTP, or SFTP enabled.

There are two methods for redirection.

- > redirects the output and creates a file at the indicated location (TFTP server, bootflash, and such)
- >> redirects the output and appends to an existing file.

```
SN6000-RK9-U19# show tech-support details > bootflash:SN6000_sh_tech_support_det_20211008_1517.log
Show tech details will take  4-8 minutes to complete. Please Wait ...
SN6000-RK9-U19# dir
   32287241    Oct 10 22:43:49 2021  SN6000_sh_tech_support_det_20211008_1517.log
SN6000-RK9-U19#
```

We can also make use of the built-in gzip application on NX-OS and create compressed log file. This method is the easiest method.

```
SN6000-RK9-U19# terminal redirection zipped
SN6000-RK9-U19# show tech-support details > bootflash:SN6000_sh_tech_support_det_20211008_1517.gz
SN6000-RK9-U19# terminal redirection ascii
```

Using DCNM-SAN Java client Run CLI Commands

In this session, we will show you how to run CLI Commands using DCNM-SAN Java client and collect logs using this tool. Open DCNM-SAN client and select the fabric of your interest.

1. Go to **Tools > Run CLI Commands**....
2. Select the switches of your interest.
3. Select the folder name to save log files.
4. Select the option to compress files.
5. Change the file name from CLICommands.zip to something more suitable as per HPE recommendation.
6. In the Command(s) pane, insert show tech-support details, **show tech-support** slowdrain, **show tech-support module <num>**, and so on. Quotes should not be used. Note <num> is a module number.
7. Click **Run** and wait till you see a success message in green color.

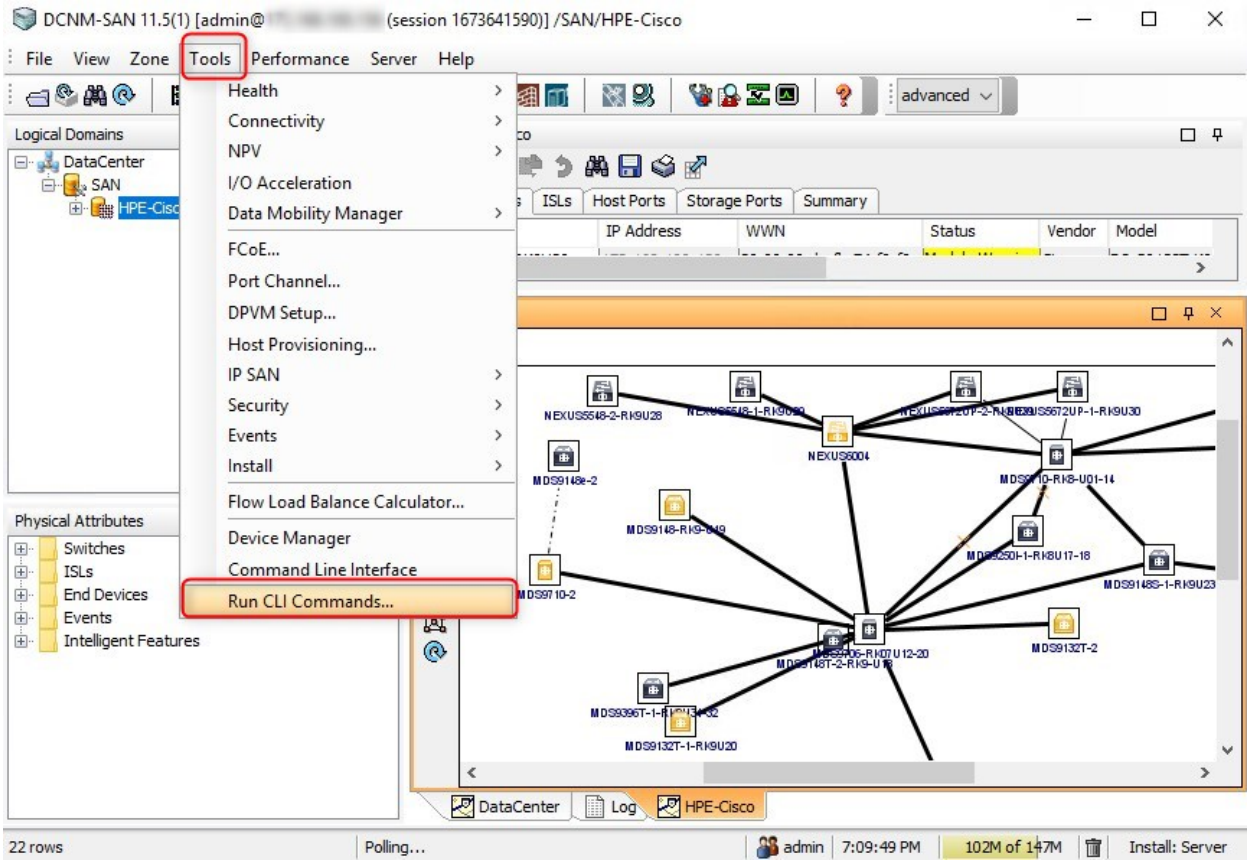

Figure 4. Select "Run CLI Commands..." on the DCNM-SAN client

Note

In case you get TCP timeout error, try increasing the TCP Timeout to a higher value (see Figure 6).

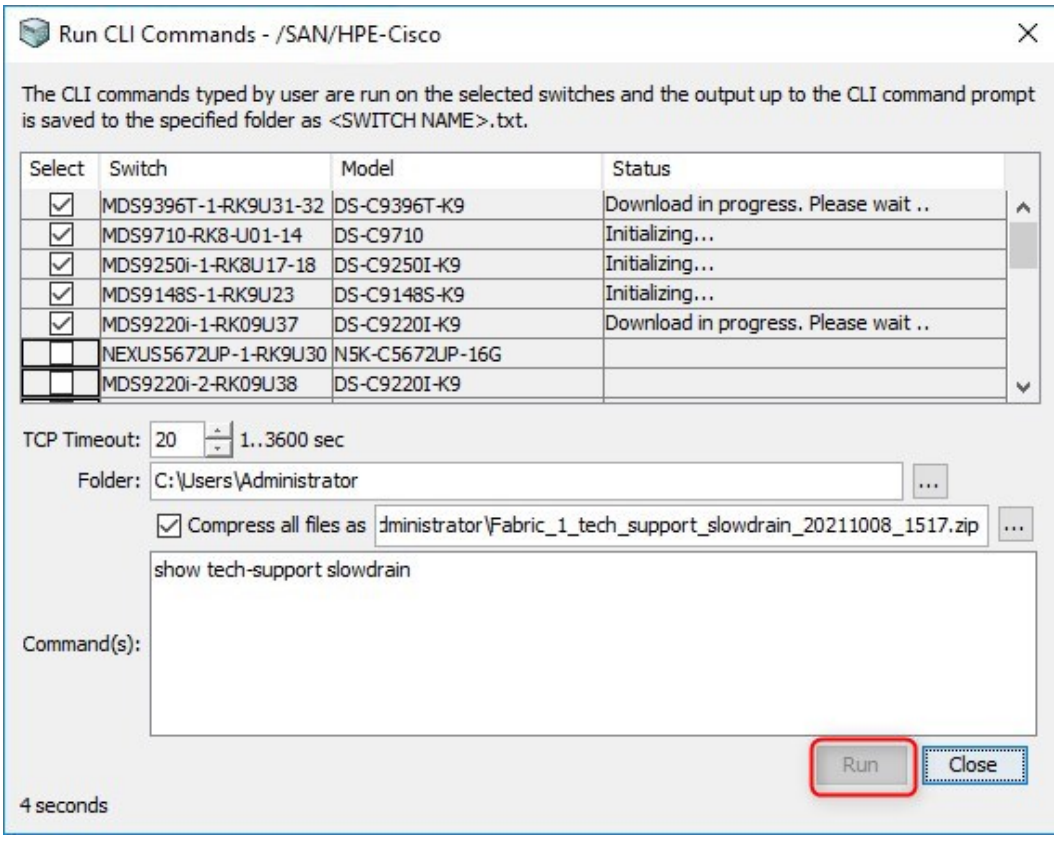

Figure 5. "Run CLI Commands" configuration window

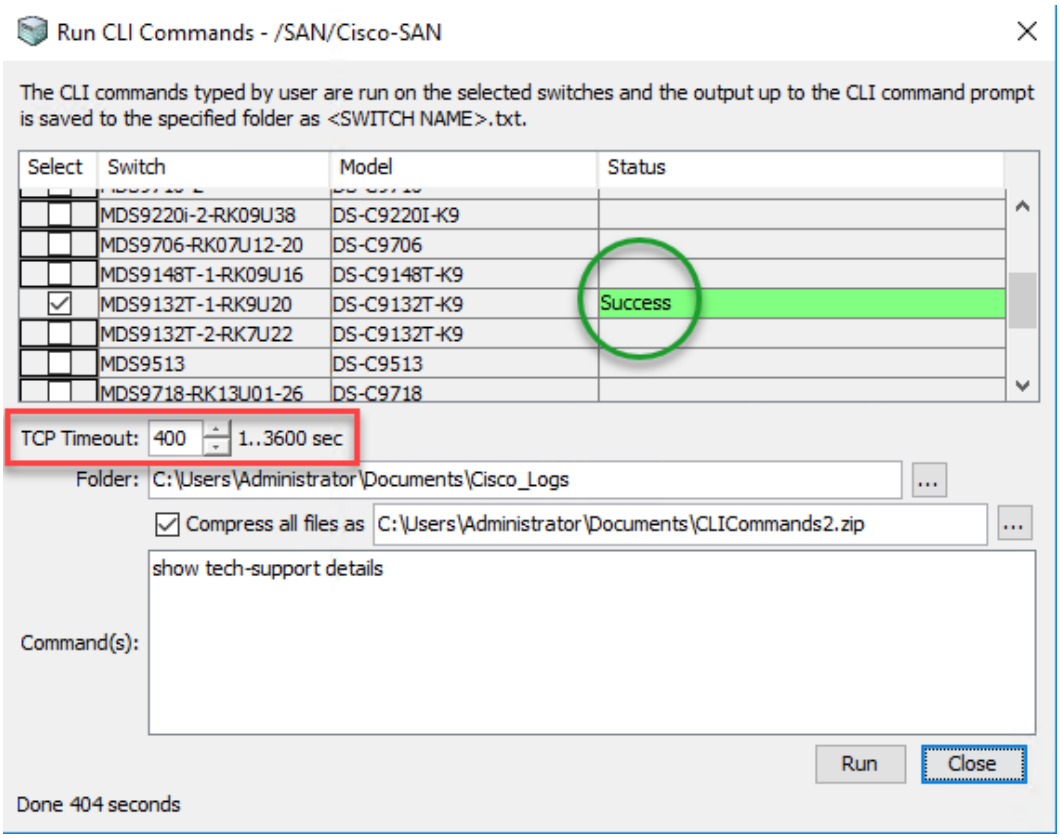

Figure 6. "Run CLI Commands" — TCP Timeout

Handling core files

Core files (occasionally referred to as core dumps) consist of the recorded state of the working memory of the NX-OS program at a specific time. They are per-process system memory dumps, so they don't take up the full memory. They might be several MB in size. They are available in situations where an NX-OS process or service crashes or terminates abnormally. When that happens, a core file is automatically produced and, by default, saved on the switch in a dedicated directory of the persistent storage. Core files can also be generated for specific needs by special tools available from Cisco. Core files can be sent to an external server through TFTP, SFTP, or SCP or to a flash card in slot0: of the local switch. You should set up your switch to send core files off the switch under guidance and instruction from your customer support representative. They are decoded by technical support engineers. Core files saved in the local switch should be copied to an external location at the earliest possible opportunity because they may be deleted with certain switch events. To see if any core file exists, the **show core** command can be issued.

Core files can be copied on-demand or periodically. For on-demand transfer of a core file to an external location, the **copy core**: command can be issued. See the "Transferring files from/to switch bootflash" section. A best practice is to set up cores files to go to an external server. Then, these core files can be shared with the HPE Support Center engineer. To set up a periodic copy of core files on your switch using NX-OS CLI, use the **system cores** command.

switch# **system cores tftp://<tftp-server-ip>/c-series_corefiles**

switch# **show system cores**

Core files are transferred to **tftp://<tftp-server-ip>/c-series_corefiles**

The directory **c-series_corefiles** must already exist in the TFTP server directory. If the directory specified by this task does not exist, the switch software logs a system message each time a copy core is attempted.

Use the **clear cores** command to clean out all the core files present on the active supervisor module.

Collecting tech-support files for management software

Collecting tech-support file for the Cisco Nexus Dashboard Fabric Controller

Cisco Data Center Network Manager (DCNM) is renamed as Cisco Nexus Dashboard Fabric Controller (NDFC) from Release 12.0.1a. Cisco NDFC is designed with an HTML-based web user interface (UI), which is the main interface for the product. Also, there is a fully integrated device manager used for visualizing and managing each individual switch or director.

For Cisco Nexus Dashboard related details, see the Cisco Nexus Dashboard Release Notes.

For Cisco Nexus Dashboard Fabric Controller details, see the Cisco Nexus Dashboard Fabric Controller Release Notes.

Cisco Nexus Dashboard Fabric Controller allows you to collect and download logs for troubleshooting.

1. Navigate to your Nexus Dashboard's **Admin Console**.
2. From the main navigation menu, select **Operations > Tech Support**.
3. In the Tech Support section, click **Collect Tech Support**.
4. In the **Collect Tech Support** window that opens, provide a description.
5. Choose a category from the dropdown to specify what type of tech support information you want to collect.
   a. System collects Infra tech support information.
   b. Nexus Dashboard Fabric Controller collects NDFC tech support log.
6. Click **Collect**.

   You can track the progress on the same screen.

7. Once it's done, download the Tech Support archive by clicking **Download** next to it.

   To delete an existing Tech Support package, select it in the **Tech Support** screen and choose **Delete Tech Support** from the **Actions** menu.

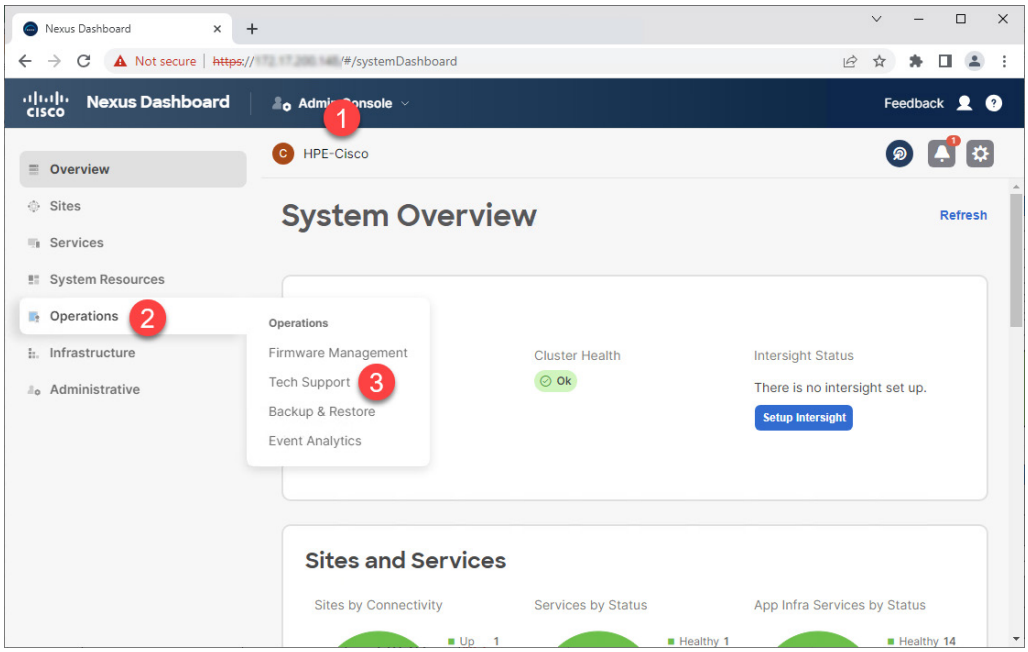

Figure 7. Accessing 'Tech Support' from the Nexus Dashboard Admin Console

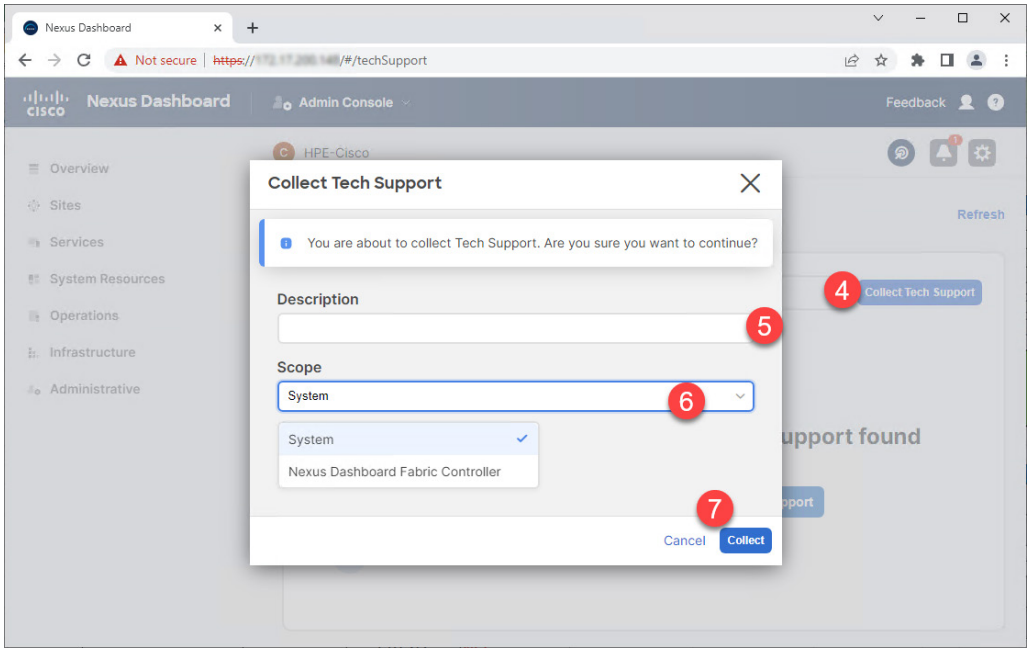

Figure 8. Option to select the scope

Collecting tech-support file for the DCNM Server

In case of issues related to DCNM tool, we may need to collect tech-support file from the DCNM tool for further investigation.

Collecting tech-support file from the DCNM web GUI

Log in to DCNM web user interface, go to **Administration > DCNM Server > Logs**.

Figure 9. DCNM web login page

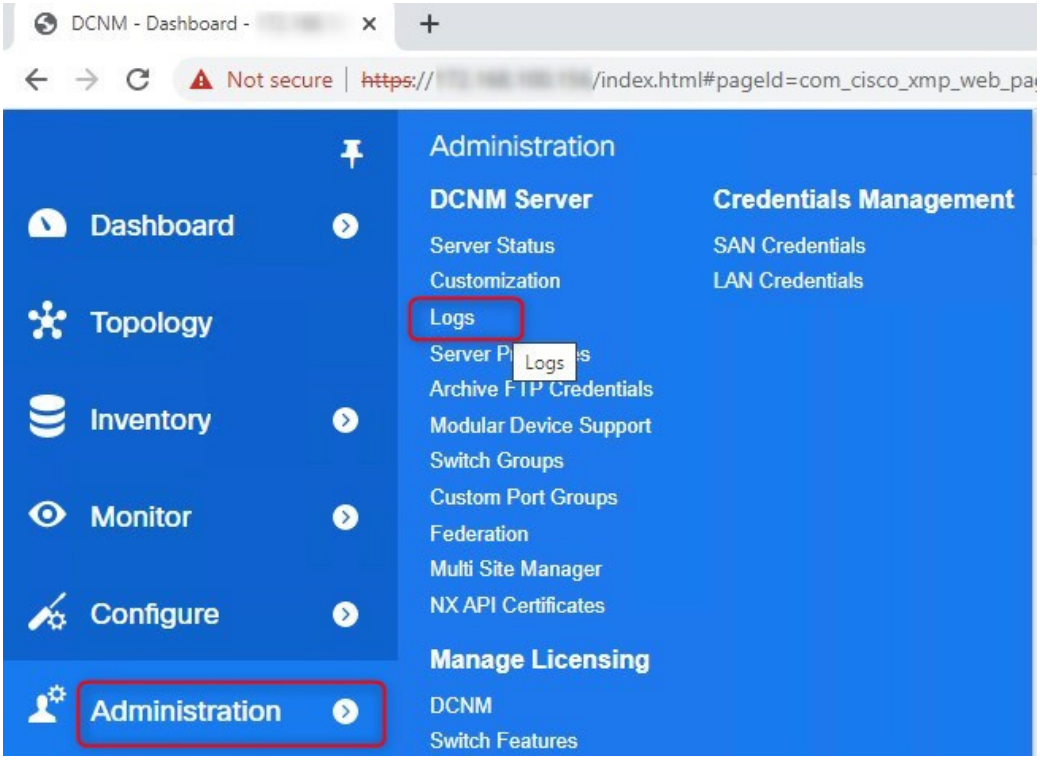

Figure 10. DCNM Administration > Logs

At the top right of the page, select **Generate Techsupport** and follow instructions in the follow-up window.

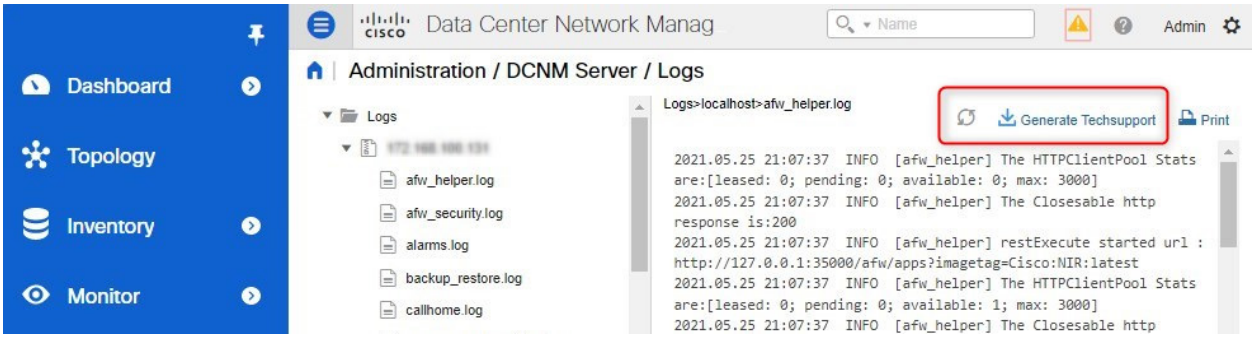

Figure 11. "Generate Techsupport" from DCNM web

Note
Make sure the pop-up blocker is disabled or the IP address (or URL) of the DCNM Server is in the allowed list. Once it generates the tech-support file, you can see them on the browser's **Downloads** folder.

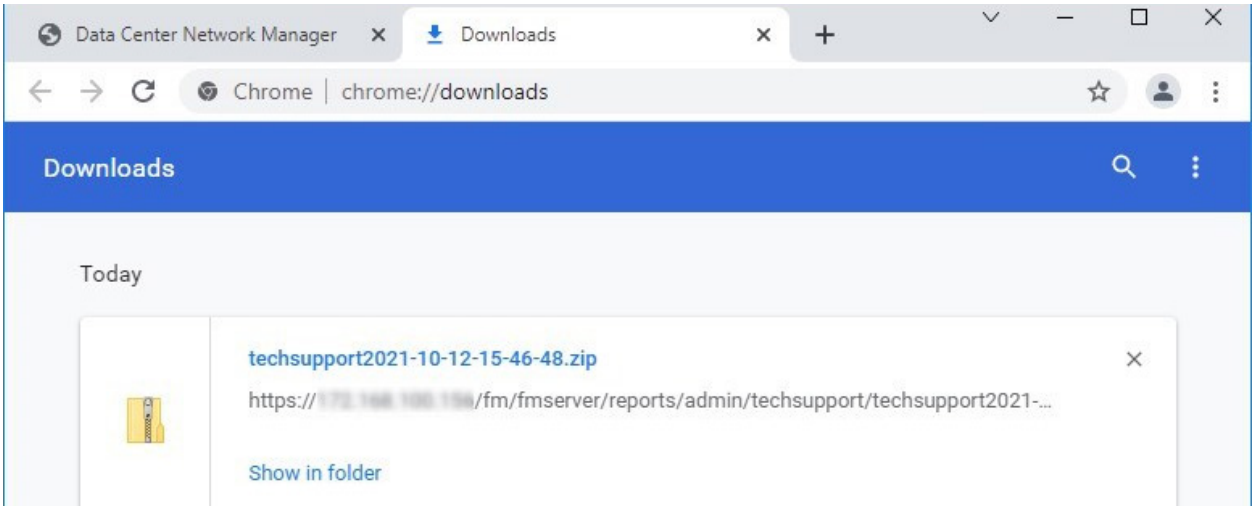

Figure 12. Generated tech-support file will be available at the browser's Downloads folder

Collecting tech-support on DCNM Windows installation

On the DCNM Windows installation, go to the DCNM installation directory, navigate to /**dcm/fm/bin/**, right-click **techsupport.bat**, and select **Run as administrator**.

Default location: **C:\Program Files\Cisco Systems\dcm\fm\bin**

Once the batch file completes, it will report the location and name of the generated tech-support. The location is always **<INSTALLDIR>/dcm/fm/logs/**

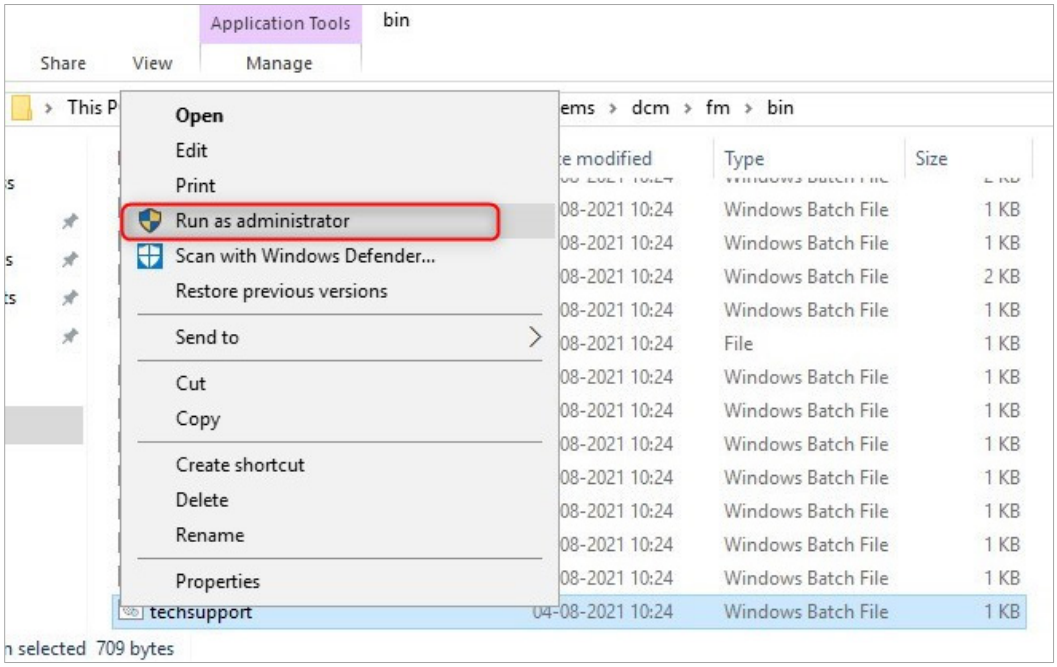

Figure 13. Run tech-support batch file from DCNM (Windows) installation directory

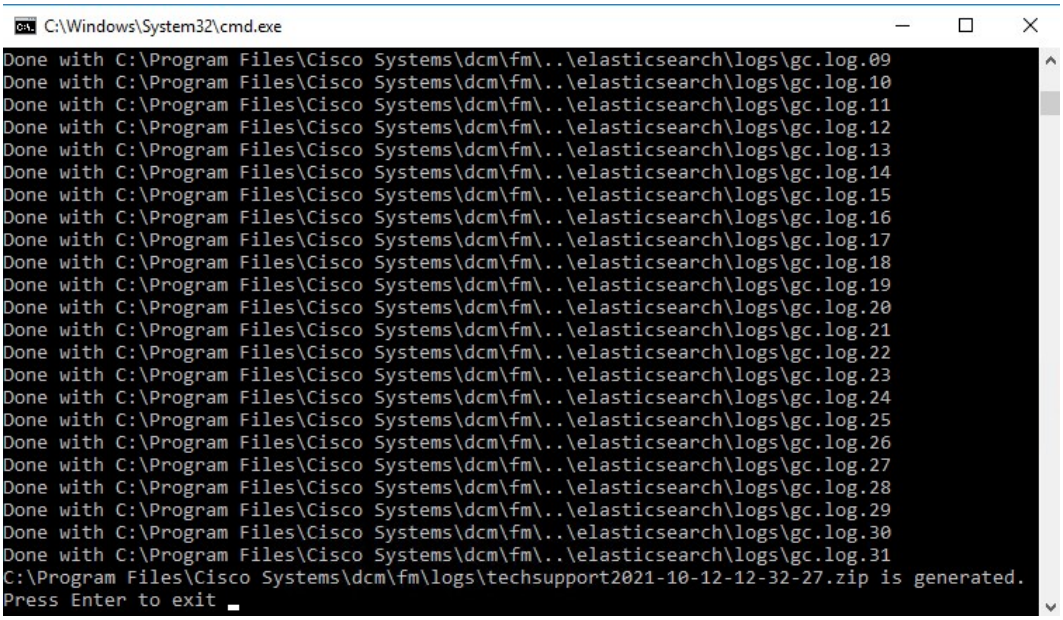

Figure 14. Generate tech-support from DCNM tech-support batch file

Collecting tech-support on DCNM Linux® installation

On the DCNM Linux installation, run the **techsupport.sh** file from the folder **<INSTALLDIR>/dcm/fm/bin/**
In DCNM OVA installations, the direct path is **/usr/local/cisco/dcm/fm/bin/techsupport.sh**
The location and name of the generated tech-support is indicated in the bottom of the output.

```
[root@dcnm ~]# cd /usr/local/cisco/dcm/fm/bin/
[root@dcnm bin]# ls
addSanAnalyticsESTemplate.sh  eplStandBy.sh     pgbackup.sh   RegisterPlugin.sh
addUser.sh                    FabricManager.sh  pgrestore.sh  seedSwitchUpdater.sh
adminUnlock.sh                FMGeneric.sh      PLMapping.sh  startSANServer.sh
ciscosmis                     fmserver          PM.sh         stopSANServer.sh
DeviceManager.sh              FMServer.sh       postgresql    techsupport.sh
Encrypter.sh                  patch.sh          python
[root@dcnm bin]# sh techsupport.sh
Server configuration file loaded: /usr/local/cisco/dcm/fm//conf/server.properties
ServerStore configuration file loaded: /usr/local/cisco/dcm/fm//conf/serverstore.properties
Done setting System properties
log4j:WARN No appenders could be found for logger (fms.db).
log4j:WARN Please initialize the log4j system properly.
log4j:WARN See http://logging.apache.org/log4j/1.2/faq.html#noconfig for more info.
Done loading from db
Done sending show tech to server
0:Received

%  from server
```

Figure 15. Initiate tech-support log collection from DCNM Linux/OVA installation

```
Done with /usr/local/cisco/dcm/fm/logs/epl.log
Done with /usr/local/cisco/dcm/fm/logs/alarms.log.1
Done with /usr/local/cisco/dcm/fm/logs/alarms.log
Done with /usr/local/cisco/dcm/fm/logs/alarms.log.2
Done with /usr/local/cisco/dcm/fm/logs/sananalytics.log
Done with /usr/local/cisco/dcm/fm/logs/nesla.log
Done with /usr/local/cisco/dcm/fm/logs/callhome.log
Done with /usr/local/cisco/dcm/fm/logs/packagemanager.log
Done with /usr/local/cisco/dcm/fm/logs/quartz.log
Done with /usr/local/cisco/dcm/fm/conf/server.properties
Done with /usr/local/cisco/dcm/fm/logs/fms_dump.4
Done with /root/dcnm_installer.log
Done with /usr/local/cisco/dcm/fm/../wildfly-14.0.1.Final/standalone/log/sanservice.log
Done with /usr/local/cisco/dcm/fm/../wildfly-14.0.1.Final/standalone/log/audit.log
Done with /usr/local/cisco/dcm/fm/../wildfly-14.0.1.Final/standalone/log/server.log
Done with /usr/local/cisco/dcm/fm/../smis/server/jserver/logs/jserverlog-4.trace
Done with /usr/local/cisco/dcm/fm/../smis/server/jserver/logs/jserverlog-3.trace
Done with /usr/local/cisco/dcm/fm/../smis/server/jserver/logs/jserverlog-2.trace
Done with /usr/local/cisco/dcm/fm/../smis/server/jserver/logs/jserverlog-0.trace
Done with /usr/local/cisco/dcm/fm/../smis/server/jserver/logs/jserverlog-1.trace
/usr/local/cisco/dcm/fm/logs/techsupport2021-10-12-15-28-34.zip is generated.
Press Enter to exit _
```

Figure 16. The tech-support log generated from DCNM Linux/OVA installation

Collecting tech-support on DCNM SAN Client (GUI-method)

On the DCNM SAN Client, navigate to Tools > Health > Show Tech Support

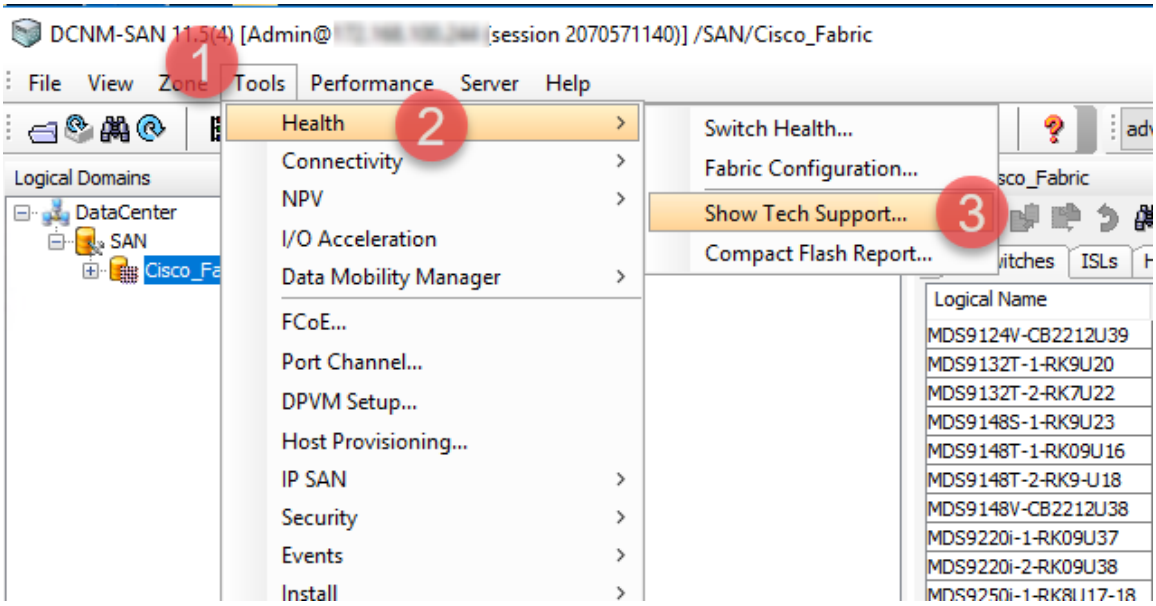

Figure 17. Generate tech-support from DCNM SAN Client login

Choose the switches you need from the list. If necessary, change the folder, pick a filename as recommended by HPE, and then click the **Run** button.

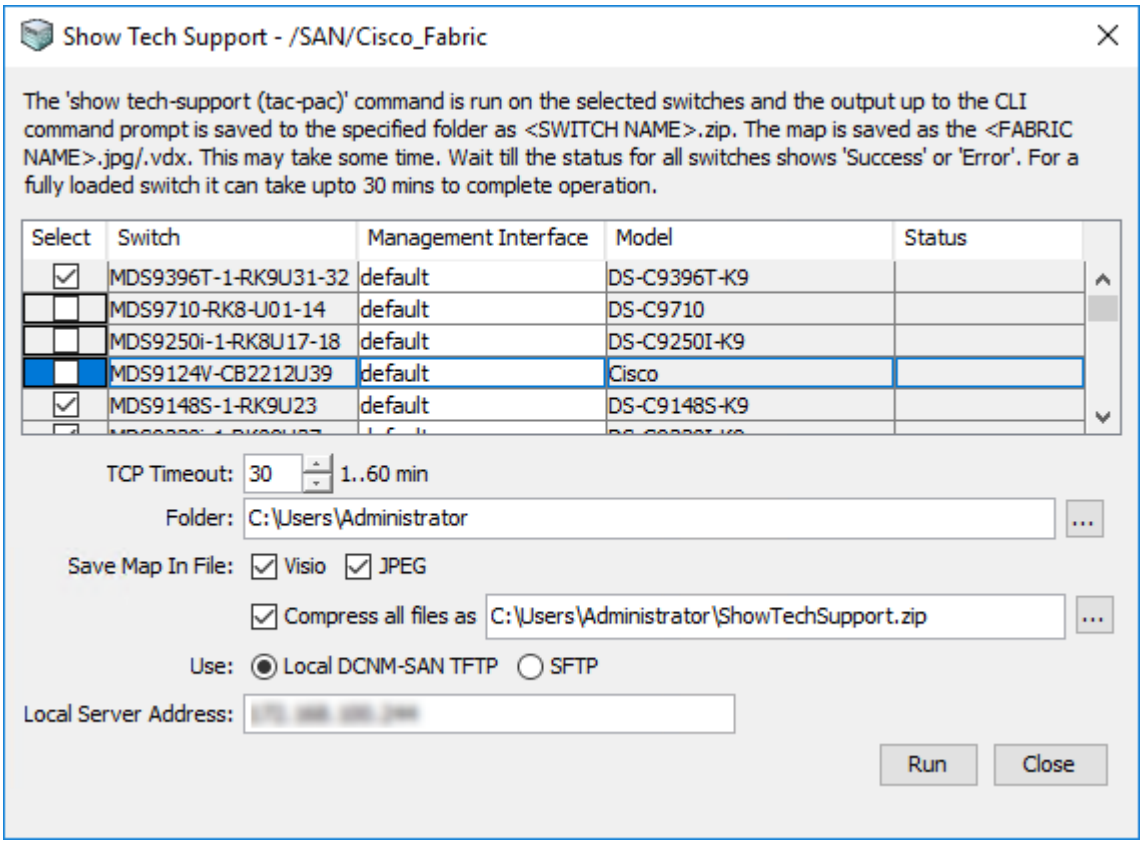

Figure 18. Choose switches from the list and modify file and folder names if needed

Transferring files from/to switch bootflash

In case you decide to generate the tech-support file on the bootflash of the switch, you may need to copy those files to a laptop or an external computer. The same strategy can be utilized to exchange other files such as firmware or config. files from an outside computer to switch bootflash. Cisco NX-OS CLI offers FTP, SFTP, SCP, or TFTP protocols to utilize for replicating to or from the device. The device always acts as a client and the session will start from the switch.

Using CLI method

The copy command on the NX-OS supports the FTP, SCP, SFTP, and TFTP transfer protocols and twelve different sources for copying files.

```
MDS9396T-1-RK9U31-32# copy bootflash: ?
  bootflash:        Select destination filesystem
  debug:            Select destination filesystem
  ftp:              Select destination filesystem
  http:             Select destination filesystem
  https:            Select destination filesystem
  log:              Select destination filesystem
  modflash:         Select destination filesystem
  nvram:            Select destination filesystem
  running-config    Copy from source to running configuration
  scheduled-config  Schedule configuration at the specified source to be applied at next switch
reload
  scp:              Select destination filesystem
  sftp:             Select destination filesystem
  startup-config    Copy from source to startup configuration
  system:           Select destination filesystem
  tftp:             Select destination filesystem
  usb1:             Select destination filesystem
  volatile:         Select destination filesystem


MDS9396T-1-RK9U31-32# copy bootflash:
```

In the following example, we are copying the tech-support file from the bootflash to an external TFTP server.

```
MDS9396T-1-RK9U31-32# copy bootflash:SN6630C1_sh_tech_support_det_20211013_1228.log
tftp://172.xx.xx.xx
Trying to connect to tftp server......
Connection to server Established. Copying Started.....
-
TFTP put operation was successful
Copy complete.
MDS9396T-1-RK9U31-32#
```

In case you want to copy a file from a TFTP server to the switch bootflash, see the following example.

```
MDS9396T-1-RK9U31-32# copy tftp://172.xx.xx.xx/JAF1445U9ZU_FM.lic bootflash:
Trying to connect to tftp server......
Connection to server Established. Copying Started.....
|
TFTP get operation was successful
Copy complete, now saving to disk (please wait)...
MDS9396T-1-RK9U31-32#
```

Using device manager

At first, we will show how we can transfer files using DCNM web and Device manager.

To copy the tech-support file from the switch bootflash to your laptop using Device Manager, follow these steps from within the Device Manager screen:

Step 1: Log in to DCNM web.

Step 2: Navigate to **Inventory > Switches**.

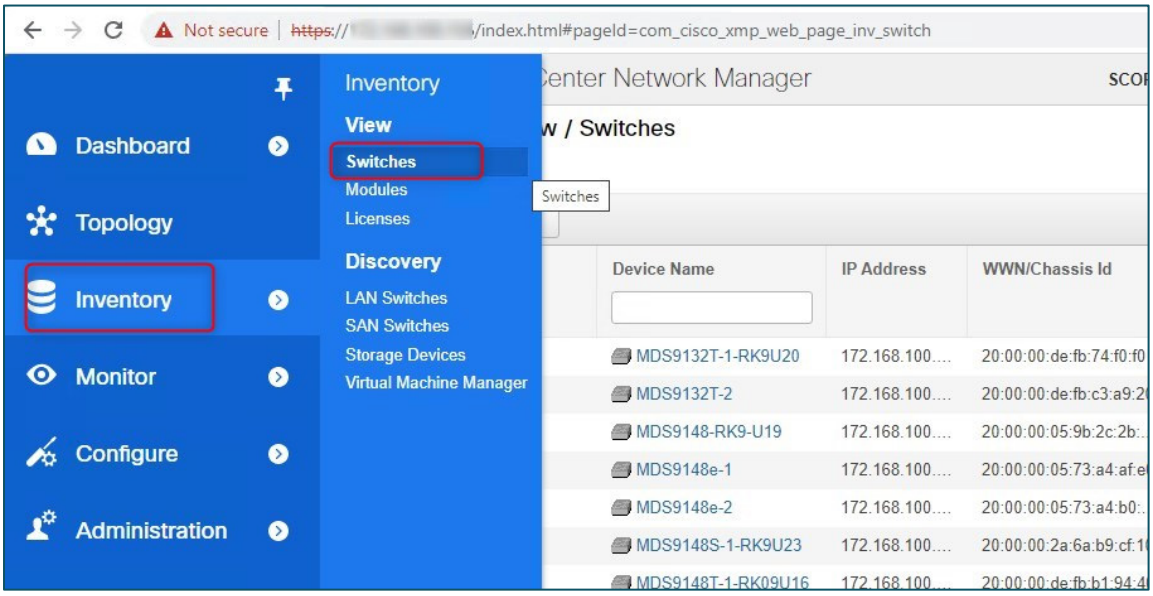

Figure 19. Select the switch from the Inventory — DCNM web

Step 3: Select the switch of your interest and then click the **Device Manager** tab.

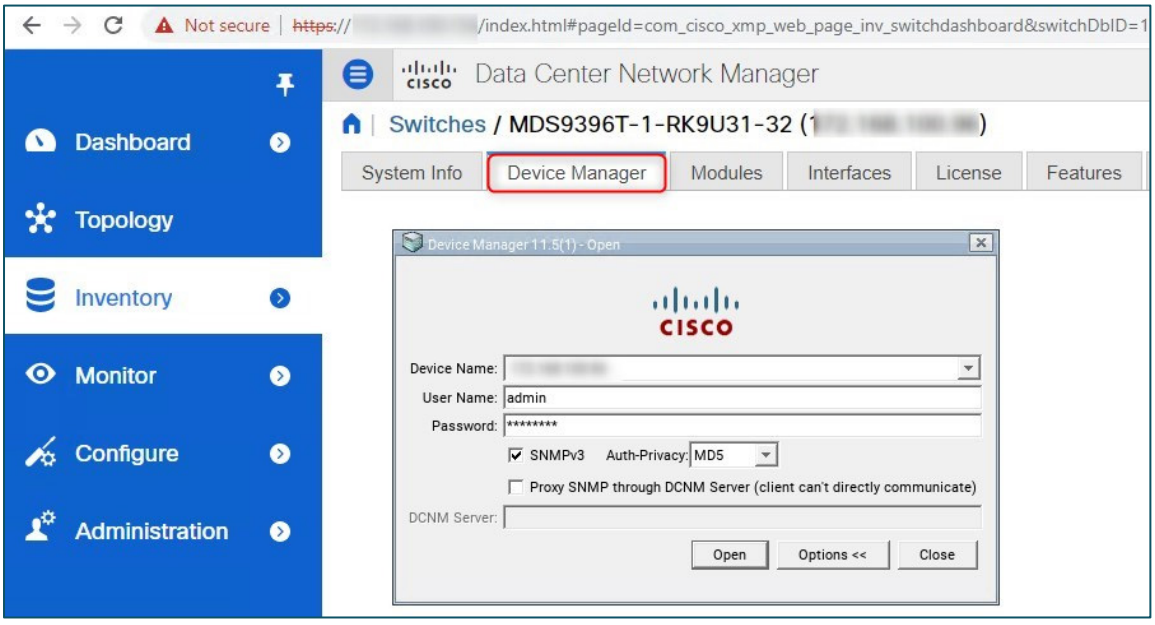

Figure 20. Open Device Manager from the switch Inventory — DCNM web

Step 4: Provide the password and click on **Open** button.

Step 5: From the Device Manager, Open **Admin > Flash files....** A new window will open with the list of files stored on the different flash partitions.

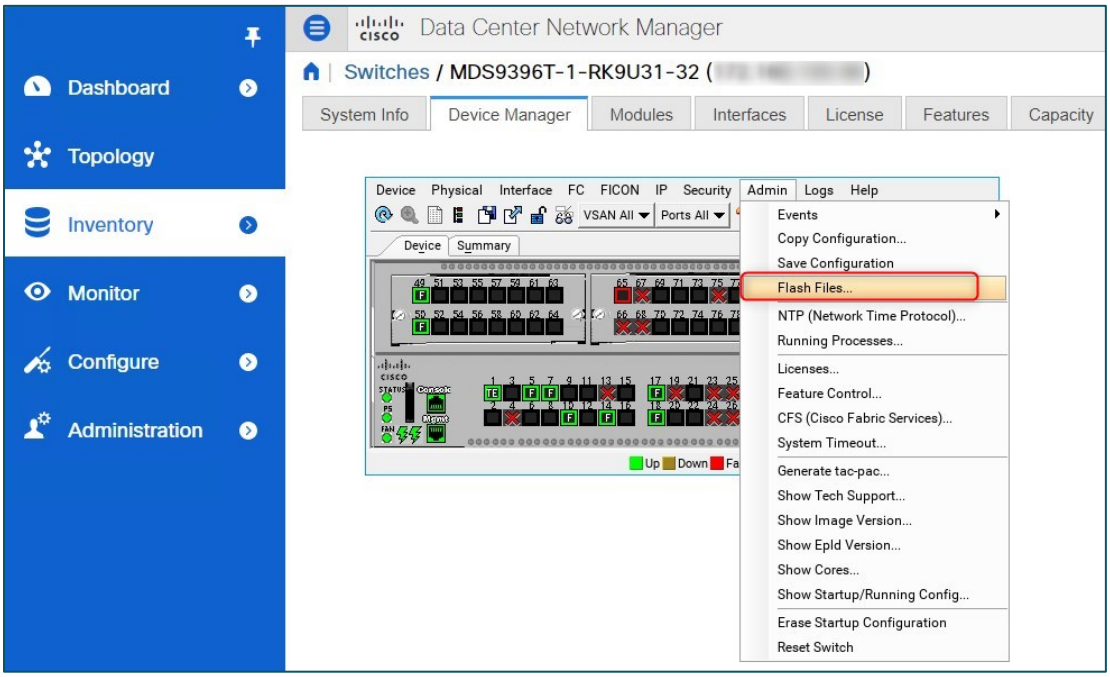

Figure 21. Flash Files option on Open Device Manager — DCNM web

Step 6: Select the file you want to copy and click the **Copy** button.

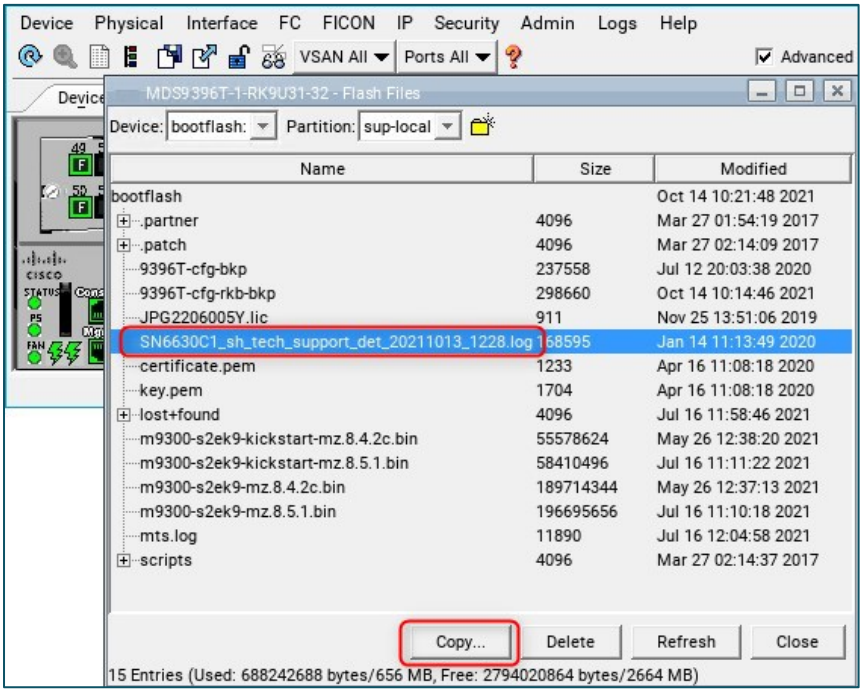

Figure 22. Copy file from Flash Files option on Open Device Manager — DCNM web

Step 7: Select the direction as **Switch > Server, protocol** you want to use to copy the file from the switch, provide server IP address and credentials, as well as the destination file name. (see Figure 23)

Step 8: Click **Apply** button. Once the transfer is complete, it will show the "File transfer successful" message.

Step 9: Click **Close** button.

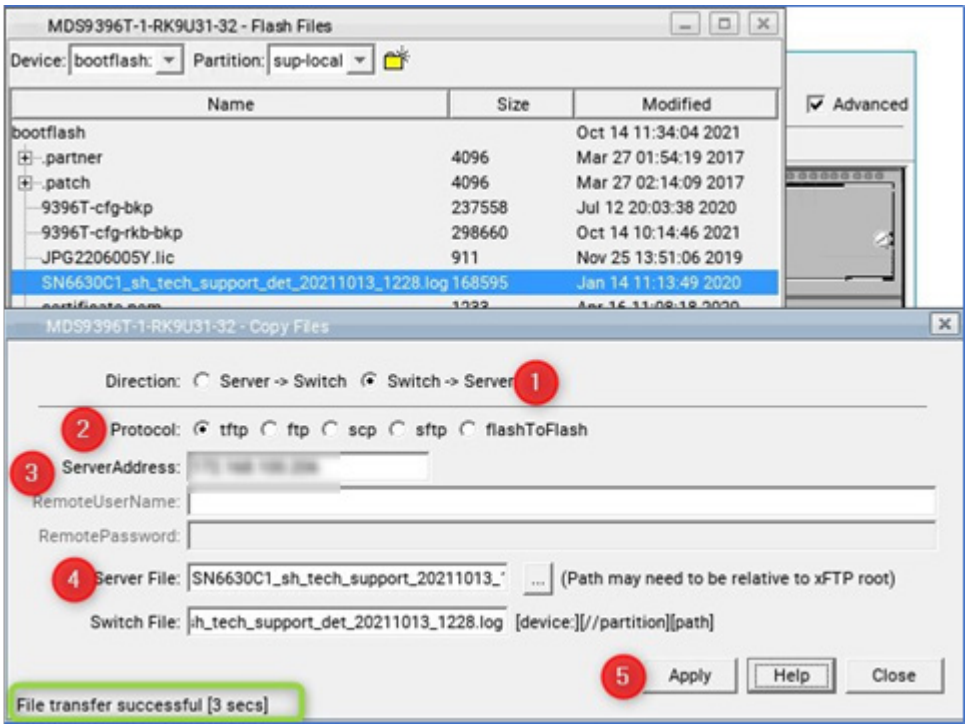

Figure 23. Copy file from bootflash to server — DCNM web

Similarly, we can copy files using Cisco Device Manager application for Windows installs. Open **Cisco Device Manager** by providing IP address and credentials from the Windows start menu. Once the **Cisco Device Manager** opens, follow similar procedures from Step 5 onward from the previously mentioned session.

If you want to copy any file from external server to switch bootflash, follow the same procedure. On Step 7 change the direction and other details as shown in the following screenshot. Once the transfer completes, it will show the "File transfer successful" message.

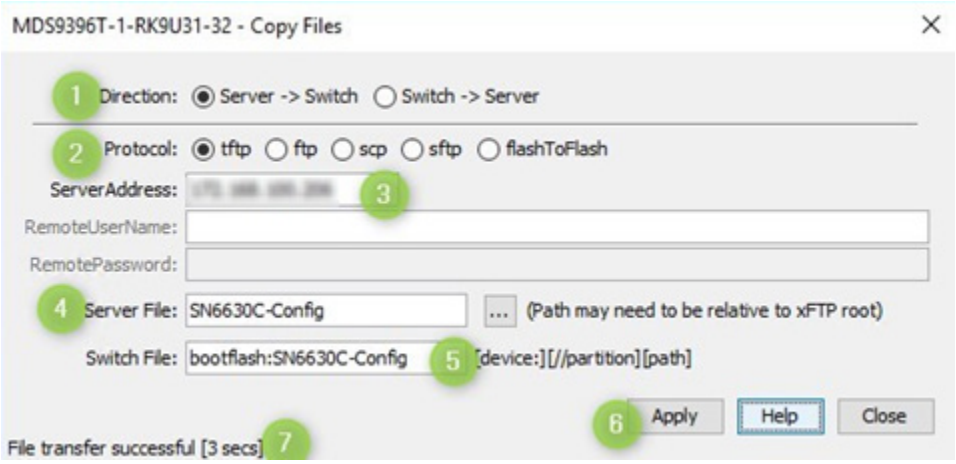

Figure 24. Copy file from Server -> Switch bootflash using Device Manager

Using external / open-source tools (for Windows)

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These third-party tools use the SFTP. Secure File Transfer Protocol (SFTP) is a file protocol for transferring large files over the web. It builds on the File Transfer Protocol (FTP) and includes Secure Shell (SSH) security components. In case you want to use these tools, make sure the feature **sftpServer** is enabled on the switch.

```
MDS9396T-1-RK9U31-32# show feature | grep sftpServer
sftpServer            1         enabled
MDS9396T-1-RK9U31-32#
```

In the following example, we show screenshot from WinSCP and FileZilla application. (Check the previously mentioned HPE disclaimer before you use these tools)

1. **WinSCP**

   Open WinSCP application, select SFTP, provide IP address of the switch and credentials, and click **Login**.
   Once the connection is established, we can easily drag and drop files between switch bootflash and laptop/server.

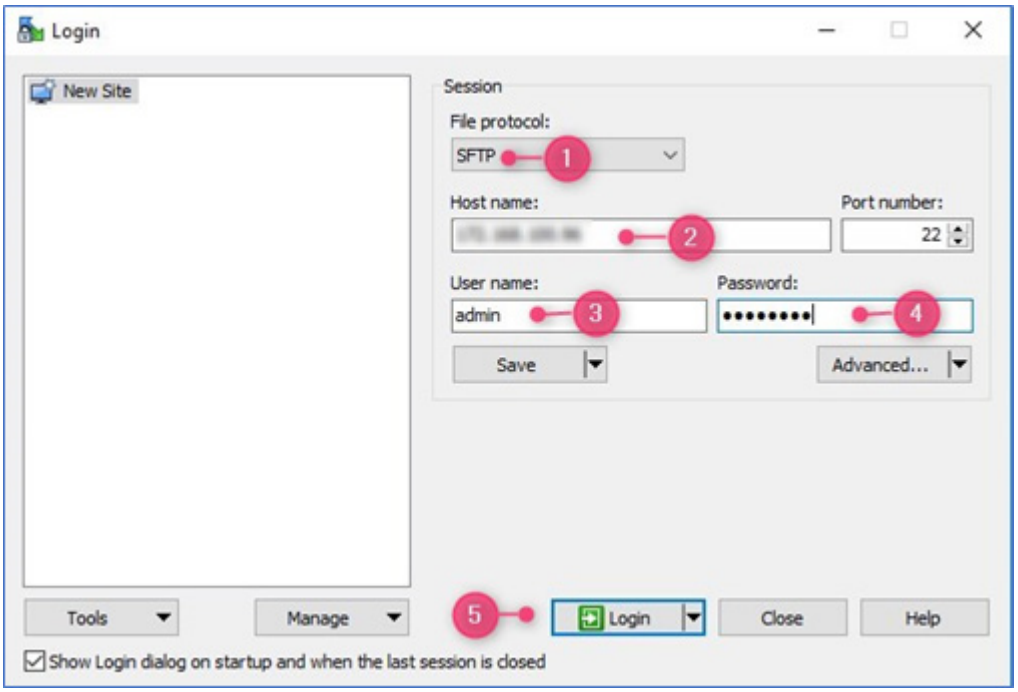

Figure 25. Connect to Switch bootflash using WinSCP tool

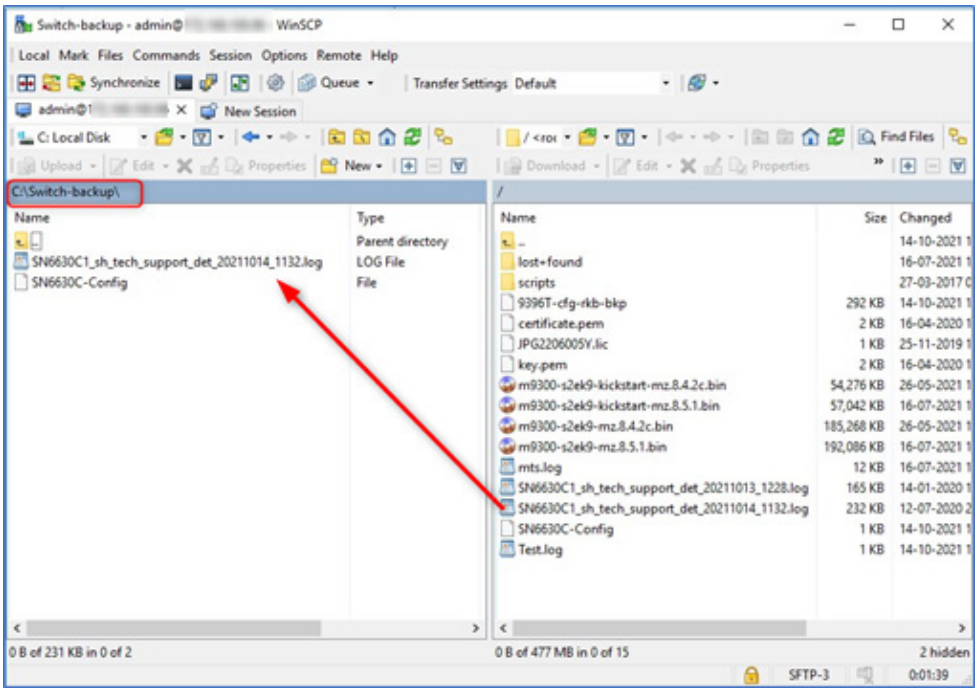

Figure 26. Copy file using WinSCP from Switch bootflash

2. FileZilla

Open FileZilla application, provide IP address of the switch and credentials, use port number as 22, and click **Quickconnect**. Once the connection is established, we can drag and drop files between switch bootflash and laptop/server.

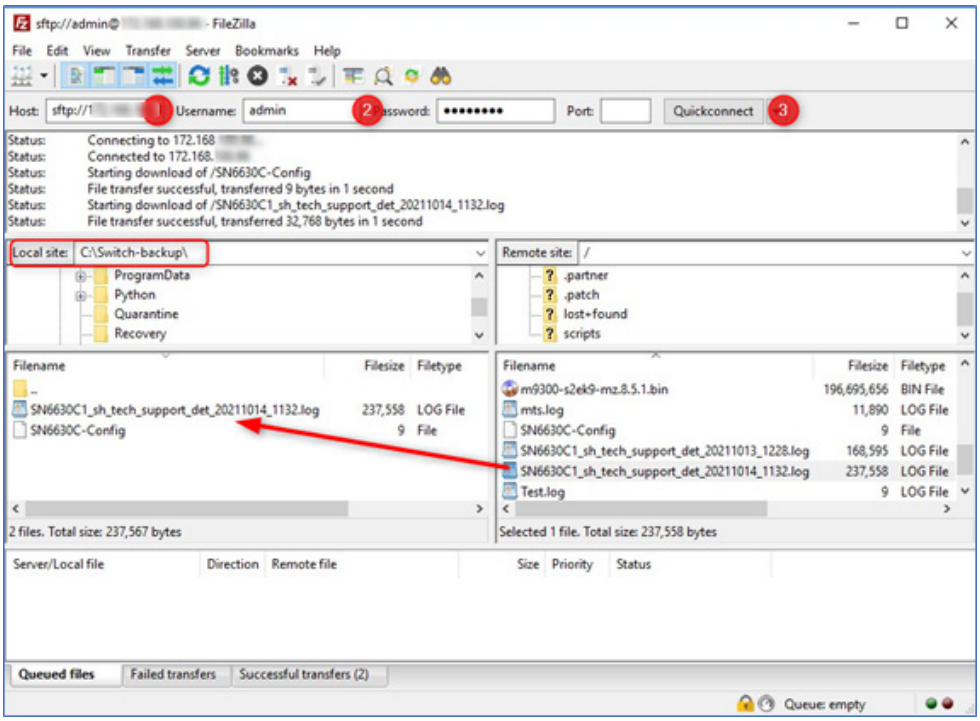

Figure 27. Copy file using FileZilla to Switch bootflash using Device Manager

Note

Please make sure to disconnect the SFTP session after you finish transferring the file.

Summary

This document provides best practices to collect the necessary information and open a service request with the HPE Support Center whenever you need support on HPE C-series switches and DCNM/NDFC. For quicker resolution of your issues, it is important that all the information, such as log files, tech-support files, core dumps, and such are collected and shared with HPE Support engineers in a well-organized way.

Useful links

Note
You must sign up for an HPE Passport to enable access to some of these links

1. Technical support phone numbers | HPE
2. Accessing SPOCK
3. SAN Design Reference Guide
4. HPE C-series cross reference document
5. Cisco Nexus Dashboard release notes
6. Cisco Nexus Dashboard Fabric Controller release notes
7. C-series NX-OS release notes

9.x series	8.5x series	8.4x series
NX-OS 9.3(2a)	NX-OS 8.5(1)	NX-OS 8.4(2f)
NX-OS 9.3(2)		NX-OS 8.4(2e)
NX-OS 9.3(1)		NX-OS 8.4.2(d)
NX-OS 9.2(2)		NX-OS 8.4(2c)
NX-OS 9.2(1a)		
NX-OS 9.2(1)		

8. Latest C-series service advisories
   a. HPE C-Series Switches — HPE SN8500C/SN8700C 48-port 32Gb Fibre Channel Director Module Might Disruptively Reload — Software Upgrade Recommended
   b. HPE C-Series Switches — SN6010C and SN6500C Switches That Run on NX-OS Releases 8.4(2), 8.4(2a), 8.4(2b), 9.2(1) or 9.2(2) Might Spontaneously Reload
   c. HPE C-Series Switches Running NX-OS 8.4(2b) or Earlier — A Disruptive Upgrade Occurs if Switch Bootflash is Mounted on Any FTP/SFTP Software During an ISSU/D
   d. HPE C-Series Switches — HPE SN6630C and HPE SN6620C Might Reload During Traffic or Might Not Pass Traffic After a Non-disruptive Software Update to NX-OS 8.4(2b)

9. See the following table for HPE QuickSpecs and corresponding Cisco data sheet links.

Table 3. HPE QuickSpecs and corresponding Cisco Data sheet.

HPE QuickSpec links	Cisco data sheet links
HPE SN8700C Director Switch HPE C-series SN8500C Director Switch (Retired)	Cisco MDS 9718 Multilayer Director Data Sheet — Cisco
	Cisco MDS 9710 Multilayer Director Data Sheet — Cisco
	Cisco MDS 9706 Multilayer Director Data Sheet — Cisco
HPE Storage Fibre Channel Switch C-Series SN6710C	Cisco MDS 9124V 64-Gbps 24-Port Fibre Channel Switch Data Sheet — Cisco
HPE Storage Fibre Channel Switch C-Series SN6720C	Cisco MDS 9148V 64-Gbps 48-Port Fibre Channel Switch Data Sheet — Cisco
HPE C-series SN6640C Multiservice Switch	Cisco MDS 9220i Multiservice Fabric Switch Data Sheet — Cisco
HPE C-series SN6630C Fibre Channel Switch	Cisco MDS 9396T 32-Gbps 96-Port Fibre Channel Switch Data Sheet — Cisco
HPE C-series SN6620C Fibre Channel Switch	Cisco MDS 9148T 32-Gbps 48-Port Fibre Channel Switch Data Sheet — Cisco
HPE C-series SN6610C Fibre Channel Switch	Cisco MDS 9132T 32-Gbps 32-Port Fibre Channel Switch Data Sheet — Cisco
HPE C-series SN6500C Multiservice Switch (Retired)	Cisco MDS 9250i Multiservice Fabric Switch Data Sheet — Cisco
HPE C-series SN6010C Fibre Channel Switch	Cisco MDS 9148S 16G Multilayer Fabric Switch Data Sheet — Cisco
Cisco Nexus Dashboard Fabric Controller (NDFC)	Cisco Nexus Dashboard Fabric Controller 12
HPE StoreFabric Data Center Network Manager (DCNM) (Retired)	Cisco Data Center Network Manager 11 Data Sheet — Cisco

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Acronyms and abbreviations

DCNM Cisco Data Center Network Manager

MDS Multilayer director switches

SPAN Switch Port Analyzer

HBA Host bus adapter

TFTP Trivial File Transfer Protocol

NVRAM Non-volatile random-access memory

NDFC Nexus Dashboard Fabric Controller

ND Nexus Dashboard

Learn more at

HPE Storage Networking

a50006890ENW, Rev. 1

Hewlett Packard Enterprise