# Data Center Network Manager (DCNM) with SFTP Switch Configuration Backup



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This document describes how to back up a switch configuration with Cisco Data Center Network Manager (DCNM) through SFTP.

# Prerequisites

### Requirements

Ensure that you meet these requirements before you attempt this configuration:

- All switches to be backed up must have an FM\_SERVER license.
- You must have a secure FTP (SFTP) server and user account.
- You must have an Simple Network Management Protocol (SNMP) version 3 user account.
- You must have a Secure Shell (SSH) user account.

#### **Components Used**

The information in this document is based on the Cisco Data Center Network Manager (DCNM) 5.2(x).

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

#### Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

## Procedure

#### **Manual Backup**

Complete these steps in order to use DCNM and SFTP to back up a switch configuration:

- 1. Install an SFTP/SCP server on a DCNM workstation.
- 2. Configure a username and password on the SFTP workstation.

**Note:** This user must have all privileges in the SFTP root directory which includes upload/download/delete/rename/list directory.

- 3. Log in to the DCNM web interface.
- 4. Click Admin > SFTP credentials.
- 5. Fill in the information for the SFTP server.

This information is used on the switch to transfer the configuration file to the SFTP server. The *Root Directory* is the path to the **root directory configured** on the SFTP server.

Example: On a Windows platform, this might be something like "C:\SFTP".

- 6. Choose a verification switch to test against.
- 7. Click Verify and Apply.

Once you click Verify and Apply, these steps occur:

- 1. SSH session is opened to the switch.
- 2. The CLI is used to copy the switch name to a file on bootflash.
- 3. The CLI is used to copy the bootflash file to the SFTP server.
- 4. The bootflash file is deleted.

If this backup was real, the file would be the switch configuration, and these steps would also occur:

- 1. The configuration file is copied from the SFTP server directory to the DCNM database.
- 2. The configuration file in the SFTP directory is deleted.

The status of the operation is reported in the Info dialog box. Here is an example of a successful test:



You can view the logs in the Logs menu (Admin > Logs > Web Reports); here is a sample log:

```
!--- Switch names is MDF-FABRIC-A.
MDS-FABRIC-A#
!--- The IP address of the switch is 172.18.121.66.
2012.05.12 10:07:19 INFO [FM.WebReport]
    show switchname > bootflash:172.18.121.66-120512-100716-TEST
```

```
MDS-FABRIC-A# copy bootflash:172.18.121.66-120512-100716-TEST
   sftp://Jim@172.18. 121.71/172.18.121.66-120512-100716-TEST
!--- SFTP user ID is Jim.
!--- The SFTP (DCNM) server IP address is 172.18.121.71.
Jim@172.18.121.71's password:
2012.05.12 10:07:20 INFO [FM.WebReport]
Connected to 172.18.121.71.
sftp> put /bootflash/172.18.121.66-120512-100716-TEST
    /172.18.121.66-120512-100716-TEST
Uploading /bootflash/172.18.121.66-120512-100716-TEST to
    /172.18.121.66-120512-100716-TEST
/bootflash/172.18.121.66-120512-100716-TEST 0% 0 0.0KB/s --:-- ETA
/bootflash/172.18.121.66-120512-100716-TEST 100% 13 0.0KB/s 00:00
sftp> exit
Copy complete, now saving to disk (please wait)...
MDS-FABRIC-A#
2012.05.12 10:07:20 INFO [FM.WebReport]
   Successful backup
2012.05.12 10:07:20 INFO [FM.WebReport]
   delete bootflash:172.18.121.66-120512-100716-TEST
```

Here is an example of a failure to connect to the switch with SSH:

Error			
8	Verification failed. Please check logs. Failed to back up file from 'MDS-FABRIC-A':		
	ок		
MI 20	)S-FABRIC-A# )12.05.12 10:32:49 INFO [FM.WebReport	]	
20	Start Running Config Diff Report Asy D12.05.12 10:32:49 INFO [FM.WebReport	nc FID:70 vsanPK: Report ' ]	Тур
20	Starting report Verify Server Creden 012.05.12 10:32:53 INFO [FM.WebReport	tials ,report ID:917511 ]	
20	Unable to open connection to Switch )12.05.12 10:32:53 INFO [FM.WebReport	MDS-FABRIC-A ]	
	Unable to open connection to Switch	MDS-FABRIC-A	

Here is an example of SFTP failed due to bad username or password:



Note: An incorrect username was used to generate the sample output below; however, an incorrect password

generates the same failure.

```
MDS-FABRIC-A#
2012.05.12 14:47:31 INFO [FM.WebReport]
    show switchname > bootflash:172.18.121.66-120512-144728-TEST
MDS-FABRIC-A# copy bootflash:172.18.121.66-120512-144728-TEST
    sftp://test@172.18 .121.71/172.18.121.66-120512-144728-TEST
test@172.18.121.71's password:
2012.05.12 14:47:31 INFO [FM.WebReport]
Permission denied, please try again.
test@172.18.121.71's password:
2012.05.12 14:47:31 INFO [FM.WebReport] Incorrect Password
2012.05.12 14:48:25 INFO [FM.WebReport]
Permission denied, please try again.
test@172.18.121.71's password:
Permission denied, please try again.
test@172.18.121.71's password:
2012.05.12 14:48:31 INFO [FM.WebReport]
Permission denied, please try again.
test@172.18.121.71's password:
Permission denied, please try again.
```

Note: Always check the logs if a test is unsuccessful.

#### Automatic (Scheduled) Backup

Complete these steps in order to schedule a job to back up the configuration from the fabric daily:

cisco Data Center Network Manager								
Dashboard - Heath - Performance - Inventory - Reg	ports 🛪 Backup 🛪 SME Admin 🛪							
/ Backup / Create								
Scope:	Backup Options							
<ul> <li>▼</li></ul>	Repeat: Once Onily Weekly Monthly Start: 05/12/2012 ■ 03 ▼ : 00 ▼ V pm End: 05/12/2013 ■ Configurati O Running Startup Create							

1. In the DCNM web interface, click **Backup > Create**.

- 2. Expand SAN, and select the fabric.
- 3. In the Backup Options area, click the **Repeat** radio button that corresponds to how often you want the job to run.
- 4. Enter a start date in the Start field and an end date in the End field.
- 5. Click Create.



To view the job you just created, go to **Backup > Jobs**.

۱، ۲	cisco Data Center Network Manager						
	Dashboard = Health = Performance = Inventory = Reports = Backup = SME Admin =						
	/ Backup / Jobs						
	Action	Job Name	User Name	Details	Status		
1	Û	Backup_120512150221	admin	Backup for Fabric_MDS-FABRIC-A Running config Daily at 15:05 from:05/12/2012 to:05/12/202			

After a job has run, view the Status column for information about the process.

This image shows there are seven (7) switches on the fabric but only two (2) were backed up.

Stadus	
Warning, 2 out of 7 switches backed up	

Go to **Admin > Logs** to view detailed information in the logs:

```
MDS-FABRIC-A#
2012.05.12 15:05:00 INFO [FM.WebReport]
   -----Begin backup for switch: Static-5596-A-----
2012.05.12 15:05:00 INFO [FM.WebReport]
   Skipping unlicensed Switch Static-5596-A
2012.05.12 15:05:00 INFO [FM.WebReport]
    -----Begin backup for switch:F340.24.10-5548-1-x-----
2012.05.12 15:05:00 INFO [FM.WebReport]
   Skipping non SNMP v3 Switch F340.24.10-5548-1-x
2012.05.12 15:05:00 INFO [FM.WebReport]
   -----Begin backup for switch:MDS-FABRIC-A-----
2012.05.12 15:05:02 INFO [FM.WebReport]
   copy running-config bootflash:172.18.121.66-120512-150501-R
Copy complete, now saving to disk (please wait)...
MDS-FABRIC-A#
2012.05.12 15:05:05 INFO [FM.WebReport]
   copy running-config bootflash:172.18.121.66-120512-150501-R
Copy complete, now saving to disk (please wait)...
MDS-FABRIC-A# copy bootflash:172.18.121.66-120512-150501-R
   sftp://Jim@172.18.121 .71/172.18.121.66-120512-150501-R
Jim@172.18.121.71's password:
2012.05.12 15:05:06 INFO [FM.WebReport]
Connected to 172.18.121.71.
sftp> put /bootflash/172.18.121.66-120512-150501-R
   /172.18.121.66-120512-150501-R
Uploading /bootflash/172.18.121.66-120512-150501-R to
```

/172.18.121.66-120512-150501-R

/bootflash/172.18.121.66-120512-150501-R 0% 0 0.0KB/s --:--/bootflash/172.18.121.66-120512-150501-R 100% 25KB 25.4KB/s 00:00 sftp> exit Copy complete, now saving to disk (please wait)... MDS-FABRIC-A# 2012.05.12 15:05:06 INFO [FM.WebReport] Successful backup 2012.05.12 15:05:06 INFO [FM.WebReport] delete bootflash:172.18.121.66-120512-150501-R MDS-FABRIC-A# 2012.05.12 15:05:06 INFO [FM.WebReport] -----Begin backup for switch:F340-----2012.05.12 15:05:06 INFO [FM.WebReport] Skipping unlicensed Switch F340 2012.05.12 15:05:06 INFO [FM.WebReport] -----Begin backup for switch:F440-----2012.05.12 15:05:06 INFO [FM.WebReport] Skipping unlicensed Switch F440 2012.05.12 15:05:06 INFO [FM.WebReport] -----Begin backup for switch:N7K-24-13-7010-1-fcoe-----2012.05.12 15:05:06 INFO [FM.WebReport] Skipping non SNMP v3 Switch N7K-24-13-7010-1-fcoe 2012.05.12 15:05:06 INFO [FM.WebReport] -----Begin backup for switch:24-----2012.05.12 15:05:11 INFO [FM.WebReport] copy running-config bootflash:172.18.121.43-120512-150508-R Copy complete, now saving to disk (please wait)... 24.10.5020A.1# 2012.05.12 15:05:15 INFO [FM.WebReport] copy running-config bootflash:172.18.121.43-120512-150508-R Copy complete, now saving to disk (please wait)... 24.10.5020A.1# copy bootflash:172.18.121.43-120512-150508-R sftp://Jim@172.18.12 1.71/172.18.121.43-120512-150508-R vrf management Jim@172.18.121.71's password: 2012.05.12 15:05:15 INFO [FM.WebReport] Connected to 172.18.121.71. sftp> put /bootflash/172.18.121.43-120512-150508-R /172.18.121.43-120512-150508-R Uploading /bootflash/172.18.121.43-120512-150508-R to /172.18.121.43-120512-150508-R /bootflash/172.18.121.43-120512-150508-R 0% 0 0.0KB/s --:-- ETA /bootflash/172.18.121.43-120512-150508-R 100% 27KB 27.4KB/s 00:00 sftp> exit Copy complete, now saving to disk (please wait)... 24.10.5020A.1# 2012.05.12 15:05:15 INFO [FM.WebReport] Successful backup

0.0KB/s --:-- ETA

The log shows that only 2 of the 7 switches were backed up:

- Two (2) were backed up OK.
- There (3) were skipped because they did not have a license.
- Two (2) were skipped because they did not have SNMPv3 enabled.

To view the backed up configuration, go to **Backup > View**.

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Dashboard + Health + Performance + Invent	ory = Reports	* Bacilup * SME Admin *		•	۵
/ Backup / Were					
Scoper		Switchs		Switch, Time, Running/Startup[:Edit], Checksum, Fil	le Size
Fabric_F340-23-03-2-9222i	-	24	-	MDS-FABRIC-A 2012-05-10, 09:09, R. c507bb6e, 2	6K. 🔺
Fabric_f340+23A+01+9222i+01		F340 (Unlicensed)		MDS-FABRIC-A 2012-05-10, 10:18, R, c507bb6e, 2	6K.
Fabric_MDS-FABRIC-A		F340 (Unlicensed)		MDS-FABRIC-A 2012-05-11, 09:09, R, c507bb6e, 2	6K.
Fabric_pod3-9509-71-5W1	1	F340.24.10-5548-1-x (Unmanaged)	1	MDS-FABRIC-A 2012-05-11, 10:18, R, c507bb6e, 2	6K.
Fabric pod5-9509-111-SW1		MDS-FABRIC-A		MDS-FABRIC-A 2012-05-12, 10:18, R, c507bb6e, 2	6K.
Fabric RTP12-F340-23-02-MD59000-1	- H	N7K-24-13-7010-1-froe (Unmanaged)	- 11	MDS-FABRIC-A 2012-05-12, 15-05, R. c507bb6e, 2	6K.
Fabric_RTP12-F340-23-02-MD59000-2	•	Static-5596-A (Unlicensed)			÷
		Backed up 8 out of 26 CISCO switches. (2 since yesterday)		View Delete Copy Local file To DB	Show All Archives
File Name: MDS-FABRIC-A 2012-05-12, 15:05, R, o	587bb6e, 26K				
🖌 Edit 🛛 Save to Local file					
(Command: show running-config					•
(Time: Sat May 12 15:06:02 2012					
logging level part link-failure pitical					
feature npiv					
feature fport-channel-trunk					
feature ternet					

You can view, delete, copy, and edit the backups, or you can save them to a local file.

## **Related Information**

• Technical Support & Documentation - Cisco Systems

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