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

TAC   **Document ID: 115754**

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Jul 15, 2013

Contents

Introduction

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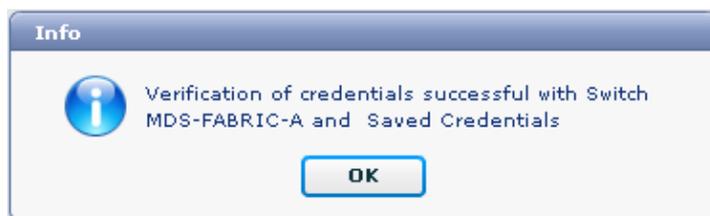
You can view the logs in the Logs menu (Admin > Logs > Web Reports); here is a sample log:

```
!--- 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:
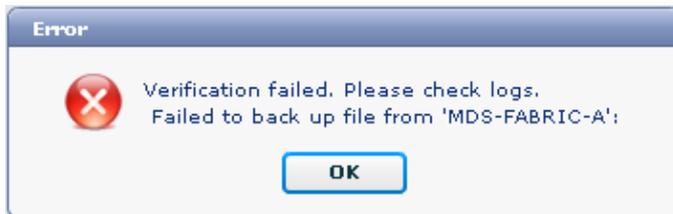

```
MDS-FABRIC-A#
2012.05.12 10:32:49  INFO  [FM.WebReport]
    Start Running Config Diff Report Async FID:70 vsanPK: Report Type:14
2012.05.12 10:32:49  INFO  [FM.WebReport]
    Starting report Verify Server Credentials ,report ID:917511
2012.05.12 10:32:53  INFO  [FM.WebReport]
    Unable to open connection to Switch MDS-FABRIC-A
2012.05.12 10:32:53  INFO  [FM.WebReport]
    Unable to open connection to Switch MDS-FABRIC-A
```

Here is an example of SFTP failed due to bad username or password:
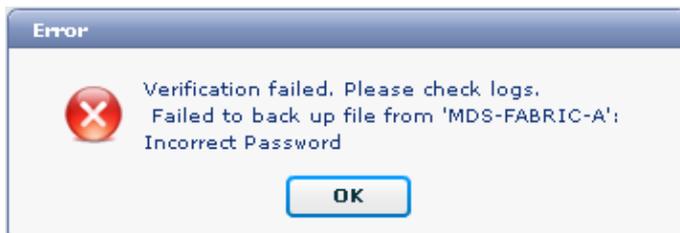
Note: An incorrect username was used to generate the sample output below; however, an incorrect password

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:

1. In the DCNM web interface, click **Backup > Create**.
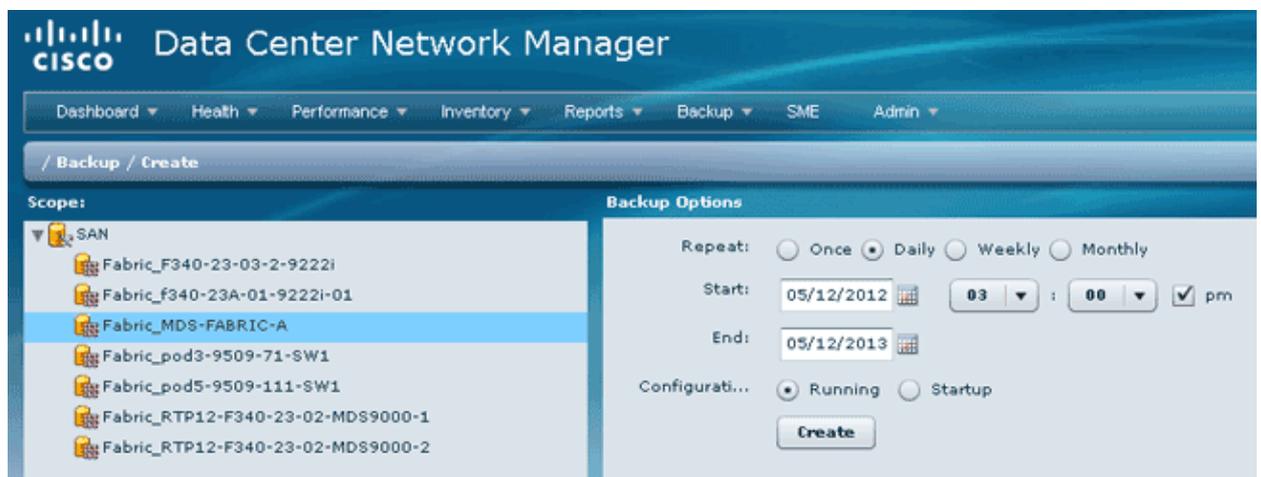
2. Expand **SAN**, and select the fabric.
3. In the Backup Options area, click the **Repeat** radio button that corresponds to how often you want the job to run.
4. Enter a start date in the Start field and an end date in the End field.
5. Click **Create**.
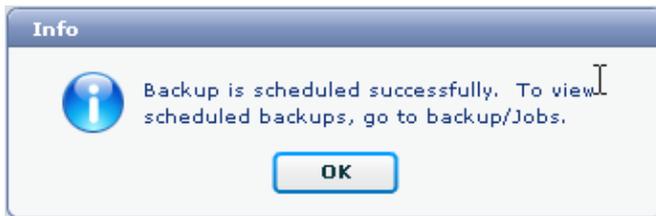
To view the job you just created, go to **Backup > Jobs**.

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.

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  --:-- ETA
/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
```

```
2012.05.12 15:05:16  INFO  [FM.WebReport]
    delete bootflash:172.18.121.43-120512-150508-R


24.10.5020A.1#
2012.05.12 15:05:16  INFO  [FM.WebReport] Backed up Fabric
    Fabric_MDS-FABRIC-A, Switches 2 out of 7 in 0 minutes.
    ********************************************************
```

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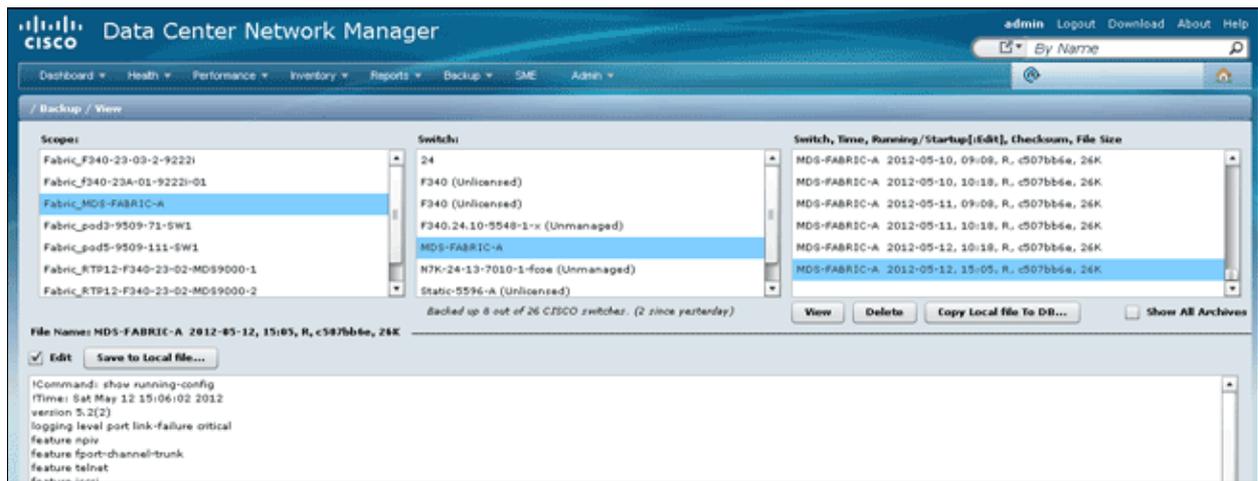
You can view, delete, copy, and edit the backups, or you can save them to a local file.

Related Information

- **Technical Support & Documentation – Cisco Systems**