Rev. A06
2017 - 04

Dell Active Fabric Manager for Microsoft Cloud Platform System 2.2(0.0) Release Notes

This document describes the new features, enhancements, and fixed issues for Active Fabric Manager for Microsoft Cloud Platform (AFM-CPS).

Topics:

Document Revision History

Table 1. Revision History

Revision	Date	Description
A00	2016–04	Updated fixed issues for AFM-CPS 2.0(0.0)P6 Release.
A01	2016–05	Updated for AFM-CPS 2.0(0.0)P7 Release.
A02	2016–06	Updated for AFM-CPS 2.1(0.0) Release.
A03	2016–08	Updated for AFM-CPS 2.1(0.0)P1 Release.
A04	2016–09	Updated for AFM-CPS 2.1(0.0)P2 Release.
A05	2016–12	Updated for AFM-CPS 2.1(0.0)P3 Release.
A06	2017–04	Updated for AFM-CPS 2.2(0.0) Release.

Contents

Features and Requirements

The following requirements apply to AFM-CPS.

AFM-CPS Supported Hardware

AFM-CPS 2.2(0.0) supports the following devices.

Table 2. CPS Supported Hardware

Hardware Version	Supported Devices	Version
CPS 2016	S3048-ON	9.11(0.0)
	S4048-ON	9.11(0.0)
CPS 2014	S4810	9.11(0.0)
	S55	8.3.5.6

AFM-CPS 2.2(0.0) also supports CPS 2016 racks with S3048-ON and S4048-ON devices and CPS 2014.

Table 3. Supported Rack Deployments

AFM-CPS 2.2(0.0)	Supported Rack Deployments
CPS 2016	One to four racks. Each CPS 2016 rack can include: • One S3048-ON switch • Five S4048-ON switches (one for aggregation, two tenant switches configured as a VLT pair, and two data center switches)
CPS 2014	Each CPS 2014 rack can include: • One S55 switch • Five S4810 switches (one for aggregation, two tenant switches configured as a VLT pair, and two data center switches)

About CPS 2016 Racks

- The aggregation, tenant, and data center switches are connected using a distributed core mesh.

- AFM-CPS uses virtual link trunking (VLT) in the access fabric to connect the rack switches to the server and internal BGP (iBGP) for the traffic in the fabric.
- Each S4048-ON switch in the same rack connects to the S3048-ON switch from ports 37–41.
- Each aggregation switch connects to the S3048-ON switch from ports 7–52.
- Port 42 is reserved for the AFM-CPS 2.2(0.0) laptop to connect to the S3048-ON switch in each rack for deployment and management of the switches.
- Each rack has its own subnet and default gateway.
- The S3048-ON in each rack is not directly connected to the switches in the other racks.
- The aggregation switch contains the L3 uplink running BGP connected to the edge router in the network.
- The edge router is not considered part of any single fabric because it is shared with multiple fabrics.
- To run validation checks on the racks and route traffic across the switches, manually configure any edge routers for AFM CPS.
- To validate the link between the management port on the S4048-ON switch and the S3048-ON switch, use the `ping` command.
- With AFM-CPS 2.2(0.0), you can expand the racks to a maximum of four racks.

AFM-CPS Server and Client Requirements

The following tables describe the hardware requirements for the server and client switches.

Table 4. AFM-CPS Server Requirements

Hardware	Requirement
Processor	Intel® Xeon® E5620 2.4Ghz, 12M cache, Turbo, HT, 1066 MHz Max memory
Operating System	Windows Server 2012 R2
Memory	32GB memory (8x4GB) minimum, 1333 MHz Dual Ranked LV RDIMMs for 2 processors, Advanced ECC
Disk Space	1TB 7.2K RPM SATA 3.5 hot plug hard drive

Table 5. AFM-CPS Client Requirements

Hardware	Requirement
Processor	Intel® Core (TM) i5-2520 M CPU @2.50Ghz
Operating System	Windows 8.1 64-bit
Memory	8 GB (minimum)

AFM-CPS Client Requirements

To install and deploy AFM-CPS and to deploy the racks, use a laptop as a host for the AFM-CPS virtual machine (VM). You install the AFM-CPS virtual hard disk (VHDx) on the laptop Hyper-V virtual machine. For information about how to import or export files using Hyper-V, see the Microsoft Hyper-V Documentation.

Using AFM-CPS 2.2(0.0), connect the laptop to each S3048-ON switch in the rack for the initial deployment or after replacement or redeployment of aggregation switches.

Table 6. AFM-CPS Client Requirements

Hardware	Requirement
Processor	Intel® Core (TM) i5-2520 M CPU @2.50Ghz
Operating System	Windows 8.1 64-bit OS or Windows Server 2012 R2
Memory	4 GB (minimum)
Software	Microsoft Hyper-V
	Microsoft System Center Virtual Machine Manager (SCVMM) (required for Hyper-V)

Software Requirements

This section describes information about the virtual machine, client, and server software.

Virtual Machine Requirements

AFM-CPS runs as a virtual machine and requires the following software.

Table 7. AFM-CPS Virtual Machine Software

Hypervisor	Version
Microsoft Hyper-V	6.3.9600.16384
Microsoft System Center Virtual Machine Manager (SCVMM)—Microsoft Hyper-V requires SCVMM.	

AFM Client Software Requirements

The AFM client and server requires the following software.

Table 8. AFM Client and Server Software

Software	Description
Server OS	Windows Server 2012 R2
	Windows requires Administrator permission on the target server. Ensure that you have modification permissions on the network service account for the system temp directory: **%systemroot%\temp**
Client OS	Windows 8.1 64-bit
	System Center 2012 R2
	Windows Azure
Browser	Internet Explorer 9 or higher
	Firefox 12 or higher

Rack Expansion

The rack expansion feature requires switches running CPS 2016.

IP Address Requirements

Before deployment, verify that you have the following IP address information available.

- The AFM-CPS laptop IP address
- The AFM-CPS IP address and Default Gateway for each rack—The IP addresses are different for each rack because each rack has its own subnet and Default Gateway.
- The final AFM-CPS IP address in the infrastructure rack.

Port Configuration Requirements

AFM-CPS requires the following AFM port configurations.

Table 9. Port Configuration

Port	Protocol
20 and 21	FTP
22	SSH and SCP (communication to the switches and CLI access to AFM)
23	Telnet (communication to the switches)
67 and 68	DHCP
69	TFTP
80	AFM server port listening for client connection and requests
123	NTP
161	SNMP get and set protocol between AFM server and switch.
162	SNMP trap listener between AFM and switch.
443	HTTPS communication protocol where the AFM takes requests from the client browser.
5432	Database server
8080	TCP/UDP
61616	ActiveMQ

New in this Release

AFM-CPS 2.2(0.0) includes the following new features:

- Keystore installation Support
- Secure Copy (SCP) Support
- Debian Operating System Support
- TACACS Authentication Support
- BGP Neighbor Authentication
- Tech Support Features
- SNMP V3 Support
- Wiring Changes Support

Known Issues

Known issues are reported using the following definitions.

Category	Description
PR#	Problem Report number that identifies the issue.
Synopsis	Synopsis is the title or short description of the issue.
Release Notes	Release Notes description contains more detailed information about the issue.
Work around	Work around describes a mechanism for circumventing, avoiding, or recovering from the issue. It might not be a permanent solution. Issues listed in the “Closed Caveats” section should not be present, and the work around is unnecessary, as the version of code for which this release note is documented has resolved the caveat.
Severity	**S1** — Crash: A software crash occurs in the kernel or a running process that requires a restart of AFM, the router, switch, or process. **S2** — Critical: An issue that renders the system or a major feature unusable, which can have a pervasive impact on the system or network, and for which there is no work around acceptable to the customer. **S3** — Major: An issue that effects the functionality of a major feature or negatively effects the network for which there exists a work around that is acceptable to the customer. **S4** — Minor: A cosmetic issue or an issue in a minor feature with little or no network impact for which there might be a work around.

Known Issues in this Release

None.

Fixed Issues

Fixed issues are reported using the following definitions.

Category	Description
PR#	Problem Report number that identifies the issue.
Synopsis	Synopsis is the title or short description of the issue.
Release Notes	Release Notes description contains more detailed information about the issue.
Work around	Work around describes a mechanism for circumventing, avoiding, or recovering from the issue. It might not be a permanent solution. Issues listed in the “Closed Caveats” section should not be present, and the work around is unnecessary, as the version of code for which this release note is documented has resolved the caveat.
Severity	**S1** — Crash: A software crash occurs in the kernel or a running process that requires a restart of AFM, the router, switch, or process. **S2** — Critical: An issue that renders the system or a major feature unusable, which can have a pervasive impact on the system or network, and for which there is no work around acceptable to the customer. **S3** — Major: An issue that effects the functionality of a major feature or negatively effects the network for which there exists a work around that is acceptable to the customer.

Category	Description
	S4 — Minor: A cosmetic issue or an issue in a minor feature with little or no network impact for which there might be a work around.

Fixed Issues in this Release

Category	Description
PR#	159322
Synopsis	AFM Predeployment Configuration wizard shows the prior software version as the correct version
Release Notes	The AFM Predeployment Configuration wizard incorrectly shows the previous software version even though the AFM upgrade completed successfully and the new switch firmware version is available. This issue is fixed by showing the latest software version supported for the device for the AFM release in the Predeployment Configuration wizard.
Work around	None.
Severity	S2

Category	Description
PR#	162251
Synopsis	AFM file renamed after transferred to TFTPBOOT folder
Release Notes	When using Transfer Files option in the AFM console, the database backup or log files are created in the transfer directory with a new name which used special characters for the date. These files are now created without the special characters and the new file name is given on the Transfer Files screen.
Work around	None.
Severity	S3

Category	Description
PR#	162851
Synopsis	Pre Deployment and Admin Settings showing different protocols for CLI input
Release Notes	The CLI protocol selection in the pre deployment wizard is fixed to show the CLI protocol selected in the admn settings.
Work around	None.
Severity	S2

Category	Description
PR#	162946
Synopsis	After a CPS upgrade from 2.1P2 to 2.1P3, AFM DB user stopped working.
Release Notes	When users other than superuser are included in a database restore to a new VM, the users were not being added to unix which resulted in the users not being completely functional.
Work around	The users can be deleted from the database using psql and then added back using the AFM GUI.
Severity	S2

Migrating AFM-CPS from CentOS to Debian

You can migrate the AFM-CPS database and configuration from CentOS (versions 2.1(0.0)P2 and earlier) to Debian. Migration from CentOS to Debian involves the following steps:

- Backing up database and configuration from AFM-CPS CentOS VM using the AFM-CPS VM console.
- Transferring files to AFM-CPS Debian VM.
- Restoring database and configuration in AFM-CPS Debian VM using the AFM-CPS VM console.

1 Access the AFM-CPS CentOS VM console using SSH.

2 Log in as `superuser`.

3 Select **Backup Database**.

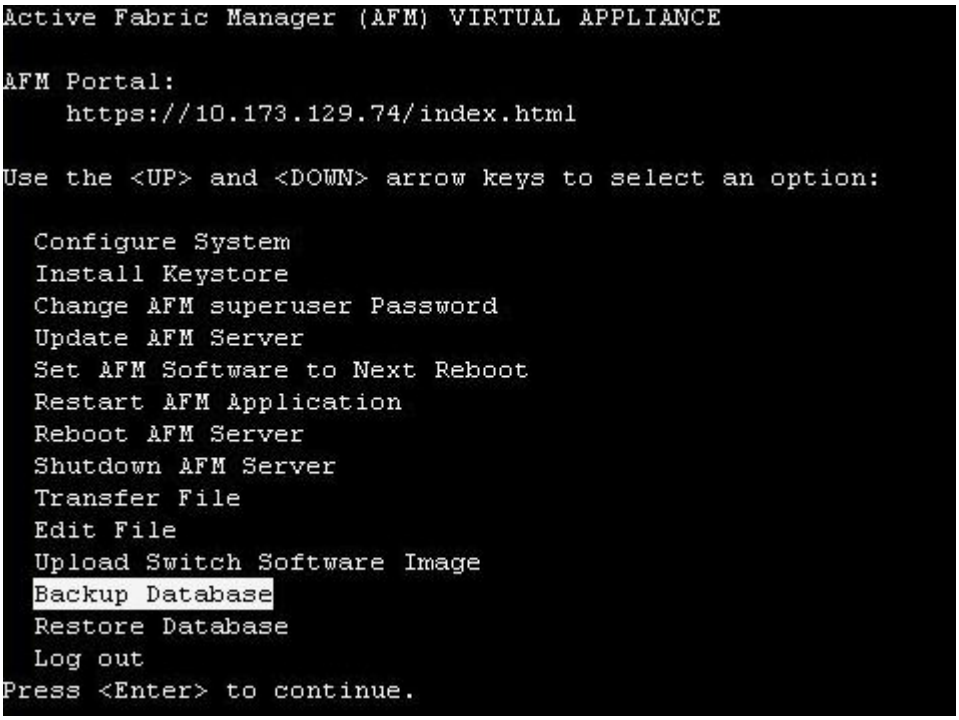

Figure 1. AFM-CPS VM Console Menu Options

The Backup Configuration and Database screen appears.

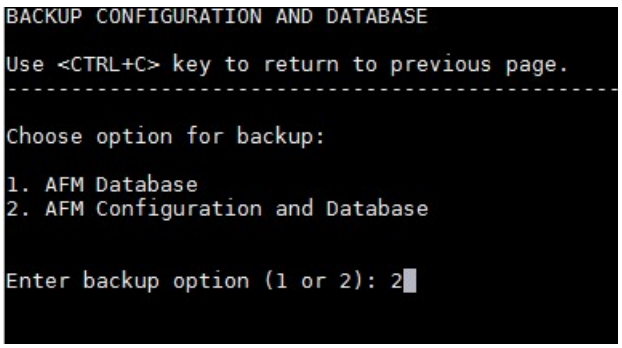

Figure 2. Backup Configuration and Database Screen

4 Select a back up option:

- **AFM Database**—Select to back up the AFM-CPS database files only. Switch configuration and `dhcpd.conf` files are not included.

- **AFM Configuration and Database**—Select to back up the AFM configuration and database files.

AFM-CPS backs up the files.

```
pg_dump: dumping contents of table wnm_unit
pg_dump: dumping contents of table wnm_vlan
pg_dump: dumping contents of table wnm_vltdomain
pg_dump: dumping contents of table wnm_vltmember
pg_dump: dumping contents of table wnm_vltpeerlag
pg_dump: dumping contents of table wnm_vrrpoperation

Database backup created: /data/backup/postgres/afm-db-backup-2016_11_21-04_52_22.custom

Configuration and database backup created: /data/backup/config-db/afm-config-db-backup-2016_11_21-04_52_22.tar.gz


Backup completed. Press <Enter> to return main menu.
```

Figure 3. AFM-CPS File Backup

5 Copy the back up file from the AFM-CPS CentOS VM to the AFM-CPS Debian VM or to another server using Secure File Transfer Protocol (SFTP), File Transfer Protocol (FTP), or Secure Copy (SCP).

6 Access the AFM-CPS Debian VM using the AFM-CPS VM console.

```
Active Fabric Manager (AFM) VIRTUAL APPLIANCE

AFM Portal:
    https://10.173.129.74/index.html

Use the <UP> and <DOWN> arrow keys to select an option:

  Configure System
  Install Keystore
  Change AFM superuser Password
  Update AFM Server
  Set AFM Software to Next Reboot
  Restart AFM Application
  Reboot AFM Server
  Shutdown AFM Server
  Transfer File
  Edit File
  Upload Switch Software Image
  Backup Database
  Restore Database
  Log out
Press <Enter> to continue.
```

Figure 4. AFM-CPS VM Console Menu Options

7 Select **Restore Database**.

The Restore Configuration and Database screen appears.

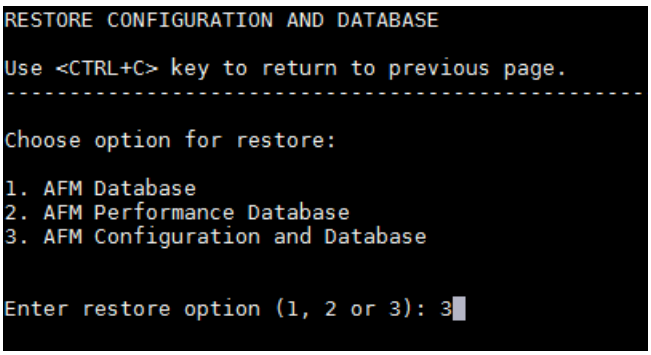

Figure 5. Restore Configuration and Database Screen

8 Select a restoration option: option 1 to restore only the AFM-CPS database; option 3 to restore both the AFM-CPS configuration and database.

> **NOTE: Created back up files are type-specific. Use the Backup files created using the AFM Database option in step 4 only when selecting option 1. Similarly, only use a backup file created in the AFM Configuration and Database option in step 4 when selecting option 3.**

9 At the **Enter database option** prompt, select **User specified location** as the location of the backup file.

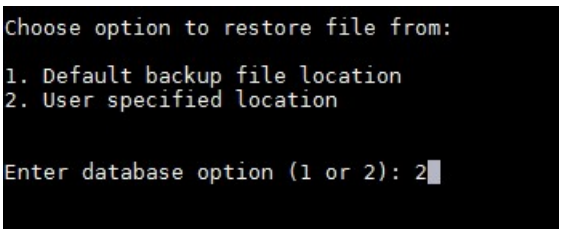

Figure 6. Enter database option Prompt

10 At the **Shared Storage Location** prompt, enter the complete file path of the local backup file location copied from the AFM-CPS CentOS VM.

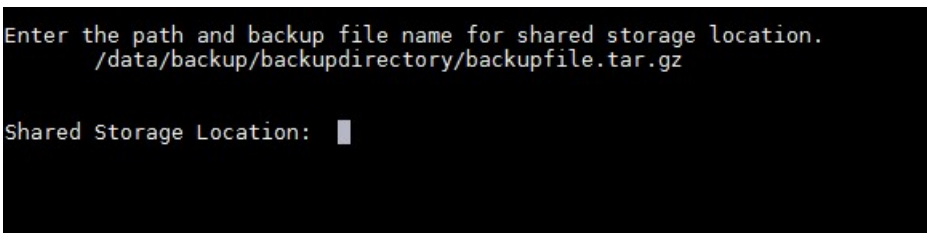

Figure 7. Shared Storage Location Prompt

11 To restore the database and restart AFM-CPS, enter `Y`.

After the backup is restored, verify the following:

- You can start AFM-CPS and log in.
- Confirm that fabrics created in AFM-CPS CentOS are listed in the AFM-CPS Debian user interface.

Upgrading AFM-CPS

The AFM-CPS browser client can be used to upgrade AFM-CPS 2.2(0.0) to a later version.
You can view and manage AFM-CPS updates on the **Server Update**.

1 From the AFM-CPS browser client menu, click **Administration** and then click the **Server Update** tab.
2 In the **Select deb file location** area, select one of the following options:
   - **Local Drive (DVD, USB)**
   - **Remote Server**

     NOTE: If the location is a remote server, enter the URL location of the deb file on the remote server.

     1 From the **Protocol Type** menu, select the protocol type:
        - **https**
        - **ftp**
        - **sftp**
     2 Specify the path of the deb package using the following formats:

        NOTE: The deb filename must start with AFM and must end with .noarch.deb (for example, AFM<version>.noarch.deb).

        - https://*ipaddress/path_to_deb.file*
        - ftp://*ipaddress/path_to_deb.file*
        - sftp://*ipaddress/path_to_deb.file*
3 From the **Select the server update method** area, select:
   - **AFM Upload/Download** — Copy the update to the standby partition on the server but do not apply it or restart. To update, manually start the update from the AFM-CPS server update page.
4 Click **Update**.

   An information note appears indicating that the server update job is scheduled. See the execution details in the **Job Results** tab. When the software image is available, it is listed in the Available Software Version column in the **Server Update** tab.
5 Click **Activate Available Version**.
6 Click **Yes** to enable the available AFM software and reboot the server. During the upgrade process, the AFM server restarts to enable the update in the standby partition. View the process details in the **Job Results** tab.

   When the upgrade is complete, you can confirm the update listed in the **Current Software Version** column in the **Server Upgrade** tab.

Installing Keystores

AFM-CPS supports the installation of third party Keystores that contain Secure Sockets Layer (SSL) certificates.
To install an SSL certificate, you first must have a third party signed SSL certificate and corresponding Keystore file generated from a third party SSL certificate using a PEM file.

1 Use SSH to access the AFM Virtual Machine (VM) console.
2 Log in as `superuser`.
3 Select **Install Keystore**.

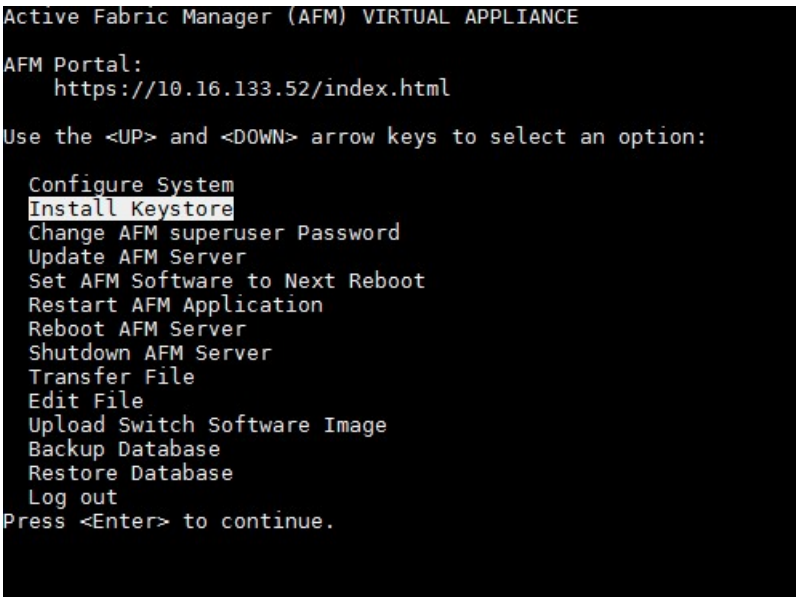

Figure 8. AFM VM Console Menu

4 Select **Import Java Keystore**.

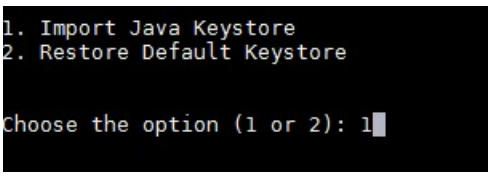

Figure 9. Install Keystore Menu Options

5 At the **URL location** prompt, enter the local or remote location of the Keystore file in one of the following formats:

- Local Keystore file path
- [s]ftp://[*<user>*:*<pass>*@]*<address>*[:*port*]/*<Keystore file path>*

  NOTE: Entering the FTP user name and password is optional.
- https://[*<user>*:*<pass>*@]*<address>*[:*port*]/*<Keystore file path>*

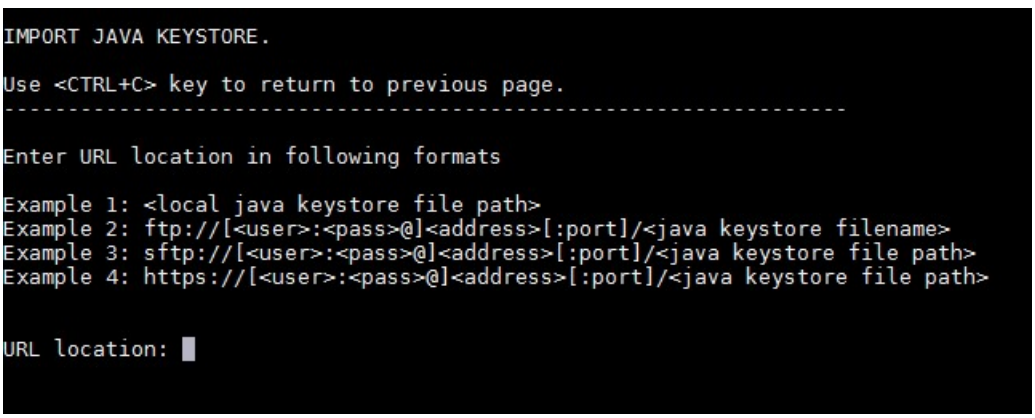

Figure 10. URL Location Prompt

6 At the **Keystore Password** prompt, enter the password. This entry should be the same password that generated the Keystore file from the PEM file.

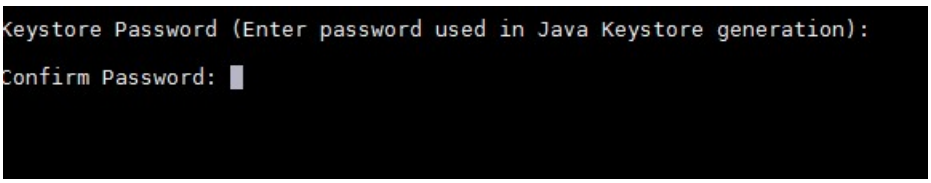

Figure 11. Keystore Password and Confirm Password Prompts

NOTE: AFM VM does echo back the password.

7 At the **Confirm Password** prompt, reenter the Keystore password.

When the Keystore file successfully transfers and installs, you must restart the AFM-CPS server for your change to take effect.

8 At the **Restart AFM application now** prompt, enter `Yes`.

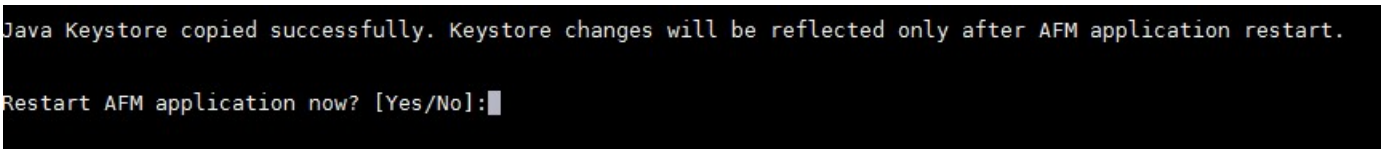

Figure 12. Restart AFM application now Prompt

Restoring Default Keystore Files

AFM-CPS supports restoring default Keystore files.

1 Use SSH to access the AFM Virtual Machine (VM) console.

2 Log in as `superuser`.

3 Select **Install Keystore**.

4 Select **Restore Default Keystore**.

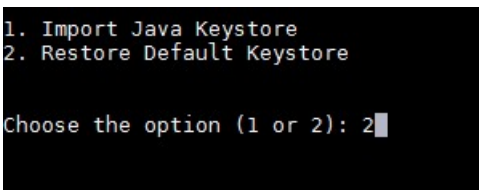

Figure 13. Keystore Menu Options

5 At the confirmation prompt, enter `Y`.

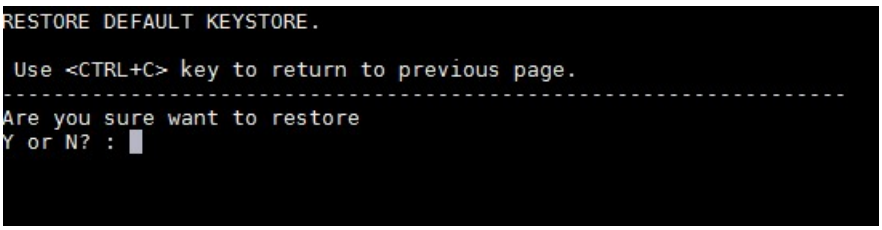

Figure 14. Restore Default Keystore Confirmation Prompt

Restart the AFM-CPS server for the change to take effect.

6 At the **Restart AFM application now** prompt, enter `Yes`.

```
Default Keystore restored successfully. Keystore changes will be reflected only after AFM application restart.

Restart AFM application now? [Yes/No]:
```

Figure 15. Restart AFM Application Now Prompt

Configuring SCP Support During AFM-CPS Setup

AFM-CPS supports configuration for secure copy (SCP) during initial AFM-CPS setup.

NOTE: S55 switches do not support SCP with BMP.

1 In the **Service Protocols** screen of the **AFM Setup** wizard, for the **File Transfer Protocol** setting, select **SCP**. Enter the user name and password to enable SCP for file transfer on the AFM-CPS server. The default user name is `afm`; the default password is `Superuser1`.

NOTE: You can modify these settings in the Settings tab of the Administration screen.

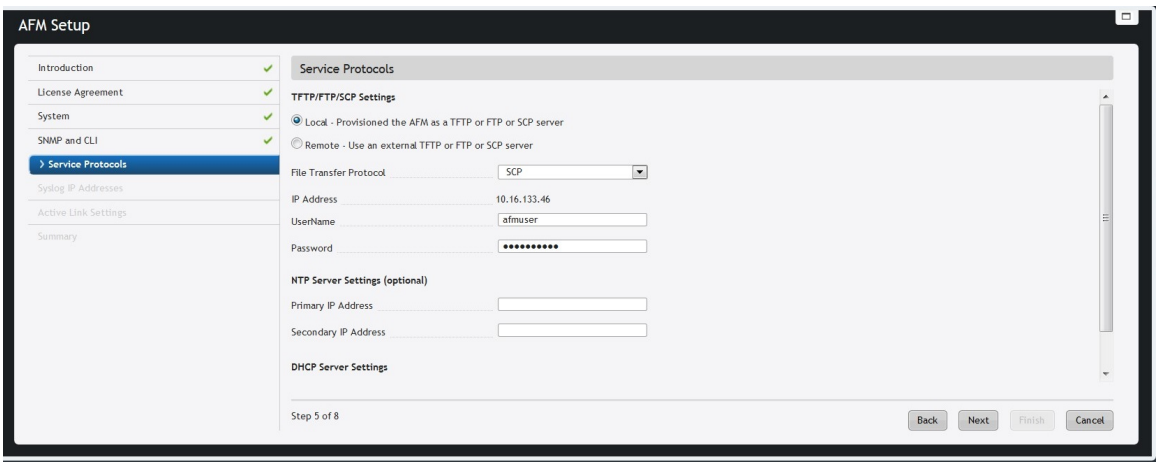

Figure 16. AFM Setup Wizard, Service Protocols Screen

2 Navigate to the **Summary** screen and confirm that the selected File Transfer Protocol setting is SCP.

After configuring SCP, the following occurs in AFM-CPS:

- In the **Predeployment Configuration** wizard, the **Introduction**, **Software Images**, **DHCP Integration**, and the **Summary** screens now refer to SCP.
- For the job of updating switch software image, SCP site settings is displayed.

NOTE: For S3048-ON, S4048-ON, and S4810 switches, to use SCP for file transfer, the OS version must be 9.10(0.1)P13 or later.

SCP Settings

AFM-CPS supports configuration for secure copy (SCP) from the **Administration** screen.

NOTE: S55 switches do not support SCP with BMP.

1 From the menu, click **Administration**, and select the **Settings** tab.

2 In the **TFTP/FTP/SCP Settings** area, click **Edit**.

The **TFTP/FTP/SCP Settings** dialog box appears.

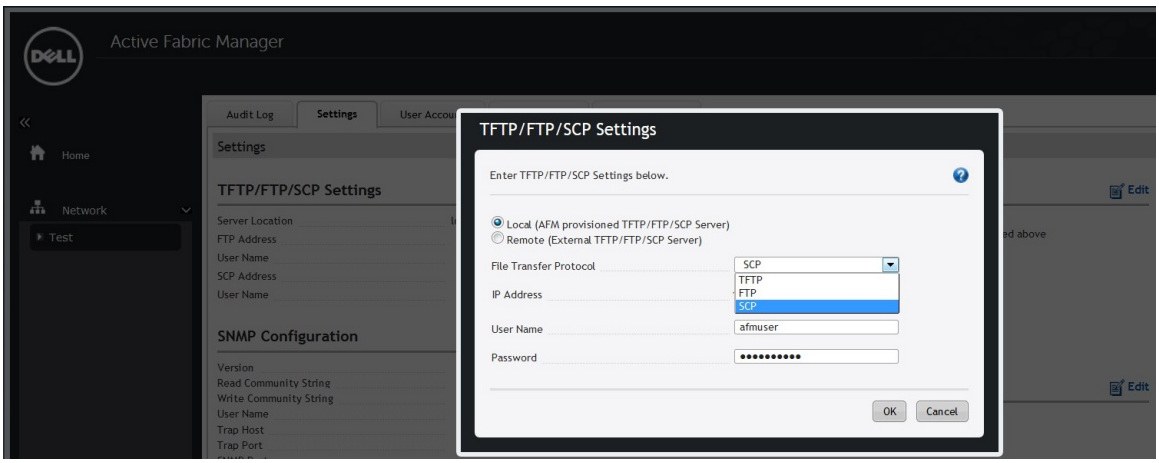

Figure 17. TFTP/FTP/SCP Settings Dialog Box

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3 Enter the user name and password to enable SCP for file transfer on the AFM-CPS server.

NOTE: For local SCP for the AFM-CPS server, the default user name is `afm` and the default password is `Superuser1`.

4 Navigate to the **Summary** screen and confirm that the selected File Transfer Protocol setting is SCP.

After you configure SCP, the following occurs in AFM-CPS:

- In the **Predeployment Configuration** wizard, the **Introduction**, **Software Images**, **DHCP Integration**, and the **Summary** screens now refer to SCP.
- For the job of updating switch software image, SCP site settings is displayed.

NOTE: For S3048-ON, S4048-ON, and S4810 switches, to use SCP for file transfer, the OS version must be 9.10(0.1)P13 or later.

Support Resources

The following support resources are available for AFM-CPS.

Documentation Resources

This document contains operational information specific to Active Fabric Manager for Microsoft Cloud Platform System (AFM-CPS) 2.2(0.0).

For information about using AFM-CPS, see the following documents at http://www.dell.com/support:

- *AFM-CPS 2.2(0.0) Installation Guide*
- *AFM-CPS 2.2(0.0) User Guide*

You can view the AFM-CPS documentation in AFM by selecting the documentation option from the **Help** menu in the AFM user interface.

For more information about hardware features and capabilities, see the Dell Networking website at https://www.dell.com/networking.

For more information about the open network installation environment (ONIE)-compatible third-party operating system, see http://onie.org.

Issues

Issues are unexpected or incorrect behavior and are listed in order of Problem Report (PR) number within the appropriate sections.

NOTE: You can subscribe to issue update reports or use the BugTrack search tool to read current information about open and closed issues. To subscribe or use BugTrack, visit Support at: https://www.force10networks.com/CSPortal20/BugTrack/SearchIssues.aspx.

Finding Documentation

This document contains operational information specific to AFM-CPS.

- For information about using AFM-CPS, see the documents at http://www.dell.com/support.
- For more information about hardware features and capabilities, see the Dell Networking website at https://www.dell.com/networking.
- For more information about the open network installation environment (ONIE)-compatible third-party operating system, see http://onie.org.

Contacting Dell

NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

Go to support.dell.com.