Backing Up and Restoring LAN Operational Mode Setups, Release 12.1.3

Table of Contents

New and Changed Information

The following table provides an overview of the significant changes up to this current release. The table does not provide an exhaustive list of all changes or of the new features up to this release.

Release Version	Feature	Description
NDFC release 12.1.3	Reorganized content	Content within this document was originally provided in the *Cisco NDFC-Fabric Controller Configuration Guide* or the *Cisco NDFC-SAN Controller Configuration Guide*. Beginning with release 12.1.3, this content is now provided solely in this document and is no longer provided in those documents.

Backing Up and Restoring LAN Fabrics

The following sections describe how to back up and restore LAN fabrics.

Guidelines: LAN Fabrics

Following are the guidelines on backing up and restoring LAN fabrics:

- If you add or remove devices to the fabric, you can't restore a fabric from a current date to an earlier date.
- The backup and restore procedures described in this document apply only for NDFC 12.x systems.
- You cannot take backups of external fabrics in monitor-only mode. You can take a backup of external fabrics in monitor-only mode, but you cannot restore them. You can restore this backup when the external fabric is not in monitor-only mode.
- You can take backups of Multi-Site Domain (MSD) fabrics. When you initiate a backup from the parent in a MSD fabric, the backup process is applicable for the member fabrics as well.

Backing Up a LAN Fabric

You can back up all fabric configurations and intents automatically or manually. You can save configurations in Cisco NDFC, which are the intents. The intent may or may not be pushed out to the switches.

The backup has the information related to intent and fabric configurations in addition to the associated state of the resource manager in terms of used resources on the fabrics. Cisco NDFC backs up only when there is a configuration push.

The following sections describe the necessary steps to back up a fabric:

Setting the Maximum Number of Backups Per Fabric

To set the maximum number of backups per fabric, navigate to:

Settings > Server Settings > LAN-Fabric

Locate the **Maximum Backups per Fabric** field and enter the number of backups that you want to

have stored per fabric. The default entry in this field is 2.

When new backups take place, the oldest (non-golden) backup gets removed automatically. Increase the value in this field only after guidance from Cisco TAC.

The backup count also includes golden backups. Cisco NDFC supports a maximum of two golden backups per fabric. See Marking a Backup as Golden for more information.

Enabling an Automatic (Scheduled) Fabric Backup

Cisco NDFC triggers an automatic backup only if you did not trigger any manual backup after the last configuration push.

To enable an automatic (scheduled) backup for fabric configurations and intents:

1. Navigate to the Fabrics window:

   LAN > Fabrics

2. Select a fabric from the list of configured fabrics, then click **Actions > Edit Fabric**.
3. Click the **Configuration Backup** tab, then enter the necessary information in the fields in this tab.

Fields	Descriptions
Hourly Fabric Backup	Check this box to enable an hourly backup only if there is a configuration deployment since the last backup.
Scheduled Fabric Backup	Check this box to schedule an automatic backup at a specified time, entered in the **Scheduled Time** field.
Scheduled Backup	This field becomes editable if **Scheduled Fabric Backup** is enabled. Enter the time that you want the automatic backup to occur, in a 24 hour (UTC) format (00:00 to 23:59).

4. Click **Save** when you have completed the configurations in this tab.

Enabling a Manual Fabric Backup

To enable a manual backup for fabric configurations and intents:

1. Navigate to the **Fabrics** window:

   LAN > Fabrics

2. Double-click on a configured fabric to bring up the **Overview** window for that fabric.
3. Click **Actions > More > Backup Fabric**.
4. Enter a name (tag) for the manual fabric backup, then click **Create Backup**.

Marking a Backup as Golden

Once you have a fabric backup configured (either a manual or an automatic backup), you can mark that fabric backup as *golden*, indicating that you don't want to delete that backup even after you reach the archiving limit. Golden backups will not be removed automatically to make space for new backups.

Note the following guidelines with golden backups:

- NDFC archives only up to ten golden backups.
- You can't delete golden backups of fabrics. However, you can remove the golden backup designation on a particular backup as described below, which would then allow you to delete that backup, if necessary.

You can mark a backup as a golden backup while restoring the fabric. To mark a specific backup as golden:

1. Navigate to the **Fabrics** window:

   LAN > Fabrics

2. Double-click on a configured fabric to bring up the **Overview** window for that fabric.
3. Click **Actions > More > Restore Fabric**.
4. Select the backup that you want to mark as golden, then click **Actions > Mark as golden**.

   If you want to remove a golden mark on a particular backup, select that backup in this window and click **Actions > Remove as golden**.

Restoring a LAN Fabric

To restore a LAN fabric that was backed up (either an automatic backup or a manual backup):

1. Navigate to the **Fabrics** window:

   LAN > Fabrics

2. Double-click on a configured fabric to bring up the **Overview** window for that fabric.
3. Click **Actions > More > Restore Fabric**.
4. Review the backups shown on this page.

   The following table describes the columns that appear on the **Restore Backup** tab.

Fields	Descriptions
Backup Date	Specifies the backup date.
Backup Version	Specifies the version of backup.
Backup Tag	Specifies the backup name.
NDFC Version	Specifies the version of NDFC.
Backup Type	Specifies the backup type (for example, a golden backup).

The following table describes the fields that appear on the **Action** tab.

Actions	Descriptions
Mark as golden	To mark an existing backup as a golden backup, choose **Mark as golden**. Click **Confirm** in the confirmation window.
Remove as golden	To remove an existing backup from a golden backup, choose **Remove as golden**. Click **Confirm** in the confirmation window.

5. In the **Select a Backup** step, click the radio button for the fabric backup that you want to restore, then click **Next**.
6. In the **Restore Preview** step, verify that the information is correct for the backup that you want to restore.

   You can preview the details about the configuration in the backup file. You can also view the name and serial numbers for the switches in the Fabric backup. Click on **Delta Config** to view the configuration difference on the switches in the fabric.

7. Click **Restore Intent**.
8. In the **Restore Status** step, you can view the status of restoring the intent.
9. Click **Next** to view the preview configuration.
10. In the **Configuration Preview** step, you can resync the configurations on specific switches.

    For the desired switch, check the **Switch Name** check box, and click **ReSync**.

11. Click deploy to complete the **Restore Fabric** operation.

Restoring Switch Configurations

NDFC supports restoring configurations for individual switches from certain fabric backups. This is supported in the following LAN fabric types:

- Custom Network
- Classic LAN
- Multi-Site External Network
- External Connectivity Network

To restore configurations for individual switches in one of these fabric types:

1. Navigate to the **Fabrics** window:

   LAN > Fabrics

2. Double-click on a configured fabric from the list above to bring up the **Overview** window for that fabric.
3. Click the **Switches** tab, then select the appropriate switch and click **Actions > More > Restore Switch**.

4. Select the backup that you want to restore from and click **Next**.
5. Click **Get Config** to view the backed up configuration and the current running configuration, and to perform a side-by-side comparision.
6. Click **Restore Intent** to restore the configuration for the switch.

Backing Up and Restoring NDFC Configurations

You can take a backup manually at any time. You can also configure a scheduler to backup all fabric configurations and intents.

Understanding NDFC Backup Formats

You can backup and restore using either of the following formats:

- **Config Only**: A Config Only backup is smaller than a Full backup, which is described below. It contains the intent, dependent data, discovery information, credentials, and policies. A restore from this backup has functional fabrics, switch discovery, expected configurations, and other settings.
- **Full**: A Full backup is large. In addition to everything in a Config Only backup, a Full backup contains current data, historical data, alarms, and host information. A restore from this backup has functional historical reports, metrics charts, and all base functionality.

You can restore a Config Only backup or a Full backup.

When restoring a backup, you can choose to do a Config Only restore or a Full restore.

- A Config Only restore will restore only the configuration (intent, discovery information, credentials, and policies) and can be done using either a Config Only backup or a Full backup.
- A Full restore will restore the configuration and any current and historical data, charts, etc. and can be done using only Full backups.

Wait for a minimum of 20 minutes after a fresh installation before restoring the backup data. Some applications may not be operational if the backup is restored immediately in the freshly-installed setup.

NDFC Backup and Restore Behavior

This table provides information about NDFC backup and restore behavior in release 12.1.2e and later. Anything not mentioned is assumed to be fully supported.

In the following table:

- A Config Only backup and restore includes only the features listed in the **Configuration Data Backup and Restore** column.

- A Full backup and restore includes the features listed in both the **Configuration Data Backup and Restore** and the **Operational Data Backup and Restore** columns.

Feature	Configuration Data Backup and Restore	Operational Data Backup and Restore
Topology > Topology Layout	Supported: Custom Layouts	N/A
LAN > Fabrics	Supported: Fabrics, Switch inventory, Policies, Interface Groups, Networks, VRFs, Resources, Deployment History, Policy Change History	N/A
LAN > Fabric > Fabric Backups	Supported: Fabric Backup Schedules	Not supported: Fabric backups
LAN > Fabric > Services	Supported	Not supported: PBR Stats
LAN > Fabrics > EPL	Supported	Supported: Historical Endpoint Search up to 1 million records. Not supported: • Endpoint Life • Aggregated Endpoint History • Snapshots
LAN > Fabrics > Metrics	Supported	Supported: 90 Days Temperature: 7 Days
Settings > Server Settings	Supported	N/A
Settings > Feature Management	Supported	N/A
Settings > LAN Credentials Management	Supported: Default Credentials, Switch	N/A
Operations > Event Analytics	Supported: Alarm Policies, Event Setup	Not Supported: Alarms, Events
Operations > Programmable Reports	Not supported: Report Definitions	Not supported: Reports
Operations > Image management	Not supported: Policies, Images	Not supported: History
Operations > License Management	Supported	Supported

Feature	Configuration Data Backup and Restore	Operational Data Backup and Restore
Operations > Templates	Supported	N/A
Operations > Backup and Restore	Supported: Backup Schedules	N/A
Operations > NX-API and Bootstrap Certificates	Supported for NDFC release 12.1(3) and later. Not supported in earlier releases.	N/A
Virtual Management	Supported	N/A
IPFM	Supported	N/A
IPFM PTP	N/A	N/A

Guidelines: NDFC Configurations

Following are the guidelines on backing up and restoring NDFC configurations:

- When you migrate from Layer 2 high availability to Layer 3 high availability, as part of the process to restore the backup, check the **Ignore External Service IP Configuration** check box to ensure that the persistent IPs in the backup are ignored and that it selects new ones during the restore. The rest of the data will be restored. See Restoring NDFC Configurations for more information.
- During disaster recovery, NDFC allows you to restore only on the same version on which the backup was taken.
- The backup and restore procedures described in this document apply only for NDFC 12.x systems.

Backing Up NDFC Configurations

The following sections describe the necessary steps to back up an NDFC configuration:

- Enabling an Automatic (Scheduled) Backup of NDFC Configurations
- Enabling a Manual Backup of NDFC Configurations

Enabling an Automatic (Scheduled) Backup of NDFC Configurations

You can create automatic (scheduled) backups of the NDFC configurations and restore those NDFC configurations at a later date, if necessary. Scheduled NDFC configurations backups must be backed up to a remote location.

To enable automatic (scheduled) backups of the NDFC configurations:

1. Navigate to the **Backup and Restore** window:

   Operations > Backup and Restore

2. Review the scheduled backup jobs in this window.

   If there are no backup jobs scheduled yet, **No Schedule set** is displayed in the upper right corner of the window.

3. Click on **No Schedule set**.

   The **Scheduler** window appears.

4. Check the **Enable scheduled backups** check box.
5. Under **Type**, select your desired format to back up (**Config only** or **Full**).

   See Understanding NDFC Backup Formats for more information.

6. In the **Destination** field, click and choose **Export to SCP Server** or **Export to SFTP Server** from the drop-down list.
7. In the **Server** field, provide the server IP address.
8. In the **Directory Path** field, provide the absolute path of the directory to store the backup file.
9. Enter the necessary information in the **Username** and **Password** fields.
10. Enter the **Encryption Key** to the backup file.

    You must have an Encryption Key in order to restore from the backup. The Encryption Key is used to encrypt a portion of the backup file that has sensitive information.

11. In the **Run on days** field, select the check box to schedule the backup job on one or more days.
12. In the **Start at** field, use the time picker to schedule the backup at a particular time.

    The time picker uses a 12-hour clock.

13. Click **Save** to run the backup job based on the configured schedule.

Enabling a Manual Backup of NDFC Configurations

To enable a manual backup of application and configuration data of an Nexus Dashboard Fabric Controller backup:

1. Navigate to the **Backup and Restore** window:

   Operations > Backup and Restore

2. Click **Backup now**.
3. Under **Name**, enter a name for the manual backup.
4. Under **Type**, select your desired format to back up (**Config only** or **Full**).

   See Understanding NDFC Backup Formats for more information.

5. Determine if you are configuring a local backup or a remote backup.

We do not recommend local backups when backing up NDFC configurations because they are not persistent. We strongly recommend that you configure a

remote backup instead.

- If you are configuring a remote backup:
  a. In the **Destination** field, choose **Export to SCP Server** or **Export to SFTP Server** to store the backup file in a remote directory.
     - You must specify the file name if you choose the **Export to SFTP Server** option for backup. The file name should contain *path/filename.tar.gz*.
     - You do not have to specify the file name for the **Export to SCP Server** option.
  b. In the **Server** field, provide the server IP address.
  c. In the **File Path** field, provide the absolute file path to the backup file.
  d. Enter the necessary information in the **Username** and **Password** fields.
  e. Enter the **Encryption Key** to the backup file.

     You must have an encryption key in order to restore the backup. The encryption key is used to encrypt a portion of the backup file that has sensitive information.

  f. Click **Backup**.

     After the backup is complete, the backup file is saved in the remote directory.

- If you are configuring a local backup:
  a. In the **Destination** field, choose **Local Download**.
  b. Enter the **Encryption Key** to the backup file.

     You must have an encryption key in order to restore the backup. The encryption key is used to encrypt a portion of the backup file that has sensitive information.

  c. Click **Backup**.

     After the backup is complete, the backup file is available for download from the **Backup and Restore** window.

  d. In the **Backup and Restore** window, in the **Actions** column, you can click on the Download icon to save the backup to a local directory.

     If you want to delete the manual backup for any reason, click the **Delete** icon to delete the backup.

     

     You must delete the backups that are taken with **Local Download** option as soon as possible due to the limited amount of allocated disk space.

Restoring NDFC Configurations

You can perform a full restore from a full backup, or you can perform a config-only restore from either a full or config-only backup.

You can perform a config-only inline restore on an existing NDFC system using a prior backup. When performing a config-only restore from a full backup, only the non-operational data is restored. All

operational data (statistics and historical data) will be lost.

Wait for minimum of 20 minutes after fresh installation before restoring the backup data. Some applications may not be operational if the backup is restored immediately in the freshly installed setup. From Cisco NDFC Release 12.1.2e, you can restore on a freshly installed Nexus Dashboard Fabric Controller system with no features enabled as well as on an existing system where features have already been enabled.

If the restore is done on a system with features enabled, note the following:

- You cannot restore a SAN controller backup on a LAN controller (and vice versa).
- You can perform only a Config Only restore. Whether the original backup is a Config Only backup or a Full backup, only configuration (non-operational) data will be restored. All operational data (statistics and historical data) will be lost.

To restore application and configuration data from a Nexus Dashboard Fabric Controller backup:

1. Navigate to the **Backup and Restore** window:

   Operations > Backup and Restore

2. Click **Restore**.

   The **Restore now** window appears.

3. Under **Type**, select your desired format to restore (**Config only** or **Full**).

   See Understanding NDFC Backup Formats for more information.

4. Determine if you are restoring from a local backup or from a remote backup.
   - If you are restoring from a local backup:
     a. In the **Source** field, choose **Upload File**.
     b. Navigate to the local directory where you backed up the NDFC configuration, then drag and drop the backup into the **Restore now** area, or click **Browse** to navigage to the local directory where you backed up the NDFC configuration and select the backup.
     c. Go to Step 5.
   - If you are restoring from a remote backup:
     a. In the **Source** field, choose **Import from SCP Server** or **Import from SFTP Server** if the backup file is stored in a remote directory.
     b. In the **Server** field, provide the server IP address.
     c. In the **File Path** field, provide the absolute file path to the backup file.
     d. Enter the necessary information in the **Username** and **Password** fields.
5. Enter the **Encryption Key** to the backup file.

You must have an Encryption Key in order to restore the backup. The Encryption Key is used to encrypt a portion of the backup file that has sensitive information.

6. (Optional) Check the **Ignore External Service IP Configuration** check box.

   If the **Ignore External Service IP Configuration** check box is selected, then the external service IP configuration is ignored. This selection allows you to take a backup on a system and restore it on a different system, with different management and/or data subnets.

   This option does not have any impact during an upgrade from Cisco DCNM 11.5(x) to Cisco NDFC.

7. Click **Restore**.

   The backup file appears in the table on the **Backup and Restore** window. The time required to restore depends on the data in the backup file.

   

   After a restore operation, the performance monitoring (PM) feature is disabled on each fabric. You must manually enable PM on each fabric after the restore. Up to 90 days of historical PM data may be present in the backup and will then appear in the History.

Copyright