



Backing Up and Restoring the Configuration

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Backup and Restore in Cisco UCS Central

The fundamental step to managing the backup and restore functionality with Cisco UCS Manager domains registered with Cisco UCS Central, is creating domain groups. A domain group is a user-defined group or classification of domains that are added to Cisco UCS Central. You can manually add domains to an existing domain group using the Cisco UCS Central GUI or automatically by configuring a rule.

When you perform a backup using Cisco UCS Central, you can backup and restore Cisco UCS Central itself or backup and restore Cisco UCS Manager, and you can export the file to a location on your network. Database backup and full configuration export policies can be created under domain groups similar to other policies and from a Cisco UCS Manager perspective, they can be configured remotely or locally based on the backup control setting. For global backup policies, Cisco UCS Manager domains that are part of a domain group inherit the policy creation, update, and deletion events. Deleting these policies remotely resets the admin state to disabled in Cisco UCS Manager since these are global policies that cannot be completely deleted. You can schedule a backup and restore operation or you can perform an immediate backup and restore operation.

Remotely configured policies are restricted to use the Cisco UCS Central repository for backups which is internally mounted by Cisco UCS Manager. Local configurations allow you to specify any external backup server. You can use SCP, SFTP, FTP, and TFTP protocols.

Saved configurations can be used to restore and configure any managed Cisco UCS domain. In recovery situations, full-state backups can be used. TFTP can be used to access the backup configurations and you can use the Cisco UCS Central GUI or the CLI to copy the URL of the back up file and use it to configure a new domain.

You can perform a backup while the domain is up and running. The backup operation saves information from the management plane. It does not have any impact on the server or network traffic.

To manage the backup archives, you can specify the maximum number of backup versions that are saved. The policy specifications can be used to indicate the number of backups to maintain for each Cisco UCS Manager domain. You can also view the list of backups for each Cisco UCS Manager domain from the Cisco UCS Central GUI and you can delete saved or unused backup directories and configurations.

**Note**

You can delete backups only after a Cisco UCS Manager domain (from which the backup has been taken) has been unregistered.

Backup Types

You can perform one or more of the following types of backups through Cisco UCS:

- **Full state**—A binary file that includes a snapshot of the entire system. You can use the file generated from this backup to restore the system during disaster recovery. This file can restore or rebuild the configuration on the original fabric interconnect, or recreate the configuration on a different fabric interconnect. You cannot use this file for an import.
- **All configuration**—An XML file that includes all system and logical configuration settings. You can use the file generated from this backup to import these configuration settings to the original fabric interconnect or to a different fabric interconnect. You cannot use this file for a system restore. This file does not include passwords for locally authenticated users.
- **System configuration**—An XML file that includes all system configuration settings such as usernames, roles, and locales. You can use the file generated from this backup to import these configuration settings to the original fabric interconnect or to a different fabric interconnect. You cannot use this file for a system restore.
- **Logical configuration**—An XML file that includes all logical configuration settings such as service profiles, VLANs, VSANs, pools, and policies. You can use the file generated from this backup to import these configuration settings to the original fabric interconnect or to a different fabric interconnect. You cannot use this file for a system restore.

Considerations and Recommendations for Backup Operations

Before you create a backup operation, consider the following:

Backup Locations

The backup location is the destination or folder on the network where you want Cisco UCS Central to export the backup file. You can maintain only one backup operation for each location where you plan to save a backup file.

Potential to Overwrite Backup Files

If you rerun a backup operation without changing the filename, Cisco UCS Central overwrites the existing file on the server. To avoid overwriting existing backup files, change the filename in the backup operation or copy the existing file to another location.

Multiple Types of Backups

You can run and export more than one type of backup to the same location. You need to change the backup type before you rerun the backup operation. We recommend that you change the filename for easier identification of the backup type and to avoid overwriting the existing backup file.

Scheduled Backups

You can create a backup operation in advance and leave the admin state disabled until you are ready to run the backup. Cisco UCS Central does not run the backup operation, save, or export the configuration file until you set the admin state of the backup operation to enabled.

You can use Cisco UCS Central to backup and restore Cisco UCS Central itself or Cisco UCS Manager. The backup and restore policy can be scheduled or, you can perform an immediate backup operation. There are two types of scheduled and immediate backup operations:

- Cisco UCS Central backup and restore functions Policy(scheduled) and Immediate operations.
- Cisco UCS Manager backup and restore functions Policy(scheduled) and Immediate operations when the policy is resolved from Cisco UCS Central

There are two types of policies: the scheduled all-config backup policy, and the scheduled db backup policy. These policies can either be defined locally or defined in Cisco UCS Central

Incremental Backups

You cannot perform incremental backups of Cisco UCS.

Encryption of Full State Backups

Full state backups are encrypted so that passwords and other sensitive information are not exported as clear text.

Import Configuration

You can import any configuration file that was exported from Cisco UCS. The file does not need to have been exported from the same Cisco UCS.

The import function is available for all configuration, system configuration, and logical configuration files. You can perform an import while the system is up and running. An import operation modifies information on the management plane only. Some modifications caused by an import operation, such as a change to a vNIC assigned to a server, can cause a server reboot or other operations that disrupt traffic.

You cannot schedule an import operation. You can, however, create an import operation in advance and leave the admin state disabled until you are ready to run the import. Cisco UCS will not run the import operation on the configuration file until you set the admin state to enabled.

You can maintain only one import operation for each location where you saved a configuration backup file.

Import Methods

You can use one of the following methods to import and update a system configuration through Cisco UCS:

- **Merge**—The information in the imported configuration file is compared with the existing configuration information. If there are conflicts, the import operation overwrites the information on the Cisco UCS domain with the information in the import configuration file.
- **Replace**—The current configuration information is replaced with the information in the imported configuration file one object at a time.

System Restore

You can use the restore function for disaster recovery.

You can restore a system configuration from any full state backup file that was exported from Cisco UCS. The file does not need to have been exported from Cisco UCS on the system that you are restoring. When restoring using a backup file that was exported from a different system, we strongly recommend that you use a system with the same or similar system configuration and hardware, including fabric interconnects, servers, adapters, and I/O module or FEX connectivity. Mismatched hardware and/or system configuration can lead to the restored system not fully functioning. If there is a mismatch between the I/O module links or servers on the two systems, acknowledge the chassis and/or servers after the restore operation.

The restore function is only available for a full state backup file. You cannot import a full state backup file. You perform a restore through the initial system setup.

Required User Role for Backup and Import Operations

You must have a user account that includes the admin role to create and run backup and import operations.

Backup Operations

Creating a Backup of Cisco UCS Central

Use this task to perform an immediate backup operation for Cisco UCS Central itself.

Before You Begin

Obtain the backup server IP address and authentication credentials.

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Backup and Import**.
- Step 3** Click the **UCS Central System** node.
- Step 4** In the work pane, click **Create System Backup**.
- Step 5** In the **Create System Backup** dialog box, complete the following fields:

Name	Description
Backup State field	<p>This can be one of the following:</p> <ul style="list-style-type: none"> • enabled—Cisco UCS Central GUI unlocks the properties fields for the selected backup operation so that you can make changes if desired. If you click OK, Cisco UCS Central reruns the backup operation. • disabled—Cisco UCS Central GUI displays the properties of the backup operation but does not allow you to make changes.
Type field	<p>The information saved in the backup configuration file. This can be one of the following:</p> <ul style="list-style-type: none"> • full-state—A binary file that includes a snapshot of the entire system. You can use the file generated from this backup to restore the system during disaster recovery. You cannot use this file for an import. • config-all—An XML file that includes all system and logical configuration settings. You cannot use this file for a system restore. This file does not include passwords for locally authenticated users. • config-logical—An XML file that includes all logical configuration settings such as service profiles, VLANs, VSANs, pools, and policies. You can use the file generated from this backup to import these configuration settings to the original fabric interconnect or to a different fabric interconnect. You cannot use this file for a system restore. • config-system—An XML file that includes all system configuration settings such as usernames, roles, and locales. You can use the file generated from this backup to import these configuration settings to the original fabric interconnect or to a different fabric interconnect. You cannot use this file for a system restore.

Name	Description
Location of the Image File field	<p>Where the backup file that you want to import is located. This can be one of the following:</p> <ul style="list-style-type: none"> • Local File System—The backup XML file is stored locally. You can download the file after the backup task has completed. • Remote File System—The backup XML file is stored on a remote server. Cisco UCS Central GUI displays the fields described below that allow you to specify the protocol, host, filename, username, and password for the remote system.
Protocol field	<p>The remote server communication protocol. This can be one of the following:</p> <ul style="list-style-type: none"> • FTP • TFTP • SCP • SFTP
Hostname field	<p>The hostname or IP address of the remote server. This can be a server, storage array, local drive, or any read/write media that Cisco UCS Central can access through the network.</p> <p>Note If you use a hostname rather than an IP address, you must configure a DNS server. If the Cisco UCS domain is not registered with Cisco UCS Central or DNS management is set to local, configure a DNS server in Cisco UCS Manager. If the Cisco UCS domain is registered with Cisco UCS Central and DNS management is set to global, configure a DNS server in Cisco UCS Central.</p>
User field	The username Cisco UCS Central should use to log in to the remote server. This field does not apply if the protocol is TFTP.
Password field	The password for the remote server username. This field does not apply if the protocol is TFTP.
Absolute Path Remote File field	The fully-qualified name of the file on the remote server, including the path and file extension.

Step 6 Click **OK**.

Step 7 If Cisco UCS Central displays a confirmation dialog box, click **OK**.

If you set the Backup State to enabled, Cisco UCS Central takes a snapshot of the configuration type that you selected and exports the file to the network location. The backup operation displays in the **Backup Operations** table in the **Backup Configuration** dialog box.

- Step 8** (Optional) To view the progress of the backup operation or the individual module export operation, in the work pane, click **Properties** and then click the **Status** tab.
- Step 9** Click **OK** to close the **Backup Configuration** dialog box.
The backup operation continues to run until it is completed. To view the progress, re-open the **Backup Configuration** dialog box.
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Running a Backup Operation for Cisco UCS Central

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Backup and Import**.
- Step 3** Click the **UCS Central System** node.
- Step 4** In the **Backup** table, click the backup operation that you want to run.
- Step 5** Click **Properties**.
a) Click the **General** tab and click the **Enabled** radio button.
- Step 6** Click **Ok**.
Cisco UCS Central takes a snapshot of the configuration type that you selected and exports the file to the network location. To view the progress of the backup operation, click the **Task** tab in the **Properties** dialog box.
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Deleting a Cisco UCS Central Backup Operation

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Backup and Import**.
- Step 3** Click the **UCS Central System** node.
- Step 4** In the **Backup** table, click the backup operation that you want to delete. You cannot click a backup operation in the table if the admin state of the operation is set to **Enabled**.
- Step 5** In the **Backup Operations** table of the **Backup Configuration** dialog box, click the backup operations that you want to delete.
- Tip** You cannot click a backup operation in the table if the admin state of the operation is set to **Enabled**.

- Step 6** Click the **Delete** icon in the icon bar of the **Backup Operations** table.
- Step 7** If Cisco UCS Central GUI displays a confirmation dialog box, click **Yes**.
- Step 8** In the **Backup Configuration** dialog box, click **Yes** to delete the backup operation.

Creating a Full-State Backup Policy for Domain Groups

You can specify the full-state backup policy that you want to associate with the Cisco UCS domains included in the Cisco UCS Central domain group.



Note

All policies created under the root domain group apply to Cisco UCS Central itself. The scheduled backup policies created under the root group will cause Cisco UCS Central to perform self backups into its internal backup repository as well.

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Domain Groups > Domain Group root**.
- Step 3** Click the **Backup/Export Policy** node.
- Step 4** In the work pane, click **Full-State Backup Policy**.
- Step 5** Click **+Create**.
- Step 6** In the **Create** dialog box, complete the following fields:

Name	Description
Create button	Allows you to specify the full state backup policy you want to associate with the Cisco UCS domains included in the Cisco UCS Central domain group. The backup policy defined here overrides the policy inherited from any parent groups, if an inherited policy exists.
Delete button	Deletes the instance of the policy defined for the selected domain group. After you delete the policy, it remains greyed-out until you click Save . When you do so, Cisco UCS Central deletes the policy and any configuration data you may have specified. While you can create a new instance of the policy later, you cannot restore the configuration data from a deleted instance. To cancel the delete request, click Reset .

Name	Description
Backup State field	Whether Cisco UCS automatically creates full state backups for the Cisco UCS domains included in the Cisco UCS Central domain group. This can be one of the following: <ul style="list-style-type: none"> • disable—Cisco UCS does not create automatic backups. • enable—Cisco UCS creates automatic full state backups using the specified schedule. A full state backup is a binary file that includes a snapshot of the entire system. You can use the file generated from this backup to restore the system during disaster recovery. You cannot use this file for an import.
Schedule drop-down list	The length of time Cisco UCS waits between creating full state backups.
Max Files field	The maximum number of backup files that Cisco UCS maintains. When that number is exceeded, Cisco UCS overwrites the oldest backup file.

The backup files are saved in a storage location shared by Cisco UCS Central. The list of backup files that are viewable using the Cisco UCS Central GUI, shows the names used.

Step 7 Click **Save**.

Import Operations

Creating a Domain Group Config-All Export Policy

You can specify the configuration backup policy that you want to associate with the Cisco UCS domains included in the Cisco UCS Central domain group.

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Domain Groups > Domain Group root**.
- Step 3** Click the **Backup/Export Policy** node.
- Step 4** In the work pane, click **Config-All Export Policy**.
- Step 5** Click **+Create**.
- Step 6** In the **Create** dialog box, complete the following fields:

Name	Description
Create button	Allows you to specify the configuration backup policy you want to associate with the Cisco UCS domains included in the Cisco UCS Central domain group. The configuration backup policy defined here overrides the policy inherited from any parent groups, if an inherited policy exists.
Delete button	Deletes the instance of the policy defined for the selected domain group. After you delete the policy, it remains greyed-out until you click Save . When you do so, Cisco UCS Central deletes the policy and any configuration data you may have specified. While you can create a new instance of the policy later, you cannot restore the configuration data from a deleted instance. To cancel the delete request, click Reset .
Export State field	Whether Cisco UCS automatically creates full configuration backups for the Cisco UCS domains included in the Cisco UCS Central domain group. This can be one of the following: <ul style="list-style-type: none"> • disable—Cisco UCS does not create automatic configuration backups. • enable—Cisco UCS creates automatic full configuration backups using the specified schedule. A full configuration backup is an XML file that includes all system and logical configuration settings. You cannot use this file for a system restore. This file does not include passwords for locally authenticated users.
Schedule drop-down list	The length of time Cisco UCS waits between creating full configuration backups.
Max Files field	The maximum number of backup files that Cisco UCS maintains. When that number is exceeded, Cisco UCS overwrites the oldest backup file.

Step 7 Click Save.

Creating a Cisco UCS Central Import Operation

You cannot import a Full State configuration file. You can import any of the following configuration files:

- All configuration
- System configuration
- Logical configuration

Before You Begin

Collect the following information that you will need to import a configuration file:

- Backup server IP address and authentication credentials
- Fully qualified name of a backup file

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Backup and Import**.
- Step 3** Click the **UCS Central System** node.
- Step 4** In the work pane, click the **Import** tab.
- Step 5** Click **Create Import Operation**.
- Step 6** In the **Create Import Operation** dialog box, complete the following fields:

Name	Description
Configuration File drop-down list	The configuration file you want to apply to a registered Cisco UCS domain.
UCS Name drop-down list	The Cisco UCS domain to which you want to apply the imported configuration information. Note You cannot change the domain after you save the import operation.
Import State field	This can be one of the following: <ul style="list-style-type: none"> • enabled—Cisco UCS runs the import operation as soon as you click OK. • disabled—Cisco UCS does not run the import operation when you click OK. You can manually run the import at a later date by selecting it on the Import tab and clicking Properties.
Action drop-down list	This can be one of the following: <ul style="list-style-type: none"> • merge—Cisco UCS merges the configuration information in the import file with the existing configuration information. If there are conflicts, Cisco UCS replaces the current configuration with the information in the import configuration file. • replace—Cisco UCS takes each object in the import configuration file and overwrites the corresponding object in the current configuration.
Hostname field	The IP address of the server on which the configuration file is stored. This must be the IP address of the Cisco UCS Central server.

Name	Description
Remote File field	The fully qualified name of the configuration file on the remote server.
Protocol field	The protocol to use when communicating with the remote server. You cannot change this protocol.

- Step 7** (Optional) If you select Local File System, you will need to download the file after the task is finished. Click **Download into backup file library**.
- Step 8** (Optional) Click **Choose file** to browse to the file that you want to upload and import in the backup file library.
- Step 9** Click **OK**.
- Step 10** In the confirmation dialog box, click **OK**.
If you set the **Import State** to enabled, Cisco UCS Central imports the configuration file from the network location. Depending upon which action you selected, the information in the file is either merged with the existing configuration or replaces the existing configuration. The import operation displays in the **Import Operations** table of the **Import Configuration** dialog box.
- Step 11** (Optional) To view the progress of the import operation and the individual module status, do the following:
- If the operation does not automatically display in the **Properties** area, click the operation in the **Import Operations** table.
 - In the **Properties** area, click the down arrows on the **FSM Details** bar.
The **FSM Details** area expands and displays the operation status.
- Step 12** Click **OK** to close the **Import Configuration** dialog box.
The import operation continues to run until it is completed. To view the progress, re-open the **Import Configuration** dialog box.

Creating a Cisco UCS Manager Import Operations

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Backup and Import**.
- Step 3** Click the **UCS System** node.
- Step 4** In the work pane, click the **Import** tab.
- Step 5** Click **+Create Import Operation**.
- Step 6** In the **Create Import Operation** dialog box, complete the following fields:

Name	Description
Configuration File drop-down list	The configuration file you want to apply to a registered Cisco UCS domain.
UCS Name drop-down list	The Cisco UCS domain to which you want to apply the imported configuration information. Note You cannot change the domain after you save the import operation.
Import State field	This can be one of the following: <ul style="list-style-type: none"> • enabled—Cisco UCS runs the import operation as soon as you click OK. • disabled—Cisco UCS does not run the import operation when you click OK. You can manually run the import at a later date by selecting it on the Import tab and clicking Properties.
Action drop-down list	This can be one of the following: <ul style="list-style-type: none"> • merge—Cisco UCS merges the configuration information in the import file with the existing configuration information. If there are conflicts, Cisco UCS replaces the current configuration with the information in the import configuration file. • replace—Cisco UCS takes each object in the import configuration file and overwrites the corresponding object in the current configuration.
Hostname field	The IP address of the server on which the configuration file is stored. This must be the IP address of the Cisco UCS Central server.
Remote File field	The fully qualified name of the configuration file on the remote server.
Protocol field	The protocol to use when communicating with the remote server. You cannot change this protocol.

Step 7 Click **Ok**.

Running an Import Operation

Choose the **UCS Central System** option to run an import operation for Cisco UCS Central. Use the **UCS Central** option to run an import operation for Cisco UCS Manager.

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Backup and Import**.
- Step 3** Click the **UCS Central System** node to run an import operation for Cisco UCS Central.
- Step 4** (Optional) Click the **UCS Central** node to run the import operation for Cisco UCS Manager .
- Step 5** In the **Import** table, click the hostname and remote file name that you want to import.
- Step 6** Click **Properties**.
- a) Click the **General** tab and click the **Enabled** radio button.
 - b) Click the **merge** or **replace** radio button.
- Step 7** Click **Ok**.
- Cisco UCS Central imports the backup configuration file that you selected. To view the progress of the backup operation, click the **Task** tab in the **Properties** dialog box.
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Deleting Import Operations

Procedure

- Step 1** On the menu bar, click **Operations Management**.
- Step 2** In the Navigation pane, expand **Backup and Import**.
- Step 3** Click the **UCS Central System** node.
- Step 4** In the work pane, click the **Import** tab.
- Step 5** In the **Import** table, click the import operation that you want to delete. You cannot click a backup operation in the table if the admin state of the operation is set to **Enabled**.
- Step 6** In the **Import** table , click the import operation that you want to delete.
- Tip** You cannot click an import operation in the table if the admin state of the operation is set to **Enabled**.
- Step 7** Click the **Delete** icon in the icon bar of the **Import** table.
- Step 8** If Cisco UCS Central GUI displays a confirmation dialog box, click **Yes**.
-