



# Configuration and File System Management

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This module describes methods for configuration management and file transfer enhancements.

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## Auto-Save Configuration

You can configure the router to automatically take the backup of the running configuration by using **configuration commit auto-save** command. This auto-save feature saves the configuration to the specified location on the router after every **commit** is made. These auto-save files are stored in the form of Linux files.

### Configure Auto-Save

Use the **configuration commit auto-save** command to auto save the configuration.

```
Router#configure  
Router (config) #configuration commit auto-save  
Router (config-cfg-autosave) #commit
```

When filename is accessed through VRF, you can specify filename in **filename** `<protocol>://<user>@<host>:<port>;<vrf name>/<url-path>/<file-name>` format.

# Increasing Commit Limit

Table 1: Feature History Table

Feature Name	Release Information	Feature Description
Increasing Commit Limit	Release 7.3.6	<p>The maximum number of commits is increased in the router that allows you to configure complex topology changes without interruptions caused by the default blocking of commit changes during rebase or ASCII backup operations. You can prevent the commit operation from getting blocked by using the <b>cfs check</b> command, which increases the commit (pacount) count from 20 to 40, and the commit file diff size (configuration data) from 2 MB to 4 MB, and by using the <b>clear configuration ascii inconsistency</b> command, which performs an ASCII backup after 55 minutes.</p> <p>The feature modifies the following commands:</p> <ul style="list-style-type: none"> <li>• <b>cfs check</b></li> <li>• <b>clear configuration ascii inconsistency</b></li> </ul>

The Cisco IOS XR Routers use a two-stage configuration model. The first stage is target configuration, where you build the configurations using necessary commands in the command line interface. The second stage is the commit, where the configuration made in the target stage is added to the router configuration using the **commit** command. After each commit, the router generates a file for the newly configured changes and adds it to its running configuration, making it an integral part of the running configuration.



**Note** This target configuration does not impact the router's running configuration.

The Cisco IOS XR routers perform rebase and ASCII backup operations to maintain the real time configuration in the backup copy. The rebase and ASCII backup operations block you from committing configurations to the router.

In rebase, the router automatically saves your changes to the backup binary configuration file after 20 commits, or 2 MB of configuration data. The router blocks the commit while saving the configuration to the backup file. The router takes a few seconds to complete the rebase operation, during which, if you terminate the CLI session, the router loses the target configurations in the blocked commit.

In ASCII backup, the router automatically saves a copy of its running configuration in the ASCII format. This backup process takes place if there has been a commit to the router configuration and when the ASCII backup timer completes a 55-minute window after the previous backup event. However, if there was no commit when the ASCII backup timer completes 55 minutes, the counter is reset without any backup. During the ASCII backup, the router blocks the configuration commits.

Starting with Release 7.3.6, we have made the following enhancements:

- You can use the **cfs check** command to increase the rebase limits in the router from 20 to 40 commits and the configuration data from 2 MB to 4 MB. When configuring the router, you can check the current commit count and configuration data size using the **show cfmgr commitdb** command. If the commit count is 20 or higher, or the configuration data size is 2 MB or above, the router will initiate a rebase within 10 seconds. By using the **cfs check** command to increase the commit count to 40 and the configuration data to 4 MB, you can commit without delay.
- You can use the **clear configuration ascii inconsistency** command to perform an ASCII backup and reset the ASCII backup timer to zero. Once the backup is complete, the router will automatically initiate the next periodic ASCII backup operation only after 55 minutes from the time the **clear configuration ascii inconsistency** command is executed.

## Guidelines and Restrictions for Increasing the Commit Limit

- The **cfs check** command increases the rebase limits only for one instance. After executing the **cfs check** command, the router will perform a rebase operation after 40 commits or when the configuration data reaches 4 MB. Once the router performs a rebase operation, the limits will reset to the default values of 20 commits and 2 MB configuration data. To enable 40 commits and 4 MB configuration data, you must perform the **cfs check** command again.
- After executing the **cfs check** command, if a router switches over to standby RP, the rebase limits are retained as 40 commits and configuration data of 4 MB. However, if the router reloads, the rebase limits are reset to 20 commits and 2 MB of configuration data. For example, after executing the **cfs check** command, if the router switches over to standby RP after 30 commits, it will still have ten more commits before a rebase. However, if the router reloads, the rebase limits are reset to default 20 commits and 2 MB of configuration data.
- The **clear configuration ascii inconsistency** command initiates an ASCII backup and resets the ASCII backup timer count to zero. Following this, the router will automatically initiate the next periodic ASCII backup operation only after 55 minutes from the time **clear configuration ascii inconsistency** command is executed. For example, if you execute a commit operation after executing a **clear configuration ascii inconsistency** command, the router will perform an ASCII backup operation 55 minutes after the **clear configuration ascii inconsistency** command was executed, and merge the new commit into ASCII backup. Hence, before the next 55 minutes, you must execute the **clear configuration ascii inconsistency** command again to reset the ASCII backup timer to zero.
- When the router enters standby mode or reloads, the ASCII timer does not reset to zero, and the router performs an ASCII backup operation 55 minutes after the first commit operation before the standby mode or reload.
- Cisco does not recommend executing **clear configuration inconsistency** and **clear configuration ascii inconsistency** commands regularly after each commit, as it causes hard disk wear and tear. You should execute these commands only before a commit or sequence of commits that must be done within a specific timeframe and without being delayed by rebase and ASCII backup operations. As these commands

perform disk input and output operations in the background, frequent execution of these commands causes frequent access to the hard disk, which increases the wear and tear on the hard disk.

## Increasing the Rebase Limits

You can increase the rebase limits as follows:

1. Use the **cfs check** command to increase the commit count to 40 and the configuration data to 4 MB.

```
Router# cfs check
Creating any missing directories in Configuration File system...OK
Initializing Configuration Version Manager...OK
Syncing commit database with running configuration...OK
```

2. Verify if the **cfs check** command is executed using the **show configuration history** command.

```
Router# show configuration history last 5
Sno.  Event      Info                               Time Stamp
~~~~  ~~~~~      ~~~~                               ~~~~~
 1    cfs check  completed                          Wed Jan 10 11:42:21 2024
 2    commit    id 1000000001                       Wed Jan 10 11:39:26 2024
 3    startup   configuration applied                 Wed Jan 10 11:39:02 2024
```

## Perform ASCII Backup and Rest ASCII Backup Timer

You can perform ASCII backup and rest ASCII backup timer as follows:

1. Use the **clear configuration ascii inconsistency** command to perform ASCII backup at that instance and reset the ASCII backup timer count to zero.

```
Router# clear configuration ascii inconsistency
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!! It is recommended to run this command only when all nodes in router      !!!!
!!!! are in IOS-XR RUN state. To determine node state, run following command: !!!!
!!!! 'show platform'.                                                         !!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Proceed with the command?[confirm] y
  Ascii configuration backup is in progress...
Configuration ascii backup complete
```

2. Verify if the **clear configuration ascii inconsistency** command is executed using the **show configuration history** command.

```
Router# show configuration history last 5
Sno.  Event      Info                               Time Stam
~~~~  ~~~~~      ~~~~                               ~~~~~
 1    backup    Periodic ASCII backup                Wed Jan 10 11:48:20 2024
 2    cfs check  completed                             Wed Jan 10 11:42:21 2024
 3    commit    id 1000000001                       Wed Jan 10 11:39:26 2024
 4    startup   configuration applied                 Wed Jan 10 11:39:02 2024
```