



Configuration Generation Performance Enhancement

The Configuration Generation Performance Enhancement feature assists configuration management by enabling faster collection of running configuration file information. This feature is especially useful in managing large networks with numerous interfaces configured.

History for the Configuration Generation Performance Enhancement Feature

Release	Modification
12.3(7)T	This feature was introduced.
12.2(25)S	This feature was integrated into Cisco IOS Release 12.2(25)S.
12.2(27)SBC	This feature was integrated into Cisco IOS Release 12.2(27)SBC.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

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Restrictions for Using the Configuration Generation Performance Enhancement Feature

The device on which the Configuration Generation Performance Enhancement feature is used must have enough memory available to store (cache) a large interface configuration file. For example, if the interface configurations take up 15 KB of memory, using this feature would require having an additional 15 KB of memory space available.

Information About the Configuration Generation Performance Enhancement Feature

Before enabling the Configuration Generation Performance Enhancement feature, be sure you understand the following concepts:

- [Cisco IOS Software Configuration Storage, page 2](#)
- [Benefits of the Configuration Generation Performance Enhancement Feature, page 2](#)

Cisco IOS Software Configuration Storage

In the Cisco IOS software configuration model, the configuration state is maintained in a distributed manner, with each component storing its own configuration state. To retrieve configuration information, the software must poll every component to collect the distributed information. This configuration state retrieval operation is performed by a process known as nonvolatile generation (NVGEN), and it is used by command line interpreter (CLI) commands such as **show running-configuration**, **write memory**, and **copy system:running-configuration** to display or copy the running system configuration. When invoked, NVGEN queries each system component and each instance of interface or other configuration objects. A running configuration file is constructed as NVGEN traverses the system performing these queries.

Benefits of the Configuration Generation Performance Enhancement Feature

Until the Configuration Generation Performance Enhancement feature was introduced, NVGEN always had to query the entire system and could generate only a total configuration. The time required to process the running configuration creates performance problems for configuration management, because completion of the NVGEN operation can take many minutes.

The Configuration Generation Performance Enhancement feature reduces the execution time for NVGEN processes and is especially useful for managing large configuration files that contain numerous interface configurations. This feature provides faster execution of commands that process the running system configuration by caching interface configuration information in system memory, and by retrieving only configuration information that has changed.

How to Configure the Configuration Generation Performance Enhancement Feature

This section contains the following required task for enabling the Configuration Generation Performance Enhancement feature:

- [Configuring the Configuration Generation Performance Enhancement Feature, page 3](#) (required)

Configuring the Configuration Generation Performance Enhancement Feature

This task enables the Configuration Generation Performance Enhancement feature.

SUMMARY STEPS

1. `enable`
2. `configure terminal`
3. `parser config cache interface`
4. `end`

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>enable</code> Example: Router> <code>enable</code>	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	<code>configure terminal</code> Example: Router# <code>configure terminal</code>	Enters global configuration mode.
Step 3	<code>parser config cache interface</code> Example: Router(config)# <code>parser config cache interface</code>	Reduces the time required for the CLI to execute commands that manage the running system configuration, especially for large configuration files.
Step 4	Router(config)# <code>end</code>	Ends global configuration mode.

Configuration Examples for Enabling the Configuration Generation Performance Enhancement

This section contains the following examples:

- [Configuring the Configuration Generation Performance Enhancement Feature: Example, page 4](#)
- [Verifying the Configuration Generation Performance Enhancement Feature: Example, page 4](#)

Configuring the Configuration Generation Performance Enhancement Feature: Example

The following example shows how to enable the Configuration Generation Performance Enhancement feature:

```
Router(config)# parser config cache interface
```

Verifying the Configuration Generation Performance Enhancement Feature: Example

You can verify that the **parser config cache interface** command has been enabled by checking for the command in the system configuration file displayed when you enter the **show running-configuration EXEC** command.



Note

The first time you display the configuration file, you will not see much evidence of improvement in performance because the interface cache will be filled up. However, you will notice performance improvements when you enter subsequent NVGEN-type commands such as the **show running-configuration EXEC** command.

Each time the interface configuration of an interface changes, the interface cache of the specified interface is flushed. The other interface data remains cached as before. Entering an NVGEN-type command after modifying the interface configuration will once again not show much evidence of improvement until the next NVGEN-type command is entered.

```
Router# show running-configuration
!
!
parser config cache interface
!
!
```

Additional References

The following sections provide references related to Configuration Generation Performance Enhancement feature.

Related Documents

Related Topic	Document Title
System configuration file management	“Managing Configuration Files” chapter in the <i>Cisco IOS Configuration Fundamentals and Network Management Configuration Guide</i> , Release 12.3
System configuration file management commands	Cisco IOS Configuration Fundamentals and Network Management Command Reference , Release 12.3 T

Standards

Standards	Title
None	—

MIBs

MIBs	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFCs	Title
None	—

Technical Assistance

Description	Link
Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/public/support/tac/home.shtml

Command Reference

This section documents the following new command only.

- [parser config cache interface](#)

parser config cache interface

To reduce the time required for the command-line interpreter to execute commands that manage the running system configuration files, use the **parser config cache interface** command in global configuration mode. To disable the reduced command execution time functionality, use the **no** form of this command.

parser config cache interface

no parser config cache interface

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration

Command History

Release	Modification
12.3(7)T	This command was introduced.
12.2(25)S	This command was integrated into Cisco IOS Release 12.2(25)S.
12.2(27)SBC	This command was integrated into Cisco IOS Release 12.2(27)SBC.

Usage Guidelines

Enable the **parser config cache interface** command to reduce the execution time required for running configuration management commands such as the **show running-configuration**, **write terminal**, and **copy system:running-configuration** commands. Information for these configuration management commands is supplied by nonvolatile generation (NVGEN) processes that query the system for configuration details. The **parser config cache interface** command is especially useful for managing large system configurations that contain numerous interface configurations.

Once enabled, the command provides faster execution of the NVGEN commands that process the running system configuration by caching interface configurations in system memory, and by retrieving only configuration information that has changed. For this reason, the device on which this command is enabled must have enough memory available to store the interface configuration. For example, if the interface configurations take up 15 KB of memory, using this command would require having an additional 15 KB of memory space available.

The first time you display the configuration file, you will not see much evidence of improvement in performance because the interface cache will be filled up. However, you will notice performance improvements when you enter subsequent NVGEN-type commands such as the **show running-configuration EXEC** command.

Each time the interface configuration is changed, the interface cache is flushed. Entering an NVGEN-type command after modifying the interface configuration will once again not show any performance improvement until the next NVGEN-type command is entered.

Examples

The following example shows how to enable the functionality for reducing the time required for the CLI interpreter to execute commands that manage the running system configuration files:

```
Router(config)# parser config cache interface
```

Related Commands

Command	Description
copy system:running-configuration	Copies the running configuration to another destination.
show running-configuration	Displays the configuration currently running on the terminal.
write terminal	Displays the configuration currently running on the terminal.

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■ parser config cache interface