



Contextual Configuration Diff Utility

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The Contextual Configuration Diff Utility feature provides the ability to perform a line-by-line comparison of any two configuration files (accessible through the Cisco IOS Integrated File System [IFS]) and generate a list of the differences between them. The generated output includes information regarding configuration lines that have been added, modified, or deleted, and the configuration modes within which a changed configuration line exists.

Finding Feature Information in This Module

Your Cisco IOS software release may not support all of the features documented in this module. To reach links to specific feature documentation in this module and to see a list of the releases in which each feature is supported, use the “[Feature Information for Contextual Configuration Diff Utility](#)” section on page 13.

Finding Support Information for Platforms and Cisco IOS Software Images

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Prerequisites for Contextual Configuration Diff Utility

The format of the configuration files used for the Contextual Configuration Diff Utility feature must comply with standard Cisco IOS configuration file indentation rules as follows:

- Start all commands on a new line with no indentation, unless the command is within a configuration submode.
- Indent commands within a first-level configuration submode one space.
- Indent commands within a second-level configuration submode two spaces.
- Indent commands within subsequent submodes accordingly.

The router must have a contiguous block of memory larger than the combined size of the two configuration files being compared.

Restrictions for Contextual Configuration Diff Utility

If the router does not have a contiguous block of memory larger than the combined size of the two configuration files being compared, the diff operation fails.

Information About Contextual Configuration Diff Utility

Before using the Contextual Configuration Diff Utility feature, you should understand the following concepts:

- [Benefits of the Contextual Configuration Diff Utility, page 2](#)
- [Contextual Configuration Diff Utility Output Format, page 2](#)

Benefits of the Contextual Configuration Diff Utility

The Contextual Configuration Diff Utility feature provides the ability to perform a line-by-line comparison of any two configuration files (accessible through the Cisco IOS File System [IFS]) and generate a list of the differences between them. The generated output includes information regarding the following items:

- Configuration lines that have been added, modified, or deleted.
- Configuration modes within which a changed configuration line exists.
- Location changes of configuration lines that are order-sensitive. For example, the **ip access-list** and **community-lists** commands are order-sensitive commands dependent on where they are listed within a configuration file in relation to other Cisco IOS commands of similar type.

Contextual Configuration Diff Utility Output Format

Diff Operation

The Contextual Configuration Diff Utility feature uses the filenames of two configuration files as input. A diff operation is performed on the specified files and a list of differences between the two files is generated as output. Interpreting the output is dependent on the order in which the two files are

configured (**show archive config differences** command). In this section, we assume that the filename of the file entered first is file1 and the filename of the file entered second is file2. Each entry in the generated output list is prefixed with a unique text symbol to indicate the type of difference found. The text symbols and their meanings are as follows:

- A minus symbol (-) indicates that the configuration line exists in file1 but not in file2.
- A plus symbol (+) indicates that the configuration line exists in file2 but not in file1.
- An exclamation point (!) with descriptive comments is used to identify order-sensitive configuration lines whose location is different in file1 than in file2.

Incremental Diff Operation

Some applications require that the generated output of a diff operation contain configuration lines that are unmodified (in other words, without the minus and plus symbols). For these applications, an incremental diff operation can be performed, which compares a specified configuration file to the running configuration file (**show archive config incremental-diffs** command).

When an incremental diff operation is performed, a list of the configuration lines that do not appear in the running configuration file (in other words, configuration lines that only appear in the specified file that is being compared to the running configuration file) is generated as output. An exclamation point (!) with descriptive comments is used to identify order-sensitive configuration lines whose location is different in the specified configuration file than in the running configuration file.

How to Use the Contextual Configuration Diff Utility

This section contains the following procedure:

- [Using the Contextual Configuration Diff Utility, page 3](#) (required)

Using the Contextual Configuration Diff Utility

This task describes how to use the Contextual Configuration Diff Utility feature.

SUMMARY STEPS

1. **enable**
2. **show archive config differences** [*file1* [*file2*]]
or
show archive config incremental-diffs [*file*]
3. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	show archive config differences [file1 [file2]] OR show archive config incremental-diffs file Example: Router# show archive config differences running-config startup-config OR Example: Router# show archive config incremental-diffs nvram:startup-config	Performs a line-by-line comparison of any two configuration files (accessible through the IFS) and generates a list of the differences between them. or Performs a line-by-line comparison of a specified configuration file to the running configuration file and generates a list of the configuration lines that do not appear in the running configuration file.
Step 3	exit Example: Router# exit	Exits to user EXEC mode.

Configuration Examples for the Contextual Configuration Diff Utility

This section contains the following configuration examples:

- [Diff Operation: Example, page 4](#)
- [Incremental Diff Operation: Example, page 6](#)

Diff Operation: Example

In this example, a diff operation is performed on the running and startup configuration files. [Table 1](#) shows the configuration files used for this example.

Table 1 Configuration Files Used for the Diff Operation Example

Running Configuration File	Startup Configuration File
<pre>no ip subnet-zero ip cef interface Ethernet1/0 ip address 10.7.7.7 255.0.0.0 no ip route-cache no ip mroute-cache duplex half no ip classless snmp-server community public RO</pre>	<pre>ip subnet-zero ip cef ip name-server 10.4.4.4 voice dnis-map 1 dnis 111 interface Ethernet1/0 no ip address no ip route-cache no ip mroute-cache shutdown duplex half ip default-gateway 10.5.5.5 ip classless access-list 110 deny ip any host 10.1.1.1 access-list 110 deny ip any host 10.1.1.2 access-list 110 deny ip any host 10.1.1.3 snmp-server community private RW</pre>

The following is sample output from the **show archive config differences** command. This sample output displays the results of the diff operation performed on the configuration files in [Table 1](#).

```
Router# show archive config differences running-config startup-config
```

```
+ip subnet-zero
+ip name-server 10.4.4.4
+voice dnis-map 1
 +dnis 111
interface Ethernet1/0
 +no ip address
 +shutdown
+ip default-gateway 10.5.5.5
+ip classless
+access-list 110 deny ip any host 10.1.1.1
+access-list 110 deny ip any host 10.1.1.2
+access-list 110 deny ip any host 10.1.1.3
+snmp-server community private RW
-no ip subnet-zero
interface Ethernet1/0
 -ip address 10.7.7.7 255.0.0.0
-no ip classless
-snmpp-server community public RO
```

Incremental Diff Operation: Example

In this example, an incremental diff operation is performed on the startup and running configuration files. [Table 2](#) shows the configuration files used for this example.

Table 2 Configuration Files Used for the Incremental Diff Operation Example

Startup Configuration File	Running Configuration File
<pre>ip subnet-zero ip cef ip name-server 10.4.4.4 voice dnis-map 1 dnis 111 interface Ethernet1/0 no ip address no ip route-cache no ip mroute-cache shutdown duplex half ip default-gateway 10.5.5.5 ip classless access-list 110 deny ip any host 10.1.1.1 access-list 110 deny ip any host 10.1.1.2 access-list 110 deny ip any host 10.1.1.3 snmp-server community private RW</pre>	<pre>no ip subnet-zero ip cef interface Ethernet1/0 ip address 10.7.7.7 255.0.0.0 no ip route-cache no ip mroute-cache duplex half no ip classless snmp-server community public RO</pre>

The following is sample output from the **show archive config incremental-diffs** command. This sample output displays the results of the incremental diff operation performed on the configuration files in [Table 2](#).

```
Router# show archive config incremental-diffs startup-config
```

```
ip subnet-zero
ip name-server 10.4.4.4
voice dnis-map 1
  dnis 111
interface Ethernet1/0
  no ip address
  shutdown
ip default-gateway 10.5.5.5
ip classless
access-list 110 deny ip any host 10.1.1.1
access-list 110 deny ip any host 10.1.1.2
access-list 110 deny ip any host 10.1.1.3
snmp-server community private RW
```

Additional References

This section provides references related to the Contextual Configuration Diff Utility feature.

Related Documents

Related Topic	Document Title
Information about managing configuration files	“ Managing Configuration Files ” chapter in the Cisco IOS Configuration Fundamentals and Network Management Configuration Guide, Release 12.2
Commands for managing configuration files	The <i>Cisco IOS Configuration Fundamentals Command Reference</i> appropriate to your software release version.

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

MIBs

MIBs	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	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
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	—

Technical Assistance

Description	Link
The Cisco Technical Support & Documentation website contains thousands of 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/techsupport

Command Reference

This section documents modified commands only.

- [show archive config differences](#)
- [show archive config incremental-diffs](#)

show archive config differences

To perform a line-by-line comparison of any two configuration files (accessible through the Cisco IOS File System [IFS]) and generate a list of the differences between them, use the **show archive config differences** command in user EXEC or privileged EXEC mode.

```
show archive config differences [file1 [file2]]
```

Syntax Description	<i>file1</i>	(Optional) The filename of the first configuration file.
	<i>file2</i>	(Optional) The filename of the second configuration file.

Command Default If the *file1* and *file2* arguments are not specified, the first configuration file is assumed to be the running configuration file and the second to be the startup configuration file.

If only the *file1* argument is specified, the second configuration file is assumed to be the running configuration file.

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	12.3(4)T	This command was introduced.
	12.2(25)S	This command was integrated into Cisco IOS Release 12.2 S.
	12.2(27)SBC	This command was integrated into Cisco IOS Release 12.2 SB.
	12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2 SR.
	12.2(33)SXH	This command was integrated into Cisco IOS Release 12.2 SX.

Usage Guidelines Interpreting the output of the **show archive config differences** command is dependent on the order in which the two files are configured. Each entry in the generated output list is prefixed with a unique text symbol to indicate the type of difference found. The text symbols and their meanings are as follows:

- A minus symbol (-) indicates that the configuration line exists in *file1* but not in *file2*.
- A plus symbol (+) indicates that the configuration line exists in *file2* but not in *file1*.
- An exclamation point (!) with descriptive comments is used to identify order-sensitive configuration lines whose location is different in *file1* than in *file2*.

Examples In this example, a diff operation is performed on the running and startup configuration files. [Table 3](#) shows the configuration files used for this example.

Table 3 Configuration Files Used for the Diff Operation Example

Running Configuration File	Startup Configuration File
<pre>no ip subnet-zero ip cef interface Ethernet1/0 ip address 10.7.7.7 255.0.0.0 no ip route-cache no ip mroute-cache duplex half no ip classless snmp-server community public RO</pre>	<pre>ip subnet-zero ip cef ip name-server 10.4.4.4 voice dnis-map 1 dnis 111 interface Ethernet1/0 no ip address no ip route-cache no ip mroute-cache shutdown duplex half ip default-gateway 10.5.5.5 ip classless access-list 110 deny ip any host 10.1.1.1 access-list 110 deny ip any host 10.1.1.2 access-list 110 deny ip any host 10.1.1.3 snmp-server community private RW</pre>

The following is sample output from the **show archive config differences** command. This sample output displays the results of the diff operation performed on the configuration files in [Table 3](#).

```
Router# show archive config differences running-config startup-config
```

```
+ip subnet-zero
+ip name-server 10.4.4.4
+voice dnis-map 1
+dnis 111
interface Ethernet1/0
+no ip address
+shutdown
+ip default-gateway 10.5.5.5
+ip classless
+access-list 110 deny ip any host 10.1.1.1
+access-list 110 deny ip any host 10.1.1.2
+access-list 110 deny ip any host 10.1.1.3
+snmp-server community private RW
-no ip subnet-zero
interface Ethernet1/0
-ip address 10.7.7.7 255.0.0.0
-no ip classless
-snmserver community public RO
```

Related Commands

Command	Description
more nvram:startup-config	Displays the startup configuration file contained in NVRAM or specified by the CONFIG_FILE environment variable.
more system:running-config	Displays the contents of the currently running configuration file.
show archive config incremental-diffs	Performs a line-by-line comparison of a specified configuration file to the running configuration file and generates a list of the configuration lines that do not appear in the running configuration file.

show archive config incremental-diffs

To perform a line-by-line comparison of a specified configuration file to the running configuration file and generate a list of the configuration lines that do not appear in the running configuration file, use the **show archive config incremental-diffs** command in user EXEC or privileged EXEC mode.

show archive config incremental-diffs *file*

Syntax Description

<i>file</i>	The filename of the configuration file to be compared to the running configuration file.
-------------	--

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.3(4)T	This command was introduced.
12.2(25)S	This command was integrated into Cisco IOS Release 12.2 S.
12.2(27)SBC	This command was integrated into Cisco IOS Release 12.2 SB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2 SR.
12.2(33)SXH	This command was integrated into Cisco IOS Release 12.2 SX.

Usage Guidelines

When an incremental diff operation is performed, a list of the configuration lines that do not appear in the running configuration file (in other words, configuration lines that only appear in the specified file that is being compared to the running configuration file) is generated as output. An exclamation point (!) with descriptive comments is used to identify order-sensitive configuration lines whose location is different in the specified configuration file than in the running configuration file.

Examples

In this example, an incremental diff operation is performed on the startup and running configuration files. [Table 4](#) shows the configuration files used for this example.

Table 4 Configuration Files Used for the Incremental Diff Operation Example

Startup Configuration File	Running Configuration File
<pre>ip subnet-zero ip cef ip name-server 10.4.4.4 voice dnis-map 1 dnis 111 interface Ethernet1/0 no ip address no ip route-cache no ip mroute-cache shutdown duplex half ip default-gateway 10.5.5.5 ip classless access-list 110 deny ip any host 10.1.1.1 access-list 110 deny ip any host 10.1.1.2 access-list 110 deny ip any host 10.1.1.3 snmp-server community private RW</pre>	<pre>no ip subnet-zero ip cef interface Ethernet1/0 ip address 10.7.7.7 255.0.0.0 no ip route-cache no ip mroute-cache duplex half no ip classless snmp-server community public RO</pre>

The following is sample output from the **show archive config incremental-diffs** command. This sample output displays the results of the incremental diff operation performed on the configuration files in [Table 4](#).

```
Router# show archive config incremental-diffs nvram:startup-config
```

```
ip subnet-zero
ip name-server 10.4.4.4
voice dnis-map 1
  dnis 111
interface Ethernet1/0
  no ip address
  shutdown
ip default-gateway 10.5.5.5
ip classless
access-list 110 deny ip any host 10.1.1.1
access-list 110 deny ip any host 10.1.1.2
access-list 110 deny ip any host 10.1.1.3
snmp-server community private RW
```

Related Commands

Command	Description
more nvram:startup-config	Displays the startup configuration file contained in NVRAM or specified by the CONFIG_FILE environment variable.
more system:running-config	Displays the contents of the currently running configuration file.
show archive config differences	Performs a line-by-line comparison of any two configuration files (accessible through the IFS) and generates a list of the differences between them.

Feature Information for Contextual Configuration Diff Utility

Table 5 lists the release history for this feature.

Not all commands may be available in your Cisco IOS software release. For release information about a specific command, see the command reference documentation.

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Note

Table 5 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release. Unless noted otherwise, subsequent releases of that Cisco IOS software release also support that feature.

Table 5 Feature Information for Contextual Configuration Diff Utility

Feature Name	Releases	Feature Information
Contextual Configuration Diff Utility	12.3(4)T, 12.2(25)S, 12.2(27)SBC, 12.2(33)SRA, 12.2(33)SXH	<p>The Contextual Configuration Diff Utility feature provides the ability to perform a line-by-line comparison of any two configuration files and generate a list of the differences between them. The generated output includes information regarding configuration lines that have been added, modified, or deleted, and the configuration modes within which a changed configuration line exists.</p> <p>In 12.3(4)T, this feature was introduced.</p> <p>In 12.2(25)S, support was added for a Cisco IOS 12.2S release.</p> <p>In 12.2(27)SBC, support was added in a Cisco IOS 12.2SB release.</p> <p>In 12.2(33)SRA, support was added in a Cisco IOS 12.2SR release.</p> <p>In 12.2(33)SXH, support was added in a Cisco IOS 12.2SX release.</p> <p>The following sections provide information about this feature:</p> <ul style="list-style-type: none"> • Benefits of the Contextual Configuration Diff Utility, page 2 • Contextual Configuration Diff Utility Output Format, page 2 • Using the Contextual Configuration Diff Utility, page 3 <p>The following commands were modified by this feature: show archive config differences, show archive config incremental-diffs.</p>

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