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# Managing Configuration Files Configuration Guide, Cisco IOS Release 15SY

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## Chapter: 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 Integrated File System [IFS]) and generate a list of the differences between them. The generated output includes information about configuration lines that have been added, modified, or deleted, and the configuration modes within which a changed configuration line exists.

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## Finding Feature Information

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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 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 device 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 device 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

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

## 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 File System [IFS]) and generate a list of the differences between them. The generated output includes information about 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

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## 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 by using the **show archive config differences** command. Interpreting the output is dependent on the order in which the two files are specified in the 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 identifies 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 by using the **show archive config incremental-diffs** command, which compares a specified configuration file to the running configuration file ().

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 appear only in the specified file that is being compared to the running configuration file) is generated as output. An exclamation point (!) with descriptive comments identifies 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

## Performing a Line-by-Line File Comparison Using the Contextual Configuration Diff Utility

### SUMMARY STEPS

1. **enable**

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DETAILED STEPS

	Command or Action
Step 1	<p>enable</p> <p><b>Example:</b> Device&gt; enable</p>
Step 2	<p>Enter one of the following:</p> <ul style="list-style-type: none"><li>• <b>show archive config differences</b> [<i>file1</i> [<i>file2</i>]]</li><li>• <b>show archive config incremental-diffs</b> <i>file</i></li></ul> <p><b>Example:</b> Device# show archive config differences running-config</p> <p><b>Example:</b> Device# show archive config incremental-diffs nvram:sta</p>

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Step 3	<b>exit</b>  <b>Example:</b> Device# exit
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## Configuration Examples for the Contextual Configuration Diff Utility

### Example: Diff Operation Performed on Running and Startup Configuration Files

In this example, a diff operation is performed on the running and startup configuration files. The table below shows the configuration files used for this example.

Table 1 Configuration Files Used for the Diff Operation Example

Running Configuration File	Startup Configuration File
no ip subnet-zero ip cef interface GigabitEthernet1/0/0 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 R0	ip subnet-zero ip cef ip name-server 10.4.4.4 voice dnis-map 1 dnis 111 interface GigabitEthernet1/0/ 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 access-list 110 deny   ip any access-list 110 deny   ip any snmp-server community private

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

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```
+dnis 111
interface GigabitEthernet1/0/0
+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 GigabitEthernet1/0/0
-ip address 10.7.7.7 255.0.0.0
-no ip classless
-snmpp-server community public RO
```

## Example: Incremental Diff Operation Performed on Running and Startup Configuration Files

In this example, an incremental diff operation is performed on the startup and running configuration files. The table below shows the configuration files used for this example.

**Table 2 Configuration Files Used for the Incremental Diff Operation Example**

Startup Configuration File	Running Configuration
ip subnet-zero ip cef ip name-server 10.4.4.4 voice dnis-map 1 dnis 111 interface GigabitEthernet1/0/0 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	no ip subnet-zero ip cef interface GigabitEthernet1/0/0 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

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Device# **show archive config incremental-diffs startup-config**

```
ip subnet-zero
ip name-server 10.4.4.4
voice dnis-map 1
  dnis 111
interface GigabitEthernet1/0/0
  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

### Related Documents

Related Topic	Document Title
Cisco IOS commands	<a href="#">Cisco IOS Master Command List, All Releases</a>
Information about managing configuration files	“Managing Configuration Files” module in the <i>Managing Configuration Files Configuration Guide</i>
Commands for managing configuration files	<a href="#">Cisco IOS Configuration Fundamentals Command Reference</a>

### Technical Assistance

Description	Link
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support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

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Table 3 Feature Information for Contextual Configuration Diff Utility

Feature Name	Releases	Feature Information
Contextual Configuration Diff Utility	12.2(25)S 12.2(27)SBC 12.2(33)SB 12.2(33)SRA 12.2(33)SXH 12.3(4)T 15.0(1)EX Cisco IOS XE Release 2.1	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 about configuration lines that have been added, modified, or deleted, and the configuration modes within which a changed configuration line exists.  The following commands were introduced or modified: <b>show archive config differences</b> , <b>show archive config incremental-diffs</b> .



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