MD5 File Validation

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The MD5 File Validation feature provides a Cisco IOS software command you can use to ensure file validation using the Message Digest 5 (MD5) algorithm in the Cisco IOS File System (IFS).

The MD5 File Validation feature allows you to check the integrity of a Cisco IOS software image by comparing its MD5 checksum value against a known MD5 checksum value for the image. MD5 values are now made available on Cisco.com for all Cisco IOS software images for comparison against local system image values.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the "Feature Information for MD5 File Validation" section on page 6.

Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

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Restrictions for MD5 File Validation

The MD5 File Validation feature can only be used to check the integrity of a Cisco IOS software image that is stored on a Cisco IOS device. It cannot be used to check the integrity of an image on a remote file system or an image running in memory.

Information About MD5 File Validation

To configure the MD5 File Validation feature, you should understand the following concept:

MD5 File Validation Overview

The MD5 File Validation feature provides a mechanism for users to verify that system image files are not corrupted or incomplete. This feature uses the industry-standard MD5 algorithm for improved reliability and security. MD5 file validation computes and displays the MD5 values from the Cisco IOS command-line interface (CLI). Files do not have to be checked on another device.

Note The MD5 file does not have to be on the router in order to verify the Cisco IOS software image.

How to Validate Files Using the MD5 Algorithm

This section contains the following task:

Verifying an Image

The MD5 File Validation feature allows you to generate the MD5 checksum for the Cisco IOS image stored on your router and compare it to the value posted on Cisco.com to verify that the image on your router is not corrupted.

Perform this task to run the MD5 integrity check after transferring an image file.

Image Information

You can obtain the MD5 value for your system image from the Software Center at Cisco.com. The most convenient way to get this value is to click the name of the file prior to download. For example, if you select the 12.2.2T4 Release for the 3640 Platform with the Enterprise Plus Feature Set, before clicking the Download button, you can click the filename for the image (c3640-js-mz.122-2.T4.bin) and the image information will be displayed.

Image information typically includes the Release, Description, File Size, BSD Checksum, Router Checksum, Date Published, and MD5 value for the image. You should record the MD5 value for the image prior to download. However, if you do not have the MD5 value for a previously downloaded image, you can select the same image on Cisco.com (using the same process you would use to download the image) to get the MD5 value.

SUMMARY STEPS

1. **enable**

2. **verify /md5** *filesystem***:***filename*

    or

    verify /md5 *filesystem***:***filename md5-value*

DETAILED STEPS

	Command or Action	Purpose

Step 1	`enable`
	
	Example:
	`Router> enable`
		Enables privileged EXEC mode.
		
		• Enter your password if prompted.

Step 2	`verify /md5 filesystem:filename`
	or
	`verify /md5 filesystem:filename md5-value`
	
	Example:
	`Router# verify /md5 disk1:c7200-js-mz`
	or
	
	Example:
	`Router# verify /md5 disk1:c7200-js-mz`
	`0f369ed9e98756f179d4f29d6e7755d3`
		Verifies the checksum of a file on a flash memory file system or computes an MD5 signature for a file.
		
		• In the example, disk1 is specified as the filesystem and c7200-js-mz is specified as the filename.
		
		or
		
		Displays a message indicating whether the MD5 values match.
		
		• In the example, the md5-value is specified as 0f369ed9e98756f179d4f29d6e7755d3.

Troubleshooting Tips

A mismatch in MD5 values means that either the image is corrupt or the wrong MD5 value was entered.

Configuration Examples for MD5 File Validation

This section provides the following configuration example:

Verifying an Image: Example

In the following example, the **/md5** keyword is used to display the MD5 value for the image stored in disk1 of the device. The MD5 value shown in the last line can be compared to the value provided on Cisco.com.

```
Router# verify /md5 disk1:
Verify filename []? c7200-js-mz
..................................
..................................
..................................
..................................
..................................
.............................Done!
verify /md5 (disk1:c7200-js-mz) = 0f369ed9e98756f179d4f29d6e7755d3
```

In the following example, the known MD5 value for the image is specified in the **verify** command, and the system checks the value against the stored value:

```
Router# verify /md5 disk1:c7200-js-mz ?
  WORD  Expected md5 signature
  <cr>
router# verify /md5 disk1:c7200-js-mz 0f369ed9e98756f179d4f29d6e7755d3
..................................
..................................
..................................
..................................
..................................
.............................Done!
Verified (disk1:c7200-js-mz) = 0f369ed9e98756f179d4f29d6e7755d3
```

Additional References

The following sections provide references related to the MD5 File Validation feature.

Related Documents

Related Topic	Document Title
Additional commands for loading, maintaining, and rebooting system images	*Cisco IOS Configuration Fundamentals Command Reference*

Standards

Standard	Title
None	—

MIBs

MIB	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

RFC	Title
RFC 1321	*MD5 Message-Digest Algorithm*

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/techsupport

Command Reference

The following commands are introduced or modified in the feature or features documented in this module. For information about these commands, see the *Cisco IOS Configuration Fundamentals Command Reference* at http://www.cisco.com/en/US/docs/ios/fundamentals/command/reference/cf_book.html. For information about all Cisco IOS commands, use the Command Lookup Tool at http://tools.cisco.com/Support/CLILookup or the *Cisco IOS Master Command List, All Releases*, at http://www.cisco.com/en/US/docs/ios/mcl/allreleasemcl/all_book.html.

- **verify**

Feature Information for MD5 File Validation

Table 1 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.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS and Catalyst OS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

Note Table 1 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release train. Unless noted otherwise, subsequent releases of that Cisco IOS software release train also support that feature.

Table 1   *Feature Information for MD5 File Vaildation*

Feature Name	Releases	Feature Information
MD5 File Validation	12.2(4)T 12.0(22)S	The MD5 File Validation feature allows you to check the integrity of a Cisco IOS software image by comparing its MD5 checksum value against a known MD5 checksum value for the image. The following command was introduced or modified: **verify**.