How to Choose a Cisco IOS Software Release

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Introduction

This document provides guidelines to help you choose the most appropriate Cisco IOS® Software release to meet your needs, and provides suggestions and tools to aid you in your choice.

Note: In order to use the troubleshooting tools described in this document, you must be a registered customer and you must be logged in.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

How Do I Choose a Cisco IOS Software Release?

The most important factors to take into account are:

- Hardware Support
- Feature Support
- Cisco IOS Software Release Version
- Memory Requirements

Hardware Support

The first thing to check when you choose a Cisco IOS Software release is hardware support. Cisco recommends that you use the Cisco Feature Navigator (registered customers only), which allows you to search for Cisco IOS Hardware Support.

Note: In order to use the tools, you must:

- Compile a list of the different software versions that support all your hardware.
- Determine which features have to be deployed within your network.

Refer to Cisco IOS Software for more information on features and hardware support for any particular Cisco IOS software release. From this page, choose the required Cisco IOS software release under The Latest Cisco IOS Software Releases section. Next, click the **Bulletins** link under the Product Literature section and refer to the Cisco IOS Release Features and Hardware Support document.

Feature Support

If you have the output of a **show version** command from your Cisco device, you can use the Cisco CLI Analyzer (registered customers only) in order to display potential issues and fixes. In order to use this tool, you must be a registered customer, be logged in, and have JavaScript enabled.

It is important to check for feature support, especially if you plan to use recent software features. If you want to keep the same features as the version that currently runs on your router, and you are not sure which feature set you use, issue the **show version** command on your router.

The second line of the **show version** command looks like this:

```
IOS (tm) 2500 Software (C2500-JS-L), Version 12.0(9), RELEASE SOFTWARE (fc1)
```

The "JS" is the feature set. In this example, J stands for "Enterprise" and S stands for "Plus". With this knowledge, you can choose a similar feature set.

In order to find out which Cisco IOS Software supports all of the features you plan to use, it is best to use the Cisco Software Research (registered customers only) , which allows you to search by feature(s) or by release, and it even allows you to compare two releases. Write down the different software versions that meet your requirements and that are compatible with your hardware.

Refer to Cisco IOS Software for more information on features and hardware support for any particular Cisco IOS software release. From this page, choose the required Cisco IOS software release under The Latest Cisco IOS Software Releases section. Next, click the **Bulletins** link and refer to the Cisco IOS Release Features and Hardware Support document.

Cisco IOS Software Release Version

You still have to choose the particular Cisco IOS Software release you want to run. All of them are fine as long as they support your hardware, contain the features you want, and are compatible with the memory of your router (see Memory Requirements). Here are some general recommendations and guidelines to make it easier for you:

Release Format

Cisco IOS Software releases use the format A.B(C)D where:

- A, B, and C are numbers.
- D (if present) is a letter.
- A.B is a major release.
- C is the maintenance version. A higher maintenance number means more bug fixes. Any feature, bug fix, and hardware support available in a particular maintenance version are also available in the next one.
- D, if present, indicates that the release is not a major release, but an extension of a major release. These extensions usually provide new features and new hardware support.

Cisco IOS Software Image

The Cisco IOS Software image is either ED, LD, GD, or DF:

- **ED stands for "Early Deployment."** Early Deployment releases offer new feature, platform, or interface support. Most non-major releases contain ED releases.
- **GD stands for "General Deployment."** A major release of Cisco IOS Software reaches the "General Deployment" milestone when Cisco feels it is suitable for deployment anywhere in customer networks where the features and functionality of the release are required. Criteria for reaching the "General Deployment" milestone are based on, but not limited to, customer feedback surveys from production and test networks using the releases, Customer Engineer bug reports, and reported field experience. Only major releases are candidates for the General Deployment milestone.
- **LD stands for "Limited Deployment."** A major release of Cisco IOS Software is said to be in the "Limited Deployment" phase of its life cycle during the period between its first shipment and the GD milestone.
- **DF stands for "Deferred."** DF releases are not available for downloading because of known defects. These should not be installed on your router.

When choosing a release, Cisco recommends a GD release when possible. Only choose an ED release if your hardware and software features leave you no other choice.

Memory Requirements

Before you install a new Cisco IOS Software image on your router, check if your router meets the memory requirements for that image. For this, issue the **show version** command on your router, and look for these lines:

```
. . .
```

```
cisco RSP4 (R5000) processor with 65536K/2072K bytes of memory
...
16384K bytes of processor board System flash (Read ONLY)
```

The first line tells you how much Dynamic RAM (DRAM) and Packet memory are installed in your router. Some platforms use a fraction of their DRAM as Packet memory. The memory requirements take this into account, so you have to add both numbers to find the amount of DRAM available on your router (from a memory requirement point of view).

Example 1: Separate DRAM and Packet Memory

```
...
cisco RSP4 (R5000) processor with 65536K/2072K bytes of memory
...
```

The 4000, 4500, 4700, and 7500 routers have separate DRAM and Packet memory, so you only need to look at the first number. This shows that the router has 65536 K (or 64 M) of DRAM.

Example 2: Combined DRAM and Packet Memory

```
...
cisco 2611 (MPC860) processor (revision 0x202) with 29696K/3072K bytes of memory
...
```

The 1000, 1600, 2500, 2600, 3600, and 7200 routers use a fraction of DRAM as Packet memory, so you need to add both numbers to find out the real amount of DRAM. In this example, the router has 29696 K + 3072 K = 32768 K (or 32 M) of DRAM.

Example 3: Available Flash Memory

```
...
cisco RSP4 (R5000) processor with 65536K/2072K bytes of memory
...
16384K bytes of processor board System flash (Read ONLY)
```

The bottom line tells you how much Flash memory is available. Some of it might already be in use. In order to find out the amount of free Flash memory, issue a **show flash** command:

```
Router#show flash

System flash directory:
File   Length   Name/status
  1    8407884  c2600-io3s56i-mz.121-6
[8407948 bytes used, 8369268 available, 16777216 total]
16384K bytes of processor board System flash (Read/Write)
```

Variants of the **show flash** command can be used to inspect different specific Flash devices on the platform. Refer to the **show flash** command definition for information on how to use these variants.

You need to satisfy both the DRAM and the Flash requirements to be able to use the software you

choose. If you do not meet the requirements, you can either add more Flash or more DRAM in the router, or choose another Cisco IOS Software release. You may also consider a reduced feature set or an older release, since they have less features, and therefore fewer requirements.

You can use the Download Software area or the Release notes in order to find the memory requirements for a particular release. Complete these steps in order to access the release notes for a Cisco IOS Software release:

1. Go to the Download Software area.
2. Choose **Cisco IOS and NX-OS Software**.
3. Choose the Cisco IOS software release for which you are looking, for example, Main Line or Special and Early Deployment.
4. Choose your product, for example, Cisco 3800 or 2800 Series.
5. Choose the Cisco IOS software release, for example, General Deployment (GD), Limited Deployment (LD) or Maintenance Deployment (MD). Here on RHS you are able to view the DRAM and Flash memory required for the respective Cisco IOS image.

Bug Scrub

You can perform a bug scrub in order to check bugs on a new release. Refer to the Bug Search Tool (registered customers only) .

Download the Cisco IOS Software Image

You should now be ready to go to the Download Software area. Complete these steps:

1. Choose the major release in which you are interested.
2. Choose the platform.
3. Choose the exact version you want to download. (At this point, you can see which versions are GD, LD, or ED [DF releases are not available for downloading]).
4. Choose the feature set you want.The memory requirements for that feature set are displayed. If your router matches them, go ahead and download the image.

Related Information

- **Cisco Routers Product Support**
- **Technical Support & Documentation - Cisco Systems**