

# RME Software Image Recommendation Process for Cisco IOS Devices

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## Introduction

The Software Image Manager (SWIM) application in Resource Manager Essentials (RME) (in CiscoWorks2000) provides software download and software library management capabilities. This document explains how the SWIM System Software and Bootldr recommendation process works for Cisco IOS® devices.

SWIM recommends the default Cisco IOS system software image and a Flash partition to copy the image in the course of the Distribute Images job creation process. SWIM also makes a default recommendation on the Bootldr image, Mica/Microcom, Channel Interface Processor (CIP) images, and a Flash target, if they are applicable to the device.

- SWIM displays its upgrade recommendations in the Options column of the Recommend Image Upgrade screen. The Image drop-down list displays all Cisco IOS system software images that belong to the same platform as the device that is upgraded. The Flash drop-down list displays all the Flash partitions that exist on the device. (If there is only one item to display in a list box, the list box is shown as simple text.)
- The default recommended image and Flash recommendation entries for SWIM are displayed with a \* superscript in the list boxes. When the screen is initially displayed, the default recommendations are automatically selected in list boxes. If SWIM does not have a default recommendation, none of the entries in the list box are marked with the \* superscript.
- SWIM can recommend system software images from the local SWIM Software Library and optionally from Cisco.com. Users with administrative privileges can point the image recommendation process to Cisco.com by choosing **Admin > Software Management > Edit Preferences** from the menu. If you configure Cisco.com filters in the Edit Preferences window, you can control which images on Cisco.com are selected by SWIM in the course of the image recommendation process. If an image exists in the local SWIM Software Library as well as on Cisco.com, the image in the local library is preferred.

## Prerequisites

### Requirements

There are no specific requirements for this document.

## Components Used

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

## Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

## System Software Recommendation Process

The SWIM System Software Recommendation compares target device information with image attributes and requirements. The image attributes considered in this process are the size of the image, subset features, minimum DRAM and BOOT ROM requirements, and so on. You can input these attributes while you import images into the local library, and edit them later using the Browse Library function.

The various phases of the SWIM image recommendation process are listed here:

1. SWIM reads all the images that belong to the same family as the target device and creates a list (referred to as the "image list" in the rest of this document). SWIM queries the local Software Library as well as the Cisco.com Software Library to generate this list.
2. SWIM performs the minimum requirement check in this step. From the image list, SWIM removes images that:
  - ◆ require more DRAM than the device has.
  - ◆ require a later version of BOOT ROM than the device has.
  - ◆ have a file size larger than the size of any Flash partition on the device.
  - ◆ are exactly the same as the current running image (same version number and feature subset).
3. SWIM compares the feature subset name of each image that remains in the list with the feature subset name of the current running image on the device. The images in the list are classified relative to the feature subset running on the device. SWIM classifies the images as:
  - ◆ **SUPERSET** The feature subset of the image is a superset of the image running on the device.
  - ◆ **EXACT** The feature subset of the image is same as the image running on the device.
  - ◆ **SUBSET** The feature subset of the image is a subset of the image running on the device.
  - ◆ **OTHER** None of the above.
4. The previous step results in four groups of images. (Some of these groups may be empty if there are no images that match the feature subset criteria.)
5. SWIM searches all four groups in the order listed in Step 3. (If SWIM finds an empty group, it moves to the next group.) When SWIM finds a populated group, it locates the latest image in that group and recommends it as the default image.
6. After a default image is selected, SWIM analyzes the Flash partition information on the device to make a default Flash target recommendation using these steps:
  - ◆ SWIM makes a list of all Flash partitions on the device and determines the total size of the Flash partition, as well as the free space available. (SWIM does not erase any files with a size less than 1MB.)
  - ◆ SWIM removes any Flash partitions that are read-only from the list.
  - ◆ SWIM locates the name of the partition that has the maximum size. If the total size of this partition is greater than the size of the recommended image, SWIM recommends this Flash partition as the default Flash target.
  - ◆ If SWIM cannot find any Flash partition that matches the Flash target criteria, it locates the Flash partition that has the most available space. SWIM then recommends this partition as the

default Flash target. (In this case, SWIM must erase the Flash before it copies the new image.)

- ◆ If SWIM is unable to recommend a Flash target, it removes the default image recommendation as well.

## Bootldr Image Recommendation Process

- Bootldr images are recommended from the local Software Library only. Bootldr images are always copied to the "bootflash:1" partition on any device.
- SWIM recommends the latest Bootldr image in the Software Library as the default image. If this image is larger than the size of the bootflash partition, SWIM recommends the second-most recent image.
- SWIM recognizes Bootldr images that have the "boot" string in their image name. SWIM does not support use of a regular image as the Bootldr image.

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