

**113-SIG-3005**  
**Manage the Cisco Internetwork Operating System (IOS) Image Files to Increase Network Reliability**  
**Status: Approved**

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**Distribution Restriction:** Approved for public release; distribution is unlimited.

**Destruction Notice:** None

**Foreign Disclosure: FD1** - This training product has been reviewed by the training developers in coordination with the US Army Signal School and FG foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

**Condition:** Your unit has just received new routers and switches. Each system image contains different sets of IOS features. You have available Packet Tracer.

**Standard:** Manage the IOS file and issue the show version command to ensure all licenses are up to date.

**Special Condition:** None

**Safety Risk:** Low

**MOPP 4:**

**Task Statements**

**Cue:** None

**DANGER**

None

**WARNING**

None

**CAUTION**

None

**Remarks:** None

**Notes:** All required references and technical manuals will be provided by the local Command via Cisco Networking Academy at [www.netacad.com](http://www.netacad.com).

## Performance Steps

1. Backup a copy of the IOS Software image.
  - a. Ping the Trivial File Transfer Protocol (TFTP) server to test connectivity.
  - b. Verify that the TFTP server has sufficient disk space to accommodate the Cisco IOS Software image. `rtr#show flash0:` (perform this step only if the TFTP server is a router)
  - c. Copy the image to the TFTP server. `rtr#copy source-url destination-url`

2. Restore a copy of the IOS Software image.
  - a. Ping the TFTP server from the router.
  - b. Ensure that there is sufficient flash space on the router that is being upgraded. `rtr#show flash0:`
  - c. Copy the IOS image file from the TFTP server to the router. `rtr#copy tftp: flash0:`
  - d. Configure the router to load the new image during bootup. `rtr(config)#boot system flash0://filename`
  - e. Save the configuration. `rtr#copy running-config startup-config`
  - f. Reboot the router. `rtr#reload`
  - g. Verify the new image has loaded. `rtr#show ver`

3. Upgrade/Install license.
  - a. Verify current license. `rtr#show license udi`
  - b. Install license file. `rtr#license install stored-location-url`
  - c. Reboot the router. `rtr#reload`
  - d. Verify license installation. `rtr#show ver`

NOTE: for additional information about or to troubleshoot issues with Cisco IOS software licenses use `rtr#show license` command

- e. Backup the license. `rtr#license save file-sys://lic-location`

f. Verify that the licenses have been saved. `rtr#show flash0:`

g. Configure a one-time acceptance of the EULA for all Cisco IOS software packages and features.  
`rtr(config)#license accept end user agreement`

h. Activate an evaluation right-to-use license. `rtr(config)#license boot module module-name technology-package package-name`

4. Uninstall license.

a. Disable the technology package. `rtr(config)#license boot module module-name technology-package package-name disable`

b. Reboot the router to make the software package inactive. `rtr#reload`

c. Clear the technology package license from license storage. `rtr#license clear feature-name`

d. Disable the active license. `rtr(config)#no license boot module module-name technology-package package-name disable`

e. Reboot the router. `rtr#reload`

Note: Some licenses, such as built-in licenses, cannot be cleared. Only licenses that have been added by using the license install command are removed. Evaluation licenses are not removed.

(Asterisks indicates a leader performance step.)

**Evaluation Guidance:** Score the Soldier GO if all steps are passed (P). Score the Soldier NO GO if any step is failed (F). If the Soldier fails any step, show what was done wrong and how to do it correctly.

**Evaluation Preparation:** Ensure that the equipment is available, serviceable, and ready for use. Use the reference and evaluation guide to score the Soldier's performance. Brief Soldier: Tell the Soldier what is required IAW the task condition and standards.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. The IOS software image is backed up.			
2. The IOS software image is restored.			
3. License upgraded/installed.			
4. License uninstalled.			

**Supporting Reference(s):** None

**TADSS :** None

**Equipment Items (LIN):** None

**Materiel Items (NSN) :**

Step ID	NSN	LIN	Title	Qty
	PACKET TRACER 4.1		Packet tracer 4.1	1

**Environment:** Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to the current Environmental Considerations manual and the current GTA Environmental-related Risk Assessment card.

**Safety:** In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination.

**Prerequisite Individual Tasks :** None

**Supporting Individual Tasks :** None

**Supported Individual Tasks :** None

**Supported Collective Tasks :**

Task Number	Title	Proponent	Status
11-5-7166(Step: 2.)	Conduct Enterprise Management	11 - Signal (Collective)	Approved
(Step: 2.)	Created from Template: Conduct Enterprise Management	11 - Signal (Collective)	Proposed

**ICTL Data :**

ICTL Title	Personnel Type	MOS Data
MOS 25C Radio Operator-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25C
MOS 25Q Multichannel Transmission Systems Operator-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25Q
MOS 25U Signal Support Systems Specialist Skill Levels 1, 2, 3, and 4	Enlisted	MOS: 25U
MOS 25B Information Technology Specialist Skill Levels 1, 2, 3, 4 and 5	Enlisted	MOS: 25B
MOS 25L Cable Systems Installer-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25L

MOS 25N Nodal Network Systems Operator-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25N
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