

113-SIG-3000
Implement the Enhanced Interior Gateway Routing Protocol (EIGRP) for Internet Protocol Version 4 (IPv4) to
Enable End-to-End Connectivity
Status: Approved

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 network is fully operational. You have a requirement to add Cisco equipment to your network and establish end-to-end connectivity. You have available a network plan, 3 Cisco Routers (With Cisco IOS release 15.2(4)M3 universal image or comparable), 3 PCs (Windows 7, Vista, or XP with terminal emulation software), 1 console cable, 3 ethernet crossover cables, 3 serial DCE/DTE cables.

Standard: Implements EIGRP for IPv4 and issues the ping command to verify end-to-end connectivity.

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.

Performance Steps

1. Configure EIGRP routing.

a. Specify the autonomous system(as) number to configure the EIGRP settings. `router(config)#router eigrp autonomous-system`

b. Set the EIGRP router ID. `router(config-router)#eigrp router-id ip-address.`

c. Enable EIGRP routing for all directly connected networks to send and receive updates. `router(config-router)#network network-address [wildcard-mask]`

d. Set interfaces that do not need routing updates to passive. `router(config-router)#passive-interface interface-type interface-number`

2. Configure route summarization for an EIGRP process.

a. Disable automatic summarization. `router(config-router)#no auto-summary` (perform this step only on older IOS)

b. Create a manual summary route for loopback networks. `router(config-if)#ip summary-address eigrp as-number network-address subnet-mask`

3. Optimize EIGRP on appropriate interfaces.

a. Modify bandwidth to reflect appropriate calculated speed. `router(config-if)#bandwidth kilobits-bandwidth-value`

b. Prevent the EIGRP process from over-utilizing a link by modifying the default bandwidth percentage. `router(config-if)#ip bandwidth-percent eigrp as-number percent`

4. Secure EIGRP.

a. Configure authentication keys.

(1) Identify a group of authentication keys. `router(config)#key chain name-of-chain`

(2) Identify an authentication key on a key chain. `router(config-keychain)#key key-id`

(3) Specify the authentication string for a key. `router(config-keychain-key)#key-string key-string-text`

b. Configure EIGRP link authentication.

(1) Specify the interface on which EIGRP is configured.
`router(config)#interface type number`

(2) Specify the type of authentication used. `router(config-if)#ip authentication mode eigrp as-number md5`

(3) Enable authentication. `router(config-if)#ip authentication key-chain eigrp as-number name-of-chain`

5. Verify network connectivity.

a. Ping PC to PC.

b. Display all connected EIGRP routers. `router#show ip eigrp neighbors`

c. Display EIGRP hello interval, hold time, bandwidth percentage and authentication mode for all EIGRP interfaces. `router#show ip eigrp interfaces detail`

d. Display EIGRP autonomous system number, router ID, address summarizations, routing network and passive interfaces. `router#show ip protocols`

e. Display only EIGRP routes. `router#show ip route eigrp`

(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. Configured EIGRP routing.			
2. Configured route summarization for an EIGRP process.			
3. Optimized EIGRP on appropriate interfaces.			
4. Secured EIGRP.			
5. Verified network connectivity.			

Supporting Reference(s): None

TADSS : None

Equipment Items (LIN): None

Materiel Items (NSN) :

Step ID	NSN	LIN	Title	Qty
	7025-01-581-2387	05004N	Cisco Integrated Router Gen 2: CISCO 2901/K9	3

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 : None

ICTL Data :

ICTL Title	Personnel Type	MOS Data
MOS 25C Radio Operator-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25C
MOS 25N Nodal Network Systems Operator-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25N
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