Interconnecting Cisco Networking Devices (ICND1 v3.0), Skill Labs

Course Specifications

Course Number: ACI76-051SL_rev1.0
Lab Length: Approximately 19 hours

Performing Initial Device Configuration (100-105)

Introduction
Objective

The Performing Initial Device configuration module provides you with the instructions and Cisco hardware to develop your hands on skills in the basic setup of Cisco switches and routers. This module includes exercise that will cover the following topics:

- Reviewing physical and configuration characteristics of a switch
- Initial switch configuration
- Configuring remote access
- Reviewing physical and configuration characteristics of a router
- Initial router configuration
- Basic router interface configuration

Troubleshooting Methodologies (100-105)

Introduction
Objective

The Troubleshooting Methodologies module provides you with the instructions and Cisco hardware to develop your hands on skills in performing troubleshooting in a rapid and effective way. This module includes the following activities:

- Examine the troubleshooting methodology that Cisco recommends
- Apply certain steps of this methodology to resolve problems on the network
- Verify that the resolutions you implemented are functioning correctly.

Configure Verify and Troubleshoot IPv4 Addressing and Subnetting (100-105)

Introduction
Objective

The Configure, Verify, and Troubleshoot IPv4 Addressing and Subnetting module provides you with the instructions and Cisco hardware to develop your hands on skills in subnetting and configuring IPv4 addressing on a network. This module includes the following activities:

- Determine the addressing scheme that will be applied to the lab topology
- Assign IP addresses to interfaces on network and end user devices according to the addressing scheme
- Verify the IP addressing configuration
- Examine common misconfigurations that can occur when IP addressing
- Troubleshoot and resolve network problems due to IP addressing misconfigurations

Configure Verify and Troubleshoot IPv6 Addressing (100-105)

Introduction
Objective

The Configure, Verify, and Troubleshoot IPv6 Addressing module provides you with the instructions and Cisco hardware to develop your hands-on skills in designing configuring IPv6 addressing on a network. This module includes the following activities:

- Determine the addressing scheme that will be applied to the lab topology
- Assign IP addresses to interfaces on network devices according to the addressing scheme
- Verify the IP addressing configuration
- Examine common misconfigurations that can occur when using IPv6 addressing
- Troubleshoot and resolve network problems due to IPv6 addressing misconfigurations

Configure and Verify Switching Concepts (100-105)

Introduction
Objective

The Configure and Verify Switching Concepts module provides you with the instructions and Cisco hardware to develop your hands on skills in understanding, configuring and verifying various features of switches. This module includes the following activities:

- Examine the functionality of the MAC Address Table
- Configure parameters of the MAC Address Table and observe their results
- Examine frame switching methods and understand how they function
- Observe frame flooding and understand its purpose and its vulnerabilities

Interface Configuration and Cabling (100-105)

Introduction
Objective

The Interface Configuration and Cabling module provides you with the instructions and Cisco hardware to develop your hands on skills in understanding, configuring and troubleshooting various interface and cable issues. This module includes the following activities:

- Duplex and speed configurations on links between network devices
- Examining methods of observing collisions and other errors
- Cabling issues and MDI/MDIX configuration

Configuring and Verifying VLANs (100-105)

Introduction
Objective

The Configuring and Verifying VLANs module provides you with the instructions and Cisco hardware to develop your hands on skills in understanding, configuring and troubleshooting VLAN configurations on switches. This module includes the following activities:

- Understand the fundamentals of VLANs
- Create VLANs and assign them to specific ports
- Understand the Default VLAN and take steps to mitigate its vulnerabilities
- Configure a voice VLAN and verify the configuration

Configure Verify and Troubleshoot Interswitch Connectivity (100-105)

Introduction
Objective

The Configure, Verify, and Troubleshoot Interswitch Connectivity module provides you with the instructions and Cisco hardware to develop your hands on skills in understanding the configuration of trunks as well as of associated protocols. This module includes the following activities:

- Creating Trunk links using DTP and VTP
- Applying 802.1q encapsulation
- Understanding Native VLANs

Configure and Verify and Troubleshoot Port Security (100-105)

Introduction
Objective

The Configure, Verify and Troubleshoot Port Security module provide you with the instructions and Cisco hardware to develop your hands on skills in understanding the configuration and verification of port security features and functionality. This module includes the following activities:

- Activate port security and configure static and dynamic secure MAC addresses
- Configure additional port security features including sticky MAC and violation actions
- Examine and configure err-disable recovery

Configure Verify and Troubleshoot Inter-VLAN Routing (100-105)

Introduction
Objective

The Configure, Verify and Troubleshoot Inter-VLAN Routing module provides you with the instructions and Cisco hardware to develop your hands on skills in configuring inter-VLAN routing using both a separate router for routing, which is also known as "router on a stick" as well as using a layer 3 switch and SVIs. This module includes the following exercises:

- Configuring and verifying inter-VLAN routing using a "router on a stick" topology
- Configuring and verifying inter-VLAN routing using a layer 3 switch with SVIs
- Troubleshooting inter-VLAN routing

Compare Static and Dynamic Routing (100-105)

Introduction
Objective

The Compare Static and Dynamic Routing module provides you with the instructions and Cisco hardware to develop your hands on skills in maintaining and troubleshooting Cisco devices. This module includes the following activities:

- Review the routing table of a Cisco router
- Implement static routing and observe how it functions
- Implement dynamic routing and examine its operation
- Compare the functionality of static and dynamic routing and especially how each reacts to changes in the network

Configure and Verify RIPv2 for IPv4 (100-105)

Introduction
Objective

The Configure and Verify RIPv2 for IPv4 module provides you with the instructions and Cisco hardware to develop your hands on skills in configuring the RIP routing protocol for Cisco routers. This module includes exercises that will cover the following topics:

- Enabling and configuring RIPv2
- Learn how to configure passive interfaces, adjust RIP timers, change auto-summarization configuration and redistribute a static route

Configure and Verify DHCP and DNS (100-105)

Introduction
Objective

The Configure and Verify DHCP and DNS module provide you with the instructions and Cisco hardware to develop your hands on skills in configuring DHCP and DNS on Cisco devices. This module includes exercises that will cover the following topics:

- Configuring a router as a DNS server
- Configuring a router as a DHCP server
- Configuring a router as a DHCP client

Configuring and Verifying NTP Operation (100-105)

Introduction
Objective

The Configuring and Verifying NTP Operation module provides you with the instructions and Cisco hardware to develop your hands on skills in the following topics:

- Understanding the functionality and importance of NTP
- Configuring an NTP server
- Configuring an NTP client
- Verifying the NTP configuration

Configure and Verify standard Access Lists (100-105)

Introduction
Objective

The Configure and verify standard Access Lists module provides you with the instructions and Cisco hardware to develop your hands on skills in creating and applying access lists to routed interfaces. This module includes exercises that will cover the following topics:

- Configuring standard and extended access lists
- Configure named access-lists
- Configuring access-lists to restrict remote access

Configure and Verify NAT (100-105)

Introduction
Objective

The Configure and Verify NAT module provide you with the instructions and Cisco hardware to develop your hands on skills in configuring NAT on Cisco routers. This module includes exercises that will cover the following topics:

- Configuring Static and Dynamic NAT

- Configuring Port Address Translation
- Examining troubleshooting methods for NAT and PAT

Configure and Verify Device Management (100-105)

Introduction
Objective

The Configure and Verify Device Management module provides you with the instructions and Cisco hardware to develop your hands on skills in managing Cisco devices and configuring key network services. This module includes exercises that will cover the following topics:

- Configuring device monitoring features
- Backing up and restoring device configurations
- Configuring and understanding device discovery protocols

Device Maintenance Procedures (100-105)

Introduction
Objective

The Device Maintenance Procedures module provides you with the instructions and Cisco hardware to develop your hands on skills in routine maintenance procedures for Cisco devices. This module includes exercises that will cover the following topics:

- File system management
- Backing up, restoring and upgrading Cisco IOS files
- Examining IOS Licensing features and procedures
- Password recovery and configuration register

Cisco IOS Troubleshooting Tools (100-105)

Introduction
Objective

The Cisco IOS troubleshooting tools module provides you with the instructions and Cisco hardware to develop your hands-on skills in using the troubleshooting tools that the Cisco IOS provides. This module includes exercises that will cover the following topics:

- Using Simple Ping and Extended Ping
- Using Traceroute