

# Cisco Networking Pro (CCNA7) Exam Objectives

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This document contains the objectives for the Cisco Networking Pro (CCNA7) certification exam.

## 1. 1.0 Device Setup and Configuration

### a. 1.1 Setup and configure a router

- i. 1.1.1 Setup and configure a router > **View router configuration information**
- ii. 1.1.2 Setup and configure a router > **Configure router hostnames and interface descriptions**
- iii. 1.1.3 Setup and configure a router > **Configure router banners**
- iv. 1.1.4 Setup and configure a router > **Manage router configuration files**

### b. 1.2 Setup and configure a switch

- i. 1.2.1 Setup and configure a switch > **View switch configuration information**
- ii. 1.2.2 Setup and configure a switch > **Configure switch hostnames and interface descriptions**
- iii. 1.2.3 Setup and configure a switch > **Configure switch banners**
- iv. 1.2.4 Setup and configure a switch > **Manage switch configuration files**

## 2. 2.0 Interface Configuration

### a. 2.1 Configure a router interface

- i. 2.1.1 Configure a router interface > **View the status of router interfaces**
- ii. 2.1.2 Configure a router interface > **View directly-connected devices using CDP**
- iii. 2.1.3 Configure a router interface > **Manage the CDP configuration**
- iv. 2.1.4 Configure a router interface > **Configure Ethernet and serial router interfaces**
- v. 2.1.5 Configure a router interface > **Troubleshoot router connections**

### b. 2.2 Configure a switch interface

- i. 2.2.1 Configure a switch interface > **View the status of switch interface**
- ii. 2.2.2 Configure a switch interface > **Configure interface speed and duplex settings**
- iii. 2.2.3 Configure a switch interface > **View directly-connected network**

## **devices using CDP**

- iv. 2.2.4 Configure a switch interface > **Manage the CDP configuration**

### **3. 3.0 Network Connectivity**

#### **a. 3.1 Configure device IP settings**

- i. 3.1.1 Configure device IP settings > **Configure router TCP/IP settings**
- ii. 3.1.2 Configure device IP settings > **Configure switch TCP/IP settings**
- iii. 3.1.3 Configure device IP settings > **Troubleshoot LAN communications**

#### **b. 3.2 Implement IP routing**

- i. 3.2.1 Implement IP routing > **Calculate and configure subnet masks for network hosts**
- ii. 3.2.2 Implement IP routing > **Configure static routes on a router**
- iii. 3.2.3 Implement IP routing > **View the routing table on a router**
- iv. 3.2.4 Implement IP routing > **Manage auto-summarization between networks**

#### **c. 3.3 Configure OSPFv2 routing**

- i. 3.3.1 Configure OSPFv2 routing > **Enable OSPF routing**
- ii. 3.3.2 Configure OSPFv2 routing > **Configure and manage OSPF routing**
- iii. 3.3.3 Configure OSPFv2 routing > **Troubleshoot OSPF routing**

### **4. 4.0 Network Access**

#### **a. 4.1 Configure switch VLANs**

- i. 4.1.1 Configure switch VLANs > **View information about VLANs configured on a switch**
- ii. 4.1.2 Configure switch VLANs > **Manage default VLAN configuration settings**
- iii. 4.1.3 Configure switch VLANs > **Configure VLANs on a switch**
- iv. 4.1.4 Configure switch VLANs > **Use trunking to extend VLAN to multiple switches**
- v. 4.1.5 Configure switch VLANs > **Troubleshoot VLAN issues**

#### **b. 4.2 Configure interVLAN routing**

- i. 4.2.1 Configure interVLAN routing > **Configure interVLAN routing**
- ii. 4.2.2 Configure interVLAN routing > **Troubleshoot interVLAN routing issues**

#### **c. 4.3 Configure spanning tree**

- i. 4.3.1 Configure spanning tree > **View STP configuration information**
- ii. 4.3.2 Configure spanning tree > **Manually configure a switch as a root bridge**
- iii. 4.3.3 Configure spanning tree > **Configure Rapid PVST+**

d. **4.4 Configure EtherChannel**

- i. 4.4.1 Configure EtherChannel > **Configure EtherChannel using PAGP**
- ii. 4.4.2 Configure EtherChannel > **Configure EtherChannel using LACP**

e. **4.5 Configure wireless networking**

- i. 4.5.1 Configure wireless networking > **Create a wireless network**
- ii. 4.5.2 Configure wireless networking > **Secure a wireless network**
- iii. 4.5.3 Configure wireless networking > **Design a wireless network**
- iv. 4.5.4 Configure wireless networking > **Implement and configure a wireless network**
- v. 4.5.5 Configure wireless networking > **Optimize a wireless network**
- vi. 4.5.6 Configure wireless networking > **Troubleshoot a wireless network**

5. **5.0 Network IP Services**

a. **5.1 Configure NAT**

- i. 5.1.1 Configure NAT > **Configure static NAT on a router**
- ii. 5.1.2 Configure NAT > **Configure dynamic NAT on a router**
- iii. 5.1.3 Configure NAT > **Configure PAT on a router**

b. **5.2 Configure DHCP**

- i. 5.2.1 Configure DHCP > **Configure the DHCP service on a router**
- ii. 5.2.2 Configure DHCP > **Configure DHCP bindings**
- iii. 5.2.3 Configure DHCP > **Configure a DHCP relay agent**

c. **5.3 Configure DNS**

- i. 5.3.1 Configure DNS > **Configure DNS**
- ii. 5.3.2 Configure DNS > **Create DNS zones**
- iii. 5.3.3 Configure DNS > **Create DNS records**
- iv. 5.3.4 Configure DNS > **Troubleshoot DNS**

6. **6.0 Security**

a. **6.1 Configure router security**

- i. 6.1.1 Configure router security > **Configure router passwords**
- ii. 6.1.2 Configure router security > **Secure router access**
- iii. 6.1.3 Configure router security > **Restrict router remote access**
- b. 6.2 **Configure switch security**
  - i. 6.2.1 Configure switch security > **Configure switch passwords**
  - ii. 6.2.2 Configure switch security > **Secure switch access**
  - iii. 6.2.3 Configure switch security > **Enable switch port security**
  - iv. 6.2.4 Configure switch security > **Configure Allowed VLANs**
  - v. 6.2.5 Configure switch security > **Restrict switch remote access**
- c. 6.3 **Configure access control list**
  - i. 6.3.1 Configure access control list > **Implement standard extended and named ACLs**
  - ii. 6.3.2 Configure access control list > **Use wildcard masks in ACLs**
  - iii. 6.3.3 Configure access control list > **Use ACLs to permit allowed network traffic**
  - iv. 6.3.4 Configure access control list > **Use ACLs to block disallowed network traffic**
  - v. 6.3.5 Configure access control list > **Block disallowed traffic**
- d. 6.4 **Implement security measures**
  - i. 6.4.1 Implement security measures > **Implement anti-malware measures**
  - ii. 6.4.2 Implement security measures > **Scan and detect open ports**
  - iii. 6.4.3 Implement security measures > **Implement device hardening**
  - iv. 6.4.4 Implement security measures > **Analyze network traffic using Wireshark**
  - v. 6.4.5 Implement security measures > **Analyze network traffic for potential security risks**