

## CCNA Security 640-553

### Implementing Cisco IOS Network Security

#### Secure Cisco routers

- Secure Cisco routers using the SDM Security Audit feature
- Use the One-Step Lockdown feature in SDM to secure a Cisco router
- Secure administrative access to Cisco routers by setting strong encrypted passwords, exec timeout, login failure rate and using IOS login enhancements
- Secure administrative access to Cisco routers by configuring multiple privilege levels
- Secure administrative access to Cisco routers by configuring role based CLI
- Secure the Cisco IOS image and configuration file

#### Implement AAA on Cisco routers using local router database and external ACS

- Explain the functions and importance of AAA
- Describe the features of TACACS+ and RADIUS AAA protocols
- Configure AAA authentication
- Configure AAA authorization
- Configure AAA accounting

#### Mitigate threats to Cisco routers and networks using ACLs

- Explain the functionality of standard, extended, and named IP Access Control List used by routers to filter packets
- Configure and verify IP ACLs to mitigate given threats (filter IP traffic destined for Telnet, SNMP, and DDoS attacks) in a network using CLI
- Configure IP ACLs to prevent IP address spoofing using CLI
- Discuss the caveats to be considered when building ACLs

#### Implement secure network management and reporting

- Use CLI and SDM to configure SSH on Cisco routers to enable secured management access
- Use CLI and SDM to configure Cisco routers to send Syslog messages to a Syslog server

### **Mitigate Common Layer 2 attacks**

- Describe how to prevent layer 2 attacks by configuring basic Catalyst switch security features

### **Implement the Cisco IOS firewall feature set using SDM**

- Describe the operational strengths and weaknesses of the different firewall technologies
- Explain stateful firewall operations and the function of the state table
- Implement Zone Based Firewall using SDM

### **Implement the Cisco IOS IPS feature set using SDM**

- Define network based vs. host based intrusion detection and prevention
- Explain IPS technologies, attack responses, and monitoring options
- Enable and verify Cisco IOS IPS operations using SDM

### **Implement site-to-site VPNs on Cisco Routers using SDM**

- Explain the different methods used in cryptography
- Explain IKE protocol functionality and phases
- Describe the building blocks of IPSec and the security functions it provides
- Configure and verify an IPSec site-to-site VPN with pre-shared key authentication using SDM