

# SCOR (IMPLEMENTING AND OPERATING CISCO SECURITY CORE TECHNOLOGIES) 1.0

## Objetivo

Gain hands-on experience implementing core security technologies and learn best practices using Cisco security solutions. Prepare for the Implementing and Operating Cisco Security Core Technologies (350-701 SCOR) exam. After taking this course, you should be able to:

- Describe information security concepts and strategies within the network;
- Describe common TCP/IP, network application, and endpoint attacks;
- Describe how various network security technologies work together to guard against attacks;
- Implement access control on Cisco ASA appliance and Cisco Firepower Next-Generation Firewall;
- Describe and implement basic email content security features and functions provided by Cisco Email Security Appliance;
- Describe and implement web content security features and functions provided by Cisco Web Security Appliance;
- Describe Cisco Umbrella® security capabilities, deployment models, policy management, and Investigate console;
- Introduce VPNs and describe cryptography solutions and algorithms;
- Describe Cisco secure site-to-site connectivity solutions;
- Explain how to deploy Cisco Internetwork Operating System (Cisco IOS®) Virtual Tunnel Interface (VTI)-based point-to-point IPsec VPNs
- Explain point-to-point IPsec VPN on the Cisco ASA and Cisco Firepower Next-Generation Firewall (NGFW);
- Describe and deploy Cisco secure remote access connectivity solutions and describe how to configure 802.1X and Extensible Authentication Protocol (EAP) authentication;
- Provide basic understanding of endpoint security and describe Advanced Malware Protection (AMP) for Endpoints architecture and basic features;
- Examine various defenses on Cisco devices that protect the control and management plane;
- Configure and verify Cisco IOS software Layer 2 and Layer 3 data plane controls;
- Describe Cisco Stealthwatch Enterprise and Stealthwatch Cloud solutions;
- Describe basics of cloud computing and common cloud attacks and how to secure cloud environment.

## Público Alvo

• Security and networking professionals looking to learn about Cisco security solutions;

• Professionals who want to prepare for the Cisco SCOR certification exam 300-701.

## Pré-Requisitos

To fully benefit from this course, you should have the following knowledge and skills:

- Familiarity with Ethernet and TCP/IP networking;
- Working knowledge of the Windows operating system;
- Working knowledge of Cisco IOS networking and concepts;
- Familiarity with basics of networking security concepts;
- Recommended that student has Skills and knowledge equivalent to those learned in Implementing and Administering Cisco Solutions (CCNA®) v1.0 course.

## Carga Horária

40 horas (5 dias).

## Conteúdo Programático

### **Describing Information Security Concepts\***

Information Security Overview  
Assets, Vulnerabilities, and Countermeasures  
Managing Risk  
Vulnerability Assessment  
Understanding Common Vulnerability Scoring System (CVSS)

### **Describing Common TCP/IP Attacks\***

Legacy TCP/IP Vulnerabilities  
IP Vulnerabilities  
Internet Control Message Protocol (ICMP) Vulnerabilities  
TCP Vulnerabilities  
User Datagram Protocol (UDP) Vulnerabilities  
Attack Surface and Attack Vectors  
Reconnaissance Attacks  
Access Attacks  
Man-in-the-Middle Attacks  
Denial of Service and Distributed Denial of Service Attacks  
Reflection and Amplification Attacks  
Spoofing Attacks  
Dynamic Host Configuration Protocol (DHCP) Attacks

### **Describing Common Network Application Attacks\***

Password Attacks  
Domain Name System (DNS)-Based Attacks  
DNS Tunneling  
Web-Based Attacks  
HTTP 302 Cushioning  
Command Injections  
SQL Injections  
Cross-Site Scripting and Request Forgery  
Email-Based Attacks

### **Describing Common Endpoint Attacks\***

Buffer Overflow  
Malware  
Reconnaissance Attack  
Gaining Access and Control  
Gaining Access via Social Engineering  
Gaining Access via Web-Based Attacks  
Exploit Kits and Rootkits  
Privilege Escalation  
Post-Exploitation Phase  
Angler Exploit Kit

### **Describing Network Security Technologies**

Defense-in-Depth Strategy  
Defending Across the Attack Continuum  
Network Segmentation and Virtualization Overview  
Stateful Firewall Overview  
Security Intelligence Overview  
Threat Information Standardization  
Network-Based Malware Protection Overview  
Intrusion Prevention System (IPS) Overview  
Next Generation Firewall Overview  
Email Content Security Overview  
Web Content Security Overview  
Threat Analytic Systems Overview  
DNS Security Overview  
Authentication, Authorization, and Accounting Overview  
Identity and Access Management Overview  
Virtual Private Network Technology Overview  
Network Security Device Form Factors Overview

### **Deploying Cisco ASA Firewall**

Cisco ASA Deployment Types  
Cisco ASA Interface Security Levels  
Cisco ASA Objects and Object Groups  
Network Address Translation  
Cisco ASA Interface Access Control Lists (ACLs)  
Cisco ASA Global ACLs  
Cisco ASA Advanced Access Policies  
Cisco ASA High Availability Overview

### **Deploying Cisco Firepower Next-Generation Firewall**

Cisco Firepower NGFW Deployments  
Cisco Firepower NGFW Packet Processing and Policies  
Cisco Firepower NGFW Objects  
Cisco Firepower NGFW Network Address Translation (NAT)  
Cisco Firepower NGFW Prefilter Policies  
Cisco Firepower NGFW Access Control Policies  
Cisco Firepower NGFW Security Intelligence  
Cisco Firepower NGFW Discovery Policies  
Cisco Firepower NGFW IPS Policies  
Cisco Firepower NGFW Malware and File Policies

### **Deploying Email Content Security**

Cisco Email Content Security Overview  
Simple Mail Transfer Protocol (SMTP) Overview  
Email Pipeline Overview  
Public and Private Listeners  
Host Access Table Overview  
Recipient Access Table Overview  
Mail Policies Overview

Protection Against Spam and Graymail  
Anti-virus and Anti-malware Protection  
Outbreak Filters  
Content Filters  
Data Loss Prevention  
Email Encryption

### **Deploying Web Content Security**

Cisco Web Security Appliance (WSA) Overview  
Deployment Options  
Network Users Authentication  
Secure HTTP (HTTPS) Traffic Decryption  
Access Policies and Identification Profiles  
Acceptable Use Controls Settings  
Anti-Malware Protection

### **Deploying Cisco Umbrella\***

Cisco Umbrella Architecture  
Deploying Cisco Umbrella  
Cisco Umbrella Roaming Client  
Managing Cisco Umbrella  
Cisco Umbrella Investigate Overview and Concepts

### **Explaining VPN Technologies and Cryptography**

VPN Definition  
VPN Types  
Secure Communication and Cryptographic Services  
Keys in Cryptography  
Public Key Infrastructure

### **Introducing Cisco Secure Site-to-Site VPN Solutions**

Site-to-Site VPN Topologies  
IPsec VPN Overview  
IPsec Static Crypto Maps  
IPsec Static Virtual Tunnel Interface  
Dynamic Multipoint VPN  
Cisco IOS FlexVPN

### **Deploying Cisco IOS VTI-Based Point-to-Point IPsec VPNs**

Cisco IOS VTIs  
Static VTI Point-to-Point IPsec Internet Key Exchange (IKE) v2 VPN Configuration

### **Deploying Point-to-Point IPsec VPNs on the Cisco ASA and Cisco Firepower NGFW**

Point-to-Point VPNs on the Cisco ASA and Cisco Firepower NGFW  
Cisco ASA Point-to-Point VPN Configuration  
Cisco Firepower NGFW Point-to-Point VPN Configuration

### **Introducing Cisco Secure Remote Access VPN Solutions**

Remote Access VPN Components  
Remote Access VPN Technologies  
Secure Sockets Layer (SSL) Overview

### **Deploying Remote Access SSL VPNs on the Cisco ASA and Cisco Firepower NGFW**

Remote Access Configuration Concepts  
Connection Profiles  
Group Policies  
Cisco ASA Remote Access VPN Configuration  
Cisco Firepower NGFW Remote Access VPN Configuration

### **Explaining Cisco Secure Network Access Solutions**

Cisco Secure Network Access  
Cisco Secure Network Access Components  
AAA Role in Cisco Secure Network Access Solution  
Cisco Identity Services Engine  
Cisco TrustSec

### **Describing 802.1X Authentication**

802.1X and Extensible Authentication Protocol (EAP)  
EAP Methods  
Role of Remote Authentication Dial-in User Service (RADIUS) in 802.1X Communications  
RADIUS Change of Authorization

### **Configuring 802.1X Authentication**

Cisco Catalyst® Switch 802.1X Configuration  
Cisco Wireless LAN Controller (WLC) 802.1X Configuration  
Cisco Identity Services Engine (ISE) 802.1X Configuration  
Supplicant 802.1x Configuration  
Cisco Central Web Authentication

### **Describing Endpoint Security Technologies\***

Host-Based Personal Firewall  
Host-Based Anti-Virus  
Host-Based Intrusion Prevention System  
Application Whitelists and Blacklists  
Host-Based Malware Protection  
Sandboxing Overview  
File Integrity Checking

### **Deploying Cisco Advanced Malware Protection (AMP) for Endpoints\***

Cisco AMP for Endpoints Architecture  
Cisco AMP for Endpoints Engines  
Retrospective Security with Cisco AMP  
Cisco AMP Device and File Trajectory  
Managing Cisco AMP for Endpoints

### **Introducing Network Infrastructure Protection\***

Identifying Network Device Planes  
Control Plane Security Controls  
Management Plane Security Controls  
Network Telemetry  
Layer 2 Data Plane Security Controls  
Layer 3 Data Plane Security Controls

#### **Deploying Control Plane Security Controls\***

Infrastructure ACLs  
Control Plane Policing  
Control Plane Protection  
Routing Protocol Security

#### **Deploying Layer 2 Data Plane Security Controls\***

Overview of Layer 2 Data Plane Security Controls  
Virtual LAN (VLAN)-Based Attacks Mitigation  
Spanning Tree Protocol (STP) Attacks Mitigation  
Port Security  
Private VLANs  
Dynamic Host Configuration Protocol (DHCP) Snooping  
Address Resolution Protocol (ARP) Inspection  
Storm Control  
MACsec Encryption

#### **Deploying Layer 3 Data Plane Security Controls\***

Infrastructure Antispoofing ACLs  
Unicast Reverse Path Forwarding  
IP Source Guard

#### **Deploying Management Plane Security Controls\***

Cisco Secure Management Access  
Simple Network Management Protocol Version 3  
Secure Access to Cisco Devices  
AAA for Management Access

#### **Deploying Traffic Telemetry Methods\***

Network Time Protocol  
Device and Network Events Logging and Export  
Network Traffic Monitoring Using NetFlow

#### **Deploying Cisco Stealthwatch Enterprise\***

Cisco Stealthwatch Offerings Overview  
Cisco Stealthwatch Enterprise Required Components  
Flow Stitching and Deduplication  
Stealthwatch Enterprise Optional Components  
Stealthwatch Enterprise and ISE Integration  
Cisco Stealthwatch with Cognitive Analytics  
Cisco Encrypted Traffic Analytics

Host Groups  
Security Events and Alarms  
Host, Role, and Default Policies

### **Describing Cloud and Common Cloud Attacks\***

Evolution of Cloud Computing  
Cloud Service Models  
Security Responsibilities in Cloud  
Cloud Deployment Models  
Common Security Threats in Cloud  
Patch Management in the Cloud  
Security Assessment in the Cloud

### **Securing the Cloud\***

Cisco Threat-Centric Approach to Network Security  
Cloud Physical Environment Security  
Application and Workload Security  
Cloud Management and API Security  
Network Function Virtualization (NFV) and Virtual Network Functions (VNF)  
Cisco NFV Examples  
Reporting and Threat Visibility in Cloud  
Cloud Access Security Broker  
Cisco CloudLock®  
OAuth and OAuth Attacks

### **Deploying Cisco Stealthwatch Cloud\***

Cisco Stealthwatch Cloud for Public Cloud Monitoring  
Cisco Stealthwatch Cloud for Private Network Monitoring  
Cisco Stealthwatch Cloud Operations  
Describing Software-Defined Networking (SDN\*)  
Software-Defined Networking Concepts  
Network Programmability and Automation  
Cisco Platforms and APIs  
Basic Python Scripts for Automation

### **Lab outline**

Lab 1: Configure Network Settings and NAT on Cisco ASA  
Lab 2: Configure Cisco ASA Access Control Policies  
Lab 3: Configure Cisco Firepower NGFW NAT  
Lab 4: Configure Cisco Firepower NGFW Access Control Policy  
Lab 5: Configure Cisco Firepower NGFW Discovery and IPS Policy  
Lab 6: Configure Cisco NGFW Malware and File Policy  
Lab 7: Configure Listener, HAT, RAT on Cisco Email Security Appliance (ESA)  
Lab 8: Configure Mail Policies  
Lab 9: Configure Proxy Services, Authentication, and HTTPS Decryption  
Lab 10: Enforce Acceptable Use Control and Malware Protection  
Lab 11: Examine the Umbrella Dashboard  
Lab 12: Examine Cisco Umbrella Investigate

- Lab 13: Explore DNS Ransomware Protection by Cisco Umbrella
- Lab 14: Configure Static VTI Point-to-Point IPsec IKEv2 Tunnel
- Lab 15: Configure Point-to-Point VPN between the Cisco ASA and Cisco Firepower NGFW
- Lab 16: Configure Remote Access VPN on the Cisco Firepower NGFW
- Lab 17: Explore Cisco AMP for Endpoints
- Lab 18: Perform Endpoint Analysis Using AMP for Endpoints Console
- Lab 19: Explore File Ransomware Protection by Cisco AMP for Endpoints Console
- Lab 20: Explore Cisco Stealthwatch Enterprise v6.9.3
- Lab 21: Explore Cognitive Threat Analytics (CTA) in Stealthwatch Enterprise v7.0
- Lab 22: Explore the Cisco Cloudlock Dashboard and User Security
- Lab 23: Explore Cisco Cloudlock Application and Data Security
- Lab 24: Explore Cisco Stealthwatch Cloud
- Lab 25: Explore Stealthwatch Cloud Alert Settings, Watchlists, and Sensors