

Engineering Cisco Meraki Solutions

Course Overview	
Course Name	Engineering Cisco Meraki Solutions
Acronym	ECMS
Modality	Instructor Led Training
Version	1.0
Course Duration	4 Day
Language	English
Certification/Technology Affiliation	Enterprise

Course Description

The **Engineering Cisco Meraki Solutions** training helps you gain the core knowledge and skills needed to deploy, plan, design, implement, and operate complex Cisco Meraki solutions. This training combines Engineering Cisco Meraki Solutions Part 1 and 2 trainings. This training helps prepare you for roles focused on implementing, securing, and managing Cisco Meraki™ based networks from a centralized dashboard. Topics covered include Cisco Meraki's cloud-based solutions, understanding of network security protocols, design of scalable architectures, and application of troubleshooting strategies.

This training prepares you for the Cisco Meraki Solutions Specialist (ECMS 500-220) exam. If passed, you earn the Cisco Meraki Solutions Specialist certification. This training also earns you 24 Continuing Education (CE) credits towards recertification.

How You'll Benefit

This training will help you:

- Gain a comprehensive understanding of the Cisco Meraki platform
- Develop expertise in designing, implementing, and securing Cisco Meraki networks
- Operate and manage networks using Cisco Meraki's cloud-based tools and features
- Apply advanced monitoring and troubleshooting techniques
- Prepare for the ECMS 500-220 exam
- Earn 24 CE credits towards recertification

Who Should Enroll

This training is designed for anyone seeking the Cisco Meraki Solution Specialist certification. The training provides foundational knowledge and skills to engineer Cisco Meraki solutions, including cloud management, design, implementation, monitoring, troubleshooting, and the comprehensive features of the Cisco Meraki product suite.

The job roles best suited to the material in this training are:

- Consulting Systems Engineers
- Deployment Engineers
- Network Administrators
- Network Engineers
- Network Managers
- Site Reliability Engineers
- Systems Engineers
- Technical Solutions Architects
- Wireless Design Engineers
- Wireless Engineers
- Sales Engineers
- Account Managers

What to Expect in the Exam

Cisco Meraki Solutions Specialist (ECMS 500-220) is a 90-minute exam associated with the Cisco Meraki Solutions Specialist certification.

The exam tests your knowledge and skills to engineer Meraki solutions, including:

- Cloud management
- Design
- Implementing
- Monitoring
- Troubleshooting

Course Objectives

- Describe Cisco Meraki cloud architecture, administration, and licensing
- Describe the hardware and features of Cisco Meraki product families
- Describe best practices for troubleshooting and when to contact Cisco Meraki support
- Plan new Cisco Meraki architectures and expand existing deployments
- Design the network for scalable management and high availability
- Describe how to automate and scale Cisco Meraki deployments with dashboard tools
- Use dynamic routing protocols to expand networks and improve wide-area network (WAN) performance
- Describe proper quality of service (QoS), policy, and performance-based routing configurations across a Cisco Meraki network and WAN optimization through traffic shaping
- Describe virtual private network (VPN) and WAN topologies and how to integrate them
- Secure, expand, and shape the network
- Implement switched network concepts and practices, and configure guest networks

- Implement wireless configuration practices and concepts
- Describe endpoint management concepts and practices using Cisco Meraki Systems Manager
- Describe physical security concepts and practices
- Gain network insight by monitoring applications
- Describe how to prepare monitoring, logging, and alerting services
- Set up reporting and auditing capabilities in the Cisco Meraki dashboard
- Monitor and troubleshoot issues using Cisco Meraki tools

Course Prerequisites

Before taking this offering, you should have earned a Cisco Certified Networking Associate (CCNA) certification or be familiar with:

General Networking

- Be actively engaged in the design, deployment, scaling, configuration, and management of enterprise networks, IPsec, and associated VPN technologies
- Be experienced with hierarchical network segmentation (access, distribution, and core layer) design and best practices
- Strong fundamental knowledge of internet protocol (IP) addressing and subnetting schemas necessary to build local area networks (LANs)
- A foundational understanding of network authentication, authorization, and accounting services
- Strong fundamental knowledge of dynamic routing protocols with focus and emphasis on open shortest path first (OSPF) and border gateway protocol (BGP)
- A foundational understanding of wired and wireless QoS mechanisms, packet queue operations, and practical implementations
- A foundational understanding of threat modeling concepts and methodologies and the ability to apply them to identify, analyze, and respond to cybersecurity threats
- A foundational understanding of network security controls and protocols, network management best practices, and data security
- Intermediate fundamental knowledge of radio frequency (RF) concepts, terminology, design principles, and practical implementations as they apply to wireless networking and current 802.11 wireless standards
- A foundational understanding of wireless security best practices centered on access control (802.1x) and spectrum security through wireless intrusion detection system (WIDS) and prevention system (WIPS)
- A foundational understanding of standard logging and monitoring protocols with a focus and emphasis on simple network management protocol (SNMP), syslog, and webhooks, and related implementation components or tools
- Be familiar with and have basic knowledge of Application Programming Interface (APIs) and related languages and formats, such as representational state transfer (REST) and JavaScript Object Notation (JSON)

The following recommended Cisco offerings may help you meet these prerequisites:

- Implementing and Administering Cisco Solutions (CCNA)
- Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR)

Course Outline

1. Introducing the Cloud and the Cisco Meraki Dashboard
2. Introducing Cisco Meraki Products and Administration
3. Introducing Cisco Meraki Troubleshooting
4. Planning New Cisco Meraki Architectures and Expanding Existing Deployment
5. Designing for Scalable Management and High Availability
6. Automating and Scaling Cisco Meraki Deployments
7. Designing Routing on the Cisco Meraki Platform
8. Introducing QoS and Traffic Shaping Design
9. Building VPN and WAN Topologies
10. Securing, Expanding, and Shaping the Network
11. Introducing Switched Network Concepts and Practices
12. Implementing Wireless Configuration Practices and Concepts
13. Introducing Endpoint Management Concepts and Practices
14. Introducing Physical Security Concepts and Practices
15. Gaining Network Insight by Monitoring Applications
16. Preparing, Monitoring, Logging, and Alerting Services
17. Setting Up Reporting and Auditing Capabilities in the Cisco Meraki Dashboard
18. Gaining Visibility and Resolving Issues Using Cisco Meraki Tools

Lab Outline

1. Configure the Cisco Meraki Dashboard
2. Enable Advanced Features and Optimize Networking
3. Troubleshoot the Network Using the Cisco Meraki Dashboard
4. Configure Tags, Link Aggregation, Port Mirroring, and High-Density SSIDs
5. Configure Routing on the Cisco Meraki Platform
6. Configure QoS, Traffic Shaping, and Load Balancing
7. Configure Network Security
8. Configure Access Policies and Wireless Guest Access
9. Configure SSIDs, RF Profiles, and Air Marshal
10. Implement Endpoint Management
11. Deploy and Configure Physical Security Devices
12. Enable Alerts and Configure Monitoring and Reporting
13. Troubleshoot a Cisco Meraki Network