



# Engineering Cisco Meraki Solutions (ECMS)

## COURSE OVERVIEW

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.

## WHO WILL BENEFIT FROM THIS COURSE?

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

## 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 OBJECTIVES**

Upon completing this course, the learner will be able to meet these overall 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 OUTLINE**

- Introducing the Cloud and the Cisco Meraki Dashboard
- Introducing Cisco Meraki Products and Administration
- Introducing Cisco Meraki Troubleshooting
- Planning New Cisco Meraki Architectures and Expanding Existing Deployment
- Designing for Scalable Management and High Availability
- Automating and Scaling Cisco Meraki Deployments
- Designing Routing on the Cisco Meraki Platform
- Introducing QoS and Traffic Shaping Design
- Building VPN and WAN Topologies
- Securing, Expanding, and Shaping the Network
- Introducing Switched Network Concepts and Practices
- Implementing Wireless Configuration Practices and Concepts
- Introducing Endpoint Management Concepts and Practices
- Introducing Physical Security Concepts and Practices
- Gaining Network Insight by Monitoring Applications
- Preparing, Monitoring, Logging, and Alerting Services
- Setting Up Reporting and Auditing Capabilities in the Cisco Meraki Dashboard
- Gaining Visibility and Resolving Issues Using Cisco Meraki Tools

## **Lab Outline**

Labs are designed to assure learners a whole practical experience, through the following practical activities:

- Configure the Cisco Meraki Dashboard
- Enable Advanced Features and Optimize Networking
- Troubleshoot the Network Using the Cisco Meraki Dashboard
- Configure Tags, Link Aggregation, Port Mirroring, and High-Density SSIDs
- Configure Routing on the Cisco Meraki Platform
- Configure QoS, Traffic Shaping, and Load Balancing
- Configure Network Security

- Configure Access Policies and Wireless Guest Access
- Configure SSIDs, RF Profiles, and Air Marshal
- Implement Endpoint Management
- Deploy and Configure Physical Security Devices
- Enable Alerts and Configure Monitoring and Reporting
- Troubleshoot a Cisco Meraki Network

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## **WHY TRAIN WITH SUNSET LEARNING INSTITUTE?**

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What sets SLI apart is not only our immense selection of trainings options, but our convenient and consistent delivery system. No matter how complex your environment is or where you are located, SLI is sure to have a training solution that you can count on!

### **Premiere World Class Instruction Team**

- All SLI instructors have a four-year technical degree, instructor level certifications and field consulting work experience
- Sunset Learning has won numerous Instructor Excellence and Instructor Quality Distinction awards since 2012

### **Enhanced Learning Experience**

- The goal of our instructors during class is ensure students understand the material, guide them through our labs and encourage questions and interactive discussions.

### **Convenient and Reliable Training Experience**

- You have the option to attend classes live with the instructor, at any of our established training facilities, or from the convenience of your home or office
- All Sunset Learning Institute classes are guaranteed to run – you can count on us to deliver the training you need when you need it!

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- You will work with a dedicated account manager to suggest the optimal learning path for you and/or your team
- An enthusiastic student services team is available to answer any questions and ensure a quality training experience

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