



## Engineering Cisco Meraki Solutions – Part 2 (ECMS2)

### Description

#### Advanced Training to Master Cisco Meraki

Join our dedicated training on Meraki solutions, specifically designed for professionals seeking to acquire the essential skills to plan, design, and manage scalable network architectures. Through practical modules and real-world case studies, you will learn how to harness the full potential of the Cisco Meraki platform to optimize the performance, security, and management of your infrastructures. This training effectively prepares you for certification while providing operational expertise that can be applied immediately.

#### Course Content

##### Module 1: Planning new Meraki architectures and extending existing deployments

- Identify optimal Meraki network architectures (organization, sizing, and network limits)
- Plan and complete license renewals via the dashboard

##### Module 2: Design for scalable management and high availability

- Design the administrative structure of the Meraki organization using tags (network and device tags)
- Design highly available and redundant networks using MX warm spare technology and MS physical stacking technology
- Design high-density wireless networks (access point calculations and SSID configurations)

##### Module 3: Automating and scaling Meraki deployments

- Use SAML for scalable role-based access control
- Explain the capabilities and limitations of templates and network cloning
- Explain and identify ideal use cases for the Dashboard API

##### Module 4: Routing design and practices on the Meraki platform

- Design appropriate static and dynamic routing topologies based on network needs
- Explain dynamic routing capabilities on the MX appliance platform
- Explain dynamic routing capabilities on the MS switch platform
- Configure OSPF on the network as a dynamic routing protocol
- Leverage BGP to extend networks and improve WAN performance

### **Module 5: QoS and traffic shaping design**

- Identify configurable quality of service (QoS) mechanisms on the LAN and WLAN
- Prepare VoIP and video traffic using class of service (CoS), DSCP tags, and wireless traffic shaping
- Configure policy and performance-based routing on the MX appliance platform

### **Module 6: VPN and WAN topology architecture**

- Design highly scalable VPN architectures (full mesh, hub-and-spoke)
- Explain the underlying mechanisms of Meraki Auto VPN (VPN registry, UDP hole punching)
- Explain the fundamentals of Meraki SD-WAN and its processing algorithm
- Design a Meraki SD-WAN architecture with performance-based routing
- Extend networks and services into the public cloud (Azure and AWS)

### **Module 7: Securing the network with advanced security features**

- Explain the default traffic flow and rule processing order for layer 3 / layer 7 rules on the MX appliance platform
- Identify security intelligence engines and definition databases that the MX Appliance platform leverages for network protection services (Cisco AMP, Threat Grid, Snort)
- Identify and enable content filtering at different levels to refine desired traffic

### **Module 8: Concepts and practices for switched networking**

- Prepare access strategies (802.1x) using Meraki authentication
- Properly use templates, cloning, and switch profiles
- Design guest access for LAN/WLAN using Meraki best practices

### **Module 9: Concepts and practices for wireless networking**

- Configure dashboard maps and floor plans
- Formulate RF profiles to prepare for difficult/variable RF deployments
- Configure WLAN access control options based on design requirements
- Enable the network for Bluetooth scanning and BLE beacons
- Use Air Marshal for intrusion detection and mitigation

### **Module 10: Concepts and practices for endpoint management**

- Explain the various device enrollment methods and profile deployment
- Design a native containerization strategy to separate work from personal data on endpoints
- Identify and implement various application deployment methods
- Assemble and implement security policies that meet diverse restriction requirements
- Build a network deployment that leverages SM Sentry

### **Module 11: Concepts and practices for physical security**

- Explain the device architecture of the MV platform and the underlying video streaming mechanism (local

- or remote video access)
- Design a retention policy using various local or cloud-based storage strategies
- Configure MV cameras for wireless deployments
- Explain and demonstrate how to effectively use advanced analytics and MV camera APIs

## **Module 12: Gaining additional network insights through application monitoring**

- Explain how Meraki Insight can provide network assurance through performance metrics and scores
- Properly qualify and size Meraki Insight licenses
- Configure, monitor, and track predefined and custom web application thresholds

## **Module 13: Preparation and configuration of monitoring, logging, and alerting services**

- Explain the integrated dashboard log databases (event and change logs) to leverage for effective activity analysis
- Identify the various monitoring tools in Dashboard (native analysis, topology)
- Demonstrate effective alerting best practices across the network
- Use the Dashboard API to monitor and maintain Meraki networks

## **Module 14: Configuration of dashboard reporting and auditing capabilities**

- Generate and interpret on-demand or recurring summary reports for key performance metrics
- Track and manage firmware versions and prepare phased upgrades
- Recommend appropriate actions to meet PCI DSS compliance (2.0 and 3.0)

## **Module 15: Gaining visibility and troubleshooting with Meraki features and integrated troubleshooting tools**

- Interpret event and change logs to troubleshoot client and network issues
- Classify and compare security threats via the Security Center
- Assess intrusions, outages, and wireless access issues using Dashboard's RF tools (Wireless Health, Air Marshal)
- Assess root causes of application performance issues with Meraki Insight
- Explain detailed VPN tunnel information and the VPN registry found on the VPN Status page
- Use the local status page as an alternative connectivity method for local troubleshooting

## **Lab / Exercises**

- Official Cisco lab and exercises

## **Documentation**

- Digital courseware included

## **Participant profiles**

- Anyone who regularly deploys or manages Meraki networks and want to deepen their technical expertise and understanding of the full Meraki product suite and features

## **Prerequisites**

- Have taken ECMS1 or CMNO, or possess equivalent Meraki knowledge and experience
- Be CCNA-certified or have an equivalent level of technical expertise

- Be employed by Cisco Systems, a Meraki partner, or a Meraki customer

**Objectives**

- Plan for network deployments and integrations using the Meraki platform
- Design Meraki architectures for redundancy, high-density, and scalability
- Implement comprehensive Meraki product features to meet design objectives
- Operate Meraki networks and troubleshoot complex network incidents using the Meraki Dashboard and analytics

**Description**

Engineering Cisco Meraki Solutions Training - Part 2

**Niveau**

Intermédiaire

**Virtual Classroom Registration Price (CHF)**

2610

**Duration (in Days)**

3

**Reference**

CIS-ECMS2