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Implementing and Configuring Meraki MX, MS, MR, MV, MT Technologies v1.0 (ICMT-CT)

This 5-day Cisco course provides students with the skills to configure, optimize, and troubleshoot a Cisco Meraki solution. Students will learn how to install and optimize Meraki MX Firewalls, Meraki MS Switches, Meraki MR Access Points, Meraki MT Sensors, and Meraki MV Cameras. Students will also learn how to configure the Meraki Dashboard, Meraki Insight and Meraki Systems Manager (EMM/MDM). Student will troubleshoot and configure the Meraki environment and learn how to diagnose and resolve user and Network issues that may arise.

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Course Objectives

Following completion of this course, students will understand, Install, Configure, Monitor, and Troubleshoot the following:

- Navigate and Configure the dashboard
- Add MX/MR/MS/MV devices to the Dashboard
- Understand and Configure Configuration Templates
- Understand and Configure Group Policies
- Manage/Configure/Integrate Users and Radius Policies
- Configure, Monitor, and Troubleshoot MX Firewalls
- Configure, Monitor, and Troubleshoot MS Switches
- Configure, Monitor, and Troubleshoot MR Access Points
- Configure, Monitor, and Troubleshoot MT Sensors
- Configure, Monitor, and Troubleshoot MV Cameras -Optional
- Configure Systems Manage (EMM/MDM) - Optional
- Use Meraki Insight to Monitor Meraki Network Health
- Troubleshoot devices and Connectivity

Who Should Attend

The primary audience for this course is as follows:

Course Duration

5 day

Course Price

\$4,295.00 or 43 CLCs

Methods of Delivery

- Instructor Led
- Virtual ILT
- On-Site

- IT Staff and Managers
- Network and Systems Personnel and Engineers
- Small to mid-sized organizations that require fundamental knowledge on networking terms/concepts and configuration guidance for Meraki equipment
- This also includes organizations looking to implement remote sites, provide a guest wireless solution, and collect user analytics

Outline

Module 0: Introduction

- Meraki Overview
- Introductions

Module 1: Introduction to Meraki

- Cisco Meraki: An Overview of the Meraki Solution
 - Cloud Based
- Meraki MS Switches Overview
- Meraki MX Security Appliances Overview
- Meraki MR Wireless Access Points Overview
- Meraki MT Sensors Access Points Overview
- Cisco Meraki Systems Manager (SM) Overview
- Cisco Meraki MV Vision Security Cameras Overview (MG and MT)
- Meraki API Overview
- Meraki Licensing
- Enterprise Support and Hardware Warranties
- Cisco Meraki Documentation

Module 2: Cloud Management with the Meraki Dashboard

- Overview of the Meraki Dashboard
 - What Is It
 - How To Access
 - Loss of Connectivity
 - Cloud
- Dashboard Structure
 - Organizations
 - Networks
 - Accounts
 - Best Practices
- Tags
- Navigating the Dashboard
- Creating Organizations
- Organizational Wide Settings
- Monitoring Organizations
- Managing Important Organizational Wide Pages and Settings

- Summary Reports
- Configuration Templates
- Scheduling and Managing Firmware
- Location Analytics
- Creating Networks
- Network-Wide Settings
- Monitoring Networks
- Other Important Network Pages and Settings
 - Group Policies
 - Clients
 - Troubleshooting Network Wide
 - Event Log
 - Packet Captures
 - Etc.
 - Location/Mapping Devices

Module 3: Meraki MX Security Appliances

- What is MX?
- Threat Management Solution and SDWAN
- Security Features
- SD-WAN Features
- MX Features and Integrations
 - Integrating Active Directory
 - High Availability
 - Cellular Failover
 - Etc.
- MX Devices
 - MX64, MX67/68, MX75
 - MX85, MX95, MX105
 - MX250, MX450
 - 3 Virtual MX for AWS, AZURE, Alibaba, and GCP
 - Z3, Z3C
- Local Status Page MX
- Adding the MX to the Network
- Device Configuration
- Addressing & VLANs
 - Concentrator Mode vs Routed Mode of Operation
 - Client Tracking Methods
 - VLANs
 - Layer 3 Interfaces
 - Static and Dynamic Routing
 - OSPF and BGP
- Firewall Configuration

- Firewall Basics
- Layer 3 and Layer 7 Firewalls
- Traffic Shaping
- Cellular Firewall Failover Rules
- Content Filtering
- Geo-IP Based Firewalling
- Layer 7 Firewall Rules
- NAT Configurations
- Cisco Umbrella
- VPN Configuration and Monitoring
 - Site-to-Site Hub VPNs Configuration
 - Concentrator VPN Configuration
 - Meraki's Client VPN
 - LZTP
 - AnyConnect Client VPN
- Active Directory Integration
- Meraki Access Control
- Meraki Splash Page Configuration
- Configuring Access Policies
- Teleworker VPN / L3 Roaming

Module 4: Meraki MS Switch Appliances

- Why use MS?
- MS Switch Platforms
 - MS120-8, MS120, MS125
 - MS210, MS225
 - MS250, MS350, MS355X, MS390
 - MS410, MS425, MS450
- MS Switch Configuration
- MS Switch Features
 - Switch Stacks
 - Multi-gigabit Ethernet
 - High Availability
 - Etc.
- Switch Configuration
 - VLAN Configuration
 - Layer 2 vs Layer 3
 - Layer 2 and Layer 3 Configuration
 - Static Routing
 - OSPF
 - BGP
 - Access Control Lists (ACL)
 - Access Policies (802.1X)

- ISE Integration
- DHCP
- Spanning Tree
- Quality of Service (QoS)
- Switch MTU
- Multicast Routing and Internet Group Management Protocol (IGMP)
- Port Configuration
 - Configuring an Individual Port
 - Configuring Ports on a Switch
 - Configuring Ports using Ranges and Search Criteria
 - Configuring Ports on a Switch Stack
 - Port Schedules
 - Access Policies
 - Port Mirroring
 - Link Aggregation
- Switch Monitoring
 - Switch Status
 - Port Status
 - Real-time and Historical Data
 - DHCP on the Switch
 - Power
 - DHCP and Routing
 - Event Logs
 - Summary Reports
- Troubleshooting
 - Turn on Switch Blinking for Switch Identification
 - Performing Packet Captures
 - Performing Cable Tests
 - Performing Port Reset
 - Performing Throughput Tests
 - Performing device Reboots
 - Using ARP and Route Tables for Troubleshooting
 - Troubleshoot using Ping and Traceroutes
- Managing Firmware Upgrades

Module 5: Meraki MR Wireless

- Meraki MR Overview
- MR Features
 - Multigig (2.5 and 5 gigs)
 - Mesh Routing
 - RF Features
 - Guest Wireless
 - Bluetooth Analytics

- Location Heatmaps
- Zero-Touch Provisioning
- Dedicated Scanning Radio
 - RF
 - Security
- IEEE 802.11 Wireless Standards
- Wi-Fi 6-802.11 AX
- Site Survey and Design: Best Practices to ensure connectivity and user experience
- AP Models and Antennas
 - MG21, MG21E, MG41, MG41E
- Configuring APs
 - Basic Configuration
 - Device Tags
 - Layer 3 Roaming
 - Access Policies with ISE
 - Other Access Policy Options
- RF Radio Settings
 - Auto RF
 - Transmit Power Control
 - Channel Assignment
 - RF Profiles
 - Band Steering
 - Client Balancing
- Cisco Umbrella
- Additional Features
 - Configuring Bluetooth Scanning
 - Splash Pages
 - Floor Plans
- Configuring SSIDs
- Wi-Fi Protected Access Settings
 - WEP
 - WAPI and 2
 - RADIUS
 - Cisco ISE
 - WAP2 Enterprise with 802.1X
 - WAP2 with Preshared Keys
- Wireless Security
 - Air Marshall
 - Local Network Access
 - L3 and L7 Firewall Rules
 - Block Applications
 - Traffic Shaping Rules per SSID
- Monitoring APs
 - Meraki Health

- Clients
- RF Metrics
- RF Spectrum
- SSID Availability
- Troubleshooting
 - Using Heatmaps to Troubleshoot RF Issues
 - Identify Problematic Areas
 - Signal Attenuation
 - Ping and Traceroute
 - Reboot Device
 - Blink LEDs
 - Throughput
 - Checking PCI Compliance
 - Using the Event Log for Troubleshooting

Module 6: Meraki SM System Manager

- Device Management Overview
- Mobile Device Management
- Mobile Application Management
- Mobile Identity
- Meraki Sentry
- Deployment Considerations
- Systems Manager Licensing
- SM Supported Devices
- Meraki SM Features
- Creating a Network for Systems Manager
- Setup Device Enrollment
 - Apple Device Enrollment with Certificates
 - Android for Work Enrollment
 - Chrome OS Device Enrollment
 - Windows Enrollment
- Cisco ISE Integration
- SM Profiles
 - Settings Restrictions
 - Active Sync
 - Setting Passcodes on Devices
 - Setting Backgrounds
 - Setting Wireless Settings
 - Setting VPN Settings
- Managing Clients
- Monitoring Clients

Module 7: Meraki MV Camera

- Meraki MV Security Cameras Product Family
 - Indoor Cameras
 - MV12N, MV12WE, MV12W
 - MV22, MV22x
 - Outdoor Cameras
 - MV52, MV72, MV72x
 - Specialized Cameras
 - MV32, MV2
- MV Camera Warranty
- MV Camera Licensing
- MV Camera Video Encryption
- MV Video and Audio Recording
- Configuring User/Admin Security
- Configuring Camera Settings
 - Configuring Video Settings
 - Configuring Camera Analytics
 - Configuring MV NightMode
 - Create Recording Schedule
 - Motion Based Recording
 - Configuring Camera Retention
- View Camera Events
 - Cloud Proxy Viewing
 - Direct Streaming
- Searching Video for Events
- Creating Configuring Video Wall Boards
- Troubleshooting Camera Connectivity
- Using the Event Log for Camera Events

LAB OUTLINE

Lab 1: Configuring the Organization

- Configure Organizational Settings
- Add All Devices to Organization
- Create Networks
- Manage Network-Wide Settings
- Create Group Policies
- Manage Firmware Upgrades
- Create Templates
- Manage VLAN Templates
- Bind Templates to Networks

Lab 2: Configuring MX Appliances and Z3 Teleworker Devices

- Configure MX Appliance and Configure Z3 Appliance
 - Setup VLANs and Layer 3 Interfaces
 - Setup a VPN Concentrator
 - Setup and Manage DHCP Settings
 - Configure Layer 3 Firewall Settings
 - Configure Layer 7 Firewall Settings
 - Configure Content Filtering
 - Configure Traffic Shaping
 - Configure SDWAN Feature and traffic Distribution
 - Configure Site-to-site VPN
 - Configure Client VPN
 - Integrate Active Directory with Group Policy Settings
 - Create Traffic Shaping Policies
 - Configure Access control with Radius and ISE
 - Create and Configure Splash Pages
- MX Appliances and Z3 Verification and Troubleshooting
 - Verify and Trouble Shoot Appliance Status
 - Verify and Trouble Shoot Site to Site VPN
 - Verify and Trouble Shoot Firewall Settings
 - Check the Routing Table
 - Use the Tools
 - Trouble shooting with Packet Capture

Lab 3: Configuring MS Switches

- Switch Configuration
 - Configure Basic Switch Settings
 - Configure Switch Stack
 - Configure Spanning Tree
 - Create Layer 3 Interfaces
 - Configure DHCP server
 - Create a Static Route
 - Configure OSPF Routing
 - Configure ACLs
 - Create Access Policies
 - Configuring Packet Captures
 - Configure Port Policies
- Configure Switch Using a Network Template
 - Configure Spanning Tree
 - Create Layer 3 Interfaces
 - Create a Static Route
 - Configure OSPF Routing
 - Configure ACLs
 - Create Access Policies
- Configuring Ports
 - Configure Trunk Ports
 - Configure Access Ports
 - Set VLAN on Multiple Ports

- Configure Link Aggregation
- Configure Port Schedules
- Configure Port Mirroring
- Meraki Switch Monitoring
 - Monitoring Switch Status
 - Monitoring Switch Port Status
 - Monitoring Real-time and Historical Data
 - Monitoring DHCP on the Switch
 - Monitoring Power
 - Monitoring DHCP and Routing
 - Monitoring Event Logs
 - Summary Reports
- Troubleshooting Tools
 - Turn on Switch Blinking for Switch Identification
 - Performing Packet Captures
 - Performing Cable Tests
 - Performing Port Reset
 - Performing Throughput Tests
 - Performing device Reboots
 - Using ARP and Route Tables for Troubleshooting
 - Troubleshoot using Ping and Traceroutes
- Managing Firmware Upgrades

Lab 4: Meraki MR Wireless

- Configuring Meraki APs
 - Connecting APs to the Network
 - Configuring Basic information including Tags
- Configuring SSIDs
 - Provisioning SSIDs
 - Open with Splash Pages
 - Click-Through
 - Systems Manager Sign-in
 - Facebook Sign-in
 - Google Sign-in
 - SMS Authenticated
 - Billing Configuration for SSIDs
 - Using Preshared Keys with WPA2
 - Using WPA2-Enterprise SSIDs with 802.1X
 - Cisco ISE
 - MAC-based Access Control Filtered SSIDs
- Firewall & Traffic Shaping Configuration for Wireless
 - Block local network for Guests
 - Layer 3 Firewall Rules

- Block Applications
- Traffic Shaping Rules per SSID
- Configuring Layer 3 Roaming
- Configuring ISE Integration with Access Policies
- Configuring Access Policies for Wireless
- Configuring Wireless RF Radio Settings
 - Auto RF
 - Transmit Power Control
 - Channel Selection
 - Band Steering
 - Client Balancing
- Configuring Bluetooth for Analytics
- Guest Self-Registration
- Configuring Splash Pages
- Configuring Floor Plans
- Placing APs on the Floor Plans
- Configuring RF Channel and Power Settings
- Configure Air Marshal to Isolate Rogue APs and Clients
- Monitoring Meraki APs
 - Monitoring AP Status
 - Using Meraki Wireless Health
 - Monitoring Clients
 - Monitoring RF Metrics
 - Monitoring the RF Spectrum
 - Monitoring SSID Availability
- Troubleshooting
 - Using Heatmaps to Troubleshoot RF Issues
 - Identify Problematic Areas
 - Signal Attenuation
 - Ping and Traceroute
 - Reboot Device
 - Blink LEDs
 - Throughput
 - Checking PCI Compliance
 - Using the Event Log for Troubleshooting

Lab 5: Meraki MV Cameras

- Adding Cameras to a dedicated Network
 - Connecting APs to the Network
 - Configuring Basic information including Tags
- Configuring Users
- Configure Admins
- Configuring Camera Settings

- Configuring Video Settings
- Configuring Camera Analytics
- Configuring MV NightMode
- Create Recording Schedule
- Motion Based Recording
- Configuring Camera Retention
- View Camera Events
 - Cloud Proxy Viewing
 - Direct Streaming
- Searching Video for Events
- Creating Configuring Video Wall Boards
- Troubleshooting Camera Connectivity
- Using the Event Log for Camera Events
- Configure Wall Boards

Lab 6: Meraki Insight and Wireless Health

- Using insight to diagnose Issues in the network
- Using Wireless Health to troubleshoot Client Issues