Certified User Management Engineer (MTCUME)

Training outline

Duration:	2 days
Outcomes:	By the end of this training session, the student will be able to securely manage large scale RouterOS based network with centralized user management.
Target Audience:	Network engineers and technicians wanting to deploy and support large scale corporate networks.
Course prerequisites:	MTCNA certificate

Title	Objective

Module 1
PPP
	• PPP Profile
	  • Local and remote addresses
	  • Incoming and outgoing filters
	  • Address list
	  • Change TCP-MSS
	  • Use encryption
	  • Session timeout
	  • Rate-limit configuration
	  • Only-one setting
	• PPP Secret
	  • Service and Profile
	  • Local and Remote address
	  • Routes configuration
	  • Limit Bytes In/Limit Bytes Out configuration
	• IP Pool
	  • Set addresses ranges
	  • Next pool options
	• **Module 1 laboratory**

Module 2
PPTP, L2TP
	• PPTP and L2TP
	  • Theory
	  • Comparison
	• PPTP Client configuration
	  • Client setup
	  • Set profile
	  • Dial on demand
	  • Add default route and static routes
	• PPTP Server configuration
	  • Enable server
	  • Setup profiles
	  • Add clients to PPP secret
	  • Set static interfaces for clients
	• L2TP Client configuration
	  • Client setup
	  • Configure profile
	  • Dial on demand
	  • Add default route and static routes
	• L2TP Server configuration
	  • Enable server
	  • Set profiles
	  • Add clients to PPP secret
	  • Set Static interfaces for clients
	• **Module 2 laboratory**

Module 3
PPPoE
	• PPPoE server and client
	  • Theory
	  • Usage environment
	  • Comparison to other PPP protocols

	• PPPoE client configuration
	  • Client setup
	  • Select interface
	  • Service name
	  • Configure profile
	• PPPoE Server configuration
	  • Enable PPPoE server
	  • Set profiles
	  • Add clients to PPP secret
	  • Add Static interfaces for clients
	  • Secure server by removing any IP address from PPPoE server interface
	• Encryption
	  • Set profile without encryption
	  • Set profile with encryption
	  • Configure PPPoE client without encryption
	• Interface ECMP
	  • Set ECMP routes for PPP interfaces
	• **Module 3 laboratory**

Module 4
Bridging
	• L2TP and EoIP
	  • Set L2TP tunnel
	  • Set EoIP tunnel
	  • Create bridge and add necessary interfaces to ports
	  • Confirm you have Ethernet connectivity between remote nodes
	• L2TP and VPLS
	  • Set L2TP tunnel
	  • Set VPLS tunnel
	  • Create bridge and add necessary interfaces to ports
	• L2TP and BCP
	  • Set L2TP tunnel
	  • Use BCP to bridge PPP interface
	  • Add to bridge necessary interface
	• Multilink Protocol
	  • Enable multilink by specifying correct MRRU settings
	  • Disable mangle rules for MSS adjustment
	• MLPPP (optional)
	  • Setup client and specify multiple interfaces for one client
	  • Set PPPoE server with MLPPP support
	• **Module 4 laboratory**

Module 5
IPsec
	• Introduction
	  • Theory and concepts
	  • Comparison to other VPN protocols
	• IPsec Peer
	  • Use different authentication methods
	  • IPsec exchange modes
	  • Encryption and hash algorithms
	  • NAT-Traversal
	  • Lifetime and lifebytes
	  • DPD protocol
	• Policy
	  • IPsec protocol and action
	  • Tunnels
	  • Generate dynamic Policy
	• Proposal
	  • Encryption and authentication algorithms
	  • Lifetime
	  • PFS
	• Installed-SA
	  • Flush SA
	• Create IPsec between two routers with NAT
	  • Set peer
	  • Set policy
	  • Set NAT rules
	  • Confirm the secure link is established
	• **Module 5 laboratory**

Module 6
HotSpot
	• Introduction
	  • Concepts
	  • Usage environments
	  • Setup HotSpot with default settings
	• HotSpot Login Methods
	  • HTTP CHAP/PAP
	  • MAC
	  • Cookie
	  • HTTPS
	  • Trial
	  • RADIUS
	• Users
	  • Add users
	  • Set MAC-address for user
	  • Set MAC-address for username
	  • Limit Uptime and Limit Bytes In/Out
	  • Reset limits for user
	• Monitor Users
	  • Host Table
	  • Active Table
	  • SNMP for users
	• Profile
	  • Keepalive timeout
	  • Shared users
	  • Rate-Limit
	  • Address-list
	  • Incoming/Outgoing filter
	  • Incoming/Outgoing Packet Mark
	• Bypass HotSpot
	  • Walled garden
	  • Walled garden IP
	  • IP binding
	• Customize HotSpot
	  • Advertisement
	  • Customize pages
	• **Module 6 laboratory**

Module 7
RADIUS
	• RADIUS client
	  • Add radius client
	  • Set service
	  • Use RADIUS for the specific service
	• RADIUS server
	• User manager
	  • Install the latest user-manager
	  • Add routers
	  • Add users
	  • Set profile
	• RADIUS incoming
	• **Module 7 laboratory**