

MikroTik Certified Network Associate MTCNA

مدت دوره: ۲۴ ساعت

پیش نیاز: Network+

خلاصه:

درس MTCNA بر فراهم آوردن دانش و مهارت لازم برای نصب و راه اندازی، کاربری و عیب یابی شبکه های با سایز کوچک تا متوسط شامل انجام تنظیمات روی روتر های میکروتیک و اتصال به شبکه با گستردگی جغرافیائی زیاد (WAN) و همچنین پیاده سازی امنیت در شبکه تمرکز دارد.

اهداف دوره: در انتهای این دوره دانشجویان قادر خواهند بود:

با سیستم عامل روترهای میکروتیک کار کنند و به سخت افزار میکروتیک آشنا شده و همچنین اتصال کامپیوتر های داخل شبکه را به اینترنت وصل نمایند.
تنظیمات ، مدیریت روترهای میکروتیک و رفع اشکال آنها را انجام دهد.

سرفصل دوره:

Module 1 : Introduction

- About MikroTik
 - What is RouterOS
 - What is RouterBOARD
- First time accessing the router
 - WinBox and MAC-WinBox
 - WebFig and Quick Set
 - Default configuration
- RouterOS command line interface (CLI)
 - Null Modem cable
 - SSH and Telnet
 - New terminal in WinBox/WebFig
- RouterOS CLI principles
 - <tab>, double <tab>, “?”, navigation
 - Command history and its benefits
- Initial configuration (Internet access)
 - WAN DHCP-client
 - LAN IP address and default gateway
 - Basic Firewall - NAT masquerade
- Upgrading RouterOS
 - Package types

- Saving and restoring the backup
- Difference between a backup and an export (.rsc) file
- Editing an export file
- Ways of upgrading
- RouterBOOT firmware upgrade
- Router identity
- Manage RouterOS logins
- Manage RouterOS services
- Managing configuration backups
- Resetting a RouterOS device
- Reinstalling a RouterOS device (Netinstall)
- RouterOS license levels

Module 2 : DHCP

- DHCP server and client
 - DHCP client
 - DHCP server setup
 - Leases management
 - DHCP server network configuration
- Address Resolution Protocol (ARP)
 - ARP modes
 - RouterOS ARP table

Module 3 : Bridging

- Bridging overview
 - Bridge concepts and settings
 - Creating bridges
 - Adding ports to bridges
- Bridge wireless networks
 - Station bridge

Module 4 : Routing

- Routing overview
 - Routing concepts
 - Route flags
- Static routing
 - Creating routes
 - Setting default route
 - Managing dynamic routes
 - Implementing static routing in a simple network

Module 5 : Wireless

- 802.11a/b/g/n/ac Concepts
 - Frequencies (bands, channels) data-rates / chains (tx power, rx sensitivity, country regulations)
- Setup a simple wireless link
 - Access Point configuration
 - Station configuration
- Wireless Security and Encryption
 - Access List

- Connect List
- Default Authenticate
- Default Forward
- WPA-PSK, WPA2-PSK
- WPS accept, WPS client
- Monitoring Tools
 - Snooper
 - Registration table

Module 6 : Firewall

- Firewall principles
 - Connection tracking and states
 - Structure, chains and actions
- Firewall Filter in action
 - Filter actions
 - Protecting your router (input)
 - Protection your customers (forward)
- Basic Address-List
- Source NAT
 - Masquerade and src-nat action
- Destination NAT
 - dst-nat and redirect actions
- FastTrack

Module 7 : QoS

- Simple Queue
 - Target
 - Destinations
 - Max-limit and limit-at
 - Bursting
- One Simple queue for the whole network (PCQ)
 - pcq-rate configuration
 - pcq-limit configuration

Module 8 : Tunnels

- PPP settings
 - PPP profile
 - PPP secret
 - PPP status
- IP pool
 - Creating pool
 - Managing ranges
 - Assigning to a service
- Secure local network
 - PPPoE service-name
 - PPPoE client
 - PPPoE server
- Point-to-point addresses
- Secure remote networks communication
 - PPTP client and PPTP server (Quick Set)

- SSTP client

Module 9 : Misc

- RouterOS tools
 - E-mail
 - Netwatch
 - Ping
 - Traceroute
 - Profiler (CPU load)
- Monitoring
 - Interface traffic monitor
 - Torch
 - Graphs
 - SNMP