MikroTik MTCNA Training Course

Duration: 3 days

Outcomes: By the end of this training session, the student will be familiar with RouterOS software and RouterBOARD products and be able to connect the client to the Internet. They will also be able to configure, manage, do basic troubleshooting of a MikroTik router and provide basic services to clients.

Target audience: Network engineers and technicians wanting to deploy and support: Corporate networks • Client CPEs (WISPs and ISPs)

Course prerequisites: The student must have a good understanding of TCP/IP and subnetting.

Module 1 Introduction: Navigating MikroTik

Welcome to the first module, where we'll delve into the essentials of MikroTik, starting with an overview of RouterOS and RouterBOARD. We'll guide you through your initial encounter with a router, introducing you to WinBox and MAC-WinBox, WebFig, and Quick Set for streamlined setup and management. Understanding the default configuration sets the stage for exploring the RouterOS command line interface (CLI), including the use of a Null Modem cable and remote management through SSH and Telnet. Discover the ease of managing your router using the CLI, from basic navigation to leveraging command history for efficiency.

Dive into the initial setup processes, such as configuring Internet access with WAN DHCP-client, setting LAN IP addresses, and establishing a basic firewall with NAT masquerade. We'll also cover the critical tasks of upgrading RouterOS, understanding package types, and the methods for updating, including RouterBOOT firmware upgrades.

Learn about the identity of your router, how to manage RouterOS logins and services, and the importance of managing configuration backups. We'll explain the differences between backups and export (.rsc) files, how to edit an export file, and the steps for resetting and reinstalling RouterOS devices, including using Netinstall.

Understanding RouterOS license levels is key to maximizing your device's potential, and we'll point you towards invaluable resources for further learning and support, including MikroTik's wiki, forums, MUM (MikroTik User Meeting) website, and how to reach out to distributors, consultants, or directly to MikroTik support.

This module concludes with a practical laboratory session, allowing you to apply what you've learned in a hands-on environment.

Module 2: DHCP Configuration and Management

Dive into the DHCP (Dynamic Host Configuration Protocol) framework, exploring both client and server perspectives. Learn how to set up a DHCP server, manage leases effectively, and configure network settings via DHCP. We'll also cover the Address Resolution Protocol (ARP), including its modes and how to navigate the RouterOS ARP table. This module culminates in a hands-on laboratory session.

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Module 3: Bridging Essentials

This module provides a comprehensive overview of bridging, including key concepts, configurations and the practical steps to create and manage bridges. Learn how to add ports to your bridges and extend these principles to wireless networks, including station bridge setups. A dedicated laboratory session allows you to apply these concepts in practice.

Module 4: Fundamentals of Routing

Get acquainted with routing fundamentals, from basic concepts and route flags to static routing. Discover how to create routes, set a default route, and manage dynamic routes. You'll learn how to implement static routing within a simple network environment, all rounded off with a practical laboratory session to solidify your knowledge.

Module 5: Wireless Networks

Explore the depths of 802.11 wireless standards (a/b/g/n/ac), including frequency bands, channels, data rates, and regulatory considerations. Set up a basic wireless link, configure access points and stations, and delve into wireless security and encryption methods such as WPA-PSK and WPA2-PSK. We'll also cover access lists, the connect list, and the importance of default authentication and forwarding. Learn how to utilize monitoring tools like Snooper and understand the registration table. A concluding laboratory session allows for hands-on application of these wireless concepts.

Module 6: Mastering the Firewall

This module dives into the core principles of firewall management, including connection tracking, states, and the structuring of chains and actions. Learn to leverage the Firewall Filter for robust network defence, explore filter actions, and understand how to safeguard your router and clients. We'll discuss Address-Lists, Source NAT techniques, and the nuances of masquerade and src-nat actions, alongside Destination NAT with dst-nat and redirect actions. The module also introduces FastTrack for enhanced performance, culminating in a practical laboratory session.

Module 7: Quality of Service (QoS) Strategies

Explore the fundamentals of QoS with a focus on Simple Queue, including target setting, destinations and bandwidth management with max-limit and limit-at. Uncover the potential of bursting for efficient bandwidth usage and learn how to implement a single Simple Queue for entire networks using Per-Connection Queue (PCQ), including pcq-rate and pcq-limit configurations. This knowledge is solidified in a hands-on laboratory session.

Module 8: Tunnelling Techniques

Gain a comprehensive understanding of tunnelling protocols and configurations, starting with PPP settings, profiles, and secrets, along with managing IP pools. Learn how to secure your local network using PPPoE, including service naming and setup for both clients and servers, and explore point-to-point address assignment. Delve into securing remote network communications with PPTP and SSTP, including client and server setups. This module wraps up with a practical laboratory session to apply what you've learned.

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Module 9: Miscellaneous Tools and Features in RouterOS

This module covers a variety of RouterOS tools and functionalities to enhance network management and troubleshooting. Discover how to utilise email notifications, monitor network availability with Netwatch, and perform network diagnostics using Ping and Traceroute.

Learn about system performance analysis with the Profiler tool for CPU load monitoring. Enhance network visibility through Interface Traffic Monitor, Torch, and graphical representations of network activity.

Dive into network management and monitoring with SNMP and The Dude. Understand the protocols for contacting support at MikroTik, including how to generate and interpret supout.rif and autosupout rif files.

Explore system logs with a focus on enabling debug logs for advanced troubleshooting, create readable configurations with item comments and names, and use network diagrams for planning and documentation.

This comprehensive module concludes with a hands-on laboratory session, allowing you to apply these tools and features in real-world scenarios.

Still Have a MikroTik Training Question?
Call Our Team on **01449 888000**

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