



# Opus Solution Pvt LTD

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## **MTCNA (MikroTik Certified Network Associate)**

### ❖ **Course Description:**

“MikroTik Certified Network Associate” MTCNA Exam course was designed to make students familiar with RouterOS software and RouterBOARD products. After successfully completing the MTCNA Exam course, students will be able to configure, manage, troubleshoot a MikroTik router and provide basic services to clients. We will put 2 additional material that very popular.

### ❖ **Modes of Trainings Available:**

- Online Training
- Class Room Training
- Regular Classes Available
- Weekend Classes Available

### **Course Outline**

“MikroTik Certified Network Associate” MTCNA Exam course was designed to make students familiar with RouterOS software and RouterBOARD products. After successfully completing the MTCNA Exam course, students will be able to configure, manage, troubleshoot a MikroTik router and provide basic services to clients. We will put 2 additional material that very popular.

### **Course Outline**

#### ❖ **Introduction to Mikrotik and its products**

- About MikroTik
- What is RouterOS
- What is RouterBOARD
- What is SwOS

#### ❖ **Installing and upgrading the RouterOS**

- Mikrotik RouterOS installation on VirtualBox and VMware
- Mikrotik RouterOS installation on physical hardware x86 platform
- Selecting Packages features while installing RouterOS



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## ❖ **First login to the RouterOS using Winbox**

- Setting up your PC for first time access
- First time access to Mikrotik RouterOS through Winbox Utility
- Access via SSH OR telnet
- Access via GUI

## ❖ **RouterOS command line (cli)**

- SSH and Telnet
- New terminal in Winbox/Web Fig
- Command line syntax

## ❖ **Initial configuration**

- Understanding default configuration
- WAN DHCP-client
- LAN IP address and default gateway Basic
- Firewall - NAT masquerade
- Configure through Winbox, Web fig
- Router identity

## ❖ **RouterOS license levels**

- Understanding license levels

## ❖ **Upgrading RouterOS**

- Package types
- Ways of upgrading
- Router BOOT firmware upgrade

## ❖ **Managing configuration backups**

- Saving and restoring the backup
- Difference between a backup and an export (.rsc) file
- Editing an export file

## ❖ **Resetting a RouterOS device**

- Reset to factory default
- Reinstalling a RouterOS device (Netinstall)

## ❖ **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



## ❖ **Creating a DHCP server and client**

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

## ❖ **Bridging overview**

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

## ❖ **Routing overview**

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

## ❖ **Simple Queue**

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

## ❖ **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



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- Secure remote networks communication
- PPTP client and PPTP server (Quick Set)
- SSTP client
- Web proxy for URL Filtering control and caching

## ❖ **Mikrotik 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

## ❖ **RouterOS tools**

- E-mail
- Net watch
- Ping
- Traceroute
- Profiler (CPU load)
- Monitoring
- Interface traffic monitor
- Torch
- Graphs
- SNMP
- The Dude