PROGRAMMA Mikrotik MTCNA

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Modulo I: 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
  - Ways of upgrading
  - RouterBOOT firmware upgrade
- Router identity
- Manage RouterOS logins
- Manage RouterOS services
- 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
• Reinstalling a RouterOS device (Netinstall)
• RouterOS license levels
• Sources of additional information
- wiki.mikrotik.com
- forum.mikrotik.com
- mum.mikrotik.com
- Distributor and consultant support
- support@mikrotik.com

• Module 1 laboratory

Modulo II: 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 2 laboratory

Modulo III: Bridging

• Bridging overview
- Bridge concepts and settings
- Creating bridges
- Adding ports to bridges

• Bridge wireless networks

- Station bridge
- Module 3 laboratory

Modulo IV: 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 4 Laboratory

Modulo V: 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 5 laboratory

Modulo VI: 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 6 laboratory

Modulo VII: 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 7 laboratory

Modulo VIII: 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 8 laboratory

Modulo IX: Misc

- RouterOS tools
  - E-mail
  - Netwatch
  - Ping
  - Traceroute
  - Profiler (CPU load)
- Monitoring
  - Interface traffic monitor
  - Torch
  - Graphs
  - SNMP
  - The Dude
- Contacting support@mikrotik.com • supout.rif, autosupout.rif and

viewer
    - System logs, enabling debug logs
    - Readable configuration (item comments and names)
    - Network diagrams
- Module 9 laboratory