Introduction

1. What is MikroTik
2. what is RouterOS
3. What is RouterBOARD
4. Router OS vs RouterBOARD
5. Types of Router OS and RouterBOARD
6. Router OS Version and License
7. What is Cloud Hosted Router
8. How to Download, Install, and setup MikroTik CHR.
9. Why MikroTik vs Other Vendors
10. Advantages and disadvantages of MikroTik vs other vendors.
11. Benefits of Using MikroTik

Basics of MikroTik

1. How to download Winbox.
2. How to access MikroTik for the first time.
    a. Winbox
    b. Webfing
3. How to access MikroTik with Telnet and SSH
4. Overview of Winbox interface
5. MikroTik Default configurations
6. MikroTik Quickset

Basics Configurations of MikroTik

1. How to Reset MikroTik Router
    a. Hard Reset
    b. Soft Reset
2. MikroTik Interface Commenting
3. MikroTik IP addresses
    a. How to get WAN IP
    b. How to check which IP to give to WAN
    c. How to access ISP Router
    d. How to choose WAN IP from ISP LAN pool
    e. How to edit DHCP pool of WAN ISP
    f. Why should we reserve IP from ISP router.
    g. How to choose LAN IP
4. MikroTik LAN DHCP Setup
    a. What is lease time
    b. How dhcp lease works and effects
5. MikroTik DNS
    a. What is DNS
    b. How DNS works
    c. Client DNS vs MikroTik DNS
    d. Recursive DNS
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6. MikroTik NAT
7. MikroTik Routes
8. MikroTik Backup
   a. Backup creation
   b. File saving
   c. Backup Restore

MikroTik CHR Lab Setup

1. What is virtualization
2. What is WMware workstation
3. How to download and install WMware workstation
4. How to download MikroTik CHR ISO
5. How to Create MikroTik CHR VM
6. WMware workstation Networking
   a. NAT
   b. Host Only
   c. Bridge
   d. Creating Custom Network adaptors in VMware workstation
7. Connecting CHR with Specific physical interface
8. Connectivity between multiple VMs in VMware

Backups and Managements

1. How to Configure MikroTik with CLI (MikroTik Terminal)
   a. RouterOS Terminal Principle
   b. <tab>, double<tab> , "?", navigation
   c. Command history and its benefits
2. Upgrading RouterOS
   a. Package Types
   b. How to download packages and install
   c. RouterBOOT firmware upgrade
3. Router Identity
   a. How to change identity(GUI and with CLI)
   b. Why should we change Identity of router
4. RouterOS Logs
5. Router OS Services
   a. How services work
   b. Why should we off/on a service
   c. Why should we change port numbers in services
   d. How to change port numbers in services
6. Router OS User password and Rights management
   a. How to change password
   b. How to create/delete/enable/disable a user
   c. How to Create and edit user Rights with Groups
   d. Why should we use user account instead of admin
7. Saving and restoring the backup
8. Difference between a backup and an export (.rsc) file

a. How to Create Backup and .rsc(text config file)
b. How to restore from Backup and .rsc(text config file)
c. How to create .rsc file of specific sub-category
d. Editing an export file
9. Reinstalling a RouterOS device (Netinstall)
10. Sources of additional information
   a. wiki.mikrotik.com
   b. forum.mikrotik.com
   c. mum.mikrotik.com
   d. Distributor and consultant support
   e. support@mikrotik.com

MikroTik Queues Management

1. Simple queue
2. Target
3. Destination
4. Max-limit(Down/upload)
5. Bursting
6. Queue Script

ARP and DHCP

1. DHCP server and client
   f. DHCP client
   g. DHCP server setup
   h. Leases management
   i. DHCP server network configuration
   j. DHCP pool editing
   k. Lease editing
   l. Static Lease
   m. Make static
11. Address Resolution Protocol (ARP)
   a. What is arp
   b. How arp works
   c. Arp mode
      i. Enable
      ii. Disable
      iii. Reply-only
   d. Arp table
   e. Static/manual arp

Interfaces in Mikrotik

1. Physical interface
   a. LAN/WAN
   b. Ethernet/SFP

  c. Ethernet/Fast-ethernet/gigabit ethernet
  d. Wireless Interface
 2. Virtual Interfaces
  a. Bridge
   i. What is Bridging in MikroTik
   ii. How to Create Bridge
   iii. How to Add/remove interfaces in/from Bridge
   iv. How to Change LAN config to Bridge
   v. Why should we create and use Bridge over single LAN physical Intrerface
  b. VLans

MikroTik Dual WAN and Failover

1. How to configure dual WAN MikroTik
2. How to add Second/additional WAN in existing configured MikroTik
3. What is failover
4. How to configure failover in MikroTik
5. What is distance and how it works in MikroTik routes.

RouterOS tools

1. E-mail
 a. What is email
 b. How email works and what is does in MikroTik
 c. How to configure Email in MikroTik
 d. What is Less Secure password/App password
 e. How to generate and user App password in Gmail
2. Auto Backup Scheduler
 a. What is Auto Backup Scheduler
 b. How it works and what is does in MikroTik
 c. How to configure Auto Backup Scheduler
3. MikroTik Router Minitoring
 a. Netwatch
 b. Ping
 c. Traceroute
 d. Profile
  i. CPU Load
  ii. Memory
  iii. Uptime
  iv. Time
  v. Date
 e. Logs
 f. Graphs

Port Forwarding in MikroTik

1. What is NAT
2. Types of NATs

       a. Static NAT
       b. Dynamic NAT
       c. NAT overload(PAT)

3. What is PAT
4. How PAT Works
5. How to forward ports in Mikrotik RouterBOARD
6. Wht is Source vs Destination NAT
7. What is Source, Destination and Target addresses and ports.

Mikrotik Policy Based Routing and Static Routes

Multiple WANs Load-balancing

MikroTik Site to Site and Site to Client VPN Tunnels