



PERCORSO DI CERTIFICAZIONI MikroTik



MikroTik Training MTCNA

Mikrotik Certified Network Associate

Il corso di Certificazione MTCNA è di fondamentale importanza per accedere alle sessioni di approfondimento e specializzazione:

MTCRE - MikroTik Certified Routing Engineer

MTCWE - MikroTik Certified Wireless Engineer

MTCTCE - MikroTik Certified Traffic Control Engineer

MTCUME - MikroTik Certified User Management Engineer

MTCINE - MikroTik Certified Inter-networking Engineer

Prerequisiti

Buona conoscenza dei protocolli TCP/IP. Ogni partecipante deve essere munito di un proprio notebook (suggerito OS Microsoft Windows)

A chi è rivolto

Professionisti delle reti, WISP, internet service provider, sistemisti di rete e system integrators per conoscere il sistema RouterOS

Programma del corso

Introduction RouterOS

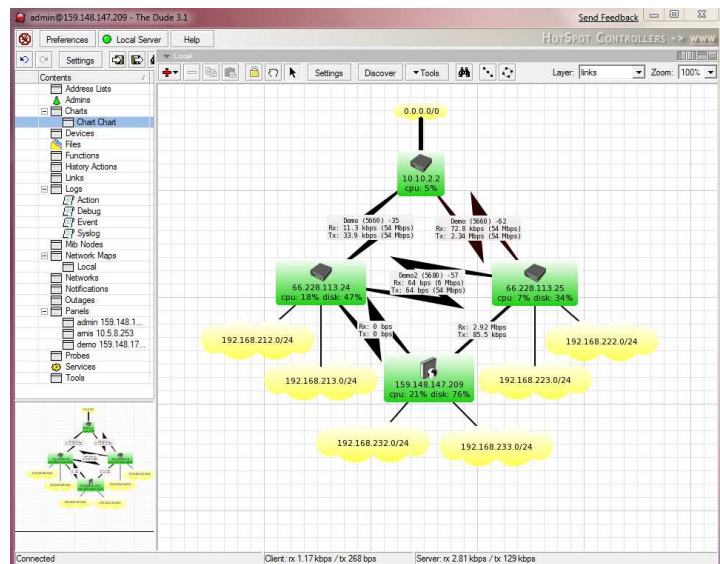
Routing: Routing overview, Routing concept, Route flags, Static routing, Creating routes, Setting default route, Manage dynamic routes, Implementing static routing on simple network,

Laboratory

Bridging: Bridging overview; Bridge concepts; Creating bridges; Adding ports to bridges

Laboratory

Wireless: 802.11n Concepts; Frequencies (bands, channels, advanced channels) data rates / HT chains (Tx power, rx sensitivity, country regulations); Legacy 802.11a/b/g stuff; Setup simple wireless link; Access Point configuration; Station configuration; MAC-address filtering; efault-authentication; Access-list; Connect-list; Default-forwarding; Wireless Security and Encryption; WPA-PSK; WPA2-PSK; MikroTik wireless protocols, NV2 (TDMA) configuration; Monitoring Tools; Wireless scan; Snooper; Registration table; Bridge wireless networks; Station-bridge



Laboratory

Network Management: ARP; ARP modes, routerOS ARP table, DHCP server and client, DHCP client, Server setup, Leases management, DHCP-server network configuration, RouterOS tools, E-mail, netwatch, Ping, Traceroute, Profiler (CPU load), Contacting support@mikrotik.com, ouput.rif, autosupout.rif and viewer, system logging and debug logs, readable configuration (item comments and names), network diagrams

Laboratory

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 action

Laboratory

QoS: Simple Queue, Target, Destinations, ax-limit and limit-at, Bursting, One Simple queue for whole network (PCQ), pcq-rate configuration, pcq-limit configuration, Monitoring, Interface traffic monitor, Torch raphs, SNMP,

Laboratory

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MikroTik RouterOS 3.10 (c) 1999-2008 http://www.mikrotik.com/

[admin@Petr] > user edit admin password
[admin@Petr] > ip address
[admin@Petr] /ip address> /
[admin@Petr] > ip address
[admin@Petr] /ip address> add
broadcast comment copy-from disabled netmask network address interface
[admin@Petr] /ip address> add address=10.0.0.1/24 interface=ether
ether2 ether3 ether1
[admin@Petr] /ip address> / ip address add address=10.0.0.1/24 interface=ether1
```

Tunnels: PPP settings, ppp profile, ppp secret, ppp status, IP pool, Creating pool, anaging ranges, Assigning to service, Secure local network, PPPoE service-name, Create PPPoE server, Point-to-point

addresses, reating PPPoE clients on RouterOS, Secure remote networks communication, PPTP client and PPTP server, SSTP client and SSTP server without certificates, Setup routes between networks



Mikrotik Certified Wireless Expert

Il corso di certificazione MTCWE è di fondamentale importanza per acquisire tutte le competenze necessarie per la progettazione, l'ottimizzazione e il troubleshooting delle reti wireless. Verranno trattati in maniera approfondita gli standard IEEE 802.11a/b/g/n, la sicurezza e la protezione delle reti e i protocolli Nstreme, Nv2, WDS e Mesh.

Prerequisiti

Ogni partecipante deve essere munito di un proprio notebook (suggerito OS Microsoft Windows) Certificazione MTCNA Buona conoscenza del protocollo TCP/IP

Programma del corso:

- Wireless Installations: Wireless Routers; RouterBoard Hardware; Wireless cards; Antenna types
- Wireless Standard: 802.11 a/b/g/n; Bands and channel width; Frequencies
- Wireless Tools: Wireless Tools + LAB; S can; Frequency usage; Spectral Scan/History; Snooper; Align; Sniffer

- Wireless Troubleshooting: Troubleshooting wireless clients + LAB; Registracion table analysis; Ack-Timeout/Distance; CCQ; TX/RX Signal Strength; Frames and HW-frames; Data-rates
- Wireless Advanced Settings: Advanced Wireless Tab settings + LAB; HW-retries; W-protection; Adaptive-noise-immunity; W MM; Country regulation settings; TX-power + LAB; Virtual-AP
- 802.11n: 802.11n wireless protocol + LAB;Features; Data Rates; Channel bonding; Frame Aggregation; TX-power for N cards; Chain settings; Wireless link debugging
- Wireless Security: Wireless Security Measures + LAB; Access Management; Access-List/Connect-List; RADIUS; Authentication; Encryption; EAP; M anagement Frame Protection
- WDS and MESH: Wireless WDS protocol + LAB: Dynamic/Static WDS; RSTP Bridge; Wireless MESH + LAB; HWMP+ Mesh
- Wireless Bridging: Wireless Transparent Bridge + LAB; WDS bridging; AP/Station-WDS; Pseudobridge; MPLS/VPLS tunnel
- Nstreme Protocol: MikroTik Wireless Nstreme Protocol + LAB; Features; C onfiguration options; Nstreme Dual; T roublesleshooting
- Nv2 Protocol: MikroTik Wireless Nv2 Protocol + LAB; Features; Configuration options; Troubleshooting



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Mikrotik Certified Routing Engineer

Mikrotik Certified Routing Engineer
MTCRE

è una certificazione avanzata che copre differenti scenari di routing nel tipico ambiente di un ISP tra i quali, OSPF area singola e multipla, Policy Routing e indirizzamento statico avanzato. Tratta anche casi in cui di connessioni multiple ad internet (load balancing and Failover). La certificazione MTCRE è inoltre un requisito necessario per accedere alla certificazione di terzo livello MTCINE.

Prerequisiti

Buona conoscenza dei protocolli TCP/IP Ogni partecipante deve essere munito di un proprio notebook (suggerito OS Microsoft Windows)

Certificazione MTCNA (non si potrà effettuare l'esame se non si possiede il certificato MTCNA)

A chi è rivolto

Professionisti delle reti, WISP, internet service provider, sistemisti di rete e system integrators per approfondire la propria conoscenza del sistema RouterOS

Programma del corso

Il corso offre una visione dettagliata dell'implementazione dei maggiori protocolli di routing sia statico che dinamico in Mikrotik RouterOS. Il training si articola nei seguenti moduli principali:

- Routing Statico Avanzato
- OSPF
- Introduzione a BGP ed MPLS -
Introduzione a VLAN - VPN e
Tunneling





Mikrotik Certified Traffic Control Engineer MTCTCE

è una certificazione avanzata che copre in modo dettagliato le configurazioni di Traffic Control contenute in RouterOS.

Prerequisiti

Buona conoscenza dei protocolli TCP/IP

Ogni partecipante deve essere munito di un proprio notebook (suggerito OS Microsoft Windows)

Certificazione MTCNA (non si potrà effettuare l'esame se non si possiede il certificato MTCNA)

A chi è rivolto

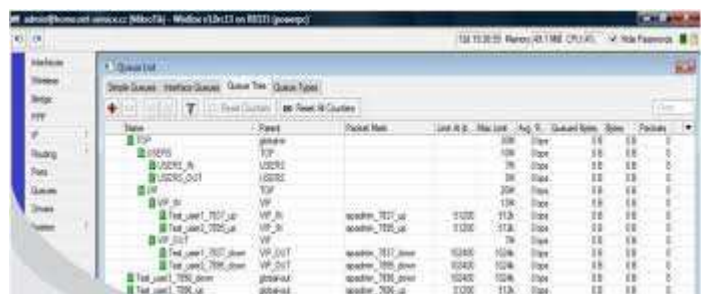
Professionisti delle reti, WISP, internet service provider, sistemisti di rete e system integrators per approfondire la propria conoscenza del sistema RouterOS



Programma del corso:

Il corso offre una visione dettagliata dell'implementazione dei maggiori protocolli di routing sia statico che dinamico in Mikrotik RouterOS. Il training si articola nei seguenti moduli principali:

- Packet flow diagram:
- Why this diagram is necessary?
- Full overview of all things covered by diagram
- Simple examples how packet travels through the diagram (routing, bridging, connection to router etc.) + LAB
- More complex examples of diagram usage + LAB
- Firewall filter/nat/mangle:
- Connection tracking
- Filter + LAB: chains (default/custom), all rule "actions" covered, most common rule "conditions" covered
- NAT + LAB: chains (default/custom), all rule "actions" covered, most common rule "conditions" covered, NAT helpers
- Mangle + LAB: chains (default/custom), all rule "actions" covered, most common rule "conditions" covered
- Some complicated rule "conditions" covered ("advanced", "extra" tab) + LAB
- uPNP
- Quality of Service:
- HTB: HTB general information, HTB implementation (queue tree), HTB structure + LAB, HTB Dual Limitation + LAB, HTB priority + LAB
- Burst + LAB
- Queue types: FIFO + LAB, SFQ + LAB, ED + LAB, PCQ + several LABs, queue size + LAB
- Simple queues + LAB
- Simple queue and queue tree interaction
- DNS client/cache:
- Basic configuration + LAB



- Static DNS Entry + LAB
- DHCP client/relay/server:
- DHCP communication analysis
- DHCP-client identification/ configuration + LAB
- DHCP server configuration: + LAB: DHCP networks, DHCP options (build-in and custom), IP Pool, advanced DHCP
- DHCP relay configuration + LAB
- Web Proxy
- Basic configuration
- Proxy rule lists: Access list + LAB, Direct Access list + LAB, Cache list + LAB
- Regular expression + LAB

IL COSTO PER OGNI CORSO COMPRENSIVO DI ESAME E' DI: 720 €

LA DURATA PER OGNI LIVELLO E' DI 2 GIORNI

**TIPOLOGIA: WORKSHOP FULL IMMERSION, 8 ORE AL GIORNO DURATA
COMPLESSIVA: 16 ORE INCONTRI IN PRESENZA CON ISTRUTTORI ALLA
FINE DEL SECONDO GIORNO SI TERRÀ L'ESAME DI CERTIFICAZIONE**

