



MikroTik Certified IPv6 Engineer

Online Course



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Course Modules

1.Introduction to IPv6

- IPv6 address
 - Differences between IPv4 and IPv6
- Address distribution
- Address notation
 - SLAAC IPv6 address creation (EUI-64)
- Subnetting
 - Address types
 - Link-local
 - Global
 - Multicast
 - Anycast
 - Unique local
 - Special addresses
- Reserved IPv6 addresses

2.IPv6 Protocol

- Address configuration
 - Auto-configuration
 - Stateless – SLAAC, DHCPv6
 - Stateful – DHCPv6
- Neighbor discovery protocol
- IPv6 routing basics
 - IPv6 prefix

3.IPv6 Packet

- IPv6 header
 - Header field description
 - Next header (daisy chaining)
 - Fragmentation
- Path MTU discovery



4.IPv6 Security

- ICMPv6
- Neighbor discovery protocol
 - Router solicitation
 - Router advertisement
- Neighbor solicitation
 - Duplicate address detection
 - Neighbor unreachability detection
- Neighbor advertisement
 - 'Managed address configuration' flag
 - 'Other configuration' flag
- Redirect
- MLD (Multicast Listener Discovery)
- Temporary addresses
- Firewall
- IPsec
 - Header only encryption (AH)
 - Data only encryption (ESP)
 - Header and data encryption (AH+ESP)



5. Transition Mechanisms

- Dual stack (RIPE recommended)
- 6to4
- 6RD
- Teredo
- DS-lite (Dual stack lite)

6. Interoperability

- IPv6 pool
- DHCP
 - DHCP PD server
 - DHCP PD client
 - DHCPv6 client
- IPv6 tunnels
 - IPIPv6
 - EoIPv6
 - GRE6
- IP version agnostic
 - DNS
 - Reverse DNS
 - NTP
 - PPP IPv6 support

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- Routing
 - Using global addresses as in IPv4
 - Using link-local addresses as in IPv6
 - RouterOS features not yet available for IPv6
 - NAT
 - HotSpot
 - RADIUS integration
 - Policy routing
 - DHCPv6 server
 - Tools
 - Ping
 - Traceroute
 - Torch
 - Traffic generator
 - Email
 - Netwatch
 - Traffic flow
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