

MTCIPv6E

Course Name:	MTCIPv6E
Course Duration:	24 hours
Requirements:	MTCNA
Who should take this Course:	Network engineers

Syllabus Course

Outline:

- Introduction to IPv6 + LAB
 - 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
- IPv6 Protocol + LAB
 - Address configuration
 - Auto-configuration
 - Stateless – SLAAC, DHCPv6
 - Stateful – DHCPv6

- Neighbor discovery protocol
- IPv6 routing basics
- IPv6 prefix
- IPv6 Packet +LAB
 - IPv6 header
 - Header field description
 - Next header (daisy chaining)
 - Fragmentation
 - Path MTU discovery
- IPv6 Security + LAB
 - 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)
- Transition Mechanisms + LAB
 - Dual stack (RIPE recommended)
 - 6to4
 - 6RD
 - Teredo
 - DS-lite (Dual stack lite)
- Interoperability + LAB
 - 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
- 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