



A C A D E M Y

MTCIPv6E outline

CERTIFIED IPv6 ENGINEER



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| Duration: | 2 days |
| Overview: | <p>MTCINE is the highest level MikroTik training available. This is a 3 day training which consists of hands-on labs with BGP, MPLS, VPLS and Traffic Engineering. MTCINE focuses on building an interconnection network between Autonomous Systems (AS), as well as deploying an MPLS/VPLS network to provide more services to customers. By connecting to another AS with BGP, you will be part of the world network and eliminate NAT on your public interface.</p> <p>All Participants who pass the exam will receive an official MikroTik MTCINE certification.</p> |
| Outcomes: | By the end of this training session, the student will be familiar with IPv6 protocol and be capable to implement IPv6 network. |
| Target Audience: | Network engineers and technicians wanting to deploy and support IPv6 based: <ul style="list-style-type: none">· Corporate networks· Client CPEs (WISPs and ISPs) |
| Course prerequisites: | A good working knowledge of TCP/IP Basics is required. You must be MikroTik MTCNA Certified (current or expired certificate is fine) to sit this course. |

| Title | Objective |
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| <p>Module 1 Introduction to IPv6</p> | <ul style="list-style-type: none"> • IPv6 address <ul style="list-style-type: none"> • Differences between IPv4 and IPv6 • Address distribution • Address notation <ul style="list-style-type: none"> • SLAAC IPv6 address creation (EUI-64) • Subnetting • Address types <ul style="list-style-type: none"> • Link-local • Global • Multicast • Anycast • Unique local • Special addresses • Reserved IPv6 addresses • Module 1 laboratory |
| <p>Module 2 IPv6 Protocol</p> | <ul style="list-style-type: none"> • Address configuration <ul style="list-style-type: none"> • Auto-configuration • Stateless – SLAAC, DHCPv6 • Stateful – DHCPv6 • Neighbor discovery protocol • IPv6 routing basics <ul style="list-style-type: none"> • IPv6 prefix • Module 2 laboratory |
| <p>Module 3 IPv6 Packet</p> | <ul style="list-style-type: none"> • IPv6 header <ul style="list-style-type: none"> • Header field description • Next header (daisy chaining) • Fragmentation • Path MTU discovery • Module 3 laboratory |

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| <p>Module 4 IPv6 Security</p> | <ul style="list-style-type: none"> • ICMPv6 • Neighbor discovery protocol <ul style="list-style-type: none"> • Router solicitation • Router advertisement • Neighbor solicitation <ul style="list-style-type: none"> • Duplicate address detection • Neighbor unreachability detection • Neighbor advertisement <ul style="list-style-type: none"> • 'Managed address configuration' flag • 'Other configuration' flag • Redirect • MLD (Multicast Listener Discovery) • Temporary addresses • Firewall • IPsec <ul style="list-style-type: none"> • Header only encryption (AH) • Data only encryption (ESP) • Header and data encryption (AH+ESP) • Module 4 laboratory |
| <p>Module 5 Transition Mechanisms</p> | <ul style="list-style-type: none"> • Dual stack (RIPE recommended) • 6to4 • 6RD • Teredo • DS-lite (Dual stack lite) • Module 5 laboratory |

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| <p>Module 6 Interoperability</p> | <ul style="list-style-type: none"> • IPv6 pool • DHCP <ul style="list-style-type: none"> • DHCP PD server • DHCP PD client • DHCPv6 client • IPv6 tunnels <ul style="list-style-type: none"> • IPIPv6 • EoIPv6 • GRE6 • IP version agnostic <ul style="list-style-type: none"> • DNS • Reverse DNS • NTP • PPP IPv6 support • Routing <ul style="list-style-type: none"> • Using global addresses as in IPv4 • Using link-local addresses as in IPv6 • RouterOS features not yet available for IPv6 <ul style="list-style-type: none"> • NAT • HotSpot • RADIUS integration • Policy routing • DHCPv6 server • Tools <ul style="list-style-type: none"> • Ping • Traceroute • Torch • Traffic generator • Email • Netwatch • Traffic flow • Module 6 laboratory |
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