



Certified Routing Engineer (MTCRE)

Training outline

Duration: 2 days

Outcomes: By the end of this training session, the student will be able to plan, implement and debug routed MikroTik RouterOS network configurations.

Target audience: Network engineers and technicians wanting to deploy and support static and/or dynamic routed networks.

Course prerequisites: MTCNA certificate

Title	Objective
Module 1 Static Routing	<ul style="list-style-type: none"> • More specific routes • ECMP • How to force gateway over specific interface • Gateway reachability check and route distance • Routing mark and route policy • Recursive next-hop and scope/target-scope usage • Module 1 laboratory
Module 2 Point to Point Addressing	<ul style="list-style-type: none"> • Point to Point address configuration • Module 2 laboratory
Module 3 VPN	<ul style="list-style-type: none"> • What is VPN? • Different types of VPN • Site to site connectivity with tunnels <ul style="list-style-type: none"> • IPIP, EoIP, PPTP, SSTP, L2TP, PPPoE • VLAN and it's usage • QinQ implementation • VLAN and managed switch • VLAN and switch chip configuration on RouterBOARDS • Module 3 laboratory
Module 4 OSPF	<ul style="list-style-type: none"> • What is OSPF? • How OSPF protocol works <ul style="list-style-type: none"> • Hello protocol • Database distribution and LSA types explained • OSPF network structure <ul style="list-style-type: none"> • Areas • Router types • OSPF neighbors and neighbor states (DR and BDR election) • External Route Distribution methods (type1, type2) • Interface cost and interface types (broadcast, NBMA, etc.) • SPT calculation algorithm • OSPF and multicast (problems with NBMA) • Stub, NSSA and area ranges (route aggregation) • Virtual links, usage and limitations • OSPF routing filters and limitations • Module 4 laboratory