MPLS Basic

Course code: SP1

The course is designed for candidates who need to have theoretical and practical (configuration) knowledge of MPLS networks. After completing the course the participant will be familiar with the functionality of MPLS and MPLS VPN applications. Will be able to configure and manage the MPLS network and the most used applications - MPLS VPN in simple and complex usage scenarios. Participants will be familiar with IPv6 transport over MPLS and IPv6 usage in the MPLS L3 VPNs.

Required skills

Knowledge of internetworking, TCP / IP, IP routing protocols including BGP and configuration of Cisco routers in the range of training A0/ICND and A1/ICND2, RS3/BGP/ROUTE.

Course outline

- Introduction to MPLS (basic concepts and principles of MPLS)
- MPLS architecture (MPLS components, description of control plane and data plane)
- MPLS functionality (principles, MPLS modes, data forwarding, the Label Distribution Protocol)
- MPLS Configuration (basic configuration, optional parameters, MPLS monitoring)
- Theory of VPN network (VPN types and their comparison, the VPN topology)
- MPLS VPN (MPLS VPN architecture, Route Distinguisher, Route Target)
- MPLS VPN functionality (routing model, packet forwarding, Cisco implementation)
- Configuring MPLS VPN (VRF configuration, the MP-BGP PE-CE routing, monitoring, MPLS VPN)
- Advanced MPLS VPN configuration (setting specific OSPF and BGP as PE-CE protocols)
- Complex topology of the MPLS VPN (Overlapping VPN, Central services VPN and managed network VPN)
- Internet and VPN services coexistence
- IPv6 over MPLS transport
- IPv6 in L3 MPLS VPN
- MPLS troubleshooting