

Building Core Networks with OSPF, IS-IS, BGP, and MPLS Power Camp

Dauer: 5 Tage Kurscode: BCMPL

Kursbeschreibung:

Building Core Networks with OSPF, IS-IS, BGP, and MPLS Power Camp (BCN) is a powerful hands-on course that provides you with the required knowledge and skills to design, deploy, operate, and maintain an Internet service provider (ISP) backbone network. You will learn the primary principles of the routing protocols that are used in very large networks. Hands-on labs reinforce the lecture materials to make sure that you have the working skills to affect the networks you support. BCN is offered in a traditional classroom or as an interactive virtual live classroom training delivered over Cisco® WebEx®. Both versions are led by the same knowledgeable instructors. The course materials are the same (although minor changes are made to accommodate the virtual live classroom environment), and both versions have the same hands-on labs. BCN Virtual live classroom offers the same learning experience as the traditional version with the added benefit of remote access.

Zielgruppe:

This course is intended for network professionals, including designers, implementers, and support staff involved with design and deployment of large-scale networks for large enterprises or high-end ISP networks that use scalable technologies such as Intermediate System-to-Intermediate System (IS-IS), Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), or Multiprotocol Label Switching (MPLS).

Kursziele:

- **Upon completion of this course, you should be able to:**
- Identify the critical factors for availability, scalability, and manageability
- Implement an Interior Gateway Protocol (IGP, either OSPF or IS-IS) into a large-scale hierarchical network using best current practices for scalability
- Implement BGP into a large-scale hierarchical network using best practices for scalability
- Control routing policy by influencing the BGP path selection process using route maps, prefix lists, and community strings
- Implement multihoming strategies using multiexit discriminators (MEDs) and local preference
- Implement and verify MPLS functionality in a large-scale network
- Implement and verify MPLS VPN connectivity in intra-autonomous-system environments
- Implement and verify MPLS traffic engineering practices
- Implement Layer 2 VPNs using Any Transport over MPLS (AToM)

Voraussetzungen:

The following are the prerequisites for this course:

- Experience using the Cisco IOS® Software command-line interface (CLI)
- Proficiency in routing fundamentals and IP addressing
- CCNA® or the equivalent networking knowledge and experience

Schulungsinhalt:

Course Outline

- Course Introduction
- Get Started with Core Networking
- Implement Link State Protocols (OSPF or IS-IS)
- Implement BGP
- BGP Scaling Techniques
- Implement BGP Policy Control
- Implement and Troubleshoot MPLS
- Implement Intranet and Extranet MPLS VPNs
- Implement MPLS Traffic Engineering
- Implement Layer 2 VPNs with AToM

Lab Outline

- Connect to the Lab Equipment

The purpose of this lab is to get you into the lab network so you can access reference materials used throughout the course and gain device access for later lab exercises.

- Configure the Basics

During the lab exercise you will configure the basic information needed to operate and manage the network equipment. You will import a configuration that installs a basic template, then configure many other elements manually.

- Configure Interfaces and IP Connectivity

The purpose of this lab exercise is to construct the lab and introduce you to the basic principles of constructing and configuring an IP network. In this lab you will configure the interfaces and establish IP connectivity.

- Configure and Verify OSPF or IS-IS in the Core Network

The purpose of this lab is to continue building the lab by configuring infrastructure routing using either OSPF or IS-IS. Using the basic router configuration from the first exercise, you will configure basic IGP routing.

- Configure and Verify Basic Interior Border Gateway Protocol (IBGP)

The purpose of this lab exercise is to introduce you to BGP and full mesh IBGP routing within the lab network.

- Configure and Verify Exterior Border Gateway Protocol (EBGP)

During this lab exercise you will establish EBGP peering and verify route advertisement and reachability across the network.

- Scale BGP with Peer Templates and Route Reflectors

The purpose of this lab exercise is to configure route reflectors and observe the effect. You will also compare and contrast update groups to peer groups.

- Configure BGP Route Filtering

The purpose of this lab exercise is to introduce you to the types of routing policy available in BGP. This lab is designed to practice filtering BGP updates using various filtering methods. The methods focus on prefix lists, community filters, and AS-path access lists.

- Configure Multihoming Policy

This lab exercise demonstrates how an autonomous system can use local preference to control outbound traffic and use MEDs or metrics to control inbound traffic when multihoming or having connectivity to more than one other autonomous system. The goal of the exercise is to demonstrate how to achieve a particular traffic flow using different methods.

- Configure and Verify MPLS

This lab exercise demonstrates how to implement and verify MPLS functionality into an existing network.

- Configure Intranet MPLS VPNs

During this lab exercise you will learn how to implement MPLS VPNs into an existing network.

- Configure Extranet MPLS VPNs

In this lab exercise you will simulate sharing VRF information with multiple sites. This could be a management LAN or a partner company.

- Configure and Verify MPLS Traffic Engineering (MPLS-TE)

In this lab exercise you will learn how to implement MPLS-TE tunnels.

- Implement, Verify, and Troubleshoot EoMPLS

This lab exercise demonstrates how to implement and verify EoMPLS functionality. You will implement a point-to-point emulated wire service (EWS) between customer edge routers using port mode Layer 2 transport.

Hinweis:

Duration: Instructor-led offering: Five days, eight hours a day; Virtual live classroom offering: Eight days, four hours a day
The virtual live classroom offering allows you to attend the live instruction, along with getting access to our lab equipment, without leaving your office.

Cisco Advanced Trainings werden vom Global Knowledge Partner Cisco Systems selber durchgeführt.
Bitte bringen Sie ggfs. Ihr eigenes Notebook und Patchkabel mit zum Seminar.

Weitere Informationen:

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