

IP Routing Technical

Underleverantör: IP-Solutions

Datum

- 16-18 May, 2011
Stockholm
- 25-27 May, 2011
Stockholm

I den här 3 dagars kursen inom avancerad routing kommer du att utveckla avancerade färdigheter, som hjälper dig att optimera konfiguration och design av routerbaserade nätverk. Utbildningen går även igenom komplexa kommandon och koncept för uppbyggnad av stora skalbara nätverk. Undervisningen inriktar sig på tillämpningar av principer för routingprotokoll i storskaliga nätverk.

Målgrupp

Den här kursen riktar sig till teknisk personal som behöver en djupare förståelse av avancerad routerkonfiguration.

Förkunskaper

Kursen kräver grundläggande arbetskunskap inom bryggor och routrar samt heltäckande kunskap inom OSI modellen, IP adressering och IP subnetting.

Kunskapstest

Testa dina kunskaper inom IP gratis redan idag. Våra rådgivare kontaktar dig med förslag på vilken av våra utbildningar som är mest optimal för dig.

[IP-test](#)

Övrigt

Denna kurs finns som schemalagd utbildning och presentationen ges på svenska eller engelska. Under kursen blandas teoretiska presentationer med praktiska övningar. Vi kan även hålla denna kurs företagsintern. Kontakta oss för att få reda på hur vi kan hjälpa er med anpassade kurser.

Längd

3 dagar

Svårighetsgrad



Agenda

Routing Overview

Routing

- Routing Fundamentals

- Static Routing
- Configuring Dynamic Routing
- Distance Vector Routing Protocols
- Link-State Routing Protocols
- Default Routing

Default Routing Overview

- Configuring Static Default Routes.
- Default Route Caveats

Floating Static Routes

- Configuring Floating Static Routes

Convergence

- Convergence Issues

Route Calculation

- Route Calculation Fundamentals
- The Initiation of Routing Updates
- Routing Metrics

OSPF Overview

- Issues Addressed by OSPF
- OSPF Terminology
- OSPF States
- OSPF Network Types
- The OSPF Hello Protocol

OSPF Operation

- Steps of OSPF Operation
- Step 1: Establish Router Adjacencies
- Step 2: Elect a DR and a BDR
- Step 3: Discover Routes
- Step 4: Select Appropriate Routes
- Step 5: Maintain Routing Information

OSPF Configuration and Verification

- Configuring OSPF on Routers Within a Single Area
- Optional Configuration Commands
- show Commands
- clear and debug Commands

Multiarea OSPF Operation

- Creating Multiple OSPF Areas
- OSPF Router Types
- OSPF LSA and Area Types

- Configuring OSPF Operation Across Multiple Areas
- Flooding LSUs to Multiple Areas
- Updating the Routing Table
- Opaque LSAs

Multiarea OSPF Configuration and Verification

- Using and Configuring OSPF Multiarea Components
- Configuring OSPF Route Summarization
- Verifying Multiarea OSPF Operation

Stub, Totally Stubby, and Not-So-Stubby Areas

- Using Stub and Totally Stubby Areas
- Stub and Totally Stubby Area Criteria
- Configuring Stub and Totally Stubby Areas
- OSPF Stub Area Configuration Example
- OSPF Totally Stubby Area Configuration Example
- NSSA Overview
- How NSSA Operates
- Configuring NSSA

Virtual Links

- Meeting the Backbone Area Requirements
- Configuring Virtual Links
- Virtual Link Configuration Example

Routing Information Protocol Version 2103

RIPv2 Overview

- RIPv2 Operation
- Issues Addressed by RIPv2
- RIPv2 Message Format
- Compatibility with RIPv1
- Classless Route Lookups
- Classless Routing Protocols
- Authentication
- Limitations of RIPv2

Configuring RIPv2

- Basic RIPv2 Configuration
- Compatibility with RIPv1
- Discontiguous Subnets and Classless Routing
- Configuring Authentication

Verifying RIPv2 Operation

- show Commands
- debug Commands

IS-IS Fundamentals

- OSI Protocols
- OSI Terminology
- ES-IS and IS-IS
- Integrated IS-IS
- OSPF Versus IS-IS

ISO Addressing

- NSAPs.
- NETs.
- ISO Addressing with Cisco Routers
- Identifying Systems in IS-IS

IS-IS Operation

- High-Level View of IS-IS Operation
- OSI PDUs
- IS-IS Hello Messages
- IS-IS Link-State PDU (LSP) Formats
- IS-IS Routing Levels
- IS-IS Adjacencies
- Designated Intermediate Systems (DIS) and Pseudonodes (PSN)
- IS-IS Data Flow
- LSP Flooding and Synchronization
- IS-IS Metrics
- IS-IS Network Types
- SPF Algorithm

IP Routing with Integrated IS-IS

- OSI, IP, and Dual
- Suboptimal IS-IS Routing
- Intra-Area and Interarea Integrated IS-IS Routing Example

Configuration of Integrated IS-IS

- Basic Configuration of Integrated IS-IS
- Multiarea Integrated IS-IS Configuration

Integrated IS-IS Operation in a WAN Environment

- Point-to-Point and Point-to-Multipoint Operation with IS-IS
- Configuring Integrated IS-IS in a WAN Environment
- Frame Relay Point-to-Point Scenario with Integrated IS-IS
- Frame Relay Point-to-Multipoint Scenario with Integrated IS-IS
- Detecting Mismatched Interfaces with Integrated IS-IS

BGP

- BGP Characteristics
- BGP Implementations
- BGP Databases
- BGP Peers

- Comparing EBGP and IBGP
- BGP Path Attributes
- BGP Route Selection

Configuring Layer 3 Redundancy with VRRP

- Virtual Router Redundancy
- VRRP Operations Process
- VRRP Configuration
- Enabling VRRP
- VRRPv2 and 3 operation