Publication date : 01/17/2024

Course : Cisco routers, BGP implementation

Practical course - 4d - 28h00 - Ref. BGP
Price : 2380 € E.T.

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This high-level course is entirely dedicated to the BGP protocol and its use in operator networks and in the interconnection of Campus networks. You'll learn how to design, maintain and troubleshoot BGP networks, thanks to a wide range of practical exercises.

Teaching objectives

At the end of the training, the participant will be able to:

- Designing BGP networks
- Maintain and troubleshoot BGP networks
- BGP features

Intended audience

Network administrators and engineers.

Prerequisites

Good knowledge of IGP routing protocols, redistribution mechanisms and route-map or equivalent to the course "Cisco routers, advanced" ref. ROP.

Course schedule

1 Introduction to the BGP protocol

- BGP features.
- Definition of BGP sessions and operating mode.
- Introduction and definition of attributes.
- The route selection algorithm.
- Management of network announcements.
- Setting up a simple BGP session.
- Redistribution within BGP and aggregation.
- BGP table and neighbor management.

Hands-on work

Configuring E-BGP and I-BGP connections. Interaction between the two connections.

PARTICIPANTS

Network administrators and engineers.

PREREQUISITES

Good knowledge of IGP routing protocols, redistribution mechanisms and route-map or equivalent to the course "Cisco routers, advanced" ref. ROP.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 Configuring a transit AS

- Operation of a transit AS.
- IBGP and EBGP sessions, 'Next-Hop' attribute management.
- IGP/BGP interaction.
- Configuring a transit AS.
- Troubleshooting examples.

Hands-on work

Configuring a transit AS.

3 Route selection and filtering

- Dual-connection network to one operator.
- The different possible routing policies.
- AS-path-based route filtering.
- Regular expressions, Prefix-list, Route-map.
- Use of ORF. Resetting BGP sessions.

Hands-on work

Multi-operator connection configuration. Filtering with prefix lists.

4 Route selection based on attributes

- The "Weight". The "Local Preference".
- AS-Path Prepending.
- The " MED " (Multi Exit Discriminator) attribute.
- Communities.

Hands-on work

Influencing route selection with the Weight attribute. How to position Local Preferences. MED. Using Communities.

5 Connectivity

- The problem of customer-operator connectivity.
- Connectivity using static routes.
- Multiple connectivity to a single operator.
- Multi-operator connectivity.

6 BGP on operator networks

- Classic operator network with BGP and IGP.
- Design networks based on hierarchical " Route Reflectors ". Configure "Route Reflectors".
- BGP confederations. Configuration.

Hands-on work

Introduction to "Routes reflectors". Confederations configuration and supervision.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.

• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.

• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

7 BGP optimization functions

- Improving convergence.
- Limit the number of BGP prefixes received.
- Peer Groups". "Route Dampening".

Hands-on work
Function configuration.

Dates and locations

REMOTE CLASS
2026 : 19 May, 29 Sep.

PARIS LA DÉFENSE
2026 : 19 May, 29 Sep.