

# Advanced Juniper Routing Protocols

This Advanced Juniper Routing Protocols training covers how to implement, monitor, & troubleshoot advanced network protocols. This course covers Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), multicast, class of service (CoS) and how they operate in enterprise networks powered by Juniper devices. For IT managers, this Juniper training can be used to onboard new network admins, curated into team training plans, or as a Juniper reference resource.

[CBT Nuggets course material](#) →

## WEEK 1

### Advanced OSPF Foundations

152 min.

Introducing Advanced OSPF on the JNCIP	2
OSPF Design Considerations	10
A (not so) Basic OSPF Deployment	15
OSPF Packet Types and LSAs	19
Verify LSDB Contents and Protect the LSDB	15
SPF Tuning	6
Metric Tuning	10
Rotating Authentication Keys	7
Summarizing Advanced OSPF Foundations	1

### Advanced OSPF Configurations and Use Cases

Overview	1
Introducing Advanced OSPF Configurations	1
OSPF Area Types	10
Route Summarization	14
Route Filtering	6
Multi-Area Single Adjacency	7
Virtual Links	9
Route Redistribution	12
Summarizing Advanced OSPF Configuration	1

### Advanced IS-IS Foundations

Overview	1
Introducing Advanced IS-IS Foundation	3

## WEEK 2

157 min.

Multi-Level IS-IS Refresher	18
IS-IS Packet Types	11
Basic Multi-Level IS-IS Deployment on JUNOS	14
LSPDU Contents and Common TLVs	9
PDU Flooding and Mesh Groups	6
Metric Tuning	7
Validating IS-IS Config and LSDB	8
Hierarchical Authentication	6
Summarizing Advanced IS-IS Foundations	1

### Advanced IS-IS Configurations

Overview	1
Introducing Advanced IS-IS Configurations	1
How the SPF Algorithm Works	12
The Partial SPF Run	4
Wide Metrics	9
The Overload Bit	4
Route Redistribution	9
Leak Routes from Level 2 to Level 1	6
The Up/Down Bit	4
Route Summarization	6
Summarizing Advanced IS-IS Config	1

### Advanced BGP Foundations

Overview	1
Introducing BGP Foundations	2
The Point of BGP (Refreshed)	15

## WEEK 3

154 min.

BGP Messages	11
BGP Advertisement Rules	12
Next Hop Solutions in iBGP	7
A Basic BGP Config on Junos	23
BGP Best Path Selection Crash Course	8
BGP Authentication	6
Summarizing BGP Foundations	1

### Advanced BGP Configurations and Policies

Overview	1
Introducing BGP Manipulation and Engineering	2
Configure GTSM	9
Dynamic Neighbor Adjacencies	6
BGP Database Protection	6
BGP Attribute Types	6
Configure Local Preference Policies	8
AS PATH: Loops	8
AS Override	5
Remove Private ASs	6
AS PATH Prepend and Expand	6
Route Aggregation	6
Summarizing BGP Attributes	1

### Advanced BGP Attribute and Community Manipulation

Overview	1
Introducing (more) Attribute Configurations	2
RegEx and AS Paths	11

## WEEK 4

154 min.

Origin Code	6
MED (Multi-Exit Discriminator)	8
BGP Communities Fundamentals	6
No Advertise Community	6
No Export (Subconfed) Community	7
Custom Communities for Grouping NLRIs	6
Summarizing Advanced BGP Manipulations	1

### BGP Scaling Solutions

Overview	1
Introducing BGP Scaling	2
The Point of Route Reflectors	9
Configuring Route Reflectors on Junos	10
Design: Full Mesh Core	6
Design: Redundant Route Reflectors Within a Cluster	8
Design: Hierarchical Route Reflectors	5
Design: Full Mesh Cluster with Redundant Route Reflectors	6
Design: Virtual Route Reflectors	6
Optimal Route Reflection (ORR)	8
Confederations	6
Summarizing BGP Scale	1

### Understand and Configure BGP FlowSpec

Overview	1
Introducing FlowSpec	2
The Point of BGP FlowSpec (and DDoS Attacks)	12

Prepare for BGP FlowSpec	12
CE: Configure Flow Specification	8
CE: Create and Export FlowSpec Policy	5
PE: Create a Community	4

## WEEK 5

87 min.

PE: Create an Import Policy	8
Validate FlowSpec	6
Generating FlowSpecs Internally for Clients	14
Summarizing FlowSpec	1

### Understand and Configure BGP Route Damping

Overview	1
Introducing BGP Route Damping	1
The Impact of Flapping Routes	14
Figures of Merit	11
Enable BGP Route Damping	5
Create Custom Damping Profiles	9
Create and Apply Damping Policies	8
Validate Route Damping	6
Summarizing BGP Route Damping	1