

## پکیج CCNP تا CCIE سیکو | Zero To Hero

دوره CCNP تا CCIE

مروری بر دوره

پکیج CCNP تا CCIE

سرفصل ها

### Week 1

#### Simple Network Design

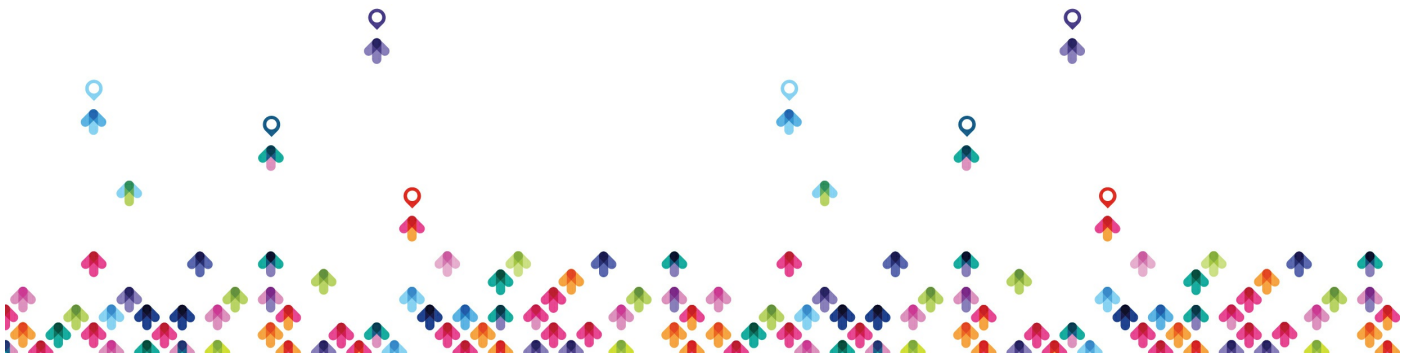
- Understanding the Host-to-Host Communications Model
- Understanding the TCP/IP Internet Layer

#### Addresses in a Network

- Introduction to Layer 2 Addresses
- Introduction to IPv4 Addressing and IP Subnets
- Introduction to IPv6 Addresses

#### Network Address Assignments

- Implementing DHCP
- Implementing DHCP for IPv6
- Manual Configuration



## Week 2

### Basic Network and Routing Concepts

- Differentiating Routing Protocols
- Understanding Network Technologies
- Configuring Static Routes

### Dynamic Routing Protocols

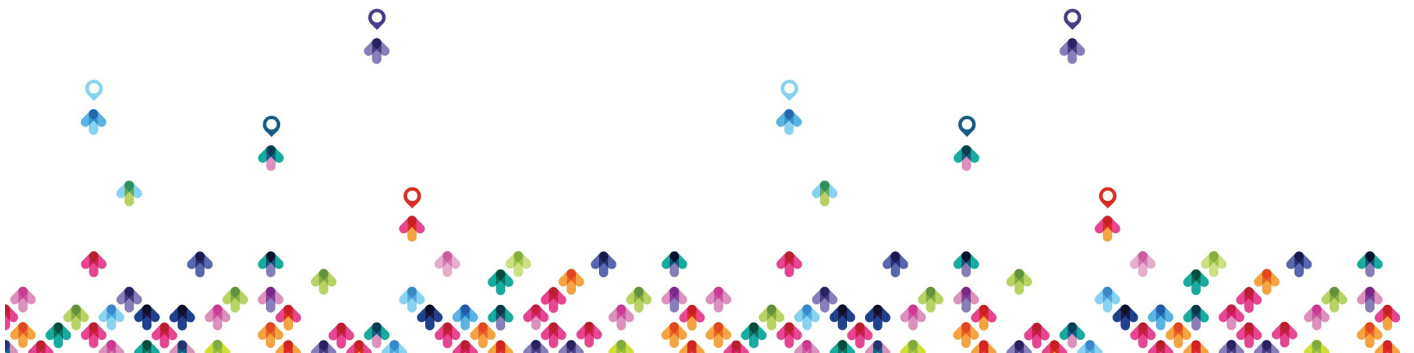
- Introduction to RIP
- Introduction to OSPF
- Introduction to EIGRP
- Introduction to IS-IS
- Introduction to BGP

### Routing Information Protocol (RIP)

- Configuring RIPv2
- Configuring RIPNG
- Securing RIP
- Troubleshooting and Verifying RIP

### EIGRP Implementation

- Establishing EIGRP Neighbor Relationships
- Building the EIGRP Topology Table
- Optimizing EIGRP Behavior
- Configuring EIGRP for IPv6



- Discovering Named EIGRP Configuration
- Securing EIGRP

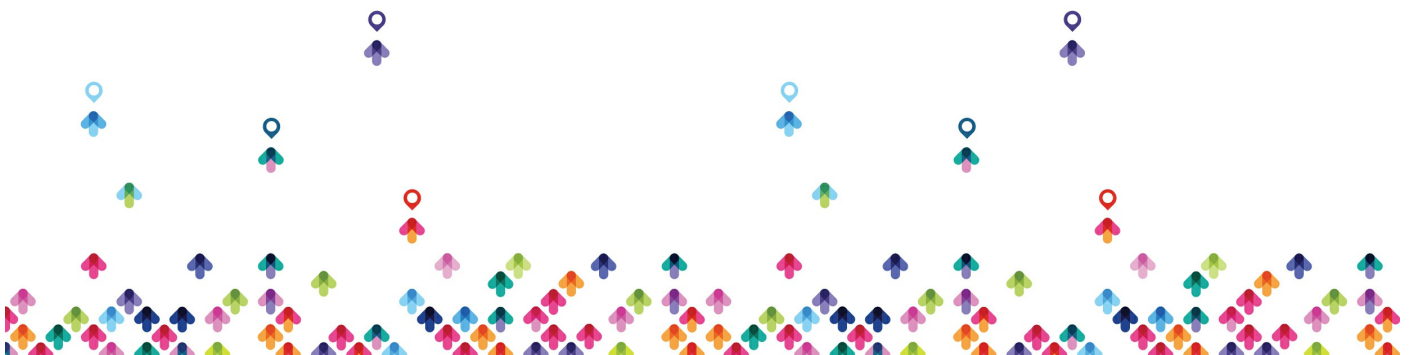
## Week 3

### VPN technologies

- Overviewing DMVPN (Phase 1, Phase 2, and Phase 3)
- NHRP Introduction
- DMVPN failure Detection and High availability
- Basic implementation
- Securing DMVPN tunnel using IPsec (DMVPN over IPsec)
- Advanced technology LAB
- Troubleshooting DMVPN

### OSPF for IPv4 and IPv6

- Establishing OSPF Neighbor Relationship
- Building the Link State Database
- OSPF Design and LSA
- Scaling OSPF
- OSPF Area types
- OSPF Suboptimal path
- Optimizing OSPF Behavior
- OSPF traffic engineering
- Configuring OSPFv3 (Traditional vs address-family)
- Securing OSPF



## **\*Review DMVPN technology by using OSPF routing protocol**

### **Week 4**

#### **IS\_IS independent routing protocol**

- Addressing scheme
- Levels, Areas and flooding domains
- ISIS metric, Packet Types and Operation
- Configuring ISIS
- ISIS\_Authentication
- ISIS for IPv6
- ISIS for Service Providers (intro to migration strategies)

#### **Configuration of Redistribution**

- Implementing Basic Routing Protocol Redistribution
- Manipulating Redistribution Using Route Filtering
- Route-map, Prefix-list, Route-control, Default Route, Summarization
- PFR introduction
- Full Scale LAB on IGP routing protocols Part ONE.

### **Week 5 and 6**

#### **BGP is EVERYTHING**

- BGP fundamentals, Packet Types, ADJ and peering
- Building BGP Table
- Building Routing Table



- BGP path attributes and Decision Processes
- Basic Configuration (eBGP vs iBGP)
- Route-filtering (basic and regular expression) and Route-summarization
- BGP suppress-map and unsuppress-map
- BGP Route Manipulation
- BGP communities, standard and extended, BGP route-Dampening
- BGP confederation and BGP Route-Reflectors
- MP\_BGP
- BGP and IPv6

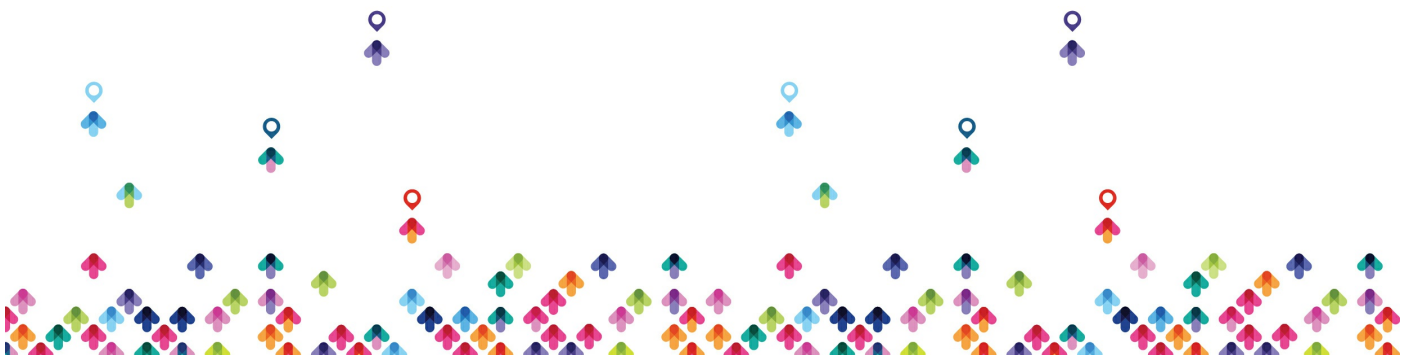
## Week 6 and 7

### MPLS (Multiprotocol Label Switching) Scale up the network

- MPLS architecture
- Forwarding traffic using Label and tag
- LDP vs TDP
- MPLS Cisco Express Forwarding Switching
- Implementing Path Control
- MPLS VPN introduction using PE\_CE strategies (Hub and Spoke model)
- VRF access, Multi VRF and CE Management
- MPLS configuration

## Week 8

### Multicast Routing



- IP multicast introduction
- Layer 2 multicast overview, IGMP, CGMP and MLD
- Multicast routing, PIM modes
- PIM Dense vs PIM Sparse
- PIM configuration, Static vs auto RP
- Multicast Traffic engineering and forwarding
- IP multicast best practice and group scoping

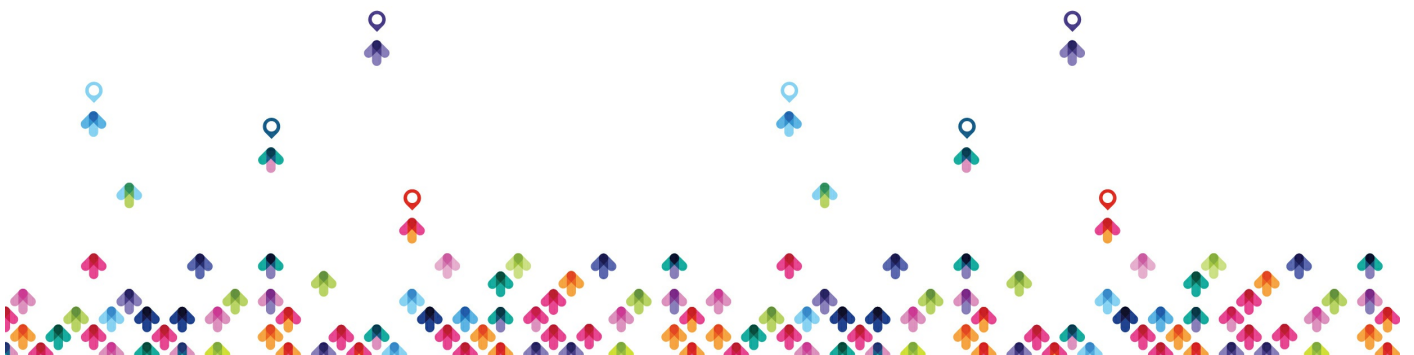
## QoS (Quality of Service)

- QoS overview, requirement and reasons
  - Classification and markig
  - Policing, Shaping and markdown tools
  - Congestion management and avoidance
  - Bandwidth reservation mechanisms
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- WAN and branch QoS design
  - MPLS VPN QoS design

## Week 9

### IPv6 architecture

- Address types
- GUA, Link local , Private local and multicast
- Dynamic IPv6 address assignement SLAAC, Stateless DHCP v6, Stateful DHCPv6



- ICMPv6 and ICMPv6 ND
- Routing in IPv6
- IPv6 NAT translation NAT64

## Week 10

### Final Prepration

8 am to 8 pm or later Full scale LAB (semi-assisted) including

MPLS, BGP, QoS, Multicast, IGP and many others

پیش نیازها

- گذراندن و یا داشتن مدرک CCNA R&S

