Implementing Cisco IP Routing

Duration: 5 Days      Course Code: ROUTE

Overview:
This 5 day course is designed to provide professionals working with medium to large networks with the skills and knowledge required to incorporate advanced routing concepts when implementing scalability for Cisco routers that are connected to LANs and WANs. Delegates will be able to dramatically increase the number of routers and sites using these techniques instead of redesigning the network when additional sites or wiring configurations are added. Labs are an important feature of this course with 2 different types of labs being used to aid learning, discovery labs are instructor guided labs through which students explore new topics in an interactive way, the challenge Labs are designed to test students understanding of the topics being taught and to provide vital hands-on practice.

Target Audience:
This course is designed for: Network professionals who want to correctly implement routing based solutions within a given network design, using Cisco IOS services and features, where implementation includes planning, configuring and verification.

Objectives:
- Upon completing this course, the learner will be able to meet these overall objectives:
- Implement route redistribution using filtering mechanisms
- Implement path control using policy based routing and IP SLA
- Describe routing protocols, different remote connectivity options, and their impact on routing and implement RIPng
- Configure EIGRP in IPv4 and IPv6 environment
- Configure OSPF in IPv4 and IPv6 environment
- Implement enterprise Internet connectivity
- Secure Cisco routers according to best practices and configure authentication for routing protocols

Prerequisites:
To gain the prerequisite skills and knowledge, Cisco strongly recommends the knowledge of the following courses:
- ICND1 - Interconnecting Cisco Network Devices Part 1
- ICND2 - Interconnecting Cisco Network Devices Part 2
- Or
- CCNABC - Cisco CCNA Certification Fast Track Programme
  Practical experience in installing, operating and maintaining Cisco routers & switches in an enterprise environment is recommended.

Testing and Certification
Recommended preparation for:
- 300-101 ROUTE - Implementing Cisco IP Routing
  This exam is required for those delegates wishing to achieve either the Cisco Certified Network Professional for Routing and Switching or the Cisco Certified Design Professional Certifications.

Follow-on-Courses:
The following courses are recommended for further study:
- SWITCH - Implementing Cisco Switched Networks
- TSHOOT - Troubleshooting and Maintaining Cisco IP Networks
- ARCH - Designing Cisco Network Architectures
- QOS - Implementing Cisco Quality of Service
- BGP - Configuring BGP on Cisco Routers
- MPLS - Implementing Cisco MPLS

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Content:

Basic Network and Routing Concepts
- Differentiating Routing Protocols
- Understanding Network Technologies
- Connecting Remote Locations with the Headquarters
- Implementing RIPv2

EIGRP Implementation
- Establishing EIGRP Neighbor Relationships
- Building the EIGRP Topology Table
- Optimizing EIGRP Behavior
- Configuring EIGRP for IPv6
- Discovering Named EIGRP Configuration

OSPF Implementation
- Establishing OSPF Neighbor Relationship
- Building the Link State Database
- Optimizing OSPF Behavior
- Configuring OSPFv3

Configuration of Redistribution
- Implementing Basic Routing Protocol Redistribution
- Manipulating Redistribution Using Route Filtering
- Path Control Implementation
- Using Cisco Express Forwarding Switching
- Implementing Path Control

Enterprise Internet Connectivity
- Planning Enterprise Internet Connectivity
- Establishing Single-Homed IPv4 Internet Connectivity
- Establishing Single-Homed IPv6 Internet Connectivity
- Improving Resilience of Internet Connectivity
- Considering Advantages of Using BGP
- Implementing Basic BGP Operations
- Using BGP Attributes and Path Selection Process
- Controlling BGP Routing Updates
- Implementing BGP for IPv6 Internet Connectivity

Routers and Routing Protocol Hardening
- Securing Cisco Routers
- Describing Routing Protocol Authentication Options
- Configuring EIGRP Authentication
- Configuring OSPF Authentication
- Configuring BGP Authentication

Further Information:

For More information, or to book your course, please call us on +254 713 027 191
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www.clclearningafrica.com

Computer Learning Centre 2nd Floor Museum Hill Centre, Muthithi Road, Westlands, Nairobi, Kenya
Implementing Cisco Switched Networks

Duration: 5 Days      Course Code: SWITCH

Overview:
This is a five-day course designed to help students prepare to plan, configure, and verify the implementation of complex enterprise switching solutions for campus environments using the Cisco Enterprise Campus Architecture. Labs are an important feature of this course with 2 different types of labs being used to aid learning, discovery labs are instructor guided labs through which students explore new topics in an interactive way, the challenge Labs are designed to test students understanding of the topics being taught and to provide vital hands-on practice.

Target Audience:
This course is designed for: Network Professionals who need to implement and support switch based solutions within a given network design using Cisco IOS services and features.

Objectives:
- Configure routing on a multilayer switch
- Configure NTP, SNMP, IP SLA, port mirroring, and verify StackWise and VSS operation
- Implement First Hop redundancy in IPv4 and IPv6 environments
- Implement VLANs, trunks, explain VTP, implement DHCP in IPv4 and IPv6 environment, and configure port aggregation
- Implement and optimize STP mechanism that best suits your network - PVSTP+, RPVSTP+, or MST
- Describe the hierarchical campus structure, basic switch operation, use of SDM templates, PoE, and LLDP

Prerequisites:
To gain the prerequisite skills and knowledge, Cisco strongly recommends the knowledge of the following courses:
- ICND1 - Interconnecting Cisco Network Devices Part 1
- ICND2 - Interconnecting Cisco Network Devices Part 2
- CCNABC - Cisco CCNA Certification Fast Track Programme
Practical experience in installing, operating and maintaining Cisco routers & switches in an enterprise environment is recommended.

Testing and Certification
Recommended preparation for:
- 300-115 SWITCH - Implementing Cisco Switched Networks
This exam is required for those delegates wishing to achieve either the Cisco Certified Network Professional for Routing and Switching or the Cisco Certified Design Professional Certifications

Follow-on-Courses:
The following courses are recommended for further study:
- ROUTE - Implementing Cisco IP Routing
- TSHOOT - Troubleshooting and Maintaining Cisco IP Networks
- ARCH - Designing Cisco Network Architectures
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Computer Learning Centre 2nd Floor Museum Hill Centre, Muthithi Road, Westlands, Nairobi, Kenya
Designing Cisco Network Service Architectures

Duration: 5 Days      Course Code: ARCH

Overview:

The Designing Cisco Network Service Architectures (ARCH) course enables learners to perform the conceptual, intermediate, and detailed design of a network infrastructure that supports desired network solutions over intelligent network services, in order to achieve effective performance, scalability, and availability. This course enables learners, by applying solid Cisco network solution models and recommended design practices, to provide viable, stable enterprise internetworking solutions. The course presents concepts and examples that are necessary to design converged enterprise networks. Advanced network infrastructure technologies, such as virtual private networks (VPNs) and other security solutions, are also covered.

Target Audience:

This course is designed for: Individuals seeking the Cisco CCDP certification and those working toward the Cisco CCDE certification Presales and postsales network engineers that are involved in network design, planning, and implementation Network administrators and designers that are responsible for designing and implementing the enterprise network

Objectives:

Upon completing this course, the learner will be able to meet these overall objectives:

- Create conceptual, intermediate, and detailed enterprise data center design
- Create conceptual, intermediate, and detailed enterprise edge and remote infrastructure designs
- Create conceptual, intermediate, and detailed network service designs for security considerations
- Create conceptual, intermediate, and detailed VPN designs

Prerequisites:

To gain the prerequisite skills and knowledge, Cisco strongly recommends knowledge of the following courses:

- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Interconnecting Cisco Network Devices Part 2 (ICND2)
- Designing for Cisco Internetwork Solutions (DESGN)
- Implementing Cisco IP Routing (ROUTE)
- Implementing Cisco IP Switched Networks (SWITCH)

Testing and Certification

Recommended as preparation for exam(s):

- 642-874 – Designing Cisco Network Service Architectures

The ARCH course is part of the Cisco Certified Design Professional CCDP Certification
### Content:

- **Cisco Network Architectures for the Enterprise**
  - Review of Cisco Network Architectures for the Enterprise
  - Reviewing the Cisco PPDIOO Approach

- **Enterprise Campus Network Design**
  - Designing High Availability in the Enterprise Campus
  - Layer 2 Design Recommendations
  - Layer 3 Design Recommendations

- **Remote Access VPN Design**
  - Describing Enterprise Network Virtualization Technologies
  - Infrastructure Services Considerations

- **Site-to-Site VPN Design**
  - Layer 2 Design Recommendations
  - Layer 3 Design Recommendations

- **IP Multicast Design**
  - Designing High Availability in the Enterprise Campus
  - Layer 2 Design Recommendations

- **E-Commerce Module Design**
  - Common Component Designs for the E-Commerce Module

- **SAN Design Considerations**
  - Identifying SAN Components and Technologies
  - SAN and SAN Extension Design

- **Network Management Capabilities with Cisco IOS Software**
  - Security Services Design
  - Firewall Design Considerations

### Further Information:

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