CISCO :

1. CCNA:

A CCNA course is a synonym of the knowledge and skills accrediting the IT personnel. CCNA has a reputation as one of the most valuable entry-level certifications in the computing industry. Cisco's CCNA certification proves that you have a firm foundation in the most important components of the Cisco product line-namely, routers and switches. It also proves that you have a broad knowledge of protocols like RIP, IGRP, EIGRP, OSPF, IP and networking technologies.

COURSE CONTENT OF -CISCO CERTIFIED NETWORK ASSOCIATE CCNA
(CODE 640-802)Chapter 1 Basic Hardware
Chapter 2 Network Essential
Chapter 3 Advance Networking
Chapter 4 Internet working
Chapter 5 Introduction to TCP/IP
Chapter 6 Sub-netting, Variable Length Subnet Mask (VLSM)
Chapter 7 Cisco Internetworking Operating System and Security Device Manager
Chapter 8 Managing a Cisco Internetwork
Chapter 9 IP Routing - Rip, Rip V2, IGRP
Chapter 10 Enhanced IGRP (EIGRP) and Open Shortest Path First (OSPF)
Chapter 11 Layer 2 Switching and Spanning Tree Protocol (STP)
Chapter 12 Virtual LANS (VLANS)
Chapter 13 Security -Access Control List
Chapter 14Network Address Translations (Nat)
Chapter 15 Cisco Wireless Technologies
Chapter 16Internet Protocol Version 6(Ipv6)
Chapter 17Wide Area Networks

2. CCNP:
The CCNP program will prepare you to understand and comprehensively tackle the internetworking issues of today and beyond; not limited to the Cisco world. You will undergo an immense metamorphosis, vastly increasing your knowledge and skills through the process of obtaining these Certifications.
CCNP Certification Skills
Installing, configuring, operating, and troubleshooting complex routed LAN, routed WAN, and switched LAN networks, and Dial Access Services.
Understanding complex networks, such as IP, IGRP, IPX, Async Routing, AppleTalk, extended access lists, IP RIP, route redistribution, IPX RIP, route

summarization, OSPF, VLSM, BGP, Serial, IGRP, Frame Relay, ISDN, ISL, X.25, DDR, PSTN, PPP, VLANs, Ethernet, ATM LAN-emulation, access lists, 802.10, FDDI, and transparent and translational bridging.

CCNP COURSE CONTENT:

CCNA Course Revision

- Routers & Switches
- Addressing
- Routing and its Importance

Introducing EIGRP

- EIGRP Capabilities and Attributes
- Underlying Processes and Technologies
- EIGRP Operation
- EIGRP Tables
- EIGRP Metric
- Calculating the EIGRP Metric
- Integrating the EIGRP and IGRP Routes

Implementing and Verifying EIGRP

- Configuring Basic EIGRP
- Using a Wildcard Mask in EIGRP
- Configuring the ip default-network Command
- ip default-network Command
- Verify EIGRP IP Routes
- EIGRP Configuration, Verify EIGRP IP Operations

Configuring Advanced EIGRP Options

- Route Summarization
- Configuring Manual Route Summarization
- Load Balancing Across Equal Paths
- Configuring Load Balancing Across Unequal-Cost Paths
- Variance
- EIGRP Bandwidth Use Across WAN Links
- Configuring EIGRP Bandwidth Use Across WAN Links
- WAN Configuration—Frame Relay Hub-and-Spoke Topology
- WAN Configuration–Hybrid Multipoint

Configuring EIGRP Authentication

- Router Authentication
- MD5 Authentication
- Configuring MD5 Authentication

- Verifying MD5 Authentication
- Troubleshooting MD5 Authentication

Using EIGRP in an Enterprise Network

- Scalability in Large Networks
- EIGRP Queries
- EIGRP Stubs
- Limiting Updates and Queries: Using EIGRP Stub
- EIGRP stub Parameters
- SIA Connections
- Preventing SIA Connections
- Graceful Shutdown

Introducing the OSPF Protocol

- Link-State Routing Protocols
- OSPF Area Structure
- OSPF Adjacency Databases
- Calculating the OSPF Metric
- Link-State Data Structures

OSPF Packets

- OSPF Neighbor Adjacencies
- Exchanging and Synchronizing LSDBs
- Maintaining Network Routes
- Maintaining Link-State Sequence Numbers
- debug ip ospf packet

Configuring OSPF Routing

- Configuring Basic Single-Area and Multiarea OSPF
- Configuring OSPF on Internal Routers of a Single Area
- Configuring OSPF for Multiple Areas
- Configuring a Router ID
- Verifying the OSPF Router ID
- Verifying OSPF Operation
- The show ip route ospf Command
- The show ip ospf interface Command
- The show ip ospf neighbor Command

OSPF Network Types

- Introducing OSPF Network Types
- Adjacency Behavior for a Point-to-Point Link
- Adjacency Behavior for a Broadcast Network Link

- Selecting the DR and BDR
- Adjacency Behavior for an NBMA Network
- OSPF over Frame Relay Configuration Options
- Sample Configuration of a Router Using OSPF Broadcast Mode
- OSPF over Frame Relay NBMA Configuration
- neighbor Command
- OSPF over Frame Relay Point-to-Multipoint Configuration
- Point-to-Multipoint Configuration
- Using Subinterfaces in OSPF over Frame Relay Configuration
- Point-to-Point Sub interface
- Multipoint Sub interface
- OSPF over NBMA Topology Summary
- Tracking OSPF Adjacencies

Link-State Advertisements

- OSPF Router Types
- OSPF Hierarchical Routing
- OSPF Virtual Links
- OSPF Virtual Link Configuration
- show ip ospf virtual-links Command
- OSPF LSA Types
- Type 1
- Type 2
- Types 3 and 4
- Type 5
- Type 6
- Type 7
- Type 8
- Types 9, 10, and 11
- LSA Type 4—Summary LSA
- Interpreting the OSPF LSDB and Routing Table
- Interpreting the OSPF Database
- Configuring OSPF LSDB Overload Protection
- Changing the Cost Metric

OSPF Route Summarization

- OSPF Route Summarization
- Using Route Summarization
- Configuring OSPF Route Summarization

- Route Summarization Configuration at ABR
- Route Summarization Configuration at ASBR
- Benefits of a Default Route in OSPF
- Default Routes in OSPF
- Configuring a Default Route in OSPF
- Default Route Configuration

Configuring OSPF Special Area Types

- Configuring OSPF Area Types
- Configuring Stub Areas
- Configuring Totally Stubby Areas
- Interpreting Routing Tables
- Routing Table in a Standard Area
- Routing Table in a Stub Area
- Routing Table in a Stub Area with Summarization
- Routing Table in a Totally Stubby Area
- Configuring NSSAs

Configuring OSPF Authentication

- Types of Authentication
- Configuring Simple Password Authentication
- Troubleshooting Simple Password Authentication
- Configuring MD5 Authentication
- Verifying MD5 Authentication
- Troubleshooting MD5 Authentication

Operating a Network Using Multiple IP Routing Protocols

- Using Multiple IP Routing Protocols
- Defining Route Redistribution
- Using Seed Metrics

Configuring and Verifying Route Redistribution

- Configuring Redistribution
- Redistributing Routes into RIP
- Redistributing Routes into OSPF
- Redistributing Routes into EIGRP
- Redistributing Routes into IS-IS
- Verifying Route Redistribution

Controlling Routing Update Traffic

- Configuring a Passive Interface
- Configuring Route Filtering Using Distribute Lists

- Implementing the Distribute List
- Defining Route Maps
- Using route-map Commands
- Implementing Route Maps with Redistribution
- Defining Administrative Distance
- Modifying Administrative Distance

DHCP (Dynamic Host Configuration Protocol)

- Describing the Purpose of DHCP
- Understanding the Function of DHCP
- Configuring DHCP
- Configuring the DHCP Client
- Explaining the IP Helper Address
- Configuring DHCP Relay Services

Explaining BGP Concepts and Terminology

- Using BGP in an Enterprise Network
- BGP Multihoming Options
- BGP Routing Between Autonomous Systems
- BGP Is Used Between Autonomous Systems
- AS Numbers
- Comparison with IGPs
- Path-Vector Functionality
- Features of BGP
- BGP Message Types

Explaining EBGP and IBGP

- BGP Neighbor Relationships
- Establishing EBGP Neighbor Relationships
- Establishing IBGP Neighbor Relationships
- IBGP on All Routers in Transit Path
- IBGP in a Transit AS
- IBGP in a Nontransit AS
- TCP and Full Mesh

Configuring Basic BGP Operations

- Initiate Basic BGP Configuration
- Activate a BGP Session
- The BGP neighbor Command
- Shutting Down a BGP Neighbor
- BGP Configuration Considerations

- Identifying BGP Neighbor States
- Authenticating in BGP
- Troubleshooting BGP

Selecting a BGP Path

- Characteristics of BGP Attributes
- AS Path Attribute
- Next-Hop Attribute
- Origin Attribute
- Local Preference Attribute
- MED Attribute
- Weight Attribute
- Determining the BGP Path Selection
- Selecting a BGP Path
- Path Selection with Multihomed Connection

Using Route Maps to Manipulate Basic BGP Paths

- Setting Local Preference with Route Maps
- Setting the MED with Route Maps
- Implementing BGP in an Enterprise Network

Implementing IPv6

- Introduction to IPv6
- Describing IPv6 Features

Defining IPv6 Addressing

- Describing IPv6 Addressing Architecture
- Defining Address Representation
- IPv6 Address Types
- Multiple ISPs and LANs with Multiple Routers