



## CCNA Boot Camp

Course length: 5 days

### Course Summary:

Cisco Systems is considered one of the leading names in Internetworking Devices. With the vast enterprise coverage of these devices, more engineers are required to gain knowledge on the operations and management of these devices.

The Cisco Certified Network Associate (CCNA) Boot Camp program builds participants knowledge on the foundation skills needed to start off their career skills on the Cisco track.

This 5-day course teaches you from the basic understanding of networks till the basic knowledge of the day-to-day operations of Switches and Routers. On top of gaining the necessary skills and knowledge, participants are also geared towards the CCNA certification.



### Who Should Attend:

Systems Engineers, Sales Engineers of Cisco Devices, or anyone who would require foundation skills to administer a Cisco device.

### Objectives:

At the end of the session, participants should have achieved the following:

- Gained the core knowledge of networking concepts, switching and routing, LAN and WAN protocols
- Acquired practical hands-on exercises to acquire the necessary skills
- Preparation for the 640-801 CCNA examination

### Time:

Class time is 9.00am – 4.30/5.00pm

Breaks are scheduled twice daily, one in the morning and another in the afternoon. Lunch is typically 12-1pm. This time may alter based on the trainers' discretion.

### Course Material:

Course materials are provided. Our goal is to make sure your class meets your objectives, not ours. Therefore, all of our outlines are treated as guides to help steer the workshop. We may change or alter course topics to best suit the classroom situation.

### Lesson Plan:

#### **Lesson 1: Networking Fundamentals**

The Internetworking Model

The OSI Reference Model

Cisco Hierarchical Model

Ethernet Data Transmission & Cabling Types

Data Encapsulation Process

ARP & RARP

Summary

Knowledge Test



## Lesson 2: Switching

How do switches operate?  
 How the MAC Address table is built?  
 Broadcast & Multicast  
 Viewing the MAC Address table  
 Port-Based Authentication  
 Spanning Tree Protocol (STP)  
 Spanning Tree Process  
 STP Timers  
 STP Interface States  
 VLANs & Trunking  
 VLAN Trunking Protocol (VTP)  
 VTP Pruning  
 Port Types and Effects on Trunking  
 Etherchannels  
 Knowledge Test  
 LAN Switching Lab Practice

## Lesson 3: Frame Relay

Frame Relay Concepts  
 Local Management Interface  
 Encapsulation Types  
 DLCI Addressing  
 Knowledge Test  
 Frame Relay Lab Practice

## Lesson 4: Point-to-point & ISDN

Point-to-point Serial Links  
 HDLC vs. PPP  
 Authenticating over WAN Links with PPP  
 Authenticating with PAP  
 Authenticating with CHAP  
 ISDN  
 The ISDN Channels  
 Dial-on-Demand Routing  
 Interesting Traffic  
 Manually setting the Idle Timer  
 Dialing the Remote Router  
 Troubleshooting ISDN  
 Show ISDN Status  
 Show ISDN History  
 Knowledge Test  
 ISDN / Point-to-point Lab Practice

## Lesson 5: Binary Math & Subnetting

Converting Decimal to Binary  
 Converting Binary to Dotted Decimal  
 IP Address & Subnetting  
 Determining Number of Valid Subnets  
 Determining Number of Valid Hosts  
 Determining Subnet Number of a Given IP  
 Determining the Range of Valid Hosts in a Subnet  
 Meeting Stated Design Requirements  
 Knowledge Test



## Lesson 6: Initial Router Configuration

Router Boot Process  
 User Modes  
 Router Modes  
 IOS Help  
 Configuring Router Passwords  
 Encrypting All Router Passwords  
 Cisco Discovery Protocol  
 Physical Interface, Logical Interface, IP Addressing  
 Knowledge Test

## Lesson 7: RIP, IGRP and Static Routing

Static Routes  
 Adding a Static Route  
 Configuring Static Default Route  
 Distance Vector Protocols  
 Split Horizon  
 Route Poisoning  
 Hold-Down Timers  
 Triggered Updates  
 Configuring RIP  
 Troubleshooting RIP  
 RIP version 1 vs. RIP version 2  
 Configuring IGRP  
 How IGRP Computes Metric  
 Tuning IGRP's Default Bandwidth Assumptions  
 IGRP Unequal Cost Load Balancing  
 Debugging IGRP  
 How the Router Chooses Between Multiple Paths  
 Administrative Distance  
 Distance Vector Protocols Comparison Matrix  
 Knowledge Test  
 Static Routing / RIP / IGRP Lab Practice

## Lesson 8: Link State Protocols

The Concept  
 Link State vs. Distance Vector  
 Hello Packets – The Heartbeat of OSPF  
 How the Dijkstra Algorithm Assists with Loop Prevention  
 Configuring OSPF  
 The Designated Router  
 OSPF Network Types  
 OSPF Router Types  
 Virtual Links  
 OSPF Stub Area Types  
 OSPF Authentication  
 Configuring OSPF Router ID  
 Troubleshooting OSPF  
 Knowledge Test  
 OSPF Lab Practice



## Lesson 9: Hybrid Protocols : EIGRP

Why EIGRP is a Hybrid  
 Hello Packets and RTP  
 Loop Avoidance  
 EIGRP's Default Network Summarization  
 How EIGRP handles multiple equal-cost and unequal cost routes to the same destination  
 EIGRP / IGRP Differences  
 Configuring EIGRP  
 EIGRP Authentication  
 Knowledge Test  
 EIGRP Lab Practice

## Lesson 10: Advanced TCP/IP Concepts

Standard, Extended and Named Access Lists  
 Configuring Standard Access Lists  
 Configuring Extended Access Lists  
 Configuring Named Access Lists  
 Route Summarization  
 Route Summarization with RIP  
 Route Summarization with EIGRP  
 IP Address Conservation  
 Network Address Translation (NAT)  
 Static NAT  
 Dynamic NAT  
 Telnet  
 Using and Resolving Host Names  
 Building a IP Host Table  
 Using DNS to Resolve HostNames  
 Password Recovery Techniques for 2500 & 2600  
 Maximum Transmission Units  
 FTP & TFTP  
 Knowledge Test  
 Advanced TCP/IP Lab Practice

### Methodology:

This course is conducted using a combination of instructor-led training, hands-on labs, discussions, quizzes, practice tests and mock evaluations

This is a product of



## THE REDYNAMICS BOOT CAMP SERIES