

PROFESSIONAL TRAINING COURSE

Training
NEXT EXIT →

5 Days Course on
Network Fundamentals
and
Routing Protocol & Concepts
(CCNA 1 & 2)



Two Sigma Technologies
Suite B, 19-2, Jalan PGN 1A/1, Pinggiran Batu Caves,
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About the Course

This course is designed based on CCNA curriculum. Focus of this course is on two parts:

1) Network Fundamentals (CCNA Part 1)

This part introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. It uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Labs use a “model Internet” to allow students to analyze real data without affecting production networks. Packet Tracer (PT) activities help students analyze protocol and network operation and build small networks in a simulated environment. At the end of the course, students build simple LAN topologies by applying basic principles of cabling, performing basic configurations of network devices such as routers and switches, and implementing IP addressing schemes.

2) Routing Protocol and Concepts (CCNA Part 2)

This part describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. By the end of this course, students will be able to recognize and correct common routing issues and problems. Students complete a basic procedural lab, followed by basic configuration, implementation, and troubleshooting labs in each chapter. Packet Tracer activities reinforce new concepts, and allow students to model and analyze routing processes that may be difficult to visualize or understand.

Network Fundamentals	Routing Protocol and Concepts
Living in a Network-Centric World	Introduction to Routing & Packet Forwarding
Communication Over the Network	Static Routing
Application Layer Functionality and Protocols	Introduction to Dynamic Routing Protocols
OSI Transport Layer	Distance Vector Routing Protocols
OSI Network Layer	RIP Version 1
Addressing the Network – Ipv4	VLSM and CIDR
Data Link Layer	RIPv2
OSI Physical Layer	The Routing Table: A Closer Look
Ethernet	EIGRP
Planning and Cabling Networks	Link-State Routing Protocols
Configuring and testing your network	OSPF

Course Settings

Venue/Date	Refer to Training Calendar
Timings	0900-1700
Inclusive	Certificates and notes
Course Fees	Contact us at sales@2-sigma.com
Timings	0900-1700 (5 Days)
Audience	IT Officer, Network Designer, Network Administrators

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Network Fundamentals and Routing Protocol & Concepts - Schedule

Day 1	
09.00am – 10.00am	Network Fundamentals Living in a Network-Centric World <ul style="list-style-type: none"> • Chapter Introduction Communicating in a Network-Centric World • Communication – An Essential Part of Our Lives • The Network as a Platform • The Architecture of the Internet • Trends in Networking • Chapter Labs • Chapter Summary • Chapter Quiz
10.00am – 10.30am	Breakfast
10.30am – 12.45pm	Communicating Over the Network <ul style="list-style-type: none"> • Chapter Introduction • The Platform for Communications • LANs, WANs, and Internetworks • Protocols • Using Layered Models • Network Addressing • Chapter Labs • Chapter Summary • Chapter Quiz Application Layer Functionality and Protocols <ul style="list-style-type: none"> • Chapter Introduction • Applications – The Interface Between the Networks • Making Provisions for Applications and Services • Application Layer Protocols and Services Examples • Chapter Labs • Chapter Summary
12.45pm – 02.15pm	Lunch
02.15pm – 05.00pm	OSI Transport Layer <ul style="list-style-type: none"> • Chapter Introduction • Roles of the Transport Layer • The TCP Protocol – Communicating with Reliability • Managing TCP Sessions • The UDP Protocol – Communicating with Low Overhead • Chapter Labs • Chapter Summary • Chapter Quiz OSI Network Layer <ul style="list-style-type: none"> • Chapter Introduction

	<ul style="list-style-type: none"> • IPv4 • Networks – Dividing Devices into Groups • Routing – How Our Data Packets are Handled • Routing Processes: How Routes are Learned • Chapter Labs • Chapter Summary • Chapter Quiz
Day 2	
09.00am – 10.00am	Addressing the Network – IPv4 <ul style="list-style-type: none"> • Chapter Introduction • IPv4 Addresses • Addresses for Different Purposes • Assigning Addresses • Is It On My Network? • Calculating Addresses • Testing the Network Layer • Chapter Labs • Chapter Summaries • Chapter Quiz
10.00am – 10.30am	Breakfast
10.30am – 12.45pm	Data Link Layer <ul style="list-style-type: none"> • Chapter Introduction • Data Link Layer – Accessing the Media • Media Access Control Techniques • Media Access Control Addressing and Framing Data • Putting It All Together • Chapter Labs • Chapter Summary • Chapter Quiz OSI Physical Layer <ul style="list-style-type: none"> • Chapter Introduction • The Physical Layer – Communication Signals • Physical Signaling and Encoding: Representing • Physical Media – Connecting Communication • Chapter Labs • Chapter Summary • Chapter Quiz
12.45pm – 02.15pm	Lunch
02.15pm – 05.00pm	Planning and Cabling Networks <ul style="list-style-type: none"> • Chapter Introduction • LANs – Making the Physical Connection • Device Interconnections • Developing an Addressing Scheme

	<ul style="list-style-type: none"> • Calculating the Subnets • Device Interconnections • Chapter Labs • Chapter Summary • Chapter Quiz <p>Configuring and Testing Your Network</p> <ul style="list-style-type: none"> • Chapter Introduction • Configuring Cisco Devices – IOS Basics • Applying a Basic Configuration Using Cisco IOS • Verifying Connectivity • Monitoring and Documenting Networks • Chapter Labs • Chapter Summary • Chapter Quiz
Day 3	
09.00am – 10.00am	<p>Routing Protocols and Concepts</p> <p>Introduction to Routing and Packet Forwarding</p> <ul style="list-style-type: none"> • Chapter Introduction • Inside the Router • CLI Configuration and Addressing • Building the Routing Table • Path Determination and Switching Functions • Router Configuration Labs • Chapter Labs • Chapter Summary • Chapter Quiz
10.00am – 10.30am	Breakfast
10.30am – 12.45pm	<p>Static Routing</p> <ul style="list-style-type: none"> • Chapter Introduction • Routers in Networks • Router Configuration Review • Exploring Directly-Connected Networks • Static Routes with “Next Hop” Addresses • Static Routes with Exit Interfaces • Summary and Default Static Routes • Managing and Troubleshooting Static Routes • Static Route Configuration Labs • Chapter Labs • Chapter Summary • Chapter Quiz <p>Introduction to Dynamic Routing Protocols</p> <ul style="list-style-type: none"> • Chapter Introduction • Introduction and Advantages

	<ul style="list-style-type: none"> • Classifying Dynamic Routing Protocols • Metrics • Administrative Distances • Routing Protocol and Subnetting Activities • Chapter Labs • Chapter Summary • Chapter Quiz
12.45pm – 02.15pm	Lunch
02.15pm – 05.00pm	<p>Distance Vector Routing Protocols</p> <ul style="list-style-type: none"> • Chapter Introduction • Introduction to Distance Vector Routing Protocols • Network Discovery • Routing Table Maintenance • Routing Loops • Distance Vector Routing Protocols Today • Chapter Labs • Chapter Summary • Chapter Quiz <p>RIP Version 1</p> <ul style="list-style-type: none"> • Chapter Introduction • RIPv1: Distance Vector, Classful Routing Protocol • Basic RIPv1 Configuration • Verification and Troubleshooting • Automatic Summarization • Default Route and RIPv1 • Chapter Labs • Chapter Summary • Chapter Quiz
Day 4	
09.00am – 10.00am	<p>VLSM and CIDR</p> <ul style="list-style-type: none"> • Chapter Introduction • Classful and Classless Addressing • VLSM • CIDR • VLSM and Route Summarization Activity • Chapter Labs • Chapter Summary • Chapter Quiz
10.00am – 10.30am	Breakfast
10.30am – 12.45pm	<p>RIPv2</p> <ul style="list-style-type: none"> • Chapter Introduction • RIPv1 Limitations • Configuring RIPv2

	<ul style="list-style-type: none"> • VLSM and CIDR • Verifying and Troubleshooting RIPv2 • RIPv2 Configuration Labs • Chapter Labs • Chapter Summary • Chapter Quiz
12.45pm – 02.15pm	Lunch
02.15pm – 05.00pm	The Routing Table: A Closer Look <ul style="list-style-type: none"> • Chapter Introduction • The Routing Table Structure • Routing Table Lookup Process • Routing Behavior • Routing Table Labs • Chapter Labs • Chapter Summary • Chapter Quiz
Day 5	
09.00am – 10.00am	EIGRP <ul style="list-style-type: none"> • Chapter Introduction • Introduction to EIGRP
10.00am – 10.30am	Breakfast
10.30am – 12.45pm	<ul style="list-style-type: none"> • Basic EIGRP Configuration • EIGRP Metric Calculation • DUAL • More EIGRP Configuration • EIGRP Configuration Labs • Chapter Labs • Chapter Summary • Chapter Quiz
12.45pm – 02.15pm	Lunch
02.15pm – 05.00pm	Link-State Routing Protocols <ul style="list-style-type: none"> • Chapter Introduction • Link-State Routing Protocols • Implementing Link-State Routing Protocols • Chapter Labs • Chapter Summary • Chapter Quiz OSPF <ul style="list-style-type: none"> • Chapter Introduction • Introduction to OSPF • Basic OSPF Configuration • The OSPF Metric • OSPF and Multi-Access Networks • More OSPF Configuration



- OSPF Configuration Labs
- Chapter Labs
- Chapter Summary
- Chapter Quiz

More Information

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To register, please email to sales@2-sigma.com or fax the registration form to 03-61880602, we will contact you for further action.

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