fast lane

2009 COURSE CATALOG

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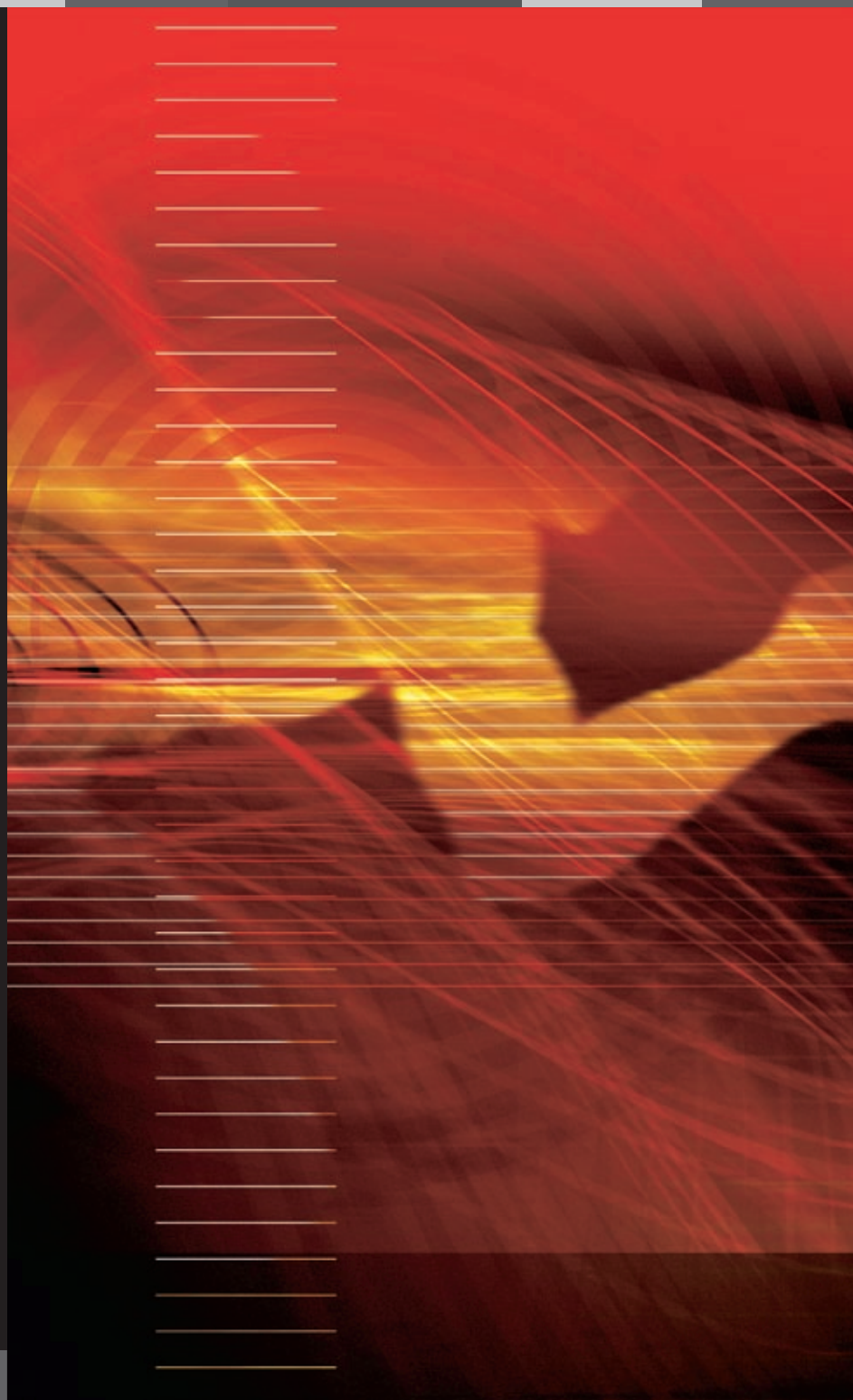

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About Fast Lane

Experience

Fast Lane, a leading provider of advanced IT Training courses, offers complete Authorized training solutions for Cisco, NetApp, IBM, VMware and Ubuntu. We have also developed other advanced technology courses to ensure you receive the right training for your career. Fast Lane's traditional and Instructor-Led Online (ILO) courses utilize Authorized Vendor and custom developed curriculum. Our strictly managed program guarantees that training with Fast Lane provides the highest level of educational quality.

Learning with Fast Lane means real-world experience that translates from the classroom to the job with ease. Our Vendor-Certified instructors have expertise with the most advanced technologies and can explain each at a level that ensures each student gains the knowledge and skills to immediately impact their productivity. Plus, Fast Lane offers a variety of Foundation Courses led by our Vendor Certified Instructors which will prepare you for use of the hottest technologies.

At Fast Lane, you can be assured of one thing…quality training that prepares you for real-world application. We're here to help you build the foundation for an exciting IT career. Get started on yours...

Why Choose Fast Lane?

- Operates in all Eight Cisco Theaters Worldwide
- Is Cisco's Largest Courseware Developer
- Develops courses that complement Cisco's Course Portfolio
- Delivers all of Cisco's Advanced Services, Optical and Emerging Technology courses on a global basis
- Maintains the world's largest Cisco dedicated remote classroom labs
- Is Cisco's only worldwide CCIE 360 Learning Partner
- As NetApp's only worldwide Authorized Learning Partner, Fast Lane Is also NetApp's largest courseware developer

Student education is of the highest priority at Fast Lane. We go above and beyond to ensure a fulfilling learning experience by

- Aligning ourselves as a training provider of other leading technologies including VMware, Ubuntu and IBM
- Offering business skills training for the technology industry
- Using only Vendor-Certified Instructors who are cross-trained in multiple platforms and technologies
- Strictly managing the quality of our students training experience
- Providing assessment tools to help measure student educational progress
- Creating a platform via the Fast Lane Community Site where students, partners and other professionals can network and access invaluable learning resources

Registration

To register for any course offered by Fast Lane, visit www.fastlaneus.com and follow prompts to enroll. We accept multiple forms of payment including credit cards (Visa, MC and Amex), purchase orders, corporate checks, Cisco Learning Credits (CLC's), and NetApp Training Units (TU's). Please visit our website for complete terms and conditions.

fast lane

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2009 Course Catalog Contents

Cisco Certifications

Cisco Career Certifications are universally recognized as the industry standard for network design and support, demonstrating a high level of expertise and credibility. Organizations with Cisco certified professionals are well positioned to maximize their network investment, stay ahead of the technology curve and anticipate market factors, rather than just respond to them.

Widely respected throughout the world, Cisco Certifications substantiate the knowledge and skills of certified individuals. They rank among the most sought-after qualifications for internetworking professionals.

General Certifications

Cisco offers three levels of general certification representing increasing levels of expertise: Associate, Professional and Expert (CCIE). Different tracks across these levels align with varying career needs. A variety of focused Cisco Qualified Specialist certifications are available as well to demonstrate knowledge in specific technologies, solutions or job roles.

General Certifications: Three Levels of Certification

- **Associate:** The first step in Cisco networking begins at the Associate level. Think of this as the apprentice or foundation level of networking certification.
- **Professional:** This is the advanced or journeyman level of certification.
- **Expert:** This is CCIE, the highest level of achievement for networking professionals, certifying an individual as an expert or master.

General Certifications: Six Different Paths

- **Routing and Switching:** This path is for professionals who install and support Cisco technology-based networks in which LAN and WAN routers and switches reside.
- **Design:** This path is aimed at professionals who design Cisco technology-based networks in which LAN and WAN routers and switches reside.
- **Network Security:** This path is directed toward network professionals who design and implement Cisco Secure networks.
- **Service Provider:** This path is aimed at professionals working with infrastructure or access solutions in a Cisco end-to-end environment primarily within the telecommunications arena.
- **Storage Networking:** This path is for professionals who implement storage solutions over extended network infrastructure using multiple transport options.
- **Voice:** This path is directed toward network professionals who install and maintain Voice solutions over IP networks.

Focused Certifications: Cisco Qualified Specialist

Next to the general Cisco qualification programs, Cisco Qualified Specialist certifications are available to demonstrate competence in specific technology areas, solutions, and/or job roles. Cisco specialist certifications are updated and extended on a regular basis.

Cisco Certified Network Associate

Cisco have announced an extensive revamp of its CCNA certification.

The revised CCNA curriculum will consist of two equally-weighted 5-day courses - ICND Part 1 (replacing the INTRO course) and ICND Part 2 (replacing the ICND course).

Both courses are based on a common topology featuring updated Cisco equipment and IOS, including ISR routers. Coverage of troubleshooting has been extended beyond installation to day-two operations, coverage of security has been enhanced, and an introduction to wireless concepts and terminology has also been included. Both courses offer more compelling lab exercises and include more time for hands-on practice and labs—roughly 30% to 50%.

Channel Partner Program: Cisco Master Certification

Master Unified Communications Specialization: This certification is targeted at an elite group of partners who have the most in-depth technology skills and demonstrated customer success in selling, deploying and providing services for more sophisticated, value-added Cisco Unified Communication solutions.

Master Security Specialization: This certification offers partners the greatest differentiation and branding opportunities along with the highest Value Incentive Program (VIP) rebate as a reward providing value-added services and for commitment to their customers' success.

Further information

For further information please contact us at (919) 674-3100 or info@flane.us.

CCNA Boot Camp (CCNABOOT)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

The CCNA Boot Camp combines the ICND1 and ICND2 classes, presenting important networking fundamentals using the Open Systems Interconnect (OSI) seven layer model concepts. Terminology and technologies are explained and illustrated using text and graphics animation. The class also focuses on using Cisco Catalyst switches and Cisco routers connected in local area networks (LANs) and wide-area networks (WANs) typically found at small to medium network sites. Upon completion of this course, you will be able to select, connect, configure, and troubleshoot various Cisco networking devices.

Prerequisites

Familiarity with networking topics such as TCP/IP, IP configuration, subnetting, and other network protocols, standards, and architectures.

Certification

The CCNA Boot Camp will prepare students to achieve the Cisco Certified Network Associate (CCNA) certification.

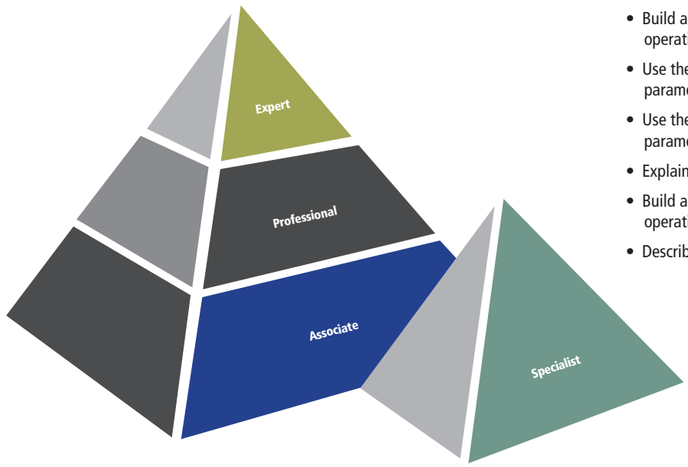
Cisco have announced an extensive revamp of its CCNA certification.

The revised CCNA curriculum will consist of two equally-weighted 5-day courses - ICND Part 1 (replacing the INTRO course) and ICND Part 2 (replacing the ICND course).

Both courses are based on a common topology featuring updated Cisco equipment and IOS, including ISR routers. Coverage of troubleshooting has been extended beyond installation to day-two operations, coverage of security has been enhanced, and an introduction to wireless concepts and terminology has also been included. Both courses offer more compelling lab exercises and include more time for hands-on practice and labs—roughly 30% to 50%.

Who Should Attend

Cisco Certified Networking Associate (CCNA) certification candidates, as well as network engineers and administrators who are new to Cisco products and services.



Course Objectives

- Describe computer hardware basics, binary and hexadecimal number systems, basic networking terminology, and internetworking concepts
- Identify the major components of a network system, including clients and servers, Network Interface Cards (NICs), internetworking devices, media, and topologies
- Describe the functions, operations, and primary components of:
  - Local Area Networks (LANs)
  - Wide Area Networks (WANs)
  - Metropolitan Area Networks (MANs)
  - Storage Area Networks (SANs)
  - Content Networks (CNs)
  - Virtual Private Networks (VPNs)
- Describe the major network access methods and outline the key features of each
- Describe the functions and operations of switching technologies
- Explain the format and significance of each of the following components to a network system:
  - IP addressing
  - Classes
  - Reserved address space
  - Subnetting
- Calculate valid subnetwork addresses and mask values so that user/network requirements are met when given an IP address scheme
- Explain the purposes of networking addresses, routing protocols, and routed protocols
- Describe the functions, operations, and primary components of WAN technologies
- Describe the function, operation, and primary components required to provide remote access services
- Use available configuration tools to establish connectivity to the appropriate network device in order to complete the initial device configuration
- Build a functional configuration to support the specified network operational requirements
- Use the appropriate show commands to display network operational parameters to detect anomalies
- Use the appropriate debug commands to monitor network operational parameters to detect anomalies
- Explain the purpose and operations of the Spanning Tree Protocol (STP)
- Build a functional router configuration to support the specified network operational requirements
- Describe the features and operation of static routing

Interconnecting Cisco Networking Devices Part 1 (ICND1)

Price: $2995 USD or 30 CLCs **Duration:** 5 Days

ICND Part 1 is the first part in the two-part updated Cisco ICND Curriculum. This course will help students gain an understanding of the operation of TCP/IP networks built with Cisco hardware. They will also learn the commands and techniques used to troubleshoot host connections, interact with Cisco switches and routers, backup and restore configuration files, and manage network equipment.

Prerequisites

To fully benefit from the ICND 1 course students should have basic computer literacy, Windows navigation skills, Internet usage skills, and e-mail usage skills.

Certification

ICND1 is part of the CCNA certification path.

Who Should Attend

Network technicians who configure and support internetworks and/or management and salespeople who need a working knowledge of modern networking.

Course Objectives

- Describe how networks function, identifying major components, functions of network components and the Open System Interconnection (OSI) reference model
- Using the host-to host packet delivery process, describe issues related to increasing traffic on an Ethernet LAN and identify switched LAN technology solutions to Ethernet networking issues
- Describe the reasons for extending the reach of a LAN and the methods that can be used with a focus on RF wireless access
- Describe the reasons for connecting networks with routers and how routed networks transmit data through networks using TCP/IP
- Describe the function of Wide Area Networks (WANs), the major devices of WANs, and configure PPP encapsulation, static and dynamic routing, PAT and RIP routing
- Use the command-line interface to discover neighbors on the network and managing the router's startup and configuration

Interconnecting Cisco Networking Devices Part 2 (ICND2)

Price: $2995 USD or 30 CLCs **Duration:** 5 Days

This hands-on Cisco course builds from the ICND1 course and provides students with a technical foundation for the rest of the Authorized Cisco curriculum. This course will provide you with information needed to pass the CCNA certification exams.

Prerequisites

Interconnecting Cisco Network Devices Part 1 (ICND1) is required before taking ICND2.

Who Should Attend

This course is designed for those who have a firm background in data networking, have some hands-on experience with Cisco routers and switches, and are looking to increase their knowledge of installation, maintaining, and troubleshooting medium-sized switched and routed networks.

Course Objectives

- Review how to configure and troubleshoot a small network
- Expand the switched network from a small LAN to a medium-sized LAN with multiple switches, supporting VLANs, trunking, and spanning tree
- Describe routing concepts as they apply to a medium-sized network and discuss considerations when implementing routing on the network
- Configure, verify, and troubleshoot OSPF
- Configure, verify, and troubleshoot EIGRP
- Determine how to apply ACLs based on network requirements, and to configure, verify, and troubleshoot ACLs on a medium-sized network
- Describe when to use NAT or PAT on a medium sized network, and configure NAT or PAT on routers
- Identify and implement the appropriate WAN technology based on network requirements
- Certification
- ICND2 is part of the CCNA certification path.

Implementing Cisco IOS Network Security (IINS)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

This five-day course focuses on the necessity of a comprehensive security policy and how it affects the posture of the network. Learners will be able to perform basic tasks to secure a small branch type office network using Cisco IOS security features available through web-based GUIs (Cisco Router and Security Device Manager [SDM]) and the command-line interface (CLI) on the Cisco routers and switches.

Certification

IINS is part of the CCNA Security certification path.

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Prerequisites

Students must have attended the ICND1 and ICND2, or have a valid CCNA.

Course Objectives

- Develop a comprehensive network security policy to counter threats against information security.
- Configure routers on the network perimeter with Cisco IOS Software security features.
- Configure a Cisco IOS zone-based firewall to perform basic security operations on a network.
- Configure site-to-site VPNs using Cisco IOS features.
- Configure IPS on Cisco network routers.
- Configure LAN devices to control access, resist attacks, shield other network devices and systems, and protect the integrity and confidentiality of network traffic.

Implementing Unified Communications Security (IUCS)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

Students will be prepared to install, configure, and maintain security on a Cisco Unified Communications solution.

Prerequisites

The following course are recommended before taking the IUCS course:

- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Interconnecting Cisco Network Devices Part 2 (ICND2)
- Cisco Voice over IP (CVOICE)
- Cisco IP Telephony Part 1 (CIPT1)
- Cisco IP Telephony Part 1 (CIPT2)
- IP Telephony Express (IPTX)

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- Identify different types of threats and attacks of Unified Communication infrastructure
- Identify different types of Layer 2 threats and attacks as well as configure a Cisco Catalyst Switch to prevent these attacks
- Identify different types of Layer 3 threats and attacks as well as configure a Cisco ASA Firewall to prevent these attacks
- Deploy and enable Secure mode for Cisco Unified CallManager
- Implement Cisco IP phone security
- Implement Cisco IOS voice gateway security
- Implement security for intercluster communication
- Implement Cisco Unified SRST for remote site failover
- Implement V3PN (Voice and Video Virtual Private Network)
- Secure H.323 and SIP internetworking using IP-IP Gateway
- Implement security for Unified Communication Application such as Cisco Unified MeetingPlace, Cisco Unified MeetingPlace Express, Cisco Unity Express and Cisco Unity

Implementing Cisco Unified Wireless Networking Essentials (IUWNE)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

Students will be prepared to install, configure, and maintain security on a Cisco Unified Communications solution.

Prerequisites

To fully benefit from CCNA Wireless, you should already possess a valid CCNA certification or equivalent work experience that provides routing and switching fundamentals. The participant should have working skills and knowledge of the following:

- Basic browser navigation
- Basic understanding of LAN, WAN and Internet operation
- IP addressing including subnetting
- Routing and switching principles
- Access Control List (ACL) functionality

Who Should Attend

Individuals who possess a general networking background, have prior experience with the Cisco Internetworking Operating System (IOS), and have achieved CCNA® certification are the target audience for this class. Targeted learners perform jobs in engineering support, development test engineering and other technical areas that may have a need to configure, monitor and troubleshoot connectivity within Cisco wireless networks.

Certification

IUWNE is part of the CCNA Wireless Security certification path.

Course Objectives

Upon completion of this course, participants will gain foundational knowledge required to prepare for the CCNA Wireless Certification [Associate level] exam (640-721). Learners will be able to:

- Create an ad-hoc connection and analyze the communication
- Configure a controller and access point (AP)
- Convert an autonomous AP to controller-based mode
- Install and configure a mobility express wireless controller and AP
- Configure EAP-FAST authentication with WPA
- Configure the controller and the AP from the WCS interface
- Work with the map editor tool
- Back up the controller configuration and WCS database

Building Scalable Cisco Internetworks (BSCI)

Price: $2995 USD or 30 CLCs **Duration:** 5 Days

This comprehensive Cisco Authorized course will teach students the complex concepts and commands necessary to configure Cisco routers for scalable operation in large and/or growing internetworks. This course will also help students prepare for the CCNP and CCIP certifications.

Prerequisites

Interconnecting Cisco Network Devices Parts 1 & 2 are required before taking the BSCI course.

Certification

BSCI is recommended for the Cisco Certified Network Professional (CCNP), Cisco Certified Design Professional (CCDP), and Cisco Certified Internetwork Professional (CCIP) certifications.

Who Should Attend

Individuals seeking certification as a Cisco Certified Network Professional (CCNP) and network administrators.

Course Objectives

- Utilize advanced IP addressing including variable length subnet masks, route summarization, Classless Interdomain Routing (CIDR), IP Version 6 (IPv6), and Network Address Translation (NAT) with route maps
- Identify advanced IP routing principles, including static and dynamic routing characteristics and the concepts of classless routing and network boundary summarization
- Configure Enhanced Interior Gateway Routing Protocol (EIGRP) for a scalable network
- Configure Open Shortest Path First (OSPF) for a scalable multiarea network
- Configure Intermediate System-to-Intermediate System (IS-IS) for a scalable multiarea network
- Manipulate routing updates and packet flow using redistribution, distribution lists, administrative distance, route maps, and policy-based routing
- Configure basic Border Gateway Protocol (BGP) for internal and external Border Gateway Protocol connections

Building Cisco Multilayer Switched Networks (BCMSN)

Price: $2995 USD or 30 CLCs **Duration:** 5 Days

The BCMSN course will teach students how to implement campus networks using multilayer switching technologies over high-speed Ethernet and wireless topologies. The course will address the integration of routing and switching technologies to create an efficient campus network. Students will design, build, and configure a campus network with device and link redundancy for high reliability, while maintaining the performance to meet today's demanding application requirements, such as voice, video, and secure wireless technologies.

Prerequisites

The Cisco Certified Networking Associate (CCNA) certification is required before taking BCMSN.

Certification

BCMSN is recommended training for the Cisco Certified Network Professional (CCNP) certification and for the Cisco Certified Design Professional (CCDP) certification.

Who Should Attend

Network administrators and technicians who are responsible for implementing or troubleshooting a multilayer switched network in an enterprise environment, as well as Cisco Certified Network Professional (CCNP) and Cisco Certified Design Professional (CCDP) candidates.

Course Objectives

- Deploy the required Cisco products and services that enable connectivity and traffic transport, given a network design that includes multilayer switching over various Ethernet technologies
- Implement the necessary services at each layer of the network to all users to obtain services in a working multilayer switched network
- Control network traffic by implementing network policies
- Restore proper network operations through the use of Cisco devices and external management tools
- Explain how service providers implement transparent LAN services & Ethernet over Multiprotocol Label Switching (MPLS) technology to deliver connectivity

Implementing Secure Converged Wide Area Networks (ISCW)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

Learn to secure the network environment using existing Cisco IOS security features and configure the three primary components of the Cisco IOS Firewall Feature set (Firewall, Intrusion, Prevention System, and AAA) in this course. Students will get the knowledge and skills needed to secure Cisco IOS router networks.

Prerequisites

The Cisco Certified Network Associate (CCNA) certification is required before taking the ISCW course.

Certification

ISCW is recommended training for the Cisco Certified Network Professional (CCNP) certification and the Cisco Certified Design Professional (CCDP) certification.

Who Should Attend

IT professionals, network administrators, and technicians who need to design, configure, or support a Cisco WAN that utilizes Cisco's remote access technologies. This course is highly recommended for people pursuing CCNP, CCDP, and CCIE certifications.

Course Objectives

- Explain the Cisco hierarchal network model as it pertains to the WAN
- Describe and implement configuration and access for telecommuters
- Implement and verify frame mode MPLS
- Describe and configure a site-to-site IPSec VPN
- Describe and configure Cisco EZVPN
- Explain the strategies used to mitigate network attacks
- Describe and configure Cisco device hardening
- Describe and configure IOS firewall features

Optimizing Converged Cisco Networks (ONT)

Price: $2995 USD or 30 CLCs **Duration:** 5 Days

Students will learn the characteristics of real-time multi-media traffic, such as voice, and you'll investigate the importance of Quality of Service management on the network and learn about the application of wireless technologies to the enterprise. The management of Wireless LAN Controllers across the enterprise using Cisco's Wireless Control System is also explored.

Prerequisites

The Cisco Certified Network Associate (CCNA) certification and the Building Cisco Multilayer Switched Networks (BCMSN) course are both required before taking the ONT course.

Certification

ONT is recommended training for the Cisco Certified Network Professional (CCNP) certification and the Cisco Certified Design Professional (CCDP) certification.

Who Should Attend

IT professionals, network administrators, and technicians who design, configure, or support a network that uses Cisco Voice or Wireless technologies; those pursuing CCNP, CCDP & CCIE certifications.

Course Objectives

- Explain the Cisco hierarchal network model as it pertains to an end-to-end enterprise network
- Describe specific requirements for implementing a VoIP network
- Describe the need to implement QoS and the methods for implementing QoS on a converged network using Cisco's routers and Catalyst Switches
- Explain the key IP QoS mechanisms used to implement the DiffServ QoS model
- Configure Auto QoS for Enterprise
- Describe and configure wireless security and basic wireless management

Cisco Voice over IP (CVOICE)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

Cisco Voice over IP (CVOICE) v6.0 provides an understanding of converged voice and data networks and also the challenges faced by the various network technologies. The course also provides network administrators and network engineers with the knowledge and skills required to integrate gateways and gatekeepers into an enterprise VoIP network. This course is one of several courses in the Cisco CCVP track that addresses design, planning, and deployment practices and provides comprehensive hands-on experience in configuration and deployment of VoIP networks.

Prerequisites

Interconnecting Cisco Network Devices Part 1 (ICND1) and Interconnecting Cisco Network Devices Part 2 (ICND2) are required prerequisites before taking CVOICE.

Certification

CVOICE is recommended training for the Cisco Certified Voice Professional (CCVP) certification, the Cisco IP Telephony Support Specialist certification, and the Cisco IP Telephony Express Specialist certification.

Who Should Attend

Technical professionals responsible for VoIP, including voice/data integration.

Course Objectives

- Describe VoIP, components of a VoIP network, VoIP protocols, special requirements for VoIP calls, and Codecs
- Configure gateway interconnections to support VoIP and PSTN calls
- Describe the basic signaling protocols used on voice gateways and configure a gateway to support calls using the various signaling protocols
- Define a dial plan, describing the purpose of each dial plan component, and implement a dial plan on a voice gateway
- Describe gatekeeper functions, protocols, and operation and implement an H.323 gatekeeper to provide dial plan resolution and call admission control
- Implement a Cisco Unified Border Element gateway to connect to an Internet Telephony Service Provider

Implementing Cisco Quality of Service (QOS)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

This Authorized Cisco course gives students the knowledge and skills required to design, implement, and troubleshoot Quality of Service (QoS) on a network. The course addresses the essential QoS technologies and applications for both Service Provider and Enterprise networks.

Prerequisites

To attend the QOS course you should have completed the ICND course or passed the CCNA Test(s). Additionally, the BGP Course is recommended, as some BGP background is assumed.

- OR -

Cisco Cerified Networking Associate (CCNA) AND Configuring BGP on Cisco Routers (BGP)

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Professional (CCIP)
- Cisco Certified Internetwork Expert (CCIE Routing & Switching)
- Cisco IP Telephony Design Specialist
- Cisco Certified Internetwork Expert (CCIE Voice)
- Cisco Certified Voice Professional (CCVP)
- Cisco Certified Design Expert (CCDE)

Who should attend

Network professionals interested in deploying state-of-the-art QoS techniques to support multimedia traffic would benefit form this course.

Course Objectives

After completing this course, you will be able to:

- Given a converged network, explain the need to implement Quality of Service (QoS) and explain methods for implementing and managing QoS
- Identify and describe different models used for ensuring QoS in a network and explain key IP QoS mechanisms used to implement the models
- Explain the use of MQC and AutoQoS to implement QoS on the network
- Successfully classify and mark network traffic to implement a policy defining QoS requirements,
- Use QoS queuing mechanisms to manage network congestion
- Use QoS congestion avoidance mechanisms to reduce the effects of congestion in a network
- Use Cisco QoS traffic policing and traffic shaping mechanisms to effectively limit the rate of network traffic.

Cisco IP Telephony Part 1 (CIPT1)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

The first part of the two-part IP Telephony courses prepares students for installing, configuring and maintaining a Cisco IP telephony solution. The course focuses primarily on Cisco Unified CallManager, the call routing and signaling component for the Cisco IP telephony solution.

Prerequisites

Interconnecting Cisco Network Devices Part 1 (ICND1) and Interconnecting Cisco Network Devices Part 2 (ICND2) are required prerequisites to CIPT1.

Certification

CIPT1 is recommended training for the Cisco Certified Voice Professional (CCVP), the Cisco Certified Internetwork Expert Voice (CCIE), and the Cisco IP Telephony Support Specialist certifications.

Who Should Attend

Networking Professionals within a multichannel call center environment who will have day-to-day interaction with the ICM products from Cisco.

Course Objectives

- Describe Cisco Unified Communications Manager including its functions, architecture, deployment, and redundancy options, and how to install or upgrade
- Perform Cisco Unified Communications Manager platform and general administration, initial configuration, and user management
- Configure Cisco Unified Communications Manager to support on-cluster calling in a single site deployment
- Implement a dial plan in Cisco Unified Communications Manager to make internal calls and place calls using the PSTN
- Configure Cisco Unified Communications Manager media resources, features and voice mail integration

Cisco IP Telephony Part 2 (CIPT2)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

This course focuses on Cisco Unified CallManager Release 6.0, the call routing and signaling component for the Cisco Unified Communications solution. Students will be prepared for installing and configuring a Cisco Unified Communications Manager solution in a multisite environment.

Prerequisites

Cisco IP Telephony Part 1 (CIPT1) is required before taking CIPT2.

Certification

CIPT2 is recommended training for the Cisco Certified Voice Professional (CCVP), the Cisco Certified Internetwork Expert Voice (CCIE), and the Cisco IP Telephony Support Specialist certifications.

Who Should Attend

Networking Professionals within a multichannel call center environment who will have day-to-day interaction with the ICM products from Cisco.

Course Objectives

- Describe multisite deployment issues and solutions, and describe and configure required dial plan elements
- Implement call processing resiliency in remote sites using SRST, MGCP fallback, and Cisco Unified Communications Manager Express in SRST mode
- Implement call admission control to prevent oversubscription of the IP WAN
- Implement features and applications that are pertinent for multisite deployments
- Secure a Cisco Unified Communications IP Telephony deployment

Implementing Cisco Unified MeetingPlace Solutions (IMPS)

Price: $3495 USD or 35 CLCs **Duration:** 5 Days

The course is a five-day instructor-led technical course providing in-depth coverage of how to install and configure the functional components of the Cisco MeetingPlace product in several deployment models in an enterprise customer network. Learners become familiar with the inter-communication of key system components, system installation and configuration, troubleshooting, monitoring and debugging. Knowledge is reinforced by hand-on labs.

Prerequisites

Attendees should have the following skills:

- Working knowledge of converged voice and data networks.
- Working knowledge of SIP, MGCP, and H.323 protocols and their implementation on Cisco IOS gateways.
- Working knowledge of video basics (suggested training -- Implementing Cisco IP Video Conference Rich Media Communications (ICRMC).
- Ability to configure and operate Cisco Unified Communication Manager (suggested training -- Implementing Cisco Unified Communication Manager Part 1 (CIPT1).

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- To provide learners with skills and resources required to successfully install, troubleshoot, monitor, and maintain a comprehensive Cisco MeetinPlace solution in a customer enterprise environment and to transfer appropriate learning to end users of the conferencing solution.
- Identify system components and client information required to successfully implement a comprehensive MeetingPlace solution.
- Verify successful operation of a MeetingPlace Media Server after performing an installation or upgrade.
- Successfully implement a MeetingPlace Control Server including required interactions with customer SIP, email and directory services.
- Successfully implement and maintain a MeetingPlace Web Conferencing solution for internal and external access.
- Identify user interfaces and procedures required to perform MeetingPlace administration and maintenance tasks and to configure specific integrations.

Designing Cisco Unified MeetingPlace Solutions (DMPS)

Price: $2095 USD or 21 CLCs **Duration:** 3 Days

DMPS is a three-day instructor-led technical course that reviews and enforces the system architecture of MeetingPlace and how those components integrate into an enterprise network. Use of the MeetingPlace Configuration Tool and other tools in case studies and design scenarios will be emphasized to create solutions that meet common customer MeetingPlace deployment requirements.

Prerequisites

Attendees should have completed the self-paced Cisco MeetingPlace Product Overview course and have hands-on experience with MeetingPlace from having attended the following on-line courses:

- "CMBU" - Cisco MeetingPlace Basic User (90-minute Web-based)
- "CMAD" - Cisco MeetingPlace System Administrator (90-minute, web-based)

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

To provide learners with skills to successfully design Cisco's rich-media conferencing solution appropriate for integration into a customer enterprise network:

- Identify MeetingPlace features, capacities and requirements to consider when planning a comprehensive.
- Identify customer application, network, user and conferencing requirement factors to consider when planning a MeetingPlace rollout.
- Design a highly available, comprehensive MeetingPlace deployment plan, given specific customer environments and requirements

Troubleshooting Cisco Unified Communication Systems (TUC)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

This course equips network professionals with the knowledge and skills required to troubleshoot Unified Communications systems/solutions in enterprise, mid-market, and commercial deployments. Students will learn troubleshooting methodology, triage, resources, tools, and fixes at the integrated system/solution level as well as for components, such as Cisco Unified CallManager, Cisco Unity, video conferencing, and network infrastructure.

Prerequisites

It is recommended that students take the following courses before attending TUC:

- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Interconnecting Cisco Network Devices Part 2 (ICND2)
- Implementing Cisco Voice Gateways and Gatekeepers (GWGK)
- Implementing Cisco Quality of Service (QOS)
- Cisco IP Telephony Part 1 (CIPT1)
- Cisco IP Telephony Part 2 (CIPT2)

Certification

TUC is recommended training for the Cisco Certified Voice Professional (CCVP) certification.

Who Should Attend

System engineers, field engineers, and anyone attempting the CCVP certification that includes IP Telephony Troubleshooting would benefit.

Course Objectives

The professional will troubleshoot Unified Communications Systems / Solutions and components / products by identifying and isolating problems, recommending solutions, and implementing fixes.

Implementing Cisco Voice Gateways and Gatekeepers (GWGK)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

GWGK covers the in-depth and important topics needed to implement Cisco Voice Gateways and Gatekeepers in Enterprise or Service Provider environments with CallManager and Cisco Unity.

Prerequisites

It is recommended that students take the following courses before attending GWGK:

- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Interconnecting Cisco Network Devices Part 2 (ICND2)
- Cisco Voice over IP (CVOICE)
- Implementing Cisco Quality of Service (QOS)
- Cisco IP Telephony Part 1 (CIPT1)
- Cisco IP Telephony Part 2 (CIPT2)

Certification

GWGK is recommended training for the Cisco Certified Voice Professional (CCVP) certification.

Who Should Attend

Network Engineers responsible for implementing Cisco Voice Gateways and Gatekeepers in Enterprise or Service Provider Environments.

Course Objectives

- Install and configure Cisco Voice Gateways and Gatekeepers
- Understand the recommendations of Cisco's Solution Reference Network Design
- Select an appropriate deployment model
- Implement Call Plans
- Implement Service Provider or managed Service Applications
- Monitor and troubleshoot Cisco Voice Gateways and Gatekeepers

Administering Unified Communications Manager and Unity (AUCMU)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

AUCMU is a 5-day instructor led class designed to provide a level of knowledge that will allow a candidate to perform daily administration of a Cisco Unified Communication installation consisting of Cisco Unified Communication Manager 6.x and Cisco Unity 5.x. The Candidate will develop the necessary skills to move, add, or change devices such as IP phones and analog phones manually, through BAT, and auto-registration, along with associate configuration parameters, such as class of service (COS), media resources, phone button templates, softkey templates, device pools, location and regions, speed dials, busy lamp field, intercom, etc. Candidates will also learn basic troubleshooting techniques.

Prerequisites

You will gain the most from this course if you have a basic understanding of the following topics:

- Windows 2000 Operating System
- TCP/IP

Who Should Attend

Anyone who is new to Cisco's IP Telephony, PBX, New Administrators

Course Objectives

After completing the course students will be able to:

- Perform Cisco Unified Communications Manager Initial Configuration
- Add Cisco Telephony Endpoints
- Perform Moves, Adds, and Changes
- Configure and verify "real world" Dial Plans (PSTN and inter-site call routing)
- Configure IP Phone Services and Directory Services
- Configure Phones Features
- Demonstrate typical business features
- Apply configured Media Resources
- Apply CM Class of Service
- Integrate Unity with Communications Manager 6.x (SIP/SCCP)
- Configure Unity Class of Service
- Configure Unity Subscriber Templates
- Add Unity Subscribers
- Configure and Verify Unity Features
- Configure Message Notification and Outcall Notification
- Configure and Verify Unity Call Handlers

Implementing Cisco Unified Communications Manager V 7.0 Features (UCM70)

Price: $2795 USD or 28 CLCs **Duration:** 3 Days

The course Upgrading to Cisco Unified Communications Manager 7.0 (UCM70) provides the knowledge and experience necessary to migrate from a Cisco Unified CallManager 4.x or Cisco Unified Communications Manager 5.x and 6.x to a Cisco Unified Communications Manager 7.0. The course shows the differences between the various versions of Cisco Unified Communications Manager compared with new Cisco Unified Communications Manager 7.0. New Cisco Unified Communications Manager features, like Global Transformations, E.164 Support, Local Route Groups and enhancements like in Cisco Unified Mobility are explained.

Prerequisites

Cisco IP Telephony (CIPT) course 4.x, 5.x, 6.x. or equivalent working knowledge

Who Should Attend

The course is addressing consultant and system engineers with hands-on experience. The course is recommended for Cisco Unified Communications consulting and system engineers who are responsible for Cisco Unified Communications environments and to upgrade these to version 7.0.

Course Objectives

After finishing this course, students will be able to:

- Understand the migration strategy and plan a migration to Cisco Unified Communications Manager 7.0
- Migrate from Cisco Unified CallManager 4.x to Cisco Unified Communications Manager 7.0
- Migrate from Cisco Unified Communications Manager 5.x or 6.x to Cisco Unified Communications Manager 7.0
- Explain and configure new features introduced with Cisco Unified Communications Manager 7.0

Implementing Cisco IOS Unified Communications (IIUC)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

Candidates achieving the CCNA Voice certification should be capable of performing the following tasks:

- Describe the components of the Cisco Unified Communications Architecture
- Describe PSTN components and technologies
- Describe how to interconnect VoIP with service provider networks
- Implement a UC 500 system using Cisco Configuration Assistant
- Implement Cisco Unified Communications Manager Express to support endpoints using Cisco CLI Commands
- Implement Cisco Unified Communications Manager Express to connect to service provider networks using CLI commands
- Implement Cisco Unity Express in a Cisco Unified Communications Manager Express environment using CLI commands
- Perform basic maintenance and operations tasks to support UC 500 and Cisco Unified Communications Manager express deployments

Prerequisites

Students must have attended the ICND1 and ICND2, or have a valid CCNA.

Certification

This course is part of the following Certifications:

- Cisco Certified Network Associate Voice (CCNA Voice)
- Cisco Certified Internetwork Expert (CCIE Voice)
- Cisco IP Communications Express Specialist

Who Should Attend

This course is designed for Network Designers, Network Administrators, Network Engineers, Network Managers, and Systems Engineers or those seeking the CCNA Voice certification.

Course Objectives

This 5-day course provides the student with Unified Communications concepts, component definition and high level designs.This is also the core technology course in the certification path to achieve the CCNA Voice designation. Students will be able implement and configure small to medium sized IP Telephony solutions. UC products covered during labs include the Cisco Unified Communicatons Manager Express / Cisco Unity Express and the UC500 Smart Business Communications System.

Implementing Cisco IOS Unified Communications Part 2 (IIUC2)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

This is a 5-day advanced course in implementing Cisco Unified Communications Manager Express and Cisco Unity Express systems. As a follow-on course to Implementing Cisco IOS UC Systems (IIUC), CUCME students will learn to implement CME to support SCCP and SIP endpoints. In additon Unified Messaging Gateways (UMG), and PSTN calling will be configured. Students will configure CUE voicemail networking and VPIM. Operation and troubleshooting will include tracing and debugging of CME, CUE and UMG.

Prerequisites

- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Implementing Cisco IOS Unified Communications (IIUC)

Certification

This course is part of the following Certifications:

- Cisco IP Communications Express Specialist

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- Configure the basic features and functionality of Cisco Unified Communications Manager.
- Express to support IP phones, analog voice interfaces, digital voice interfaces, VoIP dial peers, digit manipulation, class of service, network management, and capturing Call Detail Records.
- Configure advanced Cisco Unified Communications Manager Express features for both SIP and SCCP phones.
- Implement hardware and software media resources: transcoding, conferencing, and music on hold 2 Implementing Cisco IOS Unified Communications Part 2 (IIUC2) v1.0 © 2008 Cisco Systems, Inc.
- Implement Cisco Unified CallConnector Mobility server to track Cisco Unified Communications Manager Express phones and PSTN connections, provide single number reach services, and integrate call control through Windows add-ins.
- Configure Cisco Unity Express: users, groups, voice mailboxes, Instant Messaging, VoiceView, notification, Live Record, Cisco Unity Express AutoAttendant, and troubleshoot Cisco Unity Express.
- Extend Cisco Unity Express by configuring a Unified Messaging Gateway to simplify VPIM networking between Cisco Unity Express

Unified Contact Center Express and Unified IP IVR Deployment (UCCXD)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

This course provides the student with hands-on experience and knowledge of tasks typically performed during Contact Center deployment. This includes the deployment of Unified Contact Center Express (Unified CCX and Unified IP IVR) as contact center solutions. Tasks include planning, installation, configuration tasks, troubleshooting and creating Cisco scripts and the deployment of both IP IVR and IPCC Express as a contact center solution.

Prerequisites

- Internetworking Fundamentals
- Basic IP Telephony Concepts
- Cisco CallManager Deployment
- Cisco IP Phones, Softphones
- Contact Center Operations
- Microsoft Windows 2000
- MS SQL 2000, MSDE Databases

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Expert (CCIE Voice)
- Cisco IP Contact Center Express Specialist

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

After completing this course the student should be able to:

- Design and plan an IP Contact Center and an Unified IP IVR implementation
- Install or discuss CRS components, servers, agent and supervisor desktops and clients
- Configure all CRS components
- Build workflow applications to exploit Unified IP IVR features and capabilities
- Build contact center workflows to exploit Unified CCX features and capabilities
- Troubleshoot installations and workflows

Unified Contact Center Express Advanced (UCCXA)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

Building on the knowledge base and scripting experience learned in CRSD/UCCXD classes, the student will explore more advanced techniques in scripting and overall CRS functionality. During this four day class the students implement features that extend the functionality of UCCX using many of the tools that are already available in the premium version of the product.

Prerequisites

- All required knowledge and skills required for Unified Contact Center Express Deployment (UCCXD)
- Completion of the UCCXD course

Who Should Attend

- Cisco AVVID Channel Partners and Resellers
- System Engineers
- Customers deploying and maintaining CRS 4.0 products

Course Objectives

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

- Understand how to properly setup and design a script with these functions in mind:
  - Prompt, document, and grammar management
  - Scripting for proper terminating and ending a script
  - Debugging
  - Abandon rates
  - Exception handling
  - Using the default script
- Create a helpdesk script
- Understand how to define and use skills
- Understand and setup conditional routing
- How to use Enterprise Data
- How to setup and use Session Management
- Allow for callbacks
- Allow for callbacks while maintaining a position in queue
- Use Auto Attendant with and without ASR
- Understand how to integrate CRS with Intelligent Contact Manager (ICM)

Customer Voice Portal Implementation (CVPI)

Price: $3595 USD or 36 CLCs **Duration:** 5 Days

Cisco Customer Voice Portal (CVPI) Implementation is a hands-on instructor-led course that presents the topology of the product's three deployment models; Queue and Transfer, Stand-alone and Full Feature.
The course focuses on installation, configuration and scripting for the Full Feature deployment model which includes the Queue and Transfer and Stand-alone models. Lab exercises address the configuration of all CVP product components as well as external components including gateways, gatekeepers, CallManager, ICM and CVP Studio so as to properly interface with CVP. The course addresses CVP serviceability issues such as troubleshooting, redundancy, failover and remote monitoring. The purpose of the course is to enable a learner to achieve working-level competency for working with CVP.

Course Objectives

After completing this course the delegate will be able to:

- Identify the correct CVP product model to meet the customer's requirements
- Install and test CVP software
- Fully configure and integrate CVP components as well as external components
- Compose scripts to enable IVR functions
- Configure the Node Manager to facilitate redundancy and failover
- Gain a basic understanding of how to integrate and use CVP Studio with CVP
- Identify and resolve trouble issues using CVP tools and logs

Prerequisites

To fully benefit from CVPI, delegates must have attended the following prerequisite courses and possess the following skills and knowledge:

- Implementing Cisco Unified Communications Manager Part 1 (CIPT1)
- Cisco Voice over IP (CVOICE)
- Implementing Cisco Voice Gateways & Gatekeepers (GWGK)
- Telephony Experience - IP and Legacy
- Contact Center Experience
- Basic Networking Knowledge
- Cisco IOS CLI Familiarity
- Working Knowledge of Cisco CallManager
- Gateway and Gatekeeper for H.323 Networks
- Microsoft Windows 2000 Server

Who should attend

Cisco channel partners, resellers, customers and employees.

Cisco Unified Presence Design and Implementation (PRSDI)

Price: $2295 USD or 23 CLCs **Duration:** 3 Days

Cisco Unified Presence Design and Implementation (PRSDI) v6.0 is a 3-day course that prepares you for installing and configuring a Cisco Unified Presence Release 6.0. It also includes integration options with other Cisco Unified Communication products as well as third-party presence solutions, including Microsoft Live Communication Server, Microsoft Office Communications Server, and IBM Lotus Sametime. Finally, it presents deployment and maintaining options.

Prerequisites

- Working knowledge of converged voice and data networks
- Working knowledge of MGCP, SIP, and H.323 and their implementation on Cisco IOS gateways
- Ability to configure and operate Cisco Unified Communications Manager

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

After completing this course, the student will be able to meet these overall objectives:

- Explain presence technology and solution and describe Cisco Unified Communications Manager and Cisco Unified Communications Manager Express Presence
- Design Cisco Unified Presence deployment solutions
- Describe Cisco Unified Presence interoperability and integration options
- Install and configure Cisco Unified Presence and integrate it with other presence solutions

Cisco PGW2200 Basic (PGWB)

Price: $4495 USD or 45 CLCs **Duration:** 5 Days

Prerequisites

- Telephony fundamentals
- UNIX basics
- Cisco IOS essential

Who Should Attend

- Service Providers implementing Cisco PGW2200 solution
- Telecoms looking for Class IV switch able to translate SS7 to VoIP protocols
- Enterprises eager to consolidate their disparate voice equipment.

Course Objectives

After finishing this course, students will be able to:

- Identify and describe class IV services as part of telephony network
- Differentiate the call control vs signaling PGW2200 solutions
- Explain functions of the PGW2200 software components
- Identify and describe the PGW2200 hardware components
- Provision the PGW2200 using GUI - Voice Services Provisioning Tool (VSPT)
- Introduction to the Man Machine Language (MML)
- Describe and provision the Cisco SLT using Cisco IOS
- Provision different Media Gateways (like C28xx or AS5xxx or MGX)
- Provision Number Analysis (Dial Plans)
- Provision the HSI component
- Explain role of SIP component as integral part of PGW solution
- Identify and describe CDRs and billing service as part of PGW solution
- Overview of basic GUI tools

Course Content

- Introduction to the SS7 networks
- Overview and position of PGW2200 in SS7 networks
- VoIP Packet Transit Overview
- Introduction to VSPT
- Setting up the XECfgParm.dat file
- Provisioning the PGW2200 for SS7 Signaling
- Provisioning External Nodes - SLT
- Provisioning External Nodes - Media Gateways
- Provisioning FAS (Facility Associated Signaling) and NFAS (Non Facility Associated Signaling)
- Provisioning Trunks and Routes
- Provisioning Dial Plans
- Provisioning the H.323 Signaling Interface (HSI)
- Session Initiation Protocol (SIP)
- Provisioning for Data Termination
- Using built-in tools for monitoring, billing and troubleshooting

Cisco PGW2200 Advanced Troubleshooting (PGWAT)

Price: $4495 USD or 45 CLCs **Duration:** 5 Days

Prerequisites

Cisco PGW2200 Basic Training or:

- TDM basics (ISDN, Q.931, backhauling)
- Fundamentals about SS7 world
- Familiarity with VoIP protoocols (H.323, MGCP, SIP)
- PGW proprietary protocols (RLM, EISUP, BSM)
- Cisco PGW Call-Control Training

Who Should Attend

- Service Providers implementing Cisco PGW2200 solution
- Telecoms looking for Class IV switch able to translate SS7 to VoIP protocols
- Enterprises eager to consolidate their disparate voice equipment

Course Objectives

At the end of this course, you will be able to:

- Troubleshoot protocols/elements inside PGW system (SS7, MGCP, EISUP, H.323…)
- Perform interconnection tests (ITU recommendations Q.761, Q.764, Q.767…)
- Implement class V features in PGW to pass interconnection tests (tips&tricks)
- Experience real life challenges that could arise during interconnection with operators
- Identify and provision features behind x10 DB (LNP, Screening, Blacklists/ Whitelists…)
- Reveal the power of MGC Node Manager
- Understand how PGW controls SBCs and the benefits
- Integrate PGW with IP Transfer Point (ITP)
- Provision Billing and Measurement server (BAMS)
- Integrate PGW with BTS 10200 softswitch
- Provision advanced features: HSI without GK, announcements, DPNSS, AoC, SIP, video

Course Content

- Troubleshooting Tools
- Protocols (SS7, ISDN, MGCP, H.323, SIP, EISUP, BSM,…) related Troubletickets
- Elements (MGC, HSI, ITP-L, MG…) related Troubletickets
- Interconnection testing I
- Interconnection testing II
- Cisco MGC Node Manager
- Provisioning BAMS
- Advanced SIP provisioning
- Advanced H.323 features
- Announcements and PGW
- Provisioning DPNSS

Securing Networks with ASA Fundamentals (SNAF)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

Securing Networks with ASA Fundamentals (SNAF) v1.0 is a five-day, instructor-led, lab intensive course, that will introduce Cisco Security Appliance Technology and Features such as the Cisco ASA and PIX Security Appliance Families. This task-oriented course teaches the knowledge and skills needed to configure, maintain, and operate Cisco ASA 5500 Series Adaptive Security Appliances.

Prerequisites

The knowledge and skills that a learner must have before attending this course are as follows:

- Cisco CCNA® certification or the equivalent knowledge
- Basic knowledge of the Microsoft Windows operating system
- Familiarity with networking and security terms and concepts.

Certification

This course is part of the following Certifications:

- Cisco Certified Security Professional (CCSP)
- Cisco Certified Internetwork Expert (CCIE Security)

Who Should Attend

The primary audience for this course is as follows:

- Cisco customers who implement and maintain Cisco ASA security appliances

The secondary audience for this course is as follows:

- Cisco channel partners who sell, implement, and maintain Cisco ASA security appliances
- Cisco engineers who support the sale of Cisco ASA security appliances

Course Objectives

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

- Explain the functions of the three types of firewalls used to secure computer networks
- Describe the technology and features of Cisco security appliances
- Given diagrams of networks protected by Cisco ASA and PIX security appliances, explain how each appliance protects network devices from attacks and why each is an appropriate choice for the example network

Securing Networks with ASA Advanced (SNAA)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

This five-day, instructor-led, lab-intensive course, which will be delivered by Cisco Learning Partners. This task-oriented course teaches the knowledge and skills needed advanced configuration, maintenance, and operation Cisco ASA 5500 Series Adaptive Security Appliances.

Prerequisites

The knowledge and skills that a learner must have before attending this course are as follows:

- Cisco CCNA® certification or the equivalent knowledge
- Basic knowledge of the Microsoft Windows operating system
- Familiarity with networking and security terms and concepts

Certification

This course is part of the following Certifications:

- Cisco Certified Security Professional (CCSP)
- Cisco Certified Internetwork Expert (CCIE Security)

Who Should Attend

The primary audience for this course is as follows:

- Cisco customers who implement and maintain Cisco ASA security appliances

The secondary audience for this course is as follows:

- Cisco channel partners who sell, implement, and maintain ASA security appliances
- Cisco engineers who support the sale of ASA security appliances

Course Objectives

After completing this course, the student will be able to meet these overall objectives:

- Configure policy NAT based on traffic type
- Describe the layer 7 modular policy framework for the security appliance and how it is configured
- Describe the layer 7 advanced protocol handling capabilities of modular policy frame and how it is configured
- Identify the steps need to configure the security appliance to segment traffic with VLANs
- Identify the steps need to configure the security appliance to configure the ASA for dynamic routing.
- Explain the components of IPsec and the functionality of IPsec and explain what digital certificates are and how they are used
- Identify the steps needed to configure the security appliance to establish LAN-to-LAN tunnels with the digital certificate
- Identify the necessary steps to configure the IPSec VPN Client using digital certificates
- Identify the necessary steps to configure the security appliance for remote access using digital certificates
- Explain the advanced remote access features of the ASA
- Determine the necessary configuration for the ASA 5505 to be a VPN hardware client
- Identify the steps to configure QoS for VPN traffic
- List the steps needed to configure the WebVPN functionality of the security appliance
- Identify the basic clientless SSL VPN features of the security appliance
- Configure full network access SSL VPNs using the AnyConnect Client
- List the feature and functionality of the Cisco Secure Desktop
- Configure CSD and DAP for SSL VPN connections on the Cisco ASA
- Identify and list the characteristics of the services modules for the ASA
- Identify the steps needed to configure, inspect, and filter traffic with the Content Security and Control SSM
- Identify the steps needed to configure the security appliance to identify, alert, and defend against attacks

Securing Networks with Cisco Routers & Switches (SNRS)

Price: $3095 USD or 31 CLCs **Duration:** 5 Days

This 5 day course is aimed at providing Network Professionals with the knowledge and skills needed to secure Cisco IOS Routers and Switches. Successful students will be able to secure the network environment using existing Cisco IOS and CatOS security features, configure the 3 primary components of the Cisco IOS Firewall Feature set (Context-Based Access Control (CBAC), Intrusion Prevention, and Authentication Proxy), implement Secure Tunnels (VPNs) using IPSec Technology and implement basic Access Switch Security

Prerequisites

The Interconnecting Cisco Network Devics Part 1 & 2 (ICND1 & ICND2) are both required courses before taking SNRS

Certification

This course is part of the following Certifications:

- Cisco Certified Security Professional (CCSP)
- Cisco Certified Internetwork Expert (CCIE Security)
- Cisco IOS Security Specialist

Who Should Attend

Internetwork professionals who want to ensure security of their network or who seek the Cisco Certified Security Professional Certification (CCSP

Course Objectives

After completing this course, you will be able to:

- Secure the network environment using existing Cisco IOS and CatOS security features
- Configure the three primary components of the Cisco IOS Firewall Feature set
- Implement secure tunnels (VPNs) using IPSec technology
- Implement basic access switch security
- Complete a security audit using Cisco Security Device Manager

Implementing Monitoring, Analysis, and Response System (MARS)

Price: $3095 USD or 31 CLCs **Duration:** 4 Days

The Cisco Security Monitoring Analysis and Response System (CS-MARS) is part of the Cisco Security Management Suite which provides security monitoring for network security devices and host application made by Cisco or non-Cisco providers. In addition to event correlation and data reduction features found in SIM products, CS-MARS also provides topology awareness and automatic mitigation features. In knowing the topology of a network, CS-MARS can determine where the attack is originating and apply the appropriate remediation. CS-MARS is a key component in the Cisco Self Defending Network strategy. CS-MARS exchanges information with CS-Manager to provide a unified security management solution. For example, an administrator can view IPS signatures or the Firewall block / permit syslog messages received from sensors or firewalls. CS-MARS will communicate with CS-Manager and display the IPS signature table or firewall rule table. From there the IPS signature or firewall rule can be modified as necessary. Together CS-MARS and CS-Manager provide a unified management solution for monitoring and provisioning.

Prerequisites

The following or equivalent knowledge is required before taking this course:

- Securing Networks with ASA Fundamentals (SNAF)
- Securing Networks with Cisco Routers & Switches (SNRS)

Certifications

This course is part of the following Certifications:

- Cisco Certified Security Professional (CCSP)

Who should attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

Upon completing this course, you will be able to meet these objectives:

- Use CS-MARS to monitor security and host application devices.
- Know CS-MARS architecture and how CS-MARS process events
- Know how to use archive and restore features
- Use CS-MARS to run / create / customize reports
- Use CS-MARS to investigate an incident and mitigate the security threats
- Use CS-MARS to do customer parser for unknown devices in CS-MARS
- Use CS-MARS to create / customize rules that detects dark net through best practices example
- Know how to tune signature / log level on device side and CS-MARS side.

Implementing Cisco Network Administrator Control (IPS)

Price: $2995 USD or 30 CLCs **Duration:** 4 Days

An introduction of Cisco IDS detection platforms including the 4200 Series Sensors, they Catalyst 6500 Series Intrusion Detection Module 2 (IDSM2) and the IDS Network Module (NM-CIDS) are introduced in the IPS course. The command line and the IPS Device Manager GUI are used to configure the sensor.

Prerequisites

Students who attend this advanced course should meet the following prerequisites or have equivalent knowledge:

- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Interconnecting Cisco Network Devices Part 2 (ICND2)
- Basic knowledge of the Windows operating system
- Familiarity with basic networking and security terms and concepts

Who Should Attend

Network professionals who want to ensure security on their network or who seek the Cisco Certified Security Professional Certification (CCSP).

Certifications

This course is part of the following Certifications:

- Cisco Certified Security Professional (CCSP)
- Cisco IPS Specialist
- Cisco Certified Internetwork Expert (CCIE Security)

Course Objectives

After completing this course, you will be able to:

- Install an IPS sensor appliance in the Network and initialize it
- Use IDM to configure built-in signatures to meet the requirements of a given security policy
- Describe the functions of signature engines and their parameters and use IDM to tune and create signatures
- Tune a sensor to work optimally in the network
- Use the Monitoring Center for Security and Cisco Threat Response
- Install the NM-CIDS in a router and initialize it
- Install and recover the sensor software image and perform service pack and signature updates

Implementing Cisco NAC Appliance (CANAC)

Price: $2595 USD or 26 CLCs **Duration:** 3 Days

In this course students learn how to design and implement a Cisco NAC Appliance solution to suit any network. Basic configuration tasks such as NAM and NAS deployment modes, authentication (including Windows SSO), role-based access control, posture assessment, and remediation are taught.

Prerequisites

Certification as a CCSP, Building Cisco Multilayer Switched Networks (BCMSN), Securing Networks with Routers and Switches (SNRS), and Building Cisco Scalable Internetworks (BSCI) are required classes before taking CANAC. Students should also have basic knowledge of the Microsoft Windows operating system, familiarity with networking and security terminology and concepts, and fundamental knowledge of implementing network security.

Who Should Attend

Anyone responsible for the design, implementation, or support of a Cisco NAC Appliance installation and Cisco Channel Partners preparing for ASFE certification.

Course Objectives

- Given client network security requirements, explain how a NAC Appliance (Cisco Clean Access) deployment scenario will meet or exceed network security requirements
- Configure the common elements of a NAC Appliance (Cisco Clean Access) solution
- Configure the NAC Appliance (Cisco Clean Access) in-band and out-of-band implementation options
- Implement a highly available NAC Appliance (Cisco Clean Access) solution to mitigate network threats and facilitate network access for those users that meet corporate security requirements
- Maintain a highly available NAC Appliance (Cisco Clean Access) deployment in medium and large enterprise network environments

Data Center Network Infrastructure Design (DCNID)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

This 5-day course enables students to create a Data Center network design that optimizes availability, scalability, performance, and security, using the Nexus products, Catalyst 6500, Catalyst 4948, Firewall Services Module, Intrusion Detection Services Module, and Network Analysis Module.

Prerequisites

Designing for Cisco Internetworks Solutions (DESGN) and Securing Cisco Network Devices (SND) are required before taking DCNID.

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- Given customer requirements, the student will be able to create a Data Center network designs that optimizes availability, scalability, and performance for that environment
- Create a core layer design that optimizes data flows
- Create an aggregation layer design that optimizes data flows
- Create an access layer design that optimizes data flows
- Optimize a data center design to achieve high availability
- Design a security implementation using Catalyst 6500 service modules
- Design a management infrastructure that provides centralized management services

Implementing Cisco Data Center Network Infrastructure 1 (DCNI-1)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

This 5-day course offers Data Center-oriented content primarily focused on the Cisco Catalyst 6500 Series switches. Cisco Catalyst 4900 Series top-of-rack switches, and to a lesser degree also on the Blade switches. This is one of Six courses and exams that support the Advanced Data Center Networking Infrastructure partner specialization.

Prerequisites

CCNP, CCIE Routing & Switching, CCIE Service Provider or equivalent knowledge. The following Cisco courses are recommended so the student can benefit fully from this course:

- Building Scalable Cisco Internetworks (BSCI)
- Building Cisco Multilayer Switched Networks (BCMSN)
- Optimizing Converged Cisco Networks (ONT)
- Implementing Secure Converged Wide Area Networks (ISCW)

Certification

This course is part of the following Certifications:

- Cisco Data Center Networking Infrastructure Support Specialist.

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

The goal of the DCNI-1 v2.0 curriculum is to enable customers to build scalable, reliable, and intelligent Data Center networks using Cisco Catalyst 6500 Series switches.

Implementing Cisco Data Center Network Infrastructure 2 (DCNI-2)

Price: $2995 USD or 30 CLCs **Duration:** 4 Days

The DCNI-2 course is a 4-day hands-on training that teaches you how to implement an enterprise Data Center routing and switching infrastructure with the next-generation Cisco Nexus 7000 and 5000 platforms. The first 3 days will focus on the Nexus 7000, with an overview of the Nexus 5000 and FCoE on Day 4. This course provides a technical overview of the Nexus platform architecture, deployment, and operations, including Virtual Device Contexts, Layer 2 and Layer 3 features, QoS, and security. You will explore the features of NX-OS and the Nexus platform by performing hands-on labs using a Nexus 7000 simulator.

Prerequisites

- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Interconnecting Cisco Network Devices Part 2 (ICND2)
- Building Scalable Cisco Internetworks (BSCI)
- Building Cisco Multilayer Switched Networks (BCMSN)
- Implementing Secure Converged Wide Area Networks (ISCW)

Who should attend

Cisco channel partners, resellers, customers and employees.

Certifications

This course is part of the following Certifications:

- Cisco Data Center Networking Infrastructure Support Specialist

Course Objectives

- Describe the key features of the Nexus 7010 chassis
- Describe Supervisor Engine and Line Card Module features
- Describe the key features of the Nexus 7010 power supplies and fan-cooling system
- Describe the Connectivity Management Processor
- Describe the basic architecture of NX-OS
- Explain NX-OS Process Recovery
- Explain NX-OS Supervisor Redundancy
- Explain how the Nexus 5000 functions within SAN and LAN environments
- Describe the Fibre Channel over Ethernet (FCoE) protocol

Implementing Data Center Application Services (DCASI)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

The lecture/lab course will teach students how to design, deploy, and optimize intelligent network services using the Cisco Application Control Engine (ACE) Appliance, Service Module 2.0, and GSS. Key features of the ACE 2.0 software, including resource virtualization and management, server load-balancing (Layer 2-4 and Layer 7), SSL termination and offload, and security features like application-layer inspection and fixups are also covered.

Prerequisites

Students should have a basic understanding of the TCP/IP protocol, HTTP and SLL protocols, N-tier application architecture, and server load-balancing before taking DCASI.

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- Describe IP application delivery with the ACE module
- Describe the structure and function of the Modular Policy CLI statements used to configure ACE features
- Describe the capabilities of the ACE module used to load balance IP-based applications
- Create new contexts and resource classes
- Identify the Layer 7 processing options used to provide advanced application networking
- Create class maps and server farms
- Configure an ACE context load balance traffic flows
- Configure an ACE context to monitor real servers
- Implement fixups and inspection
- Describe the ACE features that provide IP application security
- Implement SSL termination
- Configure network address translations
- Describe the high availability features of the ACE module
- Configure an ACE context to perform a variety of functions in an integrated environment
- Troubleshoot common SLB configuration errors

Designing Data Center Application Services (DCASD)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

DCASD is a 5-day, instructor-led, lecture/lab course. You will learn how to deploy and configure intelligent network services using the Cisco ACE products, Catalyst 6500 Application Control Eging (ACE) 4710. This course covers all of the key features of the ACE products, including resources virtualization and management, server load balancing (Layer 2-4 and Layer 7), SSL termination and offload, and security features like application-layer inspection and fixups. The focus is on enabling the student to properly position the ACE products in the network for optimizing data center components and network resources.

Prerequisites

Students should have a basic understanding of TCP/IP protocol, HTTP and SSL protocols, N-tier application architecture, and server load-balancing before taking DCASD.

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- Describe IP application delivery with the ACE module
- Describe the configuration tasks necessary to successfully deploy an ACE module
- Describe the structure and function of the Modular Policy CLI statements used to configure ACE features
- Describe the capabilities and configuration of the ACE features used to provide load balancing of IP-based applications
- Identify the Layer 7 processing options used to provide advanced application networking
- Describe ACE support for SSL protocol processing
- Describe the ACE features that provide IP application-based security
- Describe the high-availability features of the ACE module which are used to provide reliable application networking services
- Describe a methodology used to design and configure multiple ACE features

Advanced Cisco Catalyst 6500 Switching (CAT6KS)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

The CAT6KS 2.0 curriculum enables customers to build scalable, reliable, and intelligent Data Center and Campus networks using Catalyst 6500 Series switches and replaces the CAT6KS v1.0 course with updated lab guides that work with the revised remote lab topology. CAT6KS also provides advanced switching training to supplement the BCMSN 3.0 CCNP Switching Class and provides a design-concept module focused on the Catalyst 6500 features that differentiate the Catalyst 6500 as a solution for next-generation Data Center and Campus networks.

The course outline is as follows:

- Applying the Enterprise Composite Model
- Describing the Campus Infrastructure Module
- Deploying Technology in the Campus Infrastructure Module
- Catalyst 6500 Architecture Overview
- Configuring the Catalyst 6500 Chassis
- Using the Cisco Power Calculator
- Introducing the Catalyst 6500 Supervisor Modules
- Introducing the Catalyst 6500 Line Cards

Prerequisites

BCMSN or equivalent

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- Module 1: Given a design, the learner will be able to identify the various components associated with the Enterprise Composite Model so that the design meets customer requirements.
- Module 2: Given a network environment, the learner will be able to identify the components of the Catalyst 6500 platform that apply to that environment.
- Module 3: Given a Catalyst 6500 installation, the learner will be able to complete initial configuration of the Catalyst 6500 Series switch.
- Module 4: Given a customers requirements for redundancy, the learner will be able to identify the redundancy features required to meet the customer needs.
- Module 5: Given a network design, the learner will be able to identify which Layer 2 enhancements should be used to meet the design requirements.
- Module 6: Given a customers requirement for managing traffic, the learner will be able to identify which features to use to satisfy the requirements.
- Module 7: Given a network design document, the learner will be able to identify the Catalyst 6500 components, features, and functions that should be included in the network design to meet the specified design goals

Catalyst 6500 and Cisco 7600 Series Routers Firewall Services Module Deployment (FWSMD)

Price: $3295 USD or 33 CLCs **Duration:** 5 Days

Prerequisites

- Experience configuring Cisco IOS Software
- CCNA Certification or similiar knowledge
- Basic knowledge of Windows Operating Systems
- Familiarity with Network and Security concepts

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Content

- Catalyst 6500 Family and Advanced Services Module Overview
- Understanding Firewall Services
- Configuring the switch for the FWSM
- Getting started with the FWSM
- Initializing the FWSM Lab
- Configuring FWSM Routed Mode
- Translations and Connections
- Access Control Lists and Content Filtering
- Object Grouping
- IP Routing
- The Cisco Modular Policy Framework
- Application Layer Protocol Inspection
- Cisco Adaptive Security Device Manager
- Authentication, Authorization, and Accounting
- Configuring FWSM Transparent Firewall
- Using the FWSM with Multiple Contexts
- Failover
- Managing and Troubleshooting the FWSM
- Introducing Cisco Security Manager
- Managing devices, policies and objects in CSM
- Using Map View in CSM
- Managing Firewall Services and Firewall Devices in CSM
- Configuring Catalyst 6500 Series Switch and Cisco 7600 Series Router Devices in CSM

Cisco Wireless Mesh & RF Design Boot Camp (WMRFBC)

Price: $3695 USD or 37 CLCs **Duration:** 5 Days

The Cisco Wireless Mesh & RF Design Boot Camp (WMRFBC) 5-day course combines the Cisco Wireless Mesh Network (CWMN) course and the Wi-Fi Mesh RF Design Boot Camp (WFRF). In one week of intense training, students will learn how to design, install, and maintain a wireless mesh network as well as select, connect, configure, and troubleshoot Cisco components of their wireless mesh network. In an in-class case study, they will gain experience designing the RF network for a sample mesh-served community, engineering the client access layer, the mesh layer, and the backhaul layer.

Prerequisites

A basic understanding of PC hardware configurations and networking business drivers are both required.

Who Should Attend

Sales and Field engineers that are involved in designing and implementing wireless mesh networks. Also, Cisco partners that need to obtain the Advanced Technology Partner 2.0 Certification can get all required courses covered in this 5-day boot camp.

Course Objectives

Part 1: Principles and models for Wi-Fi Mesh Networks
Part 2: Using the Cisco WLC in a Mesh Network
Part 3: The Business Case and Case Study
Part 4: Troubleshooting and Verification Confirmation

Cisco Wireless Mesh Networking (CWMN)

Price: $2295 USD or 23 CLCs **Duration:** 3 Days

Cisco Wireless Mesh Networking (CWMN) is a 3-day instructor-led course, training partners to their end-user customers. This three-day course focuses on using Cisco Unified Wireless solution, to design, install and maintain a wireless mesh network both as an add-on to an existing wireless LAN and as a new installation. Upon completion of this training course, you will be able to select, connect, configure and troubleshoot the different components of the Cisco Wireless Mesh Network.

Prerequisites

Delegates should have attended the CUWN or CWLF/CWLAT courses. A basic knowledge of PC hardware configurations is also required and a basic understanding of networking business drivers is essential.

Who Should Attend

System engineers, account managers, channel partner/reseller, customers

Course Objectives

- After completing this course the delegate will be able to:
- List the four configuration tasks to be conducted for priming and AP before deployment
- Explain how a Mesh AP finds the best path to the wired network, using the concept of ease
- Describe the client backhaul access and the backup backhaul access concepts
- Demonstrate an ability to configure a basic Cisco Unified WLAN controller with Layer 3 LWAPP so that it could be deployed immediately to an example 1-2 hops wireless network
- Describe the 6 steps performed during the installation and deployment of outdoor Wireless LANs with Layer 3 LWAPP
- Describe how to ensure security in the AP to controller association process
- Explain to an audience the use of Bridge Group Names as a technique to control mesh network device associations, answering the questions: How is it set up? What happens if it is not set up? What happens to a MAP if the RAP bearing the same BGN disappears?
- Explain the functionality relating to the following configurable parameters:
  - Radio Roles
  - Backhaul Interface
  - Channel Assignments
- Describe the Zero Touch configuration feature as it relates to the deployment of outdoor Wireless LANs, explain its purpose, the way mesh forms with it, and what happens if it is removed prior to or after mesh deployment
- Use and show some available methods (two main screens from the GUI, 6 main CLI commands) for verifying connectivity and performance in an outdoor mesh network
- Explain the 3 step methodology used to diagnose problems in mesh networks
- List and use the 18 key CLI commands used for verification and troubleshooting (i.e. show, debug)
- List the two main screens available in the GUI that are used to verify proper operation in a mesh network
- Locate the 11 key screens and critical fields in the GUI used to isolate and resolve problems in a mesh network

Cisco RF Design (CRFD)

Price: $2495 USD or 25 CLCs **Duration:** 3 Days

This 3-day course includes everything you'll need to know regarding Wi-Fi Mesh RF Design. In three days of intense training, students will learn how to design, install, and maintain a wireless mesh network and troubleshoot RF issues on their wireless mesh network. In an in-class case study, they will gain experience designing the RF network for a sample mesh-served community, engineering the client access layer, the mesh layer, and the backhaul layer. The use of EDX Signal Pro software will lead the attendee through a basic RF Mesh design and layout.

Prerequisites

A basic understanding of PC hardware configurations and networking business drivers are both required. Some basic understanding of 802.11 standards and Wi-Fi systems is also expected.

Who Should Attend

Sales and Field engineers that are involved in designing and implementing wireless mesh networks; also Cisco partners wishing to obtain the Advanced Technology Partner 2.0 Certification. Customers, VARs, Integrators who are attempting to learn about RF design concepts and needs within a Mesh Network

Course Objectives

- Principles of Wireless Mesh Networks
- Overview of Wi-Fi Mesh Networks
- Wi-Fi Mesh Components
- Wi-Fi Mesh Routing Approaches
- 802.11 protocols review
- Basic RF for Wi-Fi Mesh Design
- Basics Review
- Modulation and Forward Error Correction (FEC)
- Antenna Basics
- The Propagation Environment
- Basic Link Budgets
- Modeling the RF Channel
- Wi-Fi Mesh Network Design
- Determining the Mesh Point Count
- Wi-Fi Mesh Radio Types
- Mounting the Mesh Points
- RF Design Cost Considerations
- Wi-Fi Mesh Design Concerns
- Technologies for Enhancing Coverage and Capacity
- Propagation Modeling of Mesh Networks
- Using the tools, using EDX Signal Pro® software
- The Business Case and Case Study
- RF Design Cost Considerations
- Wi-Fi Mesh Design Case Study

Cisco Wireless LAN Advanced Topics (CWLAT)

Price: $2795 USD or 28 CLCs **Duration:** 4 Days

The Cisco Wireless LAN Advanced Topics (CWLAT) v2.0 is a technical training course targeted to internal Cisco and channel external SEs and FEs. The goal of this course is to provide System Engineers and Field Engineers with a more in-depth understanding of the most innovative and comprehensive suite of WLAN solutions in the industry, spanning a wide range of customer sizes and needs.

Prerequisites

Course prerequisites are as follows:

- Basic Computer Literacy
- Knowledge of fundamental networking components and terminology
- Knowledge of the Open Systems Interconnection (OSI) reference model
- Knowledge of basic LAN components and functions

Certification

DCSNS is recommended training for the Cisco Storage Networking Design Specialist certification.

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- Upon completing this course, you will be able to meet these objectives:
- Describe detailed technical features, functions and benefits of the controller-based architecture
- Install and setup Cisco WCS and provide the information needed to configure a WLAN using Cisco WCS
- Manage the WLAN controller-based network with the Cisco WCS
- Troubleshoot and maintain a WLAN controller-based network
- Apply advanced applications to WLAN controller-based networks
- Administer security so that the WLAN controller-based network is safe from attack

Cisco Wireless LAN Fundamentals (CWLF)

Price: $2795 USD or 28 CLCs **Duration:** 4 Days

This course examines the fundamentals of Cisco's wireless LAN technology. Topics will include the concepts of autonomous and lightweight access points and controllers, network management solutions and security. After completing this course, delegates will be able to discuss configuration, management of both autonomous and lightweight wireless networks.

System Overview

- Cisco Aironet WLAN Overview
- Cisco Aironet WLAN Products
- Wireless Bridges
- Aironet Desktop Utility
- Core Access Point and Bridge Basic Configuration
- Advanced Feature Set Product Administration
- WLAN Management Solutions
- Cisco Wireless Mesh Network Installation
- Security
- Site Survey Preparation and Techniques
- Manual Site Survey Tools and Utilities

Prerequisites

- Basic Computer Literacy
- Knowledge of fundamental networking components and terminology
- Knowledge of the Open Systems Interconnection (OSI) reference model
- Knowledge of basic LAN components and functions

Certification

DCSNS is recommended training for the Cisco Storage Networking Design Specialist certification.

Who Should Attend

Cisco channel partners and resellers.

Course Objectives

After completing this course the delegate will be able to:

- Describe detailed modulation and spreading techniques and how it is used with various antennas
- Describe detailed technical features, functions and benefits of the WLAN product offerings available from Cisco
- Define concepts and describe considerations for deploying wireless bridges
- Configure a Cisco client card with Cisco utilities
- Configure the core access point and bridge
- Configure an advanced featured WLAN using a Cisco wireless LAN controller
- Implement a WLAN management solution available from Cisco
- Perform an initial configuration of a WLAN
- Secure a WLAN using security methods and products available from Cisco
- Describe the requirement necessary for deployment and performing a site survey
- Describe the steps, concepts and tools available while performing a site survey

Digital Media Systems (DMS)

Price: $2095 USD or 21 CLCs **Duration:** 2 Days

The Cisco Digital Media System is a flexible, comprehensive and complete solution for digital signage and desktop video that makes it easy to create, manage, publish and access high-quality digital media for compelling communications. This course enables users to install, configure and troubleshoot DMS through Instructor led delivery and lab reinforcement.

System Overview

- Components of the Digital Media Systems
- DME 1000 & 2000 Encoder configuration
- Digital Media Player
- Digital Media Manager-Digital Signage Module Configuration
- Video Portal initial Installation
- DMM Video Portal Module configuration
- DMS 5.0
- Enterprise TV
- SNMP Management
- DMS Authentication Options
- DMP Local Storage setup and config
- ACNS and DMS integration

Prerequisites

Cisco Certified Network Associate (CCNA) or equivalent knowledge

Who should attend

Cisco channel partners and Digital Media engineers.

Course Objectives

After completing this course, students will have a thorough understanding of the Cisco Digital Media Systems (DMS) platform and have a hands on ability to install, configure and troubleshoot DMS solutions for Desktop Video, Digital Signage and Enterprise TV. Through instructor led training and plenty of lab reinforcement, students will also be able to publish dynamic live & on-demand content to digital signage displays, Enterprise TV displays as well as the desktop video application.

IP Video Surveillance (IPVS)

Price: $2595 USD or 26 CLCs **Duration:** 3 Days

The Cisco IP Video Surveillance solution is a flexible, comprehensive and complete solution to manage Physical Security. It integrates smoothly with existing, legacy CCTV camera solutions or can be operated on a pure IP level. It offers live and archived streams in all common media formats and provides archived storage for video streams. This course enables users to install, configure and troubleshoot IPVS through Instructor led delivery and lab reinforcement.

System Overview

- Introduction to Cisco IP Surveillance
- System Overview
- Video Manager and Storage System (VMSS)
- Video Surveillance Manager Overview (VSM)
- Video Surveillance Operation Manager (VSOM)
- Video Surveillance for the ISR
- Cisco TAC Support

Prerequisites

Cisco Certified Network Associate (CCNA) or equivalent knowledge

Who should attend

Only ATP invited partners can register for this course.

Course Objectives

After completing this course, the students will be able to install, configure, operate and maintain Cisco IP Surveillance components such as Stream Manager, VSM, VMSS as well as analog and digital cameras. In addition students will learn how to archive streams and operate live and playback operation. The final part of this course focuses on SMB Video Surveillance solutions inside the ISR (Integrated Service Router).

Implementing Cisco Storage Networking Solutions (ICSNS)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

ICSNS enables the student to describe and configure the hardware and software components of the Cisco MDS 9000 product family, focusing on key technologies and features that apply to departmental, mid-range, and enterprise SANs. The ICSNS course combines MDSCT and CMSE into a single course, updated for SAN-O 2.1, 3.0, and with basic networking content added.

Prerequisites

In order to fully benefit from this course, the learner is expected to have previously obtained a basic understanding of data storage hardware components and protocols, including SCSI and Fibre Channel.

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Expert (CCIE Storage Networking)
- Cisco Data Center Storage Networking Support Specialist

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

- Given a SAN environment, identify the components, services, and features of the MDS 9000 platform that can be used to improve the SAN.
- Given an MDS 9000 switch, safely install the switch hardware and initial software configuration
- Given a SAN design, implement the logical topology specified by a SAN design
- Given a SAN design, describe the traffic management features associated with Intelligent Network Services for the MDS 9000 series to configure traffic management services.
- Given a SAN environment, describe how to use and apply FCIP solutions
- Given a SAN environment, identify and use the MDS 9000 diagnostic tools.

Implementing Cisco Advanced Storage Networking Solutions (IASNS)

Price: $3195 USD or 32 CLCs **Duration:** 5Days

IASNS enables the student to implement advanced Cisco MDS 9000 technologies and features that apply primarily to enterprise SANs, and troubleshoot common SAN problems and configuration errors. This course merges CASI and CMSE, including updates for SAN-OS 2.1 and 3.0.

Prerequisites

- Implementing Cisco Storage Networking Solutions (ICSNS)

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Expert (CCIE Storage Networking)
- Cisco Data Center Storage Networking Support Specialist

Who Should Attend

Cisco channel partners, resellers.

Course Objectives

After completing this course the delegate will be able to:

- Given Fibre Channel SAN design specifications, implement a SAN with multiple virtual fabrics using the full capabilities provided by the Cisco MDS platform
- Given a set of Fibre Channel SAN management requirements, configure and use fabric management, performance management, and security services on the Cisco MDS platform
- Troubleshooting a Fibre Channel SAN
- Given a set of requirements for an iSCSI implementation, the learner will be able to identify and configure the appropriate iSCSI features to meet the requirements.

Implementing the Application Control Engine Service Module (ACESM)

Price: $2995 USD or 30 CLCs **Duration:** 4 Days

ACESM is a 4-day, instructor-led, lecture/lab course that teaches you how to design, deploy, and optmize intelligent network services using the Cisco Application Control Engine (ACE) Service Module for Catalyst 6500 switches.

This course covers all of the key features of the ACE 2.0 software, including resource virtualization and management, server load balancing (Layer 2-4 and Layer 7), SSL termination and offload, and security features like application-layer inspection and fixups.

Prerequisites

Course prerequisites are as follows:

- TCP/IP protocol
- HTTP and SSL protocols
- N-Tier application architecture
- Server load-balancing

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Expert (CCIE Storage Networking)
- Cisco Data Center Storage Networking Support Specialist

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

After completing this course the delegate will be able to:

- Describe IP application delivery with the ACE module
- Describe the structure and function of the Modular Policy CLI statements used to configure ACE features
- Describe the capabilities the ACE module used to load balance IP-based applications
- Identify the layer-7 processing options used to provide application networking
- Create new contexts and resourse classes
- Create class maps and serverfarms
- Configure an ACE context load balance traffic flows
- Configure an ACE context to monitor real servers
- Implement fixups and inspection
- Describe the ACE features that provide IP application security
- Implement SSL termination
- Configure network address translations
- Describe the high availability features of the ACE module
- Configure an ACE context to perform a variety of functions in an integrated environment
- Troubleshoot common SLB configuration errors

Designing Cisco Storage Networking Solutions (DCSNS)

Price: $3195 USD or 32 CLCs **Duration:** 5 Days

Designing Cisco Storage Networking Solutions (DCSNS) is a 5-day hands-on workshop that provides students with advanced skills in designing Cisco storage networks. Students will learn about the key features of the MDS 9000 platform, and how to leverage these features to build highly available, extensible, intelligent SANs. DCSNS includes hands-on labs to familiarize students with basic MDS 9000 configuration procedures, and design workshops where students will learn to design multiprotocol enterprise SANs and SAN extension solutions. It also enables the student to design enterprise Cisco MDS 9000 solutions that include core Fibre Channel SANs, iSCSI for mid-range applications, and SAN extension solutions.

Prerequisites

In order for students to fully benefit from DCSNS the student should have a basic understanding of data storage hardware components and protocols, including SCSI and Fibre Channel.

Certification

DCSNS is recommended training for the Cisco Storage Networking Design Specialist certification.

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Outline

Module 1: MDS 9000 Platform Overview
Module 2: Designing SAN Fabrics
Module 3: Consolidating Storage in the Data Center
Module 4: Securing the SAN
Module 5: Designing SAN Extension Solutions
Appendix A: SCSI Overview
Appendix B: Fibre Channel Overview
Appendix C: MDS 9000 Hardware Installation Reference

Course Objectives

- Given a SAN environment, identify the components, services, and features of the MDS 9000 platform that can be used to improve the availability, scalability, performance, and manageability of the SAN
- Given the MDS platform components, design a multiprotocol SAN to meet a variety of customer requirements
- Given a SAN environment, design a SAN that enables storage consolidation
- Given a SAN environment, design a SAN security implementation that includes port and fabric security, secure management protocols, and role-based access control to meet security policy requirements
- Given an understanding of SAN extension applications, design a SAN extension solution that meets application availability, performance, and scalability requirements

Configuring BGP on Cisco Routers (BGP)

Price: $2895 USD or 29 CLCs **Duration:** 5Days

An in-depth knowledge of BGP, the routing protocol that s one of the underlying foundations of the Internet, is covered. Students will also explore the theory of BGP, advanced configuration of BGP on Cisco IOS routers, and detailed troubleshooting information.

Prerequisites

- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Interconnecting Cisco Network Devices Part 2 (ICND2)
- Building Scalable Cisco Internetworks (BSCI)

Certification

This course is part of the following Certifications:
- Cisco Certified Internetwork Professional (CCIP)
- Cisco Certified Internetwork Expert (CCIE Routing & Switching)
- Cisco Certified Internetwork Expert (CCIE Service Provider)

Who Should Attend

Cisco channel partners.

Course Objectives

After completing this course the delegate will be able to:
- Configure, monitor and troubleshoot basic BGP to enable interdomain routing
- Use BGP policy controls to influence the route selection process with minimal impact on BGP route processing on a network scenario where connections to multiple ISPs must be supported
- Use BGP attributes to influence the route selection process
- Implement the correct BGP configuration to successfully connect an existing network to the Internet
- Enable a network to behave as a transit autonomous system given a typical service provider network with multiple BGP connections to other autonomous systems
- Identify common BGP scaling issues and enable route reflection and confederations as possible solutions to these issues
- Optimize the scalability of the BGP routing protocol.

Implementing Cisco MPLS (MPLS)

Price: $2895 USD or 29 CLCs **Duration:** 5 Days

An introduction to MPLS concepts, installation, migration, operation, inspecition, and troubleshooting will be covered in this 5-day course. An overview of MPLS, MPLS operation, and MPLS VPN deployment will be taught as well.

Prerequisites

The following are prerequisites to the MPLS course:
- Building Scalable Cisco Internetworks (BSCI)
- Configuring BGP on Cisco Routers (BGP)

Certification

This course is part of the following Certifications:
- Cisco Certified Internetwork Professional (CCIP)
- Cisco Certified Internetwork Expert (CCIE Routing & Switching)
- Cisco Certified Internetwork Expert (CCIE Service Provider)
- Cisco Certified Design Expert (CCDE)

Who Should Attend

Technical professionals rsponsible for designing, implementing, and/or troubleshooting MPLS networks or solution based MPLS technology.

Course Objectives

- Describe how the service provider infrastructure is attacked
- Describe the features of MPLS
- Describe how MPLS labels are assigned and distributed
- Identify the Cisco IOS tasks and command syntax necessary to implement MPLS on frame-mode Cisco IOS platforms
- Describe the MPLS peer-to-peer architecture and explain the routing and packet forwarding model in this architecture
- Identify the Cisco IOS command syntax required to successfully configure, monitor, and troubleshoot VPN operations
- Identify how the MPLS VPN model can be used to implement managed services and Internet access
- Describe the various Internet access implementations that are available and the benefits and drawbacks of each model
- Provide an overview of MPLS Traffic Engineering

Implementing Cisco MPLS Traffic Engineering & Other Features (MPLST)

Price: $2895 USD or 29 CLCs **Duration:** 5 Days

Students will learn technology basics as well as some of the more updated features and functions such as Traffic Engineering, Carrier Supporting Carrier, and Any Transport over MPLS (AToM). There is a focus on technology issues of MPLS from the Service Provider's perspective, and learn to configure some of those features and functions in a existing routed environment.

Prerequisites

- Configuring BGP on Cisco Routers (BGP)
- Implementing Cisco Quality of Service (QOS)
- Implementing Cisco MPLS (MPLS)

Certification

This course is part of the following Certifications:
- Cisco Certified Internetwork Expert (CCIE Service Provider)

Who Should Attend

Pre- and post-sales technical support engineers who have to design and implement MPLS, VPN, MPLS, TE and other advanced MPLS services (QoS, transport) in Service Provider backbones.

Course Objectives

After completing this course the delegate will be able to:
- Identify MPLS's peer-to-peer architecture and explain label allocation, routing update distribution and packet forwarding model in this architecture
- Given a working MPLS network and diagram of a network, used the CISCO IOS commands required to successfully configure, monitor, and troubleshoot service provider support using the MPLS Carrier supporting Carrier service
- Identify the MPLS Traffic Engineering architecture and explain how MPLS implements traffic engineering, establishes the constraint-based path and assigning traffic to traffic trunks
- Given a working MPLS network and diagram of a network, used the CISCO IOS commands required to successfully configure, monitor, and troubleshoot MPLS Traffic Engineering
- Given a working MPLS network and diagram of a network, used the CISCO IOS commands required to successfully implement a defined SLA using the MPLS QoS services
- Given a working MPLS network and diagram of a network, used the CISCO IOS commands required to successfullyconfigure, monitor, and troubleshoot layer-2 services using the Any Transport over MPLS service
- Given a working MPLS network and diagram of a network, used the CISCO IOS commands requried to successfully configure, monitor, and troubleshoot IPv6 support in a MPLS environment

Implementing Cisco Unified Messaging (IUM)

Price: $2995 USD or 30 CLCs **Duration:** 5 Days

Implementing Cisco Unified Messaging, formerly Cisco Unified Communications System Engineer (UCSE) provides students with best practice information on how to administer, install, configure, operate, and maintain a Cisco Unity system in either a stand-alone voice mail or unified messaging environment, as well as lessons on Cisco Unity Connection. IUM is a 5-day instructor-led course with hands-on lab activities. It is one of the two courses recommended for indivuduals seeking qualification for the Cisco Unity Support Specialiation.

Prerequisites

Course prerequisites are as follows:

- Solid understanding of Microsoft Windows, Microsoft Exchange, or IBM Lotus Domino
- Ability to competently program at least one telephone switching equipment (i.e., Cisco CallManager, NEC NEAX 2000 or 2400, Avaya Definity Series, etc.)

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Expert (CCIE Storage Networking)
- Cisco Data Center Storage Networking Support Specialist

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

After completing this course the delegate will be able to:

- Module 1: An overview of a Cisco Unified Communications System
- Module 2: Unity Connection
- Module 3: Cisco Unified Communications General Setup
- Module 4: Unified Communications Subscribers: A complete reference
- Module 5: Unified Communications System Monitoring and Maintenance

Administering Unified Messaging (AUM)

Price: $2895 USD or 29 CLCs **Duration:** 5 Days

The aim of the Administering Unified Messaging (AUM) v5.0 course is to produce competent administrators of the Cisco Unity product, up to and including Release 5.0. By the end of this course, learners will be able to perform system setup and customization; add, delete, and modify subscribers; and monitor and maintain the Cisco Unity system. It is the initial course in a two-course series; the other is Implementing Unified Messaging (IUM). As such, it lays a successful foundation for participation in the engineering-level course because a learner must understand the product features and how to use them before being able to install, configure, maintain, and troubleshoot the features.

Prerequisites

- A working knowledge of Microsoft Windows 2000
- A working knowledge of the Microsoft Exchange 2000 or the IBM Lotus Domino messaging environment
- A working knowledge of the features, benefits, and programming of at least one manufacturer's PBX (Cisco Unified CallManager or Cisco Unified Communications Manager preferred)

Certification

This course is part of the following Certifications:

- Unified Communication for System Engineers exam

Who Should Attend

The primary audience for this course is End-user system administrators, IP telephony specialized Channel Partners, Professional Services partners. The secondary audience for this course is Channel Partner systems engineers.

Course Objectives

After completing this course the delegate will be able to:

- Identify the components of the Cisco Unity system, describe their standard and optional features, and explain and how they integrate into a unified messaging system
- Identify the components of the Cisco Unity Connection system, describe their standard and optional features, and explain how they integrate with telephone systems
- Configure a Cisco Unity system using acknowledged best practices and manage a Cisco Unity subscriber account using the Cisco Unity Administration tool
- Choose the correct subscriber type and add the individual subscriber using best practices for setting account policy, class of service, and subscriber templates
- Monitor and maintain a Cisco Unity system using available tools and reporting capabilities

Cisco Unified Wireless Networking (CUWN)

Price: $2695 USD or 27 CLCs **Duration:** 4 Days

This course enables a network administrator to deploy a WLAN Enterprise solution through the identification and successful implementation of site-appropriate hardware and software features in a Cisco Unified Wireless Network.

Prerequisites

The following are prerequisites to the MPLS course:

- CCNA certification required
- Basic networking principles, TCP/IP, bridging, routing protocol, and VLAN operation.
- Basic Microsoft Windows and Internet Browser navigation skills.

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

After completing this course the delegate will be able to:

- Identify key enterprise WLAN implementation challenges
- Select and properly install the Cisco Unified Wireless Network (CUWN) hardware appropriate to site use and requirements
- Use the CUWN interfaces to administer WLAN, VLANs, 802.11 security policies, and QOS appropriately to optimize performance on and protect the network
- Configure and implement the key Unified Wireless security features to mitigate WLAN threats
- Utilize the recommended troubleshooting methodology and the various tools available to gather and assess system data and isolate equipment failures and security threats
- Administer, update, backup, restore, and use the Cisco Wireless Control System (WCS) as required to monitor CUWN equipment performance
- Configure and use the WCS location tracking features and the Cisco Location Server as appropriate to locate users within a CUWN environment

Cisco ONS 15454 Multiservice Transport Platform (MSTP) Release 8.5 Basic (MSTP BASIC)

Price: $2995 USD or 30 CLCs **Duration:** 4 Days

The Cisco Systems ONS 15454 Multiservice Transport Platform (MSTP) takes full advantage of the network intelligence introduced by the ONS 15454 Multiservice Provisioning Platform (MSPP) to deliver intelligent dense wavelength-division multiplexing (DWDM) functions for metropolitan and regional networks. The Cisco ONS 15454 MSTP solution provides a comprehensive suite of transparent wavelength service interfaces, including service interfaces. The Cisco ONS 15454 MSTP Test, Turn Up and Operations bootcamp provides the skills to test and turn up the Cisco ONS 15454 MSTP.

Prerequisites

A basic knowledge of the DWDM theory, Fibre installation and Test and turn up of optical network nodes

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

After completing this course the delegate will be able to:

- Verbally define what the Cisco ONS 15454 MSTP platform is
- Identify and record chassis components
- Verify node configuration based on device role
- Verify fibre viability and perform individual node cabling
- Identify basic fibre characteristics needed as input for a viable optical network design
- Given a desired network objective, use MetroPlanner to design an optical network and verify the MetroPlanner output
- Use Cisco Transport Controller to provision Cisco ONS 15454 DWDM nodes
- Given a point-to-point MetroPlanner lab design, implement and test
- Given a MetroPlanner lab ring design, implement and test
- Use Cisco Transport Controller and optical test tools to identify network problems and troubleshoot errors

Cisco ONS 15454 Multiservice Transport Platform (MSTP) Release 8.5 Advanced (MSTP ADVANCED)

Price: $2995 USD or 30 CLCs **Duration:** 4 Days

Prerequisites

- Routing fundamentals and IP addressing
- Cisco Transport Controller operation
- Installing and provisioning the Cisco ONS 15454 shelf
- Knowledge of dense wavelength-division multiplexing (DWDM) basics
- Experience using optical test equipment

Prerequisite knowledge gained by attending:

- Introduction to Cisco networking devices (ICND) or equivalent
- Cisco ONS 15454 MSTP Basic course

Who Should Attend

This course is intended for network professionals responsible for installation, deployment, and maintenance of the Cisco ONS 15454 MSTP. Network operations personnel, planners, and designers will also benefit.

Course Objectives

After completing this course the delegate will be able to:

- Install internal connections and provisionable patchcords
- Install optical channel client connections and optical trail circuits
- Provision the 10 Gigabit muxponder and 10 Gigabit transponders and connect with circuits
- Provision the ADM-10G subnetwork
- Provision optical protection in the ADM-10G subnetwork
- Install protected circuits in the ADM-10G subnetwork
- Provision the mesh node, which consists of the WXC, 40-MUX, and 40-DMX cards
- Provision the mesh network
- Install protected circuits in the mesh network

Course Content

- Cisco ONS 15454 MSTP System Overview
- Cisco ONS 15454 MSTP and DWDM Metro Networks
- Multiservice Provisioning Platform (MSPP) and MSTP Differences and Features
- Documentation
- Cisco Transport Controller Operations
- Safety
- MSTP Rings
- Ring Installation
- Ring Verification
- Internal Patchcords and Provisionable Patchcords
- Internal Patchcords
- Provisionable Patchcords When to Use
- 10 Gigabit Transponders and Muxponders
- 4 2.5G to 10G Muxponder
- 10 G Transponder
- Installation and Settings
- Provisionable Plug-In Modules
- Install Circuits
- ADM-10G "MSPP on a Blade" Overview
- Installation and Settings
- Optical Protection in the ADM-10G
- Protected Circuits in the ADM-10G
- Automatic Circuits
- Manual Circuits
- Manual Multiring
- Using Cisco Transport Planner to Design Manual Multiring
- Pros and Cons of Manual
- 40-Channel Ring
- Mesh Networks
- Mesh Topologies
- WXC Card Operation Using MEMS Technology
- Signal Flow in the Mesh Network
- Circuits in the Mesh Network
- Troubleshooting

Cisco ONS 15454 MSTP Release 8 Implementing Data over DWDM (MSTP DATA)

Price: $2995 USD or 30 CLCs **Duration:** 4 Days

This lab-intensive course introduces you to the Cisco ONS 15454 Multiservice Transport Platform (MSTP)dense wavelength-division multiplexing (DWDM) Release 8 data features and functions. You will learn the important theoretical concepts that underlie data encapsulation and how they are put to use in the Cisco ONS 15454 MSTP system. You will gain practical knowledge and skills to successfully deploy data over DWDM in your network. You will be able to determine the right MSTP cards to be based on the requirements of your network. In seven hands-on labs, you will learn to configure Cisco Transport Controller, the 2.5-Gigabit transponders, the 2.5 Gigabit and 10-Gigabit data cards, the Gigabit Ethernet and 10 Gigabit Ethernet crossponders, and the 10 Gigabit Add-Drop Multiplexer (ADM-10G). There is also a review of G.709 encapsulation, G.7041 Generic Framing Protocol (GFP), forward error correction, and Ethernet. This course combines lecture materials and hands-on labs throughout to make sure that you are able to successfully deploy a Cisco ONS 15454 MSTP data over DWDM network

Prerequisites

The following course is a prerequisite for this course:

- Cisco ONS 15454 Turn Up, Test, Provisioning & Operation (OCTPO)

Who Should Attend

This course is intended for network professionals, including designers, implementation staff, network operations center personnel, and support staff who are involved with the deployment, operations, and maintenance of the Cisco ONS 15454 MSTP system.

Course Objectives

After completing this course the delegate will be able to:

- List and describe the major features and benefits of the Cisco ONS 15454 MSTP data cards
- List and describe the major features and benefits of a Cisco ONS 15454 MSTP system for data over DWDM
- Understand G.709 encapsulation and forward error correction and configure the 2.5 Gigabit transponder, 2.5 Gigabit and 10 Gigabit data cards, and Gigabit Ethernet and 10 Gigabit Ethernet crossponders with G.709 options
- Understand G.7041 GFP and configure the 2.5 Gigabit and 10 Gigabit data cards
- Understand Ethernet options for Layer 1 transport using the Gigabit Ethernet and 10 Gigabit Ethernet crossponder cards
- Understand Ethernet options for Layer 2 protected and unprotected data ring circuits using the Gigabit Ethernet and 10 Gigabit Ethernet crossponder cards
- Understand general queuing theory and quality of service (QOS) as implemented in the Gigabit Ethernet and 10 Gigabit Ethernet crossponder cards
- Understand the ADM-10G time division multiplexing options for data, configure the cards, and create data circuits

Selling & Designing Cisco ONS 15454 MSTP Optical Solutions (DMSTP)

Price: $2195 USD or 22 CLCs **Duration:** 2 Days

DMSTP is a 2-day, instructor-led, lecture/lab course that is designed to provide basic skills in selling and designing optical networks with the ONS 15454 MSTP platform. You will learn how to cost-effectively scale the deployment of fibre networks with the ONS 15454 MSTP platform, focusing on multi-service aggregation, layered TDM and WDM configurations, and Cisco's next-generation management tools. In the lab, you will see how Cisco MetroPlanner is used to simplify and accelerate the design, implementation, and turn-up of MSTP solutions. The lab for this course is hands-on using MetroPlanner and CTM applications. The actual optical hardware will not be located onsite but will be logged into during the lab.

Prerequisites

- This course is intended for existing or new Cisco Optical Partners
- Basic level of knowledge of SONET/SDH and DWDM technologies

Who Should Attend

This course provides an introduction to Cisco MSTP solutions for existing optical ATP Channel Partners as well as those invited to join the optical ATP program. The course is targeted at account managers (first half of day one) pre-sales engineers and system engineers who need to sell, design, architect, and implement MSTP solutions. This course is broken into two sections; the first half of day one is appropriate for AMs and SEs, the rest of the course is targeted at SEs.

Course Objectives

After completing this course the delegate will be able to:

- Describe metro DWDM usage and typical solutions in today's market
- Describe the evolution of DWDM technology and development of key new features such as ROADM technology
- Describe the competitive advantages and intelligent features of the ONS 15454 MSTP
- Describe the architecture of the ONS 15454 platform
- Design typical basic DWDM network topologies
- Identify the shelf layout and cards and their features for the ONS 15454 MSTP
- Describe the key elements of DWDM network design
- Identify the steps used to turn up a network and create DWDM circuits with Wave Path Provisioning
- Identify the basic MSTP protection schemes and explain how to build multi-layer redundancy
- Explain how the CTC and CTM are used as end-to-end network management tools for the ONS 15454

Cisco ONS 15454 Turn Up, Test, Provisioning & Operation (OCTPO)

Price: $2795 USD or 28 CLCs **Duration:** 4 Days

The Cisco ONS 15454 Turn Up, Test, Provisioning, and Operation Training provides instructor-led training that enables you to learn how to turn up and operate the ONS 15454 through classroom instruction and hands-on training on an ONS 15454 system. Open lab periods provide you with opportunities to work with the ONS 15454 system in an unstructured environment.

The course is available in a two-day version, or an enhanced three-day version. .

Prerequisites

- SONET or SDH structure and hierarchy
- DWDM basics
- Optical test equipment use

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

After completing this course the delegate will be able to:

- Identify the major components, features, and functions of the Cisco ONS 15454 MSTP system
- Identify laser, fiber optic, electrical, and electrostatic discharge (ESD) safety topics associated with the ONS 15454 MSTP
- Identify the major components of optical fiber cables and connectors
- Identify the major steps required to properly clean optical fiber cables and connectors
- Install and provision common control, electrical, optical and Ethernet cards
- Identify types of IP addressing and common IP addressing scenarios
- Perform system setup and login
- Use the Cisco Transport Controller software
- Identify specific DWDM optics and technology relevant to this course
- Create MetroPlanner configurations
- Perform a node turn up procedure
- Perform optical signal verification tests
- Create ONS 15454 MSTP network connections
- Create ONS 15454 MSTP point-to-point circuits
- Configure an ONS 15454 MSTP amplifier
- Configure an ONS 15454 MSTP amplified OADM
- Configure an ONS 15454 Multishelf
- Configure an ONS 15454 MSTP amplified ring
- Configure ONS 15454 MSTP fiber protection
- Install ONS 15454 MSTP 10 Gbps muxponder and transponder cards
- Install ONS 15454 MSTP MXP_MR_2.5G and MXP_MR_10DME cards
- Perform basic troubleshooting on the ONS 15454 MSTP
- Install ONS 15454 MSTP Ethernet connections

Optical Technologies Fundamentals (OTF)

Price: $2295 USD or 23 CLCs **Duration:** 3 Days

The Introduction to Optical Technologies (IOT) course provides the students with fundamental knowledge about optical technologies and components of optical systems. The course enables the students to learn the basics of light and fiber optics and to distinguish between different fiber types. The students become familiar with building blocks of optical transmission systems and learn the linear and non-linear effects. The course includes an overview of Synchronous Optical Network / Synchronous Digital Hierarchy (SONET/SDH) standards, framing, protection, timing and services, Dense Wavelength Division Multiplexing (DWDM) systems and their design. This course teaches the knowledge and skills needed to describe technology features used in designing and implementing optical networks.

- Optical Technology Fundamentals
- Optical Fiber Types
- DWDM Components
- DWDM Design
- Fiber interconnection
- Light Emitters
- Light Detectors
- SONET/SDH Rates and Basic Terminology
- SONET/SDH Framing
- SONET/SDH Topologies and Protection
- Synchronization and Timing
- SONET/SDH Services
- Optical fiber cleaning
- Fiber and Laser safety

Prerequisites

CCNA required.Good networking foundation and basic knowledge in physics is helpful but not a must

Who Should Attend

Technical personnel responsible for designing and implementing optical network solutions Managers, engineers, planners, and installers wanting to broaden their view optical system capabilities, and communicate system needs to others.

Course Objectives

After completing this course the delegate will be able to:

- Describe the Electromagnetic and Optical Spectrum, the Fiber Technology and Light Propagation Inside Optical Fiber
- Identify Multi-Mode and Single-Mode Fibers and describe the Optical Parameters
- Describe Interconnection between Fibers, Interconnection Problems and Loss Factors
- Differentiate between Linear and Non-linear Effects in Optical Fiber
- Describe the use of Amplification and differentiate between Amplification and Regeneration
- Describe Building Blocks of Optical Systems
- Design Optical Systems for capacity, distance and applications
- Describe SONET/SDH standard (rates, basic terminology, framing, overhead)
- Describe SONET/SDH Topologies and Protection
- Identify SONET/SDH Synchronization and Timing
- Describe SONET/SDH Services
- Describe Optical Fiber cleaning
- Describe Fiber and Laser safety

Cisco CCIE 360 Learning Program

The Cisco CCIE 360 Learning Program for Routing and Switching offers multiple learning products and services intended to be blended together to provide a customized learning program. Components can be matched to each student's skill level, learning preference, and resources for maximum flexibility. Components can be purchased in value-priced packages or individually to suit the needs of the student.

Fast Lane is proud to be one of the first and the only global delivery partner of this new program.

Program Benefits:

- Cisco authorized learning content aligned to CCIE certification expectations
- Choice of components to fit different learning styles and budgets
- Flexible, 24/7 remote access
- Knowledge reinforced by frequent learning assessments
- Learning suggestions tailored to assessment performance
- Delivered and supported only by authorized Cisco Learning Partners and qualified
- Certified Cisco Systems Instructors
- Online Learning Management System manages and tracks progress

The Cisco CCIE 360 Learning Program for Routing and Switching develops expert-level skills through a structured combination of online learning tools and materials, resources for hands-on practice, access to qualified subject matter experts, and regular feedback and progress assessments.

- **Assessment:** Students take a diagnostic pre-assessment lab to benchmark their knowledge of various networking topics.
- **Planning:** Based on the pre-assessment, students create a learning plan that uses a mix of learning components to focus their study.
- **Learning:** Students learn by participating in lessons and lectures, reading materials, and working with peers and instructors.
- **Practice:** Students use the practice exercises to apply learning on actual network equipment.
- **Mastery:** Students measure their understanding by completing assessments of knowledge and skill for various approaches to solving network problems.
- **Review:** Students review their work with a mentor or instructor and tune their skills with tips and best practices.

PROGRAM PACKAGES

Basic Service (CCIE360-BLBS) $7495

Package Contains:

- Registration to Cisco's LMS: The heart of the Cisco CCIE 360 Learning Program for Routing and Switching is the Learning Management System, an online portal where students access learning components such as the Self-Paced Lessons, Performance Assessments, and Reference Library. Students can also schedule lab sessions and leave comments for a mentor. The portal offers both students and employers a summary of progress through the curriculum and the ability to set milestones and view success metrics.
- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and apply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Fast Lane Forums: Each student will receive access to online forums for the duration of the CCIE 360 program. These forums are available through the Fast Lane Community Site. Students may pose questions, provide input and receive support from Fast Lane instructors through this forum.
- 5 CIERS2 Assessment Labs: Cisco 360 Learning Program for CCIE R&S offers a suite of assessment labs that can be taken independently or as part of an instructor-led workshop. Each assess-ment tests the student's knowledge of concepts and technologies and tracks progress against learning goals and other students. A built-in mentoring guide provides detailed feedback, corrections and best practices for configurations. Assessments vary in degree of difficulty for use at various stages of the learning process.
- Fast Lane Mentoring Services: Mentoring tools provide detailed and personalized feedback on configurations, graded lab score reports, best practice suggestions and recommendations for further study. Mentoring feedback is automatically generated each time the students completes an assessment or lesson. Fast Lane provides Online Mentoring sessions and Discussion Forums for our Cisco CCIE 360 Learning Program for Routing and Switching students. During your program you will have access to CCIE 360 Round Table discussions with our SMEs located worldwide. These sessions are designed to address individual questions concerning your progress and level of readiness for taking the CCIE R&S Practical Exam.
- Remote rack time – 30 sessions: This package includes 30 self-scheduled remote lab sessions for individual practice.

Intermediate Service (CCIE360-BLIS) $10895

Package Contains:

- Registration to Cisco's LMS: The heart of the Cisco CCIE 360 Learning Program for Routing and Switching is the Learning Management System, an online portal where students access learning components such as the Self-Paced Lessons, Performance Assessments, and Reference Library. Students can also schedule lab sessions and leave comments for a mentor. The portal offers both students and employers a summary of progress through the curriculum and the ability to set milestones and view success metrics.
- CIERS Reference Library: The expansive and searchable technical reference library provides over 2000 pages of advanced networking documentation and best practices content. The web-based library is available online through the Cisco 360 Learning Program for R&S portal.
- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Fast Lane Forums: Each student will receive access to online forums for the duration of the CCIE 360 program. These forums are available through the Fast Lane Community Site. Students may pose questions, provide input and receive support from Fast Lane instructors through this forum.
- Self Paced Lessons: IPv6, Frame Relay, CAT QoS, Link Layer, IGP, BGP, MPLS, Troubleshooting
- CIERS Pre-Assessment Lab: The CCIE R&S pre-assessment is a four-hour lab to measure the student's starting competency. A score report helps the student and the Cisco Learning Partner choose an appropriate curriculum and learning components.
- 11 CIERS Assessment Labs: Cisco 360 Learning Program for CCIE R&S offers a suite of 11 eight-hour long assessment labs that can be taken independently or as part of an instructor-led workshop. Each assess-ment tests the student's knowledge of concepts and technologies and tracks progress against learning goals and other students. A built-in mentoring guide provides detailed feedback, corrections and best practices for configurations. Assessments vary in degree of difficulty for use at various stages of the learning process.
- Remote rack time – 50 sessions: This package includes 50 self-scheduled remote lab sessions for individual practice.
- CIERS 2 5-day Workshop: CCIE R&S Workshop 2 - Intended for students who are focused on mastering advanced configuration and troubleshooting. Workshop is approximately 20% lecture and 80% hands-on work. Includes five (5) eight-hour assessment labs, graded and returned with mentor feedback. Students will work collaboratively with other students and receive instruction via peer and instructor reviews.

Full Service (CCIE360-BLFS) $14695

Package Contains:

- Registration to Cisco's LMS: The heart of the Cisco CCIE 360 Learning Program for Routing and Switching is the Learning Management System, an online portal where students access learning components such as the Self-Paced Lessons, Performance Assessments, and Reference Library. Students can also schedule lab sessions and leave comments for a mentor. The portal offers both students and employers a summary of progress through the curriculum and the ability to set milestones and view success metrics.
- CIERS Reference Library: The expansive and searchable technical reference library provides over 2000 pages of advanced networking documentation and best practices content. The web-based library is available online through the Cisco 360 Learning Program for R&S portal.
- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Fast Lane Forums: Each student will receive access to online forums for the duration of the CCIE 360 program. These forums are available through the Fast Lane Community Site. Students may pose questions, provide input and receive support from Fast Lane instructors through this forum.
- Self Paced Lessons: IPv6, Frame Relay, CAT QoS, Link Layer, IGP, BGP, MPLS, Troubleshooting
- CIERS Pre-Assessment Lab: The CCIE R&S pre-assessment is a four-hour lab to measure the student's starting competency. A score report helps the student and the Cisco Learning Partner choose an appropriate curriculum and learning components.
- 11 CIERS Assessment Labs: Cisco 360 Learning Program for CCIE R&S offers a suite of 11 eight-hour long assessment labs that can be taken independently or as part of an instructor-led workshop. Each assess-ment tests the student's knowledge of concepts and technologies and tracks progress against learning goals and other students. A built-in mentoring guide provides detailed feedback, corrections and best practices for configurations. Assessments vary in degree of difficulty for use at various stages of the learning process.
- Remote rack time – 50 sessions: This package includes 50 self-scheduled remote lab sessions for individual practice.
- CIERS 1&2 5-day Workshops: CCIE R&S Workshop 1 - Intended for students who require an in-depth under-standing of frame relay, link layer, BGP, IGP, etc. Workshop is approximately 60% lecture and 40% hands-on work. Includes two (2) eight-hour assessment labs, graded and returned with mentor feedback. CCIE R&S Workshop 2 - Intended for students who are focused on mastering advanced configuration and troubleshooting. Workshop is approximately 20% lecture and 80% hands-on work. Includes five (5) eight-hour assessment labs, graded and returned with mentor feedback. Students will work collaboratively with other students and receive instruction via peer and instructor reviews.

CIERS 1 Workshop (CCIE360-CIERS1W) $4195

- CIERS 1 5-day Workshop: Intended for students who require an in-depth under-standing of frame relay, link layer, BGP, IGP, etc. Workshop is approximately 60% lecture and 40% hands-on work. Includes two (2) eight-hour assessment labs, graded and returned with mentor feedback.

CIERS 2 Workshop (CCIE360-CIERS2W) $4895

- CIERS 2 5-day Workshop: Intended for students who are focused on mastering advanced configuration and troubleshooting. Workshop is approximately 20% lecture and 80% hands-on work. Includes five (5) eight-hour assessment labs, graded and returned with mentor feedback. Students will work collaboratively with other students and receive instruction via peer and instructor reviews.

CIERS Package – Essentials (CCIE360-CIERSE) $3695

Package Contains:

- Registration to Cisco's LMS: The heart of the Cisco CCIE 360 Learning Program for Routing and Switching is the Learning Management System, an online portal where students access learning components such as the Self-Paced Lessons, Performance Assessments, and Reference Library. Students can also schedule lab sessions and leave comments for a mentor. The portal offers both students and employers a summary of progress through the curriculum and the ability to set milestones and view success metrics.
- CIERS Reference Library: The expansive and searchable technical reference library provides over 2000 pages of advanced networking documentation and best practices content. The web-based library is available online through the Cisco 360 Learning Program for R&S portal.
- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Fast Lane Forums: Each student will receive access to online forums for the duration of the CCIE 360 program. These forums are available through the Fast Lane Community Site. Students may pose questions, provide input and receive support from Fast Lane instructors through this forum.
- Self Paced Lessons: IPv6, Frame Relay, CAT QoS, Link Layer, IGP, BGP, MPLS, Troubleshooting
- CIERS Pre-Assessment Lab: The CCIE R&S pre-assessment is a four-hour lab to measure the student's starting competency. A score report helps the student and the Cisco Learning Partner choose an appropriate curriculum and learning components.
- 4 CIERS Assessment Labs: Cisco 360 Learning Program for CCIE R&S offers a suite of assessment labs that can be taken independently or as part of an instructor-led workshop. Each assess-ment tests the student's knowledge of concepts and technologies and tracks progress against learning goals and other students. A built-in mentoring guide provides detailed feedback, corrections and best practices for configurations. Assessments vary in degree of difficulty for use at various stages of the learning process.

CIERS Package – Preferred (CCIE360-CIERSP) $4795

Package Contains:

- Registration to Cisco's LMS: The heart of the Cisco CCIE 360 Learning Program for Routing and Switching is the Learning Management System, an online portal where students access learning components such as the Self-Paced Lessons, Performance Assessments, and Reference Library. Students can also schedule lab sessions and leave comments for a mentor. The portal offers both students and employers a summary of progress through the curriculum and the ability to set milestones and view success metrics.
- CIERS Reference Library: The expansive and searchable technical reference library provides over 2000 pages of advanced networking documentation and best practices content. The web-based library is available online through the Cisco 360 Learning Program for R&S portal.
- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Fast Lane Forums: Each student will receive access to online forums for the duration of the CCIE 360 program. These forums are available through the Fast Lane Community Site. Students may pose questions, provide input and receive support from Fast Lane instructors through this forum.
- Self Paced Lessons: IPv6, Frame Relay, CAT QoS, Link Layer, IGP, BGP, MPLS, Troubleshooting
- CIERS Pre-Assessment Lab: The CCIE R&S pre-assessment is a four-hour lab to measure the student's starting competency. A score report helps the student and the Cisco Learning Partner choose an appropriate curriculum and learning components.
- 11 CIERS Assessment Labs: Cisco 360 Learning Program for CCIE R&S offers a suite of 11 eight-hour long assessment labs that can be taken independently or as part of an instructor-led workshop. Each assess-ment tests the student's knowledge of concepts and technologies and tracks progress against learning goals and other students. A built-in mentoring guide provides detailed feedback, corrections and best practices for configurations. Assessments vary in degree of difficulty for use at various stages of the learning process.
- Remote rack time – 50 sessions: This package includes 50 self-scheduled remote lab sessions for individual practice.

Guided Workbook Package (CCIE360-GW) $2895

Package Contains:

- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Fast Lane Forums: Each student will receive access to online forums for the duration of the CCIE 360 program. These forums are available through the Fast Lane Community Site. Students may pose questions, provide input and receive support from Fast Lane instructors through this forum.
- Remote rack time – 50 sessions: This package includes 50 self-scheduled remote lab sessions for individual practice.

Self Study Essentials Package (CCIE360-SSE) $5495

Package Contains:

- Registration to Cisco's LMS: The heart of the Cisco CCIE 360 Learning Program for Routing and Switching is the Learning Management System, an online portal where students access learning components such as the Self-Paced Lessons, Performance Assessments, and Reference Library. Students can also schedule lab sessions and leave comments for a mentor. The portal offers both students and employers a summary of progress through the curriculum and the ability to set milestones and view success metrics.
- CIERS Reference Library: The expansive and searchable technical reference library provides over 2000 pages of advanced networking documentation and best practices content. The web-based library is available online through the Cisco 360 Learning Program for R&S portal.
- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Fast Lane Forums: Each student will receive access to online forums for the duration of the CCIE 360 program. These forums are available through the Fast Lane Community Site. Students may pose questions, provide input and receive support from Fast Lane instructors through this forum.
- Self Paced Lessons: IPv6, Frame Relay, CAT QoS, Link Layer, IGP, BGP, MPLS, Troubleshooting
- CIERS Pre-Assessment Lab: The CCIE R&S pre-assessment is a four-hour lab to measure the student's starting competency. A score report helps the student and the Cisco Learning Partner choose an appropriate curriculum and learning components.
- 4 CIERS Assessment Labs: Cisco 360 Learning Program for CCIE R&S offers a suite of 4 eight-hour long assessment labs that can be taken independently or as part of an instructor-led workshop. Each assess-ment tests the student's knowledge of concepts and technologies and tracks progress against learning goals and other students. A built-in mentoring guide provides detailed feedback, corrections and best practices for configurations. Assessments vary in degree of difficulty for use at various stages of the learning process.
- Remote rack time – 30 sessions: This package includes 30 self-scheduled remote lab sessions for individual practice.

Self Study Preferred Package (CCIE360-SSP) $6995

Package Contains:

- Registration to Cisco's LMS: The heart of the Cisco CCIE 360 Learning Program for Routing and Switching is the Learning Management System, an online portal where students access learning components such as the Self-Paced Lessons, Performance Assessments, and Reference Library. Students can also schedule lab sessions and leave comments for a mentor. The portal offers both students and employers a summary of progress through the curriculum and the ability to set milestones and view success metrics.
- CIERS Reference Library: The expansive and searchable technical reference library provides over 2000 pages of advanced networking documentation and best practices content. The web-based library is available online through the Cisco 360 Learning Program for R&S portal.
- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Fast Lane Forums: Each student will receive access to online forums for the duration of the CCIE 360 program. These forums are available through the Fast Lane Community Site. Students may pose questions, provide input and receive support from Fast Lane instructors through this forum.
- Self Paced Lessons: IPv6, Frame Relay, CAT QoS, Link Layer, IGP, BGP, MPLS, Troubleshooting
- CIERS Pre-Assessment Lab: The CCIE R&S pre-assessment is a four-hour lab to measure the student's starting competency. A score report helps the student and the Cisco Learning Partner choose an appropriate curriculum and learning components.
- 11 CIERS Assessment Labs: Cisco 360 Learning Program for CCIE R&S offers a suite of 11 eight-hour long assessment labs that can be taken independently or as part of an instructor-led workshop. Each assess-ment tests the student's knowledge of concepts and technologies and tracks progress against learning goals and other students. A built-in mentoring guide provides detailed feedback, corrections and best practices for configurations. Assessments vary in degree of difficulty for use at various stages of the learning process.
- Remote rack time – 50 sessions: This package includes 50 self-scheduled remote lab sessions for individual practice.

Workbook Package 1 (CCIE360-WB1) $1195

Package Contains:

- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Remote rack time – 30 sessions: This package includes 30 self-scheduled remote lab sessions for individual practice.

Workbook Package 2 (CCIE360-WB2) $1595

Package Contains:

- CCIE R&S Lab Workbook: The CCIE R&S workbook contains 30 lab scenarios to help students practice and ap-ply their learning on network equipment. Students can use their own practice lab at home or their employer, or rent remote equipment from their Cisco Learning Partner.
- Fast Lane Assessment: A Multiple choice test designed to help students verify their level of knowledge prior to purchasing any CCIE 360 package or component.
- Remote rack time – 50 sessions: This package includes 50 self-scheduled remote lab sessions for individual practice.

Cisco Advanced Services

The Cisco Advanced Services portfolio has been streamlined to make it easier for you to obtain the support you need for Cisco Advanced Technologies. The new Cisco Advanced Services architecture restructures and simplifies the Cisco Advanced Services portfolio. Advanced Services like Technical Application Support, Network Application Integration Support and Network Optimization Support have been repackaged as fixed deliverable, fixed price planning and design, and optimization services.

ADVANCED SERVICES

Cisco 10000 Series Essentials with Performance Routing Engine 2 (C10K)

Price: $2995 USD or 30 CLCs **Duration:** 4 Days

This course enables you to learn about the features, functionality, characteristics, and connectivity options of the Cisco® 10000 Series Routers with Performance Routing Engine 2 (PRE-2.) The course material includes detailed platform-specific information on leased-line applications, hardware components and interfaces, software, PRE-2 architecture and functionality, packet flows, High-Availability, Quality of Service (QoS), and Multiprotocol label switching (MPLS) technology. You learn how to configure and verify operation of leased-line features, and perform maintenance procedures, PRE-2 switchovers, and booting of the system using Cisco® IOS commands. This instructor-led course includes hands-on lab exercises that reinforce learning objectives.

Prerequisites

Students attending this course should be familiar with Cisco IOS commands and the Cisco IOS command line interface (CLI). In addition, they should have attended the following courses or have equivalent experience:

- Introduction to Cisco Network Devices (ICND)
- Building Cisco Scalable Networks (BCSN)
- IP-related routing protocols and services: Class and Quality of Service (COS/QOS), Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), and Multiprotocol Label Switching
- Internetworking, protocols, and technologies as they apply to ISPs, CLECs, and ILECs in their networking environments

Who Should Attend

This course is for technical professionals who need to know how to configure and maintain the Cisco 10000 Series Routers with PRE-2.

The following list includes the primary audience for this course:

- Customer technicians
- Cisco System Engineers (SEs)
- System Integrators (SIs)

Course Objectives

After completing this course, you will be able to:

- Discuss the functions, uses, and capabilities of the Cisco 10000 series routers with PRE-2 routing engines
- Define access architectures in which customers are utilizing the Cisco 10000 series to meet their networking needs for the leased-line market
- Demonstrate an understanding of the hardware components, their interconnection, dependencies and features through a number of hands-on exercises
- Demonstrate an understanding of the functional aspects of the PRE-2 architecture, including the areas of the PRE-2 responsible for forwarding packets and managing the system through troubleshooting exercises
- Give a detailed description of packet forwarding.
- Describe and demonstrate High-Availability features
- Configure and enable Modular QoS CLI (MQC) to satisfy Quality of Service (QoS) requirements of customers
- Use Cisco IOS CLI commands to configure LDP parameters based on network topology and network traffic criteria
- Configure an MPLS VPN to meet a specific set of criteria

ADVANCED SERVICES

Cisco Wireless LAN Advanced Topics (CWLAT)

Price: $2795 USD or 28 CLCs **Duration:** 4 Days

This hands-on 4-day course provides an advanced look at popular IPv4 routing protocols supported in Cisco IOS XR Software. The course investigates the intricacies of Interior Gateway Protocol (IGP) operation through Open Shortest Path First (OSPF) and Intermediate System-to-Intermediate System (IS-IS) Protocol labs that engage the student in a detailed examination of the link-state database and the effects of virtually all protocol options. The complexities of large-scale routing using the Border Gateway Protocol (BGP) are then explored, with the focus placed on scaling networks using route reflection and confederations. In addition, numerous BGP options, such as multihop, multipath, and authentication, are discussed and configured in a lab setting.

Prerequisites

The following are prerequisites for this course:

- Students should have knowledge of the Cisco IOS XR Software configuration syntax to the extent covered in the Cisco CRS-1 Essentials of Cisco XR 12000 Series Essentials course
- Students attending this class should be able to establish, without assistance, a basic configuration for OSPF, IS-IS, and BGP as accomplished in the Cisco CRS-1 Essentials or Cisco XR 12000 Series Essentials course labs

Who Should Attend

This course is for technical professtionals who design, implement, and operate IPv4 routing protocols in a service provider network consisting of routers running Cisco IOS XR Software. The primary audience for this course includes Network Operations Center Engineers, Network and Senior Engineers, and Support Engineers.

Course Objectives

After completing this course, you will be able to:

- Describe the basic unicast forwarding architecture and infrastructure
- Describe and apply basic routing and forwarding security
- Describe and examine bidirectional forwarding detection
- Explain nonstop forwarding operation
- Configure Routing Policy Language (RPL) sets and policies
- Design hierarchial and parameterized RPL policies
- Configure IS-IS Level 1 and Level 2 areas and verify operation
- Implement route redistribution and summarization in IS-IS
- Implement RPL policies in IS-IS
- Configure a multiple area OSPF domain and verify operation
- Configure route redistribution filtered with an RPL policy
- Configure autonomous systems with internal BGP full-mesh, route reflectors, and as a confederation
- Configure external BGP between adjacent autonomous systems
- Examine internal and external BGP operation

Cisco XR 12000 Series Essentials (XR12K)

Price: $4495 USD or 45 CLCs **Duration:** 5 Days

The course introduces you to Cisco XR 12000 Series Routers. The platform options, features, and functionality are detailed. The modules are both theoretical and practical in scope. Although some of the modules focus on the technology and features of the platform, most of the modules deal specifically with the tasks associated with configuring and deploying the Cisco XR 12000 Series Routers. Hands-on lab exercises allow you to practice and use the knowledge and skills gained during this course to perform measurable tasks.

Prerequisites

- Basic knowledge of router installation and some experience with installation tools
- Cisco GSR training or hands-on experience configuring and supporting Cisco GSR routers
- Routing protocol configuration experience with Border Gateway Protocol (BGP), Intermediate System-to-Intermediate System (IS-IS), and Open Shortest Path First (OSPF)
- Knowledge of BGP multihomed, multi-AS configurations
- Strong knowledge of MPLS configuration
- Multicast configuration experience
- Knowledge of Cisco router security implementation, including authentication, authorization, and accounting (AAA) and TACACS
- Experience troubleshooting Cisco routers in a large network environment

Who Should Attend

System Engineers, Channel Partner / Reseller, Customer.

Course Objectives

After completing this course, you will be able to:

- List and describe the major features and benefits of a Cisco XR 12000 Series Router
- Implement a Cisco IOS Software to Cisco IOS XR Software upgrade
- List and describe the major features and benefits of the Cisco IOS XR Software operating system
- List and describe the major features and benefits of a Cisco secure domain router (SDR)
- Implement and configure a Cisco secure domain router
- Configure the Cisco XR 12000, back out of configuration changes, and restore older versions of a configuration
- Install the Cisco IOS XR Software operating system, package information envelopes (PIEs), and software maintenance updates (SMUs)
- Configure the new Cisco IOS XR Software security features in both owner SDR and nonowner SDRs
- Configure routing protocols in a complex multi-AS environment
- Enable multicast routing on Cisco XR 12000 Series Routers

Securing Enterprise Data Center Architectures with FWSM, IDSM-2, Guard & Detector (SEDCA)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

Prerequisites

- Experience using the Cisco IOS Software command line interface (CLI)
- Routing fundamentals and IP addressing
- Knowledge and experience configuring Layer 2 and Layer 3 interfaces on Cisco routers and switches
- Basic knowledge of Cisco Catalyst 6500 operation and modules
- An understanding of firewall and intrusion detection systems concepts and operations

Who Should Attend

This course is targeted toward data center managers and administrators, network administrators, security professionals, and engineers interested in deploying and securing Cisco network data center solutions.

Course Objectives

Securing Enterprise Data Center Architectures is a lab-intensive course that allows delegates to integrate and test Cisco Systems security products and security best practices that comprise the Cisco Enterprise Data Center Architecture.

Delegates will implement and integrate the Cisco Catalyst 6500 Series Firewall Services Module (FWSM); the Cisco Catalyst 6500 Series Intrusion Detection System Module (IDSM-2); and two Cisco anomaly detection devices: Cisco traffic anomaly detectors and Cisco Guard DDoS mitigation appliances.

Hands-on lab experience includes use of commonly available network test applications, as well as scripts that delegates can use to verify that implemented security techniques are successful. Delegates will also learn best practices for implementing Layer 2 and Layer 3 security, with hands-on practice in implementing features such as port security and private VLANs.

Course Content

- Introduction
- Cisco Enterprise Data Center Architecture Security Overview
- Understanding Network Threats
- Implementing Device-Level Security
- Implementing Layer 2 and Layer 3 Security
- Deploying Cisco Catalyst 6500 FWSM at Internet Edge and Aggregation Layers
- Deploying IDSs, Intrusion Prevention Systems (IPSs) and Cisco Security Agent
- Deploying Cisco Guard DDoS Mitigation Appliances and Cisco Traffic Anomaly Detectors
- Securing Management Access

Building Enterprise Data Center Architectures Using Cisco 6500, MDS 9000 and ONS 15454 Optical Switches (EDCA)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

Building Enterprise Data Center Architectures is a lab-intensive course that allows students to integrate and test Cisco data center products and best practices that compose the Cisco Enterprise Data Center Architecture. Students will implement and integrate the Cisco Catalyst 6500 Series Content Services Module (CSM); Cisco Secure Sockets Layer Service Module (SSLSM); Cisco Application Control Engine (ACE); the Cisco Catalyst 6500 Series Firewall Services Module (FWSM); Cisco MDS 9000 Storage Directors; and the Cisco ONS 15454 SONET Multi-service Provisioning Platform (MSPP). Hands-on lab experience allows students to configure and verify thatimplemented techniques are successful.

Prerequisites

The following courses are recommended before taking this course:

- Building Scalable Cisco Internetworks (BSCI)
- Building Cisco Multilayer Switched Networks (BCMSN)
- Interconnecting Cisco Network Devices Part 1 (ICND1)
- Interconnecting Cisco Network Devices Part 2 (ICND2)

Who Should Attend

This course is targeted toward the following audiences:

- Large enterprise/financial customers deploying data centers
- Tier 3 and tier 4 data center support staff
- Planning, design, and implementation personnel

Course Objectives

After completing this course, you will be able to:

- Characterize the Cisco Service-Oriented Network architecture (SONA) framework and the Enterprise Data Center Architecture
- Outline L2 and L3 implementations common to the Enterprise Data Center Architecture
- Analyze a given data center topology and document a design hierarchy
- Outline and compare FWSM/CSM/SSLSM/ACE implementation options available for the data center network
- Characterize the advantages of storage area networking in the data center
- Explain where SONET architecture fits in the Enterprise Data Center Architecture
- Explain the advantages of implementing iSCSI and FCIP in the data center
- Verify L2 and L3 implementations conform to best practices in the Enterprise Data Center Architecture
- Configure a combination of FWSM and ACE modules to optimize the availability, accessibility, and security of data center applications
- Verify configuration of data center equipment for optimal redundancy and resiliency (failover capability)
- Implement and verify storage switches to support SAN architecture in the data center
- Implement a SONET Ring using ONS 15454 MSTP to facilitate interconnectivity between data centers
- Configure and verify SAN protocols (iSCSI, FCIP) as appropriate to facilitate storage networking in the data center

Implementing and Troubleshooting MPLS VPN Networks (AMPLS)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

Traditionally, ISPs and large Enterprise networks have used overlay or peer-to-peer models to implement Virtual Private Networks (VPNs). Multi-Protocol Label Switching (MPLS) VPNs provide the benefits of both the overlay and peer-to-peer models without their inherent detriments. This course teaches you how to implement, deploy, and troubleshoot MPLS VPNs in a variety of large-scale network scenarios.

You begin by building and scaling Intranet and Extranet MPLS VPN networks. Once complete, add Internet access to the VPNs using several commonly encountered methods. These complex networks are then migrated into multiple Autonomous Systems (AS) where Inter-AS VPNs and Carrier Supporting Carrier VPNs are implemented. As each technology scenario is introduced and implemented, a heavy focus is placed on troubleshooting and correcting "real world" problems. Finally, troubleshoot connectivity and transport problems that are inserted into the network by the instructor.

Prerequisites

- Configure a Cisco IOS device using the command line interface (CLI) as taught in ICND
- Describe in detail how IP routing and routers operate, including how network protocols function, and how IP addressing and subnetting works as taught in ICND and BSCI
- Configure and troubleshoot IP routing and route redistribution in large scale networks using OSPF, RIPv2, BGPv4, and static routing protocols as taught in ICND and BSCI
- Configure and troubleshoot basic MPLS functionality as taught in MPLS Technology Essentials (MPLSTE) and ISP Workshop and MPLS (IFMV).
- Building Scalable Cisco Internetworks (BSCI)

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Expert (CCIE Service Provider)

Who Should Attend

Network Professionals who:

- Deploy MPLS VPN networks
- Design Service Provider or large Enterprise networks that include MPLS VPN services

Course Objectives

After completing this course, you will be able to:

- Identify methods of deploying MPLS VPNs in a variety of network scenarios
- Select the best MPLS VPN method to implement for a given network scenario
- Implement the chosen MPLS VPN solution and verify that it is functioning as intended
- Identify and troubleshoot frequently encountered MPLS VPN problems in each implemented scenario

ADVANCED SERVICES

Cisco 7600 Series Essentials (ASISR)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

Prerequisites

- Experience using the IOS ® for configuration of IP, MPLS VPN, OSPF, BPP, and IS-IS.
- Basic understanding of QoS Operations

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Expert (CCIE Service Provider)

Who Should Attend

This course is intended for Network Professionals who implement and support large enterprise that have a need to deploy the Cisco 7600 Series Router.

Course Objectives

After completing this course, you will be able to:

- Describe the Power Management Features of the Cisco 7600
- Configure the High Availability features of the Cisco 7600 – Stateful Switchover (SSO) and Nonstop Forwarding (NSF)
- Characterize the Supervisor 720 Architecture including the Forwarding Mode
- Configure the 7600 for Unicast and Multicast
- Deploy Software Resiliency Features
- Implement Quality of Service (QoS) Features including on Catalyst LAN Ports, OSM WAN Ports, and FlexWAN Ports
- Deploy MPLS VPN on a 7600 Series
- Configure MPLS QoS Differentiated Service Modes
- Describe Packet Recirculation
- Characterize the Line Card Architecture of the Cisco 7600

Course Content

- Cisco 7600 Series Router System Overview
- Cisco 7600 Series Router Hardware Overview
- Detailed Supervisor 720 Architecture
- Packet Flows in the Cisco 7600
- High Availability
- Quality of Service (QoS)
- Multiprotocol Label Switching (MPLS)

ADVANCED SERVICES

Implementing and Troubleshooting MPLS VPN Networks (AMPLS)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

This course is intended for customer technicians and system integrators who need to implement various broadband aggregation technologies on Cisco routers. This course also enables Cisco System Engineers (SEs) to present and demonstrate various broadband aggregation technologies on Cisco routers for customers. You will learn about RBE, PPPoA, PPPoE, and L2TP, and learn how to configure and verify operation of these technologies on Cisco routers. This course also explains the Cisco 10000 Series router hardware architecture and software features.

Prerequisites

To attend this course you should have successfully completed the following training or have equivalent experience

- Interconnecting Cisco Network Devices (ICND)
- Campus ATM (CATM)
- Completion of one of the following Video on Demands: Basic DSL End-to-End Architecture or DSL Technologies Essentials

Certification

This course is part of the following Certifications:

- Cisco Certified Internetwork Expert (CCIE Service Provider)

Who Should Attend

This course is for technical professionals who need to know how to implement broadband aggregation on the Cisco 10000 Series router. The following are the primary audience for this course:

- Customer technicians
- Cisco System Engineers (SEs)
- System Integrators (SIs

Course Objectives

After completing this course, you will be able to:

- Compare and contrast the various broadband aggregation architectures available with Cisco routers
- Explain how RBE and RFC 1483 routing work, describe their typical architectures and benefits, and configure them on Cisco routers
- Explain how PPPoA and PPPoE work, along with descriptions of their typical architecture and benefits, and configure them on Cisco routers
- Explain and configure various methods for optimizing subscriber connections including PVC range, auto detect PPPoX encapsulation, VC class, ATM PVC autoprovisioning, and BBA groups
- Explain AAA services available on Cisco routers and RADIUS servers and configure AAA services on Cisco routers
- Explain how L2TP works, describe its typical architecture and benefits, and configure it on Cisco routers
- Describe the Cisco 10000 Series router and explain the features and functions of system-wide hardware and software components
- Identify and describe system modules and services on the Cisco 10000 Series router that are utilized in broadband aggregation deployment scenarios

ADVANCED SERVICES

Building Core Networks with OSPF, BGP, and MPLS Power Workshop (BCN)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

Building Core Networks with OSPF, IS-IS, BGP, and MPLS Bootcamp (BCN) is a powerful hands-on course that provides you with the required knowledge and skills to design, deploy, operate, and maintain an Internet service provider (ISP) backbone network. You will learn the primary principles of the routing protocols that are used in very large networks. Hands-on labs reinforce the lecture materials to make sure that you have the working skills to affect the networks you support.

Prerequisites

The following courses are recommended before taking this course:

- Experience using the Cisco® IOS Software command-line interface (CLI)
- Proficiency in routing fundamentals and IP addressing
- CCNA® or the equivalent networking knowledge and experience

Who Should Attend

This course is intended for network professionals, including designers, implementers and support staff involved with design and deployment of large-scale enterprise or high end ISP networks that use scalable technologies such as Intermediate System to Intermediate System (IS-IS), Open Shortest Path First (OSPF), Border Gateway Protocol (BGP) and Multiprotocol Label Switching (MPLS).

Course Objectives

After completing this course, you will be able to:

- Identify the critical factors for availability, scalability, and manageability
- Implement an Interior Gateway Protocol (IGP, either OSPF or IS-IS) into a large-scale hierarchical network using current practices for scalability
- Implement BGP into a large-scale hierarchical network using best current practices for scalability
- Control routing policy by influencing the BGP path selection process using route maps, prefix lists, and community strings
- Implement multihoming strategies using multiexit discriminators (MEDs) and local preference
- Implement and verify MPLS functionality in a large-scale network
- Implement and verify MPLS VPN connectivity in intra-autonomous-system environments
- Implement and verify MPLS traffic engineering practices
- Implement Layer 2 VPNs using Any Transport over MPLS (AToM

ADVANCED SERVICES

Cisco CRS-1 Essentials (CRS1)

Price: $4500 USD or 45 CLCs **Duration:** 5 Days

Prerequisites

The following courses are recommended before taking this course:

- Routing protocol configuration experience with BGP, IS-IS, and OSPF
- Advanced knowledge of BGP multihomed, multi–autonomous system configurations
- Strong knowledge of MPLS configuration
- Multicast configuration experience
- Advanced knowledge of Cisco Router security implementation, including AAA and TACAS

Who Should Attend

This course is intended for network professionals, including designers, implementers and support staff involved with design and deployment of large-scale enterprise or high end ISP networks that use scalable technologies such as Intermediate System to Intermediate System (IS-IS), Open Shortest Path First (OSPF), Border Gateway Protocol (BGP) and Multiprotocol Label Switching (MPLS).

Course Objectives

After completing this course, you will be able to:

- List and describe the major features and benefits of a Cisco Systems CRS router and the Cisco IOS XR Software
- Configure a CRS platform, back out configuration changes, and restore older versions of a configuration
- Install Cisco IOS XR Software, package information envelopes (PIEs), and software maintenance updates (SMUs)
- Understand the differences between the new Cisco IOS XR Software and the current Cisco IOS Software
- Configure the new Cisco IOS XR Software security features
- Configure routing protocols in a complex multi–autonomous system environment
- Enable Multicast routing on Cisco IOS XR Software platforms
- Configure Multiprotocol Label Switching (MPLS) on the Cisco IOS XR Software platform
- Convert existing route map configurations using new Routing Policy Language (RPL)
- Use the Craft Works Interface (CWI) to configure, view, and check configurations and obtain alarm status of CRS nodes
- Troubleshoot basic CRS hardware and software problems

Course Content

- CRS Hardware
- Cisco IOS XR Software Overview
- Cisco IOS XR Software Operations
- Cisco IOS XR Software Installation
- Cisco IOS XR Software Security
- Routing Protocols
- MPLS
- Route Policy Language (RPL)
- Craft Works Interface (CWI)
- Troubleshooting

Deploy, Maintain & Troubleshoot Cisco IOS XR Software on the Cisco CRS & Cisco XR 12000 Router (IOSXR)

ADVANCED SERVICES

Price: $4500 USD or 45 CLCs **Duration:** 5 Days

This is an advanced course that focuses on maintenance and troubleshooting of Cisco IOS XR Software in a typical network deployment. Although the focus of this course is on Cisco IOS XR Software, a solid understanding of the hardware on which it is implemented is a requirement. This course will detail the hardware architecture knowledge needed to effectively maintain and troubleshoot the Cisco Carrier Routing System (CRS-1) and the Cisco XR 12000 Series Router.

Prerequisites

Students are expected to already be knowledgeable about the technologies used in the course and how they are configured with both Cisco IOS XR Software and Cisco IOS Software. Students who are deficient in these prerequisites will be expected to do homework so they do not slow down the students who have met the prerequisites:

- Study material - Prior to class students will be required to have reviewed the videos, multimedia documentation, and textual documentation at www.cisco.com/cdc_content_elements/flash/carrierRoutingSystem/index.html
- Ability to configure Cisco IOS XR Software- Advanced Services Introduction to Cisco IOS XR Software course or equivalent experience in configuring Cisco IOS XR Software
- Basic knowledge of the CRS architecture and operations - Cisco CRS-1 Essentials course or equivalent experience in configuring Cisco IOS XR Software on the CRS-1Note: Because of overlapping content of the previous two courses, both are not required. Attendance in one of the two courses is strongly advised.
- Basic knowledge of the Cisco 12000 Series Router (Gigabit Switch Router, or GSR) architecture and operations - Cisco 12000 Series Technical Product Training (GSR) v2.0 or equivalent experience in operating and maintaining the GSR
- Comprehensive knowledge of designing, implementing, and operating a large-scale network for high availability
- Ability to efficiently use a command-line interface (CLI) to perform configurations
- Ability to configure, optimize, and scale dynamic routing protocols, in particular Open Shortest Path First (OSPF) Protocol, Intermediate System¿to¿
- Familiarity with traffic engineering and load balancing principles and methodologies
- Familiarity with quality-of-service (QoS) and service-level agreement principles and methodologies

Who Should Attend

Cisco channel partners, resellers, customers and employees.

Course Objectives

After completing this course, you will be able to:

- Deploy, operate, maintain, and troubleshoot Cisco IOS XR Software on the CRS-1 and the Cisco XR 12000 Series Router

Advanced CallManager 5: Migration, SIP and Presence (AUC6-MSP)

ADVANCED SERVICES

Price: $3750 USD or 38 CLCs **Duration:** 5 Days

Prerequisites

This course addresses advanced topics in depth and lab exercises are written at an expert level. Therefore, students must have taken one of the following classes, or have commensurate work experience:

- CallManager Bootcamp 4
- Communications Manager Bootcamp 5
- CIPT 1

Who Should Attend

Cisco CallManager 4 experienced IP telephony engineer and technical professionals who needs to quickly acquire hands-on experience with Cisco Unified CallManager (CUCM) 6 features and an in-depth treatment of CUPS and Microsoft LCS integration.

Course Objectives

After completing this course, you will be able to:

- Identify new features, added capabilities and enhancements introduced with Cisco Unified Communications Manager 6 and differences in the user interface
- Accomodate adoption and integration of features, capabilities, and enhancements introduced with CUCm 6.x when migrating from CCM 4.
- Configure CUCM 6 to use LDAP for Windows AD integration
- Demonstrate the use of selected troubleshooting tools provided by or used with CUCM 6.0
- Configure SIP endpoints in the enterprise
- Configure SIP trunks in the enterprise
- Configure SIP endpoints in an SRST environment
- Configure the CUP 6.0 component of a presence-enabled telephony solution with CUCM 6.0
- Understand the features and integration requirements needed to implement a presence-enabled telephony solution with a CUCM 6.0 using CUP 6.0 and CUPC 1.2
- Migrate from locations-based CAC to network-based CAC using RSVP
- Integrate a presence-enabled Cisco Unified Communications deployment with a Microsoft LCS and MOC deployment

Deploying Cisco Unified Communications Manager 6 (CMBC6)

ADVANCED SERVICES

Price: $3750 USD or 38 CLCs **Duration:** 5 Days

This course teaches students how to integrate Cisco Unified Communications into a network to meet voice and data requirements. Extensive practical labs offer additional opportunities to learn by providing exercises to select, configure, and troubleshoot Cisco Unified Communications products such as Communications Manager 6, Cisco VG248 48-Port Analog Phone Gateway, Cisco Catalyst 6000 plus digital signal processor (DSP) resources plus digital line cards, Cisco IOS Software gatekeeper, and Media Gateway Control Protocol (MGCP) and H.323 gateways.

Prerequisites

The following courses are recommended before taking this course:

- CCNA or CCNP certification
- Cisco Voice over IP (CVOICE)

Who Should Attend

This course is for field and channel systems engineers and network engineers who deploy IP telephony solutions based on the Cisco Unified Communications architecture and Cisco Unified Communications Manager 6.

Course Objectives

After completing this course, you will be able to:

- Identify new features and installation options for Cisco Unified Communications Manager 6.0
- Configure dial plans to enable routing calls, accessing features, and controlling access
- Explain gatekeeper functions, configure a gatekeeper-controlled intercluster trunk (ICT), and establish gatekeeper resiliency using Gatekeeper Update Protocol (GUP)
- Describe advanced user features available in a Cisco Unified Communications Manager solution
- Configure Survivable Remote Site Telephony (SRST) with both basic commands and Cisco
- Unified Communications Manager and monitor and troubleshoot its operation
- Identify and use common Cisco Unified Communications Manager troubleshooting tools

Cisco Voice over Broadband Solution Deployment Workshop (VOBB)

ADVANCED SERVICES

Price: $7500 USD or 75 CLCs **Duration:** 10 Days

This hands-on workshop covers the planning, design and implementation of Cisco¿s Voice over Broadband (VoBB) solution. Participants learn by doing during lab sessions. With general instructions and real world resources, participants will formulate and perform all of the tasks required to deploy the Cisco Broadband Local Integrated Service Solution (BLISS).

Prerequisites

The following courses are recommended before taking this course:

- Cisco BTS 10200 Provisioning Course (CBTSP)
- Cable HFC exposure, Cisco ICCR course
- Exposure to UNIX systems and UI
- Cisco MGX/VISM trunking gateway product training/exposure
- Solid foundation of Cisco routing and switching products and technologies
- Solid foundation in VoIP and Telephony concepts, Cisco CVOICE course
- SS7, MGCP, SIP, H323 signaling protocol experience

Who Should Attend

- Individuals who plan, design, and implement (deploy) Voice over Broadband packet based telephony solutions.
- Individuals who design Cisco softswitch systems that include Business Voice Solutions (BVS).

Course Objectives

After completing this course, you will be able to:

- Develop the necessary planning and design documentation required for solution deployment and testing, including Low Level Design (LLD), Network Implementation Plan (NIP), Network Ready For Use (NRFU), given appropriate source documentation.
- Perform necessary hardware installation and cabling procedures.
- Install software on the major solution components.
- Provision BTS 10200 Call Agent and Feature Servers for all specified requirements.
- Provision IP core switch/router components including the Catalyst 6509 and 3550, and RSM devices.
- Configure NCS/MGCP/SIP media gateways (MGWs) to support local subscribers, including Cable, IAD, ATA, and SIP-based IP Phones.
- Provision the PSTN interconnect solution components, including 2651 ITP and MGX 8850/VISM gateways

ADVANCED SERVICES

Cisco Unified Provisioning Manager (CUPM)

Price: $2000 USD or 20 CLCs **Duration:** 2 Days

Cisco Unified Provisioning Manager is a reliable and scalable Web-based provisioning solution to manage a company's critical next-generation communications services. The Cisco Unified Provisioning Manager (CUPM) v1 course teaches students how to effectively use the Cisco Unified Provisioning Manager application. The focus of this course is to have students use this product to learn how to provision Cisco Unified Communications initial deployments as well as to provide ongoing operational provisioning and activation services for individual subscriber changes. The student will use the Cisco Unified Provisioning Manager application to mangage subscribers, order products and services for subscribers, provision the Cisco Unified Communications infrastructure, track phone and directory numbers in an inventory, implement business abstractions for workflow processes that may require approving orders for delegation, and configure provisioning attributes that are applied to the services on an order suring activation. The students will reinforce what is discussed in the lecture using hands-on lab exercises.

Prerequisites

The following courses are recommended before taking this course:

- Basic Microsoft Windows user-level knowledge
- Basic Web browser usability
- TCP/IP networking experience
- Basic Cisco router and switch configuration
- Basic IP Telephony network administration skills
- Familiarity with the implementation and administration of the following applications:
  - Cisco Unified Communications Manager
  - Cisco Unified Communications Manager Express
  - Cisco Unity
  - Cisco Unity Express
  - Cisco Unity Connection

Who Should Attend

This course was written for voice network administrators who will be provisioning Cisco Unified Communications products. System Administrators who manage the Cisco UPM server and prepare the network devices for network management services should also take this class. The following are the primary audience for this class:

- Voice network administrators & operators
- System administrators, system integrators, professional services and consultants

Course Objectives

After completing this course, you will be able to:

- Describe what is meant by the term "Unified Communications," describe the management space, and the Cisco suite of products for managing the Cisco Unified Communications System
- Discuss that associated network management needs and challenges
- Effectively use Cisco Unified Provisioning Manager to:
  - Auto-configure a Unified Communications environment by domains and service areas
  - Push infrastructure configurations out to new networks
  - Load subscriber data or migratelegacy subscriber data
  - Administer individual adds, updates or deletes through a single interface and synchronize it across the Unified Communications environment
  - Roll out new subscribers and services automatically on existing Unified Communications networks
- After completing this 2-day course, students will be able to use these products to properly provision Cisco Unified Communications networks, consisting of Cisco Uniified Communications Manager, formerly called Cisco CallManager, Cisco Unified Communications Manager Express, Cisco Unity, Cisco Unity Express, and Cisco Unity Connection. Students will meet these objectives by applying the information learned in the lectures through hands-on lab exercises.

ADVANCED SERVICES

Cisco Unified Application Environment Developer Training (CUAE)

Price: $2500 USD or 25 CLCs **Duration:** 3 Days

This lab-intensive course introduces you to the Cisco Unified Application Environment (CUAE) and its features. You will learn the important theoretical concepts that the CUAE is based on and gain the practical knowledge and skills to successfully use it to develop applications in your environment. In 6 hands-on labs, you will learn to build simple applications using out-of-the-box features of CUAE as well as develop more complex custom plugins.

Prerequisites

The following courses are recommended before taking this course:

- Cisco Unified CallManager Fundamentals
- Microsoft VS.NET Fundamentals
- Working knowledge of C/C++ and .NET or any other object oriented programming language

Who Should Attend

This course is intended for application developers with a basic understanding of Cisco IP Telephony, primarily Cisco Unified CallManager.

Course Objectives

After completing this course, you will be able to:

- Build applications using the Cisco Unified Application Designer
- Deploy applications to CUAE
- Run applications on CUAE triggered by calls from the IP phone
- Run applications on CUAE triggered by making an HTTP request
- Create, deploy, and utilize actions
- Create, deploy and utilize custom providers including provider events and provider actions

ADVANCED SERVICES

Cisco Academy of Digital Signage (ADS)

Price: $2000 USD or 20 CLCs **Duration:** 2 Days

Cisco Academy of Digital Signage (ADS) is a 2-day innovative education initiative that teaches media professionals how to create and optimize media content for digital signage. Cisco ADS provides an instructor-led course to help develop the skills needed to produce digital signage for every market and customer.

Prerequisites

The following knowledge is recommended before taking this course:

- Skilled in rich media content creation and video production
- Adobe Photoshop
- Adobe Illustrator
- Adobe Flash
- Adobe Premiere
- Adobe Dreamweaver

Who Should Attend

- Media professionals who want to add a marketable credential to their skill set
- Content and media companies interested in creating digital signage formatted content
- Cisco Channel Partners who would like to expand their solution capabilities.

Course Objectives

After completing this course, you will be able to:

- Content Creation will highlight best practices for creating high-definition, on-demand video, network-broadcasted and CCTV live video, multimedia and Web design, flash automations, still and animated images, text, dynamic content, and modular designs.
- Content Management instruction will focus on content control, organization, playlisting, scheduling, digital signage management, content rights and administration.
- Content Distribution will include best practices for content-delivery networking, store-and-forward, IP multicasting, content assessment, network and system readiness assessment, and streaming video (architecture, design and protocols).

If the attendee passes both the lab and written portions of the Exam they will become a Cisco Qualified Digital Signage Media Professional

ADVANCED SERVICES

Cisco Unified Wireless Network for Data and Voice (CUWN-DVW)

Price: $3695 USD or 37 CLCs **Duration:** 5 Days

This course provides knowledge and hands-on experience for students in wireless technology for networks containing data and voice. Students will learn about the technology and configurations required for creating a wireless network for data and voice. Students will create a wireless network using lightweight access points (Cisco Aironet, 1000 Series Lightweight Access Point), Cisco 4402 Wireless LAN controller (WLC), Cisco Unified Wireless IP Phone 7921G, and wireless control systems (WCSs). Students will configure the network for quality of service (QoS), mobility between access points, and security for both wireless phones and laptops. Students will review site survey characterisitcs and create a "heat map" of predicted areas of coverage. Students will use and convert autonomous wireless access points (Cisco Aironet 1230 AG Access Point) to lightweight access points.

Prerequisites

The following knowledge is recommended before taking this course:

- Basic knowledge of wireless technology
- Basic knowledge of IP addressing
- Basic knowledge of switches and routers

Who Should Attend

This course is for technical professionals who:

- Are tasked with building a wireless network for data and/or voice
- Are seeking hands-on experience using wireless networks for data and/or voice
- Want more understanding of the equipment used for wireless networks for data and/or voice

Course Objectives

After completing this course, you will be able to:

- Describe the requirements of a wireless data only vs. a wireless data and voice network
- Use an autonomous wireless network for data and voice
- Install and configure a Cisco 4402 WLC for a data and voice network
- Install and configure a Cisco Aironet 1000 Series Lightweight Access Point
- Configure security for a wireless laptop using Protected Extensible Authentication Protocol (PEAP)
- Configure security for a Cisco Unified Wireless IP Phone 7921G using Extensible
- Authenticated Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST)
- Configure QoS in a Cisco 4402 WLC for voice and data
- Configure a wireless local area network (WLAN) for voice and data in the same network
- Configure and integrate a Cisco Unified IP Phone 7921G
- Configure wireless mobility between access points and the WLC for mobility
- Configure and utilize a WCS for: Pushing configurations to WLCs, polling statistics, and creating reports
- Describe the key characteristics of a site survey

ADVANCED SERVICES

Building Enhanced Cisco Security Networks (BECSN)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

Prerequisites

The following knowledge is recommended before taking this course:

- Experience using the IOS ® Command Line Interface (CLI)
- Routing fundamentals and IP addressing
- Experience using Cisco Secure Products including PIX Firewalls, VPN Concentrators, and Intrusion Prevention Systems (Recommended)
- Experience using Cisco Aironet Wireless LANs (Recommended)

Who Should Attend

This course is intended for network professionals including designers, implementers and support staff who design security networks and deploy networks using Cisco security products including end-to-end Cisco security services.

Course Objectives

After completing this course, you will be able to:

- Develop and document a comprehensive security policy that fulfills all requirements of a network assessment
- Based on a set of threat management criteria, document a threat response procedure
- Configure a site-to-site IP Security (IPSec) VPN to the corporate core network
- Configure split tunneling to send unencrypted traffic to the Internet so that users are capable of loading a Web page outside of the IPSec tunnel
- Configure context-based access control (CBAC) on a router to secure the remote VPN connection
- Identify the path maximum transmission unit (MTU) for the established site-to-site IPSec tunnel
- Configure Cisco VPN Routers for IPSec-HA and verify their correct operation by using a failover sequence and reverse route injection
- Configure a Cisco router to be a Next Hop Resolution Protocol (NHRP) client by having it register with the NHRP hub in the core network
- Connect a NHRP client router to a peer pod client router through the dynamic multipoint VPN (DMVPN) network
- Configure the Cisco Wireless Application Protocol (WAP) for 802.1x port-based authentication and verify its accuracy with a successful RADIUS login to a student pod Cisco Secure Access Control Server
- Configure an access edge router to support Simple Network Management Protocol Version 2 (SNMP v2) with SNMP access control lists (ACLs) for remote administration
- Configure Cisco Intrusion Detection System components to respond to active internal and external network threats using CiscoWorks VPN/Security Management Solution 2.2
- Configure a Cisco PIX firewall to respond to active and internal and external networks
- Configure Cisco routers to respond to active internal and external networks

Course Content

- Developing a Network Security Policy
- Configuring Split Tunneling for Remote Access
- Fragmentation, Path MTU Discovery, and Recursive Routing
- IPSec High Availability (IPSec-HA)
- Dynamic Multipoint VPN (DMVPN)
- Identity Based Networking Services (IBMS)
- Securing Network Management
- Network Attacks
- Network Implementation Package

ADVANCED SERVICES

Customizing ICM/IPCC Reports Workshop (IPCAR)

Price: $1995 USD or 20 CLCs **Duration:** 3 Days

Prerequisites

The following knowledge is recommended before taking this course:

- Familiarity with telephony
- Working knowledge of Cisco Unified ICM or CC
- Working knowledge of MS-SQL and databases

Who Should Attend

This course is intended for anyone responsible for the planning, estimating, or implementing of call center and ICM/CC reports.

Course Objectives

After completing this course, you will be able to:

- Describe the Cisco Unified ICM environment
- Understand typical call flows
- Relate call flows to data generation
- Describe key formulas for Cisco Unified ICM call statistics
- Assess the need for customization
- Use InfoMaker to format and create templates
- Navigate and query the Cisco Unified ICM Database Schema
- Add new templates to WebView

Course Content

- Introduction to the Reporting Interface (WebView)
- Call Flows and Data Generation
- Template Formatting
- Installing and Modifying WebView Templates
- Database Tools
- Basic SQL
- Designing and Building Templates from Scratch
- Agent Detail Records
- Cisco Unified ICM Detail Call Data
- Fulfilling custom requirements

ADVANCED SERVICES

Cisco IPCC Enterprise Advanced Scripting (IPCAS)

Price: $1995 USD or 20 CLCs **Duration:** 2 Days

Prerequisites

The following knowledge is recommended before taking this course:

- Familiarity with Cisco Call Center Technology
- Working knowledge of ICM or IPCC

Who Should Attend

This course is intended for call center professionals and other technical professionals responsible for deploying or supporting Cisco IPCC Enterprise/ICM or responsible for implementing end-to-end call-flow designs.

Course Objectives

After completing this course, you will be able to:

- Develop a technique for determining the business rules that dictate the delivery of calls within a call center
- Convert business rules into a call-flow design based on the requirements
- Develop scripts providing IVR treatment, collecting digits, performing database lookups, and facilitating screen pops at the desktop
- Recognize how scripting can affect historical reporting and identify script failure and learn troubleshooting techniques
- Test the scripting logic to verify that it meets the business requirements

Course Content

- Common Script Nodes
- Scheduling Scripts
- New Features
- Business Rules
- Routing Rules
- Administrative Scripts
- Troubleshooting
- Database Routing
- Contingency Scripting
- Advanced Concepts
- Maintenance

ADVANCED SERVICES

Cisco IPCC Enterprise PPDIOO Workshop (PPDIOO)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

Prerequisites

The following knowledge is recommended before taking this course:

- IPCC/Advanced Technology Provider (ATP) certification
- Cisco ICM/IPCC Product Training
- Project Management Experience

Who Should Attend

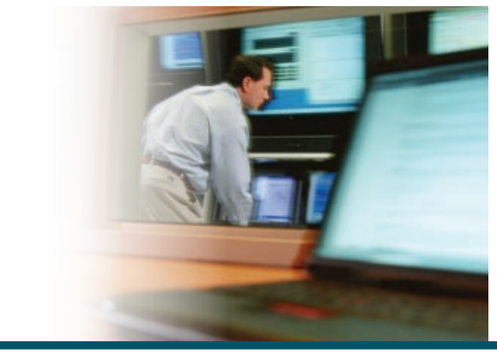
This course is intended for professionals working for Cisco Intelligent Contact Management (ICM) and for IPCC Advanced Technology Partners, Advanced Services delivery teams, sales engineers, project managers, system architects, and project engineers.

Course Objectives

Upon completion of this course, you will be able to convert business requirements into call flow design and scripts, develop IPCC scripts, produce standard reports, properly document configuration and scripting implementations, undertake fundamental debugging/fault finding of the IPCC solution, and deploy a solution and test for acceptance

Course Content

- IPCC Technical Review
- IPCC Engagement Process and PPDIOO Methodology
- Prepare and Plan: Customer Requirements
- Design and Implement
- Operate and Optimize
- Troubleshooting
- Case Study



Cisco Bliss Solution ITP/MGX Components Deployment (BLISS)

Price: $1995 USD or 20 CLCs **Duration:** 2 Days

This customized, hands-on course is specifically developed to address the installation, configuration and diagnostics of the Cisco IP Transfer Point (ITP) and Cisco MGX Series gateway components as they are implemented in the Bliss for Cable VoIP network solution. The course is recommended for individuals that design, implement, support and troubleshoot the BTS 10200 based VoIP solution. The focus of the course is on the Cisco ITP and MGX solution components, however, configuring the Cisco BTS 10200 Softswitch for ITP/MGX control and interoperability is also included.

Prerequisites

The following knowledge is recommended before taking this course:

- Operational exposure to the BTS 10200 voice solution components
- UNIX/Solaris administrative exposure
- Cisco IOS experience
- IP routing and switching concepts, and experience
- VoIP concepts, including signaling protocols
- Telephony fundamentals, including SS7 exposure

Who Should Attend

- Individuals that plan, design, implement, operate, or optimize (PDIOO) BTS 10200 Softswitch-based VoIP solutions that include the ITP and/or MGX components
- Individuals who troubleshoot BTS 10200 Softswitch-based VoIP solutions (Tier 2/3 level support.

Course Objectives

After completing this course, you will be able to:

- Describe the Cisco Bliss for Cable solution, its components purpose and interoperability
- List and describe the key SS7 operational parameters that effect PSTN signaling interconnectivity
- Install and configure the Cisco ITP signaling gateways for A-link deployment
- Given sample scripts, provision the BTS 10200 Softswitch to support ITP-PSTN interconnectivity
- Describe the Cisco MGX 8800 Series gateway system components and architecture
- Install the Cisco MGX 8800 Series gateway, using s/w installation/upgrade procedures
- Use MGX CLI to configure the PXM, SRM, RPM, and VISM components for voice trunking
- Describe BTS 10200 Softswitch provisioning table relationships use to process and control call routing and trunking to/from the PSTN
- Use ITP and MGX IOS/CLI commands to verify operational status and troubleshoot faults
- Use BTS 10200 and UNIX tools to verify operational status of the BTS, ITP and MGX and isolate faults

Deploying and Maintaining Carrier Ethernet Services (DMCE)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

The Cisco Deploying and Maintaining Carrier Ethernet Services course gives students the knowledge and skills required to configure, administer, and deploy Layer 2 Ethernet services as defined by the Metro Ethernet Forum (MEF) on a service provider Multiprotocol Label Switching (MPLS)-enable network. Students learn how to configure Customer Premise Equipment (CPE) to connect to a SP network and configure an access network and aggregation, distribution, and core portions of a SP network. Students also learn how to secure a SP network to protect it from attack. Labs are available to reinforce what is discussed in the lecture.

Prerequisites

The following knowledge is recommended before taking this course:

- Ability to efficiently use Cisco IOS command line interface to perform configurations
- Ability to design hierarchial layer 2 and layer 3 networks
- Ability to configure, optimize, and scale dynamic routing protocols, in particular OSPF, BGP, and MPLS
- Ability to configure, optimize, and scale layer 2 protocols
- Familiarity with QoS and SLA principles and methodologies

Who Should Attend

This course is for network administrators, network operators, and system administrators who need to know how to configure and deploy carrier Ethernet services in their network environment. The following are the primary audience for this course:

- Network administrators and operators
- Systems administrators

Course Objectives

After completing this course, you will be able to:

- Identify different Ethernet service type architectues as defined by the MEF
- Identify the various devices used within a carrier Ethernet system
- Describe the functions fo each device within a carrier Ethernet system
- Configure CPE network functions to connect to a Point of Presence (POP)
- Configure routed CPE functions
- Configure a routing interface and routing protocol
- Configure bridged CPE functions
- Configure an 802.1Q interface
- Configure access network functions to allow customer data into the network
- Aggregate customer traffic within the SP network
- Virtual Forwarding Instance
- Configure a core network to transport customer traffic through a SP network
- Configure MPLS within a core network
- Increase availability of layer 2 services within a SP network by configuring pseudowire redundancy and MPLS traffic engineering with fast reroute
- Ensure integrity and security of customer data and a SP network
- Implement Quality of Service (QoS) mechanisms in order to meet service level agreements (SLAs) for different traffic types
- Monitor and manage end-to-end layer 2 Ethernet services using Ethernet-OAM

Cisco BTS 10200 Softswitch Essentials I (BTSE1)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

This is the first of two five-day, hands-on technical training courses that support the Cisco® BTS 10200 Softswitch application and Cisco Broadband Local Integrated Services Solutions.

The Cisco BTS 10200 Essentials I course provides a thorough introduction to the Cisco BTS 10200 Softswitch as well as an overview of Cisco Broadband Local Integrated Services Solutions. Targeting typical network operations center (NOC) personnel, this course covers the Cisco BTS 10200 operations, maintenance, administration, and basic troubleshooting topics. The course also supports Cisco BTS 10200 Softswitch provisioning for Integrated Access Devices (IAD), Embedded Multimedia Terminal Adapter (eMTA) cable, and Session Initiation Protocol (SIP)–based IP phone residential gateways (RGWs) and subscribers. The extensive hands-on activities are designed to reinforce an end-to-end call-flow perspective, where students provision the Cisco BTS 10200 Softswitch for call setup and control as well as use the various RGW diagnostic tools to validate, observe, and troubleshoot operations.

Prerequisites

Although no formal prerequisites are required to attend this course, the following related skills and knowledge are strongly recommended for the best learning outcome:

- Experience with Cisco IOS® Software routers and knowledge of IP routing and switching fundamentals; knowledge equivalent to the CCNA® and/or CCNP® certifications
- Experience with UNIX (Solaris) operating systems
- Exposure to Media Gateway Control Protocol (MGC)P and SIP call signaling protocols
- Background with telephony network concepts and terminology

Who Should Attend

- Individuals who operate and maintain Cisco BTS 10200 Softswitch–based voice-over-IP (VoIP) solutions
- Individuals who provide troubleshooting support in the NOC
- Tier 2 or 3 level support or solution design personnel who intend to continue with additional Cisco BTS 10200 Softswitch courses: Cisco BTS 10200 Essentials II or other advanced courses.

Course Objectives

After completing this course, you will be able to:

- Identify and describe Cisco Broadband Local Integrated Services Solutions primary components and their interoperability.
- Identify and explain the Cisco BTS 10200 Softswitch capabilities, internal and external interfaces, communications protocols, and hardware options.
- Explain and demonstrate using the Cisco BTS 10200 Softswitch provisioning tools and methods, to include command-line interface (CLI), copy and paste, bulk (batch file), and Extensible Provisioning and Operations Manager (EPOM).
- Review and practice Cisco BTS 10200 Softswitch operations and maintenance methods, procedures, and commands.
- Explain and demonstrate using events and alarms to identify Cisco BTS 10200 Softswitch system faults.
- Identify the Softswitch provisioning tables used to process and control local subscriber calls and routing translations.
- Demonstrate the use of Cisco IAD, eMTA, and IP phone diagnostic tools and systems to verify correct operation for subscriber call setup and control.
- Practice basic troubleshooting to isolate and resolve on-net call-processing faults.

Cisco BTS 10200 Softswitch Essentials II (BTSE2)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

This is the second of two five-day, hands-on technical training courses that support the Cisco® BTS 10200 Softswitch application and Cisco Broadband Local Integrated Services Solutions.

The Cisco BTS 10200 Softswitch Essentials II course builds on the concepts presented in Cisco BTS 10200 Softswitch Essentials I. After a very light review of the Cisco Broadband Local Integrated Services Solution and the Cisco BTS 10200 Softswitch system, this course focuses on translations (dial plans), public switched telephone network (PSTN) interconnect with Cisco IP Transfer Point (ITP) signaling gateways, and off-net trunking with both Cisco AS5X00 IOS® Software and Cisco MGX 8000 Series trunking gateways. Targeting the tier2 and 3 level support and design and engineering personnel, this course focuses on developing Cisco BTS 10200 Softswitch provisioning scripts for off-net trunking and call routing, in-depth coverage of Media Gateway Control Protocol (MGCP), Session Initiation Protocol (SIP), Signaling System 7 (SS7), and Signaling Transport (SIGTRAN) signaling protocols, and troubleshooting of call processing faults. The extensive hands-on activities are designed to reinforce an end-to-end call-flow perspective, where students provision the Cisco BTS 10200 Softswitch for call setup and control and use the various Trunking Gateway (TGW) diagnostic tools to validate, observe, and troubleshoot operation.

Prerequisites

Cisco BTS 10200 Softswitch Essentials I is a required prerequisite course.

The following related skills and knowledge are also strongly recommended for the best learning outcome:

- Experience with Cisco IOS Software routers and knowledge of IP routing and switching fundamentals; knowledge equivalent to the CCNA® and/or CCNP® certifications
- Experience with UNIX (Solaris) operating systems
- Exposure to MGCP and SIP call signaling protocols
- Background with telephony network concepts and terminology

Who Should Attend

- Individuals who plan, design, implement, operate, or optimize (PDIOO) Cisco BTS 10200 Softswitch–based voice-over-IP (VoIP) solutions
- Individuals who troubleshoot Cisco BTS 10200 Softswitch–based VoIP solutions (tier 2/3 level support)
- Solution design, quality assurance, or engineering personnel who develop or maintain Cisco BTS 10200 Softswitch system provisioning scripts or translation tables.

Course Objectives

After completing this course, you will be able to:

- Identify and explain the Cisco BTS 10200 Softswitch Broadband Local Integrated Services Solutions, solution components, and interoperability (review).
- Identify and describe and Cisco BTS 10200 Softswitch system architecture, interfaces, and databases (review).
- Describe and demonstrate Cisco BTS 10200 Softswitch system operations and maintenance procedures and commands (review).
- Describe the Cisco BTS 10200 Softswitch provisioning table relationships used to process and control on-net and off-net calls and various routing/translation scenarios.
- Demonstrate the decoding of MGCP and SIP signaling protocols.
- Describe the system architecture and operation of the MGX8800 Series TGW, Cisco IOS Software ITP Signaling Gateway (SGW), and Cisco Software IOS TGWs.
- Demonstrate using Cisco IOS Software/command-line interface (CLI) commands to determine status and troubleshoot faults on Cisco MGX 8800 Series Switches, ITP, and AS5X00 platforms.
- Practice using troubleshooting tools and methods to isolate and resolve off-net trunking/signaling faults

Cisco BTS 10200 Voice Solution Power Workshop (BTS10200)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

This customized, hands-on course is specifically developed to address the Cisco BLISS for Cable VoIP network implementation. The course is recommended for individuals that design, implement, support, and troubleshoot the BTS 10200 based VoIP solutions. The focus of the course is on the BTS 10200, ITP and MGX 8800 Series solution components, however, overview coverage of the PacketCable, DOCSIS, and other OSS components is also included.

Prerequisites

The following reltaed skills and knowledge are strongly recommended for the best learning outcome:

- Operational exposure to the BTS 10200 voice solution and/or attendance in the Cisco BTS 10200 Softswitch Essentials I course
- UNIX/Solaris administrative exposure
- Cisco IOS experience
- IP routing and switching concepts, and experience
- VoIP concepts, including signaling protocols
- Telephony fundamentals, including SS7 exposure

Who Should Attend

- Individuals that plan, design, implement, operate or optimize (PDIOO) BTS 10200 Softswitch-based VoIP solutions that include the ITP and/or MGX components
- Individuals who troubleshoot BTS 10200 Softswitch-based VoIP solutions (Tier 2/3 level support)
- Solution design, QA, or engineering personnel that develop or maintain BTS 10200 Softswitch system provisioning scripts or translation tables

Course Objectives

After completing this course, you will be able to:

- Identify and describe Cisco's BLISS primary components and their interoperability
- Identify and explain the Cisco BTS 10200 Softswitch capabilities, internal and external interfaces, communications protocols and hardware options
- Explain and demonstrate using the BTS 10200 Softswitch provisioning tools and methods
- Demonstrate BTS 10200 Softswitch operations and maintenance methods, procedures, and commands
- Explain and demonstrate using Events and Alarms to identify BTS 10200 Softswitch system faults
- Describe the BTS 10200 Softswitch provisioning table relationships used to process and control on-net and off-net calls and various routing/translation scenarios
- Demonstrate the decoding of MGCP and SIP signaling protocols
- Describe the system architecture and operation of the MGX8800 Series TGW, IOS ITP SGW and IOS TGWs
- Demonstrate using IOS/CLI commands to determine status and troubleshooting faults on MGX 8800 Series, ITP and AS5X00 platforms
- Use troubleshooting tools and methods to isolate and resolve provisioning, trunking, and signaling faults

Cisco Service Control Application Solution Deployment Course (SCA-D)

Price: $3795 USD or 38 CLCs **Duration:** 5 Days

This course prepares students to install and configure the Cisco Service Control Application Solutions components, including the Cisco Service Control Engine (SCE), SCA-BB Console, and Cisco Collection Manager (CM), Traffic Reporter, and Cisco Subscriber Manager (SM). Students use Cisco's Planning, Design, Implementation, Operation and Optimization (PDIOO) process to deploy several SCA solution topologies, including cascade (high availability) and Multi-Gigabit (MGSCP). Based on realistic use-case scenarios, students also use the SCA-BB Console to analyze network traffic with reports and design traffic control polocies for link bandwidth optimization, to control traffic to the subscriber or application level, as well as to enable tiered service offerings.

Prerequisites

The following reltaed skills and knowledge are strongly recommended for the best learning outcome:

- Familiarity with the SCA solution to include knowledge of overall architecture and experience with the SCA-BB console GUI foe SCE provisioning.
- The Advanced Services Cisco Service Control Application for Broadband Training (SCA-BB) course
- Knowledge of IP routing and switching fundamentals as well as Solaris are recommended for the best learning outcome.

Who Should Attend

This course is intended for engineering or support level personnel designing, deploying, and supporting SCA solutions

Course Objectives

After completing this course, you will be able to:

- Describe the purpose, network insertion, architecture and interoperability of the SCA solution components
- Install the SCA solution components of hardware and software, to include SCE, SCA-BB Console, CM, and SM
- Generate detailed reports on bandwidth usage by subscriber and service type
- Use the Service Control Editor to provision combinations of bandwidth controls: quota, time-based, and tiered services to support both sebscriber-less and subscriber-aware traffic control scenarios
- Configure SCA SM and QM to affect subscriber-aware reporting and traffic control scenarios
- Implement Radius and DHCP integration for dynamic subscriber awareness through Login Event Generation (LEG) interfaces
- Describe SCA solution design methodology, specific to size, high availability considerations (cascade), and Multi-Gigabit (MGSCP) topologies

Cisco Service Control Application for Broadband Training (SCA-BB)

Price: $3795 USD or 38 CLCs **Duration:** 4 Days

Prerequisites

- Basic networking skills
- Experience using the Cisco IOS command-line interface
- Essentials of Quality of Service

Who Should Attend

This course is intended for network professionals responsible for designing, deploying, and supporting the Cisco Service Control solution.

Course Objectives

After completing this course, you will be able to:

- Describe the Cisco SCAS-BB solution components
- Configure and install the Cisco SCAS-BB solution components
- Deploy distributed-denial-of-service (DDoS) mechanisms
- Configure and install the Cisco SCAS-BB and Cisco SCSM consoles
- Utilize the Raw Data Records (RDR) protocol to aid in data collection in a Cisco SCAS-BB solution
- Install and utilize Cisco SCCM
- Install and configure the many components of the Cisco Service Control Engine product set including the operating system (SCOS), smartSUB Manager, and GUI component
- Protect your installation from spam
- Describe and contrast the database options for Cisco SCCM
- Utilize the important features of Cisco SCSM including the logon event manager, subscriber domains, high availability techniques, and subscriber modes
- Characterize the features of the different types of RDRs
- Apply bandwidth management techniques for a Cisco SCAS-BB solution

Course Content

- Cisco Service Control Platform Introduction
- Technology Overview
- Bandwidth Management Fundamentals
- The Cisco SCAS-BB Console
- CiscoSCCM Overview
- SCAS-BB Raw Data Records (RDRs)
- Cisco SCCM and SCAS Reporter Installation
- Service Control Engine Installation
- Cisco Service Control Subscriber Manager
- Distributed-Denial-of-Service (DDoS) Mechanism
- Spam Protection

Cisco Secure Access Control System Training (CS-ACS)

Price: $1995 USD or 20 CLCs **Duration:** 2 Days

The CiscoSecure Access Control System (CSACS) training course teaches students how to provide secure access to their network using the CiscoSecure Access Control System, interoperating with security features in Cisco IOS. The focus of the course is to provide a thorough understanding of the operation of the ACS System to control access to network services and devices. Course subjects include the principals of Authentication, to restrict users access to networks, services, and devices; Authorization, to restrict the functions that users can perform on services and devices; and Accounting, to track the activities of users. The RADIUS, TACACS+, EAP, and 802.1x protocols are discussed in theory and practice as the basis of network security. Specific methods and configurations are shown that can be used in the students' production networks to achieve targeted and detailed restrictions. The course includes hands-on labs to provide personal experience in configuring the ACS server and Cisco network devices, and to reinforce what is discussed in the lectures.

Prerequisites

This course has been written for network administrators, network operators, and system administrators who are responsible for the security of their networks. Network administrators or operators should have these basic skills:

- Understanding of TCP/IP networking
- Basic Cisco router and switch configuration (CCNA-equivalent)
- Basic understanding of security challenges facing networks
- Internet Web browser use
- Windows system administration

Who Should Attend

This course is for network administrators, network operators, and system administrators responsible for securing their networks to assure authorized access only by authenticated users, with accounting of their activities. The following are the primary audience for this course:

- Network Administrators & Operators
- System Administrators

Course Objectives

After completing this course, you will be able to:

- Describe the importance of network access security, and the security needs and challenges associated with a network.
- Understand the features, functions and benefits of the CiscoSecure Access Control System.
- Understand the considerations in deployment of CS ACS servers.
- Understand the protocols used to establish network security, including:
- RADIUS TACACS+ 802.1X EAP protocols
- Understand the methods that can be used to secure a network and the services that operate over the network.
- Effectively use CiscoSecure Access Control System to:
- Control access to the network and to network services by remote, dial-in, wireless, or wired users.
- Control the authority to perform specific functions.
- Record and audit the activity of users on the network and on services.
- Restrict access to network devices to authorized network administrators or programmatic interfaces.
- Configure CS ACS and IOS network devices to implement AAA features and network admission control.

Cisco Unified Operations Manager and Service Monitor (CUOM-SM)

Price: $1995 USD or 20 CLCs **Duration:** 2 Days

The Cisco® Unified Operations Manager and Service Monitor v1.1 course teaches students how to effectively use the suite of Cisco Unified Communications products, Operations Manager, Service Monitor, and Cisco 1040 Sensors to manage unified communications. The focus of the course is to provide knowledge and practice of various Operations Manager and Service Monitor functions such as viewing unified communications devices, connectivity, alerts, events; running diagnostic tests; and monitoring applications, devices, and service quality of active call streams. Cisco Unified Operations Manager provides contextual diagnostic tools to facilitate trouble isolation and troubleshooting. Cisco Unified Service Monitor works together with the Cisco 1040 Sensors to report on service quality by monitoring active call streams. Labs are available to reinforce what is discussed in the lecture

Prerequisites

This course has been written for network administrators, network operators, and system administrators who install, configure, and use Cisco Unified Communications products. Network administrators or operators should have knowledge of these basic areas:

- Network management concepts (SNMP, MIBs, etc.)
- Internet Web browser usability
- TCP/IP networking
- Basic Cisco router and switch configuration (SPAN ports, IP SLAs)
- Basic Cisco Unified Communications architecture
- Basic Cisco CallManager and Cisco Unity configuration principles
- Windows system administration

Who Should Attend

This course is for network administrators, network operators, and system administrators who need to know how to use the suite of Cisco Unified Communications products in their network environment. The following are the primary audience for this course:

- Network administrators and operators
- System administrators

Course Objectives

After completing this course, you will be able to:

- Describe what is meant by the term "unified communications" and describe the management space and the Cisco Systems® suite of products for managing this space
- Discuss the associated network management needs and challenges
- Understand the various quality-of-service (QoS) metrics and terminology
- Effectively use Operations Manager
- Effectively use Service Monitor

Cisco ANA Training (CANA)

Price: $3795 USD or 38 CLCs **Duration:** 4 Days

Cisco Active Network Abstraction (Cisco ANA) is a highly scalable, fault-tolerant,customizable management system for large-scale, multiprotocol, and multivendornetworks. The Cisco Active Network Abstraction (CANA) v3 course is a modular coursethat teaches students how to install, configure, customize, and effectively use the CiscoANA product suite. The student gains understanding of the primary components of theANA architecture; guidelines for deployment; hardware and software requirements; andthe concepts, processes, and tools that allow customization of an ANA managementsystem to meet the specific needs of the customer's unique network. The students'understanding is deepened by hands-on labs that include installing ANA units, gateway,and client software and utilizing the ANA applications, NetworkVision and EventVision,for network and service discovery and fault detection. Students will use the ANAcustomization tools to create, manage, and troubleshoot ANA Soft Properties, customcommands, and workflows.

Prerequisites

- Basic Microsoft Windows Knowledge
- Basic network management concepts (SNMP, MIBs, etc.)
- TCP/IP networking experience
- Solaris/Unix system administration knowledge
- Oracle administration knowledge

Who Should Attend

This course is for network administrators and consultants who will be planning, installing, customizing, and using the Cisco ANA applications for network, service, and fault management in multivendor networks. The following are the primary audiences for this course:

- Network administrators, system administrators, and operators
- System integrators, professional services, and consultants

Course Objectives

After completing this course, you will be able to:

- Describe the ANA architecture, consisting of Cisco ANA gateways, ANA units, and clients
- Describe virtual network elements (VNEs), which are the software-based building blocks of the Cisco ANA virtual network model, each one cloning the characteristics and properties of its real-world counterpart
- Create network maps and build a virtual network modeul of VNEs
- Discover and view netowrk inventory information
- Manage VPNs, view automatically discovered VPNs, and create or change VPN views
- Troubleshoot, manage, and correlate network events and faults
- Plan an ANA deployment and provide calculated recommendations for the hardware and software requirements based on the management plan
- Install the various ANA components
- Configure the VNEs
- Configure user accounts and ANA security features
- Maintain and troubleshoot the ANA system
- Plan for high availability
- Understand the ANA registry and its inheritance and the purpose of the ANA Golden Source
- Create, manage, and troubleshoot ANA Soft Properties
- Set soft properties threshholds and define threshold crossing alarms
- Utilize ANA Command Builder to create, manage, and troubleshoot custom commands
- Create and deploy ANA custom workflows using the Workflow Editor, templates, views, and user preferences
- Understand Inheritance and how to publish, export, and import ANA soft properties, commands, and workflows
- Use ANA Manage and ANA EventVision to view and manage the deployed workflows

Securing Your Email with IronPort C-Series, Part I (SYE1)

Price: $1995 USD or 20 CLCs **Duration:** 2 Days

This comprehensive, two-day training course provides a thorough foundation on how to successfully install, configure, and administrate IronPort email security appliances. At the end of the course, attendees will possess a working knowledge of how to use IronPort email security appliances to successfully manage and troubleshoot email traffic entering and leaving the enterprise network. Attendees will also learn about Internet email concepts and standards, and will receive an overview of other product features that can be used for more customized configurations.

Prerequisites

Students should possess the following background knowledge and skills:

- A moderate knowledge of TCP/IP fundamentals, including IP addressing and sub-netting, static IP routing and DNS.
- Experience with Internet-based messaging, including SMTP, Internet message formats, and MIME message format.
- Familiarity with command line interface (CLI) and graphical user interface (GUI).
- Previous experience with email security would be helpful.
- In addition, it is recommended that students have some experience with basic configuration of an IronPort email security appliance.

Who Should Attend

- Enterprise messaging managers and system administrators
- Email system designers and architects
- Network managers responsible for messaging implementation

Course Objectives

This two-day training course provides a thorough foundation for how to successfully install, configure, and administer IronPort email security appliances. Attendees receive in-depth instruction on the most commonly used product features, with an emphasis on:

- How to deploy IronPort email security appliances in a typical enterprise email environment, including "best practices" for configuration, operation, and system administration.
- How to manage, monitor, and troubleshoot the flow of email through IronPort email security appliances.
- How to configure access control policies to eliminate threats at the perimeter, based on the identity and trustworthiness of the sender.
- How to create content filters to implement and enforce corporate email policies.
- How to configure IronPort email security appliances to detect and handle unwanted spam and viruses.
- How to use IronPort's reputation-based services, SenderBase and Virus Outbreak Filters, to increase the security of your email network.
- How to use reporting to document email traffic trends.
- How to use Message Tracking to search on a specific email or category of email.
- How to set delivery parameters for outgoing mail.

Extensive lab exercises provide attendees with skills for installing, configuring and administering IronPort email security appliances. At the end of the course, attendees will possess a working knowledge of how to use IronPort email security appliances to successfully manage and troubleshoot email traffic entering and leaving the enterprise network.

Securing Your Email with IronPort C-Series, Part II (SYE2)

Price: $995 USD **Duration:** 1 Day

Extensive lab exercises provide attendees with critical hands-on experience working with advanced features of the IronPort email security appliance. Attendees gain working knowledge of how to use the IronPort appliance to successfully manage and troubleshoot email traffic entering and leaving the enterprise network. Attendees will also learn about advanced Internet email concepts and receive an overview of other product features that can be used for more customized configurations.

Prerequisites

Attendees should possess the following background knowledge and skills:

- Experience configuring IronPort email security appliances through participation in the IronPort Configuration Workshop or equivalent working experience.
- Solid knowledge of TCP/IP fundamentals, including IP addressing and sub-netting, static IP routing, DNS, and a very basic knowledge of the TCP protocol.
- Experience with Internet-based messaging, including SMTP, Internet message formats, and MIME message formatting and body parts.
- Strong familiarity both with AsyncOS command line interface (CLI) and graphical user interface (GUI) configuration of devices.

Who Should Attend

- Enterprise messaging managers and system administrators
- Email system designers and architects
- Network managers responsible for messaging implementation

Course Objectives

This one-day training course provides advanced information for successful configuration and operation of an IronPort email security appliance. By exploring in depth specific product features, mail administrators will receive in-depth training to meet specific needs with emphasis on:

- Integrating with a directory server via LDAP
- Debugging of LDAP integration issues
- Using message filters to redirect and modify messages
- Safe deployment and debugging of message filters
- Domain Key Identified Mail
- Sender Profile Framework verification

IRONPORT

Securing Your Web with Ironport S-Series (SYW)

Price: $1995 USD or 20 CLCs **Duration:** 2 Days

This comprehensive, two-day training course covers how to install, configure, operate and maintain the S-Series. The course consists of hands-on labs, demos and presentations to help students learn technical aspects of the S-Series Web Security Appliances.

Prerequisites

Attendees should possess the following background knowledge and skills:

- Knowledge of TCP/IP services, including DNS, SSH, FTP, SNMP, HTTP and HTTPS is assumed
- Familiarity with IP routing is assumed
- Familiarity with the IronPort S-Series Overview, or equivalent knowledge, is assumed.

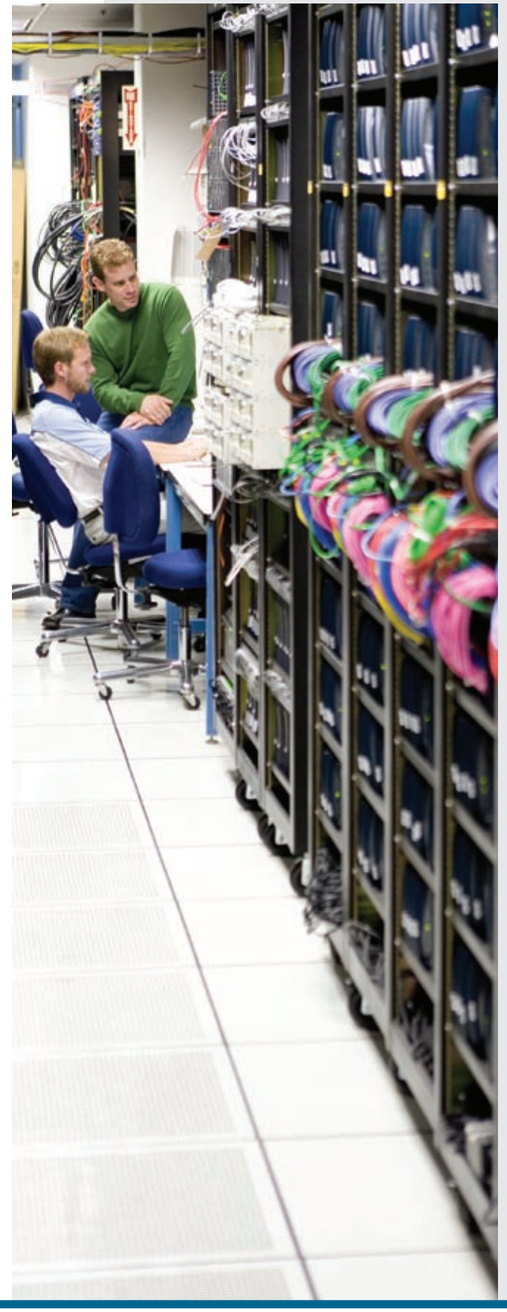
Who Should Attend

- Security Architects and System Designers
- Network Administrators and Operations Engineers
- Network or Security Managers responsible for web security

Course Objectives

After successful completion of the course, the participant will be able to describe, configure, administer, and troubleshoot:

- Policy Layers
- Decryption Policies
- Routing Policies
- Access Policies
- URL filtering
- Predefined URL Categories
- Custom URL Categories
- Time Based Policies
- Web reputation filtering
- The DVS Anti-malware Engine
- Webroot
- McAfee
- HTTPS inspection
- Authentication



NetApp™

Authorized Learning Partner

NetApp Certifications

Set yourself apart and receive industry recognition for your proven expertise with NetApp® storage and data management technologies. NetApp certification is proof that you have the skills necessary to manage and deploy NetApp technologies to best meet the needs of your company. The NetApp certification program is structured to offer storage professionals a strong foundation and a comprehensive range of specializations to choose from. We help you prepare for all of the NetApp Certifications.

NCIE
NetApp Certified Implementation Engineer

NSO 501	NSO 510	NSO 520	NSO 530
SAN	Backup & Recovery	Disaster Recovery	Storage Security

Specialist

NCDA
NetApp Certified Data Management Administrator

NSO 153 Storage Networking Exam
NSO 163 Data Protection Solutions Exam

Professional

Fast Lane Can Help

Fast Lane delivers the courses you need to help you prepare for the NetApp Certification you desire. Review the certification pyramid above and contact us to help you determine the right certification for you.

Certification Benefits for Individuals

Technical Professionals will be recognized for receiving NetApp Certifications and the prestige they bring. NetApp Certification benefits for an individual include:

- Industry/Peer Recognition
- Career Advancement Recognition
- Marketable Credentials

Certification Benefits for Companies

NetApp Partners and End-user customers benefit from having NetApp Certified Technical Professionals. Having your staff certified on NetApp solutions ensures you are getting the optimum performance from your NetApp products and technologies. Other benefits include:

- A better return on your human resources and IT Infrastructure investments
- Reduced Operating Costs
- Reduced Support Costs
- Superior Internal Support

NetApp
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NCDA Boot Camp (NCDABC)

Price: $10650 USD or 142 TUs **Duration:** 10 Days

This 10-day boot camp will prepare you to pass all the NetApp exams required to achieve the NetApp Certified Data Management Administrator (NCDA)certification.

Prerequisites

The hands-on course covers the required knowledge from the following courses:

- Data ONTAP Fundamentals (DOTF)
- Data ONTAP CIFS Administration (CIFS)
- Data ONTAP NFS Administration (NFS)
- Data Protection and Retention (DPR)
- Data ONTAP SAN Administration (SAN)
- High Availability (HA).

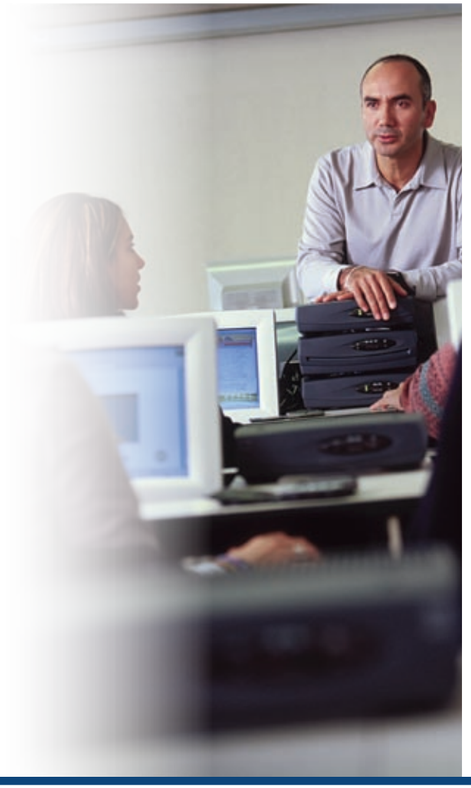
Who Should Attend

Network Professionals seeking the NetApp Certified Data Management Administrator (NCDA) certification.

This course is also valuable for those who need to perform in-depth support, administrative functions, and performance management for environments using any of the following enterprise storage solutions: CIFS, NFS, FCP, iSCSI protocols on a NetApp storage appliance running the Data ONTAP operating system.

Course Objectives

- State the advantages, features, and functions of a NetApp storage system
- Identify the key features of NetApp product platforms and disk shelves
- Distinguish between SAN and NAS topologies
- Describe the basic functions of the Data ONTAP operating system
- Access the NOW (NetApp on the Web) Knowledgebase to obtain software and hardware documentation
- Implement NetApp HA solutions using Clustered Failover, SyncMirror, and MetroCluster to ensure continuous data availability in the enterprise and rapid recovery of data in the event of a disaster
- Learn to license, cable, configure, and test Clustered Failover, SyncMirror, and MetroCluster
- Learn how to administer NetApp clusters and perform appropriate "takeover" and "giveback" commands
- Use "vol" commands to create a SyncMirrored volume, split the volume, and join the volume
- Identify the appropriate CIFS server environment for your storage system to support Windows client users
- Configure the CIFS environment on a storage system by licensing CIFS, setting up CIFS, and configuring files and options
- Administer a storage system in a CIFS environment including creating and managing shares, users, groups, and sessions
- Explain how to troubleshoot basic CIFS problems
- Define the characteristics of a SAN environment and how LUNs relate to the storage system
- Describe the components of FC and IP SANs
- Describe size planning requirements for LUNs
- Create and manage LUNs on a storage controller for both Windows and UNIX hosts
- Explain FC and IP SAN multipathing options for Windows and UNIX operating systems
- Explain how to troubleshoot common SAN issues
- State the rules for exporting resources to hosts, subnets, and netgroups
- Explain the /etc/ exports access options and how they relate to mount permissions
- Analyze NFS performance using sysstat and nfsstat commands
- Explain NFS protocol overview, NFS versions, and NFS Implementation criteria
- Configure and administer clients and servers in an NFS environment
- Collect and analyze data to assist with troubleshooting storage system hardware, operating system, network connections, NFS configuration files and options
- Explain the concept of Information Lifecycle Management (ILM)
- Set up and maintain SnapShots
- Plan and perform data recovery using SnapRestore
- Configure and administer Asynchronous and Synchronous SnapMirror
- Configure and administer SnapVault
- Configure and administer OSSV
- List best practices and perform troubleshooting of SnapMirror, SnapVault, and OSSV
- Use NDMP to archive data
- Configure and administer SnapLock and LockVault



NetApp
Authorized Learning Partner

Advanced NCDA Boot Camp (ANCDABC)

Price: $6150 USD or 82 TUs **Duration:** 5 Days

This 5-day intensive, advanced boot camp will prepare you for all required NetApp exams to achieve the NetApp Certified Data Management Administrator (NCDA) certification, assuming you have met the prerequisites.

Who Should Attend

Network Professionals seeking the NCDA certification.
This course is also valuable for those who need to perform in-depth support, administrative functions, and performance management for environments using any of the following enterprise storage solutions: CIFS, NFS, FCP, iSCSI protocols on a NetApp storage appliance running the Data ONTAP operating system.

Prerequisites

The following course is a prerequisite to the advanced boot camp:

- Data ONTAP Fundamentals

The hands-on course covers the required knowledge from the following courses:

- Data ONTAP CIFS Administration (CIFS)
- Data ONTAP NFS Administration (NFS)
- Data Protection and Retention (DPR)
- Data ONTAP SAN Administration (SAN)
- High Availability (HA)

NOTE: It is strongly recommended that you have attended the instructor-led DOTF course or have the equivalent practical experience with the NetApp ONTAP operating system before attending this advanced boot camp. The web-based version of DOTF will not provide sufficient preparation for those seeking NCDA certification upon completion of this course.

Course Objectives

The objectives of the course are as follows:

- Describe the different server environments
- Identify the appropriate server environment for your storage system to support Windows client users
- Configure the CIFS environment on a storage system by licensing CIFS, setting up CIFS, and configuring files and options
- Administer a storage system in a CIFS environment including creating and managing shares, users, groups and sessions
- Explain how to troubleshoot basic CIFS problems
- Explain NFS protocol overview, NFS versions and NFS Implementation criteria
- Configure and administer client and server in an NFS environment
- State the rules for exporting resources to hosts, subnets, and netgroups
- Explain the /etc/ exports access options and how they relate to mount permissions
- Analyze NFS performance using sysstat, nfsstat, and other commands
- Collect and analyze data to assist with troubleshooting storage system hardware, operating systems, network connections, NFS configuration files and options
- Define the characteristics of a SAN environment and how LUNs relate to the storage system
- Describe the components of FC and IP SANs
- Describe size planning requirements for LUNs
- Create and manage LUNs on a storage controller for both Windows and UNX hosts
- Explain FC and IP SAN multipathing options for Windows and UNIX operating systems
- Explain how to troubleshoot common SAN issues
- Explain the concept of Information Lifecycle Management (ILM)
- Set up and maintain snapshots
- Plan and perform data recovery using SnapRestore
- Configure and administer Asychronous and Synchronous SnapMirror
- Configure and administer SnapVault
- Configure and administer OSSV
- List best practices and perform troubleshooting of SnapMirror, SnapVault and OSSV
- Use NDMP to archive data
- Configure and administer SnapLock and LockVault
- Define High Availability and Network Appliance solutions: active-active configuration, SyncMirror, Stretch MetroCluster, and Fiber-Attached MetroCluster
- Create a SyncMirror aggregate
- Articulate best practices when deploying active-active configurations
- Configure MetroCluster
- Configure SyncMirror

Data ONTAP Fundamentals (DOTF)

Price: $4500 USD or 60 TUs **Duration:** 5 Days

Data ONTAP® 7.3 Fundamentals is an instructor-led course designed for those who provide support and administration on NetApp® storage systems running the Data ONTAP operating system. The course covers Write Anywhere File Layout (WAFL) file system, volumes, aggregates, qtrees, and quotas. Hands-on labs for the course focus on the basic administrative use of Data ONTAP in NAS and IP-SAN environments.

Who Should Attend

An individual who provides basic support and administrative functions of the Data ONTAP operating system

Prerequisites

- Introduction to NetApp Products Web Based Training

Course Objectives

- At the end of this course you should be able to:
- Describe the basic functions of the Data ONTAP operating system
- Access the NOW™ (NetApp on the Web) Knowledgebase to obtain software and hardware documentation
- Set up console access for a storage system
- Configure a storage system with the setup command
- Access FilerView and the command line to manage a storage system
- Configure and manage the AutoSupport service for a FAS storage system
- Define and create virtual interfaces (vifs) and VLANs
- Describe Data ONTAP RAID technology
- Calculate usable disk space of disks
- Define and create an aggregate and volume
- Define FlexClone volume
- Configure the storage system as an NFS server and CIFS server
- Configure a multiprotocol environment
- Configure a LUN for SAN environments
- Configure, create and restore Snapshot copies
- Describe the WAFL file system, including consistency points, tetris creation, RAID management, and storage levels
- Collect performance data Use FlexShare
- Configure an Active-Active configuration

Data ONTAP CIFS Administration (CIFS)

Price: $1500 USD or 20 TUs **Duration:** 2 Days

Data ONTAP CIFS Administration covers the different server environments where a storage system can support Windows client users, the licensing and setting up of CIFS on the storage system, configuring files and options, administering a storage system including creating and managing shares, users, and groups, and troubleshooting CIFS problems.

Prerequisites

The Data ONTAP Fundamentals or equivalent knowledge is required before taking CIFS.

Certification

CIFS is recommended training for the NetApp Certified Data Management Administrator (NCDA) certification.

Who Should Attend

Network professionals who provide support and administration for a CIFS environment on NetApp Storage Systems running the Data ONTAP operating system.

Course Objectives

- Describe the different server environments
- Identify the appropriate server environment for your storage system to support Windows client users
- Configure the CIFS environment on a storage system by licensing CIFS, setting up CIFS, and configuring files and options
- Administer a storage system in a CIFS environment including creating and managing shares, users, groups, and sessions
- Explain how to troubleshoot basic CIFS problems

Data ONTAP NFS Administration (NFS)

Price: $750 USD or 10 TUs **Duration:** 1 Day

This 1-day course builds from the Fundamentals class to give you a complete overview and working knowledge of using the Network File System (NFS) on Unix. Multiple hands-on Labs ensure you are prepared to deploy a NFS-based NetApp system.

Prerequisites

Data ONTAP Fundamentals or equivalent knowledge, working knowledge of UNIX, and familiarity with networking concepts are required before taking NFS.

Certification

NFS is recommended training for the NetApp Certified Data Management Administration (NCDA) certification.

Who Should Attend

Network Professionals who need to perform in-depth support, administrative functions, and performance management for the NFS protocol on a NetApp storage system running the Data ONTAP operating system.

Course Objectives

- Explain NFS protocol overview, NFS versions, and NFS implementation criteria
- Configure and administer client and server in a NFS environment
- State the rules for exporting resources to hosts, subnets, and netgroups
- Explain the /etc/ exports access options and how they relate to mount permissions
- Analyze NFS performance using sysstat, nfsstat, and other commands
- Collect and analyze data to assist with troubleshooting storage system hardware, operating system, network connections, NFS configuration files and options

Data ONTAP SAN Administration (SAN)

Price: $2250 USD or 30 TUs **Duration:** 3 Days

Students will cover the SAN infrastructure preparation, storage provisioning options, creation and management of LUNs and volumes, multipathing and high availability, Fibre Channel modes, and troubleshooting techniques. Multiple hands-on Labs focused on deploying a SAN reinforce the topics taught in class with real-world practice.

Prerequisites

The Data ONTAP Fundamentals or equivalent knowledge is required before taking SAN.

Certification

SAN is recommended for the NetApp Certified Solution Architect (NCSA) and NetApp Certified Implementation Engineer (NCIE) certification.

Who Should Attend

Network Professionals who perform in-depth support, administrative functions, and performance management for FC and IP SAN environments running the Data ONTAP operating system.

Course Objectives

- Define the characteristics of a SAN environment and how LUNs relate to the storage system
- Describe the components of FC and IP SANs
- Describe size planning requirements for LUNs
- Create and manage LUNs on a storage controller for both Windows and UNIX hosts
- Explain FC and IP SAN multipathing options for Windows and UNIX operating systems
- Explain how to troubleshoot common SAN issues

NetApp Protection Software Administration (NPSA)

Price: $2700 USD or 36 TUs **Duration:** 3 Days

This 3-day instructor-led course is for administrators and support personnel who will use SnapMirror®, SnapRestore®, SnapVault®, Open Systems SnapVault, SnapLock®, and LockVault™ to manage mission-critical data in the enterprise. Basic information on SnapMirror for Open Systems® and Protection Manager and Provisioning Manager are presented. A mixture of lecture and hands-on activities teach concepts and techniques needed to effectively use these solutions.

Prerequisites

The following pre-requisites or equivalent knowledge are required for this course:

- Data ONTAP Fundamentals (DOTF)

Who Should Attend

Administrators and support personnel who will use SnapMirror, SnapRestore, SnapVault, Open Systems SnapVault, SnapLock, and LockVault

Course Objectives

- At the end of this course you should be able to:
- Set up and maintain Snapshot™ copies
- Revert a file system to a previous version using SnapRestore
- Describe SnapMirror, SnapVault, and Open Systems SnapVault features and functions
- Process basic backup and restore operations with SnapMirror, SnapVault, and Open Systems SnapVault
- Troubleshoot common issues and optimize mirror solution performance
- Describe functionality for the Protection Manager and the Provisioning Manager application that run in the NetApp Management Console
- Describe SnapMirror for Open Systems® features, operating concepts and components and how they work together to provide reliable system-wide data consistency for data migration, replication and disaster recovery
- Protect your data with SnapLock

Operations Manager 3.7, Protection Manager, and Provisioning Manager (OPSMGR)

Price: $3750 USD or 50 TUs **Duration:** 5 Days

The OPSMGR course will prepare the student to install, configure, and support Operations Manager 3.7 core software and additional components in an enterprise environment. Protection Manager and Provisioning Manager work with Operations Manager to manage local and remote backups and mirrors of data residing on storage systems running Data ONTAP or on UNIX-, Linux-, or Windows-based systems running Open Systems SnapVault.

Prerequisites

The Data ONTAP Fundamentals (DOTF) course is required before taking OPSMGR.

Who Should Attend

Administrators and support personnel who will use Operations Manager, Protection Manager, and Provisioning Manager services to backup and protect mission critical data in the enterprise.

Course Objectives

- Articulate the different components that make up the Operations Manager 3.7 data management suite
- Explain the differences between Operations Manager 3.7 and previous versions
- Explain Operations Manager Licensing
- Explain hardware and software requirements
- Determine proper sizing of the Operations Manager Environment
- Install Operations Manager 3.7
- Configure user accounts
- Create and manage configuration templates
- Explain the Discovery process
- Setup host credentials and create groups
- Configure Operations Manager database backups
- Install Protection Manager from within Operations Manager
- Explain how hosts become visible in Protection Manager
- Navigate through the Protection Manager management console
- Explain the configuration of groups
- Configure Resource Pools, Schedules, Polices, and Data Sets
- Configure hosts and OSSV systems for use with Protection Manager
- Enable backup interfaces
- Operate the functionality that is provided in the core Operations Manager software suite and know its limitations
- Identify common problems that are encountered with normal Operations Manager use and their remedies
- Perform common tasks in Protection Manager: add hosts, backup and restore data, manage resource pools, setup schedules, manage policies, manage data setups, setup alarms and alerts
- Explain how to backup and restore VMware ESX servers using Protection Manager
- Explain user-defined Provisioning Manager policies to automate storage provisioning and configure default settings for exporting storage
- Explain Provisioning Manager periodic conformance checking to ensure the provisioned storage conforms to the provisioning policy
- Explain how to configure Thin Provisioning using Provisioning Manager
- Perform common tasks in Provisioning Manager: resize and delete volumes, edit Data Sets, Policies and Resource Pools, resize space and capacity of existing storage, provision new and existing storage
- Troubleshoot common issues associated within provisioning, jobs, access, and hosts
- Articulate the features and functions of Performance Advisor
- Monitor and display disk, file system, processor, and memory resources
- Replay performance charts in Performance Advisor
- Explain third party SNMP integration with Performance Advisor
- Explain integration of Operations Manager RBAC support into Performance Advisor
- Create custom performance views, alarms and thresholds in Performance Advisor

Performance Analysis on Data ONTAP (PAD)

Price: $2700 USD or 36 TUs **Duration:** 3 Days

The Performance Analysis on Data ONTAP® 7.3 course provides students with the knowledge and skills to perform data collection and analysis on NetApp® storage systems. Students will learn how to interpret data and apply performance changes based on their analysis. They will use analysis data for tuning and monitoring performance.

Prerequisites

The following pre-requisites or equivalent knowledge are required for this course:
Data ONTAP Fundamentals (DOTF)

Who Should Attend

Administrators and support personnel who administrate NetApp storage systems running Data ONTAP 7.3 and who wish to have a deeper understanding of the system performance.

Course Objectives

By the end of this course you should be able to:

- Recognize performance terminology and basic methodology
- Use known methods and tools to collect performance data
- Describe the Data ONTAP architecture and the benefits of features such as NVRAM and the WAFL® (Write Anywhere File Layout) file system
- Use knowledge about how data flows through the network and protocol layers of Data ONTAP to monitor and analyze storage system performance
- Examine command output from case studies to identify performance bottlenecks
- Perform basic software configuration and recognize diagnostic operations for the Performance Acceleration Module and FlexScale
- Use FlexCache™ to improve NFSv2 and NFSv3 read performance
- Use the reallocate command to measure volume or file layout and optimize the layout when appropriate
- Implement configuration for best practices for resiliency and performance
- Identify where to find further information

VMware ESX on NetApp Storage Systems (NAVMW)

Price: $3750 USD or 50 TUs **Duration:** 5 Days

The new VMware ESX on NetApp Storage Systems course covers the installation, configuration, and administration of an ESX Server and focuses on optimal connectivity on NetApp Storage Systems using FCP, iSCSI, CIFS and NFS. Backup and Restore of VMware ESX Server storage LUNs with ESX and NetApp are also covered, as is the planning and operation of VMware ESX Server and NetApp Storage Systems in a high availability scenario.

Prerequisites

Before taking this course you should have knowledge of NetApp Storage Systems, VMware ESX, Linux and Windows Servers.

Who Should Attend

System administrators and system engineers who are responsible for the integration, administration and management of VMware ESX server in a NetApp Storage environment.

Course Objectives

- Overview of the VMware virtualization concepts
- Basic configuration of the VMWare ESX Server and the VMs
- Networks in VMware
- Planning, installation and configuration of CIFS/SMB, NFS and iSCSI within a VM
- Planning, installation and configuration of CIFS.SMB and NFS in the service console of VMware ESX Server
- Planning, installation and configuration of FCP, NFS, and iSCSI in the VM Kernel
- Backup scenarios
- High availability scenarios
- Monitoring and system management
- Troubleshooting

Oracle on NetApp Storage Systems (ORACLE)

Price: $3750 USD or 50 TUs **Duration:** 5 Days

Students will learn how to install, configure, and support Oracle using NetApp Storage Systems with SnapManager v2.1 for Oracle and additional components in an enterprise environment. SnapManager for Oracle v2.1 paves the way for database and storage administrators to simplify data management utilizing the powerful capabilities of NetApp storage systems. This course will also integrate the native Oracle technology (such as RAC, RMAN, and ASM) across iSCSI/FCP and NFS protocols to allow IT organizations to scale their storage infrastructure, meet increasingly stringent SLA commitments, and improve productivity across the enterprise.

Prerequisites

The Data ONTAP Fundamentals (DOTF) course and basic knowledge about transactional application concepts, particularly Oracle are required before attending the ORACLE course.

Who Should Attend

Oracle DBAs and support personnel who are responsible for using NetApp hardware with Oracle software in a SAN and NFS environment.

Course Objectives

- Describe the Oracle on NetApp course, the NetApp Oracle relationship, and where to find resources for information on implementing Oracle on NetApp Storage Systems
- Understand and articulate the different components that make up NetApp Systems, scalability of NetApp Storage Systems, and multipathing and cluster configurations
- Understand the protocols used for providing and managing storage with Data ONTAP and how WAFL, NVRAM, and Snapshots protect data
- Understand the management functionality that is provided by Data ONTAP in an Oracle environment
- Understand the relationship between RAID groups and types, aggregates, flexible volumes, qtrees, and LUNs, as well as review the commands to manage these objects
- Understand the installation of Oracle databases on NFS and SAN protocols, the use of SnapManager for Oracle, SnapDrive for UNIX, and Oracle ASM
- Understand how SnapMirror can be used to mirror copies of Oracle databases for disaster recovery.
- Use SMO v2.1 features and scripting
- Understand how volume and LUN clones can be used to provision copies of Oracle databases for development and test uses, and how to manage cloning with SMO v. 2.1
- Understand the importance of monitoring system performance, and how to use commands and applications for Oracle storage performance monitoring
- Understand the application of SMO in an Oracle RAC environment with Oracle ASM

DataFort Storage Security Administration (DSSA)

Price: $3750 USD or 50 TUs **Duration:** 5 Days

This instructor-led course is designed for anyone who performs basic support, and administration functions on a Decru DataFort Storage Security appliance or Lifetime Key Management appliance. Through a combination of discussion and hands-on activities, this course describes the features and functions of the DataFort E-Series (NAS & iSCSI), FC-Series (SAN Disk & SAN Tape), A-Series (SCSI Tape), Lifetime Key Management appliances and the Data Decryption Software.

Prerequisites

Knowledge of networking terminology and management, background in UNIX or Windows server administration, and knowledge of SAN administration is required before taking the DataFort Storage Security Administration course.

Who Should Attend

Anyone needing a thorough knowledge of the Decru DataFort Security Encryption products.

Course Objectives

- Explain basic security and encryption principles and how those apply to a storage security appliance
- Explain the features and functions of the DataFort platform including encryption key hierarchy and Smart Card operation
- Describe different architectures and deployment options for the DataFort storage security appliance and Lifetime Key Management (LKM) appliance
- Install the Management Console for centralized key and configuration management
- Manage a DataFort storage security appliance using the Management Console
- Use the Setup Wizard to initialize a DataFort storage security appliance
- Create and manage Cryptainer vaults that encrypt data-at-rest
- Configure the E-series DataFort (NAS and iSCSI) for storage encryption and access control
- Configure E-series DataFort appliances into a cluster and simulate failover
- Configure the FC-series DataFort (disk and tape) for storage encryption
- Perform administration of a DataFort appliance using specialty administrative accounts
- Recover a DataFort appliance from a configuration backup file
- Decrypt data without a DataFort Storage Security appliance using Data Decryption Software
- Complete operations using the command line interface (CLI) on the E-series and FC-series DataFort appliances
- Describe the key sharing methods available for DataFort storage security appliances
- Perform key sharing operations using the DataFort storage security appliances and the LKM appliance
- Describe the new features like Key Sharing Group and Remote Authorization
- Upgrade and Downgrade DataFort firmware

NearStore Virtual Tape Library Administration (VTL)

Price: $2250 USD or 30 TUs **Duration:** 3 Days

Through a combination of discussion and hands-on activities, this course describes the features and functions of the NearStore VTL and how to integrate with the three leading backup applications (as measured by data center market share): Symantec NetBackup, IBM Tivoli Store Manager (TSM) and EMC Networker. A significant portion of this course is devoted to hands-on lab-centric training enabling students to setup, install and configure a VTL and then to integrate it operationally with the backup applications and tape libraries. Instructors will share case studies of complex VTL implementations and provide best practices and advanced configuration techniques.

Prerequisites

Knowledge of networking terminology and management, SAN administration, and at least 1 Major Backup Application (NetBackup, TSM or Networker) and a background in UNIX or Windows server administration is required before taking VTL.

Who Should Attend

Anyone who will architect, implement, administer or work with administrators of the VTL appliance.

Course Objectives

- Explain advanced disk-to-disk backup principles and how these apply to a virtual tape library appliance
- Explain the features and functions of the NearStore VTL
- Direct tape creation
- Sizing & architecting VTL environments
- Compression versus Tape Smart Sizing
- Explain the features of NearStore VTL and their impact on backup environments
- Describe different architectures and deployment options for the NearStore VTL
- Identify and describe "Best Practice" concepts and processes
- Install and cable a NearStore VTL
- Implement all of the features of the VTL product in a working environment:
- Performance tuning
- Port configurations
- Architecting & Implementing the VTL into existing SAN infrastructures
- Architecting & Implementing the VTL into new backup environments
- Configure a NearStore VTL to integrate with supported backup applications:
- Symantec NetBackup
- IBM Tivoli Storage Manager
- EMC Networker
- Perform administration of a NearStore VTL
- Complete operations using the command line interface (CLI) and scripting
- Troubleshoot and resolve errors with the operation of a NearStore VTL
- Describe lessons learned from existing installations and avoid common pitfalls

NetApp
Authorized Learning Partner

Microsoft SQL Server 2005 on NetApp Storage Systems (MSSQL)

Price: $3000 USD or 40 TUs **Duration:** 4 Days

The focus of the MSSQL course is the optimization of Microsoft SQL Server 2005 in a NetApp storage environment. This course takes students through the entire systems integration process of architecture planning, data migration, backup and restore, disaster recovery, and troubleshooting.

Prerequisites

The Data ONTAP Fundamentals (DOTF), Data ONTAP SAN Administration (SAN), Data Protection and Retention (DPR), and High Availability are all courses that are recommended to take before taking the MSSQL course. In addition at least one of the following should be taken:

- Microsoft Course 2072
- Microsoft Exam 70-228
- One year Microsoft SQL Server 2005 experience

Who Should Attend

Network Professionals who need to have a working understanding of Microsoft SQL Server 2005 on a NetApp Storage System.

Course Objectives

- Describe the benefits of running SQL Server 2005 on a NetApp Storage System
- Perform SQL Server 2005 storage planning, implementation, and administration
- Architect a high performance, highly available, consolidated SQL Server solution on a NetApp Storage System
- Deploy SQL Server 2005 on a NetApp Storage System
- Describe the SQL Server 2005 backup and restore process using SnapManager
- Determine the correct NetApp Storage Controller model, volume size, and LUN size to support the solution
- Back up and verify a SQL Server 2005 database using SnapManager
- Restore data using SnapManager
- Describe different disaster recovery methods
- Implement disaster recovery methods
- Isolate and correct faults in a SQL Server and SnapManager solution

NetApp
Authorized Learning Partner

Microsoft Exchange on NetApp Storage Systems (MSEXC)

Price: $3750 USD or 50 TUs **Duration:** 5 Days

The Microsoft Exchange on NetApp Storage Systems (MSEXC) course will train customers on how to install and implement SnapManager 5.0 for Microsoft Exchange Server 2007 at customer sites, both for evaluations and purchases. This course takes students through the entire systems-integration process of architecture planning, data migration, backup and restore, disaster recovery, and troubleshooting.

Prerequisites

The Data Protection and Retention (DPR) and Data ONTAP Fundamentals (DOTF) courses are required before taking MSEXC.

Who Should Attend

Customers who plan, install, operate, and/or troubleshoot SnapDrive and SnapManager for Windows products within a Fibre Channel SAN or iSCSI SAN environment.

Course Objectives

- Describe the benefits of running MS Exchange on a storage system
- Describe the MS Exchange Server 2007 backup and restore process
- Install and configure SnapDrive for Windows 6.0
- Perform Exchange Server 2007 storage planning, implementation, and administration
- Determine the correct NetApp storage controller model, volume size, and LUN size to support the solution
- Understand the steps necessary to migrate a stand-alone Microsoft Exchange Server 2007 to a NetApp storage system
- Perform an installation of a clustered Microsoft Exchange Server 2007 on a NetApp storage system
- Backup and verify an Exchange Data Store using SnapManager 5.0
- Restore data using SnapManager 5.0
- Describe different disaster recovery methods
- Implement a disaster recovery method
- Isolate and correct faults in an Exchange Server 2007 and SnapManager 5.0 Solution

fast lane

Project Management Training

Fast Lane is pleased to offer Project Management training courses. You will find the list of courses with outlines and schedules below. All Fast Lane delivered Project Management courses offer PMI Professional Development Units (PDU's) based on the length of the class. For more information, visit www.fastlaneus.com/courses/projectmanagement.

Project Management Training

- Project Management Fundamentals (FDML)
- PMP Power Prep - PMP Examination Preparation (PPP)
- Advanced Techniques in Project Management (ATPM)

Project Management Workshops

- Project Management Workshop (WKSP)
- Executive's Guide to Project Portfolio Management (PPM)
- Project Management for Teams (PMT)
- Managing Stakeholder Expectations (MSE)
- Leading People to Embrace Change (LPEC)
- Software Requirements: Definition and Management (SRDM)
- Project Templates: Power Tools for the PM (PTPM)
- Create Opportunity in Your Project NOW! (PMNOW)
- People in Projects: Foundation for Project Success (FPS)
- Projects CAN Make Your Strategy Come Alive! (PCAN)
- Executive's Guide to Project Stewardship (EGPS)
- Design and Implementation of the Next Generation PMO (DING)
- Better Decisions Through Critical Thinking (BDTCT)

Project Management Seminars

- Bringing a Project to a Safe Landing (BPSL)
- Winning the Estimation Game (WEG)
- PMO - Agent of Change (PMO-AC)
- A Framework for use of Project Metrics (AFPM)
- Opportunity - The Other Side of Risk (TSOR)
- Financial Aspects of Project Portfolio Management (FAPPM)
- People in Projects - Beyond the PMBOK® (PPB)
- OPM3® Overview (OPM3-O)
- OPM3®: Stewardship (OPM3-S)
- Managing Very Small Projects (MVSP)
- Templates - Simple but Effective PM Tools (SEPT)

Project Management Fundamentals (FDML)

Price: $1795 **Duration:** 5 Days

Prerequisites

This course covers the internationally recognized methods and the related terms as they are described in The Guide to the Project Management Body of Knowledge (PMBOK Guide). You will gain an understanding of the multiple certifications available from the Project Management Institute (PMI) however; this course is not intended to be a preparatory course for passing either the Project Management Professional (PMP) or the Certified Associate Project Manager (CAPM) certification examinations. For either of these certifications an application must be filed proving your qualifications prior to approval to sit for the examination.

Who Should Attend

New Project Managers, Project Administrators, and Project Planners

Course Objectives

This Live Instructor-led On-line course is intended for individuals who are new to project management and want to pursue PMP certification. It is an interactive program delivered over the web using VoIP. The online delivery format is 5 days completed in ½ day increments. This format was designed to save you travel costs and let you move your work along every day while still attending training.

Project Management Fundamentals will help you gain a level of understanding of the terms of project management and how to: plan a project; monitor and control that project; communicate with stakeholders; gather requirements; monitor and control the project and conduct a project closing.

While the PMBOK Guide does not represent the total source needed in order to be a competent project manager it does define the PMI preferred manner in which to operate. A copy of the PMBOK Guide should be acquired by the students prior to class.

PMP Power Prep - PMP Examination Preparation (PPP)

Price: $2495 **Duration:** 5 Days

This course covers the internationally recognized Project Management methods and related terms as they are described in The Guide to the Project Management Body of Knowledge (PMBOK Guide). You will gain an understanding of the PMP and CAPM certifications available from the Project Management Institute (PMI). Interspersed throughout the course at chapter endings are a total of 250 practice questions. For the final examination 100 practice questions are offered for your learning experience that will be evaluated and used to recommend study plans. For those students actively preparing their application to sit for either examination a review of that documentation is included in the course. In addition you will receive a copy of the latest Guide to the Project Management Body of Knowledge (PMBOK Guide).

Prerequisites

This 5-day instructor-led course is intended for individuals who are interested in sitting for either the PMP or the CAPM exam. In addition to the number of hours of project management experience required for the exam application to be accepted there is a study program that must be followed. Attending this course, coupled with following the additional study program discussed in class, will increase your chances of obtaining your certification.

PMP Power Prep will prepare you for the day to day activities required of senior project managers as well as cover strategies that will have you better prepared to pass the exam. This course covers The Guide to the Project Management Body of Knowledge (PMBOK Guide). While the PMBOK Guide does not represent the total source needed for the test preparation it does represent the major basis of the examination content.

Who Should Attend

Experience Project/Program Personnel seeking the PMP certification.

Advanced Techniques in Project Management (ATPM)

Price: *Please Call* **Duration:** 11 Days

Days 1 and 2 comprise the Advanced Foundation course. This course is a prerequisite for all other Advanced Topics. Any combination of Advanced Foundation and Advanced Topics may be packaged together. Contact us for the curriculum that best suits your organization's needs.

Prerequisites

This curriculum begins where most Project Management training programs end. This course assumes that the attendees are familiar with the concepts and vocabulary contained in the PMBOK®. Advanced concepts are covered at the start and then applied through the remainder of the course. The material covered in each topic deals with solutions to the issues most commonly encountered during project planning and execution, with ample time provided for class discussion and application of advanced concepts to real-world problems. The format is truly multimodal, with a mixture of exercises, simulations, group discussions, individual discovery and lecure. At the end of this course, even long experienced practitioners will walk away with a long list of actionable steps they can take to bring success to their projects.

Who Should Attend

Fully Customizable Curriculum - 2 to 11 days.

Leadership Skills

Fast Lane is pleased to offer this two-part series of Leadership Skills programs. The techniques shown in these courses have been used successfully by organizations involved in activities as diverse as telecommunications and manufacturing to the military and NASA space programs.

The courses combine tangible tools with the understanding of how to apply them. The methodologies shown create context for the user and make them immediately applicable to the workplace. The combination of hard and soft skills will help you increase your sphere of influence, operate more effectively in a conflicts environment, and break "political gridlock" within your teams.
Fast Lane can bring these standard courses or customized versions of these courses to your location. Contact us at: (919) 674-3100 or info@fastlaneus.com for more details about a Leadership Skills on-site course.

Select from the classes below to enroll in a specific class at your choice of location or if you would like to see a class offered in a specific location contact us at: (919) 674-3100 or info@fastlaneus.com.

The Program

The first course, People Leadership Skills, is designed to develop the interpersonal and interdependency skills necessary to be an effective leader as an individual contributor, team member or team leader.

The second course, Execution Leadership Skills, is designed to develop the planning and execution skills necessary to lead a network of people to deliver a specific project or end-result on time and within budget. These are high level courses designed to develop leaders with the skill set and mindset to have a positive impact on any organization.

People Leadership Skills (LS-PLS)

Price: $2700 **Duration:** 4 Days

This 4-day instructor led course is intended to develop leaders in technical, line and middle management positions. You will gain an understanding of how to leverage your leadership style, effectively communicate and deal with conflict, apply the art of assertiveness to influence others, and coach and consult with stakeholders to resolve unclear issues and develop new insights.

Course Objectives

This course covers the essentials for effectively leading people, with or without formal authority, across hierarchical lines. People Leadership Skills will help you gain a level of understanding of what you need to do and how you need to be to manage projects, lead change initiatives, and navigate through a political network.

Execution Leadership Skills (LS-ELS)

Price: $2700 **Duration:** 4 Days

This 4-day instructor led course is intended to develop leaders in technical, line and middle manager positions. You will gain an understanding of the factors that influence project leadership success and learn project management tools to execute a project on-time and within budget. You will also learn to apply the art and science of critical thinking to break complex situations into specific actionable steps, and to effectively present and advocate your logic

Course Objectives

This course covers the essentials for effectively organizing and leading projects. Execution Leadership Skills will help you gain a level of understanding on how to operate across hierarchical lines without authority, and how to work a network to deliver projects on time. In contrast to the traditional definition where a project is a series of actions toward an end-result with a start and a finish, this course focuses on project management from a leadership stand point. From a leadership perspective, a project is a charter to lead a network of people to deliver a specific end-result on time

ITIL Certification Training

Fast Lane is now offering authorized IT Infrastructure Library (ITIL) Certification Training! Your organization can be empowered through the adoption of IT Service Management from basic awareness, to planning ITIL implementation, to certifying your team. This quality training is key to implementation success.

Please see the complete list below for the courses that best fit your needs. All Fast Lane delivered ITIL Certification courses offer PMI Professional Development Units (PDU's) based on the length of the class. For more information, visit http://www.fastlaneus.com/courses/itil/ITIL-Certification.

ITIL-Foundations (ITILF)

Price: $1795 **Duration:** 3 Days

This hands on, instructor led, ITIL Foundation certification training program introduces you to the fundamentals of IT Service Management as described in the IT Infrastructure Library. Accredited by EXIN and ISEB, the course helps you prepare for the certification exam along with acquiring valuable insights from instructors who have actually managed IT operations and ITIL programs.

Delivered over three days the course features lectures, discussion, case study team exercises and quizzes. It culminates with an optional, one-hour certification examination.

Prerequisites

It is recommended that students with limited IT backgrounds sit through the Journey to Excellence web based awareness program.

Who Should Attend

Senior IT and business executives, IT management and staff, consultants, project managers, and others interested in learning about IT Service Management

Course Objectives

Day 1

- ITIL Concepts
- Service Desk
- Incident Management
- Problem Management
- Configuration Management
- Change Management

Day 2

- Release Management
- Service Level Management
- Availability Management
- Capacity Management

Day 3

- IT Service Continuity Management
- Financial Management
- Security Management

ITIL Foundation V3 (ITILFV3)

Price: $1795 **Duration:** 3 Days

This hands-on, instructor led, ITIL version 3 Foundation Certification training program introduces you to the fundamentals of IT Service Management as described in the IT Infrastructure Library. Accredited by ISEB, this course helps you prepare for the certification exam along with acquiring valuable insights from instructors who have actually managed IT operations and ITIL programs. This course features lectures, discussions, team exercises and quizzes. It culminates with an optional, one-hour exam certification.

Prerequisites

It is recommended that students have experience in corporate IT environments with a goal of better understanding the ROI of the IT infrastructure.

Who Should Attend

Senior IT and business executives, IT management and staff, consultants, project managers and others interested in learning about IT Service Management.

Course Objectives

- ITIL Concepts
- Continuous Service Improvement
- Service Operation
- Service transition
- Service Design
- Service Strategy
- Open ITIL Solutions

Practitioner: Support and Restore (IPSR)

Price: $2995 **Duration:** 5 Days

This 5-day course focuses on implementing and managing the Support and Restore activities, processes and functions that are required to stabilize an IT infrastructure through effective Incident and Problem Management processes and the Service Desk Function. It spans 4 days of lectures (40%) and hands-on activities (60%) and one day of exam review, preparation and testing. The course includes individual and group assignments required for certification as well as homework.

Prerequisites

It is recommended that students with limited IT backgrounds sit through the Journey to Excellence web based awareness program.

Who Should Attend

The ITIL Practitioner Support and Restore (IPSR) course is intended for professionals who manage, organize and optimize the operations of the Support and Restore processes in an IT Service Organization. The target group consists of operational staff and managers wishing to extend their skills in planning, monitoring, reporting and optimizing the Service Desk function and the Incident and Problem Management processes

Course Objectives

The course covers the typical activities of a practitioner responsible for managing the Incident and Problem Management processes and the Service Desk function. It focuses on:

Managing- Plan key activities in the Service Desk Function and the Incident Management and Problem Management processes; plan the exchange of appropriate information relevant to managing the Support and Restore processes; initiate actions to ensure key activities in the Support and Restore processes meet pre-defined and pre-established objectives; plan monitoring and reporting on the performance and achievements of the Support and Restore processes.

Organizing- Organize the exchange of appropriate information with other IT Service Management processes, users and suppliers; maintain the Support and Restore procedures; organize and set up Service Desk responsibilities, functions, staffing levels and technologies; organize the relationships between the Service Desk and Incident Management, incident handling, relationships between Incident Management and Problem Management, Problem Control, Error Control, and proactive Problem Management.

Optimizing- Monitor and optimize the Support and Restore processes; propose improvements, based on results of monitoring and/or reviews

Practitioner Certification: Agree & Define (IPAD)

Price: $2995 **Duration:** 5 Days

This hands on, instructor led program leads to the Practitioner Certificate in IT Service Management Agree & Define and is for IT professionals who will participate in managing, organizing, and optimizing the Service Level and Financial Management process areas.

Prerequisites

Foundation Certificate in IT Service Management along with IT operational experience.

Who Should Attend

Operational staff and managers wishing to certify their skills in planning, monitoring, reporting and optimizing the Change, Configuration & Release management process areas.

Course Objectives

The program focuses on the following topics throughout the week:

- ITIL concepts
- Process Implementation Planning
- Critical Success Factors & Continuous Service Improvement
- Service Level Management
- Manage, organize, and optimize Service Level Management
- Service Level Management assessment, process, activities, roles, and responsibilities
- Financial Management
- Manage, organize, and optimize Financial Management
- Financial Management Assessment process, activities, roles, and responsibilities

Practitioner: Release and Control (IPRC)

Price: $2995 **Duration:** 5 Days

This 5- day course focuses on implementing and managing the Release and Control activities, processes and functions that are required to stabilize an IT infrastructure through effective Change, Configuration, and Release Management processes. It spans 4 days of lecture (40%) and hands-on activities (60%) and one day of exam review, preparation and testing. The course includes individual and group assignments required for certification as well as homework

Prerequisites

Before taking this course students should have attended accredited training and successfully completed the practical assignments, and hold the ITIL Foundation Certification.

Who Should Attend

This course is intended for professionals who will participate in managing, organizing, and optimizing the operations of the Release and Control processes in an IT Service Organization that has implemented, or started to implement, ITIL-based Release and Control processes. The target group consists of operational staff and managers wishing to extend their skills in planning, monitoring, reporting, and optimizing the processes of Change, Release, and Configuration Management

Course Objectives

The course covers the typical activities of a practitioner responsible for managing Change, Configuration, and Release Management processes. It focuses on the following areas:

- **Managing-** Plan key activities; plan exchange of information relevant to managing Release and Control processes; initiate actions to ensure key activities in the processes meet objecctives; report on effectiveness and efficiency of activities in the Release and Control processes
- **Organizing-** Organize exchange of and provide information to other processes, users & suppliers; maintain procedures; maintain configuration baselines & status information; provide instructions to design, build and configure releases; advise on back-out and test plans; plan release implementations; monitor logistics of internal and purchased releases; coordinate and monitor changes
- **Optimizing-** Monitor and optimize the Release & Control processes; propose improvements; plan and conduct change, release and configuration

Implementation Workshop: Plan & Improve (IPPI)

Price: $2395 **Duration:** 4 Days

This course will provide you with in-depth exercises and labs that will help you better understand how to implement the concepts covered in class.

Prerequisites

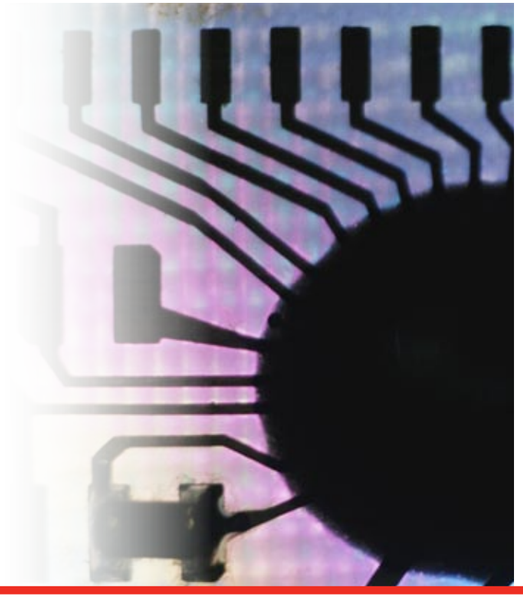
Participants must hold a ITIL Foundation Certificate.

Who Should Attend

Process owners, project managers, process implementation team and managers responsible for the successful implementation of ITIL processes.

Course Objectives

This "how to" workshop helps IT practitioners acquire the skills to plan and implement the Plan & Improve process areas (Availability, Capacity & Continuity Management). Delivered over four days the course features lectures, discussion, team exercises and quizzes. Highlights of the program include producing a Plan and Improve process design, integration and technology requirements plan



Service Lifecycle Certification v3 - Service Transition (ITST)

Price: $1895 **Duration:** 3 Days

Prerequisites

V3 Foundation Certificate in IT Service Management along with IT or ITSM operational experience.

Who Should Attend

The Service Lifecycle series will be of interest to candidates wishing to obtain knowledge of V3 practices within the Service Lifecycle context. Prime focus is the Lifecycle itself, the use of process and practice elements used within it and the management capabilities needed to deliver quality Service Management practices in an organization.

Course Objectives

This hands on program leads to a Certificate in ITIL V3 Service Lifecycle Management - Service Transition. This program is for IT professionals working within, or about to enter, an IT environment requiring a detailed understanding of the processes, functions and activities associated with the Service Transition domain of the ITIL® Service Lifecycle. Upon successful completion of the education and examination, students can expect to gain competencies in the following IT Service Transition areas:

- Introduction to Service Transition
- Service Transition Principles
- Service Transition Processes
- Service Transition related activities
- Organization and technology for Service Transition
- Understanding Implementation approaches, Service Transition roles, Challenges, Critical success factors and risks

Course Content

- Lifecycle Certification
- Service Transition
- Service Transition Processes
- Transition Planning and Support Management
- Change Management
- Service Asset and Configuration Management
- Release and Deployment Management
- Service Validation and Testing Management
- Evaluation Management
- Service Knowledge Management
- Other Lifecycle Process Relationships
- Common Activities
- Service Transition Functions
- Service Transition Considerations
- Organizational Structure
- Roles and Responsibilities
- Technology Considerations
- Implementation

ITIL Foundation V3 (ITILFV3)

Price: $1895 **Duration:** 3 Days

Prerequisites

V3 Foundation Certificate in IT Service Management along with IT or ITSM operational experience.

Who Should Attend

The Service Lifecycle series will be of interest to candidates wishing to obtain knowledge of V3 practices within the Service Lifecycle context. Prime focus is the Lifecycle itself, the use of process and practice elements used within it and the management capabilities needed to deliver quality Service Management practices in an organization.

Course Objectives

This hands on program leads to a Certificate in ITIL V3 Service Lifecycle Management - Service Operation. This program is for IT professionals working within, or about to enter, an IT environment requiring a detailed understanding of the processes, functions and activities associated with the Service Operation domain of the ITIL® Service Lifecycle. Upon successful completion of the education and examination, students can expect to gain competencies in the following IT Service Operation areas:

- Introduction to Service Operation
- Service Operations Principals
- Service Operation Processes
- Common Service Operation Activities
- Organizing Service Operation: Functions
- Technology Considerations
- Implementation Considerations

Course Content

- Lifecycle Certification
- Service Operation
- Service Operation Processes
- Event Management
- Incident Management
- Request Fulfillment
- Problem Management
- Access Management
- Other Lifecycle Process Relationships
- Common Activities
- Service Operation Functions
- Service Desk
- Technical Management
- Applications Management
- IT Operations Management
- Service Operation Considerations
- Service Operation Organizational Structure
- Service Operation Roles and Responsibilities
- Technology Considerations
- Implementation

IT-Service Manager including. Exam Review & Organization (ITSM)

Price: $7495 **Duration:** 12 Days

This hands on, instructor led program is the highest level of professional ITIL Service Management certification available. Any student who achieves this certification has demonstrated not only an in-depth knowledge of ITIL Service Management but also a practical application of that knowledge. The course introduces the following learning objects for each ITIL Service Management process:

- Process Fundamentals Review
- How to enable an ITIL Strategy
- Understanding Business and IT Alignment
- The role of Continuous Process Improvement
- Improve Quality of Service
- Control and Reduce Cost
- Improve Effectiveness and Efficiency

The program spans 10 days of lecture, student assessments, group activities, and after hour reading assignments. The remaining 2.5 days are dedicated to exam preparation and testing.

Prerequisites

You must hold an ITIL Foundation Certificate, and have a minimum of two years of relevant experience in Information Technology.

Who Should Attend

IT senior managers, process owners, project managers, process staff and managers and consultants responsible for the successful implementation of ITIL processes.

Course Objectives

The following topics will be covered in the ITIL Service Manager Certification course:

- Service Support
- Service Desk & Incident Management
- Problem Management
- Configuration Management
- Change Management
- Release Management
- Communication Planning
- Service Level Management
- Availability Management
- Capacity Management
- Continuity Management
- Finance Management
- CSIP- Business & IT Alignment

Service Lifecycle Certification v3 - Service Transition (ITST)

Price: $1895 **Duration:** 3 Days

Prerequisites

V3 Foundation Certificate in IT Service Management along with IT or ITSM operational experience.

Who Should Attend

The Service Lifecycle series will be of interest to candidates wishing to obtain knowledge of V3 practices within the Service Lifecycle context. Prime focus is the Lifecycle itself, the use of process and practice elements used within it and the management capabilities needed to deliver quality Service Management practices in an organization.

Course Objectives

This hands on program leads to a Certificate in ITIL V3 Service Lifecycle Management - Service Transition. This program is for IT professionals working within, or about to enter, an IT environment requiring a detailed understanding of the processes, functions and activities associated with the Service Transition domain of the ITIL® Service Lifecycle. Upon successful completion of the education and examination, students can expect to gain competencies in the following IT Service Transition areas:

- Introduction to Service Transition
- Service Transition Principles
- Service Transition Processes
- Service Transition related activities
- Organization and technology for Service Transition
- Understanding Implementation approaches, Service Transition roles, Challenges, Critical success factors and risks

Course Content

- Lifecycle Certification
- Service Transition
- Service Transition Processes
- Transition Planning and Support Management
- Change Management
- Service Asset and Configuration Management
- Release and Deployment Management
- Service Validation and Testing Management
- Evaluation Management
- Service Knowledge Management
- Other Lifecycle Process Relationships
- Common Activities
- Service Transition Functions
- Service Transition Considerations
- Organizational Structure
- Roles and Responsibilities
- Technology Considerations
- Implementation

ITIL Foundation V3 (ITILFV3)

Price: $1795 **Duration:** 3 Days

This hands-on, instructor led, ITIL version 3 Foundation Certification training program introduces you to the fundamentals of IT Service Management as described in the IT Infrastructure Library. Accredited by ISEB, this course helps you prepare for the certification exam along with acquiring valuable insights from instructors who have actually managed IT operations and ITIL programs. This course features lectures, discussions, team exercises and quizzes. It culminates with an optional, one-hour exam certification

Prerequisites

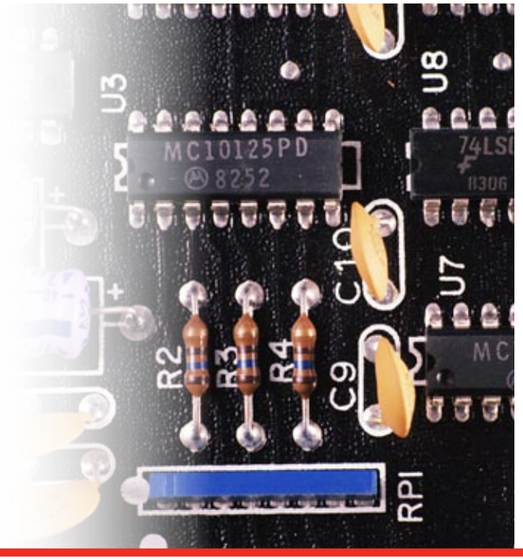
It is recommended that students have experience in corporate IT environments with a goal of better understanding the ROI of the IT infrastructure.

Who Should Attend

Senior IT and business executives, IT management and staff, consultants, project managers and others interested in learning about IT Service Management.

Course Objectives

- ITIL Concepts
- Continuous Service Improvement
- Service Operation
- Service transition
- Service Design
- Service Strategy
- Open ITIL Solutions



SalesEngineering.com

SE Skills Training

Fast Lane is now partnering with salesengineering.com in the US to provide industry leading pre-sales performance improvement solutions.

The SE Skills Improvement Program is designed for Sales Engineers (SEs) to project manage the solution sale to successfully close the solution decision. As a result, SEs make a long term measurable impact on the sales organization by:

- Shrinking sales cycles
- Increasing win rates
- Growing deal sizes
- Working on more and better qualified deals
- Freeing up the Sales Exec's time from technically-oriented activities
- Adding strategic value to the sales process

Since 1997, SalesEngineering.com has been filling the 'Technical Sales' gap with a unique six step program using a proven combination of patented training, services and tools developed specifically to address the unique role the SE plays in the sales cycle. This augments any existing sales methodology currently in place.
To find out more about this revolutionary program please contact us at (919) 674-3100 or info@fastlaneus.com.

The Program

SE Process Assessment

- Assessment Review
- Mutually Developed Implementation Plan
- SE skills Program
- Post-training Coaching Plan
- In-field Coaching Services

The Results

A client recently published the results below after implementing the program:

- Closed deals increased 200%
- Average deal size increased 75%
- Win rate increased 122%
- Estimated revenue grew by 425%

SE Skills Project Managing the Solution Sale (SPMS)

Price: $2195 **Duration:** 2 Days

SEskills is a two-day instructor-led on-site course which applies engineering principles to a proven Solution Sales Process. These best practices promote faster, repeatable, and predictable solution closures. SEs apply engineering principles to their own deals throughout SEskills. The SE chooses one of their own opportunities which is stalled or lost. SEstart, the SE Account Review Tool, is used to structure data capture, analysis, and solution opportunity project planning.

Post-training, it is important to ensure that the principles of "Project Managing the Solution Sale" are put into practice. A follow-up reinforcement program is provided that implements new policies, procedures, and coaching to ensure correct use of important new SEskills behaviors. As such, three (3) Technical Opportunity Planning (TOP) half-day instructor-led web-based reviews are provided approximately 30-60-90 days post-training. These are vital to the post-training field implementation of SE skills improvement. SE Managers are shown how to reinforce SE skills behavior and validate its correct use. SEs are shown proper solution qualification, sales intelligence gathering, technical opportunity planning, and Sales Rep alignment.

Course Objectives

Through SEskills, the SE will be able to:

- Project manage and own "Solution Closure"
- Apply over a dozen engineering principles to a Solution Sales Process
- Improve the quality of deals to improve the win rate
- Help solution stakeholders decide faster
- Grow deals by identifying more pain and establishing compelling value
- Align solution strategy with the sales rep's sales strategy
- Create a "least-cost" project plan to achieve fast Solution Closure

SE Skills Implementation for SE and Sales Executives (SISE)

Price: $445 **Duration:** 1 Days

This 4-day instructor led course is intended to develop leaders in technical, line and middle manager positions. You will gain an understanding of the factors that influence project leadership success and learn project management tools to execute a project on-time and within budget. You will also learn to apply the art and science of critical thinking to break complex situations into specific actionable steps, and to effectively present and advocate your logic

Who Should Attend

This course is intended for Sales Managers/Executives responsible for evaluating and recommending sales training for their sales force.

Course Objectives

The workshop has six main objectives:

- Understand the SEskills agenda, lessons, behaviors, and best practices
- Identify procedures and policies to make new best practices operational
- Discuss pre-sales and sales integration issues and strategies
- Identify the manager's roles pre, during, and post SE training
- Discuss the profile of deals SEs should bring into class
- Identify key milestones and success metrics

vmware® | authorized TRAINING CENTER

VMware Training

Why train with Fast Lane? Our student to server ratio is the lowest around. We have a strict one server per student policy for VMware courses verses other offerings which are 2 students per server. We also offer additional lab time. Classes ending on Thursday and Friday allow students access to the remote labs through Saturday. Other offerings end your lab access at the end of class.

Select from the following Authorized VMware Training classes to enroll at a location of your choosing or an onLine class from your office or home. Try the onLine version of any class and get this guarantee. If you are not satisfied with the onLine training for any reason you can attend the classroom version of the same class at no additional cost (travel and expenses not included).

Fast Lane also offers onsite and/or custom classes at your location for your entire team at very competative rates contact us at: (919) 674-3100 or info@fastlaneus.com.

VMware Certifications

Gain the in-depth skills and industry-recognized certification on VMware technology today! The VMware Certified Professional Program is designed for any technical individual -- partners, end-users, resellers, and consultants - who wants to demonstrate his or her expertise in virtual infrastructure and increase his or her potential for career advancement.

Please note that participation in a VMware authorized training class is REQUIRED for VCP certification. Candidates who take the VCP exam without a class will NOT be certified or confirmed by VMware.
Upon completion of any of these courses, you can take the examination to become a VMware Certified Professional (VCP) - cost of the exam is not included unless specified.

VMware Infrastructure 3: Install and Configure V3.5 (VIIC)

Price: $2995 **Duration:** 4 Days ILT & ILO

This hands-on training course explores installation, configuration, and management of VMware Infrastructure 3, which consists of VMware ESX Server and VMware VirtualCenter. Upon completion of this course, you can take the examination to become a VMware Certified Professional. Students who complete this course should enroll next in VMware Infrastructure 3: Deploy, Secure, and Analyze.

Prerequisites

System administration experience on Microsoft Windows® or Linux® operating systems

Who should attend

System administrators, systems engineers, and operators responsible for ESX Server and/or VirtualCenter

Course Objectives

At the end of the course, you should gain an understanding of the functionality in VMware Infrastructure 3 and be able to:

- Install ESX Server
- Configure ESX Server networking and storage
- Install and configure VirtualCenter
- Control user access to the VMware infrastructure
- Deploy and manage virtual machines using VirtualCenter
- Allocate and monitor virtual machines' resources
- Ensure high availability of applications

Course Content

Module 2: Virtual Infrastructure Overview
- Discussion of virtualization and virtual infrastructure components

Module 3: ESX Server Installation
- Set-up of ESX Server

Module 4: Networking
- Configuration of virtual switches, network connections and port groups

Module 5: Storage
- Storage management technologies

Module 6: VirtualCenter Installation
- Set-up of VirtualCenter components

Module 7: VM Creation and Management
- Use of templates
- Use of VMware Converter Enterprise
- Manage using VMware VirtualCenter and Web Access
- Use of Guided Consolidation

Module 8: Virtual Infrastructure Access Control
- Controlling administrator rights

Module 9: Resource Management
- VMotion migrations
- Set-up of resource pools and a VMware Distributed Resources Scheduler (DRS) cluster
- Setting VM priorities on CPU, memory, and other resources

Module 10: Resource Monitoring
- Workload assessment
- Monitoring using VMware VirtualCenter

Module 11: Data and Availability Protection
- Backup strategies
- Set-up of a VMware High Availability (HA) cluster

Module 12: Planning VI Deployment
- Guidelines and best practices for a basic deployment

VMware vSphere 4: Install, Configure, Manage (VICM)

Price: $2995 **Duration:** 4 Days ILT & ILO

This hands-on training course, aimed at experienced VMware Infrastructure administrators, has been updated to reflect ESX Server 3.5 and VirtualCenter 2.5. It focuses on ESX Server 3.5 rather than ESX Server 3i. On completion of this course, you can take the examination to become a VMware Certified Professional. This course is a continuation of the VMware Infrastructure 3: Install and Configure course.

Who should attend

System administrators, systems engineers, and operators responsible for ESXi, ESX, and/or vCenter Server.

Course Objectives

At the end of the course, you should be able to do the following:

- Install and configure ESX
- Install and configure vCenter Server
- Configure and manage ESX networking and storage using vCenter Server
- Deploy and manage virtual machines
- Manage user access to the VMware infrastructure
- Increase scalability using vCenter Server
- Monitor resource usage using vCenter Server
- Apply patches using VMware vCenter Update Manager
- Manage higher availability and data protection using vCenter Server

Course Content

- Discussion of virtualization and vSphere components
- Configuration of ESXi and ESX
- Install and configure vCenter Server, and use the VMware vSphere Client to manage vCenter Server inventory hierarchies
- Configuration of vNetwork standard and distributed switches, network connections, and port groups
- Storage management technologies
- Deploy virtual machines using templates, VMware vCenter Converter, Guided Consolidation
- Modifying, managing, and migrating virtual machines
- Controlling user access through roles and permissions
- Workload assessment, monitoring using vCenter Server
- VMware VMotion™ migrations
- Setup of resource pools and VMware Distributed Resource Scheduler cluster
- Setup of a VMware High Availability cluster
- Backup and recovery of virtual machines using VMware Data Recovery
- Patching using vCenter Update Manager
- Installation of ESX

VMware Infrastructure 3: Fast Track v3.5 (VIFT)

Price: $5495 **Duration:** 4 Days ILT & ILO

This VMware Authorized 5-day intensive, extended-hours training course covers the installation, management, and use of VMware ESX Server, VMware VirtualCenter, VMware DRS, VMware HA, VMware Consolidated Backup (VCB), VMware Converter, Storage VMotion, and VMware Update Manager. It combines the content from the 3.5 versions of the VMware Infrastructure 3: Install & Configure and Deploy, Secure, and Analyze training courses. Upon completion of this course, you can take the examination to qualify as a VMware Certified Professional.

Each student attending VMware Infrastructure 3: Fast Track v3.5 (VIFT) will receive a VCP Voucher ($175 value) good for six months.

Prerequisites

- Willingness to participate in a demanding, high-intensity training experience
- Comfort with system administration using command-line interfaces

Who should attend

This class is designed for experienced system administrators and system integrators who are responsible for scaling their organization's deployment of VMware technology. This fast-track program is most suited for those willing to work hard to achieve superior VI skills with minimal time away from the office.

Course Objectives

At the end of the course, you should be able to:

- Perform manual and scripted ESX Server installations
- Understand and configure security on the Service Console
- Install, configure, migrate, manage, and monitor virtual machines using ESX Server and VirtualCenter
- Utilize VMware Converter and VMware Update Manager
- Learn specific commands used to administer an ESX Server
- Configure and implement VMware HA, DRS and VCB
- Perform fault analysis in Virtual Infrastructure

Course Content

- Learn VMware products' functions and applications
- Perform an interactive installation of ESX Server
- Configure virtual switches, network connections and port groups through the GUI interfaces and CLI
- Identify how virtual infrastructure mitigates common security vulnerabilities
- Manage the service console firewall
- Survey storage management technologies
- Configure iSCSI storage access
- Secure access to storage and networks
- Analyze and troubleshoot a storage-related issue
- Configure VirtualCenter
- Use virtual-machine templates
- Manage virtual machines using VMware VirtualCenter
- Control administrator rights
- Migrate VMs using VMotion
- Set VM priorities for core resources
- Create DRS enabled clusters
- Manage resource pools
- Interpret performance graphs
- Enable a VMware HA cluster
- Perform backups using VMware Consolidated Backup
- Patch VMs and templates
- Configure ESX Server logging behaviour
- Identify ESX Server and VC Server log files
- Manage user and host access and privileges
- Perform a scripted installation of ESX Server

VMware vSphere 4: What´s New (VIWN)

Price: $1495 **Duration:** 2 Days ILT & ILO

Prerequisites

Recommended Completion of VMware Infrastructure 3: Install and Configure, or equivalent experience with VMware ESX and vCenter Server.

Who should attend

System architects, system administrators, IT managers, and individuals responsible for implementing and managing VMware Infrastructure architectures. This hands-on training course explores new features in future versions of VMware® vCenter Server and ESX™/ESXi, as well as how to upgrade.

Course Objectives

At the end of the course, you should be able to do the following:

- Upgrading VMware deployments
- Deploying distributed virtual switches to simplify datacenter-wide network management
- Using VMDirectPath to assign a PCI adapter directly to a virtual machine
- Migrating virtual machines' storage while they are live with Storage vMotion
- Growing virtual disks and VMFS volumes while they are live
- Employing VMware's new Pluggable Storage Architecture
- Ensuring application availability with VMware Fault Tolerance
- Manage more than one vCenter Server from the same client
- Use the new host profiles feature to keep hosts uniformly configured
- Save energy with VMware Distributed Power Management
- Save disk space with thin provisioning
- Administer virtual appliances consisting of more than one virtual machine

Course Content

- Highlights Next Generation enhancements by component and reviews upgrade tools and strategies.
- Presents new features that support better infrastructure monitoring and reduce the time it takes to provision ESX/ESXi hosts and virtual machines.
- Discusses networking enhancements that simplify configuration, extend support, and improve performance.
- Introduces new storage features that reduce storage costs, streamline management, and optimize performance.
- Reviews vMotion™ compatibility enhancements, new VMware Distributed Resource Scheduler monitoring and management tools, and extended VMware DPM support.
- Presents VMware High Availability enhancements and introduces VMware Fault Tolerance and vStorage APIs for data recovery.

IBM Websphere®

IBM WebSphere® Application Server drives business agility by providing millions of developers and IT Architects with an innovative, performance based foundation to build, reuse, run, integrate and manage Service Oriented Architecture (SOA) applications and services.

- Run applications and services in a reliable, highly available, secure and scalable environment to ensure business opportunities are not lost due to application downtime
- Delivers optimized runtime performance through provisioning, web services, and EJB3 enhancements which can result in fewer energy consuming processors performing the same workloads of previous versions
- From service-enabling legacy assets to inventing new ones, our technology makes your business accessible to new users in innovative ways, giving you immediate insight and interaction with partners, suppliers and customers and increasing your return on investment.

Portal software enables external and internal Web sites to deliver information, applications and business processes in a personalized way to individuals. Increasingly, Web 2.0 technologies are enabling Web portals to provide employees with the content, social connections and other resources to solve business problems.

IBM's portal software is used for a variety of purposes -- everything from communications, education, health, emergency and municipal services, increasingly with Web 2.0 technologies such as mashups, composite applications and text tagging.

- Deliver exceptional Web experiences - Take advantage of new, nimble Web 2.0 technologies and philosophies that put new business models in reach.
- Extend your business assets - Create and deploy custom-branded, market-driven solutions comprised of existing and net-new business assets, and re-purpose and reuse as appropriate.
- Run your business efficiently - Built on WebSphere software so that enterprise-class applications, processes and transactions can reside on a proven, reliable, scalable and high-performance foundation.

IBM WebSphere® Portal V6.1 System Administration 1 (WP711)

Price: $1875 **Duration:** 3 Days ILT & ILO

In this 3-day hands-on lab course you will explore the operational aspects of an IBM WebSphere Portal version 6.1 installation. You will practice such tasks as installation, migration of data to a relational database, and utilization of a Lightweight Directory Access Protocol (LDAP) directory. This course focuses on the deployment and management of portal resources, such as portlets, pages, themes and skins. You will manage page hierarchies and configure resource permissions on portal resources.

Prerequisites

- Basic knowledge of portals and WebSphere Portal

Who should attend

This intermediate course is designed for systems integrators, architects, and developers responsible for implementing solutions using WebSphere Portal V6.1.

Course Objectives

- Install WebSphere Portal
- Describe the portal architecture
- Migrate the default database to an enterprise database
- Enable authentication using an LDAP repository
- Navigate and manage the portal
- Implement portal security
- Administer portal using attribute based techniques
- Build and manage composite applications
- Federate a portal node into a cell
- Brand the portal

IBM WebSphere® Portal V6.1 System Administration 2 (WP721)

Price: $1250 **Duration:** 2 Days ILT & ILO

In this 2-day hands-on course, explore the advanced operational aspects of an IBM WebSphere Portal Version 6.1 environment. Practice the necessary skills for an administrator or architect to administer an existing WebSphere Portal environment including, configuring a horizontal portal cluster, deploying resources (such as portlets) in a clustered environment, troubleshooting a portal clustered environment, moving from staging to production and performing administrative tasks in a clustered environment.

Prerequisites

- Intermediate administration skills using WebSphere Application Server version 6.0 or 6.1 acquired through experience and / or completion of IBM WebSphere Application Server Administration courses (SW246) or (WA361)
- Knowledge of portals and WebSphere Portal
- Basic knowledge of portal security concepts acquired by completing IBM WebSphere Portal Version 6.1 Administration 1 (WP711)

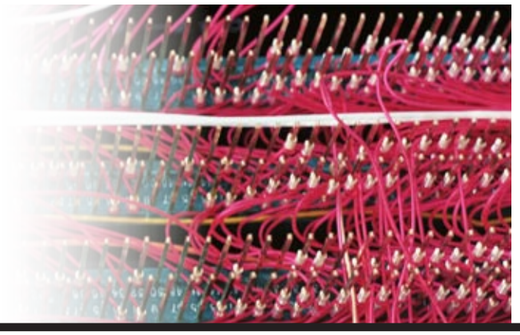
Who should attend

This advanced course is for systems integrators, architects, and developers responsible for implementing solutions using WebSphere Portal V6.1.

Course Objectives

At the end of the course, you should be able to:

- Describe various portal topologies
- Deploy portlets to a cluster
- Deploy portal from a staging environment to a cluster
- Create virtual portals and realms
- Implement content manager
- Troubleshoot a clustered portal



IBM WebSphere® Portal V6.1 System Administration 1 and 2 (WP731)

Price: $2985 **Duration:** 5 Days ILT & ILO

In this 5-day hands-on course (which is a combination of WP711 and WP721), explore the advanced operational aspects of an IBM WebSphere Portal Version 6.1 environment. Practice the necessary skills for an administrator or architect to administer an existing WebSphere Portal environment including, configuring a horizontal portal cluster, deploying resources (such as portlets) in a clustered environment, troubleshooting a portal clustered environment, moving from staging to production and performing administrative tasks in a clustered environment.

This class is a combination of WP711 and WP721.

Prerequisites

- Intermediate administration skills using WebSphere Application Server version 6.0 or 6.1 acquired through experience and /or completion of IBM WebSphere Application Server Administration courses (SW246) or (WA361)
- Basic knowledge of portals and WebSphere Portal

Who should attend

This intermediate course is designed for systems integrators, architects, and developers responsible for implementing solutions using WebSphere Portal V6.1.

Course Objectives

- Install WebSphere Portal
- Describe the portal architecture
- Migrate the default database to an enterprise database
- Enable authentication using an LDAP repository
- Navigate and manage the portal
- Implement portal security
- Administer portal using attribute based techniques
- Build and manage composite applications
- Federate a portal node into a cell
- Brand the portal
- Describe various portal topologies
- Deploy portlets to a cluster
- Deploy portal from a staging environment to a cluster
- Create virtual portals and realms
- Implement content manager
- Troubleshoot a clustered portal

IBM WebSphere® Application Server V6.1 Administration (WA361)

Price: $2000 **Duration:** 2 Days ILT & ILO

Prerequisites

Before taking this course, students should have

- An understanding of basic Internet concepts
- Experience using a Web browser
- Administration skills for a Web server, such as IBM HTTP Server or Apache
- Basic operational skills for the Windows 2000 operating system

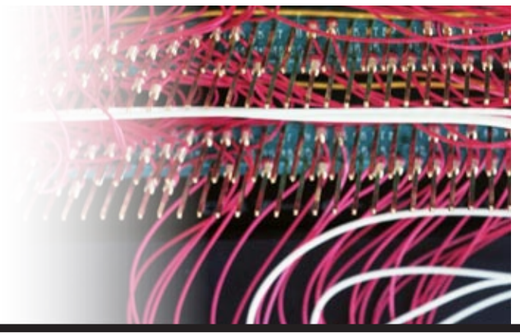
Who should attend

This course is designed for administrators who install, configure, and manage Web-based applications on WebSphere Application Server V6.1. It is also appropriate for webmasters and application architects.

Course Objectives

At the end of the course, you should be able to:

- Explain how WebSphere Application Server relates to the WebSphere family of products
- Describe the architectural concepts related to WebSphere Application Server V6.1
- Install and configure WebSphere Application Server and IBM HTTP Server (IHS)
- Explain the basic concepts of the Java 2 Platform, Enterprise Edition (J2EE)
- Assemble and install server-side Java enterprise applications
- Use WebSphere Application Server administrative tools to configure and manage enterprise applications
- Configure security for server-side application resources
- Deploy applications in clustered environments
- View performance information about server and application components
- Use problem determination tools and log files to troubleshoot problems



Developing Web Sites Using IBM Workplace Web Content Management 6.0 (WP440)

Price: $1830 **Duration:** 3 Days ILT

Prerequisites

The prerequisites for this course include:

- Experience using HTML
- Experience in Web site development
- Current involvement in existing Web site development and maintenance
- Experience with workflow and security practices

Who should attend

The target audience for this course is technical users who need to build a Web site using IBM Workplace Content Management.

Course Objectives

Developing Web Sites Using Workplace Web Content Management 6.0 introduces the concepts and skills necessary for a developer to build a Web site using IBM® Workplace Web Content ManagementTM 6.0, including site architecture, page design, content management, workflow, content security and user access.

This course covers the following topics:

Introducing IBM Workplace Web Content Management 6.0

- Overview: The IBM Workplace Web Content Management 6.0 and the Web site development process
- Navigating the IBM Workplace Web Content Management user interface

Implementing Workflow

- Workflow actions and status
- Creating workflow stages
- Creating a workflow
- Creating and publishing a new Web page

Implementing Security

- Setting library access permissions
- Enabling item security

Creating the Information Architecture

- What is information architecture?
- Creating a site framework and site areas
- Creating a category taxonomy
- Creating categories for the taxonomy

Working with Templates

- Creating Authoring Templates
- Creating a Presentation Template
- Pairing a Presentation Template with an Authoring Template

Creating Content

- Creating Web site content items

Adding Components

- Creating and referencing images
- Using style sheets
- Adding navigation to your Website
- Creating a standard navigator
- Creating a site map navigator
- Creating a tools navigator
- Creating a breadcrumb navigator

Creating menus

- Using a JSP component
- Using a federated content component
- What is an HTML component?

Implementing Search Functionality

- Using Portal Search functionality in IBM Workplace Web Content Management
- Managing Item Versions

Managing item versions and restoring items

- (Optional) Overview of the Web Content Management API
- Using the API

WebSphere Portlet Factory Top Gun Fast Track (WPC42)

Price: $3500 **Duration:** 5 Days ILT & ILO

Prerequisites

- Working knowledge of the Java programming language (strong Java skills not required)
- Working knowledge of XML as a data structure
- Theoretical knowledge of J2EE architecture recommended (proficiency in J2EE development not required)

Who should attend

The target audience for this course is corporate developers with little or no IBM WebSphere Portlet Factory experience, who will build portlets for the IBM WebSphere Portal Server.

Course Content

This class is a combination of WP416 and TG616 taught in 5 days covering:

- WPF Basics
- Services and Schemas
- Building Applications
- Programming Patterns
- Portlets, Wires, and Customization
- Using Java in Portlet Factory

IBM Lotus® Domino®

IBM Lotus Notes® and Lotus® Domino® software delivers a proven platform for collaborative business applications, messaging and workflow. It provides a reliable, security-rich messaging and collaboration environment for more than 46,000 companies worldwide, helping to increase employee productivity, facili¬tate decision making and improve overall responsiveness. IBM has leveraged its 20 years of leadership in business collaboration solutions to provide a new kind of desktop application that can help deliver an enhanced user experi¬ence, drive greater business value and boost IT performance.

Lotus Notes and Domino software empowers users to take action, create and share knowledge and collaborate with teams. It elevates the power of e-mail with tools and information that help users get work done quickly. And it enables employees to leverage assets and connections across the Internet as boundaries between the enterprise and the outside world disappear.

Innovation is what distinguishes companies that thrive from companies that simply survive. IBM Lotus Notes and Domino software can help you drive top-line growth and bottom-line savings by streamlining your existing business processes and eliminating roadblocks.

IBM Lotus Domino 8.5 System Administration Bootcamp (D8L89)

Price: $2500 **Duration:** 5 Days ILT & ILO

This course covers the entire core Lotus Domino System Administration curriculum which is normally taught in 6 days. While the course duration is condensed to 5 days, the course content is not condensed; therefore, this bootcamp offering covers the material at an accelerated pace, and could require participants to attend extended classroom hours.

Prerequisites

You should have previous experience as a network administrator or mail system administrator, and experience using the Lotus Notes 8 Client.

Who should attend

This intermediate course is system administrators new to Lotus Domino who need to acquire a foundational knowledge and working experience with the Lotus Domino administration tools and who are responsible for:

- Installing and setting up of the initial, basic Lotus Domino and Lotus Notes Infrastructure
- Setting up Domino Mail servers in the corporate intranet and extranet (i.e. Internet) environment
- Monitoring and maintaining an existing Lotus Domino 8 infrastructure
- Managing Notes and non-Notes users in a Domino domain

IBM Lotus Domino 8.5 System Administration Fundamentals (D8L75)

Price: $500 **Duration:** 1 Days ILT & ILO

Prerequisites

You should have previous experience as a network administrator or mail system administrator, and experience using the Lotus Notes client.

Who should attend

This is a basic course for current network or mail system administrators who are new to the Lotus Domino system administration, but have some experience using the Lotus Notes client, and who need to acquire a foundational knowledge and working experience with the Lotus Domino administration tools.

This course is appropriate for release 6.5, 7 and 8.X Administrators and introduces students to basic concepts that provide the foundation for Lotus Domino and Lotus Notes. This course is the point of entry to the entire core system administration curriculum.

Course Objectives

Upon completing the course, you should be able to:

- Describe the structural components of the IBM Lotus Domino 8.5 Environment.
- Perform basic IBM Lotus Domino 8.5 administration.
- Manage IBM Lotus Notes and IBM Lotus Domino security.
- Describe Domino mail routing and mail routing topologies.
- Describe Lotus Domino replication and replication topologies.
- Identify services and options that you can use to extend and enhance the functionality of the Lotus Domino environment

Building the IBM Lotus Domino 8.5 Infrastructure (D8L76)

Price: $1000 **Duration:** 2 Days ILT & ILO

Prerequisites

The prerequisites for this course include completion of the IBM Lotus Domino 8.x System Administration Operating Fundamentals course or equivalent knowledge, skills, and experience.

Who should attend

This is a basic course for current network or mail system administrators who are new to the Lotus Domino system administration, but have some experience using the Lotus Notes client, and who need to acquire a foundational knowledge and working experience with the Lotus Domino administration tools.

This course is appropriate for release 6.5, 7 and 8.X Administrators and introduces students to basic concepts that provide the foundation for Lotus Domino and Lotus Notes. This course is the second course in the core system administration curriculum. This course builds on the skills introduced in Lotus Education's IBM Lotus Domino 8.5 System Administration Fundamentals course (D8L75). The course is designed to introduce IBM Lotus Domino system administrators to the process of establishing an IBM Lotus Domino 8.5 environment. It provides students with hands-on practice with installing Lotus Domino servers and clients; configuring users, groups, and administrative tools; and configuring, managing, and troubleshooting mail.

Course Objectives

Upon completing the course, you should be able to:

- Set up the first server and the administrator
- Add Lotus Domino servers
- Add Lotus Notes clients
- Administer users by creating groups and implementing policies
- Set up server administration
- Synchronize Lotus Domino system databases
- Configure basic intranet mail routing
- Configure mail routing to the Internet
- Establish mail controls
- Implement mail rules and storage limits
- Monitor mail
- Resolve common mail routing problems

Managing IBM Lotus Domino 8.5 Servers and Users (D8L77)

Price: $1500 **Duration:** 2 Days ILT & ILO

Prerequisites

You should complete the following IBM Lotus Domino 8.x courses or equivalent knowledge, skills, and experience.

- IBM Lotus Domino 8.5 System Administration Operating Fundamentals
- Building the IBM Lotus Domino 8.5 Infrastructure

Who should attend

This is the third course in the core system administration curriculum for current network or mail system administrators who are new to the Lotus Domino system administration, but have some experience using the Lotus Notes client, and who need to acquire a foundational knowledge and working experience with the Lotus Domino administration tools.

This course is appropriate for release 6.5, 7 and 8.X Administrators and introduces students to basic concepts that provide the foundation for Lotus Domino and Lotus Notes. This is an intermediate course for system administrators who are new to Lotus Domino 8.5 and have an understanding of Lotus Domino and Lotus Notes foundational concepts and the ability to navigate in Lotus Domino Administrator; who will be responsible for monitoring and maintaining an existing Lotus Domino 8.5 infrastructure; and who will be responsible for managing Lotus Notes and non-Lotus Notes users in a Domino domain.

Course Objectives

Upon completion of this course you will be able to:

- Manage users
- Manage groups
- Manage both Lotus Notes and non-Lotus Notes clients
- Deploy composite applications
- Manage servers
- Update servers
- Set up server monitoring
- Monitor server performance
- Monitor servers with Domino Domain Monitoring
- Use the certification authority process to migrate certifiers and register users
- Resolve server problems
- Resolve replication problems
- Recover a Domino server
- Resolve user problems

Exploring New Features in IBM Lotus Domino 8 Administration (D8720)

Price: $1000 **Duration:** 2 Days ILT & ILO

Prerequisites

The prerequisites for this course include completion of either of the following Lotus Domino 7 paths or equivalent knowledge, skills, and experience:

- IBM® Lotus® Domino® 7 System Administration Operating Fundamentals (N7D750)
- Building the IBM® Lotus® Domino® 7 Infrastructure (N7D760)
- Managing IBM® Lotus® Domino® 7 Servers and Users (N7D770)

Who should attend

The target audience for this course is experienced Lotus Domino 7 administrators who require early exposure to new Lotus Domino and Lotus Notes 8 features that impact system administration.

Course Objectives

This course covers the changes in the Lotus Domino 8 administration and user environments including:

- Installing and configuring Lotus Domino 8 servers and Lotus Notes 8 clients
- Implementing new messaging features
- Managing users and clients with administration enhancements
- Administer servers using administration enhancements
- Deploying composite applications
- Migrating a Lotus Domino 7 environment to Lotus Domino 8 and Lotus Notes 8

Exploring New Features in IBM Lotus Domino 8.5 Administration (D8730)

Price: $500 **Duration:** 1 Day ILT & ILO

Prerequisites

The prerequisites for this course include completion of either of the following Lotus Domino 8.0 paths or equivalent knowledge, skills, and experience:

Administrators who were new to Lotus Domino 8.5 and completed the following courses:

- IBM Lotus Domino 8 System Administration Operating Fundamentals (D8750)
- Building the IBM Lotus Domino 8 Infrastructure (D8760)
- Managing IBM Lotus Domino 8 Servers and Users (D8770)

Administrators who upgraded to Lotus Domino 8.5 from a previous release and completed the following course: Exploring New Features in IBM Lotus Domino 8 Administration (D8720) or (D8725)

Who should attend

This intermediate course is designed for experienced Lotus Domino 8 administrators who require early exposure to new Lotus Domino and Lotus Notes 8.5 features that affect system administration, and who will be responsible for updating an existing Lotus Domino and Lotus Notes 8 environment to Lotus Domino and Lotus Notes 8.5.

Course Objectives

- Identify the high-level changes in the Lotus Domino 8.5 administration and user environments, and investigate upgrade and deployment scenarios for Lotus Domino 8.5 servers and IBM Lotus Notes 8.5 clients
- Manage users and servers
- Manage content
- Implement security features introduced in Lotus Domino 8.5
- Implement hardware conservation techniques

Fundamentals of IBM Lotus Domino 8 Application Development (D8510)

Price: $2000 **Duration:** 4 Days ILT & ILO

Prerequisites

The target audience for this course is application developers who are new to developing Domino applications and who need to acquire the fundamental skills to develop and modify single database applications in IBM Domino Designer 8. The prerequisites for this course include :

This course covers the following topics:

- Experience using the Lotus Notes client, Web browser or both to access applications.
- (Recommended) Experience developing one or more applications using other application development tools

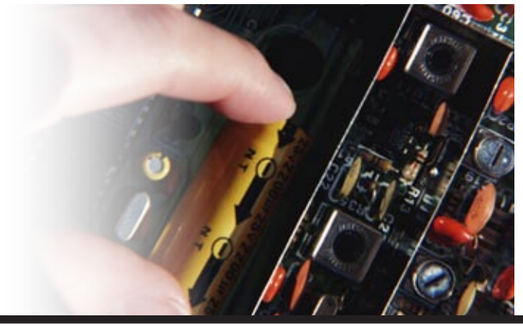
Who should attend

This course is appropriate for release 6.5, 7 and 8 Developers. The course provides the information that developers need to know to successfully create and modify database applications in IBM Lotus Domino Designer 8. It provides an overview of the Lotus Domino 8 and Domino Designer 8 environments, introduces the elements and skills that are used in creating single-database Domino applications, describes how the formula language can be used to enhance the functionality of a Domino application, and explains how Domino applications can be secured.

Course Objectives

Upon completion of this course you should be able to:

- Exploring Applications in Lotus Domino 8
- Identifying Application Types and Data Sources
- Examining the Lotus Domino Architecture
- Examining Lotus Domino Application Components
- Investigating Replication and Application Design Considerations
- Extending Lotus Domino Collaboration Capabilities



Building Web Applications with IBM Lotus Domino Designer 8 (D8520)

Price: $1000 **Duration:** 2 Days ILT & ILO

Who should attend

Extend your Domino application development skills by learning how to use the Domino tools to design and develop dynamic Web applications. Learn how to efficiently use Domino fields and page lay out design elements in the Web pages. Learn how to use JavaScript in their Domino application. You do not need to know how to program in this language to acquire an understanding of how and where to apply the programming capabilities to the best advantage. Finally, this course covers security topics specific to the Domino Web environment.

Prerequisites

This is a basic course for Lotus Domino application developers who need to build Web-enabled Lotus Domino applications using Domino Designer 8. The prerequisites for this course include completion of the following Lotus Domino Designer 8 course or equivalent knowledge, skills, and experience:

- Fundamentals of IBM Lotus Domino 8 Application Development (D8510) or (D8515)

Course Objectives

Upon completion of this course you should be able to:

- Build IBM® Lotus® Domino® Forms for the Web
- Enhance the Appearance of Web Pages
- Use JavaScript in Forms
- Customize Web Site Functionality
- Secure a Domino Web Application

Developing IBM Lotus Domino 8 Applications: Intermediate Skills (D8530)

Price: $1500 **Duration:** 3 Days ILT & ILO

Prerequisites

Students taking this course should have experience using the IBM® Lotus Notes® client to access applications and possess the equivalent knowledge, skills, and experience developing Lotus Domino 6, 7, or 8 applications. Students should have completed the Fundamentals of Lotus Domino 8 Application Development or Developing Lotus Domino 6/6.5 Applications: Foundation Skills course.

Who should attend

The target audience for this course is application developers who have experience creating or modifying single database applications with Lotus Domino Designer 6, 7, or 8.

Course Objectives

Upon successful completion of this course, students will be able to:

- Use formula language to inspect and manipulate text values and lists, and use iterative statement functions.
- Implement functions that interact with users through different types of dialog boxes using the @Prompt and @DialogBox functions.
- Implement advanced view design features to enhance how Lotus Notes displays documents.
- Examine and use several IBM® Lotus® Domino® design elements as navigation structures, including links and imagemaps.
- Create and embed an outline.
- Work with framesets and frames.
- Access data in Lotus® Domino® databases by using formula language and profile documents.
- Use the formula language to access data sources using the Microsoft® Open Database Connectivity (ODBC) interface.
- Examine Domino Enterprise Connection Services (DECS) and implement real-time data mapping between a Domino® application and a relational database.
- Implement workflow in Lotus Domino applications.
- Secure Lotus Domino application data by controlling access and encrypting data.

Using LotusScript in IBM Lotus Domino Applications (N7D540)

Price: $1500 **Duration:** 3 Days ILT & ILO

Students will learn the techniques of programming in LotusScript while they learn to access and work with objects in the Domino Object Model. This workshop starts by introducing students to the LotusScript language, having them retrieve properties of a database, using methods of NotesDatabase, and traversing down the Document Object Model to ACL classes. The skill of navigating the Document Object Model is continuously reinforced throughout the course as students learn to work with front-end and back-end classes. Students are introduced to error checking the LotusScript Debugger early on so that they use it throughout the course.

Prerequisites

D8510 Developing IBM Lotus Lotus Domino Foundation Skills (D8510) or the equivalent skills

Who should attend

The target audience for this course is Application developers who will be using LotusScript in their Domino applications.

Course Objectives

- Introducing LotusScript: where and when to use it
- Using programming skills such as:
  - declaring variables
  - assigning values
  - using looping statements
  - using arrays
  - using conditional statements
  - converting data types
- Instantiating objects
- Retrieving database information
- Using the LotusScript Debugger
- Trapping errors in code
- Working with the front-end classes to manipulate objects in the user interface
- Working with back-end classes to retrieve and add data to documents
- Creating and sending report documents
- Prompting users for data and processing the data
- Using Script Libraries

Ubuntu Training

Has your company started to consider an alternative desktop that contains all the applications your users will need, from word processing and email applications, to web server software and programming tools.

Ubuntu is a Linux based operating system that is a perfect alternative for laptops, desktops and servers and continues to be the most popular downloaded Linux distribution. Ubuntu has been validated on Dell, HP, IBM, Sun, Toshiba and Lenovo systems with more hardware vendors being added daily.

Ubuntu is and always will be free of charge. You do not pay any licensing fees. You can download, use and share Ubuntu with your friends, family, school or business for absolutely nothing.

There is a new desktop and server release every six months. That means you'll always have the latest and greatest applications that the open source world has to offer.

Ubuntu is designed with security in mind. You get free security updates for at least 18 months on the desktop and server. With the Long Term Support (LTS) version you get three years support on the desktop, and five years on the server. There is no extra fee for the LTS version, we make our very best work available to everyone on the same free terms. Upgrades to new versions of Ubuntu are and always will be free of charge.

Work towards your Linux Professional Institute (LPI) and Ubuntu Certified Professional (UCP) certifications with our wide range of class offerings.

1 Most popular downloaded distribution according to distrowatch.com

Ubuntu Desktop Training (DESK)

Price: $1000 **Duration:** 2 Days ILT

This course is based on Ubuntu 8.10 and aims to train new users of Ubuntu on how to use key applications including mainstream office applications, Internet connectivity and browsing, graphic art tools, multi-media and music.

Who should attend

This course provides both home and office users with hands on training on Ubuntu. No prior knowledge of Ubuntu is required, although computer literacy is assumed and is a pre-requisite. Ubuntu 8.10 must be installed on the computer hard disk before starting this course.

Course Objectives

After completing this course, students will be able to:

- Understand the concepts of open source and how they tie in with Ubuntu
- See the benefits and differences in using Ubuntu as an Operating system
- Customize the look and feel of the Ubuntu desktop
- Navigate through the file system and search for files
- Connect to and use the Internet
- Perform basic word-processing and spreadsheet functions using OpenOffice.org
- Install and play games
- Add, remove and update applications using different package managers
- View, draw, manipulate and scan images
- Play, edit and organize music and video files
- Seek help on Ubuntu from free and commercial sources
- Create partitions and dual-boot options

Ubuntu Certified Professional (UCP)

Price: $2500 **Duration:** 5 Days ILT

Ubuntu is a community developed, Linux-based operating system perfect for laptops, desktops and servers. It contains all the applications you need - a web browser, presentation, document and spreadsheet software, instant messaging and much more. Ubuntu skills are sought after by innovative employers worldwide.

Prequisites

The prerequistes are a good overall knowledge of IT and system administration of other operating systems. Students should also have a basic understanding of:

- How the Linux system works and interacts with a shell
- Command line interface, such as DOS or UNIX Shell
- UNIX experience is an advantage

Who should attend

The course has been designed for junior-to-intermediate level system administrators working in organizations which are about to, or have already deployed Ubuntu desktop and servers in the office. It is most appropriate for system administrators with experience in other Linux operating systems who wish to add Ubuntu to their skill set. Programmers, and other IT professionals who wish to add Ubuntu system administration to their portfolio will also benefit.

Course Objectives

The Ubuntu Certified Professional (UCP) is a training certification based on the LPI certification. To earn the UCP, candidates are required to pass the LPI 101, LPI 102 and the Ubuntu 199 exams. Exams can be taken in any order. This course prepares students for the Ubuntu 199 exam. This five day, hands-on course will provide participants with the skills they need to deploy and configure Ubuntu desktops and server within the office. It introduces participants to the basic skills required of Ubuntu System Administrators. Scenario-based exercises guide participants on how to select appropriate solutions and tools for their organization. After completing this course, participants will be able to:

- Install and configure Ubuntu systems
- Perform routine administration tasks; manager user accounts and file systems, and maintain system security
- Configure network connectivity and key network services
- Work productively at the Linux command line

Deploying Ubuntu Server Edition (SERV)

Price: $2500 **Duration:** 5 Days ILT

This five day hands-on course will provide participants with the skills they need to deploy, configure and maintain secure Ubuntu Server Edition within the enterprise infrastructure. The course is based on Ubuntu 8.04 LTS and will help system administrators to implement services at an advanced level. Extensive lab exercises in a multi-server virtual machine environment will help attendees put their new skills intopractice. This course is available in instructor led and virtual online training classroom environments.

Prerequisites

Attendees should already have an LPI Level 1 and Level 2 certification or the equivalent training or working knowledge of Solaris, HPUX, Red Hat or other UNIX System Administrator certification. Participants should also have at least two years of active System Administration experience, namely:

- SSH
- bash scripting
- Basic service configuration of Apache, Mysql, DNS, Samba, Postfix, etc..
- Working knowledge of TCP/IP networking and configuration
- Working knowledge of vi or emacs

Who Should Attend

This course has been designed for intermediate-to-advanced system administrators working in organizations, which are about to, or have already, deployed Ubuntu desktop and servers in the office. It has been tailored to meet the needs of companies switching from UNIX, Red Hat and other Linux distributions.

Course Objectives

After completing this course, you will be able to:

- Install and deploy an Ubuntu Server in an enterprise environment
- Use Debian package management tools to:
- Install, configure, update and upgrade packages
- Set up a repository
- Manage a mirror service
- Automate updates
- Monitor server status remotely
- Define and implement a Backup strategy
- Create and deploy virtual Machines using KVM and libvirt
- Manage directory services and authentication using OpenLDAP and
- Kerberos
- Keep servers as secure as possible

Quality Training From the Experts

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