



Access and Aggregation Networks

Enhanced Aggregation in Broadband Deployment

ACC-2002
Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type: Service Provider External Services

The presentation covers exploiting IOS infrastructure to implement revenue generating services in broadband deployments, features that help reduce Operating Expenses/Capital Expenses (OPEX/CAPEX), and those that minimize effects of large scale outages.

Dynamic Bandwidth Selection, various methods for per-subscriber or tiered service differentiation, per-session/per-subscriber QoS, per-user security, service selection, Network based IPsec are some of the newer service infrastructures that will be discussed in this presentation. It focuses on how to leverage the broadband aggregation router for DSL based deployments, although many of features are applicable to other types of broadband deployments also.

The presentation will also include a case study involving some of the above features.

Pre-requisite: to get the most out of the presentation, the participant should have prior practical experience in broadband deployment.

This session is designed to be useful for DSL service providers.

Campus & Local Area Networks

Designing an Enterprise IP Telephony Network

PWR-5004
Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM
Level: Power Session
Technology Focus: General Networking Features
Duration: 540
Organization Type: Enterprise

Note: This power session is SOLD OUT in Orlando.

This session will provide comprehensive design guidelines and best practices for Enterprise IP Telephony deployments. Topics will include: Network infrastructure (Campus LAN, WAN, QoS, high availability, and redundancy); IP telephony infrastructure (Gateways, protocols, call processing, scaling, call-admission control, dial plan, and infrastructure security); Telephony applications (Voice mail, computer telephony concepts including Telephony Application Program Interface [TAPI] and Java TAPI, and application-development platforms); Interoperability with existing business systems (Private branch exchanges [PBXs], voice mail, and directories).

While covering these topics, this session will show an example network that follows the rules and guidelines outlined to illustrate the operation. This offers an opportunity for participants to experience the results of the network firsthand.

This session will be useful for Network Architects and Engineers who wish to implement an end-to-end IP Telephony system in their Enterprise.

Associated Sessions:

VVT-2000 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 1

VVT-2001 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 2



VVT-2003 Emergency Services and IP Telephony

VVT-3010 Troubleshooting IP Telephony Networks
Part 1

VVT-3011 Troubleshooting IP Telephony Networks
Part 2

Campus, Branch and Teleworker Design with Emerging Technologies

PWR-5011

Orlando, Monday, 06/23 08:00 AM; Los Angeles,
Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: Routing & Switching

Duration: 540

Organization Type: Enterprise

Network managers and architects are increasingly faced with demands to enable new emerging technologies, services, and solutions in order to maximize the investment in the communications infrastructure. In many instances, the new network services may face interoperability challenges. At other times, these new technologies and solutions may impact the overall network design. This power session is targeted at the design considerations involved in deploying several new solutions generated by emerging technologies such as wireless LANs, network security, roaming, campus identity services, VPN services, teleworkers, and IP Version 6 design implications.

Catalyst Switch Architecture and Operations

RST-2011

Orlando, Tuesday, 06/24 10:00 AM; Orlando,
Thursday, 06/26 10:00 AM; Los Angeles,
Tuesday, 07/08 10:00 AM; Los Angeles,
Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This session introduces and discusses the architectural components of the Cisco Catalyst multilayer switches and how these components are

used to implement high-performance network services. The focus for this session will be on the latest generation of Catalyst switch products.

Topics include a discussion of the different switch fabrics, forwarding engines, buffering schemes, and feature implementations in Catalyst switching products. An operational overview of Layer 2/Layer 3 forwarding implementations will help attendees understand how hardware-based services are implemented. Other topics such as system performance and redundancy will also be a part of this session.

The intended audience for this session is Enterprise and Service Provider attendees who would like to understand the underlying architecture of the Catalyst switch products.

Associated Sessions:

RST-2031/2032 Designing Campus Networks, Part 1
and Part 2

RST-3031 Troubleshooting LAN Protocols

RST-3041 Catalyst 2900 and Catalyst 3500
Troubleshooting

RST-3042 Catalyst 4000 and Catalyst 4500
Troubleshooting

RST-3043 Catalyst 6500 Troubleshooting

Designing Campus Networks (Part 1)

RST-2031

Orlando, Tuesday, 06/24 01:30 PM; Orlando,
Wednesday, 06/25 01:30 PM; Los Angeles,
Tuesday, 07/08 01:30 PM; Los Angeles,
Wednesday, 07/09 01:30 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: ENT

This session focuses on the technology alternatives related to Enterprise campus networks. Participants will receive in-depth information on Cisco's Multilayer model and its relevance in enterprise networks. The session will illustrate the hierarchical layers of Cisco's



Multilayer model; Access, Distribution and Core with guidance on technology and protocol alternatives like Spanning Tree (STP), Rapid Spanning Tree (RSTP), Routing in the Access Layer, software features and design principles at each layer for successfully deploying today's enterprise network.

The session features Technology Alternatives for deploying advanced services like High Availability, Rapid spanning tree, IP Multicast, Campus Quality of Service, best practices Security recommendations including user network access control, and Campus Network Management techniques. The session also features case studies focused on services like load balancing, fast convergence, and routing and switching best practices.

Detailed examples of failure analysis scenarios, discussions on LAN, and Interior Gateway Protocol (IGP) tuning related to enterprise networks will be illustrated. Finally the session will focus on how to avoid common pitfalls such as CEF polarization, asymmetrical routing, unicast flooding, routing black holes, and best practices needed to run a stable network.

Those responsible for the Design, Deployment, Operations, and Management of Enterprise Campus Networks will find this session informative and useful.

Associated Sessions:

The following sessions cover information you may find useful if you register for them

RST-2032 Designing Campus Networks (Part 2), Identity Based Networking, Deploying 802.11b Wireless Networks, Deploying QoS, Deploying IP Multicast, Deploying IP Telephony

Designing Campus Networks (Part 2)

RST-2032

Orlando, Tuesday, 06/24 04:00 PM; Orlando,

Wednesday, 06/25 04:00 PM; Los Angeles,

Tuesday, 07/08 04:00 PM; Los Angeles,

Wednesday, 07/09 04:00 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: ENT

This session will examine the Campus Network Design considerations required to support emerging

enterprise network solutions like the Campus Wireless LANs and WLAN Roaming alternatives including the implications of extending the spanning tree domain, implementing Mobile IP (MIP) or using Proxy Mobile IP (PMIP). Also examined will be the design considerations required to implement Quality of Service (QoS), High Availability (HA), the in-line power alternatives, and transparent mobility features like Auxiliary VLAN and the new device detection support that enables real-time Voice and Video applications.

The session will explore the necessity of utilizing advanced Security features like port security and new APR inspection tools required to protect network-connected resources. The new Identity-based Networking Services, a key piece in securing the campus network, like user and device identification, authentication and policy assignment, and the ability to dynamically segment the network based on user, workgroup or device policies will also be an important discussion topic. Traditional techniques like VLANS and Access Control Lists (ACL's) will be compared to emerging solutions like MPLS, VRF/VRF-Lite, and Virtual Firewalls to address segmentation and policy enforcement. Finally, the session outline design considerations to prepare an enterprise campus network for coexistence with IPv6.

Those responsible for the Design, Deployment, Operations, and Management of Enterprise Campus Networks will find this session informative and useful.

Associated Sessions:

The following sessions cover information you may find useful if you register for this session: Campus Design Part 1, Identity Based Networking, Deploying 802.11b Wireless Networks, Deploying QoS, Deploying IP Multicast, Deploying IP Telephony

Troubleshooting LAN Protocols

RST-3031

Orlando, Wednesday, 06/25 10:00 AM; Los

Angeles, Wednesday, 07/09 10:00 AM

Level: Level 3

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This session is intended as an introduction to troubleshooting terminology and troubleshooting methods universal to all Cisco Catalyst products.



Topics covered in a platform-independent fashion include VLAN's, VTP, Trunking, Channeling, Spanning Tree and Spanning Tree features, IP multicast on switches, Access-Control Lists, and Quality of Service concepts. This session also explores data collection and recording techniques and problem-solving strategies. These discussions set the stage for the Advanced Catalyst troubleshooting sessions for each Cisco Catalyst product family.

This session is designed for engineers involved in the operation and support of small and large campus and Local area Networks.

Associated Sessions:

These discussions set the stage for the Advanced Catalyst troubleshooting sessions for each Cisco Catalyst product family.

Troubleshooting the Catalyst 2900 and Catalyst 3500

RST-3041
Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Thursday, 07/10 10:00 AM
Level: Level 3
Technology Focus: Routing & Switching
Duration: 120
Organization Type: All

This session discusses troubleshooting commands and methods specific to the Catalyst 2900-XL, 3500-XL, 2950, and 3550 family of products.

In addition to code maintenance, CPU utilization, GigaStack GBIC's, and clustering, this session covers platform specifics in troubleshooting packet forwarding, VLAN's, trunking, channeling, Spanning Tree, multicast, Access-Control Lists, and Quality-of-Service. This session assumes having taken the "Troubleshooting Catalyst Fundamentals" session, or having accumulated the equivalent elsewhere.

Network administrators and technicians responsible for deploying and/ or troubleshooting Catalyst 2900XL's, 3500XL's, 2950's, or 3550's will benefit from this session. The "Troubleshooting LAN Protocols" session is a highly-recommended prerequisite.

Associated Sessions:

The "Troubleshooting LAN Protocols" session is a prerequisite and highly recommended prior to this session. This session parallels the "Catalyst 4000 and Catalyst 4500 Troubleshooting" and

"Catalyst 6500 Troubleshooting" sessions.

Troubleshooting the Catalyst 4000 and Catalyst 4500

RST-3042
Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM
Level: Level 3
Technology Focus: Routing & Switching
Duration: 120
Organization Type: All

This session discusses troubleshooting commands and methods specific to the Catalyst 4000 and Catalyst 4500 switches. In addition to system health monitoring and troubleshooting, this session covers platform specifics in troubleshooting packet forwarding, Supervisor redundancy in the 4507R, Spanning Tree, multicast, Access-Control Lists, and Quality-of-Service.

Network administrators and technicians responsible for deploying and/ or troubleshooting Catalyst 2948G's, 4000's, or 4500's will benefit from this session. The "Troubleshooting LAN Protocols" session is a highly-recommended prerequisite.

Associated Sessions:

The "Troubleshooting LAN Protocols" session is a prerequisite and highly recommended prior to this session. This session parallels the "Catalyst 2900 and Catalyst 3500 Troubleshooting" and

"Catalyst 6500 Troubleshooting" sessions.

Troubleshooting the Catalyst 6500

RST-3043
Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM
Level: Level 3
Technology Focus: Routing & Switching
Duration: 120
Organization Type: All



This session discusses troubleshooting commands and methods specific to the Catalyst 6000 and Catalyst 6500 switches. In addition to code maintenance and conversion, and system health monitoring and troubleshooting, this session covers platform specifics in troubleshooting packet forwarding, Supervisor and MSFC redundancy, Spanning Tree, IP multicast, Access-Control Lists, and Quality-of-Service.

Network administrators and technicians responsible for deploying and/ or troubleshooting Catalyst 6000's and 6500's will benefit from this session. The "Troubleshooting LAN Protocols" session is a highly-recommended prerequisite.

Associated Sessions:

The "Troubleshooting LAN Protocols" session is a prerequisite and highly recommended prior to this session. This session parallels the "Catalyst 2900 and Catalyst 3500 Troubleshooting" and

"Catalyst 4000 and Catalyst 4500 Troubleshooting" sessions.

Understanding and Preventing Layer 2 Attacks

SEC-2002
Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 04:00 PM
Level: Level 2
Technology Focus: Security
Duration: 120
Organization Type: Enterprise

Every network today is built on the foundations of the seven-layer OSI model. This session focuses on the security issues around Layer 2, the data link layer. With a significant percentage of all network attacks originating from inside the corporate firewall, exploring this soft underbelly of data networking is critical for any secure network design. Security issues addressed include: ARP spoofing, MAC flooding, VLAN hopping, DHCP attacks, private VLANs, and Spanning-Tree Protocol (STP) concerns. Common myths with Ethernet switch security will be either confirmed or

debunked and specific security lockdown recommendations will be provided. Attack mitigation options will include the new DHCP snooping and ARP inspection functionality. Attendees can expect to learn layer 2 design considerations from a security perspective, and mitigation techniques for layer 2 attacks.

This session is designed to be particularly useful for network designers, administrators, and engineers in all areas of data networking.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2000 Design Principles for Secure Network Edges,

SEC-2001 Design Principles for Secure Enterprise Campuses,

SEC-2004 Responding to Security Incidents

Enterprise IP Telephony Security Practices and Technologies

VVT-2012
Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM
Level: Level 2
Technology Focus: Security
Duration: 120
Organization Type: Enterprise

IP Telephony is rapidly gaining wide-spread acceptance as the preferred means of business communication. One of the hurdles keeping many companies from taking the final step is voice security. This session will show that you can move forward with confidence. We will expose many of the threats voice networks face and show you the end-to-end steps you can take today to protect your network against those threats. We will also discuss some of the authentication, authorization and encryption technologies under development, such as digital certificates, 802.1x, TLS, IPSec and SRTP, to protect your voice traffic.



This session is designed to be particularly useful for engineers with knowledge of IP and voice that would like to increase security knowledge for both the network and IP Telephony specific products.

Associated Sessions:

VVT-2000 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 1

VVT-2001 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 2

VVT-2010 Designing and Deploying IP Telephony Applications

VVT-2011 Designing Voice- and Video-Enabled IPsec VPNs

SEC-1000

SEC-2000

SEC-2002

General Networking Scenarios

CCNA Practical Lab REVIEW (ICND)

CLP-6000
Los Angeles, Monday, 07/07 06:00 PM; Los Angeles, Tuesday, 07/08 06:00 PM; Los Angeles, Wednesday, 07/09 06:00 PM
Level: Level 1
Technology Focus: Network Management and Services
Duration: 120
Organization Type: All

KnowledgeNet, a Cisco Learning Partner is offering this lab review which will provide insight into the practical application of skills learned in the ICND class. It will highlight the knowledge needed to know, at the CCNA level, how to install, configure, and maintain simple networks. By the end of the 2 hour session, a student will be able to assign hostnames and passwords, assign IP addresses, connect synchronous serial connections, configure PPP and CHAP authentication, verify routing protocols and

TCP/IP connectivity, and control TCP/IP connectivity with access-lists.

This lab review session is designed for audiences who have or are considering a CCNA certification and want to learn in a dynamic environment.

Security Challenges at Layer 5

CLP-8000
Los Angeles, Monday, 07/07 08:00 AM
Level: Level 1
Technology Focus: Security
Duration: 120
Organization Type: All

IBM IT Education Services, a Cisco Learning Partner will offer this security session. Security issues at layer 3 and 4 are quite well defined and understood. Security challenges at layer 5 present a totally different picture, however; worms and buffer overflow techniques, to cite a few, have been very effective in penetrating defense mechanisms via the web or mail systems.

This session will cover three parts:
- Understanding security challenges at layer 5 through representative and known cases
- Techniques that can be used in the presence of known problems
- Facing the unknown, what other measures can be established to help mitigate the impact of future layer 5 attacks?

Introduction to Network Management

NMS-1001
Orlando, Tuesday, 06/24 10:00 AM; Orlando, Tuesday, 06/24 04:00 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Tuesday, 07/08 04:00 PM
Level: Level 1
Technology Focus: Network Management and Services
Duration: 120
Organization Type: All

This session describes what it means to manage today's complex networks. It discusses the role of network management within organizations, along with



the different components and processes involved. By describing the various network management tools and technologies available today, this session provides participants with a solid foundation for effective network management.

This session is designed to be useful for all network administrators.

Associated Sessions:

NMS-1011 Principles of Fault Management

NMS-1021 Principles of Network Configuration

NMS-1031 Introduction to Collecting Traffic Accounting Information

NMS-1031 Introduction to Collecting Traffic Accounting Information

NMS-1041 Introduction to Performance Management

NMS-2051 Securely Managing Your Network

Principles of Fault Management

NMS-1011

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM

Level: Level 1

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

An effective fault management process is essential to maintain network service and high availability. This session teaches how to improve network availability through the use of fault management tools and techniques. It provides an overview of the fault management process, as well as specifics on fault management tools, including event- or fault-reporting capabilities in Cisco devices and available fault management applications. We will go in some detail about Simple Network Management Protocol (SNMP) and Syslog notifications, as well as additional capabilities in Cisco devices, such as the Cisco Service Assurance Agent, Remote Monitoring (RMON) alarms and events, and the Event

Management Information Base (MIB). In addition, the session will provide a brief introduction to the Expression MIB. We will also discuss applications that can be used to manage fault-reporting capabilities and fault-management systems such as Internet Performance Monitor, Cisco Info Center, Device Fault Manager, and several third-party applications.

This session is designed to be useful for all network administrators. Attendees should be familiar with the basics of network management.

Associated Sessions:

NMS-1001 Introduction to Network Management

NMS-2001 Network Troubleshooting Tools and Techniques

Principles of Network Configuration

NMS-1021

Orlando, Wednesday, 06/25 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM

Level: Level 1

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

An effective configuration management process is essential to maintain network service and high availability. This session teaches how to improve network stability through the use of configuration management tools and techniques. It provides an overview of the configuration management process, as well as specifics on various methods of configuring the network. The methods covered are Command Line Interface (CLI), Simple Network Management Protocol (SNMP), some exotics like TL1 or Common Management Interface Protocol (CMIP), Cisco Network Services (CNS), and Element, Domain and Network Management Applications. Home grown configuration scripts are covered as an extension of most of the methods. We will also discuss the issue of maintaining a precise Information Model of configuration data

This session is designed to be useful for people responsible for configuring networks

Associated Sessions:



NMS-1001 Introduction to Network Management

Introduction to Collecting Traffic Accounting Information

NMS-1031

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 1

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

This session provides an overview of device accounting technologies. We will describe and technically compare different accounting methods, including Management Information Base (MIB); IP Accounting; Remote Monitoring (RMON); NetFlow; BGP Policy Accounting; authentication, authorization, and accounting (AAA); and Network-Based Application Recognition (NBAR). Configuration examples, deployment recommendations, and some troubleshooting will be discussed. Attendees should be familiar with network management basics.

This session is designed to be particularly useful for enterprise and service provider experts engaged in designing and maintaining accounting and billing solutions and traffic analysis and baselining solutions.

Associated Sessions:

NMS-1001 Introduction to Network Management

NMS-4031 Advanced NetFlow Accounting

Introduction to Performance Management

NMS-1041

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Tuesday, 06/24 04:00 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Tuesday, 07/08 04:00 PM

Level: Level 1

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

This session will provide an introduction to network performance management, starting with the relationship of performance, fault, and accounting management. We will explain the operations of the protocols used in this area. The basic statistics that are required to do performance management are covered next. Then we will discuss data collection and the types of data to collect. Next we will discuss data processing and analysis--what to do with this data (words about this). Last, we will briefly cover the applications available from Cisco and our partners that do performance management.

This session is most useful for those who have attended NMS- 1001 and are interested in measuring and improving the performance of their networks.

Associated Sessions:

NMS-1001 Introduction to Network Management

Understanding DHCP & DNS

NMS-1101

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 1

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

This session describes the management of IP addresses, host and domain names. It builds from fundamental concepts of hierarchical and dynamic organization of addresses and names through the implementation of reliable and secure name resolution and host configuration services. This session specifically explains the design and operation of Dynamic Host Configuration Protocol (DHCP) and the Domain Name System (DNS). It also includes recent standards developments in the IETF.

All network administrators.

Associated Sessions:

NMS-2301 Deploying and Troubleshooting Content Switching



Improving Network Availability

NMS-1201

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 2

Technology Focus: High Availability

Duration: 120

Organization Type: All

Network availability is an increasing concern across many types of network infrastructures, and a significant business problem is presented when network failures occur. Instead of waiting for the failure, many organizations are looking at availability more proactively. This session looks specifically at the components of availability, network failure types, and proven methodologies for improving network availability. By fully understanding these areas, participants should be better armed to take availability to the next level within their organizations. This session covers hardware, software, power and environment, links and carriers, configuration and changes, and resource usage type failures. Common failure types, failure domains, and availability perceptions across the industry will be discussed, as well as some proven methodologies to increase availability and to align availability with business objectives.

All network administrators.

Associated Sessions:

NMS-2001 Network Troubleshooting Tools and Techniques

NMS-2201 Deploying Highly Available Enterprise Networks

Introduction to Content Switching Technologies

NMS-1301

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 1

Technology Focus: Content Networking

Duration: 120

Organization Type: All

This session introduces and discusses the underlying technologies and the principles of Content Switching, including local load balancing, SSL integration and offload, geographic load balancing and disaster recovery.

A discussion of relevant protocols, such as DNS, TCP, UDP, HTTP 1.0 and 1.1, SSL and TLS, will serve as a foundation for the session.

Fundamental concepts of Content Switching and SSL offload will then be presented: load balancing based on Layer 3 and Layer 4 information, delayed binding and parsing of HTTP requests, server health monitoring mechanisms, session persistence issues and solutions, redundancy options, SSL termination and load balancing.

With the goal of providing the attendees with the knowledge to evaluate Content Switching products and solutions that meet their current and future needs, the session also covers the basic and advanced features offered by today's content switches and SSL devices as well as details on load balancing and SSL performance metrics.

The session concludes with an overview of typical Content Switching deployments.

This session is intended for Network Engineers who need to understand, evaluate and deploy content switching solutions, to create highly available, scalable web and data center infrastructures.

Associated Sessions:

NMS-1302 Introduction to Content Delivery Protocols and Technologies

NMS-2301 Deploying and Troubleshooting Content Switching

NMS-2302 Deploying Web and Video Edge Delivery

NMS-2303 Deploying Web and Video Proxy Caching



Introduction to Content Delivery Protocols and Technologies

NMS-1302
Orlando, Tuesday, 06/24 10:00 AM; Orlando,
Wednesday, 06/25 10:00 AM; Los Angeles,
Tuesday, 07/08 10:00 AM; Los Angeles,
Wednesday, 07/09 10:00 AM
Level: Level 1
Technology Focus: Content Networking
Duration: 120
Organization Type: All

This session introduces the fundamental technologies used to create distribute, request, and deliver multimedia content. The individual nature of the content has an impact on how it should be distributed in the network. This session discusses in detail several protocols used in multimedia streaming applications, the impact of multimedia on the network, and how the different network elements will support the scalability of multimedia applications. It gives some examples on how content networks are built and how the different protocols and technologies are applied to create powerful solutions.

This session is designed to be particularly useful for network engineers interested in HTTP, content delivery, caching, multimedia, or video streaming applications.

Associated Sessions:

NMS-2302 Deploying Web and Video Edge Delivery (Level 2)

NMS-2303 Deploying Web and Video Proxy Caching (Level 2)

PWR-5012 Video and Web Edge Delivery Power Session (Level 2)

Network Troubleshooting Tools and Techniques

NMS-2001
Orlando, Tuesday, 06/24 01:30 PM; Orlando,
Thursday, 06/26 10:00 AM; Los Angeles,
Tuesday, 07/08 01:30 PM; Los Angeles,
Thursday, 07/10 10:00 AM

Level: Level 2
Technology Focus: Network Management and Services
Duration: 120
Organization Type: All

This session covers general network troubleshooting tools and techniques, focusing on classifying network problems in order to determine what tools to use to troubleshoot them. We will look at some general tools of the trade like ping, traceroute, sniffers, and Remote Monitoring (RMON), as well as Cisco tools such as Service Assurance Agent and CLI commands. Attendees should have a good understanding of network management practices, and the importance of constructing network baselines to aid in identifying network problems.

This session is designed to be useful for all network administrators.

Associated Sessions:

NMS-1001 Introduction to Network Management

NMS-4041 Advanced Performance Management with Cisco Service Assurance Agent

Specific protocol or technology session
(Troubleshooting WANs, Troubleshooting BGP, etc.)

Large Scale Deployment of CiscoWorks

NMS-2021
Orlando, Wednesday, 06/25 04:00 PM; Orlando,
Thursday, 06/26 04:00 PM; Los Angeles,
Wednesday, 07/09 04:00 PM; Los Angeles,
Thursday, 07/10 04:00 PM
Level: Level 2
Technology Focus: Network Management and Services
Duration: 120
Organization Type: All

This session focuses on tools and techniques to effectively scale CiscoWorks up to its maximum device capacity, and the deployment models needed to manage larger networks. We will look at server requirements, redundancy scenarios, tools such as the Data Export Engine, Remote Syslog Analyzer Collect, and Device List Management Services, as well as real-world, large-scale deployments. Attendees should have an understanding of



CiscoWorks, and can expect to receive tips on what they can do to further enhance its operation in their network.

This session is designed to be useful for all network administrators.

Associated Sessions:

NMS-1001 Introduction to Network Management

NMS-1201 Improving Network Availability

NMS-2201 Deploying Highly Available Enterprise Networks

NMS-4021 Advanced Configuration Methods

NMS-4041 Advanced Performance Management with Cisco Service Assurance Agent

Performance Measurement with Cisco IOS

NMS-2041

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 2

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

Starting with an introduction on SLA concepts, this session focused on Cisco IOS Software features, including Service Assurance Agent (SAA), Application Response Time (ART), Remote Monitoring (RMON), and other MIBs. Understanding these different means will allow you to measure availability, usage, and performance on your network through the command line interface (CLI) and/or Simple Network Management Protocol (SNMP). Attendees should be familiar with the Cisco IOS Software CLI and have a basic understanding of network management concepts.

This session is most useful for those who have attended NSC- 1041 "Introduction to Performance Management" and are familiar with IOS.

Associated Sessions:

NMS-1041 Introduction to Performance Management

NMS-4041 Advanced Performance Management with Cisco Service Assurance Agent

Securely Managing Your Network

NMS-2051

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Tuesday, 06/24 04:00 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Tuesday, 07/08 04:00 PM

Level: Level 2

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

This technical session explains the concepts, issues, and current capabilities in merging security and network management. The issues that sometimes put these necessary functions at odds will be discussed, and you will learn about techniques for in-band and out-of-band management, Simple Network Management Protocol (SNMP)v3, and other secure protocols for managing Cisco networks. We will share examples of securely managing your network and how the Cisco SAFE architecture might be integrated with network management in mind

All network administrators.

Associated Sessions:

NMS-1001 Introduction to Network Management

NMS-4021 Advanced Configuration Methods

SEC-2006 Managing Security Technologies

Deploying and Troubleshooting NAT

NMS-2102

Orlando, Wednesday, 06/25 04:00 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Network Management and Services

Duration: 120



Organization Type: All

This session discusses the configuration and deployment of Cisco IOS Software-based Network Address Translation (NAT) in an enterprise environment. Discussion will vary from why someone might want to implement NAT to the configuration and troubleshooting of a network that is using NAT technology. This year's focus will be on virtual private network (VPN), voice, and new enhancement to Cisco IOS Software-based NAT functions.

This session is designed to be particularly useful for network engineers who support the network infrastructure and are considering or currently maintaining a network that uses Cisco IOS Software-based address translation.

Associated Sessions:

NMN-2201 Deploying Highly Available Enterprise Networks

PRD-8056 Deploying a Remote Access VPN using Cisco IOS Today and Tomorrow

SEC-3010 Troubleshooting Cisco IOS and Cisco Secure PIX Firewall-Based IPsec VPNs

SEC-3011 Troubleshooting Cisco VPN 3000 Series Concentrator IPsec VPNs

SEC-3020 Troubleshooting Firewalls

Deploying Highly Available Enterprise Networks

NMS-2201

Orlando, Thursday, 06/26 10:00 AM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Thursday, 07/10 10:00 AM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: High Availability

Duration: 120

Organization Type: All

This session examines how deployment of a modular network architecture at the enterprise edge and core can increase the availability of the network as a whole. It will focus on traditional design decisions and the use of redundancy to achieve greater resiliency. We'll also

discuss how networks can permit application survival even in the event of a disaster at primary or distributed data centers. Recently available technologies such as high-speed transport (Synchronous Optical Network [SONET], coarse-wavelength division multiplexing [CWDM], dense-wavelength division multiplexing [DWDM]), 802.1S, 802.1W, Gateway Load Balancing Protocol, Non-Stop Forwarding and Stateful Switchover, and Stateful Network Address Translation (NAT) will be examined.

Those who have attended NSC-1201 Improving Network Availability

Associated Sessions:

NMS-1201 Improving Network Availability

Deploying and Troubleshooting Content Switching

NMS-2301

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Content Networking

Duration: 120

Organization Type: All

This session discusses content switching technology in the data center and begins with a general discussion of the challenges faced by IT managers in providing a highly resilient, highly available content switched network. The session goes into the details of related supporting technologies and the challenges that those technologies bring to content switching in the data center. A detailed discussion is provided on content-switching design guidelines, best practices, deployment scenarios, and recommended troubleshooting methods. Numerous content switching terms and fundamentals are detailed such as load-balancing algorithms, performance metrics, server health and server tracking mechanisms, delayed binding, persistence, and HTTP header parsing. Discussions will include common interoperability scenarios, multiple high-availability environments such as state preservation, as well as web security through the use of firewall and Secure Sockets Layer (SSL) technologies. Topics also include scalability considerations when using various content



switching technologies, and the design considerations of their applications into data center designs. This session highlights recommended content switching troubleshooting practices and procedures applied to currently available technologies focusing on both interoperability and server farm health issues.

This session is designed to be particularly useful for network engineers that are in charge of the deployment or troubleshooting of content switching technologies.

Associated Sessions:

NMS-1301 Introduction to Content Switching Technologies (Level 2)

Deploying Web and Video Edge Delivery

NMS-2302

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: Content Networking

Duration: 120

Organization Type: All

Imagine all your branch offices were connected to the data center with 100Mbps connection. That's essentially the thrust behind edge delivery. Customers that have been hesitant to deploy rich media e-learning applications and software distribution are no longer constrained by expensive limited WAN resources. They're also not constrained by the administrative overhead of deploying a general purpose server for video or a dedicated storage device. This session will focus on deploying e-learning regardless of WAN bandwidth, multicast, and QoS. We'll understand what's involved in safely, efficiently, and securely acquiring and distributing e-learning content using the Content Distribution Manager (CDM). Finally, we'll learn about request routing methods so that client requests are intelligently routed to the best available Content Engine to service the request.

This session addresses the challenges of Web and video edge delivery of rich digital media for e-learning, marketing, and kiosk services. It is designed to be particularly useful for network, Web, and video

engineers deploying and supporting edge delivery of digital media.

Associated Sessions:

NMS-1302 Introduction to Content Delivery Protocols and Technologies (Level 1)

NMS-2303 Deploying Web and Video Caching (Level 2)

NSC-2303 Deploying Web and Video Proxy Caching (Level 2)

Deploying Web and Video Proxy Caching

NMS-2303

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: Content Networking

Duration: 120

Organization Type: All

Every Web object requested by your employees will cross your WAN or Internet link as many times as there are employees. Web browsers have integrated caches to minimize the client response time and reduce intranet/Internet bandwidth consumption, but if you have 100 people in a branch office, the browser cache does nothing to help your neighbor. As a result, popular objects traverse the WAN once per client (100 times). If that happens to be a 1-MB Java Archive (JAR) file, the network has to deliver 100 MB. Similar results apply to Internet-requested objects. This session focuses on accelerating the performance of Web-enabled enterprise applications like Siebel, SAP, and Oracle. It also details how to use content engines to cache and split Internet-sourced multimedia. Common Internet proxy deployment models, tiered Web and video caching deployments, securing the enterprise with worm blocking, and video Web casting will be discussed.

This session addresses the challenges of Web and video caching. It is designed to be particularly useful for network, Web, and video engineers deploying and supporting this technology.

Associated Sessions:



NMS-1302 Intro to Content Delivery Protocols and Technologies (Level 1)

NMS-2302 Deploying Web and Video Edge Delivery (Level 2)

NSC-2302 Deploying Web and Video Edge Delivery (Level 2)

Advanced NetFlow Accounting

NMS-4031

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 4

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

This session reviews in great detail the advantages of NetFlow services, the different versions of NetFlow, and sampled NetFlow. Design, configuration, tuning, and troubleshooting will be covered in this in-depth technical session. We will discuss the most recent improvements of NetFlow, both on routers and switches, including the new NetFlow Version 9 and its interaction with the IETF.

Most useful for those who have attended NMS-1031 and have some experience with NetFlow.

Associated Sessions:

NMS-1031 Introduction to Collecting Traffic Accounting Information

Advanced Performance Management with Cisco Service Assurance Agent

NMS-4041

Orlando, Thursday, 06/26 10:00 AM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Thursday, 07/10 10:00 AM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 4

Technology Focus: Network Management and Services

Duration: 120

Organization Type: All

This session provides details of Cisco Service Assurance Agent (SAA) deployment, advanced and new features, scalability, accuracy, and best practices. Some recent test results will be shown and explained for the first time. This presentation will focus exclusively on SA Agent, and help you to better understand and use it.

Attendees should have an understanding of Cisco SAA and network management concepts.

This session is most useful for those who have attended NMS-1041 and are familiar with SAA.

Associated Sessions:

NMS-1041 Introduction to Performance Management

NMS-1041 Performance Measurement with Cisco IOS

Security for Network Engineers: How to Think Like a Security Administrator When It's Not Your Full-time Job

PWR-5001

Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: Security

Duration: 540

Organization Type: All

Note: This power session is SOLD OUT in Orlando.

As network security moves more and more into the infrastructure of a network, pressures on network engineers to be security-literate continue to grow. Also, as smaller enterprises increase their reliance on networked systems, they need network engineers to keep these systems secure. This session will provide the network engineer with practical information on network security operations in a limited time budget.

Topics covered include staying abreast of the latest vulnerability information, how to evaluate your network's security, how to properly evaluate vendor security updates, how to detect intrusions, what to do in case of intrusion, how to deal with networking and security configuration on the same device, and how to translate a security policy into a functional secure network. Attendees can expect to walk away with



operational guidelines that can be applied to their networks.

This Session is designed to be of interest to :-
Network engineers and administrators

Associated Sessions:

The following session titles are associated to this session:-

SEC-2000 Design Principles for Secure Network Edges

SEC-2001 Design Principles for Secure Enterprise Campuses

SEC-2004 Responding to Security Incidents

NMS-2051 Securely Managing Your Network

Enterprise IP Multicast

PWR-5003

Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: Multicast

Duration: 540

Organization Type: All

IP Multicast is a rapidly growing technology that supports new applications such as distance learning, conferencing, stock market data feeds, and many others. While IP Multicast at its simplest is very easy to configure, IP Multicast routing is almost a complete technology unto itself and uses mechanisms that differ dramatically from those used in IP Unicast routing. It is not uncommon for network engineers or administrators to find themselves overwhelmed by these differences when first attempting to design, build, and/or troubleshoot IP Multicast networks.

This tutorial takes the attendee "from zero to light-speed" in one intense day of IP multicast training and includes a printed Student Guide. The tutorial will begin with the basic multicast concepts such as distribution trees, multicast addresses, and address assignment. It will also cover the mechanics of the Protocol Independent Multicast (PIM) routing protocol in extensive detail. In addition, the topic of PIM sparse-mode Rendezvous Points and their use will be

presented in detail, including the use of Auto-RP, Bootstrap Router (BSR), and Anycast Rendezvous Points. Once these fundamental concepts have been covered, the session will introduce several important extensions to the PIM model such as Bidirectional PIM and Source Specific Multicast (SSM), which allow network designers to tailor the performance, scalability, and security of their multicast network. Finally, the session will present several topics on deploying IP Multicast in enterprise networks, providing detailed deployment guidelines and case studies for both basic and advanced IP Multicast networks.

Data Center Networking

PWR-5005

Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: Content Networking

Duration: 540

Organization Type: Enterprise

This power session discusses data center design and implementation considerations related to Layer 2, Layer 3, Server Load Balancing (SLB), Secure Sockets Layer (SSL) offloading, multiple-tier application architectures, network security, distributed data centers, and various aspects of data center network management. The session starts by discussing the data center infrastructure, Layer 2 and Layer 3, which supports the addition of other services such as network security and load balancing. The session then focuses on integrating SLB and SSL offloading into the infrastructure, which leads to the integration of multiple-tier application architectures into the data center design. The next topic is the integration of network security services into the infrastructure and its existing services, including the likely application tiers. This is followed by a discussion on connecting distributed data centers whether front-end for client-to-server purposes or back-end for server-to-server or storage-to-storage purposes. The final topic includes discussions on managing the infrastructure and the services provided by the data center. The topics are structured as building blocks from the basic infrastructure to distributed data centers.

The Layer 2 section includes recommendations for Layer 2 topologies and the use of shielded twisted-



pair (STP) enhancements aimed at lowering the convergence time, including the recent 802.1s and 802.1w protocols. The Layer 3 discussion includes recommendations on how to design and integrate the data center and all of its likely services into the rest of the Layer 3 network. The service integration section discusses a service-ready architecture for SLB, SSL, firewalls, intrusion detection systems (IDSs), and appliances or modules in the infrastructure. The multilayer application architectures discusses design issues pertaining to client-server environments, such as the n-tier model that includes thin clients, Web servers, application servers, and database servers. The security section provides a comprehensive network security approach to protecting data center and server farms from internal or external attacks by using access control lists (ACLs), firewalls, IDSs, and security templates throughout the data center. The distributed data centers section discusses site-to-site recovery and multiple-site load-distribution designs and the available transport technologies. The data center management section discusses the different operational areas separately: infrastructure, application environments, network security, and distributed data center capacity planning.

Interior Gateway Protocols

PWR-5006
Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM
Level: Power Session
Technology Focus: Routing & Switching
Duration: 540
Organization Type: All

This session examines deploying and troubleshooting advanced interior gateway protocols, including OSPF, IS-IS, and EIGRP. The session begins with an overview of various routing advanced protocols, including how Bellman-Ford, DUAL, and SPF-based calculations of loop-free paths work. The session then includes a discussion of the fundamental goals in network design and hiding information. The session considers two- and three-layer hierarchical designs, with approaches to two- and three-layer designs in each of the three advanced protocols.

After covering the fundamentals, attendees will discuss techniques for using design principles presented in real-world networks, including how to create opportunities within a network for applying

these principles. The session also covers high availability and convergence within the context of network design, and pitfalls and suggestions provided for deploying EIGRP, IS-IS, and OSPF on specific topologies, including large aggregation. Finally the session will consider redistribution, including a discussion on methods and techniques that can safely redistribute between routing protocols.

Creating and Maintaining High Availability IP Networks

PWR-5008
Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM
Level: Power Session
Technology Focus: High Availability
Duration: 540
Organization Type: All

There is no denying that IP networks have become critical infrastructure for many organizations. Network outages equate to direct and indirect monetary losses. In this full-day session you will learn how to achieve high availability with your network and sustain the level of availability over time.

What causes networks to go down? Are there IP networks that are able to achieve the desired availability? How are these organizations different? What changes or investments were made to achieve higher availability?

This power session first reviews the components of network availability (technology, hardware, software, links, cables, power, environment, and user-error and process) and how these components impact availability. Common outage types are investigated with a realistic analysis of how they occur and how to prevent them. This analysis uses the Plan, Design, Implement, Operate (PDIO) model to discuss outages not as one-time events, but as a sequence of events or processes that lead to outages. Prevention methodologies are then analyzed by examining people, process, tools, and technology in each of the PDIO layers.

This session then examines the protocols, features, and techniques that are critical to reducing outage frequency and mitigating their impact. Discussion topics will include available technologies at each level of the OSI model: Synchronous Optical Network



(SONET), resilient packet ring (RPR), and EtherChannel technology at Layer 1; tuning Spanning-Tree Protocol at Layer 2; and improving convergence of Layer 3 routing protocols through load-balancing techniques. Examples will show how these technologies provide the network resilience that keeps a small error from becoming an outage. These examples will then facilitate a discussion on network design.

The session will close with recommendations on how to achieve and maintain the level of availability that your organization requires.

Realizing the Promise of Intrusion Detection Systems

PWR-5010

Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: Security

Duration: 540

Organization Type: Enterprise

Intrusion Detection Systems (IDSs) are a rapidly evolving technology. They hold the promise of greatly increasing the security posture of an organization beyond that which is available with traditional perimeter security devices. However, the technology brings with it significant challenges for the network security designer as well as the network security operations staff. A successful IDS deployment requires in-depth knowledge of the networks to be monitored, the potential attacks and threats to those networks, and the possible responses that IDSs can provide. Sensors must be tuned to their environment, and the maintenance and monitoring of the systems often require changes to the network monitoring operations of an organization. All of these challenges must be addressed to realize the promise of IDS technologies.

This session will take the attendees through a detailed discussion of IDS technology as well as a complete IDS deployment. Signature- and anomaly-based IDS models will be discussed as well as hybrid IDS models. Host, network-based, and network-node IDS models will be examined, along with the unique problems they solve. A discussion of IDS deployment and monitoring best practices will follow. The session

will dive deeply into the function of IDS detection engines and how they perform packet- and flow-analysis. A discussion of sensor tuning, the most critical step in a successful IDS deployment, will cover general principles of traffic analysis, network design, and alarm analysis. Monitoring, alarm aggregation, and incidence-response techniques will follow the tuning discussion to provide attendees with a complete deployment scenario.

The session will close with a presentation of case studies of IDS deployment including the challenges faced by the network engineers and the success or failures of each deployment.

Targeted to attendees who perform the following functions:

Network Engineers

Network Designers

Network Security Engineers

Network Security Designers

Security Operations Staff

Associated Sessions:

SEC-3030 Troubleshooting Intrusion Detection Systems

Video and Web Edge Delivery

PWR-5012

Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: Content Networking

Duration: 540

Organization Type: All

Is your network bandwidth consumed by Hypertext Transfer Protocol (HTTP), HTTP over Secure Sockets Layer (HTTPS), File Transfer Protocol (FTP), Real-Time Streaming Protocol (RTSP), and Multimedia Messaging Service (MMS) traffic? In this session, you will learn the details of these protocols, the applications that use them, and how Content Delivery Networking (CDN) can help these applications achieve optimum performance.

Has part of your organization tried to deploy e-learning applications but the network won't support it? This session will provide you with the tools to safely deploy e-learning. If you want to stream Internet-sourced business Webcasts to employees like quarterly



results, this session will show you how to scale live Internet audio and video to all your employees. It has become common for organizations to proxy cache Web-protocol requests to the Internet for authentication, content filtering, and logging, therefore we will cover how to implement Internet proxies to manage and scale employee Internet access. If you run Web enabled enterprise applications like Oracle Finance, Siebel, SAP, or others this session will show you how to accelerate the performance of just about any Web enabled application.

Military Network-Centric Transformation

PWR-5013

Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: General Networking Features

Duration: 540

Organization Type: All

This power session focuses on the use and implementation of current technologies such as IPv6, QoS, security, wireless, and mobility to enhance the capabilities of military operations. We will discuss detailed network architectures that provide state-of-the-art communications for joint forces, U.S. and Allied forces, and coalition forces. The session will focus on enabling next-generation communications and collaboration networks using ground- and space-based architectures. At the end of the session, we will provide an overview on how today's military transformational networks are empowering military information superiority.

This session is intended for attendees with a basic understanding of military network requirements and functionality, such as network planners and military operations personnel.

CCIE

PWR-5014

Orlando, Monday, 06/23 08:00 AM; Los Angeles, Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: General Networking Features

Duration: 540

Organization Type: All

Note: This power session is SOLD OUT in Orlando.

For nearly a decade, Cisco Systems' Cisco Certified Internetworking Expert (CCIE) program has set the professional benchmark for internetworking expertise. CCIE emphasizes acquired skills and knowledge, validating an individual's technical expertise through practical performance-based testing. By becoming a CCIE, individuals can realize greater career opportunity, compensation and satisfaction. This session serves as an in-depth exam tutorial that addresses the technologies and concepts emphasized in the CCIE certification exams. Most of the topics are covered using router and switch configuration examples in an exam environment. Led by CCIE program content experts, this highly interactive session is designed to assist candidates in preparing for CCIE testing although engineers that are not candidates are also welcome to attend. This power session will cover: core internetworking topics that are required for all CCIE certifications, including IP Routing, Switching, ATM, Frame Relay, IP Multicast, Quality of Service (QoS) Performance Management, and ISDN. Discussion will emphasize critical issues such as Open Shortest Path First (OSPF) and Border Gateway Protocol (BGP) routing protocols concepts and configuration essentials.

Introduction to Link State Protocols

RST-1001

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 1

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This session Provides an overview of link state interior gateway routing protocols, including OSPF and IS-IS. This session covers the fundamental concepts and theory of links state routing, including the flooding of information and synchronization of databases between devices, the operation of the Dijkstra Shortest Path First algorithm, and partial (leaf only) Shorest Path First calculations. Some discussion is included on the lcaling of link state routing protocols.



The target audience for this session is network engineers who are new to link state routing protocols, or would like to understand more about the fundamentals of these protocols.

Associated Sessions:

Associated sessions include RST-2002, Fundamental Deployment and Analysis of Link State Protocols, and RST-3002, Complex Deployment and Analysis of Link State Protocols.

Introduction to IP Multicast

RST-1051

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 01:30 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 01:30 PM

Level: Level 1

Technology Focus: Multicast

Duration: 120

Organization Type: Service Provider & Enterprise

This session provides the attendee with an overview of the fundamentals of IP multicast. It covers basic IP multicast concepts of several essential components such as link layer addressing, host-router signaling (IGMP v1-v3), distribution trees and Reverse Path Forwarding. The session then gives the attendee an overview of Sparse Mode Protocol Independent Multicast (PIM-SM). This PIM-SM overview provides a brief, high-level look at the various PIM-SM modes of operation including basic Sparse Mode, Bidir and Source Specific Multicast. In addition, the concepts of several Interdomain multicast protocols such as MBGP, MSDP and Multicast VPNs are briefly introduced.

This session is applicable for network engineers involved in either service-provider or enterprise network environments and who have no previous background in IP Multicast.

Associated Sessions:

RST-2051 "Deploying IP Multicast"

RST-4051 "Advanced IP Multicast"

Introduction to MPLS

RST-1061

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 1

Technology Focus: MPLS

Duration: 120

Organization Type: All

This session introduces Multiprotocol Label Switching (MPLS) and its various major applications including Traffic Engineering (TE), Virtual Private Networks (VPNs), Quality of Service (QoS) and MPLS Transport and Virtual Leased Lines.

This introduction will also include a discussion about the motivations behind MPLS and various application examples.

Further discussion will include sub-topics such as basic label forwarding, RSVP and LDP, LSP Set-Up, and Fast Re-Route (FRR) protection.

This session is designed to be particularly useful for attendees working in the following areas: networking technologists, managers, and executives planning to deploy or support MPLS deployments.

Associated Sessions:

Other MPLS sessions associated with this session include : -

RST-2061 - Deploying MPLS VPNs

RST-2062 - Deploying MPLS Traffic Engineering

RST-3061 - Troubleshooting MPLS VPNs

Deployment and Analysis of EIGRP

RST-2001

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All



An introduction to Cisco's advanced distance vector routing protocol, EIGRP. This session covers neighbor formation and troubleshooting, metric calculation, the Diffusing Update Algorithm (DUAL) for determining loop free paths and querying neighbors, and troubleshooting stuck in actives. This session will provide the administrator of an EIGRP network the fundamental knowledge and tools to manage and troubleshoot their network.

The target audience for this session includes network engineers who currently manage EIGRP networks, and network engineers who are currently considering deploying EIGRP in their networks, and would like to know more about the protocol.

Associated Sessions:

Related sessions include RST-3001, Complex Deployment and Analysis of EIGRP.

Deployment and Analysis of Link State Protocols

RST-2002

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This session provides a basic look at the deployment and troubleshooting of link state protocols, including OSPF and IS-IS (with the focus on OSPF). This session will cover such topics as neighbor adjacency formation and troubleshooting; database synchronization, flooding, and troubleshooting; dividing link state flooding domains; stubs, summaries, and other techniques for hiding information in a link state network.

The target audience for this session includes network engineers who are currently managing a network running a link state routing protocol, and who would like to learn more about techniques for scaling and troubleshooting that network, and network engineers who are deploying or considering deploying a link state protocol in their network.

Associated Sessions:

Related sessions include RST-1001, Introduction to Link State Protocols, and RST-3002, Complex Deployment and Analysis of Link State Protocols.

Deployment and Analysis of BGP

RST-2003

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This session offers an introduction to the basics of the Border Gateway Protocol. The session includes such topics as building and troubleshooting peering relationships, common deployment considerations such as controlling traffic flow through policy, peering arrangements, and policies, and route reflectors.

The target audience is network engineers who have deployed or are considering deploying the BGP protocol in their networks, either in a peering arrangement with other (external) routing domains (such as the Internet), or as a way to scale the core of a large scale network.

Associated Sessions:

Related sessions include RST-3003, Complex Deployment and Analysis of BGP, and RST-4005, Advanced Routing Protocols Security.

Deploying Routing Protocol Resiliency with Graceful Restart

RST-2004

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All



Network engineers and architects continue their quest to increase network availability in the face of congestion, security breach or changes in network. Device level availability prompts use of redundant Route Processors. Redundant route processors can increase network availability and provide Non-Stop forwarding characteristics when augmented with graceful restart mechanisms.

This session will discuss increasing resiliency in IP networks using graceful restart (Non-Stop Forwarding) extensions in routing protocols.

This session will provide functional details of restart mechanisms in OSPF, BGP, EIGRP and ISIS. Complementary resiliency aspects like Non-Stop Forwarding (NSF) and Stateful Switchover (SSO) will also be covered. Deployment consideration will be discussed.

This session is suitable for Enterprise and Service Providers who have OSPF, ISIS, EIGRP and BGP in their networks.

Associated Sessions:

RST-2001, RST-2002, RST-2003, RST-3001, RST-3002, RST-3003, RST-2111 and RST-2112

Deploying IP Multicast

RST-2051
Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 04:00 PM
Level: Level 2
Technology Focus: Multicast
Duration: 120
Organization Type: Service Provider & Enterprise

This presentation and will cover numerous aspects of configuring and deploying a IP multicast solution in both Enterprise and Service Provider networks. Example configurations will begin with basic multicast deployments and progress to the deployment of larger, mission critical multicast networks. Topics covered will include details on various multicast router configuration commands along with the use of Auto-RP, BSR

and Anycast-RP's techniques in PIM-SM networks. Finally, the fundamentals of two new emerging multicast technologies, Bidir PIM and Source Specific Multicast, will be introduced along with how these new technologies provide better scalability of IP Multicast.

This session is primarily intended for network professionals responsible for Enterprise networks. However, this presentation also contains some material applicable to network professionals responsible for deploying Service Provider IP Multicast services.

Associated Sessions:

RST-1051 "Introduction to IP Multicast"

RST-4051 "Advanced IP Multicast"

Deploying MPLS VPNs

RST-2061
Orlando, Tuesday, 06/24 04:00 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM
Level: Level 2
Technology Focus: MPLS
Duration: 120
Organization Type: All

This session covers deployment of MPLS and MPLS VPNs. Includes step by step walk through of what needs to be covered to successfully deploy MPLS VPNs with a sample case study. Requirements: Attendees should have basic knowledge of MPLS, Routing Protocols, and MPLS VPN technology as MPLS VPN fundamentals will be covered very briefly. Nature of the session: This is a very technical session. This is for Internet Service Providers, interested in deploying or have deployed MPLS VPNs.

This session is designed to be particularly useful for attendees working in the following areas: networking technologists, managers, and executives planning to deploy or support MPLS deployments.

Associated Sessions:

Other MPLS sessions associated with this session include : -



RST-1061 - Introduction to MPLS
RST-2062 - Deploying MPLS Traffic Engineering
RST-3061 - Troubleshooting MPLS VPNs

Deploying MPLS Traffic Engineering

RST-2062
Orlando, Tuesday, 06/24 01:30 PM; Orlando,
Wednesday, 06/25 01:30 PM; Los Angeles,
Tuesday, 07/08 01:30 PM; Los Angeles,
Wednesday, 07/09 01:30 PM
Level: Level 2
Technology Focus: MPLS
Duration: 120
Organization Type: All

Multiprotocol Label Switching (MPLS) traffic engineering is primarily concerned with making optimal use of network bandwidth. It enables network managers to better utilize their networks, and helps them avoid paying for more capacity than they need. Participants in this session will learn the theory behind MPLS traffic engineering, as well as more advanced techniques for turning MPLS traffic engineering into a revenue-generating service and combining MPLS traffic engineering with MPLS VPN. Participants will gain an understanding of how to configure and monitor basic MPLS traffic engineering, as well as sources for more information. Although MPLS, and more specifically, traffic engineering, were originally service provider technologies, large enterprises are beginning to adopt them as ways to reduce WAN circuit costs.

This session is suitable for service providers and enterprise participants.

Associated Sessions:

Other MPLS sessions associated with this session include : -

RST-1061 - Introduction to MPLS

RST-2061 - Deploying MPLS VPNs

RST-3061 - Troubleshooting MPLS VPNs

Network Centric Military Operations

RST-2071
Orlando, Thursday, 06/26 04:00 PM; Los Angeles,
Thursday, 07/10 04:00 PM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type: None

As the mainframe evolves to an IP server and the FEP becomes obsolete, the opportunity to enhance the networking infrastructure supporting the mainframe-based applications is now. This session presents the IP networking and services design recommendations for providing high availability and disaster recovery support for both IP and traditional mainframe applications. This presentation goes into depth on the support for mainframe based applications built on IP, SNA, BISYNC, and industry specific protocols like ALPS and Point of Sales when deploying a mainframe-based IP server

Designs providing high speed connectivity, load balancing, and high availability for the IP based mainframe are reviewed. Replacement solutions for the IBM Front This 2 hour session will focus on the importance and criticality of Network Centric Military Operations. The first hour is dedicated to the presentation of the importance for the use of standardized protocols and COTS technology to expedite time to deployment. Today's military must be capable of obtaining and utilizing information when and where needed to ensure agility and accurate mission information. The second hour will be dedicated to presenting sample operational deployments in ground, air, sea and space that are currently deployed in the field today.

This session is intended for military personnel who have the responsibility for network and/or mission planning that require a communications network. A basic knowledge of IP networking, mobility, security and Security is suggested. This is a functionality and case study session.

Associated Sessions:

This session is in conjunction with Sessions covering IPv6, Routing & Switching, QoS, Wireless and IP Mobility.



Deploying Quality of Service for Converged Networks

RST-2081

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 2

Technology Focus: Quality of Service

Duration: 120

Organization Type: All

This presentation discusses the various aspects involved in designing and implementing QoS in Enterprise networks. We will talk about how QoS tools can optimize the network to meet various application requirements, identify & protect critical data applications like video over low and high speed links, VoIP quality etc., and enable multiple classes of service on the network.

This is your opportunity to understand in technical detail the latest QoS features in Cisco IOS software to solve various problems on the Enterprise network - features that both aid in solving new problems, as well as help simplify QoS. You will walk away with a good understanding of how to use these new features, learn how to effectively deploy QoS and how to monitor and report on QoS (a very key issue).

We will also discuss in detail the technical aspects of Cisco AutoQoS framework that drastically simplifies IP QoS, and reduces the cost & time for large scale QoS deployments in Enterprise networks.

The attendees are assumed to have a basic understanding of the various QoS mechanisms available to IP, MPLS, Frame Relay, Ethernet and ATM. The presentation content should be ranked as intermediate to advanced.

This session is designed for both Service providers and enterprises looking to provide an infrastructure to support differentiated services and mission critical applications

Associated Sessions:

This session is a foundation for all sessions covering both network infrastructure (Routing & Switching

Sessions) and applications (Voice, Video, Wireless etc)

Deploying IPv6 Networks

RST-2091

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This session will lay the foundation for IPv6 deployments by quickly reviewing the state of the protocol, recent market activities, and highlighting a few technology differences from IPv4. The bulk of the session will describe some of the common network environments and their requirements for a deployment of IPv6, as well as details about the transition tools appropriate for use in each of those environments.

The target audience for this session includes network managers, architects, and engineers that are considering deployment of IPv6 in the next few years.

Associated Sessions:

This session is related to all other session in the Routing & Switching section.

IBM SNA Migration Developments

RST-2101

Orlando, Tuesday, 06/24 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: Enterprise

As the mainframe evolves to an IP server and the FEP becomes obsolete, the opportunity to enhance the networking infrastructure supporting the mainframe-based applications is now. This session presents the IP networking and services design recommendations for providing high availability and disaster recovery support for both IP and traditional mainframe applications. This presentation goes into depth on the support for mainframe based applications built on IP,



SNA, BISYNC, and industry specific protocols like ALPS and Point of Sales when deploying a mainframe-based IP server

Designs providing high speed connectivity, load balancing, and high availability for the IP based mainframe are reviewed. Replacement solutions for the IBM Front End Processor are overlaid on the IP mainframe including support for SNA over IP routing via Branch Extender/ Enterprise Extender (SNA Switch), SNI routing provided by Extended Border Node/Enterprise Extender architecture, and the serial conversion technologies. The session will wrap up with disaster recovery designs for Global Dispersed Parallel Sysplex environments. Each of these technologies will be addressed through Cisco best-practice recommendations for incorporating into the network.

The target audience for this presentation is data center focused networking professionals with mainframe based IP servers, SNA, BISYNC, and other serial based end devices supported by mainframe applications, as well as network designers focused on decommissioning the FEP.

Associated Sessions:

Other sessions associated with this session are: Deploying SNA Switch for FEP Replacement, Data Center Infrastructure Design, Deploying N-tier Applications in the Data Center, Securing Enterprise Data Centers, and Designing for Disaster Recovery: Business Application Resilience

Router Platform Architecture and Operation (Part 1)

RST-2111
Orlando, Tuesday, 06/24 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM
Level: Level 2
Technology Focus: Routing & Switching
Duration: 120
Organization Type: All

This session will describe the architecture of IOS based routers. We will go in to depth, looking at the different architecture models available and how they are best suited in various networking scenarios. The

session looks to define the performance and operational characteristics of these platforms.

As well as looking at physical construction, the session will deal with operating system implementations and how typical features function with IOS routers.

This session is applicable for any engineers involved with the specification or deployment of routers in all networking scenarios.

Associated Sessions:

This session Complements RST-2112 (Part 2 of this session) and all other platform architecture sessions as well as the other sessions in the Routing and Switching Section.

Router Platform Architecture and Operation (Part 2)

RST-2112
Orlando, Tuesday, 06/24 04:00 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM
Level: Level 2
Technology Focus: Routing & Switching
Duration: 120
Organization Type: All

This session will take the lid off the operation of high end routers and switches. Focusing on the switching mechanisms available, the methods of organizing and utilizing system resources, and optimization of the performance of these devices.

The session will also look at scalability issues in both system design and interaction with routing protocols and other features.

Included in this session will be the analysis of various QoS and Security feature implementations and how these are implemented with various router and switch architecture.

This session is designed for engineers involved in the specification, deployment and implementation of high performance routers and switches.

Associated Sessions:



This session Complements RST-2111 (Part 1 of this session) and all other platform architecture sessions as well as the other

Deployment and Analysis of Complex EIGRP Networks

RST-3001

Orlando, Thursday, 06/26 10:00 AM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Thursday, 07/10 10:00 AM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

An in depth look at the advanced capabilities of Cisco's advanced distance vector routing protocol, EIGRP. This session covers EIGRP scaling in large hub and spoke environments, EIGRP provider edge/customer edge interaction for MPLS VPNs, troubleshooting large scale network failures, EIGRP graceful restart, route redistribution into and out of EIGRP, and other advanced topics.

The target audience for this session includes network engineers who already have a grasp of EIGRP's fundamentals, and want to take their experience and knowledge of the protocol one step farther, and designers and engineers who work in large scale EIGRP networks.

Associated Sessions:

Related sessions include RST-2001, Fundamental Deployment and Analysis of EIGRP.

Deployment and Analysis of Complex Link State Protocol Networks

RST-3002

Orlando, Thursday, 06/26 10:00 AM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Thursday, 07/10 10:00 AM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This sessions goes in depth into the deployment and troubleshooting of link state protocols, focusing on new features and work in link state routing. Topics included are graceful restart, fast convergence, new features in the SPF algorithm, interaction with BGP, route tags, and IPv6 support.

The target audience for this session includes network engineers who understand the fundamentals of link state routing protocols, and would like to take that understanding to the next level, and engineers who are considering deployment of a link state protocol in a large scale network environment, or who manage a large scale network running a link state routing protocol.

Associated Sessions:

Related sessions include RST-1001, Introduction to Link State Protocols, and RST-2002, Fundamental Deployment and Analysis of Link State Protocols.

Deployment and Analysis of Complex BGP Networks

RST-3003

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Routing & Switching

Duration: 120

Organization Type: ENT/SP

This session provides information on the advanced features and new developments in BGP. Topics include graceful restart, improvements in policy configuration, BGP multipath routing support (equal cost and unequal cost), BGP persistent oscillation, the custom decision process, and improvements in BGP convergence times.

The target audience for this session is network engineers who have or are considering deploying BGP in their networks, have a fundamental understanding of BGP, and would like understand the new developments and advanced features of the protocol.

Associated Sessions:



Related sessions include RST-2003, Fundamental Deployment and Analysis of BGP, and RST-4005, Advanced Routing Protocols Security.

Advances in Routing Protocols

RST-4004

Orlando, Wednesday, 06/25 04:00 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 4

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This session introduces new features and concepts which are currently being developed in routing protocols. The presentation will focus on Optimized Exit Routing (OER) and Multi-Topology Routing (MTR). OER gives a network the ability to optimally choose the exit point into another routing domain based on real time traffic flow information. MTR provides the ability to overlay multiple logical topologies on the same physical topology.

The target audience for this session is advanced network engineers who would like to know what the next phase in routing will look like, what's coming down the road, so they can plan their networks and designs to take advantage of these new capabilities as they become available.

Associated Sessions:

All sessions in the Routing & Switching section are related to this session

Advanced Routing Protocol Security

RST-4005

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 4

Technology Focus: Routing & Switching

Duration: 120

Organization Type: All

This session introduces the concepts of security within a routing system, including a look at the threats to

routing systems and the corresponding pieces of information which can be secured. Current methods of securing routing protocols are covered, and a method for securing BGP in large scale deployments, such as the Internet, is discussed, Secure Origin BGP (soBGP).

The target audience for this session is advanced network engineers who are considering security in their networks, would like to know what current options they have to provide security for the routing system, and what the direction of the current work in this area is.

Associated Sessions:

All Sessions in the Routing and Switching section are a related to this session.

Advanced IP Multicast

RST-4051

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 4

Technology Focus: Multicast

Duration: 120

Organization Type: Service Provider & Enterprise

This session covers the protocols and topologies associated with Inter-domain multicast routing including details on the operation of MSDP and MBGP as they relate to PIM. This session also introduces the latest trends in Inter-domain multicast routing, PIM Source Specific Multicast (SSM), Multicast VPNs, and IPv6 Multicast. During this session, the basic fundamentals of MBGP and MSDP are covered along with their basic configuration as well as the use of Anycast RP's. Numerous topology examples with regard to Inter-domain multicast using MBGP and MSDP are presented along with configuration examples for both the provider and customers. Next, the session introduces Source Specific Multicast and shows how this new method of Inter-domain multicast solves some of the problems associated with traditional Inter-domain PIM-SM multicast. Multicast VPNs in an MPLS VPN environment will be presented. IPv6 Multicast will be discussed. And finally, methods to secure a multicast network will be presented.



This session is applicable for Network Engineers involved in Service Provider network environments and Enterprises requiring native multicast transit.

Associated Sessions:

RST-1051 "Introduction to IP Multicast"

RST-2051 "Deploying IP Multicast"

Introduction to Network Security

SEC-1000

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 1

Technology Focus: Security

Duration: 120

Organization Type: All

The Internet is a "good news, bad news" proposition. The good news is that it is a public network, where almost everybody in the world has access. However, the bad news is also that it is a public network, and as a result, is not secure. Security must not be treated as a separate issue from our networks. Security is not a device; it is a process. This introductory session provides foundation knowledge in network security principles and introduces attendees to security technologies that can be integrated into the network.

This session is designed to be particularly useful for all attendees interested in network security fundamentals. It will help prepare participants for subsequent sessions focused on security.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2000 Design Principles for Secure Network Edges,

SEC-2001 Design Principles for Secure Enterprise Campuses,

SEC-2004 Responding to Security Incidents

Design Principles for Secure Network Edges

SEC-2000

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

The network edge that connects your company to the untrusted world is the single most important area on which to focus network security design. The edge is where public Internet access occurs, e-commerce is conducted, and business linkages through intranets, extranets, and remote-access connections are enabled. This session reviews design and configuration considerations to employ at the edge of your network and spans access control, intrusion detection, anomaly detection, antivirus, authentication, and management system technologies. A lively story that chronicles a hacker's conflict with an overworked IT staff for a large company is interwoven throughout the session to keep the discussion both interesting and real-world. Participants will learn how small issues in a network can lead to large security compromises and will learn the value of defense-in-depth strategies. This is the second of two sessions on learning security design best practices the hard way; the other session is entitled "Network Campus Attack and Defend."

This session is designed to be particularly useful for network engineers who design and implement security in enterprise environments.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2001 Design Principles for Secure Enterprise Campuses

Design Principles for Secure Enterprise Campuses

SEC-2001

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles,



Tuesday, 07/08 04:00 PM; Los Angeles,
Thursday, 07/10 01:30 PM
Level: Level 2
Technology Focus: Security
Duration: 120
Organization Type: Enterprise

As the classic network edge continues to blur and network attack tools become more sophisticated, protecting the campus network is increasingly critical to a company's success. Important information assets reside within the company campus, and application availability is critical to ongoing business. This session reviews design and configuration considerations to employ within the campus of your network. It spans access control, intrusion detection, anomaly detection, antivirus, authentication, and management system technologies. A lively story that chronicles an insider hacker's conflict with an overworked IT staff for a large company is interwoven throughout the session to keep the discussion both interesting and applicable to the real world. Participants will learn how small issues in a network can lead to large security compromises and will learn the value of defense-in-depth strategies. This is the first of two sessions on learning security design best practices the hard way; the other session is entitled "Network Edge Attack and Defend."

This session is designed to be particularly useful for network engineers who design and implement security in enterprise environments.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2000 Design Principles for Secure Network Edges,

Responding to Security Incidents

SEC-2004
Orlando, Tuesday, 06/24 01:30 PM; Orlando,
Wednesday, 06/25 01:30 PM; Los Angeles,
Tuesday, 07/08 01:30 PM; Los Angeles,
Wednesday, 07/09 01:30 PM
Level: Level 2
Technology Focus: Security
Duration: 120
Organization Type: All

No matter how good your security is, your company will still experience security incidents. How quickly and effectively you verify and respond to these events will determine the impact to your organization. This session reviews the signs and symptoms of security incidents, and then discusses how to prepare for and respond to these incidents when they occur. It will cover the technical features in Cisco products that can be used to help you address security incidents, as well as the processes you must have in place to effectively manage incidents and minimize their impact when they occur.

This session is designed to be particularly useful for network and security administrators.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2000 Design Principles for Secure Network Edges,

SEC-2001 Design Principles for Secure Enterprise Campuses,

SEC-2002 Understanding and Preventing Layer 2 Attacks,

SEC-2007 Internet Service Provider Security Best Practices,

SEC-2008 Service Provider Responses to Denial of Service Attacks

Deploying 802.1x Identity Services for LAN Security

SEC-2005
Orlando, Tuesday, 06/24 04:00 PM; Orlando,
Wednesday, 06/25 01:30 PM; Los Angeles,
Tuesday, 07/08 04:00 PM; Los Angeles,
Wednesday, 07/09 01:30 PM
Level: Level 2
Technology Focus: Security
Duration: 120
Organization Type: Enterprise

This session provides participants with an in-depth look at the technologies, options, and considerations for administrators looking to increase wired and



wireless LAN security by deploying port based network access control. It explores currently available and emerging features associated with IEEE 802.1x in order to effectively leverage identity based access control and policy enforcement, including authentication, authorization, accounting, and logging. The session balances theoretical understanding with additional emphasis on real-world deployment and troubleshooting.

This session has been designed to be particularly useful for network administrators or network security administrators interested in implementing network infrastructure access control and policy enforcement.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2001 Design Principles for Secure Enterprise Campuses.

Managing Security Technologies

SEC-2006

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

This session discusses the issues involved in managing security technologies. Best practices for security management will be explained by using case studies for commonly deployed security technologies involving firewalls, intrusion detection systems (IDSs), and virtual private networks (VPNs). These include dealing with security events, enforcing corporate firewall policies, integration of security operations with network operations, scaling concerns with IDS tuning, and dynamically assigned remote firewalls. This session will explain the security protocols and technologies that can be used to configure and monitor information the security devices provide. An update will be given on the Cisco strategy and vision regarding security management software and solutions, including the CiscoWorks VPN and Security Management Solutions bundle. Finally, the session will describe how to design an infrastructure where the

security management applications are an integrated part of the overall security design.

This session is designed to be particularly useful for network operations staff, security operations staff, security architects, and anyone interested in issues and case studies around managing a Cisco technology-based security infrastructure.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2010 Deploying Remote Access IPsec VPNs,

SEC-2011 Deploying Site to Site IPsec VPNs,

SEC-2020 Deploying and Managing Firewalls,

SEC-2030 Deploying Intrusion Detection Systems

Deploying Remote-Access IPSec VPNs

SEC-2010

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

This session addresses how to plan, design, and deploy remote-access IP Security (IPSec) virtual private networks (VPNs). This session will discuss overall design considerations, including device placement considerations, various design models for remote-access VPNs, and fitting VPN design into overall security policy. Also covered is remote-access VPN deployment, including available remote-access VPN technologies, products, and corresponding configurations. High availability, load balancing, bandwidth allocation, and VPN user management will also be discussed. Case studies will be provided to demonstrate remote-access VPN deployment examples.

This session is designed to be particularly useful for network and systems operators responsible for deploying IPSec in their networks.



Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2011 Deploying Site-to-Site IPsec VPNs

SEC-2012 Deploying Complex and Large-Scale IPsec VPNs

SEC-3010 Troubleshooting Cisco IOS Firewall-Based and Cisco Secure PIX Firewall-Based IPsec VPNs

SEC-3011 Troubleshooting Cisco VPN 3000 Series Concentrator IPsec VPNs

SEC-4010 "Advanced IPsec Algorithms and Protocols"

Deploying Site-to-Site IPsec VPNs

SEC-2011

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

This session addresses how to plan, design, and deploy site-to-site IP Security (IPsec) virtual private networks (VPNs). This session will cover deployment of site-to-site VPNs, including the configuration of common designs using various topologies and products. Other considerations such as device placement, various design models for site-to-site VPNs, and fitting VPN design into overall security policy will be addressed. High availability, performance, and management aspects will also be discussed. Case studies will be provided to demonstrate site-to-site VPN deployment examples.

This session is designed to be particularly useful for network and systems operators responsible for deploying IPsec in their networks.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2010 Deploying Remote-Access IPsec VPNs

SEC-2012 Deploying Complex and Large-Scale IPsec VPNs

SEC-3010 Troubleshooting Cisco

IOS Firewall-Based and Cisco Secure PIX Firewall-Based IPsec VPNs

SEC-3011 Troubleshooting Cisco VPN 3000 Series Concentrator IPsec VPNs

SEC-4010 Advanced IPsec Algorithms and Protocols

Deploying Complex and Large-Scale IPsec VPNs

SEC-2012

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: All

This session covers advanced IP Security (IPsec) virtual private network (VPN) site-to-site design and deployment with a focus on scaling to large IPsec VPNs. It will include IPsec plus generic routing encapsulation (GRE) tunnels with a single hub as a starting point, and will progress to single- and dual-hub dynamic multipoint VPN (DMVPN) solution designs. The session's main focus will be on deployment, migration, and running routing protocols over DMVPN, and will also cover using certificates for authentication and IPsec to extend Multiprotocol Label Switching (MPLS) VPNs.

This session is designed to be particularly useful for designers, managers, and troubleshooters of extended corporate VPN networks, and for service providers that are deploying these services for their customers.

Associated Sessions:



The following session title(s) are associated with this session:-

SEC-2010 Deploying Remote-Access IPSec VPNs

SEC-2011 Deploying Site-to-Site IPSec VPNs

SEC-3010 Troubleshooting Cisco IOS Firewall-Based and Cisco Secure PIX Firewall-Based IPSec VPNs

SEC-4010 Advanced IPsec Algorithms and Protocols

Deploying and Managing Firewalls

SEC-2020

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

Firewall technology remains an important line of defense against external threats to networks, computers, and business-critical information. Firewall technology has evolved to create policy enforcement points that can be deployed throughout a network to enforce an organization's security policy. This session discusses different firewall architectures and approaches, with an emphasis on the three Cisco firewall offerings; the Cisco PIX Firewall, Cisco IOS Firewall, and the Cisco Catalyst Firewall service module. The presentation will examine how different types of firewalls are deployed in many common design scenarios. The presentation will also provide information about practical firewall management as part of an overall security policy.

This session is designed to be particularly useful for network engineers, system administrators, and network security specialists.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2000 Design Principles for Secure Network Edges,

SEC-2001 Design Principles for Secure Enterprise Campuses,

SEC-2006 Managing Security Technologies,

SEC-3020 Troubleshooting Firewalls

Deploying Intrusion Detection Systems

SEC-2030

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

Intrusion Detection Systems have become an essential tool in the development of a "defense in depth" security system by providing a level of packet and flow analysis not available through other means. This session will discuss the role of both host-based and network-based intrusion detection systems as complementary technologies in the security architecture. The session will look in depth at the individual analysis capabilities of Cisco's IDS technologies, and present a series of strategies and techniques to deploy and tune each technology to a specific environment. Issues such as multi-device placement, traffic selection and aggregation, design validation, and scalability will be discussed. Also covered will be some of the key maintenance and monitoring concepts specific to an IDS deployment. A series of deployment case studies will be examined, including the Internet edge, a corporate datacenter, and an Internet datacenter.

This session is designed to be particularly useful to network and security designer engineers and architects, along with operations and monitoring staff.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2006 Managing Security Technologies

SEC-3030 Troubleshooting Intrusion Detection Systems



PWR-5010 Realizing the Promise of Intrusion Detection Systems

Troubleshooting Cisco IOS and Cisco Secure PIX Firewall-Based IPsec VPNs

SEC-3010

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 3

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

This session demonstrates detailed techniques for troubleshooting Cisco IOS and Cisco Secure PIX Firewall-based IP Security (IPsec) designs and implementations. It covers the debugging tools available within Cisco IOS and Cisco Secure PIX Firewall to troubleshoot IPsec based virtual private network (VPN) configurations. This session also provides solutions to the most commonly seen issues concerning IPsec VPN designs and implementations, based on the experiences of Cisco Technical Assistance Center (TAC) engineers.

This session is designed to be particularly useful for customers who have deployed IPsec VPNs using either Cisco IOS or Cisco Secure PIX Firewall.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2010 Deploying Remote-Access IPsec VPNs

SEC-2011 Deploying Site-to-Site IPsec VPNs

SEC-3011 Troubleshooting Cisco VPN 3000 Series Concentrator IPsec VPNs

SEC-4010 Advanced IPsec Algorithms and Protocols

Troubleshooting Cisco VPN 3000 Series Concentrator IPsec VPNs

SEC-3011

Orlando, Wednesday, 06/25 04:00 PM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 3

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

The Cisco VPN 3000 Series Concentrator is a best-of-breed, remote-access virtual private network (VPN) solution for enterprise-class deployment, and is regarded as one of the best VPN devices in the market today. This session demonstrates various methodologies and techniques used in troubleshooting remote-access and site-to-site IP Security (IPsec) implementations. It covers detailed descriptions of the logs, provides troubleshooting tips and resolutions to common issues, and discusses case studies involving real-world scenarios.

This session is designed to be particularly useful for customers who have deployed IPsec VPNs using Cisco VPN 3000 Series concentrators.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2010 Deploying Remote-Access IPsec VPNs

SEC-2011 Deploying Site-to-Site IPsec VPNs

SEC-3010 Troubleshooting Cisco IOS Firewall-Based and Cisco Secure PIX Firewall-Based IPsec VPNs

SEC-4010 Advanced IPsec Algorithms and Protocols

Troubleshooting Firewalls

SEC-3020

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Enterprise



Firewalls are crucial components of today's networks. Their optimal functioning is critical to an enterprise or service provider network. It is essential for network engineers to be able to quickly and efficiently troubleshoot this device. This presentation focuses on the tools and techniques that can be used to troubleshoot the Cisco PIX Firewall, Cisco IOS Firewall, and Catalyst Firewall Service Module, enabling the attendees to successfully maintain their Cisco firewalls.

This session is designed to be particularly useful for network engineers, system administrators, and network security specialists.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2020 Deploying and Managing Firewalls

Troubleshooting Intrusion Detection Systems

SEC-3030

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 3

Technology Focus: Security

Duration: 120

Organization Type: Enterprise

This presentation will focus on troubleshooting Intrusion Detection Systems using Cisco IDS software 4.0 and 3.0 software on Intrusion Detection System (IDS) appliances. We will also look into detailed troubleshooting steps for IDS Management Center (IDS MC) and Security Monitor (Sec Mon) which is a part of the VMS2.1 software bundle in regards to installation, compatibility and deployment issues. We will look into the common problems associated with Cisco Security Agent software in regards to installation and deployment.

This session has been developed to be applicable to attendees who perform the following roles or are involved in the following functions: -

Configuring, maintaining and troubleshooting Intrusion Detection Systems consisting of IDS

appliances and management devices like IDS MC and Security Monitor.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2030 Deploying Intrusion Detection Systems

PWR-5010 Realizing the Promise of Intrusion Detection Systems

Advanced IPsec Algorithms and Protocols

SEC-4010

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 4

Technology Focus: Security

Duration: 120

Organization Type: All

This session details how the Internet Key Exchange (IKE) and the IPsec protocols work. The session will also analyze the authentication protocols involved in the IKE process. Encryption and hashing mechanisms, including the new AES standard in IPsec, will also be discussed. After describing the workings of these main protocols and mechanisms, the presentation will address how some of the most important IPsec features actually work. Examples of these features include mode configuration, extended authentication, Dead Peer Discovery (DPD), IPsec Network Address Translation (NAT) traversal, Stateful Failover and Tunnel Endpoint Discovery (TED). The session will emphasize protocol-level details of how the various features have been implemented, using packet flowcharts and descriptions of the various fields in the packets. The session will also include discussions around some of the new implementations being worked in the IPsec space such as IKEv2 and, IKE and IPsec monitoring MIBs.

This session is designed to be particularly useful for virtual private network (VPN) implementation experts



who would like to gain a deeper understanding of how various IPsec-based VPN configurations actually work.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2010 Deploying Remote Access IPsec VPNs,

SEC-2011 Deploying Site to Site IPsec VPNs,

SEC-2012 Deploying Complex and Large Scale IPsec VPNs,

SEC-3010 Troubleshooting IOS and PIX Firewall-Based IPsec VPNs,

SEC-3011 Troubleshooting VPN3000 IPsec Implementations

Network Management Tech Trek (Presentation in WoS)

TEK-9222

Orlando, Tuesday, 06/24 03:00 PM; Los Angeles, Tuesday, 07/08 03:00 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type:

Join the Cisco Network Management team for two hours of product-focused live presentations and interactive demonstrations, which will bring the following technologies to life:

1. Infrastructure Management: Provides a robust set of applications for configuring, monitoring, and troubleshooting a broad-range of devices in an end-to-end Cisco AVVID network.
2. Security Management: Combines Web-based applications for configuring, monitoring, and troubleshooting enterprise virtual private networks (VPNs), firewalls, and network and host-based intrusion detection systems (IDS).
3. Wireless LAN Management: Provides centralized, template-based configuration with hierarchical, customer-defined grouping, to efficiently manage to efficiently manage the entire Cisco Aironet wireless LAN infrastructure.

4. IP Telephony Management: Provides a powerful solution to ensure the readiness and manageability of converged networks supporting IP telephony implementations.

Metro Area Networks

Architecture and Design of Optical Transport Networks

OPT-2041

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 2

Technology Focus: Optical Technologies

Duration: 120

Organization Type: Service Provider & Enterprise

Service providers and enterprises looking to deploy a flexible transport for deployment of Ethernet services face a number of options, often causing confusion as to how these transport options are to be built. This session discusses the technologies used in the design of optical transport networks for the deployment of data, storage, video, and Ethernet connectivity services. It includes an introduction to Gigabit Ethernet, 10 Gigabit Ethernet, coarse-wavelength division multiplexing (CWDM), dense-wavelength division multiplexing (DWDM), Resilient Packet Ring (RPR), and Synchronous Optical Network/Synchronous Digital Hierarchy (SONET/SDH) used as transport mediums. The session will also explore architectures (point-to-point and ring) and deployment guidelines for how to build these networks.

Network Architects, Designers and Engineers who would be designing and deploying Optical Transport networks.

Associated Sessions:

OPT-2044 Design Principles for Metro Optical Networks

OPT-2045 Deploying Metro Ethernet: Architecture and Services



Design Principles for Metro Optical Networks

OPT-2044
Orlando, Tuesday, 06/24 10:00 AM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Thursday, 07/10 01:30 PM
Level: Level 2
Technology Focus: Optical Technologies
Duration: 120
Organization Type: All

Over the past few years the characteristics of metropolitan dense wavelength division multiplexing (DWDM) networks have evolved considerably. This session presents the underlying principles and best practices to successfully deploy complex optical systems. A few years ago, a typical Metro DWDM system had 16 x 2.5 Gbps channels, 200-GHz spacing, and unamplified spans. Now, the average system supports 32 x 10 Gbps, 100-GHz spacing, optical amplification, and chromatic dispersion compensation to cover distances of over 200 km and metro DWDM systems under development will raise the bar even further with respect to channel densities and distances. This growth process poses new challenges to the design of metro DWDM networks, as the impact of optical noise, chromatic dispersion, polarization mode dispersion, and fiber nonlinearities must be carefully assessed to evaluate the optical performance of such systems.

This session is designed to be particularly useful for network designers interested in the transmission aspects of metro optical networks. Although the session reviews basic optical technology concepts, it is designed as an intermediate-to-advanced course on fiber optics. A background on fiber optics is recommended.

Associated Sessions:

OPT-2041 Architecture and Design of Optical Transport Networks

OPT-2045 Deploying Metro Ethernet: Architecture and Services

Deploying Metro Ethernet: Architecture and Services

OPT-2045
Orlando, Tuesday, 06/24 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM
Level: Level 2
Technology Focus: Optical Technologies
Duration: 120
Organization Type: Service Provider & Enterprise

This session focuses on new and innovative Ethernet services from a service attributes perspective, and explores the implications of these Ethernet services with respect to availability, security, quality of service (QoS), IP Multicast, and scalability from a user perspective. This session also discusses Layer 2 VPN Service Interworking that extends Ethernet services to existing technologies. Finally, the session discusses standards efforts that are underway within the IETF, MEF, and IEEE, such as the Ethernet LMI [NOTE: EXPAND ACRONYM] and operations, administration, maintenance, and provisioning (OAM&P), that are relevant to the development of Ethernet as a ubiquitous LAN, MAN, and WAN service.

Network Architects, Designers and Engineers who need to understand more about implementations of Metro Ethernet.

Associated Sessions:

OPT-2041 Architecture and Design of Optical Transport Networks

OPT-2044 Design Principles for Metro Optical Networks

Advanced Technologies for SONET/SDH Metro Optical Infrastructure Deployment

OPT-4040
Orlando, Tuesday, 06/24 10:00 AM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Thursday, 07/10 10:00 AM
Level: Level 4
Technology Focus: Optical Technologies
Duration: 120
Organization Type: Service Provider & Enterprise

The continued growth of IP-based, bandwidth-intensive applications, along with the rising need to



deliver carrier-class service-level agreements (SLAs), has created an interest in using optical infrastructures for scalability, resiliency, and investment protection. This has increased efforts focused specifically on integrating Ethernet-over-SONET (EoS). To date, these implementations have been proprietary and have been unable to provide interoperability between products and vendors. This session discusses advanced developments in integrating data and optical networks, including:

- Enhanced quality of service (QoS)

- Architectural considerations such as .1Q, QinQ, Ethernet over Multiprotocol Label Switching (EoMPLS), and Layer 2 Tunneling Protocol Version 3/Universal Transport Interface (L2TPv3/UTI)

- Encapsulation techniques such as Generic Framing Procedure (GFP) and X.86

- Transport optimization mechanisms such as Resilient Packet Ring (RPR), Synchronous Transport Signal (STS) bandwidth scaling, virtual concatenation, and Link Capacity Adjustment Scheme (LCAS).

These advancements are leading the industry towards common delivery of data over SONET/SDH. This session reviews the technical underpinnings of these advanced developments and shows how they contribute to the multiservice network's efficiency, scalability, resiliency, and interoperability.

This session is designed to be particularly useful for metro optical network designers, architects, and engineers.

Associated Sessions:

OPT-2041 Architecture and Design of Optical Transport Networks, OPT-2044 Design Principles for Metro Optical Networks, OPT-2045 Deploying Metro Ethernet: Architecture and Services

Mobile Networks

Deploying Mobile IP

ACC-2020

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Thursday, 07/10 10:00 AM
Level: Level 2
Technology Focus: Routing & Switching
Duration: 120
Organization Type: All

This session addresses Mobile IP specifications, functions, and operation. It compares and contrasts Mobile IP with traditional routing protocols to clearly define its role in the network. Mobile IP configuration fundamentals and best practices are presented and operational issues are discussed. This session presents a foundation applicable to all Mobile IP deployments, including Cisco IOS Software mobile networks, Proxy Mobile IP, and code division multiple access (CDMA) 2000.

This session is designed to be useful for all attendees.

Associated Sessions:

ACC-2021 Designing Networks in Motion using Mobile IP and the Mobile Router

Designing Networks in Motion Using Mobile IP and the Mobile Router

ACC-2021
Orlando, Tuesday, 06/24 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM
Level: Level 2
Technology Focus: Routing & Switching
Duration: 120
Organization Type: All

Enterprise customer adoption of wireless LAN (WLAN) networking is becoming mainstream. At the same time, new networked wireless devices are becoming available in which access media such as 802.11, 1xRTT, General Packet Radio Service (GPRS), satellite, and Cellular Digital Packet Data (CDPD) can be used for connectivity. This untethered extension of the traditional wired network creates the expectation and requirement that users and networks should be able to stay connected while in motion, whether on- or off-campus.



This session focuses on the design and configuration guidelines for enterprises deploying a network infrastructure capable of supporting off-campus roaming for networks in motion.

These devices will use roaming infrastructure technologies that are often found in enterprise, public safety, and transportation markets, such as Layer 2 802.11 Roaming, and Mobile IP.

Using a building block approach, this session covers the details of:

- Radio frequency coverage options and recommendations for "wireless WAN" access media, including 802.11, 1xRTT, GPRS, satellite, and CDPD
- Central site campus design recommendations that will support Layer 3 Mobile IP Roaming, such as home agent and foreign agent scaling and performance considerations
- Design considerations with the Cisco 3200 Series MAR using Mobile IP with various IP Security (IPSec) VPNs and security deployment guidelines

This session is designed to be useful for all attendees.

Associated Sessions:

ACC-2020 Deploying Mobile IP and ACC-4010 Advanced 802.11 Designs for Voice-Enabled Enterprise Roaming

Product Session

Cisco WAN Edge Routers

PRD-7021

Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM

Level: Product Session

Technology Focus: Product Session

Duration: 60

Organization Type: Service Provider - Public

Cisco WAN edge routers provide high performance and service rich network solutions for service providers and enterprise customers. They are designed for the enterprise Headend and the Internet Gateway as well as the Service Provider CPE and edge, where expense containment or revenue generation can be most dramatically affected. This product focused session will concentrate on the Cisco

7200, 7300, 7400, and 10720 Series Routers, and will detail how the Cisco solution meets edge network needs both today and in the future. The session will illustrate how integrated, versatile, high performance routers continue to aggregate high densities of low & high speed L2&L3 links, from Frame, through ATM, Ethernet and DPT/RPR, and at the same, enable ever more critical feature implementations such as QoS for voice & video applications, VPN implementations and security.

Catalyst 4000/4500 Product Update

PRD-7022

Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM

Level: Product Session

Technology Focus: Product Session

Duration: 60

Organization Type: Service Provider & Enterprise

This session will provide an update on the recently introduced Catalyst 4500 family of chassis switches and recently introduced modules. In addition to platform updates, this discussion will cover QoS enhancements, including Dynamic Buffer Limiting, and security, resiliency, Netflow and power enhancements. We will also look at planning for and deploying in-line power to support IP telephony and other Ethernet powered devices as well as the benefits and implications of GbE to the desktop. We will also identify key areas of functionality and services that can be leveraged and implemented to increase the efficiency and operation of your organization's network and how this impacts your network design decisions.

Cisco IOS Software Release Essentials - The ABC's

PRD-7023

Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM

Level: Product Session

Technology Focus: Product Session

Duration: 60

Organization Type: All

Are you confused by the various types of Cisco IOS Software releases? Do you have trouble selecting the right software release for your network? Are you



curious about how Cisco IOS software is packaged? Do you want to learn more about the key milestones in the Cisco IOS software release life-cycle? This session demystifies Cisco IOS software releases by answering these questions and many other commonly asked software release questions. Networking professionals who purchase or recommend the purchase of Cisco IOS software will benefit from this session.

IOS Telephony Service Product Update

PRD-7024
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

Abstract: This session introduces the Cisco IOS Telephony Services product and its capabilities. Cisco IOS Telephony Services (ITS) is the latest addition to the Cisco line of IP Telephony solutions. Designed for small enterprise branch offices and small-to-medium businesses of less than 48 users, ITS offers a comprehensive set of telephony features customers require for their everyday business needs. Embedded in Cisco IOS Software, IOS Telephony Services enables customers to deploy one platform to meet their business need for telephony, data routing, and switching. Cisco IOS Telephony Services is optionally available to any customer that owns, or is looking to purchase, a Cisco 1751, 1760, 2600XM, 2691, 3640, 3660, or 3700 Series Multiservice Access Router, or the IAD 2400 series. This session also provides information about the latest feature release, and offer examples of customer deployments.

Cisco Career Certifications the next Generation

PRD-7025
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This session will cover the recent updates to the Cisco Career Certifications program, including the availability of new courses, exams and re-certification. The presentation will discuss updates to the associate and professional level certifications and the Cisco Qualified Specialists focused certifications. With these new revisions, the Cisco certifications program has been aligned to more closely reflect the needs of the networking professional working in the IT industry. The presentation will offer participants an understanding of the purpose and benefits of Cisco training and certifications. Participants will also gain an understanding on the courses and tools available from authorized Cisco Learning Partners to help prepare candidates for certifications.

Wireless LANs -- Security, Interoperability, and New Product Directions

PRD-7026
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This session will provide information on "things you should know to design a secure, high-performance, enterprise-class wireless LAN (WLAN) network". Key topics covered include security (WPA, 802.1X, AES), single-band vs. dual-band products, interoperability through standards and the CCX program, devices for the wireless office, plus some exciting new WLAN product directions.

Quantifying the business value of new IOS technologies - ROI modeling framework.

PRD-7027
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

In the current economic environment, when IT budgets are scarce, it is critical to understand the business case for deployment of any new technology. This session sets a framework for business analysis and



justifications for adopting new technologies and illustrates various approaches to business modeling techniques. We will discuss and demonstrate two real life models - the ROI model for the Cisco Bandwidth Protection and the TCO model for the Cisco AutoQoS technology. At the end of the session, the attendees will walk away with a pragmatic understanding of the various aspects of business modeling and how it can help them in running their operations and in justifying new technology investments.

Cisco Update of Desktop Switching Platforms

PRD-7028
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This session provides an update on several recently introduced Cisco product lines in the desktop switching arena and puts the entire Cisco desktop switching lineup in context. Products covered include Cisco Catalyst 2950, 2955, 3550, and 3750 Series switches.

Deploying SNA Switch for IBM FEP Replacement

PRD-7029
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: ENT

With the FEP becomes obsolete and the mainframe evolving to an IP server, the opportunity to enhance the networking infrastructure supporting mainframe-based applications is now. SNA Switch, with its implementation of the Enterprise Extender and Dependent LU Requestor technology, provides dynamic routing support for SNA applications over an IP network. This session goes into depth on Cisco's IOS feature SNA Switch and its role in replacing the Front End Processor (which is now in IBM's end-of-

sales status). This session will go into depth on design recommendations and debugging tools.

Using Cisco Networking Services (CNS) Configuration Engine to Deploy/Manage Cisco IOS Router/Switches

PRD-7030
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

Cisco CNS Configuration Engine is a secure and scalable deployment and configuration management application that provides an intelligent network interface to network applications and users; which is capable of supporting up to 5000 Cisco CPE products. Cisco CNS Configuration Engine supports a full range of Cisco CPE and switches (800 Series, 1700 Series, IAD2400 Series, 2600 Series, 2950 Series, 3550 Series, 3600 Series, 3700 Series, 7200 Series, 7300 Series and 7400 Series). In addition, CNS provides a centralized, template based, configuration management and programmatic interface to a customer's operation support systems (OSS).

This session covers deployment of Cisco CPE across multiple access technologies (Private Line, Frame Relay, ATM, DSL, Cable, Ethernet, Modem), the XML based programmatic interface to IOS and how CNS Configuration Engine is used by other Cisco applications to manage large scale networks. The session concludes with a case study focused on automating the deployment of Cisco CPE.

Integrating the Data Center

PRD-7031
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Level 1
Technology Focus: Product Session
Duration: 60
Organization Type: All



This session will focus on the changing requirements of the data center. New utility computing models, the deployment of rapid application provisioning systems, high speed LAN switching, additional data center service requirements, and the deployment of storage networks across the enterprise are some of the issues affecting Data Centers today. This session will explore the architectures and the product sets commonly deployed in the data center to help solve and adapt to these new challenges.

HP's Utility DataCenter Solution Reaches Beyond Theory, Creating a Successful Reality

PRD-7035
Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM
Level: Level 2
Technology Focus: Network Management and Services
Duration: 60
Organization Type: All

Come hear how HP's Utility Data Center (UDC), built on Cisco Infrastructure, is succeeding while the competition is still strategizing. Learn about this complete solution which virtually designs, configures, and dynamically allocates/reallocates resources with drag-and-drop simplicity via a graphical user interface. It takes a great partnership to create these kinds of results. HP and Cisco combine to create a solution that leads to reduced operating costs, better asset utilization, improved service levels, and faster time-to-market in the datacenter.

Cisco IP/MPLS Edge Routers

PRD-8051
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: Service Provider - Public

IP/MPLS edge products and technologies represent the critical meet point between carriers and customers and play a critical role as networks continue to evolve rapidly. Service Providers face the challenge of

evolving their service portfolio to increase revenues while simultaneously finding ways to improve operational efficiency and drive an increased return on investment. Enterprises look for cost containment opportunities and ways to improve the extent of their network connectivity and its efficiency. This session targets both enterprise and service providers, and focuses on updates for Cisco 7500, 7600, 10000, and 12000 Series routers, as well as the increasingly important broadband aggregation product portfolio.

The session will show how the portfolio is innovating to deliver unmatched high availability, comprehensive IPv4 and IPv6 features, the widest breadth of interfaces types and speeds, and latest processing technologies for predictable, high-performance service delivery. The session will cover WAN edge network needs both today and in the future, and illustrate how integrated, versatile, high performance routers continue to innovate while delivering aggregation of high densities of L2&L3 connections, SONET, Ethernet, and Broadband.

Catalyst 6500 Product Update

PRD-8052
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This session covers the recent updates to the Catalyst 6500 system architecture and interface options including the Supervisor Engine 720, 10 Gigabit Ethernet, and new advanced services modules. This session includes:

- Update on the new Supervisor, Forwarding Engines, and Integrated Switch Fabric
- New Software features to improve system and operational manageability
- Where to deploy services modules, in what combinations, and with what applications
- The role of IEEE 802.1x in the delivery of user-based services and authentication
- Deploying the Cisco Catalyst 6500 Series Switch as part of a comprehensive, scaleable security infrastructure in the enterprise campus
- Software development roadmap and overview



- The Catalyst Operating System and Cisco IOSR Software options for the Catalyst 6500

Cisco IOS Release 12.3 -- New Major Release Functionality, Packaging and Migration

PRD-8053
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

With the introduction of Cisco IOS Release 12.3, Cisco Systems has successfully repackaged its software into a reduced number of feature sets with an intuitive nomenclature that is common across hardware platforms. The new feature set nomenclature simplifies software image selection and troubleshooting. This session highlights key features, functionality, and platforms in Cisco IOS Release 12.3, as well as the migration path for the release. This session also addresses, in detail, the new feature set, software image, and product naming conventions for the release. Individuals who purchase or recommend the purchase of Cisco IOS software will benefit from this session.

CiscoWorks Tools to Manage Your IP Telephony Implementation

PRD-8054
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This technical/product session explains the important concepts, issues, and requirements to manage a Cisco AVVID-based IP telephony implementation and describes the CiscoWorks tools that have been specifically developed for enterprise network management organizations. You will learn about the IP Telephony Environment Monitor (ITEM), which is a suite of tools that provides day-to-day intelligence about the operational health of your IP telephony

implementation and its underlying network. We will also discuss ITEM-supported tools that capture capacity management information and several security reports about any movements of IP telephones. We will share some implementation examples of how ITEM will help you integrate IP Telephony into your current environment.

Cisco MDS 9000 SAN Switch Family Progress Report

PRD-8055
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

Cisco began shipping the Cisco MDS 9000 SAN Switch products in December, 2002. Since that time, we have introduced new modules and intelligent services that provide cost-effective SAN expansion, reliable long-distance connectivity for business continuance and network-hosted volume management. This session will present the latest additions to the Cisco MDS 9000 product line, outline our partnerships with leading storage companies and present case studies which illustrate how customers are utilizing this innovative technology to build consolidated SANs with a lower total cost of ownership.

Deploying a Remote Access VPN using Cisco IOS Today and Tomorrow

PRD-8056
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This session covers new features and technologies that both enhance and make easier the deployment of a remote access VPN. Both client and gateway initiated VPNs are covered. Topics include: NAT Transparency, VRF-aware IPsec, EZVPN



enhancements, accounting for VPNs and committed roadmap items for the next 6 - 12 months.

Cisco's Product Security Incident Response Team (PSIRT)

PRD-8057
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

Learn how Cisco Systems, Inc. addresses reports of potential security vulnerabilities in its products. In addition, PSIRT assists customers to mitigate network incidents such as Denial of Service (DoS) attacks. Topics include an overview of creating a Security Advisory, as well as PSIRT's efforts to drive security-related improvements into the Cisco product development process.

Cisco Accelerates the High Performance Network

PRD-8058
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This session covers how Cisco accelerates the high-performance network. Many customers are now looking to Cisco to help their enterprise and service provider networks reach superior performance and reliability, and the Cisco Advanced Services programs are designed to helping customers achieve business return on investment (ROI) through high-performance networking. Attendees learn about Cisco's High Availability Networking (HAN) that combines: reliable hardware, resilient software, optimized network design, proven network operations, comprehensive manageability, and world-class service and support to deliver on the need for higher network availability, productivity, and profitability..

The Cisco Advanced ATM Multiservice Portfolio (AAMP)

PRD-8059
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This session covers the entire range of Cisco Advanced Asynchronous Transfer Mode [ATM] Multiservice Portfolio (AAMP) products, provides updates on new and existing products in the portfolio, explains the positioning and usage of these products, and concludes with case studies on how these products are being used in various multiservice applications, such as: Frame Relay, ATM, IP virtual private network (FR, ATM, IP VPN) service providers, enterprise, voice applications, video applications, and mobile wireless.

Policy Based Security Design

PRD-8060
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

This session will assist participants in developing effective security policies compatible with the network security techniques and recommendations offered by white papers on the SAFE Blueprint from Cisco Systems. Using the "levels of security" method of policy development, attendees will learn how to evaluate network designs and develop the policies necessary to safeguard network applications and their assets. The "levels of security" approach to developing network security policies is a practical approach, focused on using the overall network design to secure defined network assets and applications, as opposed to focusing on point security appliances and ambiguously defined threats. This presentation discusses:- Breaking down network designs into zones of assets and network



applications- Defining the level of risk associated with each zone, which will determine the degree to which network security mechanisms will be applied to defend the assets and applications within- Examining six areas of network security (physical, access, transport, endpoint, application, and management) to define the security policies necessary to defend each zone, relative to the level of security assigned to it.

This session is designed to be particularly useful for engineers who design and implement security systems in enterprise

Methodology and Best Practices for deploying a Cisco IPT Solution

PRD-8061
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

The focus of this presentation is to offer leading practices, tools, templates and methods to Plan, Design, Implement, Operate, and Optimize (PDIOO) a Cisco IP Telephony solution. The procedures covered are based on Cisco's own internal rollout coupled with knowledge gathered from successful Cisco solution engagements. The objectives of this session are to provide the audience with a clear understanding of the following:

- 1) Baseline methodology required to deliver and operate a Cisco IP Telephony solution
- 2) Maps to methods and procedures, learning objects, templates and Tools
- 3) Full PDIOO life-cycle of steps and task that support a clear understanding for setting the users expectations

A basic understanding of voice networks is assumed.

This session is designed to be particularly useful for users involved with VoIP deployment.

360 Degree Performance Management

PRD-8062
Orlando, Tuesday, 06/24 08:00 PM; Los Angeles, Tuesday, 07/08 08:00 PM
Level: Product Session
Technology Focus: Product Session
Duration: 60
Organization Type: All

Performance Management is quickly becoming one of the most important network management functions in your network. It plays a key role in ensuring appropriate service levels while keeping costs down. In this session, we will examine a few Cisco performance management products on how they can help you manage different aspects of your network's performance.

Network Design and the Cisco Wireless IP Phone 7920

PRD-8063
Los Angeles, Tuesday, 07/08 08:00 PM
Level: Level 2
Technology Focus: Product Session
Duration: 60
Organization Type: All

With the introduction of the Cisco 7920 802.11b IP Phone, SEs and Network Administrators need to be aware of what actions are needed to not only integrate it into their AVVID networks, but also address the unique QoS, Security and CAC challenges that 802.11b brings to VoIP. This session will provide an overview of the features and design guidelines SEs need to introduce the 7920 into customer networks.

- Understanding on the features on the 7920
- Understanding on how L2 and L3 roaming will effect Campus designs
- Understand how QoS is achieved on 802.11b networks
- Understand wireless security and how it applies to the 7920
- Understand voice-specific design guidelines as they relate to the 7920 (CAC, # of Phones per AP, etc.)



Business Continuity with Cisco and IBM

PRD-8069

Orlando, Tuesday, 06/24 07:00 PM; Los Angeles, Tuesday, 07/08 07:00 PM

Level: Level 1

Technology Focus: Network Management and Services

Duration: 60

Organization Type: All

Business continuity planning encompasses a broad range of solutions, including disaster recovery, data replication, storage consolidation, storage outsourcing, and data center interconnect. In this session, learn how IBM and Cisco are teaming up to help your company reduce the cost of system outages, increase system availability, consolidate network traffic, and deliver near-continuous application availability with the Cisco ONS 15540 Extended Services Platform, Cisco ONS 15530 the new metro DWDM solution, and Geographically Dispersed Parallel Sysplex (GDPS) technology from IBM.

Storage Area Networks

Introduction to Storage Topologies and Applications

OPT-1050

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 1

Technology Focus: Optical Technologies

Duration: 120

Organization Type: All

This session introduces common storage subsystems, topologies and related applications, beginning with a storage subsystem definition that encompasses the physical and logical components. Storage topologies that are prevalent in the industry, such as DAS, NAS, and SANs are then discussed, with introduction to SAN topologies. The session then covers storage applications such as remote data replications, backup and restore, storage management, volume management and data protection, and multipathing solutions for both high availability and performance

enhancement. With each storage application, the underlying technologies are presented. Examples of these technologies include synchronous and asynchronous methods in either hardware- or software-based remote data replications, concepts such as snapshots or checkpoints for backup applications and highly available clustering solutions.

This session is designed to be particularly useful for audiences with minimum experiences in storage and SAN and gives these audiences a basic understand of the storage landscape.

Associated Sessions:

OPT-2051 "Fibre Channel SAN Design"

OPT-2052 "Storage over Distance:Network Design"

OPT-2053 "IP Storage Network Design"

Understanding Emerging Protocols for Metro Network Service Delivery

OPT-2043

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 2

Technology Focus: Optical Technologies

Duration: 120

Organization Type: All

This session addresses new and emerging standards related to service provider Ethernet service offerings. These technologies will enable service providers to offer robust Ethernet access to the enterprise while maintaining scalability of access and core networks. Topics covered include IEEE evolutions such as 802.3 EFM, and 802.17 Resilient Packet Ring (RPR) with a comparison to the Cisco Spatial Reuse Protocol (SRP). The IETF has been developing technologies for scaling Ethernet for Layer 2 services, so Hierarchical Virtual Private LAN Service (H-VPLS) and P2P Martini tunnels will be discussed. From the optical and data integration side, ITU protocols under development in SG15 will be discussed. Finally, service models and architectures defined by the Metro Ethernet Forum (MEF) will be discussed as well as Ethernet operations, administration, and maintenance



(OAM) and Ethernet Interworking (EI-NNI) will be presented.

This session is designed to be particularly useful for network designers, engineers, and operators working in service-provider cable MSO, regional metro IP transport, ISP intra-POP, and ISP exchange point, as well as large enterprise network environments.

Associated Sessions:

OPT-2041 Architecture and Design of Optical Transport Networks

OPT-2045 Deploying Metro Ethernet: Architecture and Services

OPT-4040 Advanced Technologies for SONET/SDH Metro Optical Infrastructure Deployment

Fibre Channel SAN Design

OPT-2051

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: Optical Technologies

Duration: 120

Organization Type: All

This session discusses in detail the protocols, principles, and practices used in designing Fibre Channel SANs. A brief Fibre Channel protocol overview is provided as a refresher to highlight various protocol mechanics used for various design features and services. Using this knowledge of protocols and services, several different design practices and principles are discussed for building Fibre Channel SANs of all sizes. Aspects of high availability, security, scalability, and management are discussed in terms of their application to the design models. Finally, a brief discussion of SAN extension as it relates to IP storage (iSCSI and Fibre Channel over IP [FCIP]) and optical extension (coarse wavelength division multiplexing [CWDM] and dense wavelength division multiplexing [DWDM]) is presented in the context of storage and server consolidation solutions, remote replication and disaster recovery, and backup applications.

This session is designed to be particularly useful for system administrators, SAN designers, and storage

networking professionals with a general understanding of Fibre Channel basics who want to learn more about designing storage networks.

Associated Sessions:

OPT-1050 Introduction to Storage Topologies and Applications, OPT-2052 Storage over Distance: Network Design, OPT-2053 IP Storage Network Design

Storage over Distance: Network Design

OPT-2052

Orlando, Wednesday, 06/25 04:00 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: Optical Technologies

Duration: 120

Organization Type: All

This session discusses network designs for extending storage over distance. It begins with a detailed look at various storage applications, such as synchronous and asynchronous replication, host-based mirroring, and backup and archive, and their respective roles in achieving business recovery point objectives. The session then covers how to design the underlying IP or optical network and configure the Fibre Channel SAN to meet application and business requirements. Fibre Channel over IP (FCIP) network design is also covered, as well as several metro optical coarse wavelength division multiplexing (CWDM) and dense wavelength division multiplexing (DWDM) solutions and designs. Examples and case studies are used to illustrate various design points.

This session is designed to be particularly useful for technical individuals familiar with storage networking protocols and technology, who are interested in designing and deploying storage applications between multiple sites or data centers.

Associated Sessions:

OPT-1050, Introduction to Storage Topologies and Applications, OPT-4050, Design and Architecture of Storage Networking Platforms, OPT-3050, Troubleshooting Storage Networks



IP Storage Network Design

OPT-2053

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 2

Technology Focus: Optical Technologies

Duration: 120

Organization Type: All

This is a detailed discussion on the design and deployment of Cisco iSCSI storage networks. It begins with a brief look at the iSCSI protocol, and focuses on the parts that are relevant to design and deployment of iSCSI storage networks with the Cisco SN 542x Storage Router and the Cisco MDS 9000 Series IP Services Card in mid-tier and data center environments. The session covers iSCSI configuration, scaling guidelines, security considerations, and IP storage network design guidelines (such as quality of service [QoS], high availability design, and storage network virtual LANs [VLANs]). Deployment of some popular applications are explored in further detail.

This session is designed to be particularly useful for technical individuals familiar with storage networking protocols and technology, who are interested in designing and deploying an iSCSI storage networking solution.

Associated Sessions:

OPT-1050, Introduction to Storage Topologies and Applications, OPT-3050, Troubleshooting Storage Networks

Storage Networking Security

OPT-2054

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: All

Today's SANs have grown in terms of size, topology, and architectural complexity, and numerous technologies are now available to contribute to the security of the storage infrastructure. This session provides an introduction to security protocols and architectures that are deployed in SANs. It will focus on securing Fibre Channel, iSCSI, and Fibre Channel over IP (FCIP) networks. The different mechanisms used for access control and traffic segregation such as Fibre Channel zoning and virtual SANs will be discussed and compared. The session will also cover Fibre Channel Security Protocol (FC-SP) as the currently proposed solution for device-to-device authentication, traffic integrity, and privacy protection. Security from a management perspective will also be a topic of this session, with a discussion of how Role-Based Access Control and the use of protocols such as such as Simple Network Management Protocol (SNMP)v3, Secure Sockets Handling (SSH), and Transport Layer Security (TLS) will help to secure management applications.

This session is designed to be particularly useful for system administrators, SAN designers, and storage networking professionals with a general background in storage networking, and minimum experience in security who want to learn more on security for storage networks.

Associated Sessions:

OPT-1050 Introduction to Storage Topologies and Applications, OPT-2051 Fibre Channel SAN Design, OPT-2053 IP Storage Network Design

Troubleshooting Storage Networks

OPT-3050

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 3

Technology Focus: Optical Technologies

Duration: 120

Organization Type: All

This session is focused on troubleshooting storage networks, which have been implemented with the Cisco MDS 9000 Series Fibre Channel Switch, the Cisco SN 5428 Storage Router, and the Cisco 7200 Series Fibre Channel over IP (FCIP) Port Adaptor. The session will focus on the most common issues



concerning the connectivity to Fibre Channel devices, debugging fabric switch services, and device discovery. Debugging of Cisco FCIP and iSCSI connectivity will be studied. Issues involving E-Port, B-Port, and F-Port operations, along with gaining an in-depth understanding of the protocol debugging, will be discussed. This session will cover the use of Cisco debug outputs and tools found within Cisco storage networking products, focusing on practical debugging techniques and problem resolution methods and on understanding interoperability issues with Fibre Channel devices and output determination from the vast amount of show commands one can get from Cisco SAN products.

This session is designed to be particularly useful for network engineers involved with implementing a Cisco solution who are working with day-to-day operations within a SAN.

Associated Sessions:

OPT-1050 Introduction to Storage Topologies and Applications, OPT-2051 Fibre Channel SAN Design

Design and Architecture of Storage Networking Platforms

OPT-4050
Orlando, Wednesday, 06/25 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM
Level: Level 4
Technology Focus: Optical Technologies
Duration: 120
Organization Type: All

This is an advanced session on the design and architecture of platforms for storage networking. This session provides attendees with the essential knowledge to understand how technology and design choices influence the design of highly scalable and reliable platforms for storage networking. The session will discuss concepts like cut-through versus store-and-forward, the relevance of different queuing strategies like input versus output buffering, and the importance of virtual output queuing. The design choices needed to achieve an adequate level of flexibility to implement quality of service (QoS), high availability, and high-performance switching will also be part of the discussion. This session will explain how specific technology constraints can affect the architecture of a storage networking product. For

example, different architectural choices that help to satisfy some basic requirements of storage networking such as data integrity and in-order delivery will be discussed.

This session is primarily intended for IT professionals who want to have an in-depth understanding of the products they use in their data centers and to relate technology choices to the actual deployment of the platform.

Associated Sessions:

OPT-2053, IP Storage Network Design

OPT-2054, Storage Networking Security

Storage Networking Tech Trek (presentation in WoS)

TEK-9555
Orlando, Wednesday, 06/25 03:00 PM; Los Angeles, Wednesday, 07/09 03:00 PM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type:

Join Cisco storage networking experts as they illustrate innovative concepts and features of the Cisco MDS 9000 SAN Switches. Interactive presentations will be followed by hands-on rotating demonstrations on the following topics:

Multiprotocol Support: SAN Extension/Expansion - Learn how Cisco Storage Networking solutions can expand your SAN to lower end servers with iSCSI and FCIP (Cisco FCIP Port Adaptor Module, Cisco IP Services Module and Cisco SN 5428-2 storage router) and extend your SAN over greater distance with Optical solutions (Fibre Channel over DWDM and CWDM GBICS).

Intelligent Network Services: Diagnostics - Discover how integrated diagnostic features in the Cisco MDS 9000 SAN Switches delivers the industry's most comprehensive toolset for analyzing and troubleshooting storage networks (Fibre Channel ping, Fibre Channel trace route, SPAN and the Cisco Port Analyzer Adaptor).



Intelligent Network Services: Virtualization - Understand how virtualization can be implemented on the Cisco MDS SAN Switches (Cisco MDS Advanced Services Module, Network Volume Manager, SAN Point Control)

Intelligent Network Services: Scalability - See how to enhance fabric scalability and availability by implementing Virtual SANS or VSANs. VSANs provide the ability to create completely isolated fabric topologies, each with its own set of fabric services, on top of a scalable common physical infrastructure.

Video Networks and Applications

Deploying IP Videoconferencing Networks

VVT-2030
Orlando, Tuesday, 06/24 10:00 AM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Thursday, 07/10 10:00 AM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type: Enterprise

This session covers current H.323 videoconferencing design guidelines. This session will focus on advanced gatekeeper design with the current Multimedia Conference Manager (MCM) and the next generation IOS gatekeeper and IP-to-IP gateway. Network QoS and provisioning best practices for IP videoconferencing, and video MCU and gateway design guidelines will also be covered. This session assumes basic knowledge of current videoconferencing technologies.

This session is designed to be particularly useful for anyone involved in deploying or looking to deploy an H.323 videoconferencing network. Attendees should have a good understanding of IP networks and of current videoconferencing technologies.

Associated Sessions:

VVT-2031 Integrating IP Telephony and IP Videoconferencing Networks

Integrating IP Telephony and IP Videoconferencing Networks

VVT-2031
Orlando, Tuesday, 06/24 04:00 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Thursday, 07/10 01:30 PM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type: Enterprise

Many organizations deploying IP Telephony today are also deploying IP videoconferencing. While there are still many differences between these two product offerings, both technologies use the same network infrastructure, inspiring network professionals to deploy and integrate these technologies together. Some questions to consider are: - Are the tools and mechanisms of quality of service (QoS) that I have deployed for my IP Telephony network going to change when I introduce IP videoconferencing, or can I use the existing mechanisms? - How can I integrate the IP Telephony and IP videoconferencing call control and conferencing elements? - What are the differences between the products I buy for IP Telephony and those I buy for IP videoconferencing? - How will these technologies continue to merge going forward?

This presentation will answer these questions by comparing these technologies. It will discuss how you can integrate these technologies today to save your company time and money, and how Cisco sees these technologies becoming more tightly integrated in the future.

This session is designed to be particularly useful for anyone who is currently deploying Cisco IP Telephony and Cisco IP Videoconferencing in the same network.

Associated Sessions:

VVT-2030 H.323 Videoconferencing and Video Telephony Design

VVT-3010 Troubleshooting IP Telephony Networks Part 1



VVT-4010 Advanced Dial Plan Design for IP
Telephony Networks

Virtual Private Networks

Troubleshooting MPLS VPNs

RST-3061

Orlando, Wednesday, 06/25 10:00 AM; Orlando,

Thursday, 06/26 10:00 AM; Los Angeles,

Wednesday, 07/09 10:00 AM; Los Angeles,

Thursday, 07/10 10:00 AM

Level: Level 3

Technology Focus: MPLS

Duration: 120

Organization Type: All

This session looks to go into significant depth into how to analyse the operation of MPLS based VPN services. The session will cover the IOS (tm) commands used to configure MPLS VPNs and go onto look at to analyse the routers and other components used in the construction of a MPLS VPN network.

The Session will also consider all the various Debug commands that can be used to fault find and troubleshoot these networks.

This session is designed for engineers involved in the deployment and support of MPLS networks offering VPN services, or for those using and MPLS VPN service offering.

Associated Sessions:

Other MPLS sessions associated with this session include : -

RST-1061 - Introduction to MPLS

RST-2062 - Deploying MPLS Traffic Engineering

RST-2061 - Deploying MPLS VPNs

Design Guidelines for Voice Enabled VPN Telecommuter Solutions

VVT-2002

Orlando, Tuesday, 06/24 01:30 PM; Orlando,

Thursday, 06/26 10:00 AM; Los Angeles,

Tuesday, 07/08 01:30 PM; Los Angeles,

Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: All

This session will cover best-practice design guidelines to assist an organization in deploying a secure voice and data teleworker solution. It is common for today's networks to transport voice over IP (VoIP) across private WANs. Organizations can extend virtual private network (VPN) technology to a teleworker's home, extending their IP-based voice and data network across unsecure service provider networks. The session covers planning and design, solution benefits, best practices, and caveats to ensure a successful deployment. Also covered will be how to design for appropriate quality of service (QoS) to best maintain performance, and how to provide enterprise security in a home office with wireless access and family Internet users.

Attendees should have a basic understanding of IP Telephony, QoS, and IPSec. This session does not provide introductory information on these topics.

Associated Sessions:

VVT-2000 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 1

VVT-2001 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 2

VVT-2011 Designing Voice- and Video-Enabled IPSec VPNs

Designing Voice Enabled IPsec VPNs

VVT-2011

Orlando, Tuesday, 06/24 10:00 AM; Orlando,

Thursday, 06/26 04:00 PM; Los Angeles,

Tuesday, 07/08 10:00 AM; Los Angeles,

Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: All

This session will cover best-practice design guidelines to assist the enterprise customer with a successful voice-over-IP (VoIP) over IPSecurity (IPSec) virtual



private network (VPN) deployment. The agenda includes planning and design issues as they relate to VoIP, quality of service (QoS), IPSec, and service provider considerations. Configuration examples will be included for the typical deployment models, including site to site and small office and home office, using access methods of Frame Relay, Internet T1s, cable, and DSL. Head-end redundancy and availability will be examined with IPSec only, as well as with IPSec and generic routing encapsulation (GRE) tunnels. Issues related to traffic load balancing will also be reviewed. Performance data from internal testing will be used to help attendees select the appropriate products for the desired link speed and number of users. A section on verification and troubleshooting techniques is included, as well as a review of common pitfalls and lessons learned from customer and internal Cisco deployments.

Attendees should have a basic understanding of IP Telephony, QoS, and IPSec. This session does not provide introductory information on these topics. This session is designed to be particularly useful for enterprise customers who plan to deploy voice and video over an IPSec VPN.

Associated Sessions:

VVT-2002 Design Guidelines for Voice- and Video-Enabled SOHO and Telecommuter Solutions

VVT-2003 Emergency Services and IP Telephony

VVT-2012 Securing IP Telephony

Voice Networks and Applications

IP Telephony - offered by KnowledgeNet

CLP-1530
Los Angeles, Monday, 07/07 03:30 PM
Level: Level 1
Technology Focus: Mobility
Duration: 120
Organization Type: All

KnowledgeNet, a Cisco Learning Partner will prepare you for a trip through the core components of Cisco IP Telephony. This session lays the foundation design and implementation considerations for a Voice over IP

(VoIP) network. This two hour session will highlight the various VoIP devices used in a Cisco telephony network, VoIP Quality of Service (QoS) strategies, communication protocols, and CallManager configuration fundamentals.

This session is designed to provide information for audiences who have or are considering an IP Telephony network.

What's New in Cisco ICM Enterprise Version 5.0 and Cisco IPCC Enterprise Version 5.0

CON-1000
Los Angeles, Monday, 07/07 11:00 AM
Level: Level 1
Technology Focus: Contact Center
Duration: 60
Organization Type: Enterprise

This session provides an overview of the features available in Cisco Intelligent Contact Management (ICM) Enterprise Version 5.0 and Cisco IP Contact Center (IPCC) Enterprise Version 5.0. Topics include integration of the Cisco E-Mail Manager Option, the Cisco Web Collaboration Option, and the Cisco Outbound Option as well as the operational benefits of multichannel integration. The new capabilities in Cisco Computer Telephony Integration (CTI) and Cisco WebView reporting are also addressed.

This session is designed for current Cisco ICM Enterprise or Cisco IPCC Enterprise customers who would like to learn more about the new features and capabilities available in the latest releases of these products.

Associated Sessions:

CON-2000 - The Future of Cisco ICM Enterprise and Cisco IPCC Enterprise -- Feedback Session

What's New in Cisco IPCC Express

CON-1010
Los Angeles, Monday, 07/07 01:00 PM
Level: Level 1
Technology Focus: Contact Center
Duration: 60



Organization Type: Enterprise

This session presents an overview of the features available in Cisco IP Contact Center (IPCC) Express (formerly IP ICD), the Cisco mid-market IP contact center offering. Topics include skills-based routing, new Cisco Agent and Cisco Supervisor desktops, internationalization and localization, and historical and real-time reporting.

This session is designed for anyone with a small contact center interested in learning more about the benefits that Cisco IPCC Express can provide, and for existing Cisco IPCC Express customers interested in learning about the latest features of the solution.

Associated Sessions:

CON-2010 - The Future of Cisco IPCC Express - Feedback Session

Introduction to Cisco Computer Telephony Integration (CTI) Solutions

CON-1020
Los Angeles, Monday, 07/07 04:00 PM
Level: Level 1
Technology Focus: Contact Center
Duration: 60
Organization Type: Enterprise

This session provides an overview of Computer Telephony Integration (CTI) within the context of Cisco ICM Enterprise and Cisco IPCC Enterprise solutions. Specifically, it will discuss the features and benefits of each of the products within the Cisco CTI product portfolio. Additional information will be provided on the components of an ROI analysis for adding CTI to existing Cisco ICM Enterprise or Cisco IPCC Enterprise implementations, and an update on the future releases planned for Cisco CTI products will be given.

This session is designed for anyone involved in or looking to deploy CTI within their Cisco ICM Enterprise or Cisco IPCC Enterprise implementations. Attendees should have a good understanding of Cisco ICM Enterprise or Cisco IPCC Enterprise solutions, however no application development experience will be required.

Associated Sessions:

CON-2020 - Cisco Agent Desktop Technical Session,
CON-4020 - Advanced Cisco Computer Telephony Integration (CTI) Solutions

Contact Center Planning - Effective Creation of Business Rules

CON-1030
Los Angeles, Monday, 07/07 03:00 PM
Level: Level 1
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session provides real-world solutions addressing common business requirements for contact center routing and scripting using Cisco Intelligent Contact Management (ICM) Enterprise and Cisco IP Contact Center (IPCC) Enterprise. Examples include: controlling call flows to outsourcers with and without a Peripheral Gateway (PG); enterprise routing with Cisco ICM and Cisco IPCC; and dealing with small agent groups and abnormal handle times--creating custom Minimum Expected Delay calculations.

This session is designed for business users who want to have a better understanding of how to more effectively use routing and scripting rules in a contact center enterprise. Attendees should have a basic understanding of Cisco ICM Enterprise and Cisco IPCC Enterprise scripting and routing as well as basic configuration tools.

Associated Sessions:

CON-201 - Introduction to Core Functionality & Routing with Cisco ICM/IPCC Enterprise, CON-203 - Introduction to Contact Center Scripting with Cisco ICM/IPCC Enterprise, CON-400 - Advanced Core Functionality & Routing with Cisco ICM/IPCC Enterprise, CON-402 - Advanced Contact Center Scripting with Cisco ICM/IPCC Enterprise

Maximizing Your Enterprise with India-based Outsourced Contact Centers

CON-1031
Los Angeles, Monday, 07/07 03:00 PM
Level: Level 1
Technology Focus: Contact Center
Duration: 60



Organization Type: Enterprise

India is a growing destination from where most Fortune companies manage their customer interactions. Organizations worldwide have begun entrusting this key business process, along with their back-end office work, to be delivered by a third-party provider of services based in India. The drivers for this movement include the desire to take advantage of cost efficiencies linked with the availability of skilled work forces and lower infrastructure costs prevailing in India. This session will cover the concepts, design, challenges and implementation of the Cisco IP Contact Center (IPCC) Enterprise solution to organizations considering to setting up outsourced India-based contact centers. Participants would also be able to network with a focused team from Cisco India that can provide valuable insight into the the business and infrastructure climate, success stories, challenges and support infrastructure available within the country.

This session is designed for technology and business decision makers and influencers who are interested in learning how Cisco IPCC Enterprise technology and expertise can be leveraged to generate business benefits to their organizations by using India-based outsourced contact centers.

Cisco IP Contact Center Version 5.0 at Foxtons: A Case Study

CON-1032
Los Angeles, Monday, 07/07 02:00 PM
Level: Level 1
Technology Focus: Contact Center
Duration: 60
Organization Type: Enterprise

This session provides an overview of how real estate provider Foxtons has deployed Cisco IPCC version 5.0 and has gained flexibility and scalability in their environment, and has seen cost savings and increased agent productivity as a result.

This session is designed for technology and business decision makers interesting in hearing more about

how Cisco IPCC version 5.0 can be leveraged in multi-channel contact center deployments.

Cisco IPCC Enterprise: A Contact Center Administrator's Dream: A Case Study by vCustomer

CON-1034
Los Angeles, Monday, 07/07 04:00 PM
Level: Level 1
Technology Focus: Contact Center
Duration: 60
Organization Type: Enterprise

You know that IP-based contact centers are cool but do they work, do they scale, and are they dependable? In this session, you'll hear from vCustomer, a Seattle-based provider of outsourced contact center solutions, who will discuss how they used Cisco IPCC Enterprise to build a contact center that started with 25 agents in Seattle in September of 2000, and scaled to 1800 seats currently between Seattle and New Delhi, India. Talk about virtual expansion, they are exactly 12,000 miles from their core switch, take more than 80,000 calls per day, and by the end of 2003, they will have expanded their Cisco IPCC Enterprise solution to support 3000 seats. Their enterprise-class deployment uses built-in call monitoring, extensive CTI integration, and features and benefits that TDM solutions only dream about. The Cisco IP Phones are not only cool to look at, but powerful too, with Java-enabled CTI applications running directly on the phones. If you're looking to save considerable costs and gain productivity, they're confident that the low cost of administering the system will convince your boss to give you a big raise. Plan to attend this session to learn more!

This session is designed for technology and business decision makers interesting in hearing more about how Cisco IPCC Enterprise and how it can be used in large deployments, and in overseas, outsourced deployments.

Offering Managed Services with Cisco IPCC Hosted and Cisco ICM Hosted Solutions

CON-1040
Los Angeles, Wednesday, 07/09 10:00 AM



Level: Level 1
Technology Focus: Contact Center
Duration: 120
Organization Type: Service Provider & Enterprise

This session offers an in-depth explanation of the latest developments on Cisco hosted contact center solutions. It covers both Cisco ICM Hosted and Cisco IPCC Hosted Edition, and explains how these solutions enable both service providers and end-customers to migrate from a traditional TDM environment to an IP-based contact center infrastructure. Key to this migration is the support of a mixed TDM and IP infrastructure (both service provider network infrastructure as well as end-customer infrastructure).

This session is designed for anyone involved in, or considering getting involved in either the offering or delivery of hosted contact center services, or implementing, marketing or utilizing hosted contact center services.

Associated Sessions:

CON-2041 - Service Provider Migration Strategies for Cisco ICM Hosted Edition, CON-1041 - What's New with Cisco IPCC Hosted Edition, CON-2040 - Cisco Interactive Voice Response (IVR) Solutions for Service Providers

What's New in Cisco IPCC Hosted Edition

CON-1041
Los Angeles, Monday, 07/07 11:00 AM
Level: Level 1
Technology Focus: Contact Center
Duration: 60
Organization Type: Service Provider - Public

This session covers the current state of Cisco IP Contact Center (IPCC) Hosted Edition, near term future deliverables for this product, the advantages both for hosting organizations and their subscribers, and the rapidly expanding market and demand for hosted IP contact center services. Attendees will leave the session with an understanding of various technical aspects of Cisco IPCC Hosted Edition,

including multitenancy and shared resource usage, as well as go-to-market plans, including a new licensing model. This session will primarily focus on the contact center applications of the solution.

This session is designed for anyone involved in, or considering getting involved in either the offering or delivery of hosted contact center services, or implementing, marketing or utilizing hosted contact center services.

Associated Sessions:

CON-2040 - Cisco Interactive Voice Response (IVR) Solutions for Service Providers, CON-2041 - Service Provider Migration Strategies for Cisco ICM Hosted Edition, CON-1040 - Offering Managed Services with Cisco IPCC Hosted and Cisco ICM Hosted Solutions

The Future of Cisco ICM Enterprise and Cisco IPCC Enterprise - Feedback Session

CON-2000
Los Angeles, Monday, 07/07 01:00 PM
Level: Level 2
Technology Focus: Contact Center
Duration: 60
Organization Type: Enterprise

This is an interactive forum where the roadmap for Cisco Intelligent Contact Management (ICM) Enterprise and Cisco IP Contact Center (IPCC) Enterprise will be discussed. Your feedback will be solicited with regard to new features and product direction.

This session is designed for experienced users of Cisco ICM Enterprise or Cisco IPCC Enterprise who would like to contribute feedback and product direction input.

Associated Sessions:

CON-1000 - What's New in Cisco ICM Enterprise Version 5.0 and Cisco IPCC Enterprise Version 5.0

Core Functionality and Routing with Cisco ICM Enterprise and Cisco IPCC Enterprise

CON-2001
Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 07:00 PM



Level: Level 2
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session focuses on the core features, vision and direction of Cisco Intelligent Contact Management (ICM) Enterprise and Cisco IP Contact Center (IPCC) Enterprise software products, as well as best practice guidance and examples of how these products are used in real contact centers. The Cisco integration strategy and roadmap for ACD and Cisco IPCC migration will be shared to help attendees plan their future upgrades and understand when features will become available for implementation. Specific deployment and implementation of core features will be presented with regard to fault tolerance and disaster recovery, redundant Peripheral Gateways (PG) will be discussed, and leveraging Cisco ICM Enterprise and Cisco IPCC Enterprise scripting to continue routing during failure at contact center sites will also be covered.

This session is designed for anyone involved in deploying, or looking to deploy Cisco ICM Enterprise or Cisco IPCC Enterprise implementations.

Associated Sessions:

CON-4000 - Advanced Core Functionality and Routing with Cisco ICM Enterprise and Cisco IPCC Enterprise

Contact Center Reporting with Cisco ICM Enterprise and Cisco IPCC Enterprise

CON-2002
Los Angeles, Tuesday, 07/08 07:00 PM; Los Angeles, Thursday, 07/10 10:00 AM
Level: Level 2
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session covers the basics of Cisco Intelligent Contact Management (ICM) Enterprise and Cisco IP Contact Center (IPCC) Enterprise reporting, including the Cisco ICM Enterprise and Cisco IPCC Enterprise reporting environment, the various levels of reporting entities, and how to use the reports for different views of the data. The session examines how call flow affects the data shown on Cisco IPCC Enterprise reports by looking at sample call scenarios and tracing

the call through standard reports. The database schema and how Cisco ICM Enterprise data is captured, summarized and populated will be reviewed. Infomaker will be introduced as a tool for customizing standard templates. This session will cover how Cisco ICM Enterprise and Cisco IPCC Enterprise entities relate to certain stages of the call flow, and how to use Cisco ICM Enterprise tools to modify standard reporting templates.

This session is designed for anyone using Cisco ICM Enterprise and Cisco IPCC Enterprise reporting tools to manage a contact center. Attendees should have a good understanding of contact center metrics and a basic understanding of simple call flows.

Associated Sessions:

CON-4001 - Advanced Contact Center Reporting with Cisco ICM Enterprise and Cisco IPCC Enterprise

Contact Center Scripting with Cisco ICM Enterprise and Cisco IPCC Enterprise

CON-2003
Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM
Level: Level 2
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session covers basic scripting techniques with Cisco Intelligent Contact Management (ICM) and Cisco IP Contact Center (IPCC) Enterprise. It includes how to send voice calls and other media tasks to targets such as skill groups, how to queue tasks when no agents are available, how to create and use basic formulas to make routing decisions, and how to create and schedule basic administrative scripts to perform various functions. In addition to scripting, this session will teach attendees how to use Call Tracer to send test calls to the Cisco ICM Enterprise or Cisco IPCC Enterprise routing engines. This session also covers how to use the various real-time monitoring components of Script Editor to monitor some of the many routing statistics that are available.

This session is designed for customers who have limited experience with Cisco ICM Enterprise and Cisco IPCC Enterprise and the Cisco ICM Script Editor for these solutions.



Associated Sessions:

CON-4002 - Advanced Contact Center Scripting with Cisco ICM Enterprise and Cisco IPCC Enterprise

TDM to IP Contact Center Migration with Cisco ICM Enterprise and Cisco IPCC Enterprise - PART 1

CON-2004

Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Contact Center

Duration: 120

Organization Type: Enterprise

This session presents the concepts of migrating from a traditional TDM ACD environment to an IP contact center using Cisco IP Contact Center (IPCC) Enterprise. The session addresses common myths and misconceptions of how TDM and IP contact centers can be integrated by using the core Cisco ICM Enterprise architecture and powerful multichannel options. Specific topics will include: Pre-, Post- and translation-Routing in a hybrid environment, centralized routing, queuing and reporting for both enterprise and individual contact centers, as well as agent-level reporting. New deployment models will be covered, including using Cisco Internet Service Node (ISN) as an IP-based network IVR for prompting, data collection and queuing across the multi-vendor enterprise as a migration to IP-based communications.

This session is designed for current Cisco ICM Enterprise customers who want an understanding of what is involved to migrate from their existing TDM-based ACD environments to Cisco IPCC Enterprise. This session continues with greater technical detail in the CON-4004 session - TDM to IP Contact Center Migration with Cisco ICM Enterprise and Cisco IPCC Enterprise - Part 2.

Associated Sessions:

CON-4004 - TDM to IP Contact Center Migration with Cisco ICM Enterprise and Cisco IPCC Enterprise - Part 2

Upgrade Planning for Cisco ICM Enterprise and Cisco IPCC Enterprise

CON-2005

Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: Contact Center

Duration: 120

Organization Type: Enterprise

This session covers the necessary planning elements for successful migration from earlier versions to Version 4.6.2 and Version 5.0 of Cisco Intelligent Contact Management (ICM) Enterprise and Cisco IP Contact Center (IPCC) Enterprise, including readiness reviews in the areas of hardware, third-party software (Windows 2000, SQL7, SQL 2000, for example), and peripherals (automatic call distributor [ACD] and voice response unit [VRU]). A multiphase project approach will be described in terms of risk mitigation and more effective troubleshooting. Note: The upgrade path to Cisco ICM Enterprise Version 5.0 and Cisco IPCC Enterprise Version 5.0 is from a baseline of Windows 2000, Cisco ICM/IPCC Enterprise Version 4.6.2 and SQL 7. The session will cover both getting to that baseline from Cisco ICM/IPCC Enterprise Version 4.X as well as the upgrade from Cisco ICM/IPCC Enterprise Version 4.6.2 to Cisco ICM/IPCC Enterprise Version 5.0.

This session is designed for customers currently on a Cisco ICM Enterprise or Cisco IPCC Enterprise release prior to 5.0, who want an understanding of what is involved in an upgrade to Cisco ICM Enterprise Version 5.0 or Cisco IPCC Enterprise Version 5.0.

Associated Sessions:

CON-2001 - Introduction to Core Functionality and Routing with Cisco ICM Enterprise and Cisco IPCC Enterprise

The Future of Cisco IPCC Express - Feedback Session

CON-2010

Los Angeles, Monday, 07/07 03:00 PM

Level: Level 2

Technology Focus: Contact Center

Duration: 60

Organization Type: Enterprise



This is an interactive forum where the roadmap for Cisco IP Contact Center (IPCC) Express Edition (formerly IP ICD) will be discussed. Your feedback will be solicited with regard to new features and product direction.

This session is designed for experienced users of Cisco IPCC Express who would like to contribute feedback and product direction input.

Associated Sessions:

CON-1010 - What's New in Cisco IPCC Express

Cisco Agent Desktop Technical Session

CON-2020
Los Angeles, Tuesday, 07/08 10:00 AM
Level: Level 2
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session covers the features and benefits of Cisco Agent Desktop. This technical discussion will include the architecture of the Cisco Agent Desktop product and a review of the currently available releases, highlighting best practices for configuring and administering Cisco Agent Desktop that result in a lower Total Cost of Ownership (TCO). Also covered will be the use of Cisco Supervisor Desktop for real-time visibility into agent and customer activity and to empower the supervisor to "coach" agents to enhance satisfaction and productivity. This session will conclude with a review of the upcoming Cisco Agent Desktop releases.

This session is designed for anyone involved in deploying or looking to deploy Cisco Agent Desktop within a contact center. This includes current and prospective Cisco Agent Desktop customers as well as integration partners. Attendees should have a good understanding of Cisco Customer Contact solutions.

Associated Sessions:

CON-1020 - Introduction to Cisco Computer Telephony Integration (CTI) Solutions, CON-4020 - Advanced Cisco Computer Telephony Integration (CTI) Solutions

Overview of Outbound Agent Functionality for Contact Centers

CON-2021
Los Angeles, Monday, 07/07 02:00 PM
Level: Level 2
Technology Focus: Contact Center
Duration: 60
Organization Type: Enterprise

This session discusses Cisco Outbound Option (formerly Cisco Blended Agent) and its combination of outbound dialing modes, which complements the powerful inbound call-handling capability of Cisco ICM Enterprise and Cisco IPCC Enterprise with a robust outbound call management solution. Combining the power of Cisco ICM Enterprise Edition, Cisco IPCC Enterprise Edition and Cisco Computer Telephony Integration (CTI), the Cisco Outbound Option provides the ability to design complex outbound campaigns, maximize the use of skilled agents, use individual dialing modes, and deliver rich call contact information to a best-in-class CTI desktop.

This session is designed for anyone involved in deploying or looking to deploy an outbound solution within a Cisco ICM Enterprise or Cisco IPCC Enterprise implementation. Attendees should have a good understanding of Cisco ICM Enterprise or Cisco IPCC Enterprise solutions, however no application development experience will be required.

Associated Sessions:

CON-2001 - Introduction to Core Functionality and Routing with Cisco ICM Enterprise and Cisco IPCC Enterprise

Multichannel Functionality for Contact Centers with Cisco ICM Enterprise Version 5.0 and Cisco IPCC Enterprise Version 5.0

CON-2022
Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 07:00 PM
Level: Level 2
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise



This session covers the multichannel components that are now part of the Cisco Intelligent Contact Management ((CM) Enterprise and Cisco IP Contact Center (IPCC) Enterprise. These components include Cisco Outbound Option, Cisco Web Collaboration Option, and Cisco E-Mail Manager Option. Among the topics covered will be best practices for outbound campaign strategies, integrated and dedicated agents, universal queue in an Cisco IPCC Enterprise environment, and migration strategies.

This session is designed for existing Web and e-mail contact center customers interested in migration strategies, and for existing Cisco ICM Enterprise customers considering adding multichannel functionality. Attendees should have an understanding of contact center technologies. This session will cover some application configuration, but will mainly focus on theory and technology.

Associated Sessions:

CON-2001 - Introduction to Core Functionality and Routing with Cisco ICM Enterprise and Cisco IPCC Enterprise

Cisco IP Interactive Voice Response (IVR) Solutions for Service Providers

CON-2040
Los Angeles, Monday, 07/07 01:00 PM
Level: Level 2
Technology Focus: Contact Center
Duration: 120
Organization Type: Service Provider & Enterprise

This session provides an update on the Cisco Interactive Voice Response (IVR) solution for service providers. Attendees will be provided an overview of the product, implementation options, deployment methodologies for time-division multiplexing (TDM) and voice over IP (VoIP) networks, successes in the market space, and future plans. Included in the session will be a discussion of the difference between the service provider IVR and the standard IP IVR, an overview of success in the industry, and deployment guidelines.

This session is designed for service providers interested in network IVR solutions. Attendees should have some experience with Cisco ICM Enterprise and Cisco ICM Hosted applications. This session will cover

some deployment guidelines, but will mainly focus on product features and technology.

Associated Sessions:

CON-1040 - Offering Managed Services with Cisco IPCC Hosted and Cisco ICM Hosted Solutions, CON-2041 - Service Provider Migration Strategies for Cisco ICM Hosted Edition, CON-1041 - What's New with Cisco IPCC Hosted Edition

Hosting Cisco ICM Services in the Network

CON-2041
Los Angeles, Thursday, 07/10 10:00 AM
Level: Level 2
Technology Focus: Contact Center
Duration: 120
Organization Type: Service Provider - Public

This session provides an update on hosting Cisco ICM services in the UK & Off Shore for service providers. Attendees will be provided an overview of the UK service provider market focussing on options for the implementation & deployment of domestic & offshore Cisco ICM solutions. The session will cover key successes for Cable & Wireless in the market place, how it has achieved differentiation & the roadmap for the future. This will also include a discussion of the specific challenges that service providers face around licencing, upgrades & platform management as well as how service providers can communicate the Cisco roadmap through their service provider channel.

This session is for service providers and other companies interested in learning about how to provide hosted/managed contact center services using Cisco ICM Hosted Edition.

Associated Sessions:

CON-1040 - Offering Managed Services with Cisco IPCC Hosted and Cisco ICM Hosted Solutions, CON-2041 - Service Provider Migration Strategies for Cisco ICM Hosted Edition, CON-1041 - What's New with Cisco IPCC Hosted Edition

Cisco IP Interactive Voice Response (IVR) Solutions

CON-2050



Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 10:00 AM
Level: Level 2
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session provides an update on Cisco IP Interactive Voice Response (IVR) products. Attendees will be introduced to Cisco IVR solutions, successes in the market space, and future plans. Included in the session will be an overview of Cisco IP Queue Manager, Cisco IP IVR and Cisco Internet Service Node (ISN) features, future product plans, and guidelines for choosing an appropriate IVR solution. The session will also feature a discussion of fault tolerance using Cisco IVR products and will offer guidance on planning for the redundancy of an IVR solution. An opportunity for technical questions will be offered.

This session is designed for anyone interested or involved in Cisco IVR solutions. Attendees should have experience with contact center or self-service IVR applications. This session will cover some deployment and redundancy guidelines, but will mainly focus on product features and technology.

Advanced Core Functionality and Routing with Cisco ICM Enterprise and Cisco IPCC Enterprise

CON-4000
Los Angeles, Tuesday, 07/08 07:00 PM; Los Angeles, Thursday, 07/10 01:30 PM
Level: Level 4
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session offers a compendium of advanced techniques for Cisco ICM (ICM) Enterprise and Cisco IPCC (IPCC) Enterprise. Topics include redundant and new types of Peripheral Gateways (PGs), and resilience features such as Cisco ICM Quality of Service (QoS) for Device Management Protocol (DMP) traffic and fault tolerance. Unique routing

approaches, including emergency call routing techniques, universal queue in a time-division multiplexing (TDM) installation, and a method to change the results of routing scripts without actually modifying scripts will be discussed.

This session is designed for experienced contact center customers looking for creative solutions. Attendees should have a thorough understanding of Cisco ICM Enterprise or Cisco IPCC Enterprise solutions. This session focuses heavily on application configuration.

Associated Sessions:

CON-2001 - Introduction to Core Functionality and Routing with Cisco ICM Enterprise and Cisco IPCC Enterprise

Advanced Contact Center Reporting with Cisco ICM Enterprise and Cisco IPCC Enterprise

CON-4001
Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 04:00 PM
Level: Level 4
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session covers how to access and report on the detailed data not available in standard Cisco Intelligent Contact Management (ICM) Enterprise and Cisco IP Contact Center (IPCC) Enterprise reports (DialedNumber, automatic number identification [ANI], caller-entered digits [CED], DigitsDialed, for example) with Infomaker and other reporting tools. The detailed data produced as a result of complex call flows (Conference, Warm Transfers, Requeued Calls, for example) and the specifics of cradle-to-grave call tracking and reporting will be evaluated. The most commonly requested advanced reports will be reviewed, as well as the components necessary to implement them. The Cisco Real-Time Adherence Server, which provides access to real time agent state information independent of Cisco ICM Enterprise and Cisco IPCC Enterprise, will be discussed.

This session designed for anyone heavily involved in Cisco ICM Enterprise and Cisco IPCC Enterprise reporting and data analysis. Attendees should have a



firm understanding of call flows and Cisco ICM Enterprise reporting entities (CallTypes, Services, SkillGroups), and a basic knowledge of MSSQL Server and T-SQL. This session will cover technical aspects of directly accessing the Cisco ICM Enterprise and Cisco IPCC Enterprise tables to provide data not available on standard reports.

Associated Sessions:

CON-2002 - Introduction to Contact Center Reporting with Cisco ICM Enterprise and Cisco IPCC Enterprise

Advanced Contact Center Scripting with Cisco ICM Enterprise and Cisco IPCC Enterprise

CON-4002
Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 07:00 PM
Level: Level 4
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session covers advanced scripting techniques, including: how to dynamically control Web callers while in queue for collaboration or blended collaboration; how to predict queue times in Cisco ICM Enterprise and Cisco IPCC Enterprise scripts; how to overflow emails in Cisco ICM Enterprise and Cisco IPCC Enterprise scripts to Cisco E-Mail Manager Option-specific routing skill groups after emails have been queued without resolution; how to implement contingency scripts among several media routing domains providing priority to some media over others; and how to send and queue a task directly to a specific agent using dynamic labels.

This session is designed for customers looking to learn how to route calls and other tasks beyond using basic queuing. Attendees should have a good understanding of basic Cisco ICM Enterprise and Cisco IPCC Enterprise scripting techniques such as call queuing as well as using basic formulas to route calls.

Associated Sessions:

CON-2003 - Introduction to Contact Center Scripting with Cisco ICM Enterprise and Cisco IPCC Enterprise

Database Concepts for Cisco ICM Enterprise and Cisco IPCC Enterprise

CON-4003
Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 01:30 PM
Level: Level 4
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session details the architecture, administration and performance of the Cisco Intelligent Contact Management (ICM) Enterprise database. The four type of tables in the Cisco ICM Enterprise database -- Configuration, Historical, RealTime and System -- will be discussed and the three types of databases -- Logger, Admin Workstation (AW) and Historical Data Server (HDS) will be compared. Where data resides, when it is updated and how it is purged will be covered. A focus will be placed on the three areas of database administration that are the customer's responsibility -- disk space management, database backup and performance monitoring. Alternative backup strategies will be discussed and compared. The factors that influence disk space usage and system performance will be analyzed, and the tools that can be used to monitor disk space and performance will be discussed.

This session is designed for anyone interested in or involved with Cisco ICM Enterprise database configuration. Attendees should have some familiarity with Cisco ICM Enterprise and its components.

Associated Sessions:

CON-2001 - Introduction to Core Functionality and Routing with Cisco ICM Enterprise and Cisco IPCC Enterprise

TDM to IP Contact Center Migration with Cisco ICM Enterprise and Cisco IPCC Enterprise - PART 2

CON-4004
Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM
Level: Level 4
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise



This session builds upon the concepts presented in CON-2004, presenting technical concepts of migrating from a traditional TDM ACD environment to an IP contact center using Cisco IP Contact Center (IPCC) Enterprise. Sample configuration and call flow scripts will be used to illustrate blending of TDM and IP-based contact centers with multi-channel interactions. Specific tips on configuration differences in migration to IP contact centers from TDM will be presented to help experienced TDM customers understand how they can leverage the flexibility of IP. Migration strategies using Cisco Internet Service Node (ISN) to tie TDM and IP environments will also be illustrated with specific call flows and configuration examples.

This session is designed for current Cisco ICM Enterprise customers who want a more detailed level of understanding of what is involved to migrate from an existing TDM-based ACD environment to a Cisco IP Contact Center Enterprise solution. This session is a continuation of the CON-2004 session - TDM to IP Contact Center Migration with Cisco ICM Enterprise and Cisco IPCC Enterprise - Part 1, and attendees to this session should have first attended CON-2004.

Associated Sessions:

CON-2004 - TDM to IP Contact Center Migration with Cisco ICM Enterprise and Cisco IPCC Enterprise - Part 1

Maximizing Your Cisco IPCC Express Deployment

CON-4010
Los Angeles, Tuesday, 07/08 07:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM
Level: Level 4
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session covers the architecture and the latest features in Cisco IP Contact Center (IPCC) Express (formerly IP ICD), a mid-market contact center solution meeting formal call center requirements. This session details how companies can realize a substantial return on investment by taking advantage of these features during the stages of Cisco IPCC Express deployment. Also discussed will be multi-channel functionality with Cisco IPCC Express, available via a Worldwide Voice

Practice Custom Engineering offering, enabling Web-initiated requests and queued emails to be routed to agents via Cisco IPCC Express. Agent notification occurs via Cisco Agent Desktop with non-voice contacts automatically displayed in an integrated multi-channel cockpit.

This session is designed for anyone involved in or considering deployment of Cisco IPCC Express. Attendees should have experience with contact center or self-service IVR applications, and should be familiar with the Cisco IPCC Express feature set.

Associated Sessions:

CON-4011 - Contact Center Scripting with Cisco IPCC Express

Contact Center Scripting with Cisco IPCC Express

CON-4011
Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 01:30 PM
Level: Level 4
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session demonstrates best practices for Cisco IP Contact Center (IPCC) Express (formerly IP ICD) scripting, including how to create scripts to tailor the complex business rules for several sample companies in different market segments, such as financial, retail, and healthcare. We will use the new product features, such as Automatic Speech Recognition (ASR), Text-to-Speech (TTS), and Voice XML, in the creation of these scripts.

This session is designed for anyone involved in developing business rules and writing scripts for a Cisco IPCC Express contact center. Attendees must be familiar with Cisco IPCC Express, and preferably familiar with the Cisco CRA Editor.

Associated Sessions:

CON-4010 - Maximizing Your Cisco IPCC Express Deployment

Advanced Cisco Computer Telephony Integration (CTI) Solutions



CON-4020

Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 01:30 PM
Level: Level 4
Technology Focus: Contact Center
Duration: 120
Organization Type: Enterprise

This session covers the current state of Cisco Computer Telephony Integration Object Server (CTI OS), the new Cisco CTI OS features being delivered with the Cisco Intelligent Contact Management (ICM) Versions 5.0 and 5.1, outstanding issues, and future plans for Cisco CTI OS. Attendees will be introduced to Cisco CTI OS/Siebel 7 integration, including an architecture overview of the Cisco CTI OS datastore for Siebel 7. This session will also allow attendees to ask more specific Cisco CTI OS programming questions. An additional function -- Cisco IP Phone Agent -- will also be discussed, including a description of the offering, its benefits, overall architecture, as well as hardware and software requirements.

This session designed for anyone involved in deploying or looking to deploy Cisco CTI OS in a contact center. Attendees should have a good understanding of CTI, at least one high-level programming language (Visual Basic, Java, C++, for example), and object-oriented methodologies. This session will cover some detailed programming examples and techniques, but will mainly focus on theory and technology.

Associated Sessions:

CON-1020 - Introduction to Cisco Computer Telephony Integration (CTI) Solutions, CON-2020 - Cisco Agent Desktop Technical Session

Choosing the Correct Voice/Video Signaling Strategy for Your Organization Part 1

VVT-2000
Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM
Level: Level 2
Technology Focus: Signalling Protocols
Duration: 120

Organization Type: Service Provider & Enterprise

These two sessions examine the dominant signaling and control protocols for voice-over-IP (VoIP) communications and VoIP application services. The functional aspects, features, and signal flows, and the strengths and weaknesses of each architecture are presented. This session focuses on the International Telecommunications Union (ITU) protocols H.323 and H.248. The ITU protocols are deployed in many enterprise and service provider networks today. This session examines the H.323 architecture, signal flows within the architecture, and interconnection to applications services. A brief Signaling System 7 (SS7) tutorial is presented to lay the foundation, as the session shifts focus to the H.248 client/server protocol. The session is summarized with an overview of interoperability with other VoIP architectures.

This session is designed to be particularly useful for attendees working in service provider public networks or enterprise networks, who are planning to deploy voice and related services across their IP backbones.

Associated Sessions:

VVT-2003 "Emergency Services and IP Telephony"

VVT-2020 "Designing Service Provider Hosted IP Telephony Networks"

VVT-2021 "Designing and Deploying Managed Voice/Data services for Enterprise and SMB subscribers"

VVT-2022 "Designing Voice Infrastructure & Applications for PSTN Interconnect"

VVT-2030 "H.323 Videoconferencing and Video Telephony Design"

VVT-3010 "Troubleshooting IP Telephony Networks in Campus Environments"

Choosing the Correct Voice/Video Signaling Strategy for Your Organization Part 2

VVT-2001
Orlando, Tuesday, 06/24 04:00 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles,



Tuesday, 07/08 04:00 PM; Los Angeles,
Wednesday, 07/09 04:00 PM
Level: Level 2
Technology Focus: Signalling Protocols
Duration: 120
Organization Type: Service Provider & Enterprise

This session focuses on the Internet Engineering Task Force (IETF) protocols Session Initiation Protocol (SIP) and Media Gateway Control Protocol (MGCP). The IETF protocols are rapidly emerging, with new applications being developed every day. The session provides an in-depth understanding of the SIP elements and architecture, and detailed real-world examples of SIP signal flows, including interoperability with the ITU's H.323 protocol. The session then shifts focus to the MGCP, and the client/server architecture. The session concludes by bringing together the peer-to-peer and client/server protocols in an interoperable architecture.

This session is designed to be particularly useful for attendees working in service provider public networks or enterprise networks, who are planning to deploy voice and related services across their IP backbones.

Associated Sessions:

VVT-2003 "Emergency Services and IP Telephony"

VVT-2020 "Designing Service Provider Hosted IP Telephony Networks"

VVT-2021 "Designing and Deploying Managed Voice/Data services for Enterprise and SMB subscribers"

VVT-2022 "Designing Voice Infrastructure & Applications for PSTN Interconnect"

VVT-2030 "H.323 Videoconferencing and Video Telephony Design"

VVT-3010 "Troubleshooting IP Telephony Networks in Campus Environments"

Emergency Services and IP Telephony Applications

VVT-2003
Orlando, Tuesday, 06/24 04:00 PM; Orlando,
Wednesday, 06/25 01:30 PM; Los Angeles,

Tuesday, 07/08 04:00 PM; Los Angeles,
Wednesday, 07/09 01:30 PM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type: All

This session provides a summary of the design issues relating to the proper routing of emergency calls within a Cisco AVVID (Architecture for Voice, Video and Integrated Data) network. It will discuss emergency call considerations covering the interaction between the telephony topology, the dial plan, user and device mobility, and the choice of gateways and their interface point into the telephony network. This presentation is applicable for any enterprise with a footprint spanning more than one public safety jurisdiction area.

This session is for Network Architects, Engineers and Operators interested in emergency telephony services in an IP telephony environment.

Associated Sessions:

VVT-2000 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 1

VVT-2001 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 2

Designing and Deploying IP Telephony Applications

VVT-2010
Orlando, Wednesday, 06/25 10:00 AM; Orlando,
Thursday, 06/26 10:00 AM; Los Angeles,
Wednesday, 07/09 10:00 AM; Los Angeles,
Thursday, 07/10 10:00 AM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type: Enterprise

This session focuses on the design and deployment of both Cisco and third-party IP telephony applications that interface with Cisco CallManager software. This session provides a systems design approach for integrating existing IP telephony applications over a Cisco IP telephony infrastructure. Cisco CallManager Computer Telephony Integration (CTI) scalability and redundancy design considerations will be addressed



for Cisco IP telephony applications such as the Cisco Customer Response Solutions (CRS) platform, the Cisco IP SoftPhone, and Cisco IP Phone services. General provisioning guidelines will also be given for third-party applications. An example of an enterprise applications design and deployment scenario will tie all of the session concepts together.

Attendees must have previous experience with Cisco CallManager administration. Familiarity with Cisco CTI applications is helpful but not required.

Associated Sessions:

VVT-4011, "Designing and Deploying Advanced IP Phone services"

Deploying Unified Communications in the Enterprise

VVT-2013

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: Enterprise

Making a business and technical decision to deploy Unified Communications in the enterprise requires considering many deployment and implementation options. This session discusses the most important features and factors involved in a successful Cisco Unity deployment. An overview will be provided of the most critical features, functions, interoperability, redundancy, and deployment options. The subject areas covered in the session will include:

- A Cisco Unified Communications approach to message access
- Cisco Unified Communications architecture

- Features that Cisco Unified Communications delivers to your enterprise

- Important features of Cisco Unity Version 4.X
- Administration and subscriber options
- Cisco Unity technology for Domino and DUCS (Domino Unified Communications Services)
- Cisco Unity and Personal Assistant design and deployment guidelines

- Microsoft Exchange/Active Directory and Cisco Unity technology
- Voice-mail-only requirements
- Cisco Unity technology for the Domino architecture
- Message store sizing, supported hardware platforms, and deployment models
- Cisco Unity networking and failover
- Cisco Unity Message Repository functions
- Traditional voice-mail interoperability with the Cisco Unity application
- The Cisco Unity bridge
- Helpful Cisco Unity and Personal Assistant links

This session is designed to be particularly useful for Cisco Unity and voice system designers with architectural responsibility during the planning and design phases of an enterprise-wide telephony infrastructure/unified communications deployment, as well as groupware-specific messaging architects and engineers. Attendees should have a working knowledge of telephony dial plans and telephony routing concepts, of traditional voice-mail systems and administration, and of groupware (Microsoft Exchange or IBM/Lotus Domino).

Associated Sessions:

VVT-3010 Troubleshooting IP Telephony Networks Part 1

VVT-3011 Troubleshooting IP Telephony Networks Part 2

Centralized and Distributed Deployment Models for IP Contact Centers

VVT-2014

Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 2

Technology Focus: Contact Center

Duration: 120

Organization Type: Enterprise

This session focuses on planning and deploying the Cisco IP Contact Center (IPCC) solution (Express and Enterprise) for small, medium-sized, and large deployments. Specific centralized and distributed deployment models and configurations will be presented. Attendees will gain an in-depth



understanding of Cisco IPCC interworking components, their functions, and the decisions needed while planning a Cisco IPCC deployment. Topics include configuration overview, scripting overview (business logic), call flows, call routing, call transfers, Cisco interactive voice response (IVR) queuing, and single- and multi-site deployments. Attendees will receive recommendations for a successful deployment and implementation.

This session is designed to be particularly useful for enterprise network managers, engineers and call-center teams that need to plan and deploy the Cisco IP Contact Center (IPCC) solution. Attendees should have a basic understanding of IPCC concepts prior to attending this session.

Associated Sessions:

VVT-2015 Designing IP Contact Centers: Resources, Servers, and Bandwidth Provisioning

Designing IP Contact Centers: Resources, Servers, and Bandwidth Provisioning

VVT-2015

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 2

Technology Focus: Contact Center

Duration: 120

Organization Type: Enterprise

The session reviews traffic engineering principles and the use of traffic Erlang models and other methods to determine required call center resources, server capacities, and bandwidth requirements. Attendees will learn how to determine the required number of agents (inbound and outbound), interactive voice response (IVR) ports, and gateway ports (PSTN trunks) using traffic calculators to meet required service levels. Topics include sizing capacity rules for determining the number of Cisco CallManager and Cisco IP Contact Center (IPCC) servers required. This session will highlight the Cisco IPCC application/real-time traffic flows; network quality of service (QoS), and bandwidth requirements between remote Cisco IPCC components deployed over a WAN.

This session is designed to be particularly useful for enterprise network managers, engineers and call-center teams that need to plan and deploy the Cisco IP Contact Center (IPCC) solution. Attendees should have a basic understanding of IPCC interworking concepts and deployment models prior to attending this session.

Associated Sessions:

VVT-2014 Centralized and Distributed Deployment Models for IP Contact Centers

Designing Service Provider Hosted IP Telephony Networks

VVT-2020

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: Service Provider External Services

Current economic conditions have forced many companies to figure out how to increase revenue and lower operational expenditures. Enterprises have begun to look at outsourcing various services, and service providers have been looking at how to manage those outsourced services. One of those services is Hosted IP Telephony, commonly referred to as IP Centrex or Virtual IP PBX. This session covers the design considerations and configuration of this type of solution. Topics include security, the use of ALGs or border controllers in the solution, quality of service (QoS) both on the LAN and WAN, and survivability on the customer premises equipment (CPE). The session will also discuss network availability and protocol considerations.

This session is intended for audiences with a working knowledge of SIP and MGCP.

Associated Sessions:

VVT-2000 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 1



VVT-2001 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 2

Designing and Deploying Managed Voice/Data Services for Enterprise and SMB Subscribers

VVT-2021

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: All

Managed voice and data services enable service providers to offer business customers a cost-effective, outsourced alternative to legacy PBX systems and time-division multiplexing (TDM) Centrex services. Now service providers can sell, deploy, and provide ongoing management services for their customers' IP Telephony solutions. This session covers various H.323-based enterprise and small and medium-sized business (SMB) deployment models, including design considerations for dial plan and call routing design, call flows, scalability, and redundancy. Other areas of focus include a closer look at how the multiple deployment options interconnect in a unified architecture, operations support system (OSS) overlay, Multiprotocol Label Switching (MPLS)-based network advantages and specifically, how they apply to voice-over-IP (VoIP) applications.

This session will be of particular interest to Service Provider and Enterprise Network Architects, Engineers and Operators interested in deploying managed Voice Services.

Associated Sessions:

VVT-2000 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 1

VVT-2001 Choosing the Correct Voice and Video Signaling Strategy for Your Organization Part 2

VVT-2022 Designing Voice Infrastructure and Applications for PSTN Interconnect

Designing Voice Infrastructure and Applications for PSTN Interconnect

VVT-2022

Orlando, Wednesday, 06/25 04:00 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: Service Provider - Public

Both Service Providers and Enterprise customers can benefit from IP-based voice services and applications for increased return-on-investment, capacity, next-generation services, and reduced expenditures. Interconnecting a TDM-based voice network (PSTN) with an IP-based voice infrastructure provides these opportunities while maintaining interoperability across multiple types of signaling networks. This session will cover architecture choices and design issues important for interconnecting packet voice infrastructures & applications to the PSTN. These issues include: - network analysis and dimensioning - network availability & redundancy - PSTN interconnect architectures (voice gateways, signaling controllers, softswitches) - signaling interworking (SS7, ISDN, R2/CAS to/from VoIP) - billing & management issues - network security - numerous case studies.

It is assumed that the attendee will have some knowledge of PSTN and packet voice technologies.

This session will be of value to anyone interested in learning how designing a VoIP infrastructure for PSTN interconnect, PSTN gateways, long distance transit VoIP, wholesale voice, or managed business voice. Attendees should have a basic background in PSTN and VoIP call control (SS7, ISDN, H.323, and SIP).

Associated Sessions:

VVT-2000 "Choosing The Correct Voice/Video Signaling Strategy For Your Organization, Part 1"

VVT-20001 "Choosing The Correct Voice/Video Signaling Strategy For Your Organization, Part 2"

VVT-2020 "Designing Service Provider Hosted IP Telephony Networks"



VVT-2021 "Designing and Deploying Managed Voice/Data services for Enterprise and SMB subscribers"

VVT-2023 "Designing Voice over Broadband / Local Services"

Architectures for Designing Voice over Broadband/Local Services

VVT-2023

Orlando, Wednesday, 06/25 01:30 PM; Los

Angeles, Wednesday, 07/09 01:30 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: Service Provider & Enterprise

This session covers the central call control architecture and the service features that are common to all access technologies, including billing, network management systems (NMSs), and operations support. Various broadband access technologies will be discussed, including core features that are specific to the access technology. In this context, The Cisco Broadband Local Integrated Services Solution (BLISS) architecture, which provides a comprehensive unified solution for providing residential voice-over-IP (VoIP) services over many different broadband access technologies, will be discussed.

Attendees should have a solid background in VoIP concepts. An understanding of signaling and call control is preferred.

Associated Sessions:

VVT-2000 "Choosing The Correct Voice/Video Signaling Strategy For Your Organization Part 1"

VVT-2021 "Designing and Deploying Managed Voice/Data Services for Enterprise and SMB subscribers"

Troubleshooting IP Telephony Networks Part 1

VVT-3010

Orlando, Tuesday, 06/24 01:30 PM; Orlando,

Thursday, 06/26 01:30 PM; Los Angeles,

Tuesday, 07/08 01:30 PM; Los Angeles,

Thursday, 07/10 01:30 PM

Level: Level 3

Technology Focus: General Networking Features

Duration: 120

Organization Type: All

This session focuses on a selection of tools such as Cisco CallManager-based traces, to present the low-level signaling flows and their associated entries in the trace files. Case studies of various types of calls are used, and the associated expected results are introduced. Line-by-line analysis of the trace file entries is supported with call flow diagrams; allowing the audience to become familiar with fundamental call flow concepts required as the foundation of any troubleshooting effort.

This session is designed to be particularly useful for networking professionals with technical hands-on responsibilities over a Cisco CallManager environment. Attendees should be familiar with the general configuration and operation of Cisco CallManager and associated applications, but do not need to know how to troubleshoot the problems.

Associated Sessions:

VVT-2000 "Choosing The Correct Voice/Video Signaling Strategy For Your Organization, Part 1"

VVT-20001 "Choosing The Correct Voice/Video Signaling Strategy For Your Organization, Part 2"

Troubleshooting IP Telephony Networks Part 2

VVT-3011

Orlando, Tuesday, 06/24 04:00 PM; Orlando,

Thursday, 06/26 04:00 PM; Los Angeles,

Tuesday, 07/08 04:00 PM; Los Angeles,

Thursday, 07/10 04:00 PM

Level: Level 3

Technology Focus: General Networking Features

Duration: 120

Organization Type: All

The session discusses the following 3 IP Telephony components which must be well understood in order to facilitate troubleshooting: Digit Analysis, Echo and Directory Integration.



Digit Analysis: In a Cisco IP Telephony network call setup is handled by Call Manager (CCM). CCM collects and analyzes the dialed digits in order to route the call as required. This session provides insight into how CCM does digit analysis and how it is influenced by translation and route patterns, partitions, calling search spaces, etc. Sample CCM traces are discussed in detail in order to show how common digit analysis problems can be identified and corrected.

Echo: Echo is a natural part of any telephony network. This session helps the attendee understand why echo occurs, and what can be done to troubleshoot and minimize echo. G.168 echo canceling enhancements first introduced in IOS 12.2(11)T are also discussed.

Directory Integration: Call Manager relies on the integrated DC Directory or an external directory such as iPlanet or Active Directory (AD). This session looks under the covers and reveals see how CCM interacts with the directory. At the same time common directory integration problems and useful troubleshooting techniques are discussed.

This session is designed to be particularly useful for networking professionals with technical, hands-on responsibilities over a Cisco CallManager environment. Attendees should be familiar with the general configuration and operation of Cisco CallManager and associated applications, but do not need to know how to troubleshoot the problems.

Associated Sessions:

VVT-2000 Choosing the Correct Voice/Video Signaling Strategy For Your Organization Parts 1

VVT-2001 Choosing the Correct Voice/Video Signaling Strategy For Your Organization Parts 2

VVT-2010 Designing and Deploying IP Telephony Applications

VVT-2011 Designing Voice- and Video-Enabled IPsec VPNs

VVT-2013 Deploying Cisco Unified Communications in the Enterprise

Advanced Dial Plan Design for IP Telephony Networks

VVT-4010

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 4

Technology Focus: General Networking Features

Duration: 120

Organization Type: Service Provider & Enterprise

The dial plan is one of the most important and complex elements in IP telephony design. In IP telephony networks, the dial plan provides reachability of dialed destinations, flexibility to select alternative routes based on route availability or cost where digit manipulation is required, and calling policies based on users or groups. This session provides an in-depth view of the Cisco CallManager dial plan construct and operation, and detailed dial-plan design guidelines for each of the IP telephony deployment models with recommended best practices to ensure successful, scalable deployments. This session also covers the various dial plan tools available in Cisco CallManager, such as route patterns; translation patterns for digit manipulation; dial plan interaction with PTSN gateways; and remote IP WAN calls through the H.323 gatekeeper. The session also discusses how to ensure that the primary path for voice calls is the IP WAN. Depending on the deployment model, overlapping dial plans are typically required. This will be covered, along with dial plan considerations for voice mail and other IP-based voice applications.

This session is designed to be particularly useful for system designers with architectural responsibility during the planning and design phases of an enterprise-wide telephony infrastructure, and networking professionals with technical and/or operational responsibilities over a Cisco CallManager-based system. Working knowledge of dial plans and telephony routing concepts (Cisco CallManager-based or not) is highly desirable.

Associated Sessions:

VVT-2000 Choosing the Correct Voice/Video Signaling Strategy For Your Organization Parts 1

VVT-2001 Choosing the Correct Voice/Video Signaling Strategy For Your Organization Parts 2



VVT-2011 Designing Voice- and Video-Enabled IPsec VPNs

VVT-2013 Deploying Cisco Unified Communications in the Enterprise

Designing and Developing Advanced IP Phone Services

VVT-4011

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 4

Technology Focus: General Networking Features

Duration: 120

Organization Type: Enterprise

This session discusses how to combine voice- and Web-based transactions by learning how to develop IP phone services. Intended for systems architects and programmers, this session will show you how to build powerful voice and data applications for the enterprise using the Cisco API for its SCCP-based IP phones. The session focuses on programming IP phone services using Cisco XML objects for the Cisco IP Phone as well as its available software developer kit (SDK) tools.

Network Architects, Engineers, and programmers looking for more information on how to build powerful voice and data applications for the enterprise.

Associated Sessions:

VVT-2010 "Designing and Deploying IP Telephony Applications"

Wide Area Networks

Introduction to Layer 2 Transport & Tunneling Technologies (L2VPNs)

ACC-1000

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 1

Technology Focus: General Networking Features

Duration: 120

Organization Type: Service Provider External Services

This session provides an in-depth analysis of the technologies available for the transport of Layer 2 frames across IP and Multiprotocol Label Switching (MPLS) cores. Focusing on the advantages of consolidated core networks, service providers will receive an overview of new technologies that enable forwarding ATM, Frame Relay, Ethernet, and other encapsulations directly over IP-based cores. The presentation will discuss efforts being made in the IETF to standardize methods of Layer 2 Transport for packet switched networks (PSNs). The Cisco implementation of Any Transport over MPLS (AToM), Layer 2 Tunneling Protocol Version 3 (L2TPv3), Virtual Private LAN Service (VPLS), and Layer 2 Interworking protocols will be discussed, as well as the problems these services solve and some of the common challenges associated with them.

This session is designed to be useful for all attendees and particularly useful for service providers. Attendees should have an understanding of IP and MPLS, routing, and Layer 2 encapsulations.

Associated Sessions:

ACC-2011 - Layer 2 Transport and Tunneling (L2VPN) Application and Deployment

Layer 2 Transport and Tunneling (L2VPN) Application & Deployment

ACC-2001

Orlando, Wednesday, 06/25 04:00 PM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: Service Provider External Services

This presentation addresses how service providers are applying Layer 2 VPN technology to enhance usage of their converged networks. Using a case study approach to several deployment scenarios, this session focuses on how ATM, Ethernet, and Frame



Relay edge services can be deployed over packet switched networks. This includes looking at issues associated with security, differentiated services and service verification. For a Multiprotocol Label Switching (MPLS) backbone, this presentation will discuss how traffic engineering and bandwidth protection can be used in some circumstances to enhance service-level agreements.

Attendees should have a basic understanding of Any Transport over MPLS (AtoM), Layer 2 Tunneling Protocol Version 3 (L2TPv3) and basic Layer 2 Interworking covered in the introductory course. Also beneficial is a basic understanding of quality-of-service (QoS) mechanisms available to IP, MPLS, Frame Relay, Ethernet, and ATM.

This session is designed to be useful for all attendees.

Associated Sessions:

ACC-1000 Introduction to Layer 2 Transport and Tunneling Technologies (L2VPNs)

Troubleshooting WAN Protocols in Cisco IOS Software

ACC-3000

Orlando, Thursday, 06/26 01:30 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Thursday, 07/10 01:30 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 3

Technology Focus: General Networking Features

Duration: 120

Organization Type: All

This session focuses on troubleshooting commonly deployed WAN protocols on Cisco IOS Software-based enterprise platforms. Building on their configuration experiences, participants learn how to troubleshoot scenarios such as "interface up, but line protocol down," "red, yellow, and blue alarms," "link up, but cannot pass traffic," and data-link connection identifier (DLCI) mapping problems. In addition to Layer 2 WAN protocols, this session also focuses on how to troubleshoot Layer 1 WAN problems arising on

T1/T3 (T-carriers) and Synchronous Optical Network (SONET) lines.

This session is designed for enterprise, small, and mid-sized business customers in charge of WAN implementation and maintenance. Networkers who are experienced in Cisco IOS Software configuration of ATM, Frame Relay, Point-to-Point Protocol (PPP), or High-Level Data Link Control (HDLC) protocols should attend. The session focuses on troubleshooting these WAN protocols, and attendees should be familiar with the associated configuration and terminology.

Internet Service Provider Security Best Practices

SEC-2007

Orlando, Tuesday, 06/24 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Service Provider - Internal

This session will focus on the foundational requirements necessary to improve service provider backbone security. Security is a paramount requirement in the Internet today. As the number of security incidents increases, particularly direct infrastructure attacks, service providers have to secure their backbones to protect not only their customers but also the overall stability of the global Internet. This session will provide an overview of designs and features available to SPs to help improve security by "hardening" the core network. During this session, we will review SP-centric security best practices, and network element and routing protocol security recommendations. We will also examine the deployment of security specific features and how those features can be used to improve backbone security.

This session is designed to be particularly useful for service provider network engineers. It will also provide insight into service provider security for network and security professionals in enterprise environments.

Associated Sessions:



The following session title(s) are associated with this session:-

SEC-2008 Service Provider Responses to Denial of Service Attacks,

SEC-2004 Responding to Security Incidents

Service Provider Responses to Denial of Service Attacks

SEC-2008

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Wednesday, 07/09 04:00 PM

Level: Level 2

Technology Focus: Security

Duration: 120

Organization Type: Service Provider - Internal

Denial-of-Service Attacks in their various forms are becoming a permanent problem on ISP networks. Most attacks last a very short time, or are small in bandwidth, but the number of "serious" attacks is increasing. ISPs need to be prepared to detect, trace and counter-act DoS attacks quickly and efficiently. Over the last few years a complete "toolkit" was developed to allow ISPs to trace and mitigate DoS attacks effectively. This session explains relevant techniques for ISPs to trace DoS attacks, classify them, and to counter-act in a scalable way, for example with remote-triggered black-hole filtering using BGP as a signalling mechanism. The DoS solutions of Arbor Networks and Riverhead, both Cisco partners, will be explained as well.

This session is designed to be particularly useful for service provider network engineers. It will also provide insight into service provider security for network and security professionals in enterprise environments.

Associated Sessions:

The following session title(s) are associated with this session:-

SEC-2007 Internet Service Provider Security Best Practices, SEC-2004 Responding to Security Incidents

Wireless Networks

Introduction to 802.11 Wireless Networks

ACC-1010

Orlando, Tuesday, 06/24 10:00 AM; Orlando, Wednesday, 06/25 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM; Los Angeles, Wednesday, 07/09 10:00 AM

Level: Level 1

Technology Focus: General Networking Features

Duration: 120

Organization Type: All

This session provides an introduction to wireless IEEE 802.11 LAN technology, including wireless radio characteristics, fundamental concepts, government regulation, basic IEEE 802.11 architecture, Media Access Control (MAC), modulation techniques used, and basic differences between certain IEEE 802.11 technologies.

This session is designed to be useful for all attendees.

Associated Sessions:

ACC-2010 Designing Wireless 802.11 Networks, ACC-4010 Advanced 802.11 Wireless Design for Enterprise Roaming, ACC-2011 Securing 802.11 Wireless Networks, ACC-2012 Managing and Diagnosing 802.11 Wireless LANs, ACC-2013 Design and Deployment of Outdoor 802.11 Bridging Networks, and ACC-4010 Advanced 802.11 Designs for Voice-Enabled Enterprise Roaming

Designing and Deploying Multiservice Networks for Mobile Service Providers

ACC-2000

Orlando, Tuesday, 06/24 10:00 AM; Los Angeles, Tuesday, 07/08 10:00 AM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: Service Provider Internal Infrastructure

Mobile service providers are at a crossroads and need to decide to what degree they will adopt new data services (and new revenue streams) or remain as they



are and consolidate their networks to a common infrastructure to reduce cost of ownership.

This session covers principles of designing and deploying the transport layer for today's mobile and multiservice networks, including the support of future services, and issues and challenges that need to be addressed in the migration from cell to frame-based technologies. These services include corporate virtual private network solution services (VPNSSs) like GSM data access, integrated voice and data, and multiaccess mobility; access technologies (wireless LANs); and voice transit. This session examines the relevance of underlying technologies like Layer 2 Transport and Tunneling (L2VPN), Multiprotocol Label Switching (MPLS), ATM/Frame Relay, and time-division multiplexing (TDM), which will be explained in terms of their association with mobile and multiservice architectures.

Network design options for new data services and deployment scenarios for migration from Layer 2 to Layer 3 VPNs will be discussed. Flexibility is critical in this uncertain world, and maximizing opportunities is crucial for survival and growth for mobile and multiservice network operators.

This session is designed to be useful for mobile service providers.

Associated Sessions:

ACC-2030 Deploying 2.5G and 3G Technologies and Services in GSM/UMTS and CDMA Networks

Designing Wireless 802.11 Networks

ACC-2010
Orlando, Tuesday, 06/24 01:30 PM; Orlando, Wednesday, 06/25 01:30 PM; Los Angeles, Tuesday, 07/08 01:30 PM; Los Angeles, Wednesday, 07/09 01:30 PM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type: All

This section focuses on wireless LAN (WLAN) architecture, design, and definition. Topics include the various WLAN architectures available today, how to choose the right technology, and common problems that arise during the design and implementation stages of a WLAN project. Emphasis is on defining the

requirements of a WLAN based on applications, networks, and user requirements. The advantages and disadvantages of different types of designs and architectures are discussed, and design examples are provided to highlight various designs and common issues that arise with WLANs.

Prerequisites: Introduction to Wireless 802.11 Networks

This session is designed to be useful for attendees considering WLANs, or who are in the early design stages of a WLAN project.

Associated Sessions:

ACC-1000 Introduction to 802.11 Wireless Networks, ACC-4010 Advanced 802.11 Wireless Design for Enterprise Roaming, ACC-2011 Securing 802.11 Wireless Networks, ACC-2012 Managing and Diagnosing 802.11 Wireless LANs, ACC-2013 Design and Deployment of Outdoor 802.11 Bridging Networks

Securing 802.11 Wireless Networks

ACC-2011
Orlando, Tuesday, 06/24 04:00 PM; Orlando, Wednesday, 06/25 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM
Level: Level 2
Technology Focus: General Networking Features
Duration: 120
Organization Type: All

This advanced session on securing wireless LANs (WLANs) includes an overview of early WLAN security and identifies and details existing vulnerabilities and threats to WLANs. Topics discussed include the use of virtual private networks (VPNs), dynamic keying, and authentication systems; an introduction to WLAN cryptographic algorithms; and securing legacy 802.11b devices. Design scenarios and examples underscore the topics discussed, rounding out the theme of designing and deploying secure WLANs.

This session is designed to be useful for all attendees.

Associated Sessions:

ACC-1000 Introduction to 802.11 Wireless Networks, ACC-2010 Designing Wireless 802.11 Networks, ACC-4010 Advanced 802.11 Wireless Design for



Enterprise Roaming, ACC-2012 Managing and Diagnosing 802.11 Wireless LANs, ACC-2013 Design and Deployment of Outdoor 802.11 Bridging Networks

Managing and Diagnosing 802.11 Wireless LANs

ACC-2012

Orlando, Wednesday, 06/25 01:30 PM; Orlando, Thursday, 06/26 10:00 AM; Los Angeles, Wednesday, 07/09 01:30 PM; Los Angeles, Thursday, 07/10 10:00 AM

Level: Level 2

Technology Focus: Network Management and Services

Duration: 120

Organization Type: Service Provider & Enterprise

This session focuses on management and operation of a wireless LAN (WLAN) infrastructure and the diagnosis of wireless network problems requiring attention leading to implementation modification. Topics include element management, integration into existing enterprise management systems (EMSs), and radio frequency management, with an emphasis on techniques for issue diagnosis and troubleshooting using the Cisco Wireless LAN Solutions Engine (WLSE) and other third-party applications. Other operations tasks covered include security management (such as rogue access point detection and mitigation) and client management. Diagnosis of the wireless network encompasses how to diagnose pre- and post-implementation problems, such as placement of wireless devices and bandwidth management.

Prerequisites: Introduction to Wireless 802.11 Networks

This session is designed to be useful for anyone involved in implementation and management of wireless LANs.

Associated Sessions:

ACC-1000 Introduction to Wireless 802.11 Networks, ACC-4010 Advanced 802.11 Wireless Design for Enterprise Roaming, ACC-2011 Securing 802.11 Wireless Networks, ACC-2013 Design and Deployment of Outdoor 802.11 Bridging Networks

Design and Deployment of Outdoor 802.11 Bridging Networks

ACC-2013

Orlando, Wednesday, 06/25 04:00 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Wednesday, 07/09 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 2

Technology Focus: General Networking Features

Duration: 120

Organization Type: All

This advanced session on 802.11 wireless bridging design includes an overview of wireless bridging along with technology tradeoffs. Topics discussed include the transport of data, voice, and video over wireless bridge links; wireless bridging network design guidelines, including site surveys, antenna selection, and alignment; troubleshooting; propagation; and interference. Design scenarios and examples are drawn from various industries.

Prerequisites: Introduction to Wireless 802.11 Networks

This session is intended for anyone who may be considering wireless bridging, or who has multiple networks that need to be connected.

Associated Sessions:

ACC-1000 Introduction to 802.11 Wireless Networks, ACC-2010 Designing Wireless 802.11 Networks, ACC-4010 Advanced 802.11 Wireless Design for Enterprise Roaming, ACC-2011 Securing 802.11 Wireless Networks, ACC-2012 Managing and Diagnosing 802.11 Wireless LANs

Deploying 2.5G and 3G Technologies and Services in GSM/UMTS and CDMA Networks

ACC-2030

Orlando, Wednesday, 06/25 10:00 AM; Orlando, Thursday, 06/26 01:30 PM; Los Angeles, Wednesday, 07/09 10:00 AM; Los Angeles, Thursday, 07/10 01:30 PM

Level: Level 2

Technology Focus: Mobility

Duration: 120

Organization Type: Service Provider - Public



This session covers the basic technologies used today in cellular networks to provide data services. It discusses in detail General Packet Radio Service (GPRS), Universal Mobile Telephone System (UMTS), 1xRTT, and the evolution to 3G+. Access, Radio Access Network (RAN), and core networks are also discussed. This session focuses on deploying data services over the bearer technologies used in cellular data networks, and discusses voice evolution from 2.5G to 3G+. Finally, the introduction of integrating wireless LAN (WLAN) technologies and mobility into cellular data networks is discussed.

This session is designed to be particularly useful for:

- Service provider and enterprise technical consultants and systems engineers
- Business development managers responsible for wireless technologies
- Mid-level management in both service provider and enterprise organizations who want to learn more about what wireless technologies can offer

Associated Sessions:

ACC-2000 Designing and Deploying Multiservice Networks for Mobile Service Providers

Advanced 802.11 Designs for Voice enabled Enterprise Roaming

ACC-4010

Orlando, Tuesday, 06/24 04:00 PM; Orlando, Thursday, 06/26 04:00 PM; Los Angeles, Tuesday, 07/08 04:00 PM; Los Angeles, Thursday, 07/10 04:00 PM

Level: Level 4

Technology Focus: Mobility

Duration: 120

Organization Type: Enterprise

This session focuses on the design and configuration guidelines for enterprises deploying a campus network infrastructure capable of supporting wireless users. This includes roaming devices such as 802.11 WLAN IP phones, or PDAs using roaming infrastructure technologies like Layer 2 802.11 Roaming, Proxy Mobile IP (PMIP), and Mobile IP.

Using a building-block approach, this session lays a roaming-enabled WLAN network on top of the base campus foundation and discusses 802.11 endpoints, with emphasis on the endpoints that are expected to be in motion (such as WLAN 802.11 IP phones).

Finally, this session features a customer case study on both on and off-campus roaming deployments, including current internal Cisco deployments. A recommended companion session to attend is "Designing Networks in Motion using Mobile IP and the Mobile Router."

This session is designed to be useful for enterprise, small, and mid-sized business customers.

Associated Sessions:

ACC-1000 Introduction to 802.11 Wireless Networks, ACC-2010 Designing Wireless 802.11 Networks, ACC-4010 Advanced 802.11 Wireless Design for Enterprise Roaming, ACC-2011 Securing 802.11 Wireless Networks, ACC-2012 Managing and Diagnosing 802.11 Wireless LANs, and ACC-2013 Design and Deployment of Outdoor 802.11 Bridging Networks

RF Design Concerns - Site Survey Concepts

CLP-1030

Los Angeles, Monday, 07/07 10:30 AM

Level: Level 1

Technology Focus: Mobility

Duration: 120

Organization Type: All

GigaWave Technologies, a Cisco Learning Partner will offer this course which is designed to give students a firm understanding of the importance of a wireless Site Survey. The class will cover the reasons for performing a site survey, the tools needed to perform a site survey, the process of performing site surveys, the role of proper documentation and examples of problems encountered when site surveys were not performed or performed incorrectly.



After completing this session, students should be able to:

- Justify the need for a site survey
- Understand the tools needed
- Understand the process of performing a site survey
- Understand the documentation required to complete a site survey
- Discuss potential pitfalls of installations done without site surveys or with poorly performed site surveys

This session is targeted to technical engineers, network integrators, technical sales personnel and IT staff, who need to know how to sell, design and implement a Cisco wireless network.

Secure Wireless IP Telephony (SWIPT)

CLP-1300

Los Angeles, Monday, 07/07 01:00 PM

Level: Level 1

Technology Focus: Mobility

Duration: 120

Organization Type: All

ANI, a Cisco Learning Partner will offer this session which will provide insight into the knowledge required by networking professionals to recognize and understand security threats in a Cisco AVVID VoIP and/or a wireless network and best practices to mitigate those threats. This session will highlight IP telephony basics, wireless standards and topologies, network security, and securing Cisco voice, data, and wireless LAN networks.

This session is designed for audiences who have or are considering an IP Telephony network and/or a wireless LAN infrastructure.

Developing and Implementing an 802.11 Wireless Network

PWR-5002

Orlando, Monday, 06/23 08:00 AM; Los Angeles,

Monday, 07/07 08:00 AM

Level: Power Session

Technology Focus: General Networking Features

Duration: 540

Organization Type: All

Note: This power session is SOLD OUT in Orlando.

This session will look at the elements needed to design and deploy a wireless LAN (WLAN) network. Primary topics will include WLAN technologies and design guidelines with focus on troubleshooting. We will review various 802.11 technologies, directly relating to radio frequency design and site-survey guidelines. The session will take a building-block approach to design, providing a complete set of design guidelines for deploying a secure, versatile 802.11 WLAN network.

Additional topics will include: WLAN security, virtual LANs (VLANs), quality of service (QoS), voice over IP (VoIP), and 802.1x design guidelines. WLANs are typically implemented to enable mobility therefore the topic of wireless roaming will be covered and will feature technologies such as Layer 2 802.11 Roaming, Proxy Mobile IP, and Mobile IP. This session will recommend equipment based on applications to be implemented over the WLAN, and implementation requirements for other 802.11 variants. Finally, WLAN troubleshooting will be covered as well.

This session is designed to be useful for all attendees.