

## The Future Starts Today with Ribbon

If you wish to register for a course, please visit the training course registration Web page at [www.ribboncommunications.com/services/education-services](http://www.ribboncommunications.com/services/education-services)

To reserve a dedicated session for your company, or if you have any questions regarding training, please email our Training Representative

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### Introduction

Ribbon believes that the best customer is an educated customer.

Our Education and Training Services department has been instructing customers and channel partners on the benefits of Ribbon technology and solutions for more than a decade. Our courses are available on a wide range of topics, from network provisioning to advanced network service development and multivendor interworking. Each class is led by an experienced, certified instructor with deep knowledge of real-time communications disciplines including voice, interworking of data networks, security, Unified Communications, service definition, wireless/broadband technologies, and database design.

Our approach is simple and effective: experienced teachers, small classes, stimulating lesson plans and hands-on laboratories. Instructor led workshops have a maximum of 12 students so that classes are interactive and an effective transfer of knowledge is achieved.

Classes are available through a variety of methods:

**Open enrollment classes hosted on a Ribbon or partner site.** Training is offered at any of the following facilities: Westford (Massachusetts), Richardson (Texas), RTP (North Carolina), Prague (Czech Republic), and Maidenhead (UK). Ribbon provides a training curriculum designed to meet the day-to-day requirements of our customers and channel partners as they test, deploy and manage Ribbon products. Course lengths range from one to five days, depending on subject matter and course objectives.

**Customer dedicated classes held on a customer site.** Ribbon's courses can be delivered at the customer site. Most courses include hands-on exercises; Ribbon will provide a remote laboratory service at an additional cost. Customer will need to provide the necessary environment for instructing (i.e., LCD projector, seating, network connectivity, computers for each attendee). Contact your Ribbon sales representative for further information on how to purchase a class dedicated to a customer.

**Virtual instructor-led training.** Customers and partners can receive live, interactive training from a Ribbon trainer from their secure location(s). Available through Microsoft Skype for Business and a remote laboratory environment accessed through a PC or laptop browser for a maximum of 12 students. Students receive instruction from the same instructors who teach face to face classes. The same content is addressed as in live classes including hands-on access to lab systems. Using the remote lab capability, instructors are able to virtually look over the shoulder of students and provide 1:1

## Training Tracks

Ribbon offers a training curriculum designed to meet the day-to-day requirements of our customers and channel partners as they test and deploy Ribbon products. We offer a mix of overview courses (eLearnings) and in-depth courses (Workshops) that provide extensive hands-on exercises. Information about classes scheduled to be held at a Ribbon facility or in a virtual environment are posted on the Ribbon [Training Page](#) and on the Partner Portal.

Contact your Ribbon sales representative for further information on how to purchase a class dedicated to a customer.

### Enterprise Based Training Tracks

Ribbon offers the following courses commonly applicable to network environments of enterprises:

#### **SBC 5000/7000 Series Training Curriculum**

5 Day SBC Core Support Certification Training **or**

3 Day SBC Core Configuration and Administration

#### **SBC 1000/2000 Series Training Curriculum**

3 Day SBC Edge Implementation & Support Certification Training

#### **PSX Training Curriculum**

1 Day PSX Basics Training targeting IP or TDM environments

3 Day PSX Advanced Training (Additional Routing, Advanced Services, Local, LNP, DM, Toll-Free Translations Focus & SPE, CLI Focus) targeting IP or TDM environments

1 Day PSX Advanced Training (Least Cost Routing) with Centralized PSX for TDM environments only

Service Provider Based Training Tracks

Training Courses held at Ribbon Facilities will be grouped as follows. On-site courses can be selected by the customer.

#### **Week 1:**

3 Day GSX & PSX Basics

2 Day Network Monitoring and Network Troubleshooting Basics

#### **Week 2:**

3 Day Advanced PSX: Additional Routing Techniques, Services & Translations

1 Day Advanced PSX: Least Cost Routing

## **Role Specific Recommendations for Service Provider employees**

### **Switch Technician & Product Evaluators**

4 hour Ribbon Trunking Product Overview Training

### **Circuit Provisioners**

4 hour Ribbon Trunking Product Overview Training

2 Day GSX Basics (ISUP, ISDN CLI, Provisioning Focus)

### **Translation/Routing Engineer**

4 Hour Ribbon Trunking Product Overview Training

1 Day PSX Basics Training

3 Day PSX Advanced Training Additional Routing Techniques, Services & Translations

1 day PSX Advanced Training (Least Cost Routing)

### **Tier 1/2/3 NOC or Field Service**

4 Hour Ribbon Trunking Product Overview Training

2 Day Network Troubleshooting and Monitoring Training

5 Day SBC Core Support Certification Training

1 Day SBC Edge Support Certification Training

### **SS7 Engineer**

4 Hour Ribbon Trunking Product Overview Training

1 Day Signaling Gateway Overview

### **High Level Director/Manager**

4 Hour Ribbon Trunking Product Overview Training

As applicable, training on the Ribbon Diameter Signaling Controller is also available.

2 Day Ribbon Diameter Signaling Controller Applications

## **AS C20**

1 Day AS10 or AS13 C20– Communications Application Server (AS) Overview

4 Day AS20 C20 – Communications Application Server(AS) Provisioning

2 Day SPBX15- SIP PBX Trunk Provisioning

2 Day GMS15 - GENBAND Media Server Operations and Provisioning

### **Optional**

2 Day IMM20- Intelligent Messaging Manager Provisioning and Administration

WAM10 -Web Application Manager (WAM) Operations & Configuration

4 Hour WMM10- Wireless Mobility Manager (WMM) Basic Overview

## **AS Stand Alone**

1 Day AS11 or AS12 - Communications Application Server (AS) – Standalone Overview

4 Day AS21 - Communications Application Server (AS) – Standalone Administration, Maintenance, Provisioning and Fault Management

1 Day AS30 - Communications Application Server- Standalone Accounting

2 Day SPBX16 – A2 Stand Alone SIP-PBX Trunk Provisioning

2 Day GMS16 - GENBAND Media Server Operations and Provisioning

### **Optional**

2 Day IMM20 - Intelligent Messaging Manager Provisioning and Administration

4 Hour WMM10 – Wireless Mobility Manager (WMM) Basic Overview

2 Day SPiDR15 - SPiDR Operations and Configuration

2 Day KL15 – Kandy Link Operations and Configuration

## **AS and GVPP combined curriculum**

1 Day AS11 or AS12 - Communications Application Server (AS) – Standalone Overview

4 Day AS21 - Communications Application Server (AS) – Standalone Administration, Maintenance, Provisioning and Fault Management

4 Hour GVPP10 – GENView Provisioning and Portals Overview

1 Day GVPP15 - GENView Provisioning and Portals System Administration

4 Day GVPP20 - GENView Provisioning and Portals – Setup, Administration, Provisioning, Fault Management, Reporting and Auditing

2 Day GVPP21 - GENView Provisioning and Portals for Enterprise – Provisioning, Fault Management, Reporting, Auditing and Interfaces

### **C20 on RMS**

1 Day C20RMS10 or C20RMS11 – C20 on RMS Solution Overview

3 Day C20RMS15- C20 on RMS Solution Operations, Maintenance, and Fault Management

3 Day SST16- C20 on GENiUS/RMS Session Server Trunks Provisioning and Maintenance

2 Day GMS15- GENBAND Media Server Operations and Provisioning

3 Day SP2K15- Signaling Platform 2000 Operations, Administration, Maintenance, & Provisioning

2 Day GVM15- GENview Manager Operations

2 Day GBM15- GENview Billing Mediation Operations

### **Optional**

4 Hour NPM35- CVoIP: Network Patch Manager

1 Day OSSG20 -C20 - OSSGate and Servord

2 Day GBM15- GENView Billing and Mediation Operators Course

3 Day C20G915- G9 Converged Gateway – Operation, Administration and Maintenance

3 Day G616- Universal Media Gateway Operations, Administration and Maintenance for Packet Line Gateway and Trunk Gateway

4 Hour G5SE10 – G5 SIP ESA Overview

2 Day G515 G5- Access Line Gateway Operations, Maintenance, Fault Management

4 Day CALLP26- C20 on GENiUS/RMS - Advanced Call Processing Tools

C20RMS35 -C20 on RMS Solution Planning and Capacities

3 Day C2018 – C20 & CS2000 Transition to GVM 2.0

## **C20 on GENius**

- 1 Day GEN10 or GEN11 – C20 on GENiUS Solution Overview
- 5 Day GEN15- C20 on GENiUS Operations and Maintenance, and Fault Management
- 3 Day SST16- C20 on GENiUS Session Server Trunks Provisioning and Maintenance
- 2 Day GMS15- GENBAND Media Server Operations and Provisioning
- 3 Day SP2K15- Signaling Platform 2000 Operations, Administration, Maintenance, & Provisioning
- 2 Day GVM15- GENview Manager Operations
- 2 Day GBM15- GENview Billing Mediation Operations

## **Optional**

- 4 hour NPM35- CVoIP: Network Patch Manager
- 1 Day OSSG20 -C20 - OSSGate and Servord
- 2 Day GBM15- GENView Billing and Mediation Operators Course
- 3 Day C20G915- G9 Converged Gateway – Operation, Administration and Maintenance
- 3 Day G616- Universal Media Gateway Operations, Administration and Maintenance for Packet Line Gateway and Trunk Gateway
- 4 hour G5SE10 – G5 SIP ESA Overview
- 2 day G515 G5- Access Line Gateway Operations, Maintenance, Fault Management
- 4 Day CALLP26- C20 on GENiUS/RMS - Advanced Call Processing Tools
- 2 Day GEN35 -C20 on GENiUS Solution Planning and Capacities
- 3 Day C2018 – C20 & CS2000 Transition to GVM 2.0

## **C20 Translations**

- 5 Day XLA35- C20 - Basic Translations (ANSI)
- 5 Day UXLA37- C20 Universal Translations (ETSI)

## **C15**

2 Day C1510 Product Overview Fundamentals – Leader Led  
1 Day C1511- C15 Product Overview and Fundamentals – Self Paced  
5 Day C1515 - C15 Operations, Maintenance, Fault Management  
2 Day C1520 - C15 Lines Administration  
3 Day C1521 – C15 Business VoIP Configuration and Provisioning  
5 Day C1535 - C15 Translations

### **C3/G9**

5 Day C335 - Signaling Controller – Basic Translations  
5 Day C3G915 - Converged Gateway Operations, Administration and Maintenance

### **GVPP**

4 hour GVPP10 – GENView Provisioning and Portals Overview  
2 day GVPP15 - GENView Provisioning and Portals System Administration  
4 Day GVPP20 - GENView Provisioning and Portals – Setup, Administration, Provisioning, Fault Management, Reporting and Auditing  
2 Day GVPP21 - GENView Provisioning and Portals for Enterprise –Provisioning, Fault Management, Reporting, Auditing and Interfaces

### **TMG**

3 Day C20TMG15 – C20/TelcoBridges Media Gateway (TMG) – Essentials and Configuration

### **CIM**

4 Hour 100 - CIM Overview  
2 Day 200 - Customer Support Tier 1 & Tier 2  
3 Day 300 - CIM Systems Administration

### **Kandy Business Solutions**

3 Day KBS20 – Kandy Business Solutions Onboarding – Leader Led  
3 Day KBS21 – Kandy Business Solutions Onboarding – Self Paced  
3 Day KBS22 - Kandy Business Solutions Contact Center

## SBC Core Support Certification Training

### Course Description

This course is designed for Channel Partners and Customers tasked with implementing converged voice and data solutions using session border controllers in their network. The hands-on training addresses application components (including hardware where appropriate) used to configure, manage, and troubleshoot the SBC 5x00, SBC 7000, and the SBC SWe platforms. These components include: The Embedded Management Application (EMA), Embedded Call Routing Engine (ERE), and all provisioned elements required for peer-to-peer call/session environments. The course also covers the provisioning for media interworking using transcoding.

This training requires you to view several videos prior to class. The content of these videos will be briefly reviewed in class with time for any questions you may have regarding the material. You will receive more information regarding the videos when you register for class.

### Intended Audience:

System engineers, consultants and integrators, including Channel Partners working toward technical certification, who are responsible for the implementation, management and support of Ribbon VoIP equipment

### Course Objectives:

Upon completion of this course, a student will be able to:

- Understand the usage and implementation scenarios for deploying the SBC applications into peering & access environments
- Explain the hardware components that make up the SBC 5x00/7000 machines
- Utilize the SBC Application Web Interface and Command Line Interface for provisioning and troubleshooting
- Describe various external call flow scenarios
- Provision the SBC Application for call routing in peer-to-peer and peer-to-peer-with-transcoding environments
- Perform software installations, system configurations
- Perform system backup and restore
- Read and manage event logs
- Debug the system for fault resolution
- Effectively use the packet capture tools
- Review system calls and perform troubleshooting tasks
- peering & access environments
- Explain the hardware components that make up the SBC 5x00/7000 machines
- Utilize the SBC Application Web Interface and Command Line Interface for provisioning and troubleshooting
- Describe various external call flow scenarios
- Provision the SBC Application for call routing in peer-to-peer and peer-to-peer-with-transcoding environments
- Perform software installations, system configurations
- Perform system backup and restore
- Read and manage event logs
- Debug the system for fault resolution
- Effectively use the packet capture tools
- Review system calls and perform troubleshooting tasks
- Use advance troubleshooting to resolve packet audio problems



- Provision access control lists (ACLs) and call admission controls (CAC) for system security

#### Key Topics

- Module 1 – Introduction
- SBC Positioning
- What It Is, What It Does and How It Does It
- Features
- Performance

#### Module 2 – Hardware

- SBC 5000/5400/7000
- Link Detection
- HA and GRHA
- BMC hardware requirements

#### Module 3 – Access and Navigation

- Embedded Management Application (EMA) Baseboard Management Controller
- SBC Command Line Interface
- Ribbon EMS
- Linux Access
- Lab

#### Module 4 – Software Architecture

- SBC application Hierarchy and object relationships
- Interface Groups - Interfaces
- Zones – IP Peers, Sip Trunk Groups, and SIP Signaling ports
- Lab

#### Module 5 – Provisioning

- Provision an Address Context and other objects to a lab specification
- Test provisioning for endpoint connectivity
- Troubleshoot basic configuration errors
- Lab

#### Module 6 Call Routing

- Provision:
- Routing Label
- Routing Label Routes

- Routes
- Test routing and troubleshoot if problems arise
- Lab

### **Module 7 – Packet Service Profiles**

- How PSPs Work
- Provisioning PSPs
- Pass Through and Transcoding Scenarios
- PSP lab

### **Module 8 – Troubleshooting**

- Event Logs – locate and download
- Call Detail Records - Use CDR tool to interpret a CDR stop record
- Call and Packet Trace – Use LX tool to interpret a call trace log – Send media and signaling to the PKT file and read with Wireshark
- Alarms – Locate and interpret using SBC documentation
- Lab

### **Module 9 – Command Line Interface**

- Accessing the SBC CLI
- Command line syntax
- Command line familiarization - Lab
- Build and run a CLI script to reconstruct the carrier side setup - Lab
- Alarms – Locate and interpret using SBC documentation - Lab

### **Module 10 – Security**

- How Traffic Policing is Done
- 4 Types of Traffic Policing
- Access Control Lists
- Security - Lab

### **Module 11 – Introduction**

- Channel Services Guide/Review – To be replaced with Technical Services Guide when available
- Review Support level 1 and 2 responsibilities
- Documentation review and use
- System installations and upgrades – procedures
- Lab

## **Module 12 – Architecture and Signal Flows**

- SBC Architecture – object relationships/Review
- Call flows through the SBC components
- High Availability – Review

## **Module 13 – System Configuration Backup/Restore**

- Backup/Restore using the EMA
- Backup/Restore using CLI
- Exporting configurations
- Configuration file contents
- Importing Configuration
- Lab

## **Module 14 – Debugging Activities**

- Sysdump – and other information gathering tasks
- Set up a Call trace with EMA and CLI
- View logs from Linux
- Troubleshooting tools
- Traps and Alarms
- Lab

## **Module 15 – SMM Introduction**

- Using the EMA SMM tool
- Lab Practical – Configure Required Call Flows unassisted
- Certification Exam – Written Examination

### **Prerequisites:**

- Knowledge of SIP, SIP & IP Internetworking, IP PBX
- Completion of assigned eLearning modules

**Course Length and Delivery Method:** 5-day Leader Led

## SBC Core Implementation Certification Training

### Course Description

This course provides training and tools to channel partners who will be deploying Ribbon SBC 5K/7K/Software Edition solutions on their own. During this hands-on workshop, students will use Ribbon documentation to perform a “basic” deployment on SBCs in a Ribbon Lab environment. All the key topics required for a successful SBC deployment to your customers are included. This includes: Capturing the Network layout, site preparation, SBC configuration, licensing, testing, and software upgrades.

### Course elements:

Classroom and lab certification training and initial certification exam is at Ribbon facility (this course is not offered virtually)

Recertification exam is required every two years

Remote PS implementation “shadowing” element is for up to 3 days during certified individual’s first installation and is to be utilized within the six-month period following initial certification.

Certified individuals have access to Ribbon helpdesk for non-critical events requiring <1 Hour of help desk assistance.

Maximum number of students - 6

### Intended Audience:

This is not an open enrollment course, and is designed to provide the necessary skills for channel partners to implement and deploy the Ribbon SBC 5K\7K\SWe solutions without assistance from Ribbon.

Request for enrollment, is done through the Channel Account Manager responsible for the requesting channel partner.

### Course Objectives:

- Using tools provided by Ribbon, successfully deploy a SBC 5K\7K\SWe at a customer site without assistance from Ribbon.

### Course Outline:

#### Day 1 –

- Introduction
- Network Layout and Preparation
- Lab Details

#### Day 2 –

- Install of equipment

- Install the VM
- Install of the SBC software
- SBC Licensing

#### **Day 3 –**

- Adding configuration to the SBC
- Call Testing
- CDR Analysis using “toolbox”
- Wireshark/TShark
- Call Trace & Packet Trace using EMA and LX Tool

#### **Day 4 –**

- Configuration & Call Testing
- Debugging
- Test Plan Execution
- Post Implementation Topics

#### **Day 5 –**

- SBC Software Upgrade
- Review & Certification Examination
- Re-ISO SBC Restore Backup

#### **Prerequisites:**

Before attending this course, attendance of the SBC5K\7K\Swe accreditation course is mandatory. Exceptions to the rule will be evaluated by Ribbon Professional Services on a case by case basis. Participants must have a Partner Portal account in order to access the documentation libraries.

**Course Length and Delivery Method:** 5 Day Leader Led

## SBC EDGE IMPLEMENTATION CERTIFICATION TRAINING

### Course Description

This course provides attendees with a solid competency in the SBC 1000 and SBC 2000. This dive into the technical challenges in enterprise voice, Microsoft and BroadSoft environments will highlight the importance of highly scalable and flexible Unified Communications devices to meet the needs of today's advanced VoIP deployments, both in the Enterprise as well as Service Provider environments. The course will start by looking at the detailed technical positioning and advanced voice solutions using Ribbon products, and continues with hands-on sessions configuring the SBC 1000 and SBC 2000. The focus is to build equipment implementation planning, configuration and troubleshooting skills required for all deployments such as ISDN trunks, SIP Trunks and integration into Microsoft and BroadSoft environments. With an emphasis on understanding call flows through the devices, different call routing scenarios are presented and configured, including Active Directory and Survivable Branch Appliance integration. At the end of the class a practical and theoretical exam will be taken for assessment purposes. In order to achieve certification, you must pass the practical exam with a score of 100% and the theoretical exam with a score of 80% or higher.

You will be required to view 2 videos prior to class. A very brief review of those modules will be done in class to provide an opportunity to ask any questions you may have regarding the material. You will receive more information regarding the videos when you register for this training.

### Intended Audience:

System engineers, consultants and integrators, including members of Ribbon Channel Partners working toward technical accreditation, responsible for the implementation, management and support of Ribbon VoIP equipment within enterprise VoIP and Microsoft Skype for Business environments.

### Course Objectives:

- Both enterprise VoIP and Unified Communications networks present unique challenges. This course aims to instruct in the understanding of implementation, configuration and basic troubleshooting of the SBC 1000 and SBC 2000 in these environments.

### Course Outline:

#### Module 1 – Introduction

- Course Overview
- Lab connectivity
- Ribbon Product Portfolio
- Why SBC's are required

#### Module 2 – Hardware Architecture

- SBC Hardware Overview
- SBC 1000 (V1 and V2) and SBC 2000 HW Architecture
- Application Solution Module Hardware
- SBC-ASM Hardware Architecture

### **Module 3 – Initial Setup**

- Rack Installation
- Admin Connectivity Options
- Initial Setup Screen
- Software acquisition
- SBC Full and Partial factory default
- ASM Initialization
- Licensing

### **Module 4 – User Interface**

- Scale and Capacity
- SBC GUI
- Tasks Tab
- Monitor Tab
- Settings Tab (Licenses and Ports)
- Easy Configuration Wizards (SIP, SBA and CCE)
- ASM
- RDP Access
- Hyper-V and VM's
- Supported 3rd Party Applications
- Configuration Backup/Restore
- Patch Firmware Upgrade

### **Module 5 – Basic Call Setup**

- Basic SIP-SIP Call Configuration
- Overview of LX

### **Module 6 – Call Flow Architecture**

- Naming Conventions
- Signaling Groups
- Call Routing Tables
- Transformation Tables
- Regular Expressions

### **Module 7 – Deployment Options and Planning**

- Scale and Capacity
- Greenfield
- Downstream
- Upstream
- Central Site HA
- Branch Site HA
- SIP-PSTN Connectivity
- FXS/FXO Connectivity
- Mixed-Tenor Deployments

#### **Module 8 – Features and Enhancements**

- Widely deployed features
- New Features released

#### **Module 9 – Partner Deployment Options**

- Microsoft SIP-PSTN GW
- Survivable Branch Appliance
- Skype for Business SBA Setup requirements on DC, DNS, CA and Topology Builder
- Cloud Connector Edition

#### **Conclusion:**

- Lab Practical – Configure Required Call Flows unassisted
- Certification Exam – **Written Examination**

#### **Prerequisites:**

SBA ELearning Video

CCE ELearning Video

Microsoft Active Directory, Skype for Business competency and an understanding of PBX and IP telephony concepts such as ISDN, SIP and CAS. Basic familiarity with Regular Expressions (Regex).

**Course Length and Delivery Method:** 3 Day Leader Led



# SBC EDGE SUPPORT CERTIFICATION TRAINING

## Course Description

This course provides attendees with competency in technical support of the SBC 1000 and SBC 2000. This dive into the operational challenges in enterprise voice, Microsoft and BroadSoft environments will highlight the importance of ease of support and troubleshooting, both in the Enterprise as well as Service Provider environments. The course will start by looking at the Web User Interface for the SBC Edge, and continues with hands-on sessions configuring and troubleshooting the SBC 1000 and SBC 2000. The focus is to build troubleshooting skills required for supporting all deployments such as ISDN trunks, SIP Trunks, and Local SIP clients. With an emphasis on understanding call flows through the devices, troubleshooting involves gaining an understanding of dependencies and interaction between the components configured for call flows. At the end of the class a theoretical exam will be taken for assessment purposes. In order to achieve certification, you must pass the theoretical exam with a score of 80% or higher.

You will be required to take two eLearning modules prior to class. A very brief review of those modules will be done in class to provide an opportunity to ask any questions you may have regarding the material. You will receive more information regarding the modules when you register for this training.

## Intended Audience:

Technical support engineers, consultants and integrators, including members of Ribbon Channel Partners working toward technical accreditation, responsible for the support of Ribbon VoIP equipment within enterprise VoIP and Microsoft Skype for Business environments.

## Course Objectives:

- This course provides an understanding of troubleshooting of the SBC 1000 and SBC 2000 deployed in Unified Communications environments.

## Key Topics:

### Module 1 – Introduction

- Course Overview
- Lab connectivity
- Introduction to Ribbon Portfolio

### Module 2 – User Interface

- Web User Interface - WebUI
- Checking System Information
- Licenses
- Real-Time Status

### Backup/Restore and Export/Import

- Patch Upgrade
- REST API

- EMS

### **Module 3 – ASM Applications**

- SBC Communication Service
- ASM Management and Maintenance
- Hyper-V and VM's
- Supported 3rd Party Applications
- SBA and CCE Overview

### **Module 4 – Call Flow Architecture**

- Call Processing Flow through the SBC Edge
- Naming Conventions
- Signaling Groups
- Call Routing Tables
- Transformation Tables
- Regular Expressions

### **Module 5 – Easy Configuration Wizards**

- Easy Configuration Wizard Overview
- Deployment Scenarios
- SBA Deployment
- CCE Deployment
- BroadSoft

### **Module 6 – Troubleshooting**

- Real Time Status
- SBC Log setup and file storage
- Using LX to analyze log files
- Packet Capture
- ASM Troubleshooting
- Microsoft Logging Tools
- Handover to Ribbon TAC

### **Conclusion**

Exam

#### **Prerequisites:**

SBC-EDGE-SUP-e11: Support Tools and Documentation

SBC-EDGE-SUP-e12: Hardware Architecture

An understanding of PBX and IP telephony concepts such as ISDN, SIP and CAS. Basic familiarity with Regular Expressions (Regex).

**Course Length and Delivery Method:** 1 Day Leader Led

## PSX Call Routing Basics – IP Trunk Group Based

### Course Description

PSX Routing Basics (PSXB) is designed for routing specialists. This course teaches how to provision the PSX Policy Server to perform call routing/translations for calls processed by an SBC. It teaches how to fill essential database tables on the PSX Policy Server implemented either as a standalone PSX or as an ePSX embedded within an SBC, based on the most common Ribbon applications.

### Target Audience

Translation engineers, call routing specialists, or anyone responsible for provisioning routing tables on the stand alone PSX and embedded ePSX Policy Server.

### Course Objectives

Upon completion of this course, a student will be able to:

- Trace a policy request as it is processed through the PSX/ePSX
- Navigate through the Insight PSX Manager graphical user interface
- Provision the PSX database to support basic routing
- Test routes provisioned in the PSX using the SSREQ tool

### Key Topics

#### Module 1 – Overview

- How the PSX is positioned in a network
- What the PSX is and what it does
- The different PSX features
- How the PSX processes a Policy Request

#### Module 2 – Architecture

- Centralized PSX Hardware
- Different PSX configurations
- Various Redundancy Options
- PSX Software Architecture and Processes

#### Module 3 – PSX Navigation

- Ribbon Insight EMS
- Navigation
- Icons and documentation
- PSX Manager Drop Down Menus

- Choosing an Entity
- Entity Tracker
- Hot Links
- Adding Records

#### **Module 4 – Basic Routing**

- Standard Route – Processing Order
- Standard Route – Data Fill Order
- Gateway Entity
- Trunk Group Entity
- IP Peer & Zone Index Entities
- Country Entity
- Partition Entity
- SSG Entity
- Carrier Entity
- Softswitch Entity
- Time Range Entity
- Holiday Entity
- Routing Label Entity
- Supported Call Types
- Transmission Medium
- Standard Route
- Route Filtering

#### **Module 5 – Basic Simulated Call Trace Tools SSReq**

- Setting Up SSReq
- Verifying Routes
- Configure Menu
- File Menu
- Policy Request and Response Information

#### **Module 6 – PSX IP (SIP) Trunk Group Setup**

- Trunk Group – Data Fill Order
- Numbering Plan
- Prefix Profile Entity
- Carrier Selection Priority Entity
- Feature Control Profile Entity
- IP Peer & Zone Index Entities
- Various Profile Entities

- Signaling Flags
- Class of Service Entity
- Trunk Group Entity

#### **Module 7 – Simulated Call Trace Tool (SSReq)**

- Submitting a Policy Request
- PSX Processing Flow
- Reviewing a Policy Response
- Call Type Enumerations
- Reading Call Trace Output

#### **Wrap Up**

**Prerequisites:** None

**Course Length and Delivery Method:** 1 Day Leader Led

## PSX Advanced Training - IP Trunk Group Based

### Course Description

PSX Advanced classes are targeted at specialized provisioning for customers and/or evaluators interested in learning about advanced topics for call routing and delivering advanced services. These specialized subjects are offered at various times throughout the calendar year. All specialized training focuses on a particular provisioning item and has hands-on exercises using the Insight EMS interface.

### Target Audience

Translation engineers call routing specialists or anyone responsible for provisioning routing tables and call treatment services on the PSX Policy Server.

### Course Objectives

Upon completion of this course, a student will be able to:

- Provision 14 different routing techniques
- Understand the DSI structure and where announcements are stored
- Build a blocking script using the Service Profile Editor
- Build services for each of the three service categories:
- Provision treatment, routing and enhanced services
- Provision the PSX to perform digit manipulation and parameter manipulation
- Provision the PSX to translate 800 numbers locally
- Use the Command Line Interface method to add, update and delete records in the PSX database

### Topics:

#### Module 1 – Additional Routing Techniques

- Default Country Routing & Default World Routing
- Proportion & All Proportion
- Round Robin Routing
- Route Filter Routing
- Local Routing
- Least Cost Routing
- Temporary Alternative Routing
  
- Element Routing Priority Routing
- Route Hopping
- Origination Entity Routing
- Prefix Profile Routing

- Range Profile Routing
- On Net or Off Net Routing

### **Module 2 – Announcements & the Service Profile Editor**

- Format
- How to build the blocking script using the Service Profile Editor

### **Module 3 – Treatment Services**

- How to build treatment services that will block or screen calls
- Examples include:
  - Blocking Services
  - International Blocking Services
  - Hi Fraud Country Blocking Service
  - Screening Service

### **Module 4 – Routing Services**

- How to build special routing services
- Examples include:
  - Calling Forced Routing
  - Destination Forced Routing
  - Special Access Code (SAC) Routing - North America Only
  - Services Standard Routing

### **Module 5 – Enhanced Services**

- How to provision authorization codes and build an authcode service

### **Module 6 – Digit & Uri Manipulation**

- Digit Manipulation Definition
- DM/PM Entities
- DM/PM Processing Order
- DM/PM Locations
- Variable Replacement
- Constant Replacement
- DM/PM Sub-Rules
- URI Manipulation

### **Module 7 – Local Database Translation**

- Local Database Translation Scenario
- Required Entities
  - Number Translation Criteria entity



- Number Translation Service Definition entity
  - Number Translation Label entity
  - Number Translation entity
  - Softswitch entity
  - Country entity
- Testing using SSReq

### **Module 8 – Command Line Interface (CLI)**

- How to use the CLI User Guide
- Accessing using Telnet or Putty
- Understanding the CLI Structure
- General Shell Commands, Querying and Provisioning Commands
- Building and Executing scripts

### **Wrap Up**

### **Prerequisites**

PSX Routing Basics (PSXB)

**Course Length and Delivery Method:** 3 Day Leader Led

## PSX Advanced – Least Cost Routing

### Course Objectives

Upon completion of this course, a student will be able to:

- Provision several Least Cost Routing examples using the PSX as well as validate the routing outcome using the SSREQ tool.

### Target Audience

Translation engineers, call routing specialists, or anyone responsible for provisioning routing tables and call treatment services on the Centralized PSX Policy Server in TDM environments. Applicable to North American environments only.

### Course Outline:

#### Module 1 – Introduction

- What is Least Cost Routing?
- Business Considerations
- Review the Scenario

#### Module 2 – Viewing Basic LCR Entities

- What are the LCR Routing Entities
- View LCR Vendor, LCR Offer, LCR Customer
- View Routing Labels and Standard Records
- Set up and SSREQ to Verify Routes

#### Module 3 – Provisioning a Basic LCR Scenario

- Look at Rate Sheets and Templates
  - Learn how to Parse and Load Rate Sheets
- 
- Provision LCR Vendor, LCR Offer, LCR Customer
  - Other Support Rate Sheets

#### Module 4 – Adding Exceptions and Margin Profiles

- Provision a LCR Exception to filter out vendor routes
- Understand how the LCR Margin Profile works
- Parse and load an Offer Rate Sheets
- Calculate the Expected Margin

- Run SSReq for validation

### **Module 5 – Adding Quality of Service Profiles**

- Define 4 Quality of Service Parameters
- Define the role Quality of Service (QoS) plays in an Offer
- Provision two scenarios that use Quality of Service parameters that change the routing decision outcome
- Be able to test the scenarios using SSReq

### **Wrap Up**

#### **Prerequisites**

PSX Routing Basics (PSXB)

**Course Length and Modality** – 1 Day leader led

## Ribbon EMS Support Certification Training

### Course Description

The object of this course is to provide the students with the knowledge and experience (hands-on labs will be available in each module) that they will need to navigate the EMS, monitor the network and perform daily or weekly tasks on the EMS/EMSWe, PSX and SBC Edge and Core product lines. Students will learn how to perform baseline monitoring and maintenance tasks using the EMS as the managing tool. The EMS is mandatory in all Cloud SBC deployments.

Since there is no difference between the provisioning of a virtual EMSWe versus a physical device, the information provided in this course will be valid for monitoring, configuring or provisioning both types of installations.

### Target Audience

System engineers, Network Operations Center Tier 1 and 2 technicians, consultants and integrators, including members of Ribbon Channel Partners working toward technical accreditation, responsible for the management, monitoring and support of Ribbon equipment via the Ribbon Insight EMS

### Course Objectives

- Upon completion of this course, a student will be able to:
- Navigate the Insight EMS GUI and identify the proper application to use in order to perform task on the different Ribbon devices
- Create new users and groups, assigning security privileges, logins and passwords
- Monitor the individual devices or the network as a whole, and to recognize when alarms indicate problems in the network; as well as what action to take to clear the alarm
- Perform routine maintenance, such as backups and restores, on the EMS, PSX and SBC suite
- Create and read Call Detail Records and Trace Files to troubleshoot call problems
- Create and implement Data Collection Profiles, which in turn are used to run the performance reports that provide real-time and historical information as to the status of the network
- Configure the EMS to run only the versions of software required by the actual devices in the network and understand how to enable or disable them as required.

### Key Topics:

#### Module 1 – Login & Insight Administration

- Login to the EMS
- Access the Ribbon Support Portal
- Navigate through and understand the 4 Insight Administration application tabs
  - User Activity
  - System Activity
  - General
  - Node

#### Module 2 – Users & Roles

- Build and view the following objects to support user access from within the Ribbon Insight EMS

- Roles
- Resource Groups
- Users
- User Groups
- Access Control Lists
- Build User Reports
- Terminate Users
- Unlock Users
- Synchronize user/passwords with the PSX

### **Module 3 – Fault Manager**

- Access the Fault Manager to display alarms in real-time
- Manage individual alarms by:
  - acknowledging them
  - assigning them
  - writing journal entries to share with others
  - clearing or deleting them
- Create a custom view to limit the alarms displayed
- Review the documentation
- Use the Network Dashboard

### **Module 4 – Advanced Fault Manager**

- Configure the EMS server to forward alarms
- Customize the severity, class, and description fields of alarms displayed in the Fault Manager Event Lists
- Purge alarms from the EMS server
- Control the EMS data collection for devices registered to the EMS
- Set thresholds based on performance information that trigger additional alarms

### **Module 5 – Performance**

- Build a data collection profile
- Assign a data collection profile to a node or group of nodes
- Create Performance Reports
- View Performance Reports
- Create Thresholding Profiles

### **Module 6 – Accounting – SBC 5000/7000**

- Identify the current log files being written to
- Create Call History Reports
- Understand Call Detail Records (CDRs) output

### **Module 7 – Call Trace – SBC 5000/7000**

- Create and view a trace filter in the SBC
- Interpret call trace results

### **Module 8 – Backup & Restore – SBC 5000/7000 and SBC 1000/2000**

- Produce an Inventory Report
- Backup and Restore a single SBC or a group of SBC devices
- Download backup files to your PC
- Create configuration files from a backup

### **Module 9 – Network Provisioning – SBC 1000/2000 only**

- Backup and Restore a single SBC or a group of SBC devices
- Download backup files to your PC
- Create configuration files from a backup
- Provision new SBCs from an existing configuration file
- Upgrade one or more 1K, 2Ks at one time

### **Module 10 – Device Access**

- Access the PSX Manager GUI
- Access the SBC1K/2K GUI
- Access the DSC GUI

### **Prerequisites**

Basic knowledge of the functions of the different devices in the Ribbon product suite.

**Course Length and Modality** – 1 Day Leader Led

## Ribbon Service Provider Based Training – Trunking and Gateway Solution

### Course Description

Ribbon Product Overview (SPO), a lecture-only course, describes the basic architecture and operation of the Ribbon trunking and gateway solution, and provides the essential terminology and operational understandings required for all other Ribbon courses. SPO presents possible applications using the Ribbon solution, describes the GSX 9000 Open Services Switch hardware architecture, discusses the Ribbon components that interact with the GSX 9000, and introduces the EMS graphical user interface used to provision, monitor and manage the solution.

### Target Audience

Employees of service providers requiring a basic understanding of the Ribbon trunking and gateway solution before attending a detailed “how to” course designed for their job function.

### Course Objectives

Upon completion of this course, a student will be able to:

- Explain the role of each component in the Ribbon solution
- Understand potential applications of the Ribbon solution
- Identify the hardware components of the GSX 9000
- Understand the different functions provided in the Ribbon Insight graphical user interface

### Course Outline:

- Review a Traditional Circuit Switched Network
- What is a Packet?
- Ribbon Class 4 Replacement Solution
- Ribbon Trunking Components
- Long Distance Call Flow using Ribbon Components
- GSX900 Chassis and Facts
- GSX Server Acronyms
- Server Redundancy
- Ribbon Insight

### Prerequisites

A general understanding of telephony terms and concepts.

**Course Length and Modality** – 4 Hours, Leader Led up to 20 students max.

## GSX Training (ISDN PRI & ISUP Provisioning Focus)

### Course Description

GSX Basics (GSXB) is targeted at circuit switch provisioners. Through hands-on experience using the Insight EMS GUI this course teaches how to create, test and turn-up ISUP & ISDN PRI trunk groups, with an appendix covering NFAS and IP trunk groups. This course also covers an introduction to using Command Line Interface commands.

### Target Audience

Anyone responsible for building, testing, and turning up circuit trunk groups connected to a GSX9000 Open Services Switch.

### Course Objectives

Upon completion of this course, a student will be able to:

- Describe the structure of ISUP and ISDN trunk groups
- Create, test, and turn up ISDN PRI and SS7 ISUP trunk groups
- Navigate through the Task Configurator
- View trunk group records in the PSX database
- Perform tone testing and continuity testing on circuits
- Manage the state and mode of both logical trunk group resources and physical circuits
- Augment the capacity of existing trunk groups
- View basic statistics on GSX9000 circuit usage
- Rename trunk groups that are currently carrying live traffic

### Course Outline:

#### Module 1 – Introduction

- Ribbon Open Services Architecture (OSA)
- Logging into the Insight EMS server
- Insight Element Management
- GSX 9000 trunk group hierarchy
- Trunk group planning and provisioning

#### Module 2 – Task Configurator Navigation

- Checking the GSX software version versus the Task Configuration software version
- Saving, creating and importing
- Validating and running
- Deleting and converting
- Exporting and importing
- Logs
- GXS Navigator



### **Module 3 – Creating ISDN PRI Trunk Groups**

- Introducing Nextstar Communications (a fictitious company)
- ISDN PRI trunk group members and hierarchy
- Using trunk group resource reports
- Building an ISDN PRI trunk group using a Ribbon -provided example task list
- Using the GSX Navigator to check the configuration and status of each level of the ISDN PRI trunk group hierarchy
- Putting an entire ISDN PRI trunk group hierarchy into disabled state and out-of-service (OOS) mode
- Correcting provisioning mistakes
- Viewing an ISDN PRI trunk group record on the PSX Policy Server
- Adding PRI interfaces
- Tone testing for signal loss

### **Module 4 – Creating ISUP Trunk Groups**

- Creating route sets on the SGX SS7 Gateway to support signaling to far-end switches
- Using trunk group resource reports to check for available circuits
- Building an ISUP trunk group using the Insight Trunk Group Wizard to collectively configure the GSX 9000, PSX, and SGX
- Using the GSX Navigator to check the configuration and status of each level of the ISUP trunk group hierarchy
- Viewing an ISUP trunk group record on the PSX Policy Server
- Correcting provisioning mistakes
- Building ISUP trunk groups
- Adding circuits to an existing ISUP trunk group
- Manual COT testing for ISUP circuits

### **Module 5 – Trunk Group Administration**

- Bounce commands
- Renaming live trunk groups
- Viewing active call statistics and data using the GSX Navigator

### **Module 6 – GSX900 Command Line Interface**

- GSX Operations Guide
- Accessing the CLI
- Understanding the CLI Structure and Syntax
- Understanding the Create, Configure and Monitor Commands
- Locating the CLI directory on the DSI

### **Appendix A – NFAS Trunk Groups (North America specific)**

- Building an ISDN Non-Facility Associated Signaling (NFAS) trunk group using a Ribbon -provided example task list
- Using the GSX Navigator to check the configuration and status of each level of the ISDN NFAS trunk group hierarchy
- Putting an entire ISDN NFAS trunk group hierarchy into disabled state and out-of-service (OOS) mode
- Correcting provisioning mistakes by rebuilding the trunk group or selectively changing its configuration

### **Appendix B – IP Trunk Groups**

- What is an IP trunk group used for?
- Provision the GSX for
  - Gateway-to-Gateway signaling
  - SIP call control
  - H.323 call control
- IP trunk group definitions and features
- Provisioning
- Displaying IP trunk groups using the GSX Navigator

### **Prerequisites**

Ribbon Trunking Product Overview (SPO)

**Course Length and Modality** – 2 Day Leader Led

## Network Monitoring and Troubleshooting (NMTS)

### Course Description

Network Monitoring and Troubleshooting (NMTS) is targeted at Network Operations Center (NOC) personnel who want to know how to manage and monitor SNMP alarm messages generated by Ribbon devices. This class describes how to view, interpret, and manipulate alarms displayed in the Insight EMS Fault Manager application. The course also discusses how to set performance thresholds and how to monitor the status of a GSX 9000. Also addressed are troubleshooting techniques for resolving connectivity and call processing problems in Ribbon solutions. Using the Fault Manager alarm viewer, this course describes how to start from an alarm notification and diagnose a problem using the product documentation, software tools and log files, including call accounting records, call traces, and simulated policy requests. Students are asked to troubleshoot and resolve problems using sample information provided by the instructor.

### Target Audience

Network operations center (NOC) personnel responsible for monitoring alarms generated by Ribbon equipment.

### Objectives

Upon completion of this course, a student will be able to:

- Use the Insight Fault Manager
- Use the Insight GSX Navigator to check the operational status of the GSX 9000
- Configure the EMS server to forward alarms
- Customize the default severity level and On-line Help descriptions for each alarm

Follow a standard troubleshooting methods using the Insight Fault Manager, and use of tools to isolate and resolve the problem

Investigate and correct problems such as

- GSX 9000-to-GSX 9000 communication problems
- Server module failures
- Call processing problems on ISUP trunk groups

Use of tools including

- PING and TRACE ROUTE
- D-channel message tracing
- ATTEMPT call detail records

### Course Outline

#### Module 1 – Introduction

- Identify the tools used for monitoring Ribbon devices
- Build a view using the Fault Manager
- Navigate through a Fault Manager view using the Real Time monitor
- Create and view Performance reports
- Build specific thresholds to send traps if a trigger is reached
- Navigate through the GSX to monitor the status of various objects
- Access Call Detail Records from within the Tools application

## **Module 2 – Monitoring Alarms Using the Fault Manager**

- Create custom view to limit the alarms displayed
- Access the Fault Manager to display alarms in real-time
- Manage individual alarms by:
  - Acknowledging them
  - Assigning them
  - Writing journal entries to share with others
  - Clearing or deleting them
- Review the documentation

## **Module 3 – Advanced Fault Manager Features**

- Use the Trap Probe Log
- Configure the EMS server to forward alarms to another SNMP alarm viewer
- Customize the severity, class, and description fields of alarms displayed in the Fault Manager Event Lists
- Purge alarms from the EMS server
- Control the EMS data collection from the GSX9000
- Set thresholds based on performance information that trigger additional alarms

## **Module 4 – Checking a GSX9000's Configuration & Status**

- Check the status of an MNS/MNA Module
- Check the redundancy mode of CNS redundancy group
- Check for alarms in the GSX
- Check the status of other GSX objects

## **Module 5 – Event Logs & Call History Reports**

- Describe the Different Record Type of Call Detail Records (CDRs)
- Locate the Accounting Record documentation
- Create Call History Reports

## **Module 6 – Introduction to Troubleshooting**

- Getting started
- GSX 9000-to-GSX 9000 communication overview
- Investigating GSX 9000 gateway signaling problems by viewing alarms, reading the documentation, and issuing SHOW commands
- Using PING and TRACE ROUTE to check IP connectivity between Ribbon devices

## **Module 7 – CDRs**

- Identify the Current Event Logs
- Create A Call History Report
- Understand CDR Output
- Locate Raw CDRs
- Access the Support Portal for Documentation and the Support Toolbox

## **Module 8 – Call Trace**

- Setup a Call Trace Filter
  - Level 1,2,3

- Understand Call Trace Messages
- View the Call Trace File in Ribbon EMS
- View a Raw Call Trace File

#### **Module 9 – Hardware Failures**

- Circuit network server (CNS) failures and switchovers
- Check redundancy group status
- Read the SYS event log for failure/switchover events
- Locate the event in debug (DBG) event logs
- Replace failed server modules
- Revert back to the failed slot after the hardware is replaced

#### **Module 10 – Trunk Group Problems**

- Block circuits on egress trunk groups
- Use documentation to isolate the cause
- View Call History reports for failed calls
- Use the GSX Navigator to check a circuit's operational mode
- D-channel Failures on ISDN PRI trunk groups
- Interpret Verbose (Layer 3) trace logs

#### **Module 11 –SSREQ Tool / PES LOG**

- Using the SSREQ tool to check route provisioning on the PSX & Turn On & OFF PES Log using SSMGMT

#### **Prerequisites**

Ribbon Trunking Product Overview (SPO)

**Course Length and Modality** – 2 Day Leader Led

## Ribbon Diameter Signaling Controller Applications

### Course Description

This course is intended to provide attendees with a solid competency in the Ribbon Diameter Signaling Controller (DSC) Applications. The course will start by looking at the detailed technical positioning and solutions using the Ribbon products, and continues with hands-on sessions configuring the DSC Applications. The session then dives into the technical considerations as well as hardware options, routing agents, and edge agents in Diameter signaling environments highlighting the importance of highly scalable and flexible DSC deployments. We will discuss the use of diameter routing agent and diameter edge agents in the network. Through the combination of classroom lecture, discussion and hands-on lab exercises, this course is designed to build key network design flows, equipment configuration skills, troubleshooting and alarm monitoring, required for all deployment alternatives such as DSC 8000 Hardware and DSC SWe.

### Target Audience

System engineers, consultants and integrators, wireless service provider network engineers and NOC personnel, presales and sales support.

### Objectives

Upon completion of this course the student will be able:

- Understand the usage and implementation scenarios for deploying the DSC
- Describe the different applications available in the DSC
- Explain the hardware components that make up the DSC 8000 & SWe
- Access the DSC Web Interface used for provisioning and troubleshooting
- Provisioning for routing DSC Nodes and Adjacent Nodes
- Display and interpret configurations using the Web interfaces for troubleshooting

### Course Outline

- **Module 1 - Introduction**
  - Role of the Diameter Signaling Controller in the current and future mobile/ipv6 network
  - DSC options
  - DSC 8000 and SWe Architecture
- **Module 2 - DSC UI Overview**
  - DSC Application overview
  - User Interface overview
  - Backup and restore
- **Module 3 - Configuration Examples**
  - Identify DSC Nodes
  - Describe Server Pools
  - Alias Definitions
- **Module 4 - Configuration**
  - DSC Provisioning
  - IP Routing
- **Module 5 - Alarms, Debug and Syslog**

- Examine Alarms
- Configure Debug logs
- Examine Debug logs
- Change Logging levels
- Examine the Syslog
- Basic trouble shooting
- **Module 6 - Interworking Function**
  - IWF Overview
  - Configure IWF
  - SCCP Overview
  - ITU Point Code Format
  - SCCP Configuration

### **Prerequisites**

Wireless Foundation eLearning modules;

- LTE Overview
- Accounting
- Authorization
- Authentication
- EPS Session Establishment
- Diameter Technical Overview

DSC Operations and Maintenance e-Learning

**Course Length and Modality** – 2 Day Leader Led

## Ribbon Netscore Training

### Course Description

Ribbon NetScore training is designed for networking professionals tasked with analyzing Call Detailed Records (CDRs) to solve issues, traffic analysis, KPI performance metrics, trunk group performance and threshold alarms.

The workshop based training will address the proactive monitoring of voice quality performance using collections and analysis of CDRs. The course covers on-demand reporting, report types and scheduling reports, in addition to configuring static and dynamic alarms.

### Objectives

Upon completion of this course, a student will be able to:

- Understand the collection and analysis of CDRs
- Understand Trunk Group statistics
- Create On-Demand reports
- Schedule reports
- Threshold alarms: static and dynamic
- Manage both users and groups
- Configure custom KPIs and understand predefined KPIs

### Course Outline:

#### Module 1 – Overview

- Why your company purchased NetScore?
- What is NetScore?
- Describe briefly the different KPI and Trunk Group Reports
- Describe some of NetScores Features and Benefits

#### Module 2 – Navigation

- Log into NetScore
- Identify Link Bars and Link Menus
- Open the documentation
- Set NetScore Preferences
- Change the default CDR display fields
- Understand the training scenario used to collect CDRs and Trunk Group statistics



### **Module 3 – Data Collection**

- Discuss the data collection process for collecting CDRs and trunk group statistics
- Discuss the File Collector, the P&C Collector and the P&C loader process
- Locate where CDRs are stored
- Understand the terms BIN and BIDs and the difference between the them
- Check the interval setting on the SBC

### **Module 4– Querying Call Detail Records (CDRs)**

- Use the CDR Drill-Down menu
- Filter and Save Reports
- Export and Schedule Reports
- Use the Raw CDR Parser menu
- Login to MYSQL and query the CDR table

### **Module 5 – Viewing On-Demand Reports**

- Create, View and Save On-Demand CDR Reports
- Create, View and Save On-Demand Trunk Group Reports

### **Module 6 – Dashboard**

- Navigate the NetScore Dashboard

### **Module 7 – Report Browser and Scheduler**

- Use the Report Browser
  - Drilldown Reports
  - Scheduled Reports
- Use the Report Scheduler
  - Schedule any NetScore Reports

### **Module 8 – General & Report Administration**

- Discuss and use the various Admin Link Menus

### **Module 9 – Alarms**

- Discuss the two application alarms
- Discuss the difference between Static and Dynamic thresholds
- Create a Static Threshold that produces an alarm
- View the alarms from within the Alarm Panel of the Dashboard
- Find the MIB Definitions for SNMP Traps

**Prerequisites - None**

**Course Length and Modality – 2 Day Leader Led**

## **(AS12) Application Server (AS) Standalone Overview**

### **Course Description**

This course provides a technical overview of the Communication Application Server – Standalone configuration.

### **Intended Audience:**

Managers, administrators and anyone needing a technical overview of the Communication Application Server - Standalone

### **Course Objectives:**

Upon completion of this course, you will be able to:

- Identify the types of subscriber services and key concepts provided by the Communication Application Server – Standalone configuration.
- Describe the System Manager and the GUI used for the system configuration, fault, and performance management of the Application Server – Standalone configuration.
- Describe how the Provisioning Manager is responsible for the creation and customization of customer-unique data in the Application Server – Standalone configuration.
- Describe the purpose of each of the Application Server – Standalone call processing components.
- Describe the Media Application Server and the GUI used for the configuration, fault, and performance management of the MAS in the Application Server – Standalone configuration.
- Describe the Session Border Controller in the Application Server – Standalone configuration.
- Describe each process used for accessing the Application Server applications and why each access process would be used.

### **Key Topics:**

- Identify the AS subscriber services and applications.
- Describe the OAMP functions of the System Manager.
- Describe the purpose of the Provisioning Manager.
- Describe the AS call processing components.
- Identify AS Media and voicemail servers.
- Learn how to access the AS GUI interfaces.
- Describe the purpose of the Session Border Controller.

**Prerequisites** - None

**Course Length and Delivery Method** - 1 Day – Leader Led

## **(AS11) Application Server (AS) Standalone Overview**

### **Course Description**

This course provides a technical overview of the Application Server – Standalone configuration.

### **Intended Audience:**

Managers, administrators and anyone needing a technical overview of the Application Server - Standalone

### **Course Objectives:**

Upon completion of this course, you will be able to:

- Identify the types of subscriber services and key concepts provided by the Application Server – Standalone configuration.
- Describe the System Manager and the GUI used for the system configuration, fault, and performance management of the Application Server – Standalone configuration.
- Describe how the Provisioning Manager is responsible for the creation and customization of customer-unique data in the Application Server – Standalone configuration.
- Describe the purpose of each of the Application Server – Standalone call processing components.
- Describe the Media Application Server and the GUI used for the configuration, fault, and performance management of the MAS in the Application Server – Standalone configuration.
- Describe the Session Border Controller in the Application Server – Standalone configuration.
- Describe each process used for accessing the Application Server applications and why each access process would be used.

### **Key Topics:**

- Identify the AS subscriber services and applications.
- Describe the OAMP functions of the System Manager.
- Describe the purpose of the Provisioning Manager.
- Describe the AS call processing components.
- Identify AS Media and voicemail servers.
- Learn how to access the AS GUI interfaces.
- Describe the purpose of the Session Border Controller.

**Prerequisites:** None

**Course Length and Delivery Method:** 1 Day – Self Paced

## **(AS21) Application Server (AS) - Standalone Administration, Maintenance, Provisioning, and Fault Management**

### **Course Description:**

The purpose of this course is to teach students Provisioning, Administration, Maintenance, and Fault Management tasks for the AS Application Server Standalone platform.

### **Intended Audience:**

This course is designed for people interested in learning about Provisioning, Administration, Maintenance, and Fault

### **Objectives:**

Upon completion of this course, you will be able to:

- Understand the element managers by performing navigational tasks
- Administer the element managers by building user accounts
- Understand the relationship between domains and subdomains
- Describe how telephony routes are used to perform translations
- Use the provisioning client to manage subscribers
- Manage gateway service nodes and trunks
- Perform network maintenance activities
- Maintain the network elements using the fault management systems
- Management tasks for the AS Standalone.

### **Key Topics:**

- Element Manager Access
- Network Element Administration
- Managing Domains
- Managing Telephony Routes
- Managing Users
- Provisioning a SIP Gateway
- Routine Maintenance
- Fault Management

### **Prerequisites:**

A211 or A212 Application Server (AS) – Standalone Overview

**Course Length and Delivery Method:** 4 Day – Leader Led

## **(AS30) Communication Application Server- Standalone Accounting**

### **Course Description:**

This course teaches students how to manage and interpret the Internet Protocol Detail Record (IPDR) for Communication Application Server - Standalone.

### **Intended Audience:**

Managers, administrators, and anyone responsible for the management of accounting information in the Communication Application Server - Standalone.

### **Course Objectives:**

- Upon completion of this course, you will be able to:
- Describe accounting terms and concepts in the Communication Application Server- Standalone configuration.
- Describe how to configure the Accounting Manager and access the Accounting Manager files.
- Interpret the Internet Protocol Detail Record (IPDR) accounting files and records generated in various call flow scenarios.

### **Key Topics:**

- Introduction to the Accounting Manager
- Accounting Manager
- Internet Protocol Detail Record (IPDR) interpretation

### **Prerequisites:**

AS11 or AS12 - Communication Application Server (AS) – Standalone Overview

**Course Length and Delivery Method:** 1 Day – Self-Paced

## **(AS10) Application Server (AS) C20 Hosted Overview**

### **Course Description:**

This course provides a technical overview of the C20 – Application Server configuration.

### **Intended Audience:**

Managers, administrators and anyone needing a technical overview of the C20 – Application Server.

### **Course Objectives:**

Upon completion of this course, you will be able to:

- Identify the types of subscriber services and key concepts provided by the C20 – Application Server configuration.
- Describe the System Manager and the GUI used for the system configuration, fault and performance management of the C20 – Application Server configuration.
- Describe how the Provisioning Manager is responsible for the creation and customization of customer-unique data in the C20 – Application Server configuration.
- Describe the purpose of each of the C20 – Application Server call processing components.
- Describe the MAS and the GUI used for the configuration, fault and performance management of the MAS in the C20 – Application Server configuration.
- Describe the Session Border Controller in the C20 – Application Server configuration.
- Describe the process of provisioning a C20 – Application Server user.
- Describe each process used for accessing the Application Server applications and why each access process would be used.

### **Key Topics:**

- Identify the AS subscriber services and applications.
- Describe the OAMP functions of the System Manager.
- Describe the purpose of the Provisioning Manager.
- Describe the AS call processing components.
- Identify AS Media and voicemail servers.
- Learn how to access the AS GUI interfaces.
- Describe the purpose of the Session Border Controller.

**Prerequisites:** None

**Course Length and Delivery Method:** 1 Day – Self Paced

## **(AS13) Application Server (AS) C20 Hosted Overview**

### **Course Description:**

This course provides a technical overview of the C20 – Application Server configuration.

### **Intended Audience:**

Managers, administrators and anyone needing a technical overview of the C20 – Application Server.

### **Course Objectives:**

Upon completion of this course, you will be able to:

- Identify the types of subscriber services and key concepts provided by the C20 – Application Server configuration.
- Describe the System Manager and the GUI used for the system configuration, fault and performance management of the C20 – Application Server configuration.
- Describe how the Provisioning Manager is responsible for the creation and customization of customer-unique data in the C20 – Application Server configuration.
- Describe the purpose of each of the C20 – Application Server call processing components.
- Describe the MAS and the GUI used for the configuration, fault and performance management of the MAS in the C20 – Application Server configuration.
- Describe the Session Border Controller in the C20 – Application Server configuration.
- Describe the process of provisioning a C20 – Application Server user.
- Describe each process used for accessing the Application Server applications and why each access process would be used.

### **Key Topics:**

- Identify the AS subscriber services and applications.
- Describe the OAMP functions of the System Manager.
- Describe the purpose of the Provisioning Manager.
- Describe the AS call processing components.
- Identify AS Media and voicemail servers.
- Learn how to access the AS GUI interfaces.
- Describe the purpose of the Session Border Controller.

### **Prerequisite Skills:**

None

**Prerequisites:** None

**Course Length and Delivery Method:** 1 Day – Leader Led

## **(AS20) C20 – Communications Application Server Administration, Maintenance, Provisioning and Fault Management**

### **Course Description:**

The purpose of this course is to teach students how to provision, maintain, administer and troubleshoot the C20 hosted Communications Application Servers.

### **Intended Audience:**

This course is designed for people interested in learning about Provisioning, Administration, Maintenance, and Fault Management tasks for the C20 hosted Communications Application Servers.

### **Course Objectives:**

Upon completion of this course, you will be able to:

- Correlate key data across network components
- Navigate the Provisioning Client, the SMCG, and the MAS GUI
- Create and manage User Accounts
- Manage Domains, Locations, and Services
- Navigate OSSGate and use the Batch Provisioning tool
- Navigate the Personal Agent and the GENCom Client
- Perform maintenance on server components
- Manage faults on the server platforms

### **Key Topics:**

- Infrastructure Configuration
- Element Manager Access
- Network Element Administration
- Managing Domains
- Manage Subscribers
- GENCom Client
- Routine Maintenance
- Fault Management

### **Prerequisites:**

A210 or AS13 – C20–Application Server (AS) Overview

**Course Length and Delivery Method:** 4 Days – Leader Led



## (SPBX15) C20 - SIP-PBX Trunk Provisioning

### Course Description:

This course introduces you to the SIP-enabled VoIP VPN and the terminology and interfaces. This course will lead you through the procedures to provision a SIP-enabled VoIP VPN. Also, this course will familiarize you with the maintenance fundamentals of the SIP-enabled VoIP VPN.

### Intended Audience:

Anyone who is expected to commission, provision, or maintain Session Initiation Protocol-enabled Voice over Internet Protocol Virtual Private Network (SIP-Enabled VoIP VPN) on the C20

### Objectives:

Upon completion of this course, you will be able to:

- Describe, at a high level, the Session Initiation Protocol-enabled Voice over Internet Protocol Virtual Private Network (SIP-Enabled VoIP VPN) solution for C20.
- Identify tools and procedures required to implement SIP-enabled VoIP VPN.
- Perform Gateway Controller configuration to the SIP-enabled VoIP VPN.
- Perform provisioning required to set up the PRI interface between the core and the SIP-Enabled VoIP VPN.
- Perform provisioning required at the System Management Console to set up the interface for the SIP-Enabled VoIP VPN.
- Provision Media Portal insertion for the SIP-Enabled VoIP VPN.
- Perform provisioning required at the Provisioning Client for the SIP-Enabled VoIP VPN.
- List the capabilities of the OSSGate XML interface for SIP-Enabled VoIP VPN.
- Use the new and changed maintenance tools available for SIP-Enabled VoIP VPN.
- Describe, at a high level, the Survival SIP Proxy (SSP)

### Key Topics:

- SIP-enabled VoIP VPN Configuration Overview
- SIP-enabled VoIP VPN Configuration Gateway Controller, Communication Server
- SIP-enabled VoIP VPN Configuration SSL System Manager, Media Portal Insertion
- SIP-enabled VoIP VPN Configuration Domains, Number Qualifiers and Service Packages , OSSGate XML Interface
- SIP-enabled VoIP VPN Maintenance Fundamentals
- Survival SIP Proxy (SSP)

**Prerequisite Skills:** Basic PC skills, Network Surveillance and Fault Management, switching operation and switching procedures

### Prerequisite Courses:

AS10 or AS13 – C20– Communication Application Server (AS) Overview

**Course Length and Delivery Method:** 2 Day – Self-Paced

## **(SPBX16) AS Standalone SIP PBX Trunking Configuration, Operations and Administration**

### **Course Description:**

The purpose of this course is to provide you with the skills and knowledge to configure and operate the AS Standalone SIP PBX Trunking Feature.

### **Intended Audience:**

This course is designed for individuals who are responsible for configuring and maintaining the SIP PBX Trunking Feature of the AS Standalone.

### **Course Objectives:**

Upon completion of this course, you will be able to:

- Describe the purpose of the SIP PBX Trunking Feature
- Identify the software requirements for SIP PBX Trunking Feature
- Identify the different management interfaces.
- Configure System Management Console Parameters.
- Configure Provisioning Manager interface
- Configure PBX Extension Users
- Configure PBX DN Ranges
- Identify requirements to configure the Call Forward Variants and Call Type Based Screening services
- Examine and use performance and fault management tools available for the SIP PBX Trunking Feature.
- Identify SBC requirements with AS SIP PBX Trunking Feature

### **Key Topics:**

- SIP PBX Trunking
- Software requirements
- Management interfaces
- Configuration – System Manager, Provisioning Manger, PBX Extensions and EN ranges.
- Call Feature Configuration based on Screening services
- Performance and Fault Management
- SBC requirements.

**Prerequisites:** Basic PC skills, Network Surveillance and Fault Management, switching operation and switching procedures

AS11 or AS12 – Application Server (AS) Standalone Overview

**Course Length and Delivery Method:** 2 Day – Leader Led

## **(IMM20) Intelligent Messaging Manager Provisioning and Administration**

### **Course Description:**

The purpose of this course is to teach students how to provision and manage the Intelligent Messaging Manager Application.

### **Intended Audience:**

This course is designed for people interested in learning about Provisioning, Administration, Maintenance, and Fault Management tasks for the Intelligent Messaging Manager Application.

### **Objectives:**

Upon completion of this course, you will be able to:

- Understand the IMM Application
- Understand the IMM Platform and Application Architecture
- Identify the components of the IMM Data Structure
- Provision the IMM Application
- Configuring and Managing the Auto-Attendant Application
- Manage the Subscriber Environment
- Understand the Bulk Provisioning process
- Understand the Maintenance and Troubleshooting of the IMM

### **Key Topics:**

- Features Overview
- Platform Architecture
- Data Structures
- Application Provisioning
- Managing Auto-Attendant
- Managing Subscribers
- Bulk Provisioning
- Maintenance and Troubleshooting

### **Prerequisites:**

None

**Course Length and Delivery Method:** 2 Day – Leader Led

## **(WMM10) Wireless Mobility Manager (WMM) Basic Overview**

### **Course Description:**

This course provides an introduction to the Wireless Mobility Manager Solution. It will identify the architecture, network scenarios and it will describe the hardware and software that enables the WMM functionality.

### **Intended Audience:**

Anyone wanting an introduction to the Wireless Mobility Manager (WMM).

### **Objectives:**

Upon completion of this course, you will be able to:

- Describe the purpose of the Wireless Mobility Manager solution
- Identify WMM network operational scenarios
- Explain the architecture of the WMM solution
- Identify the hardware and software requirements for WMM
- Identify the WMM management interfaces
- Identify the WMM network interfaces
- Describe the High Availability features of the WMM solution

### **Key Topics:**

- Convey the concept of Wireless Mobility by defining network scenarios and identifying the protocols and interfaces WMM supports to enable these functions
- Provide details on the services that can be enabled with WMM by displaying the call flows of the different services and highlighting the interaction of the different interfaces and protocols in that process
- Understand the hardware and software needed for the WMM solution

### **Prerequisite Skills:**

None

### **Prerequisite Courses:**

None

### **Course Length and Delivery Method**

2 – 3 Hours – Self-Pace

## **(KL15) Kandy Link Operations and Configuration**

### **Course Description:**

The purpose of this course is to provide you with the skills and knowledge to understand the Operations, Configuration, and Maintenance of Kandy Link.

### **Intended Audience:**

This course is designed for individuals who are responsible for installing and maintaining Kandy Link in a Voice over IP network.

### **Objectives:**

Upon completion of this course, you will be able to:

- Describe the purpose of Kandy Link
- Identify the hardware and Software requirements for Kandy Link.
- Understand IP Network integration for the Kandy Link
- Identify the different Kandy Link management interfaces.
- Configure Kandy Link Service Parameters.
- Identify and configure Kandy Link External Provider interfaces.
- Identify and configure Kandy Link client adapter interfaces.
- Configure Kandy Link Subscriber Accounts.
- Examine and use fault management tools available for the Kandy Link.

### **Key Topics:**

- Overview
- Hardware and Software
- Network integration
- Management Interface
- Configuration
- Fault Management

**Prerequisites:** None

**Course Length and Delivery Method:** 2 Days – Self-Paced

## **(SPiDR15) SPiDR Operations and Configuration**

### **Course Description:**

The purpose of this course is to provide you with the skills and knowledge to understand the operations, configuration, and maintenance of SPiDR.

### **Intended Audience:**

This course is designed for individuals who are responsible for installing and maintaining SPiDR in a Voice over IP network.

### **Objectives:**

Upon completion of this course, you will be able to:

- Describe the purpose of SPiDR
- Identify the hardware and Software requirements for SPiDR.
- Understand IP Network integration for the SPiDR
- Identify the different SPiDR management interfaces.
- Configure SPiDR Service Parameters.
- Identify and configure SPiDR External Provider interfaces.
- Identify and configure SPiDR client adapter interfaces.
- Configure SPiDR Subscriber Accounts.
- Examine and use fault management tools available for the SPiDR.

### **Key Topics:**

- Overview
- Hardware and Software
- Network integration
- Management Interface
- Configuration
- Fault Management

**Prerequisites:** None

**Course Length and Delivery Method:** 2 Days – Self-Pace

## **(GBM15) GENView Billing and Mediation Operators Course**

### **Course Description:**

The 2-Day Leader Led GBM15 – GENView Billing and Mediation Operators Course Train the Trainer course includes all the topics listed below for the Operators Course and additional notes and explanations are covered to ensure the students understanding of the topics.

### **Intended Audience:**

This course is intended for Operators, Technicians, and Support Personnel who will be supporting End Users, Customers and Resellers of the GVPP Platform.

### **Objectives:**

Upon completion of this course, you will be able to:

- Understand the overview and general architecture of the GENView Billing and Mediation software.
- Understand the various GBM Interfaces, inputs and outputs available.
- Understand the GBM Features and Functions, including:
- Understand the use of the System Functions used within GBM
- Understand the Software Architecture, Environment and Options available to GBM
- Understand the Data Collection, Data Flow and Data Processing of GBM
- Understand the creation and use of System Reports
- Understand the creation and use of Audit Reports
- Understand the basic GBM Web Interface and its general use
- Understand the Network Element Configuration for GBM
- Understand the Network Element Interface
- Understand the Schedule Configuration
- Understand the Global Parameters
- Understand the Process Group Configuration
- Understand the Output Destination Configuration
- Understand the Transfer Task Configuration
- Understand the Process Group Creation
- Understand the Application Processes
- Understand the Task Related Files
- Understand the creation and use of the FTP log files
- Understand the Surveillance and Reporting options within GBM
- Understand the Reporting Tools
- Understand the Monitoring Tools
- Understand the Network Element List
- Understand the Report Generation
- Understand the Support Menu
- Understand the Help Menu

- Understand the System Tools
- Understand the available Unix Utilities
- Understand the Alarm Monitoring and Reporting
- Understand the System Utilities
- Understand the Application Tools
- Understand the Application Control
- Understand the Tertiary Reprocessing (When applicable)
- Understand the Data Viewers
- Understand the Alarm Files and utilities
- Understand the Network Element Information
- Understand the Unix Utilities
- Understand the System Administration
- Understand the System Administrative Functions
- Understand the Deleting Elements
- Understand the System Control
- Understand the Application Utilities
- Understand the Configuration Files
- Understand the Performance Graphs
- Understand the Creating a new user
- Understand the Access Control and logging
- Understand the Alarm Monitoring
- Understand the Scheduled Tasks

**Prerequisites:** None

**Course Length and Delivery Method:** 2-day, Leader Led



## **(GVPP10) GENView Provisioning and Portals Overview**

### **Course Description:**

This course provides a technical overview of the GENView Provisioning and Portals software suite, its main user interfaces and the hardware and software platforms used.

### **Intended Audience:**

Managers, administrators and anyone needing a technical overview of the GENView Provisioning and Portals software.

#### ▪ **Objectives:**

Upon completion of this course, you will be able to:

- Understand the GVPP Terms and Definitions
- Understand the GVPP Hardware and Software
- Identify the steps to setup and provision the GVPP application
- Identify the different GVPP GUI management interfaces

### **Key Topics:**

- Introduction to the GENView Provisioning and Portals Interfaces: Portal Server, Reseller Interface, Small and Medium Business Interface, and End User Interface.
- System Manager
- Description of the Hardware and Software requirements of the GVPP System.
- Description and usage of common Terms and Terminology in the GVPP System.

**Prerequisites:** None

**Course Length and Delivery Method:** 1/2 Day –Self-Paced

## **(GVPP15) GENView Provisioning and Portals System Administration**

### **Course-Description**

The 1-Day Leader Led GVPP15 – GENView Provisioning and Portals System Administration Course is designed to familiarize students with all of the necessary topics to configure, maintain, and troubleshoot the GENView Provisioning and Portals application.

### **Intended Audience**

Network and System Administrators in charge of maintaining the GENView Provisioning and Portals Application

### **Key Topics**

- Hardware and Software
- Configuration
- Administration
- Maintenance
- Reporting
- Troubleshooting

### **Objectives**

Upon completion of this course, you will be able to:

- Understand the GVPP Application
- Manage Hardware and Software
- Manage and Administer the GVPP Configuration
- Perform Maintenance Tasks on the GVPP platform
- Manage GVPP Reporting
- Understand GVPP Fault Management
- Perform Troubleshooting on the GVPP platform

**Prerequisites:** GVPP10

**Course Length and Delivery Method:** 1 Day – Leader-Led

## **(GVPP20) GENView Provisioning and Portals – Setup, Administration, Provisioning, Fault Management, Reporting and Auditing**

### **Course-Description**

This course familiarizes students with the setup, administration, provisioning, fault management and reporting capabilities of the GVPP System and its four main interfaces. Through the course the student will be introduced to the core network setup activities for network elements used in the GVPP system, provisioning and management of voice service Subscribers, SIP Devices voice service Groups, as well as Reporting, Fault Management and Log File Tracking. The course includes lessons on the Reseller, SMB and End User Interface as standalone videos, allowing you choose which lesson/video you want take.

### **Intended Audience**

System Administrators, Provisioning Managers, Reseller and Customer Admins as well as anyone who will use the GVPP system to provision and manage subscribers and subscriber voice services

### **Objectives**

Upon completion of this course, you will be able to:

- Setup and manage Network Elements, Voice Feature Packages, and SIP Device Templates that will be used by the GVPP System
- Setup Service Providers in the GVPP System
- Build Customers along with the required, switch-dependent Customer Elements
- Provision Subscribers, Stations, SIP Devices and Station Templates in the Portal Server
- Uses the Order Explorer to navigate orders generated by the system, as well as use the Bulk Order Editor.
- Build and Manage Groups and Authorization Codes in the Portal Server
- Identify the main components of the GVPP System, its four main interfaces and how to access them

### **Key Topics:**

- Setup of Administration Tasks such as Network Elements, Voice Mail Servers, Voice Feature Packages and SIP Device Templates
- Creation and management of Service Providers and Customers
- Provisioning Customer Groups, Domains and Voice Services
- Managing Subscribers in the Portal Server, SMB Interface and End User Interface
- Viewing Logs, Fault Management, and Audit Trail

**Prerequisites:** GVPP10

**Course Length and Delivery Method:** 4 Day – Leader-Led

## **(GVPP21) GENView Provisioning and Portals for Enterprise –Provisioning, Fault Management, Reporting, Auditing and Interfaces**

### **Course-Description**

This course familiarizes students with the provisioning, fault management, reporting capabilities of the GVPP System and its four main interfaces. Through the course the student will be introduced to the core provisioning and management activities of voice service Subscribers, SIP Devices, voice service groups, as well as Reporting, Fault Management and Log File Tracking. The course includes lessons on the Reseller, SMB and End User Interface as standalone videos, allowing you choose which lesson/video you want take.

### **Intended Audience**

System Administrators, Provisioning Managers, Reseller and Customer Admins as well as anyone who will use the GVPP system to provision and manage subscribers and subscriber voice services

### **Objectives**

Upon completion of this course, you will be able to:

- Provision Subscribers, Stations, Service Groups and Station Templates in the Portal Server.
- Uses the Order Explorer to navigate orders generated by the system, as well as use the Bulk Order Editor.
- Understand and Generate SIP Device Configuration Files for SIP Devices.
- Run Reports, track logs and view faults in the Portal Server.

### **Key Topics**

- Provisioning of SIP and Non-SIP Lines, Voices Service Groups (MDN, CPU, HUNT, etc)
- Order Management, including the Bulk Add, Change and using the Portal Server Interface. [This does not include the bulk import from a spreadsheet.]
- SIP Device Configuration File Generation and Storage
- Bulk Import via spreadsheet using the Bulk Import Function
- Viewing Logs, Fault Management and Switch Synchronization (as required)

**Prerequisites:** GVPP10

**Course Length and Delivery Method:** 2 Day – Leader-Led

## **(GVPP30) – GENView Provisioning and Portals HTML5 Reseller Interface**

### **Course Description:**

The GVPP30 Reseller Interface Video reviews the various management options for Service Provider Admins and Resellers, managing Customers in the Reseller Interface. Management of Customer Admins, and access to the Small and Medium Business Interface is also covered.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the Reseller Interface for Service Provider Management of Customers and Customer Admins.

### **Key Topics:**

- Navigate the Reseller Interface
- Manage Customers
- Create and Manage Customer Admins
- Use the Customer Admin credentials to access the SMB Interface

**Prerequisites:** GVPP10

**Course Length and Delivery Method:** 30 minutes Self-Paced

## **(GVPP31) – GENView Provisioning and Portals HTML5 SMB Interface**

### **Course Description:**

The GVPP31 Reseller Interface Video reviews the various management options for Service Provider Admins and Resellers, managing Subscribers in the Small and Medium Business (SMB) Interface. Provisioning of Subscribers, SIP Devices, and Voice Groups are also covered.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the SMB Interface for Customer Admin Management of Subscribers.

### **Key Topics:**

- Understand the SMB Interface Login and requirements for operation
- Manage the interaction between the Voice Feature Package, Station Template and Provisioning abilities of the SMB Interface
- Provision, Manage and Delete Subscribers, Voice Services and SIP Devices
- Provision, Manage and Delete Station Groups
- Manage Subscriber Self-Care Services

**Prerequisites:** GVPP10

**Course Length and Delivery Method:** 1 hour Self-Paced

## **(GVPP32) – GENView Provisioning and Portals HTML5 EUI Interface**

### **Course Description:**

The GVPP32 End User Interface Video reviews the interface for Subscribers to manage their own voice service and associated SIP Devices in a HTML5 capable browser. Options discussed include the management of call handling options and voice service features, access to SIP device parameters, call logs and personal address book.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the End User Interface for Subscribers.

### **Key Topics:**

- Understand the EUI Interface Login and requirements for operation
- Manage Call Handling through the EUI Interface
- Manage Voice Services Features and SIP Devices
- Manage Calling Logs and Personal Address Book

**Prerequisites:** GVPP10

**Course Length and Delivery Method:** 30 min Self-Paced

## **(Course 100) CIM Overview**

### **Course Description:**

Upon completion of this course the students will understand the software, hardware components and various architectures, such as the Service and Remote Telephone Nodes that make up a CIM.

### **Intended Audience:**

Anyone who needs an introduction to the Converged Intelligent Messaging Node. This includes technical and non-technical Project Managers, NOC, customer support, and system administrators.

### **Topics:**

- CIM System Architecture
- The Software Components that make up the CIM
- What are CIM Service Node dependencies and Interworking's
- Review several example application call management flows such as
- Subscriber authentication
- Message Deposit
- Message retrieval
- Defining Class of Services (COS)
- General Services supported by the CIM as well as customer specific services
- CIM general and customer specific hardware overview, focusing on server and networking equipment.
- Managing the CIM from a system administrator perspective. Discussions will focus on the standard Linux and Ribbon system tools.
- Managing end user subscriber accounts by using the Ribbon Operations and Support System (OSS).
- Students will learn how the OSS can be used to help Diagnose some of their end subscriber problems
- Understanding the CIM's based alarming, monitoring and fault diagnostic tools that are available.

**Prerequisites:** None

**Course Length and Delivery Method:** 1/2 day, Leader Led



## **(Course 200) Customer Support Tier 1 & Tier 2**

### **Course Description:**

The CIM customer support training is a combined Tier 1 & Tier 2 course given over 2 days. The first day is typically spent in defining the service's features, functions and configuration options for each Class of Service (COS). To enforce what they have learned, students are broken into groups that will work through a set of exercise demonstrating the different telephony features and functions.

The second day focuses on using the Operations Support System and Utilities to manage and administer and trouble shoot subscriber accounts. An extensive OSS workshop is part of this training. In addition, optional CIM offer such as Auto Attendant are discussed. A general course review is part of the second day as well as time for Questions and Answers.

### **Intended Audience:**

This course is intended for Customer Support Organizations that provide direct support for end users in resolving end user problems.

### **Topics:**

- CIM High level overview
- Class of Services (COSs) descriptions
- Understanding the end-user Telephony User Interface
- Accessing the Systems
- Types of access
- Subscriber Account Initialization
- Subscriber Access & Setup
- Understanding Account Operation and Global Controls
- Caller Access and Control
- Telephony Workshop – Students are grouped together and work several exercises
- Understanding the end-user Web GUI Interface
- Web Access
- Web account setup and features functionality
- Other capabilities
- Web GUI - Students are grouped together and work several exercises
- Understanding the CIM Mobile Clients features and functionality
- iPhone & Android Client access for downloads
- Client setups and feature functionalities
- User interfaces
- Introduction to the CIM Operations and Support System (OSS) tool, which is used to manage end-user accounts
- OSS Access
- Agent Features and Functions
- Agent Administration

- End-user Account Administration
- Provisioning and end-user Account Management
- OSS Workshop - Students are grouped together and work several OSS exercises, enforcing what they have learned
- Understanding additional CIM Diagnostic Tools that are available
- Using SmartTrack to trace calls
- High Level Trouble Shooting and Analysis
- Using the OSS and Utilities
- Understanding Additional Optional CIM offers
- Auto Attendant (AA) Functions and Features (VR Pro)
- AA Menus and Operations
- AA Setup and Configurations
- Directory Setup and Administration
- Review and Open Discussions

**Prerequisites:**

An understanding of Customer Support practices and procedures.

**Course Length and Delivery Method:** 2-day Leader Led

## **(Course 300) CIM Systems Administration**

### **Course Description:**

The information presented in the course is supported by documentation such as the System Administrator's Guide, Fault and Performance Monitoring Alarm Reference & Troubleshooting Guide, Operations and Support System (OSS) System Administration Guide, etc. The topics covered in this course also include remote hands on demonstrations by the instructors as well as class exercise, using the lab configuration. The training modules described are based on generic training package that may change slightly, for individual customers based on specific requirements and deployments:

### **Course Objectives:**

Upon completion of this course, the student will be able:

Understand and operate a CIM Service Node.

### **Intended Audience:**

This course is designed for those individuals who will be responsible for the day-to-day management of the CIM Node, typically tier II and Tier III Administrators.

### **Topics:**

- CIM Infrastructure & Hardware Overview
- Software Architecture and Data Flows
- OSS Administration
- Statistics and Reporting
- System Management
- System Monitoring and Troubleshooting

### **Prerequisites:**

Working knowledge of UNIX and LINUX OS Administration is a must.

**Course Length and Delivery Method:** 3 days, Leader Led

## **(KBS20) Kandy Business Solutions Onboarding**

### **Course Description:**

KBS20 is designed to provide Kandy Business Solutions Partners with the skills and tools necessary to onboard new customers onto Kandy Business Solutions and provide ongoing Tier 1 support. The course includes an overview of the Kandy Business Solutions Portal and Ribbon Support Process. It includes information on how to capture logs, perform basic troubleshooting, performing traces and a list of common issues associated with turning up service.

### **Intended Audience:**

This course is intended for functional roles requiring the skills necessary to onboard a customer and provide end user support.

### **Objectives:**

Upon completion of this course, the student will be able to:

- Understand the key features and benefits of Kandy Business Solutions
- Gain a better understanding of the Kandy Business Solutions Cloud Architecture
- Understand what documents are available to support various functions within the reseller organization
- Define the roles and responsibilities of each function of the reseller organization and the Ribbon counterparts.
- Describe the onboard process for Partners and Customers
- Place orders into Ribbon for products or services
- Understand the purpose of the Needs assessment, Kandy Business Solutions Site Survey, Kandy Business Solutions CIQ and Contact Center CIQ.
- Understand the Kandy Business Solutions call flow patterns
- Describe the Ribbon Tier 1 Support Process. Opening and tracking support tickets.
- Understand the Kandy Business Solutions documentation resources available
- Utilize the integrated Kandy Business Solutions support tools for troubleshooting end user issues
- Demonstrate knowledge of common issues related to supporting Kandy Business Solutions end users
- Support the development of engineering plans for onboarding a new customer site.
- Complete all the necessary forms such as site surveys, CIQ "Customer Information Query", Needs Analysis and Contact Center CIQs.
- Setup and manage products catalogs and pricing within the Kandy Business Solutions portal.
- Provision services within the Kandy Business Solutions portal.
- Provision and activate voice features on end user clients or desk phones that are not considered plug and play.
- Understand the setup and use of the GENcom Personal Agent.
- Support Tier one issues related to Kandy Business Solutions PBX and Contact Center end user service requests.
- Administer Contact Center line side provisioning.

### **Prerequisites:**

Basic understanding of SIP technology, SIP School for Tier 1 support only

**Course Length and Delivery Method:** 3 Days, Leader Led

## **(KBS21) Kandy Business Solutions Onboarding**

### **Course Description:**

KBS21 is the self-paced version of the KBS20 and is designed to provide Kandy Business Solutions Partners with the skills and tools necessary to onboard new customers onto Kandy Business Solutions and provide ongoing Tier 1 support. The course includes an overview of the Kandy Business Solutions Portal and Ribbon Support Process. It includes information on how to capture logs, perform basic troubleshooting, performing traces and a list of common issues associated with turning up service.

### **Intended Audience:**

This course is intended for functional roles requiring the skills necessary to onboard a customer and provide end user support.

### **Objectives:**

Upon completion of this course, the student will be able to:

- Understand the key features and benefits of Kandy Business Solutions
- Gain a better understanding of the Kandy Business Solutions Cloud Architecture
- Understand what documents are available to support various functions within the reseller organization
- Define the roles and responsibilities of each function of the reseller organization and the Ribbon counterparts.
- Describe the onboard process for Partners and Customers
- Place orders into Ribbon for products or services
- Understand the purpose of the Needs assessment, Kandy Business Solutions Site Survey, Kandy Business Solutions CIQ and Contact Center CIQ.
- Understand the Kandy Business Solutions call flow patterns
- Describe the Ribbon Tier 1 Support Process. Opening and tracking support tickets.
- Understand the Kandy Business Solutions documentation resources available
- Utilize the integrated Kandy Business Solutions support tools for troubleshooting end user issues
- Demonstrate knowledge of common issues related to supporting Kandy Business Solutions end users
- Support the development of engineering plans for onboarding a new customer site.
- Complete all the necessary forms such as site surveys, CIQ "Customer Information Query", Needs Analysis and Contact Center CIQs.
- Setup and manage products catalogs and pricing within the Kandy Business Solutions portal.
- Provision services within the Kandy Business Solutions portal.
- Provision and activate voice features on end user clients or desk phones that are not considered plug and play.
- Understand the setup and use of the GENcom Personal Agent.
- Support Tier one issues related to Kandy Business Solutions PBX and Contact Center end user service requests.
- Administer Contact Center line side provisioning.

### **Prerequisites:**

Basic understanding of SIP technology

SIP School for Tier 1 support only

**Course Length and Delivery Method:** 3 Days, Self-Paced

## **(KBS23) Kandy Call Centre**

### **Course Description:**

This KBS23 Call Centre course is designed to teach students basic skills needed to understand and create the associated datafill for operation of the Kandy Call Centre. You will have hands-on practice viewing and creating the necessary environment.

### **Intended Audience:**

This course is intended for anyone requiring basic knowledge/functionality of the Kandy Call Center product.

### **Key Topics:**

- Kandy Call Center Introduction/System Overview
- System Management
- System Support

### **Objectives:**

Upon completion of this course, the student will be able to

- Understand the general System overview for the Call Center
- Understand the input and output results for management of the system
- Understand the Operational Characteristics for,
  - eFramework
  - Mida Control Panel
  - Network Configuration
  - Software Updates
  - External Database option
  - User Management
  - Application Management
  - Operator Console
  - Main features
  - How to access
  - Interface areas
  - User personal settings
  - Some interface layout examples
  - Queue Manager (ACD)
  - Initial steps for PBX
  - Configuring the services
  - Report Thresholds
  - OOS treatment
  - Historical reporting
  - Services – in service treatment
  - Media

- Queue Manager Advanced
- Agent Configuration
- Supervisor Configuration
- Reports
- Supervisor Console
- Access
- System homepage
- Navigational screen
- Real time area
- Reports
- Queues
- Call details
- Agent details
- Settings.

**Prerequisites:** None

**Course Length and Delivery Method:** 3 days, Leader-Led

## **(GEN10) C20-GENiUS Solution Overview**

### **Course Description:**

The GEN10 is a one-day leader led C20-GENiUS Solution Overview course. Each component will be discussed to show its role in the solution. Component hardware and user interfaces will be discussed as well.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the C20-GENiUS solution. It is a pre-requisite course for advanced courses in the curriculum. This course was designed for both technical and managerial personnel.

### **Key Topics:**

Overview of Ribbon's C20-GENiUS network components:

- C20-GENiUS Solution Overview
- GENView Manager (GVM)
- C20 on GENiUS
- Application Server (AS)
- Session Server Trunks (SST)
- Signaling Point 2000 (SP2000)
- Gateway Controller (GWC)
- Media Server
- G6 Media Gateway
- G5 Media Gateway
- G9 Media Gateway

### **Objectives:**

- Understand the general System overview for the Call Center
- Describe the C20-GENiUS Solution
- Identify the role of the GENView Manager
- Identify the C20-GENiUS hardware and software components
- Understand the Application Server SIP lines application
- Describe the purpose of the Session Server Trunks application
- Describe and identify the Signaling Point 2000
- Describe and identify the function of the Gateway Controller
- Describe the function of the Media Server
- Understand the function of the G6 Media Gateway
- Describe the function of the G5 Access Lines Gateway
- Describe the function of the G9 Media Gateway

### **Course Length and Delivery Method**

1 Day Leader led



## **(GEN11) C20-GENiUS Solution Overview**

### **Course Description:**

The GEN11 is a one day self-paced C20-GENiUS Solution Overview course. Component content is provided to show its role in the solution. Component hardware and user interfaces are provided as well.

### **Intended Audience:**

The Learning audience for the GEN11 Ribbon Solution Network Overview includes those responsible for maintaining the network. This course is targeted for both technical and managerial personnel.

### **. Key Topics:**

Overview of Ribbon's C20-GENiUS network components:

- C20-GENiUS Solution Overview
- GENView Manager (GVM)
- C20 on GENiUS
- Application Server (AS)
- Session Server Trunks (SST)
- Signaling Point 2000 (SP2000)
- Gateway Controller (GWC)
- Media Server
- G6 Media Gateway
- G5 Media Gateway
- G9 Media Gateway

### **Objectives:**

- Describe the C20-GENiUS Solution
- Identify the role of the GENView Manager
- Identify the C20-GENiUS hardware and software components
- Understand the Application Server SIP lines application
- Describe the purpose of the Session Server Trunks application
- Describe and identify the Signaling Point 2000
- Describe and identify the function of the Gateway Controller
- Describe the function of the Media Server
- Understand the function of the G6 Media Gateway
- Describe the function of the G5 Access Lines Gateway
- Describe the function of the G9 Media Gateway

### **Prerequisites:**

Knowledge and basic understanding of communications.

**Course Length and Delivery Method:** 1 Days Self-Paced

## **(C20RMS10) C20 on RMS Solution Overview**

### **Course Description:**

The C20RMS10 is a one-day leader led C20 on RMS Solution Overview course. Each component is discussed to show its role in the solution as well as its hardware platform and associated user interfaces.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the C20 on RMS solution. It is a pre-requisite course for advanced courses in the curriculum. This course was designed for both technical and managerial personnel.

### **Key Topics:**

- Overview of Ribbon's C20 on RMS network components:
- Understand the general System overview for the Call Center
- C20 on RMS Solution Overview
- GENView Manager (GVM)
- C20 on GENiUS
- Application Server (AS)
- Session Server Trunks (SST)
- Signaling Point 2000 (SP2000)
- Gateway Controller (GWC)
- Media Server
- G6 Media Gateway
- G5 Media Gateway
- G9 Media Gateway

### **Objectives:**

- Describe the Ribbon RMS Solution
- Identify the role of the GENView Manager
- Identify the C20 on RMS hardware and software components
- Understand the Ribbon SIP lines Application Server
- Describe the purpose of the Session Server Trunks application
- Describe and identify the Signaling Platform 2000
- Describe and identify the function of the Gateway Controller
- Describe the function of the Media Server
- Understand the function of the G6 Universal Gateway
- Describe the function of the G5 Line Access Gateway
- Describe the function of the G9 Converged Gateway
- Describe the function of the G5 SIP ESA

**Course Length and Delivery Method** 1 Day Leader led

## **(C20RMS11) C20 on RMS Solution Overview**

### **Course Description:**

The C20RMS11 is a one-day Self-Paced C20 on RMS Solution Overview course. Each component is discussed to show its role in the solution as well as its hardware platform and associated user interfaces.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the C20 on RMS solution. It is a pre-requisite course for advanced courses in the curriculum. This course was designed for both technical and managerial personnel.

### **Key Topics:**

- Overview of Ribbon's C20 on RMS network components:
  - C20 on RMS Solution Overview
  - GENView Manager (GVM)
  - C20 on GENIUS
  - Application Server (AS)
  - Session Server Trunks (SST)
  - Signaling Point 2000 (SP2000)
  - Gateway Controller (GWC)
  - Media Server
    - G6 Media Gateway
    - G5 Media Gateway
    - G9 Media Gateway

### **Objectives:**

- Describe the Ribbon RMS Solution
- Identify the role of the GENView Manager
- Identify the C20 on RMS hardware and software components
- Understand the Ribbon SIP lines Application Server
- Describe the purpose of the Session Server Trunks application
- Describe and identify the Signaling Platform 2000
- Describe and identify the function of the Gateway Controller
- Describe the function of the Media Server
  - Understand the function of the G6 Universal Gateway
  - Describe the function of the G5 Line Access Gateway
  - Describe the function of the G9 Converged Gateway
  - Describe the function of the G5 SIP ESA

### **Course Length and Delivery Method**

1 Day Self-Paced

## **(C20RMS15) C20-RMS Solution Operations, Maintenance, and Fault Management**

### **Course Description:**

The purpose of this course is to familiarize the student with the operations and maintenance of the C20-RMS platform. The student will also become familiar with basic troubleshooting techniques using network element level GUI managers, and Command Line interfaces. The student will also use documentation to locate and resolve component level faults.

### **Intended Audience:**

This course is designed for personnel responsible for operating and maintaining the C20-RMS Server technologies. Course content also includes troubleshooting the platform and associated network element components in the C20-RMS Call Session Controller environment.

### **Key Topics:**

- C20-RMS Solution Overview
- C20-RMS Platform Hardware and Software
- C20-RMS EMS and CLI User Interfaces
- GENWare Application Management
- C20-RMS Routine Maintenance
- GENWare Fault Management
- GENView Manager Alarms
- Application Server Fault Management
- G6 Media Gateway Fault Management
- G9 Media Gateway Fault Management

### **Objectives:**

Upon completion of this course, you will be able to:

- Understand the C20-RMS Solution Architecture and Components
- Understand the RMS Hardware and Connectivity
- Understand the RMS Hardware and view the Hardware\Software Detail from the CLI
- Manage the C20 with the Core Element Manager and the GENWare CLI
- Manage Userid Authentication and Authorization
- View Service Groups, Units, and High Availability Status
- Manage the C20 Management Module Application Set
- Manage the C20 Virtual Call Agent
- Provision and Maintain Applications at the GENWare CLI
- Manage the Data Manager File System
- Execute System Level Health Check on the C20-RMS Platform
- Execute Routine Exercise Testing on the C20-RMS Platform
- Manage Software Patching and Backup Operations from the GENWare CLI
- Manage GENWare Events, Alarms, and Security Logs
- View Alarms and Launch Applications with GENView Manager

- View Fault data on the AS, G6, and G9 Network Elements

**Prerequisites:** C20RMS10 or C20RMS11 (C20-RMS Solution Fundamentals)

**Course Length and delivery method:** 5 Days - Leader Led or E-Learning

## (GEN15) C20 on GENiUS Operations, Maintenance, and Fault Management

### Course Description:

The purpose of this course is to familiarize the student with the operations and maintenance of the C20-GENiUS platform. The student will also become familiar with basic troubleshooting techniques using network element level GUI managers, and Command Line interfaces. The student will also use documentation to locate and resolve component level faults.

### Intended Audience:

This course is designed for personnel responsible for maintaining the GENiUS shelf in the C20 Call Session Controller environment with Sandy Bridge based hardware. This course is designed for personnel responsible for operating and maintaining the C20-GENiUS Server technologies. Course content also includes troubleshooting the platform and associated network element components in the C20-GENiUS Call Session Controller environment.

### Key Topics:

- C20-GENiUS Solution Overview
- C20-GENiUS Platform Hardware and Software
- C20-GENiUS EMS and CLI User Interfaces
- GENWare Application Management
- C20-GENiUS Routine Maintenance
- GENWare Fault Management
- GENView Manager Alarms
- Application Server Fault Management
- G6 Media Gateway Fault Management
- G9 Media Gateway Fault Management

### Objectives:

Upon completion of this course, you will be able to:

- Understand the C20-GENiUS Solution Architecture and Components
- Discuss the shelf and blade components
- Describe the Multi-Application Rack Mount Server Hardware
- Show GENiUS Hardware and Software Detail from the CLI
- Understand the Platform User Interfaces
- Access the Core Element Manager (CEM)
- Access the Command Line Interface (CLI) and understand the syntax and modes
- Manage GENWare Users and Groups
- Understand the Application Inventory Manager (AIM) CLI Level
- Manage the C20 Management Module Applications
- Access Application Management Commands from GENView Manager
- Identify Service Group Names and Functions
- Execute System Health Checks

- Perform Routine Exercise (REx) testing
- Manage and Replace Disk Drives and Blades in the GENiUS shelf
- Manage Patching in the GENiUS Shelf
- Manage Backups in the GENiUS Shelf
- Manage GENWare Events, Alarms, and Security Logs
- View Alarms and Launch Applications with GENView Manager
- View Fault data on the AS, G6, and G9 Network Elements

**Prerequisites:**

GEN10 or GEN11 C20 – (C20 – GENiUS Solution Overview)

**Course Length and Delivery Method**

5 Day – Leader Led

## **(GEN35) GENiUS Class 5 Planning and Capacities**

### **Course Description:**

The purpose of this course is introduce you to the basic considerations when configuring a C20 on GENiUS platform by reviewing the System Engineering Bulletin, SEB\_09-00-003 (C20 on GENiUS Capacity Engineering) and other related SEBs.

### **Intended Audience:**

The learning audience for the GEN35 Ribbon Class 5 Planning and Capacities course are engineers responsible for managing the network architecture.

### **Key Topics:**

- C20 on GENiUS Overview
- C20 on GENiUS Capacities, including:
  - Call Agent (CA)
  - Gateway Controllers (GWC)
  - Session Server Trunks (SST)
  - A2 Converged Application (A2)
  - SP2000 (Signaling Platform 2000)
- G9 & G6 Overview and Capacities

### **Objectives:**

In this course, you will learn how to:

- Understand the general System overview for the Call Center
- Identify the components and topology of a GENiUS deployment
- Understand the limitations of GENiUS ATCA components:
  - Call Agent (CA)
  - Gateway Controllers (GWC)
  - Session Server Trunks (SST)
  - A2 Converged Application (A2)
  - SP2000 (Signaling Platform 2000)
- Describe the G9 Trunk and G6 Trunk / Packet Line Gateways

### **Prerequisites:**

Knowledge and basic understanding of communications.

GEN10 or GEN11

### **Course Length and Delivery Method:**

2 Days Leader Led



## **(C20RMS35) C20 on RMS Solution Planning and Capacities**

### **Course Description:**

The purpose of this course is introduce you to the basic considerations when configuring a C20 on RMS platform by reviewing the System Engineering Bulletin, SEB\_09-00-021 (C20 on RMS Engineering Rules) and other related SEBs.

### **Intended Audience:**

The learning audience for the C20RMS35 Ribbon C20 on RMS Planning and Capacities course are engineers responsible for managing the network architecture.

### **Key Topics:**

- C20 on RMS Overview
- C20 on RMS Capacities, including:
  - Call Agent (CA)
  - Gateway Controllers (GWC)
  - Session Server Trunks (SST)
  - Application Server (AS)
  - SP2000 (Signaling Platform 2000)
- Media Servers: GMS and MAS Capacities
- G9, G6 and G5 Overview and Capacities

### **Objectives:**

In this course, you will learn how to:

- Identify the components and topology of a C20 on RMS deployment
- Understand the limitations of the C20 on RMS components:
- Call Agent (CA)
  - Gateway Controllers (GWC)
  - Session Server Trunks (SST)
  - Application Server (AS)
  - SP2000 (Signaling Platform 2000)
- Describe the G9 Trunk, G6 Trunk / Packet Line and G5 Gateways

### **Prerequisites:**

Knowledge and basic understanding of communications.

C20RMS10 or C20RMS11

### **Course Length and Delivery Method:**

2 Days Leader Led

## **(GMS15) GENBAND Media Server (MS) Operations, Maintenance and Configuration**

### **Course Description:**

The purpose of this course is to provide you with the skills and knowledge to understand the operations, configuration, and maintenance of the GENBAND Media Server (MS) in a C20 hosted office.

### **Intended Audience:**

This course is designed for individuals who are responsible for installing and maintaining the GENBAND MS in a C20 solution.

### **Key Topics:**

- Identify the components and topology of a C20 on RMS deployment
- Introduction to the GENBAND Media Server (MS)
- Hardware and Software Architect
- Management Interfaces
- IP Network Integration
- Base Configuration
- C20 integration configuration
- AS integration configuration
- Fault and Performance Management

### **Objectives:**

In this course, you will learn how to:

- Describe the purpose of the GENBAND Media Server (MS).
- Identify the hardware and software requirements for GENBAND MS.
- Identify the different GENBAND MS management interfaces.
- Understand the IP network integration for the GENBAND MS.
- Define the GENBAND MS – Base Configuration
- Identify the GENBAND MS – C20 integration configuration.
- Understand the GENBAND MS – AS integration configuration.
- Examine and use fault and performance management tools available for the GENBAND MS.

### **Prerequisites:**

Knowledge and basic understanding of communications.

GEN10 or GEN11 or C20RMS10 or C20RMS11

### **Course Length and Delivery Method:**

2 Days Self-Paced

## **(GMS16) GENBAND Media Server (MS) Operations, Maintenance and Configuration**

### **Course Description:**

The purpose of this course is to provide you with the skills and knowledge to understand the operations, configuration, and maintenance of the GENBAND Media Server (MS).

### **Intended Audience:**

This course is designed for individuals who are responsible for installing and maintaining the GENBAND MS hosted by an Application Server in a Voice over IP network.

### **Key Topics:**

- Introduction to the GENBAND Media Server (MS)
- Hardware and Software Architect
- Management Interfaces
- IP Network Integration
- Base Configuration
- AS integration configuration
- Fault and Performance Management

### **Objectives:**

In this course, you will learn how to:

- Describe the purpose of the GENBAND Media Server (MS).
- Identify the hardware and software requirements for GENBAND MS.
- Identify the different GENBAND MS management interfaces.
- Understand the IP network integration for the GENBAND MS.
- Define the GENBAND MS – Base Configuration
- Understand the GENBAND MS – AS integration configuration.
- Examine and use fault and performance management tools.

### **Prerequisites:**

Knowledge and basic understanding of communications.

GEN10 or GEN11 or C20RMS10 or C20RMS11

### **Course Length and Delivery Method:**

2 Days Self-Paced

## **(OSSG20) C20 - OSSGate and Servord+**

### **Course Description:**

An Introduction to OSSGate and Servord+ provides a brief understanding of the OSSGate server and it's functionality in provisioning and testing CVoIP lines using SERVORD+.

### **Intended Audience:**

This course is designed for anyone that needs to provision CVoIP lines.

### **Key Topics:**

- Introduction to OSSGate; what it is and its physical connectivity
- Review of Servord; Servord compared to OSSGate's Servord
- Explanation of OSSGate Servord + ; Server access, Commands and the Construction of Servord+ commands
- Explanation of the OSSGate's line test interface for the MG9000

### **Objectives:**

Upon completion of this course, you will be able to:

- Identify OSSGate as an application for CVoIP provisioning and testing
- Understand differences between OSSGate SERVORD+ and Legacy SERVORD
- Distinguish OSSGate as part of the C20 Management Tools application
- Understand OSSGate Connections
- Define OSS/Telnet Secure and Non-secure connections
- Recognize commonly used SERVORD+ commands
- Understand command provisioning for lines using CI and SERVORD +
- Configure new lines using OSSGate commands

### **Prerequisites:**

Data entry or Service Order administration skills

GEN10 or GEN11 or C20RMS10 or C20RMS11 - C20 Solution Fundamentals

### **Course Length and Delivery Method:**

1 Day Self-Paced

## **(XLA35) C20 - Basic Translations**

### **Course Description:**

This course assumes you have no previous DMS translations experience. It gives you the ability to create translations that are used to process line-to-line, line-to-trunk, and trunk-to-line calls. You will have hands-on practice creating the information necessary to process these call types.

### **Intended Audience:**

Translations engineers and support personnel, maintenance technicians, anyone who needs to understand basic translations for the Voice over IP network.

### **Key Topics:**

- Table Editor
- Introduction to SERVORD
- Introduction to Documentation
- Introduction to Translations
- TRAVER Syntax
- Line Tables
- Standard Pretranslator Screening Tables
- Code Validation Screening Tables
- Operator Services Traffic Screening Tables
- Class-of-Service Screening Tables
- Local Calling Area Screening Tables
- Treatment Tables
- Office Route Tables
- Trunk Group Tables
- Announcement Tables

### **Objectives:**

Upon completion of this course, you will be able to:

- Apply Table Editor commands to maneuver, manipulate, and locate information in the data tables.
- Put phones in service for verification purposes and to identify the appropriate pointer tables for call processing.
- Explain how to locate procedures in Ribbon documentation.
- Describe how data tables are used to process the following types of calls: line-to-line, line-to-trunk, trunk-to-line
- Identify the proper syntax for initiating a TRAVER.
- Describe the purpose of the translations data tables that relate to lines, screening, routing, and trunks.
- Create datafill used for line-to-line, line-to-trunk, and trunk-to-line translations.
- Initiate TRAVERs through the Communication Server's translations data tables to verify tuple datafill.

### **Prerequisites:**

GEN10 or GEN11 or C20RMS10 or C20RMS11 - C20 Solution Fundamentals

### **Course Length and Delivery Method:**

5 Day Leader Led

## **(SST16) C20 on GENiUS/RMS - Session Server Trunks Provisioning and Maintenance**

### **Course Description:**

The purpose of this course is to provide you with the skills and knowledge to configure and maintain Session Server Trunks on GENiUS ATCA platform.

You will also learn basic fault and performance management methods. To reinforce learning, you will complete a number of exercises based on the topics covered.

### **Intended Audience:**

This course is designed for individuals responsible for installing and maintaining Session Server Trunks in a Carrier VoIP network.

### **Key Topics:**

- Session Server Trunks Overview
- Session Server Trunks hardware
- Session Server Trunks User Interfaces
- DPT Trunk provisioning requirements
- Basic Session Server Trunks configuration
- Advanced Session Server Trunks configuration
- Basic Session Server Trunks fault management
- Session Server Trunks fault management tools

### **Objectives:**

Upon completion of this course, you will be able to:

- Describe the purpose of the Session Server Trunks.
- Identify the hardware components required for Session Server Trunks.
- Navigate the different Session Server Trunks user interfaces.
- Datafill Dynamic Packet Trunks used with Session Server Trunks.
- Perform basic Session Server Trunks configuration.
- Perform advanced Session Server Trunks configuration.
- Perform basic fault management of the SIP Gateway Application and the Session Server Trunks platform.
- Examine advanced fault management tools available for the SIP Gateway Application and the Session Server Trunks platform.

### **Prerequisite Skills:**

Basic user interface navigation skills

Basic understanding of DMS technology and MAPCI

Familiarity with IP and other technology protocols

Basic understanding of purpose, hardware, and connectivity of each network component a VoIP network solution

**Prerequisites:**

GEN10 or GEN11 or C20RMS10 or C20RMS11

**Course Length and Delivery Method:**

3 Day Leader Led

## **(SP2K15) Signaling Platform 2000 Operations, Administration, Maintenance, & Provisioning**

### **Course Description:**

The SP2000 Operations, Administration, Maintenance, & Provisioning course familiarizes the student with the Architecture, Configuration, Administration, Fault Management and Maintenance of the Signaling Platform 2000 as a signaling gateway with R3 hardware and software.

The students are presented with structured hands-in exercises to practice the commands and Navigating both the Menu Driven and Graphical User Interfaces (GUIs).

### **Intended Audience:**

The learning audience for the SP2K15 OAMP course includes those responsible for maintaining and updating the SP2000 platform components and the SS7 network. This course targets both maintenance technicians and technical support personnel.

### **Key Topics:**

- Architecture
- Access
- Configuration
- Administration and Security
- Fault Management
- Maintenance

### **Objectives**

- Identify key concepts of the SP2000 architecture.
- Access and log in to an SP2000.
- Identify the configurations of the SP2000 to function as an SG.
- Configure a system with links and routeset.
- Perform security and administration functions.
- Perform fault management and troubleshooting tasks.
- Perform maintenance tasks

### **Prerequisite Skills:**

Knowledge and basic understanding of SS7 messaging.

### **Prerequisite Courses:**

None

### **Course Length and Delivery Method:**

3 Days - Leader Led



## **(NPM35) CVoIP: Network Patch Manager**

### **Course Description:**

The Network Patch Manager (NPM) utility is used to patch selected components of a customer's Carrier Voice over IP (CVoIP) network. CVoIP: Network Patch Manager explains patching generally, followed by an introduction to the NPM and hands-in practice using NPM.

### **Intended Audience:**

Operations and Maintenance personnel

### **Key Topics:**

- How a patch works
- NPM patching architecture and applications
- Patching sequence
- Manual patching using NPM
- Automatic patching using NPM
- Troubleshooting
- Hands-in exercises for patching and troubleshooting

### **Objectives:**

Upon completion of this course, you will be able to use NPM from GUI or command line to:

- launch NPM, retrieve and apply patches
- remove patches
- restart devices
- verify results
- setup automatic patching
- troubleshoot patching

### **Prerequisites:**

Basic knowledge of hardware and software architecture of Ribbon CVoIP networks

**Course Length and Delivery Method:** ½ day Self-Paced

## **(GVM15) – GENView Manager Operations**

### **Course Description:**

The GENView Manager (GVM) Operations course covers the usage of the GVM application for working with alarms, logs, performance management, launching applications, administration, and topology management. It also covers topics related to system administration and management of the network. Lab exercises help to reinforce the course topics. The course is currently based on software release 19 GVM 4.0.

### **Intended Audience:**

Personnel responsible for supporting network elements and managers in the Carrier Voice over IP environment.

### **Key Topics:**

- GVM Purpose
- GVM Platform
- GVM User Interfaces
- GVM Fault Management
- GVM Performance Management
- GVM Application Launching
- GVM Inventory Management
- GVM Maintenance
- GVM Security
- GVM Administration

### **Objectives:**

Upon completion of this course, you will be able to understand and perform as follows:

- Understand the architecture of the GENView application
- Understand the GENView Manager Platform
- Login and navigate the GENView Manager clients
- Utilize GENView Manager for managing faults
- Create and manage performance jobs
- Launch element management systems and command lines
- Manage the GENView Manager Inventory
- Perform maintenance actions on network elements
- Understand the GENView Security (GSEC) application
- Perform Administrative actions on the GENView Manager application

### **Prerequisites:**

GEN10 or GEN11 or C20RMS10 or C20RMS11 - C20 - Solution Fundamentals

**Course Length and Delivery Method:** 2 Day Leader Led

## (CALLP26) C20 on GENiUS/C20 on RMS - Advanced Call Processing Tools

### Course Description:

This course introduces Tools for customers to use to capture Signaling Protocol messaging involved in Call Processing for Call Session Control. This course will focus on SIP based call scenarios based on Ribbon Application Server lines, Session Server Trunks and the C20 Call Session Controller deployed within the C20 on GENiUS and C20 on RMS platforms. In addition, this course will also cover H.248 message capture on the G9 Media gateway.

You will understand the resource relationship between the AS lines and SIP/SIP-T DPT trunks, their associated Gateway Controllers and gateway endpoints definitions.

C20 Call Agent, AS and Session Server Trunk GUI and CLUI/CLI tools are introduced to discover relevant IP addressing, to locate key data and to capture various call flow messages. SIP/SIP-T, GCP and PPVM protocol messages are explored as they relate to captured messages and to the phases of line to line, line to trunk, trunk to trunk call scenarios in a Carrier VoIP environment. Activities are included to reinforce all the concepts introduced in this course.

### Intended Audience:

Tier II/III and NOC level engineers responsible for troubleshooting the CVoIP solution.

### Key Topics:

Base network topologies, signaling hops, bearer paths and protocols supporting the CVoIP line environments involving the C20 Call Agent, AS and Session Server Trunks gateways.

Access of key data resources across the following components in support of the CVoIP line call environment:

- C20 Call Session Controller
  - SIP-T Trunks GWCs
  - SIP Line GWCs
  - Session Server Trunks
  - Application Server
  
- Tools to capture key data and call messages:
  - CallTrak/MSGTRACE/GWTRACE
  - GWAdmin
  - AS Debug CLUI capture tools
  - SST CLUI capture tools
  - GWCTRACI

Discussion of protocols supporting SIP line / trunk call environment and the information flow between protocols for the call phases.

Protocols include:

- PPVM - Peripheral Processor Virtual Machine

- GCP - Generic Call Processing
- SIP / SIP-T - Session Initiation Protocol / Session Initiation Protocol-Trunks
- H.248 messages on the G9

### Objectives:

Upon completion of this course, you will be able to:

- Describe signaling protocols supporting various call path scenarios within the CVoIP environment supporting AS and the Session Server Trunks (SST).
- Use data gathering tools in the C20 Call Agent and the Gateway Controller to locate connectivity information and other key endpoint data in support of call processing.
- Access and capture key data across the SST gateway, the related GWC and the C20 in support of connectivity and troubleshooting the SIP trunks environment in the CVoIP network.
- Use specific tools to capture and view signaling protocol messages associated with Call Processing on the AS and Session Server Trunks.
- Interpret key fields within SIP and GCP messages captured by trace tools in the AS and SST gateway and associate these messages to the basic phases of a SIP/SIP-T call.
- Access the CallTrak utility in the C20 Call Agent to trace data during active calls with the CallTrak tools MSGTRACE.
- Interpret key fields within PPVM messages captured by the C20 CA CallTrak MSGTRACE tool, and align the PPVM messages with the basic phases of a SIP/SIP-T call.
- Identify and define individual components that define an endpoint and use selected tools to display nodes, terminal identifiers and endpoints.
- Identify how to use CALLTRAK GWTRACE to capture H.248 messages on the G9

### Prerequisites:

This course requires students to have the basic fundamental knowledge of the C20 Network Elements taught in this course.

#### C20 on GENiUS Prerequisite courses:

GEN16: C20-GENiUS Operations and Maintenance

SST16: C20 on GENiUS – Session Server Trunks Provisioning and Maintenance

A213: Application Server (AS) C20 Hosted Overview

C20G915: G9 Converged Gateway – Operations, Administration and Maintenance

#### C20 on RMS Prerequisite courses:

C20RMS15: C20-RMS Solution Operations, Maintenance, and Fault Management

SST16: C20 on GENiUS – Session Server Trunks Provisioning and Maintenance

A213: Application Server (AS) C20 Hosted Overview

C20G915: G9 Converged Gateway – Operations, Administration and Maintenance

NOTE: The C20G915 is optional and is not necessary if the customer does not have the G9 in the network.

**Course Length and Delivery Method:** - 4 Days Leader Led

## **(UXLA37) C20 Universal Translations**

### **Course Description:**

This course provides the students with the key skills to implement the datafill required to support a C20 Universal Translations scheme.

The course is instructor led with a high degree of practical content and student activity.

### **Intended Audience:**

Personnel responsible for the initial datafill and database management of C20 Universal Translations.

### **Key Topics:**

- Centrex Translations overview
- Trunk group tables
- Route tables
- Universal Translations overview
- Universal Translations datafill
- Call Control and Universal Screening datafill\

### **Objectives:**

On successful completion the student will be able to:

- Explain the function of a customer group and datafill customer group tables
- Describe the function of trunk tables and datafill trunk groups
- Describe the function of the route tables and datafill route lists using appropriate selectors
- Describe the function of Universal Translations tables
- Apply Universal Translations to resolve - Line to Trunk - Trunk to Line -Line to Line calls -Trunk to Trunk calls
- Describe screening of CLI's in Universal Translations and the use of White v Black lists.
- Datafill Tables to screen CLI's in Universal Translations
- Datafill Tables to screen calls using Call Control and Universal Screening
- Use TRAVER and TRANSVER to verify correct call routing through translations

### **Prerequisites:**

Knowledge and basic understanding of Centrex Translations is desirable.

GEN10 or GEN11 or C20RMS10 or C20RMS11 - C20 - Solution Fundamentals

### **Course Length and Delivery Method:**

5 Days Leader Led

## **(C310) C3 Signaling Controller Overview**

### **Course Description:**

This self-paced overview course provides the basic understanding of the functions and capabilities of the Ribbon C3 Signaling Controller. It provides general information of the configurations and scenarios where the C3 Signaling Controller can be utilized and the services it can provide as Media Gateway Controller, Signaling Gateway and Application Gateway. It describes the hardware, modules and software that enable its operation.

### **Intended Audience:**

This course is purposed for anybody that needs to engage in any discussion related to the Ribbon C3 Signaling Controller. It is the course for business or administrative associates that requires a general understanding of the solution, and is the foundation for those to become technical experts with the equipment.

### **Key Topics:**

- C3 Functions
- C3 Hardware
- C3 Scalability
- C3 Management

### **Objectives:**

Upon successful completion of this course, you will be able to:

- Position Ribbon C3 in a VoIP network as Application Gateway
- Position Ribbon C3 in a VoIP network as Signaling Gateway
- Position Ribbon C3 in a VoIP network as Media Gateway Controller
- Identify the hardware that supports Ribbon C3 Signaling Controller and its optional modules
- Identify minimum and maximum configuration of a Ribbon C3 Signaling Controller
- Describe GenView as the Graphical User Interfaces and its functional modules
- Describe the Command Line Interface, the structure of commands and navigation

### **Prerequisites:**

Enrollees are also expected to have a basic understanding of switching and networks

### **Course Length and Delivery Method**

3 hours Self-Paced

## **(C3G915) – C3 Hosted Converged Gateway – Operation, Administration, Provisioning and Maintenance**

### **Course Description:**

The C3G915 – C3 Hosted Converged Gateway - Operation, Administration, Provisioning & Maintenance Course is geared toward Service Personnel, Administrators and Maintenance personnel who require an understanding of the G9 Converged Gateway System when hosted with a C3 call controller. The student is equipped with an understanding of hardware, Operating System as well as software and database for the C3 hosted G9 system. Note: this course is only required for C3 controller implementations. For C20 controllers and third party controllers, customers should register for the G915 course.

### **Key Topics:**

- Overview of the Element Management System (EMS) Graphical User Interface (GUI)
- System hardware and software on the G9 gateway
- System Administration and applications
- Events and Alarms
- Security
- Performance Management
- Accounting Management
- System Status reporting tools
- Configuration Database
- Trunk Database

### **Objectives:**

- Understanding standard G9 Media Gateway Documentation and usage
- Understanding basic utilization with the Ribbon C3 Media Gateway Controller
- Understanding the design, navigation and operations of the Genview EMS in conjunction with the C3/G9 products
- Understanding EMS functional areas
- Understanding Ancillary Equipment used in conjunction with the G9 product
- Understand the architecture of the G9 Converged Media Gateway
- Understanding operation and functionality of gateway cards
- G9 call flow examples
- Understanding gateway maintenance
- Discussion of G9 Fault monitor and reporting sub-system
- Security management understanding
- Understanding of performance statistical reports and their operations
- Understanding of G9 status displays and their meaning
- Call trace operations and execution
- Call Detail Record retrieval and understanding
- Create Configuration Database for a variety of interface components

- Create Physical Facilities

**Prerequisites:**

Enrollees are also expected to have a basic understanding of switching and networks

G910 Media Gateway Basic Overview

C310 Media Gateway Controller Basic Overview

**Course Length and Delivery Method** 5-days, Leader Led



## (C335) Signaling Controller – Basic Translations

### Course Description:

This 5-day Leader-Led C335 Signaling Controller Basic Translations Course is designed to teach students basic skills needed to create translations that are used to process line-to-line, line-to-trunk, and trunk-to-line calls. You will have hands-on practice creating the information necessary to process these call types.

### Key Topics:

- Central office call translations
- Call routing hierarchy
- Table routing
- Operational characteristics
- Genview EMS
- Documentation
- Types of Groups
- Digit fences
- Translators
- Country and city codes
- Routes
- Trunk termination

### Objectives:

After completing the C335 course a participant should be able to:

- Understand the layout, entry and configuration for Complex Central office call translations
- Have a Basic understanding of Call Routing hierarchy
- Understand supporting tables, parameters, variations and call flows
- Understand the Operational Characteristics for,
  - Customer Groups
  - Trunk groups
  - Prefix Translations
  - Digit Fence
  - Call Screening
  - National translation
  - International Country code and City Cod
  - Originator Routing, Originator Route modifier, Operator Route Modifier, Emergency Route Modifier
  - Route List
  - Call treatment
  - Trunking tables
- Identify the Genview EMS Architecture
- Launch Genview EMS
- Navigate the GENVIEW EMS functional areas in relationship to translations
- Access documentation

- Locate Specific documentation
- Identify different groups
- Identify customer group, trunk group, prefix group pointers and Subscriber group pointers
- Identify a Trunk group
- Identify the significant fields of a trunk group
- Define a customer group
- Find where the customer data is located
- Identify trunk type features
- Define the purpose of a prefix group
- Locate the prefix group
- Locate the prefix tree
- Define a digit fence
- Define digit fence properties
- Identify the purpose of a National translator
- Identify the fields in national translations
- Identify country codes
- Identify city codes
- Identify the purpose of call screening
- Understand Origination Based Routing
- Identify the function of Route Descriptors
- Identify the purpose of Route modifiers
- Identify the function of Route list
- Understand Trunk termination options

**Prerequisites:**

C310 Media Gateway Controller Basic Overview

**Course Length and Delivery Method**

5 Day – Leader Led

## **(C1510) C15 Product Overview and Fundamentals**

### **Course Description:**

The purpose of this course is to provide the learner with a comprehensive overview of the C15 system including how the C15 fits into the network. Other topics include the C15 hardware architecture, input/output system, password security, documentation, as well as the available services and features. Instructions are provided for using the C15 documentation and communicating with the C15 via the Command Line Interface (CLI) and Graphical User Interface (GUI).

### **Intended Audience:**

This course is intended for anyone needing a general overview of the Ribbon C15 product.

### **Key Topics:**

- C15 Hardware Overview
- C15 Documentation
- C15 Features and Services
- Basic Input/output
- Password Security
- VoIP – SIP Gateway and Gateway Line
- Vendor Hardware

### **Objectives:**

Upon completion of this course, you will be able to:

- Describe the C15 hardware architecture
- Use the C15 documentation
- List features and services available on the C15
- Describe vendor hardware used in the C15
- Perform basic input/output on the C15
- Access the Graphical User Interface (GUI), and perform basic tasks
- Configure C15 password security options
- Configure VoIP - SIP subscriber lines on the C15

### **Prerequisites:**

None

### **Course Length and Delivery Method:**

1 Day Leader Led

## **(C1511) C15 Product Overview and Fundamentals**

### **Course Description:**

The purpose of this course is to provide the learner with a comprehensive overview of the C15 system including how the C15 fits into the network. Other topics include the C15 hardware architecture, input/output system, password security, documentation, as well as the available services and features. Instructions are provided for using the C15 documentation and communicating with the C15 via the Command Line Interface (CLI) and Graphical User Interface (GUI).

### **Intended Audience:**

This course is intended for anyone needing a general overview of the Ribbon C15 product.

### **Key Topics:**

- C15 Hardware Overview
- C15 Documentation
- C15 Features and Services
- Basic Input/output
- Password Security
- VoIP – SIP Gateway and Gateway Line
- Vendor Hardware

### **Objectives:**

Upon completion of this course, you will be able to:

- Describe the C15 hardware architecture
- Use the C15 documentation
- List features and services available on the C15
- Describe vendor hardware used in the C15
- Perform basic input/output on the C15
- Access the Graphical User Interface (GUI), and perform basic tasks
- Configure C15 password security options
- Configure VoIP - SIP subscriber lines on the C15

### **Prerequisites:**

None

### **Course Length and Delivery Method:**

1 Day Self-Paced

## **(C1520) C15 Line Administration**

### **Course Description:**

The purpose of this course is for the student to learn the process for configuring subscriber lines, as well as basic information for configuring VoIP phones. Topics include logging into the C15, loading programs and entering commands, using the documentation, and interpreting output messages. Instructions will be provided for using both the Graphical User Interface (GUI), and the Command Line Interface (CLI).

### **Intended Audience:**

This course is intended for anyone responsible for performing administrative tasks on subscriber lines in the C15.

### **Key Topics:**

- C15 Service Order Procedures (SOPs)
- C15 Station Options
- Graphical User Interface
- Station Profiles
- Directory Number Hunt Groups
- Voice Mail
- Lines
- Gateways and Gateway Lines
- Stations

### **Objectives:**

Upon completion of this course, you will be able to:

- Configure subscriber lines in the C15
- List the station options available to subscribers in the C15
- Use Service Order Procedures (SOPs) to perform data modifications in the C15
- Use the C15 Command Line Interface (CLI) to configure subscriber lines
- Configure VoIP phones for use with the C15
- Use the C15 Graphical User Interface (GUI) to configure subscriber lines

### **Prerequisites:**

None

### **Course Length and Delivery Method:**

2 Day Leader Led or 1 Day Self-Paced

## **(C1521) C15 Business VoIP Configuration and Provisioning**

### **Course Description:**

The purpose of this course is to introduce the student to C15 Enhanced Business Services and Centrex EBS and IBS. Students will create EBS groups and lines, configure services on IP Phones. Students will also learn about APMAX, SAC and MADN.

### **Intended Audience:**

This course is designed for those who need to have a better understanding of Enhanced Business Services (EBS) or Centrex on C15.

### **Key Topics:**

- C15 Hosted services overview
- SIP Attendant Console and ACD features
- Service Bundles
- Centrex – Enhanced Business Services (EBS)
- Centrex – Integrated Business Services (IBS)
- APMAX Automated Configuration Services (ACS)
- C15 Service Order Procedures (SOP)

### **Objectives:**

Upon completion of this course, you will be able to:

- Understand Enhanced Business Services (EBS) on the C15
- Create an EBS Group and Lines
- Configure SIP Phones via APMAX Automated Configuration Service (ASC)
- Create a Multiple Appearance Directory Number (MADN)
- Create C15 SIP Lines using the C15 GUI
- Understand how a SIP Attendant Console (SAC) is configured

### **Prerequisites:**

None

### **Course Length and Delivery Method:**

3 Days Leader Led

## **(C1515) C15 Operations, Maintenance and Fault Management**

### **Course Description:**

The purpose of this course is to provide the learner with the skills required to perform maintenance activities on the C15 system. Topics include the Core Controllers, IP Switching Fabric, SIP Lines, SIP Trunks, CCS7, AIN, and LNP. The lab exercises equip the learner to conduct maintenance activities and perform troubleshooting procedures.

### **Intended Audience:**

This course is intended for anyone responsible for performing maintenance on the C15.

### **Key Topics:**

- Troubleshooting
- Routine Maintenance
- Replace Core Controller
- Replace Port Controller
- System Initialization
- System Reload
- Alarm Indicators
- Gateways and Gateway Lines – Configure
- Gateways and Gateway Lines – Troubleshoot registration issues
- C15 Call History Recording Server

### **Objectives:**

Upon completion of this course, you will be able to:

- Use appropriate documentation and trouble-shooting techniques to clear faults in a C15 office
- Verify the Ethernet physical layer connections between C15 components, including cable color coding
- Identify cables connecting from the Rear Transition Modules (RTMs) to Time Division Multiplex (TDM) equipment
- Troubleshoot problems with configuring VoIP lines
- Configure alarm indicators in a C15 office, which requires making configuration changes in the NetGuardian and in the C15
- Replace Core Controllers and Port Controllers, both Copper and Optical
- Add DS1 spans and Trunks including returning to service
- Use Translations Verification (TRVR) to troubleshoot basic call issues
- Launch queries to databases on the CCS7 network
- Use the Call History Recording Server to access C15 call history files.

### **Prerequisites:**

C1510 C15 Product Overview and Fundamentals Leader Led **or** C1511 C15 Product Overview and Fundamentals Self-Paced

### **Course Length and Delivery Method:**

5 Day Leader Led

## (C1535) C15 Translations

### Course Description:

The purpose of this course is to for the student to learn the fundamental aspects of C15 translations, including tracing calls and modifying office data. This course includes lecture and hands-on activities. The hands-on activities include, configuring VoIP phones, making changes in translations data, performing Translations Verification (TRVR), and making test calls to confirm the changes.

Digit translations is the process of taking any set of arbitrary dialed digits and defining a call process path to either a working line or a route. This course is designed to take the student through the C15 data blocks and translators required for digit translations.

### Intended Audience:

This course is intended for anyone responsible for performing translations on the C15.

### Key Topics:

- C15 Call Processing
- Prefix, Address, and Screening Translators
- Data Blocks
- Translations Verification (TRVR)
- Equal Access
- Local Number Portability
- Centrex – Business Applications
- ISDN Primary Rate Interface (PRI)

### Objectives:

Upon completion of this course, you will be able to:

- Use the Command Line Interface (CLI) and appropriate documentation to query, add, and modify the data blocks and translators in the C15
- Configure Gateways and Gateway Lines in the C15
- Modify translators to support CLASS features
- Add an Equal Access carrier
- Port numbers in and out of a C15 office
- Add a Directory Number Hunt (DNH) group
- Add a Centrex business group
- Modify translators to support Centrex features
- Setup a Primary Rate Interface (PRI) Line Trunk Group (LTG)

### Prerequisites:

C1510 C15 Product Overview and Fundamentals –Leader Led **or** C1511 C15 Product Overview and Fundamentals – Self Paced.

**Course Length and Delivery Method:** 5 Day Leader Led



## (C2018) C20 & CS2000 Transition to GVM 2.0

### Course Description:

The *C20 & CS2000 Transition to GVM release 2.0* course covers the changes made when the Oracle/Sun based servers are migrated to either the GENiUS NDM blade for C20 or to the IA-RMS chassis for CS2000. Management differences and hardware differences are covered as well as a comparison of how management tasks were done before as to how tasks are done now.

The students are presented with structured hands-in exercises to practice the new commands and Navigating the new Graphical User Interfaces (GUIs)

### Intended Audience:

This course is intended for Central Office technicians with CS2000 or C20 experience up to release CVM16 or 17 who need to understand the changes in GVM 2.0 where the physical servers are migrated to applications.

### Topics:

- Transition changes
- Genware management commands
- IA-RMS chassis & GENiUS chassis based GVM
- Comparison of Sun based application commands vs. Genware application commands.

#### Differences of:

- IEMS to GVM
- CEM with own IP address
- Security Server to GSEC
- CMT to CMTg
- CBM to CBMg
- OAM Application Launcher

### Lessons:

- GVM 2.0 Transition for C20 & CS2K Overview
- IA-RMS
- GENWare Interface
- Comparison of Tasks
- New GUIs

### Objectives:

Upon completion of this course, you will be able to:

- Identify the changes required for transition from CVM16 or 17 to R18 on GVM.
- Identify the Fault Management changes in the transition to GVM
- Identify the Performance Management changes in the transition to GVM
- Identify the Billing Delivery changes in the transition to GVM
- Identify the access changes in the transition to GVM
- Identify the Provisioning changes in the transition to GVM
- Identify Trap changes to the Northbound feed in the transition to GVM
- Describe software of the IA-RMS.
- Describe the hardware of the IA-RMS.
- Identify characteristics of the front and back panels.

- Describe the methods of access using the IA-RMS.
- Identify the layers of software
- Describe GENWare Service Groups and Service Units
- Navigate Hardware and Software commands
- Identify backup and restore commands
- Navigate the Application Inventory Management (AIM) CLI commands
- Navigate disk maintenance commands
- Application status, swacting, and stopping
- Hard Disk Replacement
- Replacing IA-RMS units & NDM blades
- Accessing and configuring cbmg and cmtg applications
- On GSEC, Manage:
  - Security policies
  - RADIUS clients
  - Users
  - Role permissions
- Navigate the GVM Web Start Client and the HTML Web Client
- Navigate the Core Element Manager (CEM)

**Pre-requisites:**

An understanding of CS2000 or C20 management at CVM17 or earlier.

**Course Length and Delivery Method**

3 days, Leader Led

## **(G5SE10) G5 SIP ESA**

### **Course Description:**

The G5SE10 SIP ESA is a half day, Self-Paced, G5 SIP ESA course that is geared toward Service Personnel, Administrators and Maintenance personnel who require an understanding of the G5 SIP ESA.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the G5 SIP ESA.

### **Key Topics:**

- Identify the differences between G5 SIP ESA and G5 SIP Monitor
- Access and log into the G5 SIP Ribbon Compact Server
- Navigate the G5 SIP ESA View functional areas
- Navigate the G5 SIP ESA Configure functional areas
- Navigate the G5 SIP ESA Update functional areas
- Navigate the G5 SIP ESA Support functional areas

### **Objectives:**

- Identify the purpose and modes of the G5 SIP ESA
- Identify the Hardware components of the Ribbon Compact Server
- Access the G5 SIP ESA GUI and CLI
- Identify the key G5 SIP ESA GUI commands
- Basic Provisioning
- Software Update
- Backup and Restore

### **Course Length and Delivery Method**

Half day Self-Paced

## **(G515) Line Access Gateway**

### **Course Description:**

This 2-day Leader Led G515 Line Access Gateway course provides the skills required to deploy the G5 Line Access Gateway by understanding the physical connections and interfaces. It also will discuss how the features of the G5 Line Access Gateway will fit in the network.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the G5 Line Access Gateway.

### **Objectives:**

- Understand the benefits of deploying the G5 Line Access Gateway
- Understand the physical connections and interfaces on the system
- Understand the features of the G5 Line Access Gateway and how it fits in the network
- Understand how to connect a PC to the G5 Line Access Gateway
- Understand how to access the TL1 Interface
- Understand how to access the Web Interface
- Learn how to do basic provisioning on the G5 Line Access Gateway
- Learn how to monitor and troubleshoot the G5 Line Access Gateway

### **Prerequisites:**

Basic Understanding of TDM or IP Theory

Basic Unix or Linux commands.

### **Course Length and Delivery Method**

2 Day Leader led

## **(G610) – Universal Media Gateway Basic Overview**

### **Course Description:**

The G610 Universal Media Gateway Basic Overview, which is 4 hours in length, will provide the student with a high level understanding of the G6's Basic Hardware, Provisioning, Alarms, Events and the Packet Line Gateway. The course is divided into six lessons. Each lesson contains a quiz to determine if the user needs to review any information. At the completion of the course, a final test is presented. The user must achieve an 85% on the final test to pass the course. The G610 Basic Overview is the pre-requisite to the G6 classes.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the Ribbon G6 Universal Media Gateway Product

### **Key Topics:**

#### **Product Architecture**

- Carrier Class Chassis Design
- Carrier Class Redundancy
- Carrier Class System Architecture
- Carrier Class Central Office Design
- Access Gateway Functionality
- Low – High Scalability
- Universal Media Gateway Interfaces
- Anatomy of a G6 – The Midplane

#### **Module Types**

- System Controller Module (SCM)
- SCM2
- SCM1 & SCM2 Comparison
- Access to Network Module (ANM)
- GbE1 ANM
- GbE2 ANM
- GbE ANM – IP Capabilities
- GbE2 LACP Implementation
- Link Aggregation Modules
- OC3 / STM-1 and DS3 Cards
- Telephony Port Modules (TPM)
- TPM Functions
- SCM1 & STS-1 / chDS3 TPM
- SCM2 & STS-2 / chDS3 TPM
- Module Redundancy

## **Platform Enabling Multiple Solutions**

- Class 5 Voice over Broadband
- Trunking Media Gateway
- Reverse Media Gateway
- Wide Array of Internetworking
- Interoperability
- Security Summary
- Release 10.2 Security Feature Enhancements

## **GENView EMS Manager**

- System Integration & Network Elements
- Advanced Client / Server Framework
- G6 Management – CLI
- GENView Benefits
- Fault Management
- Configuration Management
- Performance Management
- Security Management
- GENView Server Recommendation
- GENView Solaris Workstation Recommendation
- GENView Windows Workstation Recommendation

## **Maintenance**

- SCM LEDs
- ANM LEDs
- DS3 LEDs
- OC3 / STM-1 and Gbe ANM LEDs
- ANM CIM LEDs
- T1 / E1 TPM LEDs
- Differentiating Between a TPM1 & a TPM2
- T1 / E1 TPM CIM
- TPM Redundancy
- STS-1 TPM
- Fan Control Module
- Power Source
- BITS or Composite Clock Installation

## **Cabling**

- SCM Craft Port Connector
- DS3 ANM connectors
- OC3 / STM-1 ANM connectors
- GbE ANM connectors
- TPM T1 Connector / Pin outs
- STS-1 TPM Connectors
- E1 TPM Connectors

### **Prerequisites:**

Basic Windows Skills

Basic Telephony Knowledge

### **Course Length and Delivery Method**

4 hours Self-Paced

## **(G616) Universal Media Gateway Operations, Administration and Maintenance for Packet Line Gateway and Trunk Gateway**

### **Course Description:**

The G616 is a 3-day, Leader Led, G6 Universal Gateway - Operation, Administration & Maintenance for Packet Line and Trunk Gateway Course that describes and illustrates the ability of the G6 to function as a Packet Line Gateway to support physical and logical interfaces for the G5 Line Access Gateway and Access Bridging Interface for legacy XPM migration. This course will also address the capability of the G6 Universal Gateway to function as a Trunk Gateway in support of ISUP, PRI and CAS trunk circuits. The student is equipped with an understanding of the G6 Hardware, H.248 Softswitch Interface Virtual Media Gateway, Interface Groups, Fault Management, Security, Performance and C20 Call Session Controller and Gateway Controller associations to support the Packet Line Gateway (PLG) and Trunk Gateway (TGW) applications defined on the G6.

### **Intended Audience:**

This course is intended for Service Personnel, Administrators and Maintenance personnel who require an understanding of the G6 Universal Gateway deployed with the C20 Converged Softswitch that provides the G6 Gateway Call Control.

**Important Note: This course is based on G6 Universal Gateway deployment with the C20 Softswitch. Customers deploying the G6 without a C20 should not attend this course; they should attend the G615 Course.**

### **Key Topics:**

- G6 Universal Gateway Command Line Interface (CLI) and Element Management System (EMS) to manage and maintain G6 operations
- System hardware and configuration on the G6 Universal Gateway
- Description and illustration of the Interface Groups for PLG and TGW
- C20 Call Session Controller associations to support G6 PLG and TGW functions
- G6 Events and Alarms
- Emergency Service Module (ESM) and Emergency Stand Alone (ESA) capability
- G6 Maintenance and Testing capabilities

### **Objectives:**

Upon completion of this course, you will be able to:

- Provide an Overview of the C20 Solution to support G6 Packet Line Gateway (PLG) and Trunk Gateway (TGW) applications
- Identify and describe the G6 Gateway hardware and protection schemes
- Describe the navigation and operations of the G6 Command Line Interface (CLI)
- Describe the navigation and operations of the G6 GenView Element Management System (EMS)
- Describe the operation and function of the G6 H.248 Softswitch Interface (SSI) Virtual Media Gateway (VMG) to support Call Control signaling in support of Packet Line Gateway (PLG) and Trunk Gateway (TGW) functionality on the G6 Gateway



- Describe the operation and function of GR-303 Interface Groups (IG) to support the G6 PLG application to support the G5 Line Access Gateway
- Describe the operation and function of ABI Interface Groups (IG) to support the G6 PLG application to support the legacy XPM via Access Bridging Interfaces (ABI)
- Describe the Trunk Gateway (TGW) functionality of the G6 Universal Gateway to support Interface Groups (IG); CCS for ISUP or PRI, CAS for CAS-R1.
- Identify Gateway Controller (GWC) profiles to support G6 PLG and TGW
- Identify C20 Tables used in conjunction for PLG and TGW applications
- Describe the Emergency Service Modules and Emergency Stand Alone capabilities of the G6 Gateway
- Discussion of G6 Alarm and Event monitoring for Fault clearing
- Understanding G6 Universal Gateway maintenance and testing capabilities
- Understanding of G6 and EMS Security management
- Understanding of performance statistical reports and their operations

**Prerequisites:**

None

**Course Length and Delivery Method**

3-day, Leader Led

## **(G910) Media Gateway – Basic Overview**

### **Course Description:**

The G910 Media Gateway Basic Overview, which is 4 hours in length, is intended as an overview to the G9 product line, architecture, features, capabilities and physical equipment for the G9 in both Class 4 and Class 5 offices. It is divided into five lessons which provide a basic understanding of the components that make up the G9 Media Gateway. After completion of the CBT, a final test is presented. The user must achieve an 85% score or better to achieve a passing grade and credit for completing this course. The user must have a passing grade to enroll in any other G9 courses.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the G9 Media Gateway Product

### **Key Topics:**

#### **Hardware**

- Provides a basic understanding of the Chassis Design
- Provides a basic understanding of the Chassis Cooling
- Provides a basic understanding of the Card Layout
- Provides a basic understanding of the Front Panel
- Provides a basic understanding of the Rear Panel
- Provides a basic understanding of the Shelf Interface Unit
- Provides a basic understanding of the G9 Gateway Architecture

#### **Media Gateway Technology**

- Provides a System Level Overview
- Provides a Product Level Overview
- Provide a basic understanding of the G9 Media Gateway
- Provide a basic understanding of the G9 Media Gateway Supported Applications
- Provide a basic understanding of the Management of the G9 Media Gateway
- Provide a basic understanding of the Control of the G9 Media Gateway
- Provide a basic understanding of the Signaling Gateway Functionalit

#### **Signaling Protocols**

- Provides an overview of the Wireless Protocols
- Provides an overview of the Wireline Protocols
- Provides an overview of the IP Protocols
- Provides an overview of the Control Protocols
- Provides an overview of the Management Protocols
- Provides an overview of the Signaling Gateway Protocols

### **Traffic Flow**

- Provides a understanding of the wireline voice Traffic Path
- Provides a understanding of the TDM Traffic
- Provides a understanding of the Packet Traffic
- Provides a understanding of the Signaling Traffic
- Provides a understanding of the Wireless Traffic

### **Product Redundancy & Protection**

- Provides a basic understanding of the Redundancy Design
- Provides a basic understanding of the Protection Schemes
- Provides a basic understanding of the Card Protection
- Provides a basic understanding of the Interface Protection Schemes

### **Prerequisites:**

Basic understanding of switching and networks

### **Course Length and Delivery Method**

4 Hours Self-Paced

## **(C3G915) C3 Media Gateway Controller and G9 Converged Media Gateway – Operation, Administration and Maintenance**

### **Course Description:**

The C3G915 is a 5-day, Leader Led - Operation, Administration & Maintenance Course is geared toward Service Personnel, Administrators and Maintenance personnel who require an understanding of the C3G9 Converged Gateway System. The student is equipped with an understanding of hardware, Operating System as well as software, configuration database, and trunking for the C3/G9 system.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the C3/G9 Product

### **Key Topics:**

- Overview of the Element Management System (EMS) Graphical User Interface (GUI)
- System hardware and software on the G9 gateway
- System Administration and applications
- Events and Alarms
- Security
- Performance Management
- Accounting Management
- System Status reporting tools
- Configuration Database
- Trunk Database

### **Objectives:**

- Understanding standard G9 Media Gateway Documentation and usage
- Understanding basic utilization with the C3 Media Gateway Controller
- Understanding the design, navigation and operations of the GENView EMS in conjunction with the C3/G9 products
- Understanding EMS functional areas
- Understanding Ancillary Equipment used in conjunction with the G9 product
- Understand the architecture of the G9 Converged Media Gateway
- Understanding operation and functionality of gateway cards
- G9 call flow examples
- Understanding gateway maintenance
- Discussion of G9 Fault monitor and reporting sub-system
- Security management understanding
- Understanding of performance statistical reports and their operations
- Understanding of G9 status displays and their meaning

- Call trace operations and execution
- Call Detail Record retrieval and understanding
- Create Configuration Database for a variety of interface components
- Create Physical Facilities

**Prerequisites:**

Enrollees are also expected to have a basic understanding of switching and networks

G910 Media Gateway Basic Overview

C310 Media Gateway Controller Basic Overview

**Course Length and Delivery Method** 5 Day Leader led

## **C20G915 – G9 Converged Gateway – Operation, Administration and Maintenance**

### **Course Description:**

The C20G915 is a 3-day, Leader Led, G9 Converged Gateway - Operation, Administration & Maintenance Course that is geared toward Service Personnel, Administrators and Maintenance personnel who require an understanding of the G9 Converged Gateway deployed with a C20 Call Session Controller for Gateway Call Control. The student is equipped with an understanding of the G9 Hardware, Virtual Media Gateway, Fault Management, Security, Performance and C20 Call Session Controller association for Trunk Group application and support.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the G9 Converged Gateway Product when deployed with a C20 Call Session Controller.

**Important Note: Customers that deploy the G9 CMG with the C3 Call Session Controller should not attend this course; instead they require the C3G915 Course.**

### **Key Topics:**

- Overview of the Element Management System (EMS) Graphical User Interface (GUI)
- System hardware and configuration on the G9 Converged Gateway
- G9, GWC and C20 Trunk Group and Carrier associations
- C20 Call Session Controller associations to support G9 Converged Gateway
- System Administration and applications
- Events and Alarms
- Security
- Performance Management
- System Status reporting tools

### **Objectives:**

- Understanding the design, navigation and operations of the Genview EMS in conjunction with the G9 Converged Gateway
- Understanding G9 Genview EMS functional areas
- Understanding C20 and GWC associations used in conjunction with the G9 Converged Gateway
- Understand the architecture of the G9 Converged Gateway
- Understand Megaco (H.248) Call Control of the G9 Converged Gateway
- Understand G9 Signaling Gateway functionality to support IUA and M3UA backhaul
- Understanding operation and functionality of Interface, Service and Control cards
- Understanding G9 Converged Gateway maintenance
- Discussion of G9 Fault monitor and reporting sub-system
- Security management understanding

- Understanding of performance statistical reports and their operations
- Understanding of G9 status displays and their meaning

**Course Length and Delivery Method**

3 Day Leader led

## **(C20TMG15) – C20/TelcoBridges Media Gateway (TMG) – Essentials and Configuration**

### **Course Description:**

The C20TMG is a 3-day, Leader Led, C20/TelcoBridges Media Gateway (TMG) – Essentials and Configuration course that is geared toward Service Personnel, Administrators and Maintenance personnel who require an understanding of the TMG deployed with a C20 Call Session Controller for Gateway Call Control. The student is equipped with an understanding of the TMG Hardware, Virtual Media Gateway, Fault Management, Security, Performance and C20 Call Session Controller association for Trunk Group application and support.

### **Intended Audience:**

This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the TMG product when deployed with a C20 Call Session Controller.

### **Key Topics:**

- Product Overview
- System hardware and configuration on the TMG
- TMG, GWC and C20 Trunk Group and Carrier associations
- C20 Call Session Controller associations to support TMG
- User Interface
- SIP
- TDM
- SS7
- Routing
- Maintenance

### **Objectives:**

- Understanding C20 and GWC associations used in conjunction with the TMG
- Understand the architecture of the TMG
- Understand Megaco (H.248) Call Control of the TMG
- Understanding operation and functionality of Interface, Service and Control cards
- Understanding TMG maintenance

### **Prerequisites:**

Basic understanding of Voice over IP Networks.

**Course Length and Delivery Method:** 3 Days Leader Led



## **(C3TMG15) C3/TelcoBridges Gateways – Essentials and Configuration**

### **Course Description:**

This course will provide the student with an skills necessary to configure, monitor and maintain the TelcoBridges Tmedia Gateway in their network.

### **Intended Audience:**

Anyone responsible for implementing and maintaining the TelcoBridges Tmedia Gateway

### **Key Topics:**

- Product Overview
- User Interface
- SIP
- TDM
- SS7
- Routing
- TB Analytics
- Maintenance and Accounting
- Roadmap

### **Objectives:**

- Speed-up deployments and lower operational costs by providing the skills needed to efficiently configure, monitor and maintain a TelcoBridges Tmedia VoIP Gateway.
- Focus on a SIP to SS7 configuration while being generic enough to be used for different configurations.

### **Prerequisites:**

Basic understanding of Voice over IP Networks.

### **Course Length and Delivery Method:**

3 Days Leader Led