Media Gateway G2
Curriculum Path

- G210 Compact Gateway Basic Overview 3 Hours Self-Paced
- G215 Compact Gateway Operations, Administration and Maintenance 2 Day Leader Led

Media Gateway G6
Curriculum Path

- G610 Universal Media Gateway Basic Overview 4 Hours Self-Paced
- G615 Universal Media Gateway Operations, Administration and Maintenance 3 Day Leader Led

Media Gateway MG9K, MG15K, 3600
Curriculum Path

- mG9K15 Media Gateway 9000 Fault Management 4 Day Leader Led
- C2011- C20 Solution Fundamentals 5 Day Self-Paced

Media Gateway G9
Curriculum Path

- G910 Converged Gateway Basic Overview Provisioning 3 Hours Self-Paced
- C3G915 Converged Gateway Configuration, Provisioning & Complex Translations 5 Day Leader Led
- G915 Compact Gateway Operations, Administration and Maintenance 3 Day Leader Led

mG36K15 Media Gateway 3600 Installation Operations and Maintenance 2 Day Leader Led
G210 – Compact Gateway – Basic Overview

Course Description:
The G210 Compact Gateway Basic Overview, which is 3 hours in length, will provide the student with a high level understanding of the G2’s Basic Hardware, Provisioning, Alarms, Events and the Packet Line Gateway. The course is divided into three 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 G210 Basic Overview is the pre-requisite to all future G2 classes.

Intended Audience:
This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the GENBAND G9 Converged Gateway Product

Key Topics:
Hardware
- Hardware Specification
- Modules
- Ports & Connectors
- Redundancy

Basic Provisioning & Alarms
- Basic Provisioning
- Command Line Interface (CLI)
- Element Management System (EMS)
- Alarm & Events

Packet Line Gateway (PLG)
- Digital Line Unit (DLU)
- CLI Command Details
- DLU Provisioning
- Add DLU Portmap
- Activate DCC & RGMG Equipment
- Download SASC Software
- Element Management System (EMS)
- EMS Provisioning Prerequisites
- DLU Provisioning Procedures
- Emergency Services Module (ESM)

Objectives:

Prerequisite Skills:
- Basic Windows skills
- Basic telephony knowledge
Prerequisite Courses:
None

Course Length and Delivery Method

3 Hours Self Paced
G215 – Compact Gateway Operations, Administration and Maintenance

Course Description:
This 2-day Leader Led G215 Compact Gateway - Operations, Administration and Maintenance course provides the skills required to perform operational, maintenance, and provisioning tasks on the G2, either via the command line interface (CLI) or GenView. This course also provides the skills required to administer and troubleshoot the G2. A post course knowledge assessment will be administered on the last day of class. A minimum score of 85% or better is needed to complete the course.

Intended Audience:
This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the GENBAND G2 Compact Gateway Product.

Objectives:
- Understand Cooling Maintenance
- Understand Cable Management
- Understand Basic Gateway Provisioning
- Understand Basic Provisioning via the CLI
- Understand Running Diagnostics
- Understand Loopback and continuity
- Understand Sigtrace and PM CLI Commands
- Understand Troubleshooting Overview
- Understand Troubleshooting with GenView
- Understand Troubleshooting Faults
- Understand GPON Application
- Understand Jitter Tuning
- Understand Card Maintenance
- Understand Customer Support
- Understand NSA Upgrade

Prerequisite Skills:
- Basic Understanding of TDM or IP Theory
- Basic Unix or Linux commands.

Prerequisite Courses:
G210 Overview

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 GENBAND 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
- kTrunking 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

**Prerequisite Skills:**
Basic Windows Skills
Basic Telephony Knowledge

**Prerequisite Courses:**
None

**Course Length and Delivery Method**
4 hours Self Paced
G615 – Universal Media Gateway Operations, Administration and Maintenance

Course Description:
This 3-day Leader Led G615 Universal Gateway - Operations, Administration and Maintenance course provides the skills required to perform operational, maintenance, and provisioning tasks on the G6, either via the command line interface (CLI) or GenView. This course also provides the skills required to administer and troubleshoot the G6. A post course knowledge assessment will be administered on the last day of class. A minimum score of 85% or better is needed to complete the course.

Intended Audience:
This course is intended for anyone requiring a basic understanding of the Design, Architecture, Features and Capabilities of the GENBAND G6 Universal Gateway Product.

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

- Understand Cooling Maintenance
- Understand Cable Management
- Understand Basic Gateway Provisioning
- Understand Basic Provisioning via the CLI
- Understand Running Diagnostics
- Understand Loopback and Continuity
- Understand Sigtrace and PM CLI Commands
- Understand Troubleshooting Overview
- Understand Troubleshooting With GenView
- Understand Troubleshooting Faults
- Understand GPON Application
- Understand Jitter Tuning
- Understand Card Maintenance
- Understand Customer Support
- Understand NSA Upgrade

Prerequisite Skills:
You will also need a Basic Understanding of TDM or IP Theory and should know basic Unix or Linux commands

Prerequisite Courses:
The G610 Overview is the pre-requisite to the G615 course. The 4 – 6 hour G6 Overview course is a self-study, Web Based Training Course. It can be accessed through the eLearning system and instructs students through the fundamentals of the G6 and introduces them to GENBAND’s G6 and GenView products. Registering for the G615 course automatically enrolls you in the G610 Overview. This overview must be completed prior to
your arrival for the G615 Course. A pre-course knowledge assessment will be administered on the first day of class to make sure the pre-requisite has been met. A minimum score of 85% or better is required to continue on with the G615 Course!

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 GENBAND 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 Functionality

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

Prerequisite Skills:
Basic understanding of switching and networks

Prerequisite Courses:
None

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 GENBAND 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 Genband 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

**Prerequisite Skills:**
Enrollees are also expected to have a basic understanding of switching and networks

**Prerequisite Courses:**
G910 Media Gateway Basic Overview
C310 Media Gateway Controller Basic Overview

**Course Length and Delivery Method**
5 Day Leader led
mG9K15 Media Gateway 9000 Fault Management

Course Description:
This course introduces you to the Media Gateway 9000 (mG9K) as a network element in the Succession Universal Access - AAL1 and Universal Access - IP solution. It provides a general product overview and information related to the basic operations, and maintenance tasks. It is highly recommended that the student use a screen resolution greater than the standard recommended minimum for optimal viewing.

Intended Audience:

- Maintenance personnel
- Tier I and II support personnel
- Network managers

Key Topics:

- Introduction to Media Gateway 9000 and Network Topologies
- MG 9000 Function
- MG 9000 Hardware
- MG 9000 Interfaces
- MG 9000 Element Manager
- MG 9000 Local Craft Interface
- MG 9000 Fault Management
- C20 Tables and Interfaces for the MG 9000
- MG9000 Troubleshooting
- MG9000 Security

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

- Describe how the MG 9000 fits in AAL1, IP AAL5 and IP GigE Carrier VoIP networks
- Differentiate the major protocols used
- Identify MG 9000 network interface card types and common service card types
- List three of the primary functions for the MG 9000 in the Carrier VoIP network
- Illustrate the primary components in the MG 9000 call control hierarchy
- Trace a call flow through the MG 9000 and other network elements, given a conceptual diagram
- Explain the Emergency Stand Alone function and the Internodal Emergency Stand Alone feature
- Describe various MG 9000 frame and shelf configurations and trace a call through the shelf hardware
- Identify the four network interface options
- Log into the MG 9000 Manager GUI and navigate to various views
• Access the Local Craft Interface (LCI) securely through https and ssh
• Display and interpret MG 9000 alarms and logs
• Perform fault management tasks including a card replacement and a line diagnostic procedure
• Datafill the LGRPINV, LTCINV, GATEWAYINV, SERVRINV, and ESAPXLA tables
• Identify various points of failure in a network
• Navigate the Integrated Element Management System (IEMS) and identify troubles from logs and events in the IEMS
• Review various security aspects implemented on the MG 9000
• Complete up to 10 hands-in activities

Prerequisite Skills:
Working knowledge of telephony and packet switched network fundamentals

Prerequisite Courses:
C2011- C20 Solution Fundamentals

Course Length and Delivery Method
4 day – Leader Led
mG15K15 Media Gateway 15000 Operations, Administration and Configuration

Course Description:
This course provides knowledge and understanding about the Media Gateway 15000 as a Trunk Gateway for voice services in a Carrier Voice over IP (CVoIP) network. The Media Gateway 15000 functions as a Trunk Gateway in either a Packet Trunking-IP (PT-IP) or Universal Access-IP (UA-IP) CVoIP network.

This course focuses on the MG 15000 deployment using the Gigabit Ethernet (GigE) for IP Packet Network access.

Intended Audience:
This course is intended for individuals performing any of the following:

- network verification
- network surveillance
- network analysis
- network provisioning support.

Also included are technicians or professionals who require a working knowledge of the Media Gateway 15000 functionality in Carrier VoIP (UA-IP/PT-IP) networks.

Key Topics:

- Overview
- Introduction to MultiService Switch 15000 Frame and Hardware
- MultiService Switch 15000 Component Administration System
- MultiService Switch 15000 Node Management Access
- MultiService Switch 15000 Provisioning System
- Media Gateway (MG) 15000 Application
- Media Gateway (MG) 15000 IP Network Access
- Media Gateway (MG) 15000 Signaling Backhaul
- Media Gateway (MG) 15000 Voice Service capabilities
- Media Gateway (MG) 15000 DS1/E1 Carrier Associations
- Trunk Maintenance Manager (TMM) and Trunk Data Audit
- MSS 15000 Software and Patch download process
- MSS 15000 Alarms and Hardware Testing
- Data Collection System (DCS) and File System (FS)
- IP Network Access via ATM AAL5
Objectives:
Upon completion of this course, you will be able to:

- Identify the MultiService Switch 15000 service application known as Media Gateway 15000
- Identify the role of Media Gateway 15000s in Carrier VoIP (UA-IP/PT-IP) Networks
- Explain how Media Gateway 15000 functions as a Trunk Gateway
- Understand different Trunk Group type applications such as; ISUP, PRI, CAS/PTS, V5.2
- Identify MultiService Switch (MSS) 15000 hardware to support MG 15000 application
- Understand the MultiService Switch (MSS) 15000 common architecture structure for services
- Define ATM NSAP addressing requirements for Media Gateway 15000
- Describe IP Addressing for the Media Gateway 15000 Signaling and Bearer Path connections
- Explain and perform Media Gateway 15000 provisioning tasks and configuration views
- Describe the functionality between the C20, Gateway Controllers (GWC) and Media Gateway 15000
- Define Media Gateway 15000 components and operational attributes for monitoring and troubleshooting
- Perform routine and troubleshooting maintenance activities

Prerequisite Skills:
Familiarity with IP networking concepts

Prerequisite Courses:
C2011- C20 Solution Fundamentals

Course Length and Delivery Method
5 day – Leader Led
mG36K15 MG3600 Installation Operations and Maintenance

Course Description:
This course will provide the student with an understanding of installation, planning and engineering, provisioning, operations, maintenance and troubleshooting activities needed to support the MG3600 in their network.

Intended Audience:
Anyone responsible for implementing and maintaining the MG3600.

Key Topics:
- Overview
- Installation
- Engineering
- CLI Commands
- EMS
- Trouble Shooting

Objectives:
Upon the completion of this course, the student will be able to perform the following:
- Install and commission the MG3600
- Plan and Engineer the MG3600
- Learn CLI Command structures
- Provision services on the MG3600
- Maintain the MG3600
- Trouble shoot fault scenarios on the MG3600

Prerequisite Skills:
Basic understanding of Voice over IP Networks.

Prerequisite Courses:
C2011- C20 Solution Fundamentals

Course Length and Delivery Method:
2 Days Leader Led