



# ACTIS

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ACTIS ACADEMY

TRAINING CATALOG 2023

## Actis Academy

The Actis Academy Benelux provides in-class & online remote AudioCodes courses at our Academy in Schiphol-Rijk. The trainers of the Actis Academy are certified by AudioCodes for providing AudioCodes branded trainings. Trainees will receive a official ACA (Essentials) or ACP (Advanced) certificate after a successful examination.

The content of these training sessions is constantly updated and is designed to create and maintain market knowledge of VoIP Technologies and the use of AudioCodes equipment. The Actis Academy is there to help system integrators, resellers and distributors in order to maintain their certification, position themselves as experts in their field, and gain the knowledge required to support AudioCodes-based VoIP networks.

The Actis Academy in France provides in professional service for registering for the AudioCodes training at the AudioCodes France office. Contact the Actis Academy for more information about the trainings in France via [academy@actis.nl](mailto:academy@actis.nl).

## Training courses

The Actis Academy offers the following in-class & online remote AudioCodes training courses.

### ACA level courses:

- [AudioCodes SBC - Essentials & Configuration](#)
- [AudioCodes SBC in Microsoft Teams Environment - Essentials & Configuration](#)
- [AudioCodes SmartTap 360°](#)
- [AudioCodes SBC ACA - Re-certification](#)
- [AudioCodes SBC in a Microsoft Teams Environment - Troubleshooting](#)
- [AudioCodes SBC - Monitoring](#)

### ACP level courses:

- [AudioCodes SBC Advanced - Microsoft Teams Environment](#)
- [AudioCodes SBC Advanced - Interworking & Security](#)
- [AudioCodes SBC Advanced - Routing & Multitenancy](#)

### Participation level courses:

- [AudioCodes VoIP & SIP Fundamentals](#)
- [OVOC One Voice Operations Center \(OVOC\)](#)
- [AudioCodes Routing Manager \(ARM\)](#)
- [Teams Direct Routing Survivable Branch Appliance \(SBA\)](#)

In addition to these in-class & online training courses, it's also possible for the Actis Academy to facilitate group training on location. Provided the location meets the requirements. The Academy also facilitates product and service updates of AudioCodes, Microsoft, Performance Metrics and CC4ALL.

## Planning & Pricing

On [Actis Academy Training schedule](#) you will find the exact dates when courses will take place at our Academy.

For more information about the possibilities of group training, product update sessions and prices, please contact us at [academy@actis.nl](mailto:academy@actis.nl).

## Classroom Training Requirements

The following requirements are necessary for classroom training:

- Hands-on will be delivered using a remote laboratory environment to which users will access using the well-known software TeamViewer.
- Attendees should bring their own laptop to access the remote online lab environment with the following requirements:
  - Access to the Internet
  - Web Browsers (e.g., Chrome, Edge, Firefox)
  - Acrobat Reader
  - TeamViewer client application

## Online Training Requirements

- Attendees should use their own laptop/PC to access the remote online session and lab environment
- The laptop/PC should have the following:
  - Access to the Internet
  - Microphone and web camera
  - Web Browsers (e.g., Chrome, Edge, Firefox)
  - Acrobat Reader
  - TeamViewer client application

## NOTE

- Certificates are valid for two years.
- Re-certification training and exam is offered based on the list of available courses.



```
object
mirror_mod.use_x = True
mirror_mod.use_y = False
mirror_mod.use_z = False
operation = "MIRROR_Y"
mirror_mod.use_x = False
mirror_mod.use_y = True
mirror_mod.use_z = False
operation = "MIRROR_Z"
mirror_mod.use_x = False
mirror_mod.use_y = False
mirror_mod.use_z = True
```

```
selection at the end -add
mirror_ob.select= 1
mirror_ob.select=1
context.scene.objects.active
("Selected" + str(modifier
mirror_ob.select = 0
bpy.context.selected_objects
data.objects[one.name].select
print("please select exactly
-- OPERATOR CLASSES
```

```
types.Operator):
X mirror to the selected
mirror_mirror_x"
```

ACTIS ACADEMY

ACA COURSES



# AUDICODES SBC ESSENTIALS & CONFIGURATION (part 1)

## Course

AudioCodes training for Session Border Controller (SBC) course is designed to provide engineers with experience in configuring, maintaining, and troubleshooting AudioCodes devices configured as an SBC.

## Student Profile

Engineers with experience in configuring, maintaining, and troubleshooting AudioCodes devices as an SBC.

## Products

AudioCodes SBC Series, AudioCodes Gateway Series.

## Prerequisites

Students are expected to have an applicable professional background with a minimum of one year of practical experience with:

- PSTN protocols and knowledge of analog and digital telephony systems
- VoIP and SIP network architecture
- Understanding of SIP control protocol signalling stacks
- IP networking

## Details

- Four days training.
- Classroom Instructor Led.
- ACA (AudioCodes Certified Associate).
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-SBC-BSC-S.

## General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on diagnostic tools and troubleshooting strategies to help students become self-sufficient in the use and support of AudioCodes SBC products. On completion of the course, students will be able to:

- Identify the AudioCodes products that support the Session Border Controller (SBC) features
- Identify the functions of the SBC
- Describe how the SBC handles SIP messages
- Understand the reasons for message manipulation
- Understand the survivability concept
- List SBC security features
- Configure SBC message manipulation rules
- Configure the parameters required by the SBC
- Configure the SBC for SIP trunking
- Configure AudioCodes Gateways for PSTN fallback needs

## Lab Activities

- Getting familiar with the GUI
- SBC Routing
- SBC Transcoding
- Header Manipulation
- SBC Survivability and PSTN Fallback

# AUDICODES SBC ESSENTIALS & CONFIGURATION (part 2)

## Course Outline

### AudioCodes Presentation

#### User Interface Introduction:

- Basic configuration
- Management and maintenance options
- Web Interface

### Documentation

#### AudioCodes SBC Platforms:

##### Hardware SBCs

- Mediant 2600/4000/9000
- Hybrid SBC Portfolio
- Mediant 500/8xx/1000/3000

##### Integrated SBC and MSBR:

- Mediant 500/8xx/1000
- Software SBC

#### SBC Description:

- SBC definition
- SBC functions
- SBC topologies and deployment
- Logical and physical connections

#### SBC Features:

- NAT traversal
- Transcoding
- Topology hiding
- VoIP firewall
- SIP routing
- SIP normalization
- Survivability

#### SBC Basic Terminology:

- Signalling Routing Domain (SRD)
- SIP Interface
- Media Realm
- IP Groups
- Proxy Sets
- SIP dialog initiation process description
- IP-to-IP routing
- Multi-tenancy Concepts
- Routing Policy

#### SBC Configuration:

- Parameters and tables
- General parameters settings
- Table assignments
- Configuration example
- SBC Configuration Wizard

#### Debugging Tools:

- Syslog and Syslog Viewer
- Wireshark
- SIP Test Calls

#### SBC Media Handling:

- Media capabilities
- Media security
- Media handling modes
- Transcoding
- Extended and Allowed coders process
- Media handling example

#### SBC Message Manipulation:

- Reasons for SIP message manipulation
- Message manipulation configuration



## AUDICODES SBC ESSENTIALS & CONFIGURATION (part 3)

### Message Manipulation Set

- Message manipulation rules
- IP-to-IP number manipulation

### SBC Security Brief Overview:

- Security needs
- Network security feature:
  - Topology hiding
  - Firewall
- SBC security feature:
  - SIP firewall filtering rules (classification rules)
  - Call Admission Control (CAC) to enforce limits
  - SIP protection – filter methods
  - Signaling security – TLS
  - Media security – SRTP
  - Block unregistered users
- Management security feature:
  - HTTPS
  - SSH
  - SNMP
- IDS

### AudioCodes Gateways Introduction:

- VoIP gateways
- Configuration basics
- IP-to-IP concept
- Inbound and outbound routing
- IP-to-IP SIP trunking scenario configuration example

### SBC Survivability:

- Concepts
- Configuration

### SBC High Availability:

- Concepts
- Configuration

# AUDICODES SBC IN MICROSOFT TEAMS ENVIRONMENT ESSENTIALS & CONFIGURATION (part 1)

## Course

Hands-on technical instruction covering installation, configuration, maintenance, troubleshooting and administration of AudioCodes equipment in Microsoft Teams.

## Student Profile

Systems Engineers, Network Architects, Consultants, and Integrators who are responsible for the planning, design, implementation and management of Microsoft Teams.

## Products

AudioCodes MediaPack (MP) Series, AudioCodes SBC Series, AudioCodes Gateway Series.

## Prerequisites

Students are expected to have an applicable professional background with a minimum of one year of practical experience with:

- PSTN protocols and knowledge of analog and digital telephony systems;
- VoIP and SIP network architecture.
- Understanding of SIP control protocol signalling stacks.
- IP Networking.

## Details

- Four days training.
- Classroom Instructor Led.
- ACA (AudioCodes Certified Associate).
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-TEAMS-BSC-S.

## General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on diagnostic tools and troubleshooting strategies to help students become self-sufficient in their use and support of AudioCodes products in a Microsoft Teams environment. On completion of the course, students will be able to:

- Install and configure AudioCodes equipment using various management tools.
- Demonstrate and understand the operation, maintenance and monitoring tools of AudioCodes equipment.
- Troubleshoot and debug AudioCodes equipment.
- Demonstrate familiarity with Microsoft Teams related voice configuration aspects.
- Integrate AudioCodes Mediant SBC series in Microsoft Teams environment that require integrated voice components.
- Understand the advantages of connecting SIP Trunks using Mediant SBCs.
- Understand the requirements and features of an SBC.
- Configure SIP Trunk connection to Teams using a Mediant SBC.
- Understand how to perform basic SIP headers Manipulations.

## Lab Activities

- Getting Familiar with the GUI.
- Basic SIP Trunk Configuration.
- Teams to SIP Trunk Connection.
- SBC Message Manipulation.
- SBC Survivability and PSTN Fallback.

# AUDICODES SBC IN MICROSOFT TEAMS ENVIRONMENT

## ESSENTIALS & CONFIGURATION (part 2)

### Course Outline

AudioCodes Solutions - Brief Overview  
AudioCodes User Interface Introduction  
Documentation Description  
Debugging Tools  
AudioCodes Gateways Hardware Description  
Analog Gateways: MediaPack Family  
Digital Gateways: Mediant Family  
SBC Application description  
SBC Basic Terminology  
Signaling Routing Domain – SRD

### SIP Interface:

- Media Realm
- IP Groups
- Proxy Sets
- Routing
- Accounts

Multi-tenant Concepts  
SBC Configuration

### Teams System Brief Overview:

- High level Architecture
- Teams Logical Architecture
- Teams as your phone
- Moving to the Cloud
- Connecting Phone System to the PSTN
- Microsoft Teams Direct Routing
- Direct Routing Signaling Path
- Teams Direct Media call without Media ByPass
- Teams Direct Media call with Media ByPass

### Voice Routing Basics

- Direct Routing Benefits
- Direct Routing Enterprise Model
- Direct Routing Hosting Model
- Direct Routing Solution Components
- SBC FQDN Requirements
- Public Trusted Certificate for the SBC
- SBC Domain Names in Enterprise and Hosting Model

### SBC Direct routing configuration for Teams

- Prerequisites
- Configure VLAN's & IP Interface's
- NTP Servers
- TLS Contexts
- How to Configure Certificate
- Trusted root certificate
- SRV Record
- SRV Table Configuration
- Coder Group
- Teams & ITSP IP Profiles
- SDP Codecs offered list manipulation
- Coder Transcoding Flow
- ICE Lite
- Candidates list
- ICE and Candidates example
- STUN Server
- Generic call flow from PSTN to Teams
- SIP and STUN messages
- Media security
- Condition Table
- Classification Table
- IP to IP Routing table

### SBC Number & Message Manipulation:

- CMR Process (CMR = Classify, Manipulate, Route)
- SBC Number Manipulation



# AUDICODES SBC IN MICROSOFT TEAMS ENVIRONMENT

## ESSENTIALS & CONFIGURATION (part 3)

### Message Manipulation:

- Message manipulation reasons
- Pre & Post Message Manipulation
- Inbound & Outbound message manipulation
- Message Manipulation Configuration
- Mandatory Headers Handling
- SIP Interface Pre-Parsing Manipulation Sets
- Message Manipulation Table
- Message Manipulation – Manipulation Set ID
- Message Manipulation – Syntax
- Auto Completion Editor
- Message Manipulation parameters description
- SIP Message Manipulation – Examples
- SIP Message Normalization
- Digital Gateways Basic Configuration

### SBC Survivability

- Survivability Methodology
- Alternative Routing Reasons
- PSTN Fallback

### SBC High Availability

- High Availability Overview
- High Availability Architecture
- HA License Key
- High Availability Configuration
- IP Interfaces table
- HA Setting
- Preempt Mode
- HA Status in the Monitor Page
- Initialization Process
- Direct and in-direct Physical Connections
- HA Software Upgrade
- Device Failure Detection
- High Availability Maintenance

## AUDICODES SBC SMARTTAP 360°

### Course

AudioCodes training for SmartTap 360° course is designed to provide engineers with experience in installing, configuring, maintaining, and troubleshooting AudioCodes SmartTap 360° Servers.

### Student Profile

Engineers with experience in configuring, maintaining, and troubleshooting AudioCodes SmartTap 360° Servers

### Products

SmartTap 360°

### Prerequisites

Students are expected to have an applicable professional background with a minimum of one year of practical experience with:

- PSTN protocols and knowledge of analog and digital telephony systems
- VoIP and SIP network architecture
- Understanding of SIP control protocol signalling stacks
- IP networking
- Microsoft Background is preferred

### Details

- Four days training.
- Online Instructor Led.
- ACA (AudioCodes Certified Associate).
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-SMARTTAP-ONL-C

### General Objectives

On completion of the course, students will be able to:

- Identify SmartTAP Benefits and Features
- Understand the Integrations and Deployments
- Understand Licensing
- Implement key points
- Describe Hardware and Software Requirements
- Describe SmartTAP Core Components Overview & Pre-requisites
- Understand SmartTap Installation Wizard
- Understand SIPRec Solution Installation
- Understand Skype for Business Solution Installation
- Identify Cumulative Updates
- Understand Upgrades
- Practice Tools and Troubleshooting
- Practice SmartTAP Administration User Interface
- Understand OVOC Integration
- Describe Microsoft Teams Integration using Teams BOT

### Course Outline

- Identify SmartTAP Benefits and Features
- Understand the Integrations and Deployments
- Understand Licensing
- Hardware and Software Requirements
- SmartTAP Core Components Overview & Pre-requisites
- SmartTap Installation Wizard
- SIPRec Solution Installation
- Skype For Business Solution On-premises Installation
- Microsoft Teams Installation
- Cumulative Updates
- Upgrades
- Tools and Troubleshooting
- SmartTAP Administration User Interface
- SmartTap SIPREC Server Installation
- SmartTAP SIPREC Server Configuration
- Installation of Skype for Business Recording
- SmartTap Skype for Business PSTN Media Delivery installed on Mediation Server

# AUDIOCODES SBC ACA RE-CERTIFICATION

## Course

Technical learning for the Session Border Controller (SBC) designed to provide engineers with experience in configuring, maintaining, and troubleshooting AudioCodes devices configured as an SBC.

## Student Profile

Tier 1, 2 and 3 supports, Sales Engineers, Trainers, Technical Writers, Developers, and other technical staff supporting AudioCodes equipment holding an expired ACA certificate.

## Products

AudioCodes SBC Series, AudioCodes Gateway Series.

## Prerequisites

An expired SBC ACA certificate.

## Details

- One day.
- Classroom Instructor Led.
- ACA (AudioCodes Certified Associate) certification renewal.
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-SBC-R-ACA-S.

## General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on diagnostic tools and troubleshooting strategies to help students become self-sufficient in the use and support of AudioCodes SBC products. On completion of the course, students will be able to:

- Identify the AudioCodes products that support the Session Border Controller's features
- Identify the functions of the SBC.
- Describe how the SBC handles SIP messages.
- Understand the reasons for message manipulation.
- Configure SBC message manipulation rules.
- Configure the parameters required by the SBC.
- Configure the SBC for SIP trunking.

## Lab Activities

- Getting Familiar with the GUI
- SBC Routing
- SBC Transcoding
- Header Manipulation

## Course Outline

- AudioCodes Presentation
- New User Interface Introduction
- AudioCodes SBC Platforms
- SBC Terminology
- SBC Configuration
- SBC Media Handling
- SBC Message Manipulation



# AUDICODES SBC IN MICROSOFT TEAMS ENVIRONMENT - TROUBLESHOOTING

## Course

The course covers topics and techniques for troubleshooting AudioCodes SBCs in a Microsoft Teams Environment using Syslog. This is a lab-oriented class designed to help you gain troubleshooting experience before attending more advanced courses. You will debug an Enterprise SBC (E-SBC) environment using the Demo lab system and simulated case logs.

## Student Profile

Tier 1, 2 and 3 supports, Sales Engineers, Trainers, Technical Writers, Developers, and other technical staff supporting AudioCodes equipment holding an expired/valid ACA certificate.

## Products

AudioCodes SBC Series.

## Prerequisites

An ACA certificate

## Details

- One day training.
- Classroom Instructor Led.
- Record of Participation
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-SBC-TRBS-Teams-S

## General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on diagnostic tools and troubleshooting strategies to help students become self-sufficient in the use and support of AudioCodes SBC products.

On completion of the course, students will be able to:

- Be familiar with Basic Debugging tools
- Perform Basic SBC in a Microsoft Teams Environment faults troubleshooting

## Course Outline

AudioCodes SBC Application and debug brief review

Lab 1 – Teams Direct Routing to SIP Trunk Connection

Lab 2 – 11 Faults for SBC in a Microsoft Teams Environment

## AUDICODES SBC - MONITORING

### Course

Technical learning for SBA for AudioCodes SBC monitoring and Performance tools

### Student Profile

Tier 1, 2 and 3 supports, Sales Engineers, Trainers, Technical Writers, Developers, and other technical staff supporting AudioCodes equipment.

### Products

AudioCodes SBC

### Prerequisites

An ACA certificate

### Details

- One day training.
- Classroom Instructor Led.
- Record of Participation
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-SBC-Monitor-S

### General Objectives

On completion of the course, students will be able to:

- Understand what are the QoE and Bandwidth Profiles
- Know to define them and trigger alarms and action based on them
- Be familiar with the Performance Monitoring
- Know to define Performance Monitoring rules

### Course Outline

- QoE related Profiles
- Hands-on Lab 1 – Bandwidth Profiles
- Performance Monitoring
- Hands-on Lab 2 – Performance Monitoring

```
object
mirror_mod.use_x = True
mirror_mod.use_y = False
mirror_mod.use_z = False
operation = "MIRROR_Y"
mirror_mod.use_x = False
mirror_mod.use_y = True
mirror_mod.use_z = False
operation = "MIRROR_Z"
mirror_mod.use_x = False
mirror_mod.use_y = False
mirror_mod.use_z = True
```

```
selection at the end -add
mirror_ob.select= 1
mirror_ob.select=1
context.scene.objects.active
("Selected" + str(modifier
mirror_ob.select = 0
bpy.context.selected_objects
data.objects[one.name].select
print("please select exactly
-- OPERATOR CLASSES
```

```
types.Operator):
X mirror to the selected
mirror_mirror_x"
```

ACTIS ACADEMY

ACP COURSES





# AUDICODES SBC

## ADVANCED MICROSOFT TEAMS ENVIRONMENT

### Course

Hands-on technical instruction covering advanced Routing and Multitenancy configuration as well as a high-level administration of AudioCodes Session Border Controllers (SBCs) for different routing needs.

### Student Profile

Systems Engineers, Network Architects, Consultants, and Integrators responsible for the planning, design, implementation, and management of Session Border Controllers in their networks.

### Products

AudioCodes SBC Series.

### Prerequisites

- ACA Certification.
- 6 Months of AudioCodes field experience with AudioCodes SBC products.

### Details

- Four days training.
- Classroom or online Instructor Led.
- ACP (AudioCodes Certified Professional).
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-Teams-ADV-S.

### General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on diagnostic tools and troubleshooting strategies to help students become self-sufficient in their use and support of AudioCodes SBCs.

On completion of the course, students will be able to:

- Achieve an in-depth understanding of AudioCodes SBC application for SIP normalization, media handling, message manipulation in a Microsoft Teams Environment
- Understand how Regular Expressions (regex) can be used in manipulations and message condition rules

### Course Outline & Lab Activities

- SBC Application Description
- Teams Environment: Basic Review
- Advanced SBC Interworking Features
- **Hands-on Lab 1 – SBC Interworking**
- Advanced SBC Media Handling
- **Hands-on Lab 2 – SBC Transcoding**
- Advanced SBC Message Manipulation
- **Hands-on Lab 3 – Message Manipulation**
- Tagging and Dial Plan Concept
- Call Setup Rules and Tagging
- **Hands-on Lab 4 – Call Setup Rules-Tagging**
- Direct Routing Hosting Model
- Local Media Optimization
- **Hands-on Lab 5 – LMO**

# AUDICODES SBC

## ADVANCED INTERWORKING & SECURITY (PART 1)

### Course

Hands-on technical instruction covering advanced Manipulation, Media Handling and Security configuration as well as a high-level administration of AudioCodes Session Border Controllers (SBCs) for interoperability in a secured environment.

### Student Profile

Systems Engineers, Network Architects, Consultants, and Integrators responsible for the planning, design, implementation and management of Session Border Controllers in their networks.

### Products

AudioCodes SBC Series.

### Prerequisites

Complete AudioCodes SBC Advanced Interworking & Security

### Details

- Four days training.
- Classroom or online Instructor Led.
- ACP (AudioCodes Certified Professional).
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-SBC-ADR-S.

### General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on diagnostic tools and troubleshooting strategies to help students become self-sufficient in their use and support of AudioCodes SBCs. On completion of the course, students will be able to:

- Identify the AudioCodes implementation of different techniques related to routing
- Understand the concept of Call Setup Rules and its usage with LDAP based Routing, Dial Plan based routing and ENUM based routing.
- Have a deep understanding of the different models of Multitenancy and the way of configuring them.

### Lab Activities

- Redundancy and Load Balancing (IP Group-based).
- Routing Based on Call Setup Rules.
- LDAP Routing using Call Setup Rules.
- Dial Plan-based Routing.
- Tag-based Routing.
- Call Setup Rules and Tag-based Routing.
- Implementing a Redirect Service.
- Customer Separation Based on TGRPs.
- Customer Separation Based on Prefixes.

# AUDICODES SBC

## ADVANCED INTERWORKING & SECURITY (PART 2)

### Course Outline

#### AudioCodes SBC Application Review:

- IP Interfaces
- Physical Interfaces
- Basic Entities: SRD, Media Realm, SIP Interface, IP Group and Proxy Set
- SIP Dialog Initiation Process Description
- Classification Process
- IP Profile
- IP-to-IP routing
- SIP Message Manipulations
- Entities and Tables Relations

#### Advanced SBC Interworking Features:

- IP Profile
- Example of terminations for IP-PBX integration
- Handling Modes
- Handling of Early Media, REFER, 3xx and other messages

#### Advanced SBC Media Handling:

- SBC Media Handling Concepts
- Extension and Allowed Coders
- Media Handling Examples
- Advanced Transcoding
- Media Handling Security Features

#### Quality of Experience (QoE) Related Profiles:

- QoE Profile
- Bandwidth Profiles
- Media Subnets
- Performance Profiles
- Quality of Service (QoS) Rules

#### SBC Message Manipulation:

- Number Manipulations
- Reasons for Message Manipulation
- Message Manipulation Operation
- Message Normalization
- Regular Expressions (Regex) Based Message Manipulation

#### Advanced SBC Security:

- Enterprise Security Threats
- AudioCodes SBC Security Capabilities
- Separation
- Topology Hiding
- Secured SIP using TLS
- TLS Contexts and Certificates
- Authentication
- Classification table
- Call Admission Control Profiles
- IDs
- Registration
- Message Policies
- Routing
- Events Logging

#### SBC Access

- Access using HTTPS
- Access using Telnet-SSH
- Access using LDAP
- Access using SNMP



# AUDICODES SBC

## ADVANCED ROUTING & MULTITENANCY (PART 1)

### Course

Hands-on technical instruction covering advanced configuration, maintenance, troubleshooting and administration of AudioCodes Session Border Controllers (SBCs).

Routing: Hands-on technical instruction covering advanced Routing and Multitenancy configuration as well as a high level administration of AudioCodes Session Border Controllers (SBCs) for different routing needs.

### Student Profile

Systems Engineers, Network Architects, Consultants, and Integrators responsible for the planning, design, implementation and management of Session Border Controllers in their networks.

### Products

AudioCodes SBC Series.

### Prerequisites

- ACA Certification.
- 6 Months of AudioCodes field experience with AudioCodes SBC products.

### Details

- Four days training.
- Classroom or online Instructor Led.
- ACP (AudioCodes Certified Professional).
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-SBC-ADI-S.

### General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on diagnostic tools and troubleshooting strategies to help students become self-sufficient in their use and support of AudioCodes SBCs. On completion of the course, students will be able to:

- Identify the concept and needs of Interworking
- Have a deeper understanding of AudioCodes' SBC application for SIP normalization, media handling, message manipulation
- Understand the SBC security risks and know how to prevent them

### Lab Activities

- Configuration with Advanced Interworking Capabilities
- SBC Configuration using Transcoding
- Configuration for Bandwidth Profiles
- Message Manipulation based on Regex and Regular Rules
- SBC Security
- Device Access using LDAP

# AUDICODES SBC

## ADVANCED INTERWORKING & SECURITY (PART 2)

### Course Outline

#### Basic Routing Overview

- Proxy Sets and IP Groups
- IP Group Sets
- Redundancy and load balancing

#### Call Setup Rules

- Concepts and Configuration
- Assignment to IP to IP Routing Table
- Assignment to IP Groups
- Example of usage

#### LDAP Routing

- LDAP Settings Review
- LDAP with Call Setup Rules
- Example of usage

#### Dial Plan Concepts

- Needs for Dial Plans
- Managing Dial Plans
- Using Dial Plans for Routing

#### Tagging Enhancements

- Concepts and definition
- Tag Configuration
- Tag Assignments
- Call Setup Rule with Tagging
- Usage and Examples

#### Routing Back to Sender

- Concepts and Configuration

#### Multitenancy

- Concepts and Definition
- Routing Policy
- Multitenancy based on SRDs
- Access SBC: Customer Separation Concepts
- Customer Separation based on IP/VLANs
- Customer Separation based on Ports
- Customer Separation based on TGRPs
- Customer Separation based on Prefixes
- Prefixes with LDAP Query and REST

```
object
mirror_mod.use_x = True
mirror_mod.use_y = False
mirror_mod.use_z = False
operation = "MIRROR_Y"
mirror_mod.use_x = False
mirror_mod.use_y = True
mirror_mod.use_z = False
operation = "MIRROR_Z"
mirror_mod.use_x = False
mirror_mod.use_y = False
mirror_mod.use_z = True
```

```
selection at the end -add
mirror_ob.select= 1
mirror_ob.select=1
context.scene.objects.active
("Selected" + str(modifier
mirror_ob.select = 0
bpy.context.selected_objects
data.objects[one.name].select
print("please select exactly
-- OPERATOR CLASSES
```

```
types.Operator)
X mirror to the sele
mirror_mirror_x"
```

# ACTIS ACADEMY

ONLINE REMOTE COURSES  
PARTICIPATION LEVEL





# AUDICODES VOIP & SIP FUNDAMENTALS

## Course

Online tutorial learning module covering basic topics related to Legacy network, voice over IP communication and SIP protocol.

## Student Profile

Telecommunication Technical staff intending to attend an AudioCodes ACA certification course (recommendation).

## Products

None.

## Prerequisites

None.

## Details

- Four hours.
- Online Instructor Led.
- Record of Participation.
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-VoIP-S.

## General Objectives

On completion of the course, students will be able to:

- Explain the basics on telephone networks
- Describe how digital signalling differs from analog signalling
- Explain the basic concept of voice over IP communications
- Describe the purpose of the Gateway in a VoIP network
- Explain the basic SIP Call Flow
- Identify the SIP Network Entities
- Follow a SIP trace signalling in a call set-up and tear-down

## Course Outline

### Introduction to Legacy Telephony

- The Telephone Network
- Typical Analog Circuit
- DTMF - Dual Tone Multi-Frequency
- Call Progress Tones
- Digital Communication
- Analog Voice Signal Conversion to Digital Stages
- Pulse Code Modulation (PCM)
- Digital Signals Multiplexing
- Time Division Multiplexing (TDM)
- E1/T1
- Signalling Methods
- Integrated Services Digital Network – ISDN
- ISDN (Q.931) Call Flow Messages
- ISDN Basic Rate Interface (BRI)

### Introduction to IP Telephony

- What is VoIP
- Circuit vs. Packet Switching
- VoIP Architecture
- VoIP Protocol Stack
- What is RTP/RTCP
- Introduction to RTP

### Voice Codecs

- Voice Compression
- VoIP Challenges
- Voice Quality Measurement
- RTCP-XR
- Voice Quality Metrics

### Introduction to SIP

- SIP Network Entities
- SIP Terminology
- SIP Servers
- Basic SIP Call Flow
- SIP Requests: Basic Methods
- SIP Requests: Extended Methods
- SIP Responses
- SIP Addressing
- General Main Header Fields
- Session Description Protocol (SDP)
- Early Media
- Call Flow with Proxy
- SIP Servers – Registrar
- Registration Call Flow
- Number Once
- FXS/FXO Gateways
- Digital Gateway

# AUDICODES ONE VOICE OPERATION CENTER ONLINE REMOTE

## Course

Online technical learning module covering OVOC FCAPS (Fault, Configuration, Accounting, Performance, Security) capabilities and voice quality measurements and statistics including IP Phones management.

## Student Profile

Tier 1, 2 and 3 supports, Sales Engineers, Trainers, Technical Writers, Developers, and other technical staff supporting AudioCodes equipment.

## Products

AudioCodes One Voice Operations Center (OVOC).

## Prerequisites

None.

## Details

- Three days.
- Online Instructor Led.
- Record of Participation.
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-OVOC-ONL-BSC-S.

## General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on diagnostic tools and troubleshooting strategies to help students become self-sufficient in the use and support of AudioCodes products. On completion of the course, students will be able to:

- Perform gateway configuration and maintenance actions using the OVOC
- Define new OVOC System/global and tenant users
- Work with alarms
- Understand AudioCodes OVOC solution for real-time management of VoIP traffic
- Know OVOC features and abilities
- Be able to configure enterprise/ITSP network in OVOC
- Be able to navigate in the OVOC and find required information
- Be familiar with the IP Phone Manager Pro server application

## Lab Activities

- Basic Management
- License Management
- Provisioning
- Monitoring

## Course Outline

- OVOC Overview
- OVOC - Getting started
- Topology View
- System Management
- License Pool
- Alarms Management
- Configuration Management
- Security Management
- Voice Quality Measurement
- OVOC for Voice Quality Measurement
- OVOC Server Preparation
- Network Quality View
- Statistics
- Quality Statistics on Calls
- Information on User Experience
- Producing Reports
- IP Phone Manager Pro

# AUDICODES ROUTING MANAGER ONLINE REMOTE (PART 1)

## Course

This course covers the configuration, maintenance and administration of the AudioCodes Routing Manager. The course will cover a general introduction, its usage and the main features included in ARM. Through the explanation and online demos, students will gain experience in configuring and monitoring the operation of ARM.

## Student Profile

Systems Engineers, Network Architects, Consultants, and Integrators who are responsible for the planning, design, implementation, maintenance and troubleshooting of call routing and policy management in a heterogeneous voice network.

## Products

AudioCodes Routing Manager (ARM)

## Prerequisites

Students are expected to have an applicable professional background and actual experience with:

- IP networking
- AudioCodes Gateways and/or SBCs
- Knowledge of analog and digital telephony systems
- Knowledge of VoIP and SIP network architectures

## Details

- Three days.
- Online Instructor Led.
- Record of Participation.
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-ARM-ONL-BSC-S.

## General Objectives

Students are expected to be active participants in the learning process. Emphasis is placed on demonstration of all the tools and features included in the product to help students become self-sufficient in the use and support of the AudioCodes Routing Manager. On completion of the course, students will be able to do the following:

- Manage and configure the ARM
- Identify the AudioCodes products that are supported in ARM
- Identify the functions of ARM
- Describe how ARM handles routes
- Describe how ARM handles number manipulation
- Describe how ARM administers users
- Understand the QBR (Quality Based Routing) concept
- List the ARM security features
- How to migrate AudioCodes devices (SBCs and gateways) to ARM
- How to integrate non-AudioCodes devices with ARM

## Lab Activities

- Online demo



# AUDICODES ROUTING MANAGER ONLINE REMOTE (PART 2)

## Course Outline

### AudioCodes Presentation

#### Introduction to ARM:

- Features
- Benefits

#### ARM Architecture:

- Configurator
- Router
- Database
- SIP Module
- getRoute Mechanism

#### ARM Management Interface:

- Main Functional Areas
- Network Page
- Topology Entities
- Peer Connections Page
- Connections Page

#### Basic Network Definition:

- Adding and Defining a Connection
- Defining the Topology
- Testing a Connection

#### Call Flows:

- Configuration
- Manipulation and Prefix Groups
- Number Manipulation
- Routing Setting

#### ARM Routing:

- Routing Groups
- Routing Rules
- Testing Routes
- Quality Based Routing
- Adding a Routing Server

#### ARM Alarms

#### Users Administration:

- Users and User Groups Administration
- Property Dictionary Administration
- LDAP Servers Administration

#### ARM Administration:

- Software License
- Security
- Web Users

#### ARM additional functionalities:

- Syslog Settings
- NTP Settings

#### Migration of AudioCodes devices (SBCs and gateways) to a ARM

#### Integration of non-AudioCodes device with ARM:

- SIP module

#### Basic ARM maintenance actions

## AUDIOCODES TEAMS DIRECT ROUTING SURVIVABLE BRANCH APPLIANCE (SBA)

### Course

Online technical learning for SBA for Teams Direct Routing

### Student Profile

Tier 1, 2 and 3 supports, Sales Engineers, Trainers, Technical Writers, Developers, and other technical staff supporting AudioCodes equipment

### Products

AudioCodes SBC, Survivable Branch Appliance (SBA)

### Prerequisites

An ACA certificate.

### Details

- One day training.
- Online Instructor Led.
- Record of Participation
- The training is subject to a minimum number of attendees.
- Access to the training course will only be accepted when the payment is fulfilled before the training date.
- Course code is TR-Teams-SBC-S

### General Objectives

On completion of the course, students will be able to:

- Understand the Direct Routing SBA concept
- Become familiar with SBA Hardware Platforms
- Set up the SBA by using the SBA wizard
- Get familiar with SBA GUI
- Configure the SBC for having the SBA added

### Course Outline

- Direct Routing Survivable Branch Appliance
- Live demo



# ACTIS

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