



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for CallTech CTLog® with Avaya Aura® Application Enablement Services and Avaya Aura® Communication Manager using ISDN Trunks – Issue 1.0**

### **Abstract**

These Application Notes contain instructions for CallTech CTLog® with Avaya Aura® Application Enablement Services and Avaya Aura® Communication Manager to successfully interoperate.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

# 1. Introduction

CallTech CTLog® (Active Recording) monitors Avaya Extensions/Stations through connectivity to Avaya Aura® Application Enablement Services and utilizes an ISDN/PRI trunk to Avaya Aura® Communication Manager to perform call recording.

CTLog constantly monitors the status of the extensions to be recorded via TSAPI Link. When a call is established on an extension, CTLog dials out over an ISDN Trunk to Communication Manager. This allows Communication Manager to interpret the call as a service observing call over the ISDN Trunk. As soon as the extension answers the call, CTLog receives the call audio which is to be recorded.

## 2. General Test Approach and Test Results

The compliance test focused on the ability for calls to be recorded. Calls were manually placed from the public switched telephone network (PSTN) directly to and from recorded devices, and to Automatic Call Distributor (ACD) queues.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

### 2.1. Interoperability Compliance Testing

The compliance test validated the ability of CTLog to successfully record calls routed to and from Analog, Digital, IP and SIP endpoints.

Additionally, testing confirmed the ability for CTLog to recover from common outages such as network outages and server reboots.

### 2.2. Test Results

All planned test cases were passed.

### 2.3. Support

Technical support from Calltech S.A. can be obtained from:

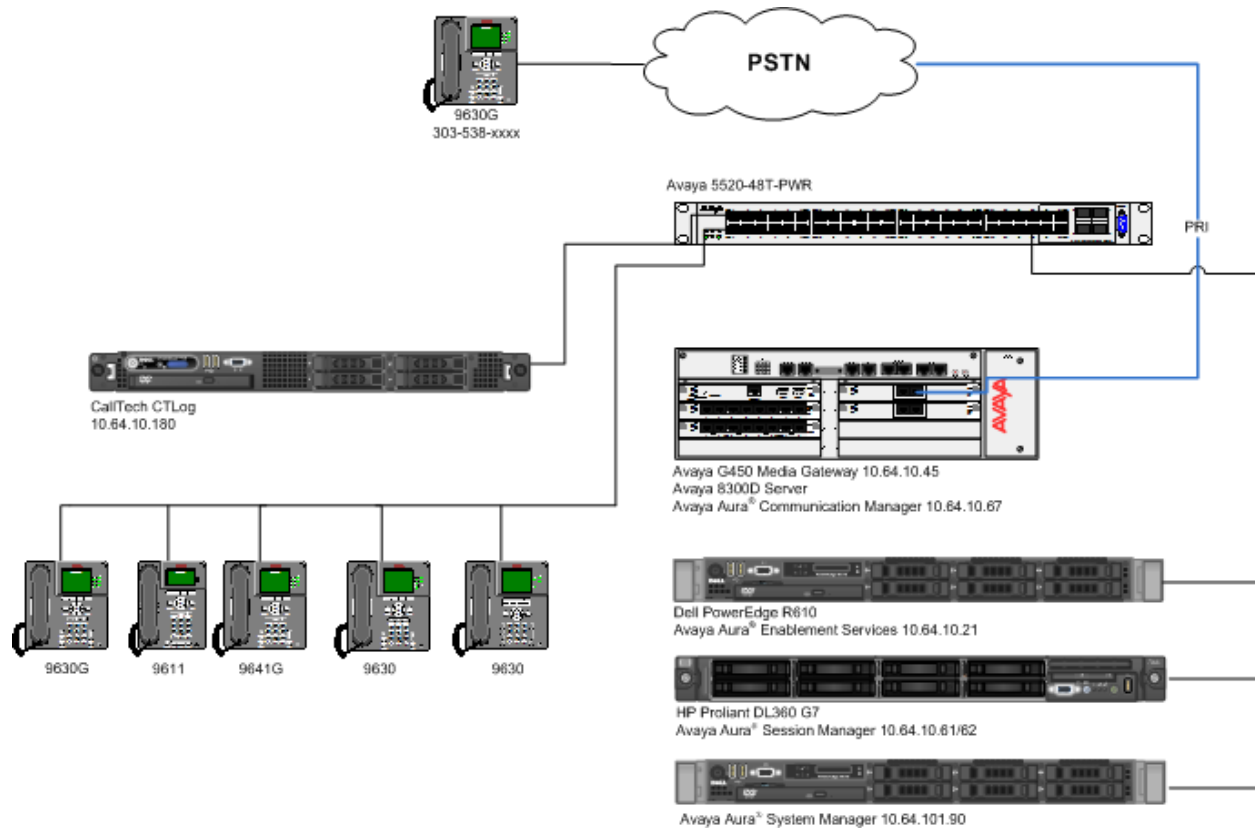
Web: [www.calltechsa.com](http://www.calltechsa.com)

E-mail: [support@calltechsa.com](mailto:support@calltechsa.com)

Phone: +57 1 6356535

### 3. Reference Configuration

**Figure 1** illustrates a sample configuration that consists of Avaya products and CallTech CTLog®. CallTech CTLog is connected to Communication Manager via an ISDN trunk.



**Figure 1:** Test Configuration for CallTech CTLog®

## 4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

| Equipment/Software   | Release/Version |
|--|-----------------|
| Avaya S8300D Server<br>Avaya Aura <sup>®</sup> Communication Manager | 6.3 SP5         |
| Avaya G450 Media Gateway   | 31.20.0         |
| Avaya Aura <sup>®</sup> Application Enablement<br>Services           | 6.3.0.0.212     |
| CallTech CTLog <sup>®</sup>  | 5.4             |

## **5. Configure Avaya Aura® Communication Manager**

This section contains steps necessary to configure CTLog successfully with Avaya Aura® Communication Manager.

All configurations in Communication Manager were performed via SAT terminal.

## 5.1. Verify Feature and License

Enter the **display system-parameters customer-options** command and ensure that the following features are enabled.

One Page 3, verify **Computer Telephony Adjunct Links** is set to **y**.

|  |  |              |
|--|--|--------------|
| display system-parameters customer-options |  | Page 3 of 11 |
| OPTIONAL FEATURES                          |  |              |
| Abbreviated Dialing Enhanced List? y       | Audible Message Waiting? y                 |              |
| Access Security Gateway (ASG)? n           | Authorization Codes? y                     |              |
| Analog Trunk Incoming Call ID? y           | CAS Branch? n                              |              |
| A/D Grp/Sys List Dialing Start at 01? y    | CAS Main? n                                |              |
| Answer Supervision by Call Classifier? y   | Change COR by FAC? n                       |              |
| ARS? y                                     | <b>Computer Telephony Adjunct Links? y</b> |              |
| ARS/AAR Partitioning? y                    | Cvg Of Calls Redirected Off-net? y         |              |
| ARS/AAR Dialing without FAC? y             | DCS (Basic)? y                             |              |
| ASAI Link Core Capabilities? y             | DCS Call Coverage? y                       |              |
| ASAI Link Plus Capabilities? y             | DCS with Rerouting? y                      |              |
| Async. Transfer Mode (ATM) PNC? n          | Digital Loss Plan Modification? y          |              |
| Async. Transfer Mode (ATM) Trunking? n     | DS1 MSP? y                                 |              |
| ATM WAN Spare Processor? n                 | DS1 Echo Cancellation? y                   |              |
| ATMS? y                                    |  |              |
| Attendant Vectoring? y                     |  |              |

On Page 4, verify **ISDN Feature Plus** and **ISDN-PRI** are set to **y**.

|  |   |              |
|--|---|--------------|
| display system-parameters customer-options |   | Page 4 of 11 |
| OPTIONAL FEATURES                          |   |              |
| Emergency Access to Attendant? y           | IP Stations? y                          |              |
| Enable 'dadmin' Login? y                   |   |              |
| Enhanced Conferencing? y                   | <b>ISDN Feature Plus? y</b>             |              |
| Enhanced EC500? y                          | ISDN/SIP Network Call Redirection? y    |              |
| Enterprise Survivable Server? n            | ISDN-BRI Trunks? y                      |              |
| Enterprise Wide Licensing? n               | <b>ISDN-PRI? y</b>                      |              |
| ESS Administration? y                      | Local Survivable Processor? n           |              |
| Extended Cvg/Fwd Admin? y                  | Malicious Call Trace? y                 |              |
| External Device Alarm Admin? y             | Media Encryption Over IP? n             |              |
| Five Port Networks Max Per MCC? n          | Mode Code for Centralized Voice Mail? n |              |
| Flexible Billing? n                        |   |              |
| Forced Entry of Account Codes? y           | Multifrequency Signaling? y             |              |
| Global Call Classification? y              | Multimedia Call Handling (Basic)? y     |              |
| Hospitality (Basic)? y                     | Multimedia Call Handling (Enhanced)? y  |              |
| Hospitality (G3V3 Enhancements)? y         | Multimedia IP SIP Trunking? y           |              |
| IP Trunks? y                               |   |              |

## 5.2. Configure COR

Each extension must to have COR (Class of Restriction) that includes the **Can Be Service Observed** feature enabled. The ISDN Trunk must to have COR (Class of Restriction) that includes the **Can Be A Service Observer** feature enabled. For extensions, COR value of 1, and for ISDN Trunk, COR value of 2 was used. User **change cor *n*** command to configure, where *n* is the COR value to be used for either extension or trunk.

```
change cor 1                                     Page 1 of 23
                                     CLASS OF RESTRICTION

COR Number: 1
COR Description: Default Station

FRL: 0                                           APLT? y
Can Be Service Observed? y                   Calling Party Restriction: none
Can Be A Service Observer? n                   Called Party Restriction: none
Time of Day Chart: 1                         Forced Entry of Account Codes? n
Priority Queuing? n                         Direct Agent Calling? y
Restriction Override: none                 Facility Access Trunk Test? n
Restricted Call List? n                   Can Change Coverage? n

Access to MCT? y                           Fully Restricted Service? n
Group II Category For MFC: 7               Hear VDN of Origin Annc.? n
Send ANI for MFE? n                       Add/Remove Agent Skills? n
MF ANI Prefix:                            Automatic Charge Display? n
Hear System Music on Hold? y PASTE (Display PBX Data on Phone)? n
Can Be Picked Up By Directed Call Pickup? n
Can Use Directed Call Pickup? n
Group Controlled Restriction: inactive
```

```
change cor 2                                     Page 1 of 23
                                     CLASS OF RESTRICTION

COR Number: 2
COR Description: Default Trunk

FRL: 0                                           APLT? y
Can Be Service Observed? n                   Calling Party Restriction: none
Can Be A Service Observer? y                 Called Party Restriction: none
Time of Day Chart: 1                         Forced Entry of Account Codes? n
Priority Queuing? n                         Direct Agent Calling? y
Restriction Override: none                 Facility Access Trunk Test? n
Restricted Call List? n                   Can Change Coverage? n

Access to MCT? y                           Fully Restricted Service? n
Group II Category For MFC: 7               Hear VDN of Origin Annc.? n
Send ANI for MFE? n                       Add/Remove Agent Skills? n
MF ANI Prefix:                            Automatic Charge Display? n
Hear System Music on Hold? y PASTE (Display PBX Data on Phone)? n
Can Be Picked Up By Directed Call Pickup? n
Can Use Directed Call Pickup? n
Group Controlled Restriction: inactive
```

### 5.3. Configure DS1

For an available T1/E1 card on the Avaya media gateway, use **change ds1 *n***, where *n* is the location of the T1/E1 card. PRI trunk from this T1/E1 card will be connected to CTLog®. This DS1 needs to be configured as an E1. Configure as follows:

- Type in a descriptive name in **Name** field
- Set **Bit Rate** to **2.048**
- Set **Line Coding** to **hdb3**
- Set **Signaling Mode** to **isdn-pri**
- Set **Country Protocol** to **etsi**
- Set **CRC** to **n**
- Set **Slip Detection** to **y**

```
change ds1 1v6                                     Page 1 of 1
                                                    DS1 CIRCUIT PACK

      Location: 001V6                                Name: to_CTLog
      Bit Rate: 2.048                                Line Coding: hdb3

      Signaling Mode: isdn-pri
      Connect: network
      TN-C7 Long Timers? n                          Country Protocol: etsi
      Interworking Message: PROGress
      Interface Companding: alaw                      CRC? n
      Idle Code: 11111111
      DCP/Analog Bearer Capability: 3.1kHz

      T303 Timer(sec): 4
      Disable Restarts? n

      Slip Detection? y                              Near-end CSU Type: other

      Echo Cancellation? n
```



## 5.4. Configure Signaling Group

User **add signaling-group *n***, where *n* is an available signaling group number, to add a signaling group. Configure as follows:

- Set **Group Type** to **isdn-pri**
- Set the **Primary D-Channel** according to the DS1 configured. Use channel number 16 as the D-Channel
- Set TSC Supplementary Service Protocol to **a**
- Once the trunk group has been configured return to this form and set the **Trunk Group for Channel Selection**

|                                       |                            |                                |  |
|---------------------------------------|----------------------------|--------------------------------|--|
| signaling-group 2                     |                            | Page 1 of 5                    |  |
| SIGNALING GROUP                       |                            |                                |  |
| Group Number: 2                       | Group Type: isdn-pri       |                                |  |
|                                       | Associated Signaling? y    | Max number of NCA TSC: 0       |  |
|                                       | Primary D-Channel: 001V616 | Max number of CA TSC: 0        |  |
|                                       |                            | Trunk Group for NCA TSC:       |  |
| Trunk Group for Channel Selection: 2  |                            | X-Mobility/Wireless Type: NONE |  |
| TSC Supplementary Service Protocol: a |                            | Network Call Transfer? n       |  |

## 5.5. Configure Trunk Group

Use **add trunk-group *n***, where *n* is an available trunk group number, to add a trunk group. On Page 1, configure as follows:

- Set **Group Type** to **isdn**
- Provide a descriptive name in **Group Name**
- Set **COR** to the value used for ISDN Trunk in [Section 5.2](#)
- Set **TAC** according to the dial plan
- Set **Carrier Medium** to **PRI/BRI**
- Set **Service Type** to **public-ntwrk**

Add the trunk group members on Page 5 (not shown).

|                            |                       |                         |           |
|----------------------------|-----------------------|-------------------------|-----------|
| add trunk-group 2          |                       | Page 1 of 21            |           |
| TRUNK GROUP                |                       |                         |           |
| Group Number: 2            | Group Type: isdn      | CDR Reports: y          |           |
| Group Name: to_CRTLog      | COR: 2                | TN: 1                   | TAC: *002 |
| Direction: two-way         | Outgoing Display? n   | Carrier Medium: PRI/BRI |           |
| Dial Access? n             | Busy Threshold: 255   | Night Service:          |           |
| Queue Length: 0            |                       |                         |           |
| Service Type: public-ntwrk | Auth Code? n          | TestCall ITC: rest      |           |
|                            | Far End Test Line No: |                         |           |
| TestCall BCC: 4            |                       |                         |           |

## 5.6. Configure Stations

Use **add station *n*** command to add a station, where *n* is an available station extension. This station will be monitored by CTLog®. Configure the station as follows, on Page 1:

- In **Name** field, enter a descriptive name
- Set **Type** to the type of the telephones
- Enter a **Security Code**
- Set **IP SoftPhone** to **y**
- Set **COR** to the value configured for extensions in [Section 5.2](#)

|                           |  |               |
|---------------------------|--|---------------|
| <b>add station 25002</b>  |  | Page 1 of 5   |
| STATION                   |  |               |
| Extension: 25002          | Lock Messages? n                             | BCC: 0        |
| <b>Type: 9630</b>         | <b>Security Code: 123456</b>                 | TN: 1         |
| <b>Port: IP</b>           | Coverage Path 1: 1                           | <b>COR: 1</b> |
| <b>Name: IP Station 1</b> | Coverage Path 2:                             | COS: 1        |
|                           | Hunt-to Station:                             |               |
| STATION OPTIONS           |  |               |
| Loss Group: 19            | Time of Day Lock Table:                      |               |
| Speakerphone: 2-way       | Personalized Ringing Pattern: 1              |               |
| Display Language: english | Message Lamp Ext: 25001                      |               |
| Survivable GK Node Name:  | Mute Button Enabled? y                       |               |
| Survivable COR: internal  | Button Modules: 0                            |               |
| Survivable Trunk Dest? y  | Media Complex Ext:                           |               |
|                           | <b>IP SoftPhone? y</b>                       |               |
|                           | IP Video Softphone? n                        |               |
|                           | Short/Prefixed Registration Allowed: default |               |
|                           | Customizable Labels? y                       |               |

## 5.7. Configure Feature Access Code

Use **change feature-access-codes** to configure the feature access code for CTLog to service observe the extensions. On Page 5, set an access code for **Service Observing Listen Only Access Code**.

|   |  |               |
|---|--|---------------|
| change feature-access-codes                               |  | Page 5 of 10  |
| FEATURE ACCESS CODE (FAC)                                 |  |               |
| Call Center Features                                      |  |               |
| AGENT WORK MODES  |  |               |
| After Call Work Access Code: *04                          |  |               |
| Assist Access Code:                                       |  |               |
| Auto-In Access Code: *02                                  |  |               |
| Aux Work Access Code: *05                                 |  |               |
| Login Access Code: *01                                    |  |               |
| Logout Access Code: *03                                   |  |               |
| Manual-in Access Code: *06                                |  |               |
| SERVICE OBSERVING   |  |               |
| Service Observing Listen Only Access Code: *555           |  |               |
| Service Observing Listen/Talk Access Code: *556           |  |               |
| Service Observing No Talk Access Code: *557               |  |               |
| Service Observing Next Call Listen Only Access Code: *558 |  |               |
| Service Observing by Location Listen Only Access Code:    |  |               |
| Service Observing by Location Listen/Talk Access Code:    |  |               |
| AACC CONFERENCE MODES                                     |  |               |
| Restrict First Consult Activation:                        |  | Deactivation: |
| Restrict Second Consult Activation:                       |  | Deactivation: |

## 5.8. Configure CTI-Link

An existing configuration was used for CTI-link, and is not shown as part of this document. Screen capture below displays the configured CTI-link that was used during compliance testing.

|                    |             |
|--------------------|-------------|
| display cti-link 1 | Page 1 of 3 |
| CTI LINK           |             |
| CTI Link: 1        |             |
| Extension: 6201    |             |
| Type: ADJ-IP       |             |
| COR: 1             |             |

## 6. Configure Avaya Aura® Application Enablement Services

Configuration of Avaya Aura® Application Enablement Services requires a user account be configured for CTLog®.

### 6.1. Configure User

All administration is performed by web browser, <https://<aes-ip-address>/>

A user needs to be created for CTLog to communicate with AES. Navigate to **User Management → User Admin → Add User**.

The screenshot displays the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title 'Application Enablement Services Management Console', and a welcome message for 'User craft' with system details. A red navigation bar contains links for 'User Management', 'User Admin', 'Add User', 'Home', 'Help', and 'Logout'. On the left, a sidebar menu lists various system functions, with 'User Management' expanded to show 'User Admin' and 'Add User' selected. The main content area is the 'Add User' form, which includes fields for User Id, Common Name, Surname, User Password, Confirm Password, Admin Note, Avaya Role (set to 'None'), Business Category, Car License, CM Home, Cms Home, CT User (set to 'No'), and Department Number. A note indicates that fields marked with an asterisk are required.

Fill in **User Id**, **Common Name**, **Surname**, **User Password** and **Confirm Password**. Set the **CT User** to **Yes**, and **Apply**.

If the Security Database is enabled on Application Enablement Services, set the CTLog user account to Unrestricted Access to enable any device to be used implicitly. This step avoids the need to duplicate administration.

Navigate to **Security → Security Database → CTI Users → List All Users**.

AE Services
Communication Manager Interface
Licensing
Maintenance
Networking
Security
Account Management
Audit
Certificate Management
Enterprise Directory
Host AA
PAM
Security Database
Control
CTI Users
List All Users
Search Users
Devices
Device Groups

### CTI Users

| User ID                                | Common Name | Worktop Name | Device ID |
|--|-------------|--------------|-----------|
| <input type="radio"/> amcom            | amcom       | NONE         | NONE      |
| <input checked="" type="radio"/> ctlog | ctlog       | NONE         | NONE      |
| <input type="radio"/> devcon           | devcon      | NONE         | NONE      |
| <input type="radio"/> devconn          | Developer   | NONE         | NONE      |
| <input type="radio"/> DevConnect       | DevConnect  | NONE         | NONE      |
| <input type="radio"/> interop          | interop     | NONE         | NONE      |
| <input type="radio"/> mattersight      | mattersight | NONE         | NONE      |
| <input type="radio"/> rtirouter1       | rtirouter1  | NONE         | NONE      |
| <input type="radio"/> rtitele1         | rtitele1    | NONE         | NONE      |
| <input type="radio"/> vhtaes           | vhtaes      | NONE         | NONE      |

Edit
List All

Select the recently added user and click **Edit**. Check the box for **Unrestricted Access** and click **Apply Changes**.

### Edit CTI User

User Profile:

User ID

Common Name

Worktop Name

Unrestricted Access

ctlog

ctlog

NONE ▾

☒

Call and Device Control:

Call Origination/Termination and Device Status

None ▾

Call and Device Monitoring:

Device Monitoring

Calls On A Device Monitoring

Call Monitoring

None ▾

None ▾

☐

Routing Control:

Allow Routing on Listed Devices

None ▾

Apply Changes

Cancel Changes

## 6.2. Configure Communication Manager Switch Connections

An existing configuration was used for Communication Manager Switch Connection. It is not shown in this document.

## 6.3. Configure TSAPI Link

Navigate to the **AE Services → TSAPI → TSAPI Links** page to add the TSAPI CTI Link. Click **Add Link** (not shown).

Select a **Switch Connection** using the drop down menu. Select the **Switch CTI Link Number** using the drop down menu. The **Switch CTI Link Number** must match the number configured in the **cti-link** form for Communication Manager.

If the application will use Encrypted Links, select **Encrypted** in the **Security** selection box.

Click **Apply Changes**.

Configuration shown below was previously configured.

### Edit TSAPI Links

|   |           |
|---|-----------|
| Link  | 1         |
| Switch Connection   | TR18300 ▼ |
| Switch CTI Link Number  | 1 ▼       |
| ASAI Link Version   | 5 ▼       |
| Security  | Both ▼    |
| <input type="button" value="Apply Changes"/> <input type="button" value="Cancel Changes"/> <input type="button" value="Advanced Settings"/> |           |

Click **Advanced Setting** to obtain the TSAPI Link that will be used by CTLog®.

### TSAPI Link - Advanced Settings

|                   |                               |
|-------------------|-------------------------------|
| Tlinks Configured | AVAYA#TR18300#CSTA-S#AES6_TR1 |
|                   | AVAYA#TR18300#CSTA#AES6_TR1   |

## 7. Configure CallTech

### 7.1. Configure CTLog

Configuration for CTLog is performed via a web interface, which can be reached via browser, <http://<ip-address>>; ip-address is the IP Address of CTLog®. Please note that the entire configuration for CTLog is displayed in Spanish.

Once logged in, navigate to **Puertos** → **Tipo**.

**CTLog® CONFIGURATOR**

Usuario: Admin ▶ Puertos

Servidores Tipo Configuración Configuración de Tarjetas SoftRecorders

Editar Borrar

Nuevo registro

| Nombre        | Arch Parámetros | Trace    | Audio Compression | Channel Type | Recording Activation            |
|---------------|-----------------|----------|-------------------|--------------|---------------------------------|
| DIGITALES NGX | parameters.xml  | Activo   | GSM               | Digital NGX  | Activación por eventos Hardware |
| DIGITALES E1  | parameters.bt   | Inactivo | GSM               | Digital E1   | Activación por eventos Hardware |

1 2 3 4

Diseñado y desarrollado por CallTech S.A.

Select **DIGITALES E1** and click **Editar**, set **Audio Compression** to **GSM** and **Channel type** to **E1**.





After all the extensions are added into the database, navigate to **Puertos → Configuration**. Select an extension and click **Editar**; check box for **Activo**. Select “**DIGITALES E1**” for “**Configuración**”, type in the extension number in “**ID Dispositivo**” field and select “**Selectivo**” for “**Modo Grabación**”

The screenshot displays the CTLog CONFIGURATOR web application. On the left is a vertical menu with options: Puertos, Extensiones, Fuentes, Horarios, Campañas, Alarmas, Perfiles, Monitoreo, Usuarios, Parámetros, Backups, Ayuda, and Salir. The main area has tabs for Servidores, Tipo, Configuración (selected), Configuración de Tarjetas, and SoftRecorders. A yellow header bar shows 'Usuario: Admin' and a 'Puertos' button. Below the tabs, there's a 'Puerto...' dropdown and 'Puerto Inicial'/'Puerto Final' fields. A table lists port configurations with columns: Id Puerto, Canal, Icono, Activo, and Configuración. A modal window titled 'Editar' is open, showing fields for Id Puerto (1), Canal (1), Icono (Teléfono), Activo (checked), Configuración (DIGITALES E1), ID Dispositivo (25001), Troncal (0), Modo Grabación (Selectivo), Módulo CTIM (checked), DirecciónIP, and Servidor (CTLOG). Buttons for 'Actualizar' and 'Cancelar' are at the bottom of the modal. A table on the right shows 'CTIM' and 'No' columns with values 512 and 0. The footer indicates 'Diseñado y desarrollado por CallTech S.A.' and the CTLog logo.

Locate an entry for **SelectiveRecordingString** entry and click **Editar**, type in the Service Observing Access Code configured in [Section 5.7](#) in **Valor**.

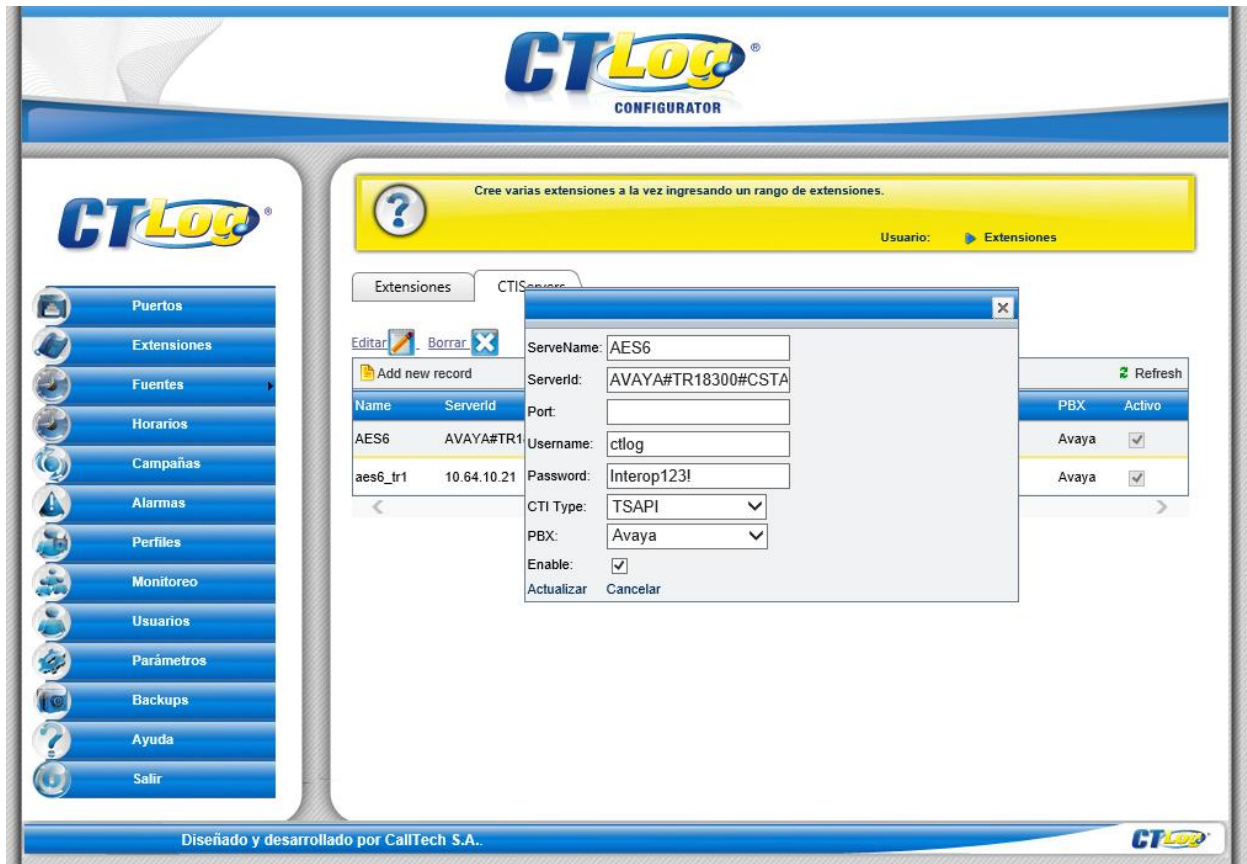
The screenshot shows the CTLog CONFIGURATOR web interface. The sidebar on the left contains navigation links: Puertos, Extensiones, Fuentes, Horarios, Campañas, Alarmas, Perfiles, Monitoreo, Usuarios, Parámetros, Backups, Ayuda, and Salir. The main content area is titled 'CTLog CONFIGURATOR' and shows the 'Parámetros' tab selected. At the top right, it indicates 'Usuario: Admin' and a link to 'Parámetros'. Below this, there are tabs for 'Parámetros', 'Control Estados', and 'Modos Grabación'. The 'Parámetros' tab displays a table of configuration entries. A modal window is open for editing the 'FTPUser' entry, showing a 'Valor' field with the text '\*555'. The table lists various parameters for the CTLog Server, including InitCTIModule, SelectiveRecordingString, and DeleteOnBackupRecords.

| Aplicación   | Nombre                   | Valor | Descripción  |
|--------------|--------------------------|-------|--|
| CTLog Server | FTPUser                  | *555  |  |
| CTLog Server | FTPPass                  |       |  |
| CTLog Server | InitCTIModule            | 0     | Indica si el CTLog server debe iniciar el modulo CTIM                                  |
| CTLog Server | SelectiveRecordingString | *944E | Codigo de marcacion para Iniciar Grabacion Selectiva. E: Extension a grabar            |
| CTLog Server | DeleteOnBackupRecords    | 1     | 0- Free space, doesn't care on backup, 1- Delete only records already copied to backup |

Página 3 de 13, ítems 11 a 15 de 65.

To configure CTI, navigate to **Extensiones** → **CTIServers**. To add an entry for TSAPI, select **Add new record**:

- Type in a name in **ServerName**
- Type in the T-Link from [Section 6.3](#) in **ServerID**
- Type in the **Username** and **Password** from [Section 6.1](#)
- Set **CTI Type** to **TSAPI**
- Set **PBX** to **Avaya**
- Check box for **Enable**



To insert extensions that need to be monitored, on the left pane, select **Extensiones** → **Extensiones**.

The screenshot shows the CTLog CONFIGURATOR web interface. On the left is a navigation menu with options: Puertos, Extensiones, Fuentes, Horarios, Campañas, Alarmas, Perfiles, Monitoreo, Usuarios, Parámetros, Backups, Ayuda, and Salir. The 'Extensiones' option is selected. The main content area has a yellow header with a question mark icon and the text 'Cree varias extensiones a la vez ingresando un rango de extensiones.' Below this is a 'Usuario:' dropdown set to 'Extensiones'. There are tabs for 'Extensiones' and 'CTIServers'. A search bar is present. Below the search bar are input fields for 'Ext.Inicial:' and 'Ext.Final:', followed by an 'Insert' button. To the right is a small table:


| Nombre    | CTIM | No |
|-----------|------|----|
| Selectivo | 16   | 0  |

Below the input fields are 'Editar' and 'Borrar' buttons. A table titled 'Add new record' with a 'Refresh' button contains the following data:

| IdExtension | Numero | DireccionIP | Activo                              | ModuloCTIM                          | FechaCreacion          | ModoGrabacion | IdPort |
|-------------|--------|-------------|-------------------------------------|-------------------------------------|------------------------|---------------|--------|
| 655         | 25001  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 12:25:32 PM | Selectivo     | 1      |
| 657         | 25002  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 2:33:42 PM  | Selectivo     | 2      |
| 659         | 25003  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 2:33:42 PM  | Selectivo     | 3      |
| 660         | 25004  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 2:33:42 PM  | Selectivo     | 4      |
| 661         | 25005  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 2:33:42 PM  | Selectivo     | 5      |

At the bottom of the table are navigation controls (first, previous, next, last) and 'Page size: 5'. A footer at the bottom of the interface reads 'Diseñado y desarrollado por CalTech S.A.' and includes the CTLog logo.

To insert a range of extensions, type in the starting range in **Ext. Inicial** and ending range in **Ext. Final**; click **Insert**.



The screenshot shows the CTLog CONFIGURATOR web interface. On the left is a navigation menu with options: Puertos, Extensiones, Fuentes, Horarios, Campa as, Alarmas, Perfiles, Monitoreo, Usuarios, Par metros, Backups, Ayuda, and Salir. The main content area is titled 'Cree varias extensiones a la vez ingresando un rango de extensiones.' and includes a 'Usuario:' dropdown set to 'Extensiones'. Below this, there's a section for 'Extensiones' with a 'CTIServers' tab and a search icon. It features input fields for 'Ext. Inicial: 25001' and 'Ext. Final: 25005' with an 'Insert' button. A small summary table shows 'Nombre: Selectivo', 'CTIM: 16', and 'No: 0'. Below the input fields are 'Editar' and 'Borrar' buttons. A table titled 'Add new record' with a 'Refresh' button displays a list of extensions. The table has columns: IdExtension, Numero, DireccionIP, Activo, ModuloCTIM, FechaCreacion, ModoGrabacion, and IdPort. The data shows five records with extension numbers 25001 through 25005. At the bottom of the table, it indicates 'Page size: 5' and '16 items in 4 pages'.

| Nombre    | CTIM | No |
|-----------|------|----|
| Selectivo | 16   | 0  |

| IdExtension | Numero | DireccionIP | Activo                              | ModuloCTIM                          | FechaCreacion          | ModoGrabacion | IdPort |
|-------------|--------|-------------|-------------------------------------|-------------------------------------|------------------------|---------------|--------|
| 655         | 25001  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 12:25:32 PM | Selectivo     | 1      |
| 657         | 25002  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 2:33:42 PM  | Selectivo     | 2      |
| 659         | 25003  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 2:33:42 PM  | Selectivo     | 3      |
| 660         | 25004  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 2:33:42 PM  | Selectivo     | 4      |
| 661         | 25005  | --          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 11/19/2010 2:33:42 PM  | Selectivo     | 5      |

Page size: 5      16 items in 4 pages

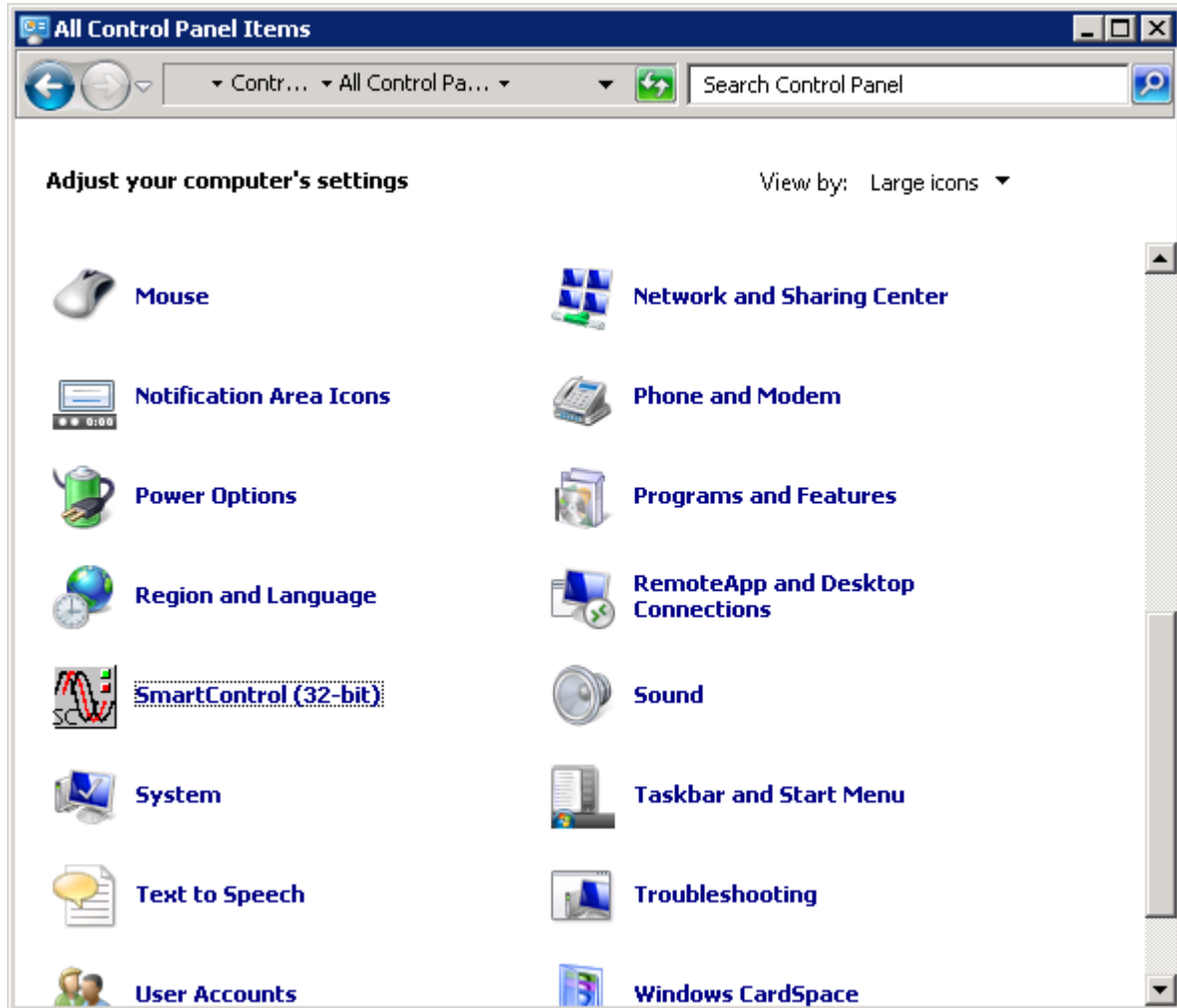
For each extension, select and click on “**Editar**”. Check “**Activo**” and “**Modulo CTIM**”. Select “**Selectivo**” for “**Modo de grabación**”, select the assigned server for “**Servidor**”, Uncheck “**Nulo**”, select the assigned recording port for this extension in “**Puerto**” and select the assigned CTI Server for “**Servidor CTI**”

The screenshot shows the CTLog CONFIGURATOR web interface. On the left is a sidebar menu with options: Puertos, Extensiones, Fuentes, Horarios, Campañas, Alarmas, Perfiles, Monitoreo, Usuarios, Parámetros, Backups, Ayuda, and Salir. The main area displays the 'Extensiones' configuration page. At the top, a yellow banner says 'Cree varias extensiones a la vez ingresando un rango de extensiones.' and 'Usuario: > Extensiones'. Below this, there's a table of extensions. An 'Editar' modal is open, showing fields for: Número (25001), Dirección IP, Activo (checked), Auto Answer (unchecked), Módulo CTIM (checked), Modo Grabación (Selectivo), Servidor (CTLOG), Puerto (1), and Servidor CTI (AES6). There is also an unchecked 'Nulo' checkbox. The modal has 'Update' and 'Cancel' buttons. In the background, a table of extensions is visible with columns: IdExtension, Numero, CTIM, No, and IdPort. The table contains rows for extensions 659 through 663.

| IdExtension | Numero | CTIM | No | IdPort |
|-------------|--------|------|----|--------|
| 659         | 25001  |      | 0  |        |
| 660         | 25002  |      |    |        |
| 661         | 25003  |      |    |        |
| 662         | 25004  |      |    |        |
| 663         | 25005  |      |    |        |

## 7.2. Configure ISDN

On the server running CTLog, open **SmartControl** application; it can be found in **Control Panel**.



Under the **System** tab. Set “GCI Starting Index” parameter to **1**.

The screenshot shows the 'AudioCodes USA Inc SmartWORKS' configuration window with the 'System' tab selected. The window contains several configuration sections:

- Basic**: A group box containing six text input fields arranged in two columns. The first column includes 'Driver Version' (05.07.01), 'Driver Build' (0820), and 'Control Panel Version' (5.7.1.00095). The second column includes 'Max Log Count' (100), 'MVIP Starting Slot' (0), and 'MVIP Slot Count' (256).
- IPX/HPX Watchdog**: A group box containing five controls: 'Heartbeat Enabled' (unchecked checkbox), 'TCP Port' (39998), 'Connection Retries' (2), 'Retry Interval' (20), and 'Polling Interval' (30).
- H100 Stream Speed**: A group box with three radio buttons: '2048 KHz' (selected), '4096 KHz', and '8192 KHz'.
- GCI Starting Index**: A group box with two radio buttons: '0' and '1' (selected).
- Allow Bus Segmentation**: An unchecked checkbox.
- Default**: A button located below the main configuration area.
- Footer**: Three buttons at the bottom: 'Apply', 'OK', and 'Cancel'.



Under the **Board** tab:

- Set **TDM Encoding** to **A-law**
- Set **CT Mode** to **Slave**

The screenshot shows the 'AudioCodes USA Inc SmartWORKS' application window with the 'Board' tab selected. The 'Select Board' section shows 'Board Number' 0, 'PCI Bus No: 5', and 'PCI Slot No: 0'. Below this, 'Information For Board 0' is displayed, including Board Type (SmartTERM DT3209 PCIe Single E1), Total Channels (32), Serial Number (217Y), DateCode (1021), Firmware Version (05.07.01), Build (1038), OEM Info (AudioCodes USA, Inc.), Copyright (© 2007 AudioCodes USA, Inc. All Rights Reserved.), and T1E1Option (E1). The 'TDM Encoding' section has radio buttons for 'μ-law' and 'A-law', with 'A-law' selected. The 'Board Switch ID' field is empty. The 'CT Bus Type' section has radio buttons for 'H.100' and 'M/VIP', with 'H.100' selected. The 'CT Mode' section has radio buttons for 'Master', 'Slave', 'Master A', and 'MasterB', with 'Slave' selected. A 'Defaults' button is located to the right of the CT Mode section. At the bottom, there are 'Apply', 'OK', and 'Cancel' buttons.

AudioCodes USA Inc SmartWORKS

System Board CPM Parameters Digital Network

Select Board

Board Number 0 PCI Bus No: 5 PCI Slot No: 0

Information For Board 0

Board Type SmartTERM DT3209 PCIe Single E1

Total Channels 32

Serial Number 217Y

DateCode 1021

Firmware Version 05.07.01 Build 1038

OEM Info AudioCodes USA, Inc.

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T1E1Option E1

TDM Encoding

☐ μ-law ☒ A-law

Board Switch ID --

CT Bus Type

☒ H.100 ☐ M/VIP

CT Mode

☐ Master ☒ Slave

☐ Master A ☐ MasterB

Defaults

Apply OK Cancel

Under **Digital Network**, set the **T1E1 Option** to **E1**. Click **Advanced** for the trunk being used under **Protocol Settings**; set it to **NT**.

The screenshot shows the AudioCodes USA Inc SmartWORKS configuration window with the **Digital Network** tab selected. The **Board** is set to **Board 0, SmartTERM DT3209 PCIe Single E1**. The **T1E1 Option** is set to **E1**. The **Trunk Settings** table shows the following configuration:

| Trunk | Framing     | Line Coding | LBO     | ZCS |
|-------|-------------|-------------|---------|-----|
| 0     | Basic G.704 | HDB3        | 120 ohm |     |
| 1     |             |             |         |     |

The **Protocol Settings** table shows the following configuration:

| Trunk | Signaling Protocol | Variant   | Advanced |
|-------|--------------------|-----------|----------|
| 0     | ISDN               | (ETS 300) | Advanced |
| 1     |                    |           | Advanced |

The **NFAS Settings** table shows the following configuration:

| Trunk | NFAS Index |
|-------|------------|
| 0     |            |
| 1     |            |

The **ISDN Interface** dialog box is open, showing the configuration for **Board 0, Trunk 0**. The **TE** option is selected, and the **NT** option is also visible. The **Default**, **OK**, and **Cancel** buttons are at the bottom.

## 8. Verification Steps

To verify the status for ISDN Trunk to CTLog, via SAT, use the **status trunk *n***, where *n* is the number of trunk that was configured in this document. The **Service State** of **in-service/idle** indicates that the trunk is in an operational state.

|                    |         |                 |                      |      |
|--------------------|---------|-----------------|----------------------|------|
| status trunk 2     |         |                 |                      |      |
| TRUNK GROUP STATUS |         |                 |                      |      |
| Member             | Port    | Service State   | Mtce Connected Ports | Busy |
| 0011/001           | 001V601 | in-service/idle | no                   |      |
| 0011/002           | 001V602 | in-service/idle | no                   |      |
| 0011/003           | 001V603 | in-service/idle | no                   |      |
| 0011/004           | 001V604 | in-service/idle | no                   |      |
| 0011/005           | 001V605 | in-service/idle | no                   |      |
| 0011/006           | 001V606 | in-service/idle | no                   |      |
| 0011/007           | 001V607 | in-service/idle | no                   |      |
| 0011/008           | 001V608 | in-service/idle | no                   |      |
| 0011/009           | 001V609 | in-service/idle | no                   |      |
| 0011/010           | 001V610 | in-service/idle | no                   |      |

Place a call from an Avaya Station and verify that the audio for the call was retrieved and saved by CTLog.

## 9. Conclusion

CallTech CTLog® was able to successfully interoperate with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services.

## 10. Additional References

Documentation related to Avaya can be obtained from <https://support.avaya.com>.

[1] *Administering Avaya Aura® Communication Manager, Release 6.3, Issue 3, October 2013*

[2] *Avaya Aura® Application Enablement Service Administration and Maintenance Guide, Issue 2, Release 6.3, October 2013*

Documentation related to CTLog® can be obtained from <http://www.calltechsa.com>

[3] *CTLog® Configurator*

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