



UPTIVITY
Agile WFO for SMB

Customer Guide to Avaya DT-SO Integrations

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Version: This guide should be used with NICE Uptivity (formerly Uptivity Premise) 16.2 or higher.

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Introduction

Audience

This document is written for customers and prospective customers interested in using Uptivity Call Recording in an Avaya DT-SO telephony environment. Readers who will perform procedures in this guide should have a basic level of familiarity with traditional wired telephony, general networking, the Windows operating system, Avaya hardware and software, and NICE Uptivity.

Goals

The goal of this document is to provide knowledge, reference, and procedural information necessary to understand a proposed Avaya/Uptivity integration using digital telephony trunks and Avaya SO, and to configure the Avaya equipment to support the integration.

This document is NOT intended as a specific system or network design document. If further clarification is needed, consult with your telephony vendor(s).

Assumptions

This document assumes the reader has access to an Uptivity Sales Engineer, Project Manager, or other resource to assist in applying this information to the reader's environment. It also assumes that the telephony trunks have been added to your Avaya PBX and are working correctly.

Need-to-Knows



To facilitate ease of use, this document takes advantage of PDF bookmarks. By opening the bookmark pane, readers can easily refer to the portion(s) of the guide that are relevant to their needs. For example, the Uptivity application administrator can click on the **Customer Administration Tasks** bookmark to jump directly to that section.

To expand and collapse the bookmark pane, click on the bookmark icon on the left side of the document window.

Introduction

For questions related to Uptivity configuration, consult the Uptivity installation team.

This integration uses Avaya TSAPI. Refer to the *Uptivity Customer Guide to Avaya TSAPI Integrations* for additional limitations, licensing requirements, and customer integration tasks.

Terminology

To ensure a common frame of reference, this guide uses the following terms in conjunction with this Avaya integration:

- **AES** — Application Enablement Services. The AES server in an Avaya contact center hosts software that provides CTI events.
- **Avaya CMS** — Avaya Call Management System. This contact center product is designed for businesses with complex contact center operations and high call volume. Sometimes referred to as Avaya CM.
- **GEDI** — Graphically-Enhanced DEFINITY Interface. Used by the customer or Avaya vendor to configure the Avaya CMS.
- **SO** — Service Observe. Avaya functionality that allows a person or device to listen to a call in progress.
- **TDM** — Time Division Multiplexing. Commonly-used as an acronym for traditional wired telephony, as opposed to VoIP.
- **TSAPI** — Telephone Services Application Programming Interface. Avaya TSAPI is software provides the call control events and metadata to Uptivity.
- **S8300, S8500, S8700** — Common models of Avaya PBX equipment

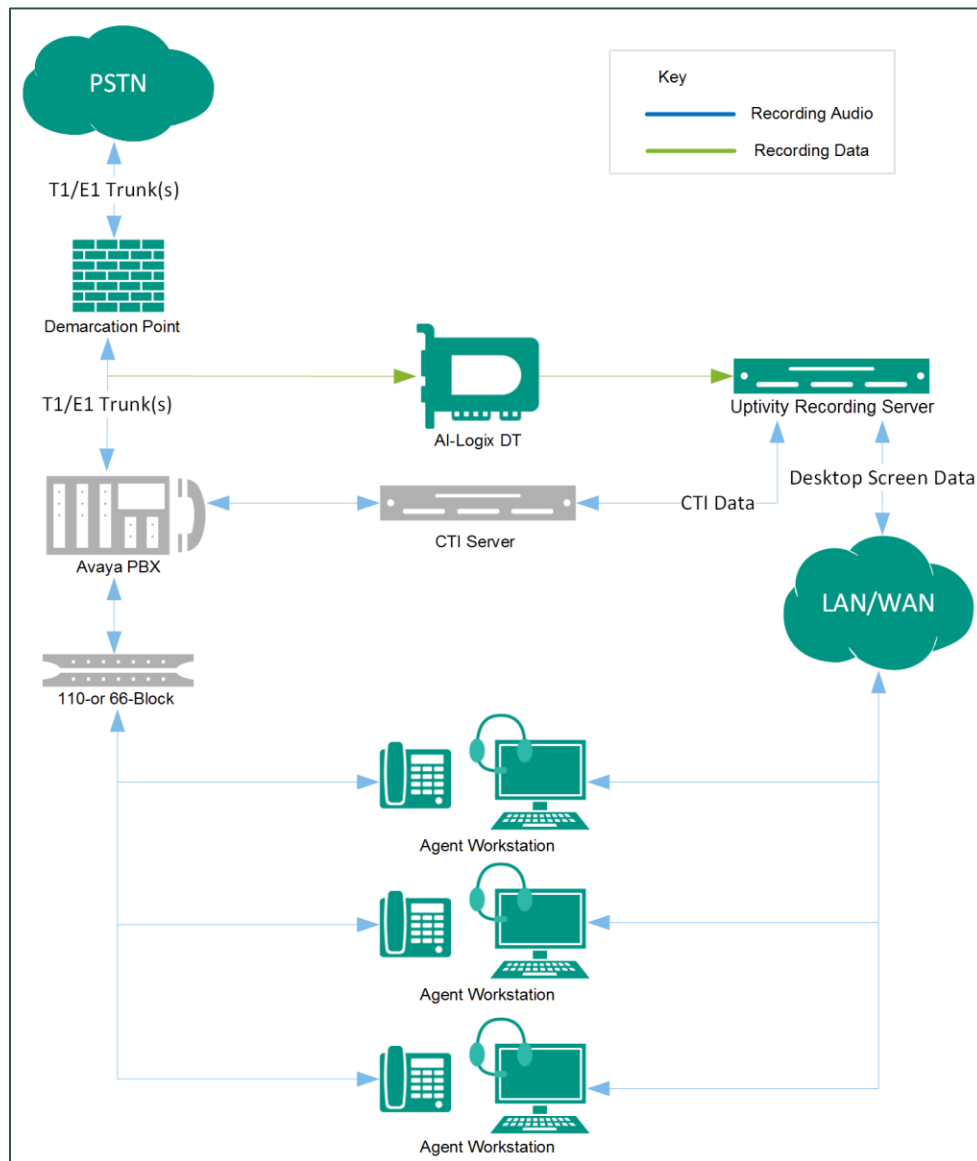
Customer Responsibilities

You are responsible for supplying the physical connection(s), IP connection(s), or both to your telephone system and LAN, and for obtaining and loading any licensing required by Avaya. You are also responsible for configuring Avaya system components to support the recording integration. See the [Customer Integration Tasks](#) section for additional information.

If you supply the server hardware for the installation, then you are also responsible for installing the physical Ai-Logix cards in the server.

Avaya DT-SO Integration Overview

The Avaya DT-SO integration uses T1/E1 terminating trunks as the audio source, and receives call control events and metadata through AES using TSAPI. Uptivity detects when a station joins a call and makes a service observe request to the PBX. The Avaya PBX then delivers the audio to the trunk. The number of trunk members available determines the number of simultaneous calls that can be recorded. For example, if two T1s are deployed in a PRI configuration, this allows for 46 simultaneous calls to be recorded (2 x 23 channels).



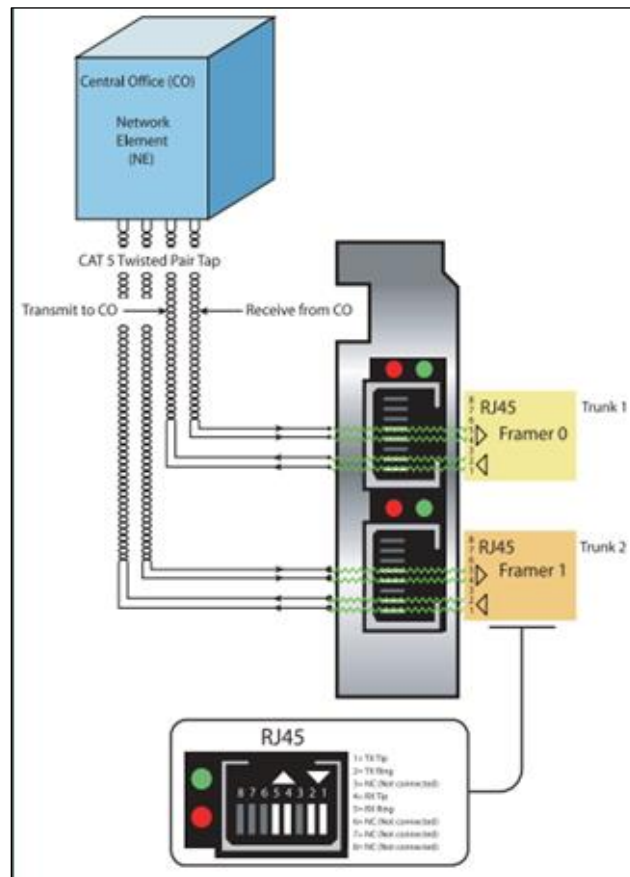
General architectural example of the Avaya DT-SO integration

Avaya DT-SO Integration Overview

Component	Function
Avaya CM	Controls audio presented to and from digital phones, IP phones, or both.
Avaya AES	Provides a CTI Interface for call metadata and call control events that can be used as recording triggers.
Ai-Logix DT Card	Audio capture card(s) installed in the Uptivity recording server.
Uptivity Recording Server	Receives audio, call control events, and business data. Provides a CTI interface for recording. May also host the Web Portal for playback and system administration.

Wiring Example

A T1 crossover cable or adapter may be needed to connect the Ai-Logix card to the Avaya DS1 Circuit pack. For more information, refer to AudioCodes documentation available on the AudioCodes Support website or from your installation team.



Wiring diagram for terminating trunks

Known Limitations

- This integration provides “muted” (mono) audio and therefore does not support speaker separation for reporting or analytics.
- Versions of Avaya CM prior to v4.0 allow only one Service Observer in a call.
- The Avaya DT-SO integration does not support the real-time blackout functionality in Uptivity.

Avaya Requirements

Hardware

- Avaya S8300, S8500, or S8700 media server
- Avaya DS1 Circuit Packs

Software

- Avaya CM v3.1 through 7.0

Licensing

- One (1) Station License per channel

Uptivity Requirements

Hardware

Uptivity hardware requirements vary depending on system configurations. Appropriate hardware is identified during the system implementation process. For additional information, search online help for keyword *site requirements*.

Along with standard hardware, one or more of the following is specifically required for this integration based on the number of trunks to be recorded:

- AudioCodes DT 6409 T1/E1 Terminating Tap Call Recording Blade

This card is dual-port and can connect to up to two (2) T1/E1 trunks. The number of channels that can be recorded per trunk varies depending on the configuration of the trunk itself:

- **Single T1** — 24 channels (23 channels for ISDN-signaled T1)
- **Dual T1** — 48 channels (46 channels for ISDN-signaled T1)
- **Single E1** — 30 channels
- **Dual E1** — 60 channels

Software

This guide covers the following:

- Uptivity, v5.6 or higher

Additional third-party software is required for the Ai-Logix digital trunk integration:

- AudioCodes SmartWORKS v3.11 – 5.4
- AudioCodes SmartWORKS v5.9 in MS 2012 environments

Licensing

- One (1) Voice seat license per trunk channel
- Additional licensing may be required if the system includes optional features (for example, Uptivity Screen Recording)

Customer Configuration Overview

The following table provides a high-level overview of the customer configuration steps in Avaya DT-SO integrations. Links are provided for tasks that are covered in this guide.

Customer Configuration Steps for Avaya DT-SO Integrations	
1	Install the Ai-Logix card(s) in customer-supplied server(s).
2	Complete all necessary physical connections between the recording server(s) and the telephony system.
3	Complete all necessary physical and IP connections between the recording server(s) and the LAN.
4	Obtain any necessary Avaya software and licensing.
5	Complete the tasks and procedures detailed in the <i>Customer Guide to Avaya TSAPI Integrations</i> .
6	Set Call Center System Parameters.
7	Enable Service Observing.
8	Set a Service Observe Feature Access Code.
9	Create a Class of Restriction (COR).
10	Configure the DS1 Circuit Pack.
11	Configure the Trunk Group.
12	Configure the Trunk Signaling Group.
13	Configure the Trunk Group Channels.

Customer Integration Tasks

The information in this section is provided for your reference only. Detailed steps for the Avaya configuration can be found in Avaya's documentation, which is available on the Avaya website. You should always use the appropriate documentation from Avaya to install and configure Avaya components.

Set Call Center System Parameters

```

change system-parameters features                                     Page 11 of 18
                                FEATURE-RELATED SYSTEM PARAMETERS
CALL CENTER SYSTEM PARAMETERS
EAS
  Expert Agent Selection (EAS) Enabled? y
  Minimum Agent-LoginID Password Length: —
  Direct Agent Announcement Extension: —           Delay: —
  Message Waiting Lamp Indicates Status For: station

VECTORIZING
  Converse First Data Delay: 0           Second Data Delay: 2
  Converse Signaling Tone (msec): 100       Pause (msec): 70
  Prompting Timeout (secs): 10
  Interflow-qpos EWT Threshold: 2
  Reverse Star/Pound Digit For Collect Step? n
  Available Agent Adjustments for BSR? n
  BSR Tie Strategy: 1st-found
  Store UDN Name in Station's Local Call Log? n
SERVICE OBSERVING
  Service Observing: Warning Tone? n       or Conference Tone? n
  Service Observing Allowed with Exclusion? n
  Allow Two Observers in Same Call? y

```

Sometimes Uptivity needs to observe and make two recordings for a single call (for example, agent-to-agent calls, conference calls with more than one participating agent, and so forth).

1. Log in to GEDI with an appropriately-permissioned account.
2. Type the command: **change system-parameters features**.
3. On page 11 of the display, verify that **Allow Two Observers in Same Call?** is set to **y**.

After completing this procedure, return to the [Customer Configuration Overview](#).

Enable Service Observing

```

display system-parameters customer-options                               Page 6 of 11
CALL CENTER OPTIONAL FEATURES

Call Center Release: 3.0

ACD? y                                                                Reason Codes? y
BCMS (Basic)? y                                                       Service Level Maximizer? y
BCMS/VuStats Service Level? y                                         Service Observing (Basic)? y
BSR Local Treatment for IP & ISDN? n                                   Service Observing (Remote/By FAC)? y
Business Advocate? n                                                  Service Observing (VDNs)? y
Call Work Codes? y                                                    Timed ACW? y
DTMF Feedback Signals For VRU? n                                       Vectoring (Basic)? y
Dynamic Advocate? n                                                    Vectoring (Prompting)? y
Expert Agent Selection (EAS)? y                                         Vectoring (G3V4 Enhanced)? y
EAS-PHD? y                                                             Vectoring (3.0 Enhanced)? n
Forced ACD Calls? n                                                    Vectoring (ANI/II-Digits Routing)? y
Least Occupied Agent? n                                                Vectoring (G3V4 Advanced Routing)? y
Lookahead Interflow (LAI)? y                                           Vectoring (CINFO)? y
Multiple Call Handling (On Request)? y                                   Vectoring (Best Service Routing)? n
Multiple Call Handling (Forced)? y                                       Vectoring (Holidays)? n
PASTE (Display PBX Data on Phone)? y                                    Vectoring (Variables)? n
(NOTE: You must logoff & login to effect the permission changes.)

```

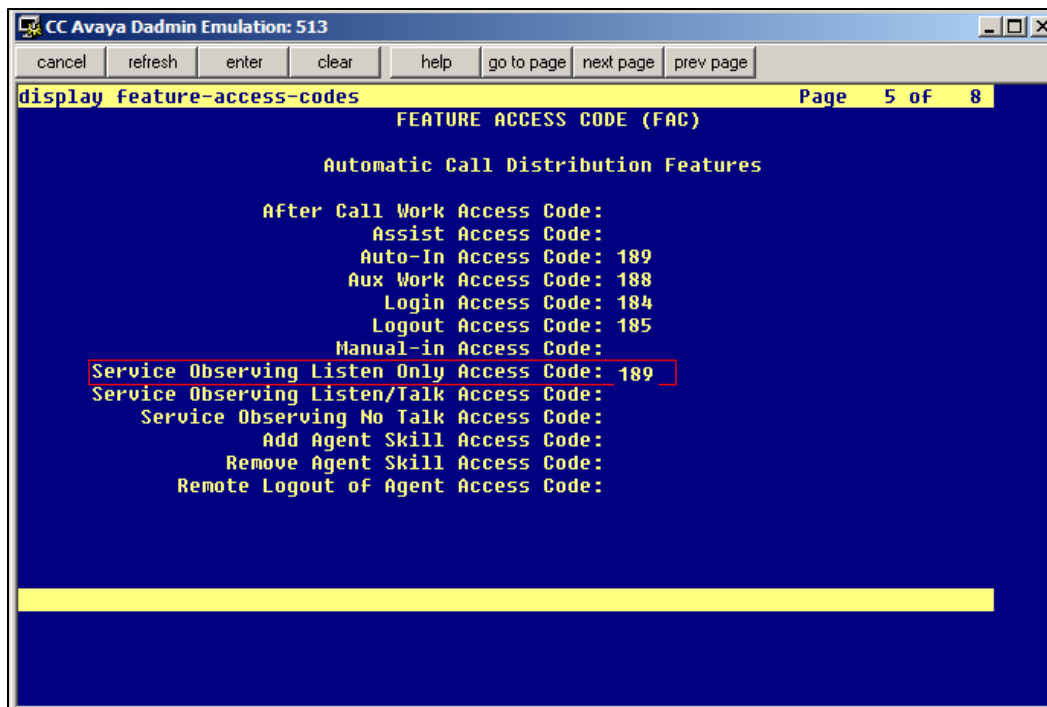
This integration uses the SO feature on the Avaya CM.

1. Log in to GEDI with an appropriately-permissioned account.
2. Type the **display system-parameters customer-options** command to open the CM System Parameter Customer-Options screen.
3. Verify that **Service Observing (Basic)** and **Service Observing (Remote/By FAC)** are both set to **y**.

If these fields are not enabled, contact your Avaya representative for information on how your installation was initially configured.

After completing this procedure, return to the [Customer Configuration Overview](#).

Set a Service Observe Feature Access Code



When supervisors perform a service observe, they must enter an access code. Uptivity must be configured to use this access code as well. You must set the **Service Observing Listen Only Access Code** for the Avaya CM and provide this code to your Uptivity installation team.

1. Log in to GEDI with an appropriately-permissioned account.
2. Type the command: **change feature-access-codes**.
3. Enter a code for **Service Observing Listen Only Access Code** (in the screenshot, the code is 189) and provide this number to the Uptivity installation team.

After completing this procedure, return to the [Customer Configuration Overview](#).

Create a Class of Restriction (COR)

You must assign a class of restriction to each trunk group to allow it to issue the Service Observing code.

1. Log in to GEDI with an appropriately-permissioned account.
2. Enter the command: **change cor *n*** to create a COR (*n* can be any number).
3. Enter a description.
4. Set **Can Be a Service Observer** to *y*.

After completing this procedure, return to the [Customer Configuration Overview](#).

Configure the DS1 Circuit Pack

```

CC Avaya: display ds1 01v3 (page 1) 10/27/2008 5:29:20 PM

                                DS1 CIRCUIT PACK

                                Location: 001V3                                Name: * Survey Trunk
                                Bit Rate: 1.544                                Line Coding: b8zs
                                Line Compensation: 1                            Framing Mode: esf
                                Signaling Mode: isdn-pri
                                Connect: pbx
                                TN-C/ Long Timers? n
                                Interworking Message: PROGRESS
                                Interface Companding: mulaw
                                Idle Code: 1111111
                                DCP/Analog Bearer Capability: 3.1kHz
                                T303 Timer(sec): 4

                                Slip Detection? y                            Near-end CSU Type: other
                                Echo Cancellation? y                        Block Progress Indicator? n
                                EC Direction: inward
                                EC Configuration: 4
  
```

1. Log in to GEDI with an appropriately-permissioned account.
2. Enter the command: **display ds1**.
3. Verify that the settings match those shown in the preceding image.
4. Make a note of the settings and provide them to your Uptivity installation team.

After completing this procedure, return to the [Customer Configuration Overview](#).

Configure the Trunk Group

You must perform this task for all trunk groups to be recorded.

1. Log in to GEDI with an appropriately-permissioned account.

Customer Integration Tasks

2. Enter the command: **display trunk-group n**, where n is the number of the applicable trunk group.
3. On page 1 of the display, configure the settings as shown in this image. For **COR**, enter the ID you configured in [Create a Class of Restriction \(COR\)](#).

```
CC Avaya: display trunk-group 10 (page 1) 10/27/2008 5:28:47 PM

                                TRUNK GROUP

Group Number: 10                  Group Type: isdn                  CDR Reports: y
Group Name: * Nortel              COR: 1                            TN: 1      TAC: 111
Direction: two-way              Outgoing Display? y              Carrier Medium: PRI/BRI
Dial Access? y                  Busy Threshold: 255              Night Service:
Code Length: 0
Service Type: tie                Auth Code? n                      TestCall ITC: rest
TestCall BCC: 4                Far End Test Line No:


```

4. On page 2 of the display, verify that **Group Type** is set to *isdn* as shown in the following image.

```
CC Avaya: display trunk-group 10 (page 2) 10/27/2008 5:28:47 PM

Group Type: isdn

TRUNK PARAMETERS
  Codeset to Send Display: 6      Codeset to Send National IEs: 6
  Max Message Size to Send: 260   Charge Advice: none
  Supplementary Service Protocol: a Digit Handling (in/out): enbloc/enbloc

  Trunk Hunt: cyclical

Incoming Calling Number - Delete:      Insert:      Digital Loss Group: 13
  Bit Rate: 1200                    Synchronization: async      Format:
Disconnect Supervision - In? y Out? n      Duplex: full
Answer Supervision Timeout: 0


```

5. On page 3 of the display, verify all settings are as shown in the following image.


```

CC Avaya: display trunk-group 10 (page 3) 10/27/2008 5:28:47 PM

TRUNK FEATURES
  ACA Assignment? n           Measured: none           Wideband Support? n
                               Internal Alert? n         Maintenance Tests? y
                               Data Restriction? n      NCA-TSC Trunk Member:
                               Send Name: y              Send Calling Number: y
                               Used for DCS? n                    Send EMU Visitor CPN? n
                               Suppress # Outpulsing? n          Format: public
Outgoing Channel ID Encoding: preferred  UII IE Treatment: service-provider

                               Replace Restricted Numbers? n
                               Replace Unavailable Numbers? n
                               Send Connected Number: y
Network Call Redirection: none        Hold/Unhold Notifications? n
  Send UII IE? y                      Modify Tandem Calling Number? n
  Send UCID? y                          Dsl Echo Cancellation? n
  Send Codeset 6/7 LAI IE? y          US NI Delayed Calling Name Update? n

                               Network (Japan) Needs Connect Before Disconnect? n
                               Apply Local Ringback? n

```

After completing this procedure, return to the [Customer Configuration Overview](#).

Configure the Trunk Signaling Group

```

display signaling-group 10                                     Page 1 of 5

                               SIGNALING GROUP

Group Number: 10      Group Type: isdn-pri
                     Associated Signaling? y
                     Primary D-Channel: 001V324
                               Max number of NCA TSC: 0
                               Max number of CA TSC: 0
                               Trunk Group for NCA TSC:
Trunk Group for Channel Selection: 10
TSC Supplementary Service Protocol: a      Network Call Transfer? n

```

1. Log in to GEDI with an appropriately-permissioned account.
2. Enter the command: **display signaling-group n**, where n is the number of the applicable trunk group.
3. For **Group Type**, enter the value: *isdn-pri*.
4. For **Associated Signaling**, enter the value: *y*.
5. For **Primary D-Channel**, the value must match channel 24 on the card used in the **add ds1** command when you configured the T1 board.
6. For **Trunk Group for Channel Selection**, the value should match the trunk group number used in the **add trunk group n** commands.
7. Make a note of the settings and provide them to your Uptivity installation team.

After completing this procedure, return to the [Customer Configuration Overview](#).

Configure the Trunk Group Channels

```
display trunk-group 10                                     Page 5 of 21
                                                           TRUNK GROUP
                                                           Administered Members (min/max): 1/23
GROUP MEMBER ASSIGNMENTS                                  Total Administered Members: 23

```

	Port	Code	Sfx Name	Night	Sig Grp
1:	001V301	MM710			10
2:	001V302	MM710			10
3:	001V303	MM710			10
4:	001V304	MM710			10
5:	001V305	MM710			10
6:	001V306	MM710			10
7:	001V307	MM710			10
8:	001V308	MM710			10
9:	001V309	MM710			10
10:	001V310	MM710			10
11:	001V311	MM710			10
12:	001V312	MM710			10
13:	001V313	MM710			10
14:	001V314	MM710			10
15:	001V315	MM710			10

1. Log in to GEDI with an appropriately-permissioned account.
2. Enter the command: **display trunk-group n**, where n is the number of the applicable trunk group.
3. On the first page of the trunk group channels (as shown in this image), verify that channels 01-23 on the board used are entered under **Port** and that **Sig Grp** matches the signaling group number for the trunk.
4. Make a note of the settings and provide them to your Uptivity installation team.

After completing this procedure, return to the [Customer Configuration Overview](#)

Customer Administration Tasks

During ongoing use of the system, your Uptivity administrator may need to configure new channels or reconfigure existing channels. At those times, this integration requires changes to the **Voice Boards** page and to the CTI monitors in the **Web Portal**.

The number of voice board channels corresponds to the number of trunks configured on the physical Ai-Logix card. Adding channels may require purchase and installation of server hardware and Uptivity licensing. Contact Support for additional information.

For more information on voice board tasks, search online help for keyword *voice boards*.

Channel Configuration Settings for Voice Boards

This section provides a reference to channel settings that must be configured for the Avaya DT-SO integration. You should refer to this section whenever you add new channels to your Uptivity system.

Any other voice board changes should only be done under direct supervision from Uptivity Support. Done incorrectly, voice board modifications can have serious negative impact to your system. In addition, altering the hardware configuration of your system may void your warranty.

The following table shows the settings that apply when configuring channels for Avaya DT-SO integrations.

Customer Administration Tasks

Setting	Definition	Value
Number of Channels	<p>This will already be configured unless you are adding a new Ai-Logix card. In that scenario, select the value from the drop-down list based on the trunk configuration:</p> <ul style="list-style-type: none"> ▪ 23 – T1 ISDN for ISDN-signaled T1 trunks ▪ 24 – T1 RBS for T1 trunks with Robbed-bit ▪ 30 – E1 ISDN for ISDN-signaled E1 trunks ▪ 30 – E1 RBS for E1 trunks with Robbed-bit 	
Assign	Used in deployments where physical devices and channels have a one-to-one correspondence, or to allocate specific channels to specific types of recording. For details, search online help for keyword <i>channel assignment</i> .	Anything
Assign Value	Enter one PBX Trunk Member/Port ID per channel. This value is case sensitive.	
Desc	Enter an optional description for the channel.	
Name	Enter an optional name for the channel that can be used in channel scripting.	
Trunk Tap	Indicates whether to use the trunk-tap ability of the card.	Cleared