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UPTIVITY WFO CUSTOMER GUIDE TO AVAYA DMS-MLS INTEGRATIONS

April 2015

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Version: This guide should be used with Uptivity WFO v5.6 or higher.

Revision: April 2015

About inContact: inContact (NASDAQ: SAAS) is the cloud contact center software leader, helping organizations around the globe create high quality customer experiences with a complete workforce optimization portfolio (WFO). **Uptivity WFO** is part of the inContact portfolio and is a comprehensive WFO solution offering a powerful choice of deployment options. The portfolio also includes the WFO Suite powered by Verint®, ECHO ™ Customer Feedback Survey, inView ™ Performance Dashboard.

inContact is the only provider to combine cloud software with an enterprise-class telecommunications network for a complete customer interaction solution. Winner of Frost & Sullivan 2012 North American Cloud Company of the Year in Cloud Contact Center Solutions, inContact has deployed over 1,300 cloud contact center instances. To learn more, visit www.inContact.com.

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Contact: Send suggestions or corrections regarding this guide to documentationrequests-discover@incontact.com.

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Introduction

Audience

This document is written for customers and prospective customers interested in using Uptivity WFO Call Recording in an Avaya DMS-MLS telephony environment. Readers who will perform procedures in this guide should have a basic level of familiarity with IP telephony, general networking, the Windows operating system, Avaya MLS, and Uptivity WFO.

Goals

The goal of this document is to provide all knowledge, reference, and procedural information necessary to understand a proposed Avaya/Uptivity WFO integration using Avaya DMS, and to configure the Avaya equipment to support the integration. The information is presented in the following order:

- Overview of the Avaya DMS-MLS integration
- Customer knowledge and procedures related to integration tasks
- Customer knowledge and procedures for maintaining the recording 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 WFO Sales Engineer, Project Manager, or other resource to assist in applying this information to the reader's environment.

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 WFO 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.

For information and procedures related to Uptivity WFO configuration, consult the Uptivity WFO installation team.

Terminology

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

- **AACC:** Avaya Aura Contact Center. AACC is an Avaya contact center product that is common in VoIP environments and in multi-channel call centers due to its support for non-voice interactions.
- **AST:** Associated Set. This is a type of license available from Avaya. This integration requires either AST or CCMS DN licensing.
- **CCMS:** Contact Center Manager Server. Core software component of the AACC.
- **CS1000:** This is the legacy Nortel contact center PBX. It has been rebranded as Avaya and is still in use.
- **DMS:** Dual Media Stream. This functionality of the Avaya MLS server sends a duplicate stream of audio for every call and can be used for active recording.
- **MLS:** Meridian Link Services. MLS is a legacy Nortel product that has been rebranded as Avaya and is still widely used.

Customer Responsibilities

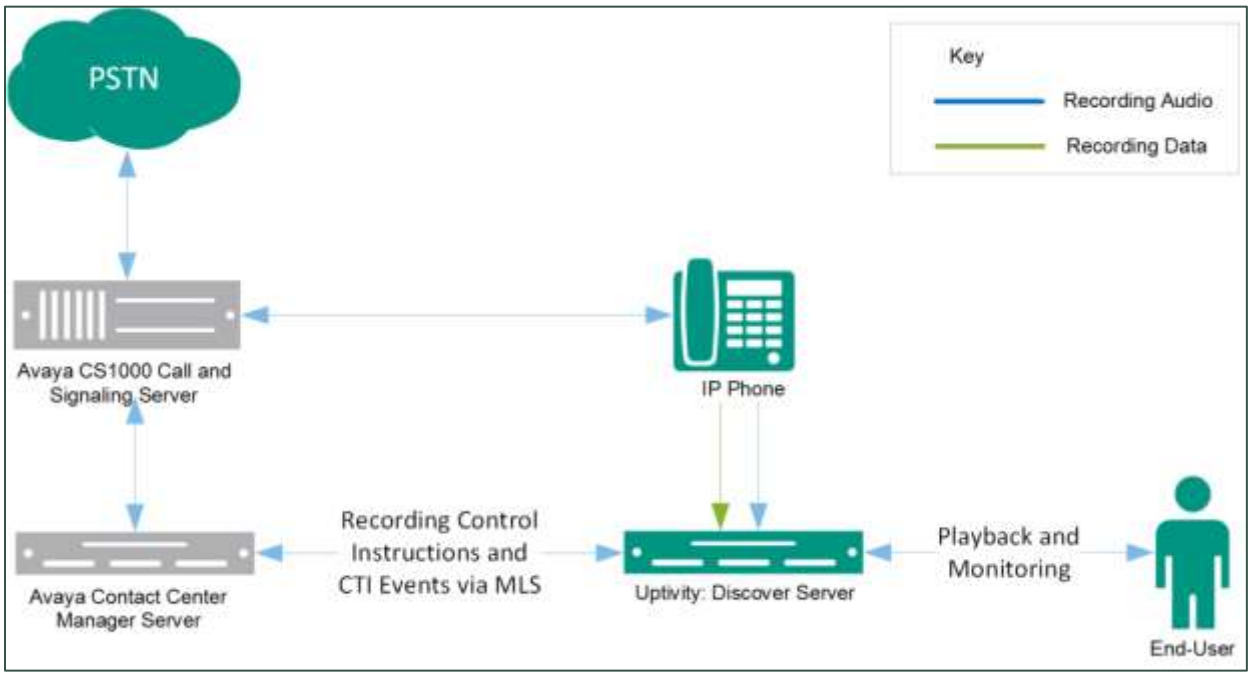
You are responsible for supplying the physical and/or IP connection(s) to your telephone system, as well as any licensing required by Avaya. You may also be responsible for configuring Avaya system components to support the recording integration. See your specific integration in the Customer Integration Tasks section for additional information.

What's New in this Version

- Uptivity WFO now supports recording all DNs for a given phone set. This functionality requires Avaya CCMS DN licensing instead of Avaya AST licensing. See Licensing.

Avaya DMS-MLS Integration Overview

The Avaya DMS-MLS integration uses an active method for acquiring audio. Uptivity WFO relies on the Avaya DMS functionality to send it the audio to be recorded. RTP streams are forwarded directly from the phones to the Uptivity WFO server without the need for port mirroring. Uptivity WFO uses MLS for CTI integration which provides call control events and metadata. MLS also provides the services necessary to direct the phones to forward audio streams.



General architectural diagram of an Avaya DMS-MLS integration

Component	Function
Avaya CS 1000	PBX component that controls the audio being presented to and from digital and/or IP phones.
Avaya CCMS	Supports MLS and provides CTI call events such as start/stop to the Uptivity WFO server.
Uptivity WFO Server	Receives call control events, business data, and audio. Provides a CTI interface to the Uptivity WFO recording node, which records audio. Creates call records and manages recording storage.

Avaya Requirements

Hardware

- Avaya Communication Server (CS) 1000
- Phase II or higher IP Phones

Software

- Succession/CS1000 Release 4.5 – 7.6
- Contact Center Manager Server (CCMS) 6.0 – 7.6

Licensing

AST or CCMS DN licensing is required for phones. With AST licensing, Uptivity WFO can record a maximum of two (2) DNs per phone set. CCMS DN licensing allows recording of all DNs associated with a given phone set.

Uptivity WFO Requirements

Hardware

Uptivity WFO hardware requirements vary depending on system configurations. Appropriate hardware is identified during the system implementation process. For additional information, see *Customer Site Requirements for Uptivity WFO.*

Software

- Uptivity WFO version 5.6 or higher.

Licensing

- One (1) Voice seat license per named agent.
- One (1) Screen Capture license for each Workstation to be recorded if feature is used.

Customer Configuration Overview

The following table provides a high-level overview of the customer configuration steps in Avaya DMS-MLS integrations. Links are provided for procedures covered in this guide.

Customer Configuration Steps for Avaya DMS-MLS Integrations	
1	Complete all necessary physical and IP connections between the recording server(s) and the LAN.
2	Obtain any necessary Avaya software and licensing.
3	Enable the IPIE Prompt on the CS1000.
4	Configure IP Call Recording CLS.
5	Configure Avaya telephony settings and Generate a DN Database List.
6	Configure the Avaya MLS server to use DMS for all phones you wish to record. Consult your Avaya vendor for more information.

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 manuals and/or guides from Avaya to install and configure Avaya components.

Enable the IPIE Prompt on the CS1000

The IPIE Prompt on the CS1000 enables or disables IP Call Recording on a system-wide basis, and is disabled by default. The Prompt must be **enabled** for this integration. When enabled, the PBX sends a modified Application Module Link (AML) message that identifies the IP endpoint for each call. The IPIE Prompt is in LD 17 under system parameters (PARM).

Configure IP Call Recording CLS

The CLS ICRD/ICRA responses are used to configure whether or not an IP Phone allows call recording. The CLS must be set to ICRA for each IP phone to allow call recording. You can change the CLS in LD 11.

To determine whether a phone is configured with the proper CLS, you can perform an LD 20 printout. The **ICRA** flag will be listed in the CLS. To obtain a count of how many phones have the ICRA CLS enabled, view the ICRA/ICRD responses to the FEAT prompt in LD 81.

If you apply the ICRA class of service to a non-IP Phone, error SCH1599 message is generated.

If you change the class of service on an IP Phone during an active call, the Call Server will disconnect the call to apply the change.

As of Avaya (Nortel) CS1000 Release 7.0, the ICRA/ICRD classes of service have been replaced with RECA/RECD, respectively. Attempting to use the older classes in newer release versions will result in error SCH2381. For details, see Avaya's *Software Input Output Reference –System Messages* guide for Avaya (Nortel) Communication Server 1000 Release 7.0.

Generate a DN Database List

In an Avaya CS1000 environment, each phone can have different DNs (extension numbers) assigned to it. To record ACD calls, the ACID of each phone is needed. The ACID roughly equates to a position ID or line appearance – when an agent signs into the phone, their agent number is attached to this ACID.

Phone have DNs of their own, which are used when an agent places a call or when a non-ACD call is received. These DNs are usually listed with a TYPE parameter of "SL1". Avaya MLS requires that these monitors be started in a different way.

ACDNs can also be monitored for additional call detail. The ACDN determines the pool of agents to which calls are distributed. This is equivalent to an ACD queue.

You will need to provide each of these values for any phone you wish to record to your Uptivity WFO Installation team for later configuration of Uptivity WFO. Obtaining the DN database that contains these values requires console access to and administrative privileges for the Avaya CS1000.

> The number of DNs that can be recorded per phone may be limited by your Avaya licensing. For more information, see Licensing.

inContact recommends that you use a terminal program (such as PuTTY or SecureCRT) with a buffer capture feature to capture the printout of this listing for later use. Within such a program, set up and run the following command on the Avaya console:

- Overlay Number: LD 20
- REQ: PRT
- TYPE: DNB

The remaining fields can be left blank.

Customer Administration Tasks

During ongoing use of the system, your Uptivity WFO administrator may need to configure new channels or reconfigure existing channels. This integration requires changes to the Voice Boards page and to the CTI Monitors page in the Uptivity WFO Web Portal when channels are added or must be reconfigured.

Adding channels to your system may also require additional Avaya licensing. Talk to your Uptivity WFO representative, and/or your Avaya representative, for more information.

Voice Boards Overview

Voice Boards control how Uptivity WFO acquires audio. This component provides ***what*** Uptivity WFO is to record. At least one Voice Board is required for most integrations. While Voice Boards can correspond to physical audio capture boards in some integrations, they are not those boards.

Uptivity WFO uses per-channel licensing, and each Voice Board software component maintains the count of licensed, used and available channels associated with it. The system will not use any Voice Boards or channels for which it is not licensed.

Voice Board Configuration

The basic procedure for configuring Voice Board channels is the same for all integrations and can be found in the *Uptivity WFO Administration Manual*. For channel settings specific to this integration, see Channel Configuration Settings. You must restart the Recorder service (cc_cticore.exe) after any Voice Board and/or Channel changes.

Any Voice Board changes other than channel configuration should only be done under direct supervision from Uptivity WFO 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.

Channel Configuration Settings

The following settings apply when configuring channels for an Avaya VoIP-MLS integration:

Setting	Definition	Value
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, see Appendix: Channel Configuration Settings Definitions.	Concurrent Licensing: **Anything** Per-Seat Licensing: **Dedicated Record**
Assign Value	If Assignment Type is Anything, leave this field blank. If Assignment Type is set to a Dedicated Record option, enter the value for the corresponding device.	
Name	Enter an optional name for the channel that can be used in channel scripting.	

CTI Monitors Overview

In some integrations, Uptivity WFO requires a list of devices to monitor (CTI Monitors). Any phone or device that should be monitored must be configured in this list. You can also establish Prefix and Postfix settings for all monitors, which can be used to distinguish extensions by areas or groups.

With Avaya VoIP-MLS, the Uptivity WFO CTI Core monitors the **ACD/DN** for login/logoff events, the **Position ID** for ACD (incoming) calls, and the **PBX Extension** for direct and outbound calls. For related information, see Generate a DN Database List.

When you add or reconfigure a channel, you will need to configure a CTI Monitor for each of these values. The Avaya system differentiates the agent logged into the phone from the phone itself.

CTI Monitors are not used in all integrations, so the procedure for configuring them is included in this section.

Configure CTI Monitors

To configure entities for monitoring:

1. Log in to the Uptivity WFO Web Portal with an appropriately-permissioned account.
1. Click the **Administration** tab and expand **Recorder Settings** in the left navigation menu.
2. Click **CTI Cores**.
3. Click the **Edit** icon on the line for the desired CTI Core.
4. Scroll down and click the **Edit** icon on the line for the **cc_NortelMLS** module.
5. Select the desired choice from the **Monitor Type** list.
6. Enter the ACD/DNs, PositionIDs, and/or PBX Extensions for recording in the **Monitor Values** field as a single entry (e.g. '1234'), multiple entries in a comma separated list (e.g. '1234,2345,4321') or a range of entries using a hyphen (e.g. 2300-2400).
7. Click the **Add** icon to add the monitor types to the list.
8. Click **Save**.

Edit CTI Monitors

To delete single items from the Monitor list:

- Click the **Delete** icon beside the item.

To delete multiple items from the list:

- Enter a range of items in the **Monitor Values** field and click the **Delete** icon.

To filter the displayed list of Monitor Types:

- Select a value from the **Filter Monitors** drop-down list and click the **Filter** icon.

Appendix: Channel Configuration Settings Definitions

From time to time, your Uptivity WFO administrator may need to configure or reconfigure recording channels in your system. For procedural information, see the *Uptivity WFO Administration Manual*. For settings specific to your integration, see the applicable section in this guide.

The following table lists and defines the settings that may apply to channels. Individual settings appear in the Uptivity WFO Web Portal only if they are applicable to the type of Voice Board and channel being configured. Therefore, the table lists all settings in alphabetical order. The table also indicates default settings where applicable; not all settings have a default value.

Setting	Definition	Default
Number of Channels	Select the number of channels and signal type the Ai-Logix card uses from the drop-down list.	
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, see Channel Assignment Settings Definitions.	Anything
Assign Value	Enter the identifier for the device assigned to the channel (typically the phone extension).	
Channel Map		N/A
Channel Name	Enter an optional name for the channel that can be used in channel scripting.	
Channel Number	Value: set by application. Logical internal identifier for the recording port/channel. Uptivity WFO uses this number to refer to any actions taken on the channel.	
Deglitch	Value: milliseconds. Determines the length of time voltage must stay past the high or low threshold before an event is issued.	50
Desc	Enter an optional description for the channel.	
Name	See **Channel Name**.	
Password	Enter the password for the DMCC station.	

Polarity	Possible values: Default, Normal, Reverse. Should be set to match the polarity of the physical wiring taps.	Default
Station	Enter a DMCC station extension.	
Trunk Name		
Trunk Tap	Indicates whether to use the trunk-tap capability of the card.	Unselected
Voltage Low	Enter a value that can be used to determine when a physical phone has been taken off-hook. Required only when on/off hook signaling is used to determine recording start/stop.	
Voltage High	Enter a value that can be used to determine when a physical phone has been place on-hook. Required only when on/off hook signaling is used to determine recording start/stop.	

Channel Assignment Settings Definitions

The following table lists and defines the values that can be selected for the Assign setting in channel configuration. Individual settings that appear in the Uptivity WFO Web Portal may vary depending on the type of Voice Board and channel being configured. Setting labels are affected by Terminology settings.

Setting	Definition
Not in Use	Identifies a channel that is licensed in the system but not currently used.
Anything	Allows channel to be used for all recording and playback events, as determined by schedule priorities.
Playback Anything	Limits channel to playback of recordings via telephone.
Record Anything	Allows channel to be used for any scheduled or API-triggered recording.
Instant Record	Dedicates channel to instant recording requests from the API.
Dedicated Record ACD Group	Limits channel to recording only the specified ACD/PBX group (not the Uptivity WFO Group), independently of any schedules.
Dedicated Record Device ID	Limits channel to recording a specific hardware resource (e.g., voice port or DN) on the ACD/PBX.

Dedicated Record Agent ID	Limits channel to recording a specific agent number or extension.
Dedicated Record Dialed Number	Limits channel to recording a specific inbound number, such as an 800-number carrying traffic to your facility.
Dedicated Record Caller ID	Limits channel to recording a specific ANI. Full or partial ANI matches may be used, e.g., limit to a matching area code.
Dedicated Record User1(2)(3)(4)(5)	Limits channel to recording a specific user-defined value as set by the API. Examples include Account and Case Number.
Playback and Instant Record	Limits channel to playback and instant recording requests from the API.
Playback and Record	Limit channel to scheduled recordings and playback.
Record and Instant Record	Limit calls to recording only, but of any recording type.
Unlicensed	Identifies a channel which may be present (for example, on a physical audio capture card) but for which there is no license in the system.

Document Revision History

Revision	Change Description	Effective Date
0	Initial release for this version	2015-04-30
1	Revised supported version of Avaya DMS-MLS	2016-10-05