

Avaya IP Office TAPI and ACCS Integration Guide

Includes Avaya Call Reporting/Chronicall for Encore WFM

Encore Workforce Optimization Solution
Version 9.0 or later

November 21, 2023

 **encore**

**For Dealer
and Customer
Use Only**

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Introduction

The Encore Call Recording system integrates with the Avaya IP Office using TAPI and optionally with the Avaya Contact Center Select using the CCT web services. This integration allows the Encore system to successfully perform the following functions:

- Audio Collection – Capture the audio that needs to be recorded.
- Recording Control – Receive the necessary events that signal when the Encore must start and stop recording.
- Data Capture – Receive data associated with the call.

The Encore system can record calls on an Avaya system without the TAPI integration, but the recording controls and data capture are limited; configuration for this integration is not covered in this document.

In addition, and if available, Encore can collect additional data from the Avaya Contact Center Select (ACCS). See below for the specific data available.

If subscribed to Encore WFM, Encore can optionally integrate with Avaya Call Reporting(ACR)/Chronicall and send data to Encore WFM by receiving real-time adherence information and retrieving historical data from an ACR/Chronicall server. Encore WFM can only monitor agents that ACR/Chronicall can monitor, which include IP Office users assigned to Hunt Groups and ACR/Chronicall Multimedia agents. Data captured from the ACR/Chronicall system is not available in data records captured for Encore Call Recording. **Note: This WFM integration with ACR/Chronicall does not monitor real-time or historical data from chat or email sources.**

Supported Data Capture

The following is a list of the supported data elements that can be collected with each recording. Not every element is applicable for each call. For a description of each data element, refer to “[Appendix 1: Glossary](#)” on page 27.

- ANI
- Call Direction
- Call ID
- Call Origin
- Consultation Call
- Device Name
- DNIS
- Extension
- Other Call ID
- Other Party Name
- Other Party Number
- Recorded Party Number
- Third Call ID

The Avaya Contact Center Select (ACCS) does not provide recording control but does capture additional call meta-data:

- ACD Number
- Skillset
- Agent Login ID
- Recorded Party Name

Supported Recording Features

The following matrix should be used to determine which audio collection is best for your business needs. If you find that more than one collection method will work for you, talk to your Encore representative about which method is more cost-effective. For a description of each feature, refer to “[Appendix 1: Glossary](#)” on page 27. **Note:** Where supported, G.711 Wav recording is the default recording format.

RECORDING FEATURE	AUDIO COLLECTION METHOD	
	STATION-SIDE TDM	STATION-SIDE RTP PACKET CAPTURE (PASSIVE INTERFACE)
Max. Recording Ports per Server ¹	192	500
Record External Calls	YES	YES
Record Internal Calls	YES	YES
Record Encrypted Calls	N/A	
Record Softphones ³		YES
Related Call Lookup ²	YES	YES
Suspend/Resume on Hold	YES	YES
ACCS Data Collection	YES	YES
Hot Desking	YES	YES
Dynamic IP Capture		YES
G.711 Wav Recording	NO ⁵	Stereo ⁴

1. Small Business Servers are limited to 72 ports.

2. Cannot relate calls across IP Office Nodes.

3. See the [Considerations for Recording Softphones](#) section for more details on supported softphones and scenarios.

4. **G.711 Wav Recording in stereo** stores recorded audio at 16000 bytes/sec.

5. **Vox mono audio storage only.** Encore stores recorded audio using ADPCM 4000 bytes/sec.

IMPORTANT CONSIDERATIONS

Due to an Avaya TAPI TSP limitation, please be aware of these important operating considerations:

- If the IP Office PBX is rebooted, the Encore server must also be rebooted so that it may continue to receive TAPI events.
- Since the IP Office PBX requires a reboot after a new phone with a base extension is added to it, Encore must also be rebooted after the IP Office PBX completes its reboot.
- If a user extension(s) is added to the IP Office PBX, Encore's CT Gateway service must be restarted to allow it to receive events for the new extension(s).
- If a user is logged into a softphone and physical phone at the same time, Encore will not receive events for the softphone.

Software Requirements

SYSTEM	SOFTWARE REQUIREMENTS
Avaya system	<ul style="list-style-type: none"> • All audio collection methods <ul style="list-style-type: none"> ○ IP Office Server Edition Release 9.1 or later or IP Office 500V2 Release 9.1 or later ○ CTI Link Pro License • Station-side RTP Packet Capture <ul style="list-style-type: none"> ○ VoIP phones must use the G.711MU, G.711A and G.729 codec types • If using Encore WFM <ul style="list-style-type: none"> ○ Avaya IP Office 10.0 or higher ○ ACR/Chronicall version 4.2 and higher ○ ACR/Chronicall Licenses required: <ul style="list-style-type: none"> ○ Standard Reports ○ Custom Reports ○ Realtime module <ul style="list-style-type: none"> ▪ Realtime Agents - 1 Realtime Agent license for each agent to be monitored by Encore WFM. ○ Contact Center module <ul style="list-style-type: none"> ▪ Contact Center Voice Agent - 1 Contact Center Voice Agent license for each agent to be monitored by Encore WFM.
Encore system	<ul style="list-style-type: none"> • If using the optional ACCS: <ul style="list-style-type: none"> ○ ACCSBridge.exe 2.3.8.10192 or later ○ Encore.Utility.dll 2.3.8.10192 or later ○ Nortel.CCT.dll 9.0.0.11 or later ○ Nortel.CCT.WCF.dll 9.0.0.3 or later • Encore WFM Integration <ul style="list-style-type: none"> ○ Encore 8.3 or later

Hardware Requirements

SYSTEM	HARDWARE REQUIREMENTS
Avaya system	<ul style="list-style-type: none"> • Station-side TDM <ul style="list-style-type: none"> ○ Phone models supported by AudioCodes board: 9504, 9508 and 14xx, 2400, 5400 and 6400 series ○ Must allow Encore to tap at the punchdown block • Station-side RTP Packet Capture <ul style="list-style-type: none"> ○ Span port on network to route all RTP traffic for recorded stations to Encore server ○ If Encore is to determine the phone's IP Address using the Dynamic IP Capture feature, the Span port must also provide the RTCP packets ○ Phone models known to be supported (others may work as well) <ul style="list-style-type: none"> ○ H.323 – 9608, 9611(G), 9620C, 9621, 9641G, J169, J179, 1608-I ○ SIP – J179 ○ Softphones (SIP) <ul style="list-style-type: none"> ▪ Avaya Communicator for Windows ▪ Avaya Workplace client
Encore system	<ul style="list-style-type: none"> • Station-side TDM <ul style="list-style-type: none"> ○ AudioCodes NGX PCIe card

Compliance Testing

As of **November 13, 2020**, Encore has been compliance tested to interoperate with Avaya Contact Center Select 7.1 and Avaya IP Office Server Edition 11.1. The following equipment and software were used for the validation test.

EQUIPMENT/SOFTWARE	RELEASE/VERSION
PRIMARY	
Avaya Contact Center Select	7.1.0.3
Avaya Aura® Media Server	8.0.0.205
Avaya Agent Desktop on Windows 10 Pro	7.1
Avaya IP Office Server Edition (Primary) in Virtual Environment	11.1.0.1.0
Avaya 9611G & J179 IP Deskphones (H.323)	6.8304
DVSAalytics Encore on Windows 2016 Server Standard	7.2
<ul style="list-style-type: none"> • Encore Web Interface • Database • Encore VoIP Service • Encore CTGateway Service <ul style="list-style-type: none"> ○ Avaya IP Office TAPI2 Driver (tspi2w_64.tsp) 	3.15.21531 2.38.21498 2.38.21558 1.0.0.44
EXPANSION	
Avaya Agent Desktop on Windows 10 Pro	7.1
Avaya IP Office on IP500V2 (Expansion)	11.1.0.1.0
Avaya 1608-I IP Deskphone (H.323)	1.3120
Avaya J169 IP Deskphone (H.323)	6.8304
DVSAalytics Encore on Windows 2016 Server Standard	7.2
<ul style="list-style-type: none"> • Encore VoIP Service 	2.38.21498

As of **November 6, 2020**, Encore has been compliance tested to interoperate with Avaya IP Office Server Edition 11.1. The following equipment and software were used for the validation test.

EQUIPMENT/SOFTWARE	RELEASE/VERSION
PRIMARY	
Avaya IP Office Server Edition (Primary) in Virtual Environment	11.1.0.1.0
Avaya 9611G & J179 IP Deskphones (H.323)	6.8304
DVSAalytics Encore on Windows 2016 Server Standard <ul style="list-style-type: none"> • Encore Web Interface • Database • Encore VoIP Service • Encore CTGateway Service <ul style="list-style-type: none"> ○ Avaya IP Office TAPI2 Driver (tspi2w_64.tsp) 	7.2 3.15.21531 2.38.21498 2.38.21558 1.0.0.44
EXPANSION	
Avaya IP Office on IP500V2 (Expansion)	11.1.0.1.0
Avaya 1608-I IP Deskphone (H.323)	1.3120
Avaya J169 IP Deskphone (H.323)	6.8304
DVSAalytics Encore on Windows 2016 Server Standard <ul style="list-style-type: none"> • Encore VoIP Service • Encore CTGateway Service <ul style="list-style-type: none"> ○ Avaya IP Office TAPI2 Driver (tspi2w_64.tsp) 	7.2 2.38.21498 2.38.21558 1.0.0.44

As of **December 2016**, Encore has been compliance tested and is approved to operate with the following Avaya equipment and software.

EQUIPMENT/SOFTWARE	RELEASE/VERSION
MAIN SITE	
Avaya IP Office Server Edition (Primary) in Virtual Environment	10.0.0.1.0
Avaya 9608, 9611G & 9641G IP Deskphone (H.323)	6.6302
DVSAalytics Encore on Windows 2008 Server R2 Standard <ul style="list-style-type: none"> Encore Web Interface Database Avaya IP Office TAPI2 Driver (tspi2w_64.tsp) 	6.0.5 SP1 1.0.0.43
REMOTE SITE	
Avaya IP Office on IP500V2 (Expansion)	10.0.0.1.0
Avaya 9620C IP Deskphone (H.323)	3.270B
Avaya 9611G & 9641G IP Deskphone (H.323)	6.6302
DVSAalytics Encore on Windows 2008 Server R2 Standard <ul style="list-style-type: none"> Avaya IP Office TAPI2 Driver (tspi2w_64.tsp) 	6.0.5 SP1 1.0.0.43

As of **December 2016**, Encore has been compliance tested and is approved to operate with the following Avaya equipment and software.

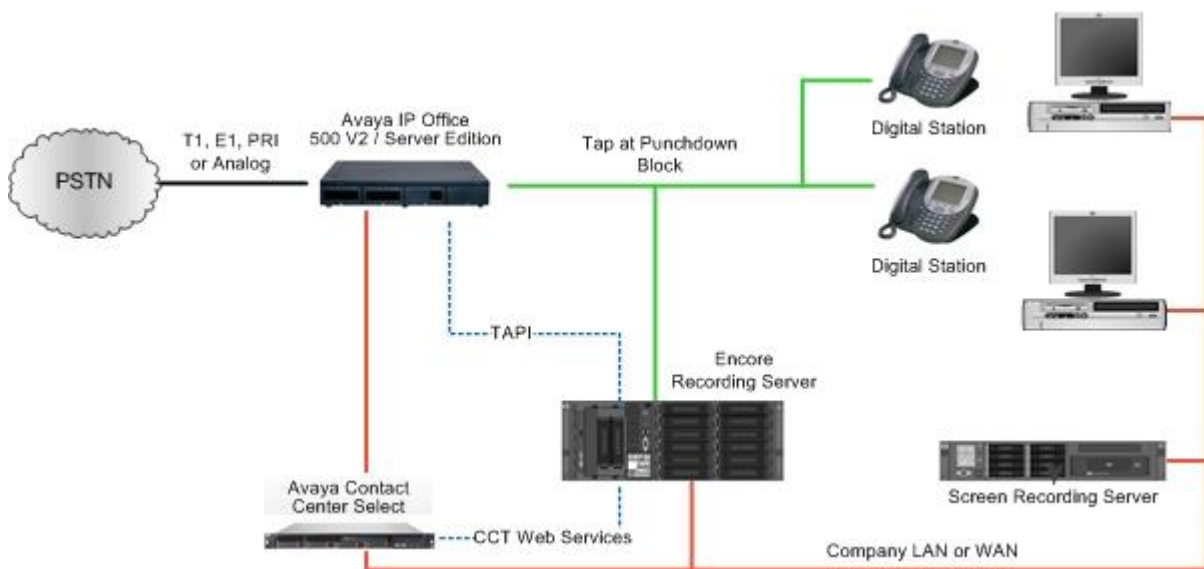
EQUIPMENT/SOFTWARE	RELEASE/VERSION
Avaya Contact Center Select	7.0.0.1
Avaya Aura® Media Server	7.7.0.269
Avaya IP Office Server Edition (Primary) in Virtual Environment	10.0.0.1.0
Avaya IP Office on IP500V2 (Expansion)	10.0.0.1.0
Avaya Agent Desktop on Windows 10 Pro	7.0
Avaya 9620C IP Deskphone (H.323)	3.270B
Avaya 9608, 9611G & 9641G IP Deskphone (H.323)	6.6302
DVSAalytics Encore on Windows 2008 Server R2 Standard <ul style="list-style-type: none"> Encore Web Interface Database Avaya IP Office TAPI2 Driver (tspi2w_64.tsp) Avaya CCT SDK (Nortel.CCT.dll & Nortel.CCT.WCF.dll) 	6.0.5 SP1 1.0.0.43 7.0

Overview

This section provides an overview of each audio collection method. For simplicity's sake, the diagrams only display a single Encore server but there can be multiple Encore servers depending on the number of stations to be recorded.

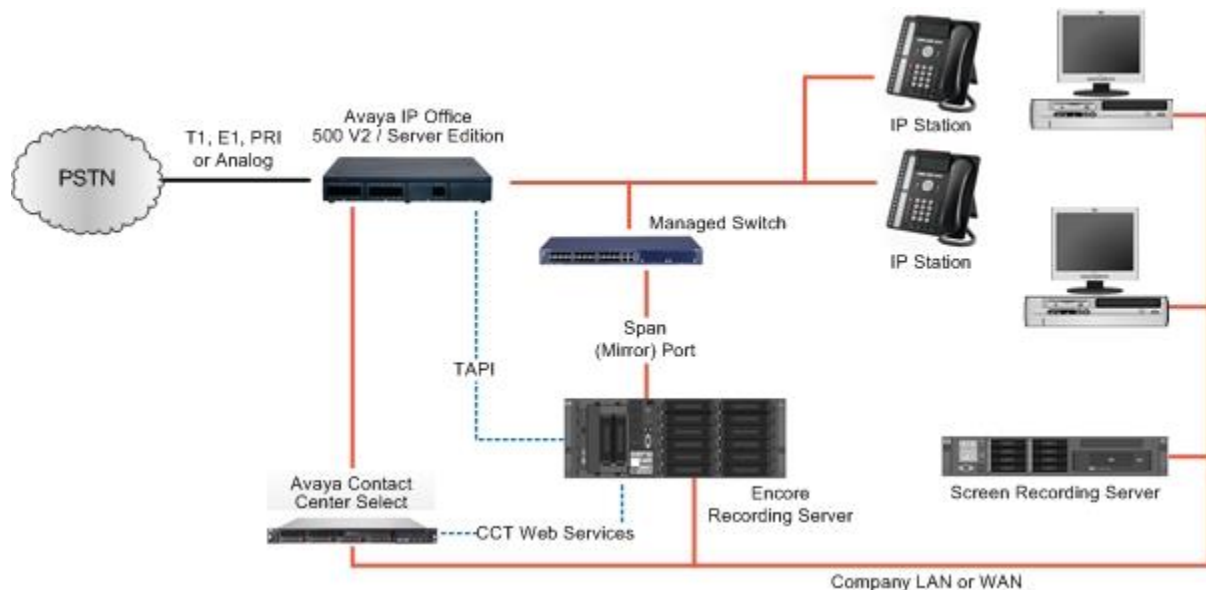
Station-side TDM

The Station-side TDM method uses a passive tap on the phones connected to the Avaya IP Office to collect audio. These may be analog or digital phone sets. This passive tap is connected to the recording boards in the Encore server. Based on events received from the TAPI interface, the Encore server starts and stops recording, collects the audio on the recording boards, and collects the data associated with the call. Additional data may be collected if the optional Avaya Contact Center Select (ACCS) server is used.



Station-side RTP Packet Capture

The Station-side RTP Packet Capture method uses a span port to collect the RTP audio packets directly from the network segment that includes the VoIP traffic. Based on events received from the TAPI interface, the Encore server collects the RTP packets for a specific IP or MAC address and converts the RTP data to an audio recording file. Encore collects data associated with the call from the TAPI messages.



If the **Dynamic IP Capture** feature will be used, Encore also collects the phone's RTCP (RTP Control Protocol) packets and can associate a base phone extension or a softphone extension to the IP Address associated with that phone. Once that association is made, Encore can collect the phones RTP packets as described above.

NOTE

When Dynamic IP Capture is configured on Encore and a physical phone's IP address has changed or a user logs into a softphone, Encore may not be informed of the new IP address until several seconds into the call, thus the start of these first recordings may have missing audio. Subsequent calls will be recorded without incident.

Additional data may be collected if the optional Avaya Contact Center Select (ACCS) server is used.

Considerations for Recording Softphones

If your call recording needs do not involve recording softphones, you may skip to [Configure Avaya IP Office TAPI and ACCS](#).

Encore currently supports recording the following Avaya SIP based softphones for Microsoft Windows:

- Avaya Communicator for Windows
- Avaya Workplace client

Encore cannot record the following softphone, in any configuration:

- Avaya One-X Communicator

Please take time to read both sections below to learn more about the special considerations for softphone recording.

Packet collection

The supported softphones must register directly with the IP Office PBX and must communicate with the PBX from a unique IP address that is directly reachable by the PBX. This scenario is typically found when the softphone is on the same local network as the PBX or when the softphone's PC is using the corporate VPN which allows for this direct IP communication. Softphones that register or communicate using a SIP proxy(SBC) or NAT forwarding are not supported.

Encore will use the Dynamic IP Capture method to associate a user's softphone extension with the current IP address assigned to the Windows PC running the softphone. This association is done by reading the softphone's user extension contained in the RTCP (RTP Control Protocol) packet and associating it to the IP address.

Softphones can add additional considerations for how you choose to get the required packets to the Encore server. When collecting packets for physical phones, oftentimes these phones are placed on a separate network or VLAN, which make routing the needed packets to the span/mirror a much easier task. Typically, no additional filtering of the packets going to the span/mirror port is needed. With softphones however, both the PC's normal network traffic and the softphone's traffic are on the same network interface. This makes filtering the traffic going to the span/mirror port much more critical. When softphones are used, DVSAanalytics recommends that the mirrored traffic only contains RTP and RTCP traffic.

Choosing where to collect the packets can add additional layers of complexity depending on your recording needs. If you only need to record calls involving external parties, then collecting the packets from a central point where your trunk's audio enters your network is typically the best choice.

If you need to record internal calls as well, you may now have several locations where call traffic can be collected. For example, if you record a mixture of physical phones and LAN based softphones, you may need to collect traffic from both the voice network/VLAN and the data network/VLAN. If you need to record softphones that are used by remote workers on a corporate VPN and those remote workers make internal calls to other remote workers, the audio packets may never leave your corporate firewall or VPN server, so it's important that the firewall or VPN server be able to mirror this internal traffic. Be sure that your network administrator understands your recordings needs and can provide Encore with the packets needed to meet your recording requirements.

If more than one span/mirror port needs to be provided, please let your DVSAanalytics Project Manager or Installation Tech know this so that the Encore server can be configured with additional sniffer NICs.

CTI Events

When the Avaya IP Office administrator creates a new extension for a user in the management software, the default is typically to create both a user extension and a base extension using the same extension number. A user that uses a physical phone on a regular basis would typically have their user extension and base extension match as this allows the user to be automatically logged into the base phone. When using a softphone, the same user logs into the softphone using their user extension. For normal day to day operations, there is no problem with this. Unfortunately, when Encore needs to record this user, the IP Office does not provide the CTI layer (TAPI) with any data about calls or events taking place on the softphone. To rectify this, the IP Office administrator must make sure that for any user that needs to be recorded while using a softphone, there is no corresponding base extension defined in the PBX. For example, if user Sally Smith has a user extension of 2294, there cannot be a base extension of 2294 defined in the system. It does not matter if there is a physical phone assigned or not, simply the presence of the 2294 base extension being defined in the PBX is enough to prevent the CTI from being delivered.

See the example screenshots below where User extension 2294 has been assigned to Sally Smith, but no corresponding Base Extension exists in the PBX. In this example, Sally could login to a softphone and the PBX would provide Encore with the CTI events for her calls. If needed, after logging out of her softphone, she could login to a physical phone with the base extension of 2201 and Encore would also receive CTI events for her calls that take place here.

If your current PBX configuration already contains User Extensions that have a corresponding Base Extension and you need to record these users when they are using softphones, you must renumber your base extensions so that there are no conflicts.

You must also ensure that if your users move between physical phones and a softphone, that they log out of the physical phone prior to logging into the softphone. Failure to do this can result in softphone calls not being recorded due to the Avaya CTI provider only providing events for the physical phone when the user is logged into both.

The screenshot shows the Avaya IP Office configuration interface. On the left, the 'Configuration' tree is expanded to 'User (28)'. The main area shows a list of users with columns for Name and Extension. 'Sally Smith' is highlighted with an extension of 2294. On the right, the 'User' configuration form for Sally Smith is shown, with the 'Extension' field set to 2294.

Name	Extension
Agent 2251	2251
Agent 2252	2252
H323User2282	2282
NewUser2283	2283
sipuser2292	2292
Sally Smith	2294
SipUser2295	2295
ACCS User	6000
Agent 6001	6001
Agent 6002	6002
Agent 6003	6003
Agent 6004	6004
Agent 6005	6005
Agent 6100	6100

The screenshot shows the Avaya IP Office configuration interface. On the left, the 'Configuration' tree is expanded to 'Extension (13)'. The main area shows a list of extensions with columns for Id, Extension, Module, and Port. '11207 2201' is highlighted under the 'H323 Extension' section. On the right, the 'Extension' configuration form for extension 11207 is shown, with the 'Base Extension' field set to 2201.

Id	Extension	Module	Port
H323 Extension			
11207	2201	0	0
11208	2202	0	0
11210	2281	0	0
11211	2282	0	0
11212	2283	0	0
11209	6110	0	0
SIP Extension			
11201	2204	0	0
11206	2205	0	0
11204	2291	0	0
11203	2292	0	0
11205	2305	0	0

Configure Avaya IP Office TAPI and ACCS

The steps to configure the Avaya IP Office switch to integrate using TAPI are included in this section. Steps to configure the optional ACCS are also included. It is assumed the reader has a working knowledge of the Avaya IP Office Manager software and only needs specific assistance.

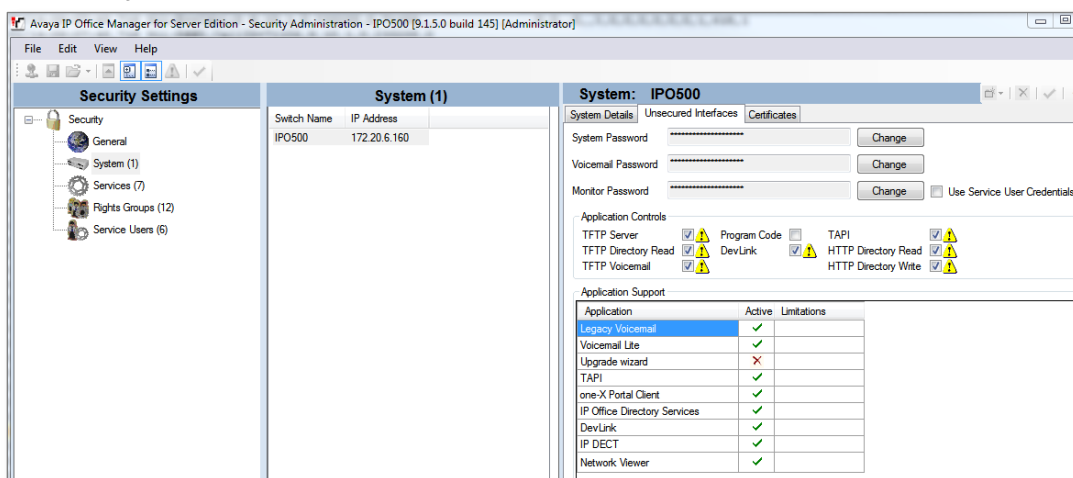
Obtain Required Information

The following information must be obtained and provided to your dealer or DVSAalytics installer in order to set up the IP Office TAPI integration with Encore.

- List of base extensions that need to be recorded when recording physical phones.
- List of user extensions that need to be recorded for any user using a supported softphone.
- The **System password** used when installing the TAPI service provider on the Encore server (see [Step 2e](#) on page 14).
- The IP address of the Primary IP Office server.
- If the ACCS server is used:
 - IP address or FQDN of the ACCS server.
 - Domain name, username and password of the user created for the CCT web services connection. (See Step 3 on page 17 in the [Configure ACCS](#) section)

Verify License and Select TAPI Support Setting

1. Verify the CTI Link Pro license is installed on the switch.
2. Select the TAPI support setting:
 - a. Start IP Office Manager.
 - b. Select **File | Advanced | Security Settings**.
 - c. Select the Primary IP Office system and click **OK**.
 - d. Enter a user name and password of a user account with security configuration access.
 - e. Click **System** and select the **Unsecured Interfaces** tab.



- f. In the list of **Application Controls**, select the **TAPI** option.
- g. The TAPI software installation also uses the **TFTP Directory Read** option to obtain a list of users from the IP Office system. If not enabled the installation displays “Failed to retrieve user list from IP Office”. However, the user details can still be entered manually. If you enable **TFTP Directory Read** to simplify TAPI installation you should disable the option afterwards unless it is also specifically required by the TAPI application being supported.

- h. Click **OK**.
- i. Click the **Save** button on the toolbar to save the updated security settings.

NOTE

Make a note of the **System Password** used in the **Unsecured Interfaces** tab (see the screenshot in Step 2e above). Provide this password to the Encore installer. The installer will need it when installing the TAPI Service Provider on the Encore server.

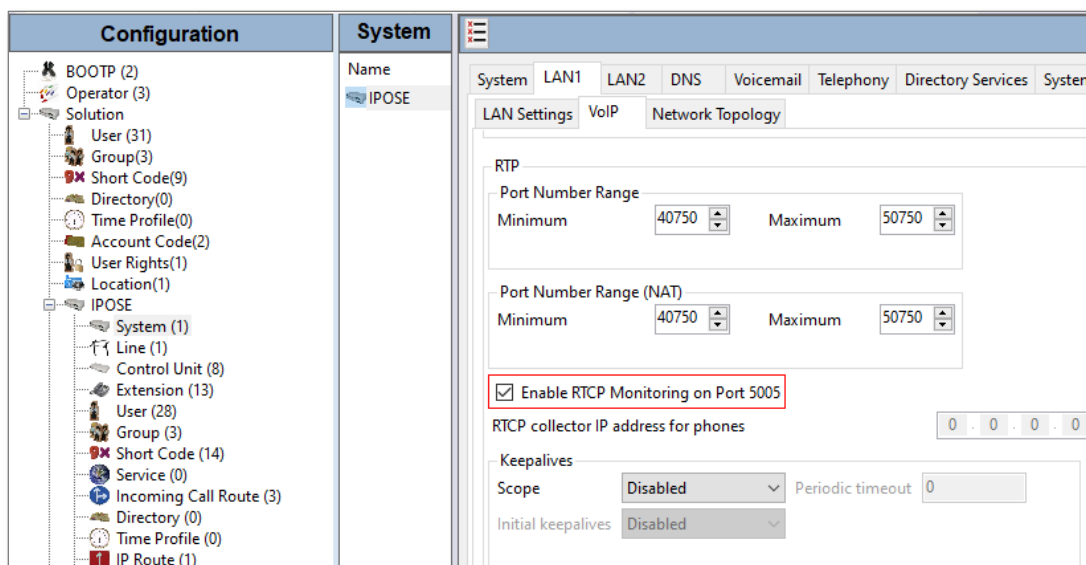
CAUTION

When the IP Office switch is rebooted, the Encore server must also be rebooted. This is a limitation of the IP Office TSP.

Enable RTCP Monitoring for Dynamic IP Capture or Softphone Recording

If your Encore system will use the Dynamic IP Capture feature or will be recording softphones, follow these steps to ensure that RTCP monitoring is enabled so that phones send RTCP packets.

1. Open the IP Office Configuration and for each IP Office system in your cluster where recorded phones or softphones are located, navigate to **System**.
2. With **System** selected, navigate to **LAN1** and then the sub-tab **VoIP**.
3. Locate the **Enable RTCP Monitoring on Port 5005** setting and be sure it is **Enabled**.
4. If **LAN2** is also in use, repeat the above for LAN2.
5. Repeat these steps for any IP Office system, Primary or Expansion, where phones are registered.
6. After these changes have been made, save them and push the configuration to the PBX.



Required Configuration for Users on Avaya IP Office

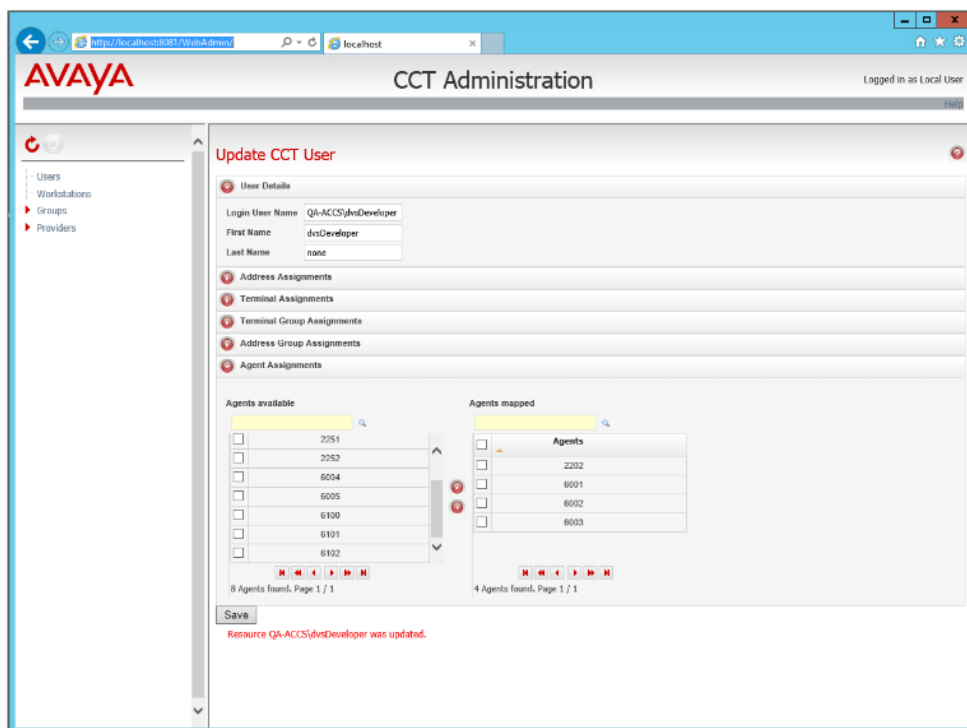
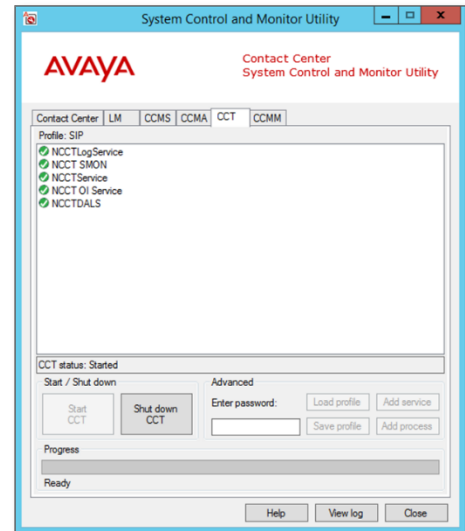
Follow the requirements below when adding users to the Avaya IP Office server to ensure Encore is able to record them in your environment.

- Verify the **Exclude from directory** option is NOT selected for any users that need to be recorded.
- If your site uses secondary or expansion systems, follow one of the configurations below based on your environment:
 - **Add recorded users to one server** – If possible, the recorded users must be added to one server, typically the Primary server. Please provide the Encore Installer with the IP address of this system so it can be entered into the Avaya TAPI Service Provider that is loaded on the Encore server.
 - **Add recorded users to secondary or expansion system(s)** – If the customer requires that recorded users are added on the secondary or expansion system(s) then additional Encore systems will be required because the Avaya TAPI service provider, installed on the Encore server, can only be registered to one Avaya IP Office system.
- If you need to record softphones, be sure there are no Base Extensions configured on the PBX that match a User Extension that needs to be recorded when logged into a softphone. See [Considerations for Recording Softphones](#) above for more details.

Configure ACCS (optional)

Complete the steps below to configure Avaya Contact Center Select (ACCS) for the IP Office TAPI integration.

1. Verify ACCS has the required license for the Avaya Communication Control Toolkit (CTT).
2. Verify the Contact Center services are started:
 - a. Log on to the ACCS server.
 - b. On the **Apps** screen, in the **Avaya** section, select **System Control and Monitor Utility**.
 - c. Select the **CCT** tab and verify that the Communication Control Toolkit services are running.
3. Set up a CCT user account for Encore. Encore requires this account to monitor all recorded agents.
 - a. Log on to the ACCS server.
 - b. Add the Windows user account using the **Local Users and Groups** found in **Computer Management**. Set the **Password never expires** option.
 - c. Use the **CCTAdmin** to administer the account using **<http://localhost:8081/WebAdmin/>**
 - d. Right-click **Users** on the left and select **Add new user**.



- e. In the **User Details** section, enter the **Login User Name** using the Domain\Username format, where the Domain is the hostname of the ACCS server.
- f. Enter values for the **First Name** and **Last Name** fields.

- g. Expand the **Agent Assignments** section and under the **Agents available** list select all agents that are to be recorded and move them to the right so they appear in the **Agents mapped** list.
- h. Click **Save**.

NOTE

If new recorded agents are added to the ACCS, you must return to this user and move those agents into the **Agents mapped** list and save the user.

Configure ACR/Chronicall for Encore WFM (optional)

Follow these steps if you have subscribed to Encore WFM and will be integrating with an ACR/Chronicall server. These steps will help you prepare the ACR/Chronicall system for integration with Encore WFM and will guide you in gathering the information needed for a successful installation.

Verify Licenses

Before proceeding, please verify that your ACR/Chronicall system is licensed for the following features/modules.

- Standard Reports
- Custom Reports
- Realtime module
 - 1 Realtime Agent license for each agent to be monitored by Encore WFM.
- Contact Center module
 - 1 Contact Center Voice Agent license for each agent to be monitored by Encore WFM.

Gather the ACR/Chronicall URL

The Encore WFM Adapter needs to communicate with ACR/Chronicall using the same URL that the ACR/Chronicall Desktop app uses. This is also the base portion of the URL when using a browser to connect to the ACR/Chronicall web interface. Typically, this base URL will be:

http://<ACR/Chronicall IP address or FQDN>:9080

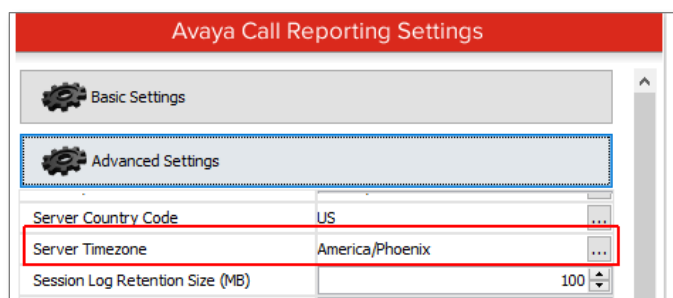
If your ACR/Chronicall system has HTTPS enabled, then this will be an https URL and the port number (following the colon) may be different.

Please provide your DVSAalytics Project Manager or Installation Tech the URL.

Obtain ACR/Chronicall Timezone id

1. Login to the ACR/Chronicall Desktop application with user with Administrator privileges.
2. Navigate to the **Admin (System)** area and select **System** settings.
3. Expand the **Advanced Settings** section and look for the **Server Timezone** field.
4. Make note of the string used for this field and provide it to your DVSAalytics Project Manager or Installation Tech. In order for the Encore WFM adapter to properly match timestamps provided by the ACR/Chronicall system, it is important that the exact string, as displayed, is provided. The format is based on the IANA time zone database:

https://en.wikipedia.org/wiki/List_of_tz_database_time_zones



Gather the list of Reason Codes from ACR/Chronicall

For a successful Encore WFM installation, please provide your DVSAalytics Project Manager or Installation Tech a list of all Reason Codes that Encore WFM needs to monitor. These reason codes are selected by the agent when they go into Do Not Disturb(DND) mode. These codes will be needed later when activity mapping is performed in the Encore WFM system.

1. Navigate to **Agent Dashboard Configuration -> Multimedia Busy Codes**.
2. Capture any reason code from this list that the Encore WFM system will need to monitor activity for.
3. Provide this list to your DVSAalytics Project Manager or Installation Tech.



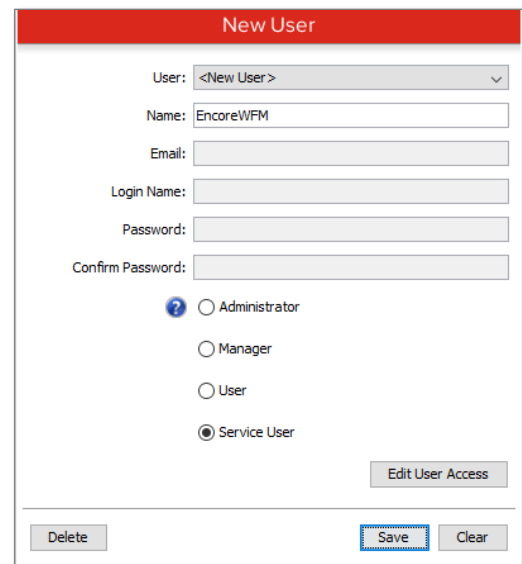
Configure Service User

The Encore WFM Adapter needs an ACR/Chronicall Service User to authenticate and access the server's data. Follow these steps to create the Service User.

CAUTION

This Service User must be for the exclusive use of Encore WFO/WFM. No other apps should use this user.

1. Navigate to **User Management->User Accounts**.
2. In the *User* field, select **New User**.
3. In the *Name* field, use the recommended name of **EncoreWFM**, or a username of your choice.
4. Select the **Service User** radio button at the bottom and click **Save**.

A screenshot of a web form titled "New User". The form contains several input fields: "User" (a dropdown menu showing "<New User>"), "Name" (text input with "EncoreWFM"), "Email" (text input), "Login Name" (text input), "Password" (text input), and "Confirm Password" (text input). Below these fields are four radio button options: "Administrator", "Manager", "User", and "Service User". The "Service User" option is selected. At the bottom right, there is an "Edit User Access" button. At the bottom left, there is a "Delete" button. At the bottom center, there is a "Save" button. At the bottom right, there is a "Clear" button.

Acquire the Service User's Authentication Key

1. Navigate to **API Enablement > Service Users**.
2. Select the Service User you created in [Configure Service User](#) above and click **Edit**.
3. Copy the entire string that's displayed in the **Authentication Key** field. This is a long string that will end with =.
4. Provide this string to your DVSanalytics Project Manager or Installation Tech.

Configuring Realtime Data API

1. Navigate to **API Enablement > Realtime Metric Access**.
2. Provide a *Metric Name* of **EncoreWFM-AgentState**.
3. For the *Metric Category* select **Agent**.
4. For *Category Selection* click the ellipsis button and select the users for which you need to monitor Realtime data. You can use the *Select All* option to select all current agents, or you can click the down arrow to just select members of particular groups. Once all of the agents have been selected click **OK**.
5. For the *Service Account*, select the service account user you created in [Configure Service User](#) above.
6. Click OK to save the Realtime Metric.

API Enabled Realtime Metric	
Metric Name	EncoreWFM-AgentState
Metric Category	Agent
Realtime Metric	Agent State
Category Selection	7 Selected
Service Account	EncoreWFM
Metric ID	KMYATKE

Show List View Show Request Details OK Cancel

CAUTION

When the list of agents that you need to monitor changes, you must edit the **Category Selection**, add/remove agents as appropriate and then save the changes.

The Encore WFM adapter will pick up any changes the following day.

Configuring Historical Data API

1. Navigate to **API Enablement > Historical Data Access**.
2. Unless you have been directed otherwise, in the *Report Template* field, select **Inbound Call Service Level**.
3. Make note of the *Report ID* field's value, as this will need to be provided to your DVSAalytics Project Manager or Installation Tech.
4. Click the **Show Report Details** button and verify that *Summarize Report* is set to **False** and *Report Output* is set to **JSON**. Click **OK** to exit. **Note:** The settings in the other fields don't matter since this is only used as a template and the Encore WFM adapter will use its own parameters when making the query.
5. Click **OK** to save.

API Enabled Report	
Report Template	Inbound Call Service Level
Service Account	EncoreWFM
Report ID	KY4DSBWA
<input type="button" value="Show Request Details"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/>	

Report Parameters	
Report Timeframe	2022/01/26 to 2022/01/26
Rows (Time)	15 Minutes per row
Group	<4 Selected>
Service Level (Speed of Answer)	≤ 0 : 00 : 20
Summarize Report	False
Report Output	JSON
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

Custom reports (optional)

For most implementations, the system provided **Inbound Call Service Level** historical report template provides Encore WFM with the required information. If your WFM needs require that you track other call types for your agents, such as outbound calls or internal calls, a custom report template may need to be used.

Your DVSAalytics Project Manager or Installation Tech will need to know the report's column names so they can ensure the WFM adapter is able to query the data correctly.

If possible, please use the following column names:

- Minutes
- Calls Presented
- Calls Answered
- Calls Abandoned
- Avg Call Duration

If the column names on the previous page are not used, please provide your DVSAalytics Project Manager or Installation Tech the column names that contain the equivalent data.

- The custom historical report's column name, which shows the interval data. Typically, the **Minutes** column.
- The custom historical report's column name, which shows the data for calls offered/presented during the interval period. Typically, the **Calls Presented** column.
- The custom historical report's column name, which shows the data for calls answered/handled during the interval period. Typically, the **Calls Answered** column.
- The custom historical report's column name, which shows the data for calls abandoned during the interval period. Typically, the **Calls Abandoned** column.
- The custom historical report's column name, which shows the data for the average duration of calls during the interval period. Typically, the **Avg Call Duration** column.

Provide DVSAalytics the required information

As indicated in the steps above, your DVSAalytics Project Manager or Installation Tech will need the following information:

- The ACR/Chronicall URL
- ACR/Chronicall Timezone id
- The list of Reason Codes for DND
- The Service User's Authentication Key
- The Historical Data API's Report ID
- If a custom report template is in use, the column names as indicated in the Custom reports section above.

Call Handling Scenarios

This section explains how different calls are displayed in Encore. The samples in this section are from a station-side recording system and it is assumed that all stations involved in the calls are configured to be recorded.

Certain situations affect how recordings are created and how they can be located using the Related Call Lookup feature:

- **Hold** – When a call is put on hold, the recording is suspended. When the call is retrieved, the audio is appended to the recording to create one audio recording.
- **Consultation Call** – If an agent is on a call and then places a consultation call, the first call is put on hold and the recording is suspended. Assuming the called party is also using a recorded phone, the consultation call is recorded as two separate recordings – one for each extension. When the agent hangs up the consultation call and retrieves the caller, the two recordings end and the first recording resumes; the second portion of the recording is appended to the first portion. All three recordings have different Segment IDs (SID) and share the same Related ID (RID).
- **Blind Transfer** – When a call is blind transferred (also called an unannounced transfer), the first recording ends after the agent presses the transfer button and hangs up the handset. The second recording begins when the second agent answers the transferred call. The second recording ends when the second agent hangs up the call. Separate SIDs are associated with each recording and they usually share the same RID. If the call is transferred to an ACD queue or Hunt Group, it may not be possible to show the relationship between the recordings and the same RID may not be associated with both recordings.
- **Conference Call** – When an agent decides to bring a third party into a current call, the agent usually puts the caller on hold to first consult with the third party. The first recording of the agent and the outside caller suspends during the consultation call. Assuming the third party is using a recorded phone, the consultation call creates two recordings – one for the agent and another for the third party. After the consultation call ends and the three parties are joined into the conference, the first recording resumes and it ends when the agent hangs up. The recording of the third party continues until the third party hangs up.
- **Internal Call** – If both extensions are monitored by Encore, two recordings are created – one for each extension. The party who initiates the call is treated as the agent for data collection purposes.

NOTE

Encore cannot relate calls across IP Office Nodes. For example, with an internal call where one party is using an IP phone attached to the IP Office Server Edition and the other party is using a digital phone attached to an IP Office 500v2 secondary server, the calls will not be related.

External Inbound Call

Recordings: 1 | SID: 1 | RID: 1

Extension 5002 receives an external inbound call with SID 1 and hangs up when the call is complete. This call creates one recording and one RID even though no other calls are associated with it.

External Inbound Call with Supervised Transfer

Recordings: 3 | SID: 3 | RID: 1

1. Extension 5002 receives an external inbound call. Recording 1 begins with SID 1.
2. The agent presses the transfer button which puts the caller on hold and suspends Recording 1. The agent then makes a consultation call to extension 5025. Recording 2 for extension 5002 begins with SID 2 and Recording 3 begins for extension 5025 with SID 3. When extension 5002 hangs up to complete the transfer, Recordings 1 and 2 end.
3. Now the caller is transferred to the agent at extension 5025. Recording 3 continues.
4. When the agent at extension 5025 hangs up, Recording 3 ends.

The same RID is associated with all recordings to show they are related.

External Inbound Call to ACD

Recordings: 1 | SID: 1 | RID: 1

Extension 5002 answers an external ACD call. A recording with SID 1 begins and, when the call ends, the recording stops. The ACD number, Skillset, Recorded Party Name, and Agent Login ID are associated with the recording.

External Outbound Call

Recordings: 1 | SID: 1 | RID: 1

Extension 5002 makes an external outbound call with SID 1 and hangs up when the call is complete. This call creates one recording and one RID even though no other calls are associated with it. The Call Direction for the recording shows as Outgoing. The dialed number is stored in the DNIS and Other Party Number fields.

Internal Call

Recordings: 2 | SID: 2 | RID: 1

Extension 5002 makes an internal call to extension 5009 (both extensions are monitored by Encore). A recording is created for each monitored extension and each recording is assigned a different SID. Both recordings are assigned the same RID to show they are related to each other.

External Inbound Call with Blind or Unannounced Transfer

Recordings: 2 | SID: 2 | RID: 1

1. Extension 5002 receives an external inbound call which starts Recording 1 with SID 1.
2. The agent transfers the caller to extension 5009 without consulting the agent at extension 5009. Recording 1 ends when 5002 hangs up his phone.
3. Recording 2 with SID 2 begins when 5009 answers the call. It ends when the agent hangs up her phone.

The same RID is associated with each recording to show they are related.

Consultation Call

Recordings: 3 | SID: 3 | RID: 1

1. Extension 5002 receives an external inbound call which starts Recording 1 with SID 1.
2. The agent puts the caller on hold, suspending Recording 1, and makes a consultation call to extension 5025 which starts Recording 2 with SID 2 to record extension 5002. This also starts Recording 3 with SID 3 to record extension 5025 in the consultation call.
3. When the agent at 5002 hangs up the consultation call, Recording 2 ends. When the agent at 5025 hangs up, Recording 3 ends.
4. The agent at extension 5002 then retrieves the original call and Recording 1 with SID 1 resumes.
5. When extension 5002 hangs up with the caller, Recording 1 ends.

The same RID is associated with all recordings to show they are related.

Conference Call

Recordings: 3 | SID: 3 | RID: 1

1. Extension 5010 receives an external inbound call which starts Recording 1 with SID 1.
2. The agent at extension 5010 puts the caller on hold and makes a consultation call to bring a supervisor at extension 5008 into the call. This suspends Recording 1. Recording 2 with SID 2 begins to record extension 5010 on the consultation call and starts Recording 3 with SID 3 to record the supervisor at extension 5008.
3. When the agent at extension 5010 joins the caller and the supervisor at extension 5008 into a three-party conference, Recording 2 ends. Recording 1 resumes and appends the audio to the first portion of the recording. Recording 3 continues.
4. When the supervisor at extension 5008 hangs up the call, Recording 3 ends.
5. When the agent at extension 5010 hangs up the call, Recording 1 ends.

The same RID is associated with all recordings to show they are related.

Appendix 1: Glossary

abandoned call

An incoming call which is answered by the ACD but terminated by the caller before it is answered by an agent.

ACD

Automatic Call Distributor. An application that answers calls and directs them to a predetermined queue, or line, of waiting calls. In most cases, the ACD ensures that the first call in is the first call answered. It also determines which agent receives a call based on predetermined criteria such as idle time or availability and generates reports on call volume and distribution.

ACD number

This is the equivalent of the Control Directory Number (CDN) where the call originated.

agent

A person who handles phone calls. Other variations include operator, attendant, representative, customer service representative (CSR), telemarketer, phone sales representative (TSR), and so on.

agent login ID

Usually the same number as the agent's extension.

ANI

Automatic Number Identification. For inbound calls, this is the customer's number (may not be supported by the trunk).

automated attendant

A voice processing system that answers calls with a recording and then enables callers to press touch-tone buttons to navigate through a menu system to a person, department, or voice mail.

base extension

This is the extension that can be assigned to a physical phone. This number is displayed on the phone when no user is logged into it. For physical phones, Encore matches this Base extension with the phone's IP address, so it knows which phone to collect packets for. A Base extension may be created in the IP Office PBX, but never assigned to a physical phone. This can cause problems with recording a user on a softphone where the user's extension matches a base extension.

call ID

A unique ID for the call, allocated by the PBX.

call origin

One of the following origins is provided by the TAPI stream:

- Conference – The call originated from a conference call.
- External Incoming – The call originated as an incoming call on an external line. If an internal call is between two extensions that are logged into two different PBX Nodes, the Call Origin may show as External Incoming for the party receiving the call.
- Internal Incoming – The call originated as an incoming call at a station internal to the same switching environment.
- Outgoing – The call originated from this station as an outgoing call.

call record

An entry in a database that holds the data associated with a call.

device name

The base extension of the physical device that was recorded.

digital recording

A method of recording that converts analog sound into a series of pulses that are translated into binary code, which is read by computers.

DNIS

Dialed Number Identification Service. For inbound calls, this is the number the customer dialed (may not be supported by the trunk).

encrypted calls

Calls that have the audio RTP packets encrypted. This prevents 3rd party applications, such as the Encore system, from using the RTP packets for recording.

extension

This is an agent's user extension. See "[user extension](#)" on page 30 for more information.

external calls

In these calls, the calling or called parties are outside the PBX.

full-time recording

This method uses the Recording Engine to record all conversations for the defined endpoints.

hold duration capture

The sum of all hold durations that occurred during the recording.

Hot Desking (Extension Roaming)

Hot Desking allows a number of users the non-exclusive use of the same extension (phone). Users log in with their own identity (User Extension) so they can receive calls and can access their own voicemail and other facilities. For example, sales personnel who visit the office infrequently can be provided with telephony and voicemail services without being permanently assigned a physical extension. When finished, they simply log off to make the extension (phone) available to others or if users log on at another phone, they are automatically logged off the original extension. If a user logs into a softphone, they are not automatically logged off the physical phone.

inbound

Calls which are received/answered by a recorded party.

internal calls

In these calls, the calling and called parties are extensions on the PBX.

other call ID

This identifier allows the Encore server to relate the “customer-agent” call to the “agent-supervisor” consultation call.

other party name

Name of the other party on the line with the person being recorded, may be blank if this is an external call. If a call is transferred from Phone A on PBX Node 1 to Phone B on PBX Node 2, the Other Party Name for Phone B could be Phone A instead of the caller.

other party number

Number of the other party on the line with the person being recorded; if external and incoming call, this is an ANI. If a call is transferred from Phone A on PBX Node 1 to Phone B on PBX Node 2, the Other Party Number for Phone B could be Phone A instead of the caller.

outbound

Calls which are placed by a recorded party.

pause/resume on hold

A method that pauses the recording of audio and screen when a call is placed on hold, and resumes recording when the hold is taken off.

PBX (PABX)

Private (Automated) Branch Exchange. The phone system to which the office phones are connected.

recorded party name

Agent’s name. This is not provided in the IP Office TAPI integration; instead, this is acquired using ACCS after the agent logs into the ACD.

recorded party number

The agent’s extension that is logged into the monitored phone.

recording

The audio recording, screen recording, and database record associated with a single phone call or conversation.

related call lookup

A customer's experience in a call center may include multiple recordings even though the customer was on one, continuous call. This feature shows recordings that are related to the selected recording.

station

A phone connected to the PBX.

skillset

A skillset is a group of abilities necessary to answer a specific type of contact. Encore captures the skillset of the call that was delivered to the agent.

trunk

The connection between the phone company and the PBX that carries incoming calls.

user extension

In order for agents to receive calls, they log into their phones with their user extensions. A user extension may or may not be the same number as a phone's base extension.