



# Customer Guide to ShoreTel TAPI-WAV Integrations

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**Recording**

## Customer Guide to ShoreTel TAPI-WAV Integrations

- **Version** — This guide should be used with inContact WFO 16.2 or later.
- **Revision** — May 2016
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## Table of Contents

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<b>Introduction .....</b>	<b>5</b>
Audience.....	5
Goals.....	5
Assumptions.....	5
Need-to-Knows .....	5
What’s New in this Version.....	6
Customer Responsibilities .....	6
<b>ShoreTel TAPI-WAV Integration Overview.....</b>	<b>7</b>
Known Limitations .....	8
ShoreTel Requirements .....	9
Hardware .....	9
Software .....	9
Licensing .....	9
inContact WFO Requirements.....	9
Hardware .....	9
Software .....	9
Licensing .....	10
Customer Configuration Overview.....	10
<b>Customer Integration Tasks .....</b>	<b>11</b>
Configure a Route Point for inContact WFO.....	11
Configure the Agent Class of Service for Recording .....	12
Configure Contact Center Integration (Optional) .....	14

Recording Beep Tones Overview ..... 14

Install ShoreWare Remote Server..... 15

Register ShoreTel Remote Server ..... 15

**Customer Administration Tasks..... 17**

    Voice Boards Overview ..... 17

    Voice Board Configuration ..... 17

    Channel Configuration Settings..... 18

**Document Revision History ..... 19**

## Introduction

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### Audience

This document is written for customers and prospective customers interested in using inContact WFO Call Recording in ShoreTel VoIP telephony environments. Readers who will perform procedures in this guide should have a basic level of familiarity with IP telephony, general networking, the Windows operating system, the ShoreTel hardware and software in use, and inContact WFO.

### Goals

The goal of this document is to provide knowledge, reference, and procedural information necessary to understand a proposed ShoreTel/inContact WFO integration using TAPI-WAV, and to configure ShoreTel 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 inContact 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 inContact 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 inContact WFO configuration, consult the inContact WFO installation team.

In addition to the TAPI-WAV integration discussed in this guide, inContact WFO also supports a ShoreTel TAPI-VoIP integration that combines passive VoIP recording with TAPI for call control and metadata. Ask your inContact WFO representative if you want additional information on these integration methods.

## What's New in this Version

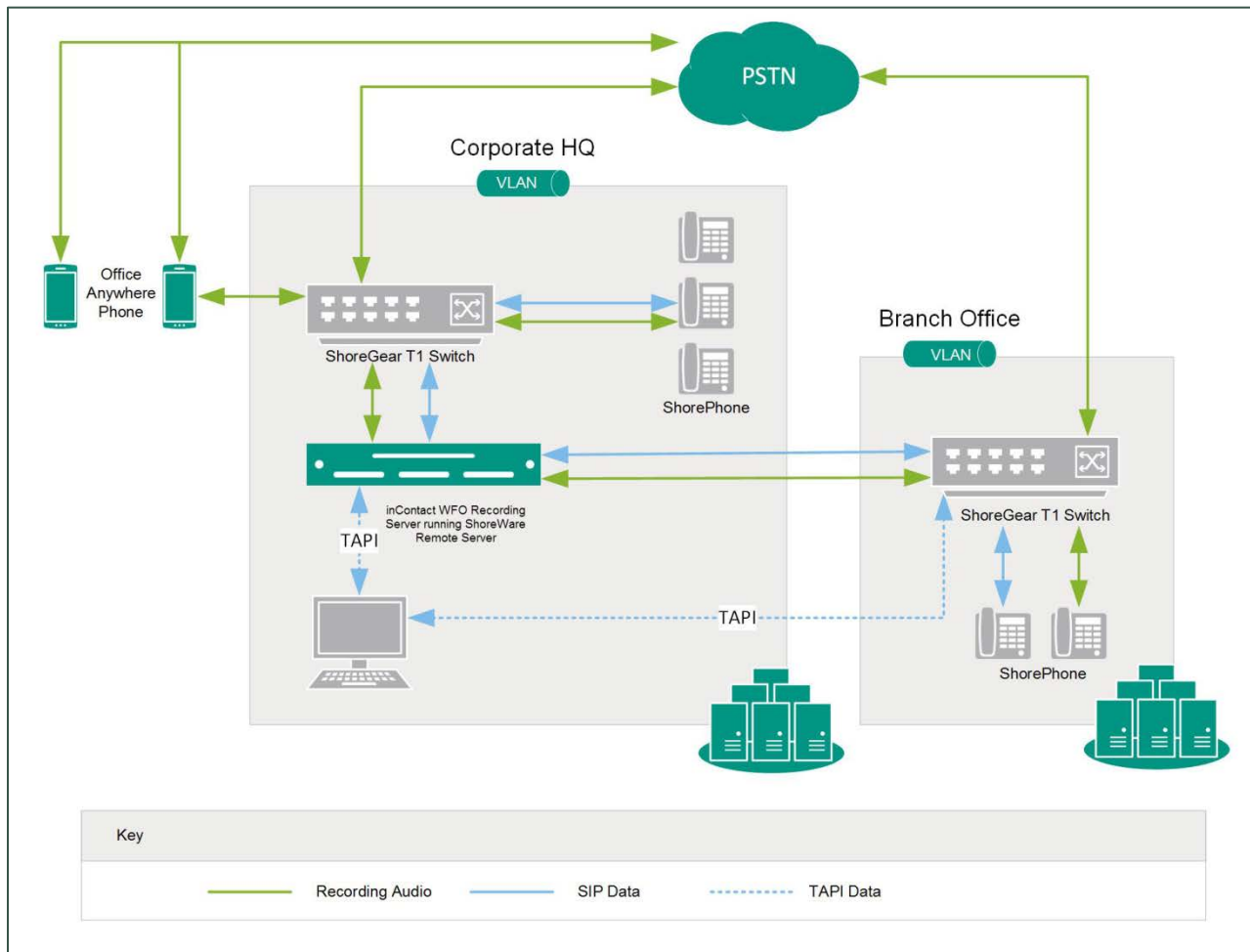
**ShoreTel Connect integration:** This integration has been tested with the latest version of ShoreTel software, known as ShoreTel Connect. Internal testing confirms that the existing integrations are supported on this version. Interoperability testing in ShoreTel's lab environments is pending. Some ShoreTel product names have changed slightly in ShoreTel Connect versus previous versions; refer to your ShoreTel resources for any clarification regarding ShoreTel products mentioned in this guide.

## Customer Responsibilities

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

## ShoreTel TAPI-WAV Integration Overview

The ShoreTel TAPI-WAV integration is an active recording method that communicates with the ShoreTel System using TAPI. inContact WFO receives call control events and metadata (such as CallerID) from ShoreTel (ShoreWare) Director. Audio for designated calls is delivered to inContact WFO by ShoreTel in the form of WAV files. This method is referred to as "native call recording" by ShoreTel.



**General architectural example of a multi-site ShoreTel TAPI-WAV integration; the optional ShoreTel Contact Center is not shown**

Component	Function
<b>ShoreGear T1 Switch</b>	Provides trunking to the central office.
<b>ShoreTel Connect Contact Center Director</b>	Allows system administrators to configure entities of the ShoreTel Connect Contact Center and set the system parameters. Can be configured to set call variables that are passed to the TAPI interface.
<b>ShoreTel RoutePoint</b>	All audio is redirected from a ShoreTel route point (that is, extension) to inContact WFO, which is configured in ShoreTel as another route point.
<b>ShoreWare Remote Server</b>	Provides the CTI connection to the ShoreTel PBX. The Remote Server software must be installed on the inContact WFO recording server.
<b>inContact WFO Server(s)</b>	Receives audio, metadata, and call control events from the ShoreTel Connect Contact Center Director. Associates metadata with audio and screen recordings (if applicable). Manages storage of completed files and generates call records in the inContact WFO database. Provides user interface to inContact WFO through the Web Portal.

## Known Limitations

- ShoreTel uses a proprietary encryption for the SIP traffic, making inContact WFO dependent on the TAPI messaging for recording. Therefore, inContact WFO does **not** support recording ShoreTel SIP phones without TAPI.
- The TAPI-WAV method of recording is unable to capture audio of internal extension-to-extension conversations. This includes calls placed on SIP trunks. This is a functional limitation of ShoreTel's application architecture.
- The TAPI-WAV method of recording is unable to support live monitoring of calls as they are being recorded. This is a functional limitation of ShoreTel's application architecture.
- ShoreTel does not support sending audio to multiple recorders from a single Route Point, nor does it support sending the same audio to multiple recorders.
- One Route Point can have a call stack of up to 200 concurrent connections. If more than 200 concurrent recordings are anticipated, multiple route points are required. One inContact WFO CTI Core can support multiple Route Points, or multiple cores can be used.
- In multiple CTI Core scenarios, all recorders receive the same TAPI events from ShoreTel. Therefore, scripting, scheduling, or both must be used to distinguish which calls are recorded by each core.



- PBX client software pieces used in this integration (for example, ShoreWare Remote Server) are only supported on Microsoft Server 2012 R2 by ShoreTel v14.2.19.42.8801.0 or higher.
- ShoreTel TAPI integrations do not support the real-time blackout functionality in inContact WFO.

## ShoreTel Requirements

### Hardware

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Review your ShoreTel documentation for relevant hardware and system software specifications. These documents address server, agent computer, and telephone hardware requirements and restrictions that ShoreTel recommends. This integration requires:

- At least one (1) ShoreTel Voice Switch
- At least one (1) ShoreTel Contact Center Director server

### Software

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This integration has been tested with and is supported for:

- ShoreTel version 14.2 to ShoreTel Connect (version 14.2.19.42.8801.0 or higher is required if inContact WFO is to be deployed on MS Server 2012 R2).

### Licensing

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The integration requires the following licensing:

- One (1) ShoreWare Remote Server Software license.

## inContact WFO Requirements

### Hardware

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inContact WFO hardware requirements vary depending on system configurations. Appropriate hardware is identified during the system implementation process.

### Software

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This guide covers the following release:

- inContact WFO 16.2 or later

## Licensing

- One (1) Voice seat license per named agent **or**
- One (1) Voice concurrent session license for each simultaneous call that will be recorded.
- Additional licensing may be required if the system includes optional features (for example, inContact Screen Recording).

## Customer Configuration Overview

The following table provides a high-level overview of the customer configuration steps in ShoreTel integrations.

Customer Configuration Steps for ShoreTel TAPI-WAV Integrations	
1	Complete all necessary physical and IP connections between the recording server(s) and the LAN.
2	In ShoreTel Director, <a href="#">Configure a Route Point for inContact WFO</a> . Provide the Route Point extension to the inContact WFO installation team.
3	<a href="#">Configure the Agent Class of Service for Recording</a> for all users who are to be recorded.
4	If applicable, configure integration with ShoreTel Contact Center.
5	If applicable, configure recording beep tones in ShoreTel Director.
6	After the inContact WFO software has been installed and the Web Portal has been configured: <a href="#">Install ShoreTel Remote Server</a> and <a href="#">Register ShoreTel Remote Server</a> .

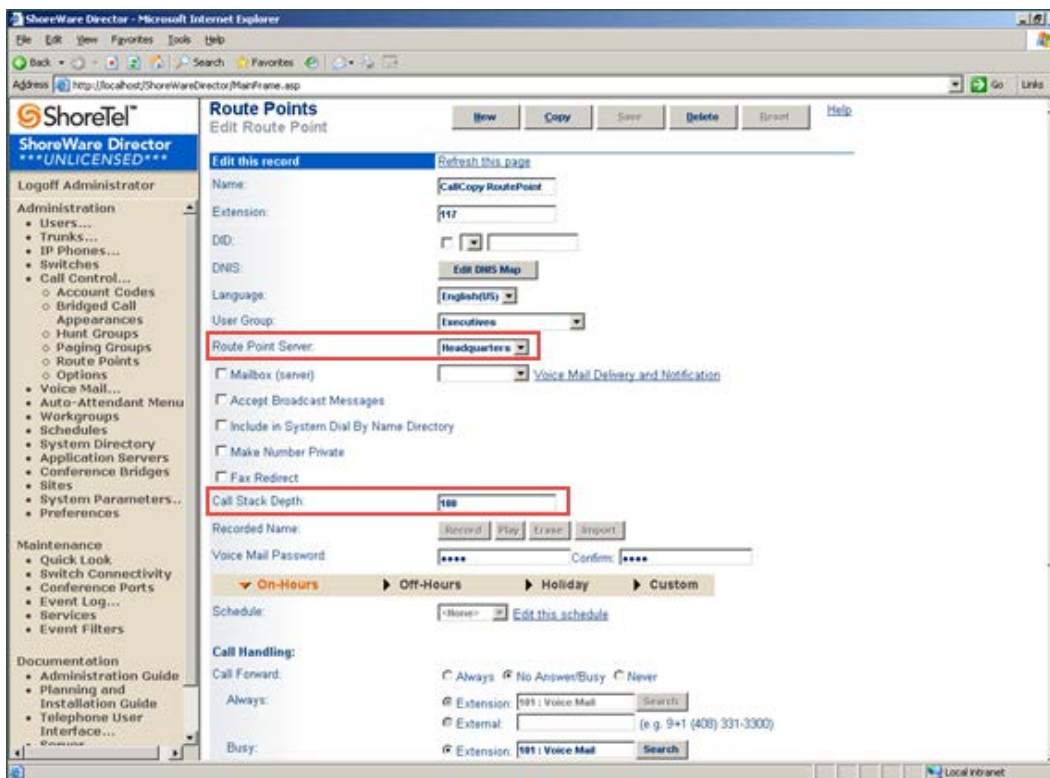
## Customer Integration Tasks

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

### Configure a Route Point for inContact WFO

To configure a Route Point extension for inContact WFO:

1. Log in to ShoreTel Contact Center Director with an appropriately-permissioned account.
1. Go to **Administration -> Call Control -> Route Points**.
2. The Route Point Server should be the same application server that the service is installed on. Make note of the extension assigned to the route point and provide it to the inContact WFO installation team.



3. For **Route Point Server**, select the Application Server name that was created for the inContact WFO recording server.

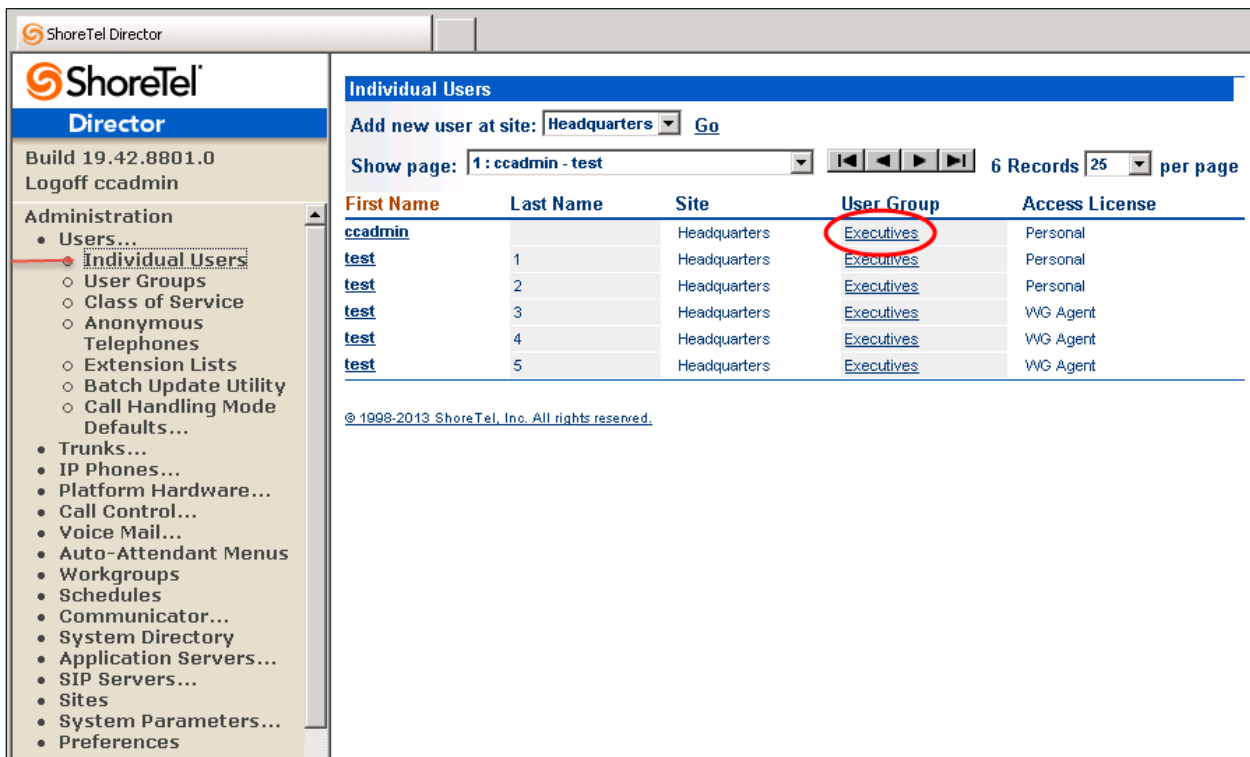
4. For **Call Stack Depth**, select the number of recording channels purchased with inContact WFO. This setting specifies the number of simultaneous calls to which the Route Point can be connected. For related information, see [Known Limitations](#).
5. Click **Save**.

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

## Configure the Agent Class of Service for Recording

All agents to be recorded must have the ability to record themselves. To configure a Class of Service that allows this:

1. Log in to ShoreTel Contact Center Director with an appropriately-permissioned account.
2. In the left navigation menu, expand **Administration** and then expand **Users**.
3. Click on **Individual Users**.
4. For each user to be recorded, click the link in the **User Group** column.



ShoreTel Director

ShoreTel  
Director  
Build 19.42.8801.0  
Logoff ccadmin

Administration

- Users...
  - **Individual Users**
  - User Groups
  - Class of Service
  - Anonymous Telephones
  - Extension Lists
  - Batch Update Utility
  - Call Handling Mode Defaults...
- Trunks...
- IP Phones...
- Platform Hardware...
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Communicator...
- System Directory
- Application Servers...
- SIP Servers...
- Sites
- System Parameters...
- Preferences

Individual Users

Add new user at site:

Show page:    6 Records  per page

First Name	Last Name	Site	User Group	Access License
<a href="#">ccadmin</a>		Headquarters	<a href="#">Executives</a>	Personal
test	1	Headquarters	<a href="#">Executives</a>	Personal
test	2	Headquarters	<a href="#">Executives</a>	Personal
test	3	Headquarters	<a href="#">Executives</a>	WG Agent
test	4	Headquarters	<a href="#">Executives</a>	WG Agent
test	5	Headquarters	<a href="#">Executives</a>	WG Agent

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5. Next to the **COS – Telephony** field, click **Go to this Class of Service**.

The screenshot shows the 'User Groups' configuration page in ShoreTel Director. The left sidebar contains a navigation tree with 'Administration' > 'Users...' > 'User Groups' selected. The main content area is titled 'User Groups' and 'Edit User Group'. It features several dropdown menus for configuration: 'Name' (Executives), 'COS - Telephony' (Fully Featured), 'COS - Call Permissions' (No Restrictions), and 'COS - Voice Mail' (Large Mail Box). Each dropdown has a 'Go to this Class of Service' link next to it. The 'Go to this Class of Service' link for 'COS - Telephony' is circled in red. There are also checkboxes for 'Send Caller ID as Caller's Emergency Service Identification (CESID)' and 'Send DID as Caller's Emergency Service Identification (CESID)', both of which are checked. An 'Account Code Collection' dropdown is set to 'Disabled'. Buttons for 'New', 'Copy', 'Save', 'Delete', 'Reset', and 'Help' are visible at the top right.

6. Select the checkbox for **Allow Recording of Own Calls**.

The screenshot shows the 'Class of Service' configuration page in ShoreTel Director. The left sidebar contains a navigation tree with 'Administration' > 'Users...' > 'Class of Service' selected. The main content area is titled 'Class of Service' and 'Edit Telephony Features Permissions'. It features several input fields and checkboxes for configuration: 'Name' (Fully Featured), 'Max. Call Stack Depth' (8), 'Max. Buddies Per User' (500), 'Max. Personal Contacts' (500), 'Max. Parties in Make Me Conference' (3), and 'IM Presence Invitation Handling' (Prompt to accept invitation). There are several checkboxes for permissions: 'Allow Call Pickup', 'Allow Trunk-to-Trunk Transfer', 'Allow Overhead and Group Paging', 'Allow Make Hunt Group Busy', 'Allow Extension Reassignment', 'Allow PSTN Failover', 'Show Caller ID Name and Number for Other Extensions', 'Enumerate Individual Held Calls for Unpark', 'Allow Customization of IP Phone Buttons and Communicator Monitor Windows', 'Show Extensions with Different Prefixes in Directory', 'Allow Collaboration Features', and 'Allow Recording of Own Calls'. The 'Allow Recording of Own Calls' checkbox is checked and circled in red. Buttons for 'New', 'Copy', 'Save', 'Delete', and 'Reset' are visible at the top right.

7. Click **Save**.

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

## Configure Contact Center Integration (Optional)

If you use ShoreTel Contact Center software, you can optionally configure Contact Center to pass call metadata through ShoreTel Director into the TAPI events received for a phone. The inContact WFO installation team can modify the channel script to include this metadata in the call record.

For a complete description of mandatory and user-defined call profiles, and their associated user fields, see the *ShoreTel Contact Center Administrator Guide*.

To extract and store call profile information in TAPI:

1. On the Contact Center Server, in the directory in which ShoreTel Contact Center is installed, use a text editor (such as Notepad) to create a file named **shoretelcfg.ini**.
2. In the shoretelcfg.ini file, add a section named **call\_profile**.
3. In the call\_profile section, specify a key named **user\_fields** with call profile field names as values. Separate the values with a comma. For example:

```
[call_profile]
user_fields=AGENT_NUMBER, AccNo, Balance, DueDate
```

4. Restart the Contact Center Server.

The specified call profile field values will now display in the TAPI call properties and be available to the inContact WFO channel script.

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

## Recording Beep Tones Overview

ShoreTel Connect Contact Center Director offers the option of playing a beep tone on 2-way or Make Me Conference calls that indicates the call is being monitored or recorded. This option is enabled by default and is a global setting.

When the recording is silent or hidden, there is no visual or audible indication that the call is being recorded. The periodic beeping sound (used to notify call participants that their calls are being recorded) is suppressed.

Recording beep tones can be configured on the Call Control Options page of the ShoreTel Connect Contact Center Director web portal. Refer to the *ShoreTel Administration Guide* for more information regarding this feature.

## Install ShoreWare Remote Server

After the inContact WFO installation engineer has installed the software and configured the recording Web Portal, you must install the ShoreWare Remote Server software on the recording server. The Remote Server software can usually be downloaded from the ShoreTel Director web interface at the following URL:

**<http://<directorhost>/ShoreWareDirector/RemotelInstall/>**

**i** Replace <directorhost> with the TCP/IP address or host name of the customer's ShoreTel Director Server.

Follow the prompts to install the application server. When prompted for the IP address or name of the headquarters server, be sure to specify the IP address (or hostname) of the ShoreTel Director. After a successful installation, you will be prompted to reboot the server.

For detailed instructions on installing Remote Server software, refer to the appropriate *ShoreTel Planning and Installation Guide* for the PBX version.

## Register ShoreTel Remote Server

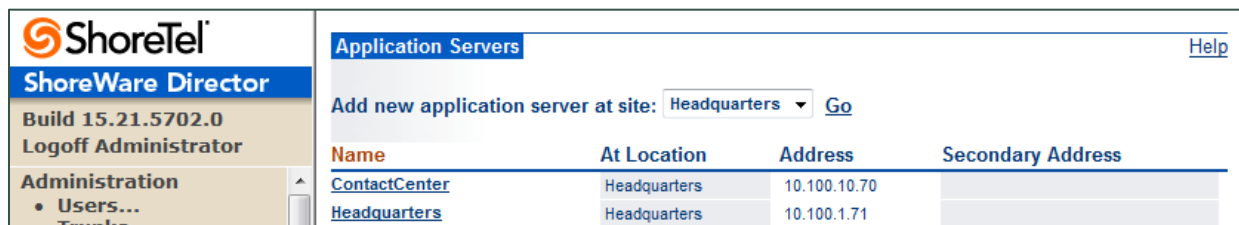
Once the Remote Server software has been installed, you must register the recording server in ShoreTel Director.

1. Go to the ShoreTel Director Web administration site at the listed URL:

**<http://<directorhost>/ShoreWareDirector/>**

**i** Replace <directorhost> with the TCP/IP address or host name of the ShoreTel Director Server.

2. Log in with an appropriately-permissioned account.
3. Under **Administration**, click **Application Server**.



Name	At Location	Address	Secondary Address
<a href="#">ContactCenter</a>	Headquarters	10.100.10.70	
<a href="#">Headquarters</a>	Headquarters	10.100.1.71	

- On the Application Servers page, select the site to which the application server will be added and click **Go**.



The screenshot shows the 'Application Servers' web interface. At the top, there are buttons for 'New', 'Copy', 'Save', 'Delete', 'Reset', and 'Help'. Below these is a 'Refresh this page' link and a '\* modified' indicator. The main form is titled 'Edit this record' and contains the following fields:

- Name: Recorder
- Host IP Address: 10.100.1.10 (with a 'Ping this Server' button next to it)
- Site: Headquarters
- SoftSwitch Name: Recorder
- Maximum Trunks for Voice Mail Notification (1 - 200): 4
- Account Code Local Extension: (empty)
- Allow Voice Mailboxes
- Voice Mail and Auto Attendant:**
  - Voice Mail Extension: 136
  - Voice Mail Login Extension: 137
  - Auto Attendant Extension: 138
- Assigned User Group: Voice Mail Notification (dropdown)
- Default Auto-Attendant Menu: Default (Menu) - 700 (dropdown)
- Voice Mail Interface:**
  - Mode: <None> (dropdown)

- On the Edit Server page, enter a **Name** for the inContact WFO recording server.
- In the **Host IP Address** field, enter the IP address of the inContact WFO recording server on which you installed the Remote Server software.
- Clear the check box for **Allow Voice Mailboxes**.
- Click **Save**.



## Customer Administration Tasks

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During ongoing use of the system, your inContact WFO administrator may need to configure new channels or reconfigure existing channels. This integration requires changes to the Voice Boards page in the inContact WFO Web Portal only when channels are added.

### Voice Boards Overview

Voice Boards control how inContact WFO acquires audio. This component provides *what* inContact 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.

inContact 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 ShoreTel TAPI-WAV integration delivers audio to inContact WFO in the form of WAV files. There must be one channel in inContact WFO for each anticipated concurrent connection. Therefore, the number of channels in inContact WFO must match the Call Stack Depth value in the Route Point created on ShoreTel Director. For related information, see [Known Limitations](#) and [Configure a Route Point for inContact WFO](#).

If channels are added to your system, you will need to increase the channel count and configure the new channel(s) on the associated Voice Board. The basic procedure for configuring Voice Board channels is the same for all integrations and can be found in online help for inContact WFO. For channel settings specific to this integration, see [Channel Configuration Settings](#). You must restart the Recorder service (cc\_cticore.exe) after any Voice Board or channel changes.

Any other Voice Board changes should only be done under direct supervision from inContact 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 a ShoreTel TAPI-WAV integration:

Setting	Definition	Default
<b>Assign</b>	Used in deployments where physical devices and channels have a one-to-one correspondence, or to allocate specific channels to specific types of recording. See <a href="#">Appendix: Channel Assignment Settings Definitions</a> .	Dedicated Record Device (Voice Port)
<b>Assign Value</b>	Type the identifier for the device assigned to the channel (typically the phone extension).	
<b>Name</b>	Type an optional name for the channel that can be used in channel scripting.	

## Document Revision History

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Revision	Change Description	Effective Date
0	Initial release	2015-04-30
1	Moved tasks for installing and registering ShoreWare Remote Server to customer guide.	2015-07-23
2	Updated to reflect integration with ShoreTel Connect.	2016-05-28