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Avaya Solution & Interoperability Test Lab

Application Notes for Xima Chronicall 3.8 with Avaya IP Office 10.1 – Issue 1.1

Abstract

These Application Notes describe the configuration steps required for Xima Chronicall 3.8 to interoperate with Avaya IP Office 10.1. Xima Chronicall is a call reporting application.

In the compliance testing, Xima Chronicall used the DevLink3 interface from Avaya IP Office to monitor agent users and provided real-time agent status and cradle to grave reporting. In addition, recordings for call scenarios from Avaya IP Office Voicemail Pro were processed and presented in the cradle to grave report by Xima Chronicall for customer playback.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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

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1. Introduction

These Application Notes describe the configuration steps required for Xima Chronicall 3.8 to interoperate with Avaya IP Office 10.1. Chronicall is a call reporting application.

In the compliance testing, Chronicall used the DevLink3 interface from IP Office to monitor agent users and provided real-time agent status and cradle to grave reporting. In addition, applicable recordings from IP Office Voicemail Pro were processed and presented in the cradle to grave report by Chronicall for customer playback.

The DevLink3 interface was used by Chronicall to obtain configured system resources from IP Office such as configured hunt groups and agent users, and to obtain real-time agent status and call events. The obtained information was used to produce real-time agent status and cradle to grave reporting, which were accessible via the Chronicall web interface. The support of real-time agent status requires the optional Realtime Module to be running on the Chronicall server.

The compliance testing also included the optional Chronicall Recording Library Module on the Chronicall server, and a corresponding Chronicall Recording Library service that was running on the IP Office Voicemail Pro server. Recordings generated by IP Office Voicemail Pro were processed and compressed by Chronicall, and made available for customers to playback via the cradle to grave report.

2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of Chronicall, the application automatically sends DevLink3 commands to obtain configured account codes, hunt groups, users, hunt group membership, and user feature status information from IP Office.

For the manual part of the testing, calls were made from the PSTN and from local users to the hunt groups and agent users. Necessary user actions such as hold/reconnect were performed from the user telephones to generate events for the various call scenarios.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet connection to the Chronicall server.

The verification focused on the cradle to grave reporting and recording playback for the call scenarios, and real-time agent status reflection.

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

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between IP Office and Chronicall utilized the enabled capabilities of TLS.

2.1. Interoperability Compliance Testing

The compliance testing included feature and serviceability areas.

The feature testing focused on verifying the following on Chronicall:

- Use of DevLink3 ReadFile commands to obtain account codes, hunt groups, users, hunt group membership, and user feature status information.

- Use of DevLink3 extension events to provide real-time reporting of user status for do-not-disturb, hunt group membership, forward unconditional, follow-me-to, forward busy number, forward hunt group calls, forward number, forward on busy, forward on no answer, log in, log out, and follow-me-here features.

- Use of DevLink3 call events to provide cradle to grave reporting for various call scenarios including internal, external, inbound, outbound, drop, hold/reconnect, blind/attended transfer, blind/attended conference, voicemail coverage, voicemail retrieval, hunt group, hunt group queuing, hot desking, park/unpark, forwarding, multiple users, multiple calls, auto attendant, long duration, and mobile twinning.

- Use of Voicemail Pro wave files to provide recordings for customer playback of call scenarios in the cradle to grave report.

The serviceability testing focused on verifying the ability of Chronicall to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet connection to the Chronicall server.

2.2. Test Results

All test cases were executed and verified. The following were observations on Chronicall from the compliance testing.

- User feature configuration changes on IP Office Manager cannot reflect in real-time on Chronicall due to nature of the interface. A workaround is to restart the Chronicall service to force a re-synchronization with IP Office.

- Any activation of Follow Me Here prior to start of the application was reflected as Follow Me To due to limitation of the DevLink3 interface.

- User feature status changes via short codes may not always reflect by Chronicall, and the recommendation is to always use the programmed buttons on the user telephones.

- The Idle and Ready states reported by do not correspond to any one feature or state on IP Office, but rather determined by the application and deduced from several features and may not match to the current IP Office user state. As such, these two real-time reporting parameters were not verified.

- Immediately upon conclusion of a call, recording entries can show up as "Call Recorded" on the cradle to grave report. After Chronicall completes association of recordings with proper call segments, recording icons can then appear next to the applicable call sub-entries in place of "Call Recorded" entries. If for some reason Chronicall cannot find an appropriate match for a recording, then the recording will continue to appear as a "Call Recorded" entry. Also note that it is possible for multiple recordings to be associated with one sub-entry.

2.3. Support

Technical support on Chronicall can be obtained through the following:

- **Phone:** (888) 944-XIMA
- **Email:** support@ximasoftware.com
- **Web:** http://www.ximasoftware.com/support

3. Reference Configuration

The configuration used for the compliance testing is shown in **Figure 1**. The Chronicall optional Recording Library Module included a Recording Library service. The service can be installed on the Voicemail Pro server or on the Chronicall server. In the compliance testing, the Recording Library service was installed on the Voicemail Pro server.

The Recording Library service obtained call recording wave files from Voicemail Pro, compressed the recordings for more efficient storage on Voicemail Pro, and provided the metadata of processed recording files to the Recording Library Module for association with cradle to grave reporting.

The detailed administration of general devices such as Voicemail Pro, hunt groups and agent users are assumed to be in place and are not covered in these Application Notes. In the compliance testing, the IP Office resources shown in the table below were used. Note that agent user 20032 was a hot desking user that used extension 20021.

Device Type	Device Number/Extension
Extensions	20021, 20031, 20041
Users	20031, 20032 , 20041
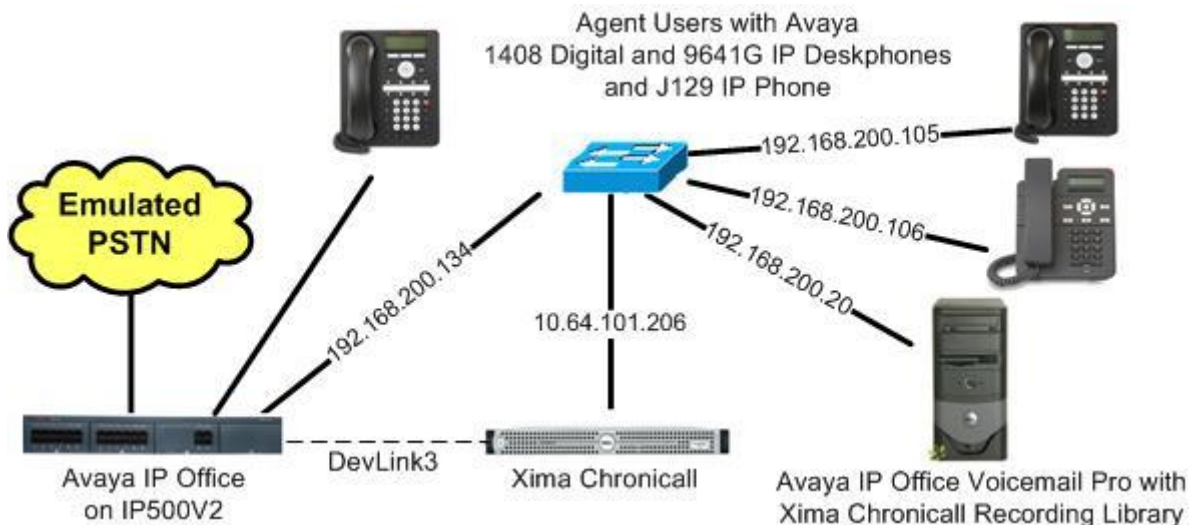
Figure 1: Compliance Testing Configuration

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4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office on IP500 V2	10.1.0.0.0
Avaya IP Office Voicemail Pro • Xima Chronicall Recording Library	10.1.0.241 3.8 (5g)
Avaya 1408 Digital Deskphone	NA
Avaya 9641G IP Deskphone (H.323)	6.6506
Avaya J129 IP Phone (SIP)	1.1.0.0.15
Xima Chronicall on Windows 2012 Server • Realtime Module • Recording Library Module	3.8 (5g) R2 Standard

Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 only.

5. Configure Avaya IP Office
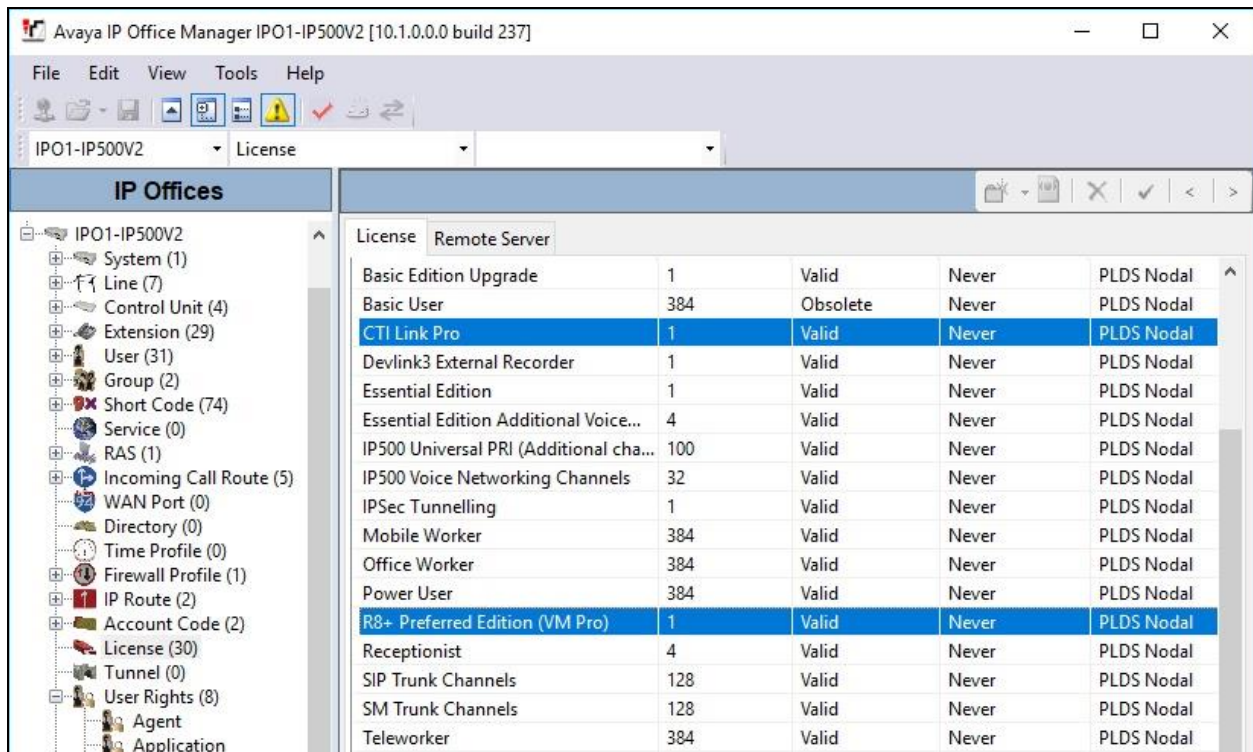
This section provides the procedures for configuring IP Office. The procedures include the following areas:

- Verify license
- Administer users
- Administer system interfaces
- Administer rights groups
- Administer service users

5.1. Verify License

From a PC running the IP Office Manager application, select **Start → All Programs → IP Office → Manager** to launch the application. Select the proper IP Office system, and log in using the appropriate credentials.

The **Avaya IP Office Manager** screen is displayed. From the configuration tree in the left pane, select **License** to display a list of licenses in the right pane. Verify that there are valid licenses for **CTI Link Pro** and for Voicemail Pro such as **R8+ Preferred Edition (VM Pro)**, as shown below.

5.2. Administer Users

From the configuration tree in the left pane, expand **User** (not shown) and select the first agent user from **Section 3**, in this case **20031**. Scroll the right pane as necessary to select the **Voice Recording** tab, and configure the parameters as desired for automatic recording by Voicemail Pro. The screenshot below shows the settings used in the compliance testing.

Repeat this section for all users in **Section 3**.

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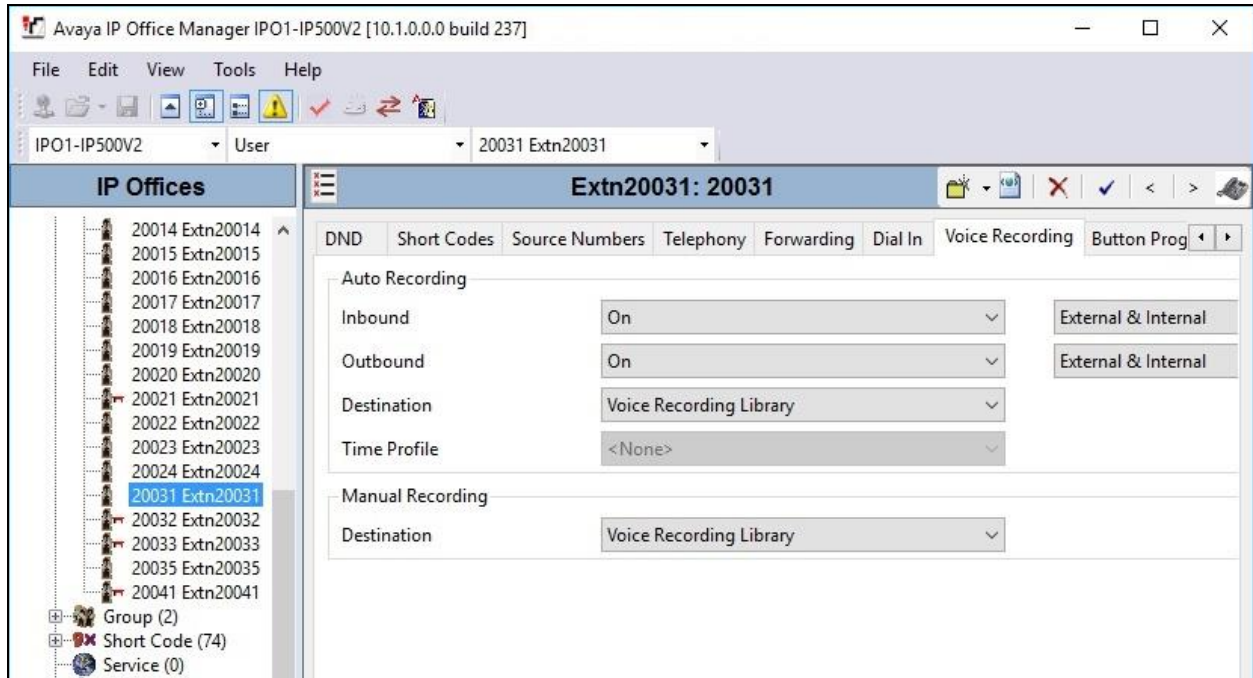
5.3. Administer System Interfaces

From the configuration tree in the left pane, select **File → Advanced → Security Settings** from the top menu.

The **Avaya IP Office Manager – Security Administration** screen is displayed. Select **Security → System** from the left pane, to display the **System** screen in the right pane.
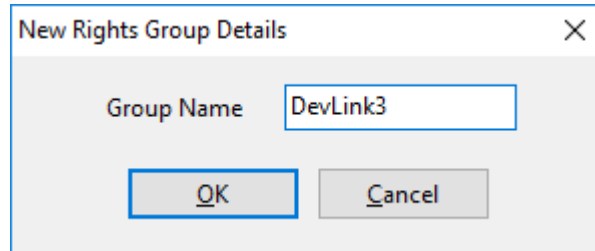
Select the **Unsecured Interfaces** tab, and make certain **TAPI/DevLink3** is checked, as shown below.

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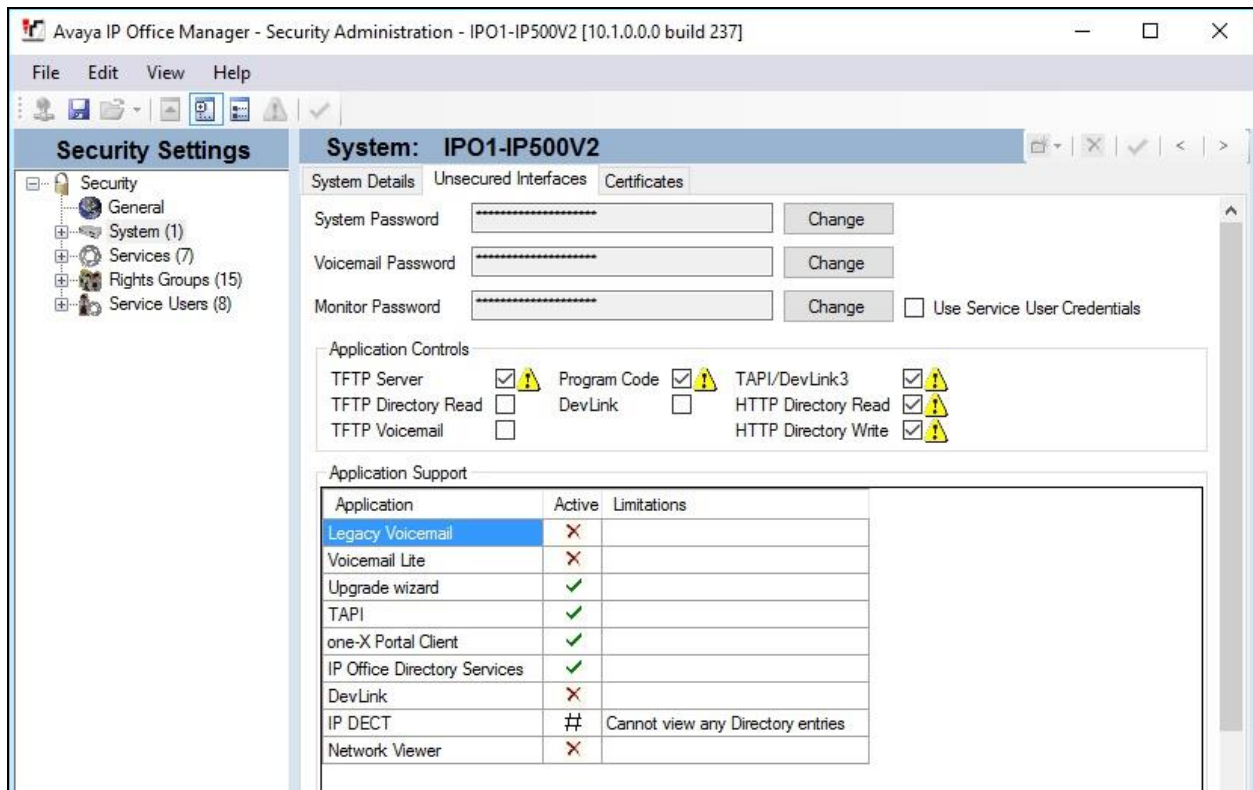
5.4. Administer Rights Groups

From the **Avaya IP Office Manager – Security Administration** screen shown in **Section 5.3**, select and right-click on **Rights Groups** in the left pane, followed by **New** from the pop-up list to add a new rights group.

The **New Rights Group Details** dialog box is displayed. For **Group Name**, enter a descriptive name, as shown below.
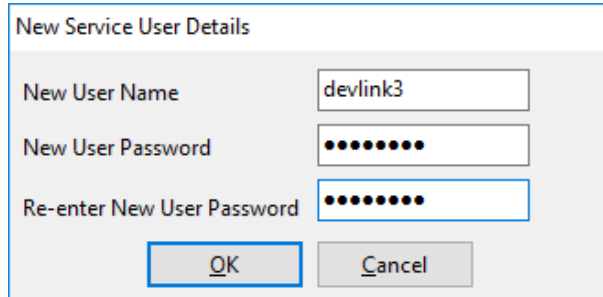
The **Avaya IP Office Manager – Security Administration** screen is updated, with **Rights Group: DevLink3** shown in the right pane, where **DevLink3** is the name of the newly added rights group.

Select the **Telephony APIs** tab in the right pane, and check **DevLink3**, as shown below.
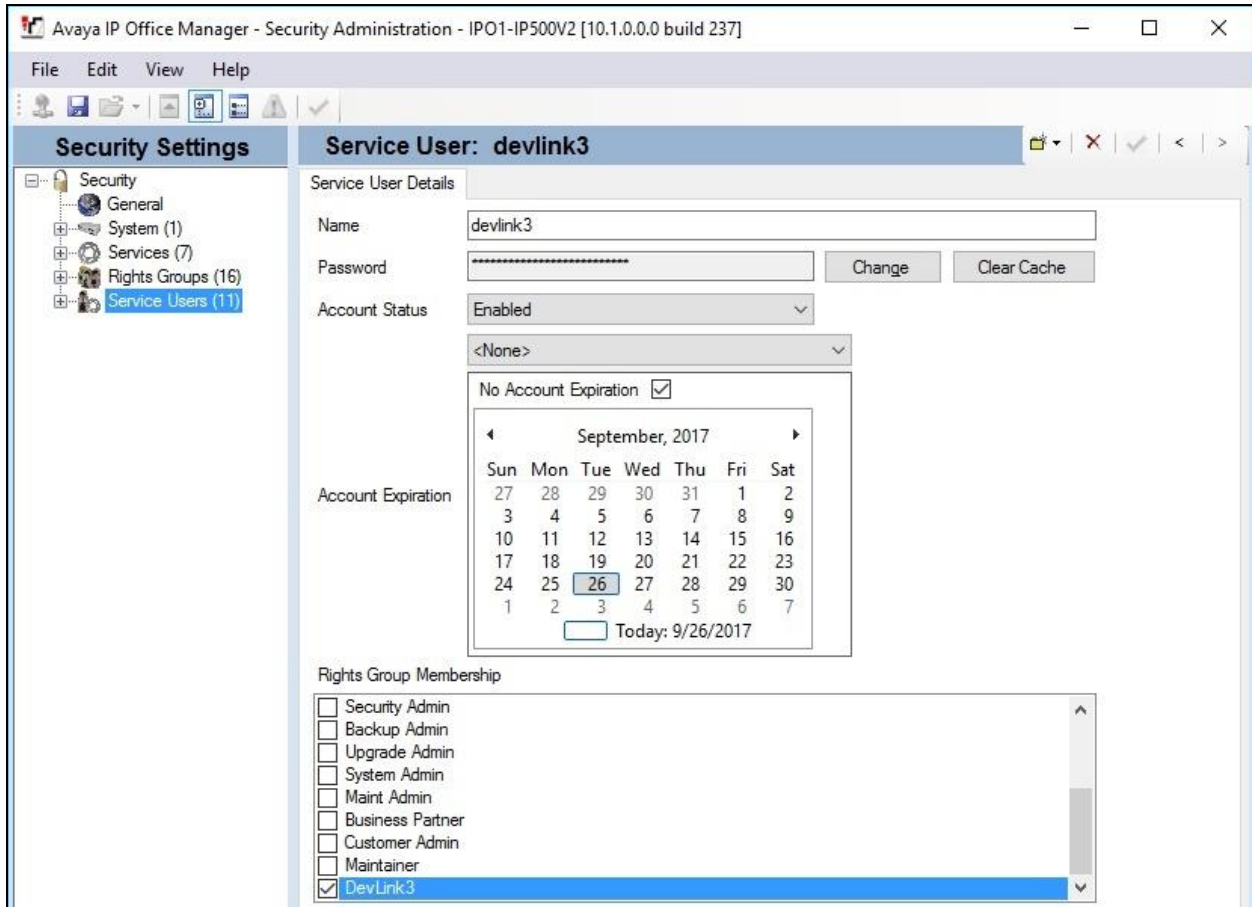
5.5. Administer Service Users

From the **Avaya IP Office Manager – Security Administration** screen shown in **Section 5.4**, select and right-click on **Service Users** in the left pane, followed by **New** from the pop-up list to add a new service user. The **New Service User Details** dialog box is displayed. Enter desired name and password, as shown below.

The **Avaya IP Office Manager – Security Administration** screen is updated, with **Service User: devlink3** shown in the right pane, where **devlink3** is the name of the newly added service user from above. Scroll the **Rights Group Membership** in the bottom right pane as necessary, and check the newly added rights groups from **Section 5.4**, in this case **DevLink3**.
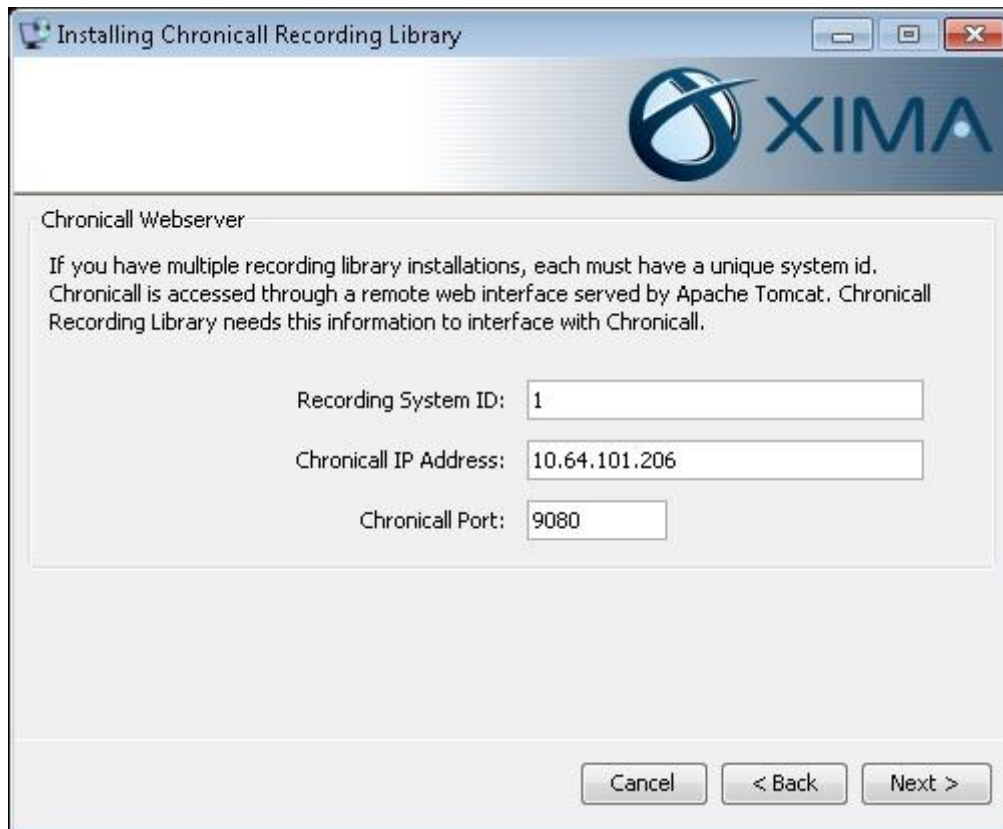
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6. Configure Xima Chronicall Recording Library Service

This section provides the procedures for configuring the Chronicall Recording Library service. The service can be installed on the IP Office Voicemail Pro server or on the Chronicall server. In the compliance testing, the service was installed on the IP Office Voicemail Pro server.

As part of the Chronicall Recording Library service installation, the IP address of the Chronicall server was entered, as shown below. Retain the default values in all other parameters and proceed to complete the installation.

There is no other configuration required on the Chronicall Recording Library service.

7. Configure Xima Chronicall

This section provides the procedures for configuring Chronicall. The procedures include the following areas:

- Launch web interface
- Administer IP Office connection
- Administer agent seats
- Administer realtime stats
- Administer leaderboard
- Administer recording libraries

7.1. Launch Web Interface

Access the Chronicall web interface by using the URL "http://ip-address:9080" in an Internet Explorer browser window, where "ip-address" is the IP address of Chronicall. Log in using the appropriate credentials.
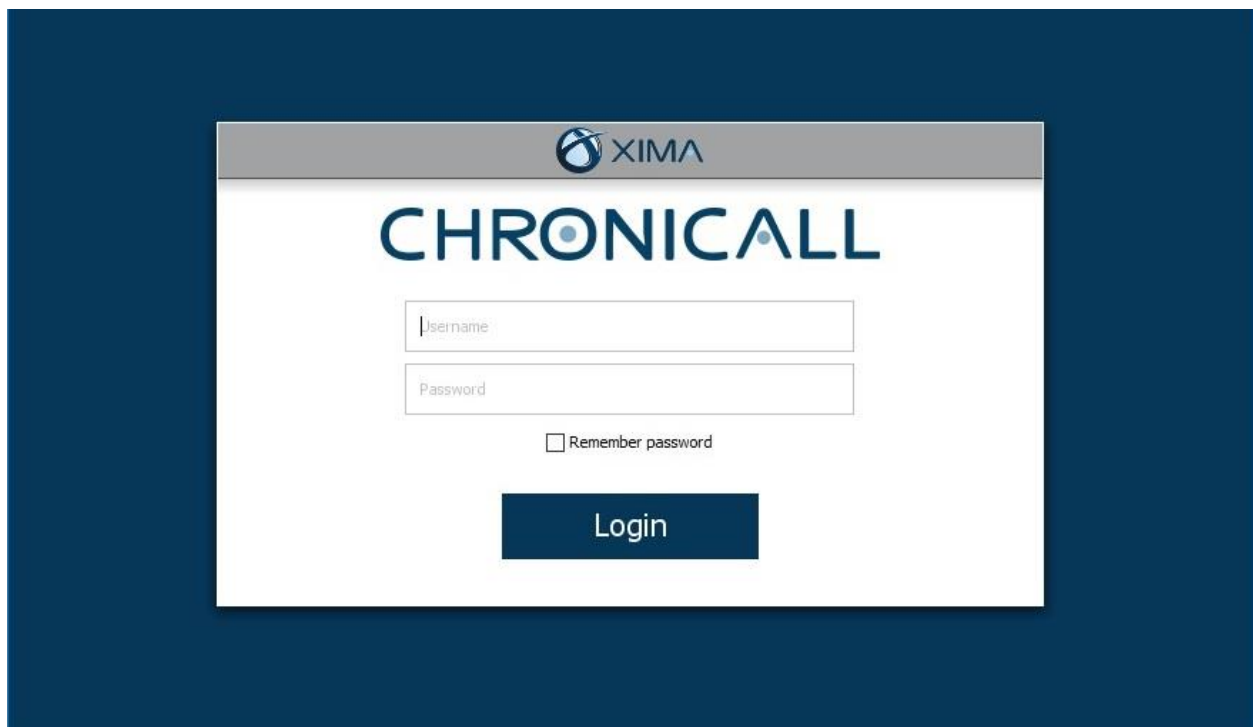
7.2. Administer IP Office Connection

Upon initial access, the **Server Edition (site 1) Configuration** screen below is displayed. Click **Add** in the lower right corner.
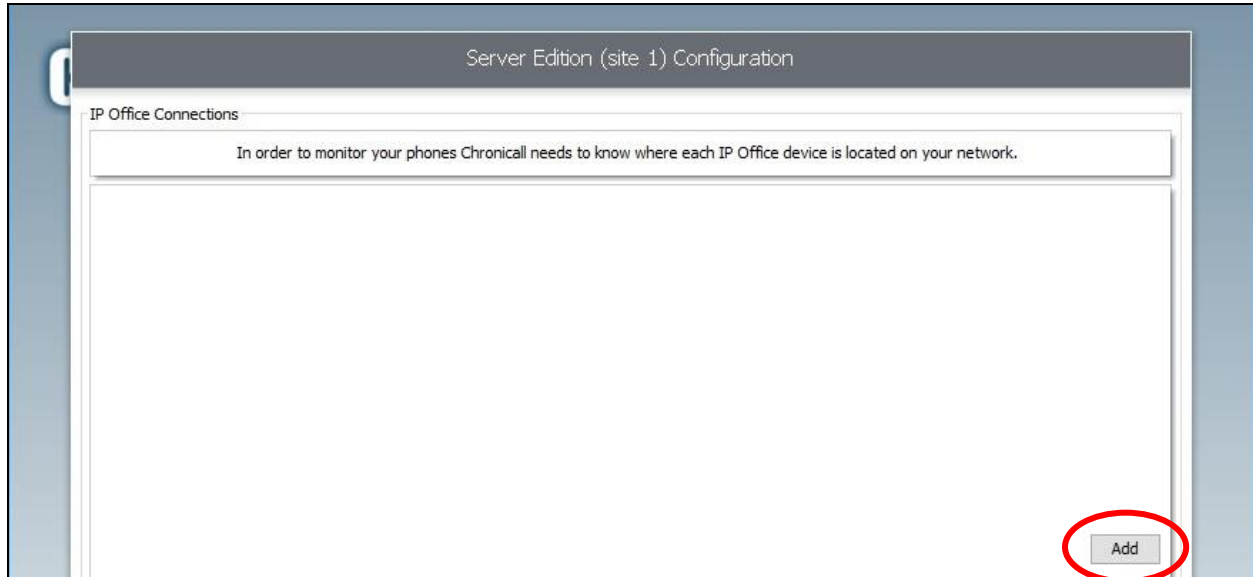
The **IP Office Connection** pop-up screen is displayed next. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **API:** "DevLink3 (IPO R10)"
- **Site Name:** A descriptive site name.
- **IP Address of IP Office:** IP address of IP Office.
- **DevLink3 Use TLS:** "True"
- **DevLink3 Username:** The service user credential from **Section 5.5**.
- **DevLink3 Password:** The service user credential from **Section 5.5**.

7.3. Administer Agent Seats

After successful connection with IP Office via DevLink3 and retrieval of configured users, the **Configuration Requirements** pop-up screen is displayed. Scroll the **View by Agent** pane as necessary, and check all users desired to be monitored.

In the compliance testing, all agent users from **Section 3** were selected, as shown below.

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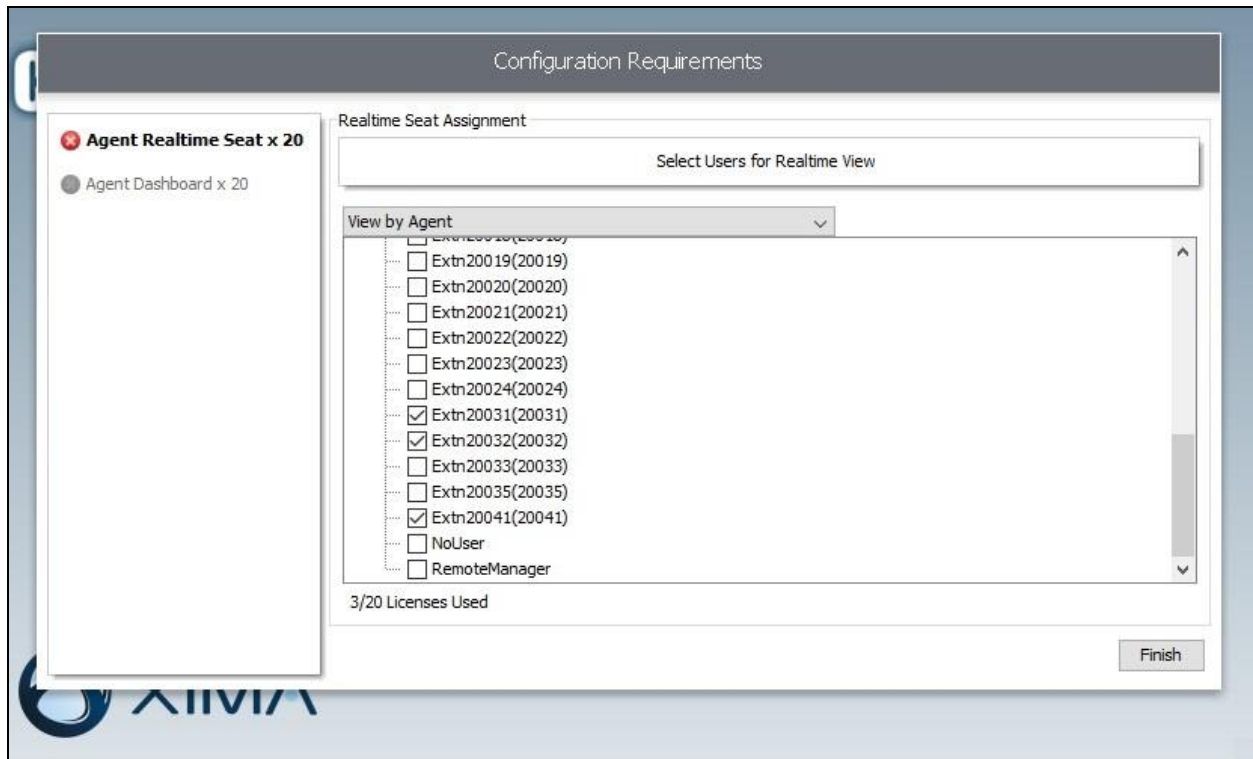
7.4. Administer Realtime Stats

The Chronicall screen below is displayed next. Select **Realtime Displays → Realtime Stats** from the left pane.

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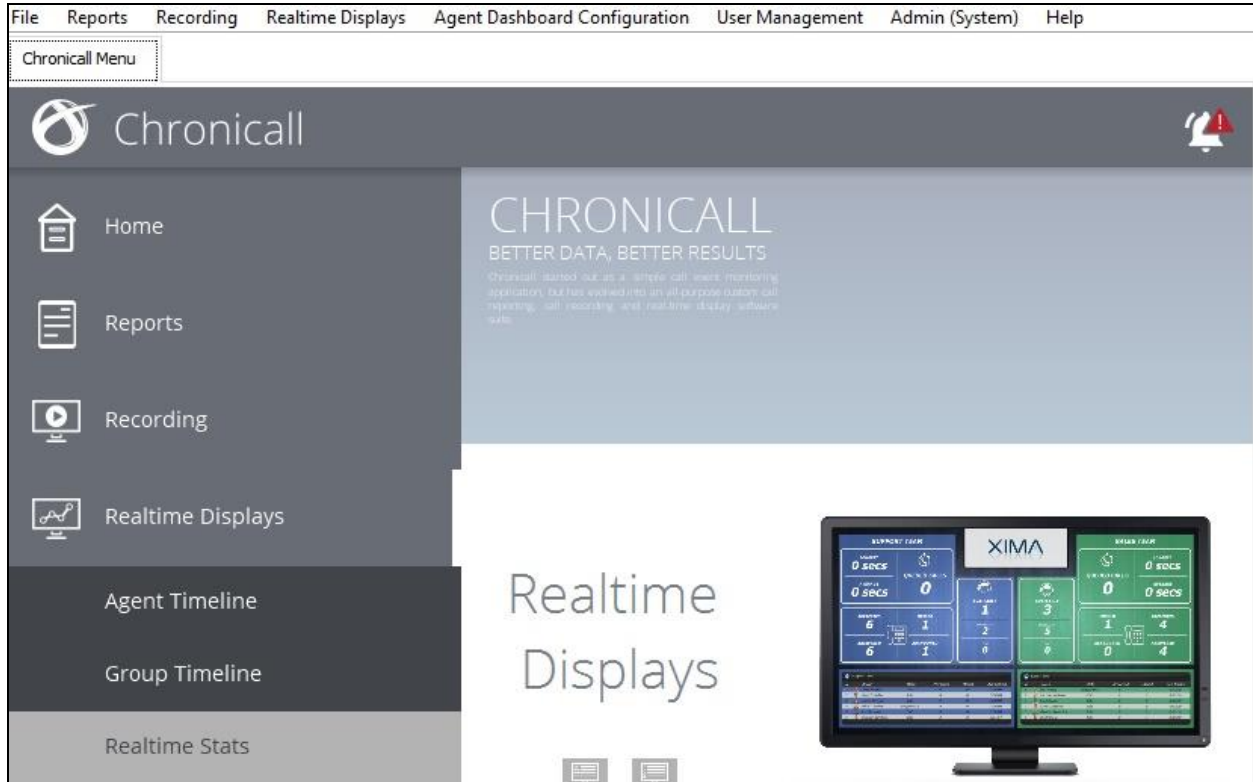
The **Realtime Statistics** tab is created, and the **Import Realtime Template** pop-up screen is displayed, as shown below. Select the desired template, in this case **Blank**, and click **Use Template**.
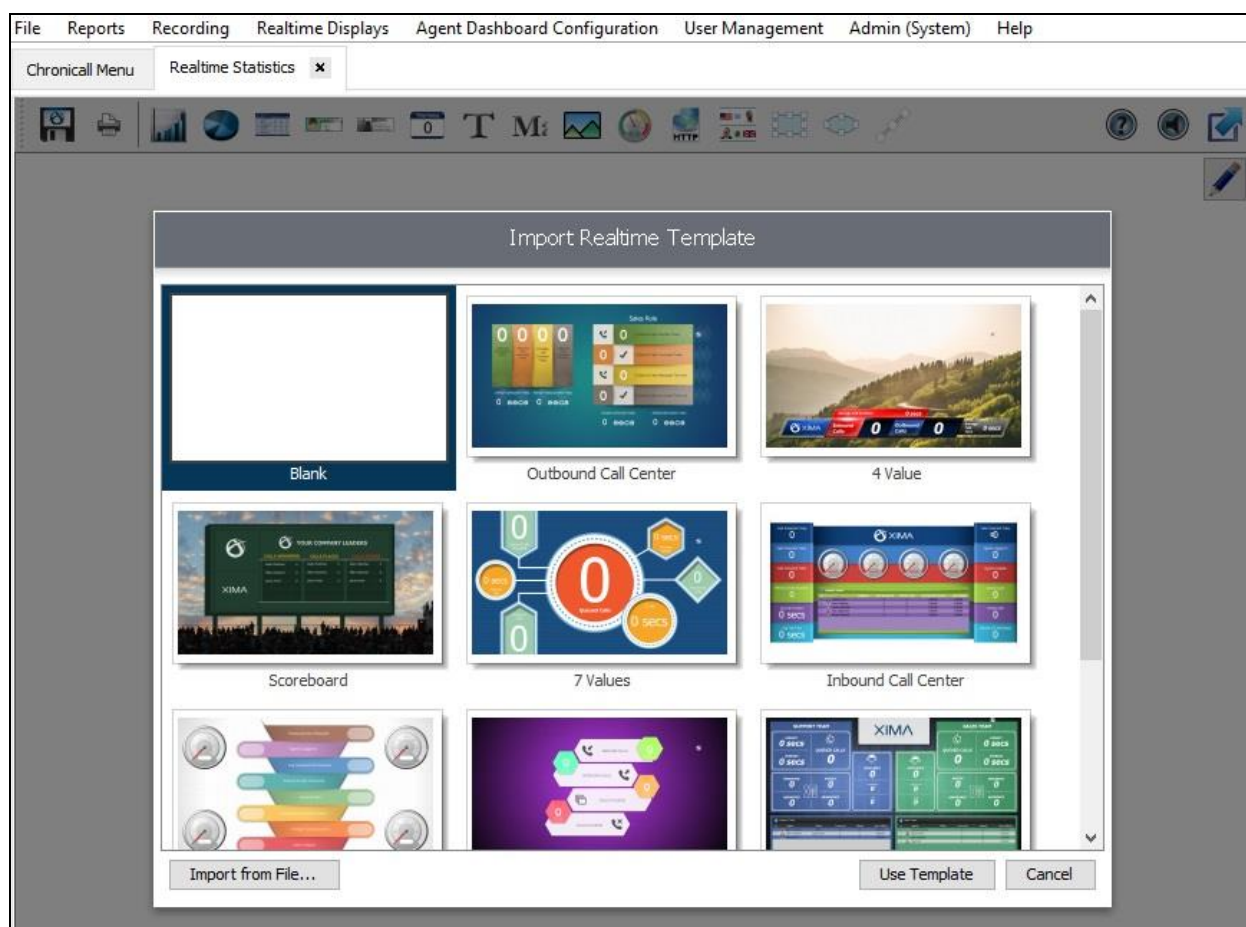
In the updated screen, click on the **Leaderboard Widget** icon shown below, and drag-and-drop the mouse to define the size of a leaderboard in the bottom pane.
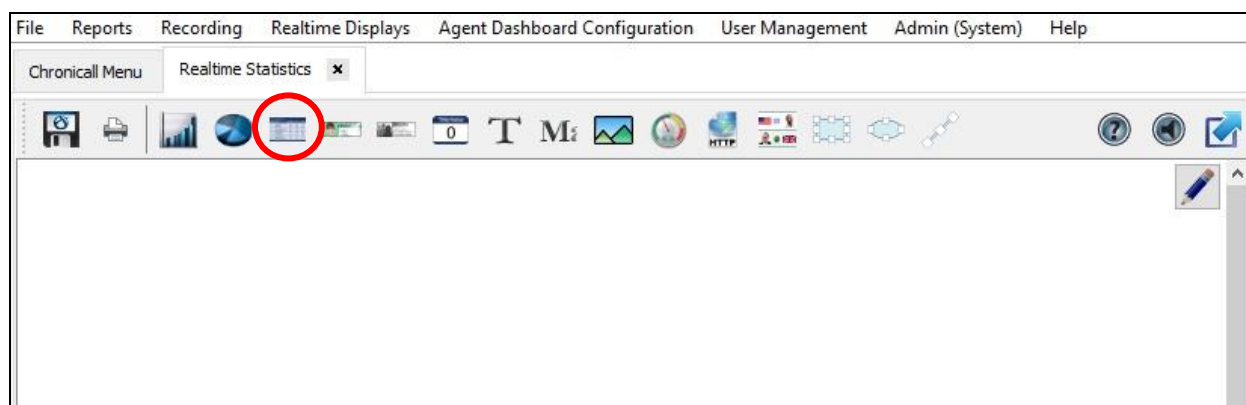
7.5. Administer Leaderboard

The screen is updated with a sample leaderboard, along with the **Click To Edit Leaderboard Properties** screen in the foreground. Scroll down to the bottom, select the **Users** tab, and check all users from **Section 3** in the bottom pane, as shown below.

Click on the icon associated with the **Values** field, followed by **Add** in the subsequent **Realtime Values** screen (not shown).
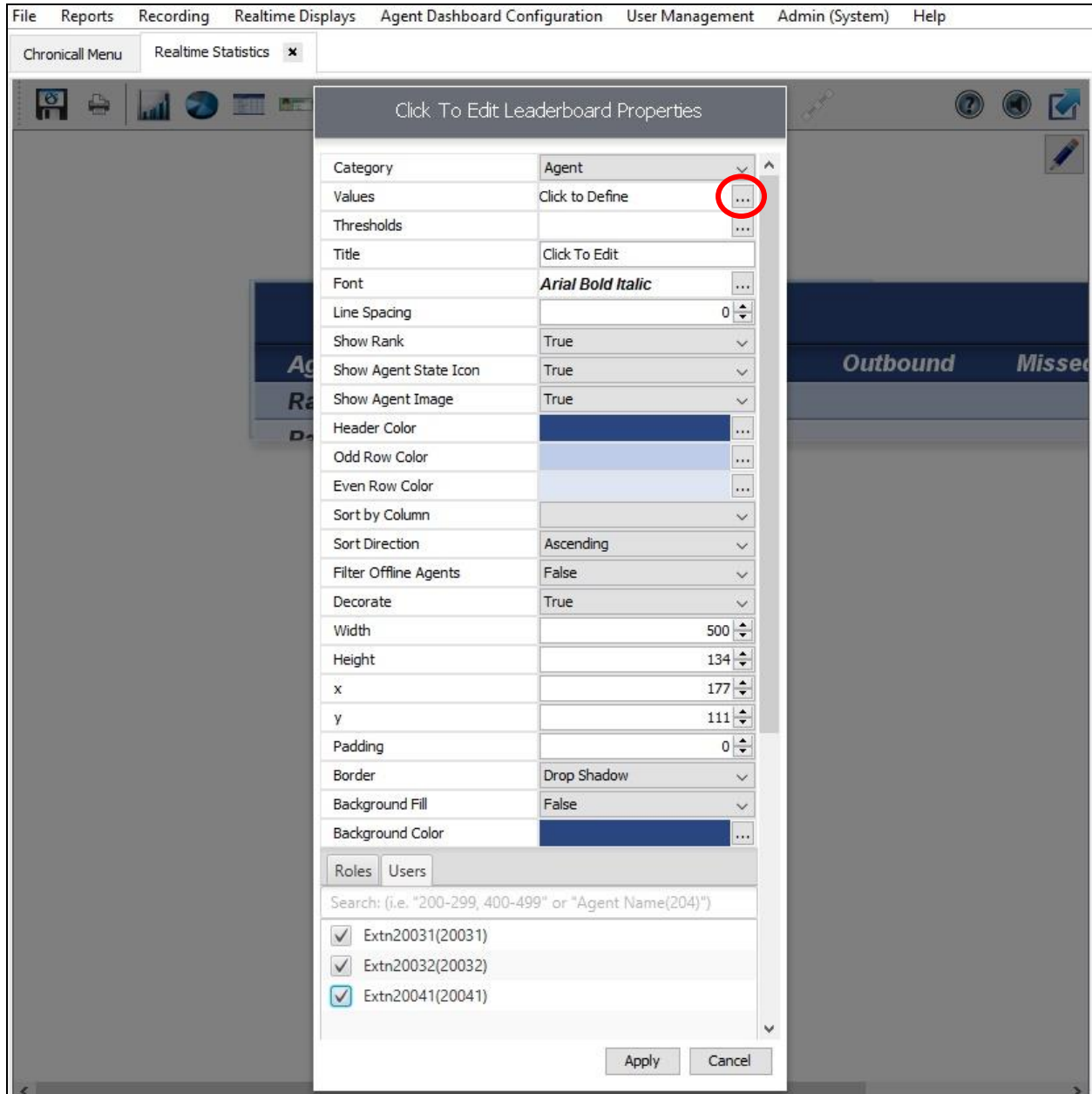
The **Realtime Value** screen is displayed next. Select the **Miscellaneous** tab in the bottom left pane, followed by **Basic Feature** in the top left pane.

In the right pane, click on the icon next to the **Feature** field, and select a desired feature in the pop-up screen (not shown), in this case "Do Not Disturb". Enter a desired **Title**, and select the desired **Calculation**.
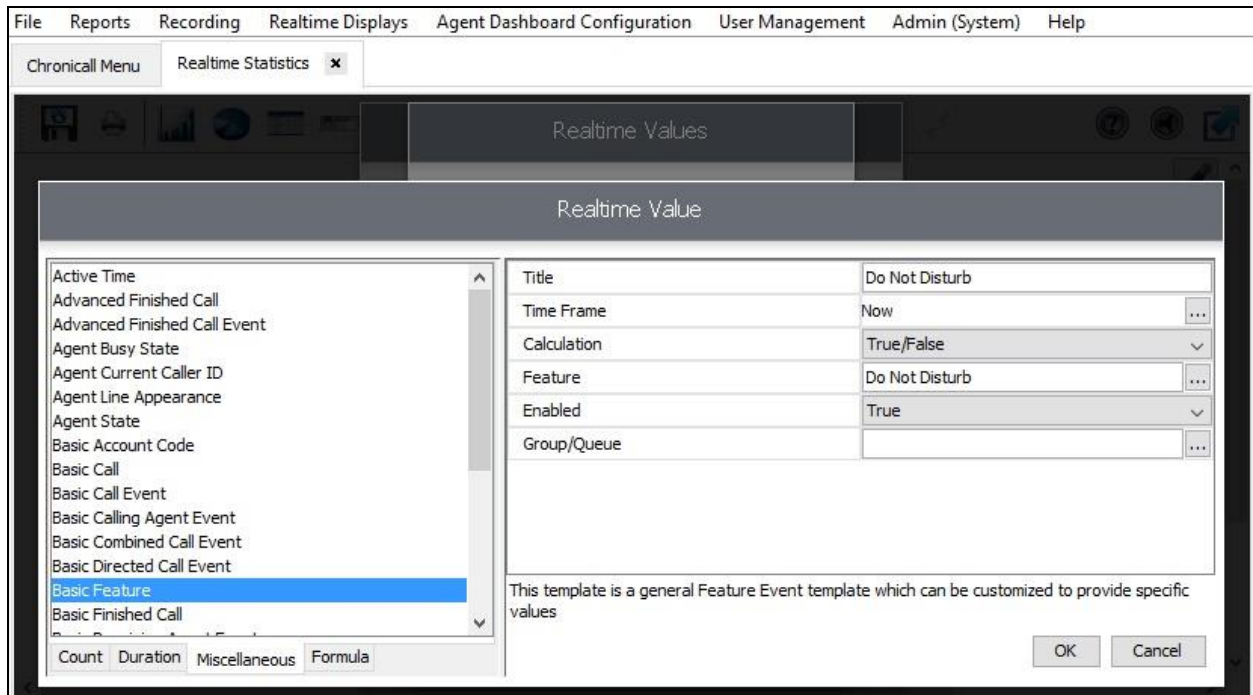
Repeat this section to add all desired features. The **Realtime Values** screen below shows all features that were configured in the compliance testing.
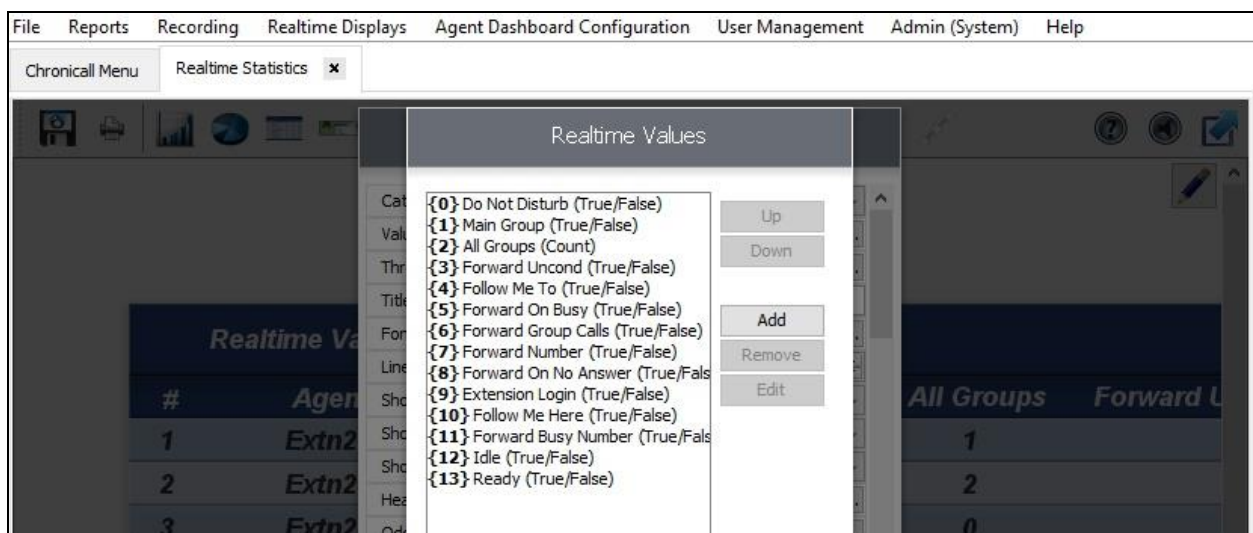
7.6. Administer Recording Libraries

Select **Admin (System)** → **System Settings** from the top menu, to display the **Chronicall Settings** screen. Expand **Recording Libraries**, and click on the icon associated with **Recording Libraries** shown below.
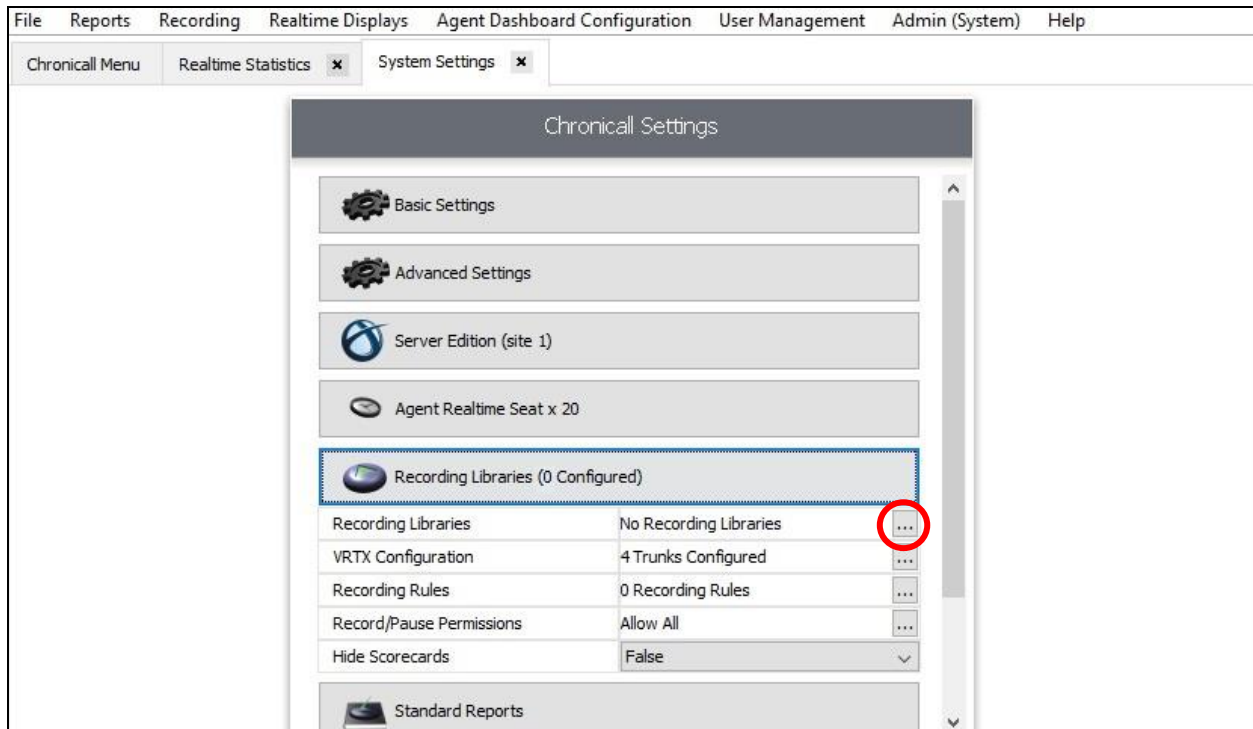
The **Recording Libraries** pop-up screen is displayed next. Select **Add** to create a new entry.

The **New Recording Library Instance** pop-up screen is displayed. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Recording Configuration:**   "VM Pro or VRTX"
- **Recording Library IP Address:** IP address of Voicemail Pro server.
- **Chronicall Server Address:**   IP address of Chronicall server.
- **Monitored Recording Directory:** Path to the Voicemail Pro VRL directory.
- **Clean Monitored Directory:**   Select the desired setting.

In the compliance testing, the path to the Voicemail Pro VRL directory was "C:\Program Files\Avaya\IP Office\Voicemail Pro\VM\VRL". In addition, the **Clean Monitored Directory** parameter was set to "False", so that all original recordings generated by Voicemail Pro were retained for comparison with the compressed recordings presented by Chronicall.

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8. Verification Steps

This section provides tests that can be performed to verify proper configuration of IP Office and Chronicall.
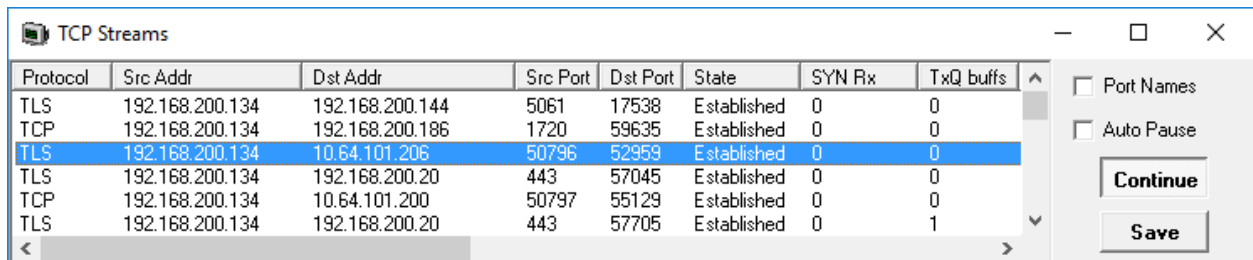
8.1. Verify Avaya IP Office

From a PC running the IP Office Monitor application, select **Start → All Programs → IP Office → Monitor** to launch the application, and connect to the IP Office system.

The **Avaya IP Office SysMonitor** screen is displayed. Select **Status → TCP Stream Data** from the top menu.
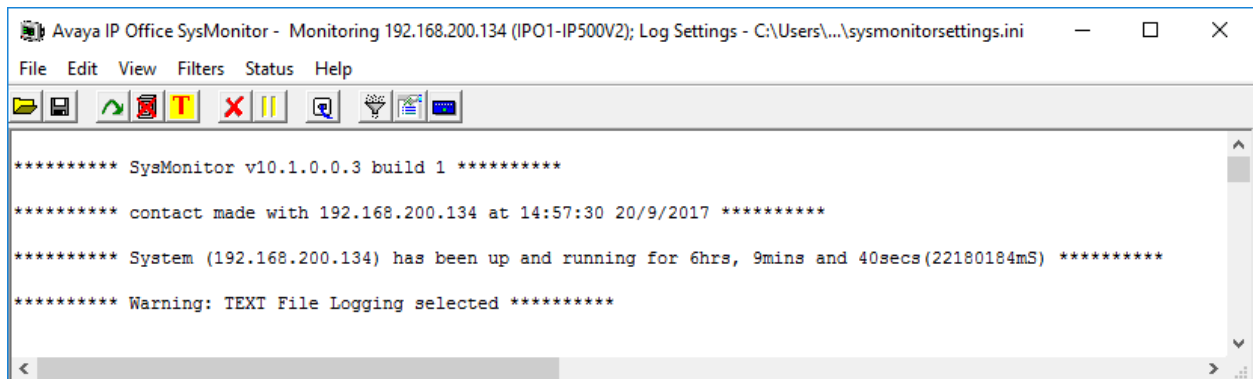
The **TCP Streams** screen is displayed. Verify that there is an entry corresponding to the Chronicall server, with the IP address of the Chronicall server in the **Dst Addr** column. Also verify that the pertinent entry has **TLS** shown as **Protocol** and secured port **50796** shown as **Src Port**, and that the **State** is **Established**.

8.2. Verify Xima Chronicall

This section provides tests that can be performed to verify Chronicall cradle to grave, recording, and real-time reporting.

8.2.1. Verify Cradle to Grave

Place an incoming trunk call from PSTN to a hunt group with an available agent. Answer the call at the agent and perform a few actions such as hold/resume before ending the call.

Follow the procedures in **Section 7.1** to access the Chronicall web interface. Select **Reports →**
Cradle to Grave from the top menu. The **Cradle to Grave** tab is created, and the **Cradle to Grave Criteria** screen is displayed. Select the pertinent date and click **Execute**.

The **Cradle to Grave** tab is updated as shown below. Verify that there is an entry reflecting the last call, in this case **Call 2 - Inbound**.

Expand the entry, and verify that the reported details reflect the call with proper values in the respective columns.

8.2.2. Verify Recording
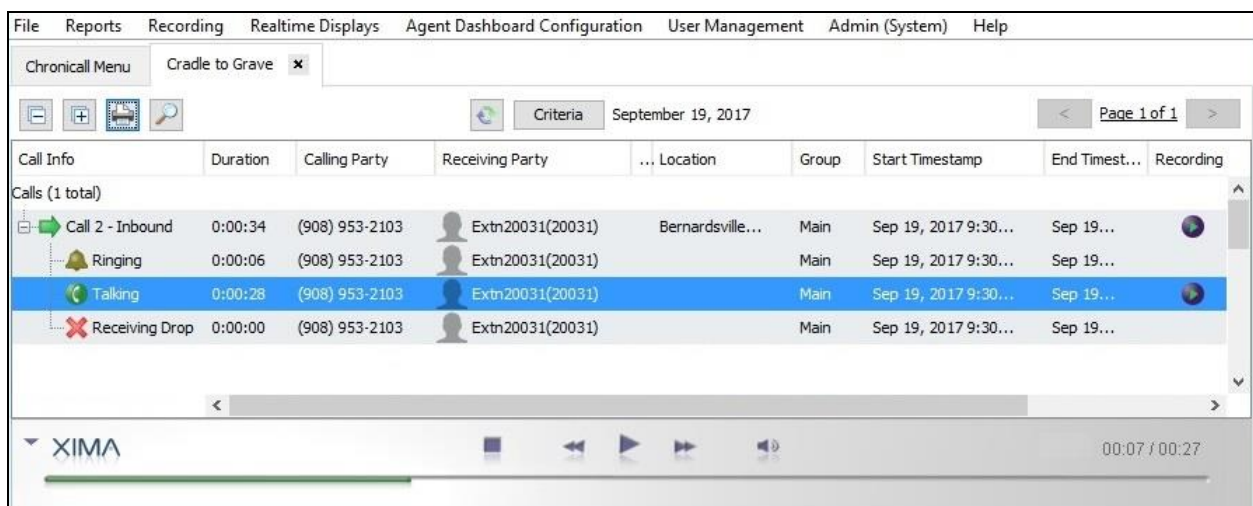
On the Cradle to Grave report, verify that there is an icon in the **Recording** column for the pertinent call from **Section 8.2.1**, as shown below.

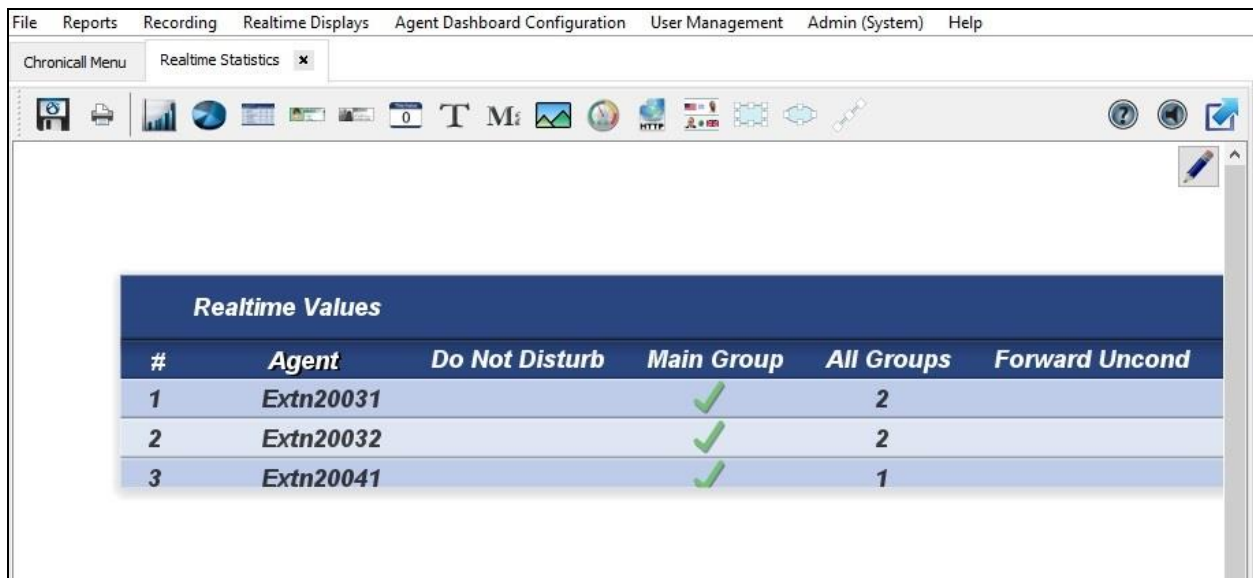Click on the **Recording** icon, and verify that the audio can be played back.
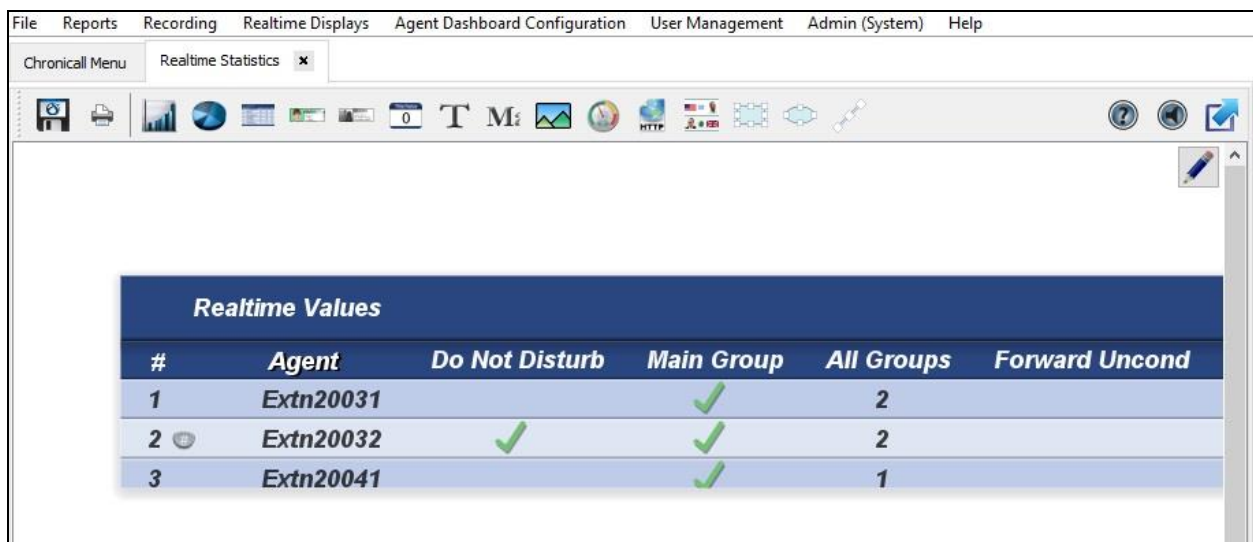
8.2.3. Verify Real-Time

From the Chronicall web interface, select **Realtime Displays → Realtime Stats** from the top menu, to create the **Realtime Statistics** tab.

Verify that the **Realtime Values** screen is displayed, along with proper feature status for all configured agent users from **Section 7.5**.

Change the status of an agent user, such as activation of do-not-disturb. Verify that the corresponding agent user entry in the leaderboard is updated showing proper do-not-disturb status, in this case under the **Do Not Disturb** column.

9. Conclusion

These Application Notes describe the configuration steps required for Xima Chronicall 3.8 to successfully interoperate with Avaya IP Office 10.1 using DevLink3. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

10. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administering Avaya IP Office™ Platform with Manager*, Release 10.1, June 2017, available at http://support.avaya.com.

2. *AVAYA IP OFFICE CONFIGURATION GUIDE*, June 2017, available at https://ximacare.ximasoftware.com/hc/en-us.

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