Integrating Telrex CallRex Call Recording Solution with the Cisco Unified Communications 500 Series for Small Business

This application note provides guidelines and configuration instructions for the Cisco® Unified Communications 500 Series for Small Business and the Telrex CallRex Call Recording software.

Many small businesses require that phone conversations be recorded, for legal reasons and also to monitor the quality of customer service and improve customer satisfaction. Telrex is the market leader in IP call recording software. The following application note explains how to integrate the Telrex CallRex on-premise server with the Cisco Unified Communications 500 Series for Small Business.

The information in this document applies to Cisco Configuration Assistant Version 2.0 and Cisco Unified Communications 500 Series software pack Version 7.0.3.

Scope and Assumptions

The information in this application note is intended for use by Cisco small and medium-sized VARs and Cisco SMB Specialized Partners. We strongly recommend that users have a Cisco Express Foundation Specialization. It is assumed that users are familiar with configuration of voice and security features on the Cisco SBCS and are also familiar with the Cisco IOS® command-line interface. It is also assumed that users are familiar with fundamental data and voice networking.

The scope of this application note is limited to the basic configuration of the CallRex software application and the provisioning of the Cisco Unified Communications 500 Series in the context of the proposed topology. This document does not cover configuration of additional or optional voice and networking features.

The target customer for this integration is a small customer site, where only eight end users or fewer need to be monitored at any given time. However, a very convenient option is offered in which only external calls (public switched telephone network/Session Initiation Protocol [PSTN/SIP]) can be monitored, if customers need to keep track of more than eight phones. For monitoring internal and external calls for larger installations, customers should use Cisco Unified Communications Manager Express and the Cisco Catalyst® switches.

The procedures in this application note assume the following:

- All network components have been upgraded and configured for basic connectivity.
- Each site has been provisioned for voice users and for PSTN termination (if required).

The information in this document applies to Cisco Configuration Assistant Version 2.0 and Cisco Unified Communications 500 Series software package Version 7.0.3.

Solution Overview and Benefits

CallRex Call Recording is an easy and affordable call recording and monitoring solution for IP telephony and unified communications systems, like the Cisco Unified Communications 500 Series platform, part of the Smart Business Communications System (SBCS). The demand for call recording has increased dramatically in recent years. Businesses of all types improve customer service, resolve customer disputes, increase employee productivity, and comply with legal requirements through the CalRex Call Recording software.

CallRex Call Recording software includes the following features:

- Supervisors can monitor, record on-demand, and retrieve call recordings
- Provides multiple recording options: full-time, on-demand, triggered, or selective recording included with every license
- Supervisors can view real-time user status, monitor calls live, and enable recording remotely
- Provides a software-only IP call recording solution
- Users can easily search, retrieve, and play back calls
- Export call recordings for email, link to CRM records, and more
- Archive recordings locally or using network attached storage (NAS) or a storage area network (SAN)
- Multisite support, with remote management capabilities

Some additional benefits of this integration are:

- **Reduced costs:** Software-based voice-over-IP (VoIP) call recording solutions that utilize packet sniffing are typically less expensive than legacy PBX recording solutions. IP call recording does not require station or trunk taps or expensive third-party telephony cards.
- **Simple installation:** IP call recording solutions typically install more quickly and easily than legacy PBX call recording solutions. Packet sniffing solutions require a standard customer-supplied server to run the recording software and a data switch enabled for port mirroring.
- **Easy maintenance:** A software-based IP call recording system is managed and maintained like any other software program.
- **No interference:** IP call recording is completely unobtrusive. Sniffing packets on the data network does not interfere with an IP PBX or any other mission-critical system.
- **Scalable:** VoIP call recording systems are highly scalable. Legacy PBX-based recording systems are limited in scalability by the number of telephony cards that can be installed in the server.

The interaction between the CallRex IP Recording software and SBCS is very simple. On the Cisco side, all that is needed is basic port mirroring configuration on the Cisco Small Business Pro ESW 500 Series Switch ports using the Cisco Configuration Assistant. The sections in this document that deal with configuring port mirroring list all the necessary steps to achieve this integration.

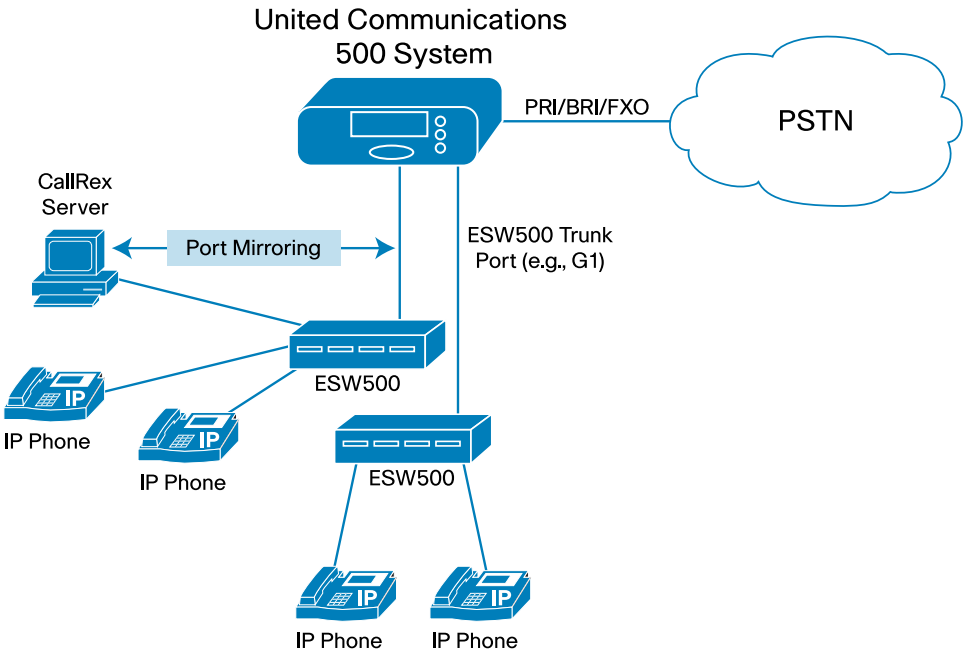
For a detailed description of the CallRex server system requirements and specifications, please visit: http://www.telrex.com/assets/CallRex_server_specifications.pdf.

Finally, Telrex provides a free, 14-day trial of the CallRex product. See the “Support Information” section at the end of this document for sales and support contact details.

Basic Network Topology

Figure 1 illustrates the deployment model supported by this integration, where the monitoring (mirroring) session is configured to use the ESW 500 Series expansion port (trunk port, labeled G1, for example) as the source of traffic. The destination port has to be configured on the same switch (first one upstream). Notice that only external calls could be captured in this basic configuration.

Figure 1. Basic Network Topology



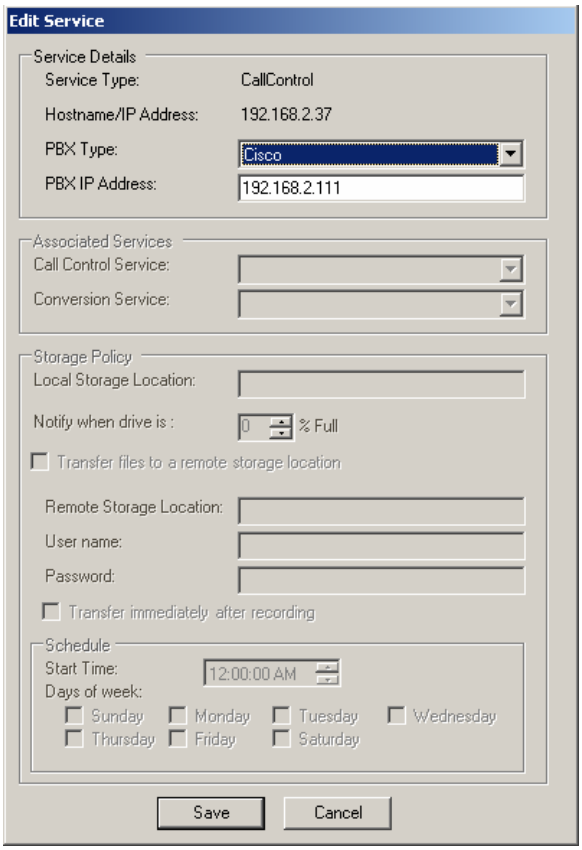
There can be more than one switch, as shown Figure 1, but the port mirroring must be configured on the switch directly connected to the Cisco Unified Communications 500 Series.

Configuring CallRex IP Recording Service

Follow these steps to enable call recording on the CallRex server. (To view the complete user manuals, visit: http://www.telrex.com/manuals/.)

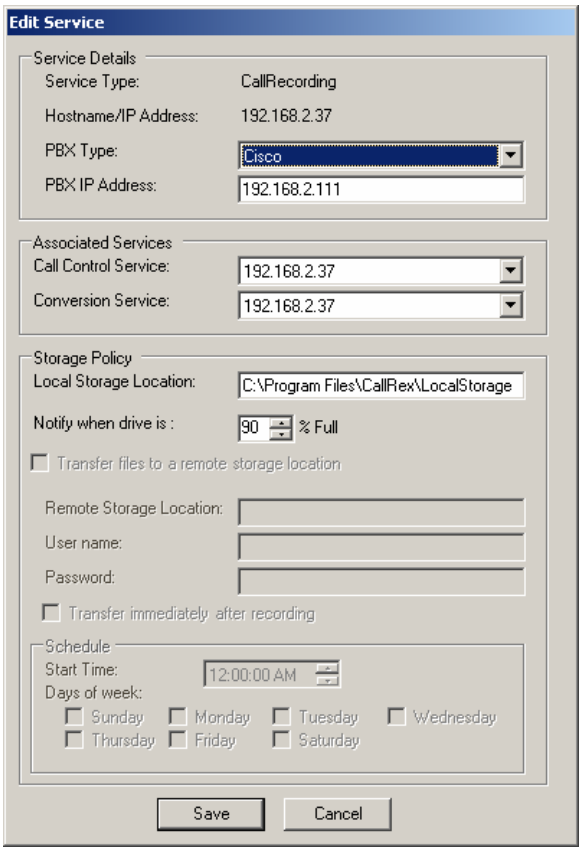
1. Once the software is installed, log in as the administrator in using the CallRex client. The default username is administrator and password is admin.
2. Under the Configure > Services tab, the CallControl and CallRecording Services need to be edited to configure them for the specific PBX Type. The IP-PBX Type needs to be set to Cisco and the PBX IP Address field needs to be configured with the IP address of the Cisco Unified Communications 500 Series or can be left empty (Figure 2).

Figure 2. Configuring the Call Control Service



3. CallRecording Service also needs to be set to point to the associated Call Control and Call Conversion Services via the Drop Down IP list shown in Figure 3:

Figure 3. Configuring the Call Recording Service



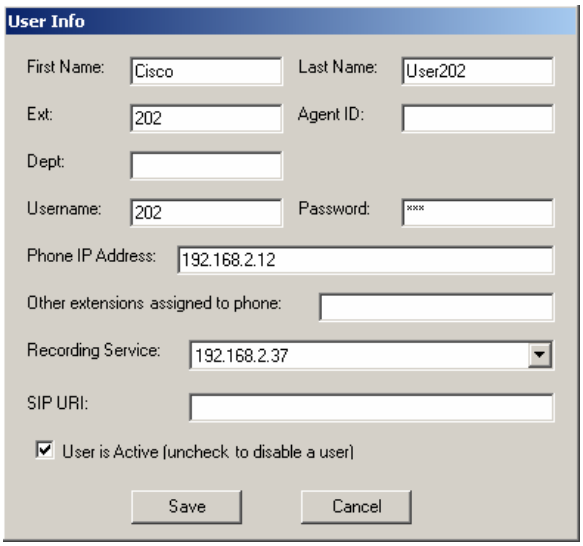
The settings in step 3 allow for a distributed architecture of the CallRex system. If the CallRex server is intended for a single site, the Associated Services fields should point to the IP address of the CallRex server itself, since all the services reside on the same server.

Important Notes

- Since Cisco Unified Communications 500 Series deals with VLANs by default, a special registry setting needs to be set under HKEY_LOCAL_MACHINE\SOFTWARE\Telrex\CallRexPro with DWORD set to VLanEnabled and value set to 1. This enables CallRex to sniff skinny packets on VLANs.
- The above three steps require that all Windows CallRex services be restarted (Start > Administrative Tools > Services)

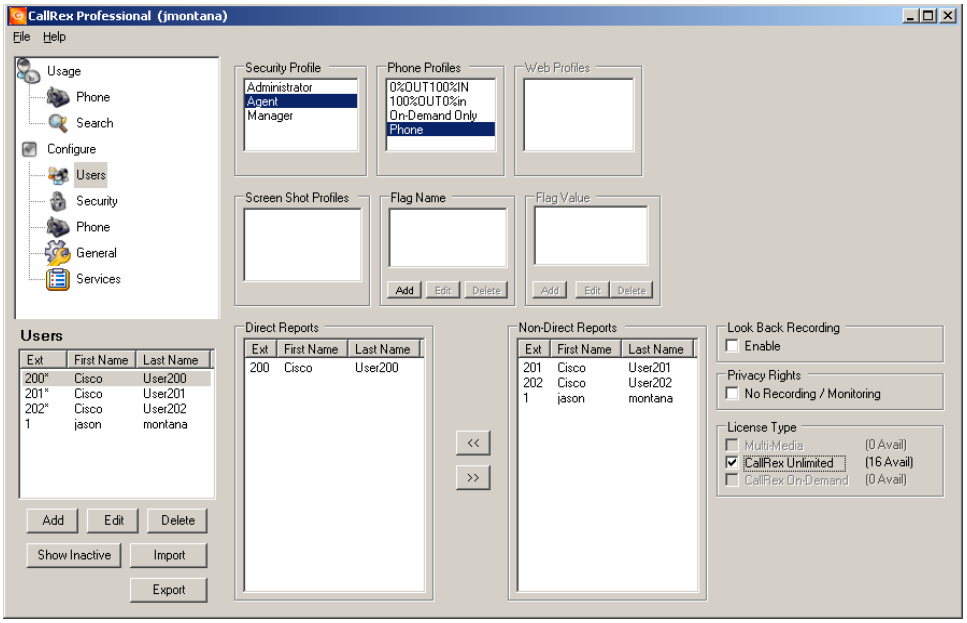
4. Click Add in the Configure > Users tab to add/configure each user as shown in Figure 4 (you can enter extensions 201, 202, and 203, for example). You can also specify the IP address of the Cisco IP phone or Cisco soft phone (Cisco IP Communicator). Dynamic Host Configuration Protocol (DHCP) is supported; therefore, if the phones use DHCP, it is recommended you do not enter IP addresses when setting up users. Enter the IP address if you have a static assignment for certain users (softphone users, for example). If the IP address changes for a user's phone, the new IP address will automatically be updated within the associated user's profile in CallRex when the phone reboots.

Figure 4. Configuring Users



5. In the Configure > Users tab, select each user in the Users list and under License Type, assign a CallRex Unlimited license, as shown in Figure 5.

Figure 5. Assigning Users a License Type



This triggers the CallRex user information to record automatically when a call is placed on the associated phone.

The user can be associated with a Phone Profile (for recording of all calls) or an On-Demand Profile, for manual recording activation. To activate manual recording, the user uses the ** option (a dual-tone multifrequency [DTMF] option) to start the session while on a call, and the ## option to terminate the recording session.

At this point, proceed to the next section that shows how to configure port mirroring. For a detailed guide to setting up custom profiles for triggered recording, refer to the CallRex User Guide at: http://www.telrex.com/manuals/.

Configuring Port Mirroring on the Cisco ESW 500 Series Switch

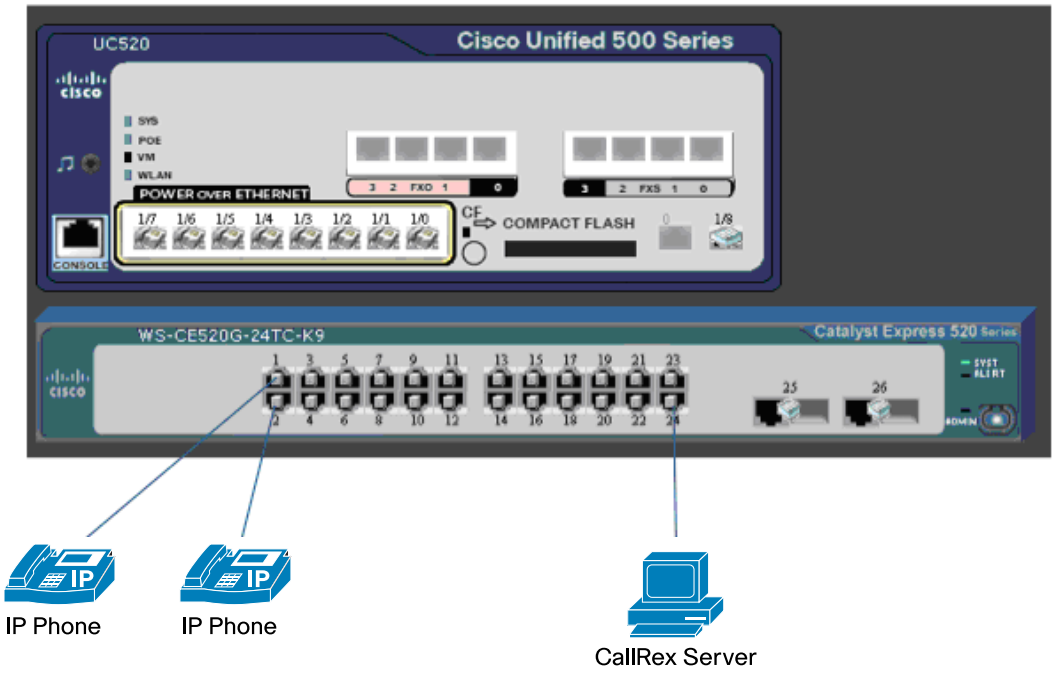
If a Cisco Small Business Pro ESW 500 Series Switch is installed in the network, port mirroring can be configured to monitor calls of IP phones attached to the switch. Notice that the CallRex server needs also to be attached to the same physical ESW 500 Series for port mirroring to work, as this feature is not supported across different hardware devices.

Cisco Configuration Assistant can be used to configure port mirroring, but only eight source ports are supported. Source VLAN for port mirroring is not supported on the ESW 500 Series switch.

IMPORTANT: You can define the expansion trunk port on the ESW 500 Series switch as the single source of traffic for the monitoring session. If you do this, you will not run into any scalability limitations, but only external (PSTN) calls will be monitored. Internal calls (IP phone to IP phone) will not be captured.

In the following example, three IP phones are connected to ports 1, 2, and 3 respectively. The CallRex server is connected to port 24 of the Cisco ESW 520 48-Port 10/100 PoE Switch (ESW-520-24P in the figure). The mirroring source is port G1, which is directly connected to the Cisco Unified Communications 500 Series (Figure 6).

Figure 6. Example of Configuring Port Mirroring



To configure port mirroring, follow these steps:

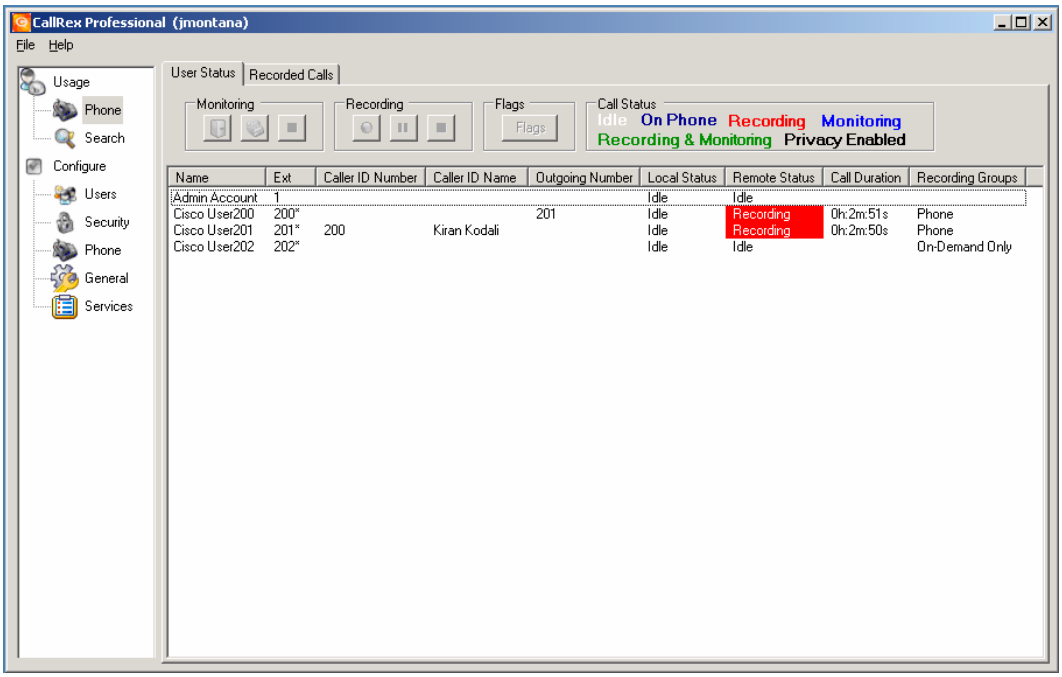
1. Open Cisco Configuration Assistant and navigate to Configure > Switching >Smartports.
2. Click on port 24 and change its role to “Other”. Click OK and apply your changes.
3. Navigate to Configure >Ports > Port Mirroring.
4. Select port 24 as the destination and port G1 as the sources. Ensure that Transmit and Receive is selected for this port. Click OK and Apply.

The configuration is complete and at this point the CallRex server should start capturing calls for the monitored IP phones, including Cisco IP Communicator clients. You can monitor calls for the specified users using the Usage menu available on the CallRex client.

Recording and Playback of Phone Calls

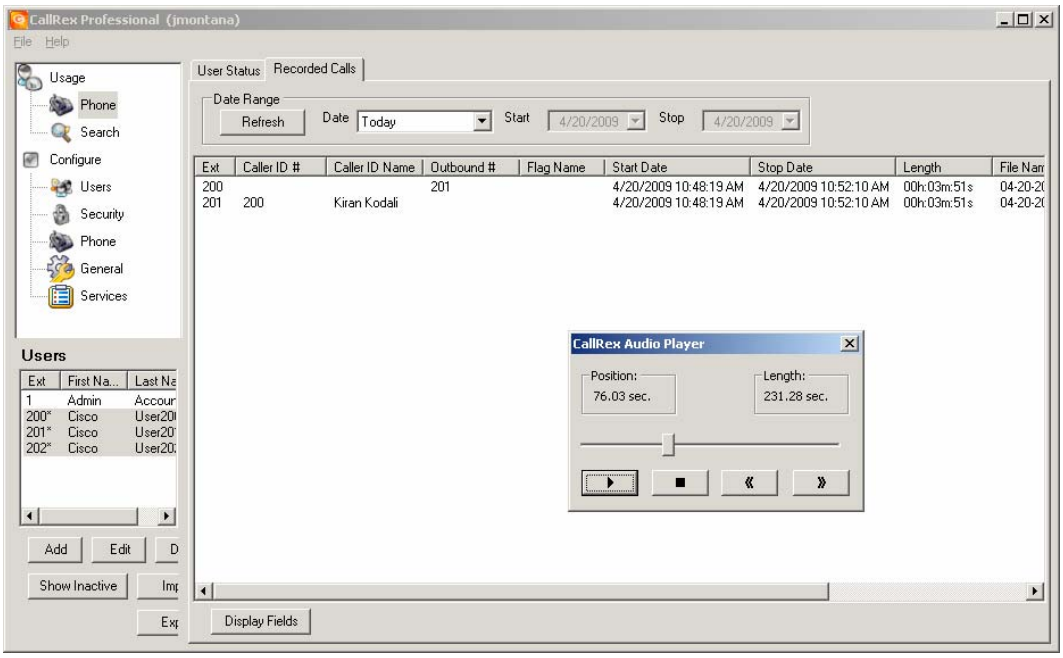
The CallRex client can be used to monitor real-time recording of phone calls. Sessions can be identified by caller and called number (Figure 7).

Figure 7. Recording and Monitoring of Phone Calls



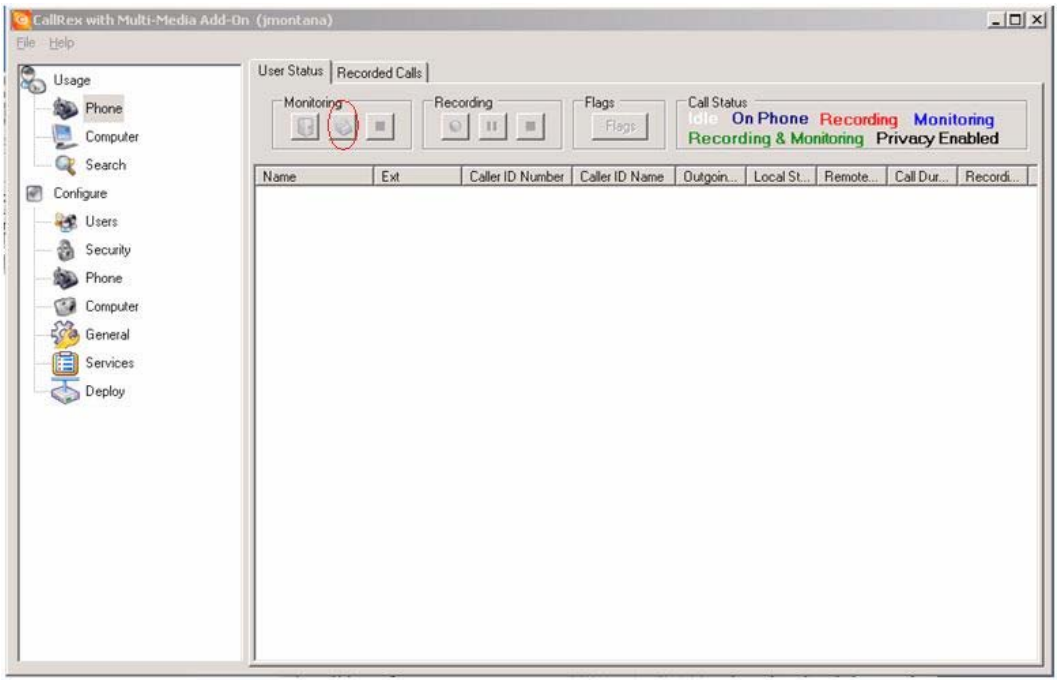
Recorded calls can also be played back form the Usage > Recorded Calls window (Figure 8).

Figure 8. Playing Back Recorded Calls



A manager can monitor agents' calls silently in real time, regardless of whether the call is being recorded or not. In order to do this, when a user is in Recording or On Phone status, click the middle button in the Monitoring section in User Status page in Usage > Phone (Figure 9).

Figure 9. Monitoring Calls



Make sure that you have a free audio device (speaker or headset) that you can use to listen in. Otherwise, you will get an error.

Caveats and Limitations

The following is a list of known limitations and special considerations:

- A maximum of eight (8) simultaneous monitored sources is supported on the ESW 500 Series switch. If the mirroring source is the expansion trunk port of the ESW 500, there is no limit in the amount of phones that can be monitored. However, only external calls (PSTN) can be recorded in this case.
- The users defined in the CallRex server are independent from the IP phone users in Cisco Configuration Assistant.
- Cisco Catalyst Express 520 Series Switches are not supported by the IP Call Recording CallRex server.
- On the Cisco ESW 500 Series switch, port-mirroring sessions must be defined using individual source ports, and not for the entire voice VLAN.
- On the ESW 500 Series, one single destination for each mirroring session is supported.
- Both source and destination ports need to reside on the same physical switch. Port SPAN across multiple switches (RSPAN) is not supported.
- The CallRex server network interface cards (NICs) must support tagged (VLAN) frames for the server's capture interface.
- Secure Real Time Protocol (SRTP) must be disabled for the CallRex Call Recording software to operate.
- CallRex only supports G.711 A-Law, G.711 Mu-Law and G.729A audio codecs.
- For Cisco Extension Mobility users, two CallRex licenses are needed
- Cisco SPA525G 5-line IP Phone with Color Display is supported in wired mode only.
- You should not set up port mirroring on both PBX or trunk ports and phones ports. This can cause significant duplication of network activity.

- There is no setting within the CallRex client to record internal versus external calls. The CallRex software will record based on the packets it receives via port mirroring.
- With regard to Cisco Extension Mobility: If you would like to record both the extension mobility users and the base phone (a phone in a logged-out state), you must create two user profiles (with a license assigned to each profile) in CallRex. If you would like to record only the Cisco Extension Mobility users, only one profile is needed (with one license). The base extension for the phone must be assigned to the first line button on the phone.
- The ESW 500 Series switch supports bidirectional port mirroring. For this reason, a single NIC can be used for messaging as well as sniffing on the CallRex server, although it is not ideal. Dual-NIC deployments are still recommended in order to keep the media channel (capture) and the signaling channel (for server administration) separate and for remote access by the CallRex client. Notice that the destination SPAN port will have limited connectivity (as the SPAN port is a transmit-only port).
- CIPC users can be connected to the switch port on the back of an IP phone (if available) in which case the monitor session can track both the hard phone and the soft phone extensions.

Support Information

For more information, visit the SBCS Small Business Support Community at: http://www.myciscocommunity.com/community/smallbizsupport.

For Cisco technical support information, please contact the Planning, Design and Implementation help desk at http://www.cisco.com/go/pdihelpdesk (Cisco.com login required) or call 800 GO CISCO and select PDI.

For Telrex technical support, please contact +1 425 827-6156 6 a.m. to 5 p.m. Monday through Friday, Pacific Time. Free customer support is available during your 14-day trial.

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