

CallRex 4.x Installation Guide

This document describes how to install CallRex 4.x. It covers the following:

- *CallRex 4.x Components.*
- *Server Prerequisites.*
- *Performing the Installation.*
- *Changing the Account Used by CallRex Services.*
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When CallRex is installed its services (CallRex Call Recording Service and CallRex Data Service) are configured to run using the Local System account, which has full permissions. However, for better security the services should run from their own service account, which has only the permissions they require. Your organization's security requirements will dictate which account the CallRex services should be run as.

You must configure a custom service account before you enable recording encryption. To be PCI-compliant, Callrex services must also be run as an account with a password composed of two parts, each held by a different person, with neither knowing the other's half. When an account is created, one person enters their half of the password, and then the other person enters theirs.

To Change the Service Account:

1. In Control Panel, select **Administrative Tools** and then double-click **Services**.
2. In the **Services** window, double-click a Callrex service to display its properties.
3. On the **Log On** tab, select **This account**, enter the name of the account the service should run as, its password, confirm the password, and then click **OK**.

CallRex Data Service Requirements

The account that runs the Callrex Data Service needs to have a URL reservation for the following URL namespaces:

- `http://+:8002/`
- `http://+:8003/`
- `http://+:8004/`
- `http://+:8005/`
- `http://+:8007/`

You can grant these using the `netsh` command. For example:

```
netsh http add urlacl url=http://+:8002/ user=DOMAIN\UserName
```

The account also needs to be added as a user at the database hosting the telrex35 database. This user must:

- be enabled for Windows Authentication.
- have server roles **public** and **sysadm**.

- have a mapping to the database Telrex35.
- be granted permission to connect to the database engine and enabled for login.
- be granted full control on the private local MSMQ named **callrexdurabledataservicequeue**.

CallRex Call Recording Service Requirements

The account that runs the CallRex Call Recording Service needs:

- a URL reservation for the URL namespace `http://+:8006/`.
- full control over:
 - any directories where it accumulates recordings; for example `C:\ProgramData\CallRex\LocalStorage`.
 - the directory where it's installed; for example `C:\Program Files (x86)\CallRex\CallRecording`.
 - the Telrex registry key and its subkeys.
On a 32 bit system this key is:
`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Telrex`
on a 64 bit system the key is:
`HKEY_LOCAL_MACHINE\SOFTWARE\Telrex`.
- Troubleshooting.

CallRex 4.x Components

A CallRex 4.x installation consists of these components:

- The **CallRex Data Service** - a central service that manages SQL database access and client connections.
- A **Microsoft SQL Server 2005 or 2008 database** is typically installed on the same server as the CallRex Data Service.
- The **CallRex Client software** is installed into an Internet Information Services (IIS) website on the same server as the CallRex Data Service. When a user connects to this website via a web browser, the CallRex Client software gets downloaded to their computer.

The CallRex Client software can run on any current version of Windows or Mac OS X on which the Microsoft Silverlight 4.0 runtime environment has been installed. If Silverlight is not already installed on your machine, you are prompted to install it the first time you run the CallRex Client application. The following web browsers are supported:

- Microsoft Internet Explorer 6, 7, or 8.
- FireFox 2 or 3.
- Apple Safari 3 or 4.
- Google Chrome.
- The **CallRex Call Recording Service** can be installed on the same server as the CallRex Data Service, and is typically also installed at remote sites that also require call recording.

Server Prerequisites

Before installing the CallRex 4.x services you must install the following components on **all** servers (including the one that will host the CallRex Data Service and any hosting the CallRex Call Recording Service):

- Windows Imaging Component (WIC). This is required by the .NET 4.0 framework.
Download it from
<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=8e011506-6307-445b-b950-215def45ddd8&displaylang=en>.
- The full version of the .NET 4.0 framework (not the client-only version).
Download from
<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=9cfb2d51-5ff4-4491-b0e5-b386f32c0992&displaylang=en>.
- Microsoft Message Queuing (MSMQ).

To install MSMQ under Windows XP or 2003:

1. In Control Panel, open **Add or Remove Programs**.
2. Click **Add/Remove Windows Components**.
3. Select **Application Server**, and then click **Details**.
4. Select the **Message Queuing** check box.

To install MSMQ under newer versions of Windows:

1. In Control Panel, open **Programs**.
2. Click **Turn Windows features on or off**.
3. Expand the box for **Microsoft Message Queue (MSMQ) Server**.
4. Select the **Microsoft Message Queue (MSMQ) Server Core** check box.

Server Running CallRex Data Service

On the server hosting the CallRex Data Service you must also install the Internet Information Services (IIS). This is required to host the CallRex Client application's website.

To install IIS under Windows XP or 2003:

4. In Control Panel, open **Add or Remove Programs**.
5. Click **Add/Remove Windows Components**.
6. Select **Application Server**, and then click **Details**.
7. Select the **Internet Information Services (IIS)** check box.

To install IIS under newer versions of Windows:

1. From the **Server Manager**, select **Roles** in the left hand navigation bar
2. Click **Add Roles**
3. Follow the steps in the Setup wizard by clicking **Next**.
4. In the **Select Server Roles** dialog box, select **Web Server (IIS)** from the **Roles** listed, leave the default options unchanged, and click **Next**.
5. In the **Role Services** dialog box, select **IIS 6 Management Compatibility**.
6. Click **Next** until you complete the installation.

Server Running CallRex Call Recording Service

Before installing on the server hosting the CallRex Call Recording Service you must ensure that port mirroring has been configured properly on the network switch and that the required network packets are being delivered to the CallRex Server. You can check this by installing and running Wireshark (<http://www.wireshark.org>) and confirming the presence of RTP packets.

You must also ensure that any required Computer Telephony Interface (CTI) components have been installed and configured before installing the CallRex Call Recording Service. CTI components are PBX-specific:

- For **ShoreTel** integrations, ShoreTel TAPI is required.
You can confirm that TAPI is working by running Microsoft Dialer (available in all Windows installations) and confirming that the extensions to be recorded show up in the device list.
- For **Mitel** integrations, the Mitel MiTAI interface is required.
You can confirm that MiTAI is working by running the MiTAI Extension Test Tool.
- For all other PBX integrations, CTI events are captured using the port-mirror on the network switch.

Performing the Installation

To install CallRex, you must be logged in as a system administrator. You must first install the [Primary Server](#) – which runs the CallRex Data Service and CallRex Client – followed by the [Call Recording Servers](#).

Installing the Primary Server

To install the Primary Server:

1. Create the SQL database.
Either:
 - Install a new instance of Microsoft SQL Server 2008 Express edition, by running the setup program in the `InstallAndCreateDatabaseSetup` directory.
 - Install the database into an existing instance of Microsoft SQL Server 2005 or 2008, by running the setup program in the `CreateDatabaseSetup` directory.
2. Install the CallRex Data Service.
When prompted for the SQL Data Source name, enter the name of the SQL instance into which you installed the database. If you ran the `InstallAndCreateDatabaseSetup` program to generate the database, the instance name is `.\SQLEXPRESS`.
3. Run the CallRex Client setup package, accepting the default values.
4. Create the MIME types required for Silverlight applications to run properly:
 - a. In Control Panel, open **Administrative Tools**, and run the **Internet Information Services (IIS) Manager** utility.
 - b. In the tree, under the local computer, expand **Web Sites**, then right-click **Default Web Site** and select **Properties**.
 - c. In the **Properties** dialog box, select the **HTTP Headers** tab and click **MIME Types**.
 - d. Create the following MIME Types:

Extension	MIME Types
.xaml	application/xaml+xml
.xap	application/octet-stream

5. Reboot the server.
6. Open a web browser and navigate to <http://localhost/CallRex>.
If prompted, install Microsoft Silverlight.

Installing Call Recording Servers

You must install the CallRex 4.x Call Recording Service on each Call Recording Server (Data Collector), including the one running the CallRex Data Service.

On each Call Recording Server:

1. Install the CallRex Call Recording Service.
You need to provide the following information:
 - Data service address.
The hostname or IP address of the computer running the CallRex Data Service.
 - Packet capture adapter.
The friendly name given to the networking adapter that receives packets from the network. For example, "Local Area Connection".
 - Messaging adapter.
The friendly name given to the networking adapter that communicates with the CallRex Data Service. For example, "Local Area Connection 2"
2. Reboot the server.

On the server running the CallRex Data Service you must also enable anonymous login access to the MSMQ queue.

1. Click **Start**.
2. Right-click **My Computer** and select **Manage**.
3. In the Computer Management dialog box:
 - Under *Windows 2003*, click **Services and Applications > Message Queuing > Private Queues**.
 - Under *Windows 2008*, click **Features > Message Queuing > Private Queues**.
4. Right-click **callrexdurabledataservicequeue** and select **Properties**.
5. Under the **Security** tab, set **Add ANONYMOUS LOGON**.
6. Set **Send Message** to **Allow**.
7. Click **OK**.

Changing the Account Used by CallRex Services

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To Change the Service Account:

8. In Control Panel, select **Administrative Tools** and then double-click **Services**.
9. In the **Services** window, double-click a CallRex service to display its properties.
10. On the **Log On** tab, select **This account**, enter the name of the account the service should run as, its password, confirm the password, and then click **OK**.

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 - the directory where it's installed; for example `C:\Program Files (x86)\CallRex\CallRecording`.

- the Telrex registry key and its subkeys.
On a 32 bit system this key is:
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Telrex
on a 64 bit system the key is:
HKEY_LOCAL_MACHINE\SOFTWARE\Telrex.

Troubleshooting

This section describes problems you may encounter while installing and configuring CallRex 4.x, and how to solve them.

Installation Problems

Problem	Solution
When installing the CallRex client, the following message is displayed: "The installer was interrupted before CallRex Client 4.x could be installed. You need to restart the client again".	Before installing the CallRex client, you must ensure that the server running the CallRex Data Service has IIS installed, as described in Server Running CallRex Data Service on page 2.

Configuration Problems

Problem	Solution
Firewall Configuration One of the first things to check when experiencing problems after installation is the firewall configuration.	The CallRex Data service needs to be able to accept connections on ports 80, 8002, 8003, 8004, 8007, 943, and 4530. The CallRex Call Recording Service needs to be able to accept connections on ports: 8005, 8006, 943, 4533, and 4531.
Licensing	Make sure that your CallRex system can reach port 80 on the server updates.telrex.com . If you try to access updates.telrex.com from a web browser on the computer hosting the CallRex Data service, and you see a "Directory listing denied" message, you should be able to license the software. Common reasons that licensing does not work are: <ul style="list-style-type: none"> • You have an HTTP proxy that requires a password or user account to access the public internet. • The machine is on a network that is not connected to the public internet.
Calls Not Recording	The most common reason for Calls Not Recording is port mirroring problems. How to check this is described below.
Calls Recorded but Cannot be Searched Calls record and .wav files show up in the configured record storage location, but no search results appear in the client.	The commonest reason for recorded calls to be unsearchable is a problem with the permissions set on MSMQ (Microsoft Message Queuing). The solution is to give Anonymous Login access to the MSMQ queue on the server running the CallRex Data Service, as described on page 4.
Recordings Searchable but Cannot be Replayed	This is almost always due to the servers not being resolvable by name from client machines. The solution is to add an address override value in the recording services configuration.

Calls Not Recording

If calls are not being recorded:

1. Confirm that the CallRex Users are configured properly.

- a. Click **Administration > Licensing**, and confirm that your Call Recording license is installed and valid.
 - b. Click **Administration > Services**, and confirm that the Call Recording service has been:
 - Set to the correct PBX type
 - Contacted within the last 10 minutes.
 - c. Confirm that the User who is not recording:
 - Has a Call Recording license assigned
 - Is assigned to the correct Call Recording service.
 - Has an endpoint IP address matching the IP address assigned to their phone.Make note of the User's endpoint IP address for use in step 7.
2. Ensure that your port mirror is plugged into the correct Ethernet adapter on the switch.
 3. Use the CallRex `CrConfig.exe` utility to ensure that the Call Recording service is configured to use the Ethernet adapter.
 4. If it is not already installed, download and install Wireshark (<http://www.wireshark.org>).
 5. Run Wireshark and click **Capture > Interfaces**.
 6. In the **Capture Interfaces** dialog box, click **Options** for the network interface receiving data from the port mirror.
 7. In the **Capture Options** dialog box, type **host** followed by a space and then the IP address of the phone that isn't recording into the **Capture Filter** box. For example: "host 192.168.1.120"
 8. Click **Start**.
 9. Make a test call using a phone that isn't recording.
 10. Click **Capture > Stop**.
 11. In the upper pane of the Wireshark main window, look for RTP (audio) packets. If necessary, you can enter **rtp** in the **Filter** box to make this task easier (sometimes Wireshark mis-labels the packets).

If you see RTP packets, port mirroring is working. Proceed to step 12.

If you can't see any RTP packets:

 - a. Enter **udp** in the **Filter** box.
 - b. Select a listed packet (it may be mis-labeled).
 - c. In the middle pane, select **User Datagram Protocol**.
 - d. Look at the bottom pane. If the hexadecimal byte value immediately after the highlighted byte is **80**, the packet is actually an RTP packet.
 - If the packet is RTP, in the top pane, right-click the selected packet, select **Decode As**, then select **RTP** from the list.
 - If the packet is not RTP, try another.

If no RTP packets are listed, there is a problem with the port mirror. Checking the port mirror is beyond the scope of this document.
 12. If RTP packets are present, confirm the codec they are using:
 - a. Select an RTP packet.
 - b. In the middle pane, expand **Real-Time Transport Protocol**.
 - c. Scroll down to the **Payload Type**.

CallRex supports these payload types: G.711 PCMU, G.711 PCMA, G.729, and G.722.

Upgrade Problems

Sometimes you cannot uninstall the old CallRex 3.7/3.9 services because they don't show up in the list of applications to uninstall.

To solve this problem, log into the windows account that originally installed the CallRex services (often the administrator account on the local machine) and then uninstall the software.

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