



# **Advanced SIP recording for small to mid-size organisations**

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## **Product Documentation**

**Last Updated: October 2013**

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# Home

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## What is Echo?

Echo is the call recording module that can be incorporated into one of our call logging solutions, TIM Plus or Enterprise in order to provide a fully integrated call logging and recording solution. It can be attached to either ISDN or SIP lines and, any phone calls going over those

channels are intercepted, recorded, then sent to our call logger to be attached to the logged call.

To record calls over PSTN, channels such as ISDN30 (PRI/E1/T1/J1), ISDN2 (BRI) or analogue POT lines, a piece of physical hardware - the **Magic Box** - is used to physically connect into your lines.

For VoIP (SIP) channels, a PC with a standard network interface card (NIC) can be used to capture the voice packets from strategic points in your voice network. If many simultaneous VoIP calls are expected, a dedicated computer with multiple NICs becomes necessary.

All calls are securely encrypted using the industry standard 256-bit key AES algorithm.

## Prerequisites

### System requirements

In order for Echo to collect call audio information, it must be installed on a computer that has an additional network card connected to a mirrored port on a local managed network switch.

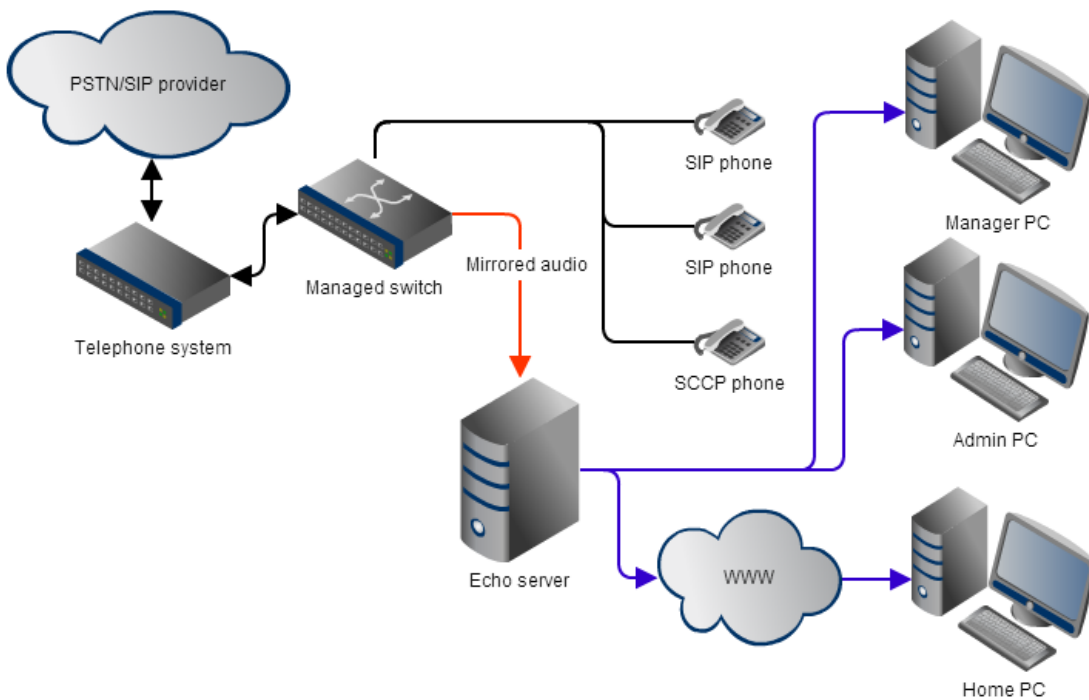
The primary network card would have its IP configuration set up so that it is visible on the data LAN. This allows playback of recordings by authorised users, as well as remote control of the Echo server, such as Remote Desktop Connection, if required.

The secondary network card would have its IP configuration set up so that it is visible on the SIP/telephone network. This allows mirrored traffic to be sent to it for the purpose of monitoring and recording by the Echo server.

Field	Description
<b>CPU</b>	minimum 4 cores, 2GHz
<b>Memory</b>	3GB
<b>Hard disk</b>	250GB Hard disk space = 44,000 channel hours 500GB Hard disk space = 88,000 channel hours 700GB Hard disk space = 132,000 channel hours 1TB Hard disk space = 176,000 channel hours
<b>Operating system</b>	Windows XP SP3 - Windows 8 (inc. Server editions)
<b>Physical adaptors</b>	Realtek PCI GBE Family Controller D-Link DGE-528T Gigabit Ethernet Adapter, Realtek PCIe FE Family Controller, Intel(R) 82566DM-2 Gigabit Network Connection, Intel(R) 82576 Gigabit Dual Port Network, TRENDnet, TEG-PCITXR 32-bit 10/100/1000Mbps PCI ADAPTER, Intel(R) PRO/1000 PM Network Connection, AMD PCNET Family PCI Ethernet Adapter, HP NC112i 1-port Ethernet Server Adapter, Intel(R) Gigabit CT Desktop Adapter, Broadcom NetXtreme Gigabit Ethernet

### SCCP/SIP extension example

Below is an example of a network layout for an installation that would allow recording of internal and external calls across the telephone network, depending on the configuration.



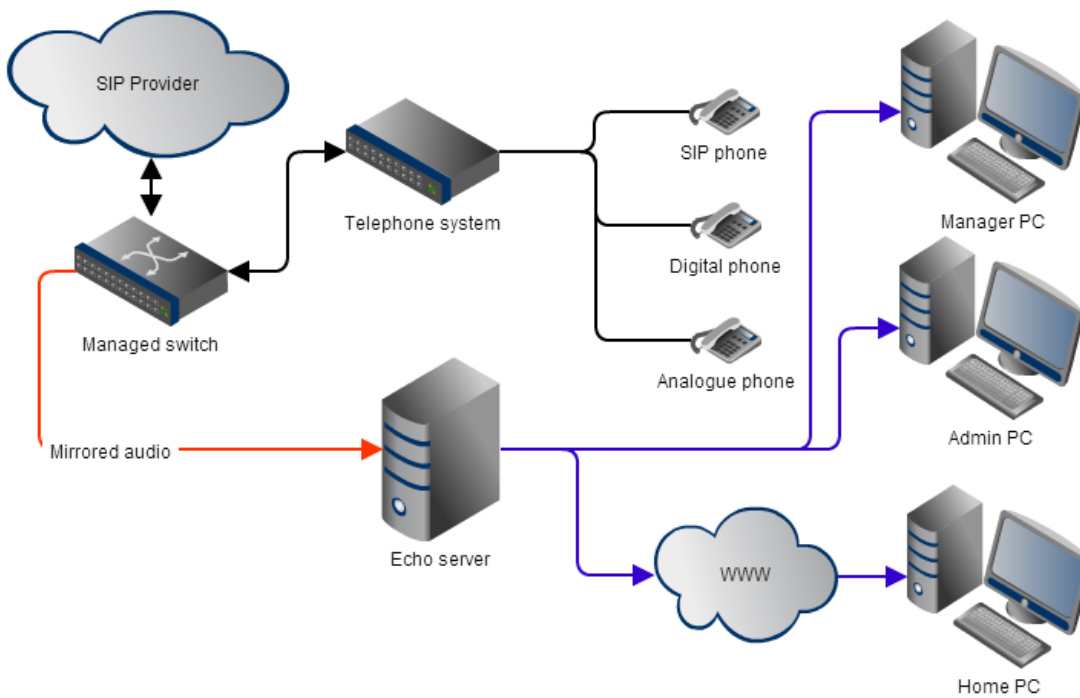
Monitoring handsets that are capable of either SCCP or SIP communication allow generic recording to occur, regardless of what combination of PSTN interfaces are in use, e.g. SIP, PRI, BRI, analogue.

To record extension side audio, the monitoring can be configured in two ways. The first method will record external calls only, whereas the second will record all calls but will add further load to the managed switch.

Field	Description
<b>External only</b>	The managed switch needs to be configured to mirror the port where the telephone system connects to the telephone network.
<b>All calls</b>	The managed switch needs to be configured to mirror every port that has a telephone connected to it, but the telephone system's network connection doesn't need to be mirrored.  This method allows the collection of the internal RTP traffic that would not be seen at the telephone system's network connection.

## SIP trunk example

Below is an example of a network layout for an installation that would allow recording of external calls across SIP trunks.



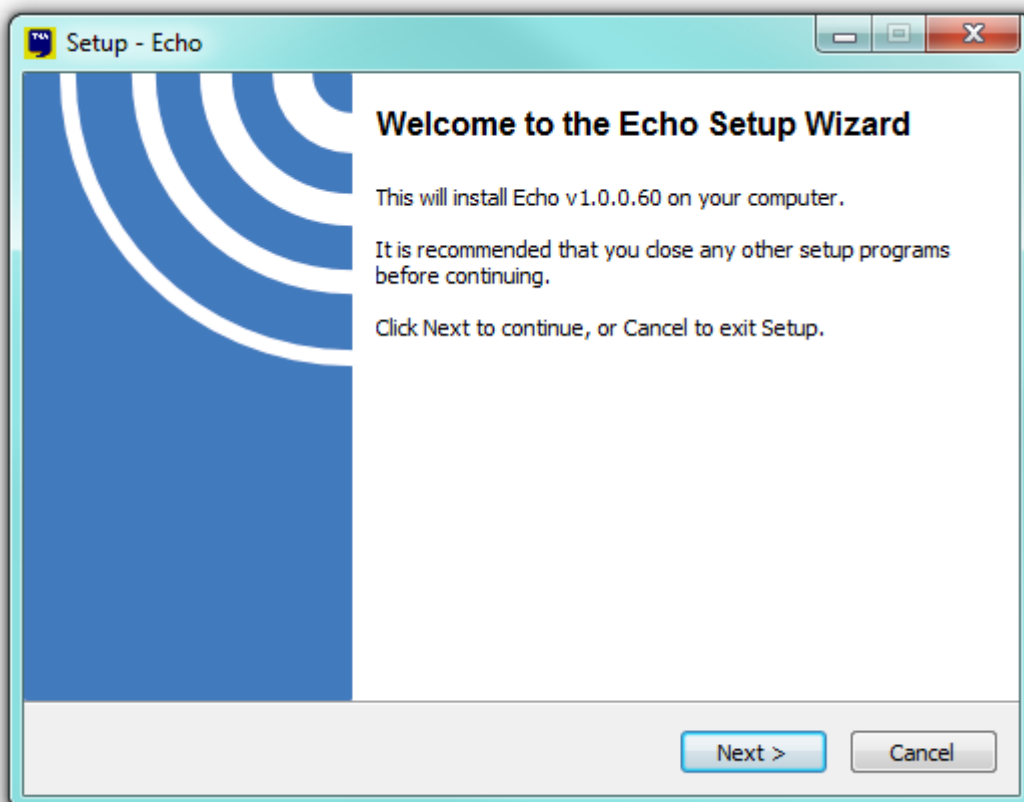
Monitoring SIP trunks allows any phone system or handsets to be recorded. This includes proprietary handsets which would normally be expensive when recording extension-side.

The managed switch needs to be configured to mirror the port where the telephone system would be sending the SIP/RTP call information.

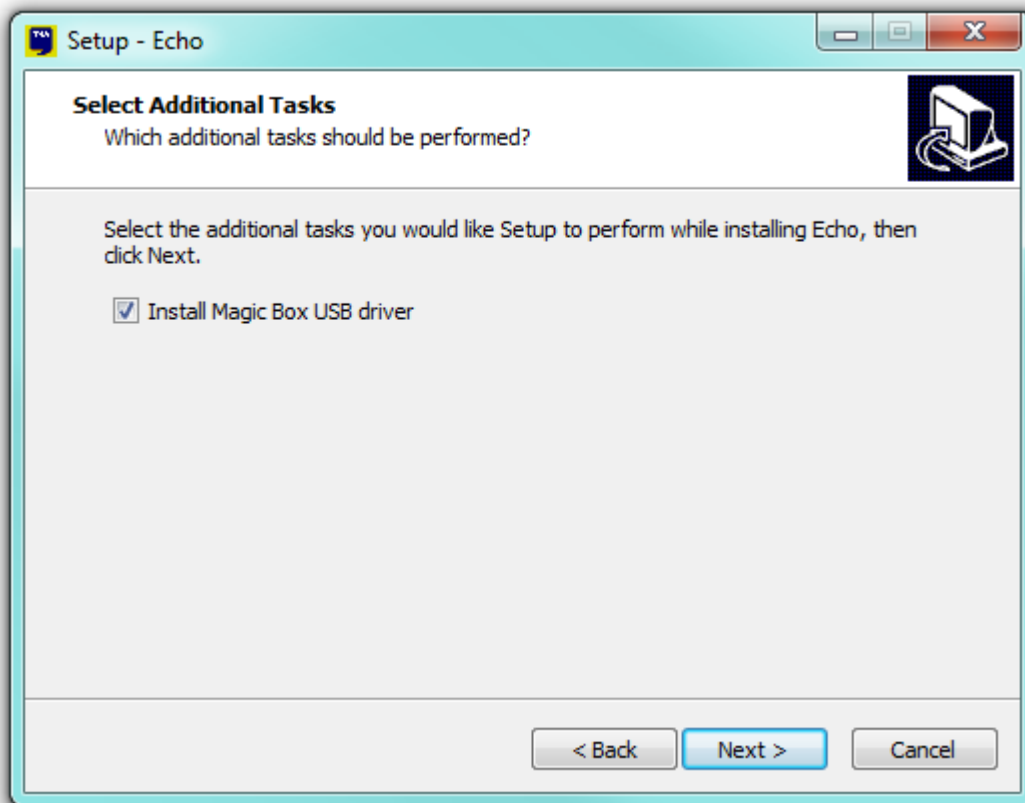
## Setup

### Installing Echo

To install Echo, click on the setup package and follow the on-screen instructions.



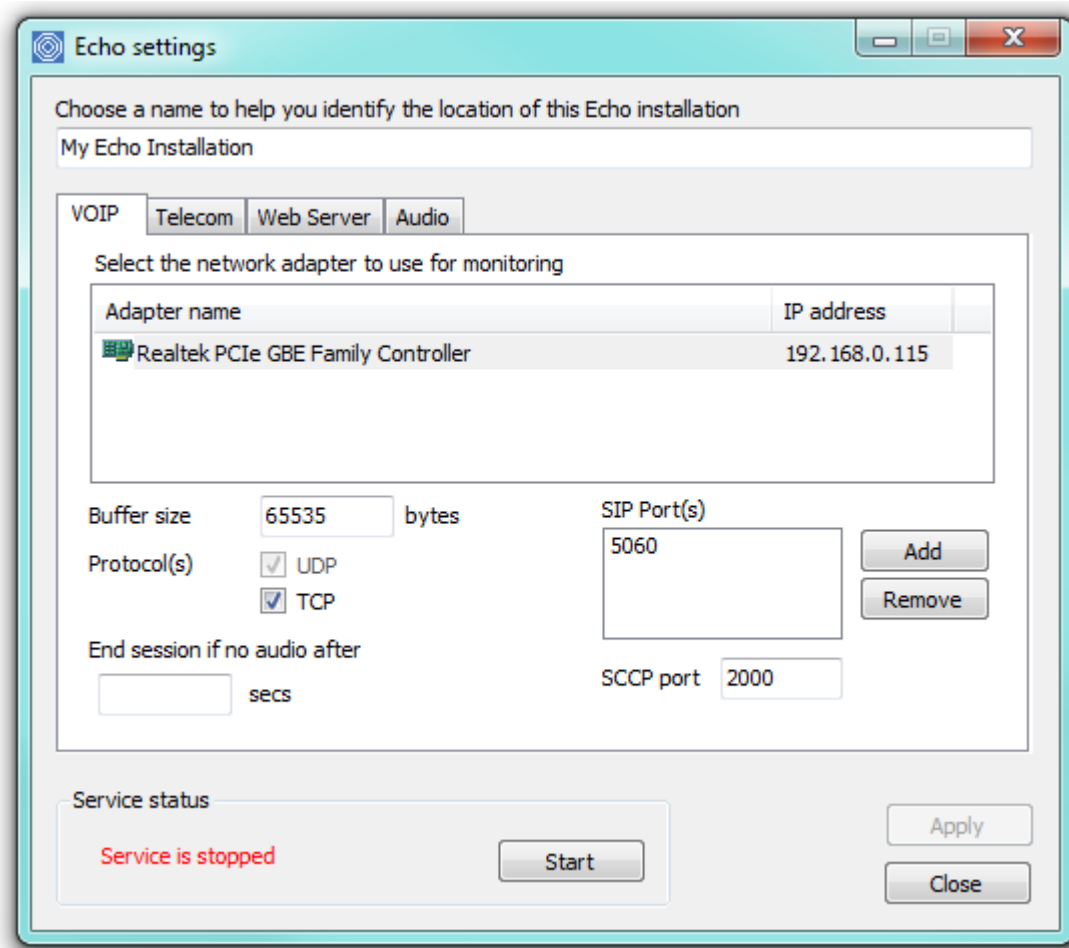
If you are monitoring ISDN channels, ensure the **Install Magic Box USB driver** option is selected. Follow the on-screen instructions to install the driver.



## Configuring Echo

After installation, the **Echo settings** screen will appear, where you are prompted for various pieces of information to help set up Echo successfully on your network:

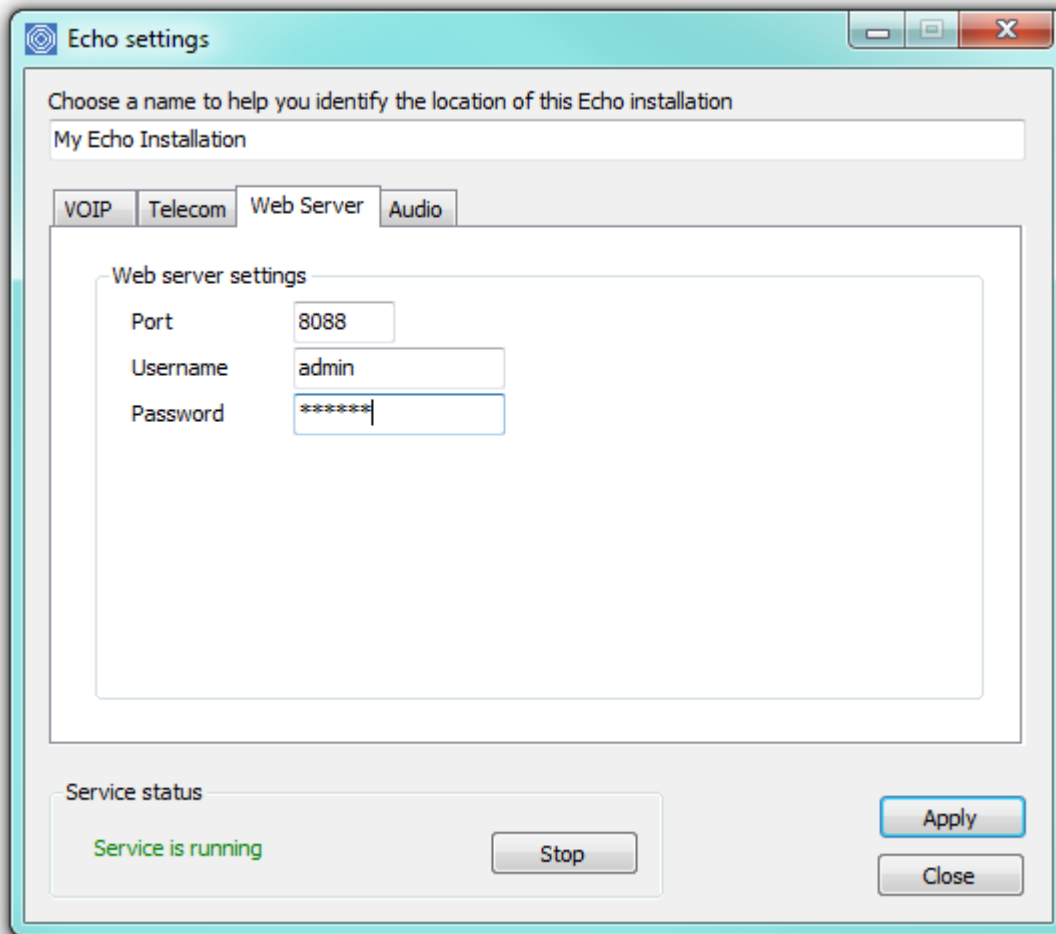
### VOIP



Field	Description
<b>Choose a name</b>	Enter a unique name to identify this installation; if you are installing more than one instance of Echo on your network, the name you enter here will be used in the subsequent setup of your TIM Plus or TIM Enterprise server.
<b>Network adapter</b>	Choose the adapter that will receive SIP/SCCP and media packets from your network.
<b>Buffer size</b>	The socket buffer value is the maximum size (in bytes) that you'd expect your network adapter to receive from your network. The default value of 65536 should be sufficient for most networks.
<b>Protocols</b>	The types of IP packets that you know Echo should look for when inspecting passing traffic on your network adapter. If you know for sure that your audio signal or media packets will never be TCP packets, you should deselect TCP to save CPU load; the less traffic that Echo needs to inspect, the more concurrent calls it can handle with the same hardware.
<b>SIP port(s)</b>	The UDP/TCP port number(s) that will be used for SIP signalling traffic on your network. Usually this is a single port (5060) but, in the case of media proxies or multiple SIP registrars on the same network segment, further ports may need to be entered here.
<b>SCCP port</b>	The TCP/UDP port that you expect Cisco SCCP (Skinny) packets to be transmitted on. This value is normally port 2000.
<b>End session if no audio</b>	This value specifies (in seconds) the maximum amount of time that Echo will continue monitoring a SIP or SCCP session in the event of no traffic, before it considers the session abandoned.

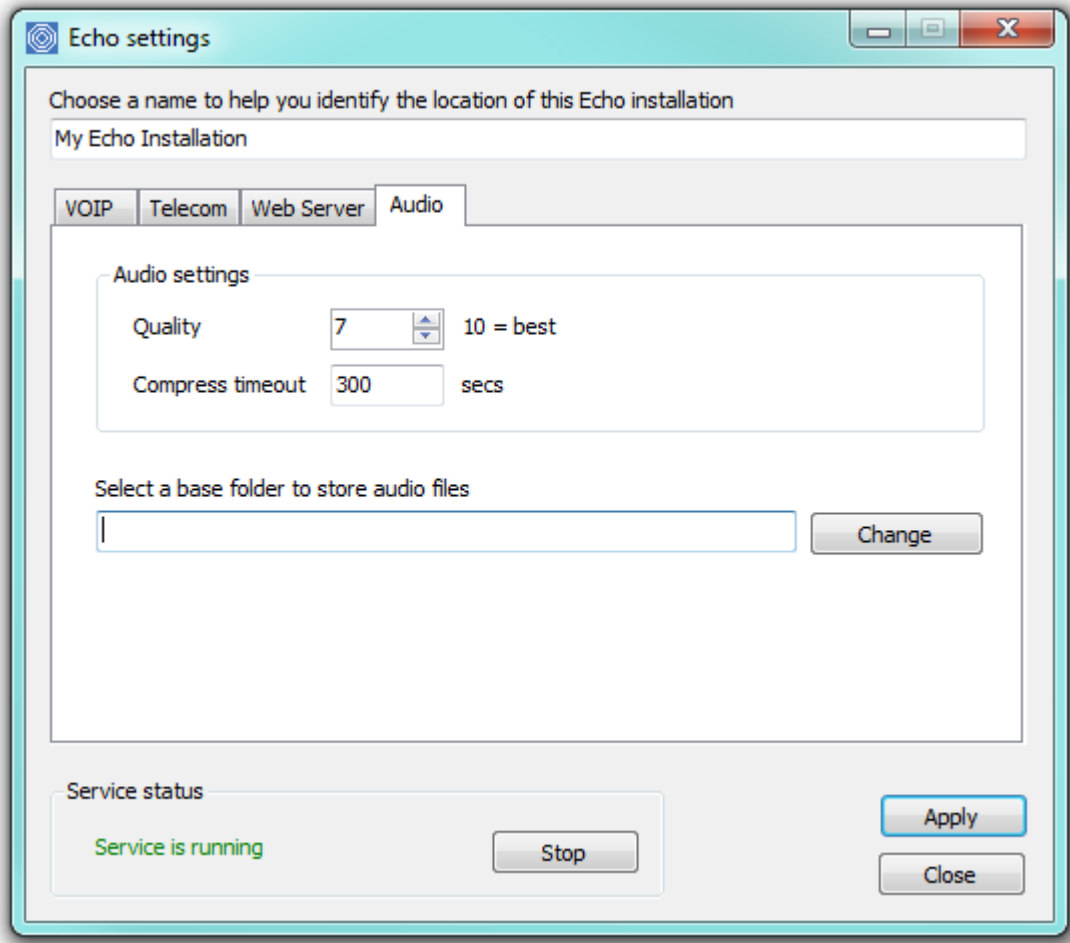
## Web server





Setting	Description
Port	The port number that the internal web service that Echo should listen on
Username	The username required to access the Echo web service
Password	The password required to access the Echo web service

**Audio**



Setting	Description
<b>Quality</b>	The desired quality of audio recordings after compression. The higher the quality, the better the audio will sound, but the bigger the files on disk will be
<b>Compress timeout</b>	The amount of time (in seconds) that Echo will wait for an audio file to be compressed. By default, this is set on 2400 seconds (40 minutes).
<b>Change</b>	By default, the audio files are stored in the following location: <code>C:\ProgramData\Tri-Line\Echo\audio</code> . To select a different folder, click on the <b>Change</b> button and enter the preferred location.

When you have finished configuring Echo, click on the **Apply** button to save the settings to disk and then start the Echo service.

**i** You can verify that the Echo service is running by connecting to its web service at: <http://localhost:8088/>. If you changed the Web server settings (above), the address may differ.

## Magic Box

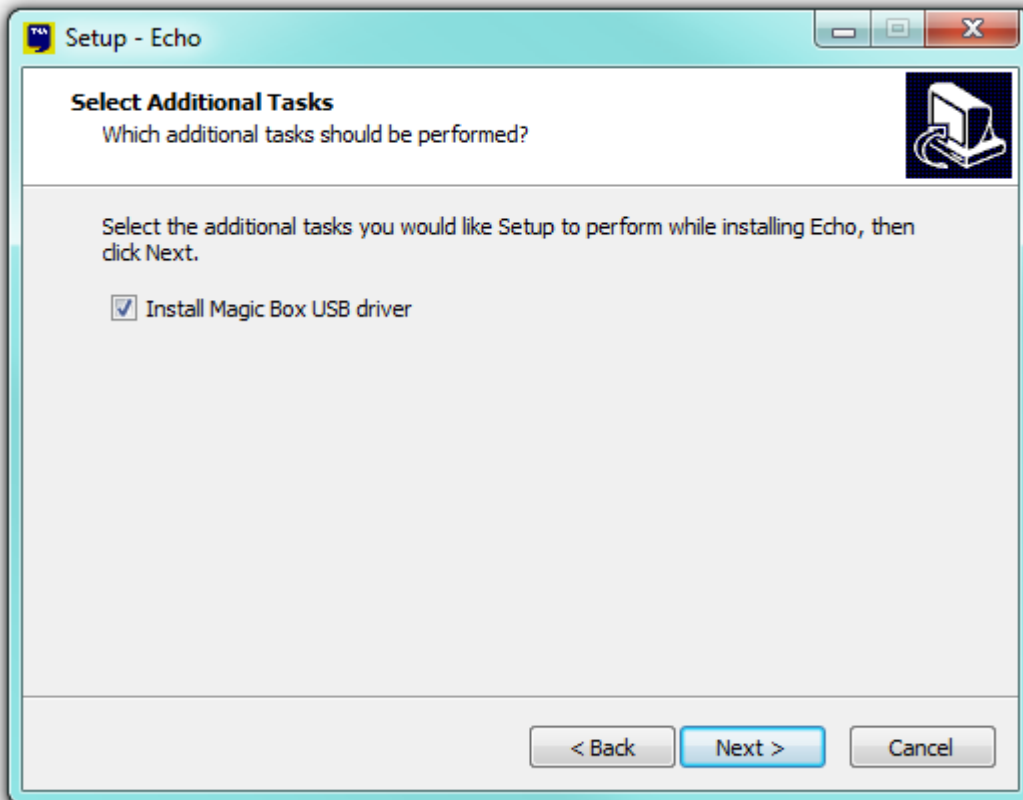
In addition to the Echo software, to record calls over PSTN channels, such as ISDN30 (PRI/E1/T1/J1), ISDN2 (BRI) or analogue POT lines, a piece of physical hardware - the Magic Box - is also required.



The Magic Box can be attached to any telephone system connected to one of our call logging solution, TIM Plus or Enterprise. The box is placed between the ISDN trunk and the telephone system and must be connected to the PC running the Echo software, where the audio files will be stored and embedded thereafter in the call logging software.



To install the driver for the call recording device, ensure the `Install Magic Box USB driver` box is ticked, during the Echo installation.



# TIM Talk

## Overview

TIM Talk is our integrated call logging and recording solution, combining one or more Echo installations with one of our call logging software, TIM Plus or Enterprise.

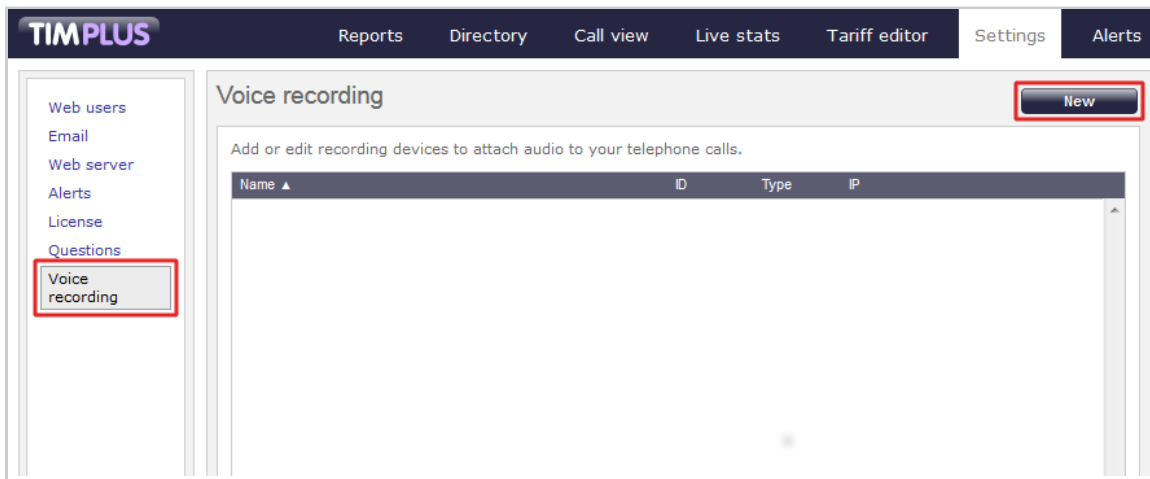
Unlike other call recorders that are separate and require special client software, our integrated solution enables all calls to be securely played through the existing web interface of the call logger, using a standard web browser.



## Integrating with TIM Plus

After installing Echo into your voice network, you need to configure its presence in TIM Plus.

Ensuring you are logged in to TIM Plus as an administrator, click on the **Settings** tab and select the **Voice recording** option from the left-hand side menu. To add a voice recording option, click on the **New** tab, as shown below:



A new window will appear, allowing you to configure the settings of your call recording device.

**Recording device settings**
✕

General

Channel map

Device name

Choose the type of recording device:

Type Magic Box - PRI ▼

Enter specific settings for the selected device:

ID 0

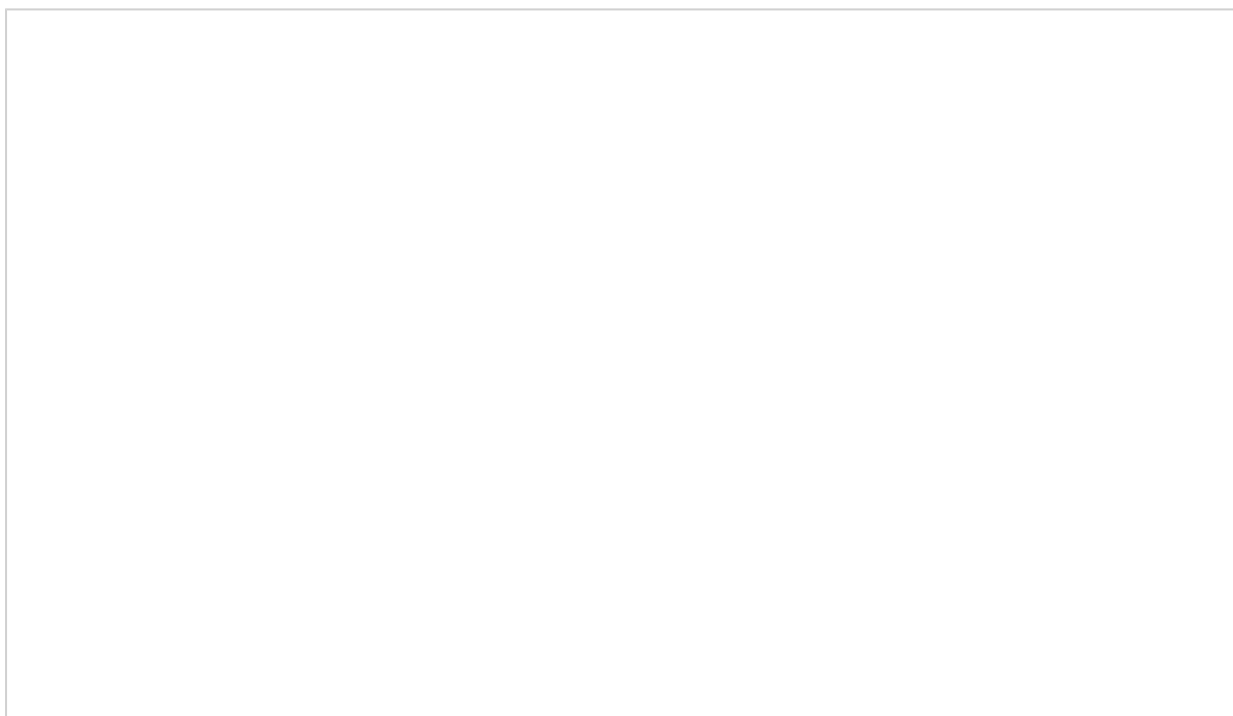
Host & Port 127.0.0.1 8088

Time offset 60 seconds

Cancel
Add

Setting	Description
<b>Device name</b>	The name of your recording device
<b>Type</b>	The type of telephone lines you are using: PRI, BRI, Analogue, VOIP
<b>ID</b>	The unique identifier of each call recording device
<b>Host &amp; Port</b>	The IP address of the recording device, or computer to which the device is attached
<b>Time offset</b>	The time interval around which TIM Plus will search for calls when matching audio files

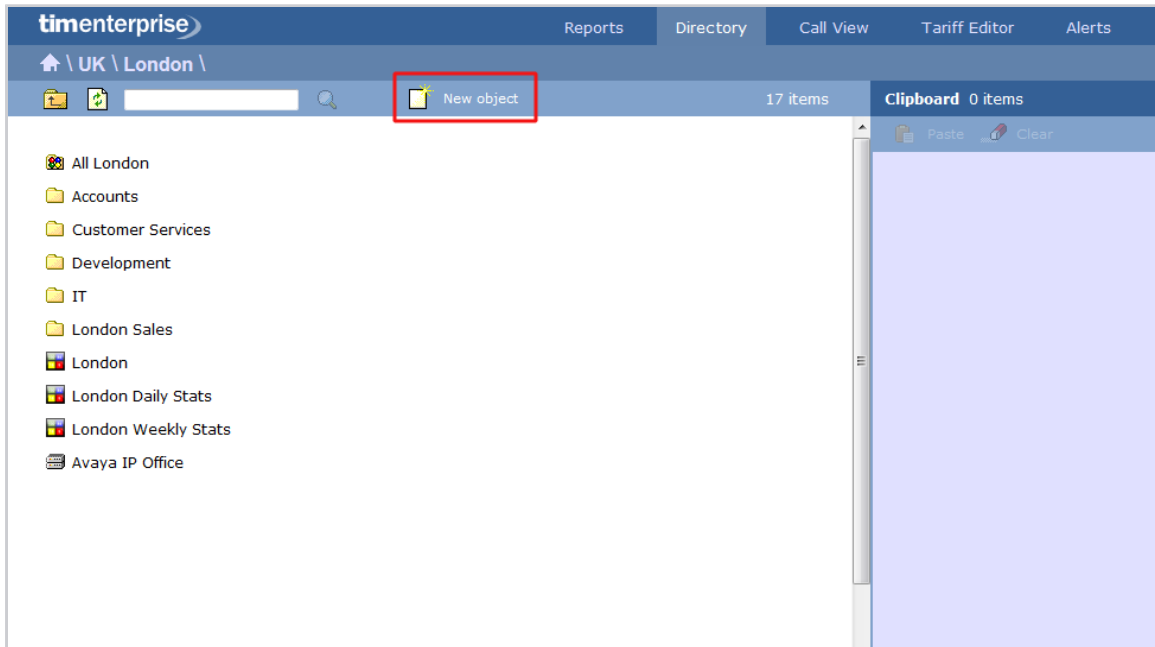
**Voice recording - overview video**



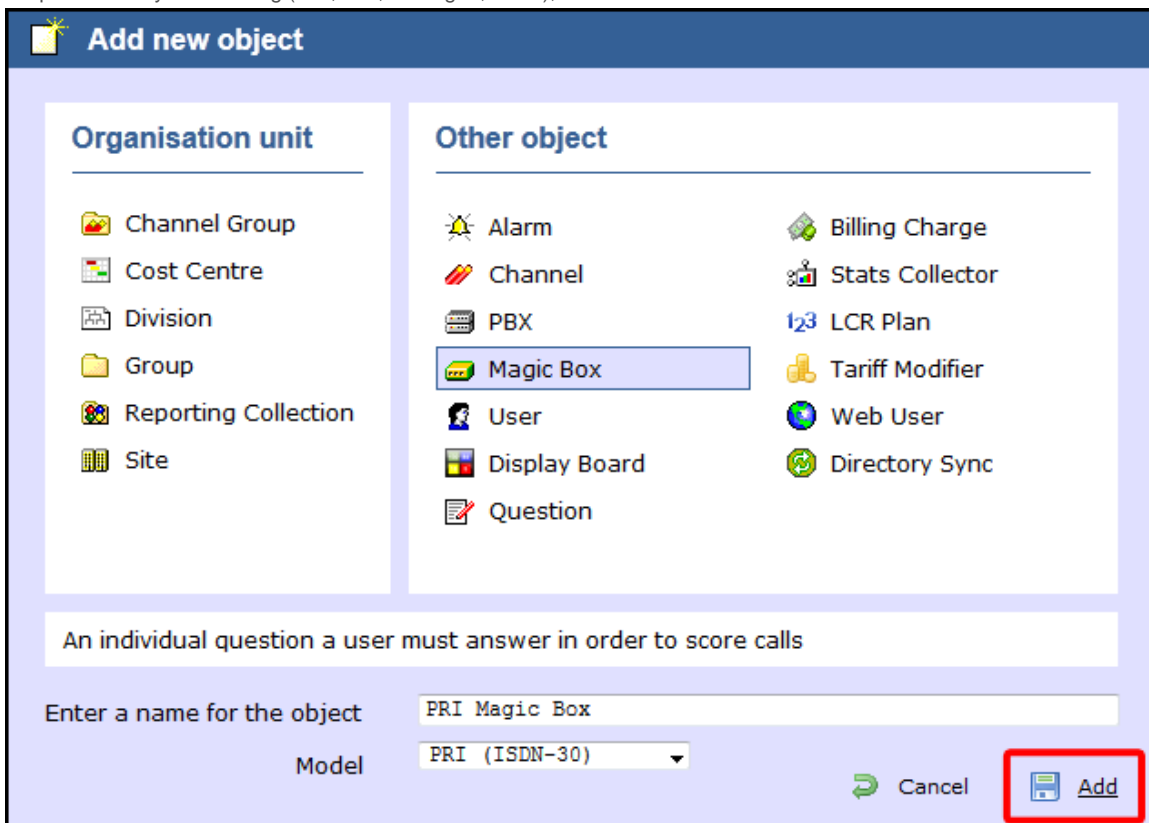
## Integrating with TIM Enterprise

After installing Echo into your voice network, you need to configure its presence in TIM Enterprise, by following the steps below:

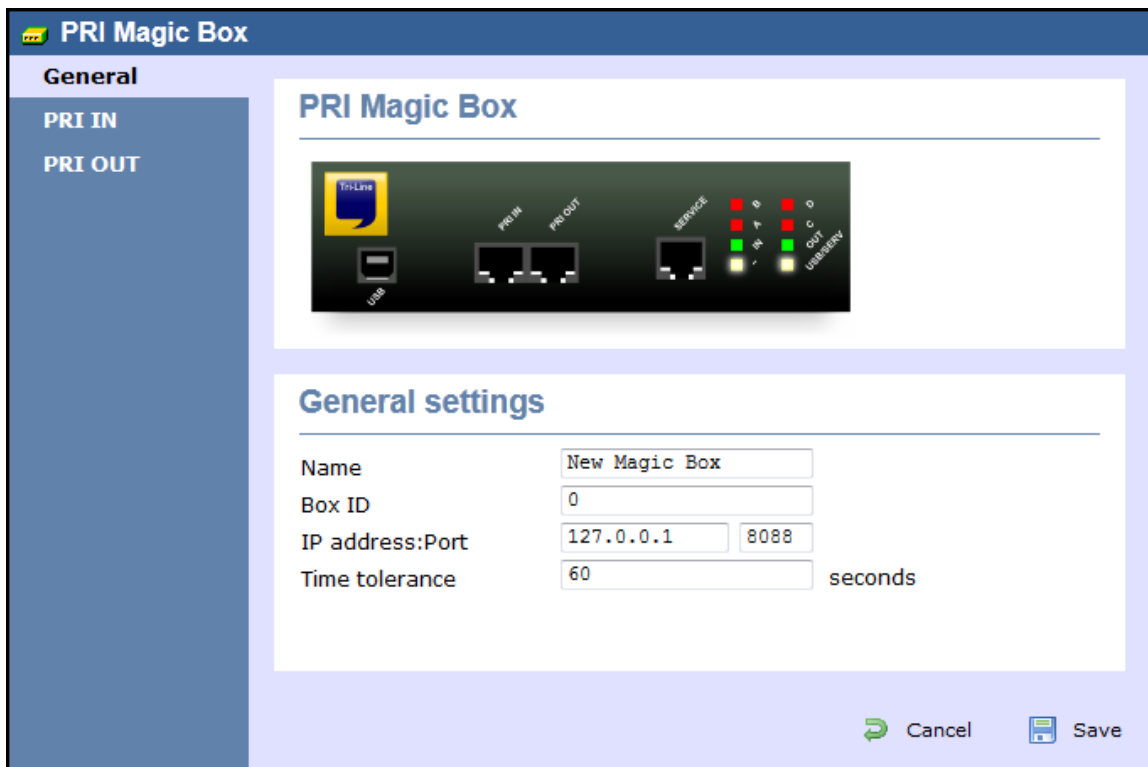
1. Log in to TIM Enterprise, drill-down to the Directory level where you want to add the call recording device and click on the **New object** tab, as shown below:



2. In the new window that opens, select the **Magic Box** object from the **Other object** list, enter a name and select the type of telephone lines you are using (PRI, BRI, Analogue, VOIP), as shown below:

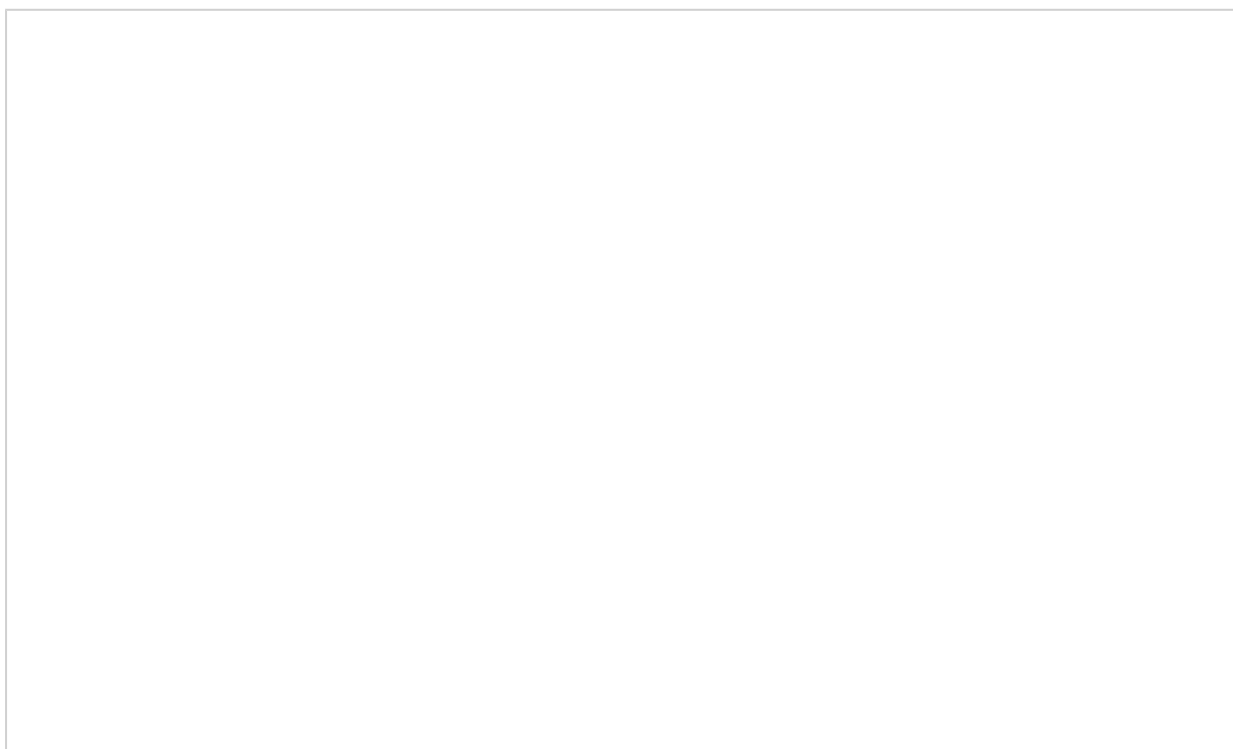


3. A new window will open, allowing you to configure the properties of your recording device object.




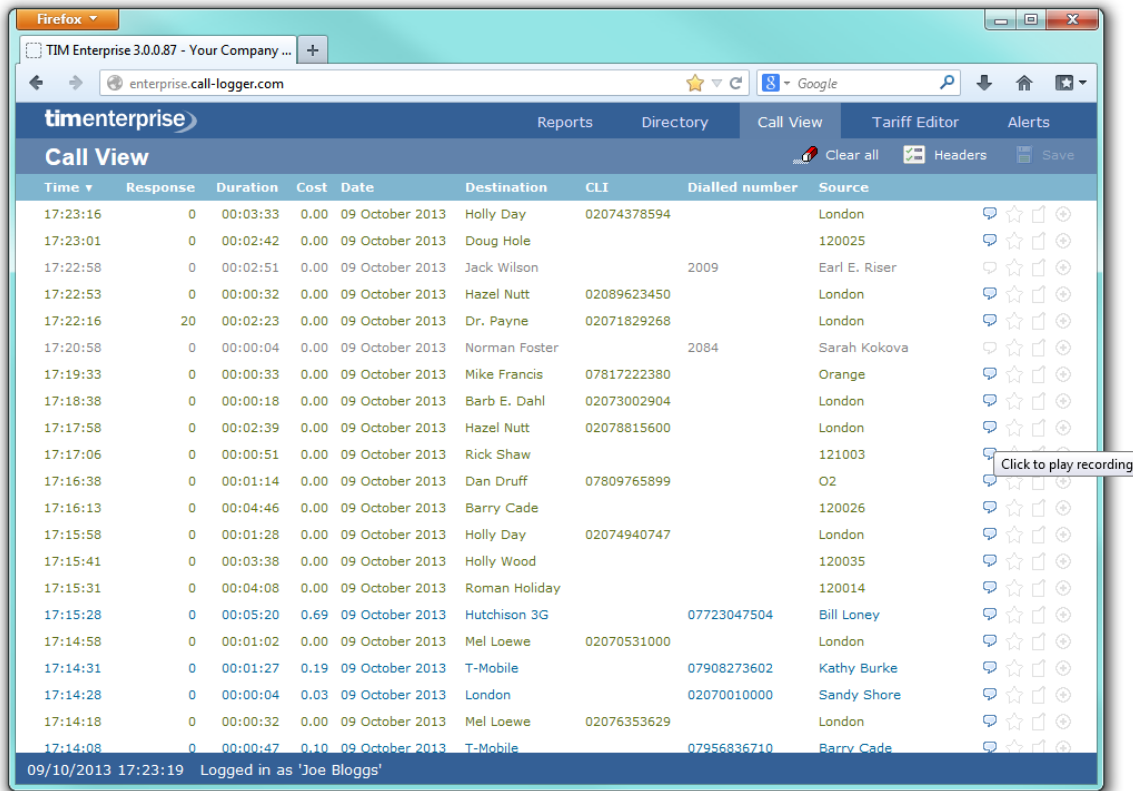
Setting	Description
<b>Name</b>	The name of your recording device
<b>Box ID</b>	The unique identifier of each call recording device
<b>IP address: Port</b>	The IP address of the recording device, or computer to which the device is attached and the port number
<b>Time tolerance</b>	The time interval around which TIM Enterprise will search for calls when matching audio files

**Voice recording - overview video**



## Accessing your call recordings

Call recordings are accessible via the web interface of your call logging solution. To listen or save a call recording, click on the  icon in the Call view screen or any itemised call logging report, as shown below:



A new window will open, allowing you to listen or save the call recording, as shown below:

