



.. www.totalrecallvr.com ..

Total Recall VR Monitor

User Guide

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Related Documents:

- [1] Prolancer Pty Ltd, Total Recall VR web site. Available from:
<http://www.totalrecallvr.com/>.
- [2] Prolancer Pty Ltd, Prolancer web site. Available from:
<http://www.prolancer.com.au/>.
- [3] Prolancer Pty Ltd, Total Recall VR Overview User Guide, 28.0, May 2022
- [4] Prolancer Pty Ltd, Total Recall VR Deployment User Guide, 28.0, May 2022
- [5] Prolancer Pty Ltd, Total Recall VR Embedded GUI User Guide, 28.0, May 2022
- [6] Prolancer Pty Ltd, Total Recall VR Manager User Guide, 19.0, March 2022

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1. Preface

1.1. Conventions

Our guides use several conventions to highlight certain words and phrases and draw attention to specific pieces of information.

1.1.1. Notes & Warnings

We use the following visual styles to draw attention to information that might otherwise be overlooked:



Notes are tips, shortcuts or alternative approaches to the task at hand. Ignoring a note should have no negative consequences, but you might miss out on a trick that makes your life easier.



Important boxes detail things that are easily missed: configuration changes that only apply to the current session, or services that need restarting before an update will apply. Ignoring the information will not cause data loss, but may cause irritation and frustration.



Warnings should not be ignored. Ignoring warnings will most likely cause data loss.

1.1.2. Typographic Conventions

We use typographic conventions to call attention to specific words and phrases. These conventions, and the circumstances they apply to, are as follows.

Example	Meaning
Select <u>Guide</u> to display ...	Locate the link named "Guide" on the screen, position the cursor over the link and then depress the appropriate mouse button to follow the link.
Select Add to create a new ...	Locate the button or menu item named "Add" on the screen, position the cursor over the button or menu item and then depress the appropriate mouse button to initiate an action.

Enter <i>Commission</i> ...	Locate the field named "Commission" on the screen, position the cursor over the field and then depress the appropriate mouse button to select the field. Once the cursor appears in the field, enter a value.
Choose <i>Country</i> ...	Locate the field named "Country" on the screen, position the cursor over the field and then depress the appropriate mouse button to display the available options. Then position the cursor over the desired option and depress the appropriate mouse button to select it.
Tick <i>Active User</i> ...	Locate the check box named "Active User" on the screen, position the cursor over the check box and depress the appropriate mouse button to place a visual tick in the box.
Un-tick <i>Active User</i> ...	Locate the check box named "Active User" on the screen, position the cursor over the check box and depress the appropriate mouse button to remove the visual tick in the box.
Enter \$30.95 ...	Enter "\$30.95" using the keys on your keyboard.

1.1.3. Procedures

We use numbered sequence of steps to define procedures for performing certain tasks. For example:

Procedure Title

1. This is the first step of the procedure.
2. This is the second step of the procedure.
 - a. This is the first sub-step of step 2.
 - b. This is the second sub-step of step 2.
3. This is step three.

1.2. We Need Feedback

If you find a typographical error in this guide, or if you have thought of a way to make this guide better, we would love to hear from you.

Please submit your feedback using the feedback form on our web site:

<http://www.prolancer.com.au/contact/feedback>.

If you have a suggestion for improving the guide, then try to be as specific as possible when describing your suggestion. Otherwise, if you have found an error, please include the section number and some of the surrounding text so we can find it easily.

2. Introduction

2.1. About This Guide

This guide describes the Total Recall VR Monitor application.

The guide is intended for Total Recall VR end users. It describes how to use the Total Recall VR Monitor application. Please keep a copy of this guide handy for quick reference.

2.2. What is Total Recall VR



Audio Logging
and
Call Recording
Systems

Total Recall VR is a professional audio logging and call recording system which is self-contained, fully featured and cost-effective. Enterprises and governments worldwide use it to create electronic records of many forms of audio communication including telephone, 2-way radio, broadcast radio, public address, intercoms, room microphones and much more.

Total Recall VR is the ideal solution for:

- Recording business telephone conversations;
- Recording agent calls in contact centres;
- Logging emergency response communication;
- Logging business operations communication;
- Logging radio broadcasts;
- Logging public announcements;
- Logging Air Traffic Control communication;
- Creating audio records of meetings, legal proceedings, public enquiries and similar events; and
- Creating compliance records to meet duty of care and legal requirements.

Total Recall VR captures all audio in digital format and stores it in a proprietary, secure and tamper proof file format in its on-board hard drive storage. The file format preserves the originality of the audio that it stores and has a number of built-in mechanisms that aid quick and reliable detection of tampering. However, for ease of access, Total Recall VR client applications can generate copies of recordings in a number of popular and everyday formats such as Microsoft's Wave (.wav) and MPEG Layer-3 (.mp3).

Storing audio by itself does not help when looking for one recording in a store that can hold hundreds of thousands of recordings. That is why, in addition to audio, Total Recall VR captures and then stores information related to each recording and audio source in its database such as start time, end time and duration of recordings, calling and called numbers on telephone calls, DTMF digits during calls, radio IDs, user configurable notes and much more. This information is the backbone of a powerful search capability which can pin point a single recording in a set of hundreds of thousands of recordings which reside either on a Total Recall VR recorder or in one of many types of off-system archives of recordings.

In addition to the audio recorder and the on-board storage, each Total Recall VR system comes with a built-in media player with comprehensive player controls (start, stop, fast-forward, rewind ...). The player can play audio stored in files directly on the system or stream audio to a remote client application which then outputs the sound to the PC speakers of the PC that it runs on.

While audio recording, storage and re-play are the main functions of Total Recall VR, every Total Recall VR offers many more advanced, professional-grade features. For example:

- Ability to capture audio from different types of audio sources (analogue, VoIP, RoIP, AoIP and ISDN), at the same time – hybrid recording.
- Live and real-time monitoring (listening) of recordings in progress on the system itself or on a remote PC with the aid of a PC client application.
- Feature-rich archiver which can create searchable archives of recordings on CD, DVD or BD discs, USB keys or drives and network drives, either automatically or on-demand.
- Automated self-cleaning mechanism that removes obsolete recordings automatically and on regular intervals to keep the system operating endlessly.
- SNMP agent capable of generating SNMP alarms (traps).
- SMDR integration for a number of popular PBXes.
- Fully internationalised user interface; all menus and software available in multiple languages.
- Role based access control.
- On-board LCD display and control keypad on selected models.
- A range of PC client applications with value adding functionality.
- APIs and PC applications for integration with other business systems and solutions.

When audio records are critical to your operations, Total Recall VR delivers. It is professional, reliable and fully self-contained solution for audio logging and call recording that comes at an affordable price.



The Total Recall VR Overview [3] guide contains a comprehensive description and overview of Total Recall VR.

2.3. What is Total Recall VR Monitor

Total Recall VR Monitor is a powerful real-time recording monitor and browser application that provides for multi-channel monitoring of recordings in progress and instant recall and browsing of recordings that are stored in different types of Total Recall VR archives and on Total Recall VR systems. It has a powerful monitoring, instant recall, search and exporting functions as well as an integrated version of the Audio Player and the Event Player applications.

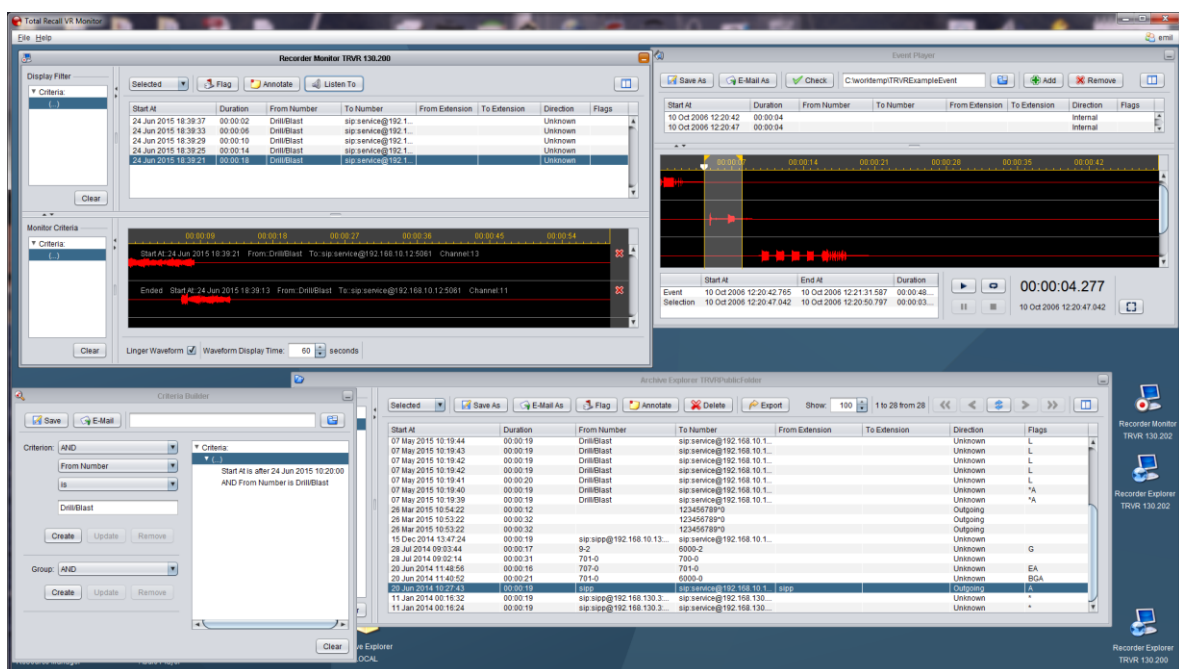


Figure 1: Total Recall VR Monitor Screen Shot

Total Recall VR Monitor offers:

- User configurable and flexible role based access control for all application features and recordings.
- Two working modes: workstation (for use by a single or multiple users on a single PC) and workgroup (for use by multiple users on multiple PCs).
- Multi-channel real time monitoring of recordings in progress on multiple Total Recall VR systems simultaneously.
- Real-time metadata and waveform display of recordings in progress and recordings being monitored.

- Auto-monitoring criteria to automatically initiate monitoring of recordings that match the criteria.
- Waveform lingering with visual indication of audio on multiple channels.
- Browsing of recordings in Total Recall VR archives that are stored on discs, USB devices and network drives.
- Browsing of recordings that are stored in Total Recall VR mega archives.
- Browsing of recordings that are stored on Total Recall VR systems with automatic fetching of latest recordings.
- Creation and management of Public Folder archives with unlimited number of records and role base shared access from multiple PCs by multiple users.
- Automatic detection (plug and play) of archives on discs, USB devices and network drives.
- Recording management: delete, annotate, tag, lock, etc.
- Ability to 'lock' recordings to prevent deletion.
- Advanced natural language search query builder that provides for saving of queries to files, recall of queries from files and sharing of queries via e-mail.
- Flexible (selected, found, all, etc.) batch export of recording metadata to CSV format for use in reporting tools.
- Flexible (selected, found, all, etc.) batch export of recordings to standard audio file formats (wav, mp3, aifc, au and spx) that are compatible with popular audio player applications such as Windows Media Player.
- Integrated e-mail client for fast sharing of recordings in any supported file and audio format and search queries.
- Integrated audio player with built-in visual waveform and integrity check for recordings that are stored in the TRC file format.
- Integrated event creator and player with built-in visual waveform.

Total Recall VR Monitor is a Java/Windows based application designed to run on a PC with Windows 7, 8 or 10.



Total Recall VR Monitor is a licensed application. You must purchase an Activation License in order to use the application.

Total Recall VR Monitor requires an AMBE decoder license to play recordings that are stored in the AMBE audio format.



You can purchase a USB based AMBE decoder from us, order code TRVR-AMBE and TRVR-AMBE-3.

NOTE: Multiple AMBE decoder licenses are needed to monitor multiple recordings that use the AMBE audio format and are in progress at the same.

2.4. Total Recall VR Archives

Total Recall VR Monitor allows you to access recordings stored in different types of Total Recall VR archives:

- **Disc archives.**

Disc archives are collection of recordings and a database of metadata on the recordings that are stored on a CD, DVD or BluRay disc. Total Recall VR systems create disc archives when you archive recordings on a Total Recall VR system.

There are two types of disc archives:

- Legacy disc archives that were created by old generation Total Recall VR systems which run the Total Recall VR application release 4.60 or earlier; and
- Latest generation disc archives that are created by the new generation Total Recall VR systems that run the Total Recall VR application release 5.x.y or later.

Total Recall VR Monitor supports both types of disc archives.

- **USB archives.**

USB archives are collection of recordings and a database of metadata on the recordings that are stored on a USB device. Total Recall VR systems create USB archives when you archive recordings on a Total Recall VR system.

As USB devices usually contain files from many sources, Total Recall VR systems use a folder caller 'trvr-archive' on USB devices as a Total Recall VR archive. It simply ignores all other files and folders on USB devices.

- **Network drive archives.**

Network drive archives are collections of Total Recall VR archives which are stored on a disk drive that is accessible over a network. Each sub-archive, in the collection of archives, contains a collection of recordings and a database of metadata on the recordings.

Total Recall VR systems create network drive archives when you archive recordings on a Total Recall VR system.

Total Recall VR Monitor 'hides' the fact that network drive archives are a collection of archives and allows you to treat each collection as a single archive when searching and managing recordings in it.

- **Public Folder archives.**

Public Folders are ad-hoc archives that users can create while using Total Recall VR Monitor.

Public Folder archives have no restrictions on number of recordings; however, the intended use of this type of archives is to create small collections of recordings from various sources in order to share recordings with multiple users of Total Recall VR Monitor. This is similar to public folders that you may create in other applications to share documents or e-mail messages for example.

- **Mega archives.**

Mega archives are a new type of archives which unlike all other types of archives are designed to store unlimited number of recordings. Of course, disk space limits apply.

In addition, unlike all other types of archives, Total Recall VR Archiver creates this type of archive. Total Recall VR systems cannot create this type of archive.

- **Local Folder archives.**

Local Folder archives are specific to the now obsolete Total Recall VR Remote Manager application. Other applications, including Total Recall VR Monitor, do not support this type of archives.

3. Start Here

3.1. System Requirements

Total Recall VR Monitor is a Java based application designed to run on a PC with Windows 7, 8 or 10.

The application is compatible with Windows XP and Vista, however it has not been tested for correct operation on Windows XP and Vista.

For best experience with Total Recall VR Monitor install it on a PC with the following specification:

- 40Mb free hard disk space.
- 8Gb memory (RAM).
- Intel i7 CPU is strongly recommended due to the real time audio processing needs of the applications, in particular when monitoring more than one channel at a time.
- Display hardware that supports the HD resolution (1920x1080).
- Sound system with built-in or external speakers or headphones.
- 100Mbps Ethernet network interface (NIC) hardware.
- Drive capable of reading CD-R, CD-RW, DVD+RW, BD-R and BD-RE discs.
- At least one USB 2.0 port.

The PC must have a working network connection and access to an E-Mail server in order to send e-mail from Total Recall VR Monitor.



Total Recall VR Monitor requires an AMBE decoder license to play recordings that are stored in the AMBE audio format.

You can purchase a USB based AMBE decoder from us, order code TRVR-AMBE and TRVR-AMBE-3.

NOTE: Multiple AMBE decoder licenses are needed to monitor multiple recordings that use the AMBE audio format and are in progress at the same.

3.2. Compatibility

Total Recall VR Monitor uses cutting edge technology to connect to Total Recall VR systems that run different releases of the Total Recall VR application.

As a result, it is possible to connect Total Recall VR Monitor to Total Recall VR systems that run a 9.x.y, 10.x.y or 11.x.y version of the application at the same time.

However, the minimum releases of the Total Recall VR application that have support for applications like Total Recall VR Monitor are 9.18.0 and 10.9.0 so you will have to upgrade your Total Recall VR systems to at least 9.18.0 or 10.9.0, if possible to do so, in order to use Total Recall VR Monitor with your systems.



It is not possible to connect Total Recall VR Monitor to Total Recall VR systems that run application version 8.x.y or earlier.

3.3. Application Working Mode

You can use Total Recall VR Monitor in one of two working modes: workstation or workgroup.

3.3.1. Workstation Mode

This mode is best when a single or multiple users will use Total Recall VR Monitor on a single PC.

In this mode the Total Recall VR Monitor configuration (users, archives, Total Recall VR systems ...) is local to the PC that runs the application. As a result, Total Recall VR Monitor can be used by a single user, or multiple users on the same PC.

The following diagram illustrates workstation mode. In summary, Total Recall VR Monitor is installed on a single PC. It uses the configuration database (H2 database) on the same PC. Multiple users, each with their own application account, can use the Total Recall VR Monitor on the same PC.

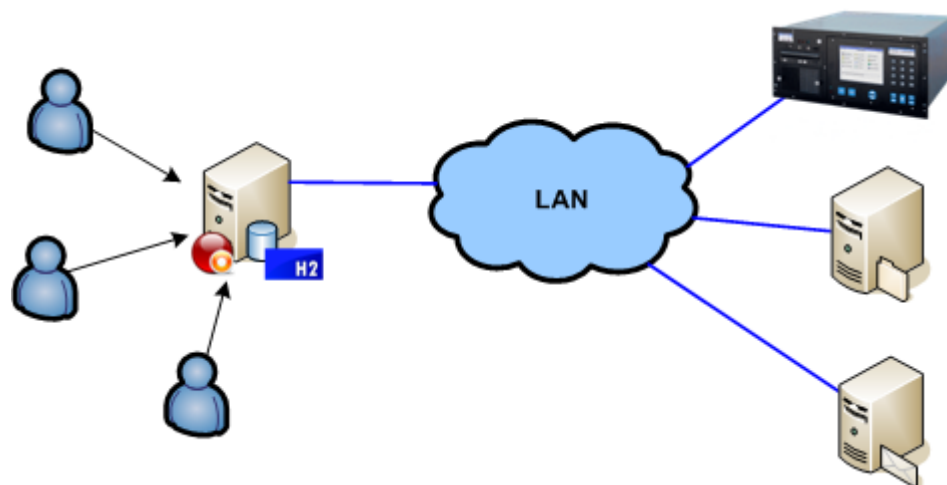


Figure 2: Total Recall VR Monitor in Workstation Mode

Of course, you can install Total Recall VR Monitor on multiple PCs and use it in workstation mode on each PC. However, each instance is independent from all other instances and must be configured independently of all other instances.

3.3.2. Workgroup Mode

This mode is best when multiple users will use Total Recall VR Monitor from different PCs.

In this mode all Total Recall VR Monitor instances use the same configuration (users, archives, Total Recall VR systems ...). As a result, Total Recall VR Monitor can be used by multiple users, each with their own application account, on multiple PCs. You can manage the Total Recall VR Monitor configuration from any PC that has an instance of Total Recall VR Monitor and the changes will apply to all instances of Total Recall VR Monitor on all PCs.

The following diagram illustrates workgroup mode. In summary, Total Recall VR Monitor is installed on multiple PCs. Each instance uses the central configuration database (H2 database) which is installed on a separate server. Multiple users, each with their own application account, can use Total Recall VR Monitor from different PCs.

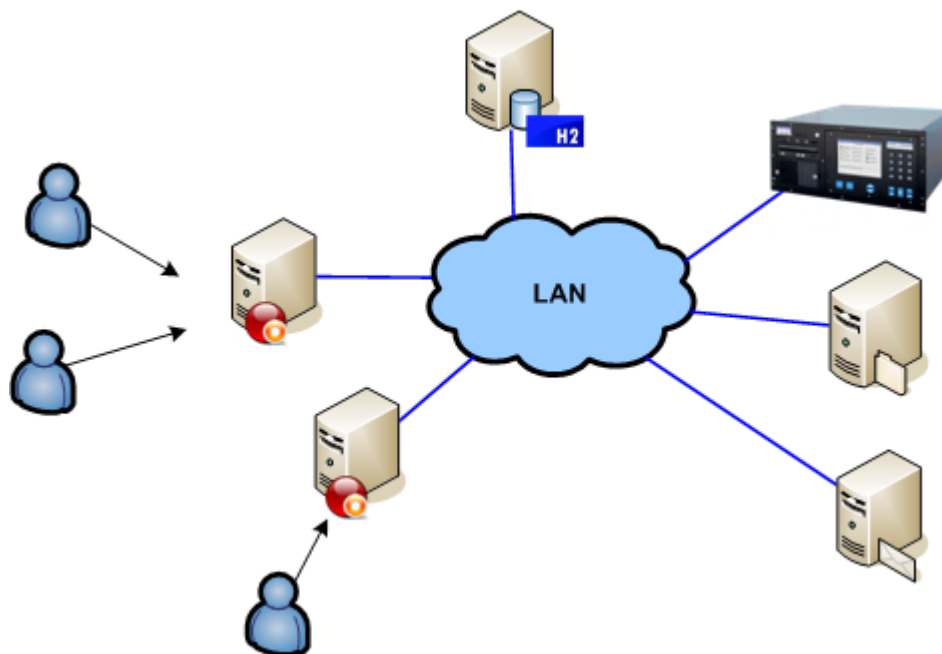


Figure 3: Total Recall VR Monitor in Workgroup Mode

3.4. Pre-Installation

Total Recall VR Monitor requires 3rd party software and drivers which you may need to install before installing Total Recall VR Monitor.

3.4.1. Java SE Runtime Environment



This 3rd party software is mandatory. The application will not run at all without it.

Total Recall VR Monitor is a Java application and as such it requires a Java SE runtime environment to run.



You must install a 32bit, version 8 (tested and recommended), Java SE Runtime Environment on your PC to use Total Recall VR Monitor.

You can download a Java SE Runtime Environment installer from <http://www.oracle.com/technetwork/java/javase/downloads/index.html>.

You may already have a Java SE runtime environment on your PC. Ask your friendly technical staff to help you determine this if you are not sure how to check.

If your PC is running a 64bit version of Windows, then you may already have a 64bit Java SE runtime environment on your PC. If this is the case you must install the 32bit Java SE runtime environment on your PC as well in order to use Total Recall VR Monitor. Ask your friendly technical staff to help you if you are not sure what to do.

3.4.2. FTDI 2DXX Drivers



This 3rd party software is optional. It is required to decode recordings that use the AMBE audio encoding.

Total Recall VR Monitor uses a USB based AMBE decoder when playing AMBE encoded audio.



You can purchase the USB based AMBE decoder from us – order

code TRVR-AMBE and TRVR-AMBE-3.

The USB device requires FTDI D2XX drivers to work.



You must install FTDI's D2XX version 2.12.06, or better, WHQL certified drivers on your PC to enable Total Recall VR Monitor to play recordings in the AMBE format.

You can download an installer for the drivers from <http://www.ftdichip.com/Drivers/D2XX.htm>.

3.4.3. Visual C++ 2015 Redistributable



This 3rd party software is mandatory. The application will not run correctly without it.

Total Recall VR Monitor uses native Windows libraries and as such it requires the Visual C++ 2015 redistributable to run.



You must install the 32bit Visual C++ 2015 redistributable on your PC to use Total Recall VR Monitor.

You can download an installer for the 32bit Visual C++ 2015 redistributable from <https://www.microsoft.com/en-au/download/details.aspx?id=48145>.

You may already have a Visual C++ 2015 redistributable on your PC or server. Ask your friendly technical staff to help you determine this if you are not sure how to check.

If your PC or server is running a 64bit version of Windows, then you may already have a 64bit Visual C++ 2015 redistributable on your PC or server. If this is the case

you must install the 32bit Visual C++ 2015 redistributable on your PC or server as well in order to use Total Recall VR Monitor. Ask your friendly technical staff to help you if you are not sure what to do.

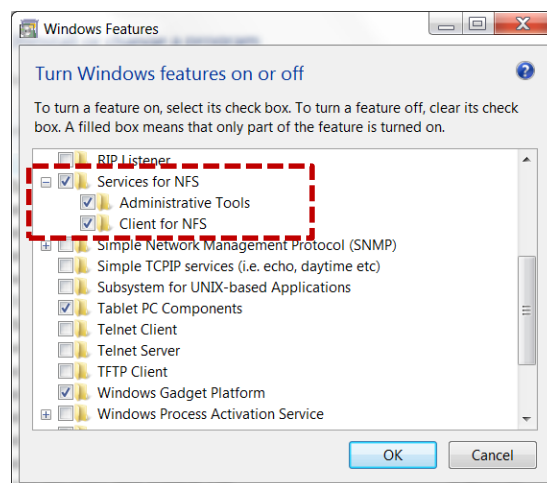
3.4.4. NFS Client



This 3rd party software is optional. It is required to access recordings that are stored in Total Recall VR Network Archives on NFS drives.

Total Recall VR Monitor requires an NFS client in order to access network archives on Linux/Unix network drives.

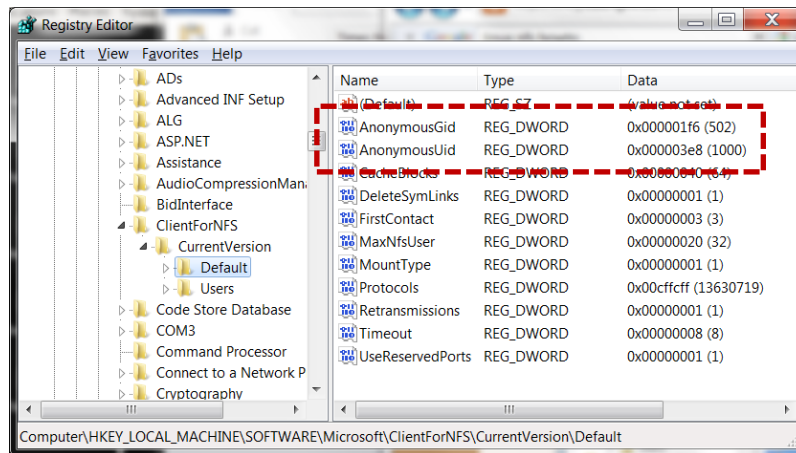
An NFS client is included with Windows 7 and 8, however it is not installed by default. You can install it through **Control Panel – Programs – Programs & Features – Turn Windows features on and off**.



Once installed, you may have to set the group ID (GID) and user ID (UID) for the anonymous user which the client uses to access NFS network drives by adding an *AnonymousUid* and *AnonymousGid* configuration parameters to the NFS client configuration in the registry.



Registry changes can render your PC unusable. Ask your friendly technical staff to help you if you are not sure what to do.



Reboot the machine after making the changes. Now you should be able to map NFS drives as local drives on your PC.

3.4.5. H2 Database



This 3rd party software is optional. It is required to use the application in the workgroup mode. It is not needed to use the application in the workstation mode.

Total Recall VR Monitor uses an H2 database to store its configuration and operating parameters. If you intend to use Total Recall VR Monitor in workgroup mode (see section 3.3.2 Workgroup Mode), then you must install a central H2 database which will be shared by all instances of Total Recall VR Monitor.



You can download a Windows installation package for an H2 database server from <http://www.h2database.com/html/download.html>. We have tested the application with version 1.4.200 and we recommend that you use this version.

Once you have installed an H2 database on a server, configure the H2 database service (using the wrapper.conf file in the services directory) and make sure that the H2 database service is running.



This document uses an H2 database server which runs on a machine with IP address 192.168.120.200 and provides service on TCP port 9092 in examples. The same server provides a management service on TCP port 8082.

The H2 database installation instructions are not as clear as they should be when it comes to explaining how to get an H2 database server going. The following is a summary of the steps and can be used as a guide when setting up an H2 database server; however, it does not aim to replace the official H2 database documentation.

Install an H2 database server

1. Download the latest stable Windows installer from <http://www.h2database.com/html/download.html>. We downloaded a file named 'h2-setup-2019-10-14.exe' for this example.
2. Run the installer file which by default will install the software in "c:\Program Files\H2" on a 32bit system or "c:\Program Files (x86)\H2" on a 64bit system.
3. Step 2 does not install the H2 database service automatically. You must manually install it, after configuring it, as follows.

The service ensures that the H2 database starts when the machine restarts.

4. The service configuration is in the "c:\Program Files\H2\service\wrapper.conf" file. We modified the following to tailor the service to our environment:

```
1. # Application parameters. Add parameters as needed starting from 1
2. ## -- Make sure to allow tcpPort on the firewall -- ##
3. wrapper.app.parameter.1=org.h2.tools.Server
4. wrapper.app.parameter.2=-tcp
5. wrapper.app.parameter.3=-tcpPort 9092
6. wrapper.app.parameter.4=-tcpAllowOthers
7. wrapper.app.parameter.5=-web
8. wrapper.app.parameter.6=-webPort 8082
9. wrapper.app.parameter.7=-webAllowOthers
10. wrapper.app.parameter.8=-ifNotExists
11. wrapper.app.parameter.9=-baseDir "c:/worktemp/db"
```

In summary, we want the service to store database files in the "c:\worktemp\db" directory on the local machine and run on TCP port 9092. Also, we want the service to use TCP port 8082 for web management.

5. With the above changes in place, open a terminal window and change to the "c:\Program Files\H2\service" directory. Then:
 - a. Run the *1_install_service.bat* script to install the service on the machine. This adds the "H2 Database Engine Service" to the set of services on the machine.

- b. Run the `2_start_service.bat` script to start the service.
 - c. To make sure that the service is running, start a browser using the `3_start_browser.bat` script on the same machine. This should show the login page for the database server management console.
6. Edit the firewall configuration for the machine and make sure that TCP ports 9092 and 8082 (if you are using our configuration from step 4) are not blocked.

How you complete this step depends on the firewall application that you are using. Please consult the documentation for your firewall application.

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 -
 -
 7. Once the firewall is allowing communication to TCP ports 9092 and 8082 open a browser on a different machine and attempt to access the H2 server web management console using <http://192.168.120.200:8082> (if you are using our configuration from step 4) to make sure that remote access to the server is possible.

Note that you do not need to create database users and a database for Total Recall VR Monitor once the server is running. The first instance of Total Recall VR Monitor that will attempt to use the server will create users and a database which you must then use for all other instances of Total Recall VR Monitor.

3.4.6. Remote Interface



This recorder configuration is mandatory. The application will not be able to connect to recorders without it.

In most cases Total Recall VR Monitor will connect to one or more Total Recall VR systems.

Total Recall VR Monitor uses the Remote Interface provided by Total Recall VR systems to connect and interact with Total Recall VR systems. As a result, you must configure the Remote Interface on each Total Recall VR system that you wish to access from Total Recall VR Monitor.

See section 6.5 in the Total Recall VR Embedded GUI User Guide [5] for details on how to configure the Remote Interface on systems with built-in screen.

For example:

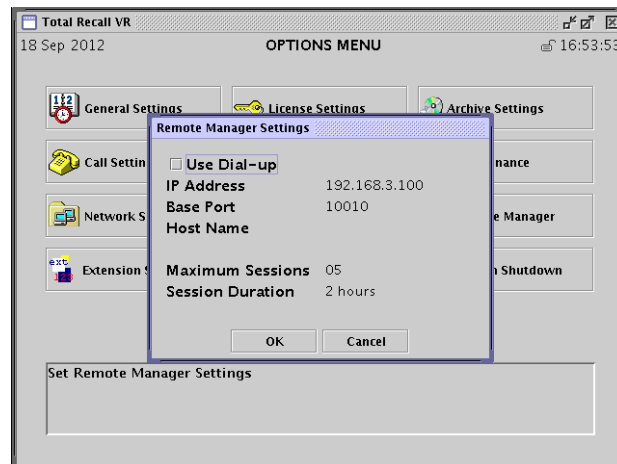


Figure 4: Remote Interface Configuration

The value of the **Maximum Sessions** parameter is important when monitoring multiple recordings with Total Recall VR Monitor. Its value defines the maximum number of recordings that can be monitored by all instances of Total Recall VR Monitor.

For example, if **Maximum Sessions** is set to 5, as shown the previous screen capture, then the maximum number of monitoring sessions across all running instances of Total Recall VR Monitor is 5. As a result, if a single instance of Total Recall VR Monitor is monitoring 5 recordings in progress, then all other instances will not be able to monitor any recordings in progress until the instance that is monitoring 5 recordings stops monitoring at least 1 or more recordings.

If your Total Recall VR system does not have a built-in screen, then use the Total Recall VR Manager application to configure the Remote Interface. See section 8.2.5 in the Total Recall VR Manager User Guide [6] for details on how to configure the Remote Interface on systems without a built-in screen.

For example:

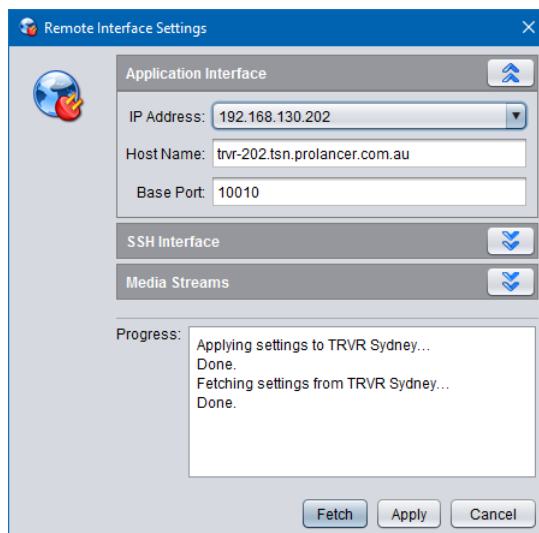


Figure 5: Remote Interface Configuration

3.5. Application Installation

A Total Recall VR Monitor installer is available for download from our web site. We do not ship installation media for Total Recall VR Monitor.



Please visit <http://www.totalrecallvr.com/applications/total-recall-vr-monitor> to download the installer for Total Recall VR Monitor.

The installer is a wizard based installation program which will guide you through the installation steps. To install Total Recall VR Monitor on your PC:

Install Total Recall VR Monitor

1. Extract the TRVRMonitor-Setup-x.y.z.yyyymmdd.exe file from the TRVRMonitor-Setup-x.y.z.yyyymmdd.zip file that you downloaded from our web site.
2. Double-click on the TRVRMonitor -Setup-x.y.z.yyyymmdd.exe file to launch the installer.
3. Follow the prompts to complete the installation.

3.6. Application Upgrade

To upgrade Total Recall VR Monitor:

- If you wish to keep the previous configuration and activation license for the application, then simply follow the installation procedure. Do not uninstall the previous version of the application.
- If you wish to have a clean installation of the application, with new configuration, then first uninstall the previous version of the application and then install the new version. Please make a record of your activation license before you uninstall the old version of the application. You will need the activation license for the new version of the application.

3.7. First Run

Total Recall VR Monitor requires an activation license key to run. As a result, when you run Total Recall VR Monitor for the first time, it will prompt you to enter an activation token or license as shown on the following screen capture.

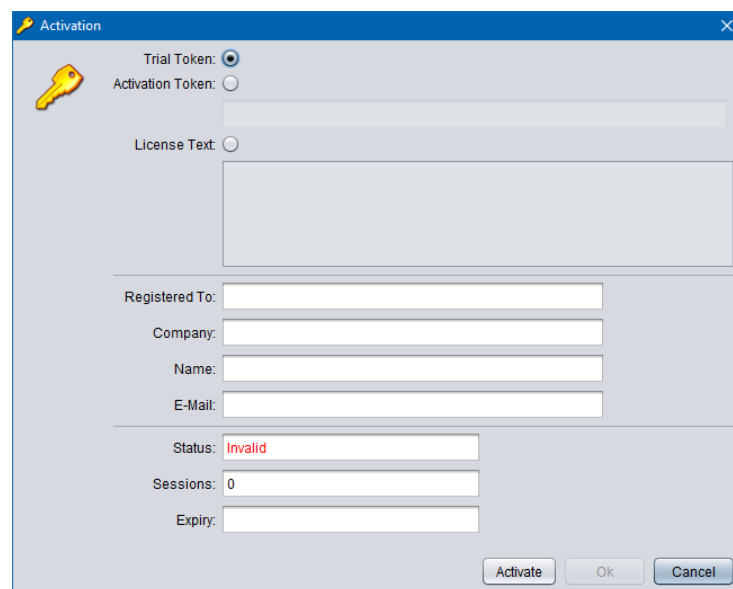


Figure 6: Activation Dialog

You can activate the application in one of the following ways:

1. Activate a 10 day trial of the application by choosing the **Trial Token** option. This mode of activation requires Internet access.

Note that you will be able to activate one, and only one, trial of the application on a given PC. Once the 10 day trial is complete, it will not be possible to activate another trial for the application on the same PC.

2. Activate the application for either a limited time or perpetually by entering an **Activation Token** that we send you when you purchase a license for the application. This mode of activation requires Internet access.

Based on the number of licenses that you purchase, and the type of token that we send you, you may be able to activate the application with the token on a single

PC or multiple PCs. Please consult the instructions that come with the token for more details.

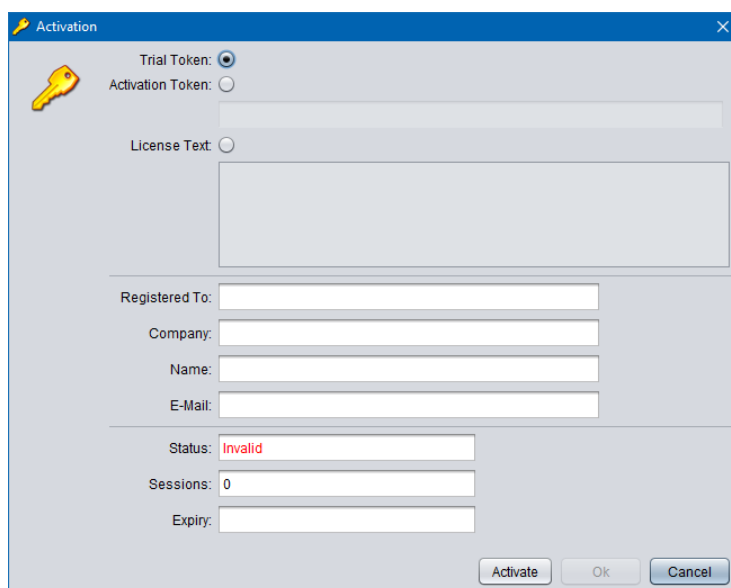
3. Activate the application for a limited time or perpetually by entering a **License Text**. This mode of activation does not requires Internet access.

This mode of activation, in general, will be used only for existing licenses (activated previously) when lost or misplaced. Please contact us for instructions on how to proceed to recover lost activation licenses. However, it can be used to activate the application on PCs that do not have Internet access.

Instructions for each method of activation follows.

Activation with the Trial Token

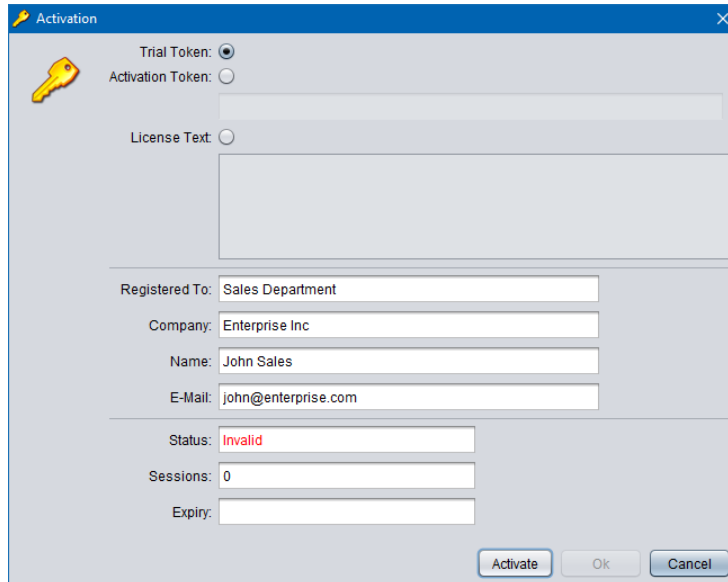
1. To activate a 10 day trial of the application select **Trial Token**.



The screenshot shows a dialog box titled "Activation". It has a yellow key icon on the left. There are three radio buttons: "Trial Token:" (selected), "Activation Token:", and "License Text:". Below these are text input fields for "Registered To:", "Company:", "Name:", and "E-Mail:". At the bottom, there are fields for "Status:" (displaying "Invalid" in red), "Sessions:" (displaying "0"), and "Expiry:". At the bottom right are "Activate", "Ok", and "Cancel" buttons.

2. Enter **Registered To**, **Company**, **Name** and **E-Mail** as desired. Note that the details that you enter here will be needed to recover the trial activation license in the event that it is lost or misplaced so make a record of them and keep them in a safe place.

For example:

The 'Activation' dialog box has a blue title bar with a key icon. It contains three radio buttons: 'Trial Token' (selected), 'Activation Token', and 'License Text'. Below these are three text input fields. The 'Registered To' field contains 'Sales Department', 'Company' contains 'Enterprise Inc', 'Name' contains 'John Sales', and 'E-Mail' contains 'john@enterprise.com'. The 'Status' field displays 'Invalid' in red text. The 'Sessions' field contains '0' and the 'Expiry' field is empty. At the bottom right are 'Activate', 'Ok', and 'Cancel' buttons.

Activation

Trial Token: ☒

Activation Token: ☐

License Text: ☐

Registered To: Sales Department

Company: Enterprise Inc

Name: John Sales

E-Mail: john@enterprise.com

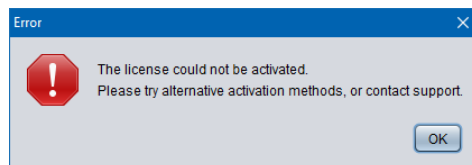
Status: Invalid

Sessions: 0

Expiry:

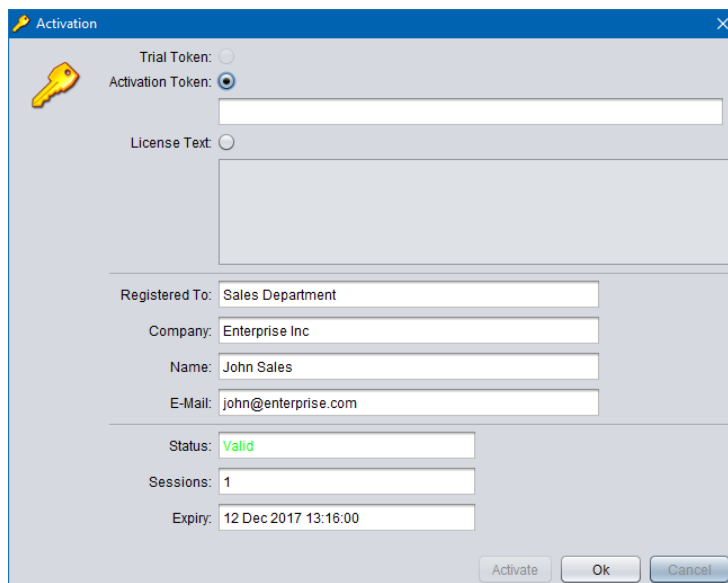
Activate Ok Cancel

3. Select **Activate** to attempt activation. The application will attempt activation (over the Internet) with the Total Recall VR licensing server. If you receive the following error message, then a trial of the application was previously activated on the PC.



As a result, the Trial Token cannot be used to activate the application (again).

4. In most cases the activation will be successful. For example:

The 'Activation' dialog box is shown with the 'Activation Token' radio button selected. The 'Status' field now displays 'Valid' in green text. The 'Sessions' field contains '1' and the 'Expiry' field contains '12 Dec 2017 13:16:00'. The 'Activate', 'Ok', and 'Cancel' buttons are at the bottom right.

Activation

Trial Token: ☐

Activation Token: ☒

License Text: ☐

Registered To: Sales Department

Company: Enterprise Inc

Name: John Sales

E-Mail: john@enterprise.com

Status: Valid

Sessions: 1

Expiry: 12 Dec 2017 13:16:00

Activate Ok Cancel

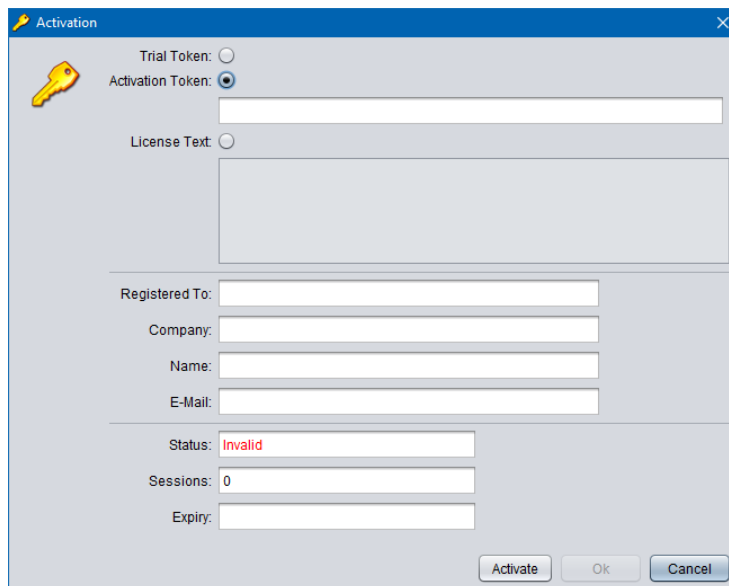
5. Select **Ok** to start the trial of the application. You will not be asked to activate the application again during the trial.

Activation with an Activation Token

1. If you have received an activation token from us, then you can activate the application with the token. This is an example of an activation token that you will receive:

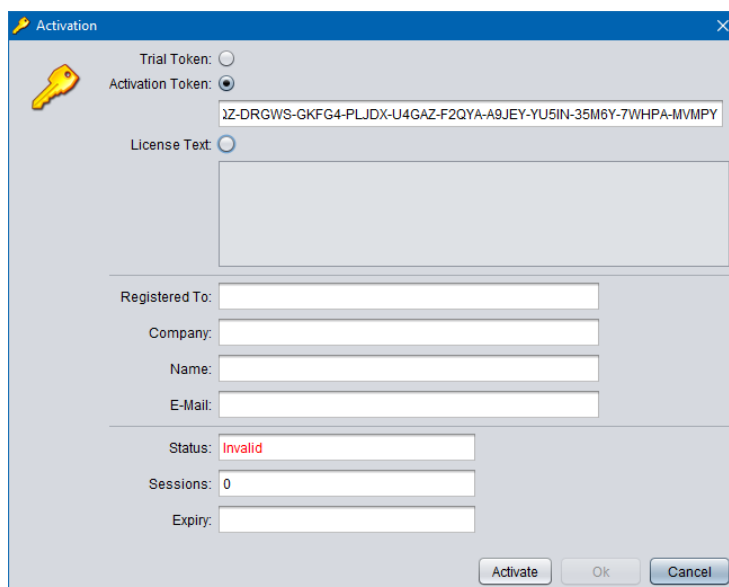
ZU2QL-DSFGK-GHAHA-3NW9B-24RAH-LJQ9A-A9LEH-GTPH5-3G6L4-XJPTX-H5SEA

2. To activate the application with an activation token select **Activation Token**.



The screenshot shows the 'Activation' dialog box. It has a blue title bar with a yellow key icon. The 'Trial Token' radio button is unselected, and the 'Activation Token' radio button is selected. Below the radio buttons is a text input field for the activation token. The 'License Text' radio button is unselected, and there is a large text area for license text. The 'Registered To' section has four input fields: 'Registered To:', 'Company:', 'Name:', and 'E-Mail:'. The 'Status' field shows 'Invalid' in red. The 'Sessions' field shows '0'. The 'Expiry' field is empty. At the bottom are 'Activate', 'Ok', and 'Cancel' buttons.

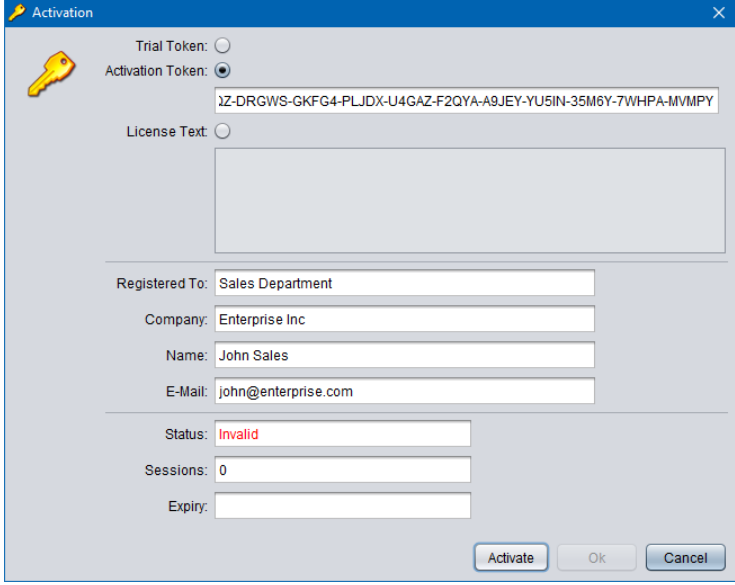
3. Enter the token as you received it from us. For example:



The screenshot shows the 'Activation' dialog box with an example activation token entered. The 'Activation Token' radio button is selected. The token 'XZ-DRGWS-GKFG4-PLJDX-U4GAZ-F2QYA-A9JEY-YU5IN-35M6Y-7WHPA-MVMPY' is entered in the token field. The 'License Text' field is empty. The 'Registered To' section contains empty fields for Company, Name, and E-Mail. The Status field shows 'Invalid' in red. The Sessions field shows '0'. The Expiry field is empty. At the bottom are 'Activate', 'Ok', and 'Cancel' buttons.

4. Enter ***Registered To***, ***Company***, ***Name*** and ***E-Mail*** as desired. Note that the details that you enter here will be needed to recover the activation license in the event that it is lost or misplaced so make a record of them and keep them in a safe place.

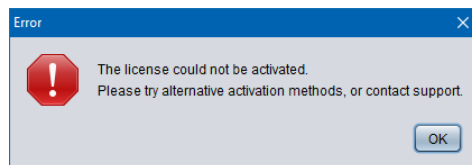
For example:



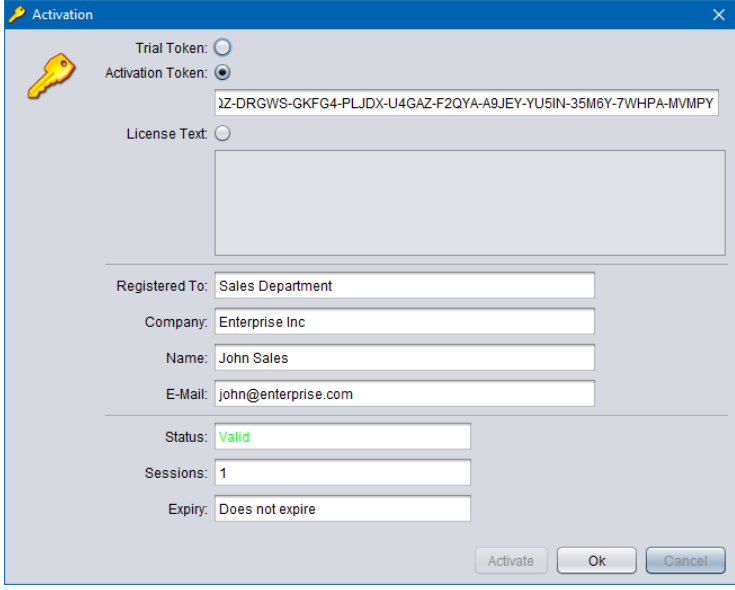
The Activation dialog box contains the following fields and controls:

- Trial Token:** ☐
- Activation Token:** ☒ (Selected)
- License Text:** ☐
- Registered To:** Sales Department
- Company:** Enterprise Inc
- Name:** John Sales
- E-Mail:** john@enterprise.com
- Status:** Invalid
- Sessions:** 0
- Expiry:** (Empty field)
- Buttons:** Activate, Ok, Cancel

5. Select **Activate** to attempt activation. The application will attempt activation (over the Internet) with the Total Recall VR licensing server. If you receive the following error message, then the Activation Token is no longer valid, or it was previously used to activate the application.



6. In most cases the activation will be successful. For example:



The Activation dialog box contains the following fields and controls:

- Trial Token:** ☐
- Activation Token:** ☒ (Selected)
- License Text:** ☐
- Registered To:** Sales Department
- Company:** Enterprise Inc
- Name:** John Sales
- E-Mail:** john@enterprise.com
- Status:** Valid
- Sessions:** 1
- Expiry:** Does not expire
- Buttons:** Activate, Ok, Cancel

7. Select **Ok** to start using the application.

(Re)Activation with License Text

1. We may send you the license text of an activation license if you cannot activate the application over the Internet, or if you have activated the application before and misplaced your activation license for the application on a particular PC. This is an example of license text that you will receive (some lines were removed to save space):

```
# Example Application License (id: 1511837763868)
6729c0c1fc5b9b29b19c4336e2068b75b231474c87cbce079ff39ea741b0
04ec3480fda88ffed82f6dee402293e82e1ece184925ed3510c2189c2b18
4c819332337373235b9e7b8210da6286c2f502de30a0a4140e3a5ddc1102
:
:
4abc5a5efd5f38c804a4ee8b45e92495aac362e67cf5c9721a48400c9ee3
8b699a6d3fc266e0d8efabcede2d58427ac92f510576c4250af30d5ad7a2
5cde6395e2493adb54960307e8083ae8
```

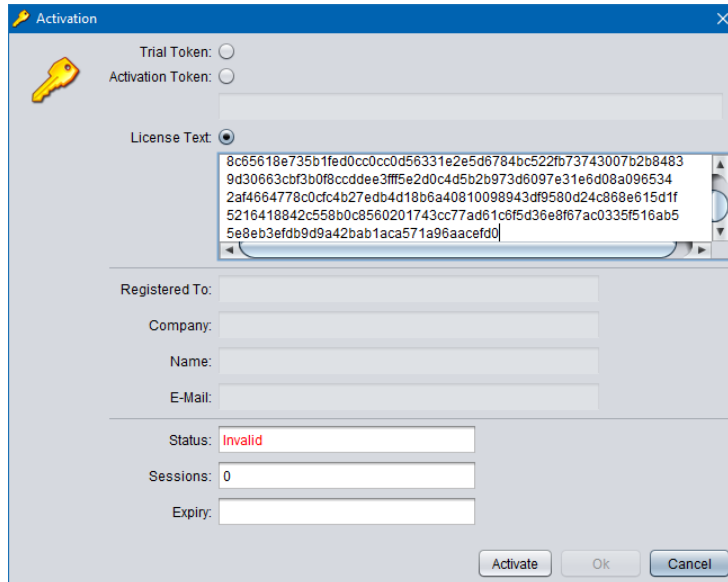
Note:

- a. The PC does not need Internet access to (re)activate the application with license text.
 - b. The license text that we will send you is for an existing license which activates the application on the same PC (without hardware modifications) as it was when activated for the first time.
 - c. If the activation license is lost due to damaged hard disk, or motherboard and you replace the faulty hardware, then the license text of the original activation license (which we will send you) will no longer be valid as the hardware of the PC changed and you will have to purchase a new license.
2. To activate the application with a license text select **License Text**.

The screenshot shows a window titled "Activation" with a close button (X) in the top right corner. On the left side, there is a yellow key icon. The window contains several input fields and buttons:

- Trial Token:** An unselected radio button.
- Activation Token:** An unselected radio button.
- License Text:** A selected radio button, followed by a large, empty text area for pasting the license text.
- Registered To:** A text input field.
- Company:** A text input field.
- Name:** A text input field.
- E-Mail:** A text input field.
- Status:** A text input field containing the word "Invalid" in red.
- Sessions:** A text input field containing the number "0".
- Expiry:** A text input field.
- At the bottom right, there are three buttons: "Activate", "Ok", and "Cancel".

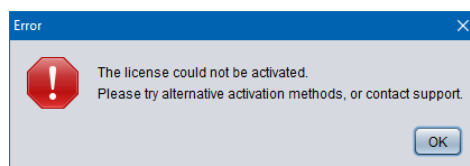
3. Enter the license text as you received it from us. For example:



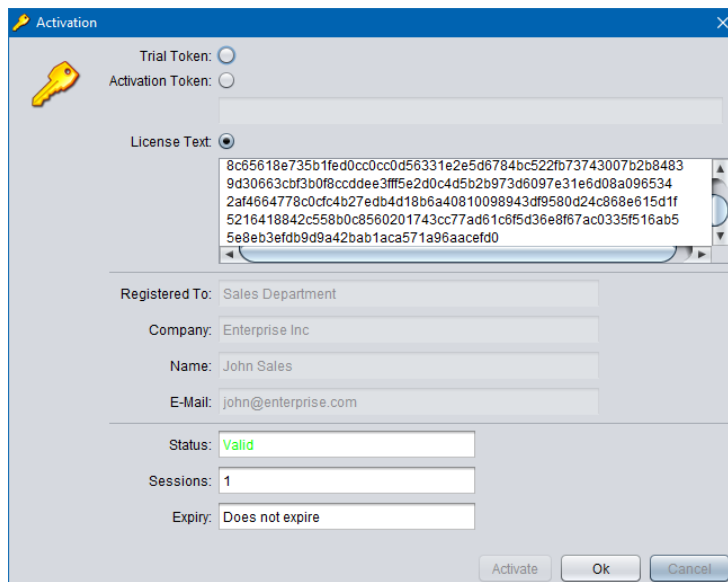
The Activation dialog box contains the following fields and controls:

- Trial Token:** Radio button (unselected)
- Activation Token:** Radio button (unselected)
- License Text:** Radio button (selected), with a text area containing a long alphanumeric string.
- Registered To:** Text field
- Company:** Text field
- Name:** Text field
- E-Mail:** Text field
- Status:** Text field displaying "Invalid" in red.
- Sessions:** Text field displaying "0".
- Expiry:** Text field.
- Buttons:** "Activate", "Ok", and "Cancel".

4. Select **Activate** to attempt activation. If you receive the following error message, then the activation license is no longer valid, or it is for a different application, or it is for a PC with different hardware.



5. In most cases the activation will be successful. For example:



The Activation dialog box contains the following fields and controls:

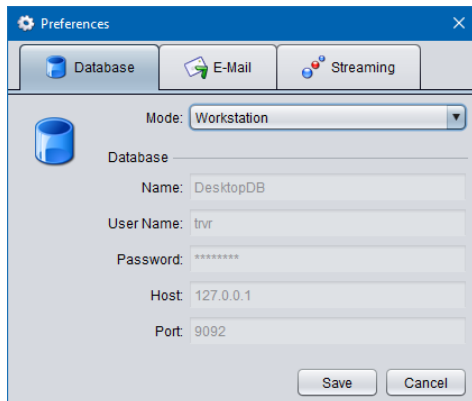
- Trial Token:** Radio button (unselected)
- Activation Token:** Radio button (unselected)
- License Text:** Radio button (selected), with a text area containing a long alphanumeric string.
- Registered To:** Text field containing "Sales Department".
- Company:** Text field containing "Enterprise Inc".
- Name:** Text field containing "John Sales".
- E-Mail:** Text field containing "john@enterprise.com".
- Status:** Text field displaying "Valid" in green.
- Sessions:** Text field displaying "1".
- Expiry:** Text field displaying "Does not expire".
- Buttons:** "Activate", "Ok", and "Cancel".

6. Select **Ok** to start using the application.

Once you activate the application (for the first time), it will display the Preference dialog which allows you to configure the application.

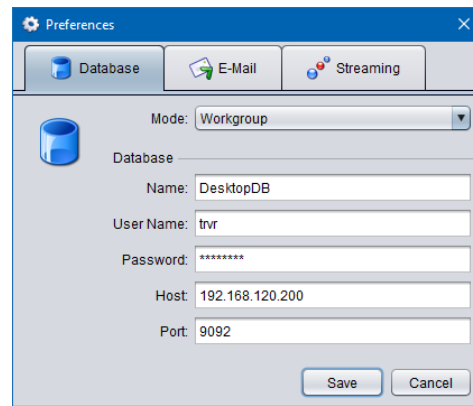
Application Configuration

1. The Preferences dialog allows you to configure the application.

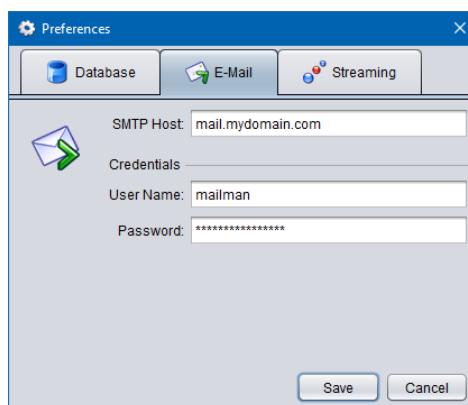


2. On the **Database** tab, select **Mode**. This is the working mode that the application will use. Select one of the following:
 - a. *Workstation* if you wish to allow multiple users to use the application but on a single PC – see section 3.3.1 Workstation Mode for more details.
 - b. *Workgroup* if you wish to allow multiple users to use the application from multiple PCs – see section 3.3.2 Workgroup Mode for more details.
3. If you select *Workgroup* mode, then enter the details of the central H2 database which contains the configuration for the application:
 - a. Enter **Name**. This is the name of the H2 database. All application instances that share the same H2 database must use the same name for the database.
 - b. Enter **User Name**. This is the user name that the application will use when connecting to the database. All application instances that share the same H2 database must use the same user name.
 - c. Enter **Password**. This is the password that the application will use when connection to the database. All application instances that share the same H2 database must use the same password.
 - d. Enter **Host**. This is the IP address, or the host name, of the server which runs the H2 database server.
 - e. Enter **Port**. This is the TCP port that is used by the H2 database server to provide database services.

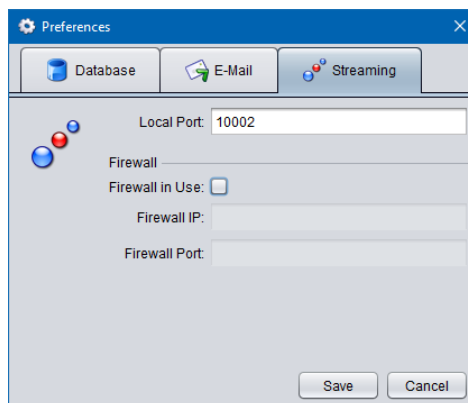
For example:



4. Optionally, and if you wish to enable sending of e-mail from the application, switch to the **E-Mail** tab:

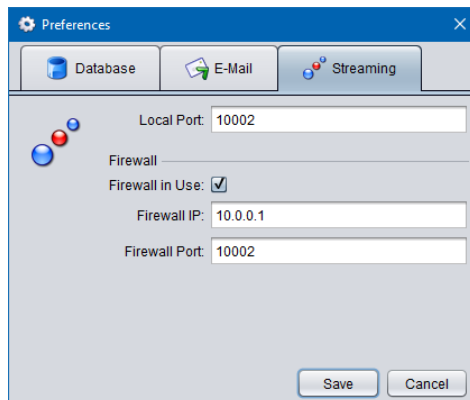


5. To enable sending of e-mail from the application:
 - a. Enter **SMTP Host**. This is the IP address, or the host name, of an SMTP e-mail server on your network that the application can use to send e-mail.
 - b. Optionally, and if your SMTP server requires authentication to send e-mail, enter **User Name** and **Password**.
6. Optionally, and if you wish to change the default streaming configuration for the application, switch to the **Streaming** tab:

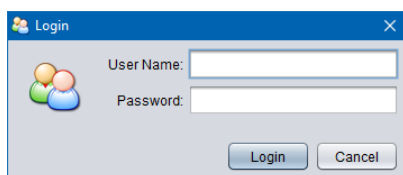


7. By default, the application will use UDP port 10002 on the local PC to receive audio streams from Total Recall VR systems. To change to a different port:

- a. Enter **Local Port**. This is a UDP port on the local PC that the application will use to receive audio streams from Total Recall VR systems.
- b. Optionally, and if you are running the application on a PC that is behind a firewall, tick **Use Firewall**:



- c. Enter **Firewall IP**. This is the external (or public) IP address that is assigned to the firewall.
 - d. Enter **Firewall Port**. This is a UDP port on the firewall that will be used to receive audio streams from Total Recall VR systems.
 - e. Make sure to forward **Firewall Port** to **Local Port** on the firewall. Otherwise, the application will not receive the audio from the Total Recall VR systems.
8. Select **Save** to save the application configuration.
 9. The application may take a moment to initialise. When done, it will display the Login dialog:



10. If you are using the application in workstation mode, then use the pre-configured user with application administration rights to log in:
 - a. **User Name**: admin
 - b. **Password**: changeme
11. If you are using the application in workgroup mode, then you can use any user that exists in the central H2 database. However, if this is the first instance of the application, then use the pre-configured user with application administration rights to log in (see the previous step for login details).

Once you login for the first time you should proceed immediately to the Resource Manager where you need to create at least one user (see Users tab) and one recorder connection (see Recorders tab).

4. User Interface

Total Recall VR Monitor is collection of applications that work together in a desktop like environment which provides the runtime environment for the applications.

4.1. Desktop

The following screen capture shows the desktop as it appears when all applications are minimised. The applications appear as icons at the bottom edge of the desktop.

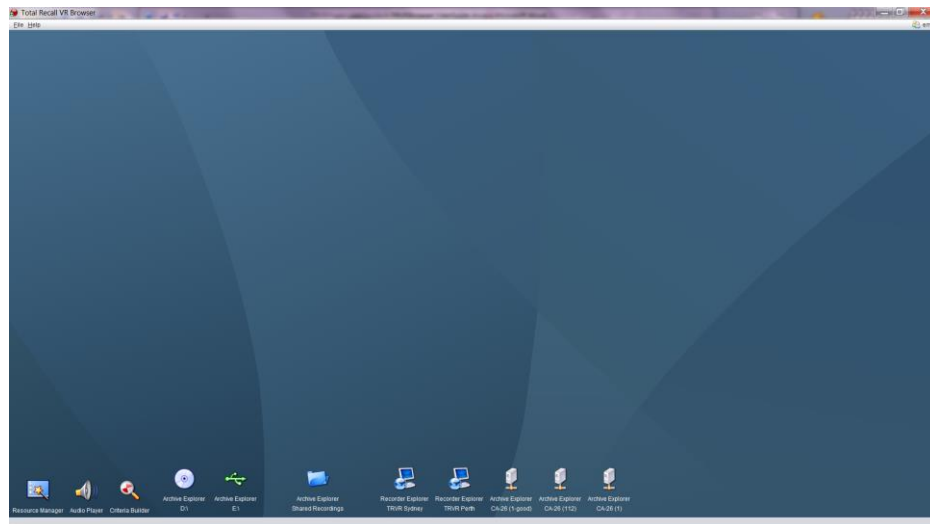


Figure 7: Total Recall VR Monitor Desktop

Note that not all icons that you see on the previous screen capture may appear on your instance of the desktop. Section 4.5 Plug and Play explains why. The following screen capture shows a number of applications in use within the desktop.

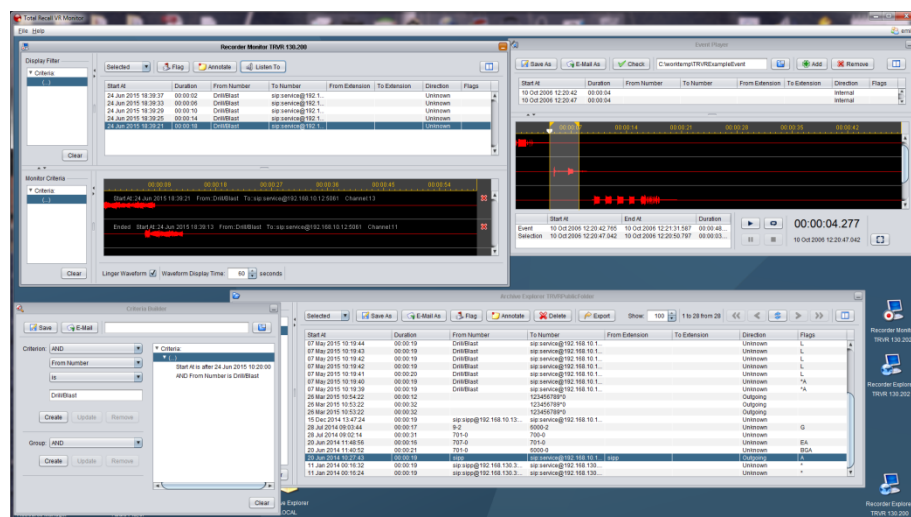
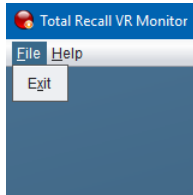


Figure 8: Total Recall VR Monitor Desktop with Applications in Use

4.2. Main Menu Bar

The Total Recall VR Monitor main menu bar comprises of 3 menus:

4.2.1. File Menu

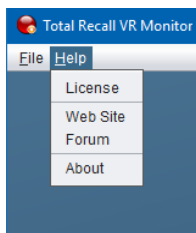


The File menu includes the following options:

1. **Exit**

It terminates the application.

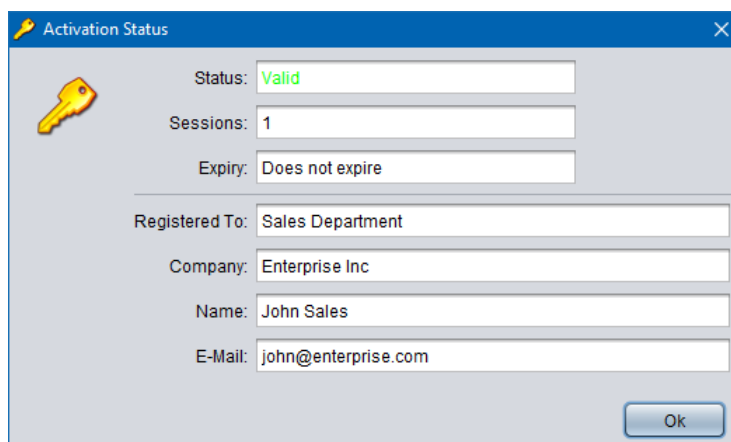
4.2.2. Help Menu



The Help menu includes the following options:

1. **License**

It displays the Activation Status dialog which shows information on the activation license:



2. **Web Site**

It starts the default system web browser and loads the front page of the Total Recall VR web site.

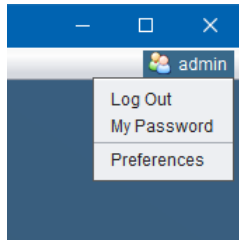
3. **Forum**

It starts the default system web browser and loads the Forums page of the Total Recall VR web site.

4. **About**

It display 'about' information about the application including the version number of the application.

4.2.3. User Menu



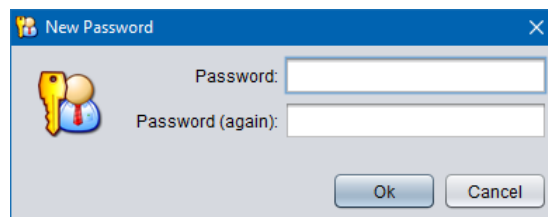
Found in the top right corner of the desktop, and only when a user is logged in, the user menu includes the following options:

1. **Log Out**

It logs out the current user from the desktop. This will close all applications and show the log in dialog so another user can log in and proceed to use the application.

2. **My Password**

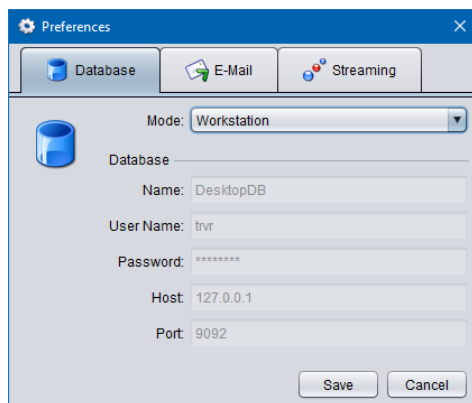
Displays the My Password dialog which allows the current user to change his/her own password:



3. **Preferences**

This item appears on the menu only if the current user has application administration rights.

It displays the Preferences dialog which allows you to configure the application.



4.3. Applications

Total Recall VR Monitor comprises of the following applications:



Resource Manager

Resource Manager is an application that provides for configuration of application resources such as users, Total Recall VR systems, location of network drives which contain Total Recall VR network archives, Public Folder archives and Mega archives.

This application appears on the desktop only, if and only if, the current user has administrative privileges for the application.



Criteria Builder

Criteria Builder is an application that provides for the creation, editing and sharing of comprehensive natural language search queries.

The queries that are created by this application can be shared by multiple recording explorer applications and the event player and monitor applications. In addition, the queries can be used as recording filter on the users' profile.

This application is always present on the desktop.



Audio Player

Audio Player is a powerful audio player application that provides for play of, and conversion between, all Total Recall VR audio file and encoding formats.

In addition to playing and media conversion, this application provides for sharing of recordings via e-mail and integrity check of recordings that are stored in the TRC file format.

This application appears on the desktop only if the current user has authority to play (listen to) recordings.



Event Player

Event Player is a powerful audio player application designed to play the mix of the audio from multiple recordings ordered in time. This enable users to recreate events that comprise of one or more recordings and listen to the audio of the events as it happened in time.

In addition to playing, this application provides for exporting events to popular audio file formats, sharing of events via e-mail and integrity check of event segments.



Disc Archive Explorer

Disc Archive Explorer is a recording explorer that provides for viewing, searching, exporting and managing of recordings that are stored in Total Recall VR disc archives.

This application appears on the desktop only if the current user has authority to search Total Recall VR archives and only when the application detects a disc with a Total Recall VR archive in one of the disc drives that are attached to the machine that runs the application.



USB Archive Explorer

USB Archive Explorer is a recording explorer that provides for viewing, searching, exporting and managing of recordings that are stored in Total Recall VR USB archives.

This application appears on the desktop only if the current user has authority to search Total Recall VR archives and only when the application detects a USB device with a Total Recall VR archive on one of the USB ports of the machine that runs the application.



Public Folder Explorer

Public Folder Explorer is a recording explorer that provides for viewing, searching, exporting and managing of recordings that are stored in Public Folders.

This application appears on the desktop only if the current user has authority to search Public Folders and only when the application has access to Public Folders.



Network Archive Explorer

Network Archive Explorer is a recording explorer that provides for viewing, searching, exporting and managing of recordings that are stored in Total Recall VR network archives.

This application appears on the desktop only if the current user has authority to search Total Recall VR archives and only when the application has access to network drives that contains one or more Total Recall VR network archives.



Mega Archive Explorer

Mega Archive Explorer is a recording explorer that provides for viewing,

searching, exporting and managing of recordings that are stored in Total Recall VR mega archives.

This application appears on the desktop only if the current user has authority to search Total Recall VR archives and only when the application has access to the database and disk space used by the mega archive.



Recorder Explorer

Recorder Explorer is a recording explorer that provides for viewing, searching, exporting and managing of recordings that are stored on Total Recall VR systems.

This application appears on the desktop only if the current user has authority to search Total Recall VR systems and only when the application can access Total Recall VR systems over the network.



Recorder Monitor

Recorder Monitor is a powerful application designed for real-time monitoring (listening) and observing of recordings in progress on multiple Total Recall VR systems simultaneously. It provides for real time display of recording meta data and waveforms as well as listening to multiple recordings in progress.

This application appears on the desktop only if the current user has authority to monitor recording in progress on Total Recall VR systems and only when the application can access Total Recall VR systems over the network.

4.4. Drag and Drop

Drag and drop is a user interface gesture in which you select an object on the screen with a pointing device (mouse for example) and then drop it on top of another object on the screen to invoke a desired action. It is used extensively by Total Recall VR Monitor.

Applications share data (recordings, search queries etc.) via drag and drop. So it is important to familiarise yourself with drag and drop (or DnD as it is otherwise known) in GUI environments if you are not already familiar with it.

For example, to load a recording from a recording explorer application into Audio Player you simply select the recording in the explorer with your mouse, drag it to the area of Audio Player and drop it there.

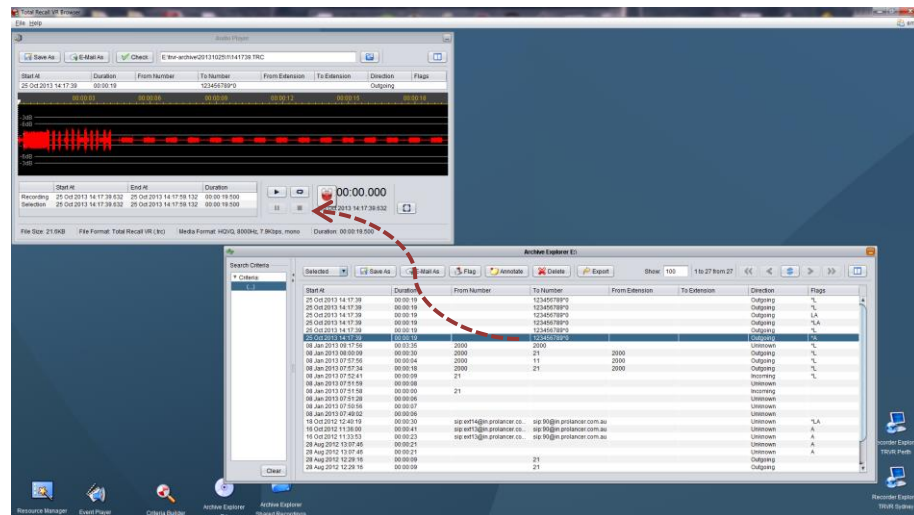


Figure 9: Using DnD to Load Recordings into Audio Player

Another example is the transfer of a search query from Query Builder to a recording explorer. Simply select the root node of the query in Criteria Builder and drag it to the area of an explorer window where you simply drop it to initiate a search based on the query:

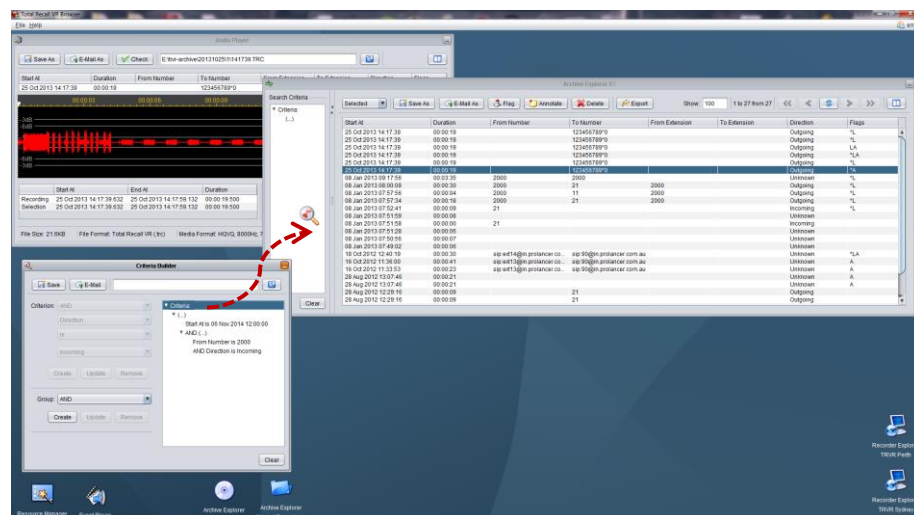


Figure 10: Using DnD to Transfer Search Queries

4.5. Plug and Play

Plug and play is another important feature of Total Recall VR Monitor.

Plug and play is a technology that enables Total Recall VR Monitor to automatically detect discs, USB drives and network connections to network drives and Total Recall VR systems and automatically load and show applications on the desktop. The same technology enables Total Recall VR Monitor to hide and unload applications when you remove a USB device or a network connection breaks for example.

This technology makes the content of the desktop dynamic. Applications appear on, and disappear from, the desktop as events happen.

For example, here is the content of the desktop when there is a disc with a Total Recall VR archive in one of the disc drives and a USB device with a Total Recall VR archive is attached to one of the USB ports:

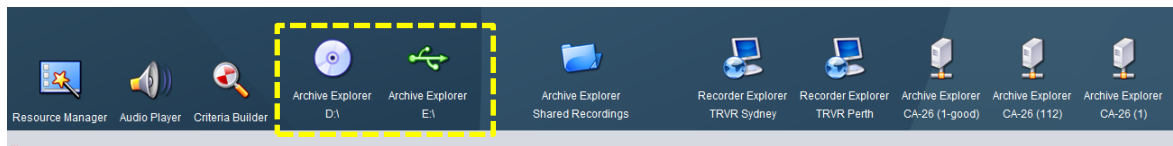


Figure 11: Desktop Icons with Disc and USB Archives Present

If you remove the disc with a Total Recall VR archive and the USB device with a Total Recall VR archive, the desktop will change to the following:

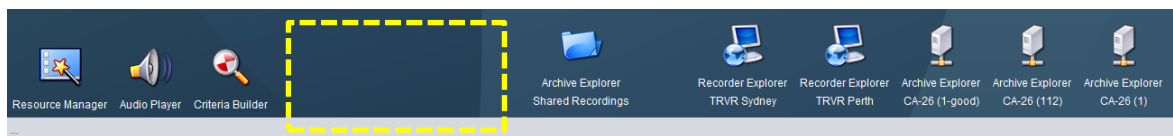


Figure 12: Desktop Icons When no Disc and USB Archives are Present

Note how the Disc Archive Explorer and the USB Archive Explorer disappear from the desktop when you eject the disc and detach the USB device.

This behaviour is consistent with the behaviour of the Windows desktop, and other popular desktops. For example Windows automatically creates and removes drives for discs and USB devices when attached and detached.

5. Resource Manager

Resource Manager is an application that provides for configuration of application resources.

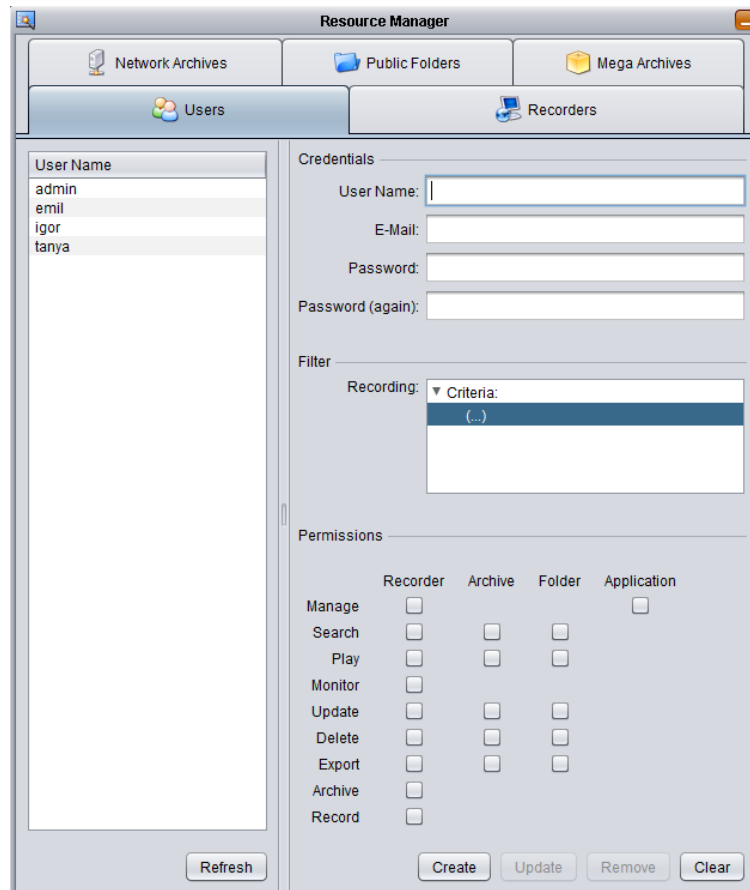


Figure 13: Resource Manager Application

You must use Resource Manager to configure:

- Users - application users including authentication credentials (username and password), permissions and a recording filter.
- Recorders - connections to the Remote Manager Interface provided by Total Recall VR systems to allow application users to access recordings on the systems.
- Network Archives – location and access credentials for network drives which contain Total Recall VR network archives.
- Public Folder – folders on the local machine, or network drives, which users can use as Public Folders.
- Mega Archives – location and access credentials for Total Recall VR mega archives.

Total Recall VR Monitor stores all resources in a database. The location of the database depends on the application working mode (see section 3.3 Application Working Mode for more details).

5.1. Users

Total Recall VR Monitor uses its own database of users to control access to the application and to features of the applications.

Use the **Users** tab to create, update and remove application users.

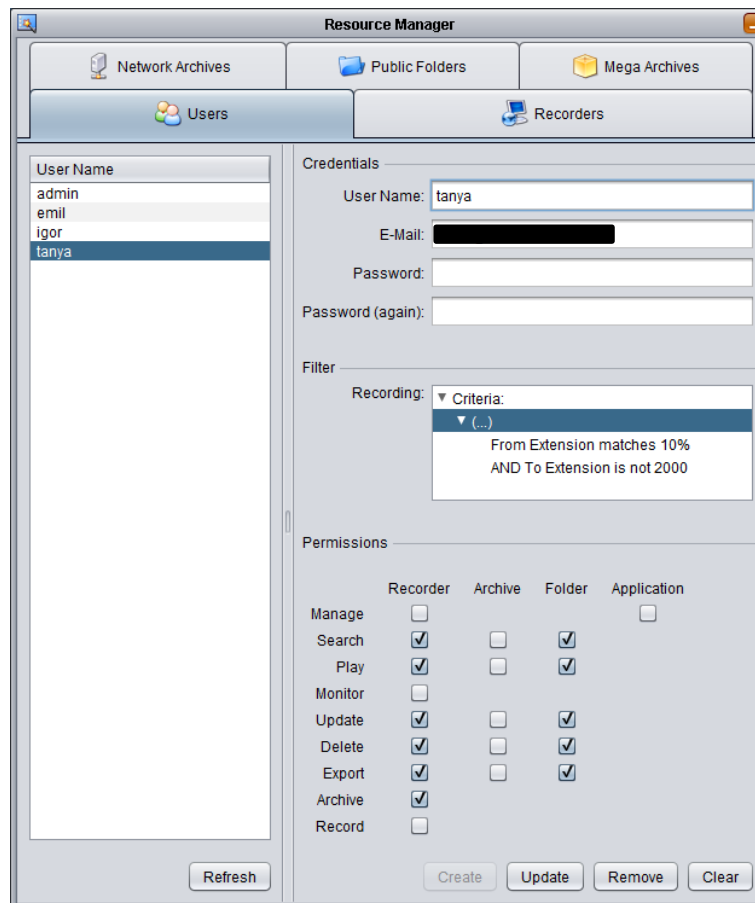


Figure 14: Resource Manager - Users Tab

You must define the following for each user: access credentials, filters and permissions.

5.1.1. Access Credentials

Access credentials comprise of the standard username and password and an optional e-mail address.

The username and password allow access to the application. Both are mandatory and the password must comply with the following rules:

- Minimum 8 and maximum 16 characters.
- Contains at least one alpha and one numeric character.
- Does not contain the same character (alpha or numeric) more than 3 times.

The e-mail address is optional and if present allows the user to send e-mail messages from the application. If you wish to disallow e-mail sending for the user simply leave *E-Mail* blank.

5.1.2. Filters

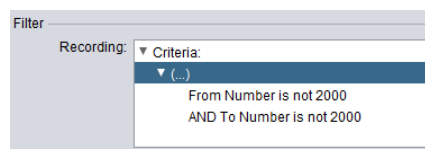
At this stage there is only one filter that you can specify for a user, a recording filter.

The application uses the recording filter to filter recordings when the user runs standard search queries and when monitoring. The filter criteria are automatically added to each search query that the user runs and to recordings in progress. As a result, the filter is automatically applied to all searches and while monitoring.

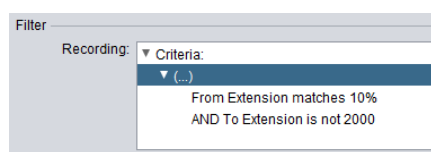


Use the Criteria Builder application to create recording filters. When a filter is ready to assign to a user record simply drag and drop the filter from the Criteria Builder window to the **Recording** area.

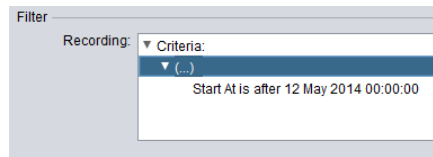
There are no rules on how to structure a filter and you can choose to use exclusion, inclusion or a combined filter. The following is an example of an exclusion filter which will remove all recordings with To Number and From Number set to 2000 from all search results and while monitoring:



The following is an example of a combined filter which will keep recordings with From Extension that starts with the digits '10' and at the same time remove all recordings with To Extension set to 2000 from all search results and while monitoring.



The possibilities are endless and the filters are not limited to the numbers fields. For example you can create a filter that excludes all recordings that were recorded before 12th of May 2014 from all search results as follows:



5.1.3. Permissions

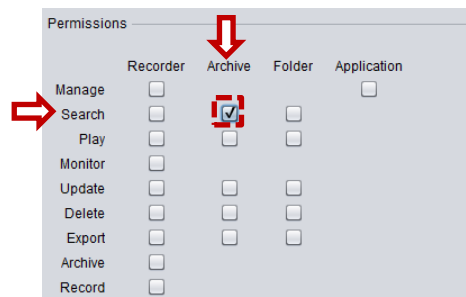
The application uses a set of permissions to control access to various features of the applications.

Unlike other applications, there are no predefined roles (permission sets) and you are free to set a different set of permissions for each user. This has the effect of defining a role for each user while at the same time users with the same set of permissions belong to the same role.

Permissions have two components:

1. Resource – recorder, archive, folder and application; and
2. Operation – manage, search, play etc.

So, to define a permission for a user, simply tick the check box that sits in the cross of a resource and an operation. For example, the following shows how to give a user permission to search archives:



The following table shows the permissions that are used by Total Recall VR Monitor. If a permission does not appear in the table, then it is not used by Total Recall VR Monitor and if it is set for a user it will have no impact on the user's experience with the application.

Resource	Operation	Explanation
Recorder	Search	Allows users to browse recordings that reside on Total Recall VR systems. Users must have this permission in order to access the Recorder Explorer application.
	Play	Allows users to play (listen to) recordings that reside on Total Recall VR systems.
	Monitor	Allows the user to monitor (listen to) recordings in progress on Total Recall VR systems.
	Update	Allows users to change some of the metadata for recordings that reside on Total Recall VR systems. In particular, users can add/change notes and change flags (tagged, archived, locked ...).
	Delete	Allows users to (permanently) delete recordings that reside on Total Recall VR systems. Do not give this permission to users unless you are absolutely sure that you wish to allow them to permanently delete recordings.
	Export	Allows users to export metadata to CSV format for recordings that reside on Total Recall VR systems. In addition, it allows users to create local copies of and e-mail recordings that reside on Total Recall VR systems.
Archive	Search	Allows users to browse recordings that reside in Total Recall VR disc, USB, network and mega archives. Users must have this permission in order to access the Disc Archive Explorer, USB Archive Explorer Network Archive Explorer and Mega Archive Explorer applications.
	Play	Allows users to play (listen to) recordings that reside in Total Recall VR disc, USB, network and mega archives.
	Update	Allows users to change some of the metadata for recordings that reside in Total Recall VR disc, USB, network and mega archives. In particular, users can add/change notes and change flags (tagged, archived, locked ...).
	Delete	Allows users to (permanently) delete recordings that reside in Total Recall VR USB, network and mega

		<p>archives.</p> <p>Do not give this permission to users unless you are absolutely sure that you wish to allow them to permanently delete recordings.</p>
	Export	<p>Allows users to export metadata to CSV format for recordings that reside in Total Recall VR disc, USB, network and mega archives.</p> <p>In addition, it allows users to create local copies of and e-mail recordings that reside in Total Recall VR disc, USB, network and mega archives.</p>
Folder	Search	<p>Allows users to browse recordings that reside in Public Folders.</p> <p>Users must have this permission in order to access the Public Folder Explorer application.</p>
	Play	Allows users to play (listen to) recordings that reside in Public Folders.
	Update	<p>Allows users to change some of the metadata for recordings that reside in Public Folders.</p> <p>In particular, users can add/change notes and change flags (tagged, archived, locked ...).</p>
	Delete	<p>Allows users to (permanently) delete recordings that reside in Public Folders.</p> <p>Do not give this permission to users unless you are absolutely sure that you wish to allow them to permanently delete recordings.</p>
	Export	<p>Allows users to export metadata to CSV format for recordings that reside in Public Folders.</p> <p>In addition, it allows users to create local copies of and e-mail recordings that reside in Public Folders.</p>
Application	Manage	<p>Allows users to manage the application configuration and resources.</p> <p>In particular it allows access to the Resource Manager application and the (application) Preferences dialog.</p> <p>Do not give this permission to users unless you are absolutely sure that they should be allowed to edit the application configuration and resources.</p>

5.2. Recorders

Total Recall VR Monitor uses its own database of Total Recall VR systems. Each record defines connection details for the Remote Manager Interface provided by Total Recall VR systems.



If you have multiple Total Recall VR systems, then you must assign a different recorder ID to each system before you can configure Total Recall VR Monitor to connect to them.

See the Total Recall VR Embedded GUI User Guide [5] and/or the Total Recall VR Remote Manager User Guide [6] on how to assign a recorder ID to your systems.



You must configure the Remote Manager Interface on your Total Recall VR systems before you configure Total Recall VR Monitor to connect to them.

See section 3.4.6 Remote Interface for more details.

Use the **Recorders** tab to create, edit and remove connection details to Remote Manager Interfaces provided by Total Recall VR systems.

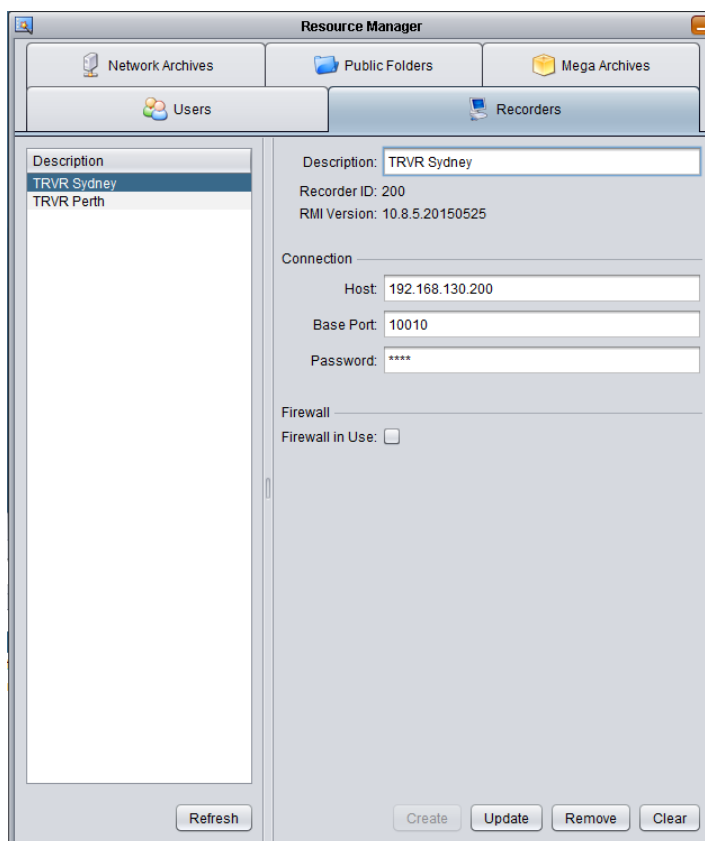
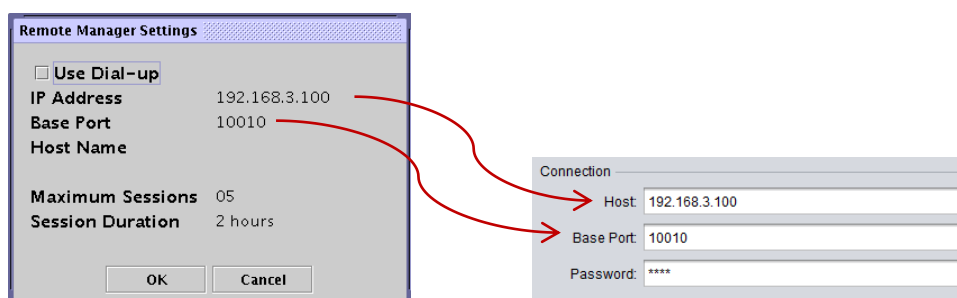


Figure 15: Resource Manager - Recorders Tab

The **Host** and **Base Port** entries in the **Connection** section must reflect the configuration of the Remote Manager Interface on a Total Recall VR system as shown on the following screen captures:



Password must be set to the password assigned to the Administrator user on the Total Recall VR system. By default this password is '0000' (four zeroes); however, you may have changed it to a different value.



Do not use the password assigned to the non-administrative user on the Total Recall VR system.

If there is a firewall between the networks that connect the PC that runs Total Recall VR Monitor and the Total Recall VR system, then tick ***Firewall in Use*** and then change ***Host*** and ***Base Port*** as described in the Total Recall VR Deployment Guide [4].



For more details on connecting to the Remote Manager Interface of a Total Recall VR system on networks that uses firewalls please see section 12 Remote Manager Interface Application Deployment in the Total Recall VR Deployment Guide [4].

The following table shows the ports that Total Recall VR Monitor uses when interacting with a Total Recall VR system:

Port	Type	Usage
10010	TCP	This is the default port used by the Remote Manager Interface on Total Recall VR systems. However, it is user configurable and can be set to a different value.
10011	TCP	Default port + 1, so it may change if you change the default port (10010) for the Remote Manager Interface. Used to stream audio from the recorder using the RTSP protocol.
4040	TCP	Used to post audit events to the recorder using the HTTP protocol.
22	TCP	Used to execute remote commands on the Total Recall VR system as well as transfer files from and to the Total Recall VR system. This is the same port used by the SSH and SCP protocols.
10012	TCP	Default port + 2, so it may change if you change the default port (10010) for the Remote Manager Interface. Used instead of TCP port 22 when <i>Firewall in Use</i> is set in the configuration.

5.3. Network Archives

Total Recall VR Monitor needs connection details for network drives that are used to store Total Recall VR network archives in order to access the archives on the drives.

Use the **Network Archives** tab to create, edit and remove connection details for network drives that house Total Recall VR network archives.

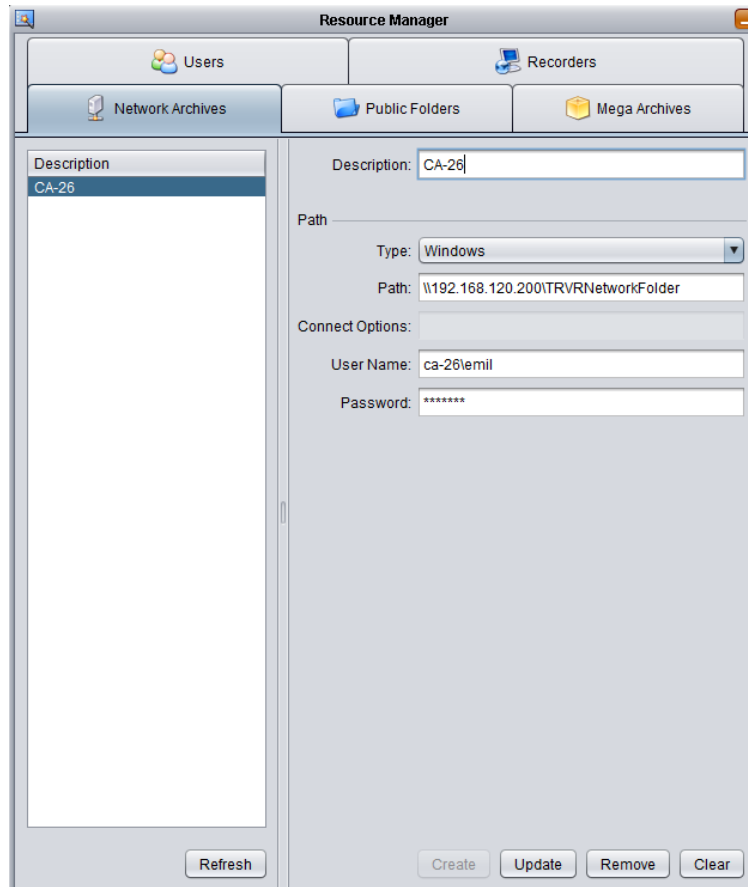
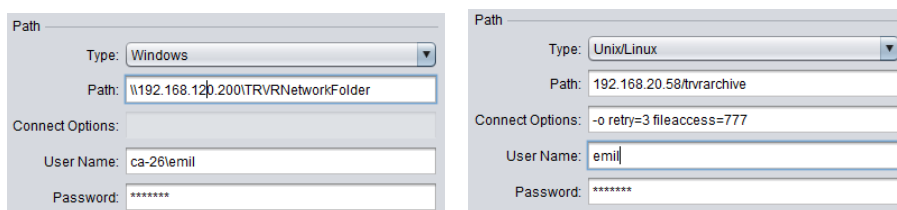


Figure 16: Resource Manager - Network Archives Tab

Total Recall VR Monitor supports two types of network drives: Windows and Unix/Linux (via NFS).

The following are example configuration for a Windows and a Unix/Linux network drive:



Connect Options are not applicable when connecting to Windows network drives. However, Total Recall VR Monitor passes the connection options directly to the NFS client when connecting to Linux network drives.



See <http://technet.microsoft.com/en-us/library/cc754350.aspx> for details on connection options used by the Windows NFS client.

5.4. Public Folders

Total Recall VR Monitor can create, access and manage recordings in Public Folder archives.



Public Folders are ad-hoc archives that users can create while using Total Recall VR Monitor.

Public Folder archives have no restrictions on number of recordings; however, the intended use of this type of archives is to create small collections of recordings from various sources in order to share recordings with multiple users of Total Recall VR Monitor. This is similar to public folders that you may create in other applications to share documents or e-mail messages for example.

The type of public folder that you can create depends on the Total Recall VR Monitor working mode – see section 3.3 Application Working Mode.

5.4.1. Workstation Public Folders

If you are using Total Recall VR Monitor in workstation mode (see 3.3.1 Workstation Mode) then the Public Folders that you can create can use disk space for its database and recording files on one of the local disks that are attached to the PC that runs Total Recall VR Monitor. This can be an internal disk or an external disk (USB, eSATA etc).

If a Public Folder is using a local disk or directory, then it cannot be accessed by instances of Total Recall VR Monitor that run on different PCs. If you wish to allow access to a Public Folders from different PCs, then you must use disk space on a network accessible drive.

In both cases, the Public Folder will store its database and recording files in the same location.

Use the **Public Folders** tab to create, edit and remove Public Folders.

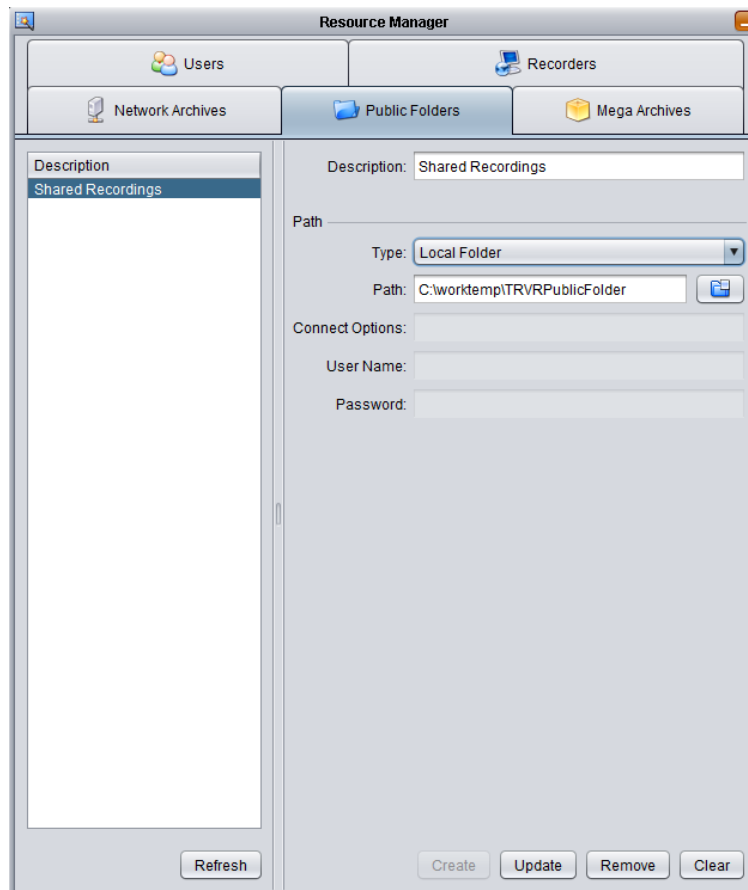
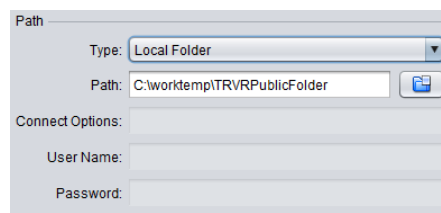


Figure 17: Resource Manager – Workstation Public Folders

The following is an example configuration of a Public Folder that is using disk space on a local drive:



The following are example configuration for Public Folders that use disk space on a network drive:

Path	Path
Type: Windows	Type: Unix/Linux
Path: \\192.168.120.200\TR\VRPublicFolder	Path: 192.168.20.36/public
Connect Options:	Connect Options: -o retry=3 fileaccess=777
User Name: ca-26lemil	User Name: root
Password: *****	Password: *****

The **Connect Options** are not applicable when using Windows network drives. However, Total Recall VR Monitor passes the connection options directly to the NFS client when connecting to Linux network drives using NFS.



See <http://technet.microsoft.com/en-us/library/cc754350.aspx> for details on connection options used by the Windows NFS client.

If you decide to remove a Public Folder, then note that the content of the archives remains on disk when you remove the Public Folder record in Resource Manager. You must manually delete the content on disk if you wish to completely delete (destroy) the Public Folder archive.

5.4.2. Workgroup Public Folders

If you are using Total Recall VR Monitor in workgroup mode (see 3.3.2 Workgroup Mode) then you must specify disk space for recording files on a network drive and a database for recording metadata on a working H2 database server.

Multiple instances of Total Recall VR Monitor that run on multiple PCs can access workgroup Public Folders.

Use the **Public Folders** tab to create, edit and remove Public Folders.

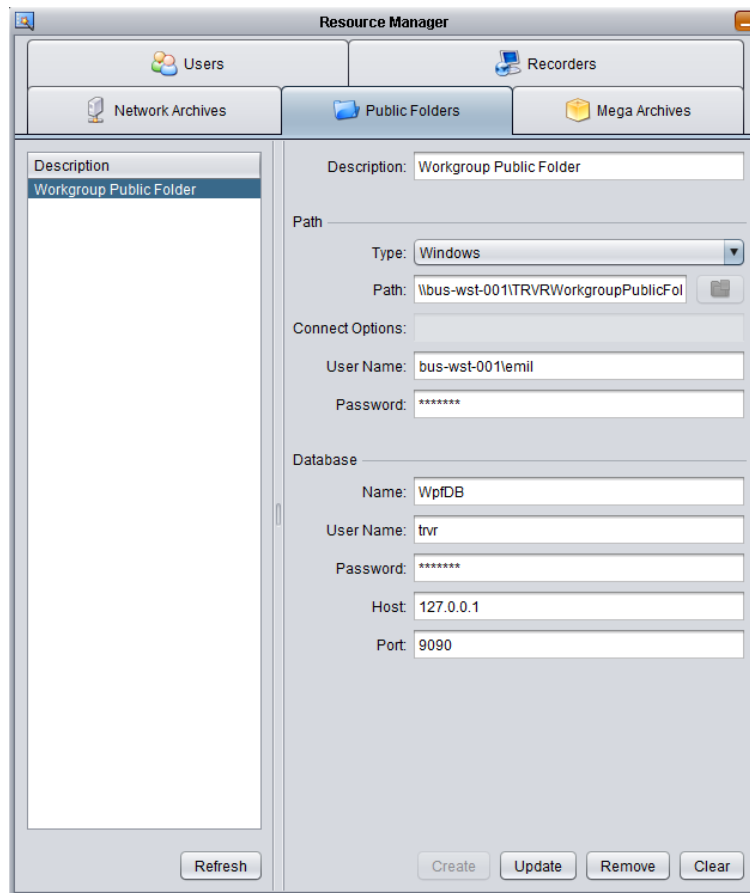
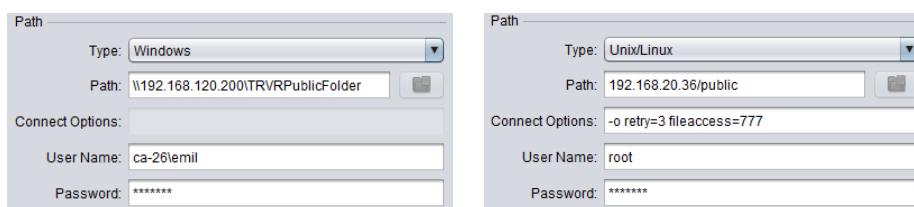


Figure 18: Resource Manager - Workgroup Public Folders

The following are example configuration for Public Folders that use disk space on a Windows and Linux network drive:



The **Connect Options** are not applicable when using Windows network drives. However, Total Recall VR Monitor passes the connection options directly to the NFS client when connecting to Linux network drives using NFS.



See <http://technet.microsoft.com/en-us/library/cc754350.aspx> for details on connection options used by the Windows NFS client.

If you decide to remove a Public Folder, then note that the content of the archives remains on disk and database when you remove the Public Folder record in Resource Manager. You must manually delete the content on disk and the database file if you wish to completely delete (destroy) the Public Folder archive.

5.5. Mega Archives

Total Recall VR Monitor can access and manage recordings that are stored in Total Recall VR mega archives.



Mega archives are a new type of archives which unlike all other types of archives are designed to store unlimited number of recordings. Of course, disk space limits apply.

In addition, unlike all other types of archives, Total Recall VR Archiver creates this type of archive. Total Recall VR systems cannot create this type of archive.

Mega archives comprise of a database and disk storage for audio files. To configure a mega archive, you must specify connection details and credentials to a database and the associated disk storage. The disk storage can be available as a local drive on the machine where you are running Total Recall VR Monitor, or a network drive.

Use the **Mega Archives** tab to create, edit and remove mega archives.

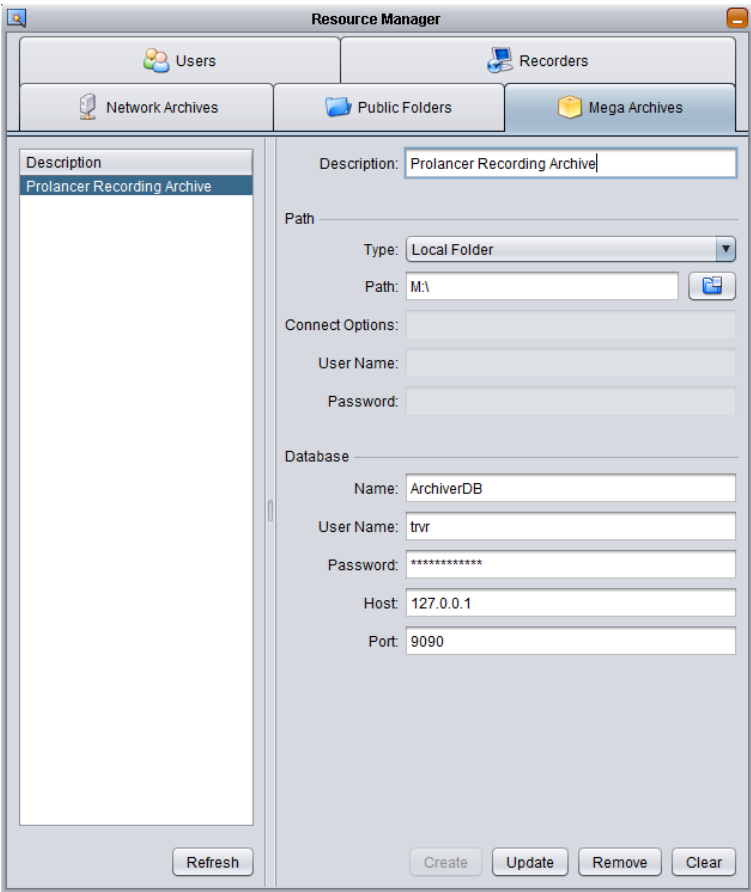
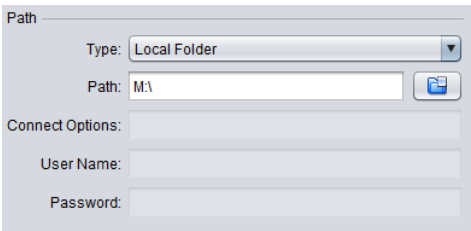
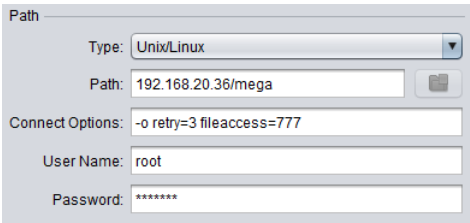
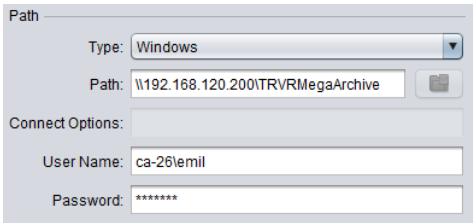


Figure 19: Resource Manager - Mega Archive

The following is an example configuration of a Mega Archive that is using disk space on a locally mapped drive:



The following are example configuration for Mega Archives that use disk space on a network drive:



The ***Connect Options*** are not applicable when using Windows network drives. However, Total Recall VR Monitor passes the connection options directly to the NFS client when connecting to Linux network drives using NFS.



See <http://technet.microsoft.com/en-us/library/cc754350.aspx> for details on connection options used by the Windows NFS client.

6. Criteria Builder

Criteria Builder is an application that provides for the creation, editing and sharing of comprehensive natural language search queries.

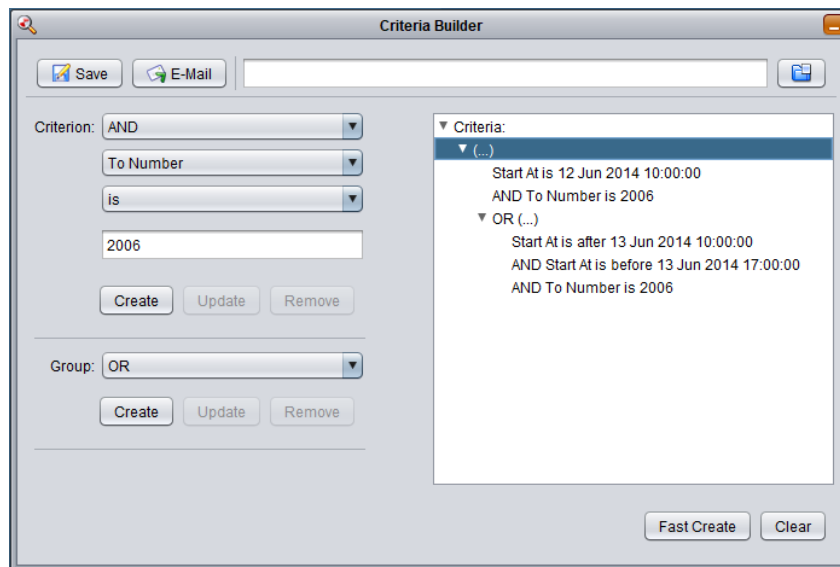
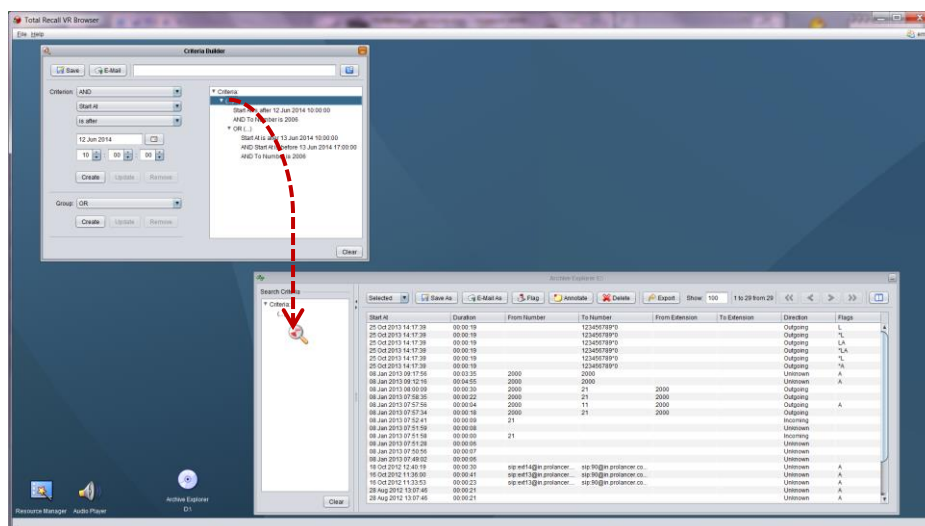


Figure 20: Criteria Builder Application

Use Criteria Builder to create natural language search queries and then simply drag and drop queries to an explorer window to initiate a search based on the query.



You can also do the reverse; that is, drag a query from an explorer window and drop it on Criteria Builder if you wish to change the query.

Criteria Builder also allows you to save queries to files as well as send queries via e-mail to other users directly from the application.



Not sure how to create a query? Or struggling to get the right query?

E-mail us the details of the query that you wish to create and we will e-mail you a query file which you can load into Criteria Builder and then use it in the application.

This is a free service.

6.1. Anatomy of Queries

Criteria Builder creates queries which comprise of criteria that may be organised into groups. Criteria and groups may be joined with logical 'and' and 'or' operators to form complex queries.

The main building blocks of each query are criteria. For example:

- Start At is after 12 Jun 2014 10:00:00
- To Number is 2006
- From Extension matches 10%

You can join criteria together with 'and' and 'or' to create conjunctions and disjunctions. For example:

- Duration is more than 00:01:00 AND To Number is 2006
- To Number is 1000 OR To Extension matches 10%

Criteria Builder does not impose a limit on the number of criteria that are joined with 'and' and 'or'.

You can organise criteria into groups and then join whole groups with 'and' and 'or' to create complex conjunctions and disjunctions. For example:

- Duration is more than 00:01:00 AND (To Number is 1000 OR To Extension matches 10%)
- (Start At is after 12 Jun 2014 10:00:00 AND Duration is more than 00:01:00) AND (To Number is 1000 OR To Extension matches 10%)

Criteria Builder does not impose a limit on the number of groups and the level of nesting of groups.

6.2. Criterion Comparators

An integral part of each criterion is a comparator. Criteria Builder supports the following comparator (most are self-explanatory):

Operator	Description
is	Matches values that are same as the one specified.
is not	Matches values that are NOT the same as the one specified.
is less than	Matches values that are less than the one specified.
is more than	Matches values that are more than the one specified.
is before	Matches values that are before the one specified.
is after	Matches values that are after the one specified.
matches	<p>Matches values that match the specified pattern.</p> <p>The pattern comprises of alphanumeric characters and the following wildcard characters:</p> <p>% - matches zero or more alphanumeric characters.</p> <p>For example: 10% matches any sequence of characters that start with 10.</p> <p>To match the actual % character use ‘\%’.</p> <p>_ - matches exactly one character.</p> <p>For example: 10_ matches any sequence of 3 characters that start with 10.</p> <p>To match the actual _ character use ‘_’.</p>

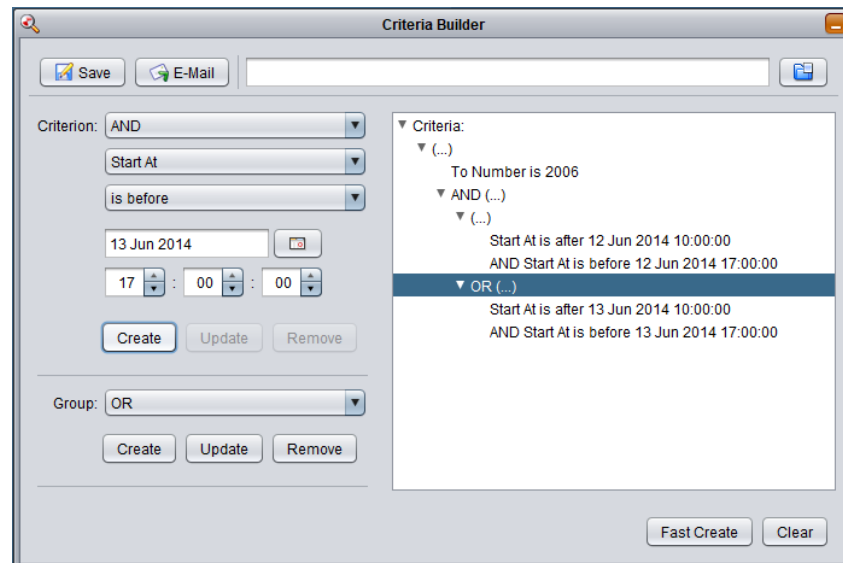
6.3. Creating Queries

The flexibility of Criteria Builder enables creation of complex queries. Also, queries that result in the same search outcome may take different forms and shapes. Consequently, it is impossible to explain here how you can create every possibly query. Instead we explain how you can create the following example query:

To Number is 2006 AND (
(Start At is after 12 Jun 2014 10:00:00 AND
Start At is before 12 Jun 2014 17:00:00)
OR
(Start At is after 13 Jun 2014 10:00:00 AND
Start At is before 13 Jun 2014 17:00:00)
)

The query basically identifies all recordings which have To Number set to 2006 and started between the hours of 10am and 5pm on the 12th and 13th of June 2014.

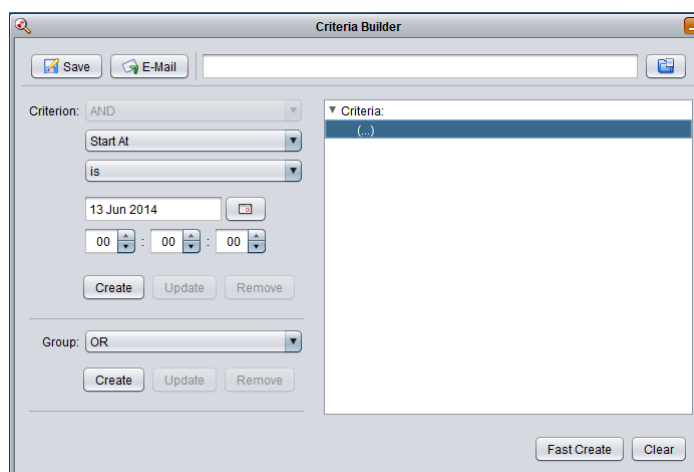
The following screen capture shows the query in Criteria Builder:



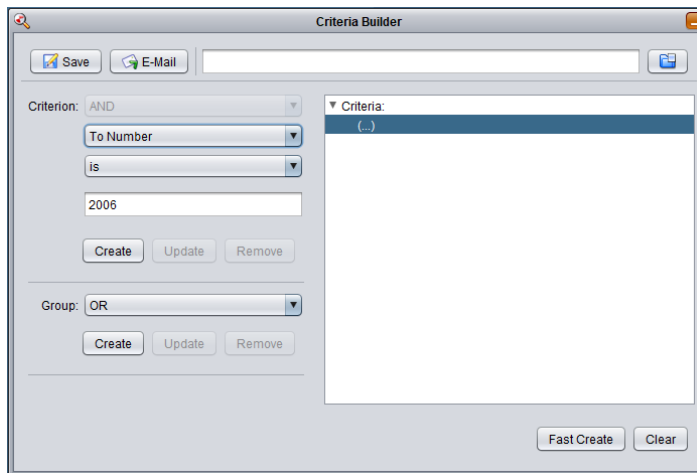
The example query comprises of 5 criteria and 3 groups one of which is used to group two groups.

Example query creation

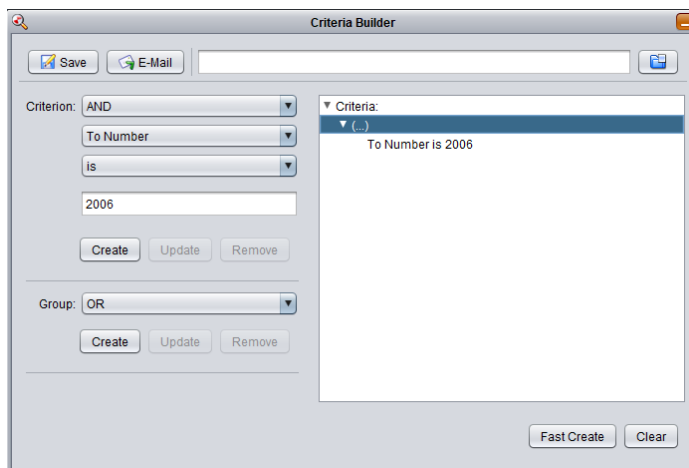
1. New queries start with an empty Criteria tree:



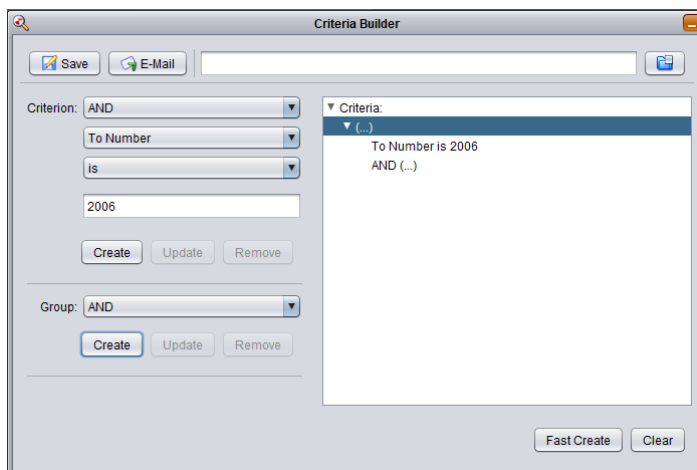
2. To create the first criterion (*To Number is 2006*), first set **Criterion** as shown on the following screen capture:



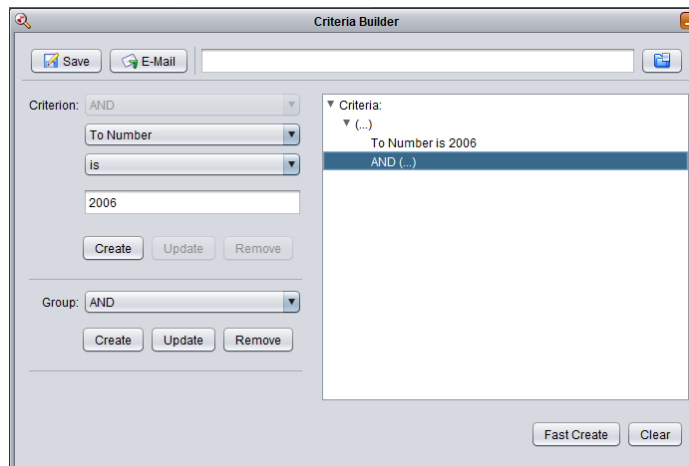
3. Now select **Create** in the **Criterion** area to add the criterion to the Criteria tree:



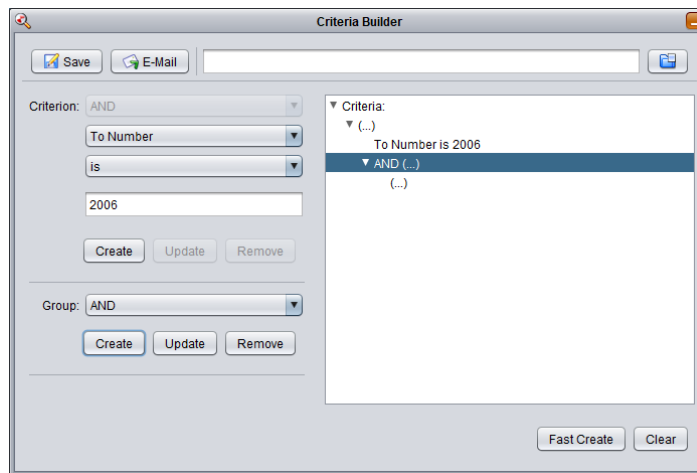
4. Now we need to create the group that will hold the two groups with the Start At criteria. Choose **AND** for **Group** and then select **Create** in the **Group** area to add the group to the Criteria tree:



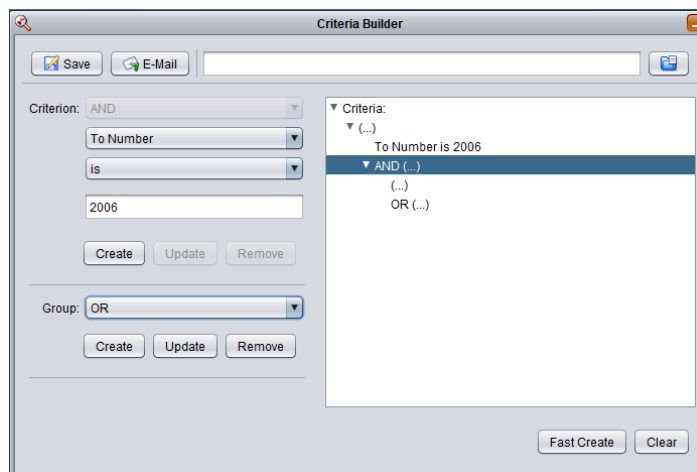
5. The new group comprises of two groups which are joined with “or” in our example query. So we will create the two groups first. To do so, select the group node that we just created on the Criteria tree:



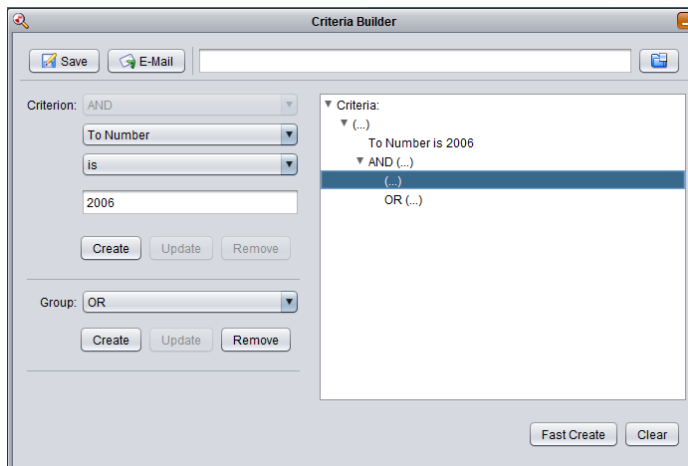
6. Choose AND for **Group** and then select **Create** in the **Group** area to add the first group to the Criteria tree:



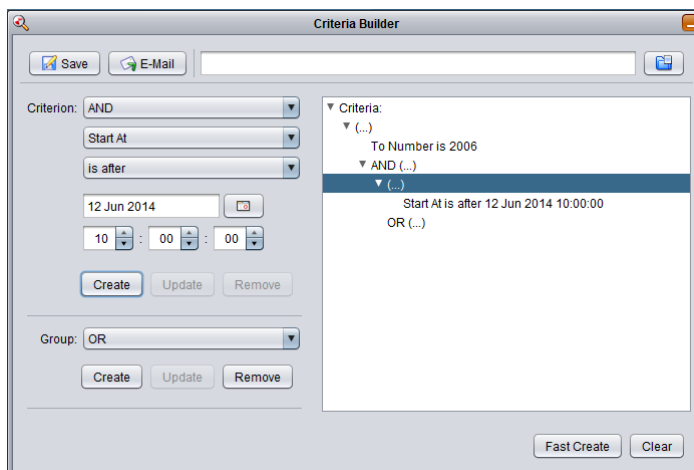
7. Choose OR for **Group** and then select **Create** in the **Group** area to add the second group to the Criteria tree:



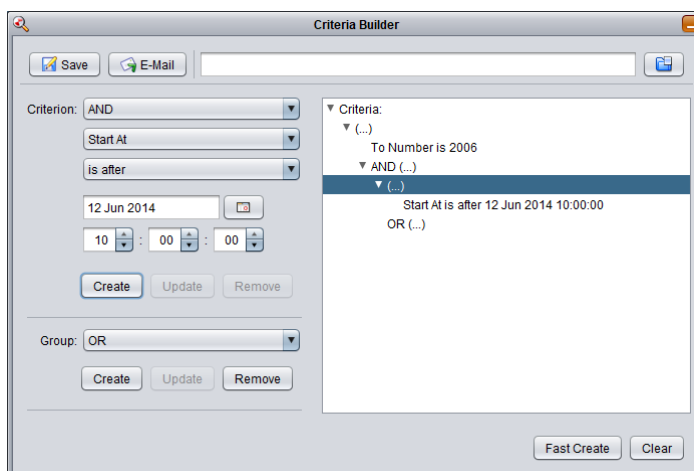
8. Now we will add the criteria for 12th of June. To do so, select the first sub-group in the Criteria tree:



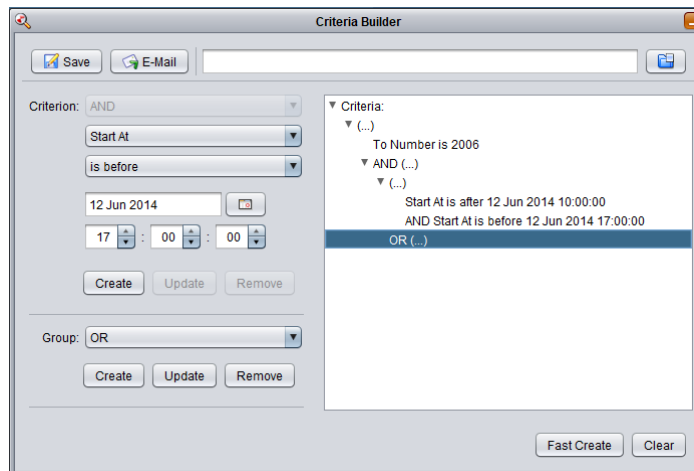
9. To create the first criterion for 12th of June (*Start At is after 12 Jun 2014 10:00:00*), first set **Criterion** as shown on the following screen capture, and then select **Create** in the **Criterion** area:



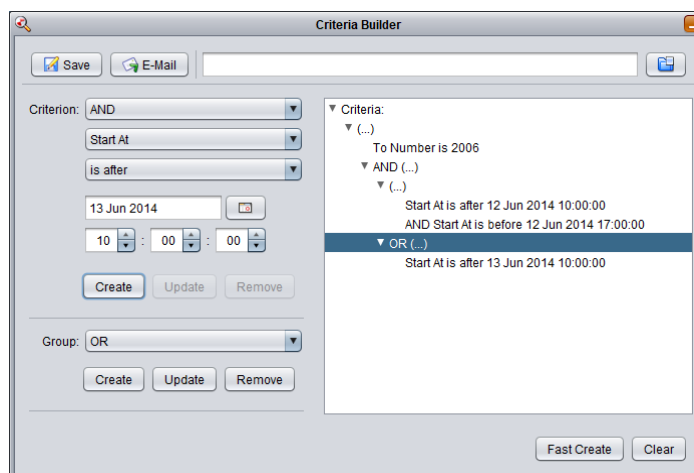
10. To create the second criterion for 12th of June (*Start At is before 12 Jun 2014 17:00:00*), first set **Criterion** as shown on the following screen capture, and then select **Create** in the **Criterion** area:



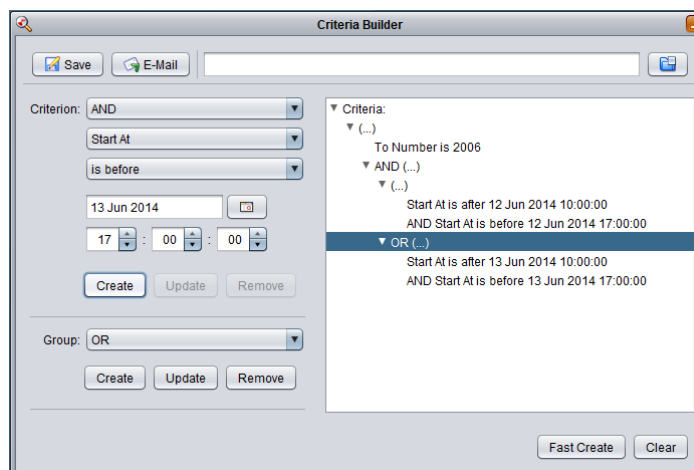
11. Finally we will add the criteria for 13th of June. To do so, select the second sub-group in the Criteria tree first:



12. To create the first criterion for 13th of June (*Start At is after 13 Jun 2014 10:00:00*), first set **Criterion** as shown on the following screen capture, and then select **Create** in the **Criterion** area:



13. To create the second criterion for 13th of June (*Start At is before 13 Jun 2014 17:00:00*), first set **Criterion** as shown on the following screen capture, and then select **Create** in the **Criterion** area:



14. The query is now complete and you can simply drag to an explorer window and then drop it to initiate a search based on the query.

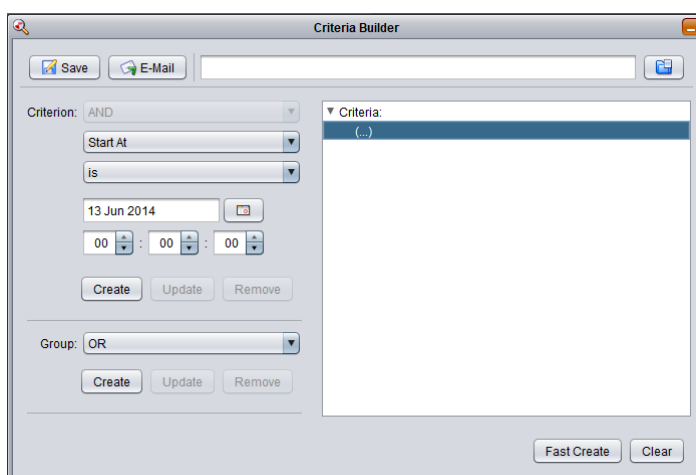
6.4. Fast Queries

The previous sections explain the flexibility of Criteria Builder, however if you find the flexibility a bit overwhelming then it is possible to create simple, but very useful queries using the Quick Query builder.

You need specify only values for various search parameters and the Quick Query builder will create a query for you. You can use the query as is or modify it in the Criteria Builder.

Fast query creation

1. Start with an empty Criteria tree (select **Clear** if the Criteria is not empty as shown on the following screen capture):



2. Select **Fast Create** to display the Quick Criteria dialog:

- Enter values for the parameters that you wish to use in the query. Parameters that do not have a value will be ignored.

For example let's assume we wish to find all incoming calls to 2006 on the 12th of June 2014. If so, set values as shown on the following screen capture:

Quick Criteria

Earliest Start At: 12 Jun 2014 00 : 00 : 00

Latest Start At: 12 Jun 2014 23 : 59 : 59

From Number:

To Number: 2006

From Extension:

To Extension:

Duration: 00 : 00 : 00

Direction: Incoming

Notes:

Channel:

Flags: ☐ * ☐ E ☐ B ☐ G ☐ L ☐ A ☐ X ☐ C

Digits:

Agent:

Clear Ok Cancel

That is, set:

- **Earliest Start At** to 12 Jun 2014, 00:00:00
- **Latest Start At** to 12 Jun 2014, 23:59:59
- **To Number** to 2006
- **Direction** to Incoming

- Select **Ok** to load the query into the Criteria Builder:

Criteria Builder

Save E-Mail

Criterion: AND

Start At

is before

13 Jun 2014 17 : 00 : 00

Create Update Remove

Group: OR

Create Update Remove

Criteria:

- Start At is 12 Jun 2014 00:00:00
- OR Start At is 12 Jun 2014 23:59:59
- OR Start At is after 12 Jun 2014 00:00:00
- AND Start At is before 12 Jun 2014 23:59:59
- AND To Number matches 2006
- AND Direction is Incoming

Fast Create Clear


- Now you can use the query as is or modify it as desired before using it.

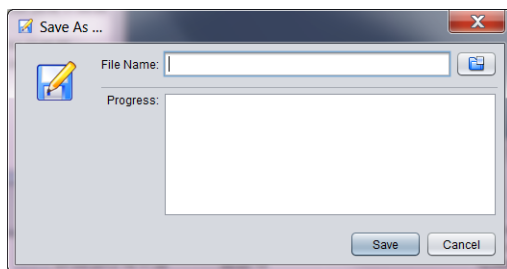
Of course, not all queries can be created with this method. For complex queries please use the Criteria Builder directly as explained in the previous section.

6.5. Saving Queries

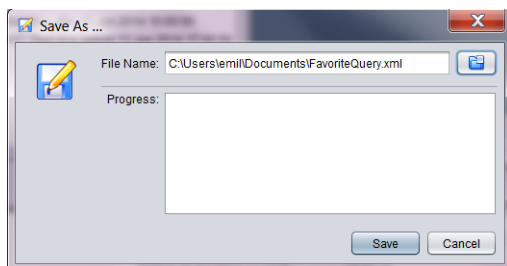
As you create queries you may find that you use some queries often. To save time re-creating the same queries, simply save your favourite queries to files. Then, when you need them, you can simply load them from the file in Criteria Builder.


Saving a query

1. First create a query. Then to save the query:
2. Select  **Save** to display the Save As ... dialog:

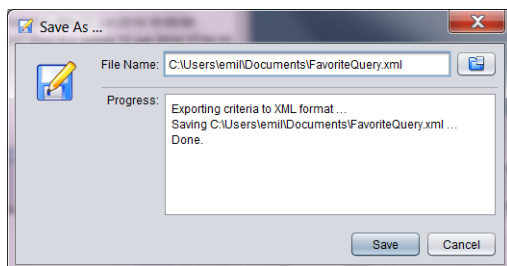


3. Enter ***File Name***.




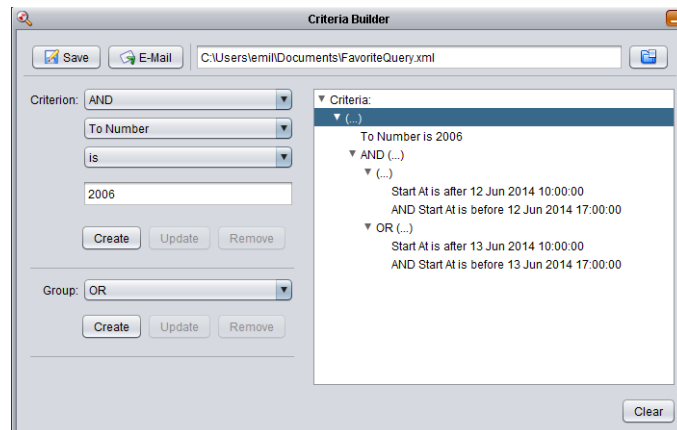
Alternatively you can select a file name by first selecting  to display a File Chooser dialog.

4. Select **Save** to save the query:



5. Optionally, repeat steps 3 and 4 to save the query to another file. Finally select **Cancel** to close the Save As ... dialog.


You can quickly recall queries from files with Criteria Builder. Select  to display a File Chooser dialog where you can select a query file and load it into Criteria Builder:

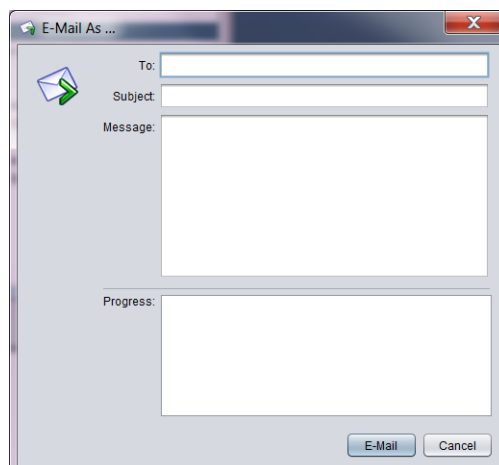


6.6. E-Mailing Queries

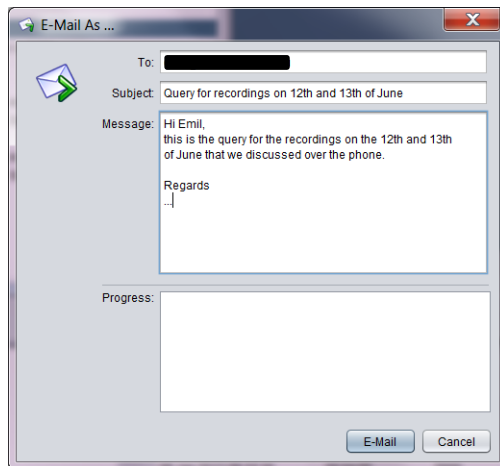
Criteria Builder allows you to e-mail queries directly from the application. Of course, you can save queries to files and then use your favourite e-mail client to e-mail them, however sometime it may be quicker to just e-mail queries directly from Criteria Builder.

E-Mailing a query

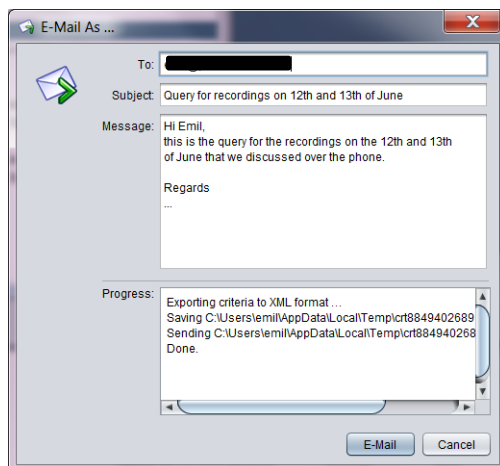
1. First create a query, or load one from a file. Then to e-mail the query:
2. Select  **E-Mail** to display the E-Mail As ... dialog:



3. Fill in the message details:



4. Enter **To**. This is the e-mail address of the recipient. You can enter multiple e-mail addresses, however you must separate them with semicolon (;).
5. Enter **Subject**. This is a free text field.
6. Enter **Message**. This is a free text field.
7. Select **E-Mail** to send the message.
8. Criteria Builder will attempt to send the e-mail and display progress in the **Progress** area:



9. Optionally, repeat steps 3 and 8 to send the query to others. Finally select **Cancel** to close the E-Mail As ... dialog.

At the other end, recipients will receive a query file which they can then load into Criteria Builder.

7. Recorder Monitor

Recorder Monitor is a powerful application designed for real-time monitoring (listening) and observing of recordings in progress on multiple Total Recall VR systems simultaneously.

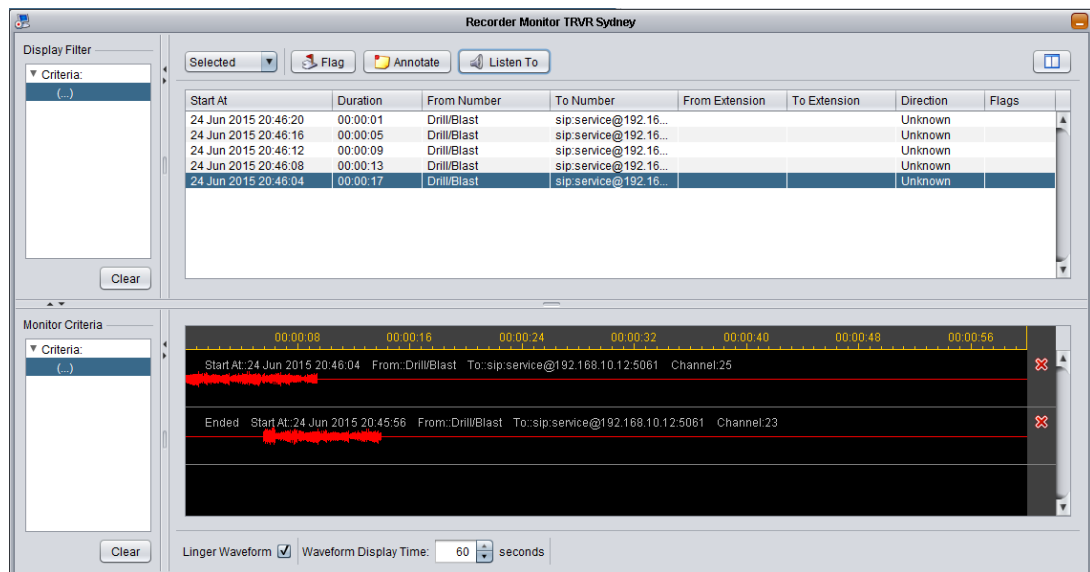


Figure 21: Recorder Monitor Application

Use Recorder Monitor to:

- View the metadata of recordings in progress in real time (as they happen).
- Listen to multiple recordings in progress simultaneously and in real-time on ad-hoc basis.
- Listen to multiple recordings that match a user defined criteria in progress simultaneously and in real-time automatically.
- Use the waveform lingering feature to visually observe who is talking when in a pre-defined time window (for example during the last 2 minutes).
- Add notes to recordings in progress.
- Tag and lock (to prevent deletion) recordings in progress.

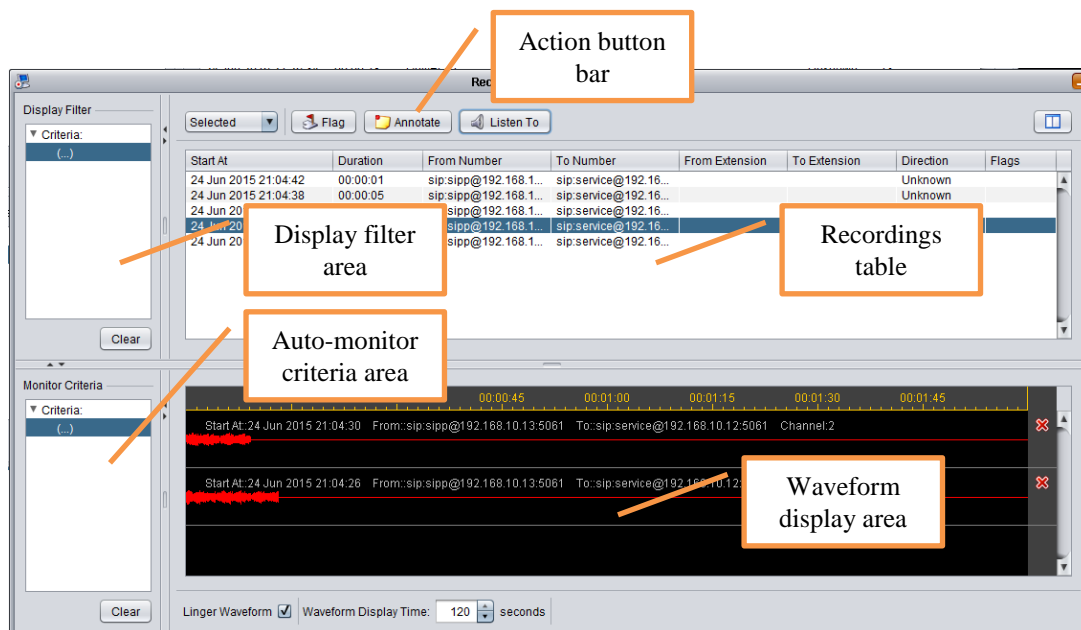
The Recording Monitor in combination with the auto-update feature of the Recorder Explorer give you instant access to recordings in progress and recently completed recordings.

7.1. User Interface

The user interface of the Recorder Monitor application comprises of:

- A display filter criteria area that shows the criteria that applies to the recordings shown in the recordings table.
- A recordings table which shows metadata of recordings in progress in tabular format.
- A button bar which contains buttons that initiate various operations on recordings in progress and their metadata.
- A monitoring criteria area which shows the criteria that matches recordings that will be monitored automatically if they start.
- A waveform display area which shows the waveform of the recordings being monitored.

The following screen capture identifies the different components:



7.1.1. Display Filter Area

The display filter area displays the criteria that apply to the recordings that are shown in the recordings table.

You cannot edit the criteria in the display filter area. Instead, use the Criteria Builder application as explained in section 6 Criteria Builder.

7.1.2. Auto-monitor Criteria Area

The auto-monitor criteria area displays the criteria that apply to the recordings that will be automatically monitored if they start.

You cannot edit the criteria in the auto-monitor criteria area. Instead, use the Criteria Builder application as explained in section 6 Criteria Builder.

7.1.3. Recordings Table

The recordings table displays the metadata of the recordings that are in progress. The table can show the following columns:

- **Start At**

Shows the date and time when recording started.

The date and time is the local date and time equivalent of the actual recording start date and time based on the time zone used by the PC that runs Total Recall VR Monitor.

This fact is important when viewing recordings that started in another time zone. For example, a recording that started on a Total Recall VR system that is located in Perth Australia at 6am on a given date will show start date and time of 9am on the same date if Total Recall VR Monitor is running on a PC that is using the Sydney Australia time zone (as you may know, there is a 3 hour difference between the time zones used by Sydney and Perth, Australia).

- **Duration**

Shows the recorded duration of recording rounded to the nearest second.

- **From Number**

Shows the 'from' number as collected by the Total Recall VR system from signalling messages while recording or applied by Total Recall VR to the recording as instructed by its configuration.

- **To Number**

Shows the 'to' number as collected by the Total Recall VR system from signalling messages while recording or applied by Total Recall VR to the recording as instructed by its configuration.

- **From Extension**

Shows the 'from' extension as determined by the Total Recall VR system by applying mapping rules to the 'from' number that it collected from signalling messages while recording or to the 'from' number that it applied to the recording as instructed by its configuration.

- **To Extension**

Shows the 'to' extension as determined by the Total Recall VR system by applying mapping rules to the 'to' number that it collected from signalling messages while recording or the 'to' number that it applied to the recording as instructed by its configuration.

- **Direction**

Shows the direction (incoming, outgoing ...) of the recording as determined by the Total Recall VR system during recording.

- **Flags**

Shows the current set of flags and tags that are attached to the recording.

The following characters can appear in this column for each of the recordings:

*: indicates that the recording is tagged.

T: indicates that the recording was rolled-over to another one when its duration reached the maximum duration specified in the recorder configuration.

C: indicates that this recording is a segment of a long conversation that is captured in multiple recordings.

L: indicates that the recording is 'locked' and it cannot be deleted.

E: indicates that the recording is a recording of an emergency call or communication.

B: indicates that the recording is a recording of a broadcast call or communication.

G: indicates that the recording is a recording of a group call or communication.

- **Agent**

Shows the name of the agent, if any, that is involved in the conversation that is being recorded.

- **Channel**

Shows the number of the recording channel that the Total Recall VR system is using to create the recording.

- **DTMF Digits**

Shows the sequence of DTMF digits, if any, that the Total Recall VR system detects while recording.

- **Notes**

Shows the current notes that are attached to the recording.

7.1.4. Action Button Bar

The action button bar comprises of two sections.


The following screen capture shows the first section which contains buttons which initiate actions that affect recordings and recording metadata.

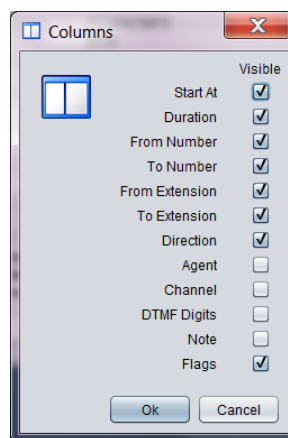


Use the dropdown box on the far left hand side to set the context of the actions initiated by the remaining buttons. Select:

- *Selected* – if you wish the actions to apply to the records that are selected in the recordings table.
- *All* – if you wish actions to apply to all records that appear in the recordings table.

We explain the role of each of the action buttons in a subsequent section of this document.

The second section of the button bar contains the table column configuration button. Use the  button to display the Columns dialog where you can choose the columns that appear in the recordings table:



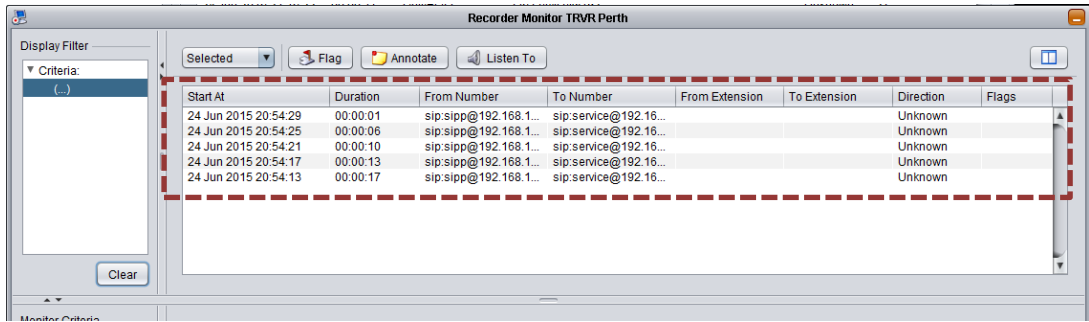
7.1.5. Waveform Display Area

The waveform display area shows the waveform of recordings being monitored for a user defined time period (by default the last 120 seconds).

By default, the waveforms of recordings that have ended lingers, i.e. remains on the screen for the whole duration of the waveform display time. This is a powerful feature as it enables visual monitoring of conversations on multiple recording channels.

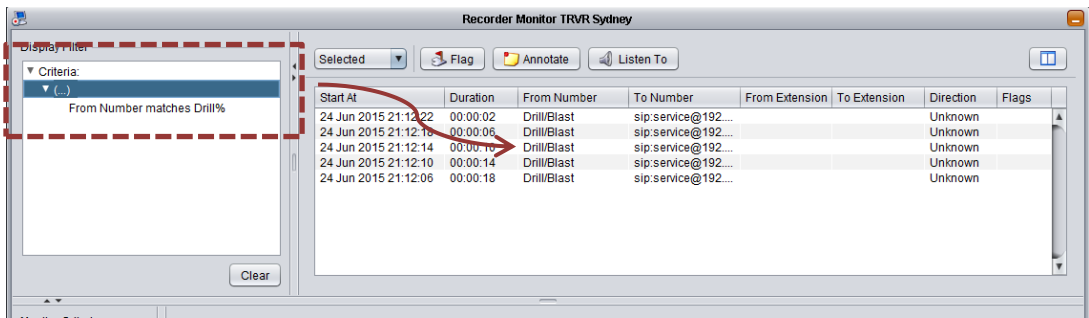
7.2. Display Recordings in Progress

The metadata of recordings in progress on a given Total Recall VR system automatically appears in the recordings table at the top part of the Recorder Monitor when recordings start and disappear from the table when recordings end.



You can access recordings that have completed with the Recorder Explorer application – see section 10 Recording Explorer(s).

By default, Recorder Monitor shows the metadata of all recordings in progress. However, you can define a display filter with the Criteria Builder (see section 6 Criteria Builder) to display only recordings of interest. For example:



7.3. Listen To Recordings

There are two ways that you can use to initiate monitoring of recordings in progress: ad-hoc and automatically.

To listen to recordings in progress on ad-hoc basis simply select the recordings in the recordings table and then select  **Listen To**.

The Recorder Monitor will start streaming audio from the recorder and play it through the audio system of the PC.

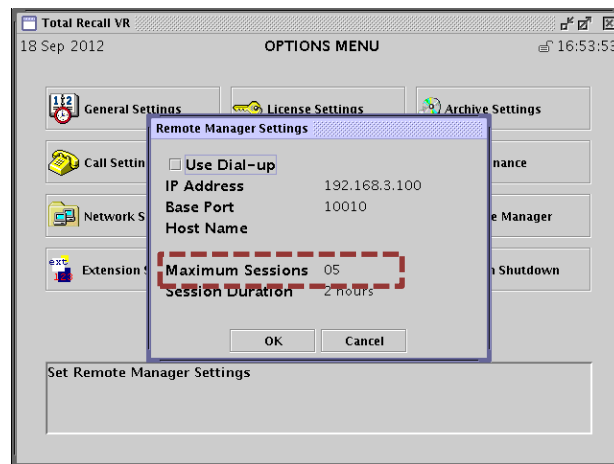
Alternatively, and in combination with ad-hoc monitoring, you can define a criteria that matches recordings that you wish to monitor automatically when they start. Use the Criteria Builder application as explained in section 6 Criteria Builder to define and apply the auto-monitoring criteria to Recorder Monitor.



The Number of recordings that you can monitor at the same time is limited by configuration on the Total Recall VR system. Total Recall VR Monitor does not limit the number of recordings that can be

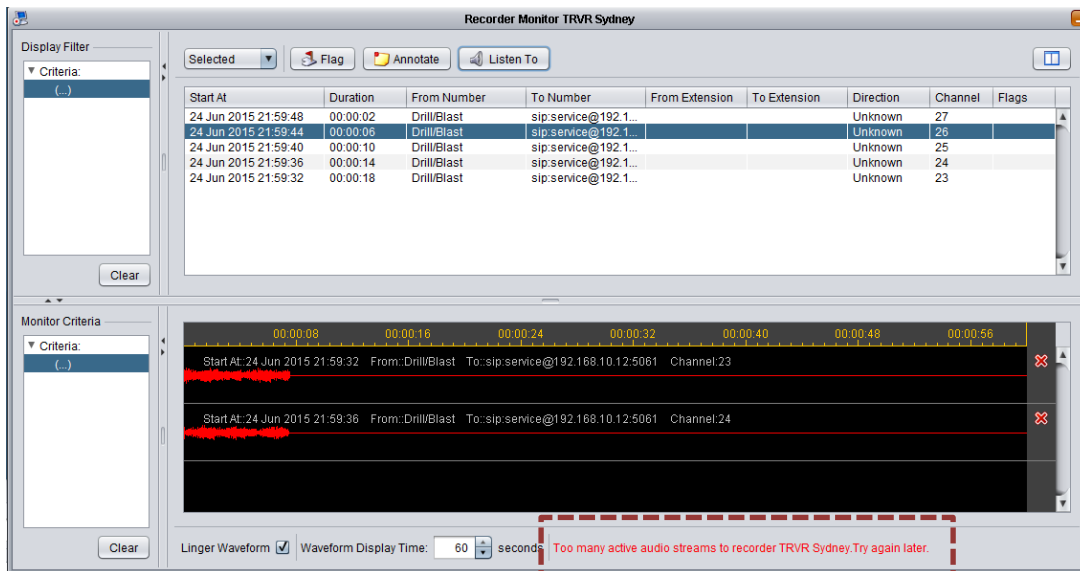
monitored at the same time.

The Remote Manager Settings configuration on Total Recall VR systems limit the number of recordings that can be monitored at the same time across all Total Recall VR client applications. The value ***Maximum Sessions*** parameter, which is shown on the following screen capture, specifies the limit.



For example, if ***Maximum Sessions*** is set to 5, as shown the previous screen capture, then the maximum number of monitoring sessions across all running instances of Total Recall VR Monitor is 5. As a result, if a single instance of Total Recall VR Monitor is monitoring 5 recordings in progress, then all other instances will not be able to monitor any recordings in progress until the instance that is monitoring 5 recordings stops monitoring at least 1 recording.

Recorder Monitor shows a warning message when it cannot start monitoring recordings due to limits imposed by Total Recall VR system configuration. For example:



7.4. Flagging Recordings

Recorder Monitor allows you to change the flags and tags of recordings. In particular you can set or reset the following flags and tags:

*: indicates that the recording is tagged.


L: indicates that the recording is 'locked' and it cannot be deleted.

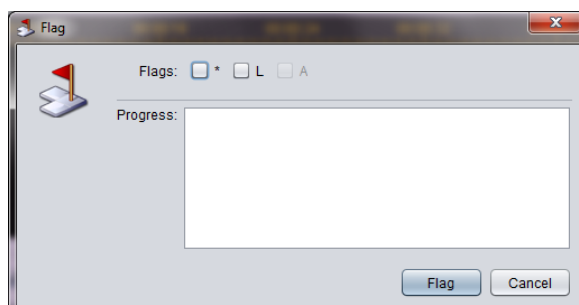
To flag recordings first identify the recordings that you wish to flag:

- You may have to create a display filter that matches the recordings that you wish to flag with Criteria Builder.
- Select records in the recordings table.

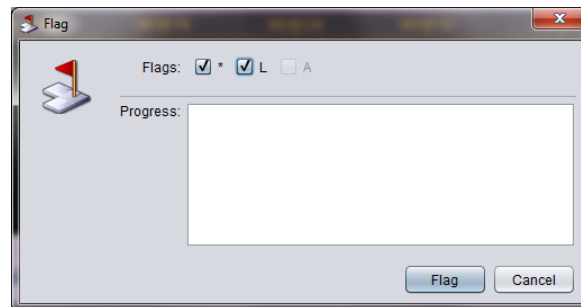
Once you have identified and selected the recordings that you wish to flag:

Flag a batch of recordings

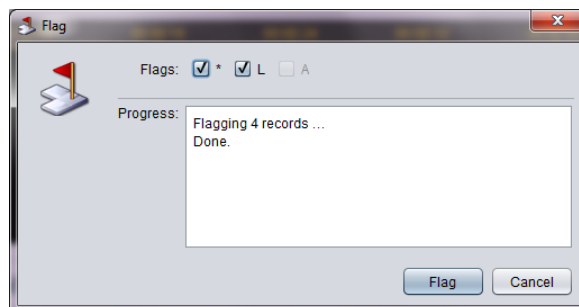
1. Select  **Flag** to display the Flag dialog.



2. Tick or un-tick **Flags** based on whether you wish to set or clear flags and tags:
 - a. Tick * if you wish to tag recordings.
 - b. Tick L if you wish to 'lock' recordings in order to prevent them from being deleted.



3. Select **Flag** to apply the new set of flags and tags to the recordings.
4. Recorder Monitor will attempt to apply the flags and tags to the recordings and display progress in **Progress**:



5. Select **Cancel** when done to close the Flag dialog.

7.5. Annotating Recordings


Recorder Monitor allows you to change the notes for recordings.

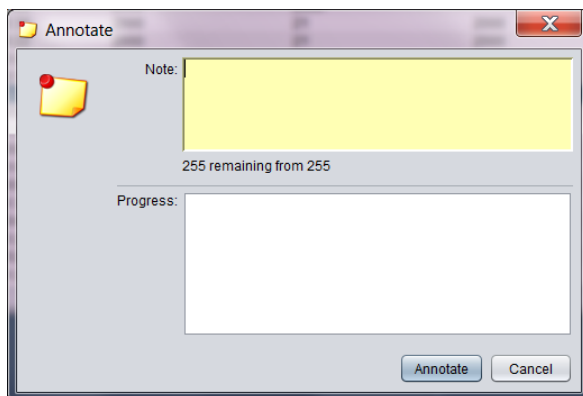
To annotate recordings first identify the recordings that you wish to annotate:

- You may have to create a display filter that matches the recordings that you wish to annotate with Criteria Builder.
- Select records in the recordings table.

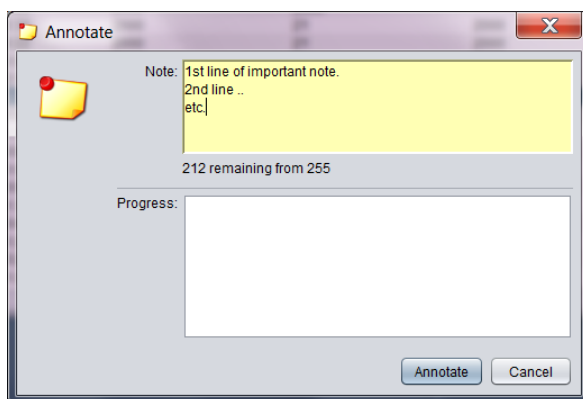
Once you have identified and selected the recordings that you wish to annotate:

Annotate a batch of recordings

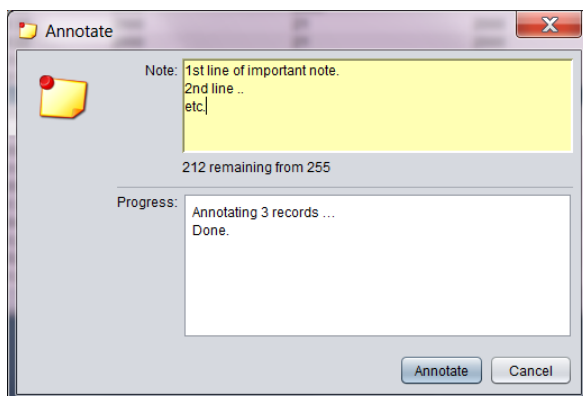
1. Select  **Annotate** to display the Annotate dialog.



2. Enter *Note* (up to 255 characters):



3. Select **Annotate** to apply the note to the recordings.
4. Recording Explorer will attempt to apply the note to the recordings and display progress in *Progress*:



5. Select **Cancel** when done to close the Annotate dialog.

7.6. Waveform Display Control

Recorder Monitor displays the waveform of the audio of recordings being monitored in the waveform display areas.

You can control the behaviour of the waveform display window as follows:

- Tick **Linger Waveform** if you wish to continue observing waveforms for the duration of the waveform window even when recordings end. Otherwise, and if

you wish waveforms to disappear when recordings end, untick ***Linger Waveform***.

- Set the ***Waveform Display Time*** to define the duration of the waveform window.

If you enable waveform lingering, then you will be able to visually see audio activity on various recording channels. This allows you to visually and audibly observe conversations between multiple parties, for example during an incident, for a predefined time period.

8. Audio Player

Audio Player is a powerful audio player application that provides for play of, and conversion between, all Total Recall VR audio file and encoding formats.

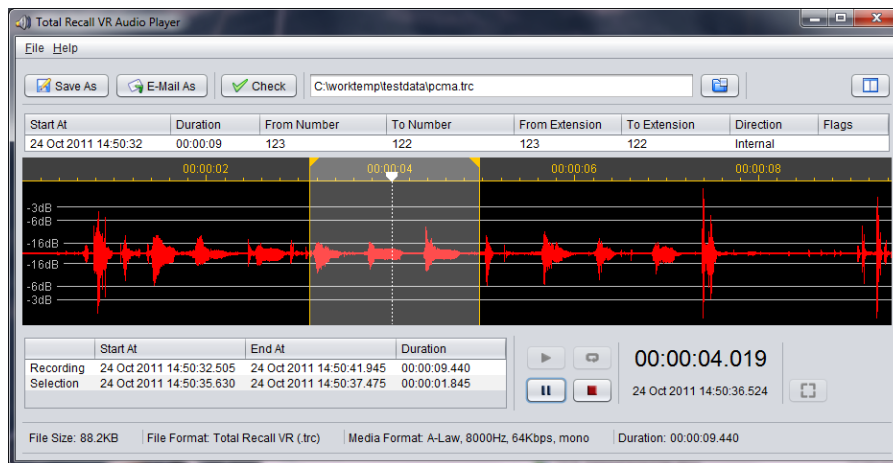


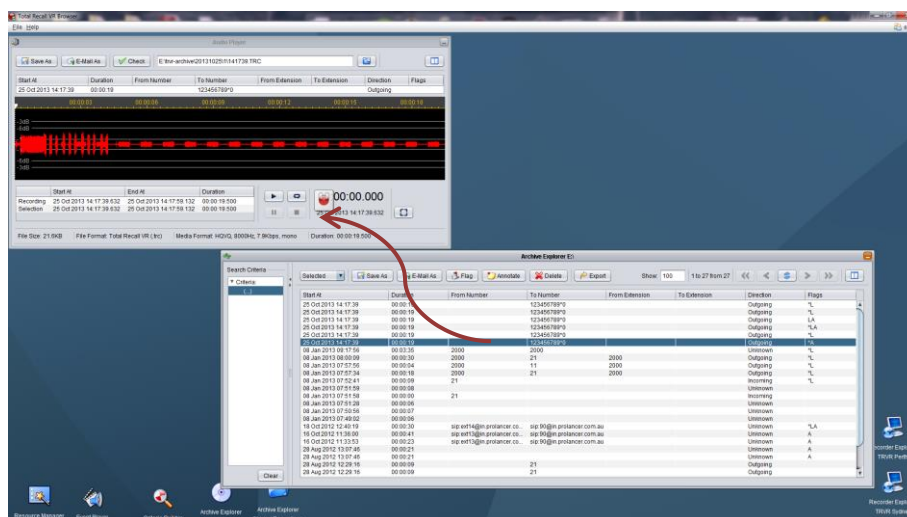
Figure 22: Audio Player Application

Use Audio Player to listen to recordings.

In addition, you can use Audio Player to export individual recordings to standard audio file formats (wav, mp3, aifc, au and spx) that are compatible with popular audio player applications such as Windows Media Player. You can save exported recordings to a file or send them via e-mail to other members of your team.

Finally, you can use Audio Player to check the integrity of recordings stored in the latest generation TRC file format.

The simplest way to use Audio Player is to simply select a recording in a recording explorer window, drag it to Audio Player and simply drop it.



Once Audio Player loads the file and displays the waveform, you can use it to listen to the audio and export it in a number of different formats.

8.1. Playing a Recording

The main purpose of Audio Player is to play recordings.



Audio Player can play one recording at a time.

Audio Player supports the file and audio formats shown in the subsequent table:

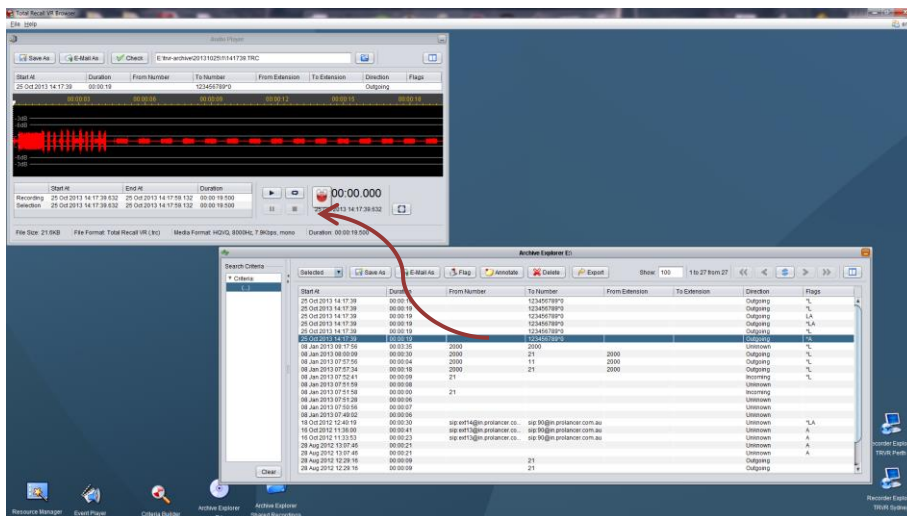
	<i>.trc</i>	<i>.alaw</i>	<i>.ulaw</i>	<i>.wav</i>	<i>.mp3</i>	<i>.afic</i>	<i>.au</i>	<i>.spx</i>	<i>.skyrec</i>
HQVQ, 8000Hz, 7.9Kbps, mono	✓								
G.711 A-law, 8000Hz, 64Kbps, mono	✓	✓		✓			✓		✓
G.711 A-law, 8000Hz, 128Kbps, stereo	✓			✓			✓		
G.711 μ -law, 8000Hz, 64Kbps, mono	✓		✓	✓		✓	✓		
G.711 μ -law, 8000Hz, 128Kbps, stereo	✓			✓		✓	✓		
MPEG Audio Layer-3, 8000Hz, 24Kbps, mono					✓				
MPEG Audio Layer-3, 8000Hz, 48Kbps, stereo					✓				
Speex Q8, 8000Hz, 15Kbps, mono	✓							✓	
Speex Q8, 8000Hz, 30Kbps, stereo								✓	
AMBE, 8000Hz, 2450bps, mono	✓								
AMBE, 8000Hz, 4900bps, stereo	✓								
PCM, 8000Hz, 128Kbps, mono	✓			✓		✓	✓		
PCM, 8000Hz, 256Kbps, stereo	✓			✓		✓	✓		



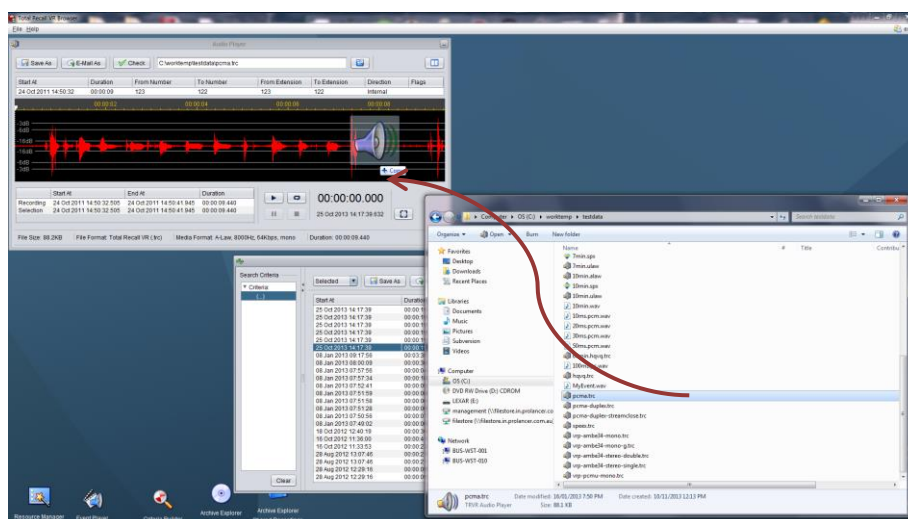
Audio Player will not play files that are in format that is not listed on the previous table. For example, if you attempt to play an mp3 file which uses rate other than 24Kbps, then Audio Player will not play the file.

To play a recording you must load its file in Audio Player. There are different ways to do this.

The simplest way is to select a recording file in a recording explorer window, drag it to the Audio Player window, and then drop it as shown on the subsequent screen capture.



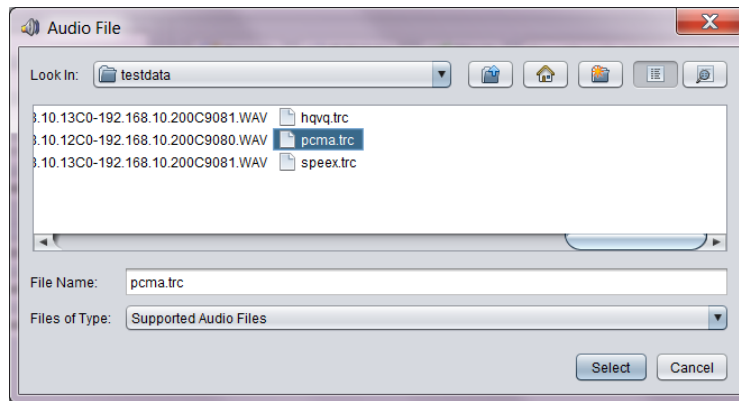
You can do the same with audio files that you are viewing in a Windows File Explorer window as shown on the following screen capture:



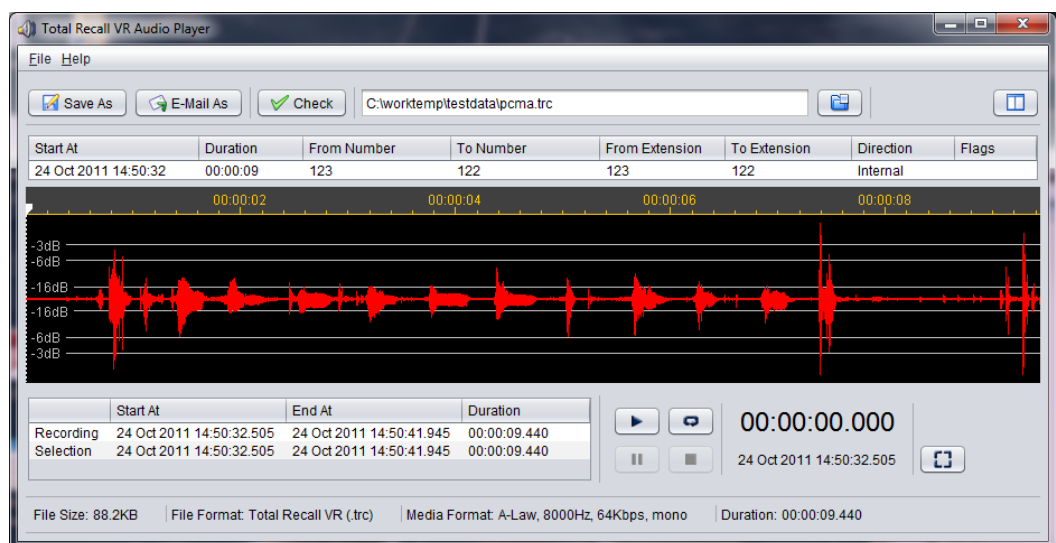
Alternatively, to load a recording file:

Load a recording file

1. Select  to display the Audio File selection dialog:



2. Navigate to the directory where the recording files reside and select the file that you wish to load.
3. Select **Select** to load the file.
4. Audio Player will load the file and start processing it.







5. Note that the waveform may take some time to display. In general, the longer the recording, the longer it will take to display the waveform.

However, you can use the play controls to start listening to the audio while Audio Player is trying to plot the waveform.

6. If you selected a TRC file, then Audio Player will display the recording metadata as *Start At, Duration ...*

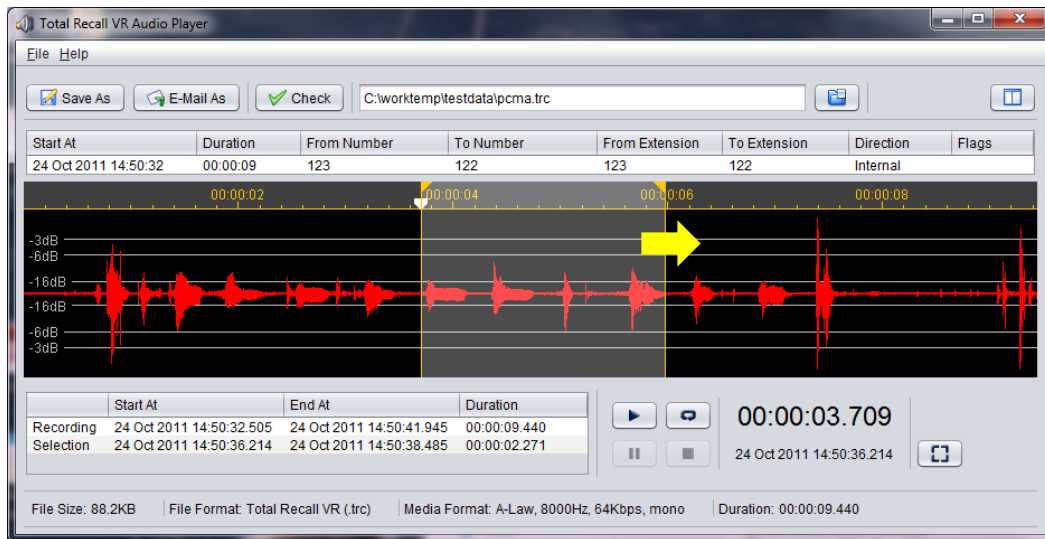
Other audio files do not store this information so the metadata fields will be empty.

Once Audio Player loads the file, simply use the player controls: , ,  and  to listen to the audio.

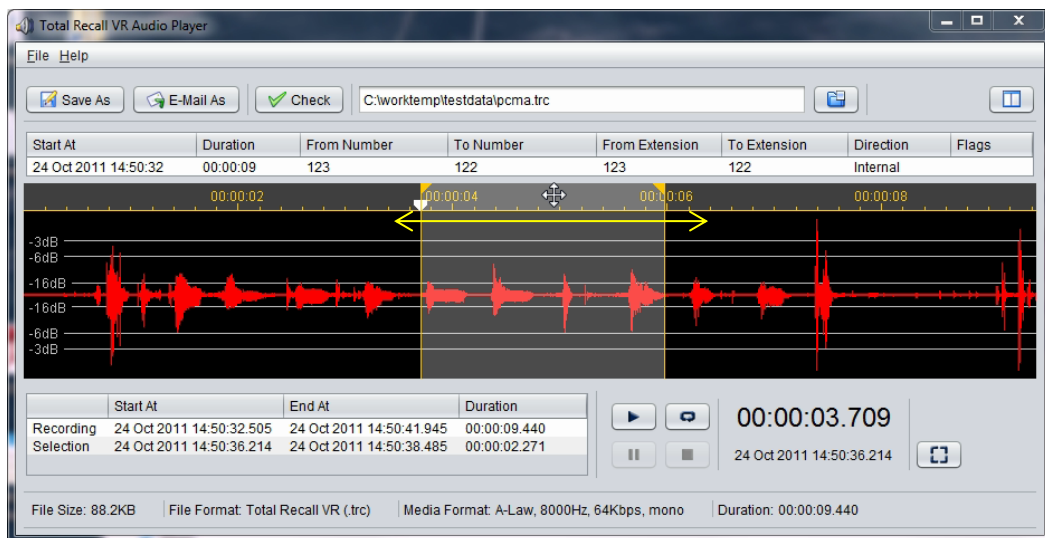
If you wish to listen to only a segment of the audio, then you can select the part of the audio that you wish to listen to.

Create a play selection

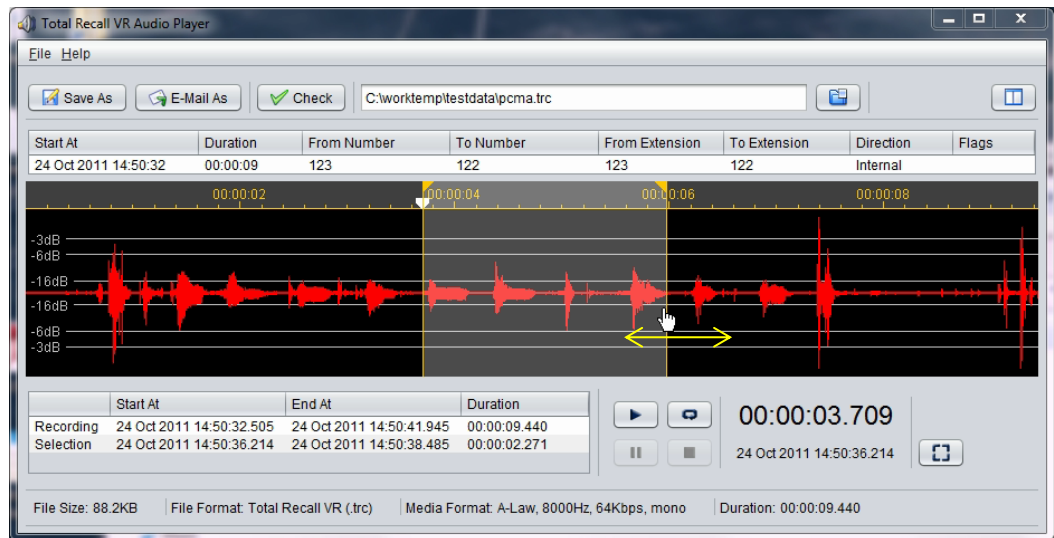
1. To create a play selection simply click and drag the mouse pointer over the area that you wish to listen to:



2. Once you define the selection, you can move it. Move the mouse pointer to the time scale area within the selection. The mouse cursor will change to . Then simply drag the selection area to the desired location.



3. In addition you can adjust the start and end position of the selection area as well. To do this simply move the mouse painter close to the start or end position line of the play range. The cursor will change to . Then simply drag the start or end position to the new location.

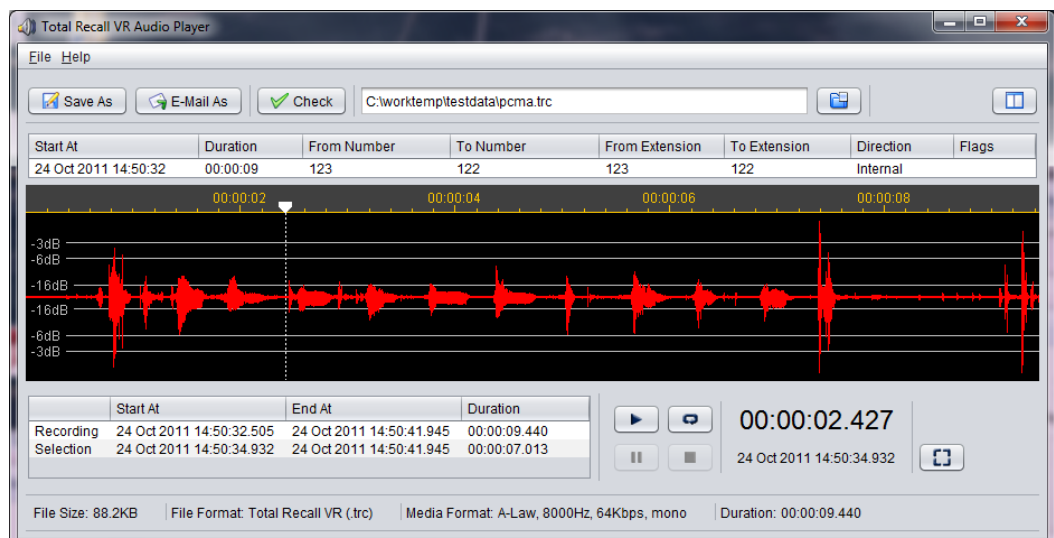






4. Use the player controls: , ,  and  to listen to the audio segment. You can quickly reset the selection by selecting .

Finally, you can start listening from a given time of the recording by specifying a start play position

Define a start play position

1. To define a start play position simply click the mouse pointer over the waveform area:



2. Use the player controls: , ,  and  to listen to the audio from the specified start position.

Recordings in the AMBE audio format take considerably longer time to decode to format suitable to play when compared to all other formats. To speed up loading and playing of recordings in the AMBE media format Audio Player decodes and caches decoded versions of recordings in the AMBE format. As a result, you will notice a processing delay when loading a recording in the AMBE format for the first time, however there will be no delay on every subsequent attempt to load the same recording.

Audio Player uses the temporary director allocated to the Windows user that runs it as the location for the cache. The following screen capture shows the location of the cache and the cached recordings for the Windows user “emil”.

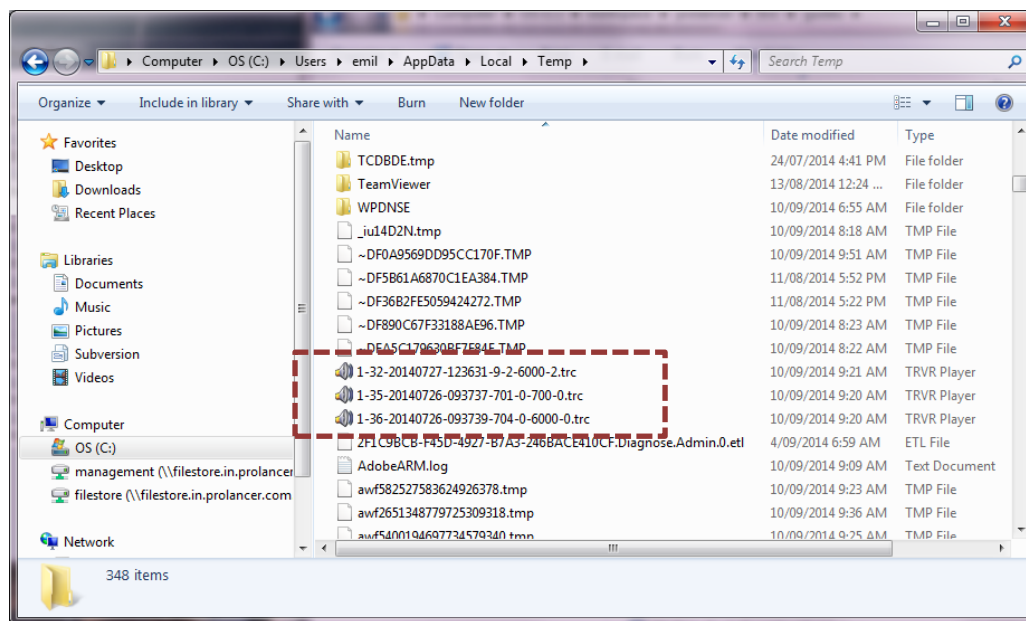


Figure 23: Cache Location for Recordings in the AMBE Format

To clear the cache, either delete all the TRC files manually, or use the Windows disk clean-up application and configure it to delete all temporary files.

8.2. Saving a Recording As (Exporting)

Audio Player can export recording files between all supported file and audio formats with the exception that it cannot create TRC files.



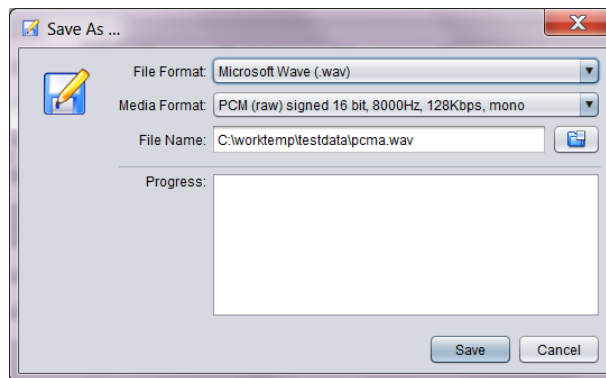
Audio Player can export one recording at a time. Use the recording explorer applications if you wish to export a batch of recordings at the same time.

To export a recording, first load it in Audio Player as explained in section 8.1 Playing a Recording.

Then, to export the recording:

Export a recording


1. Select  **Save As** to display the Save As ... dialog:

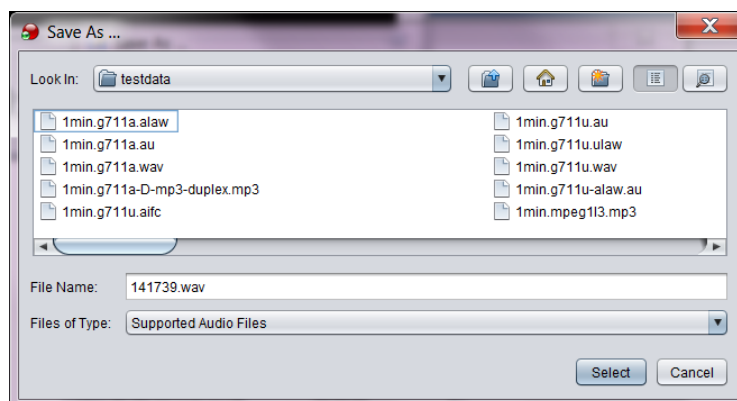


2. Select **File Format**.
3. Select **Media Format**.

Note that not all media formats can exist in all file formats. The set of media formats that are available depends on the chosen **File Format**.

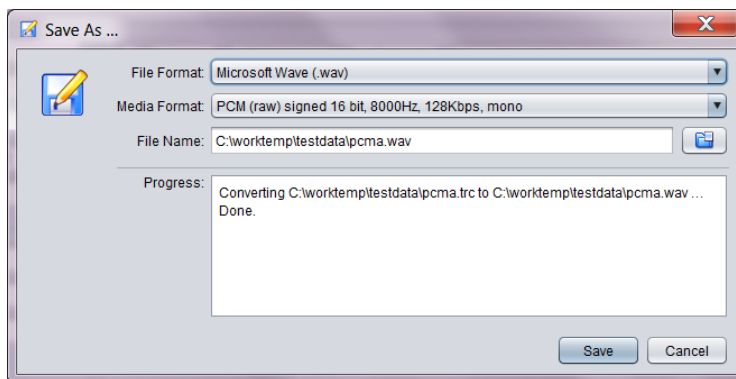
4. Enter **File Name**. This is the location and name of the destination file.

Alternatively select  to display a dialog which lets you choose a location and enter a name for the destination file.



Select **Select** to return to the Save As ... dialog.

5. Select **Save**.
6. Audio Player will generate the new file as instructed and show progress in the **Progress** area.



7. Repeat steps 2 to 6 to save the recording to a different format.
8. Select **Cancel** when done close the Save As ... dialog.

You can load and listen to the files that you create with Audio Player as explained in section 8.1 Playing a Recording.

Alternatively, you can listen to the files that you create with Audio Player with standard players like Windows Media Player.

8.3. E-Mailing a Recording As

Audio Player can e-mail recording files in any of the supported file and audio formats with the exception that it cannot e-mail TRC files.



Audio Player can export and then e-mail one recording at a time. Use the recording explorer applications if you wish to export and then e-mail a batch of recordings at the same time.

Alternatively, export recordings in a desirable file and audio format as explained in section 8.2 Saving a Recording As (Exporting) and then use your favourite e-mail client to e-mail the recordings.

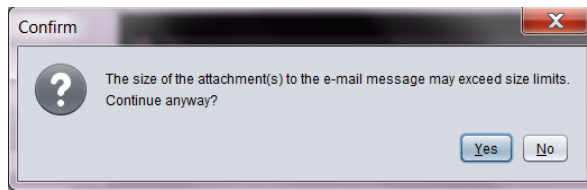
To e-mail a recording in any supported file and audio format first, first load it in Audio Player as explained in section 8.1 Playing a Recording.

Then, to e-mail the recording:

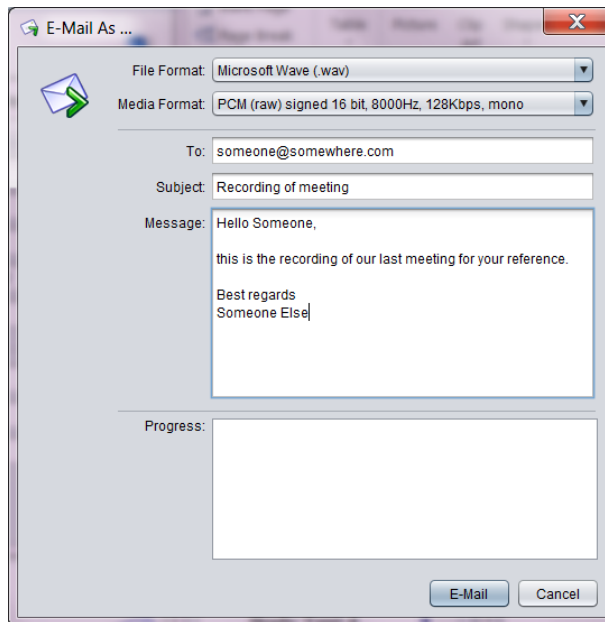
E-mail a recording

1. Select  **Email As** to display the E-Mail As ... dialog.

Audio Player will first warn you that it may fail to e-mail the recording as its file size may exceed limits imposed by your e-mail server.



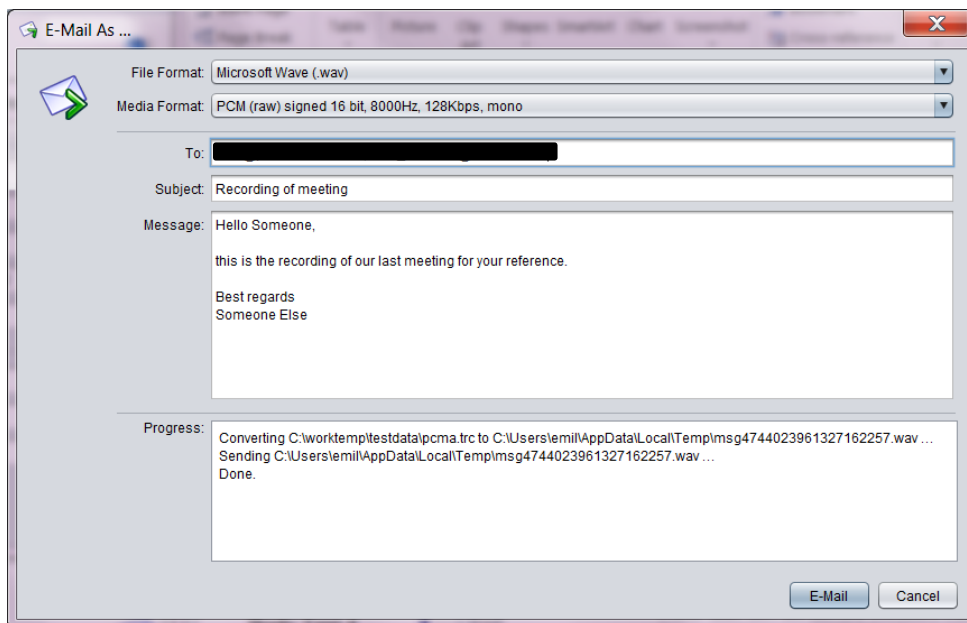
Select **Yes** to display the E-Mail As ... dialog:



2. Select **File Format**. This is the file format that will be sent. It is best to select the wav or mp3 format if the recipient does not have Audio Player.
3. Select **Media Format**. This is the audio format that will be sent. It is best to select the PCM or MP3 format if the recipient does not have Audio Player. However, PCM results in audio files with large size while MP3 results in audio files with small size that is more likely to be less than the file size limits imposed by e-mail servers.

Note that not all media formats can exist in all file formats. The set of media formats that are available depends on the chosen **File Format**.

4. Enter **To**. This is the e-mail address of the recipient. You can enter multiple e-mail addresses, however you must separate them with semicolon (;).
5. Enter **Subject**. This is a free text field.
6. Enter **Message**. This is a free text field.
7. Select **E-Mail** to send the message and the recording as an attachment to the recipient.
8. Audio Player will attempt to send the e-mail and display progress in the **Progress** area:



9. Repeat steps 2 to 8 to e-mail the recording to a different recipient or to the same recipient but in different file and media format.
10. Select **Cancel** when done to close the E-Mail As ... dialog

Recipients can load and listen to the files that you send them from Audio Player with their own copy of Audio Player as explained in section 8.1 Playing a Recording.

Alternatively, they can listen to the files that you send them from Audio Player with standard players like Windows Media Player.

8.4. Checking the Integrity of a Recording

Total Recall VR systems store recordings in the TRC file format which is a proprietary, secure and tamper-proof file format. Audio Player can check the integrity of TRC files and detect tampering with the audio samples in the files.



Integrity checks are possible on latest generation TRC files only. Other file formats, including legacy generation 2 TRC files, do not support the security features of the TRC files and the integrity of the audio stored in other file formats cannot be checked or guaranteed.

Audio Player makes all attempts possible to load and play, as much as possible, compromised TRC files.



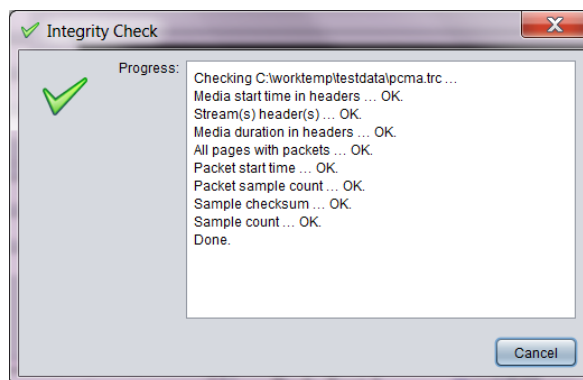
So loading and playing are in no way reliable methods of checking the integrity of the audio that is stored in TRC file. Use the procedure described in this section to check the integrity of the audio that is stored in TRC files.

To check the integrity of the audio that is stored in a TRC file, first load it in Audio Player as explained in section 8.1 Playing a Recording.

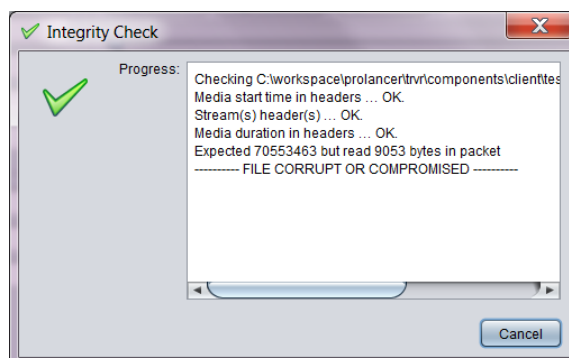
Then, to check the integrity:

Check the integrity of a recording

1. Select  **Check** to run an integrity check and display a report dialog:



2. The previous screen capture shows a report for a file that passes the integrity check. If Audio Player detects tampering that it will show it in the report:



3. Select **Cancel** to close the Integrity Check dialog.

9. Event Player

Event Player is a powerful audio player application designed to play the mix of the audio from multiple recordings ordered in time. This enable users to recreate events that comprise of one or more recordings and listen to the audio of the events as it happened in time.

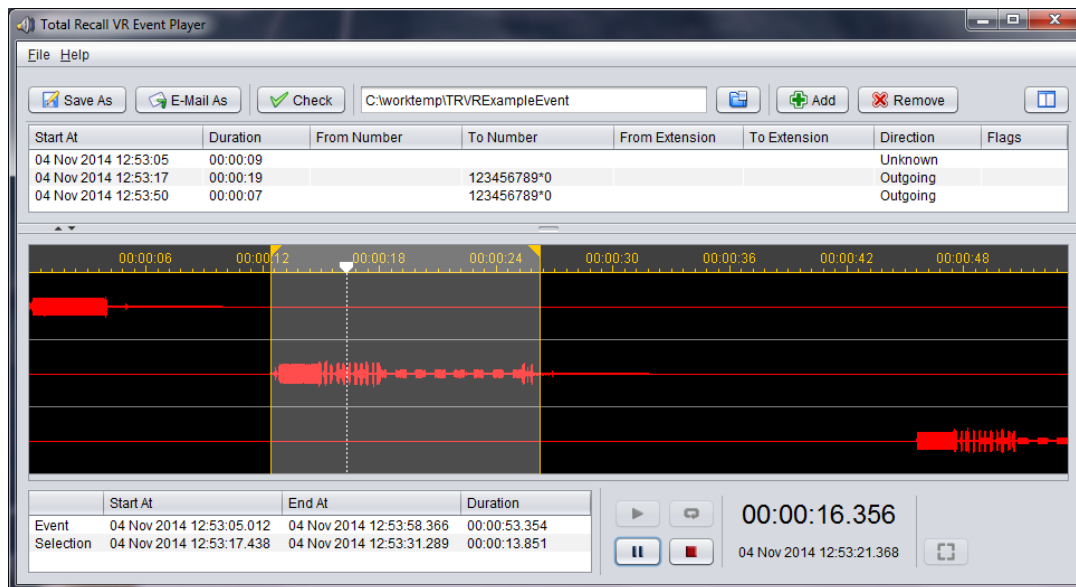


Figure 24: Event Player Application

Events are time ordered collection of recordings that are related to each other in some way. For example, recordings related to the communication between an air traffic controller and a pilot during landing.

The recordings that are part of an event are known as event segments (or parts).

It is possible to reconstruct an event by playing (and mixing when necessary) event segments in time order, as they happened.

Use the Event Player to create and listen to events. In addition, you can use the Event Player to export events to standard audio file formats (wav, mp3, aifc, au and spx) that are compatible with popular audio player applications such as Windows Media Player. You can also save events to a file or send them via e-mail to other members of your team.

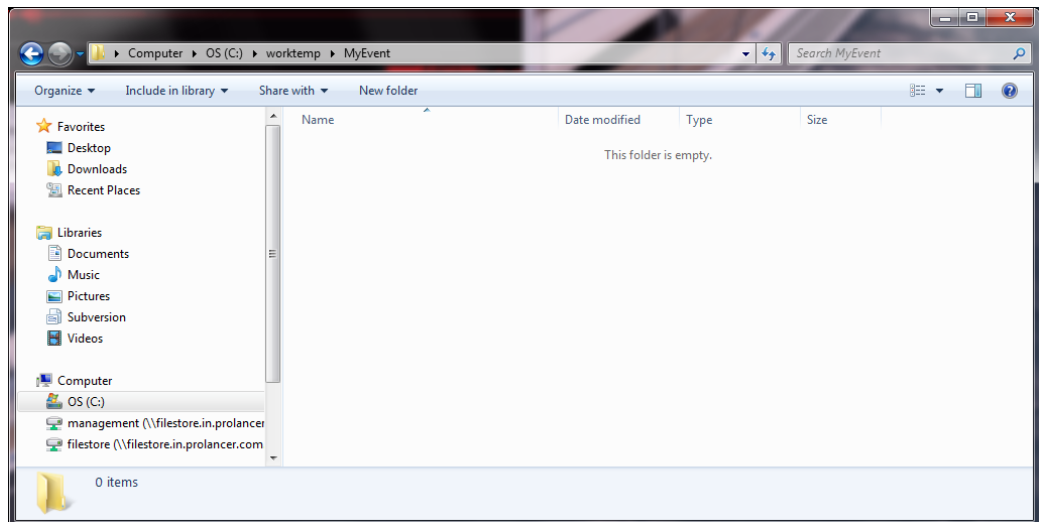
Finally, you can use Event Player to check the integrity of event segments.

9.1. Creating an Event


You must create an event before you can play it.

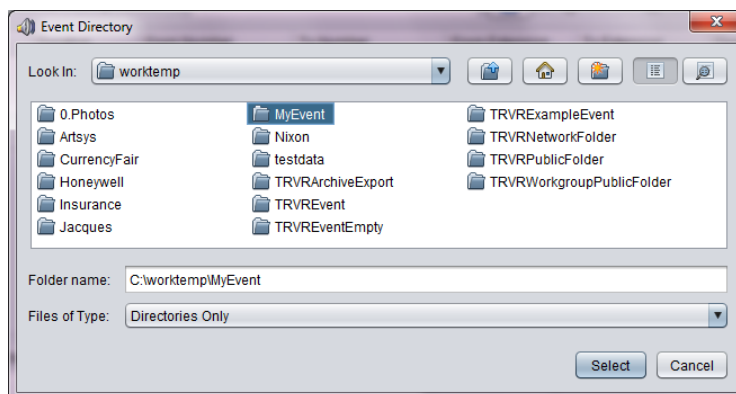
Create an event


1. Start by creating an empty folder. The folder can be located on your local disk, or a network drive. For example:




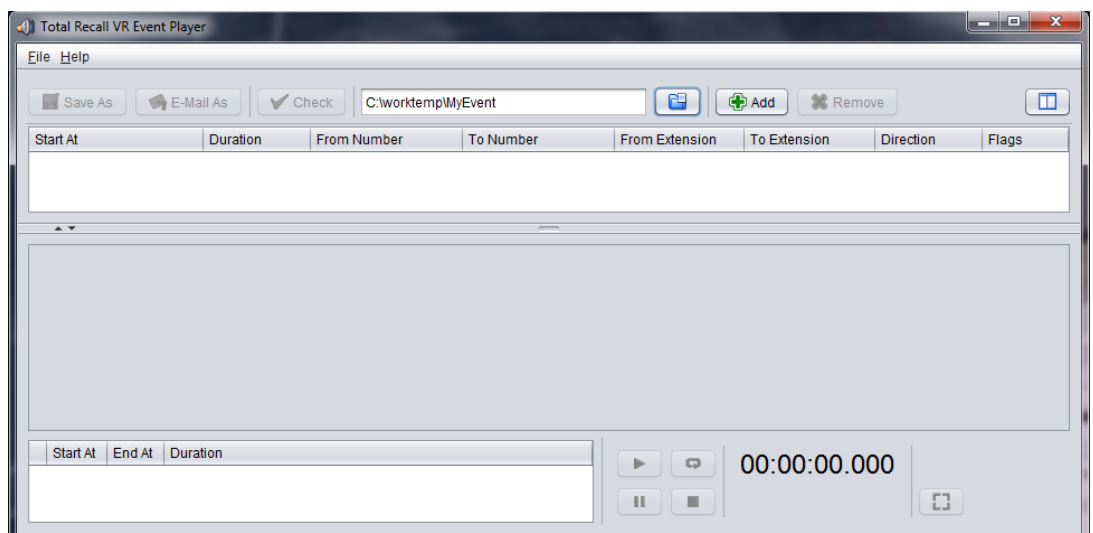
Note: you can skip this step and create a folder during step 2.

2. Load the empty event in Event Player. Select  to display the Event Directory dialog and select the directory that you created in step 1:

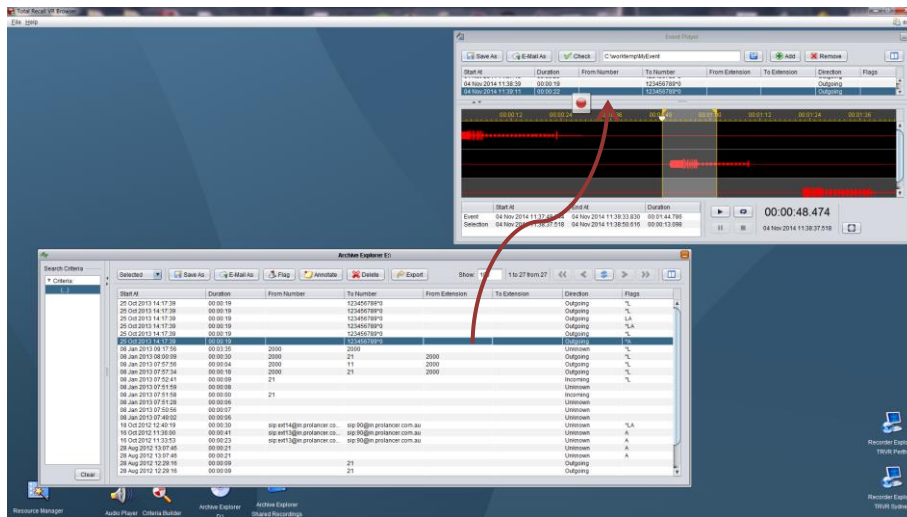


Note: if you did not create a folder during step 1, then you can create a new folder at this step as well by selecting .

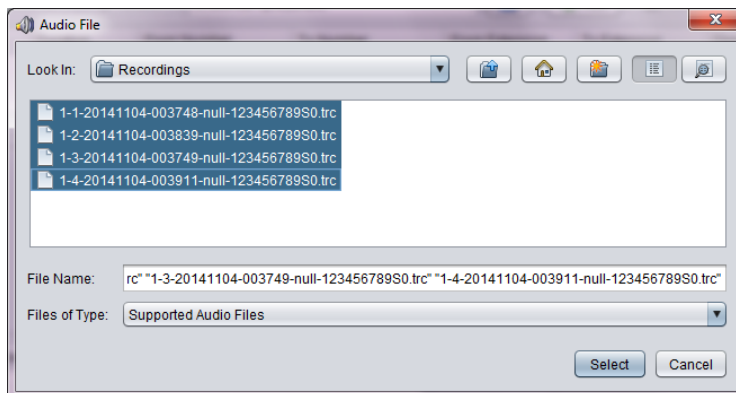
3. Select **Select** to load the empty event. Event Player will load the empty event and enable the  **Add** button.



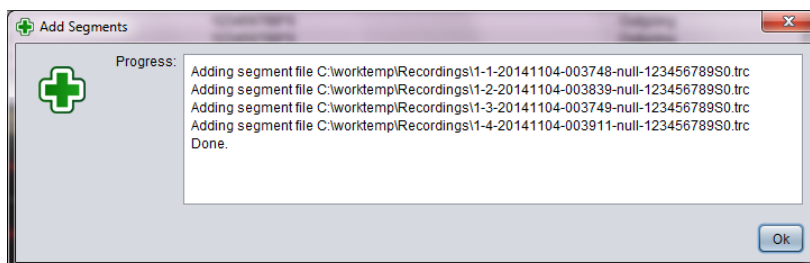
4. You can add segments to the event by simply dragging and dropping recordings from Explorer applications:



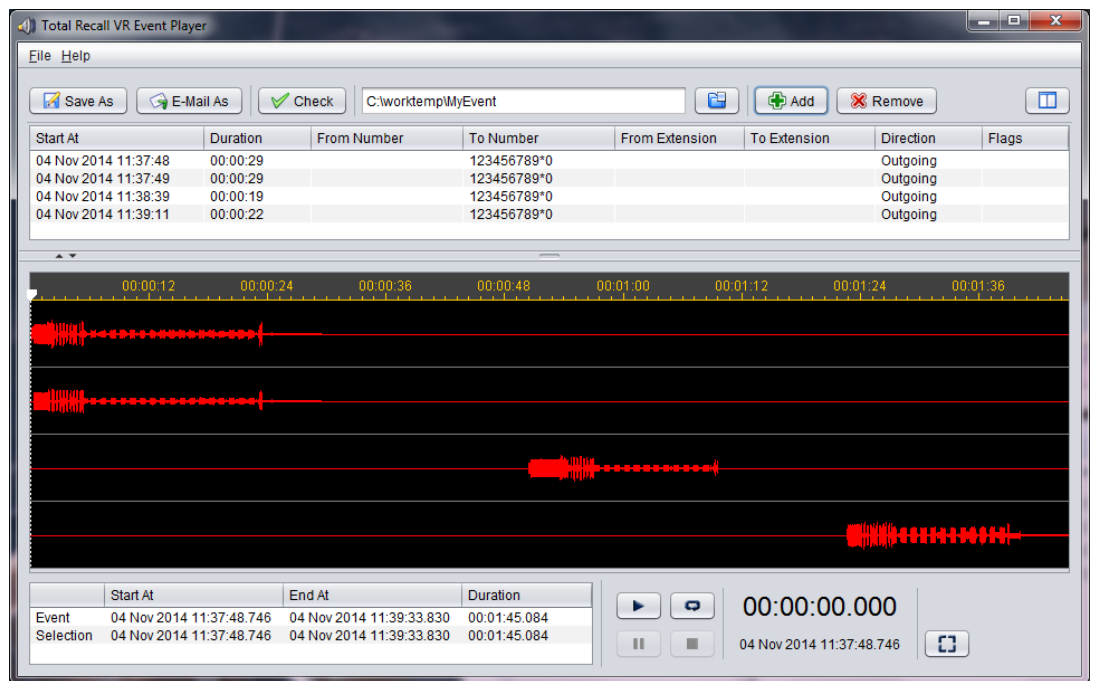
5. Alternatively, select **Add** to open the Audio File dialog and then navigate to the directory which contains the recordings that you wish to add to the event:





6. Select one or more recordings and then select **Select** to add the recordings to the event. Event Player will start loading the segments and show progress:



7. Select **Ok** to return to Event Player which now should show the metadata and waveform for each of the segments.



8. To add more segments to the event repeat steps 5 to 7.
9. Alternately select  **Remove** to remove segments from the event. First select the row that shows the metadata for the segment in the table above the waveforms and then select  **Remove** to remove the segment from the event.

Note how Event Player orders segments in start time order, oldest at top.




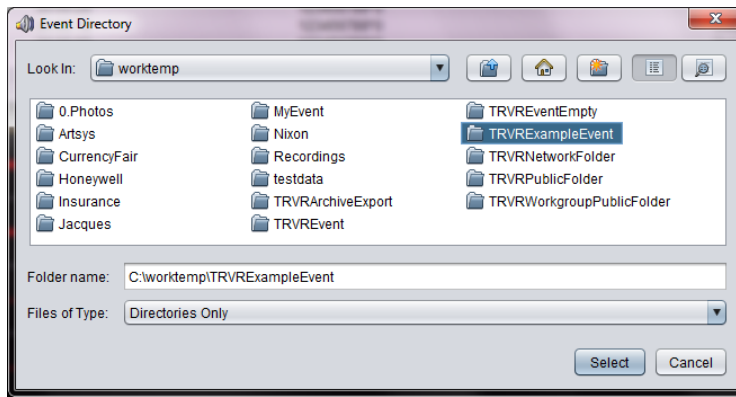
It is not possible to change the order of segments. Segments are shown in start time order, oldest on top, always.

9.2. Playing an Event

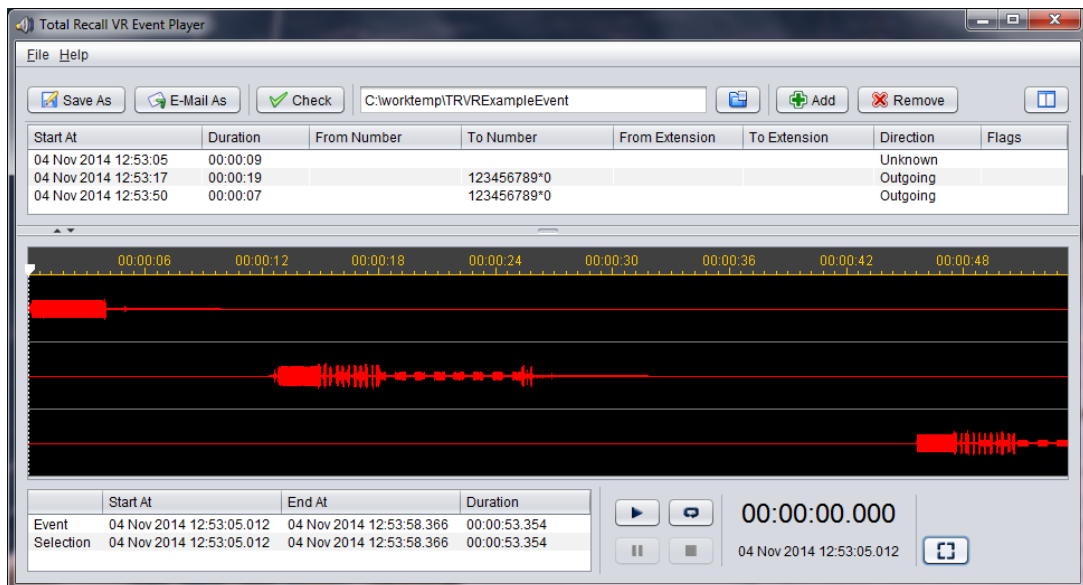
To play an event you must load it in Event Player first.

Load an event





1. Select  to display the Event Directory dialog:



2. Navigate to the event directory.
3. Select **Select** to load the event.
4. Event Player will load the event segments.



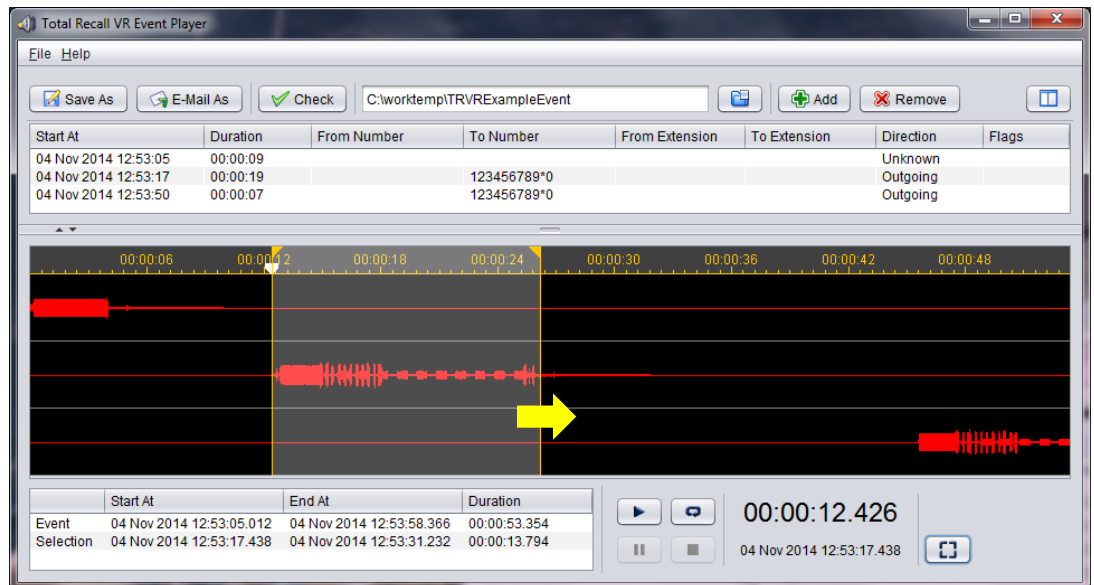
Note that the waveform may take some time to display. In general, the longer the recording, the longer it will take to display the waveform.


Once Event Player loads the event segments, simply use the player controls: , ,  and  to listen to the audio.

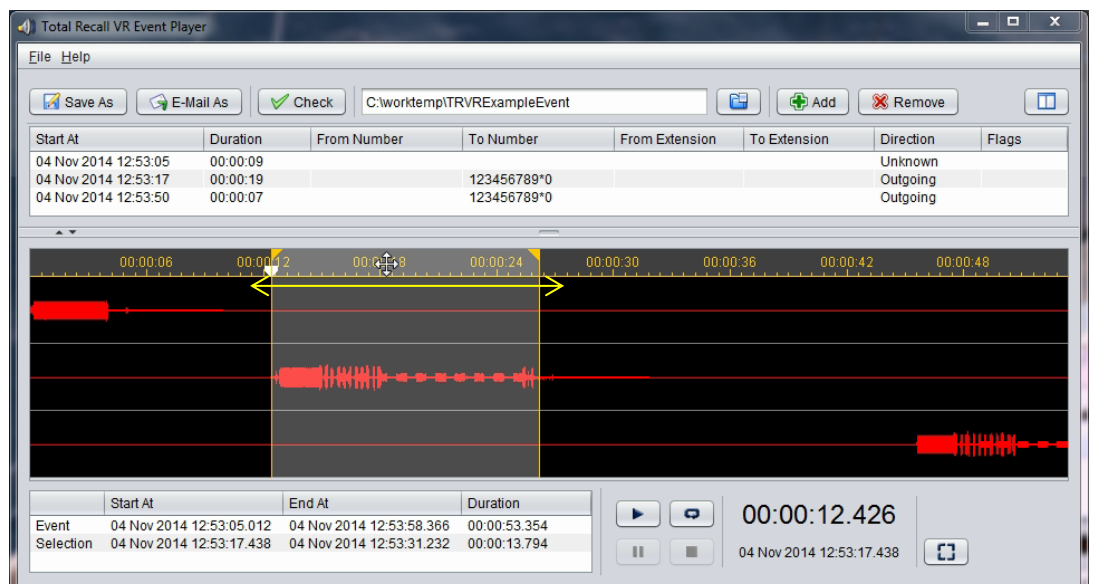
If you wish to listen to only a segment of the audio, then you can select the part of the audio that you wish to listen to.


Create a play selection

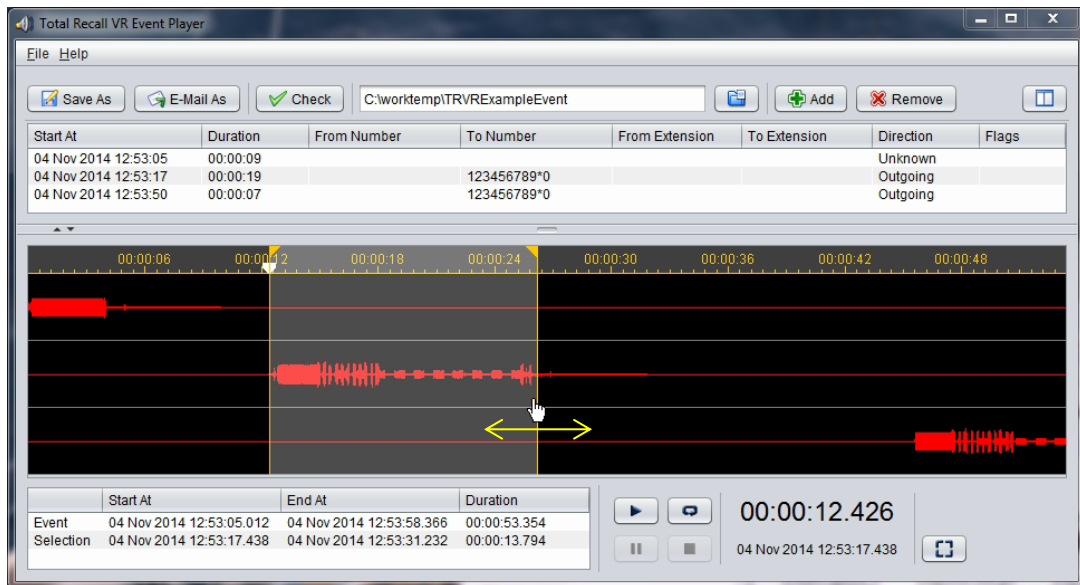
1. To create a play selection simply drag the mouse pointer over the area that you wish to listen to:








2. Once you define the selection, you can move it. Move the mouse pointer to the time scale area within the selection. The mouse cursor will change to . Then simply drag the selection area to the desired location.



3. In addition you can adjust the start and end position of the selection area as well. To do this simply move the mouse painter close to the start or end position line of the play range. The cursor will change to . Then simply drag the start or end position to the new location.

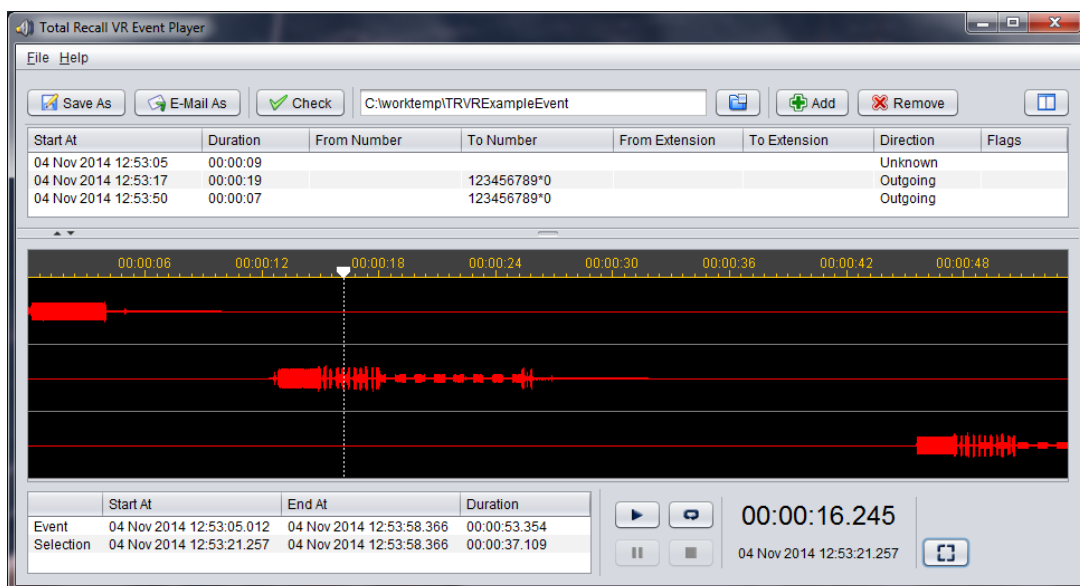






4. Use the player controls: , ,  and  to listen to the audio segment. You can quickly reset the selection by selecting .

Finally, you can start listening from a given time by specifying the start play position.

Define a start play position

1. To define a start play position simply click the mouse pointer over the waveform area:



2. Use the player controls: , ,  and  to listen to the audio from the specified start position.

9.3. Saving an Event As (Exporting)

Event Player can export the audio of an event to a number of standard file and audio formats. This may be useful if you wish to have the whole event in one audio file that can be played by a standard player like Windows Media Player.



The procedures in this section explain how to export the audio of the whole event in single audio file.

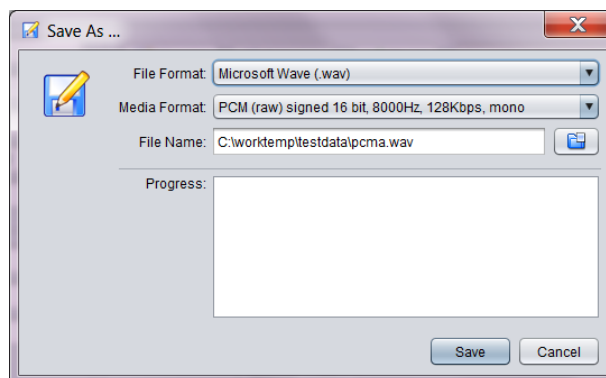
If you wish to share the event in its native format with other users then simply send them the content of the event directory (including all subdirectories that are created by Event Player).

To export an event, first load it in Event Player as explained in section 9.2 Playing an Event.

Then, to export the event:

Export an event


1. Select  **Save As** to display the Save As ... dialog:

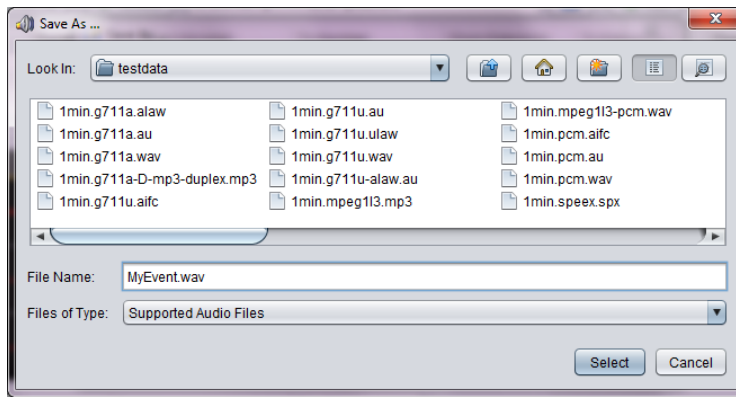


2. Select **File Format**.
3. Select **Media Format**.

Note that not all media formats can exist in all file formats. The set of media formats that are available depends on the chosen **File Format**.

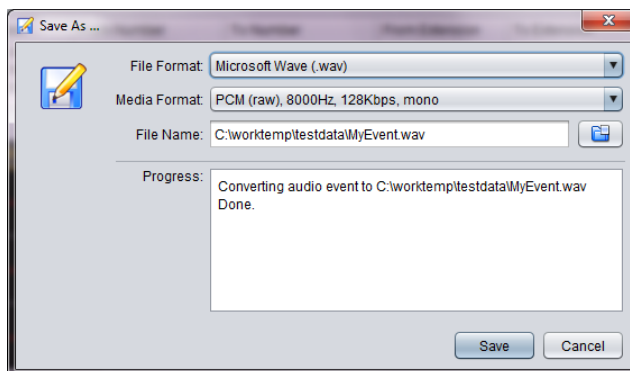
4. Enter **File Name**. This is the location and name of the destination file.

Alternatively select  to display a dialog which lets you choose a location and enter a name for the destination file.



Select **Select** to return to the Save As ... dialog.

5. Select **Save**.
6. Event Player will generate the new file as instructed and show progress in the **Progress** area.



7. Repeat steps 2 to 6 to save the event in a different format.
8. Select **Cancel** when done to close the Save As ... dialog.

You can listen to the files that you create in Event Player with a standard player like Windows Media Player or Audio Player.

9.4. E-Mailing an Event As

Event Player can e-mail the audio of an event in a number of standard file and audio formats.

Alternatively, export the event in a desirable file and audio format as explained in section 9.3 Saving an Event As (Exporting) and then use your favourite e-mail client to e-mail the file.



The procedures in this section explain how to export and e-mail the audio of the whole event in single audio file.

If you wish to share the event in its native format with other users then simply send them the content of the event directory (including all subdirectories that are created by Event Player).

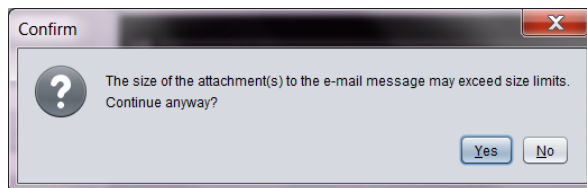
To e-mail an event file first load it in Event Player as explained in section 9.2 Playing an Event.

Then, to e-mail the event:

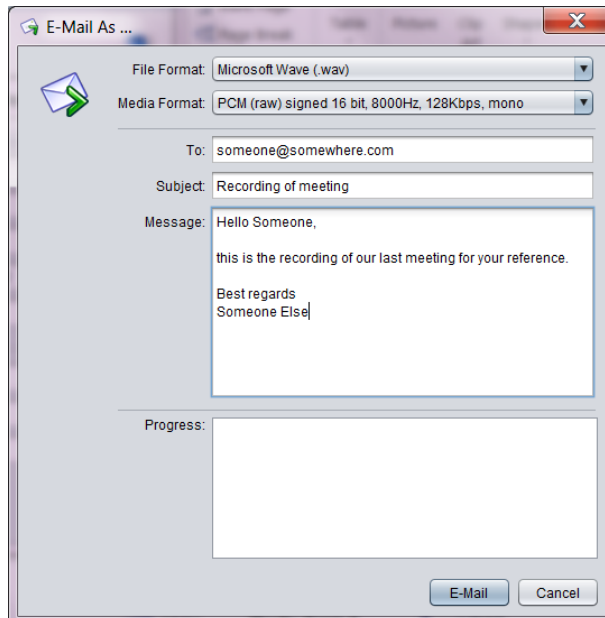
E-mail an event

1. Select  **Email As** to display the E-Mail As ... dialog.

Event Player will first warn you that it may fail to e-mail the event file as its file size may exceed limits imposed by your e-mail server.



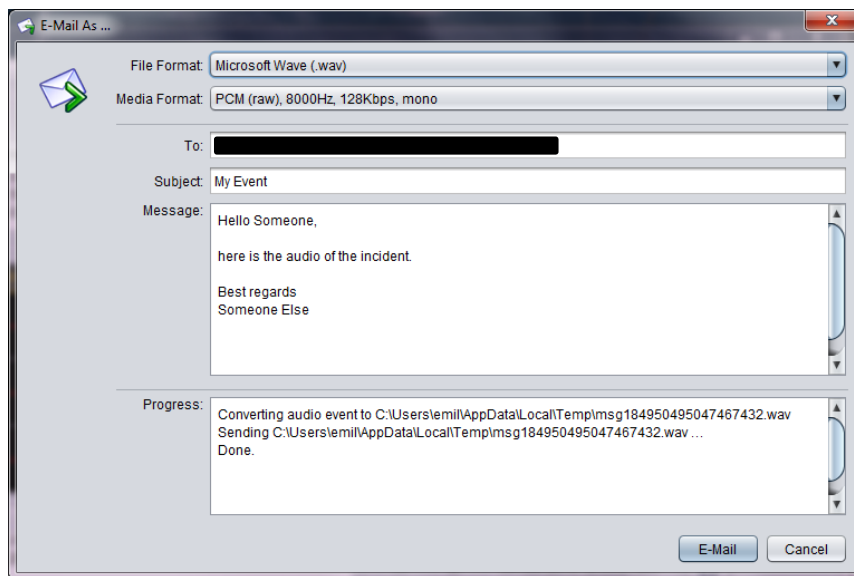
Select **Yes** to display the E-Mail As ... dialog:



2. Select **File Format**. This is the file format that will be sent. It is best to select the wav or mp3 format if the recipient does not have Audio Player.
3. Select **Media Format**. This is the audio format that will be sent. It is best to select the PCM or MP3 format if the recipient does not have Audio Player. However, PCM results in an audio file with large size while MP3 results in an audio file with small size that is more likely to be less than limits imposed by e-mail servers.

Note that not all media formats can exist in all file formats. The set of media formats that are available depends on the chosen **File Format**.

4. Enter **To**. This is the e-mail address of the recipient. You can enter multiple e-mail addresses; however you must separate them with semicolon (;).
5. Enter **Subject**. This is a free text field.
6. Enter **Message**. This is a free text field.
7. Select **E-Mail** to send the message and the event as an attachment to the recipient.
8. Event Player will attempt to send the e-mail and display progress in the **Progress** area:



9. Repeat steps 2 to 8 to e-mail the event to different recipient or to the same recipient but in different file and media format.
10. Select **Cancel** when done to close the E-Mail As ... dialog

Recipients can listen to the files that you send them from Event Player with a standard player like Windows Media Player or Audio Player.

9.5. Checking the Integrity of Event Segments

Total Recall VR systems store recordings in the TRC file format which is a proprietary, secure and tamper-proof file format. Event Player can check the integrity of the event segments, which are stored as TRC files, and detect tampering with the audio samples in the files.

Event Player makes all attempts possible to load and play, as much as possible, compromised event segments.



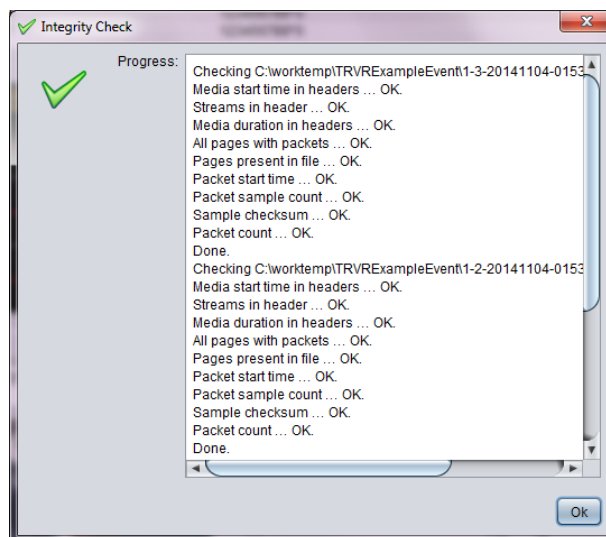
So loading and playing are in no way reliable methods of checking the integrity of the audio that is stored in each segment file. Use the procedure described in this section to check the integrity of the audio that is stored in the segment files.

To check the integrity of the audio that is stored in the event segment files, first load the event in Event Player as explained in section 9.2 Playing an Event.

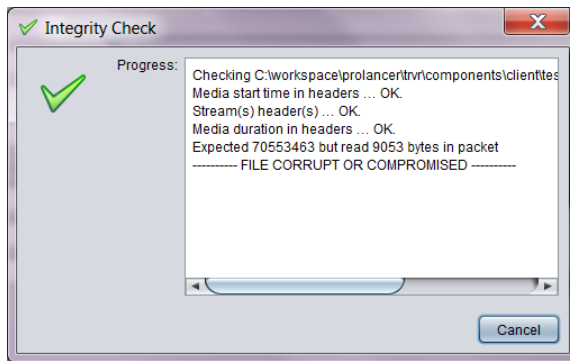
Then, to check the integrity:

Check the integrity of event segments

1. Select  **Check** to run an integrity check and display a report dialog:



2. The previous screen capture shows the report for segment files that pass the integrity check. If Event Player detects tampering than it will show it in the report:



3. Select **Cancel** to closet the Integrity Check dialog.

10. Recording Explorer(s)

Recording Explorers provide for viewing, searching, exporting and managing of recordings that are stored in one of the Total Recall VR archives as well as recordings that reside on Total Recall VR systems.

Total Recall VR Monitor has a number of Recording Explorer applications: Disc Archive Explorer, USB Archive Explorer, Recorder Explorer etc. However, while they are different applications, all look, feel and behave the same way to make you user experience simpler and consistent.

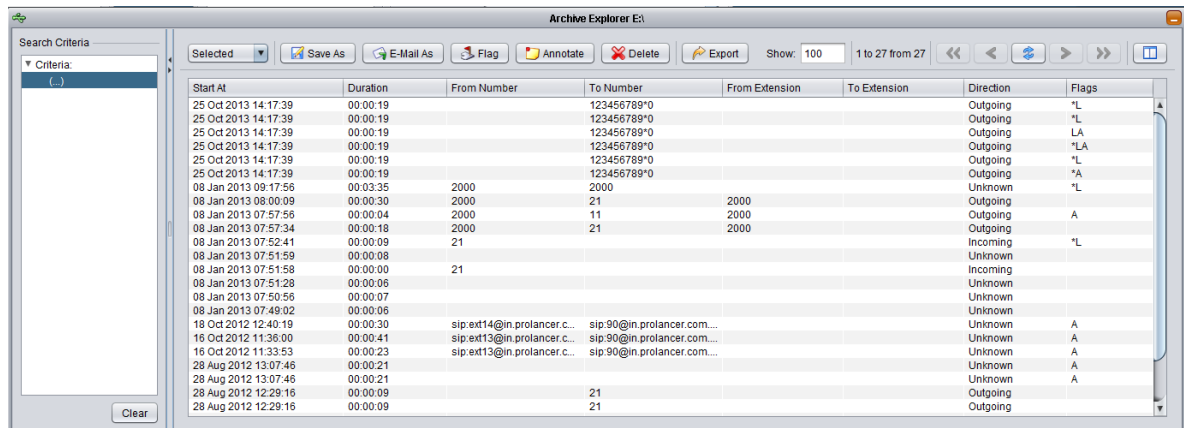


Figure 25: USB Archive Explorer Application - Example Recording Explorer

Use Recording Explorers to search for recordings.

Once you locate recordings of interest, you can export batches of recordings to any of the supported file and media formats. In addition, you can e-mail batches of recordings in any of the supported file and media format. Finally, and if the archive media allows it, you can delete recordings if they are no longer useful to you.

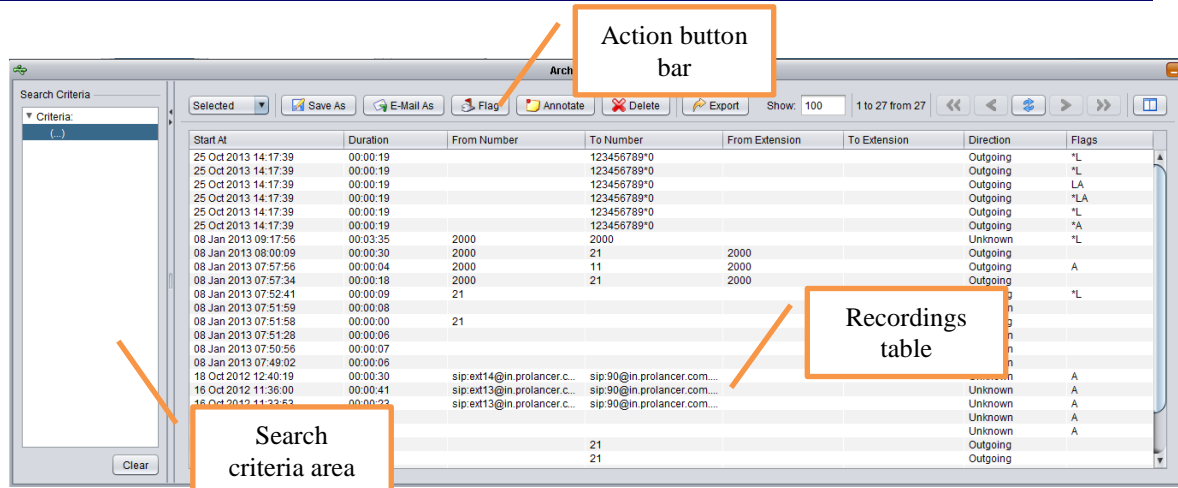
Recording Explorers allow you to edit the metadata of recordings (notes, flags ...) and export the metadata of batches of recordings in the CSV format suitable for use in popular reporting tools such as Microsoft Excel as well.

10.1. User Interface

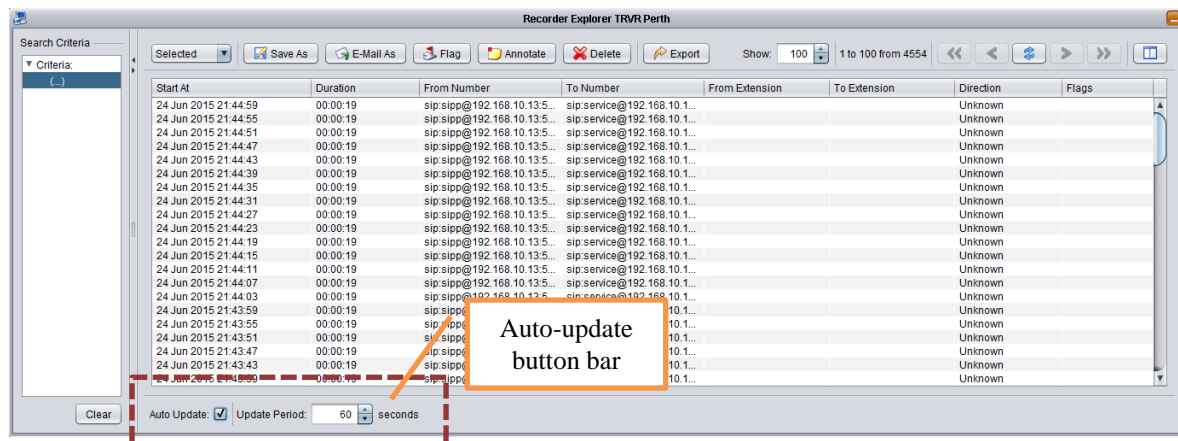
All Recording Explorer applications have the same user interface which comprises of:

- A search criteria area which shows the search criteria that applies to the recordings shown in the recordings table.
- A recordings table which shows metadata of recordings in tabular format.
- A button bar which contains buttons that initiate various operations on recordings and their metadata.

The following screen capture identifies the different components:



If the current user has permissions to monitor recordings on Total Recall VR systems, then the recording browser for recordings on Total Recall VR systems shows additional controls below the recordings table as shown on the following screen capture:



10.1.1. Search Criteria Area

The search criteria area displays the search criteria that apply to the recordings that are shown in the recordings table.

You cannot edit search criteria in the search criteria area. Instead, use the Criteria Builder application as explained in section 6 Criteria Builder.

10.1.2. Recordings Table

The recordings table displays the metadata of the recordings that match the current search criteria. The table can show the following columns:

- **Start At**

Shows the date and time when recording started.

The date and time is the local date and time equivalent of the actual recording start date and time based on the time zone used by the PC that runs the Total Recall VR Monitor.

This fact is important when viewing recordings that were created in another time zone. For example, a recording that was created on a Total Recall VR system that is located in Perth Australia at 6am on a given date will show start date and time of 9am on the same date if Total Recall VR Monitor is running on a PC that is using the Sydney Australia time zone (as you may know, there is a 3 hour difference between the time zones used by Sydney and Perth, Australia).

- **Duration**

Shows the duration of recording rounded to the nearest second.

If you wish to know the exact duration of the recording, down to a millisecond, then load the recording in Audio Player.

The actual recorded audio may be shorter if partial recording was used. For example a call may have lasted for two minutes (which is the duration that will be shown) but only a short part of it may have been actually recorder.

- **From Number**

Shows the 'from' number as collected by the Total Recall VR system from signalling messages while recording or applied by Total Recall VR to the recording as instructed by its configuration.

- **To Number**

Shows the 'to' number as collected by the Total Recall VR system from signalling messages while recording or applied by Total Recall VR to the recording as instructed by its configuration.

- **From Extension**

Shows the 'from' extension as determined by the Total Recall VR system by applying mapping rules to the 'from' number that it collected from signalling messages while recording or to the 'from' number that it applied to the recording as instructed by its configuration.

- **To Extension**

Shows the 'to' extension as determined by the Total Recall VR system by applying mapping rules to the 'to' number that it collected from signalling messages while recording or the 'to' number that it applied to the recording as instructed by its configuration.

- **Direction**

Shows the direction (incoming, outgoing ...) of the recording as determined by the Total Recall VR system during recording.

- **Flags**

Shows the current set of flags and tags that are attached to the recording.

The following characters can appear in this column for each of the recordings:

*: indicates that the recording is tagged.

A: indicates that the recording has been archived at least once before.

X: indicates that the recoding file is damaged.

T: indicates that the recording was rolled-over to another one when its duration reached the maximum duration specified in the recorder configuration.

C: indicates that this recording is a segment of a long conversation that is captured in multiple recordings.

L: indicates that the recording is 'locked' and it cannot be deleted.

E: indicates that the recording is a recording of an emergency call or communication.

B: indicates that the recording is a recording of a broadcast call or communication.

G: indicates that the recording is a recording of a group call or communication.

- **Agent**

Shows the name of the agent, if any, that was involved in the conversation that is stored in the recording.

- **Channel**

Shows the number of the recording channel that the Total Recall VR system used to create the recording.

- **DTMF Digits**

Shows the sequence of DTMF digits, if any, that the Total Recall VR system detected while recording.

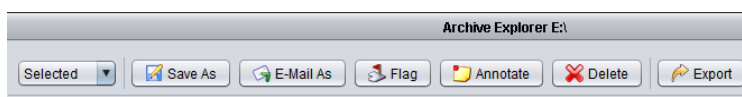
- **Notes**

Shows the current notes that are attached to the recording.

10.1.3. Action Button Bar

The action button bar comprises of two sections.

The following screen capture shows the first section which contains buttons which initiate actions that affect recordings and recording metadata.



Use the dropdown box on the far left hand side to set the context of the actions initiated by the remaining buttons. Select:

- *Selected* – if you wish the actions to apply to the records that are selected in the recordings table.
- *Found* – if you wish actions to apply to all records that match the current search criteria which appears in the search criteria area.

Note that the recordings table may not show all records that match the search criteria and you may invoke an action on records that do not appear in the current view of the table.

- *All* – if you wish actions to apply to all records that are in the archive or on a Total Recall VR system.

Use this option with extreme caution as the recordings table may not show all records in the current view.


We explain the role of each of the action buttons in a subsequent section of this document.

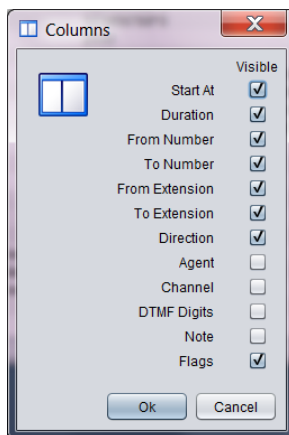
The following screen capture shows the second section of the button bar. This section contains record paging buttons and a table column configuration button.



Use **Show** to specify the number of rows (between 10 and 250) that you wish to display in the recordings table at any one time (or per page). Then you can use the paging buttons to display a different page of records:

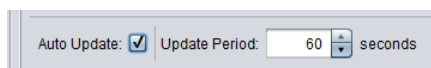
- ◀◀ displays the first page of records that match the current search criteria.
- ◀ displays the previous page of records that match the current search criteria.
- ↻ refreshes the current page of records that match the current search criteria.
- ▶ displays the next page of records that match the current search criteria.
- ▶▶ displays the last page of records that match the current search criteria.

Finally, use  to display the Columns dialog where you can choose the columns that appear in the recordings table:



10.1.4. Auto-update Button Bar

The auto-update button bar contains controls that allow you to enable automatic fetching of the latest recordings from the Total Recall VR system on regular intervals.



Tick **Auto Update** if you wish to enable automatic fetching of the latest recordings from the Total Recall VR system on regular intervals.

Optionally, set **Update Period** (between 10 and 3600 seconds) to change the default time period between updates.

10.2. Saving Recordings As

Recording Explorers can save copies of recordings in their native format or convert to and then save recordings to any of the supported file and audio formats.



Recording Explorers can convert and then save one or a batch of recordings at a time.

To save recordings to any of the supported audio and file formats first identify the recordings that you wish to save:

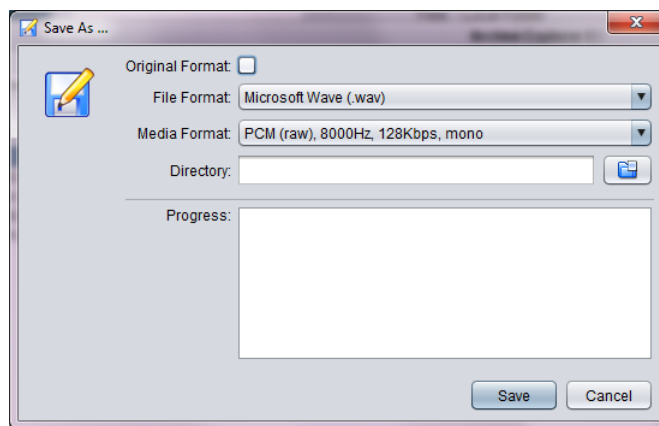
- You may have to create a query that matches the recordings that you wish to save with Criteria Builder.

- Optionally, you may have to set the context (Selected, Found or All) of the save action.
- Optionally, you may have to select records in the recordings table.

Once you have identified the recordings that you wish to save:

Save a batch of recordings


1. Select  **Save As** to display the Save As ... dialog:

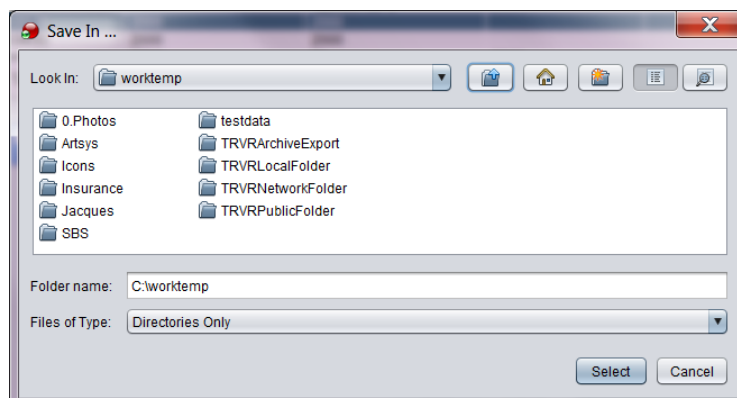


2. Tick **Original Format** if you wish to save copies of the recordings in their native format. Otherwise:
 - a. Select **File Format**.
 - b. Select **Media Format**.

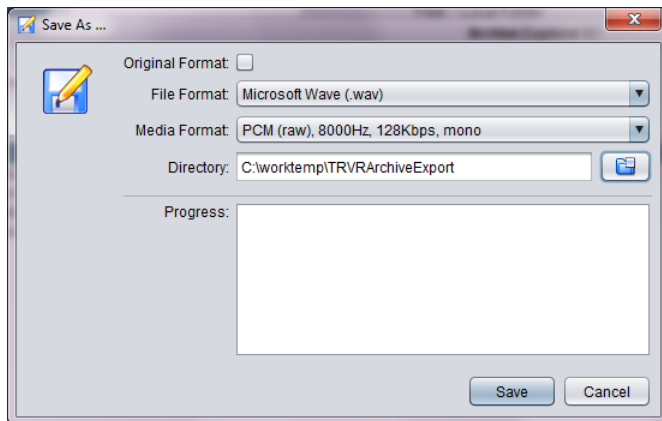
Note that not all media formats can exist in all file formats. The set of media formats that are available depends on the chosen **File Format**.

3. Enter **Directory**. This is a directory where you wish to save the recordings.

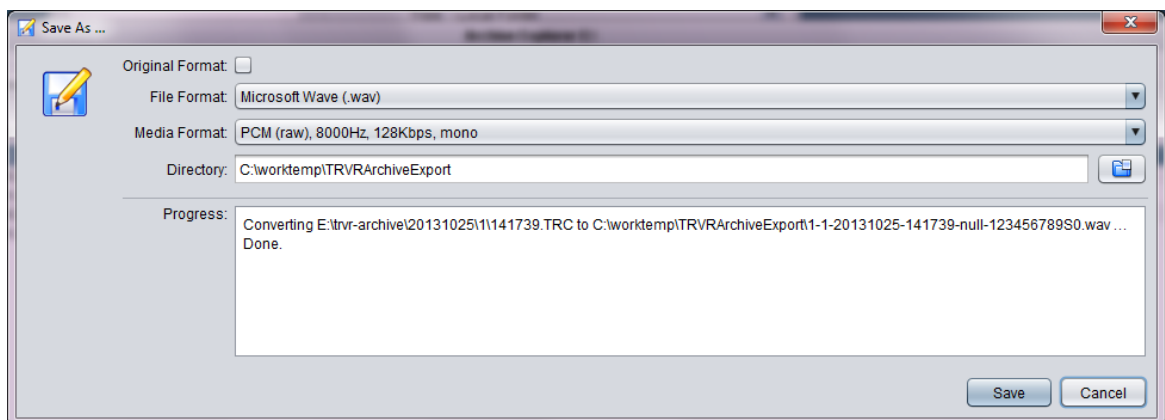
Alternatively select  to display a dialog which lets you choose a directory and enter a name of a directory.



Select **Select** to return to the Save As ... dialog.

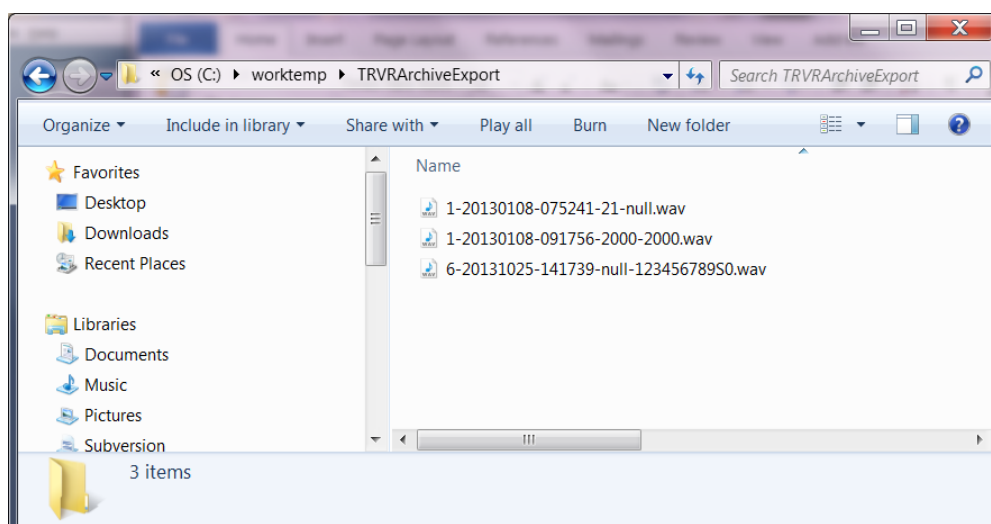


4. Select **Save**.
5. Recording Explorer will generate the files as instructed and show progress in the **Progress** area.



6. Repeat steps 2 to 6 to save the recordings in a different format.
7. Select **Cancel** when done to close the Save As ... dialog.

The destination folder will contain one file per recording in the batch. For example:



10.3. E-Mailing Recordings As

Recording Explorers can e-mail copies of recordings in their native format or convert to and then e-mail recordings to any of the supported file and audio formats



Recording Explorers can convert and then e-mail one or a batch of recordings at a time.

To e-mail recordings in any of the supported audio and file formats first identify the recordings that you wish to e-mail:

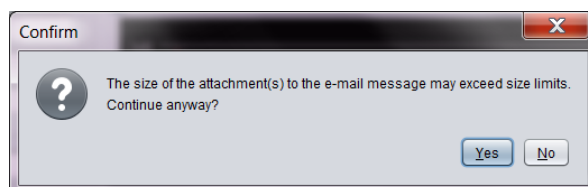
- You may have to create a query that matches the recordings that you wish to e-mail with Criteria Builder.
- Optionally, you may have to set the context (Selected, Found or All) of the e-mail action.
- Optionally, you may have to select records in the recordings table.

Once you have identified the recordings that you wish to e-mail:

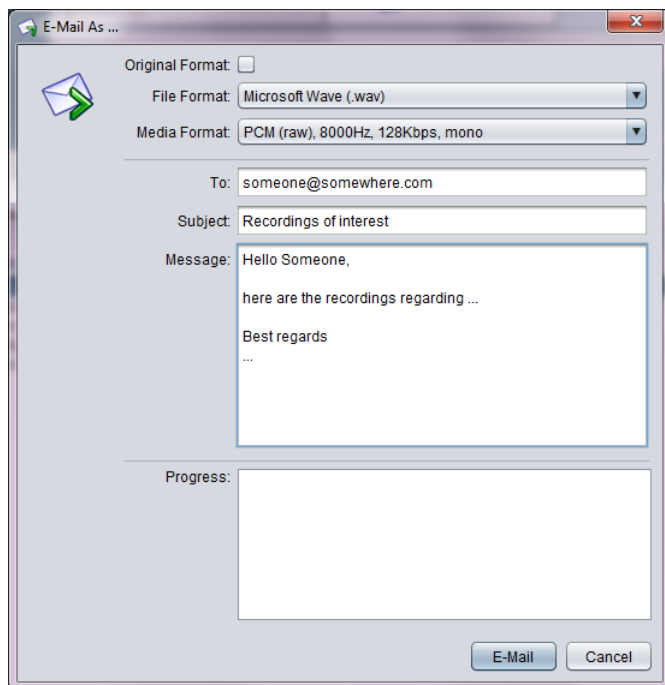
E-mail a batch of recordings

1. Select  **Email As** to display the E-Mail As ... dialog.

Recording Explorer will first warn you that it may fail to e-mail the recordings as their file sizes may exceed limits imposed by your e-mail server.



Select **Yes** to display the E-Mail As ... dialog:



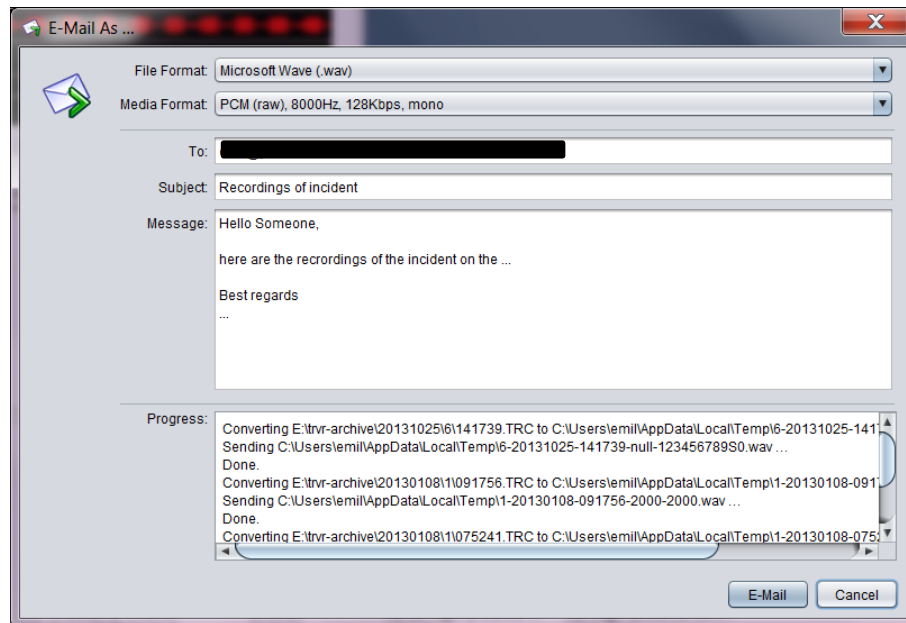
2. Tick **Original Format** if you wish to e-mail copies of the recordings in their native format. Otherwise:
 - a. Select **File Format**. This is the file format that will be sent. It is best to select the wav or mp3 format if the recipient does not have Audio Player.
 - b. Select **Media Format**. This is the audio format that will be sent. It is best to select the PCM or MP3 format if the recipient does not have Audio Player. However, PCM results in audio files with large size while MP3 results in audio files with small size that is more likely to be less than the file size limits imposed by e-mail servers.

Note that not all media formats can exist in all file formats. The set of media formats that are available depends on the chosen **File Format**.

3. Enter **To**. This is the e-mail address of the recipient. You can enter multiple e-mail addresses, however you must separate them with semicolon (;).
4. Enter **Subject**. This is a free text field.
5. Enter **Message**. This is a free text field.
6. Select **E-Mail** to send e-mail messages with a recording as an attachment to the recipient.

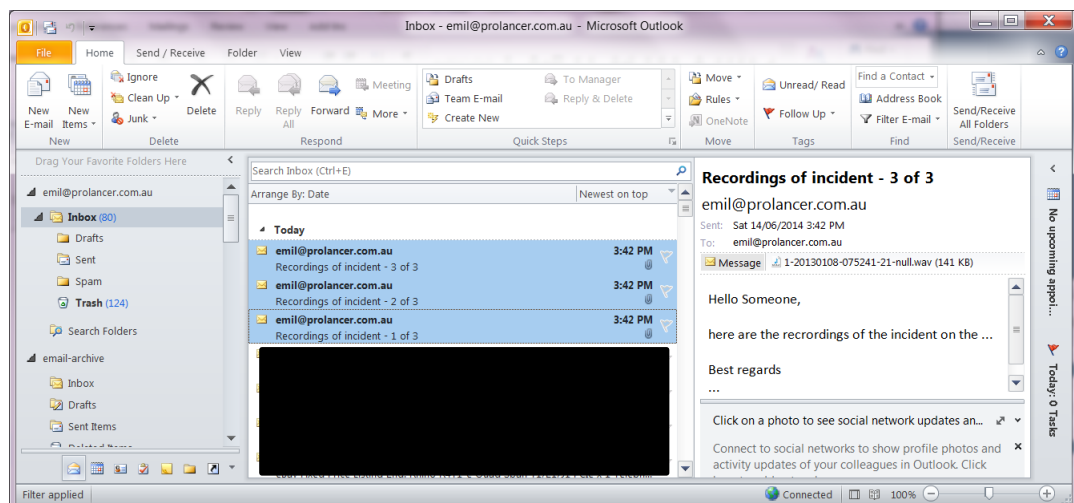
Note that Recording Explorer will send one message per recording, so if you have selected to e-mail 10 recordings then the recipient will receive 10 e-mail messages.

7. Recording Explorer will attempt to send the e-mail messages and display progress in the **Progress** area:



8. Repeat steps 2 to 8 to e-mail the recording to a different recipient or to the same recipient but in different file and media format.
9. Select **Cancel** when done to close the E-Mail As ... dialog.

On the other end the recipient will receive a numbered sequence of e-mail messages, all with the same content as *Message*, but each with a different recording file as an attachment. For example:



10.4. Flagging Recordings

Recording Explorers allow you to change the flags and tags of recordings in the recording metadata. In particular you can set or reset the following flags and tags:

*: indicates that the recording is tagged.

A: indicates that the recording has been archived at least once before.


L: indicates that the recording is 'locked' and it cannot be deleted.

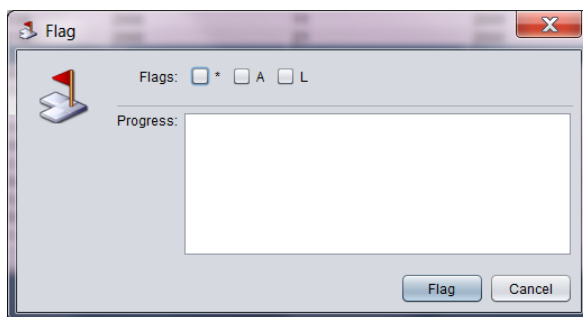
To flag recordings first identify the recordings that you wish to flag:

- You may have to create a query that matches the recordings that you wish to flag with Criteria Builder.
- Optionally, you may have to set the context (Selected, Found or All) of the flag action.
- Optionally, you may have to select records in the recordings table.

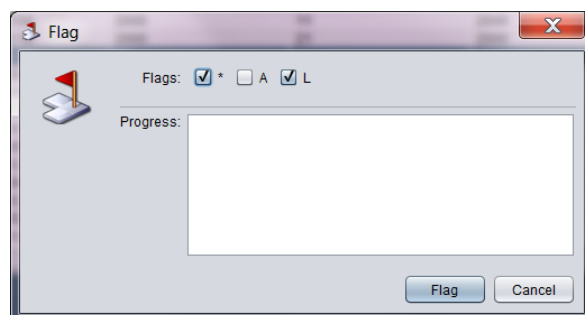
Once you have identified the recordings that you wish to flag:

Flag a batch of recordings

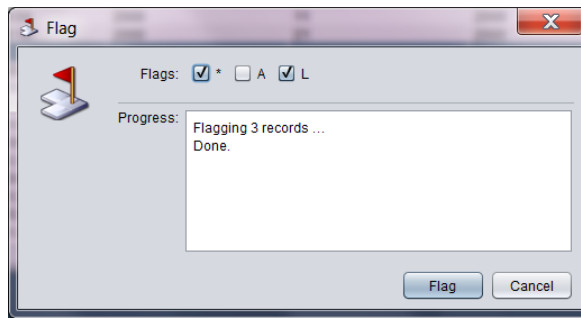
1. Select  **Flag** to display the Flag dialog.



2. Tick or un-tick **Flags** based on whether you wish to set or clear flags and tags:
 - a. Tick * if you wish to tag recordings.
 - b. Tick A if you wish to mark recordings as archived.
 - c. Tick L if you wish to 'lock' recordings in order to prevent them from being deleted.



3. Select **Flag** to apply the new set of flags and tags to the recordings.
4. Recording Explorer will attempt to apply the flags and tags to the recordings and display progress in **Progress**:



5. Select **Cancel** when done to close the Flag dialog.

10.5. Annotating Recordings


Recording Explorers allow you to change the notes for recordings in the recording metadata.

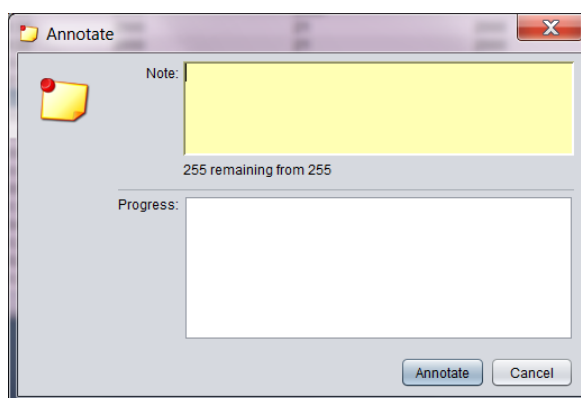
To annotate recordings first identify the recordings that you wish to annotate:

- You may have to create a query that matches the recordings that you wish to annotate with Criteria Builder.
- Optionally, you may have to set the context (Selected, Found or All) of the annotate action.
- Optionally, you may have to select records in the recordings table.

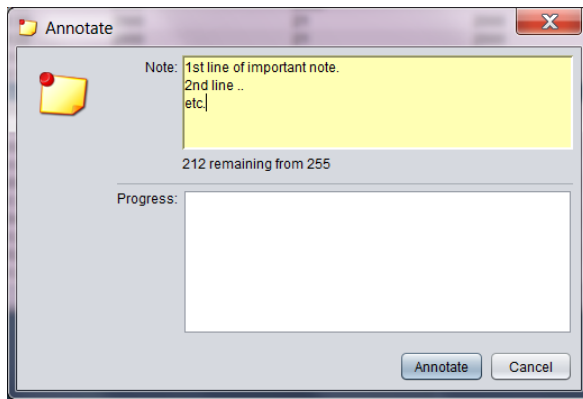
Once you have identified the recordings that you wish to annotate:

Annotate a batch of recordings

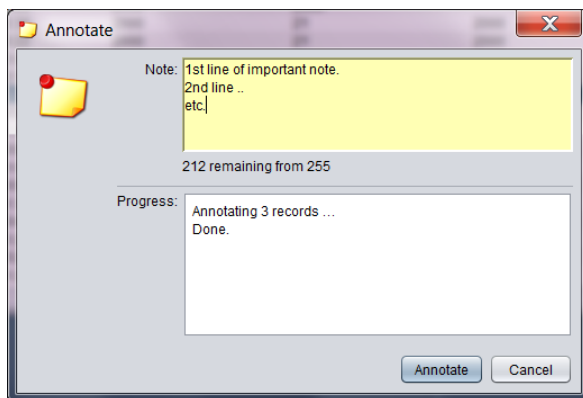
1. Select  **Annotate** to display the Annotate dialog.



2. Enter *Note* (up to 255 characters):



3. Select **Annotate** to apply the note to the recordings.
4. Recording Explorer will attempt to apply the note to the recordings and display progress in **Progress**:



5. Select **Cancel** when done to close the Annotate dialog.

10.6. Deleting Recordings



This section explains how to **PERMANENTLY** delete recordings including the audio files and metadata. The operation is **NOT** reversible and it is **NOT** possible to recover deleted recordings (file and metadata) once deleted.

By performing the procedures in this section:

1. You acknowledge that you have voluntarily chosen to do so.
2. You acknowledge that you understand the risks involved including and not limited to the risks of financial loss, loss of evidence and loss of important records.

As a result, you agree to accept all associated risks, including and not limited to the risks of financial loss, loss of evidence and loss of important records.

Further, you agree to indemnify, defend and hold harmless Prolancer Pty Ltd, its officers, directors, employees and contractors from and against all claims arising out of or resulting from execution of the procedures in this section.



IF YOU DO NOT AGREE, THEN DO NOT PERFORM THE PROCEDURES IN THIS SECTION.

Recording Explorers allow you to permanently delete recordings. It deletes the files that contain the audio of the recordings from the file system as well as the metadata on the recordings from the database that contains them.


The deletion is not reversible; that is, the file and metadata cannot be restored once deleted.

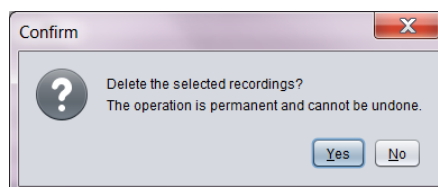
To delete recordings first identify the recordings that you wish to delete:

- You may have to create a query that matches the recordings that you wish to delete with Criteria Builder.
- Optionally, you may have to set the context (Selected, Found or All) of the delete action.
- Optionally, you may have to select records in the recordings table.

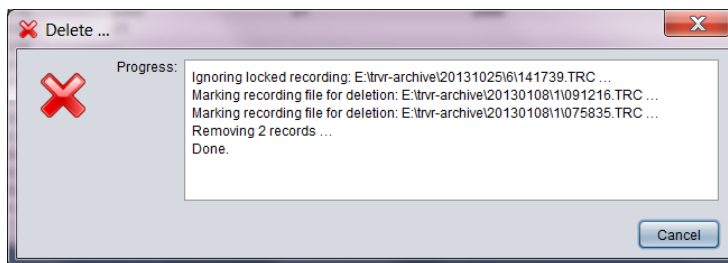
Once you have identified the recordings that you wish to delete:

Delete a batch of recordings

1. Select  **Delete** to start the process. Recording Explorers will give you one last chance to change your mind:



2. Select **Yes** to delete the recordings. Otherwise select **No** to keep the recordings.
3. Recording Explorer will start deleting recordings immediately once you select **Yes** and display progress:



Note that 'locked' recordings will be excluded if selected to delete. You must unlock them by removing the L flag before you can delete them.

4. Select **Cancel** to close the Delete... dialog.

10.7. Exporting Recording Metadata

Recording Explorers allow you to export the metadata of recordings in the following formats:

1. CSV (comma separated values) format which is suitable to use in reporting tools such as Microsoft Excel.
2. XML format which is suitable for ingestion into other business systems.
3. PDF (unsigned and signed) format which is suitable for direct reporting. The signed PDF format is a tamper proof by definition which makes it suitable for use in legal proceedings.




Recording Explorers export all fields of the metadata at this stage. It is not possible to select which fields will be exported.

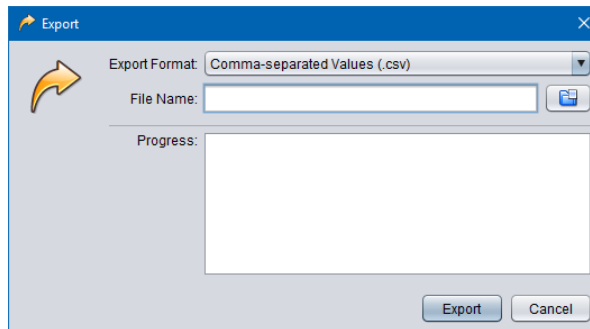
To export the metadata of recordings in any of the supported formats first identify the recordings that you wish to export:

- You may have to create a query that matches the recordings that you wish to export with Criteria Builder.
- Optionally, you may have to set the context (Selected, Found or All) of the export action.
- Optionally, you may have to select records in the recordings table.


Once you have identified the recordings that you wish to export:

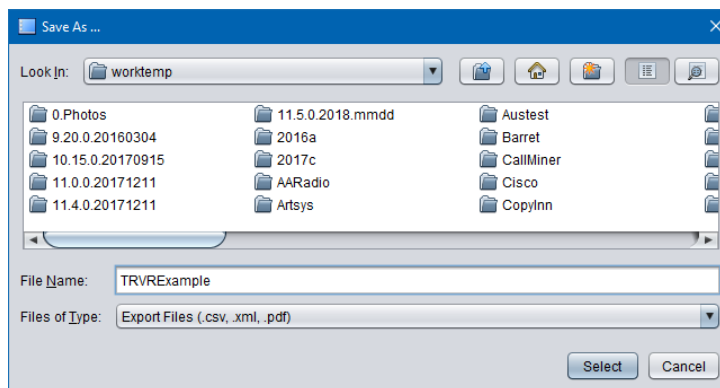
Export a batch of recordings

1. Select  **Export** to display the Export dialog.

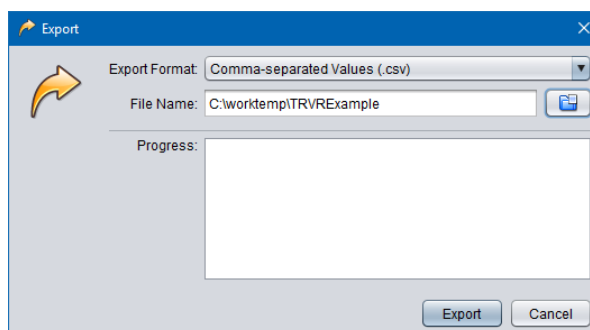


2. Select **Export Format**.
3. Enter **File Name**. This is the location and name of the file that will contain the recording metadata in the chosen format.

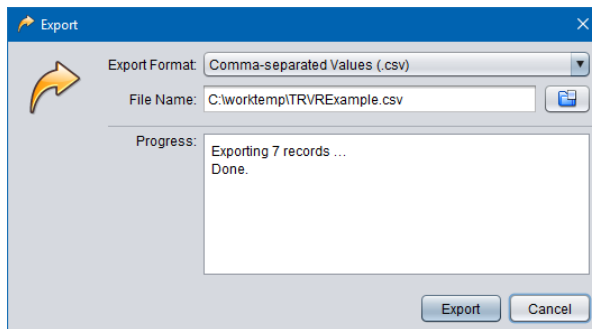
Alternatively select  to display a dialog which lets you choose a location and enter a name for the file.



Select **Select** to return to the Export dialog.



4. Select **Export** to export the metadata.
5. Recording Explorer will start exporting the data and show progress in **Progress**:



6. Select **Cancel** to close the Export dialog.

If you chose to export to the CSV format, then you can open the CSV file with a reporting tool that supports the CSV format such as Microsoft Excel:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Start At	Duration	From Number	To Number	From Extension	To Extension	Direction	Agent	Channel	DTMF Digit	Note	Flags	
2	25/10/2013 14:17	0:00:19	123456789*0				Outgoing			6	123456789 1st line of	*L	
3	25/10/2013 14:17	0:00:19	123456789*0				Outgoing			5	123456789 8th tada	*L	
4	25/10/2013 14:17	0:00:19	123456789*0				Outgoing			4	123456789 8th tada	LA	
5	25/10/2013 14:17	0:00:19	123456789*0				Outgoing			3	123456789 8th tada	*LA	
6	25/10/2013 14:17	0:00:19	123456789*0				Outgoing			2	123456789 8th tada	*L	
7	25/10/2013 14:17	0:00:19	123456789*0				Outgoing			1	123456789 8th tada	*A	
8	8/01/2013 9:17	0:03:35	2000	2000			Unknown			1	1st line of	*L	
9	8/01/2013 8:00	0:00:30	21	2000	2000		Outgoing			1	21		
10	8/01/2013 7:57	0:00:04	11	2000	2000		Outgoing			1	11	A	
11	8/01/2013 7:57	0:00:18	21	2000	2000		Outgoing			1	21		
12													
13													
14													

Alternatively, if you chose to export in the PDF format, you can view the PDF files with a PDF reader such as Acrobat Reader.

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9.2 For a limited time after the expiration of your Maintenance Plan, you may purchase a renewal of your Maintenance Plan. This will provide you with a new Maintenance Plan that will begin at the date the renewal is purchased.

9.3 If you do not purchase any additional Maintenance Plan, you will still have the right to use the existing Software but you will lose the right to technical support and Software updates and upgrades as of the date your current Maintenance Plan expires.

9.4 For customers that purchase or already own multiple licenses, a Maintenance Plan must be purchased for each license.

9.5 Technical support is provided via electronic mail at the address specified on the web site. Prolancer will use its best efforts to provide you with technical support within forty-eight (48) business hours of your request. Please check our website to find our latest contact information.

10. SUPPORT

10.1 Except as provided herein, support for the Software is provided to you free of charge while your current Maintenance Plan is valid. If Prolancer discontinues any version of the Software, Prolancer reserves the right to limit or cease product support and updates for such discontinued version. Prolancer reserves the right to discontinue free support with thirty (30) days written notice posted to the Prolancer or the Software web site.

11. INTERNET-BASED SERVICES

11.1 Consent for Internet-Based Services. Certain Software features connect to Prolancer or service provider computer systems over the Internet. In some cases, you will not receive a separate notice when they connect. You may switch off these features or not use them. BY USING THESE FEATURES, YOU CONSENT TO THE TRANSMISSION OF THIS INFORMATION. Prolancer does not use the information to identify or contact you. For more information, see Prolancer's Privacy Policy on Prolancer's web site.

11.2 Computer Information. The Software features use Internet protocols, which send to the appropriate systems computer information, such as your Internet protocol address, the type of operating system, browser and name and version of the software you are using, and the language code of the device where you installed the software. Prolancer uses this information to make the Internet-based services available to you.

11.3 Customer Experience Improvement Program (CEIP). The Software may use CEIP, which automatically sends to Prolancer anonymous information about your hardware and how you use this software. We may use the computer information, and CEIP information, to improve our software and services. We may also share it with others, such as hardware and software vendors. They may use the information to improve how their products run with Prolancer software.

12. HIGH RISK ACTIVITIES

12.1 The Software is not fault-tolerant and is not designed, manufactured or intended for use or resale as on-line control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of the Software could lead directly to death, personal injury, or severe physical or environmental damage ("High Risk Activities"). Prolancer and its suppliers specifically disclaim any express or implied warranty of fitness for High Risk Activities.

13. THIRD PARTY SITES AND SOFTWARE

13.1 The Software may direct you to third party Web sites. Prolancer does not control, endorse, or guarantee content, including software, data or other information found on such third party sites. You agree that Prolancer is not responsible for any content, associated links, resources, or services associated with a third party site. You further agree that Prolancer shall not be liable for any loss or damage of any sort associated with your use of third party content. Access to these sites is provided for your convenience only.

13.2 The Software may contain third party software. By accepting this EULA, You are also accepting the additional terms and conditions with respect to such software, if any, forth herein.

14. AUDIT RIGHTS

14.1 Prolancer may audits your use of the Software to verify compliance with this Agreement. The Software is configured to enable periodic HTTP communication with Prolancer. During this communication, license information is transmitted from the Software to Prolancer to ensure license compliance. The information transmitted during these periodic updates includes the operating system, license serial number, and other relevant information to verify compliance. If you are unwilling to provide this communication capability, you may opt out of ongoing communication, but you will no longer receive Software updates and search engine configuration updates. If the usage of the Software is considered to be out of compliance with this Agreement, the Software may, without notice, cease to function.

14.2 During the audit process, Prolancer has the ability to personally identify the individual that registered with Prolancer to acquire the Software license ("Registrant") through the identification number assigned to your account at the time of registration, by using the personal information the Registrant provided to

Prolancer during the registration process. Such personal information will only be used by Prolancer in connection with such audit process.

15. SEVERABILITY

15.1 If any provision hereof shall be held illegal, invalid or unenforceable, in whole or in part, such provision shall be modified to the minimum extent necessary to make it legal, valid and enforceable, and the legality, validity and enforceability of all other provisions of this Agreement shall not be affected.

16. GOVERNING LAW

16.1 This Agreement is to be governed by and construed in accordance with the laws and jurisdiction of the defending party. Service of process upon either party shall be valid if served by registered or certified mail, return receipt requested and to the most current address provided by such party. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Agreement.

17. TERMINATION

17.1 Your license to use the Software continues until terminated. This license will terminate automatically if you fail to comply with any term hereof. No notice shall be required from Prolancer to effect such termination. You may also terminate this Agreement at any time by notifying Prolancer in writing of termination. On termination, you must destroy all copies of the Software. Your obligation to pay accrued charges and fees shall survive any termination of this Agreement.

18. ASSIGNMENT

18.1 Neither this Agreement nor any rights granted hereunder may be sold, leased, assigned, or otherwise transferred, in whole or in part, by you, whether voluntary or by operation of law. Any such attempted assignment shall be void and of no effect without the prior written consent of Prolancer.

19. ENTIRE AGREEMENT

19.1 This Agreement contains the entire agreement between Prolancer and You related to the software and supersedes all prior agreements and understandings, whether oral or written. It may be amended only by a writing executed by both parties.

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