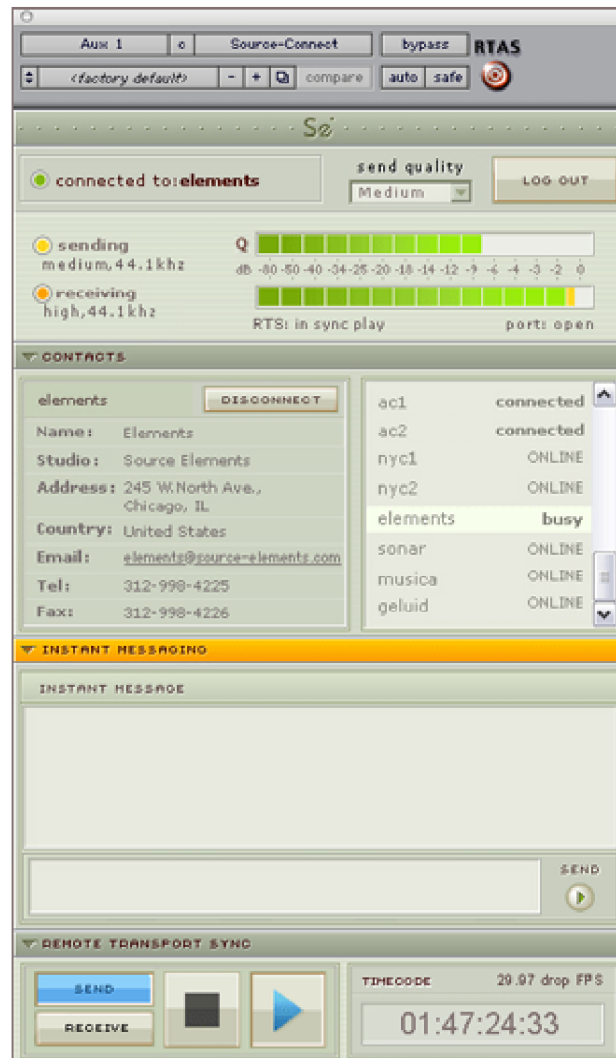


Source-Connect® Standard 3.1 User Guide



* For Source-Connect Standard including version 2.9, VST and Audio Units

Source-Connect Standard 3.1 User Guide

1. Introducing Source-Connect

Source-Connect is an HTDM/RTAS and VST plug-in for Digidesign Pro Tools TDM or LE and supported VST hosts.

Source-Connect provides professional studio access to the encoding and decoding of high quality, real-time audio streaming from within your editing environment, along with Remote Transport Sync (RTS), for remote synchronization of recording sessions.

To reduce the channel bandwidth requirements while maintaining low delay and high quality communications. Source-Connect uses a state-of-the-art AAC codec, developed by Fraunhofer IIS. Source-Connect Pro with apt-X® also uses the apt-X Extended algorithm from APT.



In addition to streaming and RTS capabilities, Source-Connect also provides Contacts management and Instant Messaging features. You can add or remove contacts and edit your personal settings and profile by logging in to your account on the Source-Connect website.

This manual applies to Source-Connect Standard versions 2.9 and up.

What's new in Source-Connect 3.1?

Source-Connect 3.1 comes in several versions:

- **Source-Connect Standard**
- **Source-Connect Pro**
- **Source-Connect Pro with apt-X**

Support is now available for VST and Audio Units formats.

For an overview of the new features in Source-Connect 3.1 see:

<http://www.source-elements.com/source-connect/3.1>

For an overview of the new features in Source-Connect 3.0 see:

<http://www.source-elements.com/source-connect/3.0>

For a general overview of the Source-Connect versions and features see:

<http://www.source-elements.com/source-connect/features>

2. Installation

2.1: System requirements

Supported Host versions and Hardware

Pro Tools:

Source-Connect Pro supports Pro Tools LE or TDM versions 6.4 or higher, running on the software and hardware configurations required to run Digidesign Pro Tools LE or TDM. See the Supported Versions on the website for more details and specific tutorials.

As of the writing of this document, this includes Digidesign Pro Tools MIX, Pro Tools LE and M-Powered and Pro Tools HD hardware. Theoretically, Source-Connect may work on any version of Pro Tools from 6.0 and up, however we only offer technical support for 6.4 and above. Please refer to the Digidesign website (see link below) for more information on compatibility with Pro Tools.

VST:

Source-Connect Standard supports any VST host that runs VST version 3.2 and is capable of sending and receiving a live input. This includes Steinberg Nuendo and Cubase, Ableton Live, Adobe Audition 2.0 and higher, Cakewalk Sonar and others. See the Supported Versions on the website for more details and specific tutorials.

<http://source-elements.com/resources/vst>

Audio Units:

Source-Connect Pro supports any Audio Units host that is capable of sending and receiving a live input. This includes Logic, Digital Performer, Sound Track Pro, GarageBand, Ardour and others. See the Supported Versions on the website for more details and specific tutorials.

<http://source-elements.com/resources/au>

Minimum recommended configurations:

1ghz G4, 768mb RAM, OSX 10.4

2ghz P4 PC (or equivalent), 1GB RAM, Windows XP

Windows Vista is not supported by Source Elements software at this time.

Source-Connect supported sample-rates:

Source-Connect currently only supports 44.1khz and 48khz.

Source-Connect supported bit-rates:

Source-Connect supports 16bit and 24bit sessions.

Compatibility

Source-Connect 3.1 is compatible with version 2.9 for Pro Tools 6, and all 3.0 versions and up.

Source-Connect 2.9

Source-Connect 2.9 is the version for Pro Tools 6. This version does not include the Q Manager nor ability to send or receive Restore and Replace requests. If Restore and Replace is a priority for you we recommend installing Pro Tools 7 where possible.

2.2: Network configuration

To establish an audio session between two studios, direct peer-to-peer communication is required between two hosts each running Source-Connect. Internet communication occurs over the UDP protocol, which is a low level and very fast Internet Protocol. It is therefore required that your firewall and/or router is configured properly to enable such communication.

For most operations you will open UDP 6000–6002 in your firewall and/or port forward these ports to your computer's IP address.

Please review the online Network Guide for specific details on getting your Network configured for Source-Connect:

<http://source-elements.com/networkguide>

Bandwidth:

Source-Connect requires an Internet connection with bandwidth of **at least** 300 kbps in both directions. You may need to configure your firewall and/or router if you are inside a network or have an active firewall. Corporate firewalls and routers may be able to provide QoS services to increase your application bandwidth. Please refer to our detailed network-specific information if you have difficulty connecting successfully.

You can get an idea of your bandwidth via Internet Speed test sites, such as <http://www.speakeasy.net/speedtest>. However, please note that a report from a site in California does not mean that you will be getting the same bandwidth when connecting to a peer in, say, Australia.

Additional firewall information:

Source-Connect will make outgoing requests from any available TCP port to ports 80 and 5222 on our server (www.source-elements.com). All TCP ports should be allowed to make outgoing connections to and from the firewall. Most networks allow these connections by default.

For additional information on configuring your network, please refer to:

<http://source-elements.com/networkguide>

You will find here an illustrated step-by-step guide on configuring your network, along with Advanced documentation for IT administrators.

For detailed assistance please contact Support.

2.3: Downloading and Installing Source-Connect

All Source Elements software is obtained by download directly from your account on the website.

To get access to the Downloads page you will need:

1. A physical iLok dongle
2. A valid evaluation or purchased license for Source-Connect

For more information on the iLok:

<http://source-elements.com/iLok>

If you requested an evaluation license, or purchased a license you should have also created a new Source Elements account at the same time. Use this account to login to your account and download the software.

If you did not receive an account please contact Support.

Installing Source-Connect

You should now have downloaded the correct software for your iLok license.

Launch the installer and follow the instructions.

Newer versions of Source-Connect will install over installations.

Installing InterLok Extensions:

You must have the InterLok Extensions installed to allow Source-Connect to recognise your iLok. InterLok extensions are installed with the Installer Application. The installer will not overwrite extensions which are more recent, and will only upgrade older versions. You may need to restart the computer if this is the first time you have installed the InterLok Extensions.

Uninstalling: Mac OSX

To uninstall Source-Connect, run the Installer and select 'Uninstall' in the 'Customize section.

Uninstalling: Windows XP

To uninstall Source-Connect, go to your Control Panel and select 'Add or Remove Programs'. Select Source-Connect in the menu and run the uninstaller.

3. Setup and Settings

3.1: Basics

The following is a quick guide, which does not include working with Auto-Restore, Auto-Replace or Remote Transport Sync. See the section 7 in this guide for information on working with these technologies.

Basic steps in using Source-Connect are as follows:

1. Instantiate Source-Connect on an **auxillary** channel in your Pro Tools session or follow the VST tutorial for your application.
2. Log in with your username and password.
3. Setup your audio session parameters. Parameters that can be set are bitrate, resilience and buffer size. You may also need to specify a port. If in doubt, use the default settings.
4. Go to the Source-Elements.com website: log in and go to your Contacts section. You can add users to your Contacts list here. Next time you login to Source-Connect you will see your new user(s) listed in the Contacts panel, and whether their status is ONLINE and available for connecting with.
5. Select an ONLINE contact in your list and press 'Connect' in the Contacts panel. This will connect both studios with a real-time streaming-audio session. Instant Messaging and RTS (Remote Transport Sync) will also be enabled. During the session, you send compressed audio data to each other over the Internet. Be advised that if either user does not have sufficient bandwidth or has excess packet loss there is a possibility of an audible dropout. To minimize dropouts, see the support documentation online.
6. Disconnect. This will end your audio session with the remote studio.
7. Log out.

3.2: Initializing Source-Connect

To initialize Source-Connect follow these instructions:

Create a new 44.1khz or 48khz sample-rate session.

Pro Tools TDM 6.x:

Create a new Aux track.

Open the Inserts -> TDM menu, then choose Other -> Source-Connect.

Pro Tools LE 6.x:

Create a new Aux track.

Open the Inserts -> RTAS menu, then choose Other -> Source-Connect.

Pro Tools TDM 7.x:

Create a new Aux track.

Open the Inserts -> RTAS menu, then choose Other -> Source-Connect.

Pro Tools 7.x LE and M-Powered:

Create a new Aux track.

Open the Inserts menu, then choose Other -> Source-Connect.

VST:

See the VST tutorial specific to your application.

<http://source-elements.com/resources/vst/guides.sc>

Audio Units:

See the Audio Units tutorial specific to your application.

<http://source-elements.com/resources/au>

3.3 Audio Input and Output

Pro Tools

The input to Source-Connect is determined by the input to the auxillary track that Source-Connect is inserted on. For the quickest and easiest set-up it should be set to "Mic 1" or your microphone input. Likewise, the output of the Receiver is sent out though the output of the auxillary track that Source-Connect is on. For the quickest and easiest set-up it should be set to "main out".

See our download section for more advanced setups and example Protools setup files.

Note: It is possible to get a feedback loop due to situations when removing Source-Connect from an aux track. It is therefore recommended that you mute the aux track before removing Source-Connect.

VST

See the VST tutorial specific to your application:

<http://source-elements.com/resources/vst>

Audio Units:

See the Audio Units tutorial specific to your application.

<http://source-elements.com/resources/au>

3.4: Getting Around

Source-Connect consists of multiple panels, each of which is individually expandable. To expand or collapse a panel, click on the dark green title bar. The Status panel is always visible.

To collapse or expand all panels at once:

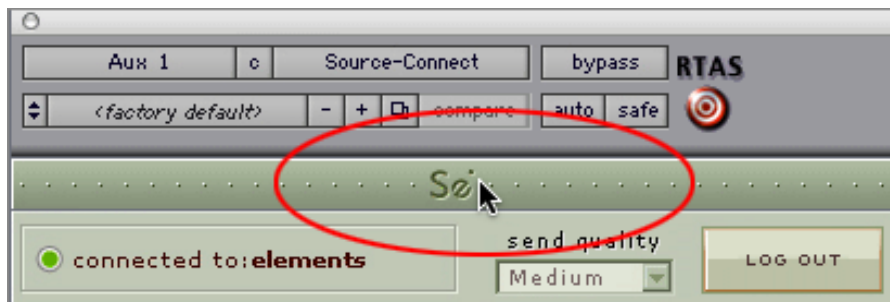
- Option-click or Right-Click on any panel heading

Source-Connect includes several keyboard shortcuts for features such as getting to your Instant Message window quickly, and using the RTS panel. For a full list of quick commands see our **Shortcuts Guide** in section 9.

3.5: About Box

The About Box provides information on which version of Source-Connect you have installed. To view the About box, click on the Source Elements logo at the top of Source-Connect window. You can close the About box by clicking anywhere in that box.

Opening the About Box:



3.6: Source-Connect Standard: Setting session parameters – Overview

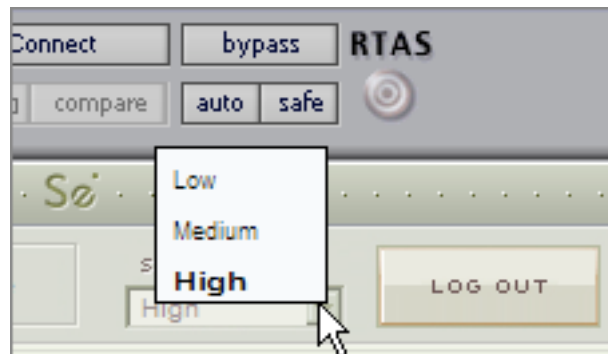
Source-Connect Standard has one setting that affects the transmission in terms of audio quality and network resilience. This setting is found at the top of the Status panel and is labelled 'Send quality'. All settings are designed to work flawlessly with both Source-Connect Standard and Pro versions.

You have the following options:

Low: This is a 'low' quality option, which is suitable for talkback only, or if your network is unable to handle the higher audio transmission rates.

Medium: This is a setting recommended for use if your remote connection is not recording you, but only monitoring.

High: This setting is the most transparent in terms of quality. It has an excellent sound to it, and is suitable for real-time recording for use in post production.



4. Your Profile and Contacts

4.1: Configuring your Profile

Your Contacts list and profile is managed on the Source-Connect website under your Account, which you can access by pressing the 'Edit button in the Settings panel, or logging in to your account online. You can choose what information to display (or not to display). Your basic profile information is available to your Contacts via the Source-Connect software and, depending on the level of privacy you choose, may be viewable to all other users of Source-Connect.

See the Account and Profile pages for available options:

<http://source-elements.com/account>

4.2: Managing your Contacts list online

IMPORTANT: Newly added Contacts will not be visible in your list while you are logged in to the Source-Connect plug-in. If you have added a new Contact, or know that a Contact has added you, please log out, and log back in to refresh the list.

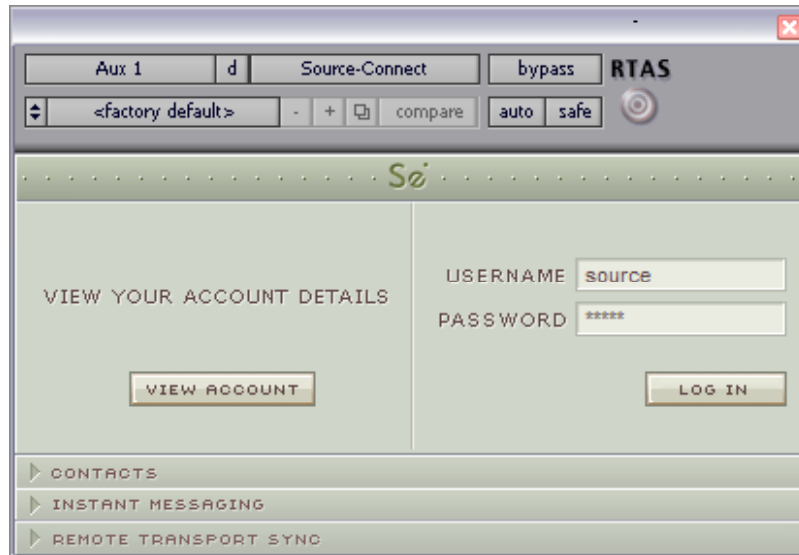
To add a new Contact, simply search or browse for the contact you wish to add and click on the 'Add contact' button:

<http://source-elements.com/contacts>

5. Using Source-Connect

5.1: Logging in

To login, enter your username and password and press the “Log in” button. If your login is successful, the plug-in will change its view: it will now show that you are able to establish an audio session.



5.2 Establishing a session

Upon logging in, the Contacts panel will list the users you have chosen to display in your Contacts list. Detailed user information is shown in the section at the left of the panel, and can be viewed by selecting a user from the list.



Before connecting to a user and establishing an audio session, it is always recommended that you check your settings.

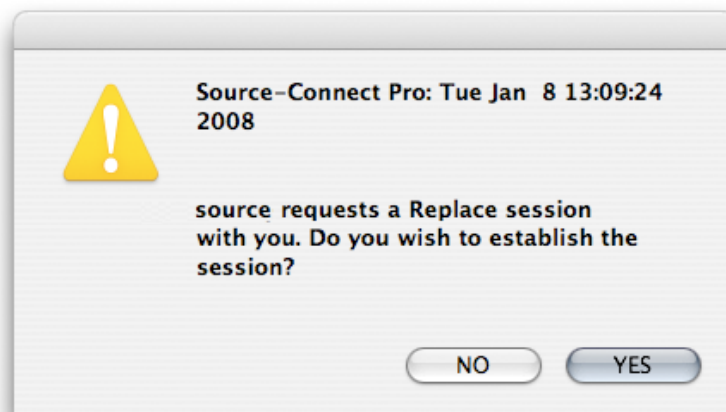
To initiate an audio session, select the user in the Contacts panel with whom the session is to be established. It is only possible to connect to users who have Online status: that is, the users who are currently online and not already engaged in a session.

To connect:

Select the user you wish to connect with in the Contacts list and press the 'Connect' button in the Contacts panel to request a connection.



If the remote user agrees to the dialog that appears immediately on their screen, the session is established. If both users' port settings are correctly set and the audio settings are appropriate for your respective bandwidths, sending and receiving will begin.



Audio activity is displayed in the signal meter. Otherwise (if the remote user disagrees or the request times out), the session is not established and a corresponding alert message is displayed.

Failed connection:

If you do not see a blinking 'sending' or 'receiving' light at the top of the plug-in it means that there is a problem with the network. Please review the Network Guide for information on how to resolve this:

<http://source-elements.com/networkguide>

5.3 Network timeouts

Request timeout: 30 seconds

This is the time required to reply to the confirmation dialog when establishing audio session. If you make a request, and see that your user stays listed as 'busy', you know that they are online, but are away from their computer. You can cancel your request at any time by pressing disconnect.

Streaming timeout

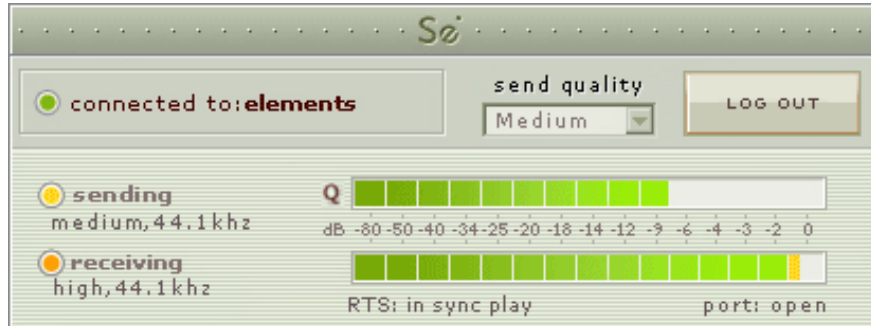
If the audio session is established but no audio data is received your 'receiving' blinker light will stop blinking to let you know that the network is not sending you any audio. If this happens during your session, try disconnecting and reconnecting with a lower bitrate and resilience setting.

Source-Connect session timeout

Source-Connect keeps your connection alive indefinitely, until you either log out, close your Pro Tools session or disconnect your network. In some cases you may receive a dialogue 'Connection reset by peer': this means you were unexpectedly disconnected – usually because your network was no longer responding. Go ahead and reconnect. If the problem persists it is due to insufficient bandwidth resources.

5.4 Session status

When the session is successfully established, the current session properties are shown in the Status panel. You are informed of the quality and sample rate that is being sent and received, and whether you are samplerate converting.



Session properties:

Sending light: If the connection is successful your sending light will blink.

If you do not have a sending light blinking but you do have a receive light, it is likely to be an audio application/hardware problem. Try restarting and verify your host settings.

Receiving light: If the connection is successful your receiving light will blink.

If you do not have a receiving light blinking it is likely to be a firewall or other network problem. You should verify that the Connection Test is successful on both sides. See the online Network Guide for more information.

Sample-rate: The sample-rate that Source-Connect is receiving

The sample-rate listed below the sending and receiving status indicate the sample-rate that the codec within Source-Connect is working at and not necessarily the same as the sample-rate that the host application is set at. If they are different Source-Connect will indicate that it is sample-rate converting.

NOTE: Sample-rate converting is not compatible with Auto-Restore and Auto-Replace or with Remote Transport Sync.

'Q' icon on sending meter: The other side has 'Restore' checked in their Settings panel and is capable of requesting Restore processes. When you are sending Q processes Source-Connect will cache the entire session in compressed format to your harddrive. You can delete this cache via the Q Manager.

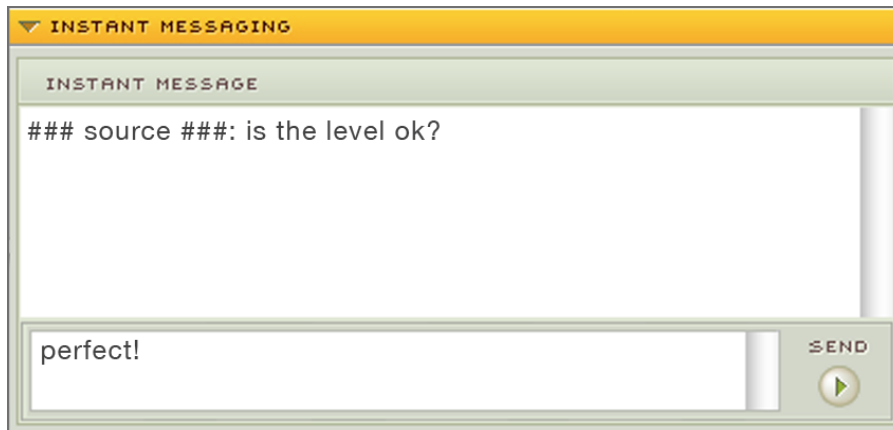
NOTE: If the Q icon has a red slash through it it means that the Q Manager is not correctly configured. Please review the section on Auto-Restore and Replace.

RTS messages: See the Remote Transport Sync FAQ for details on the RTS messages. RTS will in no way affect your actual audio connection. These messages can be ignored if you are not working with Remote Transport Sync.

5.5 Instant Messaging

During an audio session it is often useful to exchange instant messages with remote user, for example if you are not able to send or receive a signal for any reason, or you do not wish to interrupt the audio signal with a message to the other side.

To send a message, type in the lower textbox at the bottom of Instant Messaging panel and enter your message. Press either enter or return key or click the Send button. Sent and received messages appear in the text display panel above.



Quick key access:

Use these shortcuts to quickly access your Instant Messaging panel:

- Open and close IM panel: Option+\
- Open IM panel and place cursor in text input window: Control+\

For a full list of quick commands see the **Shortcuts Guide** in section 9 of this guide.

Pro Tools: Scrolling the messages

The text display panel can be scrolled by clicking in the panel and pressing your up and down keys.

Pro Tools focus:

After sending an IM message with the 'Return' key the keyboard focus is automatically returned to Pro Tools. If your cursor is in the Instant Message panel (ie. you are typing a message, or about to) you can return focus to Pro Tools immediately via the ESC (escape) button.

5.6 Remote Transport Sync (RTS)

RTS is an integrated method of synchronizing remotely connected Pro Tools transports. Purpose-built for ADR, over-dubbing and remote monitoring RTS makes distance collaboration easier and more efficient than it's ever been.

The following is a very brief overview. For specific instructions and screenshots, please see the comprehensive Remote Transport Sync FAQ:

<http://source-elements.com/support/rts>

How to enable RTS:

1. Create a new mono Audio track alongside your Source-Connect track.
2. From the Inserts->RTAS-> Instruments menu, instantiate 'Se ReWire'.
3. When you establish a session over Source-Connect the SEND and RECEIVE buttons will be enabled in the RTS panel.

Using RTS

To use RTS, one user must be in SEND mode and the other in RECEIVE. The RECEIVE user has no transport controls – effectively they are now slaved to the SEND user who has 2 possible types of operation: ADR mode or Mix/review mode.

Source-Connect Standard can only send and receive ADR modes.

Please review the Remote Transport Sync FAQ for details on ADR or Mix/review modes and running an RTS session.

<http://source-elements.com/support/rts>

5.7 Closing a Source-Connect session

A Source-Connect session can be closed manually by pressing the Disconnect button in Status panel. You will then be able to reconnect to the same user, or any other available user in your Contacts list who agrees to establish a session.

A session is closed automatically if either user quits or logs out. In the event of a hardware, software or network failure, the user is disconnected by the server after 60 seconds. To expedite the process of the server recognising that a user has inadvertently logged out, users can log out and log back in.

5.8 Logging out of Source-Connect

Logging out can be performed manually by pressing the Log out button in the Status panel. Once you are logged out, you can log in again at any time and with any valid Source-Connect account.

Closing the audio session will also log you out. You do not need to manually log out to exit from Source-Connect.

5.9 Privacy

Once you have established a connection and you are sending and receiving audio, you are sending data directly to and only from your remote user. Instant Messages are not captured or stored on our servers and we do not capture or store identifying information or connection information.

For a comprehensive outline of our Privacy policy, please read:

<http://source-elements.com/privacy>

6. Auto-Restore

This section provides a complete overview on using Source-Connect 3.0 Standard with Restore. This section is divided into five parts:

- 7.1 Understanding the Q Manager: Lifecycle of a recording
- 7.2 Installing and configuring the Q Manager settings
- 7.3 Using Auto-Restore from Source-Connect Standard
- 7.4 What is Auto-Restore?
- 7.5 Comprehensive Q Manager interface overview
- 7.6 Troubleshooting

This section starts with a step-by-step guide to using Auto-Restore. It is important that you understand what settings need to be verified, so **please review section 7.2. Installing and QuickStart.**

A 'Quick Start' guide is also available to you on the Q Manager setup panel. You can refer to this guide whenever you apply changes.

If you have any questions on working with the Q Manager and Auto-Restore please contact Support.

6.1. Understanding the Q Manager: 'Lifecycle' of a recording

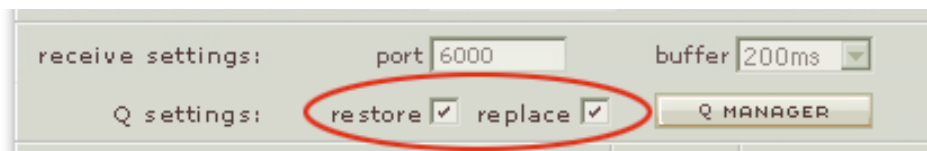
This section is a step-by-step guide to using Source-Connect 3.0 Standard for Auto-Restore. It shows how the Q Manager works by describing the 'lifecycle' of a file recorded in Pro Tools and the subsequent restore and final replace process.

For Source-Connect Standard users this process is very simple: you only need to ensure that the Q Manager is properly configured. The Source-Connect Pro user will manage the Auto-Restore process automatically for you.

NOTE: Auto-Restore can only be used in conjunction with Source-Connect Pro. If you are connecting to another Source-Connect Standard user you will not have access to the Auto-Restore functionality.

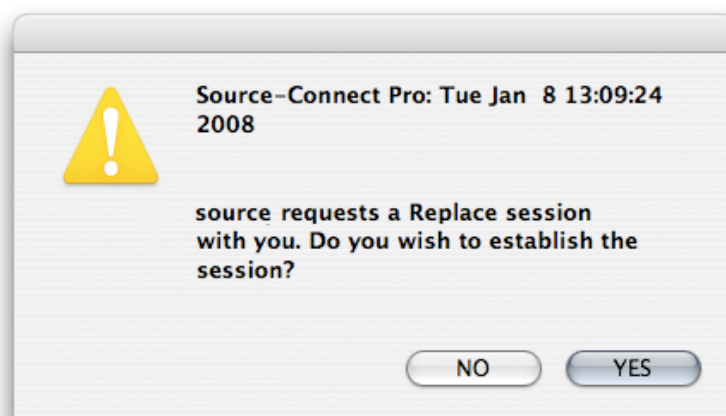
1. Your connection partner will enable Restore in their Source-Connect Pro settings

To request Restore and Replace data, your connection partner must have the 'restore' checkbox checked in their Source-Connect Pro Settings panel.



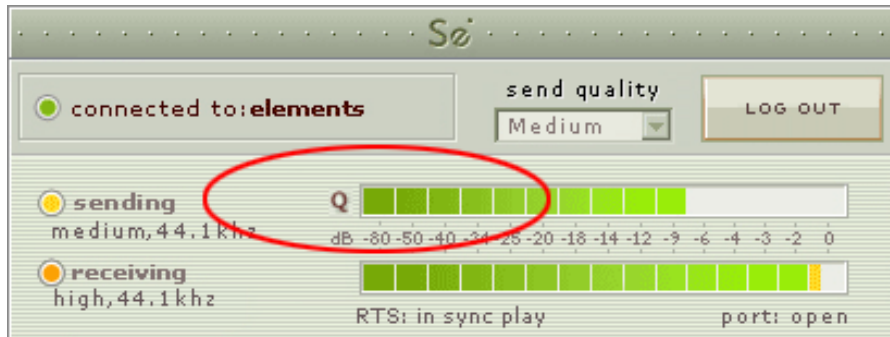
2. Request a Source-Connect session

When you are requested to start a Source-Connect session with Restore, you will be shown a dialog indicating that you will send Restore data.



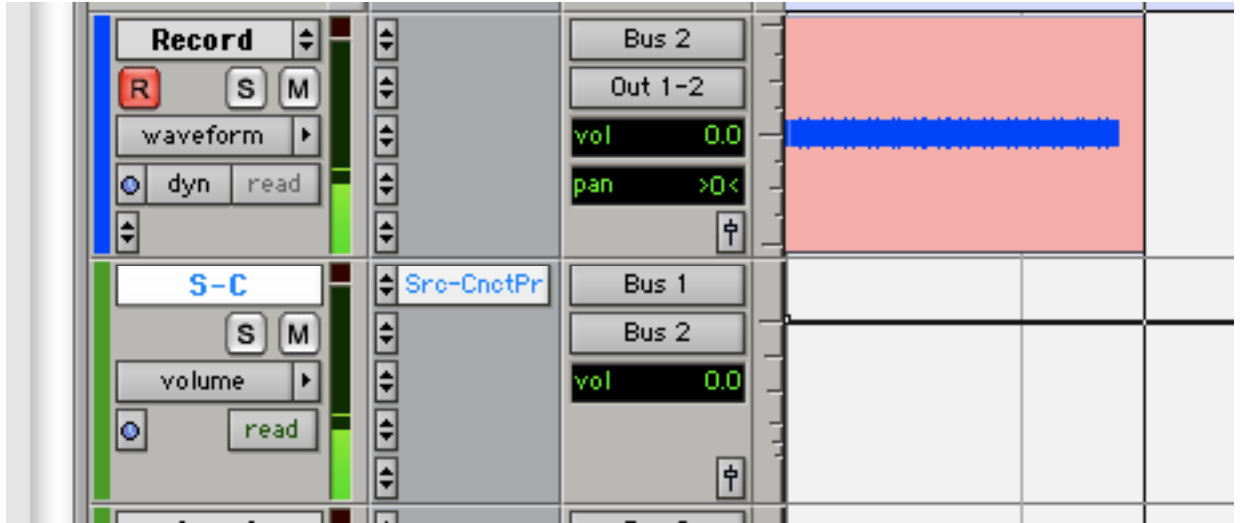
3. Ready to record

If you accept you have now established a Source-Connect session with Restore enabled. You should now see a Q icon to the left of the Receiving meter, indicating that you can receive Restore and Replace data.



4. Recording an audio file

Your connection partner will now record. In this example we are sending a sine-tone signal via the Signal Generator plug-in to be recorded, and for the purposes of demonstration we are causing a significant number of dropped packets. You can see on the waveform in Pro Tools that the recording is significantly degraded:

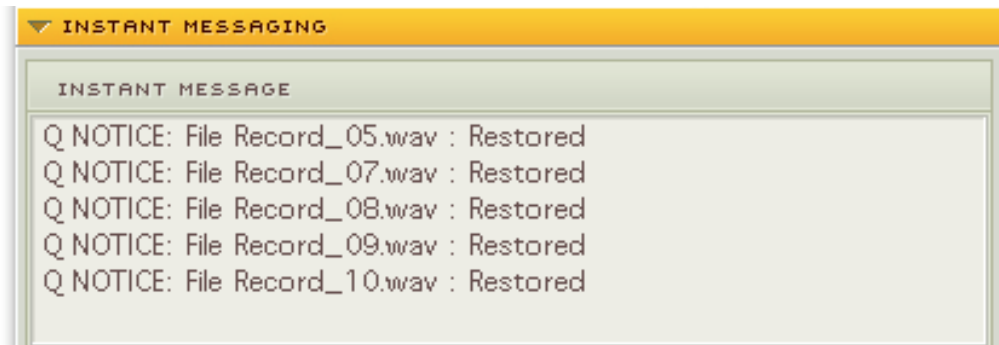


IMPORTANT FOR PRO USERS: Troubleshooting on the Source-Connect Pro side: As noted in the Source-Connect Pro documentation it is necessary to ensure that the recorded signal is passed directly to the record track via a bus, with no volume changes or other plug-in processes in between Source-Connect and the record track. You can see in the above session that Source-Connect is on an Auxillary track and the outgoing signal is bussed to a record track. This ensures that the Q Manager will be able to fully restore and replace the recordings.

5. Restoring the audio file in the background

Once your connection partner stops recording the Q Manager will start the restore process. They can continue recording multiple files as the restore process does not interrupt your session in any way. Your connection partner will see the completed processes as the session continues. In Source-Connect Standard you do not see these messages.

Source-Connect Pro IM window:



6. Taking a look at the restored file on the Source-Connect Pro side

Since we have recorded a sine-tone signal, it is simple to see visually how the restore process works. Your connection partner can select the filename in the Pro Tools bin and choose 'Recalculate waveform overviews'. We can now compare the files before and after the restore process visually:

Before and after the restore process:



We can now see that we have a completely restored audio file with perfect playback.

6.2. Versions, Installation and configuring the Q Manager settings

Source-Connect 3.0 versions

There are 3 available versions for Source-Connect 3.0:

Standard:

Source-Connect Standard with Auto-Restore send-only

Pro:

Source-Connect Pro with Auto-Restore send and receive and Auto-Replace send-only

Pro with Replace:

Source-Connect Pro with Auto-Restore and Replace send and receive

NOTE: Source Elements has released Source-Connect Pro with Replace as a free upgrade to all users. Source-Connect Pro with Restore Only is not currently available. Therefore in this document we refer to Source-Connect Pro with Replace.

What does this mean?

If you are **using Source-Connect Standard** and you are **connecting to Source-Connect Pro**, you'll be able to request a Restore process. You will not be able to request a Restore process. You will not be able to send or request any Replace processes.

See Appendix 1 for a table of the features available for each version.

Installing Source-Connect 3.0 with Q Manager

When you download and install the latest version of Source-Connect 3.0 you will also have the option to run the Q Manager installer. If you only wish to install the Source-Connect plug-in choose 'Customize' from the Install menu. Run the installers (make sure Pro Tools or your Audio host is not running). You will need to restart your computer, so make sure you have saved any open documents.

OSX:

When you have relaunched, you'll see the 'Se' Q Manager icon on your MenuBar. Click on the icon and select 'Show Setup panel'.



WINDOWS XP:

After installation you will see a new icon in the System Tray. Right click on the icon and select 'Show Setup panel'.

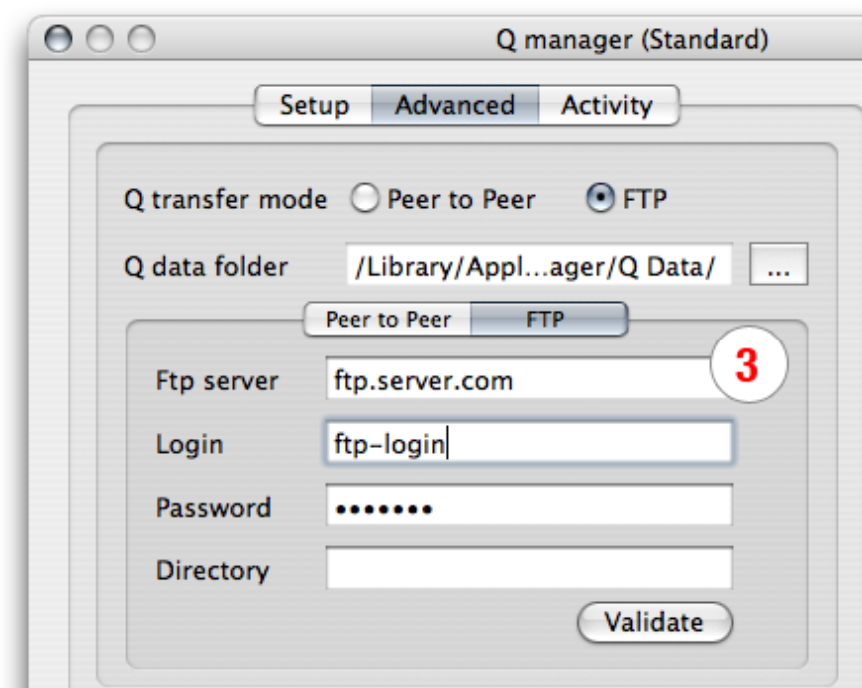
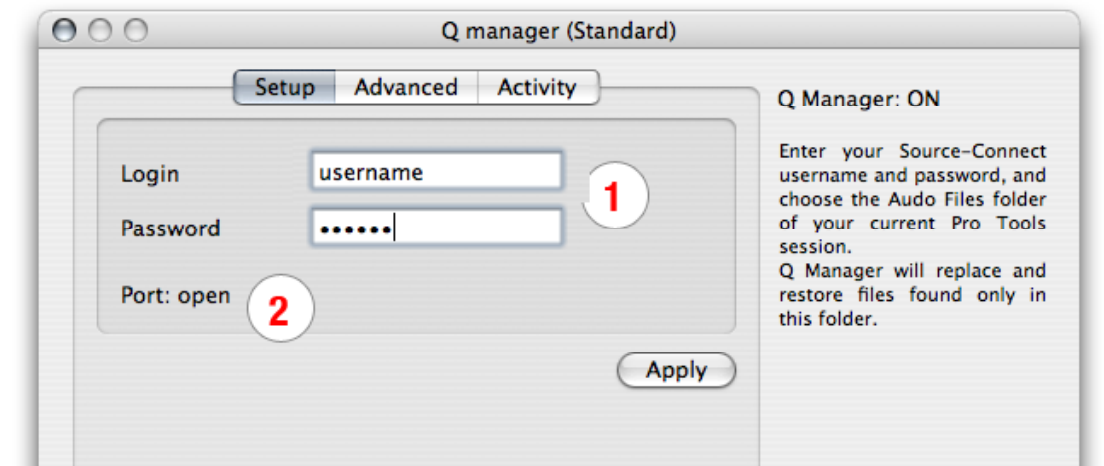


Configuring the Q Manager settings

You must first configure the Q Manager before working with Source-Connect 3.0 Auto-Restore and Auto-Replace.

For basic use, you will only need to verify three settings:

1. Open the Q Manager setup panel via the MenuBar/System Tray icon or the Q Manager button on Source-Connect Pro Settings panel. Enter your Source Elements username and password.
2. Verify that you have UDP port 6002 available.
3. If possible, enter the address of an FTP server that you have read/write access to. If this is not possible, you will receive a warning message upon Apply which can be ignored.



When you have completed these settings, click 'Apply'. It will take a few seconds to confirm. If you have incorrectly entered your username you will be informed, and you will see a port status message to verify if your port settings are valid.

6.3. What is Auto-Restore and Auto-Replace?

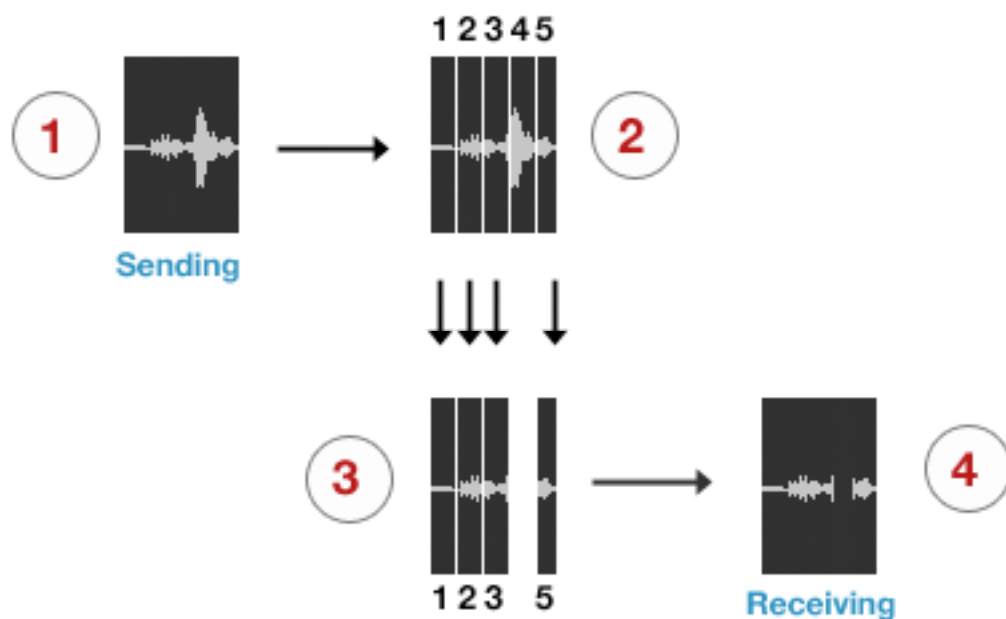
For the purposes of understanding Source-Connect processes in general, this section covers both Auto-Restore and Auto-Replace features.

With traditional long-distance recording, whether with Source-Connect, ISDN or any network-based transmission, the send signal is subject to various issues which may cause dropped packets and therefore 'glitches' in your recorded audio. Previously the only method to ensure a fully complete recording was to ensure your connection partner was also recording locally, so you could transfer this audio after your session and manually replace it in your edit.

Source-Connect 3.0 is the only available automated method to ensure that your recordings are perfect every time, with our Auto-Restore functionality. Additionally, with Auto-Replace you can request the original PCM audio and replace the compressed AAC or apt-X® recording without requiring any additional effort.

How does it work?

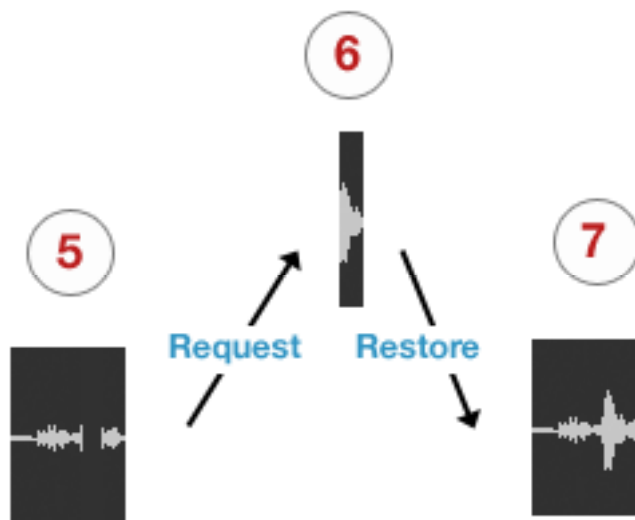
First, an overview of how audio is transferred and recorded over packet-based transmission lines.



1. The audio signal is sent through Source-Connect, and is split into packets.
2. These packets are sent sequentially to your connected partner over the internet.
3. If a network error occurs, a packet may not arrive in time.
4. If this occurs you will hear a minor glitch in the received audio signal.

Source-Connect has built-in error correction modes to try and resolve these dropped packet issues in realtime, however under certain circumstances a packet may not be retrieved in time to recover the signal before it is recorded.

Auto-Restore resolves this problem by working in the background in non-realtime and restoring your recorded audio files.



5. The audio file is scanned when recording completes.
6. If any missing packets are detected they are requested from your connected partner, who has stored them during the connection.
7. Your file is restored and is now available for flawless playback.

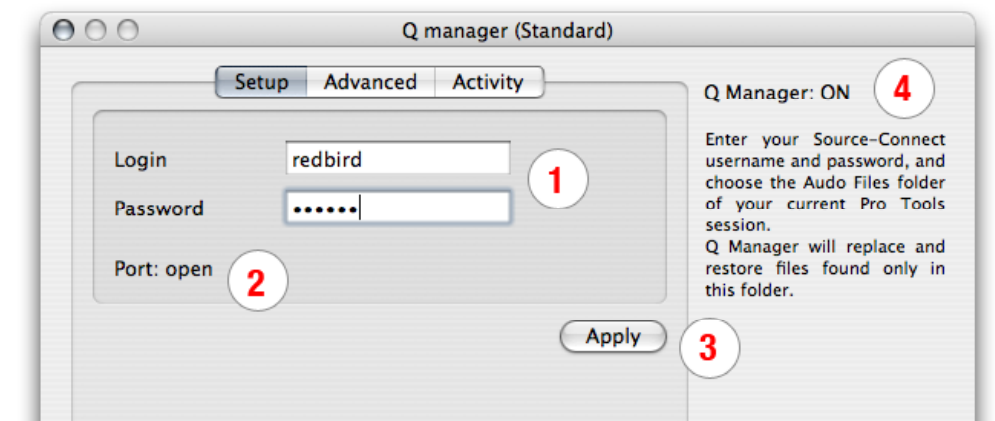
Auto-Replace

Auto-Replace works in a similar way, except the packets which are requested from your connected partner are of the original PCM data which was sent into the Source-Connect plug-in, and instead of only requesting those packets which did not arrive in time, all packets are requested. A complete replacement of the decoded AAC audio is then made with the full resolution PCM audio. An important distinction between Replace and Restore, is that Replace operations can take longer to transfer due to PCM being uncompressed data. Generally we would recommend you activate the Replace process once your session is complete.

6.4. Comprehensive Q Manager overview

This section is a complete overview of all available options and their functions.

Setup panel



1. Login and Password

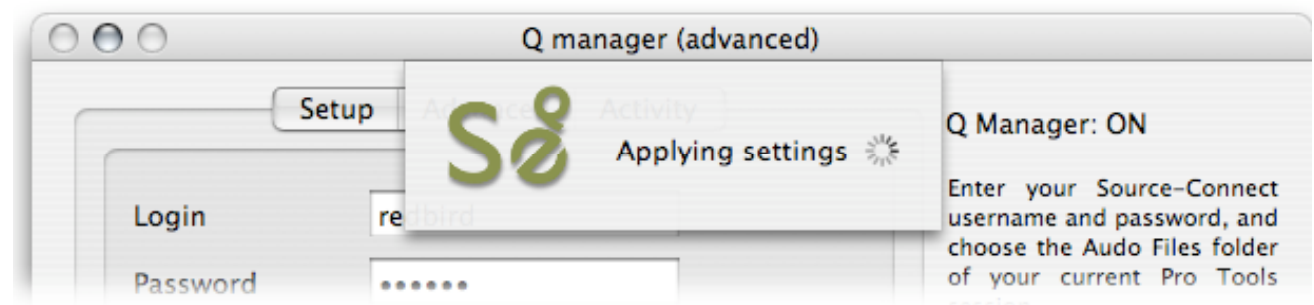
Enter your Source Elements username and password. If you enter your details incorrectly you'll receive an error notification upon applying your settings.

2. P2P port

The port message is important. If you get 'port not mapped' or 'port failed' you will need to use FTP settings or Auto-Restore transfers may be unsuccessful.

3. Apply

When you have entered your login and password and selected your Session folder, click on the Apply button. The Q Manager will require a few seconds to validate your settings and load the new session. You'll see the following while the Q Manager is applying:



4. Q Manager Status

When the Q Manager is ready, the status will say 'Q Manager: ON'. You are now ready to being recording with Source-Connect 3.0. If you see that the Q Manager status is OFF or Offline, it may mean that the Q Manager is not allowed, or able, to connect to the internet. Verify your network settings if this is the case.

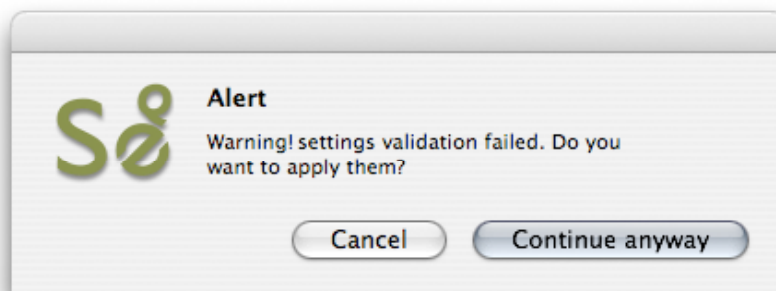
NOTE: If for some reason the Q Manager cannot go online for your session, you can still record using Source-Connect and later process your files, as long as your connected partner does not delete the corresponding data. See the section about the Activity Panel for more details.

Invalid Q Manager settings and warnings

If your Q Manager settings are invalid for some reason, you'll be given a dialog warning. Possible warnings are:

- Invalid username or password
- Invalid FTP settings
- Duplicate login on different machines
- Q Manager is unable to connect to the internet

Invalid username or password

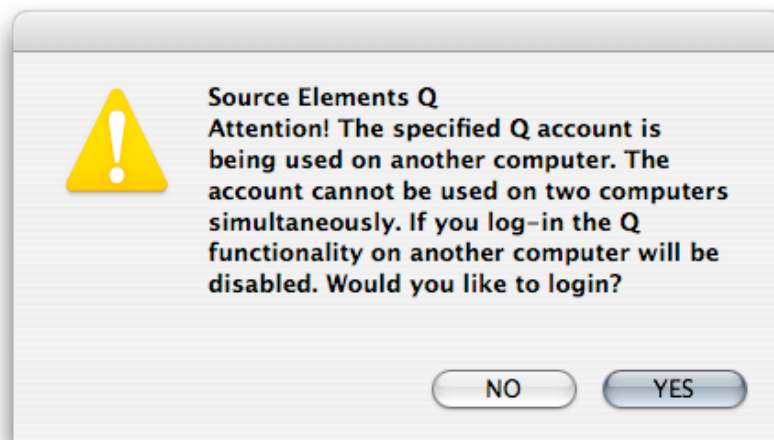


This means that your username and password are incorrectly entered, or your username has not been validated to work with Source-Connect 3.0. If you are sure that your username and password are correct, you can validate your details for 3.0 simply by visiting the Download page on the Source Elements website:

<http://source-elements.com/support/Download/Source-Connect.3.0>

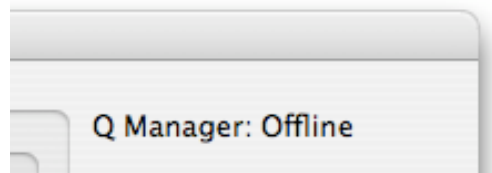
Then click on the Download page for your Source-Connect version. The username and password that you are logging into Support with will now be validated to work with Source-Connect 3.0.

Duplicate login on different machines



If you see this error, it means that another computer is currently logged in with your username and password. If you choose to continue the other machine will be logged out.

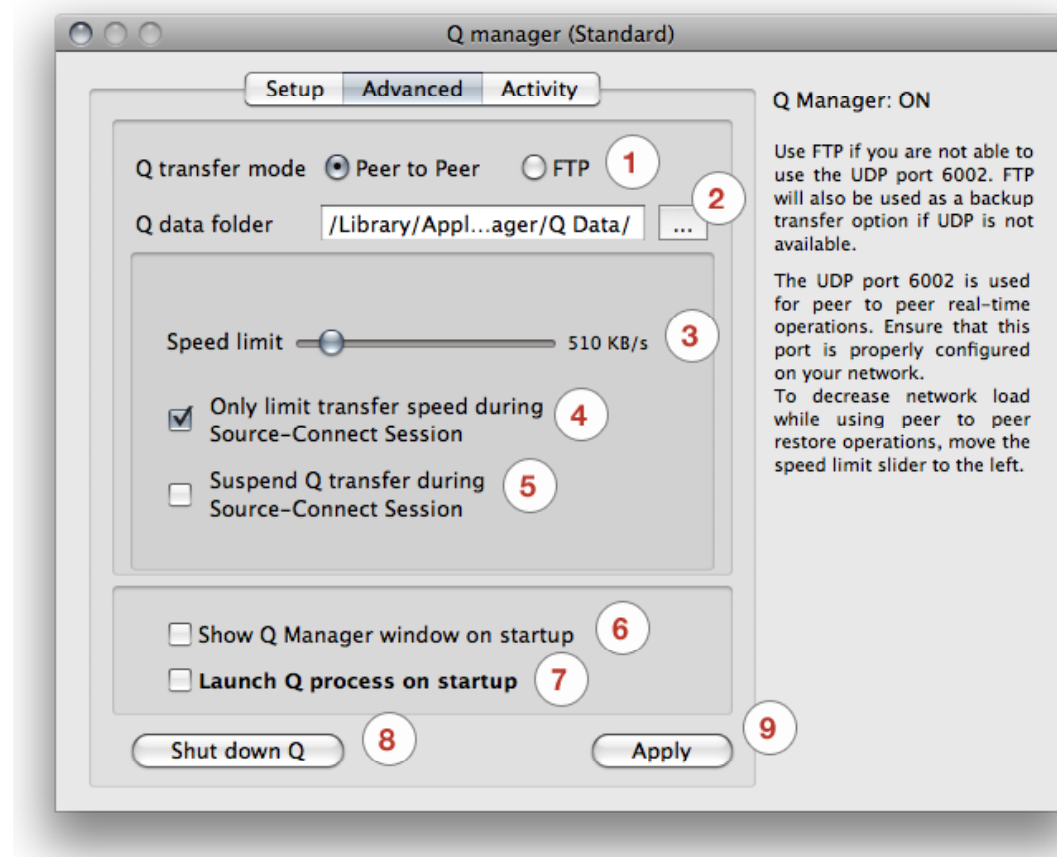
Q Manager cannot connect to the Internet



If the Q Manager cannot connect to the internet, perhaps due to a firewall settings or other network configuration issues, the status will be Offline. Check that your internet connection is working, and if you have a built-in firewall you will need to allow access to the Q Manager and Q Daemon.

Advanced Setup panel

Generally you will only need to verify that your username and port is set correctly in the Setup panel. This section of the manual informs you of the advanced settings available and when they are useful to modify and why.



1. Q transfer mode: Peer to Peer (P2P) or FTP

By default, Source-Connect 3.0 will transfer restore and replace data directly between you and your connected partner. Select FTP mode if you are unable to transfer over P2P mode due to network configuration conflicts. P2P mode is generally recommended, but FTP mode is a good backup when you are not able to work with open UDP ports. You do not need to enter any FTP details, this is taken care of on the Receiving side.

2. Q data folder

When you establish a connection with another Source-Connect 3.0 partner who is requesting restore or replace data from you, all transfer data is saved to your harddrive in realtime. Because both PCM and encoded AAC data is stored, the storage requirements can become significant. By default, the storage location is:

OSX: <systemdrive>/Library/Application Support/SourceElements/Qmanager/QData

Windows: c:\Program Files\SourceElements\Q Manager\pktFolder

You can change this location to any connected drive, including a network drive, however it is important to note that once you change the location, previously recorded sessions will not be able to be located. Because of this we recommend you select a location for all session storage. See the Activity panel for managing data.

3. Speed limit

The speed limit is an important setting if you are working on a network with limited bandwidth. When you are connected in a Source-Connect session, your audio files will be restored and replaced in the background. The speed limit is designed to not interrupt your Source-Connect signal. If you have limited bandwidth, lowering this limit can improve a better signal between you and your connected partner. Conversely, if you have plenty of bandwidth and would like more responsive restore and replace processes, you can increase this speed limit. The minimum limit is 128 Kilobytes per second. The maximum limit is 4096 Kilobytes per second.

Generally we recommend leaving the default setting. If you are experiencing higher-than-expected signal issues you can lower the value. If you are on a T1 or better and can work with higher transfer rates you can increase the value.

4. Only limit transfer speed during Source-Connect Session

This option is enabled by default and relates to the Peer to Peer speed limit. When this option is checked, it means that when you disconnect from your Source-Connect session any remaining transfers will not be limited in speed. We highly recommend leaving this setting checked. For example, replace data can be quite large in size as it is PCM data, so if you request the replace process on files while you are either connected with Source-Connect, or you have unchecked this option, the transfer can take quite a long time. On the other hand, if there are other Source-Connect sessions ongoing on the same network, or you need to preserve low-bandwidth usage for some reason, leaving this setting checked will ensure the Q Manager does not utilize all your bandwidth during the transfer process.

5. Suspend Q transfer during Source-Connect Session

This option is recommended in situations where there is limited bandwidth to conduct Source-Connect sessions, and it is critical that the signal is not interrupted by restore or replace transfers. If you check this option and establish a Source-Connect session, all restore processes will be 'paused' and you will see in your Activity panel that the 'pause all' button is highlighted and now says 'unpause all'.

If the Suspend Q transfer option is checked and you need to process a file or files, you have the option to click on 'unpause all' in the Activity panel. This action will override the Suspend Q transfer mode.

6. Show Q Manager window on startup

When your computer reboots the Q Manager will show up by default. Uncheck this to not show the Q Manager window on startup.

7. Launch Q process on startup

If you are not using Source-Connect daily, you may find it useful to uncheck the 'Launch Q process on startup'. You can start the Q process by launching the Q Manager via the Q Manager application found here:

OSX: /Applications/Qmanager

Windows: Start->All Programs->Source Elements->Source-Connect plug-in->Q Manager->Q Manager

8. Shut down Q

If you no longer need the Q Manager service to scan your Audio Files directory, you can shut down the Manager to reserve CPU or memory usage. See above regarding restarting the Q Manager.

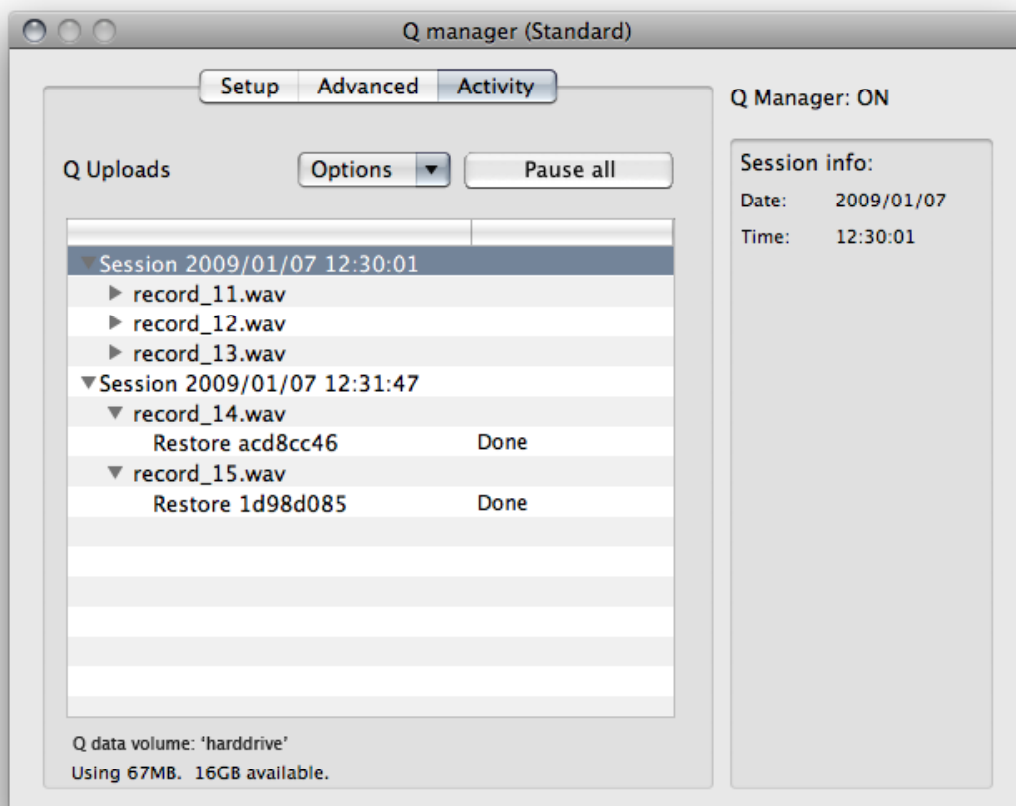
9. Apply

This button has the same function as the Apply button on the Setup panel.

Activity panel: Q Uploads

This panel gives you a full overview of what files are being processed by your connection partner and allows you to manage the Auto-Restore data after your session has finished.

When a Source-Connect Pro user records you, Source-Connect will store information about your session which the Q Manager uses. Once a recording is complete the Q Manager will go ahead and complete any required Auto-Restore processes. Depending on the length of the file, the number of dropped packets, and the available bandwidth, the file can be fully restored within a few seconds. All files are subsequently listed in the Activity panel with the corresponding process status.



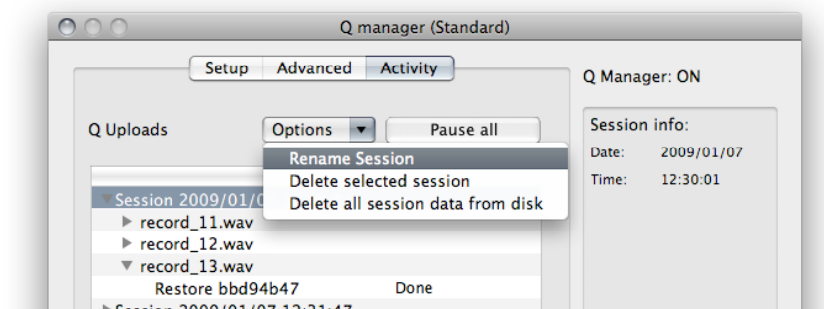
Q Uploads Overview

If your connected partner is recording, you'll be storing data on your side to enable restore and replace processes. You will see the status of this data storage and any requested transfers in the 'Q Uploads' panel.

Each upload process will show a progress bar and the current status. When the upload is completed successfully the status will be 'Done'.

Q Uploads: Options menu

For session you have additional options available to you via the Options menu.

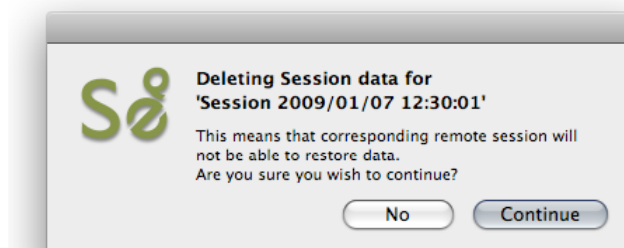


Rename session

For easier session management and later session recognition you can rename the session.

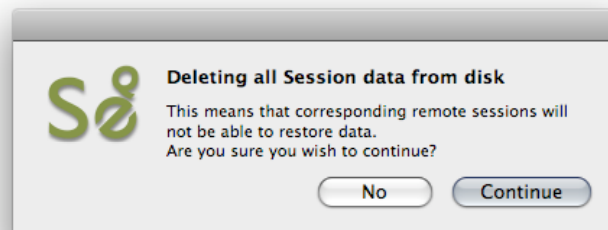
Delete selected session

Once your connected partner has successfully completed all required transfers you can delete the Uploads session to preserve disk space. Note that this option is not undoable. It will mean that your connected partner will no longer be able to request any further restore or replace operations.

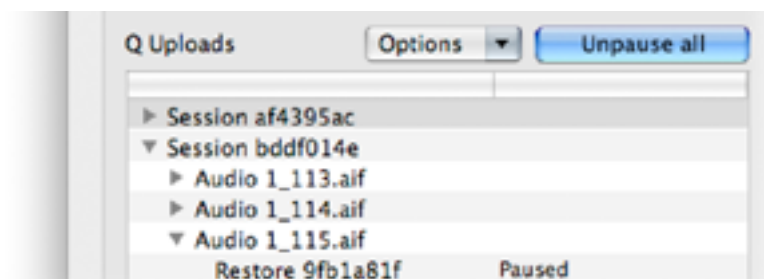


Delete all session data from disk

If you know that your recording partner has successfully completed all Restore and Replace processes, you can now delete all session data from disk. This will permanently remove all stored data to date. You will be asked to confirm this action. After deleting all data you will see that the disk usage at the bottom of the panel has gone down to a small number.



Activity panel: Pause all / Unpause all



Pause / Unpause all

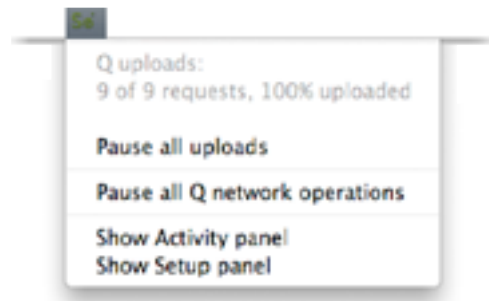
If you have enabled 'Suspend Q transfers' and are connected over Source-Connect, all transfers will be paused until you disconnect. Transfers will begin immediately upon disconnecting.

If a transfer is in process and you need to conserve bandwidth, the Pause All button will pause all P2P transfers currently in process. Click on 'Unpause all' to resume all pending transfers.

NOTE: Pause does not work with FTP transfers.

Q Menubar options

The Q Manager has several functions available to you via the Menubar and also provides a quick glance at what processes are active:



Q Uploads

This shows all files being requested from you for restore and replace processing and the total overall percentage processed.

Pause all uploads

This option pauses all currently active uploads.

Pause all Q network operations

This option pauses all network activity, both uploads and downloads.

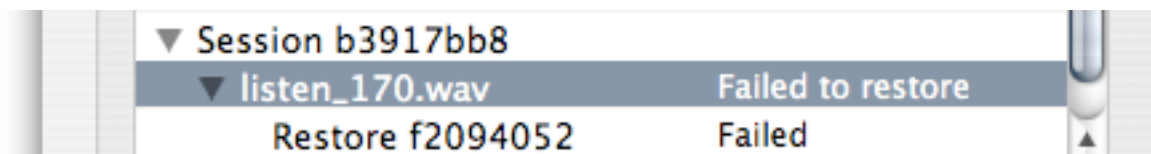
Show Activity / Setup panel

Open the Activity or Setup panel.

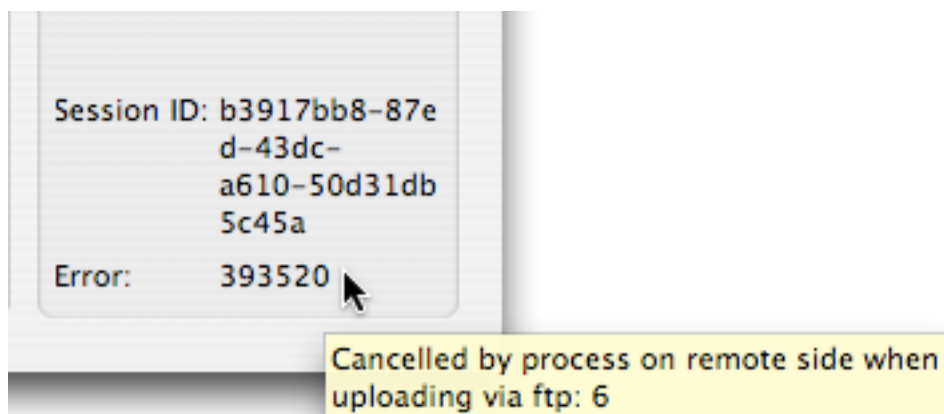
6.5. Troubleshooting

For each file and process there is a status. For successful files the status will be Restored or Replaced depending on the type of process last completed. If you see that the status for a file, or files, is 'Failed to restore' or 'Failed to replace' it means that either you or your connection partner has invalid settings or a component is not properly installed or configured.

There are various reasons as to why a file may fail to replace or restore. To find out the exact reason for a failed process, select the file in the Q Requests panel:



Now, look at the error code message to the very bottom right. If you hold the mouse over the error code number you will be shown a message explaining why the file failed to be processed.



For example, this error tells us that the other side was unable to upload the restore data via FTP. This means that your FTP settings were not valid or the FTP server was not available. To resolve this, validate your FTP settings and request the Restore or Replace process again from the Q Requests options menu.

See Appendix 2 for a overview of possible error messages and how to resolve them.

6.6 Common Q Manager issues

A comprehensive guide is available online:

<http://source-elements.com/support/q>

Most issues will be related to the Network settings or because your Connection Partner does not have the correct Q Manager settings. The Standard Q Manager settings are comparatively simple, so as long as your P2P port is open and you have valid FTP settings the troubleshooting is generally required on the Source-Connect Pro side.

For basic troubleshooting, verify the following:

1. **Check that Q is enabled.** You should have a Q icon to the left of your Source-Connect receiving meter. Verify that the Restore and/or Replace checkboxes are checked in the Source-Connect Pro Settings panel before establishing a connection.
2. **Pro Tools errors, for example CPU errors, may cause the Q Manager to not detect the file.** If this is the case, reapply the Q Manager with 'Rescan all files' selected or select 'Scan file(s)' from the Q Requests menu in the Activity panel.
3. **Verify your Q Manager settings:**
 - Your username and password should be correctly entered
 - Your port should be 'open' or 'not mapped'. If the port status is 'failed' you will encounter transfer errors
 - FTP mode requires that both sides have valid FTP settings.
4. **Q Manager should be launched:** make sure you can view the Q Manager via the MenuBar icon. NOTE: Files which are recorded with Source-Connect when the Q Manager is not launched can be later processed by rescanning the Audio Files directory.
5. **Samplerate converting is not supported.** Verify your connection is not samplerate converting.

7. Troubleshooting Source-Connect and Known Issues

7.1 Troubleshooting

The Support section of the website provides much more detail on troubleshooting. Most issues are network related, you should follow the Network Guide:

<http://source-elements.com/networkguide>

A quick overview of common issues follows:

Low audio quality, many artifacts

Try to reduce your bitrate and increase the buffer size. You may also be experiencing hardware issues: for example, check that your hardware matches your session samplerate and try increasing your hardware playback buffer size.

Pro Tools: Packet loss increases on record, H/W buffer errors

It is important to set your H/W buffer size to 512 or 1024 and your CPU Usage Limit to at least 85% (90% if you are able to).

In Pro Tools HD make sure you have 1 RTAS processor and if you can lower the DSP voices to 16 or 32 this can help a lot with RTAS plug-in issues.

The settings can be found in the Setup->Playback menu in Pro Tools. Limiting the running of any other plug-ins at the same time can also help.

Automatically disconnected, 'Connection reset by peer' dialogue

There may be severe network congestion occurring. This can happen if you are inside a LAN where many other users are downloading and uploading large files. Reduce your bitrate, increase the buffer size and reconnect.

User has suddenly gone offline

In the event of an unexpected disconnect, due to hardware, software or network failure, your remote user may not re-appear until the server has recognised that they have timed-out. This can take up to 60 seconds. To expedite the process of the server recognising that a user has inadvertently logged out, users can log out and log back in.

See the following section on **Known Issues** for additional information.

7.2 Known Issues

Unsupported Pro Tools versions:

Source-Connect does not officially support Pro Tools versions below 6.4.

Unsupported VST hosts:

Source-Connect will not work on 'editing' audio applications, such as SoundForge or Peak, or on older applications which do not support VST 3.2.

Pro Tools 7 TDM and RTAS

With Pro Tools 7 you may find that the RTAS engine loses its connection with the TDM engine. If this occurs your connection may appear to have been dropped. The reality is that audio is not passing to and from Pro Tools. To resume press play and stop. Dropping your DSP voices down to 16 or 32 can alleviate this issue greatly.

Source-Connect non-network-related signal degradation

At times it can appear that your receive signal is experiencing packet loss. This loss may not actually be due to network packet loss. If it has a consistent, grainy sound it is more likely that Pro Tools is upset. Toggling your hardware buffer between 512 or 1024 will resolve this issue.

CPU speed / RAM configurations:

Source-Connect performs best on a TDM-equipped 1ghz G4 with at least 1GB RAM, or 2ghz P4 with 1GB RAM. If your computer is configured lower than this, you may experience difficulty while reading and writing to disk, and your Pro Tools or VST host may tell you that you have insufficient resources. Because USB devices (for example, if you are using an Mbox) also require additional resources we recommend running Source-Connect with Pro Tools LE on newer machines.

It is not recommended that you connect your Mbox via a USB hub unless it is self-powered.

Network bandwidth:

The most common cause of difficulty is insufficient network resources. Assuming your network has sufficient bandwidth the issue may be due to internal congestion, for example an FTP server is running or other people are heavily using the network. A common fix for this is to install a dedicated DSL line, or apply QoS ('Quality of Service') settings on the router.

For further details and tools see the Support section online or contact Support.

7.3 Reporting Issues

To report an issue, please provide the following information:

1. Source-Connect build number (available from the About box)
2. System configuration (Operating system, computer hardware)
3. Pro Tools version and hardware
4. Network configuration ie. LAN, DSL, wireless etc
5. Source-Connect settings: username, bitrate, buffer and port.
6. Bandwidth report, for example from <http://speakeasy.net/speedtest>
7. Description of what action(s) you were taking when the issue occurred, for example who you were connected to and what the settings were.

Technical Support is available via email, telephone and directly over Source-Connect.

8. Shortcut Guide

You can access the following functions with keyboard shortcuts (both XP and OSX):

Remote Transport Sync (RTS):

Start ADR mode playback:

If you are in SEND mode, and the remote user in RECEIVE, you can begin ADR mode playback with this key command: **Option+Shift+**

Start Mix/review mode playback:

For Source-Connect Pro you can start Mix/review mode playback using the standard Pro Tools transport controls or spacebar.

Instant Messaging:

Open and close IM window: **Option+**

Open IM window (if not open) and insert cursor: **Control+**

Return: Using the Return key when sending an Instant Message will return control to Pro Tools.

Enter: Using the Enter key when sending an Instant Message will return the cursor to the Instant Messaging input panel, so you can continue typing.

Logging in:

In Pro Tools and some VST hosts the Tab key will toggle between the username and password field. When you have entered your details you can hit the Return or Enter key to login.

9. Contact Support

Contact Source Elements for technical and general support:

Please use the online support available on our website as the first stop for all technical and other questions. If your question is not answered you may contact us via telephone or email.

Online support:

<http://www.source-elements.com/support>

Online forum:

<http://source-elements.com/forum>

Telephone:

Chicago: +1 312 706 5555

London: +44 (0)20 7193 3700

Telephone hours: 9am – 5pm PST (Chicago time).

After hours:

Please leave a message with your name and phone number and we will return your call as soon as possible. We can generally schedule an appointment for a convenient time for you.

Email:

Technical support: support@source-mail.com

Sales: sales@source-mail.com

General: info@source-mail.com

When emailing Support, please provide us with the information required to resolve the issue: for example, your Source-Connect login, computer type, host version, and as much detail about the problem you are having as possible. This will assist us in responding to you with relevant assistance more rapidly.

Mailing address:

Source Elements LLC
515 N. State St
25th Floor
Chicago, Illinois 60610
United States

Appendix 1: Source-Connect 3.1 Versions and Compatibility table

The following table shows a complete overview of what Restore and Replace processes are available to all versions of Source-Connect 3.1.

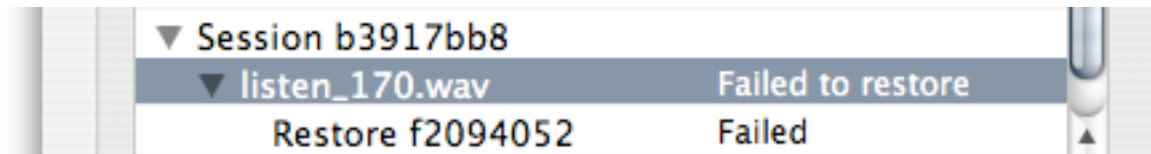
Feature	Source-Connect Standard	Source-Connect Pro	Source-Connect Pro with Replace
Restore send	✓	✓	✓
Restore receive		✓	✓
Replace send		✓	✓
Replace receive			✓

Note: When receiving the apt-X codec you can only use Replace

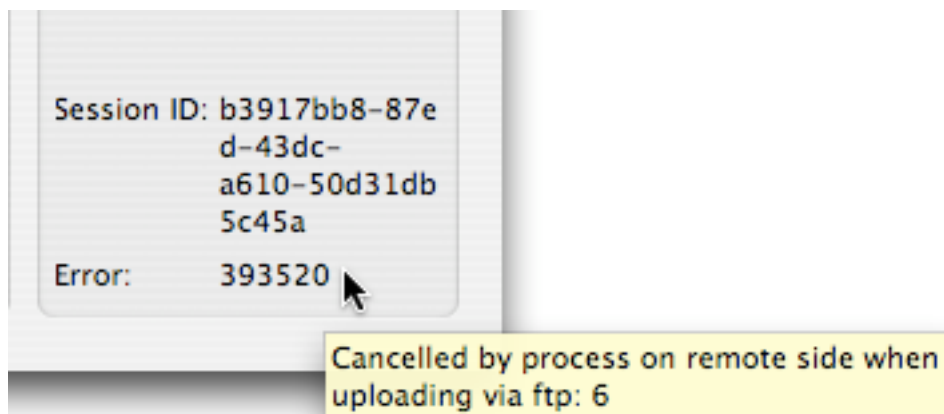
Appendix 2: Q Manager Error messages

Providing Support with the error message provided for any files which failed to restore or replace will allow us to respond to you with a possible solution more rapidly.

There are various reasons as to why a file may fail to replace or restore. To find out the exact reason for a failed process, select the file in the Q Requests panel:



Now, look at the error code message to the very bottom right. If you hold the mouse over the error code number you will be shown a message explaining why the file failed to be processed.



For example, this error means that the other side was unable to upload the restore data via FTP. This usually means that the FTP service was not available. You should validate your FTP settings.

When contacting Support with Q Manager / Restore / Replace issues we will need to know the error message number(s).

Appendix 3: System requirements

Source-Connect 3.1 is currently only available as an RTAS plug-in for Pro Tools 7.x and higher systems including Pro Tools HD, LE and M-Powered.

Source-Connect 2.9 is essentially the same as Source-Connect 3.1 however it does not have the Q Manager feature.

The Q Manager software is qualified for Mac OS X 10.4 and 10.5, and Window XP.

Source Elements software does not support Windows Vista at this time.