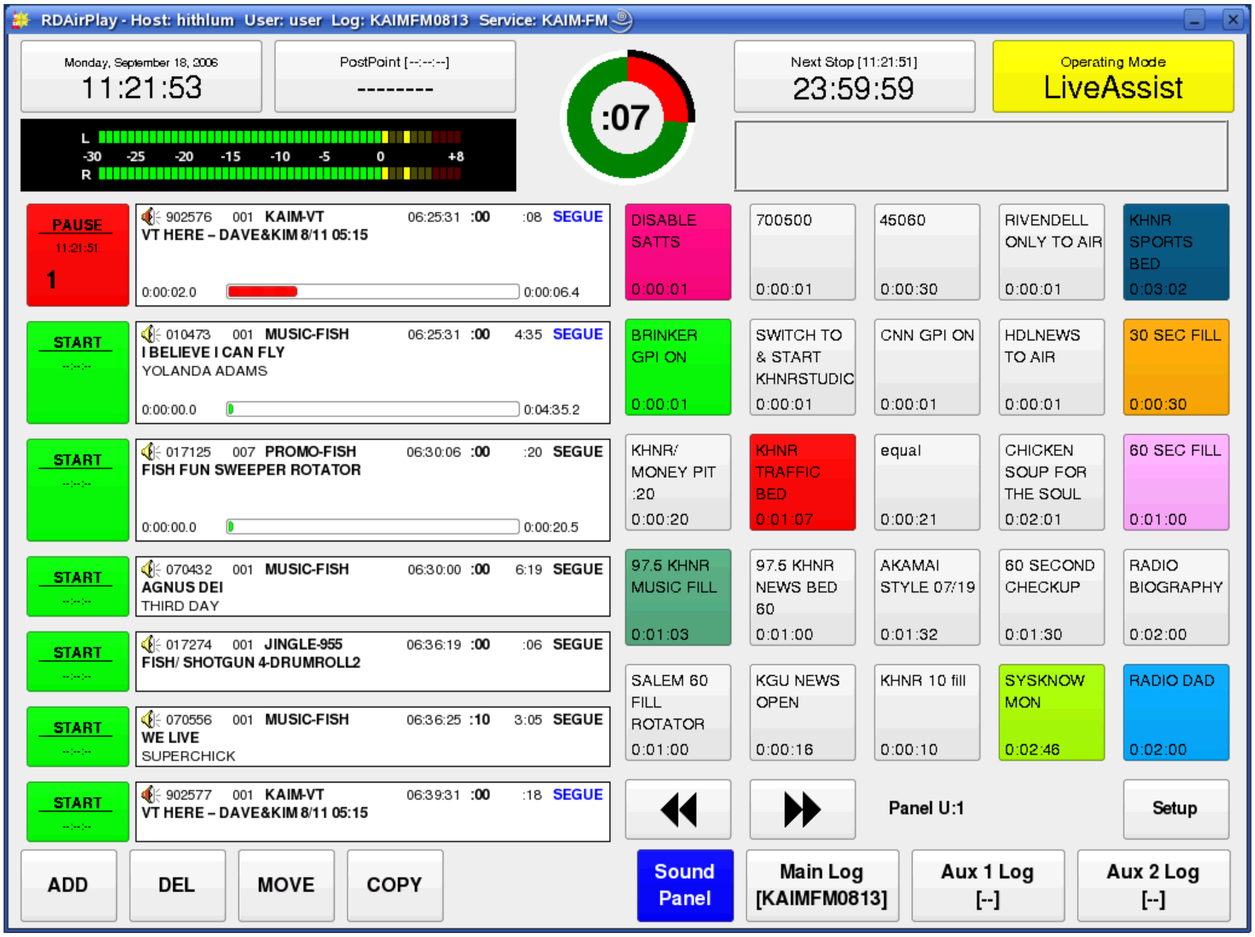
Rivendell Operations Guide

Version 0.9.1



```
902576   001  KAIM-VT      06:25:31  :00   :08  SEGUE
VT HERE – DAVE&KIM 8/11 05:15
0:00:02.0                                   0:00:06.4

010473   001  MUSIC-FISH   06:25:31  :00  4:35  SEGUE
I BELIEVE I CAN FLY
YOLANDA ADAMS
0:00:00.0                                   0:04:35.2

017125   007  PROMO-FISH   06:30:06  :00   :20  SEGUE
FISH FUN SWEEPER ROTATOR
0:00:00.0                                   0:00:20.5

070432   001  MUSIC-FISH   06:30:00  :00  6:19  SEGUE
AGNUS DEI
THIRD DAY

017274   001  JINGLE-955   06:36:19  :00   :06  SEGUE
FISH/ SHOTGUN 4-DRUMROLL2

070556   001  MUSIC-FISH   06:36:25  :10  3:05  SEGUE
WE LIVE
SUPERCHICK

902577   001  KAIM-VT      06:39:31  :00   :18  SEGUE
VT HERE – DAVE&KIM 8/11 05:15
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by Fred Gleason

Rivendell Automation System

System Operations Guide

by Frederick F. Gleason, Jr.

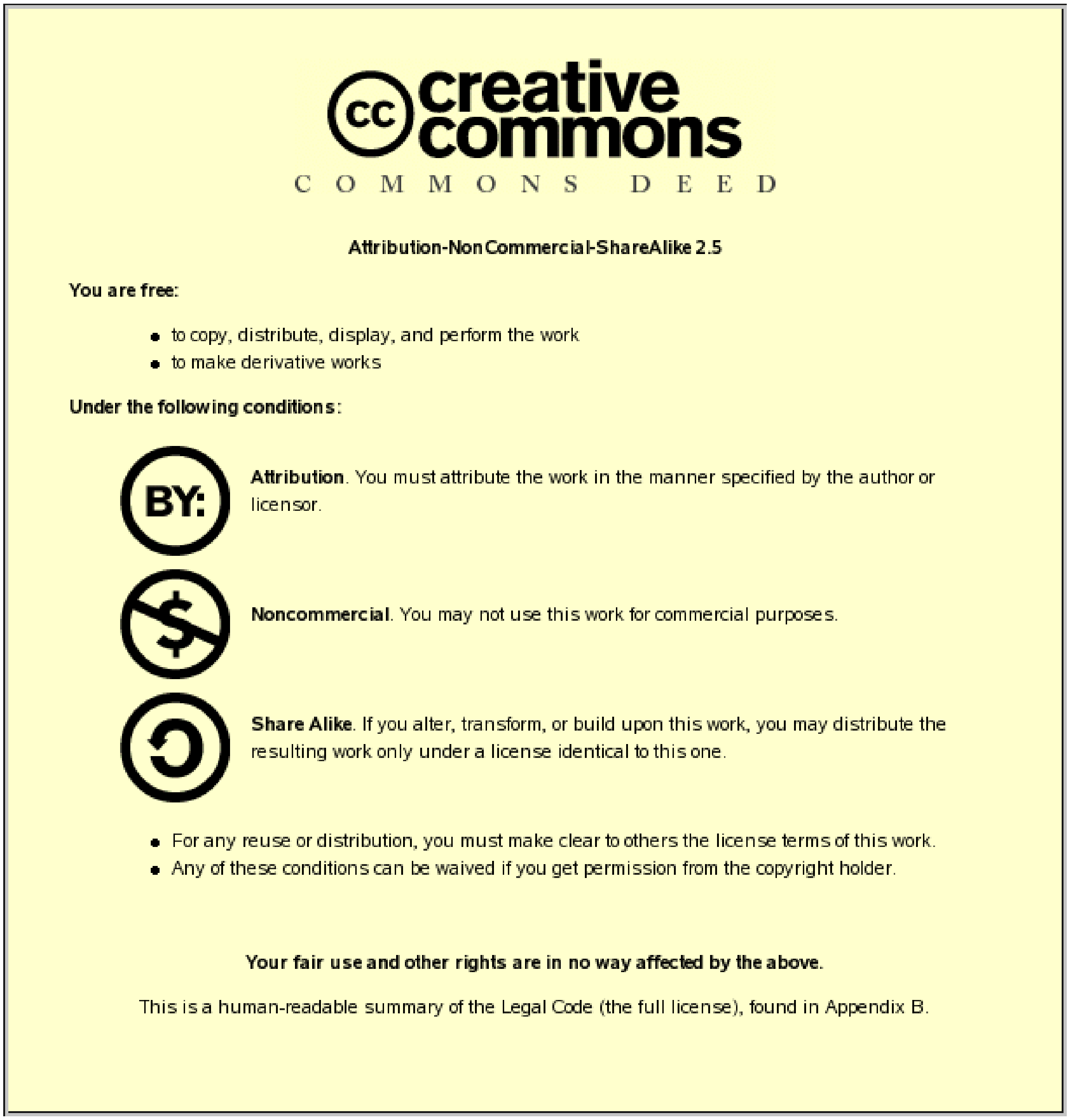


Table of Contents

Chapter One
System Overview

Section 1.0 Introducing Rivendell

Rivendell is a digital audio content management and delivery system that is targeted for use in professional radio broadcast environments. It includes robust tools for the acquisition, organization, management and play out of audio material from and to a diverse array of sources and destinations. Support for a wide variety of external third party hardware devices and software packages commonly used in the radio industry is featured, including interfaces for:

- Audio Routing Switchers
- Satellite Down Link Receivers
- Audio Mixing Consoles
- Commercial Traffic and Music Scheduling Systems

Rivendell is made available under the terms of the GNU General Public License (GPL), a copy of which can be found in Appendix A. As such, it comes with **absolutely no warranty**, not even the implied warranties of merchantability or fitness for a particular purpose. See the full text of the GPL for details.

Rivendell has been designed and developed from the ground up to run on the popular and highly stable GNU/Linux[1] operating system. Selected tools (mostly having to do with log generation) have also been ported to run in the Microsoft Windows[2] environment as well. Full source code as well as binary installation packages for Windows and select Linux distributions are available on line. Consult the *Rivendell Technical and Administration Guide* for details.

Rivendell has been designed to be able to operate in a wide variety of roles, ranging from single, self-contained workstations to large, multi-station clusters consisting of multiple workstations and centralized servers. Also included are redundancy and hot-standby capabilities to allow for reliable operation even in the presence of hardware faults. Details can be found in the *Rivendell Technical and Administration Guide*.

Rivendell is implemented as a set of interactive tools or 'modules' that collectively provide the complete functionality of the system. Briefly, these modules and their functions are:

RDAdmin – System wide configuration
RDLibrary – Library content management
RDCatch – Automatic event scheduler
RDAirPlay – On-air play out application
RDLogEdit – Simple log editing tool
RDLogManager – Automated log generation and interface utility
RDLogin – Set the current user on a Rivendell host

[1] *Linux* is a registered trademark of Linus Torvalds
[2] *Windows* is a registered trademark of Microsoft Corporation

The operation of each of these modules is explained in detail in the chapters that follow. However, we first need to cover some basic concepts common to all Rivendell modules.

Section 1.1 The Rivendell Security Paradigm

All Rivendell modules make use of the following four classes of system resources:

- **Hosts**
- **Users**
- **Groups**
- **Services**

We'll cover each of these concepts in turn.

1.1.0 Hosts

Every physical computer within a given network that is running Rivendell software is referred to as a **host**. Any host in a Rivendell network can be individually configured and controlled from any other host (provided the system administrator has enabled this capability). Hosts can be used for a wide variety of applications, including content ingestion and management, automatic recording (sometimes referred to as *netcatching*), on-air play out or log (sometimes also referred to as *playlist*) generation. It is also possible for a single host to perform all of these functions.

1.1.1 Users

Every host on a Rivendell network has one or more **users** available to it. In this context, a 'user' is merely a set of access policies established by the system administrator that defines what tasks a given host is or is not allowed to perform. Every host has at least one user, called the **default user**. As the name suggests, this is the set of user policies that are loaded by default when the system starts up. It is also possible to change the user currently in use on a given host by running the **RDLogin** module.

1.1.2 Groups

A Rivendell **group** is a system of categories that is used by the audio library to classify and organize the audio within the library. Groups are a very powerful capability, and many operations within Rivendell can be specified on the basis of group membership. The actual classification scheme, including the number of available groups and their names, is completely arbitrary so as to allow each facility to tailor a schema that best fits its own operational requirements. Designing and implementing the group schema is one of the most important tasks facing the Rivendell system administrator, as a well-designed schema can make long-term maintenance and management of the system substantially easier *vis-a-vis* a poorly thought out one. We will cover groups in detail in the chapters devoted to the **RDLibrary** and **RDAdmin** modules.

1.1.3 Services

Every facility at which Rivendell is deployed is presumed to have one or more ultimate *destinations* for which audio is intended. These could be radio stations (e.g. WAVA), satellite uplink channels, live Internet audio streams, or any mix of the above. Each of these sorts of destinations is referred to in Rivendell as a **service**, and certain parameters, particularly as regards audio play out and log (playlist) creation, can be configured on the basis of what particular service is being referenced.

Section 1.2 The Rivendell Hardware Paradigm

In addition to the core computer hardware (CPU, motherboard, etc), each Rivendell host typically interacts with specialized hardware required to accomplish the task at hand. Three main categories of such 'special' hardware are of interest to us here, the three being *audio adapters*, *serial ports* and *GPIO/switcher devices*. We'll cover each below.

1.2.0 Audio Adapters

An **audio adapter** in Rivendell is simply a device or facility for getting audio into and/or out of a host on a realtime basis. Most commonly this will be a *sound card*, although other, more exotic possibilities (using TCP/IP networking or direct routing to other audio applications) also exist. The three main classes of audio adapters supported by Rivendell are:

> **Advanced Linux Sound Architecture (ALSA)** – The standard Linux sound card driver starting with the 2.6.x kernel series, ALSA supports a huge array of commercially available sound cards, ranging from entry level 'game' cards to high-end cards aimed at professional audio uses. More information, including a current list of supported cards, is available at the ALSA web site, http://www.alsa-project.org/.
>
> **HPI Adapters** – These are high-performance sound cards manufactured by AudioScience Corporation. Designed and built specifically for broadcast automation applications, many feature advanced capabilities (such as on-board MPEG codecs and AES3 i/o) specially aimed for use in that setting. They are so-called because Rivendell uses AudioScience's special 'HPI' driver to access and control them. More information is available at AudioScience's web site, http://www.audioscience.com/.
>
> **JACK Audio Interconnect Kit** – JACK is not a particular set of hardware devices, but rather an audio 'framework' that allows compliant applications to share audio resources and route audio in realtime amongst themselves. JACK is different from similar efforts within the Linux realm in that it was designed from the ground up for professional audio work, with particular focus upon low-latency operation and synchronous execution of all

clients. More information can be found at the JACK web site, http://jackit.sourceforge.net/.

1.2.1 Serial Ports

Commonly known in the DOS/Windows world as 'COM ports', **serial ports** are often used to communicate with outboard gear, such as satellite receivers and audio switchers. Up to eight serial ports can be accessed simultaneously by each Rivendell host.

1.2.2 GPIO/Switcher Devices

Because these capabilities are often (although not always) bundled together in the same device, Rivendell lumps GPIO and switcher devices together within the same class. 'GPIO' stands for 'General Purpose Input Output'. As the name implies, these devices can be used to interface to a huge variety of outboard equipment by means of control lines. GPI (General Purpose Input) lines can be used to sense changes in an outboard system's state (and Rivendell programmed to take various actions on the basis of that), while GPO (General Purpose Output) lines can be used to send commands to an outboard system. The actual physical interfacing of GPIO devices is complex and generally beyond the scope of this document. Readers are encouraged to consult a good handbook on radio engineering for more information. A current list of GPIO/Switcher devices supported by Rivendell can be found in 'docs/GPIO.txt' file in the Rivendell sources.

Chapter Two
Managing the Current User with RDLogin

Section 2.0 RDLogin

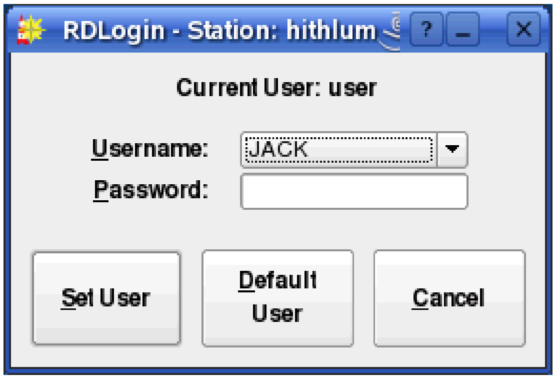
Rivendell uses a sophisticated system of user privileges to keep track of which users have permission to perform what operations. These privileges are tracked by the system on the basis of **user accounts**. Creating user accounts and administering their permissions are done in the RDAdmin module and are covered in the *Rivendell Technical and Administration Guide*.

It's important to note that these user accounts are *not* the same thing as the "Login Name" that is used to log into the computer system itself. Rather, they exist and have meaning only within the Rivendell system. For the rest of this discussion, when we talk about "users", it is these "Rivendell users" that we are referring to.

Each Rivendell host has a **default user**. As the name implies, this is the user that is automatically logged in after the system is booted. By default, the name of this user is "user", but the system administrator may have changed this to some other name.

For many sites, a single default user is all that is ever required. For some sites however, particularly larger ones, it is desirable to have multiple user accounts, each tailored to a particular person or "role", with privileges assigned appropriately. Such sites require a means to log different users in and out of the system, without interfering with any playout operations that may be ongoing at the time. RDLogin is the module for doing this.

RDLogin will display a small window after being started, showing the currently logged-in user (see *Illustration 1*). To change to a different user, select the desired user name from the **Username:** control, enter the correct password, and then touch the **Set User** button. To "log out" of the system (in reality, just return to the default user), simply touch the **Default User** button (no password is required to set the default user). To exit RDLogin and do nothing, simply touch the **Cancel** button.


RDLogin - Station: hithlum

Current User: user

Username: JACK

Password:

Illustration 1: The RDLogin Window

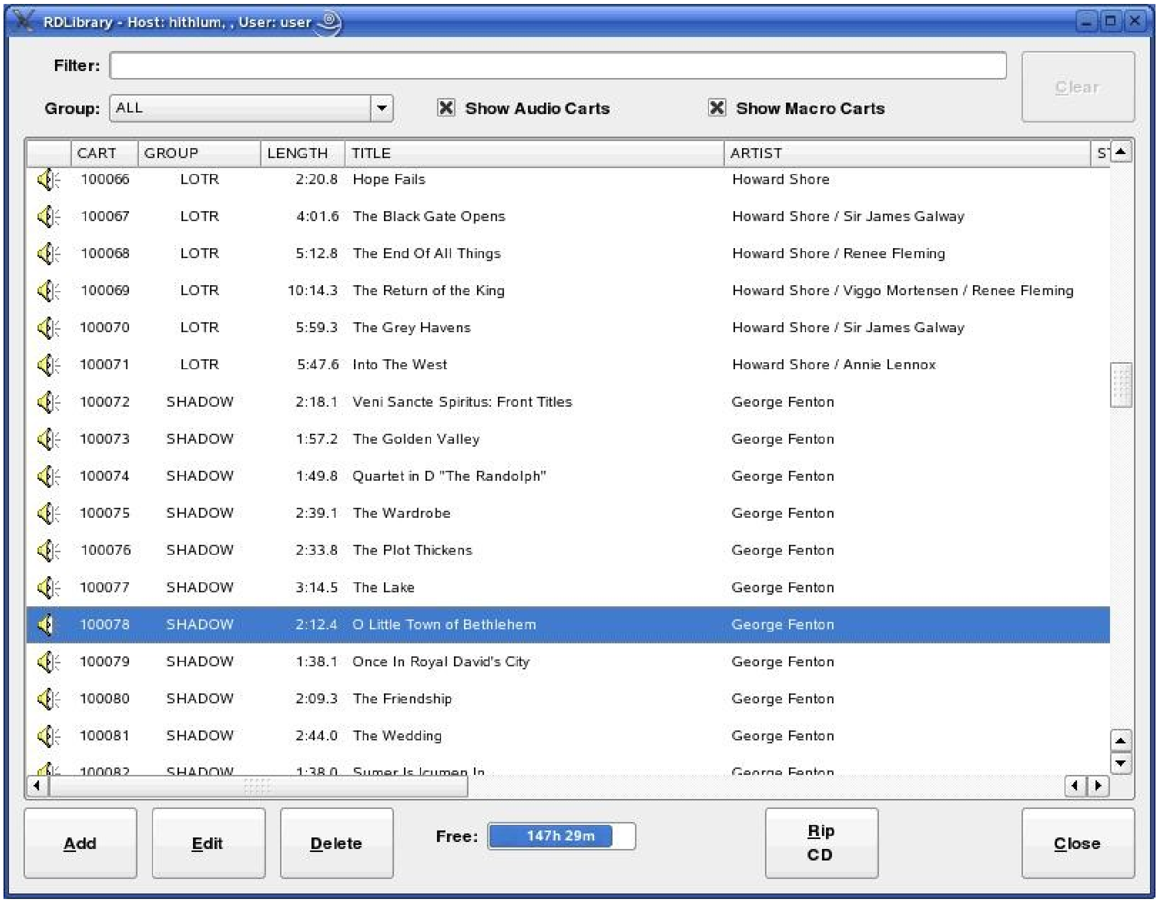
Chapter Three
Content Management with RDLibrary

Section 3.0 The Rivendell Library Structure and RDLibrary

3.0.0 Carts

The Rivendell Library consists of a set of objects called **carts**. A cart is a data container that holds either one or more pieces of audio (called an **audio cart**), or macro commands to the system (called a **macro cart**). The cart is the fundamental schedule building block in Rivendell, in that it is the smallest object or 'atom' that the outside world (like a traffic or music scheduler) can see.

RDLibrary, upon startup, will show the current list of all carts on the system, as in *Illustration 2* below:



Filter:

Group: ALL

☒ Show Audio Carts ☒ Show Macro Carts

CART	GROUP	LENGTH	TITLE	ARTIST
100066	LOTR	2:20.8	Hope Fails	Howard Shore
100067	LOTR	4:01.6	The Black Gate Opens	Howard Shore / Sir James Galway
100068	LOTR	5:12.8	The End Of All Things	Howard Shore / Renee Fleming
100069	LOTR	10:14.3	The Return of the King	Howard Shore / Viggo Mortensen / Renee Fleming
100070	LOTR	5:59.3	The Grey Havens	Howard Shore / Sir James Galway
100071	LOTR	5:47.6	Into The West	Howard Shore / Annie Lennox
100072	SHADOW	2:18.1	Veni Sancte Spiritus: Front Titles	George Fenton
100073	SHADOW	1:57.2	The Golden Valley	George Fenton
100074	SHADOW	1:49.8	Quartet in D "The Randolph"	George Fenton
100075	SHADOW	2:39.1	The Wardrobe	George Fenton
100076	SHADOW	2:33.8	The Plot Thickens	George Fenton
100077	SHADOW	3:14.5	The Lake	George Fenton
100078	SHADOW	2:12.4	O Little Town of Bethlehem	George Fenton
100079	SHADOW	1:38.1	Once In Royal David's City	George Fenton
100080	SHADOW	2:09.3	The Friendship	George Fenton
100081	SHADOW	2:44.0	The Wedding	George Fenton
100082	SHADOW	1:38.0	Sumer Is Icumen In	George Fenton

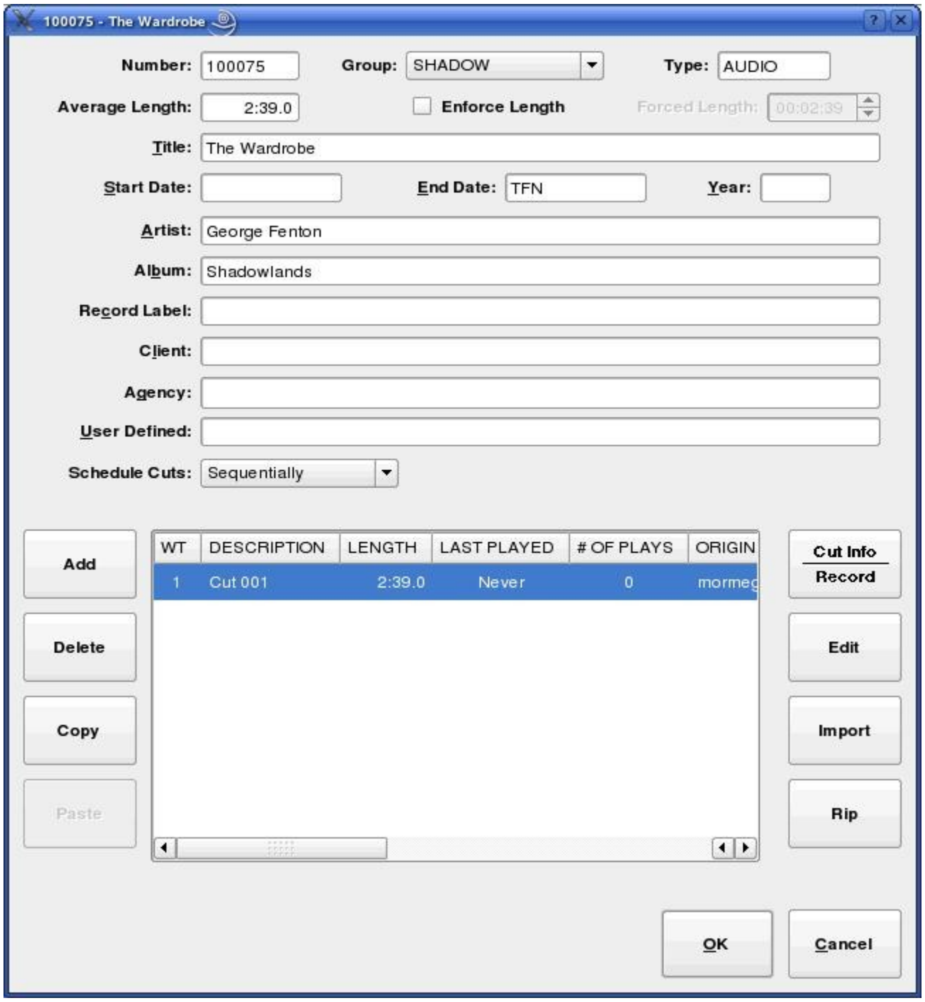
Free: 147h 29m

Illustration 2: The RDLibrary Cart List

A number of important attributes of carts can be seen from this illustration. First is the cart's *number*. Each cart in the Library gets assigned a unique number when it is created. This number can range between 000001 and 999999, and is the primary 'handle' by which both Rivendell and external systems (like traffic or music schedulers) refer to the cart. Very often, sites have specific rules concerning which types of audio (commercials, promos, music, etc) and macros get assigned which numbers. We'll cover this area in some detail when we discuss groups.

Immediately to the left of the cart number is an icon indicating the type of cart. Just to the right of the cart number is the **average** length of the cart. Except in the case of where timescaling is in use (in which case it will be indicated in blue numerals), this value is calculated automatically by the system.

Next comes various columns showing information from the *cart label* – Title, Artist, Client and Agency data, etc. This information can be edited by opening RDLibrary's Edit Cart dialog (*Illustration 3*), either by double-clicking on the desired cart entry in the list, or by touching the desired cart entry and then touching the **Edit** button. In either case, you should get a dialog similar to that shown in *Illustration 3*.



100075 - The Wardrobe

Number: 100075 Group: SHADOW Type: AUDIO

Average Length: 2:39.0 □ Enforce Length Forced Length: 00:02:39

Title: The Wardrobe

Start Date: End Date: TFN Year:

Artist: George Fenton

Album: Shadowlands

Record Label:

Client:

Agency:

User Defined:

Schedule Cuts: Sequentially

WT	DESCRIPTION	LENGTH	LAST PLAYED	# OF PLAYS	ORIGIN
1	Cut 001	2:39.0	Never	0	mormeg

Illustration 3: The Audio Cart Editor

This is how an audio cart looks when loaded into the Edit Cart dialog. The upper half of the dialog is the cart label data. The meaning of most of these fields should be fairly self-evident, but a few call for special comment:

Enforce Length – When checked, this indicates that timescaling should be applied to this cart when it is played in **RDAirPlay**, meaning that the cart will air at the length indicated by the **Forced Length** field, rather than the native length of the audio. Care is needed when implementing timescaling within a facility, as there are limits to how much the length can be altered, while only certain types of audio adapters support it at all. See the *Rivendell Technical Guide* for more information.

Group – This is a pull down menu by which the group ownership for the cart can be set. The system administrator configures the list of available groups for each user in **RDAdmin**.

User Defined – As the name implies, this field has no dedicated meaning to Rivendell itself, but is provided for each site to use as is seen fit.

The example in *Illustration 3* shows an audio cart. As such, the bottom half of the dialog displays the lists of **cuts** contained within the cart.

3.0.1 Cuts

Each audio cart can contain one or more **cuts**. A Rivendell cut is an actual piece of audio, somewhat analogous to a 'track' on a CD. Up to 999 such cuts can exist within a single cart. Each line in the cut list contains information about the cut, including:

Description – An arbitrary name, assignable by the user as an aid in keeping track of the content, it is roughly analogous to the 'Title' field in the cart label.

Length – The actual, measured play out length of the cut audio. This field is set automatically by the system.

Last Played – The last date and time that the cut was aired by the RDAirPlay module. Useful for keeping track of stale inventory.

# Of Plays – The total number of times the cut has been aired by the RDAirPlay module.

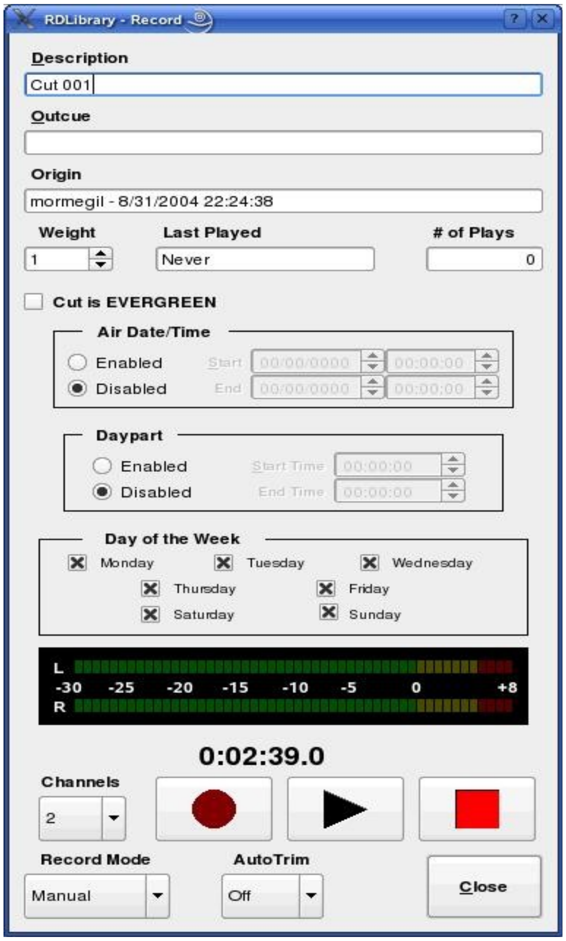
Origin – The name of the host upon which the audio in the cut was last recorded, along with the date and time.

Outcue – A user settable field. This line shows up in the RDAirPlay log when the cut is played.

3.0.1.0 Multiple Cuts in a Cart

What happens when more than one cut is placed into a cart? The answer, in a word, is **rotation**. Rotation is the ability to schedule a single cart in a log, but to have that cart play out *different* material at different times. This capability has a myriad of uses. One of the simplest, common in commercial radio facilities, is to allow multiple versions of a spot to be placed into the system, while still allowing the traffic department to have to track and schedule only one cart number. A more sophisticated use involves use of the cut's **dayparting** settings, forcing different cuts to play based upon certain date/time criteria, such as day of the week or time of day. Cut dayparting is a very powerful feature in Rivendell, and is something we will discuss shortly.

To edit the properties of a cut, either double-click its entry in the cut list, or touch it once to highlight and then touch the **Cut Info/Record** button. The Record Dialog (*Illustration 4*) will now open up.



RDLibrary - Record

Description: Cut 001

Outcue:

Origin: mormegil - 8/31/2004 22:24:38

Weight: 1 Last Played: Never # of Plays: 0

☐ Cut is EVERGREEN

Air Date/Time
○ Enabled ● Disabled
Start 00/00/0000 00:00:00
End 00/00/0000 00:00:00

Daypart
○ Enabled ● Disabled
Start Time 00:00:00
End Time 00:00:00

Day of the Week
☒ Monday ☒ Tuesday ☒ Wednesday
☒ Thursday ☒ Friday
☒ Saturday ☒ Sunday

0:02:39.0

Channels: 2

Record Mode: Manual

AutoTrim: Off

Illustration 4: The Record Dialog

Roughly the upper third of the dialog is for editing the various cut parameters, the middle section is for configuring the cut's daypart settings, and the bottom third is a **record machine** that can be used both to record new audio into the system and to audition any recording already made.

3.0.1.1 Cut Dayparting

Each cut in Rivendell can be dayparted on the basis of three parameters:

- Absolute Start and End Date-Time
- Relative Start and End Time
- Day of the Week

By default, each newly created cut starts out with dayparting disabled, meaning that it will be 'eligible to play' at all times. By clicking the **Enabled** button in the **Air Date/Time** box, an absolute start and end date for the cut can be entered, meaning that the cut will be prevented from airing in the RDAirPlay module at any time outside the range of those date-times. Likewise, by selecting the **Enabled** button in the **Daypart** box, start and end times (relative to the day the cut is to air) can be entered. Cuts designated in this way will be allowed to air only within the specified range of times. Finally, by selecting or clearing the appropriate boxes in the **Day of the Week** box, a cut can be designed to air only on certain days of the week.

All of the dayparting parameters can be used either singly or in combination with each other. When combined, the resulting 'eligibility' is calculated as the logical AND of the applied dayparting limits. For example, a cut with the 'Monday' box cleared will refuse to air on Mondays, regardless of whether any of the other daypart rules match.

It's important to remember that dayparting rules affect audio play out *only within the RDAirPlay module*. You will still be able to audition and play the audio without limitation in the other Rivendell modules.

3.0.1.2 Recording and Auditioning a Cut in the Record Dialog

The lower third of the Record Dialog is used both to audition and record audio. To audition the cut, simply press the play button (the one with the triangular symbol). The button should illuminate, audio should show on the bar meter and start playing immediately. The audio will play to completion, unless either the stop button (square symbol) is pressed, or the Record Dialog is closed.

To record new material into a cut, first ensure that the **Channels** drop-down menu is set to record the appropriate number of channels, then touch the record button (round symbol). If the cut contains audio that was recorded previously, a warning box will pop up at this point to inform you of this and to give you a chance to abort the recording without erasing what was previously recorded. If **Yes** is selected here, the previous recording will be overwritten and no longer accessible.

The record button should now be illuminated steadily, while the play button will be flashing, indicating that the record machine is in 'ready' mode. The bar meter will also be active to indicate input levels, and this is the point where you want to verify that your levels are correct, with peaks just into the yellow area being optimal. Nothing is actually being recorded just yet.

We have two options for actually starting the record machine. We can start it manually by pressing the play button, at which point the machine will immediately begin recording, or we can set the **Record Mode** drop-down menu to the **VOX** (short for voice activated) setting. When in VOX mode, the record machine will start automatically as soon as it senses the presence of audio at the input.

Once started, recording will continue until either the stop button is pushed, or the maximum allowed length for a manual recording (set by the system administrator) has been reached. Once stopped, if the **AutoTrim** drop-down menu has been set to **On**, the Start and End markers will be automatically set to the beginning and end of detected audio within the cut. (We will discuss Markers in detail when we get to the section on the Edit Markers dialog).

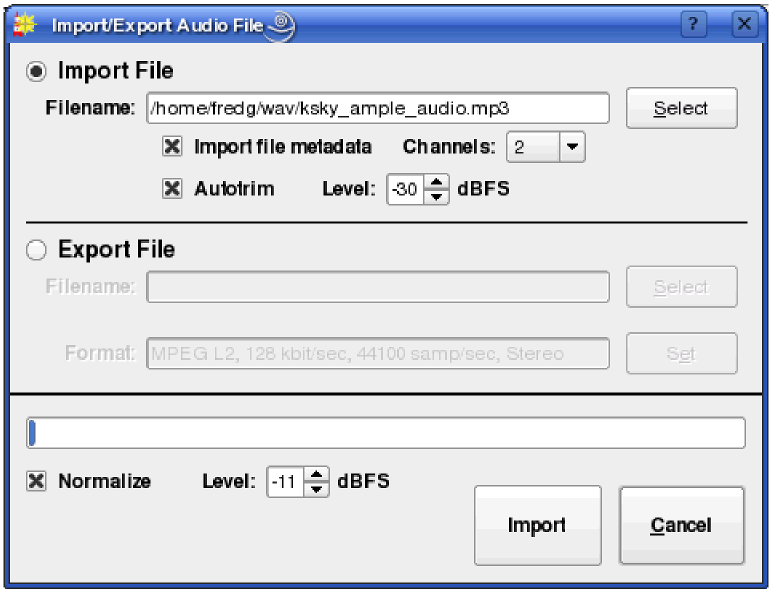
Section 3.1 Alternative Methods of Audio Ingestion

In addition to manually recording material in realtime, RDLibrary supports two alternative methods for audio ingestion:

- Importing from a File
- Ripping from a CD

3.1.0 Importing Audio from a File

To import audio from a file directly into a cut, we start by opening the cut's parent cart in the Edit Cart Dialog. Next, touch the cut's entry in the cut list and then touch the **Import/Export** button to open the Import/Export Audio Dialog (*Illustration 5*).



● Import File
Filename: /home/fredg/wav/ksky_ample_audio.mp3
☒ Import file metadata Channels: 2
☒ Autotrim Level: -30 dBFS

○ Export File
Filename:
Format: MPEG L2, 128 kbit/sec, 44100 samp/sec, Stereo

☒ Normalize Level: -11 dBFS

Illustration 5: The Import/Export Audio Dialog

Select the file you wish to import, either by entering the path and filename to it in the **Filename** field or by clicking the **Select** button to open a file browsing dialog. Rivendell is capable of importing the following types of audio files:

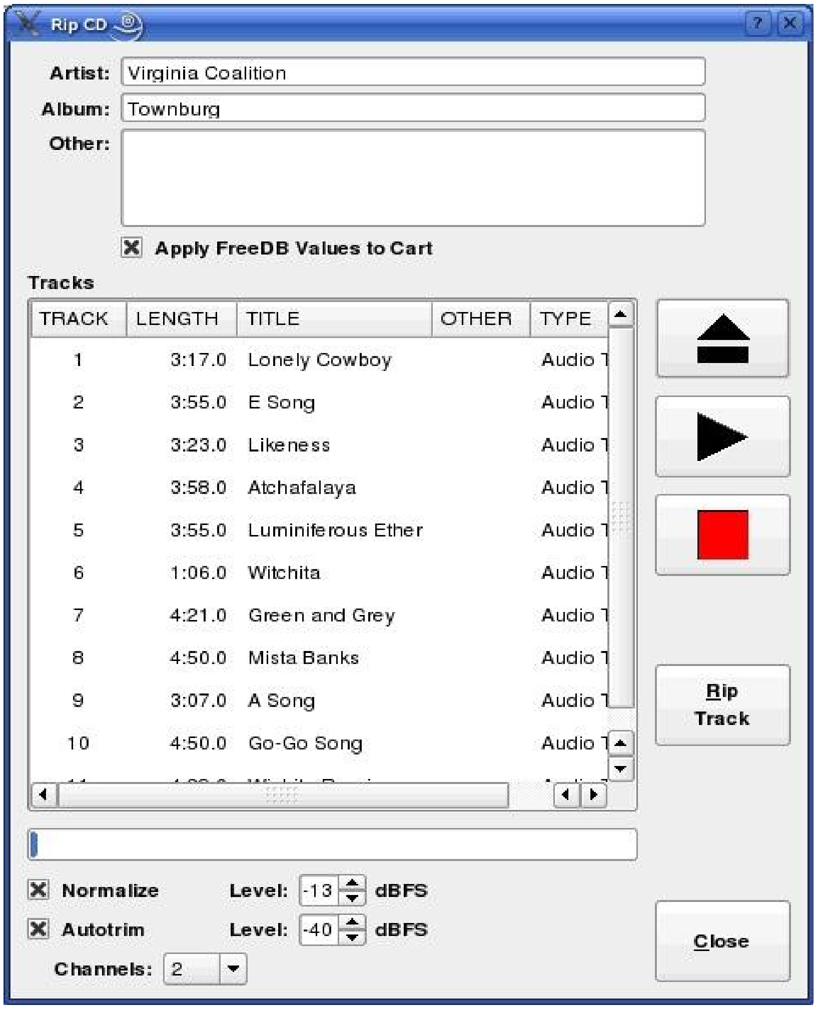
- Microsoft WAV (*.wav) – Both PCM16 and MPEG supported
- MPEG (*.mp1, *.mp2, *.mp3)
- OggVorbis (*.ogg)
- Free Lossless Audio Codec [FLAC] (*.flac)

Next, set the **Channels** drop-down menu to the appropriate number of channels. You may also wish to adjust the **Normalize** or **Autotrim** controls, although these will normally be set to reasonable default values by the system administrator and should seldom have to be altered. If **Normalize** is selected, then the imported audio will be *peak* normalized to the level indicated. The **Autotrim** does the same thing as in the Record Dialog (see section 2.0.1.2, 'Recording and Auditioning a Cut in the Record Dialog' above for details).

Finally, touch the **Import** button. A progress bar will indicate percentage completion of the import, followed by a popup box to announce completion. The Import Audio Dialog will automatically close after acknowledging completion. The audio is now imported, and can now be auditioned and otherwise processed in the usual way.

3.1.1 Ripping Audio from a CD Track

To rip audio directly off of a CD into a cut, we again start by opening the cut's parent cart in the Edit Cart Dialog. Next, select the cut's by touching the cut's entry in the cut list, and then touch the **Rip** button to open the Rip CD Dialog (*Illustration 6*).



Artist: Virginia Coalition

Album: Townburg

Other:

☒ Apply FreeDB Values to Cart

TRACK	LENGTH	TITLE	OTHER	TYPE
1	3:17.0	Lonely Cowboy		Audio T
2	3:55.0	E Song		Audio T
3	3:23.0	Likeness		Audio T
4	3:58.0	Atchafalaya		Audio T
5	3:55.0	Luminiferous Ether		Audio T
6	1:06.0	Witchita		Audio T
7	4:21.0	Green and Grey		Audio T
8	4:50.0	Mista Banks		Audio T
9	3:07.0	A Song		Audio T
10	4:50.0	Go-Go Song		Audio T

☒ Normalize Level: -13 dBFS

☒ Autotrim Level: -40 dBFS

Channels: 2

Illustration 6: The Rip CD Dialog

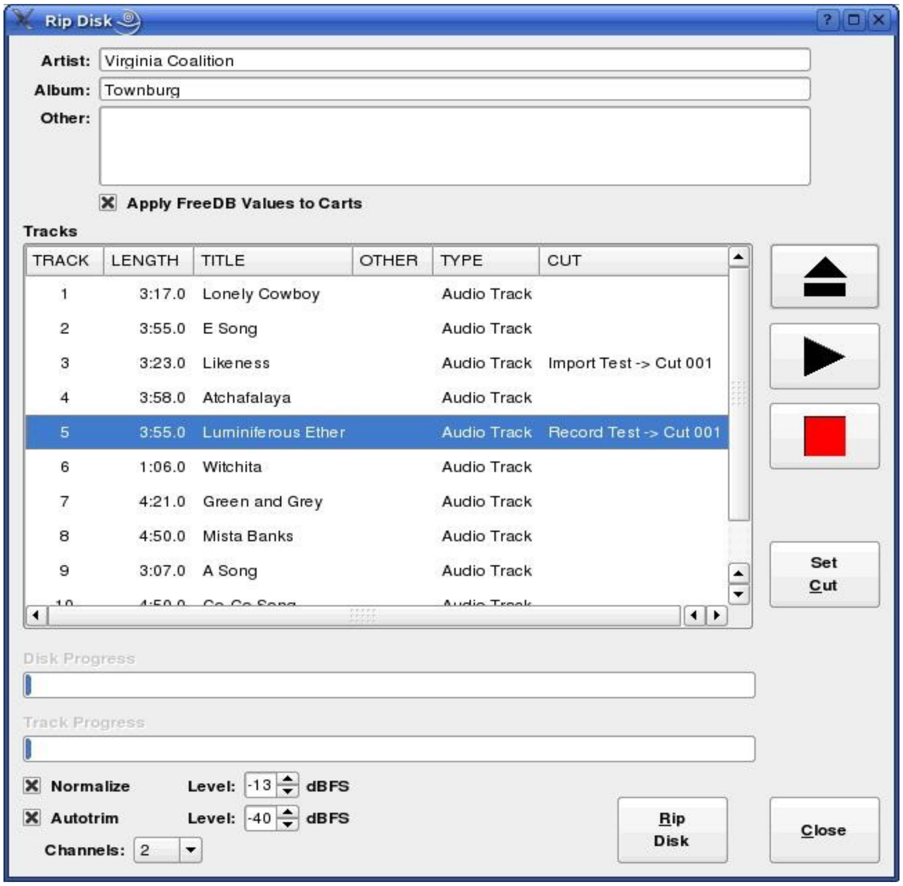
Load a CD into the CD drive. After a few seconds, list of tracks should appear in the **Tracks** area. If the system administrator has enabled the FreeDB CD Lookup Service, the names of the various tracks may appear as well.

Set the **Channels**, **Normalize** and **Autotrim** controls appropriately (see section 2.1.0 for more details on using the **Normalize** and **Autotrim** controls). Next, touch the track you wish to rip and then press the **Rip Track** button. The track will now be ripped into the cut, with a progress bar keeping you informed of progress. When the rip is complete, a message box will pop up to inform you of this.

If FreeDB data was found for the CD, you can have the FreeDB track, artist and album names be automatically placed on the cart label for the cart by checking **Apply FreeDB Values to Cart** before closing the Dialog.

3.1.2 Ripping Multiple CD Tracks at a Time

Sometimes, when transferring multiple audio tracks from CD, it's more convenient to be able to set up the entire transfer at once and then let the rip run in a 'batch' mode. RDLibrary is capable of ripping audio in this manner as well. To do this, click the **Rip CD** button near the bottom of the main RDLibrary screen, bringing up the Rip Disk Dialog (*Illustration 7*).



Artist: Virginia Coalition

Album: Townburg

Other:

☒ Apply FreeDB Values to Carts

Tracks

TRACK	LENGTH	TITLE	OTHER	TYPE	CUT
1	3:17.0	Lonely Cowboy		Audio Track	
2	3:55.0	E Song		Audio Track	
3	3:23.0	Likeness		Audio Track	Import Test -> Cut 001
4	3:58.0	Atchafalaya		Audio Track	
5	3:55.0	Luminiferous Ether		Audio Track	Record Test -> Cut 001
6	1:06.0	Witchita		Audio Track	
7	4:21.0	Green and Grey		Audio Track	
8	4:50.0	Mista Banks		Audio Track	
9	3:07.0	A Song		Audio Track	
10	4:50.0	Co Co Song		Audio Track	

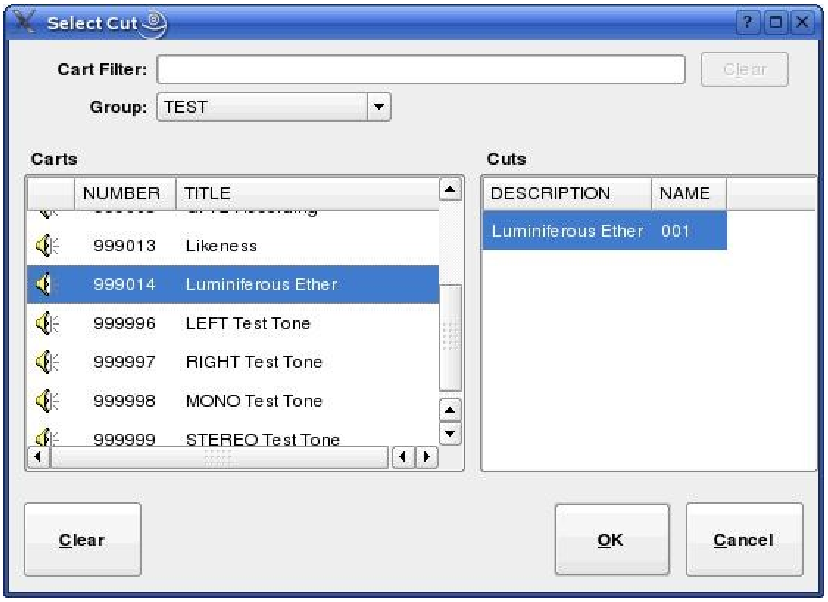
☒ Normalize Level: -13 dBFS

☒ Autotrim Level: -40 dBFS

Channels: 2

Illustration 7: The Rip Disk Dialog

This dialog is similar in many ways to the Rip CD Dialog described above, except that each track can be assigned to transfer to a different cut by double clicking on its listing, or by touching the listing and then the **Set Cut** button, bringing up the Select Cut Dialog (see *Illustration 8*).



Cart Filter:

Group: TEST

	NUMBER	TITLE
	999013	Likeness
	999014	Luminiferous Ether
	999996	LEFT Test Tone
	999997	RIGHT Test Tone
	999998	MONO Test Tone
	999999	STEREO Test Tone

DESCRIPTION	NAME
Luminiferous Ether	001

Illustration 8: The Select Cut Dialog

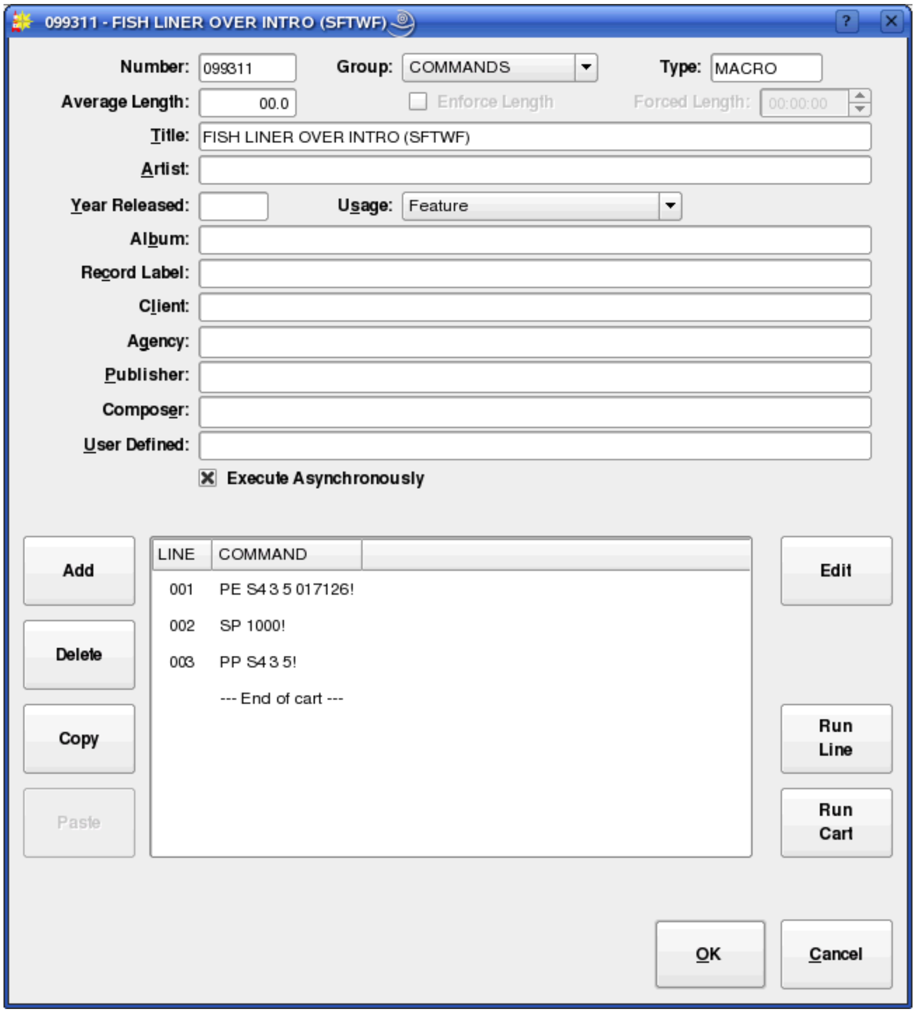
The destination cut is selected by first choosing the cart from the left-hand pane, followed by the desired cut within that cart on the right-hand pane. The complete set of library filtering tools are available to you here – see section 2.2, 'Navigating the Audio Library' for details on their function, just as in the main RDLibrary screen.

Once all of the desired tracks have been assigned to cuts, be sure that the **Normalize**, **Autotrim**, **Channels** and **Apply FreeDB Values to Carts** controls have been set as desired, then click the **Rip Disk** button. A set of progress bars will keep you informed of the progress of each track, as well as overall progress. When, the rip is finished, a message box will let you know.

Section 3.2 Macro Carts

A **macro cart** is a cart that contains one or more commands written in Rivendell Macro Language (or 'RML' for short). The Edit Cart dialog for a macro cart is similar in many ways to that for an audio cart with the exception of the lower half, which contains a list of RML commands to be executed rather than a list of cuts (see *Illustration 9*). (NOTE: for a complete description of Rivendell Macro Language, including a breakdown of available commands, see Chapter Nine).

To add a new line of RML, select the desired location in the list and touch the **Add** button. Similarly, a line can be deleted by selecting it and then touching the **Delete** button, or modified by touching the **Edit** button. The RML can be tested, eight line-by-line or as a whole by touching the **Run Line** or **Run Cart** button respectively. It is also possible to **Copy** and **Paste** individual lines both within a given cart or between carts.



099311 - FISH LINER OVER INTRO (SFTWF)

Number: 099311
Group: COMMANDS
Type: MACRO
Average Length: 00.0
☐ Enforce Length
Forced Length: 00:00:00
Title: FISH LINER OVER INTRO (SFTWF)
Artist:
Year Released:
Usage: Feature
Album:
Record Label:
Client:
Agency:
Publisher:
Composer:
User Defined:
☒ Execute Asynchronously

LINE	COMMAND
001	PE S4 3 5 017126!
002	SP 1000!
003	PP S4 3 5!
	--- End of cart ---

Illustration 9: The Edit Cart Dialog for Macro Carts

Section 3.3 Navigating the Audio Library

The uppermost section of RDLibrary's main window contains tools designed to allow for fast searching of the entire audio library, making locating a particular piece of audio easy even in a library containing thousands of carts. It's possible to control what carts are listed, as well as how they are sorted.

3.3.0 Changing the Cart Sort Order

The order in which carts are displayed in the cart list can be changed by simply clicking on the header of the column by which you want them sorted by. By default, the carts are sorted by Cart Number. To instead sort them alphabetically by Title, simply click the TITLE header once. To sort them by Title in *reverse* – i.e from 'Z' to 'A' – click the TITLE header once again. Clicking the TITLE header a third time restores the sort to normal 'A' to 'Z' again. And so on for all of the columns in the cart list – it's possible to sort the Library by Artist, Length, or any other parameter shown in the cart list.

3.3.1 Selecting Carts by the Filter Field

Very often, one will want to find a cart or set of carts whose label(s) contains a particular word or phrase. It's possible to narrow the list of displayed carts to this set by simply entering the desired word or phrase into the **Filter** field at the top of the main RDLibrary screen. The full list can be restored by clearing the **Filter** field or by clicking the **Clear** button.

3.3.2 Selecting Carts by Group

It's possible to limit the list of carts to only those in a particular group by setting the **Group** drop-down menu to the desired group name.

3.3.3 Selecting Carts by Type

You can tell RDLibrary what type of carts to list by checking the **Show Audio Carts** and **Show Macro Carts** boxes. Clearing both boxes obviously results in no carts at all being displayed.

It's also possible to *combine* all four of the above search and sorting methods.

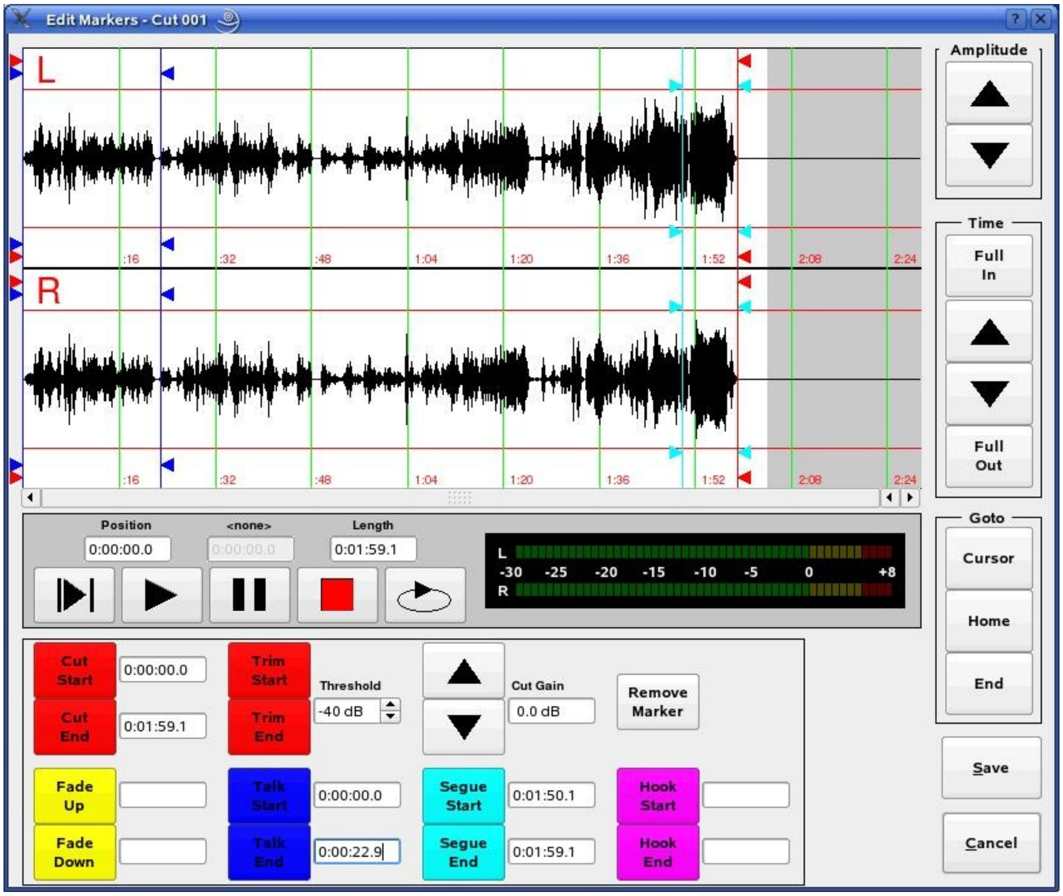
3.3.4 Selecting and Opening Carts

Once the desired cart has been located on the cart list, load it into the Edit Cart Dialog (*Illustration 3*) by either double clicking its list entry, or by touching its list entry and then touching the **Edit** button.

Section 3.4 Library Maintenance

3.4.0 Editing Markers

Rivendell uses a system of cue points within audio cuts, referred to as **markers**. Markers can be used to specify a number of parameters for a piece of audio. *Table One* shows what markers are available, their purpose and their corresponding color.



Position: 0:00:00.0
<none>: 0:00:00.0
Length: 0:01:59.1

Cut Start: 0:00:00.0
Cut End: 0:01:59.1
Threshold: -40 dB
Cut Gain: 0.0 dB
Talk Start: 0:00:00.0
Talk End: 0:00:22.9
Segue Start: 0:01:50.1
Segue End: 0:01:59.1

Illustration 10: The Edit Markers Dialog

Markers are set in the Edit Markers Dialog (see *Illustration 10*). To access the Dialog, open an audio cart, select the cut to open on the cut list and then touch the **Edit** button.

The Dialog is divided into three areas: the **waveform** area in the upper half, consisting of the waveform display and **Amplitude** and **Time** buttons; the **transport controls** area in the center, consisting of Start, Pause, Stop and Loop buttons along with an audio meter; and the **marker button** area in the lower third of the window, consisting of controls for selecting and positioning markers.

It's possible to 'zoom-in' on the waveform in various ways by clicking the **Amplitude** and **Time** buttons. By default, the waveform is displayed fully 'zoomed-out', thus showing the entire length of the audio cut. The **GoTo** buttons can be used to jump directly to the current play out cursor position, start or end of the waveform.

Marker Type	***Function***	***Color***
Start / Stop	Indicates start and end points of audio.	RED
TalkStart / TalkStop	Indicates point to start and stop the Talk Counter in RDAirPlay.	BLUE
SegueStart / SegueEnd	Indicates the start and end of the audio overlap during Segue transitions in RDAirPlay.	CYAN
HookStart / HookEnd	Not used at present.	VIOLET
FadeUp	Indicates the point at which audio should be faded up to full level after starting in RDAirPlay.	YELLOW
FadeDown	Indicates the point at which audio should start fading down to off before ending in RDAirPlay.	YELLOW

Table 1: Rivendell Marker Types

Audio can be played one of two ways: either by clicking on the waveform to indicate where play out should start and then clicking the left-hand Play button, causing play out to start from the selected position, or by clicking the right-hand Play button, which will cause play out to start from the Start Marker (just as it would in RDAirPlay). Clicking the Pause button while playing will cause audio to stop and the play out cursor (a thin vertical black line in the waveform area) to freeze at its current position, while pressing the Stop button will stop the audio while resetting the play out cursor to the position it was in when Play was started. Clicking the Loop button will cause the audio to play out continuously, looping from end back to start, until either the Stop, Pause, **Save** or **Cancel** buttons are clicked.

To set a marker, click on the corresponding marker button and then left-click on the waveform area to indicate where on the audio the marker should be placed. (NOTE: With the exception of the FadeUp and FadeDown markers, all markers in Rivendell are assigned in pairs. For example, placing a TalkStart marker will also cause a TalkEnd marker to be placed.) Markers that have already been placed can be moved by selecting the appropriate marker button and then dragging the marker to the desired location. It's also possible to specify the position of a marker in the form of hh:mm:ss.s (relative to time after the Start marker) by entering the desired value next to a selected marker button. It is also possible to remove a set of markers that have already been placed, either by accessing the marker menu by doing a right-click on the waveform display, or by touching the **Remove Marker** button and then touch the marker button corresponding to the marker to be removed. (NOTE: the exceptions to this are the Start / End markers, which are *always* present and hence cannot be removed.)

As an aid for accurately setting the Start and End markers, it's possible to use the **Trim Start** and **Trim End** buttons to automatically set the markers to the first and last instances of the level specified by the **Threshold** field, respectively.

3.4.1 Copying and Pasting Audio from Cut to Cut

It's possible to make copies of existing an audio cut on the system by opening up the cut's parent cart in the Edit Cart Dialog, selecting it on the cut list and clicking the **Copy** button. To paste the copied audio, simply select the desired destination cut (within the same cart or a different one) and press **Paste**.

Chapter Four
Automating Tasks with RDCatch

Section 4.0 Choosing the Correct Automation Tool

Rivendell includes two modules specially optimized for performing automatic operations: The **RDCatch** and **RDAirPlay** modules. The two modules take radically different approaches in how they go about organizing and controlling operations, so a few words regarding each may be in order here.

RDCatch is aimed at executing actions on the basis of a strict *time-based* schedule, referred to as an **event list**. Each action (which can be a recording, a play out, an up- or download, a macro execution or an operation on an audio switcher device) executes on the basis of its scheduled time in the event list, independently of all other actions. As such, RDCatch is often best suited for use in settings such as network head end operations or 'auxiliary' roles at broadcast stations, where the transitions between events are generally not an important part of the presentation.

RDAirPlay takes a very different approach, in that most events are organized into one or more playlists or **logs**. A Rivendell log is a list of one or more carts, organized in chronological order. As the name implies, RDAirPlay is optimized for use in situations where the transitions between the various program elements are a key part of the delivery and presentation of the content, such as in live air play environments.

Of course, it's entirely possible to use *both* modules, even together on the same machine at the same time – the Linux OS makes for a very robust and capable multitasking system.

Section 4.1 The RDCatch Main Window

After starting up RDCatch, you should see the main RDCatch window, looking something like *Illustration 11*. The window consists of four areas: the **record / play out decks** at the top, the **filter** areas just below the decks, the **events list** and the **audition buttons** and other buttons at the bottom. We'll cover each of these in turn.

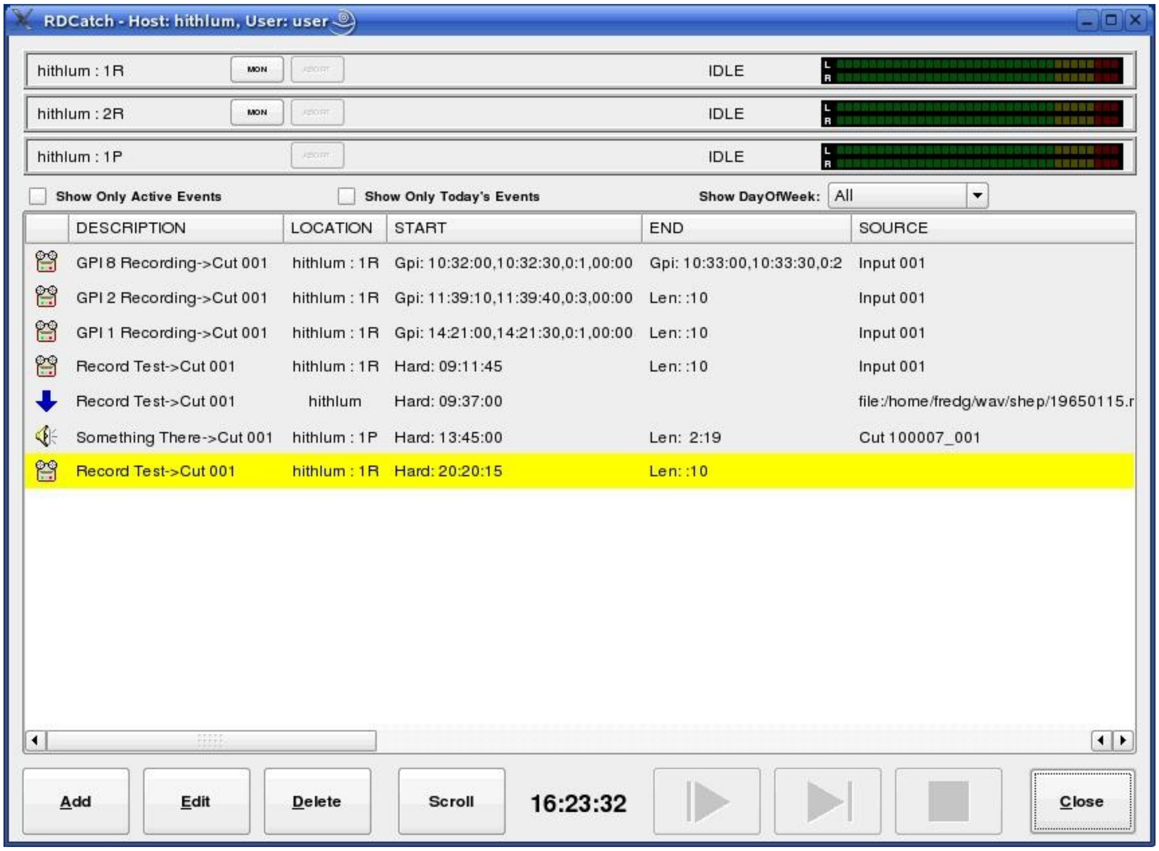
4.1.0 The Record / Play Out Deck Area

If the system administrator has configured one or more RDCatch record or play out decks, they will be visible at the top of the RDCatch main window. A record deck is a virtual 'recorder' that can be used to make automated recordings, while a play out deck can be used to automatically play out audio. It does not matter on which particular host a particular deck 'resides' – *all* Rivendell decks throughout the system are visible in RDCatch, regardless of which host it is run upon.

Starting at the left-hand edge of each deck, there is the deck's name, consisting of the name of the deck's host machine followed by a number and a letter, an 'R' to indicate a record deck and a 'P' to indicate a play out deck. Next, for record decks, there is a **MON** button, used to monitor the audio present at the deck input, followed by an **ABORT** button, used to manually stop an event running in the deck. A description of the currently running event next appears (this area will be blank if no event is currently active), followed by the deck's **status**, which could be any of the values shown in *Table 2*.

STATUS	***MEANING***
IDLE	The deck is available for events
READY	The deck has started monitoring audio but the transport is not yet rolling (record decks only).
WAITING	The deck is waiting for a GPI event (record decks only)
RECORDING	The deck is recording (record decks only).
PLAYING	The deck is playing out (play out decks only).
OFFLINE	The deck is configured but not available.

Table 2: RDCatch Deck Statuses



□ Show Only Active Events □ Show Only Today's Events Show DayOfWeek: All

	DESCRIPTION	LOCATION	START	END	SOURCE
	GPI 8 Recording->Cut 001	hithlum : 1R	Gpi: 10:32:00,10:32:30,0:1,00:00	Gpi: 10:33:00,10:33:30,0:2	Input 001
	GPI 2 Recording->Cut 001	hithlum : 1R	Gpi: 11:39:10,11:39:40,0:3,00:00	Len: :10	Input 001
	GPI 1 Recording->Cut 001	hithlum : 1R	Gpi: 14:21:00,14:21:30,0:1,00:00	Len: :10	Input 001
	Record Test->Cut 001	hithlum : 1R	Hard: 09:11:45	Len: :10	Input 001
⬇	Record Test->Cut 001	hithlum	Hard: 09:37:00		file:/home/fredg/wav/shep/19650115.r
	Something There->Cut 001	hithlum : 1P	Hard: 13:45:00	Len: 2:19	Cut 100007_001
	Record Test->Cut 001	hithlum : 1R	Hard: 20:20:15	Len: :10	

Illustration 11: The RDCatch Main Window

Finally, each deck has an **audio meter** on its right-hand end, used to verify audio levels in realtime.

4.1.1 The Filter Area

Immediately below the decks is the **filter area**, consisting of the **Show Only Active Events**, **Show Only Today's Events** and **Show DayOfWeek** controls. These controls are used to select which events will be visible in the events list area immediately below.

4.1.2 The Event List

The **event list** is a *system wide* list of all events to be executed by RDCatch on *all* of the various hosts on the Rivendell network, with each event occupying a single line. The status of each event is indicated by its background color, as shown in *Table 3*.

COLOR	***MEANING***
YELLOW	The event is next to be executed.
GREEN	The event is active.
CYAN	The event is in the READY state.
VIOLET	The event is in the WAITING state.
RED	The event is reporting an error.

Table 3: RDCatch Event List Colors

Each entry in the event list starts with an icon that indicates the type of the event, as shown in *Table 4*.

📼	Record Event
🔈	Play Out Event
⇄	Switch Event
🌀	Macro Event
⬇	Upload Event
⬆	Download Event

Table 4: RDCatch Event Icons

Next on each line comes the **description** (settable by the user) and **location** for the event, the location being the name of the host/deck where the event will run. Then, comes the **start** and **end** parameters. These time-based parameters come in one of three different forms: a *hard* time, which is simply an absolute time (in twenty-four hour 'military' format), a *length* (in HH:MM format, relative to an earlier start time), or a *GPI* start. The GPI parameters can be somewhat involved. They are specified in the following format:

Gpi: <start-time>,<end-time>,<gpi-num>,<wait-time>

Where:

<start-time> The time, in HH:MM:SS format, when RDCatch will start looking for a GPI event (also sometimes referred to as the *window start* time).

<end-time> The time, in HH:MM:SS format, when RDCatch will stop looking for a GPI event (also sometime referred to as the *window end* time).

<gpi-num> The number of the GPI event to wait for, in the format MATRIX:LINE. We will deal with GPI matrix and line numbers in detail when we cover RDAdmin.

<wait-time> The amount of time to wait, in MM:SS format, between the reception of the GPI event and the actual start of the event (used only for Start parameters).

For example, the start parameter 'Gpi: 14:00:00,14:05:59,0:1,01:00' has a window start time of 14:00:00 [2:00:00 PM], a window end time of 14:05:59, looks for a GPI event on line 0:1 and will wait one minute [01:00] after receiving the GPI before starting the event.

Next come the **source** and **destination** fields. The uses of these will vary depending upon what type of event is being listed, but should normally be fairly self-evident. For example, for a record event, the source field indicates the audio source from which the recording is to be made, while the destination indicates the cat/cut combo to which the recording should be made. Some events may leave one or the other of these fields blank.

Now come the **day of the week** fields. These indicate on which days of the week the listed event should be executed, followed by the **origin** field, which is simply a readout of the Origin data of the events underlying cut. There are a number of other fields which follow, but these are less important for understanding the operation of RDCatch.

4.1.3 The Button Area

At the bottom of the main window are various buttons. On the left-hand side, the **Add**, **Edit** and **Delete** buttons are used to manage events in the event list. Clicking the **Scroll** button toggles RDCatch into and out of 'scroll mode'. In this mode, the event list display will be advanced automatically so as to keep the first actively running event centered within the event list area.

On the right hand side, in addition to **Close**, are three **audition** buttons. These buttons can be used to audition the head and tail of each cut referenced by an event, thus making it possible to quickly verify that a set of automatic recordings were properly executed.

Section 4.2 – Adding New Events

A new event can be added to the event list by simply clicking the **Add** button to bring up the Add Event Dialog (see *Illustration 12*). Simply clicking the button that correspond to the desired type of event will create it.

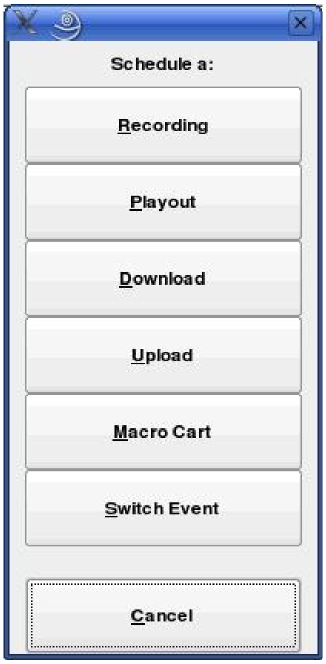


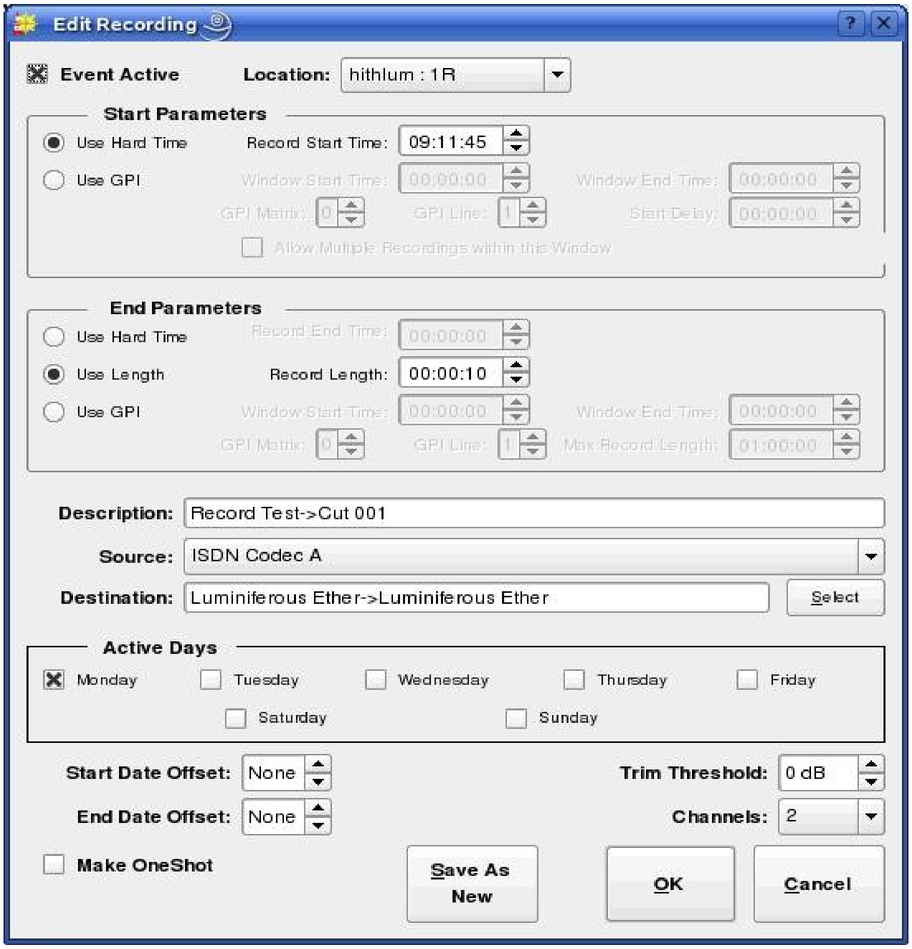
Illustration 12: The Add Event Dialog

Section 4.3 – Automating Recordings

Automated recordings are configured by means of the Edit Recording dialog (see *Illustration 13*), which can be accessed either by clicking the **Recording** button in the Add Event dialog to create a new record event or by touching the **Edit** button to modify an existing event.

4.3.1 The 'Start Parameters' Section

The **start parameters** of each recording are configured in the 'Start Parameters' section. A recording can be programmed to start on the basis of the wall clock time, referred to the **hard start time**, or upon reception of a **general-purpose input**, or **GPI** event originated by a satellite receiver, tone decoder or other external device. Programming a hard start time is merely a matter of entering the desired start time, in 24 hour 'military' format. Programming a GPI start involves, in addition to entry of the GPI parameters themselves (matrix and GPI line numbers) that **Window Start** and **Windows End** times be entered, that define the 'window' during which reception of the appropriate GPI event will be 'recognized' by RDCatch. It is also optionally possible to specify a **Start Delay** between reception of the GPI event and the actual start of the recording.



☒ Event Active   Location: hithlum : 1R

Start Parameters

● Use Hard Time   Record Start Time: 09:11:45
○ Use GPI   Window Start Time: 00:00:00   Window End Time: 00:00:00
GPI Matrix: 0   GPI Line: 1   Start Delay: 00:00:00
□ Allow Multiple Recordings within this Window

End Parameters

○ Use Hard Time   Record End Time: 00:00:00
● Use Length   Record Length: 00:00:10
○ Use GPI   Window Start Time: 00:00:00   Window End Time: 00:00:00
GPI Matrix: 0   GPI Line: 1   Max Record Length: 01:00:00

Description: Record Test->Cut 001
Source: ISDN Codec A
Destination: Luminiferous Ether->Luminiferous Ether

Active Days

☒ Monday   □ Tuesday   □ Wednesday   □ Thursday   □ Friday
□ Saturday   □ Sunday

Start Date Offset: None   Trim Threshold: 0 dB
End Date Offset: None   Channels: 2
□ Make OneShot

Illustration 13: The Edit Recording Dialog

4.3.2 The 'End Parameters' Section

The **end parameters** of each recording are configured in the 'End Parameters' section. A recording can be programmed to end on the basis of a hard time, its absolute length or in response to a GPI event. Programming of the Hard Time and Length parameters should be fairly self-explanatory, while the parameters needed to program a GPI event are similar to those used for the start parameters, with the exception of the 'Max Record Length' setting, which limits the maximum length of the recording in the event that the expected GPI event is never received.

4.3.3 Programming Multiple Recordings in a Single Event

If a record event is configured to use GPI for its start and Length or GPI for its end parameter, then it is possible to configure the event to make repeated, multiple recordings within a single event by checking the 'Allow Multiple Recordings Within This Window' box in the 'Start Parameters' section. This can significantly reduce the amount of required record events when capturing material with high on-air turnover, such as newscasts or traffic reports.

4.3.4 Selecting a Record Source

If the selected record deck (chosen in the **Location** drop-down menu at the top of the dialog) as been configured to operate with an audio switcher device, the appropriate audio input can be chosen from the **Source** drop-down menu.

4.3.5 Selecting a Record Destination

Each programmed recording must have a 'destination', a designated Cart/Cut which will hold the audio. The currently programmed destination is shown in the **Destination** field, and can be changed by clicking the **Select** button.

4.3.6 Setting the Active Days for a Recording

A check should be placed next to each day of the week for which a recording should be made in the **Active Days** box. If no days are checked, then *no* recordings at all will be made.

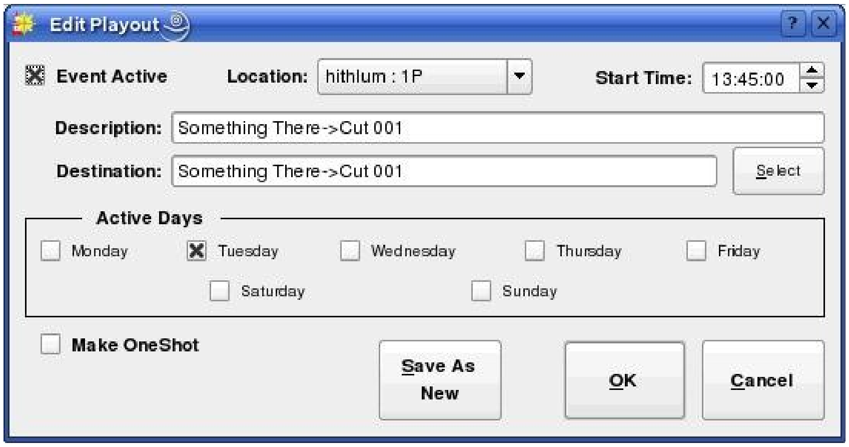
4.3.7 Record List Management with Event Active and Make OneShot

The record event will be actually executed only if **Event Active** (in the upper left corner of the dialog box) is checked. By clearing this box, it's possible to 'bank' a record event without actually having it run, useful for events that are only used sporadically.

For events that need to be executed only once, the **Make OneShot** box can be checked. Such an event will execute just once, and them automatically delete itself from the event list.

Section 4.4 – Automating Playouts

Automated playouts are configured by means of the Edit Playout dialog (see *Illustration 14*), which can be accessed either by clicking the **Playout** button in the Add Event dialog to create a new record event or by touching the **Edit** button to modify an existing event. The process of configuring a playout is very similar to that for configuring a recording – see the relevant part of Section 3.3, 'Automating Recordings' above for details.



☒ Event Active

Location: hithlum : 1P

Start Time: 13:45:00

Description: Something There->Cut 001

Destination: Something There->Cut 001

Active Days

☐ Monday ☒ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday

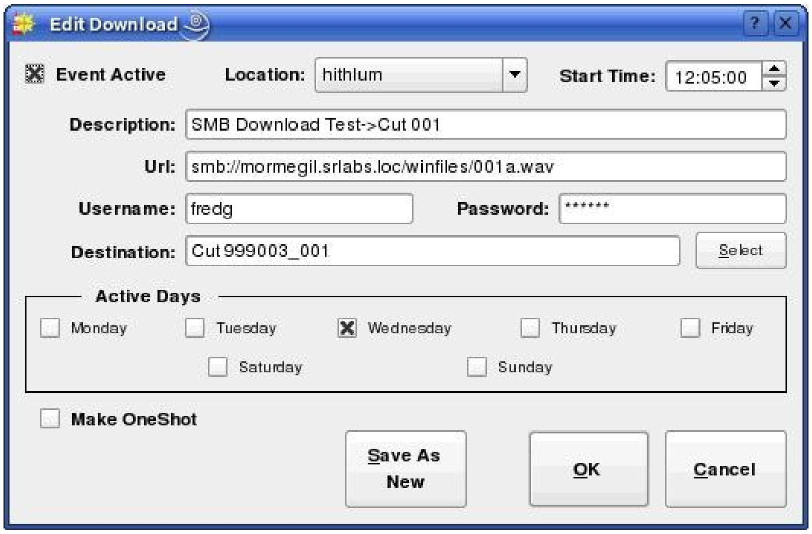
☐ Saturday ☐ Sunday

☐ Make OneShot

Illustration 14: The Edit Playout Dialog

Section 4.5 – Automating Uploads/Downloads

It's possible to use RDCatch to automatically upload and download material from both local and Internet-based servers. Automated downloads are configured by means of the Edit Download dialog, which can be accessed either by clicking the **Download** button in the Add Event dialog (see *Illustration 15*) to create a new record event or by touching the **Edit** button to modify an existing event.



Edit Download

☒ Event Active

Location: hithlum

Start Time: 12:05:00

Description: SMB Download Test->Cut 001

Url: smb://mormegil.srlabs.loc/winfiles/001a.wav

Username: fredg

Password: ******

Destination: Cut999003_001

Active Days

☐ Monday ☐ Tuesday ☒ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday

☐ Make OneShot

Illustration 15: The Edit Download Dialog

With the exception of the **Url**, **Username** and **Password** controls, the process of configuring a download is very similar to that for configuring a recording – see the relevant part of Section 3.3, 'Automating Recordings' above for details.

The **Url** control is used to specify the Uniform Resource Locater for the material to be downloaded. The following download types are supported: **http**, **ftp**, **smb** and **file.** The URL field can also include *wildcard* characters that can be used to construct date-based URLs, as shown in *Table 5*.

The **Username** and **Password** fields are used to indicate the username and password required for access to the server referenced in the URL. For public web pages and anonymous FTP servers, these fields can be left blank.

Automated uploads are configured by means of the Edit Upload dialog (see *Illustration 16*), which can be accessed either by clicking the **Upload** button in the Add Event dialog to create a new record event or by touching the **Edit** button to modify an existing event. The following upload types are supported: **ftp**, **smb** and **file.** As with downloads, the URL field can also include *wildcard* characters that can be used to construct date-based URLs, as shown in *Table 5*.

Configuration of an upload event is very similar to that of a download, with the addition of the **Export Format** control. This is used to set what file format should be used for the upload. Depending upon what software encoders have been installed by the system administrator, the following export types may be available:

- PCM16 Linear (*.wav)
- Free Lossless Audio Codec [FLAC] (*.flac)
- MPEG Layer 2 (*.mp2)
- MPEG Layer 3 (*.mp3)
- OggVorbis (*.ogg)

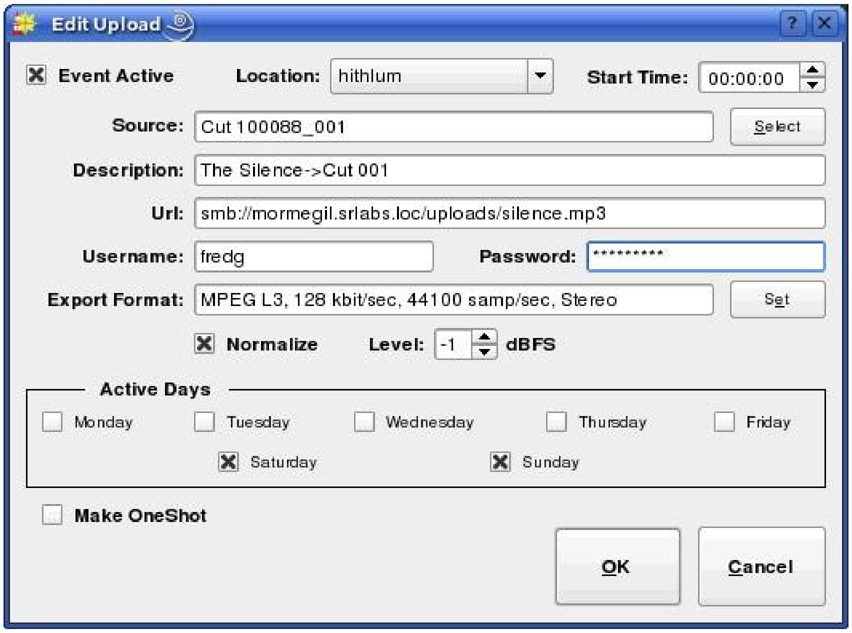
The desired upload format and parameters are set by clicking the **Set** button.

WILDCARD	***MEANING***
%a	Abbreviated Weekday Name (e.g. mon, tue)
%A	Full Weekday Name (e.g. monday, tuesday)
%b	Abbreviated Month Name (e.g. jan, feb)
%B	Full Month Name (e.g. January, February)
%C	Century
%d	Day of the Month, range 01 – 31, with leading zero
%D	Numerical Date, in format mm-dd-yy
%F	Numerical Date in ISO 8601 Format (yyyy-mm-dd)
%g	Two Digit Year, as per ISO 8601
%G	Two Digit Year Number, as per ISO 8601
%H	Hour, range 00 – 23, with leading zero
%j	Julian Day, range 000 – 366, with leading zero
%m	Minute, range 00 – 59, with leading zero
%S	Second, range 00 – 60, with leading zero
%u	Numerical Day of the Week, range 1 – 7, 1 = Monday
%V	Week Number, as per ISO 8601
%W	Same as %V
%w	Numerical Day of the Week, range 1 – 7, 1 = Sunday
%y	Two-Digit Year, range 00 – 99
%Y	Four Digit Year, range 0000 – 9999
%%	Literal '%' character

Table 5: RDCatch Date/Time Wildcards

Section 4.6 – Automating Macro Execution

It's possible to configure the automatic execution of a Macro Cart by means of the Edit Cart Event dialog (see *Illustration 17*), which can be accessed either by clicking the **Macro Cart** button in the Add Event dialog to create a new Macro Cart event or by touching the **Edit** button to modify an existing event. The process of configuring a macro cart event is very similar to that for configuring a recording – see the relevant part of Section 3.3, 'Automating Recordings' above for details.



☒ Event Active   Location: hithlum   Start Time: 00:00:00

Source: Cut 100088_001

Description: The Silence->Cut 001

Url: smb://mormegil.srlabs.loc/uploads/silence.mp3

Username: fredg   Password: *********

Export Format: MPEG L3, 128 kbit/sec, 44100 samp/sec, Stereo

☒ Normalize   Level: -1 dBFS

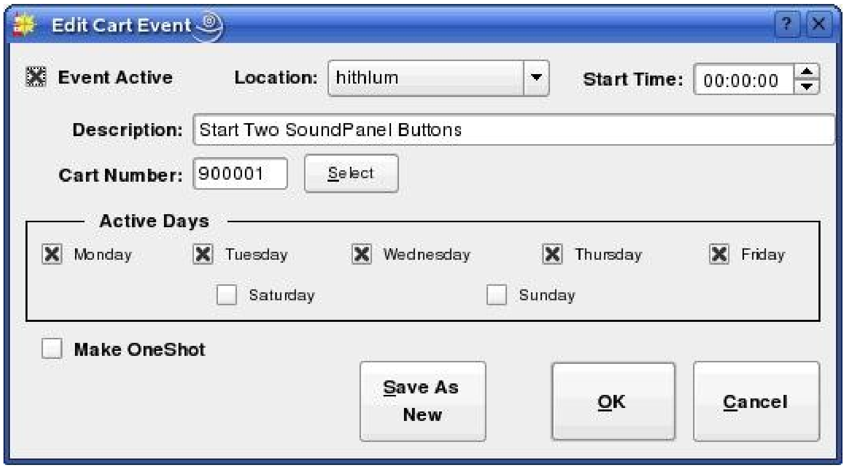
Active Days

☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday

☒ Saturday ☒ Sunday

☐ Make OneShot

Illustration 16: The Edit Upload Dialog



☒ Event Active   Location: hithlum   Start Time: 00:00:00

Description: Start Two SoundPanel Buttons

Cart Number: 900001

Active Days

☒ Monday ☒ Tuesday ☒ Wednesday ☒ Thursday ☒ Friday

☐ Saturday ☐ Sunday

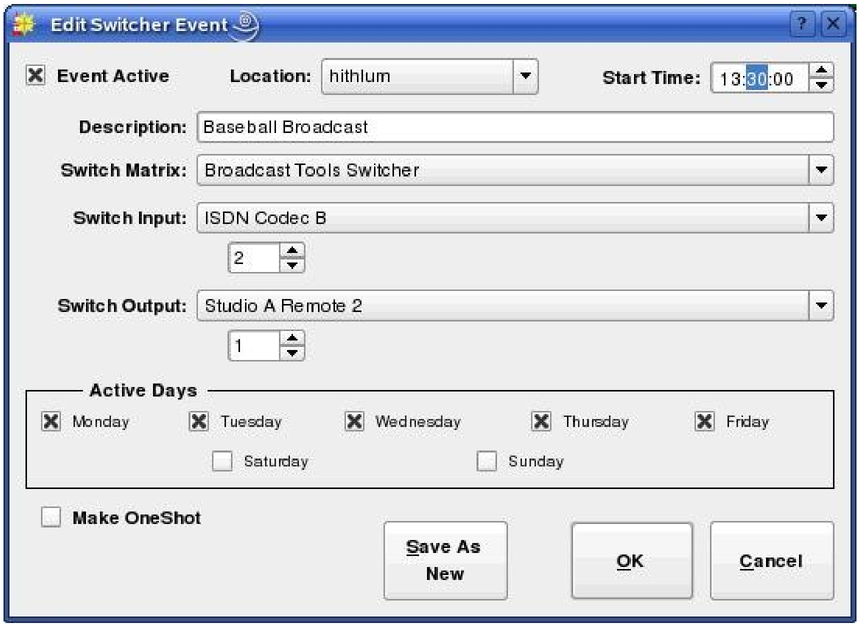
☐ Make OneShot

Illustration 17: The Edit Cart Event Dialog

Section 4.7 – Automating Switcher Operations

It's possible to configure an automatic operation on a switcher device by means of the Edit Switcher Event dialog (see *Illustration 18*), which can be accessed either by clicking the **Switch Event** button in the Add Event dialog to create a new switch event or by touching the **Edit** button to modify an existing event.

In addition to the usual fields, a switch event has **Switch Matrix** (the name of one of the switch matrices associated with the selected **Location**), **Switch Input** and **Switch Output** controls. When executed, a switch events causes a *take* operation to be performed on the specified switcher device between the specified input and output. It is possible to specify the input and output either by their alphanumeric names (assigned in RDAdmin) or by their absolute numbers.



☒ Event Active   Location: hithlum   Start Time: 13:30:00

Description: Baseball Broadcast

Switch Matrix: Broadcast Tools Switcher

Switch Input: ISDN Codec B
2

Switch Output: Studio A Remote 2
1

Active Days

☒ Monday   ☒ Tuesday   ☒ Wednesday   ☒ Thursday   ☒ Friday

□ Saturday   □ Sunday

□ Make OneShot

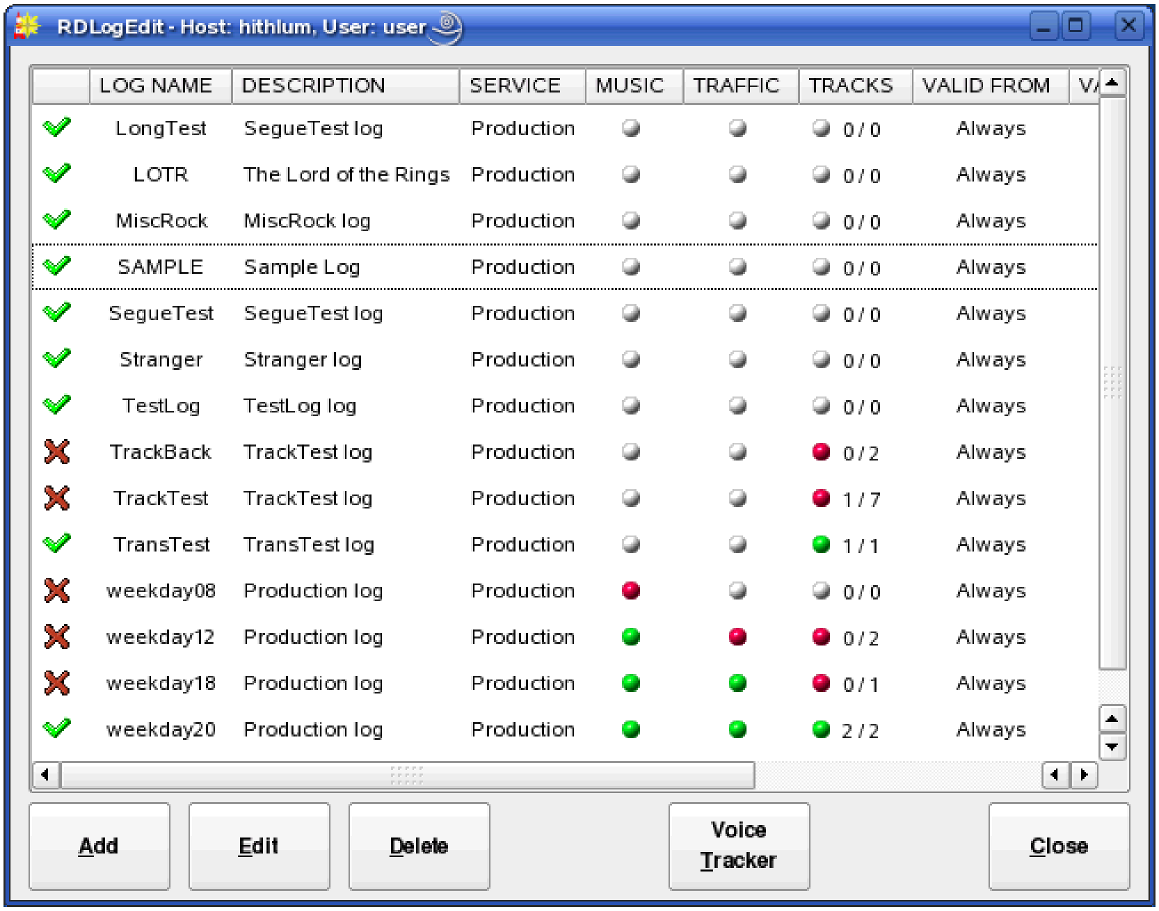
Illustration 18: The Edit Switcher Event Dialog

Chapter Five
Generating and Maintaining Logs with RDLogEdit

Section 5.0 Logs and Log Events

A Rivendell **log** is a sequence of one or more events to be executed by the system, arranged in chronological order. (This functionality is sometimes referred to as a *playlist* in other automation systems). Several different types of events can be included in a log, along with parameters governing how and under what circumstances they will be executed.

Upon startup, RDLogEdit will show the current list of all logs on the system, as in *Illustration 19*. A number of important attributes of logs can be seen from this illustration, the first being the **log name**, with a **summary status indicator** next to it. The name is an alpha-numeric label that is used as a unique "handle" by the system to reference each log, and can be up to a maximum of 64 characters long. The status indicator is intended as a quick visual guide as to whether a particular log is ready for air (green check mark) or not (red ex).



	LOG NAME	DESCRIPTION	SERVICE	MUSIC	TRAFFIC	TRACKS	VALID FROM	VA
✓	LongTest	SegueTest log	Production	⚪	⚪	⚪ 0 / 0	Always	
✓	LOTR	The Lord of the Rings	Production	⚪	⚪	⚪ 0 / 0	Always	
✓	MiscRock	MiscRock log	Production	⚪	⚪	⚪ 0 / 0	Always	
✓	SAMPLE	Sample Log	Production	⚪	⚪	⚪ 0 / 0	Always	
✓	SegueTest	SegueTest log	Production	⚪	⚪	⚪ 0 / 0	Always	
✓	Stranger	Stranger log	Production	⚪	⚪	⚪ 0 / 0	Always	
✓	TestLog	TestLog log	Production	⚪	⚪	⚪ 0 / 0	Always	
✗	TrackBack	TrackTest log	Production	⚪	⚪	🔴 0 / 2	Always	
✗	TrackTest	TrackTest log	Production	⚪	⚪	🔴 1 / 7	Always	
✓	TransTest	TransTest log	Production	⚪	⚪	🟢 1 / 1	Always	
✗	weekday08	Production log	Production	🔴	⚪	⚪ 0 / 0	Always	
✗	weekday12	Production log	Production	🟢	🔴	🔴 0 / 2	Always	
✗	weekday18	Production log	Production	🟢	🟢	🔴 0 / 1	Always	
✓	weekday20	Production log	Production	🟢	🟢	🟢 2 / 2	Always	

Illustration 19: RDLogEdit Log List

Next comes the log's **description**. This is a free-form alpha-numeric label that can be used to record any information that might be useful to have appear on the log list (e.g. "This log for Sunday's show, don't modify!").

Next comes a column showing the **owning service**. Each log is owned by exactly one service, which determines under what circumstances the log can be played and where electronic log reconciliation (ELR) data resulting from log playouts is sent (for an overview of Rivendell services, see section 1.1.3).

Next comes three "status indicator" columns ("MUSIC", "TRAFFIC" and "TRACKS") indicating the log's degree of readiness for air. A **red** indicator indicates that the particular data element is required but currently missing, a **green** indicator indicates an element is required and present, while a **white** indicator indicates that an element is not required. Additionally, the "TRACKS" column contains a pair of numbers indicating how many completed voice tracks exist in the log versus how many total track markers exist (the subject of voice tracks and track markers will be covered in more detail below). When all three of these status indicators show either **green** or **white**, the summary status indicator (at the beginning of the log's entry in the list) will show as a green check mark, while a **red** indicator in any of these three fields will show a red ex. (NOTE: because a log sports a red ex does *not* indicate that the respective log cannot be played. It is merely a visual indicator to allow logs to be quickly "eyeballed" for completeness).

Next comes a pair of columns indicating the valid **start date** and **end date** for the log.

Finally, there is a column indicating the log's **origin** –i.e. the place, date and time it was originally created.

A new log can be created by touching the **Add** button and entering a name, or an existing log inspected and modified by touching its entry on the log list and then touching the **Edit** button, resulting in the log being opened in the Edit Log dialog as shown in *Illustration 20*. The Edit Log dialog consists of three parts: the top section, where much of the information shown on the log list can be inspected and modified; the middle section, which shows the list of events comprising the log, and the bottom section, where buttons for modifying and saving the log are located. Each event in a log can be one of several different types, indicated by the icon displayed at the start of the line (see *Table 6* for a breakdown of the various icons). The following types of events can be incorporated into a Rivendell log:

5.0.1 Audio Carts

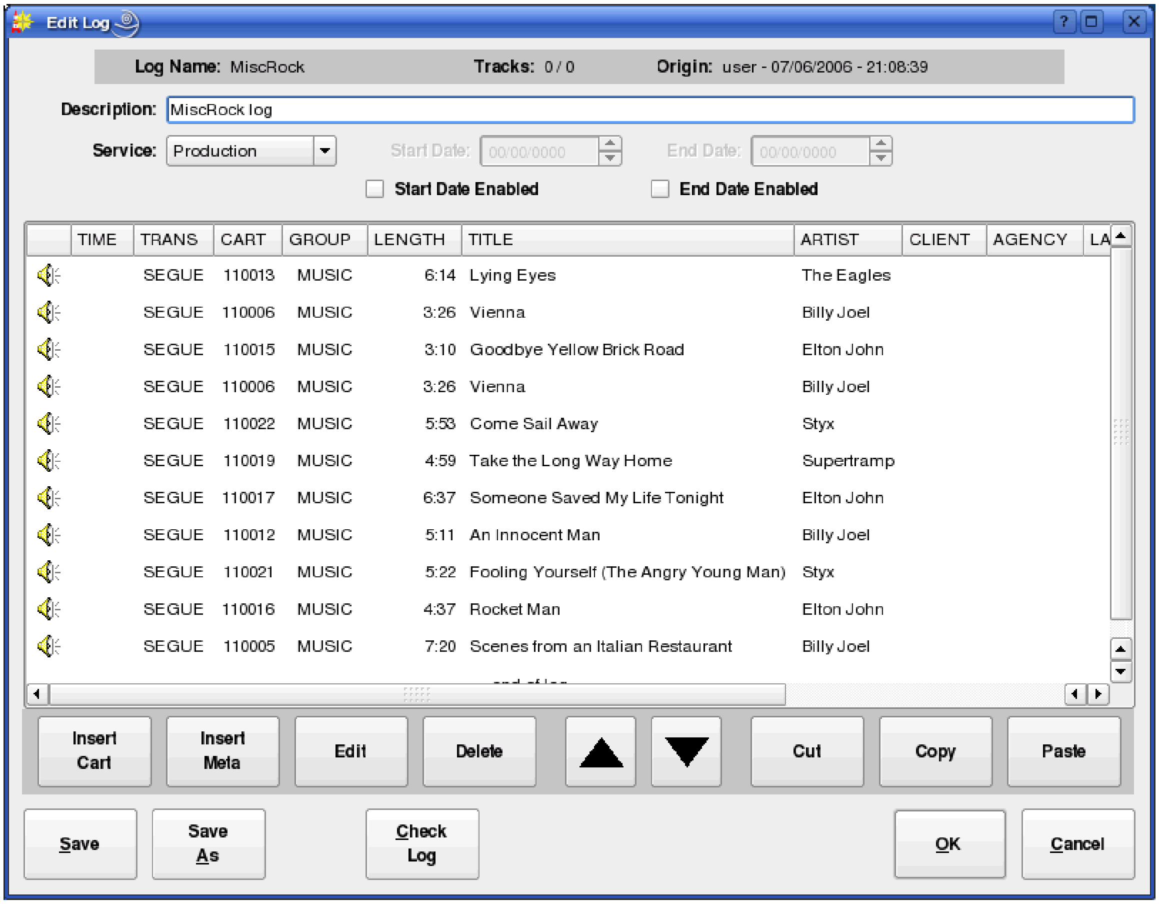
The first, and usually most common type of log event is an **audio cart**. As the name implies, audio carts are Library entries that contain audio material intended for playout. Audio carts were covered in detail in Chapter Two in the discussion about RDLibrary.

5.0.2 Macro Carts

A **macro cart** is a cart from the Library that contains one or more system commands that can be used to cause the system to take various actions. They were touched upon in Chapter Two in the discussion about RDLibrary, and will be discussed in detail in

5.0.3 Note Markers

A **note marker** is an entry in the log that contains text intended to be seen by operators and used as a guide or reminder (program coders sometimes refer to this sort of functionality as a *remark* or *comment,* as seen in the **REM** command used by BASIC programmers). Note markers belong to a class of log events known as *meta events* because (unlike carts, which exist in the Library independently of whether they are placed in a log or not), they have no independent existence outside of the specific log where they are placed. A note marker has absolutely no effect on the execution of a log other than to simply display some text at a specified point in a log, and as such can be useful as a mechanism for making notes or reminders to oneself or to others who may be executing the log.



Log Name: MiscRock Tracks: 0 / 0 Origin: user - 07/06/2006 - 21:08:39

Description: MiscRock log

Service: Production Start Date: 00/00/0000 End Date: 00/00/0000

□ Start Date Enabled □ End Date Enabled

TIME	TRANS	CART	GROUP	LENGTH	TITLE	ARTIST	CLIENT	AGENCY	LA
	SEGUE	110013	MUSIC	6:14	Lying Eyes	The Eagles			
	SEGUE	110006	MUSIC	3:26	Vienna	Billy Joel			
	SEGUE	110015	MUSIC	3:10	Goodbye Yellow Brick Road	Elton John			
	SEGUE	110006	MUSIC	3:26	Vienna	Billy Joel			
	SEGUE	110022	MUSIC	5:53	Come Sail Away	Styx			
	SEGUE	110019	MUSIC	4:59	Take the Long Way Home	Supertramp			
	SEGUE	110017	MUSIC	6:37	Someone Saved My Life Tonight	Elton John			
	SEGUE	110012	MUSIC	5:11	An Innocent Man	Billy Joel			
	SEGUE	110021	MUSIC	5:22	Fooling Yourself (The Angry Young Man)	Styx			
	SEGUE	110016	MUSIC	4:37	Rocket Man	Elton John			
	SEGUE	110005	MUSIC	7:20	Scenes from an Italian Restaurant	Billy Joel			

Illustration 20: The Edit Log Dialog

5.0.4 Track Markers

A **track marker** is another meta event that is very similar in operation to note markers, with one key addition: track markers designate or "bookmark" a place in the log where a voice track is to be recorded. (The entire topic of voice tracks and tracking will be covered in detail in Chapter Eight). As with note markers, track markers have absolutely no effect on the execution of a log.

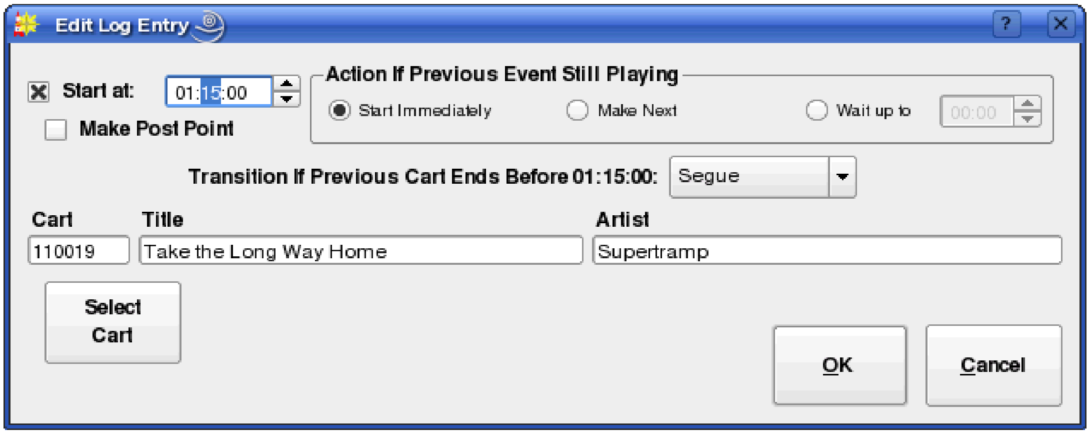
5.0.5 Chain Events

A third type of meta event is the **chain event.** Unlike markers, a chain event has a very definite effect when executed in a log: namely, causing a new log (whose name is specified as part of the event) to be loaded and executed. Chain events are often placed at the very end of a log, typically just before midnight so as to cause a new log to load for the next broadcast day.

5.0.6 Import Links

An **import link** is a placeholder event that shows where events imported from the external music or traffic scheduling system will eventually go. They will be covered in detail in the chapter on RDLogManager.

Each event in a Rivendell log can have its parameters modified by touching its entry in the Edit Log dialog and then clicking the **Edit** button, thus opening up the Edit Log Entry dialog, shown in *Illustration 21* for a cart event, or *Illustration 22* for a meta event.



Edit Log Entry

☒ Start at: 01:15:00

□ Make Post Point

Action If Previous Event Still Playing

● Start Immediately ○ Make Next ○ Wait up to 00:00

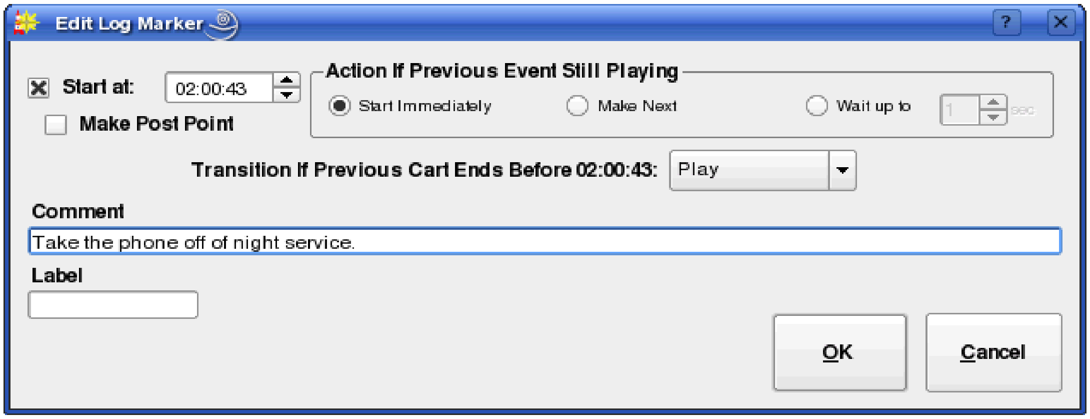
Transition If Previous Cart Ends Before 01:15:00: Segue

Cart: 110019

Title: Take the Long Way Home

Artist: Supertramp

Illustration 21: The Edit Log Entry Dialog for Cart Events



Edit Log Marker

☒ Start at: 02:00:43

□ Make Post Point

Action If Previous Event Still Playing

● Start Immediately ○ Make Next ○ Wait up to 1 sec

Transition If Previous Cart Ends Before 02:00:43: Play

Comment: Take the phone off of night service.

Label:

Illustration 22: The Edit Log Entry Dialog for Meta Events

Section 5.1 Event Transitions

Each event in a log has a **transition type,** shown in the “TRANS” column of the Edit Log dialog. The transition type determines what happens when one event in a log ends and the next starts. Three basic transition types can exist in a Rivendell log: **PLAY**, **SEGUE** and **STOP**.

🔈	Audio Cart
🔈	Voice Track Audio Cart
⚙	Macro Cart
📝	Note Marker
T	Track Marker
C	Chain Event
🎵	Music Import Link
T	Traffic Import Link

Table 6: Rivendell Log Event Type Icons

5.1.1 The PLAY Transition

If an event has a PLAY transition, then it will begin playing when the previous event has finished. PLAY transitions are used when automatic event sequencing is desired with no audio overlap (such as when playing two voice-only announcements back-to-back).

5.1.2 The SEGUE Transition

SEGUE transitions are similar to PLAY transitions, with one key difference: if the finishing event contains segue data (either from the Library or from a custom transition programmed in the voice tracker), then the event will start *before* the prior event is finished, causing the two pieces of audio to overlap and mix together. SEGUE transitions can be a very powerful tool for creating a variety of special effects, particularly when used in conjunction with musical material.

5.1.3 The STOP Transition

As the name implies, STOP transitions cause execution of the log to be suspended prior to execution of the event. This is often the desired behavior in situations where the log playout needs to be synchronized to one or more external audio sources (such as remote satellite feeds), and is commonly used in conjunction with Hard Timed events (see below).

Section 5.2 Time and Time Types

All Rivendell log events have an associated **time type**, which controls what effect (if any) the passage of time will have on the event. There are two basic time types: *relative* and *hard*. Additionally, the *hard* time type has several additional options that further modify its behavior.

5.2.1 The Relative Time Type

The default time type for log events, a relative time type simply means that the event is assumed to have a start time of whenever the previous event ends (if it has a PLAY or SEGUE transition) or whenever it is started (if it has a STOP transition).

5.2.2 The Hard Time Type

A hard time type causes the event to be executed or otherwise acted upon when the wall clock equals the time associated with the event. Hard times are a powerful feature that can be used to synchronize the log to various external events. An event can be assigned a hard time by clicking the **Start at** check box in the Edit Log Entry and filling in the desired time, and will show up with the letter 'T' appearing at the beginning of its listed time in the “TIME” column of the Edit Log dialog. An event which has been assigned a hard time can also be set to be a **Post Point** by checking the **Make Post Point** check box (the concept of post points will be discussed in detail in the chapter covering RDAirPlay).

The specific action that is performed when the time matches is determined by the option parameters supplied as part of the event. Three basic actions are possible:

- Start the event immediately
- Cue to the event (“Make Next”)
- Wait up to *N* Seconds, then start the event

5.2.2.1 Start Immediately

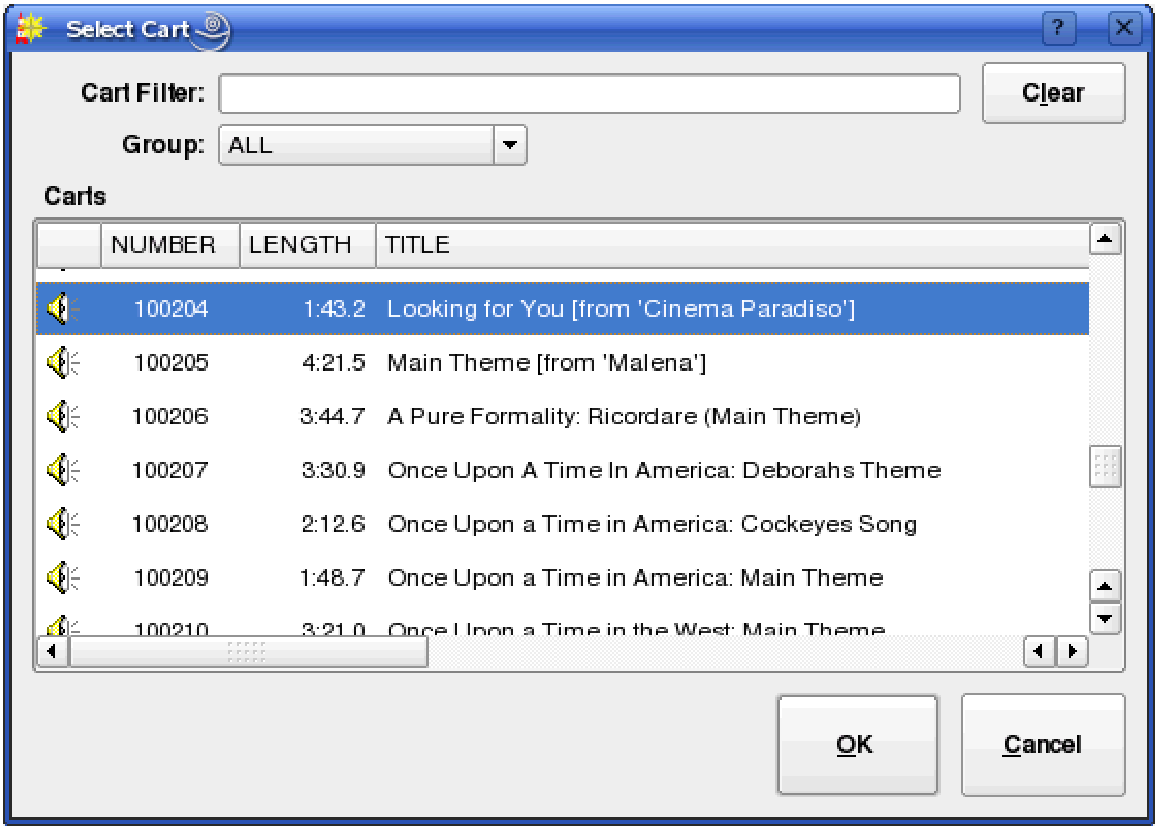
As implied by the name, if the event is set to start immediately, it will be started as soon as the hard time is reached. Any currently playing events in the log will be stopped down.

5.2.2.2 Cue to the Event (“Make Next”)

If set to 'Make Next', the event will be cued up to become the next event to be executed in the log, bypassing any intervening events in the log between the currently playing event and the hard timed one. Any currently playing events are unaffected.

5.2.2.3 Wait up to *N* Seconds, then start the event

Very similar to “start immediately”, with the difference that, if one or more events are currently playing, the log will wait up to the specified number of seconds before stopping them and starting the new event.



Cart Filter:

Group: ALL

Carts

	NUMBER	LENGTH	TITLE
🔈	100204	1:43.2	Looking for You [from 'Cinema Paradiso']
🔈	100205	4:21.5	Main Theme [from 'Malena']
🔈	100206	3:44.7	A Pure Formality: Ricordare (Main Theme)
🔈	100207	3:30.9	Once Upon A Time In America: Deborahs Theme
🔈	100208	2:12.6	Once Upon a Time in America: Cockeyes Song
🔈	100209	1:48.7	Once Upon a Time in America: Main Theme
🔈	100210	3:21.0	Once Upon a Time in the West: Main Theme

Illustration 23: The Select Cart Dialog

Section 5.3 Editing Log Event Parameters

5.3.1 Specifying a Cart

The cart number to use for an event can be specified by touching the **Select Cart** button in the Edit Log Entry dialog, which will open up the Select Cart dialog, as shown in *Illustration 23*. Alternatively, it is possible to simply enter the cart number in the **Cart** field if the number is already known. The **Title** and **Artist** information will be automatically supplied by the system from the cart's label.

5.3.2 Specifying Meta Event Parameters

Note marker and track marker events each take only a single parameter: a **Comment** text that will show up on the log entry. In the case of a chain event, the name of the log to chain to must be supplied in the **Log Name** field, or the **Select** button can be touched to bring up the Select Log dialog to allow a name to picked from a list of all those available. Note that meta events are assigned transition and time types just the same as cart events.

5.3.3 Rearranging Log Events

Existing events in a log can be cut, copied, pasted or rearranged by touching the appropriate buttons in the Edit Log dialog. In addition, touch the **Delete** button will cause the selected log event(s) to be removed from the log.

5.3.4 Saving or Abandoning Changes to a Log

Any changes made to a log can be saved by touching either the **Save** or **OK** buttons in the Edit Log dialog. The current log can be saved under a different name by touching the **Save As** button, while touching **Cancel** will abandon any changes made since the last save.

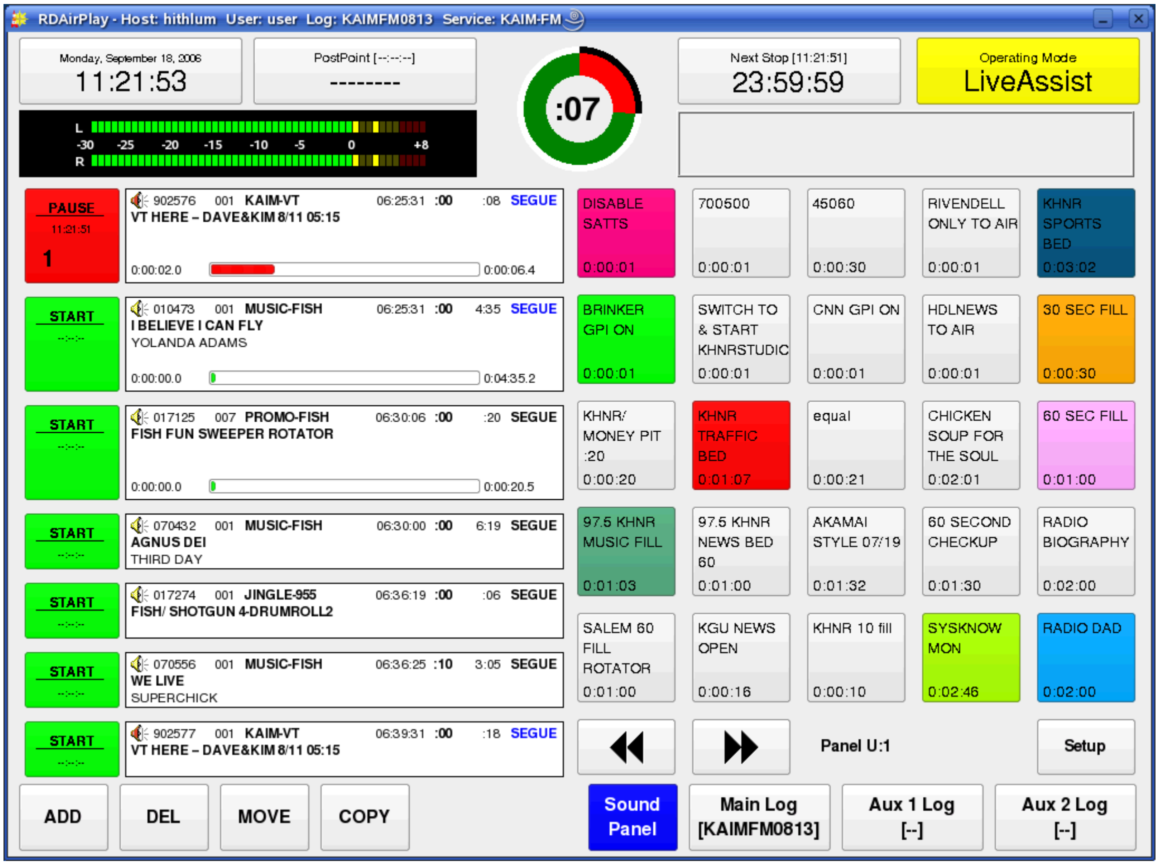
5.3.5 Missing/Invalid Cart Events

If a given event has a problem (such as referencing a cart that does not exist in the Library, or that is not enabled for play on the log's owning service) its entry will be highlighted either RED (indicating a missing/invalid cart) or MAGENTA (indicating a cart without permission to run on the owning service). It's also possible to generate an exception report summarizing problem cart entries by touching the **Check Log** button.

Chapter Six
Running Logs with RDAirPlay

Section 6.0 Overview

RDAirPlay is the Rivendell module used to run logs generated by the RDLogEdit or RDLogManager (for an overview of Rivendell logs, see Chapter Four). It contains a wide array of features for enabling playout of audio content in live assist as well as fully automated environments.


RDAirPlay - Host: hithlum User: user Log: KAIMFM0813 Service: KAIM-FM
Monday, September 18, 2006
11:21:53
PostPoint [--:--:--]

:07
Next Stop [11:21:51]
23:59:59
Operating Mode
LiveAssist
L
-30 -25 -20 -15 -10 -5 0 +8
R
PAUSE
11:21:51
1
902576 001 KAIM-VT 06:25:31 :00 :08 SEGUE
VT HERE – DAVE&KIM 8/11 05:15
0:00:02.0 0:00:06.4
START
-:--:--
010473 001 MUSIC-FISH 06:25:31 :00 4:35 SEGUE
I BELIEVE I CAN FLY
YOLANDA ADAMS
0:00:00.0 0:04:35.2
START
017125 007 PROMO-FISH 06:30:06 :00 :20 SEGUE
FISH FUN SWEEPER ROTATOR
0:00:00.0 0:00:20.5
START
070432 001 MUSIC-FISH 06:30:00 :00 6:19 SEGUE
AGNUS DEI
THIRD DAY
START
017274 001 JINGLE-955 06:36:19 :00 :06 SEGUE
FISH/ SHOTGUN 4-DRUMROLL2
START
070556 001 MUSIC-FISH 06:36:25 :10 3:05 SEGUE
WE LIVE
SUPERCHICK
START
902577 001 KAIM-VT 06:39:31 :00 :18 SEGUE
VT HERE – DAVE&KIM 8/11 05:15
DISABLE SATTS 0:00:01
700500 0:00:01
45060 0:00:30
RIVENDELL ONLY TO AIR 0:00:01
KHNR SPORTS BED 0:03:02
BRINKER GPI ON 0:00:01
SWITCH TO & START KHNRSTUDIO 0:00:01
CNN GPI ON 0:00:01
HDLNEWS TO AIR 0:00:01
30 SEC FILL 0:00:30
KHNR/ MONEY PIT :20 0:00:20
KHNR TRAFFIC BED 0:01:07
equal 0:00:21
CHICKEN SOUP FOR THE SOUL 0:02:01
60 SEC FILL 0:01:00
97.5 KHNR MUSIC FILL 0:01:03
97.5 KHNR NEWS BED 60 0:01:00
AKAMAI STYLE 07/19 0:01:32
60 SECOND CHECKUP 0:01:30
RADIO BIOGRAPHY 0:02:00
SALEM 60 FILL ROTATOR 0:01:00
KGU NEWS OPEN 0:00:16
KHNR 10 fill 0:00:10
SYSKNOW MON 0:02:46
RADIO DAD 0:02:00
Panel U:1
Setup
ADD
DEL
MOVE
COPY
Sound Panel
Main Log [KAIMFM0813]
Aux 1 Log [--]
Aux 2 Log [--]

Illustration 24: RDAirPlay Main Screen

Section 6.1 Log Machines

Fundamental to the operation of RDAirPlay is the concept of a **log machine**. A log machine is a virtual "device" into which a Rivendell log may be loaded and executed. RDAirPlay has three such log machines, called **Main Log**, **Aux 1 Log** and **Aux 2 Log**. Each of these log machines is completely independent of the others in the sense that different logs can be loaded and executed simultaneously in the respective machines.

Section 6.2 Layout

As shown in *Illustration 24*, the RDAirPlay main screen consists of four primary areas: the **top area**, which contains a variety of indicators for use in live assist situations as well as a set of audio meters; the **button widget**, which occupies the bulk of the left-hand side of the screen; the **right-hand side**, which displays either a SoundPanel array or a full log width; and the **edit buttons** in the lower left-hand corner of the screen.

The top area contains the following indicators:

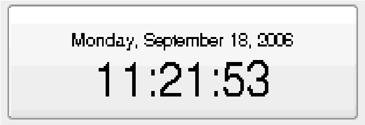


Illustration 25: The Wall Clock

6.2.0 The Wall Clock

In the upper left-hand corner is **wall clock** indicator, which indicates the current system date and time. The style used for displaying times throughout RDAirPlay can be toggled between 24 hour "military" format and the traditional "AM/PM" presentation by clicking once on this display. If the system administrator has enabled it, this display will also flash RED to indicate possible clock inaccuracy due to loss of master clock synchronization.

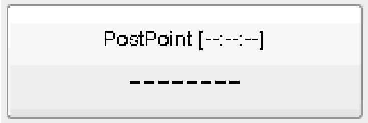


Illustration 26: The Post Point Counter (Idle)

6.2.1 The Post Point Counter

Immediately to the right of the wall clock is the **Post Point Counter**. A *post point* is an attribute applied to a log event with a hard time type. The post point counter uses this information to display countdown and timing information.

The counter can be in one of four possible states: Idle, On Time, Under Time or Over Time. If the next upcoming hard timed event does not have its post point attribute set, then the counter will be in Idle mode (see *Illustration 26*). If the attribute is set however, then the counter will provide an estimate of how "on-time" the log currently is, on the basis of the current time and events still scheduled to be played.

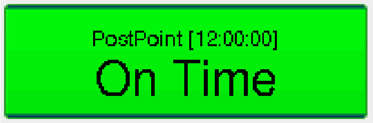


Illustration 27: The Post Point Counter (On Time)

If the playout is such that the post point will be reached within one second of its programmed time, then the counter will be in On Time mode (see *Illustration 27*). The value shown in the square brackets is the scheduled time of the point point.

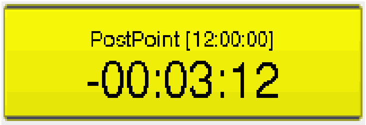


Illustration 28: The Post Point Counter (Early)

If the playout is such that the post point will be reached one second or more before its programmed time, then the counter will be in Early mode (see *Illustration 28*). It will also give an indication of how much more material would need to be added to make the join on time.

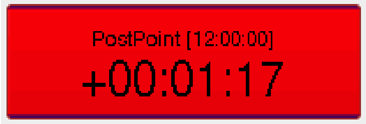


Illustration 29: The Post Point Counter (Late)

If the playout is such that the post point will be reached one second or more after its programmed time, then the counter will be in Late mode (see *Illustration 29*). It will also give an indication of how much material would need to be removed to make the join on time.

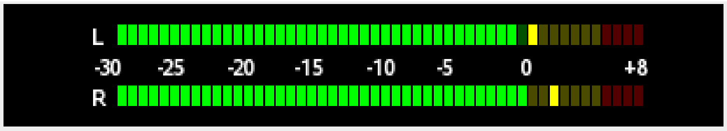


Illustration 30: The Audio Meter

6.2.2 The Audio Meter

Immediately beneath the wall clock and post point counter is the **audio meter**. The meter shows the current peak levels of audio being played out of RDAirPlay, with '0' level referenced to -16 dBFS.

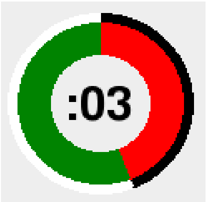
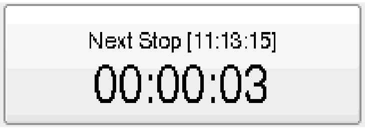


Illustration 31: The Pie Wedge Widget

6.2.3 The Pie Wedge Widget

In the top center of the top area is the **pie wedge widget**. This widget counts down the final few seconds of each event. The length of time it counts down, along with whether it counts to the start of the next transition or the absolute end of the event are both configurable in RDADmin. The color of the band that grows as the countdown progresses (shown RED in *Illustration 31*) will change color to indicate if the currently playing event is the last event before a log stopdown. If it is the last, it will be RED, if not, GREEN. A BLUE band and countdown will also appear to indicate the event's *talk time* (if talk time markers have been set in the underlying cart).



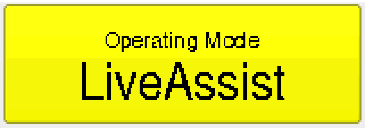
Next Stop [11:13:15]

00:00:03

Illustration 32: The Next Stop Counter

6.2.4 The Next Stop Counter

Immediately to the right of the pie wedge widget is the **next stop counter**. The large numerals indicate the predicted interval of time before the next stopdown of the Main Log machine, with the actual predicted time in the square brackets. If the Main Log is already stopped, then the counter simply displays 'Stopped'.



Operating Mode

LiveAssist

Illustration 33: The Mode Indicator

6.2.5 The Mode Indicator

In the upper right-hand corner of the top area is the **mode indicator**, showing the current *automation mode* of the log machines. Three different modes are possible: *Automatic*, in which all log features, including PLAY and SEGUE transitions and hard times are fully enabled; *LiveAssist,* in which no automatic transitions or hard start times are executed but automatic crossfades are done between elements; and *Manual*, which is very similar to LiveAssist except that not even automatic crossfades are enabled (thus permitting fully manual crossfade control by means of an external console). To change RDAirPlay to a different mode, simply touch the mode indicator until the desired mode is indicated.

Someone is at the door.

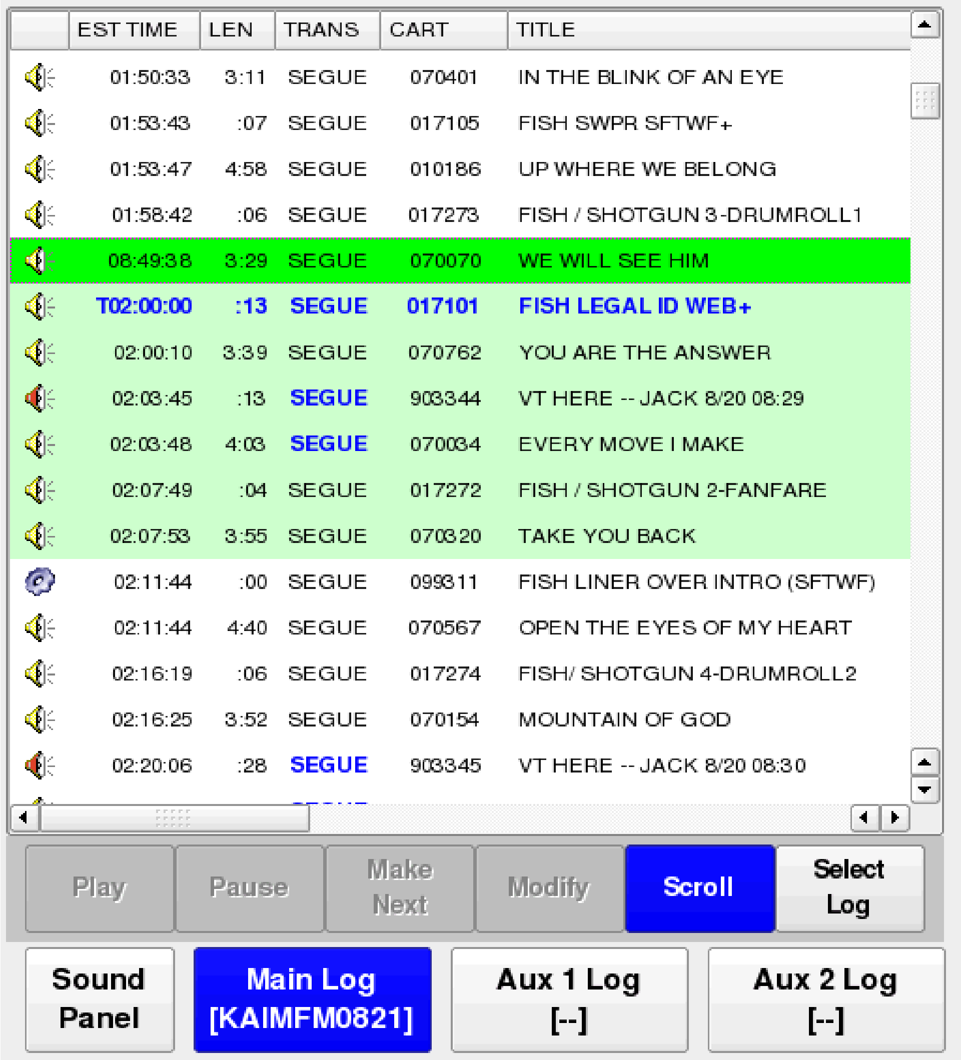
Illustration 34: The Label Area

6.2.6 The Label Area

Immediately below the next stop counter and mode indicator is the **label area**. Text messages can be made to appear here (by means of RML commands) to signal the operator concerning the state of the system or need to take some kind of action.

6.2.7 The Right-Hand Side

Directly below the label area is the **right-hand side**. The right-hand side can display either a **SoundPanel array** or a **full log widget** for each of the three log machines, selected by clicking the appropriate button in the lower right-hand corner of the screen. (NOTE: depending upon how the system administrator has configured the system, not all of the log machine buttons may be visible on your system).

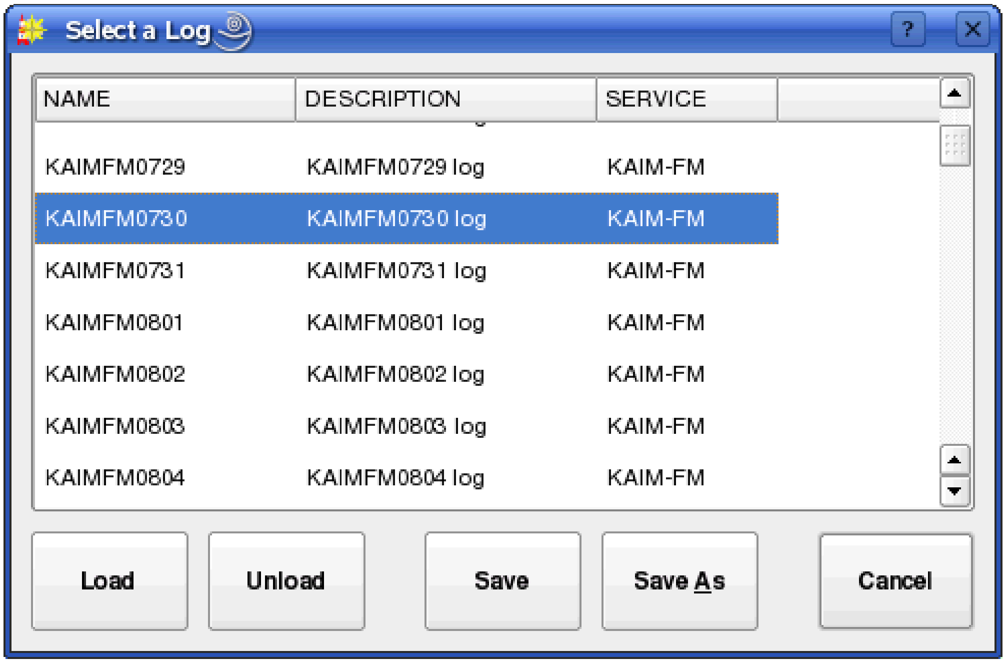


	EST TIME	LEN	TRANS	CART	TITLE
🔈	01:50:33	3:11	SEGUE	070401	IN THE BLINK OF AN EYE
🔈	01:53:43	:07	SEGUE	017105	FISH SWPR SFTWF+
🔈	01:53:47	4:58	SEGUE	010186	UP WHERE WE BELONG
🔈	01:58:42	:06	SEGUE	017273	FISH / SHOTGUN 3-DRUMROLL1
🔈	08:49:38	3:29	SEGUE	070070	WE WILL SEE HIM
🔈	T02:00:00	:13	SEGUE	017101	FISH LEGAL ID WEB+
🔈	02:00:10	3:39	SEGUE	070762	YOU ARE THE ANSWER
🔈	02:03:45	:13	SEGUE	903344	VT HERE -- JACK 8/20 08:29
🔈	02:03:48	4:03	SEGUE	070034	EVERY MOVE I MAKE
🔈	02:07:49	:04	SEGUE	017272	FISH / SHOTGUN 2-FANFARE
🔈	02:07:53	3:55	SEGUE	070320	TAKE YOU BACK
●	02:11:44	:00	SEGUE	099311	FISH LINER OVER INTRO (SFTWF)
🔈	02:11:44	4:40	SEGUE	070567	OPEN THE EYES OF MY HEART
🔈	02:16:19	:06	SEGUE	017274	FISH/ SHOTGUN 4-DRUMROLL2
🔈	02:16:25	3:52	SEGUE	070154	MOUNTAIN OF GOD
🔈	02:20:06	:28	SEGUE	903345	VT HERE -- JACK 8/20 08:30

Illustration 35: The Full Log Widget

6.2.8 The Full Log Widget

As the name implies, the **full log widget** can be used to view the contents of a log over its entire length. To load a log, touch the **Select Log** button to bring up the Select Log dialog, select the desired log from the list and then touch **Load**. The currently loaded log can also be saved by touching the **Save** or **Save As** buttons, or the current log unloaded by touching **Unload**. See *Illustration 36*.

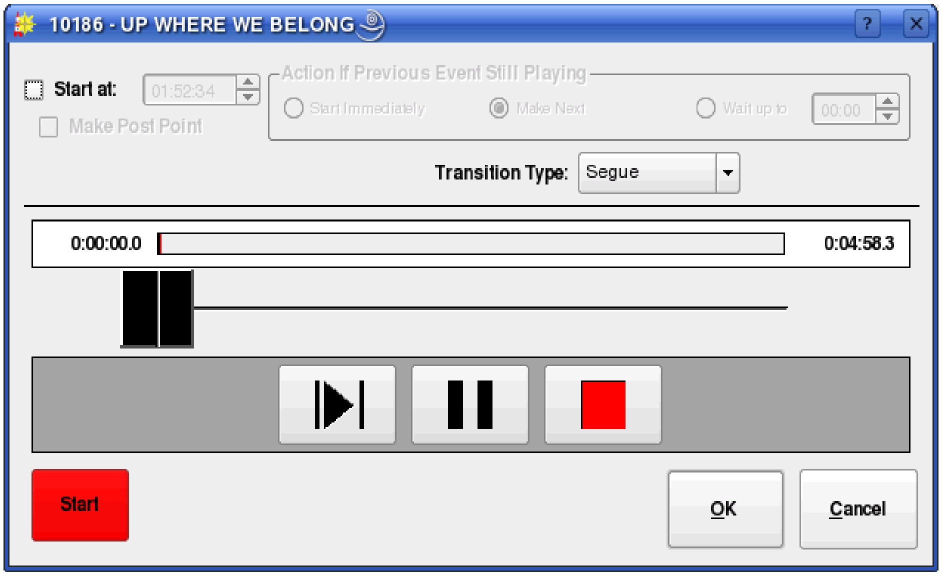


NAME	DESCRIPTION	SERVICE
KAIMFM0729	KAIMFM0729 log	KAIM-FM
KAIMFM0730	KAIMFM0730 log	KAIM-FM
KAIMFM0731	KAIMFM0731 log	KAIM-FM
KAIMFM0801	KAIMFM0801 log	KAIM-FM
KAIMFM0802	KAIMFM0802 log	KAIM-FM
KAIMFM0803	KAIMFM0803 log	KAIM-FM
KAIMFM0804	KAIMFM0804 log	KAIM-FM

Illustration 36: The Select Log Dialog

Once a log is loaded, it can be started at any point by touching an event and then pressing the **Play** button. Any playing event can likewise be stopped by touching in the event and then pressing the **Stop** button. To cue-up an event so that it is the next to play (indicated by the event being the first with a light green background), touch the event and then press the **Make Next** button. The play parameters of an event can be modified by touching the event, then pressing the **Modify** button, bringing up the Edit Event dialog (see *Illustration 37*).

In addition to having the ability to modify the event's time and transition parameters, the Edit Event dialog can be used to audition the event's audio in Cue or set the start position of the audio for on-air playback (so as to allow a program to be joined “in progress”, for example). To audition the audio, simply press the play button. The slider can be moved to adjust where in the audio to audition from. To set the start position, press the **Start** button and then position the slider where you wish the start to be. The red line on progress display indicates the current start position. Pressing the **Start** button again returns the dialog to Audition mode.



10186 - UP WHERE WE BELONG

□ Start at: 01:52:34

□ Make Post Point

Action If Previous Event Still Playing: ○ Start Immediately ● Make Next ○ Wait up to 00:00

Transition Type: Segue

0:00:00.0 0:04:58.3

Illustration 37: The Edit Event Dialog

When running a log, it is often desirable to have the currently playing event always in sight. To do this, toggle the **Scroll** button on (blue background).

6.2.9 The Button Log Widget

To the left of the full log widget is the **button log widget**, consisting of a column of seven large buttons adjacent to cart labels. This widget provides another, specialized "view" of the Main Log log machine. Specifically, the first seven currently playing and/or next events in that log machine will always be visible here. Events visible in the button log will be shown in the full log widget as having a green background. Unlike the full log widget, the button log is always visible, regardless of which display has been selected for the right-hand side.

To start an event from the button log, simply touch an event's corresponding **Start** button. Touching the button of a running event will either (depending upon how the system administrator has configured RDAirPlay) stop or pause it. To modify an event's parameters (via the Edit Event dialog), simply double-click the event's cart label.

Section 6.3 Editing a Log

It is possible to edit the log loaded into any of the three log log machines by means of the **log edit buttons** in the lower left-hand corner of the screen.

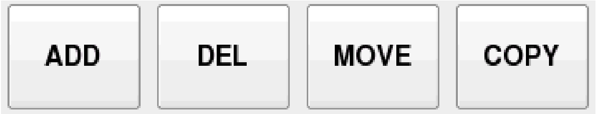
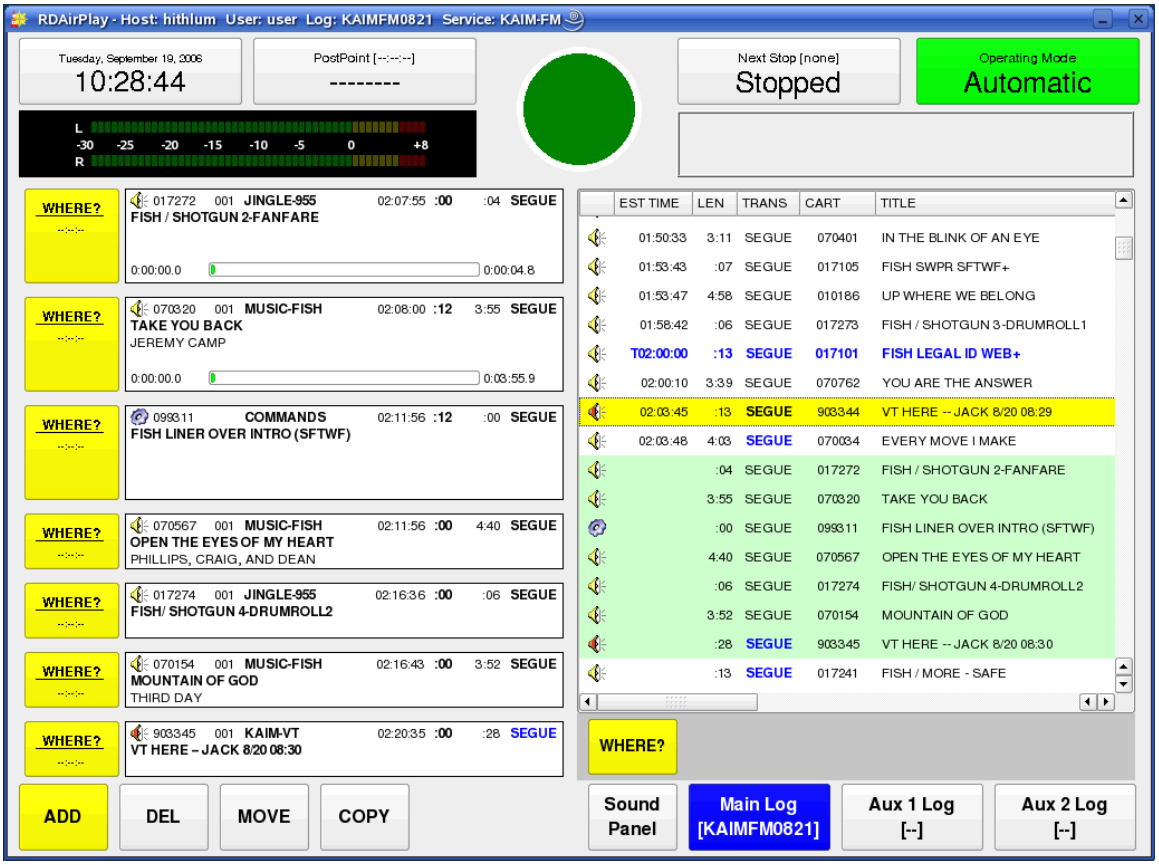


Illustration 38: The Log Edit Buttons

6.2.10.1 Adding an Event

To add an event, touch the **ADD** button to open the Select Cart dialog, pick the desired cart and then touch **OK**. To place the selected cart using the button log widget, simply touch one of the yellow **WHERE?** buttons. To place it using the full log widget, click the event where you wish it to go and then touch the yellow **WHERE?** button. If, after selecting a cart from the Select Cart dialog, you decide you don't want to add it after all, simply touch the **ADD** button again to cancel the operation (see *Illustration 39*).



RDAirPlay - Host: hithlum User: user Log: KAIMFM0821 Service: KAIM-FM

Tuesday, September 19, 2006
10:28:44

PostPoint [--:--:--]

Next Stop [none]
Stopped

Operating Mode
Automatic

WHERE? --:--:-- | 017272 001 JINGLE-955 02:07:55 :00 :04 SEGUE
FISH / SHOTGUN 2-FANFARE
0:00:00.0 0:00:04.8

WHERE? --:--:-- | 070320 001 MUSIC-FISH 02:08:00 :12 3:55 SEGUE
TAKE YOU BACK
JEREMY CAMP
0:00:00.0 0:03:55.9

WHERE? --:--:-- | 099311 COMMANDS 02:11:56 :12 :00 SEGUE
FISH LINER OVER INTRO (SFTWF)

WHERE? --:--:-- | 070567 001 MUSIC-FISH 02:11:56 :00 4:40 SEGUE
OPEN THE EYES OF MY HEART
PHILLIPS, CRAIG, AND DEAN

WHERE? --:--:-- | 017274 001 JINGLE-955 02:16:36 :00 :06 SEGUE
FISH/ SHOTGUN 4-DRUMROLL2

WHERE? --:--:-- | 070154 001 MUSIC-FISH 02:16:43 :00 3:52 SEGUE
MOUNTAIN OF GOD
THIRD DAY

WHERE? --:--:-- | 903345 001 KAIM-VT 02:20:35 :00 :28 SEGUE
VT HERE – JACK 8/20 08:30

EST TIME	LEN	TRANS	CART	TITLE
01:50:33	3:11	SEGUE	070401	IN THE BLINK OF AN EYE
01:53:43	:07	SEGUE	017105	FISH SWPR SFTWF+
01:53:47	4:58	SEGUE	010186	UP WHERE WE BELONG
01:58:42	:06	SEGUE	017273	FISH / SHOTGUN 3-DRUMROLL1
T02:00:00	:13	SEGUE	017101	FISH LEGAL ID WEB+
02:00:10	3:39	SEGUE	070762	YOU ARE THE ANSWER
02:03:45	:13	SEGUE	903344	VT HERE -- JACK 8/20 08:29
02:03:48	4:03	SEGUE	070034	EVERY MOVE I MAKE
	:04	SEGUE	017272	FISH / SHOTGUN 2-FANFARE
	3:55	SEGUE	070320	TAKE YOU BACK
	:00	SEGUE	099311	FISH LINER OVER INTRO (SFTWF)
	4:40	SEGUE	070567	OPEN THE EYES OF MY HEART
	:06	SEGUE	017274	FISH/ SHOTGUN 4-DRUMROLL2
	3:52	SEGUE	070154	MOUNTAIN OF GOD
	:28	SEGUE	903345	VT HERE -- JACK 8/20 08:30
	:13	SEGUE	017241	FISH / MORE - SAFE

Illustration 39: Adding an Event

6.3.0 Deleting an Event

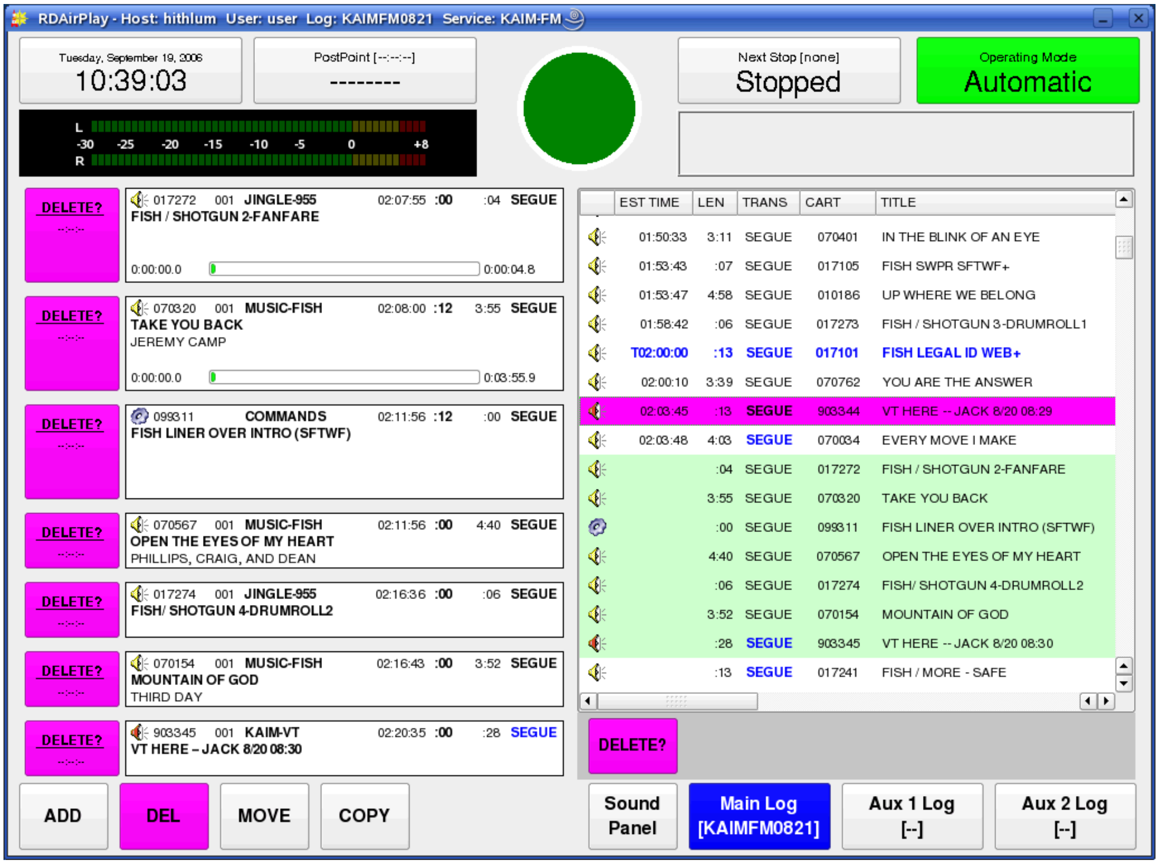
To delete an event, touch the **DEL** button, then touch one of the violet **DELETE** buttons in the button log widget, or select an event and then touch the violet **DELETE** button. To cancel the operation, simply touch the **DEL** button again (see *Illustration 40*).

6.3.1 Moving an Event

To move an event, touch the **Move** button, then touch one of the violet **MOVE** buttons in the button log widget, or select an event and then touch the violet **MOVE** button, then touch one of the yellow **TO** buttons in the button log widget, or select an event and then touch the yellow **TO** button. To cancel the operation at any stage, simply touch the **MOVE** button again. It is perfectly permissible to move an event between two different log machines.

6.3.2 Copying an Event

To copy an event, touch the **Copy** button, then touch one of the violet **COPY** buttons in the button log widget, or select an event and then touch the violet **COPY** button, then touch one of the yellow **TO** buttons in the button log widget, or select an event and then touch the yellow **TO** button. To cancel the operation at any stage, simply touch the **COPY** button again. It is perfectly permissible to copy an event between two different log machines.



RDAirPlay - Host: hithlum User: user Log: KAIMFM0821 Service: KAIM-FM

Tuesday, September 19, 2006
10:39:03

PostPoint [--:--:--]

Next Stop [none]
Stopped

Operating Mode
Automatic

```
017272   001  JINGLE-955       02:07:55 :00    :04  SEGUE
FISH / SHOTGUN 2-FANFARE
0:00:00.0                                  0:00:04.8

070320   001  MUSIC-FISH       02:08:00 :12   3:55  SEGUE
TAKE YOU BACK
JEREMY CAMP
0:00:00.0                                  0:03:55.9

099311        COMMANDS         02:11:56 :12    :00  SEGUE
FISH LINER OVER INTRO (SFTWF)

070567   001  MUSIC-FISH       02:11:56 :00   4:40  SEGUE
OPEN THE EYES OF MY HEART
PHILLIPS, CRAIG, AND DEAN

017274   001  JINGLE-955       02:16:36 :00    :06  SEGUE
FISH/ SHOTGUN 4-DRUMROLL2

070154   001  MUSIC-FISH       02:16:43 :00   3:52  SEGUE
MOUNTAIN OF GOD
THIRD DAY

903345   001  KAIM-VT          02:20:35 :00    :28  SEGUE
VT HERE – JACK 8/20 08:30
```

EST TIME	LEN	TRANS	CART	TITLE
01:50:33	3:11	SEGUE	070401	IN THE BLINK OF AN EYE
01:53:43	:07	SEGUE	017105	FISH SWPR SFTWF+
01:53:47	4:58	SEGUE	010186	UP WHERE WE BELONG
01:58:42	:06	SEGUE	017273	FISH / SHOTGUN 3-DRUMROLL1
T02:00:00	:13	SEGUE	017101	FISH LEGAL ID WEB+
02:00:10	3:39	SEGUE	070762	YOU ARE THE ANSWER
02:03:45	:13	SEGUE	903344	VT HERE -- JACK 8/20 08:29
02:03:48	4:03	SEGUE	070034	EVERY MOVE I MAKE
	:04	SEGUE	017272	FISH / SHOTGUN 2-FANFARE
	3:55	SEGUE	070320	TAKE YOU BACK
	:00	SEGUE	099311	FISH LINER OVER INTRO (SFTWF)
	4:40	SEGUE	070567	OPEN THE EYES OF MY HEART
	:06	SEGUE	017274	FISH/ SHOTGUN 4-DRUMROLL2
	3:52	SEGUE	070154	MOUNTAIN OF GOD
	:28	SEGUE	903345	VT HERE -- JACK 8/20 08:30
	:13	SEGUE	017241	FISH / MORE - SAFE

Illustration 40: Deleting an Event

Section 6.4 The SoundPanel

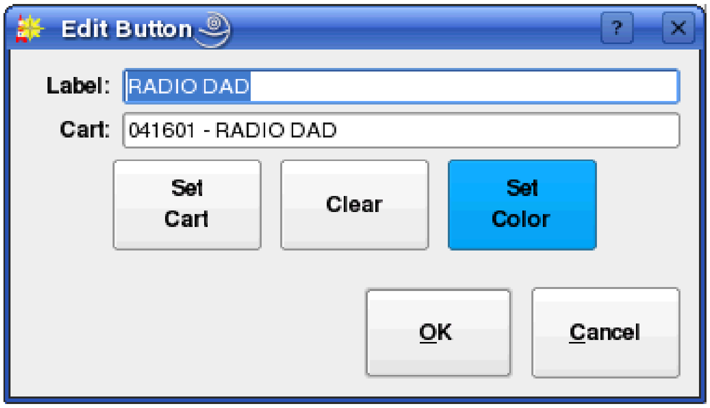
The SoundPanel is an array of buttons that appears in the right-hand side of RDAirPlay when the **Sound Panel** button is selected (see *Illustration 41*). Each button can be associated with a particular cart in the Library (either Audio or Macro carts), which is then played each time the button is clicked. The soundpanel is particularly useful in live assist situations where it is desired to drop in some piece of audio on a live, improvised basis.

6.4.0 Panel Types

The SoundPanel has multiple **panels** or "panes" that can scrolled through by touching the double-left or double-right arrow buttons. Each panel has a designator, (displayed just to the right of the arrow keys), consisting of the letter 'U' or 'S' followed by a number. An 'S' indicates that the panel is a 'system' panel, meaning that its button assignments will show up in all RDAirPlay instances across a given site; while a 'U' indicates a 'user' panel, one which is associated with a particular user and that will “follow around” that user where ever he logs in in the site. (Depending upon how the system administrator has configured RDAirPlay, you may not have both of these panel types available to you).

6.4.1 Programming a SoundPanel Button

To associate a cart with a panel button, first touch the **Setup** button, which will begin to flash. (Depending upon how the system administrator has configured RDAirPlay, the **Setup** button may be disabled). Next, touch the button you wish to program, opening the Edit Button dialog (see *Illustration 41*).



Label: RADIO DAD
Cart: 041601 - RADIO DAD

Illustration 41: The Edit Button Dialog

Touch the **Set Cart** button to open the Select Cart dialog and pick a cart. To clear the button –i.e. have *no* cart associated with it – touch the **Clear** button. To assign a custom background color to the button, touch the **Set Color** button. A custom label can be entered in the **Label** field, or the name of the cart will be used by default. Touch the **OK** button when done. When done programming all the desired buttons, touch the **Setup** button again to toggle off Setup mode.

Chapter Seven
Generating Logs with RDLogManager

Section 7.0 Overview

RDLogManager is a tool for generating Rivendell logs. It is different from RDLogEdit in that, instead of building logs line-by-line, it allows log structures to be defined by a series of rules (called **events** and **clocks**) that are then plugged into a time framework (called a **grid**). This grid is then used to automatically generate logs on an as-needed basis. Each Rivendell service has its own, separately defined grid, thus allowing for separate log generation rules for each service. This system of rules allows for very powerful, modular features, including the ability to import and use scheduling data from various external third party systems, such as music schedulers and traffic and billing systems.

RDLogManager also includes facilities for generating **reports**. Reports are data outputs that detail whether certain events aired as scheduled, and under what circumstances. Reports are available in various formats. Some are intended to be read by humans, while others are intended for use by other, external software systems as a means of reconciling exported schedules.

When RDLogManager is started, it displays its main menu (see *Illustration 42*).

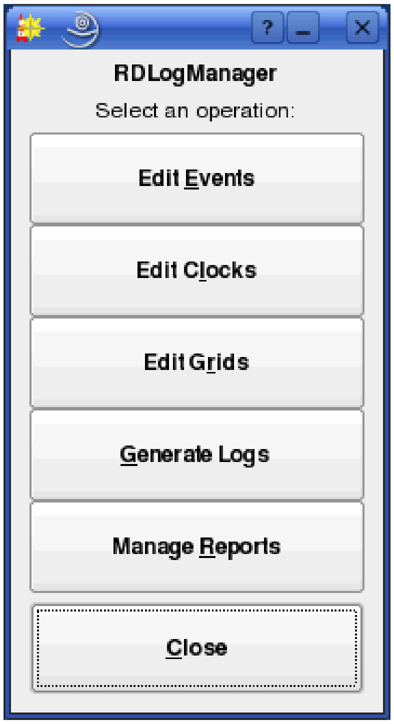
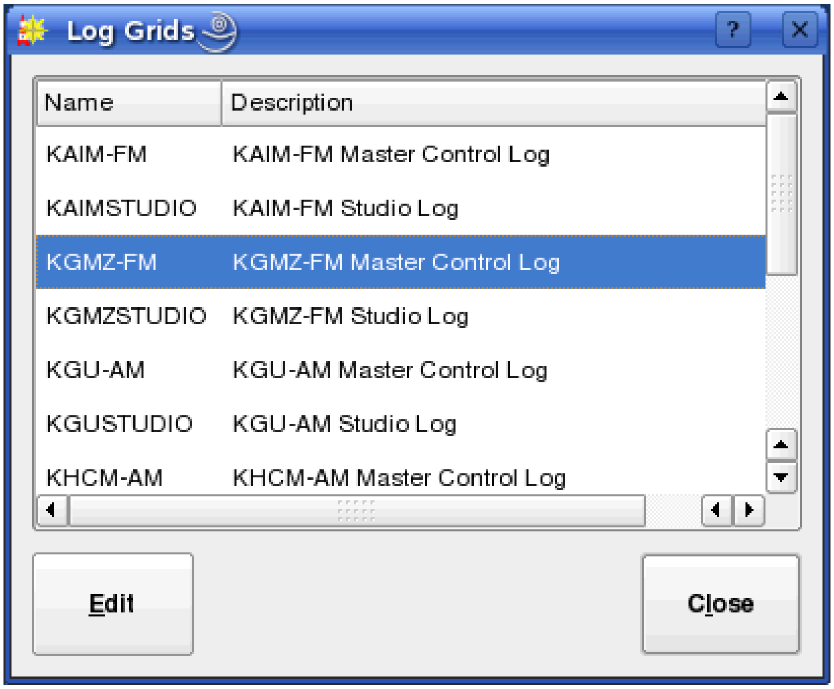


Illustration 42: RDLogManager Main Menu

Section 7.1 Grids

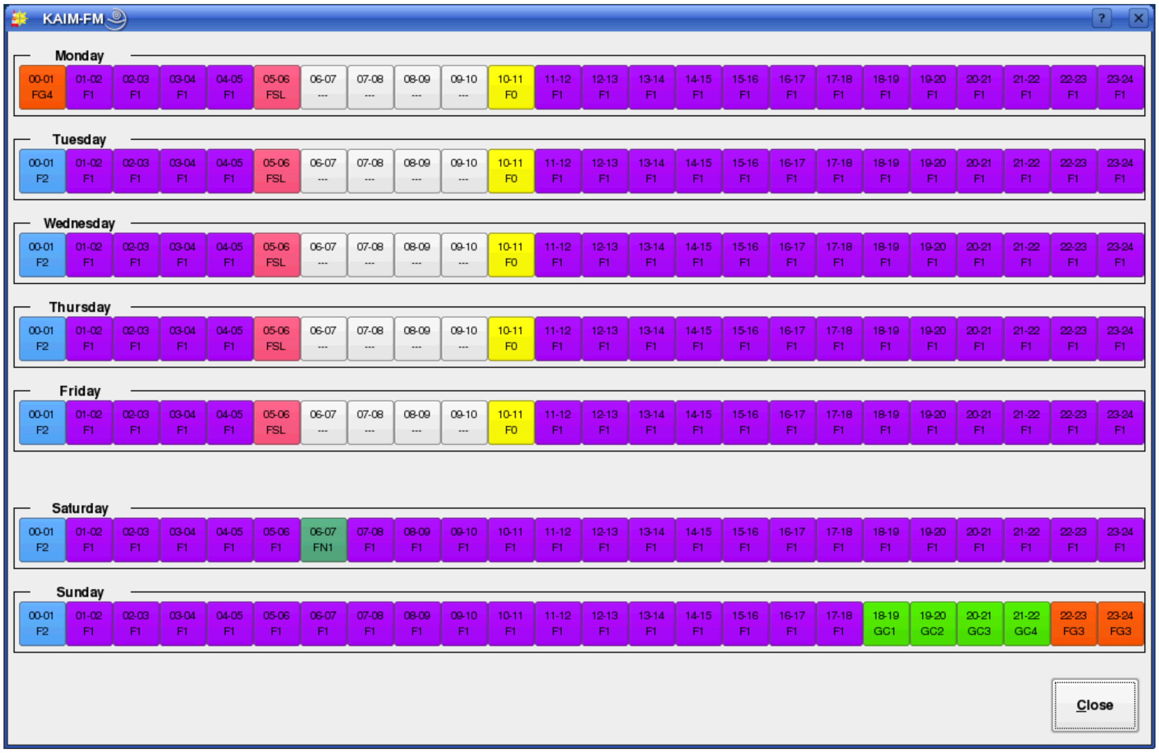
Each Rivendell service has an RDLogManager **grid**. To see the list of available grids, touch the **Edit Grids** button to open the Log Grids dialog (see *Illustration 43*).



Name	Description
KAIM-FM	KAIM-FM Master Control Log
KAIMSTUDIO	KAIM-FM Studio Log
KGMZ-FM	KGMZ-FM Master Control Log
KGMZSTUDIO	KGMZ-FM Studio Log
KGU-AM	KGU-AM Master Control Log
KGUSTUDIO	KGU-AM Studio Log
KHCM-AM	KHCM-AM Master Control Log

Illustration 43: The Log Grids Dialog

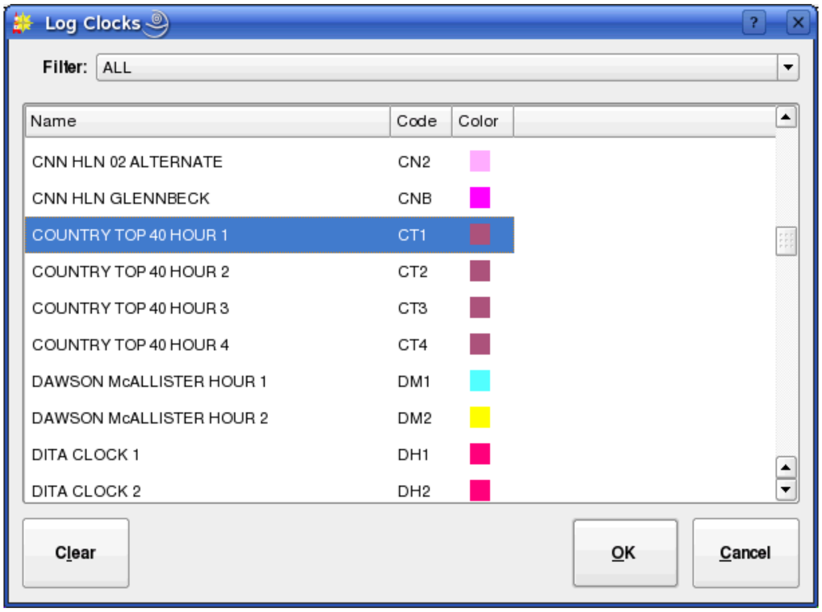
To open a particular grid, select its service name and touch the **Edit** button (see *Illustration 44*).



	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Monday	FG4	F1	F1	F1	F1	FSL	---	---	---	---	F0	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1
Tuesday	F2	F1	F1	F1	F1	FSL	---	---	---	---	F0	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1
Wednesday	F2	F1	F1	F1	F1	FSL	---	---	---	---	F0	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1
Thursday	F2	F1	F1	F1	F1	FSL	---	---	---	---	F0	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1
Friday	F2	F1	F1	F1	F1	FSL	---	---	---	---	F0	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1
Saturday	F2	F1	F1	F1	F1	F1	FN1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1
Sunday	F2	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	GC1	GC2	GC3	GC4	FG3	FG3

Illustration 44: A Typical Service's Grid

Each grid has **slots** for every hour of every day of the broadcast week – 168 slots in all. By specifying a particular clock to go into each of these slots, a set of rules that RDLogManager can use to generate a log for any given day of the week is built up. To specify a clock, simply touch the particular hour of interest to open up the Select Log Clock dialog (see *Illustration 45*).



Filter: ALL

Name	Code	Color
CNN HLN 02 ALTERNATE	CN2	🟪
CNN HLN GLENNBECK	CNB	🟪
COUNTRY TOP 40 HOUR 1	CT1	🟫
COUNTRY TOP 40 HOUR 2	CT2	🟫
COUNTRY TOP 40 HOUR 3	CT3	🟫
COUNTRY TOP 40 HOUR 4	CT4	🟫
DAWSON McALLISTER HOUR 1	DM1	🟦
DAWSON McALLISTER HOUR 2	DM2	🟨
DITA CLOCK 1	DH1	🟥
DITA CLOCK 2	DH2	🟥

Illustration 45: The Select Log Clock Dialog

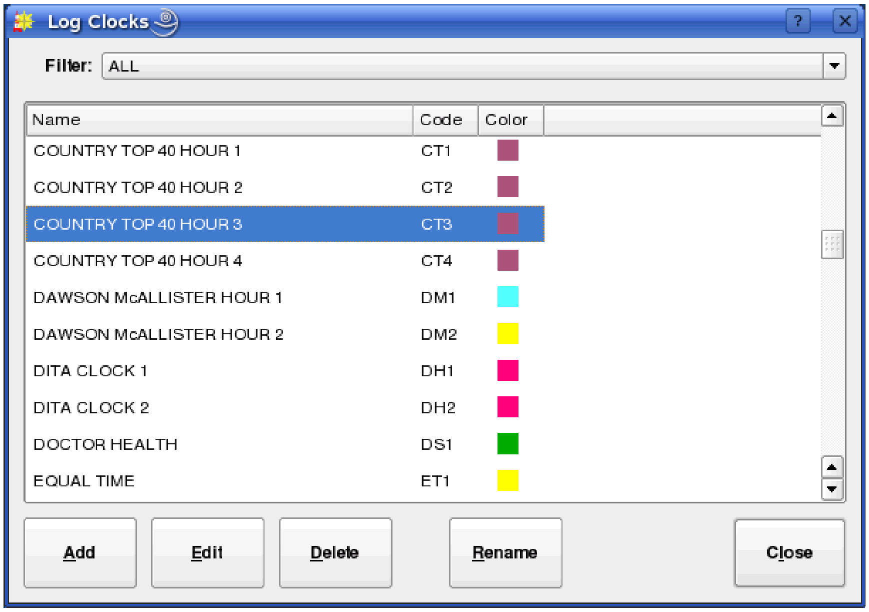
Click the desired clock, then touch the **OK** button. To clear the assignment of any clock to the selected hour, touch the **Clear** button, then **OK**.

It is possible to 'drill down' directly to the underlying configuration of a clock (to be covered shortly) by right-clicking on the relevant hour in a grid and selecting **Edit Clock**.

Section 7.2 Clocks

An RDLogManager **clock** is a collection of RDLogManager events, arranged in terms of their start time (relative to the beginning of the hour) and length. It basically can be thought of as the "schedule" of an hour – *any* hour. Once defined, a clock can be plugged into any hour of a grid of any service, thus making for easy modularization and changes to a service's schedule.

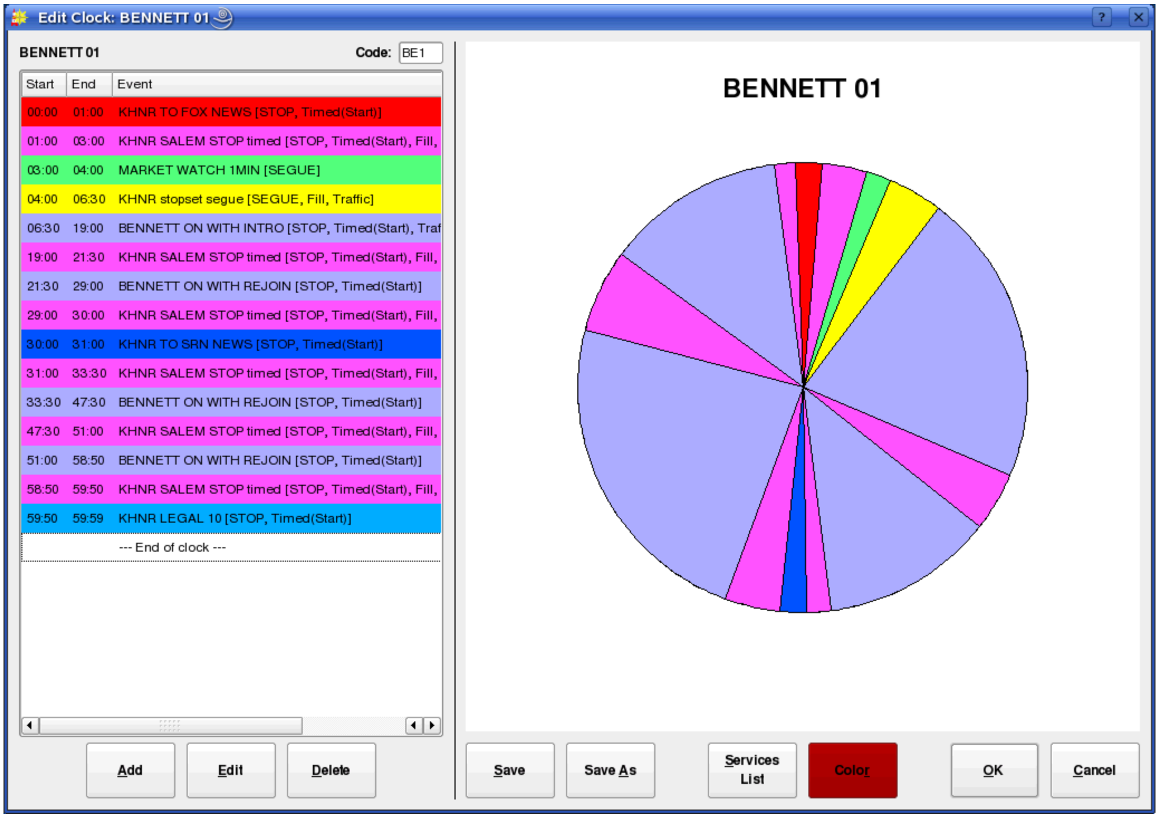
To see the list of available clocks, touch the **Edit Clocks** button in RDLogManager's Main Menu to open the Log Clocks dialog (see *Illustration 46*). Each RDLogManager clock can be assigned a three-letter code and color, as an aid in identifying it when assigned to grids. To add a new clock, touch the **Add** button, or to edit a clock's parameters, click on it and touch the **Edit** button. In each case, the Edit Clock dialog (see *Illustration 47*) will open. Clocks can also be deleted by touching the **Delete** button or renamed by touching the **Rename** button.



Filter: ALL

Name	Code	Color
COUNTRY TOP 40 HOUR 1	CT1	🟪
COUNTRY TOP 40 HOUR 2	CT2	🟪
COUNTRY TOP 40 HOUR 3	CT3	🟪
COUNTRY TOP 40 HOUR 4	CT4	🟪
DAWSON McALLISTER HOUR 1	DM1	🟦
DAWSON McALLISTER HOUR 2	DM2	🟨
DITA CLOCK 1	DH1	🟥
DITA CLOCK 2	DH2	🟥
DOCTOR HEALTH	DS1	🟩
EQUAL TIME	ET1	🟨

Illustration 46: The Log Clocks Dialog



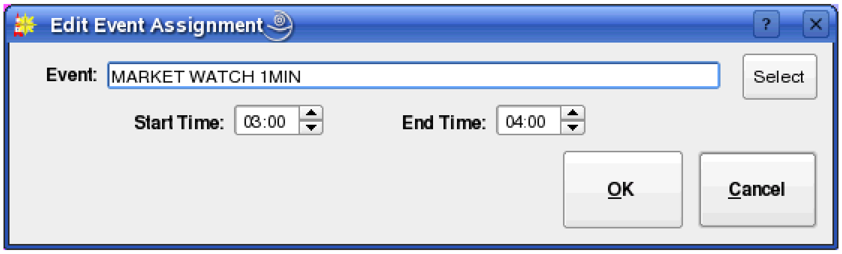
BENNETT 01 Code: BE1

Start	End	Event
00:00	01:00	KHNR TO FOX NEWS [STOP, Timed(Start)]
01:00	03:00	KHNR SALEM STOP timed [STOP, Timed(Start), Fill,
03:00	04:00	MARKET WATCH 1MIN [SEGUE]
04:00	06:30	KHNR stopset segue [SEGUE, Fill, Traffic]
06:30	19:00	BENNETT ON WITH INTRO [STOP, Timed(Start), Traf
19:00	21:30	KHNR SALEM STOP timed [STOP, Timed(Start), Fill,
21:30	29:00	BENNETT ON WITH REJOIN [STOP, Timed(Start)]
29:00	30:00	KHNR SALEM STOP timed [STOP, Timed(Start), Fill,
30:00	31:00	KHNR TO SRN NEWS [STOP, Timed(Start)]
31:00	33:30	KHNR SALEM STOP timed [STOP, Timed(Start), Fill,
33:30	47:30	BENNETT ON WITH REJOIN [STOP, Timed(Start)]
47:30	51:00	KHNR SALEM STOP timed [STOP, Timed(Start), Fill,
51:00	58:50	BENNETT ON WITH REJOIN [STOP, Timed(Start)]
58:50	59:50	KHNR SALEM STOP timed [STOP, Timed(Start), Fill,
59:50	59:59	KHNR LEGAL 10 [STOP, Timed(Start)]
		--- End of clock ---

Illustration 47: The Edit Clock Dialog

The Edit Clock dialog consists of three main sections: a tabular list of events in chronological order, a graphical depiction of the clock in the traditional "broadcast clock"

format, and a series of action buttons across the bottom.
The clock's three-letter code is set by means of the **Code:** field in the upper right-hand corner of the table area. Its color can be set by touching the **Color** button. To save the clock without exiting the dialog, touch the **Save** or **Save As** buttons. To add a new event to the clock, touch the **Add** button, or to edit an existing entry touch the **Edit** button. In either case, the Edit Event Assignment dialog will open (see *Illustration 48*). To delete an entry, touch the **Delete** button. As in the case of grids, it is possible to 'drill down' into the underlying RDLogManager event by right-clicking on the respective entry in the clock event table and selecting **Edit Event**.


Edit Event Assignment

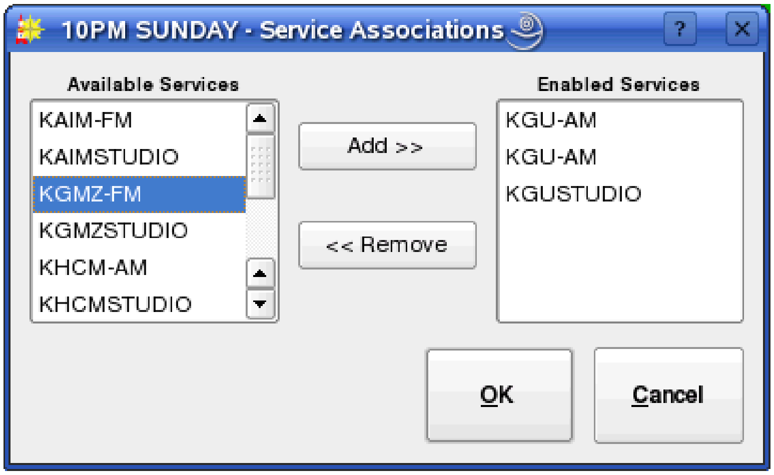
Event: MARKET WATCH 1MIN

Start Time: 03:00 End Time: 04:00

Illustration 48: The Edit Event Assignment Dialog

The Edit Event Assignment dialog simply consists of an **Event** field for the name of the RDLogManager event and **Start Time:** and **End Time:** fields for the start and end times *relative to the start of the hour*. A list of available events can be brought up by touching the **Select** button to bring up the Log Events dialog.

Each clock can be designated as being associated with one or more services. This can make finding the correct clock for a given service much faster, as the **Filter** control on the List Clocks dialog can then be used. To program these associations, touch the **Services List** button in the Edit Clock dialog to bring up the Service Associations dialog (see *Illustration 49*).


10PM SUNDAY - Service Associations

Available Services

KAIM-FM
KAIMSTUDIO
KGMZ-FM
KGMZSTUDIO
KHCM-AM
KHCMSTUDIO

Enabled Services

KGU-AM
KGU-AM
KGUSTUDIO

Illustration 49: The Service Association Dialog

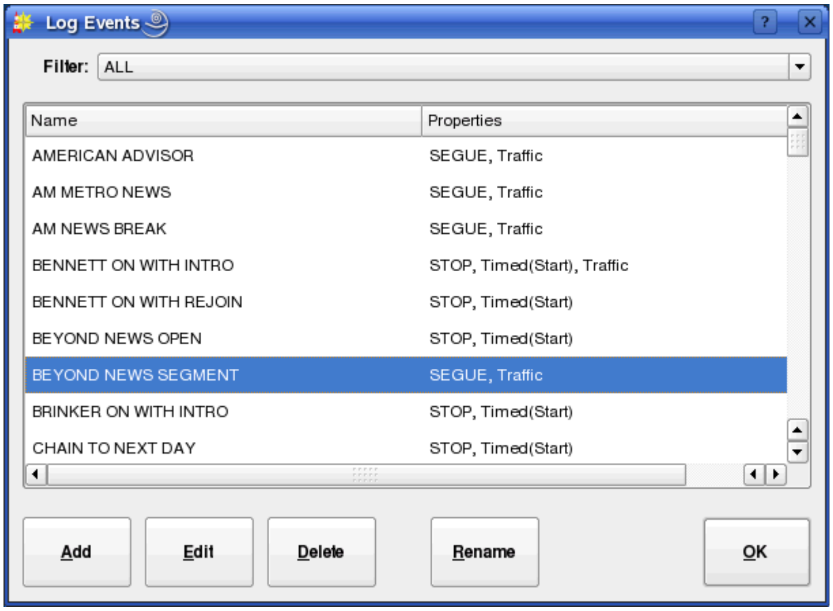
To designate a service as being valid for this clock, select the services name in the

Available Services list and then touch the **Add >>** button. Likewise, to deselect a service, select its name in the **Enabled Services** list and then touch the **<< Remove** button.

Section 7.3 Events

An RDLogManager **event** is a set of rules that define a series of log elements (audio carts, macro carts, markers, etc) that should be inserted into a log, along with the appropriate log event parameters (transition type, time type, etc) that should be associated with them. The actual elements to be inserted can be specified directly within the event itself, or imported from a data file generated by an external scheduling system. Up to two such external scheduling sources can be defined for each service. While for convenience sake these are designated as 'Traffic' and 'Music' within RDLogManager, they can each be used anywhere a means of importing external scheduling data into the system is needed, regardless of whether such data actually references commercial or musical material or not.

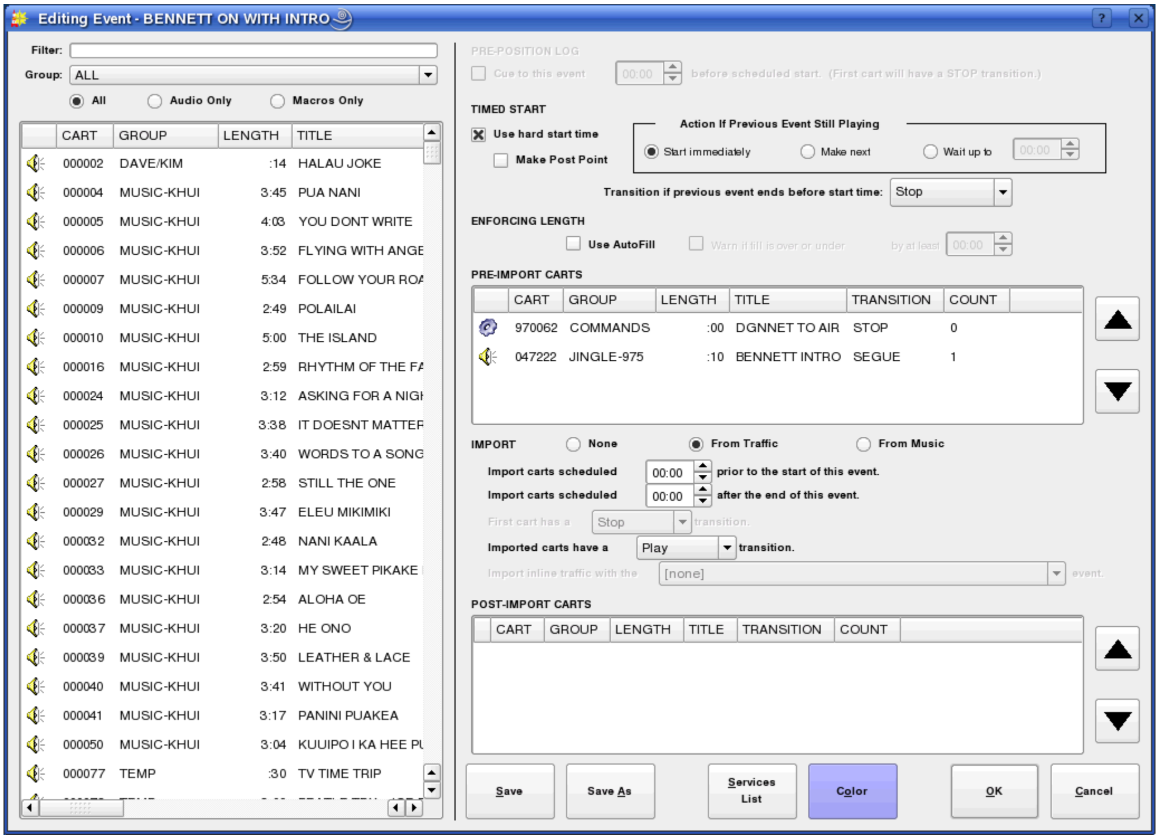
To see the list of available RDLogManager events, touch the **Edit Events** button on the RDLogManager Main Menu to open the Log Events dialog (see *Illustration 50*). It is possible to filter the list of available events to only those used for a particular service by selecting the service in the **Filter:** control. To add a new event, touch the **Add** button, or to edit an event's parameters, click on it and touch the **Edit** button. In each case, the Edit Event dialog (see *Illustration 51*) will open. Events can also be deleted by touching the **Delete** button or renamed by touching the **Rename** button.



Filter: ALL

Name	Properties
AMERICAN ADVISOR	SEGUE, Traffic
AM METRO NEWS	SEGUE, Traffic
AM NEWS BREAK	SEGUE, Traffic
BENNETT ON WITH INTRO	STOP, Timed(Start), Traffic
BENNETT ON WITH REJOIN	STOP, Timed(Start)
BEYOND NEWS OPEN	STOP, Timed(Start)
BEYOND NEWS SEGMENT	SEGUE, Traffic
BRINKER ON WITH INTRO	STOP, Timed(Start)
CHAIN TO NEXT DAY	STOP, Timed(Start)

Illustration 50: The Log Events Dialog



Editing Event - BENNETT ON WITH INTRO

Filter:

Group: ALL

● All ○ Audio Only ○ Macros Only

CART	GROUP	LENGTH	TITLE
000002	DAVE/KIM	:14	HALAU JOKE
000004	MUSIC-KHUI	3:45	PUA NANI
000005	MUSIC-KHUI	4:03	YOU DONT WRITE
000006	MUSIC-KHUI	3:52	FLYING WITH ANGE
000007	MUSIC-KHUI	5:34	FOLLOW YOUR ROA
000009	MUSIC-KHUI	2:49	POLAILAI
000010	MUSIC-KHUI	5:00	THE ISLAND
000016	MUSIC-KHUI	2:59	RHYTHM OF THE FA
000024	MUSIC-KHUI	3:12	ASKING FOR A NIGH
000025	MUSIC-KHUI	3:38	IT DOESNT MATTER
000026	MUSIC-KHUI	3:40	WORDS TO A SONG
000027	MUSIC-KHUI	2:58	STILL THE ONE
000029	MUSIC-KHUI	3:47	ELEU MIKIMIKI
000032	MUSIC-KHUI	2:48	NANI KAALA
000033	MUSIC-KHUI	3:14	MY SWEET PIKAKE
000036	MUSIC-KHUI	2:54	ALOHA OE
000037	MUSIC-KHUI	3:20	HE ONO
000039	MUSIC-KHUI	3:50	LEATHER & LACE
000040	MUSIC-KHUI	3:41	WITHOUT YOU
000041	MUSIC-KHUI	3:17	PANINI PUAKEA
000050	MUSIC-KHUI	3:04	KUUIPO I KA HEE PU
000077	TEMP	:30	TV TIME TRIP

PRE-POSITION LOG

□ Cue to this event 00:00 before scheduled start. (First cart will have a STOP transition.)

TIMED START

☒ Use hard start time

□ Make Post Point

Action If Previous Event Still Playing

● Start immediately ○ Make next ○ Wait up to 00:00

Transition if previous event ends before start time: Stop

ENFORCING LENGTH

□ Use AutoFill □ Warn if fill is over or under by at least 00:00

PRE-IMPORT CARTS

CART	GROUP	LENGTH	TITLE	TRANSITION	COUNT
970062	COMMANDS	:00	DGNNET TO AIR	STOP	0
047222	JINGLE-975	:10	BENNETT INTRO	SEGUE	1

IMPORT ○ None ● From Traffic ○ From Music

Import carts scheduled 00:00 prior to the start of this event.

Import carts scheduled 00:00 after the end of this event.

First cart has a Stop transition.

Imported carts have a Play transition.

Import inline traffic with the [none] event.

POST-IMPORT CARTS

CART	GROUP	LENGTH	TITLE	TRANSITION	COUNT

Illustration 51: The Edit Event Dialog

The Edit Event dialog consists of two main parts: a Library cart picker widget on the left side, and an area showing the various event parameters on the right. Programming an event basically consists of specifying four things: its log parameters (transition and time types), the list of pre-import events, the event import (if any) and the list of post-import events. The first matter to be decided is if the event should have a hard start time: if so, then the **Use hard start time** box in the **TIMED START** section should be checked. Checking this box will enable all of the usual hard start parameters to be specified. If an automatic timed start is not desired, then it is possible to check the **Cue to this event** box in the **PREPOSITION LOG** section. This will cause RDLogManager to place a hard time with a 'Make Next' attribute on the first item of the event – effectively, causing the event to be automatically "cued up" at the scheduled time – something that can be particularly handy for keeping spot breaks in sync when "overscheduling" music.

Next, if it is desired to have RDLogManager try to automatically insert material from the Autofill List to ensure that the event has the length indicated by its parent clock, the **Use Autofill** box in the **ENFORCING LENGTH** section should be checked. (Configuring the Autofill List is covered in detail in the *Rivendell Technical and Administration Guide*). If Autofill is enabled, it is also possible to check the **Warn if fill is under or over** box to have RDLogManager generate a warning if it was unable to properly fill the event when the log was generated.

Next, the list of log events (if any) to be inserted before the data import should be placed in the **PRE-IMPORT CARTS** list. For audio or macro carts, these can be simply dragged and dropped from the Library cart list on the left-hand side of the dialog. Meta events can be inserted by right-clicking on the list and selecting the desired element. It is also possible to edit or delete elements and set the transition type of each element through the right-click menu.

The **IMPORT** section then defines which (if any) source will be used for importing external scheduling events into the log. Either **Music**, **Traffic** or **None** can be selected. If **Music** or **Traffic** is selected, then RDLogManager will import any events from those sources that fall within the start and end times of the event (as supplied by the parent clock). These start and end times can be further broadened by means of 'slop factors' entered into the **Import carts scheduled** controls (this is sometimes necessary to get the import to work properly with certain external scheduler systems). The transition types to be used for the first and subsequent imported elements can be specified with the **First cart has a** and **Imported carts have a** controls. If **Music** has been selected as the import source, it is also possible to specify the event to use to import traffic breaks embedded in the music log with the **Import inline traffic with the** control. (Configuration of the actual parser parameters for data importation is covered in the *Rivendell Technical and Administration Guide*).

Finally, the list of log events (if any) to be inserted after the data import should be placed in the **POST-IMPORT CARTS** list. Configuration of the events work very similarly to that of the **PRE-IMPORT CARTS** list.

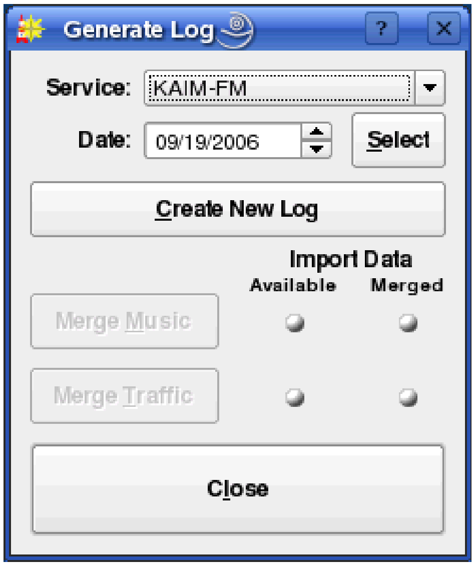
The color of the event (as seen in the Edit Clock dialog) can be set by touching the **Color** button. The list of services for which this event is valid can be edited by touching the **Services List** button. To save the event without exiting the dialog, touch the **Save** or **Save As** buttons.

Section 7.4 Generating Logs

After all of the appropriate hours have been populated in a service's grid, it's time to start generating logs. To do this, touch the **Generate Logs** button in RDLogManager's Main Menu to open the Generate Log dialog (see *Illustration 52*).

Depending upon how many external scheduling sources are involved, generating a log involves one, two or three steps. Before performing any of the steps, it is first necessary to select the relevant service for which to generate the log (using the **Service:** control) and the log date (either by entering the date in the **Date:** control or by touching the **Select** button and picking it off of the calendar).

In all cases, a new log is initially generated by touching the **Create New Log** button. If the log for the selected date and service does not already exist, it will be created at this point


Service: KAIM-FM

Date: 09/19/2006

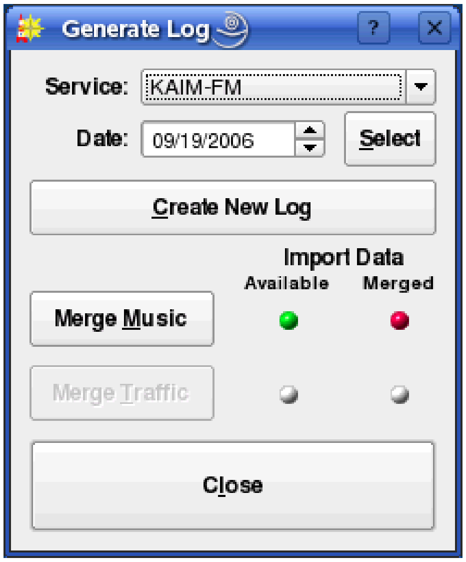
Illustration 52: The Generate Log Dialog

(becoming visible in RDLogEdit). It the log already exists, it will be overwritten. (NOTE: if completed voicetracks exist in the old log, they will be deleted when the log is overwritten!)

When generating a log, RDLogManager will look for possible problems (such as scheduled carts that are missing in the Library) and generate an **exception report** if it finds any.

Once generated, the **status lights** in the Generate Log dialog indicate which (if any) additional import data are needed to complete the log. Two types of status light exist: **Available**, which indicates if the required data file is available to RDLogManager, and **Merged**, indicating whether the data has been merged into the log as yet. Each light can show one of three different colors: GREEN, meaning “yes”, RED, meaning “no” and WHITE, meaning “not required”.

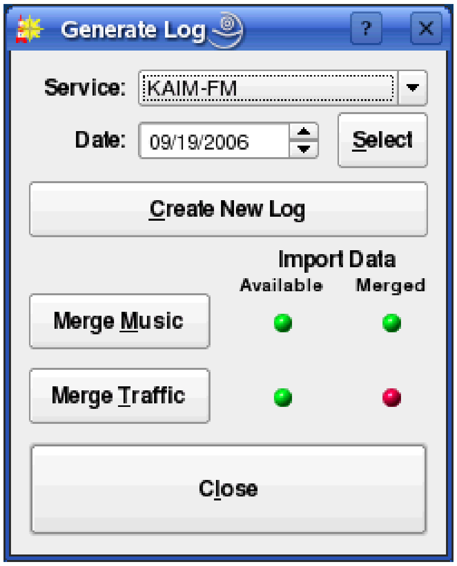
For an example, see *Illustration 53*. This is showing a log that has been generated and has music data available but not yet merged. To perform the merge, touch the **Merge Music** button. The dialog now changes to that shown in *Illustration 54*, indicating that Music data has been merged but that traffic data is still needed. Once a log has reached this state – that of having any necessary music data merged – it can be voicetracked without having to wait for traffic data to become available. Traffic data can be merged at any time before, during or after the generation of voicetracks. The actual traffic merge is performed by touching the **Merge Traffic** button, resulting in a dialog like that shown in *Illustration 55*. (NOTE: the configuration of the various data file names and parser parameters needed for data import is done in the RDAdmin module and is covered in the *Rivendell Technical and Administration Guide*).



Service: KAIM-FM

Date: 09/19/2006

Illustration 53: The Generate Log Dialog -- Music Merge Required

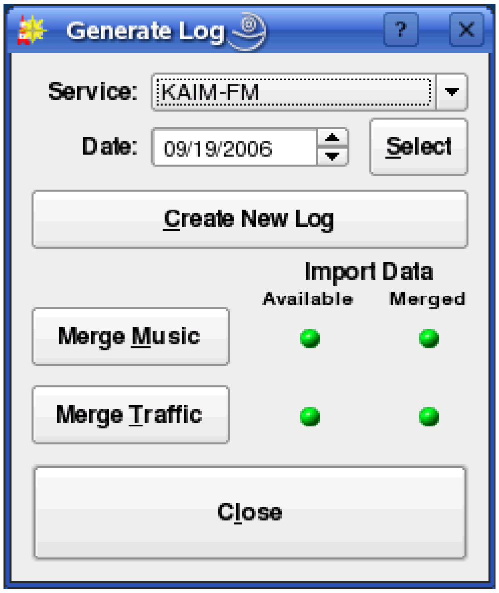


Service: KAIM-FM

Date: 09/19/2006

Illustration 54: The Generate Log Dialog -- Traffic Merge Required

It is important to note that the sequence of operations from the example above is typical, but may vary depending upon how the system administrator has configured RDLogManager at each site. Some services, for example, will have no music data, only traffic, so the music indicator lights will be “whited out” accordingly.



Service: KAIM-FM

Date: 09/19/2006

Illustration 55: The Generate Log Dialog -- Completely Merged

Section 7.5 Generating Reports

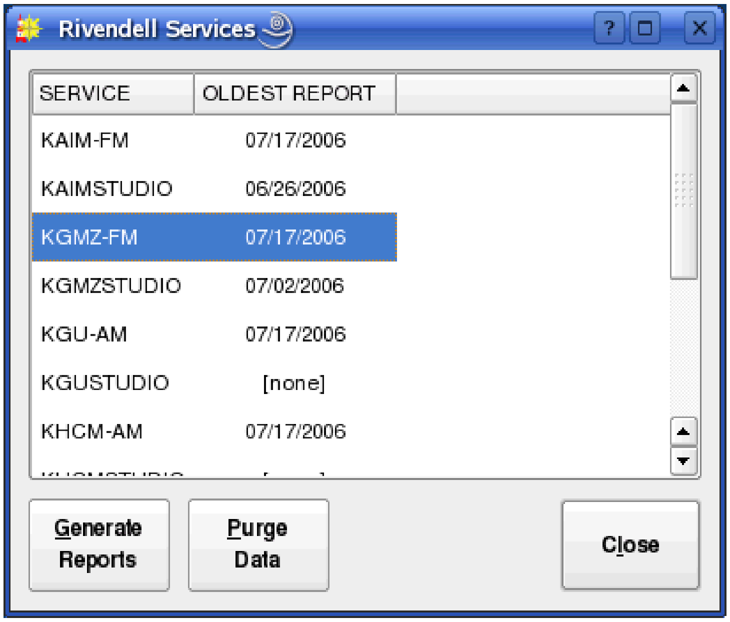
A Rivendell **report** is a data output that details whether certain events aired as scheduled, and under what circumstances. Reports are available in various formats. Some are intended to be directly read by humans, while others are intended for use by other, external software systems as a means of reconciling exported schedules.

Rivendell has the ability to filter the data that go into any particular report on the basis of the type of material played (traffic spots, music or all), the playing service(s) and the originating host(s). The configuration of reports is done in the RDAdmin module and is covered in the *Rivendell Technical and Administration Guide*. Once configured however, reports are actually generated by the RDLogManager module.

To generate a report, touch the **Manage Reports** button on the RDLogManager Main Menu to open the Select Service dialog (see *Illustration 56*). The dialog will show each service on the system, along with the date of the oldest data available for generating reports. Touch the **Generate Reports** button to open the Select Report Dates dialog (see *Illustration 57*). The desired report can be selected with the **Report:** control, and the start and end dates of the report specified with the **Start Date:** and **End Date:** controls, respectively (NOTE: not all reports are capable of being generated so as to span more than one day). Once the parameters are set, touch the **Generate Report** button to write out the report.

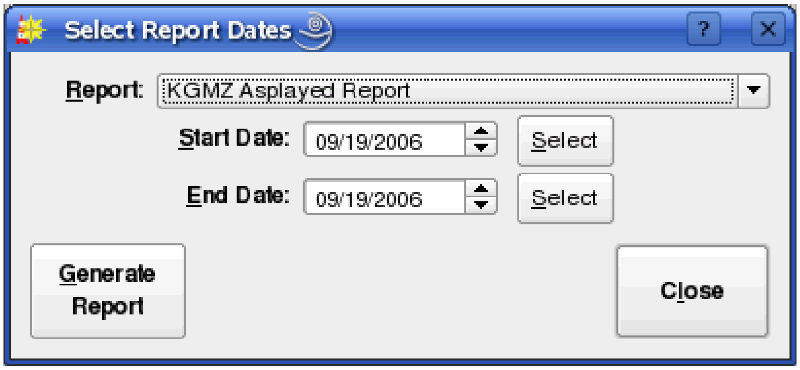
7.5.1 Purging Old Report Data

Rivendell keeps the raw data used to generate reports indefinitely, until manually purged out of the system. Periodic purging of old data is a good idea from the standpoint of minimizing the amount of system resources utilized, and can be done by selecting the desired service and then touching the **Purge Data** button in the Select Service dialog, opening up a calendar dialog (see *Illustration 58*). Each date that has data eligible for purging will be shown in bold. To purge a particular day, select it and the touch the **Purge Data** button. (NOTE: once purged, no reports can be generated for that particular service/date, so be sure that all required reports have been produced before purging!)



SERVICE	OLDEST REPORT
KAIM-FM	07/17/2006
KAIMSTUDIO	06/26/2006
KGMZ-FM	07/17/2006
KGMZSTUDIO	07/02/2006
KGU-AM	07/17/2006
KGUSTUDIO	[none]
KHCM-AM	07/17/2006
KHCMSTUDIO	[none]

Illustration 56: The Select Service Dialog

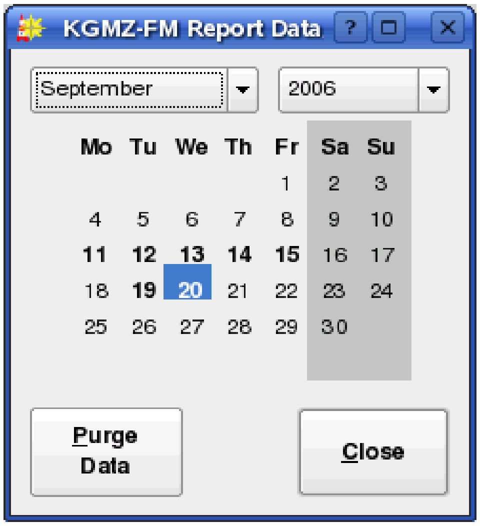


Report: KGMZ Asplayed Report

Start Date: 09/19/2006

End Date: 09/19/2006

Illustration 57: The Select Report Dates Dialog



KGMZ-FM Report Data

September 2006

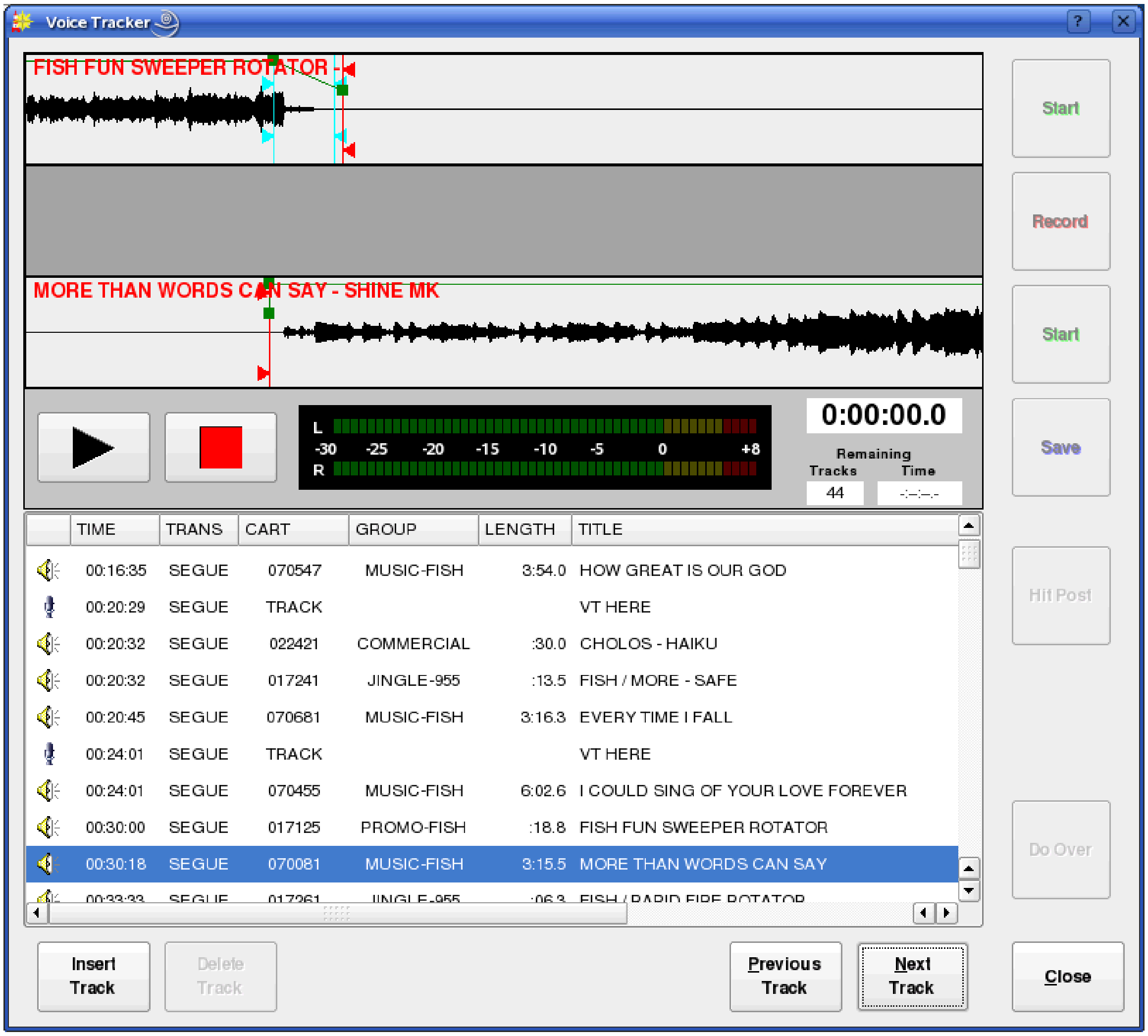
Mo	Tu	We	Th	Fr	Sa	Su
				1	2	3
4	5	6	7	8	9	10
11	**12**	**13**	**14**	**15**	16	17
18	**19**	20	21	22	23	24
25	26	27	28	29	30	

Illustration 58: The Purge Calendar Dialog

Chapter Eight
VoiceTracking

Section 8.0 Voicetracking in Rivendell

Voicetracking is a capability wherein custom “one-off” content is created and inserted into logs, making it possible to create programming that sounds very spontaneous and “live”. In Rivendell, such voicetracks are placed into a special type of audio cart known as a **voicetrack cart**. These carts are automatically created, deleted and managed by the voicetracker interface (part of the RDLogEdit module), with no manual user intervention required. The voicetracker module also includes extensive capabilities for allowing customization of the transitions between log elements.



	TIME	TRANS	CART	GROUP	LENGTH	TITLE
🔈	00:16:35	SEGUE	070547	MUSIC-FISH	3:54.0	HOW GREAT IS OUR GOD
🎤	00:20:29	SEGUE	TRACK			VT HERE
🔈	00:20:32	SEGUE	022421	COMMERCIAL	:30.0	CHOLOS - HAIKU
🔈	00:20:32	SEGUE	017241	JINGLE-955	:13.5	FISH / MORE - SAFE
🔈	00:20:45	SEGUE	070681	MUSIC-FISH	3:16.3	EVERY TIME I FALL
🎤	00:24:01	SEGUE	TRACK			VT HERE
🔈	00:24:01	SEGUE	070455	MUSIC-FISH	6:02.6	I COULD SING OF YOUR LOVE FOREVER
🔈	00:30:00	SEGUE	017125	PROMO-FISH	:18.8	FISH FUN SWEEPER ROTATOR
🔈	00:30:18	SEGUE	070081	MUSIC-FISH	3:15.5	MORE THAN WORDS CAN SAY
🔈	00:33:33	SEGUE	017261	JINGLE-955	:06.3	FISH / RAPID FIRE ROTATOR

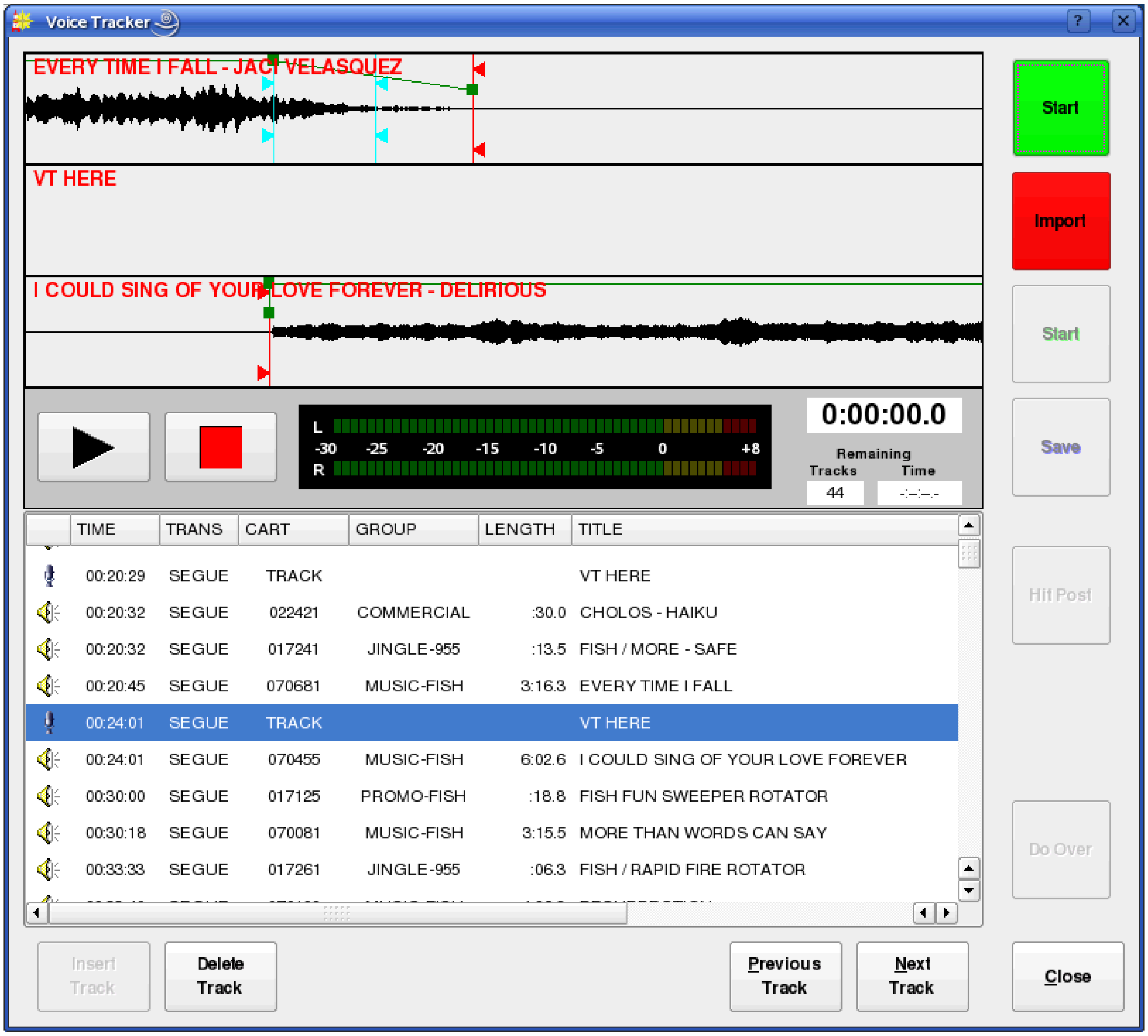
Illustration 59: The Voicetracker Dialog, Showing a Simple Transition

8.0.1 Prerequisites

Before beginning voicetracking for a particular service, a voicetracker group and pool of available cart numbers must be configured in the RDAdmin module. These procedures are detailed in the *Rivendell Technical and Administration Guide*.

8.0.2 VoiceTrack Markers

A **voicetrack marker** is a meta event that can be inserted into a log as a “placeholder” to others to indicate where a voicetrack is to be recorded. Track markers can be inserted by RDLogEdit, RDLogManager events or even “embedded” in data generated by external schedulers such as *RCS Selector*TM.



	TIME	TRANS	CART	GROUP	LENGTH	TITLE
	00:20:29	SEGUE	TRACK			VT HERE
	00:20:32	SEGUE	022421	COMMERCIAL	:30.0	CHOLOS - HAIKU
	00:20:32	SEGUE	017241	JINGLE-955	:13.5	FISH / MORE - SAFE
	00:20:45	SEGUE	070681	MUSIC-FISH	3:16.3	EVERY TIME I FALL
	00:24:01	SEGUE	TRACK			VT HERE
	00:24:01	SEGUE	070455	MUSIC-FISH	6:02.6	I COULD SING OF YOUR LOVE FOREVER
	00:30:00	SEGUE	017125	PROMO-FISH	:18.8	FISH FUN SWEEPER ROTATOR
	00:30:18	SEGUE	070081	MUSIC-FISH	3:15.5	MORE THAN WORDS CAN SAY
	00:33:33	SEGUE	017261	JINGLE-955	:06.3	FISH / RAPID FIRE ROTATOR

Illustration 60: Ready to Record a Voicetrack

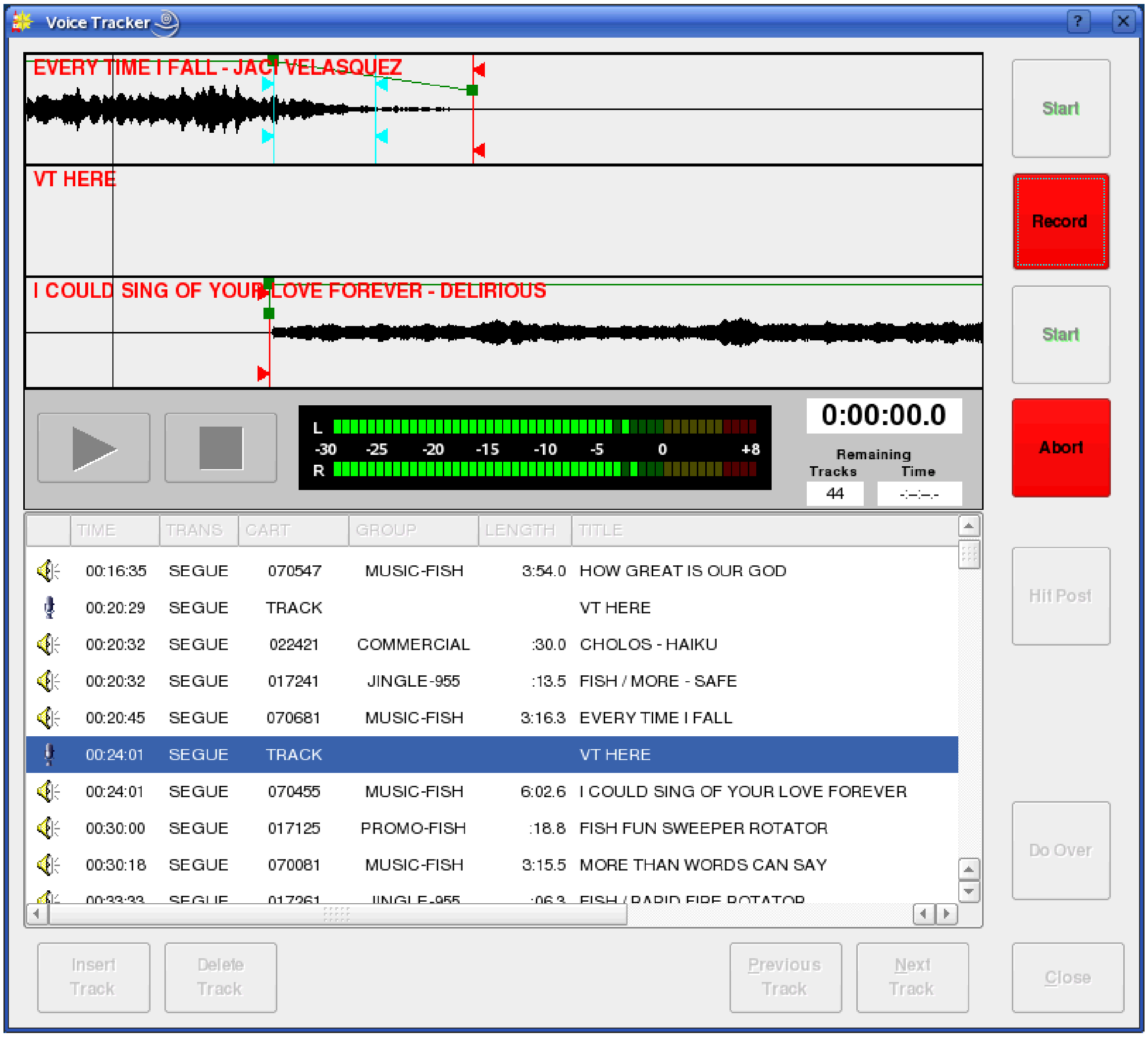
Section 8.1 Using the Voicetrack Interface

8.1.0 The VoiceTracker Dialog

To voicetrack a log, start the RDLogEdit module (see *Illustration 19*), highlight the desired log and touch the **VoiceTracker** button, opening the VoiceTracker dialog (see *Illustration 59*). This dialog consists of three major parts: the **waveform area**, the **log list** and the **control buttons**.

The waveform area is in the upper center part of the dialog, and consists of four “panes”.

The upper three display waveform depictions while the fourth contains audition control buttons, an audio meter and various counters. Directly below this is the log list, showing a copy of the currently loaded log. The control buttons occupy the bottom and right-hand edges of the dialog.



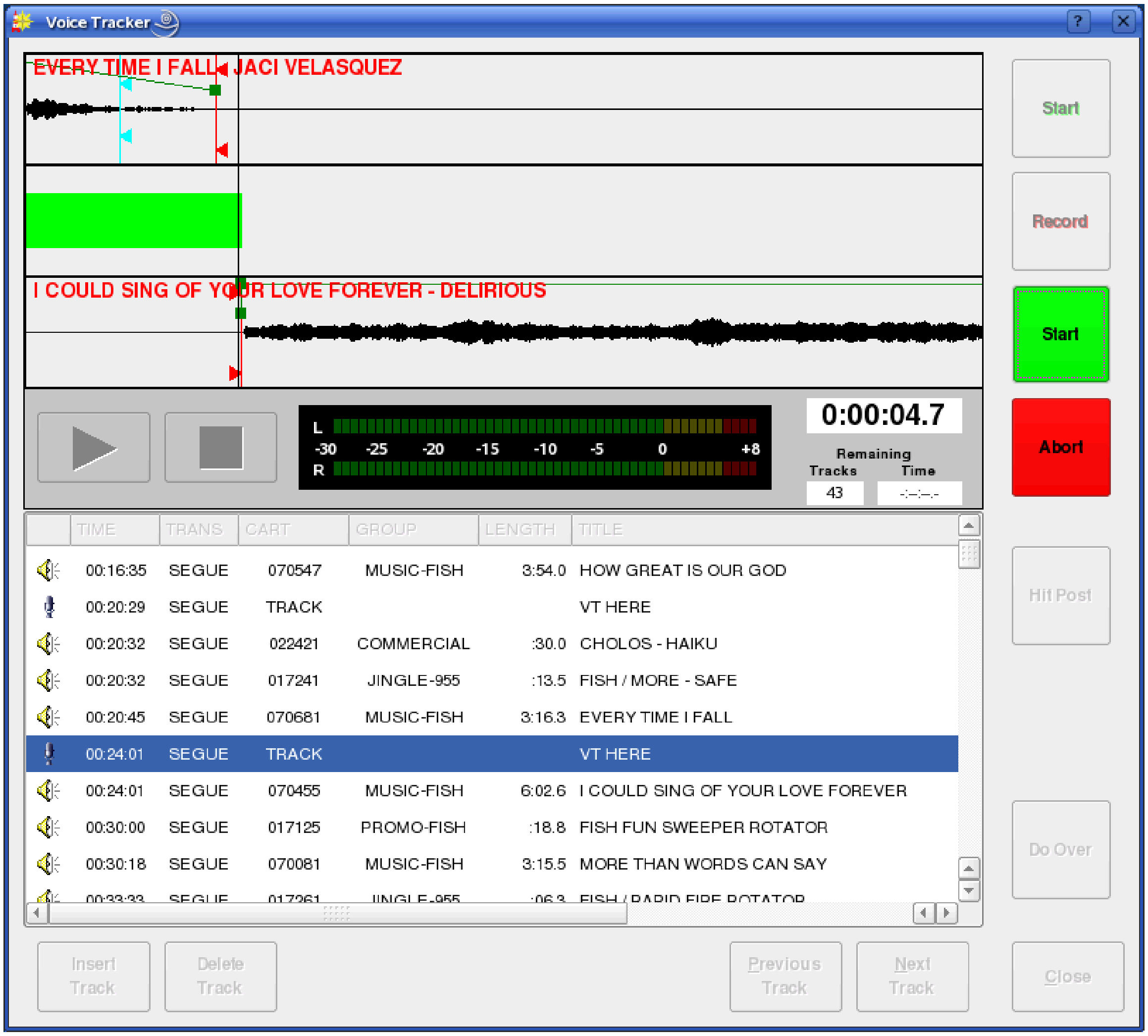
	TIME	TRANS	CART	GROUP	LENGTH	TITLE
🔈	00:16:35	SEGUE	070547	MUSIC-FISH	3:54.0	HOW GREAT IS OUR GOD
🎙	00:20:29	SEGUE	TRACK			VT HERE
🔈	00:20:32	SEGUE	022421	COMMERCIAL	:30.0	CHOLOS - HAIKU
🔈	00:20:32	SEGUE	017241	JINGLE-955	:13.5	FISH / MORE - SAFE
🔈	00:20:45	SEGUE	070681	MUSIC-FISH	3:16.3	EVERY TIME I FALL
🎙	00:24:01	SEGUE	TRACK			VT HERE
🔈	00:24:01	SEGUE	070455	MUSIC-FISH	6:02.6	I COULD SING OF YOUR LOVE FOREVER
🔈	00:30:00	SEGUE	017125	PROMO-FISH	:18.8	FISH FUN SWEEPER ROTATOR
🔈	00:30:18	SEGUE	070081	MUSIC-FISH	3:15.5	MORE THAN WORDS CAN SAY
🔈	00:33:33	SEGUE	017261	JINGLE-955	:06.3	FISH / RAPID FIRE ROTATOR

Illustration 61: Track One Playing

8.1.1 Editing Transitions

When an event is selected in the log list, a graphical depiction of the transition into that event is loaded into the waveform area. If the selected event and its prior event in the log is not a voicetrack or track marker, then the selected event will be displayed in the third pane of the waveform area and the previous event displayed in the first pane. If the selected event or its prior event is a voicetrack or track marker, then voicetrack or marker will be displayed in the second pane of the waveform area.

Once selected, a transition can be auditioned by touching the play button in the fourth pane of the waveform area. Play will start from the left-hand edge of the topmost waveform. This start location can be adjusted by dragging the topmost waveform to the left or right by means of the mouse or touchscreen. If the transition type of the selected event is SEGUE, it is also possible to adjust the degree of audio overlap by dragging the second or third waveform as well. It's possible to "undo" changes made in the segue overlap by right-clicking on the waveform and selecting **Undo Segue Changes** from the menu. To make the overlap permanent, touch the **Save** button. To restore the transition to its default state (calculated on the basis of segue markers from the Library) touch the **Do Over** button. The transition type can be changed by right-clicking on an event and selecting the desired transition type from the menu.



	TIME	TRANS	CART	GROUP	LENGTH	TITLE
	00:16:35	SEGUE	070547	MUSIC-FISH	3:54.0	HOW GREAT IS OUR GOD
	00:20:29	SEGUE	TRACK			VT HERE
	00:20:32	SEGUE	022421	COMMERCIAL	:30.0	CHOLOS - HAIKU
	00:20:32	SEGUE	017241	JINGLE-955	:13.5	FISH / MORE - SAFE
	00:20:45	SEGUE	070681	MUSIC-FISH	3:16.3	EVERY TIME I FALL
	00:24:01	SEGUE	TRACK			VT HERE
	00:24:01	SEGUE	070455	MUSIC-FISH	6:02.6	I COULD SING OF YOUR LOVE FOREVER
	00:30:00	SEGUE	017125	PROMO-FISH	:18.8	FISH FUN SWEEPER ROTATOR
	00:30:18	SEGUE	070081	MUSIC-FISH	3:15.5	MORE THAN WORDS CAN SAY
	00:33:33	SEGUE	017261	JINGLE-955	:06.3	FISH / RAPID FIRE ROTATOR

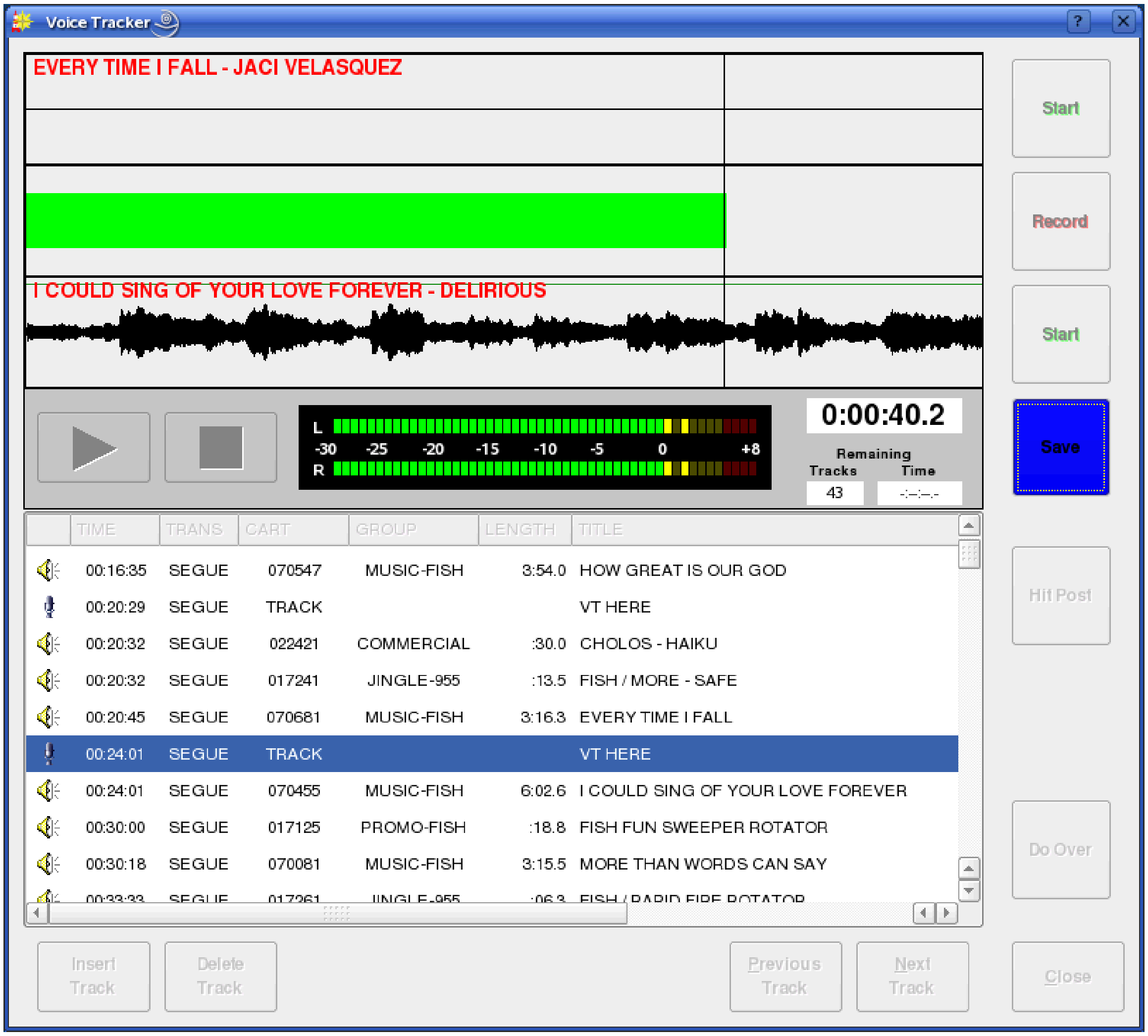
Illustration 62: Recording

8.1.2 Inserting and Deleting Track Markers

It is possible to insert a new voicetrack marker by selecting the desired location in the log list and touching the **Insert Track** button. An existing voicetrack marker can likewise by deleted by selecting it in the log list and touching the **Delete Track** button.

8.1.3 Moving Between Track Markers

It is possible to move directly to the next or previous voicetrack marker simply by touching the **Next Track** or **Previous Track** buttons, respectively.



	TIME	TRANS	CART	GROUP	LENGTH	TITLE
🔈	00:16:35	SEGUE	070547	MUSIC-FISH	3:54.0	HOW GREAT IS OUR GOD
🎙	00:20:29	SEGUE	TRACK			VT HERE
🔈	00:20:32	SEGUE	022421	COMMERCIAL	:30.0	CHOLOS - HAIKU
🔈	00:20:32	SEGUE	017241	JINGLE-955	:13.5	FISH / MORE - SAFE
🔈	00:20:45	SEGUE	070681	MUSIC-FISH	3:16.3	EVERY TIME I FALL
🎙	00:24:01	SEGUE	TRACK			VT HERE
🔈	00:24:01	SEGUE	070455	MUSIC-FISH	6:02.6	I COULD SING OF YOUR LOVE FOREVER
🔈	00:30:00	SEGUE	017125	PROMO-FISH	:18.8	FISH FUN SWEEPER ROTATOR
🔈	00:30:18	SEGUE	070081	MUSIC-FISH	3:15.5	MORE THAN WORDS CAN SAY
🔈	00:33:33	SEGUE	017261	JINGLE-955	:06.3	FISH / RAPID FIRE ROTATOR

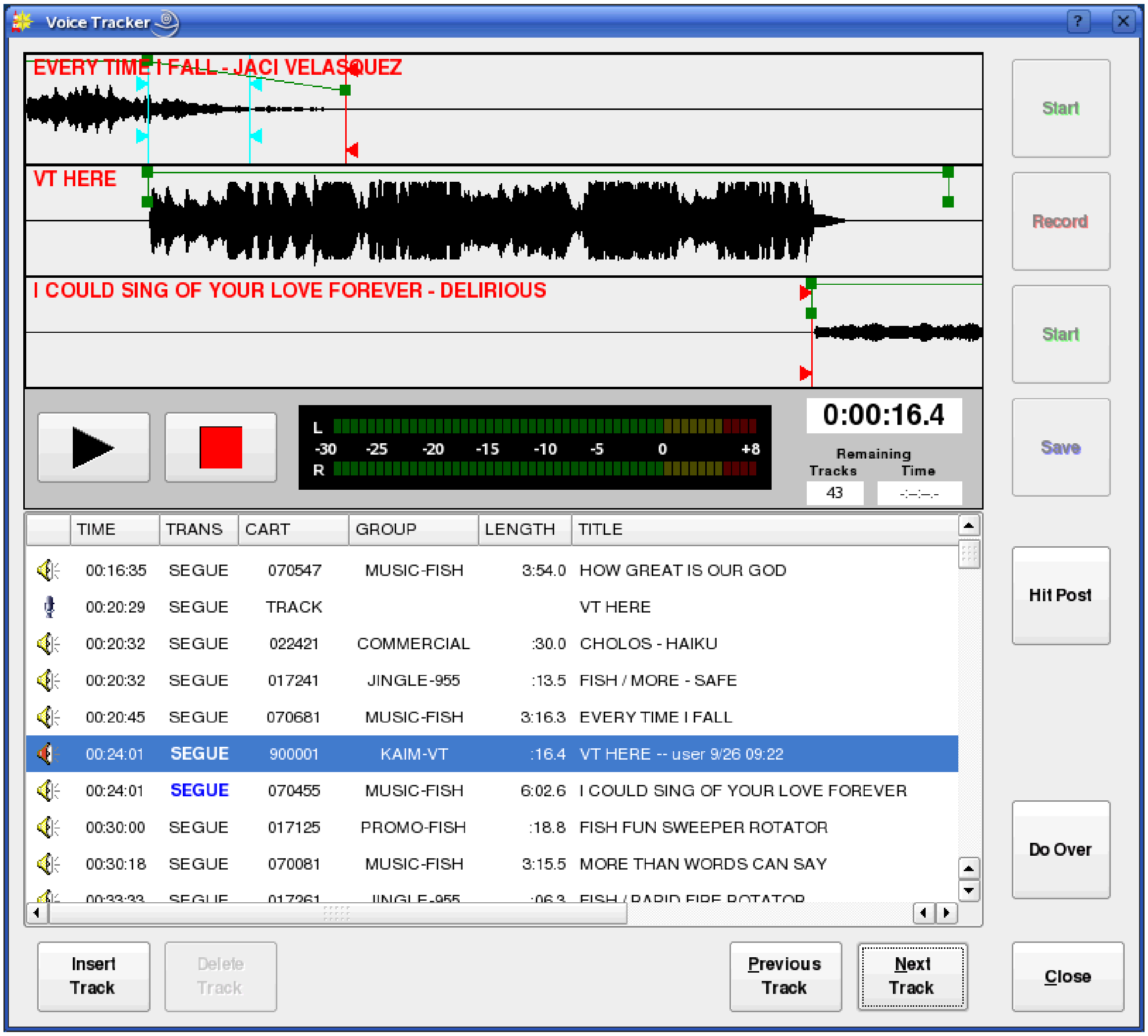
Illustration 63: Track Two Started

8.1.4 Recording a Voicetrack

Once the desired voicetrack marker has been selected, the process of recording a voicetrack consists of four steps, each initiated by one of the four square control buttons in the upper right-hand corner of the dialog. (See *Illustration 50*).

To begin, touch the topmost **Start** button. This will cause the audio in the topmost pane to begin playing, with a cursor to show playback position (see *Illustration 61*). To begin the actual recording, touch the **Record** button (see *Illustration 62*). To start the following event (in the third pane), touch the second **Start** button (see *Illustration 63*). Finally, to stop recording, touch the **Save** button (see *Illustration 64*). The record process can be canceled at any time by touching the **Abort** button, restoring the transition to its default state. It is also possible to undo a completed voicetrack by touching the **Do Over** button.

Once completed, the segue overlaps into and out of a voicetrack can be adjusted in the same manner as for simple transitions –i.e. by dragging the appropriate waveforms with the mouse.



	TIME	TRANS	CART	GROUP	LENGTH	TITLE
🔈	00:16:35	SEGUE	070547	MUSIC-FISH	3:54.0	HOW GREAT IS OUR GOD
🎙	00:20:29	SEGUE	TRACK			VT HERE
🔈	00:20:32	SEGUE	022421	COMMERCIAL	:30.0	CHOLOS - HAIKU
🔈	00:20:32	SEGUE	017241	JINGLE-955	:13.5	FISH / MORE - SAFE
🔈	00:20:45	SEGUE	070681	MUSIC-FISH	3:16.3	EVERY TIME I FALL
🔈	00:24:01	SEGUE	900001	KAIM-VT	:16.4	VT HERE -- user 9/26 09:22
🔈	00:24:01	SEGUE	070455	MUSIC-FISH	6:02.6	I COULD SING OF YOUR LOVE FOREVER
🔈	00:30:00	SEGUE	017125	PROMO-FISH	:18.8	FISH FUN SWEEPER ROTATOR
🔈	00:30:18	SEGUE	070081	MUSIC-FISH	3:15.5	MORE THAN WORDS CAN SAY
🔈	00:33:33	SEGUE	017261	JINGLE-955	:06.3	FISH / RAPID FIRE ROTATOR

Illustration 64: Completed VoiceTrack

8.1.5 Adjusting Transition Levels

It is possible to adjust the audio fade levels applied during transitions by means of **rubber bands** on the waveform displays. These are green lines with small square **targets**. To adjust a rubber band, use the mouse to grab one of the targets and drag it to the desired location.

8.1.6 Importing Voicetracks

In addition to recording in realtime, it's possible to import a voicetrack directly from an audio file. To do so, select the desired voicetrack marker and then touch the **Import** button to open the Import/Export Audio dialog (see *Illustration 5*). (For more information on using the Import/Export Audio dialog, see Section 3.1.0 *Importing Audio from a File*). Once imported, the voicetrack can be manipulated in the same manner as those that were directly recorded.

8.1.7 Hitting the Post

If the event following a voicetrack has its Talk Time markers set, it is possible to set the transition so that the end of the voicetrack automatically aligns with the end of the Talk Time (commonly referred to as *hitting the post*). To do this, simply touch the **Hit Post** button.

Chapter Nine
Rivendell Macro Langauge

Section 9.0 Overview

Rivendell Macro Language (or RML for short) is a set of commands implemented within Rivendell that can be used to program the system to take various actions. A wide variety of commands exist, ranging from control of outboard gear (such as switchers and GPIO devices) to control of various aspects of log playout in RDAirPlay, to Rivendell user management.

Section 9.1 Command Structure

Each RML command in its native form consists of a two-letter code, followed by zero or more arguments (separated by spaces) and terminated with a '!' character. For example, the 'Play Next' RML looks like this:

```
PN 1!
```

This command would cause the Main Log machine in RDAirPlay to start the next event in the log. A full list of all available RMLs can be found in the section 9.3.

Section 9.2 Specifying Color

Some RMLs take a **color value** as one of their arguments. The following colors are available:

white	**black**
red	**darkRed**
green	**darkGreen**
blue	**darkBlue**
cyan	**darkCyan**
magenta	**darkMagenta**
yellow	**darkYellow**
gray	**darkGray**
lightGray	

Section 9.3 Available Commands

NOTE: not all commands shown will be available for all types of hardware (this is particularly true of the GPIO and Switcher commands). For an up-to-date listing of hardware devices supported by Rivendell, along with supported RML functionality for each, consult the 'SWITCHERS.txt' and 'GPIO.txt' files in the Rivendell documentation directory.

ADD NEXT
Code: **PX**
Syntax:

PX <mach> <cart>**!**

Insert cart <cart> in the next to play position on RDAirPlay log machine <mach>. Values for <mach> are: 1 = Main Log, 2 = Aux 1 Log, 3 = Aux 2 Log.

BINARY SERIAL OUT
Code: **BO**
Syntax:

BO <port-num> <hex-code> <...>!

Output a string of binary codes represented by <hex-code> <...> on serial port <port-num>**!**

CLEAR SERIAL TRAP
Code: **SC**
Syntax:

SC <port> <cart> <string>**!**
SC <port> <cart>**!**
SC <port>**!**

Clear a serial trap. The three argument form will clear all traps on <port> that reference <cart> and <string>. The two argument form will clear all traps on <port> that reference <cart>, while the one argument form will clear all traps on <port>.

COMMAND SEND
Code: **CC**
Syntax:

CC <dest> <rml>**!**

Send the RML command <rml> to <dest>. <dest> may be either a Rivendell host name or an IP address.

CONSOLE LABEL
Code: **CL**
Syntax:

CL <matrix> <surface> <chan> <label>**!**

On matrix <matrix>, set the input <chan> module label of control surface <surface> to <label>.

DATABASE BACKUP
Code: **DB**
Syntax:

DB <path-name>**!**

Create a backup copy of the active Rivendell database in <pathname>.
(WARNING: use of this RML is deprecated, as generating backups from a live Rivendell database can cause system pauses).

EXECUTE CART
Code: **EX**
Syntax:

EX <cart>**!**

Execute macro cart <cart> on the local host.

FIRE SALVO
Code: **FS**
Syntax:

FS <matrix> <salvo-num>**!**

Fire salvo number <salvo-num> on matrix <matrix>.

GPI ENABLE
Code: **GE**
Syntax:

GE <matrix> <gpi-num> <state>**!**

Enable or disable the GPI line indicated by <gpi-num> on matrix <matrix>.

GPI SET
Code: **GI**
Syntax:

GI <matrix> <gpi-num> <state> <cart>**!**

Issue the macro cart <cart> upon transition of the GPI line <gpi-num> on matrix <matrix> to <state>.

GPO SET
Code: **GO**
Syntax:

GO <matrix> <gpo-num> <state> <length>**!**

Command GPO line <gpo-num> on matrix <matrix> to <state> for <length> mS. A length of '0' indicates to hold the state indefinetly.

INSERT SERIAL TRAP
Code: **SI**
Syntax:

SI <port> <cart> <string>**!**

Insert a serial trap to execute the macro cart <cart> upon receipt of <string> on serial port <port>.

LOAD LOG
Code: **LL**
Syntax:

LL <mach> <log> [<start-line>]**!**

Load the log <log> in RDAirPlay log machine <mach>. After loading, start the log at line <start-line> if it is >=0. Default <start-line>=-1. Values for <mach> are: 1 = Main Log, 2 = Aux 1 Log, 3 = Aux 2 Log.

LOAD PANEL
Code: **PE**
Syntax:

PE <panel> <column> <row> <cart>**!**

Load cart <cart> into the RDAirPlay SoundPanel button at <column>,<row> of panel <panel>. <panel> should be specified with a type identifier to indicate “system” or “user”, e.g. 's1' or 'u2'

LOGIN
Code: **LO**
Syntax:

LO!
LO <user> <password>**!**

Set the current Rivendell user to <user>. If no arguments are supplied, log out the host –i.e. Revert to the default user.

MAKE NEXT
Code: **MN**
Syntax:

MN <mach> <line>**!**

Set the next event for RDAirPlay log machine <mach> to line <line>. Values for <mach> are: 1 = Main Log, 2 = Aux 1 Log, 3 = Aux 2 Log.

PLAY PANEL
Code: **PP**
Syntax:

PP <panel> <column> <row>**!**

Play the RDAirPlay button at <column>,<row> of panel <panel>. <panel> should be specified with a type identifier to indicate “system” or “user”. For example, to start a button in the second column, third row of panel U:1, one would send: PP U1 2 3!

RUN SHELL COMMAND
Code: **RN**
Syntax:

RN <shell-cmd>**!**

Run the shell command <shell-cmd>. The command will run with the permissions of the Rivendell user as configured in rd.conf(5).

SELECT WIDGET

Code: **PW**

Syntax:

PW <mach>|0**!**

Select the RDAirPlay right-hand widget to log-machine <mach> or '0' for sound panel. Values for <mach> are: 1 = Main Log, 2 = Aux 1 Log, 3 = Aux 2 Log.

SERIAL OUT

Code: **SO**

Syntax:

SO <port-num> <string>!

Output <string> on serial port <port-num>**!**

SERIAL RELOAD

Code: **SY**

Syntax:

SY <port-num>**!**

Reload the configuration for the indicated serial port. Normally, this should only be issued by RDAdmin following a configuration change.

SET COLOR LABEL

Code: **LC**

Syntax:

LC <color> **<**string>**!**

Display <string> in color <color> in the label area of RDAirPlay.

SET DISPLAY

Code: **SD**

Syntax:

SD <matrix> <display> <line> <col> <attr> <label>**!**

On matrix <matrix>, set the console display <display> to <label>, starting at position <line>,<col> and using message attributes <attr>.

The message attributes value is constructed as follows:

Bit 7 – Display mode
Bit 6,5 – Video attribute
Bits 2,1,0 – Message Text Color

Display Mode: 0 – overwrite text
1 – insert text

Video Attribute: 00 – normally
01 – flash
02 – reverse

Text Color: 000 - White
001 - Red
010 - Yellow
011 - Green
100 - Cyan
101 – Magenta

SET LABEL
Code: **LB**
Syntax:

LB <string>**!**

Display <string> in the label area of RDAirPlay.

SET MODE
Code: **PM**
Syntax:

PM <mode>**!**

Set the RDAirPlay mode <mode>. 1 = LiveAssist, 2 = Auto, 3 = Manual.

SLEEP
Code: **SP**
Syntax:

SP <msecs>**!**
Wait for <msecs> milliseconds.

START
Code: **PL**
Syntax:

PL <mach> <line>**!**

Start RDAirPlay log machine <mach> at line <line> if stopped, otherwise do nothing. Values for <mach> are: 1 = Main Log, 2 = Aux 1 Log, 3 = Aux 2 Log.

START BUTTON
Code: **PB**
Syntax:

PB <button>**!**

Push button number <button> on RDAirPlay's button widget.

START NEXT
Code: **PN**
Syntax:

PN <mach> [<mport>]**!**

Start RDAirPlay log machine <mach> if stopped, or start next event if already running. If specified, start the playout on machine port <mport>. Values for <mach> are: 1 = Main Log, 2 = Aux 1 Log, 3 = Aux 2 Log.

STOP
Code: **PS**
Syntax:

PS <mach>|0**!**

Stop log machine <mach>. Values for <mach> are: 1 = Main Log, 2 = Aux 1 Log, 3 = Aux 2 Log, 0 = ALL.

STOP PANEL
Code: **PT**
Syntax:

PT <panel> <column> <row>**!**

Stop the RDAirPlay SoundPanel button button at <column>,<row> of panel <panel>. <panel> should be specified with a type identifier to indicate “system” or “user”, e.g. 's1' or 'u2'

SWITCH ADD
Code: **SA**
Syntax:

SA <matrix> <source> <dest>**!**

Command switch matrix number <matrix> to add input number <source> to output number <dest>. Unlike **SWITCH TAKE**, this command leaves any other previously assigned inputs unchanged.

SWITCH ADD WITH GAIN
Code: **SG**
Syntax:

SG <matrix> <source> <dest> <gain>**!**

Command switch matrix number <matrix> to add input number <source> to output number <dest> at gain <gain>. The gain is specified in 1/10 of a dB, with 0 = unity gain. Unlike **SWITCH TAKE**, this command leaves any other previously assigned inputs unchanged.

SWITCH LEVEL
Code: **SL**
Syntax:

SL <matrix> <source> <level>**!**

Command switch matrix number <matrix> to adjust the gain of input number <source> to <level> dB.

SWITCH CROSSPOINT GAIN
Code: **SX**
Syntax:

SX <matrix> <source> <dest> <level>**!**

Command switch matrix number <matrix> to adjust the gain of the crosspoint connecting input <source> to output <dest> to <level> dB.

SWITCH RELOAD
Code: **SZ**
Syntax:

SZ <matrix>**!**

Reload the configuration for the indicated matrix. Normally, this should only be issued by RDAdmin following a configuration change.

SWITCH REMOVE
Code: **SR**
Syntax:

SR <matrix> <source> <dest>**!**

Command switch matrix number <matrix> to remove input number <source> from output number <dest>. Unlike **SWITCH TAKE**, this command leaves any other previous assigned inputs unchanged.

SWITCH TAKE
Code: **ST**
Syntax:

ST <matrix> <source> <dest>**!**

Command switch matrix number <matrix> to take input number <source> to output number <dest>. "Take" in this context implies removing any previously assigned inputs from the referenced output.

UDP OUT
Code: **UO**
Syntax:

UO <ip-addr> <udp-port> <string>**!**

Send <string> in a UDP packet to port <udp-port> at <ip-addr>.

Section 9.4 RML Command Index

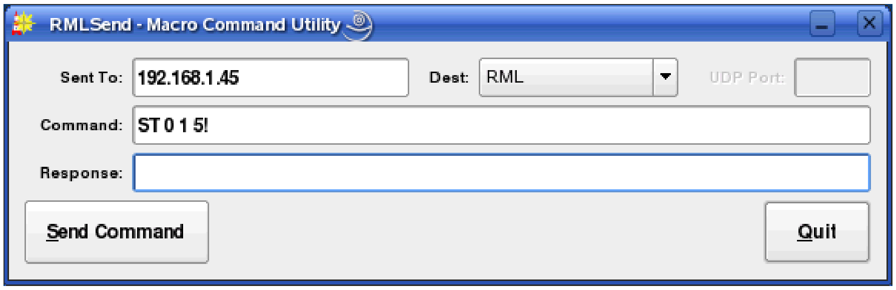
BO –	Binary Serial Out
CC –	Command Send
CL –	Console Label
DB –	Database Backup
EX –	Execute Cart
FS –	Fire Salvo
GE –	GPI Enable
GI –	GPI Set
GO –	GPO Set
LB –	Set Label
LC –	Set Color Label
LL –	Load Log
LO –	Login
MN –	Make Next
NN –	Null Command
PB –	Start Button
PE –	Load Panel
PL –	Start
PM –	Set Mode
PN –	Start Next
PP –	Play Panel
PS –	Stop
PT –	Stop Panel
PW –	Select Widget
PX –	Add Next
RN –	Run Shell Command
SA –	Switch Add
SC –	Clear Serial Trap
SD –	Set Display
SG –	Switch Add with Gain
SI –	Insert Serial Trap
SL –	Switch Level
SO –	Serial Out
SP –	Sleep
SR –	Switch Remove
ST –	Switch Take
SX –	Switch Xpoint Gain
SY –	Serial Reload
SZ –	Switch Reload
UO –	UDP Out

Chapter Ten
Interfacing with the Linux Ecosystem: RMLSend and RDImport

Section 10.0 RMLSend

RMLSend is a small utility that can be used to send RML commands to a local or remote Rivendell host. It can operate in two modes: GUI or a command line interface (CLI).

If started with no arguments, RMLSend will come up in GUI mode (see *Illustration 65*).



Sent To: 192.168.1.45
Dest: RML
UDP Port:
Command: ST 0 1 5!
Response:

Illustration 65: RMLSend in GUI Mode

The **Sent To:** should have the name or IP address of the system to which to send the RML. **Dest:** controls the method by which the command will be sent. 'RML' is standard RML transmission that returns an echo code to indicate success/failure. 'RML (No echo) does not return an echo code, while 'Set Port' allows the destination UDP port to be set (useful for controlling Rivendell from outside firewalls). **Command:** is the RML command to be sent, and **Response:** will show any echo code returned from the remote system (or 'No response' if no reply is received). Touching the **Send Command** button actually sends the command.

RMLSend also has a full-featured command-line facility that allows Rivendell commands to be sent using the standard Linux CLI utilities. The command-line syntax is:

```
rmlsend [--to-host=<hostname>] [--to-port=<port>] [<rml>|--from-file=<file>]
```

Where:

`<hostname>` name or IP address of the host to send the command to

`<port>` UDP port to to send the message to

`<rml>` any valid RML code

`<file>` name of a file containing valid RML code. If '-' is specified as <file>, then rmlsend will read the list of RML commands to be sent from standard input.

When specifying RML code on the command line, it will likely be necessary to escape any special characters (such as spaces or bang [!] characters) to protect them from the shell.

Examples:

```
 rmlsend LL\ TestLog\!
```

Send the RML command 'LL 1 TestLog!' to the local host.

```
rmlsend --to-host=host.example.com --to-port=5858 --from-file=test.rml
```

Send the RML commands in 'test.rml' to the system at 'host.example.com' at port 5858.

The above information can also be displayed on the command line by doing:

```
      rmlsend –help
```

Section 10.1 RDImport

RDImport is a command-line interface (CLI) program that can be used to import audio material into the Rivendell Library. It is particularly useful in situations where a large number of audio files need to be imported in an automated fashion, and is capable of importing thousands of files with a single command-line invocation.

The syntax for invoking RDImport is:

```
rdimport [options] <group> <filespec> [,<filespec>]*
```

Where:

`<group>` The name of a Rivendell group

`<filespec>` A file name or specification. All of the usual regex tricks work. A `<filespec>` of '-' will cause RDImport to read the list of filespecs from standard input.

The following options are available:

```
--verbose
```

Print progress messages during processing.

```
--normalization-level=<level>
```

Specify the level to use for normalizing the audio, in dBFS.
Specifying '0' will turn off normalization.

```
--autotrim-level=<level>
```

Specify the threshold level to use for autotrimming the audio, in dBFS. Specifying '0' will turn off autotrimming.

`--single-cart`

If more than one file is imported, place them within multiple cuts within a single cart, rather than creating separate carts for each file.

`--to-cart=<cartnum>`

Specify the cart to import the audio into, rather than using the next available cart number for the group. If the cart does not exist, it will be created. Each file will be imported into a separate new cut within the cart. Use of this option implies the `--single-cart` option as well.

`--delete-source`

Delete each source file after successful import. Use with caution!

`--delete-cuts`

Delete all cuts within the destination cart before importing. Use with caution!

`--drop-box`

Operate in DropBox mode. RDImport will run continuously, periodically scanning for the specified files, importing and then deleting them when found. **WARNING: use of this option also implies the** `--delete-source` **option!**

It may be necessary to enclose individual <filespec> clauses in quotes in order to protect wildcard characters from expansion by the shell. A typical indicator that this is necessary is the failure of RDImport to process newly added files when running in DropBox mode.

The above information can also be displayed on the command line by doing:

```
rdimport –help
```

Appendix A
The GNU General Public License, Version Two

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Preamble

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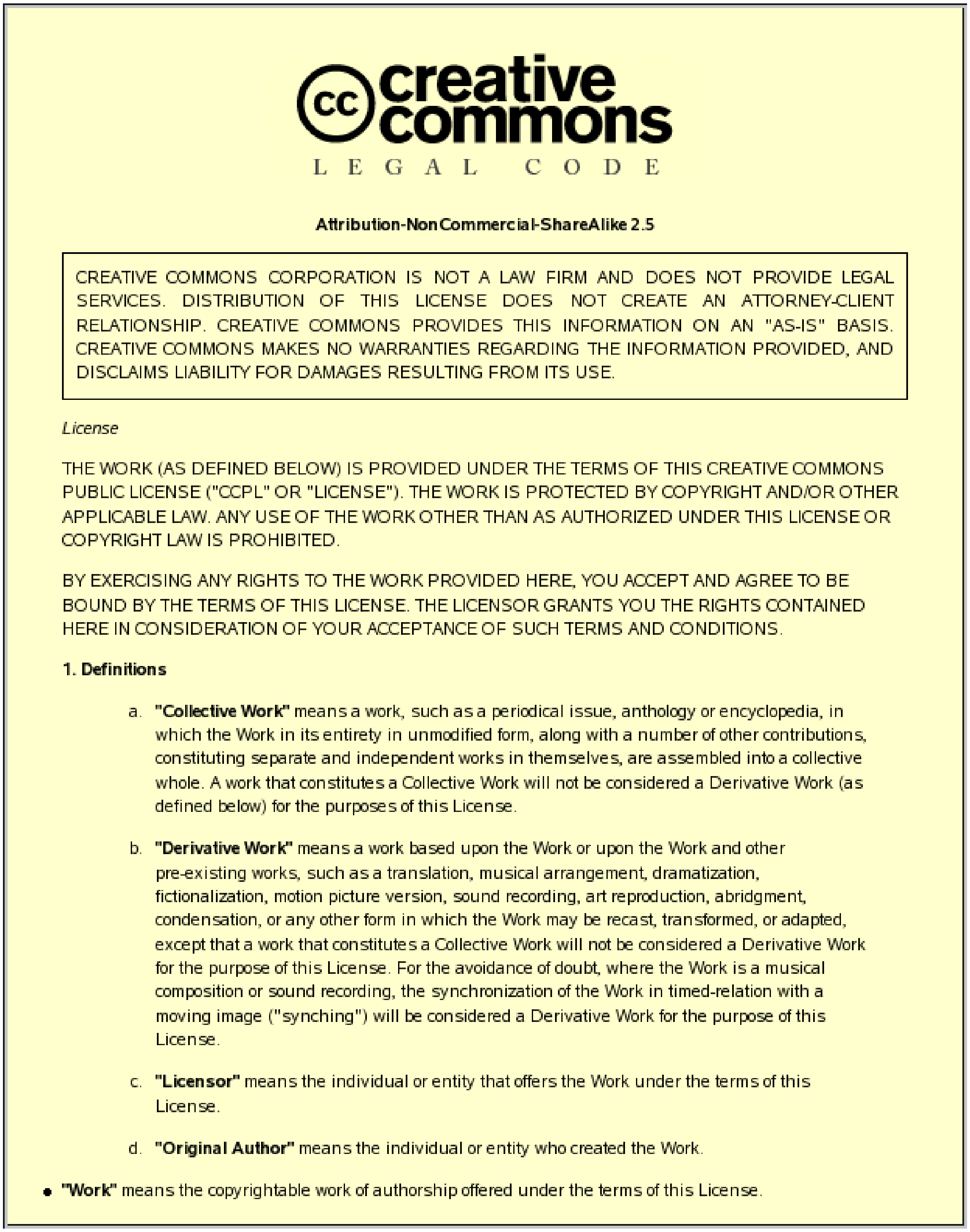

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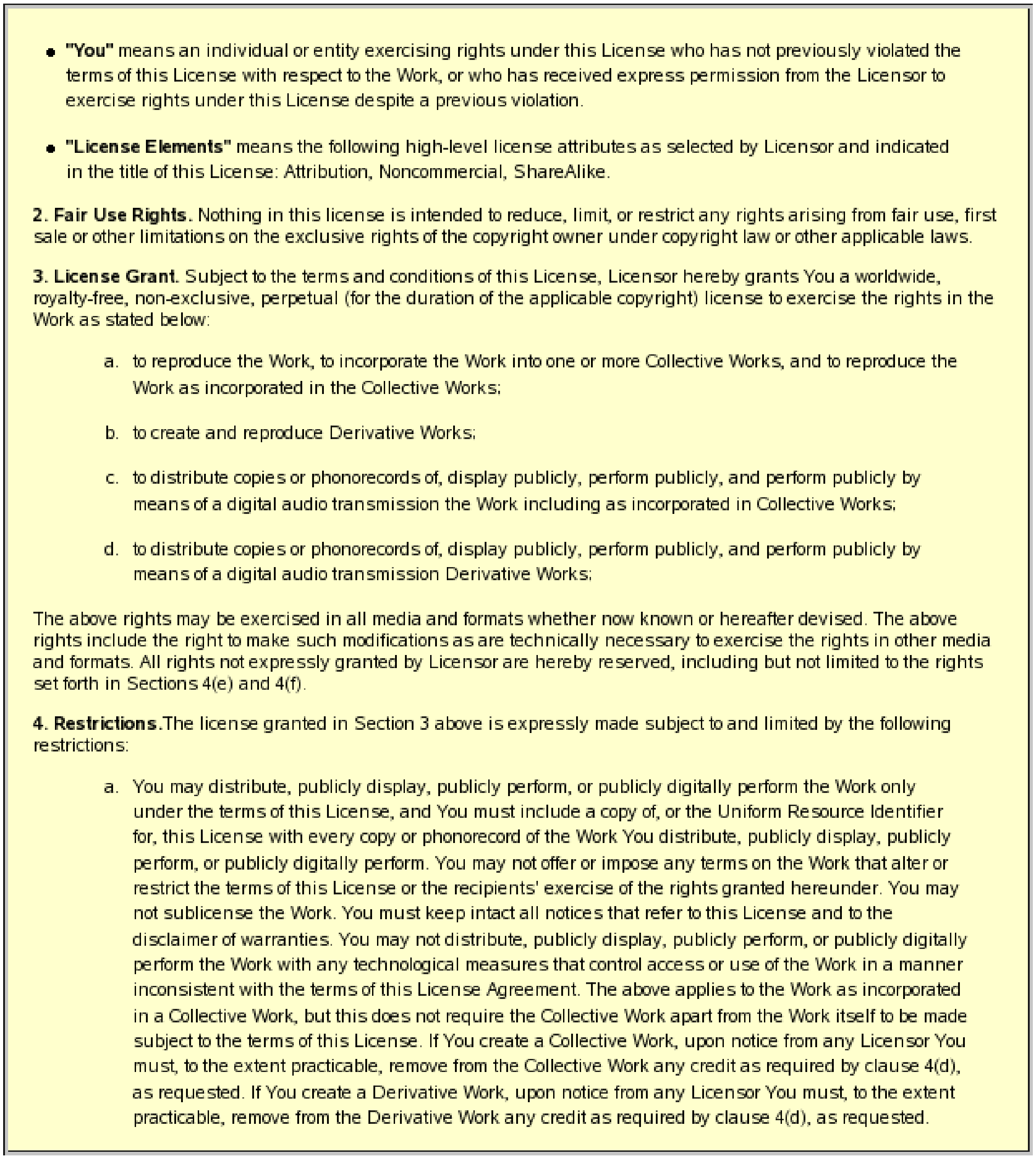

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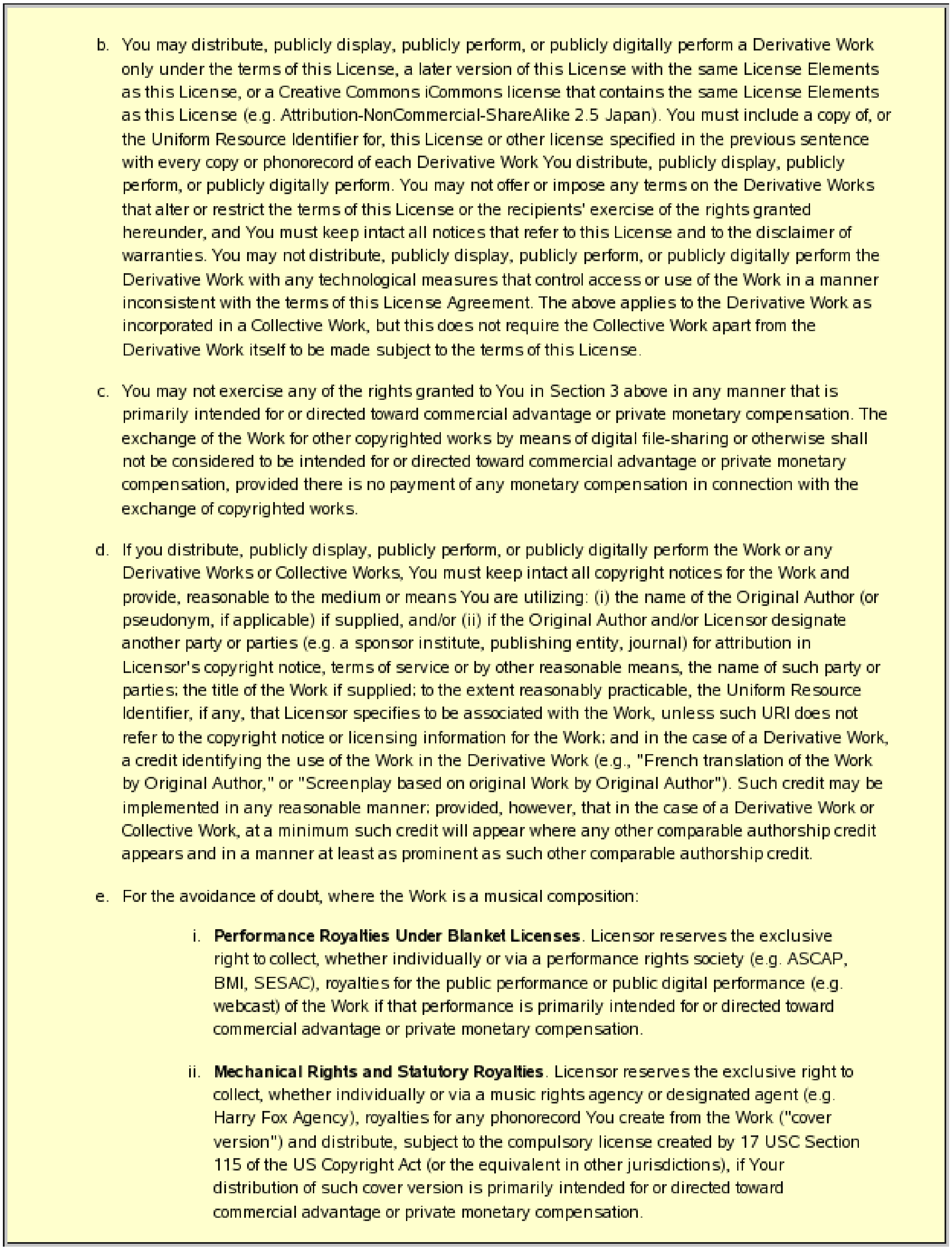

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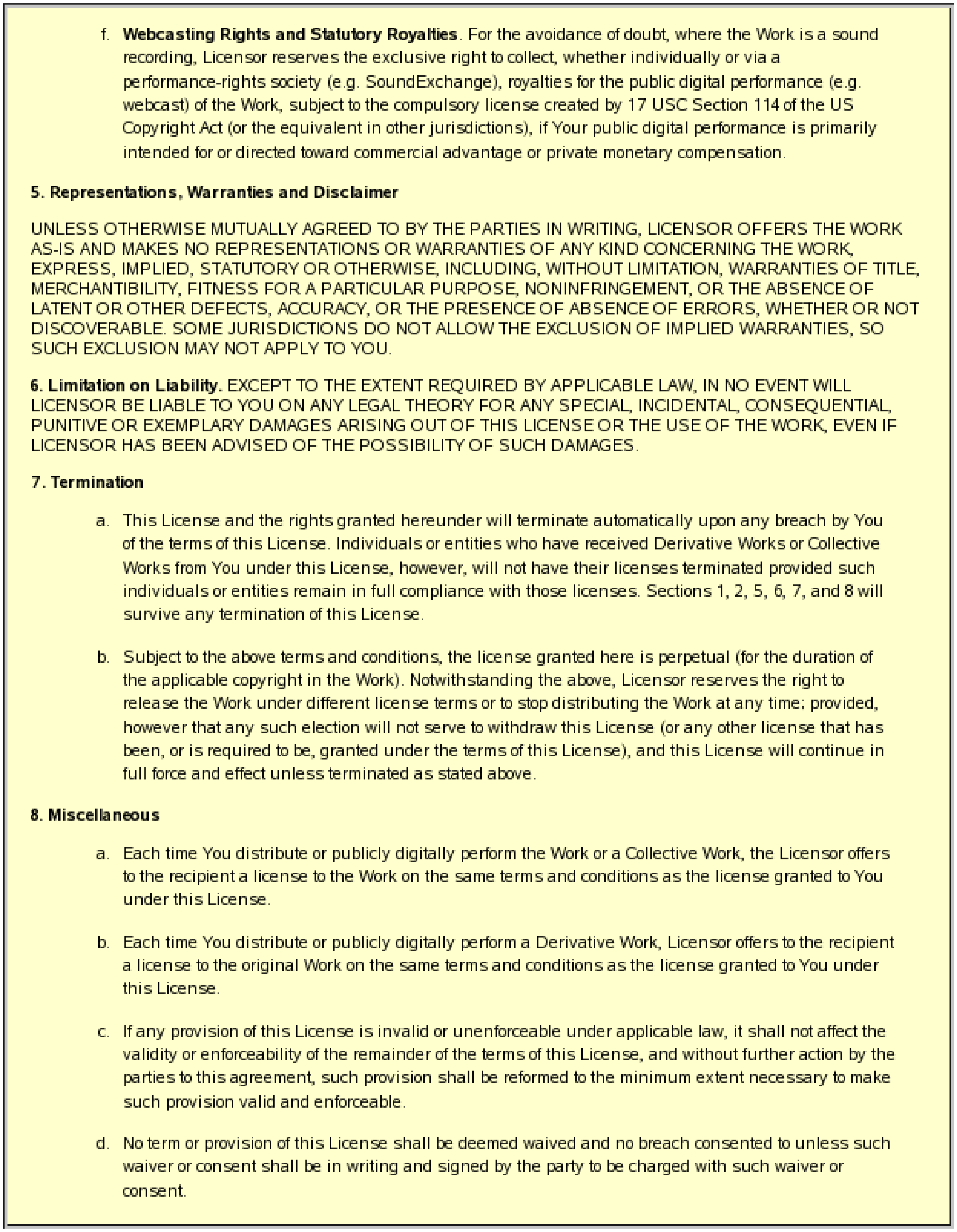

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Released full document as version 0.9.

2006-10-10 Robert Orr <orrrobert@gmail.com>
Fixed various typos.

2006-10-10 Fred Gleason <fredg@salemradiolabs.com>
Added a title page.
Added a Change History page.
Released as version 0.9.1