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Documentation Conventions

This manual uses some special symbols and fonts to call your attention to important information. The following symbols appear throughout this manual:

**CAUTION:** The Caution symbol calls your attention to information that, if ignored, can adversely affect the performance of your Harmonic product, or that can make a procedure needlessly difficult.

**NOTE:** The Note symbol calls your attention to additional information that you will benefit from heeding. It may be used to call attention to an especially important piece of information you need, or it may provide additional information that applies in only some carefully delineated circumstances.

**TIP:** The Tip symbol calls your attention to parenthetical information that is not necessary for performing a given procedure, but which, if followed, might make the procedure or its subsequent steps easier, smoother, or more efficient.

In addition to these symbols, this manual uses the following text conventions:

- **Data Entry:** indicates text you enter at the keyboard.
- **User Interface:** indicates a button to click, a menu item to select, or a key or key sequence to press.
- **Screen Output:** shows console output or other text that is displayed to you on a computer screen.
- **Bold:** indicates the definition of a new term.
- **Italics:** used for emphasis, cross-references, and hyperlinked cross-references in online documents.
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Chapter 1
Introduction

Use Harmonic’s LIVEcut, a live ingest solution, to extend on-demand services by automating the capture of live broadcast TV content.

You define which channels need to be recorded, choosing from the existing pool of broadcast channels. Then, your users can access this live content on demand, and can pause, rewind, and restart it.

LIVEcut supports different types of scheduling for the wide range of live on-demand applications:

- Automatic schedule recording, based on customized rules and EPG data
- Different scheduling mechanisms defined for different broadcast channels
- Importing standard schedules from formatted EPG files
- Automatic generation of metadata based on EPG data and templates
- Notification of recording instances to middleware server through metadata and triggers
- Creating custom schedule formats through LIVEcut’s user interface

Live content is often broadcasted in VBR (variable bit rate) mode, so you can save bandwidth by using statistical multiplexing techniques. To achieve this, you can convert the VBR to CBR (constant bit-rate) with the ProStream 1000 stream processing platform and Mentor re-encoding technology. The integration of LIVEcut with Mentor lets operators control the content preparation and ingest of live broadcast channels from a single place in the network.

LIVEcut 1.4.0.0 automatically installs anti-virus software to protect your platform from viruses.

1.1 About this Manual

This document contains information about LIVEcut:

- Chapter 1, Introduction (this chapter) gives a high-level overview of the product and explains what is in this book.
- Chapter 2, Background, explains how LIVEcut works with your system, and gives a brief overview of a LIVEcut system.
- Chapter 3, Configuring, describes how to prepare LIVEcut, set up the anti-virus protection, and configure the EPG (electronic program guide).
- Chapter 4, Basic Usage, explains the steps for basic use of LIVEcut, and includes a section with examples.
- Chapter 5, Advanced Features, explains the steps for advanced use of LIVEcut, and includes a section with examples.
- Chapter 6, Troubleshooting and Contacting Support, lists some error messages, alarms, and SNMP trap, how to read results of the anti-virus scans, and how to contact Harmonic, Inc. support.
Chapter 2
Background

This chapter has background information about LIVEcut features and architecture.

LIVEcut delivers live broadcast content. By nature, live content is difficult to deliver on demand. The content may be in VBR (variable bit rate), and may require advanced compression tools for processing. It is difficult to manage and automate, because it involves integration with a program, external legacy VOD (Video On Demand) systems and scheduling systems.

2.1 How LIVEcut Works with Your System

LIVEcut is designed to work with Harmonic StreamLiner clusters. Figure 2-1 shows how it fits with the StreamLiner ingest server, external middleware, the program and the operator.

![Figure 2-1: LIVEcut’s function in the ecosystem](image)

You can choose programs from the EPG (electronic program guide) as your objects, and LIVEcut will use the EPG’s time information to do the scheduling. Or, you can define rules to select and manage the captures.
2.2 What You Can Do

Using the EPG (electronic program guide), LIVEcut will give you interfaces to schedule and automate live capture, and to provide EPG information. LIVEcut communicates with StreamLiner for actual capture and ingest. Once that is completed, LIVEcut communicates with the middleware about the asset that is newly added to the system.

- **Viewing the program guide.** You view the EPG channels and programs in the LIVEcut interface. Typically, LIVEcut downloads program guides daily from an FTP site, or reads them from a shared drive.
  
  If there are too many channels to view easily, you can define groups of channels, then view only that subset at one time.

- **Using metadata templates.** You can use one of the default metadata templates, or you can edit them to create a customized one.

- **Creating work orders.** First, you create a work order template. Specify commonly used parameters, and modify them slightly to create custom instances. Each work order includes a work order template, a metadata template. You can list, view, and delete work orders. (Deleting a template makes it unavailable, but does not affect any work orders already using it.)

- You can record programs in several ways:
  - Selecting a particular program directly.
Specifying a particular channel and defining specific time duration for recording. Multiple assets are created, depending on the number of programs you specify in the window.

Specifying custom criteria (rules) that LIVEcut uses to select programs to be recorded.

- **Modifying work orders.** You can modify a limited number of parameters in a work order. All internal recorded changes will take place in five minutes. Because of this, you must change a work order more than five minutes before recording.

- **Deleting, stopping, or aborting work orders.**
  - If you delete a work order that has not yet started, it will be removed from the schedule.
  - If you *abort* a work order that is in progress, recording will stop and the asset will be removed.
  - If you *stop* a work order, recording will stop but the asset will not be removed.

- **Viewing work order status and logs.** You can view and search log records, and see record, ingest, user, and other activities.

- **Extending program capture.** You can request a particular recording be extended by a certain period of time, but it must within five minutes before the scheduled end time.

- **Terminating recording.** You can specifically request that a recording job be terminated while it is in progress. It will stop within three minutes.
2.3 Object Relationships

Figure 2-3 shows the relationships of objects in the LIVEcut environment.

You define rule groups that are associated with multiple rules and channels.

Each channel in the group contains a number of programs.

To create work orders, you create metadata templates with commonly used ADI 1.1 trigger parameter settings, and work order templates that have common parameters.

You set rules that specify how to select a set of programs, and which templates to use to generate the work order. When that rule is applied to a channel or rule group, the programs are selected, and the work orders are generated for each. At the scheduled time, the work orders are executed and the assets are generated.
This chapter describes procedures on configuring LIVEcut so that the anti-virus protection is functioning well, and LIVEcut works with the EPG (electronic program guides). The process includes these steps:

- Configuring LIVEcut
- Configuring the EPG

This document assumes you have already set up your VOD ecosystem, configured the hardware and created the cluster.

### 3.1 Configuring LIVEcut

Open LIVEcut: in your browser, type in http://{server_ipaddress}/smcv3, where `server_ipaddress` is the address of your cluster controller. When the StreamLiner Management Console opens, navigate to `/Configuration / LIVEcut / LIVEcut Engine`.

![Figure 3-1: Configure LIVEcut, Part 1 of 3](image)
1. Complete these fields according to your program schedule:
   - **Locale**
   - **Display Time format**
   - **Display Date Format**
   - For the daylight saving settings, you can enter the following fields (optional):
     - **Daylight Saving Start Time & Daylight Saving End Time**
       
       If a pair of Daylight Saving Start/End Time is not specified, LIVEcut will use the system’s daylight saving schedules for time conversion and handle daylight saving based on the following windows daylight saving update. Please refer to [http://support.microsoft.com/kb/2443685](http://support.microsoft.com/kb/2443685) for details.
       
       If a pair of valid Daylight Saving Start/End Time is specified, LIVEcut will convert daylight saving times based on the user’s inputted times.

   **NOTE:** You are recommended to leave these two fields BLANK unless a new Energy Policy Act for US Daylight Saving Time is implemented. Once the Daylight Saving Start/End Time fields have been entered, they need to be updated every year; otherwise daylight saving time may be incorrect.

   These two fields MUST be in the “MM-ddTHH:mm:ssZ” UTC format where:
   - MM = two-digit month
   - dd = two-digit day of the month
   - HH = two-digit hour
   - mm = two-digit minute
   - ss = two-digit second

   For example, the USA Daylight Saving Time for Year 2012 began March 11, at 2 a.m. and ended November 4 at 2 a.m.

   **Table 3-1: Conversion between local time and UTC time**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>March 11 at 2 a.m.</td>
<td>November 4 at 2 a.m.</td>
</tr>
<tr>
<td>03-11T07:00:00Z</td>
<td>11-04T06:00:00Z</td>
</tr>
</tbody>
</table>

   For year 2012 you can input the settings as follows if desired:
   - **Daylight Saving Start Time:** 03-11T07:00:00Z
   - **Daylight Saving End Time:** 11-04T06:00:00Z

   **CAUTION:** Any changes on the Daylight Saving Start/End Time fields would require a service restart for the new times to take effect.

   **CAUTION:** If the Daylight Saving End Time is set earlier than the Daylight Saving Start Time, LIVEcut will assume that the Daylight Saving End Time refers to the next coming year.
For email notification, enter the following fields:

- **Email notification address.** Supply the email addresses where you want LIVEcut to send alerts.
- **Email alert in HTML format.** Click to check if you want the alerts in html format.
- **Email management event.** Click to check if you want to be emailed with management event notices.
- For email transfer, fill in email transmission information for SMTP: SMTP Host, SMTP Port Number, SMTP Username, SMTP Password, and SMTP enable SSL.

**SCTE Local Binding IP.** Enter the interface of the node used for SCTE35. Multicast traffic from this interface must be able to reach the interface on the IDP that is receiving the live channels.

---

**Enable Asset Distributor:** To enable, click to show a checkmark. If you do enable it, also enter values for the four corresponding Asset Distributor fields:

- **Asset Distributor.** Select from drop-down list.
- **Asset Distributor Destination Path.**
3. Configuring the EPG Converter

1. Set up LIVEcut: See 3.1 Configuring LIVEcut on page 11. (LIVEcut interface is available at: http://{cc_ip_address}/livecut.)

2. From the StreamLiner Management Console, navigate to /Configuration/LIVEcut/EPG Converter.

3. You see a new page:
4. Fill in these parameters:

- **EPG adapter**: From the drop-down list, select the adapter you will be using.
- **EPG Distributor**: From the drop-down list, select LIVEcut Distributor.
- **EPG Extractor**: For most cases, EPG pull will be FTP.

   If this is chosen, complete these fields:

   - **EPG Source Ftp Address**: The FTP address for getting the EPG.
   - **EPG Source Ftp Port**: The FTP port for getting the EPG.
   - **EPG Source Ftp Path**: The FTP path for getting the EPG.
   - **EPG Source Ftp Transfer Mode**: Binary (default).
   - **EPG Source Ftp Connection Mode**: Active (default).
   - **EPG Source Ftp Username**: The FTP username for getting the EPG.
   - **EPG Source Ftp Password**: The FTP password for getting the EPG.

- **Set these fields to match your schedule**:

   - **EPG Extract Interval**: If you want the EPG extract to happen at regular intervals, enter the interval here. For example, to start every half-hour, you would enter 00:30:00.
   - **Extract at Specified Time of Day?** (Yes or no)
Extract Time of Day. If you specified Yes for time of day, enter the time here. For example, if you want the EPG extracted at 11:30 PM, enter 23:30:00.

- Set these for NAS (network access server), the Windows (cifs or smb) share:
  - EPG NAS Path. The directory path to the EPG data.
  - EPG NAS Address. The IP address of the storage server.

- Click the Apply button.
- Restart LIVEcut, as instructed.

### 3.3 Uploading the EPG

You view program schedules from the information in the EPG file. There are two ways to get the file:

- You can trigger an FTP pull.
- You can manually download an EPG file (in xmltv format) and upload it to LIVEcut.

#### 3.3.1 Pull the EPG file

To manually trigger a pull from a configured location:

1. Open the LIVEcut main page at http://{servername}/livecut/
2. Under Configuration, select Upload EPG.
3. Under Manually trigger LIVEcut Engine, click the button that says Pull EPG.

#### 3.3.2 Download the EPG file

First, download an EPG file from the internet:

2. Install TVxb, follow the instructions in the TVxb Installation Guide.
3. Modify the TVxb.ini file, as described in the TVxb Installation Guide. Change the download path, the different channels, and the number of days of programs to download.
4. Run TVxb Download Guide to download the file and generate the EPG file.

Now, upload that EPG file to LIVEcut:

1. Go to the LIVEcut main page at http://{cluster-controller-servername}
2. Under Configuration, select Upload EPG.
3. Browse to the EPG file, and click on Submit.
This chapter has information about basic uses of LIVEcut, followed by a few examples. Information and examples for more advanced uses are in Chapter 5, Advanced Features.

4.1 Configuring the Channel for Ingest

![Figure 4-1: Work order workflow](image)

After you have downloaded the EPG files, as described in Chapter 3, Configuring, you are ready to specify which channels LIVEcut will create work orders for. Channels need to be configured, and at least one work order template must be created.

Follow these steps to configure the channel:

1. If the GUI is not open, open it from http://{cc_ip_address}/livecut.
2. Navigate to Configuration / Channel.
3. Click the Select Desired Channels button.
4. When you click to select the channel, the Configuration - Desired Channels window opens:

![Figure 4-2: Harmonic MasterView, with channel setting circled](image)
5. If no channels are shown in the lists, navigate to Configuration - Upload EPG, and click the Pull EPG button.

6. Select channels to move between lists, then click the arrow buttons to move them. The list of desired channels has a limit of 60 channels.

7. When the Desired list is complete, Click on the Save button. The channels will appear at the next EPG pull.

4.2 Configure the Channel for Ingest

You must specify the information about the ingest source (IP, port, for example) so that work orders can be created for that channel through LIVEcut. There are two ways to configure a channel: in the Channel Configuration page, and with a shortcut in Master View.

4.2.1 Using the Channel Configuration Page to Configure Channel Ingest

1. Navigate to Configuration / Channel.
2. Click on the Edit button for the channel that you want to configure.
3. **Icon Location** (optional). This is the URL location of the icon for the channel.

4. **Category** (optional). Categories are used to categorize the assets for your own purposes. Select from the Available Category and then import to the Desired Category. The Available Category needs to be pre-defined in the Configuration - Category page. (Please refer to **4.6 Create a Category** for details).

5. Modify the channel information Ingest Settings:
   - **Ingest IP**.
   - **Ingest port**.
     
The ingest source must be connected, and the ingest interface must be configured correctly in SMC. The source can be unicast or multicast.
   - **Bandwidth** or **Ingest Profile**. Typically, you enter the bandwidth here. Advanced users can select an ingest profile from the drop-down list.
   - **Resolution**. You need to specify the resolution for the ingest source. Select the
appropriate resolution from the drop-down list.

- **Codec.** You need to specify the codec for the ingest source. Select the appropriate codec from the drop-down list.
- **Associated rule group.** You need to have the channel associated to the rule group by selecting the appropriate Rule Group from the radio button list.

### 4.2.2 Using the Master View to Configure Channel Ingest

1. Navigate to LIVEcut Master View.
2. Choose the channel you want to configure, and click on the icon to modify.

![Figure 4-5: Use master page to edit channel](image)

3. **Icon Location** (optional). This is the URL location of the icon for the channel.
4. **Category** (optional). Categories are used to categorize the assets for your own purposes. Select from the Available Category and then import to the Desired Category. The Available Category needs to be pre-defined in the Configuration - Category page. (Please refer to 4.6 Create a Category for details).
5. Modify the channel information Ingest Settings:
   - **Ingest IP.**
   - **Ingest port.**
     The ingest source must be connected, and the ingest interface must be configured correctly in SMC. The source can be either unicast or multicast.
   - **Bandwidth** or **Ingest Profile.** Enter the bandwidth, or select an ingest profile from the drop-down list.
Resolution. You need to specify the resolution for the ingest source. Select the appropriate resolution from the drop-down list.

 Codec. You need to specify the codec for the ingest source. Select the appropriate codec from the drop-down list.

 Associated rule group. You need to have the channel associated to the rule group by selecting the appropriate Rule Group from the radio button list.

4.3 Upload a Metadata Template

You use metadata templates to generate the metadata for ADI package. In the ADI template files, some fields are static and some fields can be dynamically modified by LIVEcut when generating the metadata.

A metadata template has been included by default but other metadata templates can be uploaded to LIVEcut. For more information about using metadata templates, see Chapter 5, Advanced Features.

You can upload, download, and delete metadata templates through the Configuration - Metadata Template page.

Follow these steps to upload a metadata template to LIVEcut:

1. Navigate to Configuration / Metadata Templates.

2. Click the browse button to find the desired metadata template.

3. Click the Add button.

4.4 Create a Work Order Template

A work order template is required to create work orders. All fields in the template must be filled; none are optional.

1. Navigate to Configuration / Work Order Templates. You see a new page:
2. Fill in the fields:

**Name.** Input a name for the work order template, something you will recognize later.

**Asset Retention Day.** The asset will be valid for the number of days that you enter. After that many days, the asset will be scheduled to be deleted.

**Metadata Template.** Select one from the drop-down list.

**Ingest buffer Start.** Ingest starts before the start time of the program. Enter an integer for the number of minutes and seconds before the program start time that you want ingest to start.

For example, a program runs from 02:00 to 03:00 on a day. The ingest buffer start = 1 min 0 sec, ingest buffer end = 2 min 0 sec. The total ingest time will be 01:59 – 03:02.

**Ingest buffer End.** Ingest ends after the end time of the program. Enter an integer for the number of minutes and seconds after the program end time that you want ingest to end. (See example above.)

---

**Viewing Buffer Start Hour.** The asset will be available for viewing this many hours after ingest is complete.

**Viewing Buffer End Hour.** The asset will no longer be available for viewing this many hours after ingest is complete.

**Asset Naming Convention.** Either enter one, or select from the drop-down list. Some drop-down selections may not be compliant with ADI 1.1. For more information about ADI 1.1 asset naming, see 5.1 Variables Used in Work Orders: Asset Naming on page 40.
4.5 Create a Channel List

Use channel lists to group channels that you want displayed in your Master View window. This is useful if there are a lot of channels, but only a few of them need to be monitored.

You can have more than one channel list.

1. Navigate to Configuration / Channel List. The Configuration - Channel List window opens:

![Figure 4-8: LIVEcut Configuration - Add Channel List window](image)

2. Click on the Add Channel List button. The Configuration - Channel List window opens fields for you to add entries for the list you just added:

![Figure 4-9: Add channel list](image)
3. **Name.** Enter a name for the list, one that you will recognize later.

4. **Description** (Optional). Enter a description for the channel list.

5. Create a list of **Selected** channels in the box on the left. The maximum is six channels. To move an item between the 2 lists, click it, then click an arrow to move it into the box on the other side.

6. Click **Save** to close when your Selected list is complete.

7. Now, select the new channel list in Master view.

4.6 **Create a Category**

LIVEcut allows you to define categories (optional) that can be used to categorize the assets for your own purposes. These user-defined categories will be used in the generation of ADI metadata file for successfully ingested work orders, provided that the variable $Program_Category$ is used in the metadata template.

1. Navigate to Configuration / Category. The Configuration - Category page appears.
2. Specify a category name in the blank field beside the **Add** button.
3. Click on the **Add** button.

**NOTE:** The selected user-defined categories of a channel or ingest work order will not be affected if any categories are deleted and updated in the Configuration - Category page.

### 4.7 Create an Ad Hoc Channel

**LIVEcut** allows you to create ad hoc channels (optional) by specifying parameters for these newly created channels in the **LIVEcut** GUI.

1. Navigate to Configuration / Channel. The Configuration - Channel page appears.
2. Click the **Add Ad Hoc Channel** button.

![Image 4-12: Create an ad hoc channel](image)

Specify the parameters for the ad hoc channel.

3. **Icon location** (optional). This is the URL location of the icon for the channel.
4. **Category** (optional). Categories are used to categorize the assets for your own purposes. Select from the Available Category and then import to the Desired Category. The Available Category needs to be pre-defined in the Configuration - Category page. (Please refer to **4.6 Create a Category** for details).
5. Specify the channel information Ingest Settings:
   - **Ingest IP**
   - **Ingest port**

The ingest source must be connected, and the ingest interface must be configured correctly in SMC. The source can be either unicast or multicast.
4.8 Create an Ad Hoc Work Order

LIVEcut allows you to create a work order for the user-defined ad hoc channel. You need to create an ad hoc channel before creating any ad hoc work orders.

1. Navigate to Work Order View.
2. In that window, click on Create Ad Hoc Work Order. The following page appears.

Specify the parameters for the ad hoc work order.

3. **Title**. This is the program title. The value will be used for metadata template variable $Program_Title$.

**NOTE:** The maximum length for "Title" is 121 characters only because 7 characters have been reserved for adding the creation date to the "Title" in the output metadata. (Please also refer to metadata variable "$Program_Title_CreationDate" for details.)

4. **Title Brief** (Optional). This is the program title brief. The value will be used for metadata template variable $Program_TitleBrief$.
5. **Description** (Optional). This is the program description. The value will be used for metadata template variable $Program_Desc$.

6. **Channel**. This is the ad hoc channel on which the work order is to be created.

7. **Work Order Template**. This is the template for the creation of the work order.

8. **Start Time**. This is the start time of the work order, in the format of “yyyy/mm/dd hh:mm tt”. It is required to be at least 1 minute from the current time.

   To be more convenient, the initial start time when the page is loaded will be the start of the nearest half hour block (e.g. current time is 10:15 a.m. when the page is loaded, the initial start time will be 10:30 a.m.).

9. **Record Duration**. This is the record duration of the work order. The minimum value is 5 minutes.

10. **Category** (optional). Categories are used to categorize the assets for your own purposes. Select from the Available Category and then import to the Desired Category. The Category needs to be pre-defined in the Configuration - Category page. (Please refer to 4.6 *Create a Category* for details).

### 4.9 Searching for Programs

The Search Program feature lets you find your programs in Master View, by several criteria: title, description, start time, and end time.

Follow these steps to search:

1. Navigate to LIVEmc Master View.
2. Click on the Search Program icon.

![Search Program](image)

**Figure 4-14**: Master page with Search button (circled)

You see a new page, where you can search for programs by criteria.
3. In the upper input boxes, enter the criteria you want to use for your search. These will be matched to the items shown in the columns below:
   - Channel
   - Start Time
   - End Time
   - Program Title
   - Program Description
4. Click the **Search** button. The list below will show the programs that match your criteria.
5. When you find the program, click to select it. Click on the **Go to Master View** icon, which is on the far right of the row.
   You will return to the master view window, where the selected program will be highlighted:

![Figure 4-16: LIVEcut Master View, showing selected program](image-url)
4.9.1 Viewing Work Orders

In addition to the list in Master View, you can also monitor your work orders for programs in the search list in another view: the Work Order View.

There are two methods to set the display:

1. You can use the quick filters on top, where you can select criteria for three fields:
   - Channel
   - Time range
   - Start time

   In the columns below, you can see the parameters that were specified for the asset.

   ![Figure 4-17: Work Order shown in Search by filters](image)

2. You can check the Search box on the top and search by these criteria:
   - Record Mode
   - Channel
   - Status
   - Metadata Distribution Status
   - Ingest Error Code
   - Target Asset Name
   - Service Mode
   - Start time
   - End time
   - Program title
   - Program description
   - Asset Remaining Day <=

   (Asset Remaining Day implies the number of days between the Asset Retention Date and the current date.)
NOTE: You can view the most recent work orders by clicking the Now button. The Start Time field will then display the most recent time slot for work orders. (Please refer to Figure 4-17 on page 29).

4.9.2 Viewing Ad Hoc Work Orders

You can monitor work orders for ad hoc channels only. Follow these steps:
1. Navigate to Work Order View.
2. Select All Ad Hoc Channels from the top drop-down menu as shown in Figure 4-19.
3. All the work orders for ad hoc channels appear if they exist.

NOTE: You can view the most recent work orders for ad hoc channels by clicking the Now button. The Start Time field will then display the most recent time slot for work orders.
4.10 **Viewing Ingesting Jobs**

You can monitor ingesting jobs in a different window. Follow these steps:
1. Navigate to Work Order View.
2. In that window, click on Show Ingesting Jobs.

3. The Ingesting Jobs window opens:

   ![Figure 4-20: Click Show Ingesting Jobs in Work Order View](image)

   - ![Figure 4-21: Ingesting Jobs window](image)

4. In this window, you can Stop or Abort a job by clicking on the button on the far right of its row.

   **NOTE:** Similarly, you can view all the ingesting jobs for Ad Hoc Channels by selecting "All Ad Hoc Channels" from the drop-down list circled as shown in Figure 4-20.

4.11 **Viewing Extension Data**

Some channels and programs may contain extension data. To view the extension data, follow these steps:
1. Navigate to Master View.
2. Click on the View icon in the channel or the program heading. A drop-down list will appear with the information.

---

**4.12 Basic Usage Examples**

Four examples of basic usage are described here:

- **4.12.1 Example 1: Record a Specific Program** describes recording a specific program.
- **4.12.2 Example 2: Record all Programs in a Channel in a Given Time Period** describes recording all programs in a channel within a time period.
- **4.12.3 Extending a Work Order** describes extending a work order.
- **4.12.4 Stopping or Aborting a Work Order** describes stopping or aborting a work order.

### 4.12.1 Example 1: Record a Specific Program

This example records a specific program, following these steps:

1. Configure channel for ingest. (See **4.1 Configuring the Channel for Ingest** on page 17).
2. Upload metadata template (optional). (See **4.3 Upload a Metadata Template** on page 21).
3. Create work order template. (See **4.4 Create a Work Order Template** on page 21).
4. Navigate to LIVEcut Master View.
5. Choose the program, then click the Create Work Order icon, as shown in **Figure 4-23: LIVEcut Master View - Search Program, with Create Work Order icon circled** on page 33.

**NOTE:** To choose the program, click the green cross icon that appears in the program list, circled below. (Do not use the green cross in the channel box.)
Chapter 4 Basic Usage

Basic Usage Examples

6. In the drop-down list, choose the work order template created.
7. Click the Create button.

4.12.2 Example 2: Record all Programs in a Channel in a Given Time Period

1. Configure the channel for ingest. (See 4.1 Configuring the Channel for Ingest on page 17).
2. Upload the metadata template (optional). See 4.3 Upload a Metadata Template on page 21.
3. Create a work order template. (See 4.4 Create a Work Order Template on page 21).
4. Go to LIVEcut Master View.
5. Choose the channel, and click the Apply Rule icon next to the channel name.

NOTE: For channel, select the green cross icon that appears in the channel box, not the one that appears in the list of programs.

You see a new page:

Figure 4-24: LIVEcut Master View – Apply Rule window
6. In the Apply Rule window:
   - From the drop-down list, choose the Work Order Template.
   - For Program date from: and Program date to: enter year, month, and time in the format shown in Figure 4-24 on page 33.
   - You can enter a Rule Name (optional).
7. Click the Apply button.

### 4.12.3 Extending a Work Order

The most common way to extend a work order is through Master View. (You can also do it from the Work Order View or the Ingesting Jobs page.)

1. Navigate to Master View.
2. Click to select the work order that you want to extend. It must have status of either ingesting or pending.
3. The details list opens. Modify the ingest buffer (in minutes and seconds) to extend the ingest.
4. Click the **Update** button to update the work order.
4.12.4 Stopping or Aborting a Work Order

You can stop or abort an ingesting work order through the interface. When you do, ingest stops. If you use the Abort button, the ingested asset is deleted as well. If you use the Stop button, the ingested asset is not deleted.

One way to do this is through Master View.
1. Navigate to Master View.
2. Click on the ingesting work order that you want to stop.
3. The details list opens. Click on the Stop or Abort button.

You can also start from the Work Order View or the Ingesting Jobs page. (4.10 Viewing Ingesting Jobs on page 31 shows the Ingesting Jobs page.)
4.12.5 Manual Metadata Redistribution

You can resend metadata manually for the ingested work orders.

After ingest and metadata distribution has finished, check the work order details and logs for the final result.

Use the **Resend Failed** or **Resend All** button for manual metadata redistribution if desired.

One way to do this is through Master View.
1. Navigate to Master View and monitor the work orders.
2. If the log icon in work order is blue, that means all metadata are distributed successfully.
If the log icon is red, that means there are failed distributions.

![Failed distributions for metadata](image)

**Figure 4-27: Failed distributions for metadata**

3. Click on the ingested work order that you want to redistribute.
4. The details list open. Click on the **Resend Failed** or **Resend All** button.

### 4.12.6 Editing Metadata

You can edit metadata manually on the ingesting or pending work orders. The fields you can edit include Metadata Title & Metadata Description.

To edit metadata, proceed the following steps:
1. Navigate to Master View.
2. Click on the ingesting or pending work order you want to edit.
3. The Details list opens.
4. Edit the Metadata Title and/or Metadata Description fields.
5. Click on the Update button.
6. An icon appears for the work order where the metadata within has been edited.
Chapter 5
Advanced Features

This chapter describes using more advanced features of LIVEcut:

- Using variables in the work order, with the asset naming conventions for doing it
- How LIVEcut modifies ingested metadata templates for specific local use
- Using the log viewers and its sort criteria
- How to create and use rules to generate work orders

After the descriptions, there is an example of recording programs that uses some of these advanced features.

5.1 Variables Used in Work Orders: Asset Naming

You can generate target asset names by using a predefined formatted string in the work order template.

**NOTE:** When using the ADI exporter, you must create an asset name that follows the ADI conventions. It must have 4 alphabetical letters followed by 16 numbers. For example: 
PROV$isd:yyyyMMddHHmm$3:SEQ_NUMBER$

Below are some examples of asset naming convention strings:

\$u:CHANNEL_ID$$_psg:yyyyMMddHHmmss$

\$PROGRAM\_TITLE$$_u:CHANNEL\_ID$_$psd:yyyy\_MM\_dd\_HH\_mm\_ss$

\$CHANNEL\_NAME$_$8:SEQ\_NUMBER$

LIVEcut will replace the text with the actual value.

The variables that are used are listed in Table 5-1, Table 5-2, Table 5-3, and Table 5-4.

**Table 5-1: Conversion Tags**

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANNEL_ID</td>
<td>Channel ID</td>
</tr>
<tr>
<td>CHANNEL_NAME</td>
<td>Channel name</td>
</tr>
<tr>
<td>CHANNEL_IP</td>
<td>Channel ingest source IP</td>
</tr>
<tr>
<td>CHANNEL_IP_WITH_PORT</td>
<td>Channel ingest source IP with port number (value should be IP:port#)</td>
</tr>
<tr>
<td>PROGRAM_TITLE</td>
<td>Program title</td>
</tr>
<tr>
<td>PROGRAM_CATEGORY</td>
<td>Program category</td>
</tr>
<tr>
<td>PROGRAM_LANGUAGE</td>
<td>Program language</td>
</tr>
<tr>
<td>TEMPLATE_NAME</td>
<td>Template name</td>
</tr>
<tr>
<td>TEMPLATE_SERVICE_MODE</td>
<td>Template service mode</td>
</tr>
</tbody>
</table>
### Table 5-1: Conversion Tags

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>METADATA_TEMPLATE_NAME</td>
<td>Metadata template name</td>
</tr>
<tr>
<td>SEQ_NUMBER</td>
<td>Sequence number (When each asset is generated, this number will be incremented and inserted for this tag)</td>
</tr>
</tbody>
</table>

### Table 5-2: Special Tags

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>u</td>
<td>Upper case</td>
</tr>
<tr>
<td>l</td>
<td>Lower case</td>
</tr>
<tr>
<td>number</td>
<td>Number of digits (Valid for sequence number only.)</td>
</tr>
</tbody>
</table>

### Table 5-3: Timestamp Tags (Default is ingest start time.)

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>psg</td>
<td>Program start time, in GMT*</td>
</tr>
<tr>
<td>peg</td>
<td>Program end time, in GMT*</td>
</tr>
<tr>
<td>isg</td>
<td>Ingest start time, in GMT*</td>
</tr>
<tr>
<td>ieg</td>
<td>Ingest end time, in GMT*</td>
</tr>
<tr>
<td>psd</td>
<td>Program start time, in DST*</td>
</tr>
<tr>
<td>ped</td>
<td>Program end time, in DST*</td>
</tr>
<tr>
<td>isd</td>
<td>Ingest start time, in DST*</td>
</tr>
<tr>
<td>ied</td>
<td>Ingest end time, in DST*</td>
</tr>
</tbody>
</table>

*GMT = Greenwich Mean Time, and DST = Daylight Saving Time

### Table 5-4: Date/Time Format String

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dd</td>
<td>Represents the day of the month as a number from 01 through 31. A single-digit day is formatted with a leading zero.</td>
</tr>
</tbody>
</table>
### Table 5-4: Date/Time Format String

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hh</td>
<td>Represents the hour as a number from 01 through 12, that is, the hour as represented by a 12-hour clock that counts the whole hours since midnight or noon. Format a single-digit hour with a leading zero.</td>
</tr>
<tr>
<td>HH</td>
<td>Represents the hour as a number from 00 through 23. This is the hour as represented by a zero-based 24-hour clock that counts the hours from midnight (0). A single-digit hour is formatted with a leading zero; for example, the HH value for 1:00 AM is 01.</td>
</tr>
<tr>
<td>mm</td>
<td>Represents the minute as a number from 00 through 59. The minute represents whole minutes passed since the last hour. A single-digit minute is formatted with a leading zero.</td>
</tr>
<tr>
<td>MM</td>
<td>Represents the month as a number from 01 through 12. A single-digit month is formatted with a leading zero.</td>
</tr>
<tr>
<td>ss</td>
<td>Represents the seconds as a number from 00 through 59. The second represents whole seconds passed since the last minute. A single-digit second is formatted with a leading zero.</td>
</tr>
<tr>
<td>t</td>
<td>Represents the first character of the A.M./P.M. designator.</td>
</tr>
<tr>
<td>tt</td>
<td>Represents the A.M./P.M. designator.</td>
</tr>
<tr>
<td>yy</td>
<td>Represents the year as a two-digit number. If the year has more than two digits, only the two low-order digits appear in the result. If the year has fewer than two digits, the number is padded with leading zeros to form a two-digit value.</td>
</tr>
<tr>
<td>yyyy</td>
<td>Represents the year as a four-digit number. If the year has more than four digits, only the four low-order digits appear in the result. If the year has fewer than four digits, the number is padded with leading zeros to form a four-digit value.</td>
</tr>
</tbody>
</table>

### 5.2 Understanding LIVEcut’s Changes to the Metadata Template

LIVEcut can generate ADI metadata after ingest, and it will be generated according to the metadata template.

These tables list the reserved words that LIVEcut searches for, then replaces with values from the LIVEcut metadata. LIVEcut searches for certain reserved words in all templates. It also searches Tribune™ EPGs for additional reserved words.
LIVEcut replaces these reserved words in all templates.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$AssetName$</td>
<td>Asset names are generated by LIVEcut from the ingest work order templates. For ADI distribution, the asset name must follow this convention: (PROV$isd:yyyyMMddHHmm$$3:SEQ_NUMBERS$)</td>
</tr>
<tr>
<td>$AssetNameP$</td>
<td>$AssetName$_0</td>
</tr>
<tr>
<td>$AssetNameT$</td>
<td>$AssetName$_1</td>
</tr>
<tr>
<td>$AssetNameM$</td>
<td>$AssetName$_2</td>
</tr>
<tr>
<td>$AssetID$</td>
<td>Asset ID is generated by LIVEcut from the ingest work order templates. Asset Id contains 20 characters. The first 19 characters or if it is less than 19 characters, the characters available is copied from the asset name, and the ending char is “0”.</td>
</tr>
<tr>
<td>$AssetIdT$</td>
<td>Asset ID of Title Asset is generated by LIVEcut from the ingest work order templates. Asset Id contains 20 characters. The first 19 characters are copied from the asset name, and the ending char is “1”.</td>
</tr>
<tr>
<td>$AssetIdM$</td>
<td>Asset ID of Movie Asset is generated by LIVEcut from the ingest work order templates. Asset Id contains 20 characters. The first 19 characters are copied from the asset name, and the ending char is “2”.</td>
</tr>
<tr>
<td>$Program_Title$</td>
<td>Program Title (maximum 128 characters)</td>
</tr>
<tr>
<td>$Program_TitleBrief$</td>
<td>Program Title Brief (maximum 19 characters)</td>
</tr>
<tr>
<td>$Program_Desc$</td>
<td>Program description</td>
</tr>
<tr>
<td>$Program_SummaryShort$</td>
<td>Program Summary Short (maximum 256 characters)</td>
</tr>
<tr>
<td>$Program_SummaryMedium$</td>
<td>Program Summary Medium (maximum1024 characters)</td>
</tr>
<tr>
<td>$Program_SummaryLong$</td>
<td>$Program_SummaryLong$</td>
</tr>
<tr>
<td>$TV_Rating$</td>
<td>TV Rating</td>
</tr>
<tr>
<td>$Runtime$</td>
<td>The duration of the asset (HH:MM:SS)</td>
</tr>
<tr>
<td>$DisplayRuntime$</td>
<td>The duration of asset for display (HH:MM)</td>
</tr>
<tr>
<td>$Program_Actor$</td>
<td>Program Actors</td>
</tr>
<tr>
<td>$Program_Director$</td>
<td>Program Director</td>
</tr>
<tr>
<td>$Program_Producer$</td>
<td>Program Producer</td>
</tr>
<tr>
<td>$Program_Category$</td>
<td>Program Categories</td>
</tr>
<tr>
<td>$LicenseStartDate$</td>
<td>The date the asset is ready for streaming, represented in the format yyyy-MM-dd for year, Month, and day.</td>
</tr>
</tbody>
</table>
Table 5-5: Reserved words in all templates, and their replacement

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$LicenseEndDate$</td>
<td>The date the asset is no longer available to be viewed, represented in the format yyyy-MM-dd for year, Month, and day.</td>
</tr>
<tr>
<td>$LicenseStartTime$</td>
<td>The date and time when the asset is ready for streaming, represented in the format yyyy-MM-ddTHH:mm:ss for year, month, date, and Time = Hour, minute, and second</td>
</tr>
<tr>
<td>$LicenseEndTime$</td>
<td>The date and time when the asset is no longer available to be viewed, represented in the format yyyy-MM-ddTHH:mm:ss for year, month, date, and Time = Hour, minute, and second</td>
</tr>
<tr>
<td>$CreationDate$</td>
<td>The date when ingest starts, represented in the format yyyy-MM-dd for year, Month, and day.</td>
</tr>
<tr>
<td>$Program_EpisodeNum$</td>
<td>Episode Number</td>
</tr>
<tr>
<td>$ExposedFTPLocation$</td>
<td>The ftp location where the content can be downloaded</td>
</tr>
<tr>
<td>$Filesize$</td>
<td>File size of the ingested asset</td>
</tr>
<tr>
<td>$Checksum$</td>
<td>The checksum of the ingested asset</td>
</tr>
<tr>
<td>$Bit_Rate$</td>
<td>Bit rate of the ingested asset</td>
</tr>
<tr>
<td>$Frame_Rate$</td>
<td>Frame rate of the ingested asset</td>
</tr>
<tr>
<td>$Codec$</td>
<td>Codec of the ingested asset</td>
</tr>
<tr>
<td>$Resolution$</td>
<td>Resolution of the ingested asset</td>
</tr>
<tr>
<td>$Program_Title_CreationDate$</td>
<td>The ingest start date is appended to the program title. Program_Title: the Program Title. CreationDate: the date when ingest starts, represented in the format MMM dd for month, and date.</td>
</tr>
<tr>
<td>$Program_TitleBrief_CreationDate$</td>
<td>The ingest start date is appended to the brief program title. Program_Title: the brief Program Title. CreationDate: the date when ingest starts, represented in the format MMM dd for month, and date.</td>
</tr>
</tbody>
</table>

LIVEcut replaces these reserved words in Tribune™ EPG integration templates.

Table 5-6: Reserved words in Tribune–EPG integration only, and their replacements

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Audio_Type$</td>
<td>The audio encoding type of the program</td>
</tr>
<tr>
<td>$Program_EpisodeName$</td>
<td>Episode name of program</td>
</tr>
<tr>
<td>$Closed_Caption$</td>
<td>Whether the program is closed caption</td>
</tr>
<tr>
<td>$HD$</td>
<td>Whether the program is HD program</td>
</tr>
</tbody>
</table>
Here are three examples:

- **AMS fields:**
  To fill in the PackageAsset\Asset_Name field of the metadata, find the tag and mark the following in the metadata template:
  
  ```xml
  <AMS Asset_Class="package" Asset_Name="$AssetName$" ... />
  ```

- **App_Data fields:**
  To fill in the PackageAsset\TitleAsset\Title of the metadata, find the tag and mark the following in the metadata template:
  
  ```xml
  <App_Data ... Name="Title" Value="$Program_Title$" ... />
  ```

- **Static text fields:**
  For example, to change the provider from cnn to pbs, you would change
  
  ```xml
  <AMS Provider="cnn.com"> to <AMS Provider="pbs.com">
  ```

**NOTE:** Any static can be changed, but make sure to create a document that is compliant with XML or ADI.

### 5.2.1 Sample ADI metadata template

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<!DOCTYPE ADI SYSTEM 'ADI.DTD'>
<ADI>
  <Metadata>
    <AMS Provider="cnn.com" Product="MOD" Asset_Name="$AssetNameP$
      Version_Major="1" Version_Minor="0" Description="Package Asset"
      Provider_ID="cnn.com" Asset_ID="$AssetId$
      Asset_Class="package"
      Creation_Date="$CreationDate$" />
    <App_Data App="MOD" Name="Metadata_Spec_Version"
      Value="CableLabsVOD1.1"/>
  </Metadata>

  <Asset>
    <Metadata>
      <AMS Provider="cnn.com" Product="MOD" Asset_Name="$AssetNameT$
        Version_Major="1" Version_Minor="0" Description="Title Asset"
        Provider_ID="cnn.com" Asset_ID="$AssetIdT$
        Asset_Class="title"
        Creation_Date="$CreationDate$" />
      <App_Data App="MOD" Name="Type" Value="title"/>
    </Metadata>
  </Asset>
</ADI>
```

### Table 5-6: Reserved words in Tribune–EPG integration only, and their replacements

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Year$</td>
<td>Year</td>
</tr>
</tbody>
</table>
<App_Data App="MOD" Name="Title_Brief" Value="$Program_TitleBrief$"/>
<App_Data App="MOD" Name="Title" Value="$Program_Title$"/>
<App_Data App="MOD" Name="Episode_Name" Value="$Program_Title$"/>
<App_Data App="MOD" Name="Episode_ID" Value="$Program_EpisodeNum$"/>
<App_Data App="MOD" Name="Summary_Long" Value="$Program_SummaryLong$"/>
<App_Data App="MOD" Name="Summary_Medium" Value="$Program_SummaryMedium$"/>
<App_Data App="MOD" Name="Summary_Short" Value="$Program_SummaryShort$"/>
<App_Data App="MOD" Name="Rating" Value="$TV_Rating$"/>
<App_Data App="MOD" Name="Closed_Captioning" Value="Y"/>
<App_Data App="MOD" Name="Run_Time" Value="$Runtime$"/>
<App_Data App="MOD" Name="Display_Run_Time" Value="$DisplayRuntime$"/>
<App_Data App="MOD" Name="Year" Value="2008"/>
<App_Data App="MOD" Name="Actors" Value="$Program_Actor$"/>
<App_Data App="MOD" Name="Director" Value="$Program_Director$"/>
/App_Data App="MOD" Name="Producers" Value="$Program_Producer$"/>
/App_Data App="MOD" Name="Category" Value="$Program_Category$"/>
/App_Data App="MOD" Name="Genre" Value="$Program_Category$"/>
/App_Data App="MOD" Name="Billing_ID" Value="0"/>
/App_Data App="MOD" Name="Licensing_Window_Start" Value="$LicenseStartTime$"/>
/App_Data App="MOD" Name="Licensing_Window_End" Value="$LicenseEndTime$"/>
/App_Data App="MOD" Name="Preview_Period" Value="300"/>
/App_Data App="MOD" Name="Provider_QA_Contact" Value="cnn@cnn.com"/>
</Metadata>
</Asset>
<Metadata>
5.3 Viewing Logs

You can monitor logs in the Log View. Click a heading in the table to search logs by several criteria:

- Level
- Type, including:
  - All
  - Asset
  - Audit
  - Channel
  - Metadata
  - Program
  - Provision
  - Record
  - Resource
  - Rule
5.4 Configuring Rules

5.4.1 Creating Ingest Rules

Rather than creating each work order anew, you can create common rules to be used in work orders templates. Then, you can generate work orders that use those rules with those templates. You do this by defining a rule group, whose members use the same template with the same rules. For example, when you associate a channel to a rule group, you can generate multiple work orders that share the group rules and work order template.

When there is a match to the work order in the channel that the rule is applied to, the work order is generated according to the work order template specified in the rule. The rule can be applied manually or by EPG upload.

The application time must be within the effective date interval of a rule when it is being applied. If it is not, the rule will be ignored.

To add a rule, navigate to Configuration / Rule:
Click the **Add rule** button. You see a new page as shown below:

![Configuration - Rule view](image)

**Figure 5-2: Configuration - Rule view**

5.4.1.1 Recording All Programs

1. Input a name for the rule.
2. Optionally, add a description that will help you recognize it later.
3. For the Criteria, select *Record all programs*. It will record all programs in the channel.
4. Choose a work order template from the drop-down list.
5. You can apply the rule to specific rule groups or All Channels (i.e. The rule group with all channels).
6. To create the effective date range for the rule, enter Effective date from, and Effective date to.
7. Click the **Save** button.
5.4.1.2 Recording Custom Programs

1. Input a name for the rule.
2. Optionally, add a description that will help you recognize it later.
3. For the Criteria, select Custom. It will record only those programs that match your criteria.
   The criteria statement has three parts:
   - property name
   - condition
   - value.
   For example, to get Spanish language listings, you could select property Language, condition = , and value Spanish.

4. Select a Property Name from the drop-down list. There are three data types:
   - Most are string type.
   Following properties are not string type:
     - FirstRun is a boolean.
     - Day of the week, Day of the month, StartTime and EndTime are DateTime types.

5. Select a Condition from the drop-down list to specify how the match should be made.
   String types take any of the conditions.
   Boolean type only takes EQUAL and NOT_EQUAL.
   DateTime types only take EQUAL and NOT_EQUAL.
   MATCH_PATTERN and NOT_MATCH_PATTERN recognize regular expressions.
5. Select a value from the drop down box for Property Value.
   - For String types, enter alphanumeric characters.
   - For Boolean types, it must be True or False.
   - For DateTime types, enter the property value in the configured time format for Exact Time.
   - If the property is Day of Week, Day of Month, or Week of Month, choose a value from the drop-down box.

7. In the Work Order Template drop-down menu, select the work order you want.

8. You can apply the rule to specific rule groups or All Channels (i.e. The rule group with all channels).

9. In the Effective date from and the Effective date to, you can enter dates in the configured time format. This is optional.

10. Click the Save button.

5.4.2 Assigning Rules to a Rule Group Association

When a rule in the group has been matched, the matching procedure ends.

In order to apply any of these ingest rules, you need to assign it to a rule group. You can do this in two locations:
- The Rule Configuration page
- The Rule Group Configuration page, where you can also add it to a rule group already existed and displayed in the page.

5.4.3 Forming Rule Groups

You can select a default rule group for each channel. When new items are added via EPG import, these rules will be automatically applied.

You add, modify, or delete a rule group in the Configuration - Rule Group windows.

Follow these steps to create a rule group:
1. Navigate to Configuration / Rule Group.
Chapter 5 Advanced Features

2. Click the Add Rule Group button. You see a new page:
3. The available rules are listed in two boxes: Selected and Available. Select an item in either list, then click the arrow to move it to the other box.
   You can modify the order in the lists by dragging the rules up or down in the box until they are in the order that you want.
4. When the selected box is in the order you want, click the check box on the left that says Add or remove rules. You see a new page:
5. Click **Save** to save the rule group.

If you intend to associate one or more channels to a rule group repeat the following for each channel:
1. Go to LIVEcut Master View.
2. Choose the channel and click on the Modify channel setting wrench icon.
3. Select the rule group under Associated Rule Group.
4. Press **Save** to save the Channel settings.

### 5.5 Example: Advanced Usage

This example records programs in a channel with *news* in the title, within a specified time period. These steps were used in this example:
1. Configure the channel for ingest.
2. Upload the metadata template.
3. Create a work order template.
4. From Configuration / Rule group, click the Add a rule group and input a name.

![Figure 5-8: Creating the rule group for the “news” example](image)

5. Next, configure the channel to associate the new rule group you just created:
6. Configure the rule in Custom program mode:
7. For custom criteria, select:
   - Property Name = Title
   - Condition = CONTAIN
   - Property Value = News
8. Select the created rule group for field Apply to Rule Groups.
9. Save rule.
10. Click on Apply Rule.
11. Select the channel for field; Apply to Channel.
12. Enter Program date from and Program date to.
13. Click on **Apply**.

**Figure 5-11: Apply the created rule group**
Chapter 6
Troubleshooting and Contacting Support

6.1 Error Messages and Alarms

These error messages can be useful when troubleshooting:

- **The page cannot be displayed.** If you get this message, check the IIS settings, including authentication and access control and LIVEcut virtual directory settings.

Troubleshoot the following alarms:

- **EPG transfer failure.** This occurs when LIVEcut cannot FTP pull an EPG file from the external FTP server, or when LIVEcut cannot copy an EPG file from CIFS drive. *(Major # 5, orange. Not service affecting)*
  
  Suggestion: Is the FTP server/CIFS driven up? Is the EPG file in the destination drive? Check LIVEcut configuration.

- **EPG parsing error.** Syntax error or format error was found when EPG Converter was parsing the EPG file. *(Major #5 orange. Not service affecting)*
  
  Suggestion: Check the EPG raw file, see if it is corrupted. Does the global configuration on the LIVEcut server support TEXT or XML? Are any mandatory fields is missing on the EPG raw file.

- **EPG advance information missing.** After LIVEcut engine completed parsing an EPG file, it found that program information after two days (48 hours) was missing. Certain rule-based recording may not function after two days. *(Warning #4 yellow. Not service affecting)*
  
  Suggestion: Check the EPG raw file: Is it updated? Does it contain program information for at least three days in advance?

- **Program changed in EPG.** LIVEcut has detected that one or more programs were changed after a recent EPG import. *(Warning #4 yellow. Not service affecting)*
  
  Suggestion: Not an error. The EPG provider may have changed the file to reflect a change in programming. LIVEcut will always use the latest EPG data for a pending work error.

- **Metadata template parsing error.** Syntax error was found when user uploaded a metadata template from the LIVEcut Web GUI. *(Major #5 orange. Not service affecting)*
  
  Suggestion: Make sure the metadata template is CableLabs ADI 1.1 compliant.

- **Middleware server communication failure.** Error occurred when LIVEcut tried to send AMS an ADI COBRA trigger, or an FTP push, or an HTTP post. The scheduled workflow cannot be completed however. *(Critical #6 red. Service affecting)*
  
  Suggestion: The naming server may be down. Check the ISA stream setting on LIVEcut to ensure it is correct. You may need to send the ADI trigger to AMS manually.

- **Work order error: Ingestion failure.** Work order cannot be completed due to ingestion failure. *(Critical #6 red. Service affecting)*
  
  Suggestion: Check the StreamLiner Ingest node. The channel source may not be available at ingestion. The Ingest node may have found some invalid MPEG content or an incorrect encoding profile.

- **Work order error: Resource conflict.** Work order cannot be completed due to insufficient resources during asset ingestion. *(Critical #6 red. Service affecting)*
  
  Suggestion: Look at the logs of the Ingest node. Check available ingest resources on all the Ingest nodes.
- **Extend recording time error.** Error occurred when user manually extended a recording duration. *(Critical #6 red. Service affecting)*
  Suggestion: Check the logs in LIVEcut and the StreamLiner Ingest nodes. See if request was rendered too late (after the work order had already been completed) or too early (before it had started).

- **Asset transfer (ftp push) failure.** Error occurred when SENVR or eFTP attempted to transfer the completed asset to an external storage server via FTP. The scheduled workflow cannot be completed. *(Critical #6 red. Service affecting)*
  Suggestion: Check the LIVEcut configuration to see if the storage device was correctly configured. Check the logs to see if the storage device was down. You may have to do the FTP transfer manually.

- **Work order creation error.** Error occurred when LIVEcut engine created a new work order based on the EPG input data and metadata template. *(Major #5 orange. Not service affecting)*
  Suggestion: Find out why the LIVEcut engine cannot map the EPG data into the metadata template. Look at the LIVEcut server logs for an error or failure. Check the EPG raw data, and look at the specific work order that failed.

- **LIVEcut resource error.** Error occurred because the LIVEcut server was running out of resources. *(Critical #6 red. Service affecting)*

### 6.2 SNMP Traps

There are four types of SNMP Traps that are related to:
- Asset management
- Ingest management
- Platform hardware
- LIVEcut scheduling

Refer to the included MIB file for information about the supported SNMP traps.

### 6.3 Virus Scan Reports

LIVEcut 1.4.0.0 includes anti-virus protection that the Symantec Anti-virus Corporate Edition 10.x Client is automatically installed on every deployment.

<table>
<thead>
<tr>
<th>Status</th>
<th>Configuration</th>
<th>Service</th>
<th>Platform</th>
<th>Operation</th>
<th>Diagnostics</th>
<th>Software Information</th>
<th>Backup/Restore</th>
</tr>
</thead>
</table>

- **Log**
  Display the log of anti-virus

**Path:** `/ Operation / Anti Virus / Log`

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk History</td>
<td>[ Table ]</td>
<td>Display the risk history</td>
</tr>
<tr>
<td>Scan History</td>
<td>[ Table ]</td>
<td>Display the scan history</td>
</tr>
<tr>
<td>Event Log</td>
<td>[ Table ]</td>
<td>Display the event log</td>
</tr>
</tbody>
</table>

*Figure 6-1: Anti-Virus Log*
The Risk History log will display:
- The name of the risk.
- The name of the infected file.
- The action that the anti-virus program performed.
- The date and time when the risk was found.

The Scan History log will show:
- The status of each scan operation.
- The scan type.
- The date and time the schedule scan started.
- The date and time when the schedule scan completed.
- The number of files that were scanned.
- The number of files that were found infected.

The Event Log will show:
- Each event that happened.
- The date and time that each occurred.

### 6.4 Contacting Harmonic Support

The Harmonic Customer and Technical Support groups are available to help you with any questions or problems you may have regarding Harmonic products.

**For assistance from within the U.S. and Canada, call toll free:**
1.888.MPEGTWO (673.4896)

**For assistance from outside the U.S. and Canada, call:**
1.408.490.6477

The fax number is 408.490.6770.

The email address is techhelp@harmonicinc.com.

**The corporate address for Harmonic Inc. is:**
Harmonic Inc.
4300 North First St.
San Jose, CA 95134, U.S.A.
Attn: Customer Support

The corporate telephone numbers for Harmonic Inc. are:
Tel. 1.800.788.1330 (from the U.S. and Canada)
Tel. +1.408.542.2500 (outside the U.S. and Canada)
Fax.+1.408.490.6708

The web address for Harmonic Inc. is www.harmonicinc.com.