ProMedia™ Capture
Video Ingest Engine
RELEASE 1.2.0.0

User Guide
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In addition to these symbols, this guide may use the following text conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typed Command</td>
<td>Indicates the text that you type in at the keyboard prompt.</td>
</tr>
<tr>
<td>&lt;Ctrl&gt;, &lt;Ctrl&gt;+&lt;Shift&gt;</td>
<td>A key or key sequence to press.</td>
</tr>
<tr>
<td>Links</td>
<td>The <em>italics in blue</em> text to indicate Cross-references, and hyperlinkd cross-references in online documents.</td>
</tr>
<tr>
<td>Bold</td>
<td>Indicates a button to click, or a menu item to select.</td>
</tr>
<tr>
<td>ScreenOutput</td>
<td>The text that is displayed on a computer screen.</td>
</tr>
<tr>
<td>Emphasis</td>
<td>The <em>italics</em> text used for emphasis and document references.</td>
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This guide describes the configuration of the underlying platform upon which all applications run and the management of the ProMedia Capture web-based GUI where captures are performed.

Organization of this guide

This user guide is organized as follows:

- **Chapter 1, Preface** (this chapter), outlines this guide's organization.
- **Chapter 2, Introduction**, describes the general features of the Product Capture application.
- **Chapter 3, Getting Started**, introduces the overview of the ProMedia Capture GUI.
- **Chapter 4, Configuring Platform Settings**, describes the general configurations of the underlying platform.
- **Chapter 5, Configuring Application Settings**, describes the necessary setup procedures on the application before performing capture using the ProMedia Capture GUI.
- **Chapter 6, Use Case Scenarios**, describes the three typical use case scenarios, including step-by-step procedures for capturing source content using the ProMedia Capture GUI.
- **Chapter 7, Monitoring and Troubleshooting**, covers maintenance and monitoring tasks, and Harmonic Support contact information.
- **Chapter 8, Glossary**, provides definitions for the most common abbreviations and acronyms used in this document.
- **Appendix A, Contacting the Technical Assistance Center**
- **Appendix B, Compliance, Safety, and Agency Approvals**
- **Appendix C, Keystroke Commands**
Chapter 2
Introduction

This chapter describes the general features of the ProMedia Capture application. It includes the following section:

- Overview

Overview

The Harmonic ProMedia Capture video ingest engine streamlines the acquisition of live and taped SD and HD video for file-based workflows. Real-time encoding directly into the most common editing and playout formats provides enormous time savings for diverse applications such as video mastering, content repurposing, archiving, and video-on-demand (VOD).

Direct connection to Omneon MediaGrid shared storage allows fast turnaround editing, while integration with the Harmonic Workflow System (WFS) automates the complete production process. To further optimize content preparation, ProMedia Capture offers browser-based video monitoring as well as VTR & VDR control of two ingest channels, allowing system management from any remote, networked workstation.

Figure 2-1 illustrates the ProMedia Capture File-based Workflow:
Chapter 3
Getting Started

This chapter describes the general capabilities of the ProMedia Capture GUI. It includes the following sections:

- System Requirements
- Connecting to the ProMedia Capture GUI
- Ingest Page
- History Page
- Presets Page
- Templates Page
- The Source Device Tab in the Settings Page
- The Platform Tab in the Settings Page

System Requirements

Compatible Browsers and Operating Systems

ProMedia Capture supports the following browsers and operating systems to view the GUI:

<table>
<thead>
<tr>
<th>Browser</th>
<th>Operating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Explorer 8.0 or above</td>
<td>Windows XP, Windows 7</td>
</tr>
<tr>
<td>Firefox 12.0 or above</td>
<td>Windows 7</td>
</tr>
<tr>
<td></td>
<td>Macintosh OS (Leopard and Lion)</td>
</tr>
<tr>
<td></td>
<td>Linux</td>
</tr>
<tr>
<td>Safari 5.0 or above</td>
<td>Macintosh OS (Snow Leopard and Lion)</td>
</tr>
</tbody>
</table>

Silverlight Client

In addition, the Silverlight 5.0 plug-in is another requirement to view the ProMedia Capture GUI. For detailed information of Silverlight, please refer to System Requirements in http://www.microsoft.com/silverlight/get-started/install/default.aspx.

NOTE: If Silverlight is not installed, the browser will redirect to a page to download the Silverlight client.
Connecting to the ProMedia Capture GUI

Access the ProMedia Capture GUI as follows:

1. Enter http://<application IP> or https://<application IP> where <application IP> is your server’s Management IP address.
2. Fill in your default User Name and Password and click Login.
   - User Name: smc
   - Password: 5mc!@#321

![ProMedia Capture GUI Login Page](image)

Figure 3–1: ProMedia Capture GUI Login Page

The browser will then prompt you with a security warning. Continue to work through the procedures until a dialog box appears.

![Mixed Content Dialog](image)

Figure 3–2: Click Yes to display mixed content

Click Yes to proceed until the process is complete. (This dialog box may be minimized. Users can press Alt+Tab to locate this dialog box.)
Ingest Page

In the ProMedia Capture GUI, select the Ingest menu at the top. The Ingest page appears.

Figure 3–3: Ingest page

The Ingest page includes three main areas (as shown in Figure 3–3):

- **Source Settings & Job Settings Area**
- **Device Control Area**
- **Job Operation Area**

### Source Settings & Job Settings Area

**Source Settings panel**

On the Source Settings panel, specify the following parameters:

- **Source**
  
  Select the source device from the drop-down menu if performing VTR or VDR capture. The source device needs to be pre-defined on the Settings page. (Please refer to Connecting a Source Device for details.)

- **Use VITC**
  
  This check box specifies whether to use VITC of video source to enable frame-accurate captures.

- **Line**
  
  This appears when the video source is SD. This drop-down menu specifies the line number of video source carrying VITC.

- **Video Standard**
This specifies the input video resolution and frame rate. It can be automatically detected from the SDI source if users click the Connect button.

**TC Format**

Refers to the timecode format. This drop-down menu appears only when the frame rate of video source is either 29.97 fps or 59.94 fps.

**Job Settings panel**

On the *Job Settings* panel, specify the following parameters:

**Capture Preset**

Select the appropriate pre-defined video preset for transcoding. (Please refer to *Defining an Output Preset* & *Defining Mapping between Presets and Video Standard of Source* for details.)

**Audio Mapping**

Select the appropriate pre-defined audio mapping for the input and output channels. (Please refer to *Defining an Audio Channel Mapping* for details.)

**Destination**

Designate a destination path for the captured clips. (Please refer to *Setting Destination Paths for Storage* for details.)

**Authoring Info Template**

Use pre-defined Authoring Info Template to define and populate descriptive metadata fields associated with the captured clip. (Please refer to *Defining an Authoring Info Template* for details.)

**Scene Logging Template**

Use pre-defined shortcut hot keys (alphabet a to z) and scene messages in a Scene Logging template to log desired scenes during crash capture. (Please refer to *Defining a Scene Logging Template* for details.)

**Audio Level panel**

On the Ingest page, click the *Audio Level* tab to keep track of the sixteen audio channels while playing the source content.

**Device Control Area**

The Device Control area incorporates a video playing screen and a control panel for capture (as shown in *Figure 3–3*). Through manipulating the control panel users can control the connected source device and preview the source content.

Afterward, users can screen out the desired content for capture using the control buttons, shuttle bar, and jog wheel on the Device Control panel.

When the desired content is screened out for performing capture, users need to specify a name for the clip to be captured and log the clip for capture preparation.

(Please refer to *Chapter 6, Use Case Scenarios* for the operational procedure.)
Job Operation Area

After screening out the necessary content for capture, users can execute the job and preview the capture via a thumbnail window. Batch capture is also available to process multiple jobs in sequence.

(Please refer to Chapter 6, Use Case Scenarios for operational procedure.)

History Page

In the ProMedia Capture GUI, select the History menu at the top. The History page appears.

![History page](image)

Figure 3–4: History page

After the capture jobs are finished, all the relevant records can be found on the History page. Besides, users can perform the following operations on the History page:

**Recapture**: allows users to edit and later execute the job again on the Ingest page.

**Retransfer**: allows users to transfer the captured clips to the CIFS storage again, if the job is failed during transferring.

**Delete**: allows users to delete the capture jobs displayed on the History page.

**Batch**: allows users to select the capture jobs for batch processing which includes Batch Recapture, Batch Retransfer, and Batch Delete.
In the ProMedia Capture GUI, select the **Presets** menu at the top. The Presets page appears.

**Presets Page**

There are three main tabs on the Presets page:

- **Capture Preset tab**
  
  Allows users to use the presets for video transcoding purposes. (Please refer to [Defining an Output Preset](#) for details.)

- **Audio Mapping tab**
  
  Allows users to define mapping between audio input and output channels. (Please refer to [Defining an Audio Channel Mapping](#) for details.)

- **Source/Presets Mapping tab**
  
  Allows users to define mapping between the video standard of source content and its relevant presets. (Please refer to [Defining Mapping between Presets and Video Standard of Source](#) for details.)

**Figure 3–5: Presets page**
Templates Page

In the ProMedia Capture GUI, select the Templates menu at the top. The Templates page appears.

![Figure 3–6: Templates page](image)

(Please refer to Defining a Template for details.)

The Source Device Tab in the Settings Page

In the ProMedia Capture GUI, navigate to Settings > Source Device. The Source Device tab appears.

![Figure 3–7: Source Device tab](image)
The Source Device tab allows users to set up a connection between the source device and SDI for the ProMedia Capture application to capture the source content. ProMedia Capture provides two channels for capture via the SDI-1 port and the SDI-2 port respectively.

(Please refer to Connecting a Source Device & Disconnecting a Source Device for details.)

The Platform Tab in the Settings Page

The Platform tab allows users to configure individual settings for the underlying ProMedia Capture server before capturing the source content.

In the ProMedia Capture GUI, navigate to Settings > Platform. The Platform tab appears.

![Platform Tab in the Settings Page](image)

Figure 3–8: Platform tab

(Please refer to Chapter 4, Configuring Platform Settings for platform configuration details.)
Chapter 4
Configuring Platform Settings

This chapter describes individual settings for the underlying platform. It is essential to establish the initial network setup and configure network parameters before the execution of capture using the ProMedia Capture GUI.

It includes the following sections:
- Setting Network Connections
- Setting Date/Time and Time Zone
- Setting Host Name
- Viewing Licensing Information
- Configuring Routing Table
- Viewing Local Storage
- Configuring Remote Storage
- Configuring SNMP
- Configuring Syslog
- Setting User Account
- Setting Anti-Virus Protection
- Upgrading ProMedia Capture
- Backing up/Restoring Settings & Data

Setting Network Connections

The Network page includes initial configurations to place the server on the network. You need to set up the network settings before proceeding to subsequent capture.

To set up network connections for ProMedia Capture:
1. In the ProMedia Capture GUI, navigate to Settings > Platform > Network. The Network page appears.
2. Specify parameters on the **Ethernet Port Configuration** section:

   **Enable**
   
   Select the check box(es) to enable/disable the Ethernet ports.
   
   An alarm will be shown for the Ethernet port, which is physically disconnected but enabled in the GUI. To prevent this false alarm, all Ethernet ports which are not used should be disabled in the GUI.

   **Name**
   
   This displays the name of the Ethernet interface:
   - Management 01: refers to GbE port #1. Use ONLY for management.
   - Management 02: refers to GbE port #2. Use ONLY for CIFS storage connection.
   - Gbe 03: refers to GbE port #3. Use for CIFS and MediaGrid storage connection.
   - Gbe 04: refers to GbE port #4. Use for CIFS and MediaGrid storage connection.

   (Please refer to [Configuring Remote Storage](#) for details of CIFS/MediaGrid configuration.)

   **CAUTION:** As long as MediaGrid is configured as the remote storage, GbE ports #3 and #4 should either be connected to MediaGrid network or disconnected. That is, if either GbE port #3 or #4 is connected to MediaGrid network while the other is connected to a non-MediaGrid network, failure for some capture presets (e.g. AVC intra 100, DVCPRO) could be triggered.

   **DHCP**
   
   Select the check box(es) to enable Dynamic Host Configuration Protocol (DHCP) for the specific input/output and management interface.

   **Port Status**
This displays the connection status of the Ethernet ports.

**IP Address**

Enter the IP address of the Ethernet port that has been assigned to the ProMedia Capture server using standard dotted-four notation. For example, setting the IP address for the Management 01 interface allows remote web browser access to the ProMedia Capture GUI.

**Network Mask**

Enter the subnet mask of the Ethernet port that has been assigned to ProMedia Capture server using standard dotted-four notation.

**MAC Address**

The IP address is mapped to this MAC address for use with the Address Resolution Protocol (ARP). The MAC address consists of six octets separated by colons. For example, 78:2B:CB:14:7E:22.

**Gateway**

Enter the Gateway address for the Ethernet interface, if needed.

3. Specify parameters on the **DNS Servers** section:

You need to configure the Domain Name System (DNS) servers used in your server’s network.

**IP Address**

Click “Click here to add a new row” to add an IP address for a DNS server.

Input the IP address of the DNS server used in your server’s network.

4. Specify parameters on the **NTP Servers** Section:

You can configure any Network Time Protocol (NTP) server available on your network such that the system clock of the ProMedia Capture server can be synchronized with other machines.

**IP Address/Host Name**

Click “Click here to add a new row” to add an IP address/Host name for a NTP server.

Input the IP address or host name of the NTP server.

5. Click **Apply** to save the changes.

---

**Setting Date/Time and Time Zone**

To set up date/time and time zone for ProMedia Capture:

1. In the ProMedia Capture GUI, navigate to **Settings > Platform > Date/Time**. The Date/Time page appears.
Chapter 4 Configuring Platform Settings

Setting Host Name

The Device Information page allows users to configure the host name for the ProMedia Capture server and displays the associated hardware and software information.

To set up the host name for ProMedia Capture:

1. In the ProMedia Capture GUI, navigate to Settings > Platform > Device Information. Information about the ProMedia Capture server appears.

Setting Host Name

2. Specify the parameters on the Date/Time page:

   **Local Date Time**
   
   Select the appropriate server's local date and enter the proper time. Be cautious that the time displayed is not running and there will be a time gap before you apply the time to the server.

   **NOTE:** The local time displayed in the ProMedia GUI does not reflect the daylight saving time adjustments.

   **Time Zone Region**
   
   Select the appropriate server's time zone region. After selecting a new time zone region, you also need to adjust the local date and time accordingly based on the selected time zone region.

3. Click Apply to save the changes.

   **NOTE:** It is required to restart the ProMedia Capture GUI after the server time is updated.
2. Specify the parameter for the ProMedia Capture server (if required):

   **Host Name**
   
   Specify the host name for the ProMedia Capture server.

   **NOTE:** The new host name will take effect only after the server is rebooted.

   **Hardware Configuration**
   
   Displays the hardware identification for the ProMedia Capture server.

   **Valid Hardware Configuration**
   
   Displays whether or not the hardware identification is valid.

   **Software Version**
   
   Displays the software version installed on the ProMedia Capture server.

3. Click **Apply** to save the changes.

### Viewing Licensing Information

The License page displays the license dongle identification and licensing information. The USB license dongle must be inserted into an available USB port of the server for proper operation of ProMedia Capture.

In the ProMedia Capture GUI, navigate to **Settings > Platform > License**. Two sections appear:

- Current License section
License Information section

Viewing Licensing Information

- **License Information section**

![License page](image)

**Figure 4-4: License page**

**Viewing the Current License Section**

**Dongle ID**
This field displays the license dongle identification attached to the ProMedia Capture server. This Dongle ID must be present before proceeding to capture.

**Dongle Type**
This field displays the dongle type attached to the ProMedia Capture server. This Dongle Type must be present before proceeding to capture.

**Viewing the License Information Section**

**Name**
This displays the name of the license.

**Details**
This displays the availability of different features provided with the license.

**Updating License Dongle by Using Export & Import Buttons**

To update the license dongle, proceed with the following procedures:
1. Click **Export** button and export the license into the C2V file.
2. Send the C2V file to Harmonic and request for license update.
3. Receive the license update file (i.e. V2C file) from Harmonic.
4. Click **Import** button and import the license update file (i.e. V2C file) into the system.
Configuring Routing Table

When the destination is not in the same subnet as ProMedia Capture server and not reachable through the default gateway, a static route entry is required. You might also need to make adjustments to the routing table for the server’s network in the ProMedia Capture GUI.

To configure the Routing Table:

1. In the ProMedia Capture GUI, navigate to Settings > Platform > Routing Table. The Routing Table page appears.

2. Click “Click here to add a new row” at the bottom of the Routing Table page to add a new routing table configuration.

3. Specify the parameters on the Routing Table page:

   **Network Destination**
   
   The network destination is used with the netmask to match the destination IP address. The network destination can range from 0.0.0.0 for the default route through 255.255.255.255 for the limited broadcast, which is a special broadcast address to all hosts on the same network segment.

   **Netmask**
   
   The netmask is the subnet mask that is applied to the destination IP address when matching it to the value in the network destination.

   **Gateway**
   
   The gateway address is the IP address that the local host uses to forward IP datagrams to other IP networks. This is either the IP address of a local network adapter or the IP address of an IP router (such as a default gateway router) on the local network segment.

   **Metric**
   
   The metric is the value used to determine the route that packets should take through the network.
A metric indicates the cost of using a route, which is typically the number of hops to the IP destination. Enter the metric value (1 to 9999).

**Interface**

The interface is the IP address that is configured on the local computer for the local network adapter that is used when an IP datagram is forwarded on the network.

**Type**

This is an optional field. Select a type (Active / Persistent).

Active: The routing table entry is static and remains valid until reboot.

Persistent: The routing table entry is persistent and remains valid even after reboot.

**NOTE:** The network route cannot take effect unless at least one of the network interfaces can reach the gateway.

4. Click **Apply** to save the changes.

**Viewing Local Storage**

You can view the storage capacity of the server and monitor how much space is available.

In the ProMedia Capture GUI, navigate to **Settings > Platform > Local Storage**. The Local Storage page appears.

![Figure 4–6: Local Storage page](image)

View the system or data volume information including type, status, total disk space, available disk space, and percentage of utilization.
Configuring Remote Storage

The Remote Storage page allows you to specify at most two remote storages in storage configuration, one can be set for CIFS NAS while the other can be set for MediaGrid.

To configure remote storage for ProMedia Capture:


2. Specify parameters for MediaGrid/CIFS storage:
   - **NAS Type**
     ProMedia Capture supports CIFS and MediaGrid as the NAS type.
   - **NAS Persist Storage Require Login**
     Click to enable the user name and password for NAS (i.e. MediaGrid/CIFS) login.
   - **NAS Persist Storage Username**
     Specify the user name for NAS (i.e. MediaGrid/CIFS) login.
   - **NAS Persist Storage Password**
     Specify the password for NAS (i.e. MediaGrid/CIFS) login.
   - **NAS IP**
     The IP address of NAS (i.e. MediaGrid/CIFS).
   - **NAS Persist Storage Folder Path**

**NOTE:** Mounting a remote storage may take a while to take effect.
The folder share name at NAS (i.e. MediaGrid/CIFS).

**NAS Persist Storage Domain**

The domain used to create the mount point to the NAS (i.e. MediaGrid/CIFS).

**Status**

Displays the status about the connection between the ProMedia Capture server and NAS (i.e. MediaGrid/CIFS).

---

**NOTE:** For MediaGrid storage, the logged clip will be captured to MediaGrid directly. For CIFS storage, the logged clip will be stored in the server’s local storage and transferred to CIFS after it has been captured successfully.

**CAUTION:** You need to configure at least one remote storage (i.e. MediaGrid/CIFS). If both MediaGrid and CIFS are configured in the ProMedia Capture GUI, the two remote storages must be connected for starting any Capture jobs.

---

3. Click **Apply** to save the changes.

---

## Configuring SNMP

The SNMP Configuration page allows you to specify settings for, and the behavior of, the ProMedia Capture server on the network.

To configure SNMP settings for ProMedia Capture:

1. In the ProMedia Capture GUI, navigate to **Settings > Platform > SNMP Configuration**. The SNMP Configuration page appears.
Figure 4–8: SNMP Configuration page

2. Specify parameters on the **Basic** Section:

**Send Trap**
Select this check box to enable the ProMedia Capture server to send SNMP traps.

**Send Traps to Following Communities**
- Community Name: Designate a list of accepted communities that can use SNMP services from the current server.
- Destinations: Assign the trap destinations.

3. Specify parameters on the **Advanced** Section:

**Send Authentication Trap**
Select this check box to enable the ProMedia Capture server to send an authentication trap.

**Accept SNMP Packets from Any Host**
Select this check box to enable acceptance of SNMP packets from any host.

**Accept SNMP Packets from Following Hosts**
If “Accept SNMP packets from any host” is not selected, enter the IP address for “Accept SNMP packets from following hosts”.

**Accepted Communities**
You can designate a list of accepted communities that can use the SNMP services from the current server.
- Name: Specify a name for the accepted communities.
- Community Right: Select (None / Notify / Read only / Read and Write / Read and Create) to authorize the right to the specific communities.
4. Use the Download MIBs Button.

Click Download MIBs to download the MIB files for the components of the current ProMedia Capture server and view them or save them to disk. You will be prompted to save or view the mib.zip file.

5. Click Apply to save the changes.

Configuring Syslog

ProMedia Capture allows the Syslog server to send log messages to an external monitoring system for troubleshooting purposes.

To configure Syslog for ProMedia Capture:

1. In the ProMedia Capture GUI, navigate to Settings > Platform > Syslog. The Syslog page appears.

   ![Syslog page](image)

   **Figure 4–9: Syslog page**

2. Specify the parameters on the Syslog page:

   **Destination**

   The destination IP address for the Syslog file. To disable this destination address, set it as 0.0.0.0.

   **Port**

   The destination port for the Syslog file.

3. Click Apply to save the changes.
Setting User Account

The ProMedia Capture GUI allows the system administrator to create, edit, or delete a user account. This user account is set for logging in the ProMedia Capture GUI only and not used for local console login.

To set up a user account:
1. In the ProMedia Capture GUI, navigate to **Settings > Platform > User**. The User page appears.

![User page](image.png)

Figure 4–10: User page

2. Click “Click here to add a new row” to add a new user.
3. Enter the login credentials for the new user account.
   - **Name**
     Add the Name of the user for whom the new account is created.
   - **Password**
     Add the login Password for this new user account.
   - **Confirmation**
     Re-enter the password to confirm.
4. Click **Apply** to save the changes.
Setting Anti-Virus Protection

To protect your server from viruses, spyware, and malicious intrusion, ProMedia Capture includes anti-virus software in its installation. It has a real-time scan engine to ensure that the server is protected 24 hours a day.

To set up anti-virus protection for ProMedia Capture:

1. In the ProMedia Capture GUI, navigate to Settings > Platform > Anti-Virus. The Anti-Virus page appears.

2. Specify the parameters on the Anti-Virus page:

   **Live Update**
   
   This enables live update to download and install security updates and software patches.

   **Schedule Scan Day of Week**
   
   A scheduled scan checks ProMedia Capture for viruses and other threats on a regular basis. Select the day(s) of the week you want to run the scheduled scans.

   **Schedule Scan Time**
   
   Specify the time you want to run the scheduled scans.

3. Click **Apply** to save the changes.
Upgrading ProMedia Capture

The Software Upgrade page allows you to load the Harmonic patch releases to the server.

To upgrade ProMedia Capture:

**IMPORTANT:** You need to back up your Platform/Application data before upgrading ProMedia Capture. The saved backup settings can be used to restore in case downgrading is needed. Please refer to the next section *Backing up/Restoring Settings & Data* for the backup/restore procedures.

1. Download the patch to a location on the network.
2. Log in to the FTP server of ProMedia Capture to be upgraded.
3. Navigate to `/Virtual/Upgrade`.
4. Upload the upgrade package (the cab file) using binary mode.
5. Connect to the ProMedia Capture GUI and navigate to Settings > Software Upgrade. (The Software Upgrade page allows you to load the Harmonic patch releases to the server)

   ![Figure 4–12: Software Upgrade page](image)

6. Select the patch from the Targeted Patch drop-down menu to load the available upgrade package to the server.
7. Click the **Apply** button to apply the upgrade package.

**NOTE:** If you do not find the patch in the selection of the drop-down menu, please check if it has been uploaded successfully to the path `/Virtual/Upgrade`.
Backing up/Restoring Settings & Data

To back up or restore your platform or application configuration, proceed with the following steps:

1. In the ProMedia Capture GUI, navigate to Settings > Platform > Backup/Restore. The Backup/Restore page appears.

2. Select the following Backup/Restore options:
   a. **Backup**
      - **Backup Platform Settings**
        Click this button to save the platform settings to a specific location as a backup file.
      - **Backup Application Settings & Data**
        Click this button to save the application settings and data (including job records, presets, templates, source device mapping) to a specific location as a backup file.
   b. **Restore**
      - **Restore Application Settings & Data**
        Click this button to open the backup file from a specific location to restore the application settings and data.
      - **Restore Platform Settings**
        Click this button to open the backup file from a specific location to restore the platform settings.
Chapter 5
Configuring Application Settings

This chapter describes the essential setup procedures for the application before performing capture using the ProMedia Capture GUI. It includes the following sections:

- Connecting a Source Device
- Disconnecting a Source Device
- Defining an Output Preset
- Defining Mapping between Presets and Video Standard of Source
- Defining an Audio Channel Mapping
- Defining a Template
- Setting Destination Paths for Storage

Connecting a Source Device

ProMedia Capture allows you to set up the connection between source devices and SDIs for capture.

ProMedia Capture provides two channels for capture via the SDI-1 port and the SDI-2 port. The frame rate of the 2 channels has to be in the same group in order to perform dual capture / capture & previewing source content. The groups include:

- PAL group: 25, 50fps
- NTSC group: 23.98, 29.97, 59.94fps
- Other groups: 24fps

To connect a source device, proceed with the following steps:

1. Open the Settings page

   - Click the Settings menu at the top.
   - Select the Source Device tab.
   - Click Connect to Device for the SDI-1 port or SDI-2 port.
2. **Connect to the source device**

- After clicking **Connect to Device**, the Select Source Device dialog box appears.
- Select `<New Device>`.
- Specify the following parameters.
  - **Device Name**: Specify a name for the source device.
  - **Protocol**: Select `Sony 9-pin` for VTR; select `VDCP` for VDR.
  - **Baudrate**: Specify the baudrate of the port connecting to the server. The default value is 38400.
  - **Signal Port** (for VDR only). Specify the signal port for VDR.
  - **Cue Up Mode** (for VTR only). Specify whether to use VITC or LTC timecode for the cue up command.
  - **LTC Query Only** (for VTR only). This check box appears only if the **Cue Up Mode** is selected as LTC. Click the check box to specify whether VTR supports only LTC for timecode query.
- Click **Add and Select**.

3. **ACTIVE mode**

- The connected source device appears in ACTIVE mode.
Disconnecting a Source Device

If you intend to disconnect a connected source device, you need to switch the connected device from ACTIVE mode to MAINTENANCE mode and disconnect the source device afterward.

To disconnect a source device, proceed with the following steps:

1. **Open the Settings page**

   - Click the **Settings** menu at the top. The Settings page appears.
   - Select the **Source Device** tab.
   - Select the device to be disconnected.
   - Click **Switch**.

2. **Switch to the MAINTENANCE mode**

   - A Switch Mode dialog box appears for confirmation.
   - Click **Confirm** to switch to MAINTENANCE mode.

**NOTE:** If there is a capturing job using the source device, the “Pending for MAINTENANCE” mode appears instead. After the capturing job is completed, the mode will be changed to “MAINTENANCE”.
3. **Click the Disconnect Device button**

A Disconnect Device button appears for confirmation.

4. **Disconnect the source device**

- A Disconnect Source Device dialog box appears for confirmation.
- Click **Confirm** to disconnect the source device from SDI.

5. **Check the disconnection status**

- Uncontrollable Source mode appears if the source device is disconnected successfully from SDI.
Defining an Output Preset

Defining a Capture Preset

The ProMedia Capture application provides pre-defined configurations for video transcoding, which are called “Capture Presets”. You can use these default presets for video transcoding purposes. In addition, you can create a custom Capture preset by modifying any existing presets.

NOTE: You are not allowed to edit the default presets. Only the custom presets can be modified.

To define an output Capture Preset, proceed with the following steps:

1. Open the Presets page

   - Click the Presets menu at the top. The Presets page appears.
   - Select the Capture Preset tab & Capture Preset List tab.
   - The Capture Preset List appears.
2. Check the Capture Preset List

Select a Default preset on the Capture Preset List.
- The associated transcoding configuration appears on the right.

3. Customize a Capture Preset

Select a preset to customize.
- Click Save As.
- Specify a name and description for this custom preset.
Defining an Output Preset

- Specify parameters of settings for this custom preset.
- Click Apply.

4. View the Custom Capture Preset

A new custom preset appears on the Capture Preset List.

Defining a Proxy Preset

ProMedia Capture allows users to customize filters in accompany with the supplementary configurations for video transcoding, which are called “Proxy Presets”.

You can set up two types of filters based on the default Proxy Presets:

- **Timecode Display** filter: If enabled, a specified timecode will be added to the video output based on your configuration.

- **Bitmap Keying** filter: If enabled, a specified picture will be overlaid on the video output based on your configuration.

**NOTE:** You are not allowed to edit the default proxy presets. Only the custom proxy presets can be modified. To define a proxy preset, you need to create a custom proxy preset first based on the default proxy preset.
To define an output Proxy Preset, proceed with the following steps:

1. **Open the Presets page**

   - Click the **Presets** menu at the top. The Presets page appears.
   - Select the **Capture Preset** tab & **Proxy Preset List** tab.
   - The **Proxy Preset List** appears.

2. **Check the Proxy Preset List**

   - Select a Default preset on the Proxy Preset List.
3. **Customize a Proxy Preset**

- Select the desired default proxy preset to customize.
- Click **Save As** and then the parameters on the right are enabled to be modified.
- Specify a name and description for this custom Proxy preset.
- Specify parameters of settings for this custom Proxy preset.
4. Set Filters for the Proxy Preset

- Click the Filter Settings tab.
- Select the Timecode Display or Bitmap Keying filter from the drop-down menu.

5. Configure the Timecode Display Filter

- Select the Timecode Display filter.
- Define the Timecode Display configuration regarding the timecode to be applied on the video output.
Defining an Output Preset

6. Configure the Bitmap Keying Filter

- Click the tab to add another filter to the Proxy preset, if desired.

- Select the Bitmap Keying filter.

- Define Bitmap Keying configuration regarding the image to be overlaid on the video output.

**NOTE:** ProMedia Capture supports BMP, PNG, and TGA as the image format for Bitmap Keying filters.

- Click the tab to add another filter to the Proxy preset, if desired.
7. **Apply Filters to the Proxy Preset**

- Click on each Filter tab to cross-check the configurations attached to the Proxy Preset.
- Click **Apply**.

8. **View the Proxy Preset**

- Check if the Custom Proxy Preset is created successfully.
Defining Mapping between Presets and Video Standard of Source

In order to use a preset for job capturing, it is necessary to define a mapping between the preset (i.e. Capture/Proxy Preset) and video standard of source content. After establishing the mapping, it is enabled to use the resolution, frame rate, and associated preset configuration during the process of capture.

For example, we can create a mapping for the following video standard and preset:

<table>
<thead>
<tr>
<th>Video Standard of Source (Resolution and Frame Rate)</th>
<th>Preset</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920x1080i 29.97fps</td>
<td>H.264 for 1080i29.97 at 8.9Mbps in MPEG-2 TS for VOD</td>
</tr>
</tbody>
</table>

**CAUTION:** A preset must be mapped to video standard before it can be used in a capture job.

To define a mapping between the Video Standard of source content and presets, proceed with the following steps:

1. **Open the Presets page**

   - Click the Presets menu at the top. The Presets page appears.
   - Select the Source/Presets Mapping tab.
2. Define mapping

- Select the appropriate Resolution and Frame Rate to be mapped.
- Select the Capture Preset tab or Proxy Preset tab.
- Select the associated presets on the Capture Preset List and Proxy Preset List.
- Click the Import button to add the presets for mapping.

**NOTE:** Multiple presets can be mapped to a selected Resolution and Frame Rate.
3. Make Default on the Source/Presets Map List (Optional)

- You are optional to click Make Default to set this preset as default when defining jobs in the Ingest page.

4. Check the video standard and its presets on the Ingest page

- Click the Ingest menu at the top. The Ingest page appears.
- Check if video presets are mapped to their corresponding video standards.
**Defining an Audio Channel Mapping**

ProMedia Capture allows users to define a mapping between audio input and output channels. There are sixteen audio input-output channels available for mapping.

To define an audio channel map, proceed with the following steps:

1. **Open the Presets page**

   - Click the Presets menu at the top.
   - Select the **Audio Mapping** tab.

---

**IMPORTANT:** You are able to define at most two presets for a single capture job. Click the button to add another preset, if needed. Two Capture Preset tabs will appear for your configuration.
2. Create a new audio channel map

- Click New.
- Specify a name for Audio Map.
- Specify the audio mapping between input and output channels by selecting the relevant check boxes.
- Click Apply.

3. Make default on the Audio Map List (Optional)
Defining a Template

Defining a Scene Logging Template

ProMedia Capture allows users to pre-define shortcut hot keys (alphabet a to z), scene messages, as well as general parameters in a Scene Logging template. Users can then log desired scenes by pressing those pre-defined hot keys or using ad hoc approach during crash capture.

XML files specifying the scene position referenced in the capture output clip will be generated for users to load into a clip editing tool (e.g. Final Cut Pro) for post-editing. In addition, thumbnails in the JPEG format are also generated and provided for users to reference the logged scenes.

NOTE: Only one thumbnail is generated for each scene and one XML file is generated for each output.

For the Scene Logging detailed procedure, please refer to *Crash Capture with Scene Logging*. 
To define a Scene Logging template, proceed with the following steps:

1. **Open the Templates page**
   - Click the **Templates** menu at the top of the screen.
   - Select the **Scene Logging Template** tab.

2. **Import Scene Logging XML file (Optional)**
   - Click **Import** to load the Scene Logging XML file into the system.

3. **Create a new Scene Logging Template**
   - Click **New**.
   - Specify a name for the template.

4. **Specify the Scene Logging parameters**
   a. Click **Add Scene** to configure scene logging parameters (Optional):
      - **In Point Key**. This setting allows you to pre-define the hot keys (i.e. alphabet a to z) in order to log the start of the scene during crash capture (e.g. pressing “a” on the keyboard can log the start of the scene during crash capture).
      - **Out Point Key**. This setting allows you to pre-define the hot keys (i.e. alphabet a to z) in order to log the end of the scene during crash capture (e.g. pressing “b” on the keyboard can log the end of the scene during crash capture).
      - **Message**. This setting allows you to specify messages for referencing the logged scenes.
      - **Default Scene Duration**. In the case when no end of scene is logged after a start of scene is logged during crash capture, the end of the scene will be applied according to this **Default Scene Duration** setting.
   b. Specify other parameters:
Defining a Template

**Logging Reaction Time Offset (msec)**. This setting allows you to offset the time code (or frame count) extracted from the input source when the Capture server receives the request to log the start/end of the scene.

**NOTE**: It is recommended to set the Logging Reaction Time Offset to a more negative value if you find the time code in the thumbnail filename or the start/end of scene specified in the XML file is earlier than expected period.

**Thumbnail Generation Delay (msec)**. This setting allows you to delay the thumbnail generation time after the start of the scene is logged.

**Ad Hoc Scene Logging Duration (sec)**. This setting allows you to set the duration of ad hoc scenes. The end of the scene is applied according to this duration.

**Thumbnail Filename Prefix**. This setting allows you to specify either job name or filename of the first capture output as the prefix of thumbnail filename. The thumbnail filename is in the format of `<job name or first capture output filename>_<start time code of the scene in hhmmssff format>.jpg`.

For example, if you select **Job Name** from the drop-down menu and the job name is “ABC” with the start time code of the scene of 01:02:03:04, the filename of the thumbnail will be “ABC_01020304.jpg”.

**XML Output Path**. Specify the output location of the XML file, which contains the scene logging information in the Final Cut Pro XML Interchange format for post-editing.

**NOTE**: The filename of the XML file is in the format of `<capture output filename>.xml`. For example, if the capture output filename is “ABC.mov”, the filename of the XML file will be “ABC.mov.xml”.

**XML Output Path**. Specify the output location of the generated thumbnail files.

**First Capture Output File Path Prefix in XML**. This setting allows you to configure the file path prefix of the first capture output referenced in the scene logging XML file.

For example, if you use the default prefix, the output file path in the XML file could be `file://localhost/Asset/ABC.mov` where **Asset** is the configured job output destination and **ABC.mov** is the output filename.

**Second Capture Output File Path Prefix in XML**. This setting allows you to configure the file path prefix of the second capture output referenced in the scene logging XML file.

For example, if you use the default prefix, the output file path in the XML file could be `file://localhost/Asset/ABC.mov` where **Asset** is the configured job output destination and **ABC.mov** is the output filename.

C. Click **Apply** to save the changes.

5. **Export Scene Logging Template (Optional)**

   - Click **Export** to save the Scene Logging template to XML file. You can import the saved XML file to the system afterward, if desired.
6. Make default on the Scene Logging Template (Optional)

- Select the template to be set as default.
- Click Make Default.

7. Select Scene Logging Template on the Ingest page

- Click the Ingest menu at the top of the screen.
- Select the desired Scene Logging Template with the check box enabled.
Defining an Authoring Info Template

ProMedia Capture allows users to define and populate descriptive metadata fields associated with the captured clip.

To define an Authoring Info Template, proceed with the following steps:

1. Open the Templates page

- Click the Templates menu at the top. The Templates page appears.
- Select the Authoring Info Template tab.
2. **Create a new Authoring Info Template**

- Click **New**.
- Specify a name for the template.
- Click **Add Property** to specify additional property names and property types (i.e. String, Integer, Boolean, and Date).
- Click **Apply**.

3. **Make Default on the Authoring Info Template List (Optional)**

- Select the template.
Setting Destination Paths for Storage

In order to store captured clips on the remote storage, ProMedia Capture requires users to set up destination paths for storing the captured content.

ProMedia Capture supports two types of remote storage:

- **MediaGrid.** For MediaGrid storage, the logged clip will be captured to MediaGrid directly.

- **CIFS.** For CIFS storage, the logged clip will be stored in the server’s local storage and transferred to CIFS after it has been captured successfully.

(Please refer to Configuring Remote Storage for details of configuring remote storage using the ProMedia Capture GUI.)
NOTE: ProMedia Capture allows multiple assets captured from the same content source but written to different storage destinations (i.e. CIFS/MediaGrid). For example, an asset captured in Proxy format can be delivered to CIFS while another asset captured in VOD format can be transmitted to MediaGrid as destination.

IMPORTANT: If both outputs captured from the same source are configured to be written to CIFS, the paths must be the same (e.g. you select to write an output to the path "CIFS\abc", the other output path must also be "CIFS\abc").

To set a destination path for remote storage, proceed with the following steps:

1. Open the Ingest page

- Click the **Ingest** menu at the top of the screen.
- Select either **CIFS** or **MediaGrid** as the output destination.
- Click the button to specify the destination path.
2. Select the Destination Folder

Select Destination Folder

- Click to expand the top main folder.

3. Create a new folder

Select Destination Folder

- Click New Folder.
- A Create New Folder dialog box appears.
- Specify a name for the destination folder.
- Click OK.
4. Select the new destination folder

- Select the newly created destination folder.
- Click OK.

**CAUTION:** Users are not able to edit or delete any destination folders via the ProMedia Capture GUI.

5. Check the destination path

- Check if the destination path is set properly.
Chapter 6
Use Case Scenarios

This chapter describes the typical use case scenarios including step-by-step procedures for capture using the ProMedia Capture GUI. It includes the following sections:

- Capturing from VTR Sources
- Capturing from VDR Sources
- Crash Capture without Scene Logging
- Crash Capture with Scene Logging

**IMPORTANT:** Before performing the use case scenarios, users must ensure all the necessary Platform Settings and Application Settings have been configured properly.

Capturing from VTR Sources

ProMedia Capture enables users to perform capture from VTR sources.

To capture from VTR sources, proceed with the following steps:

1. **Make sure the SDI port on the ProMedia Capture server is connected to VTR**

2. **Open the Settings page**

   - Click the **Settings** menu at the top of the screen.
   - Select the **Source Device** tab.
   - Click **Connect to Device** for the SDI-1 port or the SDI-2 port (ProMedia Capture provides two channels for capture. Please refer to **Connecting a Source Device** for details).
3. Connect to the source device

- After clicking **Connect to Device**, the **Select Source Device** dialog box appears.
- Select **<New Device>**.
- Specify the following parameters.
  - **Device Name**: Specify a name for the source device.
  - **Protocol**: Select *Sony 9-pin* for VTR.
  - **Baudrate**: Specify the baudrate of the port connecting to the server. The default value is 38400.
  - **Cue Up Mode**: Specify whether to use VITC or LTC timecode for the cue up command.
  - **LTC Query Only**: This check box appears only if the **Cue Up Mode** is selected as LTC. Click the check box to specify whether VTR supports only LTC for timecode query.
- Click **Add and Select**.
- The Active mode will take effect.
4. **Open the Ingest page**

- Click the Ingest menu at the top of the screen.
- Select the source device from the Source drop-down menu to specify the VTR as source content.
- Click Connect.

**CAUTION:** Make sure the VTR source tape has been inserted before clicking Connect.
5. Specify parameters

- On the **Source Settings** and **Job Settings** panels, specify the following parameters:
  
  **Use VITC.** This check box specifies whether to use VITC of video source to enable frame-accurate captures.
  
  **Line.** This drop-down menu specifies the line number of video source carrying VITC. This appears only when the source is connecting to the device and the resolution of video source is SD.
  
  **Video Standard.** This specifies the input video resolution and frame rate. It can be automatically detected from the SDI source if users click the Connect button.
  
  **TC Format.** Refers to the timecode format. It is available when the frame rates of the source video are 29.97 fps and 59.94 fps. Select if Drop Frame Timecode or Non Drop Frame Timecode is used for the tape content.
  
  **Capture Preset.** Select the appropriate preset from the drop-down menu. You are able to define at most two presets for a single capture job. Click the + button to add another preset, if needed. Two Capture Preset tabs will appear for your configuration. For example, users can capture two assets with one encoded in MPEG2-TS format for the VOD system while another in AVC-Intra format for archiving.

**NOTE:** Before selecting the preset(s), you are required to set up the mapping between Video Standard of Source Content and the preset(s). Please refer to *Defining Mapping between Presets and Video Standard of Source* for details.

- **Audio Mapping.** Select the appropriate audio mapping.

- **Destination.** Specify destination paths for the captured clips. ProMedia Capture allows multiple assets captured from same content source but written to different storage destinations i.e. CIFS/MediaGrid. For example, an asset captured in Proxy format can be delivered to CIFS while another asset captured in VOD format can be delivered to MediaGrid.
**NOTE:** If two outputs are configured to CIFS storage, both destination paths must be identical.

**Authoring Info Template.** Enable the check box, if authoring info is needed. Select the appropriate Authoring Info Template.

### 6. Manipulate the Control Panel

The diagram below illustrates a separate view of the Control Panel:

Please read through the descriptions below for the alphabets indicated in the diagram:

- **A** - Displays the timecode of the source video in the format hh:mm:ss:ff.
B - Displays the frame rate and the timecode format of the source video. DF and NDF refer to Drop Frame and Non Drop Frame respectively and appear when the frame rate is 29.97 fps or 59.94 fps.

C - Click and hold the shuttle bar to adjust the forward or rewind speed. The speed can reach as high as 64x.

D - Click and glide forward or backward on the jog wheel to view individual frames of the source video.

E - Click to record the current timecode from the source video and display in the F field as the starting timecode for capture.

F - Specify the starting timecode for capture in the format hh:mm:ss:ff.

G - Click to seek the source video according to the starting timecode specified in the F field.

H - Click to record the current timecode from the current source video and display in the I field as the ending timecode for capture.

I - Specify the ending timecode for capture in the format hh:mm:ss:ff.

J - Click to seek the source video according to the ending timecode specified in the I field.

K - The duration between the inclusive starting timecode and the inclusive ending timecode as specified in the F field and the I field respectively.

L - Click to display the duration between the starting timecode and the ending timecode specified in the F field and the I field respectively.

NOTE: The above available functions are dependent on the individual player.

7. Concatenate multiple segments for single capture (Optional)
   a. Concatenate multiple segments from the same VTR source (Optional)
- Set the In-point timecode & Out-point timecode.
- Click within the Log Clip button.
- Select the “Add Segment to List” option from the drop-down menu. (Repeat this “Add Segment to List” action to add multiple segments, if desired.)

**NOTE:** The resolution and frame rate must be the same for all segments.

- A Capture Segment List appears on the left.
- The duration details of segments display on the Capture Segment List.
- Click the arrow buttons to re-arrange the sequence, if desired.
Chapter 6 Use Case Scenarios

Capturing from VTR Sources

b. **Concatenate multiple segments from multiple VTR sources (Optional)**

- Set the In-point timecode & Out-point timecode.
- Click within the Log Clip button & select the “Add Segment to List” option from the drop-down menu.
- Select another source to proceed multi-segments.
- Click Disconnect.

Set In-point Timecode
Set Out-point Timecode

Then select “Add Segment to List”
Click the **Source** drop-down menu to select another Source (e.g. SDI-2) to proceed with multiple segments from multiple sources.

- Click **Connect** to connect to another source.
- Once it is connected, set the In-point timecode & Out-point timecode.
- Click the **Log Clip** button.
- Select the “Add Segment to List” option from the drop-down menu.

**NOTE:** The resolution and frame rate must be the same for all segments.

- A Capture Segment List appears on the left.
- The duration details of segments display on the Capture Segment List.
- Click the arrow buttons to re-arrange the sequence, if desired.
8. Log the clip

- Specify the following parameters, if needed.
  - Tape ID (Optional). Specify a name for the tape for your own reference.
  - Clip Name (Mandatory). Specify a name for this clip capturing.
  - Log Notes (Optional). Specify a remark for this clip capturing.
  - Authoring Info (Optional). Specify the properties on the fields of the Authoring Info Template for this clip capturing.

- Click Log Clip.
9. Job Operation

- Click the button to open the Job Operation panel. (Users can categorize the jobs by logging clips with different Tape IDs, then multiple panels will appear based on the Tape IDs.)

**NOTE:** An independent panel on the right with the heading "Multiple Sources" will appear if you have concatenated multiple segments from multiple sources. Proceed with the same steps as described below.

- The status of the clip is displayed as "Logged".

- Click the button. Proceed with the following job operations:
  - **Execute.** Select to execute the logged clip.
  - **Edit.** Select to edit info for creating another job using similar info.
  - **Delete.** Select to delete the job operation.

**NOTE:** You can perform batch capture on multiple logged clips having same Tape ID or clips with multiple segments of different Tape IDs by clicking **Batch Capture** of the panel. The logged clips having the same Tape ID or clips with multiple segments of different Tape IDs will then be processed in sequence. Similarly, you can perform Batch Dequeue, Batch Recapture, Batch Retransfer, and Batch Delete, if desired.
10. Execute the job

- Click the button to select the **Execute** option.
- If you have performed “Add Segment to List” to concatenate multiple segments from the same player for capture, the Segments column will display “(Multiple)” for the logged clip. Mouse-over on “(Multiple)” will then display the detailed clips info.
- The status will change to **Capturing**. (Note that it then changes to **Transferring** after Capturing if the remote storage is CIFS.)
- If the captured job is completed successfully, the **Job Operation** panel will disappear afterward if there are no other logged jobs in the panel.
11. Check the History page

- Click the History menu at the top of the screen.
- Check if the Status of the job is Completed.
- Click Recapture to log the clip again in order to edit and execute the job again on the Ingest page.
- Click Retransfer to transfer the captured clip to the CIFS storage again, if the job is failed during transferring.
- Click Batch to perform batch processing on the capture jobs, which includes Batch Recapture, Batch Retransfer, and Batch Delete. A pop-up window appears for selecting the capture jobs you would like to perform batch processing.

Capturing from VDR Sources

ProMedia Capture enables users to perform capture from VDR sources.

To capture from VDR sources, proceed with the following steps:

1. Make sure the SDI port on the ProMedia Capture server is connected to VDR
2. Open the Settings page

- Click the Settings menu at the top of the screen.
- Select the Source Device tab.
- Click Connect to Device for the SDI-1 port or the SDI-2 port (ProMedia Capture provides two channels for capture. Please refer to Connecting a Source Device for details).

3. Connect to the source device

- After clicking Connect to Device, the Select Source Device dialog box appears.
- Select <New Device>.
- Specify the following parameters.
  - Device Name. Specify a name for the source device.
  - Protocol. Select VDCP for VDR.
  - Baudrate. Specify the baudrate of the port connecting to the server. The default value is 38400.
  - Signal Port. Specify the signal port for VDR.
- Click Add and Select.
- The Active mode takes effect afterward.
4. **Open the Ingest page**

- Click the Ingest menu at the top of the screen.
- Select the source device from the **Source** drop-down menu to specify the VDR as source content.
- Click **Connect**.

5. **Select the source clip**

- Select the source clip.
Select the source clip in VDR from the **Src Clip** drop-down menu.

### 6. Specify the parameters

- **Capture Preset.** Select the appropriate preset from the drop-down menu.

  You are able to define at most two presets for a single capture job. Click the **+** button to add another preset, if needed. Two Capture Preset tabs will appear for your configuration.

  For example, users can capture two assets with one encoded in MPEG2-TS format for the VOD system while another in AVC-Intra format for archiving.

  **NOTE:** Before selecting the preset(s), you are required to set up the mapping between Video Standard of Source Content and the preset(s). Please refer to *Defining Mapping between Presets and Video Standard of Source* for details.

- **Audio Mapping.** Select the appropriate audio mapping.

- **Destination.** Specify destination paths for the captured clips. ProMedia Capture allows multiple assets captured from same content source but written to different storage destinations i.e. CIFS/MediaGrid. For example, an asset captured in Proxy format can be delivered to CIFS while another asset captured in VOD format can be delivered to MediaGrid.

  **NOTE:** If two outputs are configured to CIFS storage, both destination paths must be identical.

- **Authoring Info Template.** Enable the check box, if needed. Select the appropriate Authoring Info Template.
7. Manipulate the Control Panel

The diagram below illustrates a separate view of the Control Panel:

Please read through the descriptions below for the alphabets indicated in the diagram:

A - Displays the timecode of the source video in the format hh:mm:ss:ff.

B - Displays the frame rate and the timecode format of the source video. DF and NDF refer to Drop Frame and Non Drop Frame respectively and appear when the frame rate is 29.97 fps or 59.94 fps.

C - Click and hold the shuttle bar to adjust the forward or rewind speed. The speed can reach as high as 64x.
D - Click and glide forward or backward on the jog wheel to view individual frames of the source video.

E - Click to record the current timecode from the source video and display in the **F** field as the starting timecode for capture.

F - Specify the starting timecode for capture in the format **hh:mm:ss:ff**.

G - Click to seek the source video according to the starting timecode specified in the **F** field.

H - Click to record the current timecode from the current source video and display in the **I** field as the ending timecode for capture.

I - Specify the ending timecode for capture in the format **hh:mm:ss:ff**.

J - Click to seek the source video according to the ending timecode specified in the **I** field.

K - The duration between the inclusive starting timecode and the inclusive ending timecode as specified in the **F** field and the **I** field respectively.

L - Click to display the duration between the starting timecode and the ending timecode specified in the **F** field and the **I** field respectively.

**NOTE:** The above available functions are dependent on the individual player.

8. **Concatenate multiple segments for single capture (Optional)**

a. **Concatenate multiple segments from the same VDR source (Optional)**

- Set the In-point timecode & Out-point timecode.
- Click **within the Log Clip button.**
- Select the “Add Segment to List” option from the drop-down menu. (Repeat this “Add Segment to List” action to add multiple segments, if desired.)

**NOTE:** The resolution and frame rate must be the same for all segments.
Chapter 6 Use Case Scenarios

Capturing from VDR Sources

- A Capture Segment List appears on the left.
- The duration details of segments display on the Capture Segment List.
- Click the arrow buttons to re-arrange the sequence, if desired.

b. Concatenate multiple segments from multiple VDR sources (Optional)

- Set the In-point timecode & Out-point timecode.
- Click within the **Log Clip** button & select the “Add Segment to List” option from the drop-down menu.

- Click **Disconnect**.

- Click the **Source** drop-down menu to select another Source (e.g. SDI-2) to proceed with multiple segments from multiple sources.

- Click **Connect** to connect to another source.

- Select another source to proceed multi-segments

- Disconnect

- Click **Arrow buttons** to re-arrange the sequence of segments

- Set **In-point Timecode**

- Set **Out-point Timecode**

- Click this **Arrow button** &

- Then select “Add Segment to List”
Once it is connected, set the In-point timecode & Out-point timecode.

Click within the Log Clip button.

Select the “Add Segment to List” option from the drop-down menu.

**NOTE:** The resolution and frame rate must be the same for all segments.

A Capture Segment List appears on the left.

The duration details of segments display on the Capture Segment List.

Click the arrow buttons to re-arrange the sequence, if desired.

### 9. Log the clip

Specify the following parameters.

- **Clip Name** (Mandatory). Specify a name for this clip capturing.
- **Log Notes** (Optional). Specify a remark for this clip capturing, if needed.
- **Authoring Info** (Optional). Specify the properties in the fields of the Authoring Info Template for this video clip capturing, if needed.

Click Log Clip.
**10. Job Operation**

- Click the button to open the Job Operation panel.

**NOTE:** An independent panel on the right with the heading "Multiple Sources" will appear if you have concatenated multiple segments from multiple sources. Proceed with the same steps as described below.

- The status of the clip is displayed as "Logged".

- Click the button. Proceed with the following job operations:
  - **Execute.** Select to execute the logged clip.
  - **Edit.** Select to edit info for creating another job using similar info.
  - **Delete.** Select to delete the job.

**NOTE:** You can perform batch capture on multiple logged clips by clicking Batch Capture of the panel. The logged clips will then be processed in sequence. Similarly, you can perform Batch Dequeue, Batch Recapture, Batch Retransfer, and Batch Delete, if desired.
11. Execute the job

- Click the button to select the Execute option.
- If you have performed “Add Segment to List” to concatenate multiple segments from same player for capture, the Source Clip column will display “(Multiple)” for the logged clip. Mouse-over on “(Multiple)” will then display the detailed clips info.
- The status will change to Capturing. (Note that it then changes to Transferring after Capturing if the remote storage is CIFS.)
- If the captured job is completed successfully, the Job Operation panel will disappear afterward if there are no other logged jobs in the panel.
12. Check the History page

- Click the History menu at the top of the screen.
- Check if the status of the job is Completed.
- Click Recapture to log the clip again in order to edit and execute the job again on the Ingest page.
- Click Retransfer to transfer the captured clip to the CIFS storage again, if the job is failed during transferring.
- Click Batch to perform batch processing on the capture jobs, which includes Batch Recapture, Batch Retransfer, and Batch Delete. A pop-up window appears for selecting the capture jobs you would like to perform batch processing.

Crash Capture

ProMedia Capture allows users to perform live signal capturing via crash capture without having any source device (e.g. VTR) connected.

Crash Capture without Scene Logging

To execute a crash capture without scene logging, proceed with the following steps:

1. Make sure the SDI port on the ProMedia Capture server is connected to live feed signal
2. Open the Ingest page

- Select SDI-1: <No player> or SDI-2: <No player> from the Source drop-down menu to specify live source signal.
- Click Connect.

3. Specify the clip info

- Specify the Clip Name. (Tape ID will be ignored for crash capture.)
- Specify the Log Notes optionally.
On the Job Settings panel, specify the following parameter (Optional):

**Capture Preset.** Select the appropriate preset from the drop-down menu.

You are able to define at most two presets for a single crash capture job. Click the button to add another preset, if needed. Two Capture Preset tabs will appear for your configuration.

For example, users can capture two assets with one encoded in MPEG2-TS format for the VOD system while another in AVC-Intra format for archiving.

**NOTE:** Before selecting the preset(s), you are required to set up the mapping between Video Standard of Source Content and the preset(s). Please refer to *Defining Mapping between Presets and Video Standard of Source* for details.

**Audio Mapping.** Select the appropriate audio mapping.

**Destination.** Specify destination paths for the captured clips. ProMedia Capture allows multiple assets captured from same content source but written to different storage destinations (i.e. CIFS/MediaGrid). For example, an asset captured in Proxy format can be delivered to CIFS while another asset captured in VOD format can be delivered to MediaGrid.

**NOTE:** If two outputs are configured to CIFS storage, both destination paths must be identical.

**Authoring Info Template.** Enable the check box, if needed. Select the appropriate Authoring Info Template.

### 4. Initialize & Start Crash Capture

Click **Initialize Crash Capture** to initialize crash capture.

**NOTE:** The initializing process might take a short period of time. Please wait until the process is complete.
After the initializing process is complete, click the **Crash Capture** button to start crash capture.

### 5. Crash Capture in Progress

- Click the **Crash Capture** button to open the **Job Operation** panel.
Click the button. You are optional to proceed with the following job operations:

- **Preview**: Select to preview the crash capture job and it will be displayed in the video preview window of the Device Control panel.
- **Abort**: Select to terminate the job and the status will display as “Failed”.
- **Edit**: Select to edit info for this crash capture clip for creating another job using similar info.
- **Delete**: Select to delete the job.

**NOTE:** The crash capture needs to be started within 1 hour after initializing the job or the job will fail due to timeout. After the crash capture job is initialized and started, the capture can proceed at a maximum of 12 hours as long as the storage space is sufficient for the capture.

**NOTE:** After users initialize or start a crash capture, there will be an alarm appeared at the top of the page. When navigating to another page, users can click on the alarm and then click the Preview button on the pop-up window. It will navigate to the Ingest page and the Preview operation will be started automatically and users can click the **Crash Capture** or **Stop Capture** button to proceed.

6. **Stop Crash Capture**

Click **Stop Capture** to end the process of crash capture.
7. **Check the Completed Job Details on the History Page**

- Click the History menu at the top of the screen.
- Click Delete to delete the crash capture job record, if desired.

**Crash Capture with Scene Logging**

To execute a crash capture job with scene logging, proceed with the following steps:

1. **Make sure the SDI port on the ProMedia Capture server is connected to live feed signal**

2. **Use SDI monitor to view scenes (Optional)**
   - To log scenes more precisely, it is recommended to view the video content source via SDI monitor which is connected to same live feed signal.
3. **Open the Ingest page**

   - Enable and select the desired Scene Logging Template. (Please refer to *Defining a Scene Logging Template* for details.)
   - Select SDI-1: <No player> or SDI-2: <No player> from the Source drop-down menu to specify live source signal.
   - Click Connect.

4. **Specify the clip info**

   - Specify the Clip Name. (Tape ID will be ignored for crash capture.)
   - Specify the Log Notes optionally.
   - On the Job Settings panel, specify the following parameter (Optional):
     - **Capture Preset.** Select the appropriate preset from the drop-down menu.
     
     You are able to define at most two presets for a single crash capture job. Click the + button to add another preset, if needed. Two Capture Preset tabs will appear for your configuration.
     
     For example, users can capture two assets with one encoded in MPEG2-TS format for the VOD system while another in AVC-Intra format for archiving.

     **NOTE:** Before selecting the preset(s), you are required to set up the mapping between Video Standard of Source Content and the preset(s). Please refer to *Defining Mapping between Presets and Video Standard of Source* for details.

   - **Audio Mapping.** Select the appropriate audio mapping.
   - **Destination.** Specify destination paths for the captured clips. ProMedia Capture allows multiple assets captured from same content source but written to different storage destinations i.e. CIFS/MediaGrid. For example, an asset captured in Proxy format can be delivered to CIFS while another asset captured in VOD format can be delivered to MediaGrid.
NOTE: If two outputs are configured to CIFS storage, both destination paths must be identical.

Authoring Info Template. Enable the check box, if needed. Select the appropriate Authoring Info Template.

5. Initialize & Start Crash Capture
   - Click Initialize Crash Capture to initialize crash capture.

NOTE: The initializing process might take a short period of time. Please wait until the process is complete.
   - After the initializing process is complete, click the Crash Capture button to start crash capture.

6. Crash Capture in Progress
   - Click the button to open the Job Operation panel.
   - Click the button. You are optional to proceed with the following job operations:
     - Preview. Select to preview the crash capture job and it will be displayed in the video preview window of the Device Control panel.
     - Abort. Select to terminate the job and the status will display as “Failed”.
     - Edit. Select to edit info for this crash capture clip for creating another job using similar info.
     - Delete. Select to delete the job.

NOTE: The crash capture needs to be started within 1 hour after initializing the job or the job will fail due to timeout. After the crash capture job is initialized and started, the capture can proceed at a maximum of 12 hours as long as the storage space is sufficient for the capture.

NOTE: After users initialize or start a crash capture, there will be an alarm appeared at the top of the page. When navigating to another page, users can click on the alarm and then click the Preview button on the pop-up window. It will navigate to the Ingest page and the Preview operation will be started automatically and users can click the Crash Capture or Stop Capture button to proceed.

7. Scene Logging
   a. Scene Logging Using Pre-defined Hot Keys (Based on Video Displayed on the SDI monitor)
i. Click **Activate Keys** to activate the pre-defined scene logging hot keys.

ii. The button turns to green and **Keys Activated** appears.

iii. Hit the hot key on the keyboard as the **In Point Key** (e.g. a) to log the start of the scene.

iv. Hit the hot key on the keyboard as the **Out Point Key** (e.g. b) to log the end the scene.

---

**NOTE:** You can log multiple scenes by using In Point Keys and Out Point Keys.

---

**NOTE:** Optionally you can configure the value of **Thumbnail Generation Delay** by navigating to **Templates > Scene Logging Template**. Set to a larger value if you find the content of generated thumbnail is earlier than expected.

---

**NOTE:** Optionally you can configure the value of **Logging Reaction Time Offset** by navigating to **Templates > Scene Logging Template**. Set to a more negative value if you find the time code specified in XML file is earlier than expected.
b. Scene Logging Using Ad Hoc Approach (Based on Video Displayed on the SDI Monitor)

i. Enter the scene message in the text box.

ii. Click Log to log the start of the scene with the scene message specified in the text box.

iii. The scene will be ended according to the Ad Hoc Scene Logging Duration configured in the Scene Logging Template. (Please refer to Defining a Scene Logging Template for details.)

**NOTE:** You can log multiple scenes by entering messages and clicking the log button.

**NOTE:** Optionally you can configure the value of Thumbnail Generation Delay by navigating to Templates > Scene Logging Template. Set to a larger value if you find the content of generated thumbnail is earlier than expected.

**NOTE:** Optionally you can configure the value of Logging Reaction Time Offset by navigating to Templates > Scene Logging Template. Set to a more negative value if you find the time code specified in XML file is earlier than expected.

8. Stop Crash Capture
   - Click Stop Capture to end the process of crash capture.

9. Locate Generated XML Files and Thumbnails of Logged Scenes
   - Access the remote storage (i.e., MediaGrid/CIFS).
- Search the XML file according to the **XML Output Path** configured in the Scene Logging Template.

  The filename of the XML file is in the format of `<capture output filename>.xml`. For example, if the capture output filename is “ABC.mov”, the filename of the XML file will be “ABC.mov.xml”.

- Locate the thumbnails according to the **Thumbnail Output Path** configured in the Scene Logging Template.

  The thumbnail filename is in the format of `<job name or first capture output filename>_<start time code of the scene in hhmmssff format>.jpg`. For example, if the job name is “ABC” and start time code of the scene is 01:02:03:04, the filename of the thumbnail will be “ABC_01020304.jpg”.
Chapter 7
Monitoring and Troubleshooting

This chapter shows how to monitor the job status of capture, alarm types, and perform routine maintenance tasks.

- Monitoring the Finished Job Status
- Alarm Types
- Rebooting the Server
- Downloading Debug Logs for Technical Support

Monitoring the Finished Job Status

After finishing capture, the job status can be monitored on the History page.

In the ProMedia Capture GUI, click the History menu at the top. The History page appears.

![History Page Screenshot](image)

Figure 7–1: Monitor the Finished Job Status

All the relevant job records can be found on the History page. There are two job statuses:

- Completed
- Failed

**NOTE:** If the job is failed during transferring, you can click Retransfer to transfer the job to CIFS storage again.

Using Filters on the History Page

On the History page, you can use filters to search for specific information.
To use a filter, proceed with the following steps:

1. Click the button on the columns (as shown in Figure 7–1).
2. A drop-down window appears.
3. Specify the criteria to be filtered.
4. Click Filter.

As a result, the captured jobs will be filtered and displayed accordingly.

To cancel a filter, proceed with the following steps:

1. Click the button on the column.
2. A drop-down window appears.
3. Click Clear.

As a result, all the job data appear on the History page.

Using Filters on the Ingest Page

On the Ingest page, you can use filters in the Job Operation panel to search for specific information. Please refer to Using Filters on the History Page for operational procedures.

Alarm Types

ProMedia Capture issues two types of alarm based on the level of severity:

- Error Alarm
- Notification Alarm

Error Alarm

An error alarm message will be raised if there is a severe error occurred in the system that an immediate action needs to be taken to maintain normal operation of the system. An error alarm is indicated in RED.

The following are the error alarms:

1. **SERVER CONNECTION** - The GUI fails to establish connection with server.
2. **STORAGE CONNECTION** - The server fails to establish connection with remote storage.
3. **DONGLE** - The dongle is not present on the server.
4. **PLATFORM** - The hardware configuration is invalid; the RAID volume is failed or not in optimal configuration.

Notification Alarm

A notification alarm message will be raised to remind users that an action should be taken to maintain normal operation of the system. A notification alarm is indicated in YELLOW.

The following are the notification alarms:
1. **STORAGE** - Prompt users when temporary storage is almost full (i.e. the free capacity in temporary storage is less than 10 GB) or the remote storage is almost full (i.e. the free capacity in remote storage is less than 110 GB).

   **NOTE:** No pending job will be started when the available space of storage is less than 1 GB.

2. **TAPE INSERTION** - Users need to confirm that the corresponding tape has been inserted for a VTR job to proceed capturing.

3. **CRASH CAPTURE** - Either a crash capture has been initialized and is waiting for users to start, or it has already started and is waiting for users to stop it.

4. **PLATFORM** - Prompt users in the occurrence of cases of host name modification, connection failure to the NTP server, disconnection of the network interfaces, or other RAID volume issues.

### Rebooting the Server

In the ProMedia Capture GUI, navigate to **Settings > Platform** and click **Reboot** to reboot the ProMedia Capture server (as shown in Figure 7–2).

![Figure 7–2: System Reboot and Download Debug Logs](image)

#### Downloading Debug Logs for Technical Support

ProMedia Capture allows users to download the debug logs, which can be passed to Harmonic Technical Support for further investigation in case a system malfunction occurs.
In the ProMedia Capture GUI, navigate to Settings > Platform and click Download Debug Logs to download the debug logs (as shown in Figure 7–2).
Chapter 8
Glossary

A

AAC
Advanced Audio Coding is a lossy audio compression technology associated with MPEG-4.

AC-3
Active Coding 3 is Dolby's third digital audio coding technology, and is synonymous with Dolby Digital.

ADTS
Audio Data Transport Stream is a standard for encapsulating encoded audio data into a data stream.

AFT
Adapter Fault Tolerance provides automatic redundancy for an adapter through failover from an active adapter to a standby adapter for switch port, cable, or adapter failure. It supports two to eight adapters per team and works with any hub or switch.

AMR-NB
Adaptive Multi-Rate Narrow Band is a codec adopted by 3rd Generation Partnership Project (3GPP) for use over mobile networks.

ANSI
American National Standards Institute.

ASF
Advanced Systems Format is a proprietary digital audio/digital video container format developed by Microsoft, that specifies the structure of a video/audio stream.

ASI
Asynchronous Serial Interface. A DVB-defined interface protocol for carrying MPEG-2 transport streams at a constant or defined transmission rate.

ATSC
Advanced Television System Committee.

B

bandwidth
The maximum amount of data that a transmission device (cable, fiber-optics link, satellite feed, and so on) is capable of carrying.

Bottom Field First (BFF)
Use the bottom field of interlaced frame based video as the dominant field.
C

CAS
Conditional Access System. Scrambles the programming material and allows conditional access to the descrambled information on the basis of subscriber authorization.

CBR
Constant Bit Rate.

CEA
Consumer Electronics Association.

channel
A system transcoding exactly one program.

CIF
Common Intermediate Format. Originally a set of standard video formats defined by their resolution (used in videoconferencing). Now refers to video resolution: 352x288 in PAL or 352x240 in NTSC.

CIFS
Common Internet File System

codec
A device or software used for coding and decoding transformations of digital data or signal streams.

copper cable
A copper cable is comprised of twisted copper wires insulated with plastic. It is often used for computer network cabling. It is terminated with RJ-45 electrical connector.

D

data stream
The continuous flow of information from one location to another.

DTS
Decoding Time Stamp.

DVB
Digital Video Broadcasting Group.

DVS
Digital Video Specification.
E

elementary stream

A constituent stream of a program, that carries only one type of data (audio, video, or closed-caption).

encoding profile

A combination of service allocation, output video size, frame rate, video bitrate, video codec, audio codec, audio bitrate, multiplexing/encapsulation, and all other parameters defining an audio/video stream output format.

EPG

Electronic Program Guide. A digital listing of scheduled TV or radio programs, typically displayed with navigation functions for viewers to select programming from a remote input device.

Ethernet

A data link (physical interface) developed for local area networks (LANs) that supports transmission rates up to 10 Mbps. Fast Ethernet supports transmission rates up to 100 Mbps.

G

GbE

Gigabit Ethernet. A transmission technology based on the Ethernet frame format and protocol used in local area networks that provide a data rate of 1 billion bits per second.

H

HD

High Definition.

HE-AAC

High Efficiency Advanced Audio Coding (see entry for AAC).

headend

The distribution point in a TV system.

Hertz (Hz)

A unit of frequency defined as one cycle per second. Abbreviated Hz.

I

IDR frame

An IDR frame is a particular kind of I frame used in MPEG-4 AVC encoding.

IEC

I/O
Input/Output. Refers to a connection that inputs and outputs data.

IOM card
Cards that have two independent ports that when active support input and output traffic simultaneously.

IP address
An identifier for a computer or device on an Internet Protocol (IP) network. Networks using IP route messages based on the IP address of the destination. An IP address is a 32-bit number written in dotted decimal notation: four 8-bit sections, separated by periods, converted from binary to decimal. Each section is a number from zero to 255.

ISO
International Standards Organization.

J
JVT
Joint Video Team. The Joint Video Team is a group of video coding experts from ITU-T Study Group 16 (VCEG) and ISO/IEC JTC 1 SC 29 / WG 11 (MPEG) created to develop an advanced video coding specification.

K
kBps
Kilobytes per second. One thousand bytes per second.
kbps
Kilobits per second. One thousand bits per second.

L
LC
A high-density optical connector used for single-mode and multimode fiber-optic applications.
LTC
Longitudinal Time Code.

M
MPEG
MPTS

Multi Program Transport Stream.

Multimode fiber

Optical fiber designed to carry multiple light rays or modes concurrently each at a lightly different reflection angle within the optical fiber core. Multimode fiber transmission is used for relatively short distances because the modes tend to disperse over longer lengths. For longer distances, singlemode fiber is used.

N

NTSC

National Television System Committee.

P

packet

A block of data used for transmission.

PAT

Program Association Table.

PES

Packetized Elementary Stream.

PIFF

Microsoft’s Protected Interoperable File Format (PIFF) specification defines a standard multimedia file format for delivery and playback of multimedia content.

PID

Packet identifier. Integer values used in the MPEG-2 standard to identify an elementary stream of a program within a transport stream.

PMT

Program Mapping Table.

port

A port is an input to or an output from a component, an adapter, or a module.

profile

A profile refers to the encoding profile for the processing (encoding or transcoding) that the <Product> performs on the input program data stream. It includes the codec, size, bit rate, frame rate, and all other settings that determine the output format. The maximum number of profiles supported on each unit depends on the encapsulation type, and CPU utilization. You must acquire a license for each profile that you want to enable on the <Product>.
**Program**

A program is made up of the video and audio data streams that you want to include in the output. The program is assigned to one or more profiles and it is converted to the specified format for that profile. In this way, a single program can be processed for different output targets.

**PSIP**

Program System Information Protocol.

**PTS**

Presentation Time Stamp.

**Q**

**QAM**

Quadrature Amplitude Modulation.

**R**

**RAP Period**

Random Access Point Period. The period between reference frames, for example in H264 it is the period between IDR frames.

**Redundancy**

A back-up system of Harmonic components that ensures uninterruptable service in the event of a component failure.

**RTCP**

Real Time Control Protocol is a companion protocol to RTP that allows monitoring of the data delivery.

**RTMP**

Real Time Messaging Protocol is a proprietary protocol developed by Adobe Systems, used for streaming audio, video and data over the Internet, between an Adobe Flash player and a server.

**RTP**

Realtime Transport Protocol is an IP protocol that supports real-time transmission of data such as audio and video.

**S**

**SAP**

Session Announcement Protocol.

**SDP**

Session Description Protocol.
**single mode fiber**
Optical fiber designed for the transmission of a single ray or mode of light as a carrier and is used for long-distance signal transmission. For short distances, multimode fiber is used.

**scrambler**
A broadcasting device that can encode the incoming traffic.

**SCTE**
Society of Cable Telecommunication Engineers.

**SD**
Standard Definition.

**SDP**
Session Description Protocol. A text-based message format protocol defined by the IETF, used for describing a multi-media session.

**SEI**
Supplemental Enhancement Information is extra information that can be inserted into the bitstream to enhance the use of the video for a wide variety of purposes, in accordance with H.264/AVC/MPEG-4 Part 10. See also VUI.

**SFP Module**
A module that converts optical data into electrical data and vice versa.

**SFT**
Switch Fault Tolerance provides automatic redundancy across switches. An adapter connected to one switch will failover to a standby adapter connected to a different switch for a switch, switch port, cable, or adapter failure.

**SNMP**

**SPTS**
Single Program Transport Stream.

**T**

transport stream
One or more multiplexed MPEG-2 programs.

**T-STD**
Transport-System Target Decoder.
V

VITC
Vertically Integrated Time Code.

VBR
Variable Bit Rate.

VOD
Video On Demand.

VUI
Video Usability Information is extra information that can be inserted into the bitstream to enhance the use of the video for a wide variety of purposes, in accordance with H.264/AVC/MPEG-4 Part 10. See also SEI.

W

WMA
Windows Media Audio (originally MSAudio) is a proprietary audio compression format developed by Microsoft.

WMV
Windows Media Video is a compressed video file format for several proprietary codecs, developed by Microsoft.
Appendix A
Contacting the Technical Assistance Center

Harmonic Global Service and Support has many Technical Assistance Centers (TAC) located globally, but virtually co-located where our customers can obtain technical assistance or request on-site visits from the Regional Field Service Management team. The TAC operates a Follow-The-Sun support model to provide Global Technical Support anytime, anywhere, through a single case management and virtual telephone system. Depending on time of day, anywhere in the world, we will receive and address your calls or emails in one of our global support centers. The Follow-the-Sun model greatly benefits our customers by providing continuous problem resolution and escalation of issues around the clock.

Table A–1: For Distribution and Delivery (D&D, Legacy Harmonic) Products

<table>
<thead>
<tr>
<th>Region</th>
<th>Telephone Technical Support</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>888.673.4896 (888.MPEG.TWO) or 408.490.6477</td>
<td><a href="mailto:support@harmonicinc.com">support@harmonicinc.com</a></td>
</tr>
<tr>
<td>EME</td>
<td>+44.1252.555.450</td>
<td><a href="mailto:support.emea@harmonicinc.com">support.emea@harmonicinc.com</a></td>
</tr>
<tr>
<td>India</td>
<td>+44.1252.555.450</td>
<td><a href="mailto:support.emea@harmonicinc.com">support.emea@harmonicinc.com</a></td>
</tr>
<tr>
<td>Russia</td>
<td>+7.495.926.4608</td>
<td><a href="mailto:support.sm@harmonicinc.com">support.sm@harmonicinc.com</a></td>
</tr>
<tr>
<td>Africa</td>
<td>+44.1252.555.450</td>
<td><a href="mailto:support.emea@harmonicinc.com">support.emea@harmonicinc.com</a></td>
</tr>
<tr>
<td>Mainland China</td>
<td>+86.10.6569.5580</td>
<td><a href="mailto:chinasupport@harmonicinc.com">chinasupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Japan</td>
<td>+81.3.5565.6737</td>
<td><a href="mailto:japansupport@harmonicinc.com">japansupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Asia Pacific – Other Territories</td>
<td>+65.6542.0050</td>
<td><a href="mailto:apacsupport@harmonicinc.com">apacsupport@harmonicinc.com</a></td>
</tr>
</tbody>
</table>

Table A–2: For Production and Playout (P&P, Legacy Omneon and Rhozet) Products

<table>
<thead>
<tr>
<th>Region</th>
<th>Telephone Technical Support</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>888.673.4896 (888.MPEG.TWO) or 408.490.6477</td>
<td><a href="mailto:omneon.support@harmonicinc.com">omneon.support@harmonicinc.com</a></td>
</tr>
<tr>
<td>EMEA</td>
<td>+44.1252.555.450</td>
<td><a href="mailto:omneonemeasupport@harmonicinc.com">omneonemeasupport@harmonicinc.com</a></td>
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<tr>
<td>Mainland China</td>
<td>+86.10.6569.5580</td>
<td><a href="mailto:chinasupport@harmonicinc.com">chinasupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Japan</td>
<td>+81.3.5565.6737</td>
<td><a href="mailto:japansupport@harmonicinc.com">japansupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Asia Pacific – Other Territories</td>
<td>+65.6542.0050</td>
<td><a href="mailto:apacsupport@harmonicinc.com">apacsupport@harmonicinc.com</a></td>
</tr>
</tbody>
</table>
The Harmonic Inc. support website is:
http://www.harmonicinc.com/content/technical-support

The Harmonic Inc. Distribution and Delivery product software downloads site is:
ftp://ftp.harmonicinc.com

The Harmonic Inc. Playout and Production software downloads site is:

The Harmonic Inc. corporate address 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.+1.408.542.2511
Appendix B

Compliance, Safety, and Agency Approvals

NOTE: The information in this appendix may apply to purchased products.

This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if it is not installed and used in accordance with the instructions in this manual. Operation of this equipment in a residential area is likely to cause harmful interference. If this occurs, the user will be required to correct the interference at his or her own expense.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15, Subpart B of the Federal Communications Commission (FCC) rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Connections between the Harmonic equipment and other equipment must be made in a manner that is consistent with maintaining compliance with FCC radio frequency emission limits. Modifications to this equipment not expressly approved by Harmonic may void the authority granted to the user by the FCC to operate this equipment.

WEEE/RoHS Compliance Policy

Harmonic Inc. intends to comply fully with the European Union’s Directive 2002/96/EC as amended, on Waste Electrical and Electronic Equipment, also known as “WEEE,” and Directive 2002/95/EC, as amended, on the Restriction of use of Hazardous Substances, also known as “RoHS.”

Harmonic will ensure that product which cannot be reused will be recycled in compliance with the WEEE Directive. To that end, users are advised that (1) Harmonic equipment is not to be discarded in household or office garbage, (2) Harmonic Inc. will pay the freight for shipment of equipment to be disposed of if it is returned to Harmonic, (3) customers should call the normal RMA telephone numbers to arrange for such shipment, and (4) for additional and updated information on this process customers may consult the Harmonic website: http://harmonicinc.com/pa_weee_recycle.cfm.

Harmonic will ensure that its products will be either reused or recycled in compliance with the WEEE Directive. For the latest information concerning Harmonic’s WEEE/RoHS Compliance Policy and its Recycling and Take-Back process, please visit our web site.

© 2013 Harmonic Inc. All rights reserved. 109 ProMedia Capture User Guide, Release 1.2.0.0, Rev A
Restricted Substance Statement

Harmonic products contain less than the permitted limits for the six restricted substances except where exemptions published in the RoHS Directive are applicable. This statement is based on vendor-supplied analysis or material certifications, and/or lab test results of the component raw materials used in the manufacture of Harmonic products.

<table>
<thead>
<tr>
<th>Restricted Substance</th>
<th>Permitted limit*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium (Cd)</td>
<td>≤ 0.01% (Cd)</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>≤ 0.1% (Pb)</td>
</tr>
<tr>
<td>Chromium (VI) (Cr (VI))</td>
<td>≤ 0.1% (CrVI)</td>
</tr>
<tr>
<td>Mercury (Hg)</td>
<td>≤ 0.1% (Hg)</td>
</tr>
<tr>
<td>Polybrominated Biphenyls (PBBs)</td>
<td>≤ 0.1% (PBBs)</td>
</tr>
</tbody>
</table>

*Homogeneous material definition as per the EU Directive.

产品中的有毒有害物质或元素的名称及含量表

Names and Contents of Toxic and Hazardous Substances

This section lists the names of contents of toxic or hazardous substances, or elements in the products if the part is present.

The Environmental Protective Use Period for Harmonic products is 20 years unless displayed otherwise on the product. The EPUP period is valid only when the products are operated or stored as per the conditions specified in the product manual.

<table>
<thead>
<tr>
<th>部件名称 (Part name)</th>
<th>有毒有害物质或元素 (Hazardous Substance)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>铅 (Pb)</td>
</tr>
<tr>
<td>印刷线路板 (Printed Circuit Assemblies)</td>
<td>X</td>
</tr>
<tr>
<td>机械组件 (Mechanical Subassemblies)</td>
<td>X</td>
</tr>
<tr>
<td>光学组件 (Optical Subassemblies)</td>
<td>X</td>
</tr>
</tbody>
</table>
### Appendix B Compliance, Safety, and Agency Approvals

#### Names and Contents of Toxic and Hazardous Substances

<table>
<thead>
<tr>
<th>部件名称 (Part name)</th>
<th>有毒有害物质或元素 (Hazardous Substance)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>铅 (PB)</td>
</tr>
<tr>
<td>电源 (Power Supplies)</td>
<td>X</td>
</tr>
<tr>
<td>缆线 / 线束 (Cables, harnesses)</td>
<td>X</td>
</tr>
<tr>
<td>屏幕 / 显示器 (Screens, Monitors)</td>
<td>X</td>
</tr>
<tr>
<td>金属零件 (Metal Parts)</td>
<td>O</td>
</tr>
<tr>
<td>塑料 / 发泡材料 (Plastics, foams)</td>
<td>O</td>
</tr>
<tr>
<td>电池 (Batteries)</td>
<td>O</td>
</tr>
</tbody>
</table>

O: 表示在该部件的所有均质材料中，此类有毒有害物质的含量均小于 SJ/T11363-2006 标准所规定的限量。

X: 表示至少在该部件的某均质材料中，此类有毒有害物质的含量超出 SJ/T11363-2006 标准规定的限量。

#### 기종별

<table>
<thead>
<tr>
<th>기종별</th>
<th>사용자 안내문</th>
</tr>
</thead>
<tbody>
<tr>
<td>A급 기기 (업무용 정보통신기기)</td>
<td>이기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 구입하였을 때에는 가정용으로 교환하시기 바랍니다.</td>
</tr>
</tbody>
</table>
Standards and Agency Approval

The following tables list regulatory standards and agency approvals:

**North America**

<table>
<thead>
<tr>
<th>Standards</th>
<th>Agency Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI: FCC Part 15, Subpart B, ICES-003, Issue 2, Class A</td>
<td>FCC</td>
</tr>
<tr>
<td>Safety: UL60950-1, CAN/CSA C22.2 No. 60950-1</td>
<td>cTUV-us Mark</td>
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</table>

**Europe**

<table>
<thead>
<tr>
<th>Standards</th>
<th>Agency Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI/EMC: EN55022 Class A, EN55024, EN61000-3-2 and EN61000-3-3</td>
<td>CE</td>
</tr>
<tr>
<td>Safety: EN 60950-1, EN60825-1</td>
<td>TUV-GS or T-Mark, CE</td>
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<tr>
<td>RoHS2: Directive 2011/65/EU</td>
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**Japan**

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**Australia and New Zealand**

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</thead>
<tbody>
<tr>
<td>EMI: AS/NZS CISPR22</td>
<td>AS/NZS CISPR22</td>
</tr>
</tbody>
</table>

**Canadian EMC Notice of Compliance**

English: This digital apparatus does not exceed the Class A limits for the radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Commerce.

French: Le présent appareil numérique n’émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

EU Manufacturer’s Declaration of Conformity

We: Harmonic, Inc.

Declare under our sole responsibility that the products identified below comply with the following EU Directives and Harmonized Standards stated.
### Applicable EU Directives for ContentBridge:

<table>
<thead>
<tr>
<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ContentBridge 1000</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMC</td>
<td>FCC Part 15, ICES-003</td>
<td>Class A for Digital Equipment, USA, Canada</td>
</tr>
<tr>
<td></td>
<td>CISPR 22</td>
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</tr>
<tr>
<td></td>
<td>2004/108/EC Electromagnetic Compatibility including amendments</td>
<td>EN55022, EN61000-3-2, EN61000-3-3, and EN55024</td>
</tr>
<tr>
<td>Safety</td>
<td>TUV</td>
<td>UL60950-1, CAN/CSA-C22.2 No.</td>
</tr>
<tr>
<td></td>
<td>2006/95/EC Low Voltage Directive</td>
<td>60950-1 Safety of Information Technology</td>
</tr>
<tr>
<td></td>
<td>including amendments</td>
<td>Equipment</td>
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<tr>
<td><strong>ContentBridge 2010A</strong></td>
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<tr>
<td>EMC</td>
<td>FCC</td>
<td>Class A</td>
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<tr>
<td></td>
<td>ICES</td>
<td>Class B</td>
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<tr>
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<td>CE Mark</td>
<td>EN 55022 Class B,</td>
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<tr>
<td></td>
<td>VCCI</td>
<td>EN55024, EN61000-3-2,</td>
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<tr>
<td></td>
<td>BSMI</td>
<td>EN61000-3-3</td>
</tr>
<tr>
<td></td>
<td>C-Tick</td>
<td>Class B</td>
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<tr>
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<td>SABS</td>
<td>Class A</td>
</tr>
<tr>
<td></td>
<td>CCC</td>
<td>Class B</td>
</tr>
<tr>
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<td>MIC</td>
<td>Class B</td>
</tr>
<tr>
<td>Safety</td>
<td>UL</td>
<td>UL 60950-1</td>
</tr>
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<td>CAN/CSA</td>
<td>CAN/CSA-C22.2 No.</td>
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<td>EN</td>
<td>60950-1</td>
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<tr>
<td></td>
<td>IEC</td>
<td>EN 60950-1, EN60825-1,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EN60825-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IEC60950-1</td>
</tr>
<tr>
<td>Regulatory Compliance</td>
<td>Directive(s)</td>
<td>Notes</td>
</tr>
<tr>
<td>------------------------</td>
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</tr>
<tr>
<td><strong>EMC</strong></td>
<td>ACMA or C-Tick&lt;br&gt;BELLIS&lt;br&gt;KVALIDET&lt;br&gt;ICES&lt;br&gt;CNCA or CCC&lt;br&gt;KONCAR&lt;br&gt;CE&lt;br&gt;SII&lt;br&gt;VCCI&lt;br&gt;OTAN – CKT&lt;br&gt;INSM&lt;br&gt;NEMKO&lt;br&gt;GOST&lt;br&gt;SABS&lt;br&gt;KCC&lt;br&gt;BSMI&lt;br&gt;UKRTEST or&lt;br&gt;UKRSERTCOMPUTER&lt;br&gt;FCC&lt;br&gt;STZ&lt;br&gt;ICT</td>
<td></td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>IRAM&lt;br&gt;BELLIS&lt;br&gt;SCC&lt;br&gt;CNCA or CCC&lt;br&gt;KONCAR&lt;br&gt;CE&lt;br&gt;TUV&lt;br&gt;IECEE&lt;br&gt;IECEE CB&lt;br&gt;SII&lt;br&gt;OTAN – CKT&lt;br&gt;KEBS&lt;br&gt;KUCAS&lt;br&gt;NYCE or NOM&lt;br&gt;INSM&lt;br&gt;SONCAP&lt;br&gt;NEMKO&lt;br&gt;GOST&lt;br&gt;KSA ICCP&lt;br&gt;NRCS&lt;br&gt;BSMI&lt;br&gt;UKRTEST or UKRSERTCOMPUTER&lt;br&gt;NRTL&lt;br&gt;STZ</td>
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</tbody>
</table>
### Applicable EU Directives for ContentDirector:

<table>
<thead>
<tr>
<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMC</strong></td>
<td>ACMA or C-Tick, BELLIS, KVALITET, ICES, CNCA or CCC, KONCAR, CE, SII, VCCI, OTAN – CKT, INSM, NEMKO, GOST, SABS, KCC, BSMI, UKRTEST or UKRSERTCOMPUTER, FCC, STZ, ICT</td>
<td>Class A</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>IRAM, BELLIS, SCC, CNCA or CCC, KONCAR, CE, TUV, IECCE, IECCE CB, SII, OTAN – CKT, KEBS, KUCAS, NYCE or NOM, INSM, SONCAP, NEMKO, GOST, KCC, ICCP, NRCS, BSMI, UKRTEST or UKRSERTCOMPUTER, NRTL, STZ</td>
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</table>
### Applicable EU Directives for ContentServer and ContentStore:

<table>
<thead>
<tr>
<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td><strong>ContentServer 1042B/1042C-DP</strong></td>
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<tr>
<td><strong>ContentServer 2122/2124</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMC</td>
<td>FCC Part 15, ICES-003 CISPR 22 89/336/EEC Electromagnetic Compatibility including amendments</td>
<td>Class A for Digital Equipment, USA, Canada EN55022 EMISSIONS EN61000-3-2, EN61000-3-3 EN55024, AS/NZS 3548 (CISPR-22 Class A) VCCI V-3</td>
</tr>
<tr>
<td><strong>ContentServer 3000</strong></td>
<td></td>
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</tr>
<tr>
<td>EMC</td>
<td>FCC (CFR 47, Part 15) Class A IEC-003, Issue 3, Class A</td>
<td>EN 55022, EN1000-2-3, EN1000-3-3 EN55024, AS/NZS 3548 (CISPR-22 Class A) VCCI V-3</td>
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<tr>
<td>Safety</td>
<td>IEC/EN 60950-1: CB report and CB certificate UL/CSA 60950-1: cTUVus-mark</td>
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<tr>
<td><strong>ContentStore 3160</strong></td>
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<tr>
<td>EMC</td>
<td>FCC (CFR 47, Part 15) Class A IEC-003, Issue 3, Class A</td>
<td>EN 55022, EN1000-2-3, EN1000-3-3 EN55024, AS/NZS 3548 (CISPR-22 Class A) VCCI V-3</td>
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## Regulatory Compliance

<table>
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<th>Directive(s)</th>
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<tbody>
<tr>
<td>Safety</td>
<td>IEC/EN 60950-1: CB report and CB certificate UL/CSA 60950-1: cTUVus-mark</td>
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</table>

### Applicable EU Directives for Network Switch 2924, 2948 and 5406:

<table>
<thead>
<tr>
<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>CE</td>
<td>Low Voltage Directive is: 2006/95/EC, EMC directive is: 2004/108/EC</td>
<td>EN60950-1 Safety of Information Technology Equipment</td>
</tr>
<tr>
<td>EMC</td>
<td>FCC VCCI EN CISPR-22</td>
<td>Class A Class A 55022 Class A</td>
</tr>
<tr>
<td>Safety</td>
<td>CSA 22.2 UL IEC EN</td>
<td>No. 60950-1 60950-1 60950-1</td>
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### Applicable EU Directives for the MediaDeck 7000:

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<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
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Applicable EU Directives for the MediaDirector 2201, 2202, 2251, 2252, and the MediaCenter:

<table>
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<tr>
<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>Low Voltage Directive is 2006/95/EC, EMC directive is: 2004/108/EC</td>
<td>EN 60950-1 Safety of Information Technology Equipment</td>
</tr>
<tr>
<td>EMC</td>
<td>FCC Part 15 Class A, ICES-003, VCCI Class A, CISPR 22 Class A, CNS 13438, EN 55022 Class A, KN22 Class A</td>
<td>USA, Canada, Japan, Australia, New Zealand, EU, Taiwan, EU, Korea</td>
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<tr>
<td>Safety</td>
<td>UL 60950-1 First, Second Edition, CSA C22.2</td>
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</table>
### Applicable EU Directives for MediaPort Series 5000, MediaPort 7000 Series, and ChannelPort:

<table>
<thead>
<tr>
<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>MediaPort 5000 Series, MediaPort 7000 Series, and ChannelPort</strong></td>
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<tr>
<td><strong>CE</strong></td>
<td>Low Voltage Directive is: 2006/95/EC, EMC directive is: 2004/108/EC</td>
<td>EN60950-1 Safety of Information Technology Equipment</td>
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</tbody>
</table>

### ChannelPort


### Applicable EU Directives for the Ellipse1000 and 2000:

<table>
<thead>
<tr>
<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CE</strong></td>
<td>Low Voltage Directive is: 2006/95/EC, EMC directive is: 2004/108/EC</td>
<td></td>
</tr>
<tr>
<td><strong>EMC</strong></td>
<td>EN55022, EN61000-3-2, EN61000-3-3 and EN55024. VCCI V-3, AS/NZS CISPR22, KN22 and KN24</td>
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<tr>
<td><strong>Safety</strong></td>
<td>EN60950-1, EN60525-1, EN60825-2, UL60950-1, CSA C22.2 No. 60950-1</td>
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### Applicable EU Directives for the Electra 1000, 5000, 5400, and 9200 encoders:

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<tr>
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<th>Directive(s)</th>
<th>Notes</th>
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<td>Low Voltage Directive is: 2006/95/EC, EMC directive is: 2004/108/EC</td>
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<td>EMC</td>
<td>EN55022, EN61000-3-2, EN61000-3-3 and EN55024, VCCI V-3, AS/NZS CISPR22</td>
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<tr>
<td>Safety</td>
<td>EN60950-1, EN60525-1, EN60825-2, UL60950-1, CSA C22.2 No. 60950-1</td>
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### Applicable EU Directives for the Electra 8000 encoders:

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<th>Directive(s)</th>
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<td>Low Voltage Directive is: 2006/95/EC, EMC directive is: 2004/108/EC</td>
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</tr>
<tr>
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<td>EN55022, EN61000-3-2, EN61000-3-3 and EN55024, VCCI V-3, AS/NZS CISPR22, KN22 and KN24</td>
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</tr>
<tr>
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### Applicable EU Directives for the ION AVC HD, ION AVC SD, ION MPEG-2, ION MPEG-4 AVC, and ION Multichannel encoders:

<table>
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<th>Regulatory Compliance</th>
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<td>EMC</td>
<td>EN55022, EN61000-3-2, EN61000-3-3 and EN55024, VCCI V-3, AS/NZS CISPR22</td>
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<td>EN60950-1, EN60525-1, EN60825-2, UL60950-1, CSA C22.2 No. 60950-1</td>
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### Applicable EU Directives for ProStream 1000, 2000, 4000, 4500, 5000, and 8000:

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<td>CE</td>
<td>Low Voltage Directive is: 2006/95/EC, EMC directive is: 2004/108/EC</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B Compliance, Safety, and Agency Approvals

Important Safeguards and Notices

This section provides important safety guidelines for both the Operator and Service Personnel. Specific warnings and cautions are found throughout the guide where they apply, but may not appear here. Please read and follow the important safety information, noting especially those instructions related to risk of fire, electric shock or injury to persons.

Safety and Regulatory Information for the ContentServer 3000 and ContentStore 3160

**Danger**: Class 1 laser product.

**Attention**: Produit laser de classe 1

**Warnung**: Laserprodukt der Klasse 1

This equipment contains optical transceivers, which comply with the limits of Class 1 laser radiation. Visible and invisible laser radiation may be emitted from the aperture of the optical transceiver ports when no cable is connected. Avoid exposure to laser radiation and do not stare into open apertures.

<table>
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<tr>
<th>Regulatory Compliance</th>
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</thead>
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<tr>
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<td>EN55022, EN61000-3-2, EN61000-3-3 and EN55024, VCCI V-3, AS/NZS CISPR22</td>
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<td>Safety</td>
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Applicable EU Directives for the MV400, MV450, and MV500 MPEG-2:

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<tr>
<th>Regulatory Compliance</th>
<th>Directive(s)</th>
<th>Notes</th>
</tr>
</thead>
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<tr>
<td>EMC</td>
<td>EN55022, EN61000-3-2, EN61000-3-3 and EN55024, VCCI V-3, AS/NZS CISPR22</td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td>EN60950-1, EN60525-1, EN60825-2, UL60950-1, CSA C22.2 No. 60950-1</td>
<td></td>
</tr>
</tbody>
</table>
Lithium Battery Notice for Service Personnel

This product contains a lithium battery. Although the battery is not field-serviceable, observe the following warning:

<table>
<thead>
<tr>
<th>Mark</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning Symbol] <strong>CAUTION</strong>: Danger of explosion if battery is replaced with incorrect type. Replace only with the same type recommended by the manufacturer. Dispose of used batteries according to the manufacturer’s instructions.</td>
<td></td>
</tr>
<tr>
<td>![Warning Symbol] <strong>WARNING</strong>: CALIFORNIA PERCHLORATE ADVISORY Some lithium batteries, may contain perchlorate material. The following advisory is provided: “Perchlorate Material – special handling may apply, see <a href="http://www.dtsc.ca.gov/hazardouswaste/perchlorate/%E2%80%9D">www.dtsc.ca.gov/hazardouswaste/perchlorate/”</a> for information.</td>
<td></td>
</tr>
<tr>
<td>![Warning Symbol] <strong>ATTENTION</strong>: Il y a danger d’explosion s’il a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d’un type equivalent recommande par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant</td>
<td></td>
</tr>
<tr>
<td>![Warning Symbol] <strong>WARNING</strong>: This product relies on the building’s installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors).</td>
<td></td>
</tr>
<tr>
<td>![Warning Symbol] <strong>ATTENTION</strong>: Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l’installation électrique du local. Vérifier qu’un fusible ou qu’un disjoncteur de 120 V alt., 15 A U.S. maximum (240 V alt., 10 A international) est utilisé sur les conducteurs de phase (conducteurs de charge).</td>
<td></td>
</tr>
<tr>
<td>![Warning Symbol] <strong>WARNING</strong>: To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. These guidelines are provided to ensure your safety:</td>
<td></td>
</tr>
<tr>
<td>■ This unit should be mounted at the bottom of the rack if it is the only unit in the rack.</td>
<td></td>
</tr>
<tr>
<td>■ When mounting this unit in a partially filled rack, load the rack from the bottom to the top with he heaviest component at the bottom of the rack.</td>
<td></td>
</tr>
<tr>
<td>■ If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.</td>
<td></td>
</tr>
<tr>
<td>Mark</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>ATTENTION:</td>
<td>Pour éviter toute blessure corporelle pendant les opérations de montage ou de réparation de cette unité en casier, il convient de prendre des précautions spéciales afin de maintenir la stabilité du système. Les directives ci-dessous sont destinées à assurer la protection du personnel.</td>
</tr>
<tr>
<td>-</td>
<td>Si cette unité constitue la seule unité montée en casier, elle doit être placée dans le bas.</td>
</tr>
<tr>
<td>-</td>
<td>Si cette unité est montée dans un casier partiellement rempli, charger le casier de bas en haut en plaçant l’élément le plus lourd dans le bas.</td>
</tr>
<tr>
<td>-</td>
<td>Si le casier est équipé de dispositifs stabilisateurs, installer les stabilisateurs avant de monter ou de réparer l’unité en casier.</td>
</tr>
<tr>
<td>WARNUNG:</td>
<td>Zur Vermeidung von Körperverletzung beim Anbringen oder Warten dieser Einheit in einem Gestell müssen Sie besondere Vorkehrungen treffen, um sicherzustellen, daß das System stabil bleibt. Die folgenden Richtlinien sollen zur Gewährleistung Ihrer Sicherheit dienen:</td>
</tr>
<tr>
<td>-</td>
<td>Wenn diese Einheit die einzige im Gestell ist, sollte sie unten im Gestell angebracht werden.</td>
</tr>
<tr>
<td>-</td>
<td>Bei Anbringung dieser Einheit in einem zum Teil gefüllten Gestell ist das Gestell von unten nach oben zu laden, wobei das schwerste Bauteil unten im Gestell anzubringen ist.</td>
</tr>
<tr>
<td>-</td>
<td>Wird das Gestell mit Stabilisierungszubehör geliefert, sind zuerst die Stabilisatoren zu installieren, bevor Sie die Einheit im Gestell anbringen oder sie warten.</td>
</tr>
</tbody>
</table>

The Technical File is available to proper authorities and the product is marked.
## Safety Symbols

The product is marked with these symbols when it is necessary to refer to the manuals to prevent damage to the product.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Caution Symbol] | Caution | Please observe the following important cautions:  
- When installing this equipment, always comply with the National Electrical Standard and local electrical standard for attachment of the power cords.  
- Risk of explosion if battery is replaced incorrectly or with an incorrect type. There are no user-serviceable batteries inside Omneon products. Refer to Omneon qualified personnel only to service the replaceable batteries. Dispose of batteries according to the instructions.  
- Use only specified replacement parts.  
- Follow static precautions at all times when handling this equipment.  
- Slots and openings in the chassis are provided for ventilation. Do not block them. Leave the back of the frame clear for air exhaust cooling and to allow room for cabling — a minimum of 6 inches (15.25 cm) of clearance is recommended.  
- Disconnect all AC power supplies when servicing any unit. |
| ![Warning Symbol] | Warning | Please observe the following important warnings:  
- Any instructions in this guide that require opening the chassis or removing a board should be performed by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing unless you are qualified to do so.  
- Heed all warnings on the unit and in the operating instructions.  
- Do not use this product in or near water. Disconnect all AC power before installing any options or servicing the unit unless instructed to do so by this manual.  
- This product is grounded through the power cord grounding conductor. To avoid electric shock, plug the power cord into a properly wired receptacle before connecting the product inputs or outputs. |
Safety Precautions

To avoid injury and prevent equipment damage, observe the following safety precautions:

- Do not move or ship equipment unless it is correctly packed in its original wrapping and shipping containers.
- Only Harmonic trained personnel can undertake equipment service and maintenance.
- To prevent damage by lightning, ground the unit according to local regulations.
- Do not permit unqualified personnel to operate the unit.
- Wear ear protection when working near an NSG Pro platform for a long period of time.

AC Power Supply to the Unit

To ensure correctly and safely operation of the unit, the following are required:

- Adding to the system a UPS (Uninterrupted Power Supply) and an AVR (Automated Voltage Regulator) is highly recommended.

---

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Laser Warning</td>
<td>Please observe the following laser warnings:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Invisible Laser Radiation, when open or when operating with the fiber disconnected. AVOID DIRECT EXPOSURE TO THE BEAM. Never operate a unit with a broken fiber or with a separated fiber connector.</td>
</tr>
</tbody>
</table>
Safety Precautions

■ Installing the main power supply by a qualified electrician, according to power authority regulations. Make sure all powering are wired with an earth leakage, according to local regulations.

■ It is recommended to install the encoder within 1.5m (approximately 5 feet) from an easily accessible grounded AC outlet.

■ When the encoder is rack-mounted, ensure that the rack is correctly grounded.

**DANGER:** To ensure that the rack is correctly grounded by a qualified electrician. Incorrectly grounded equipment may result in electrical shock.

DC Power Supply to the Unit

In the case the unit is fitted with DC power inputs, the following are required:

■ Never work on DC powered equipment while power is applied. Disconnect power before making connections to the device.

■ Ensure a suitable overcurrent device is inline between the equipment and the power source.

Rack Mount Instructions

■ Elevated Operating Ambient: If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

■ Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

■ Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

■ Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

■ Reliable Earthing: Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Handling Fibre Channel Cables

■ Always read and comply with the handling instructions on the shipping container.

■ Follow all ESD precautions and approved fiber cleaning procedures.

■ The fiber is made of a very pure, expensive glass and should be treated with great care. Handle fibers only in areas that are very clean and do not contain sharp objects.

■ Wear finger cots or gloves as dirt and oils can damage the fiber and contaminate connectors.

■ Do not allow kinks or knots to develop in the fiber. If tangles occur, carefully work out the tangles avoiding pulling or bending the fibre beyond its bend radius.

■ Always use the correct tools for stripping and cleaving the fiber. It will save time and reduce breakage caused by scratches.
- If you must secure a bundle of fiber cables together, avoid plastic and metal tie wraps; secure with velcro instead.

## Product End-of-Life Disassembly Instructions

This section provides instruction for the disassembly of the indicated Harmonic Spectrum MediaDeck 7000 product family in order to remove components requiring selective treatment, as defined by the EU WEEE Directive (2002/96/EC).

<table>
<thead>
<tr>
<th>Description</th>
<th>Notes</th>
<th>Qty in the product</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed Circuit Board Assemblies (PCBA)</td>
<td>With a surface greater than 10 sq. cm (Additional PCBA-s may be present depending on the configuration)</td>
<td>2</td>
<td>Inside the chassis</td>
</tr>
<tr>
<td>Batteries</td>
<td>All types including standard alkaline and lithium coin or button style batteries</td>
<td>1</td>
<td>LITHIUM COIN, P/N 57-1006 3V,20MM,2PIN on the main Base board. California USE Only: Perchlorate Material - For handling see: <a href="http://www.dtsc.ca.gov/hazardouswaste/perchlorate">www.dtsc.ca.gov/hazardouswaste/perchlorate</a></td>
</tr>
<tr>
<td>Mercury-containing components</td>
<td>For example, mercury in display backlights, switches, batteries</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Liquid Crystal Displays (LCD) with a surface greater than 100 sq cm</td>
<td>Includes background illuminated displays</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Video display device</td>
<td>With a screen size of more than 10 cm measured diagonally</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Cathode Ray Tubes (CRT)</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Capacitors / condensers (Containing PCB/PCT)</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Electrolytic Capacitors / Condensers measuring greater than 2.5 cm in diameter or height</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>External electrical cables and cords</td>
<td>2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Gas Discharge Lamps</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
The following table lists the required tools.

<table>
<thead>
<tr>
<th>Description</th>
<th>Notes</th>
<th>Qty in the product</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philips screw drivers</td>
<td></td>
<td>#1 and #2</td>
<td></td>
</tr>
<tr>
<td>Flat-head screw driver</td>
<td></td>
<td>small</td>
<td></td>
</tr>
<tr>
<td>Flat-head screw driver</td>
<td></td>
<td>large</td>
<td></td>
</tr>
<tr>
<td>Diagonal-cutting pliers, long-nose pliers</td>
<td></td>
<td>~ 5”</td>
<td></td>
</tr>
<tr>
<td>Sockets</td>
<td></td>
<td>11/32”, 1/2”, 5/8”, and 9/16” (deep)</td>
<td></td>
</tr>
<tr>
<td>Special tools to remove specific components</td>
<td></td>
<td>Not needed</td>
<td></td>
</tr>
</tbody>
</table>

**Product Disassembly Process**

1. Disassemble equipment at a dedicated area only, gather the needed tools for disassembly.
2. Remove covers, housing, etc.
3. Remove and separate subassemblies (i.e. lasers, cables, metals, displays, fans, etc.).
4. Separate hazardous materials from the remainder of the material.
   a. Sort hazardous materials into their different types (i.e., batteries, hazardous liquids, hazardous solids, fiberglass, etc.).
   b. Proceed with hazardous waste management processes only.
5. Identify re-usable materials/subassemblies and separate these from the rest of the material.
6. Identify and separate recyclable materials as per below examples:
   a. Scrap material to be sent to smelter(s).
   b. E-waste such as displays, CPU’s, cables and wires, hard drives, keyboards, etc.
   c. Metals such as steel, brass, and aluminum.
   d. Plastics such as fan casings, housings, covers, etc.
   e. Fiber optics and plastic tubing not containing electrical or data wiring.
Safety Rules

Recycler personnel are to wear personal protective equipment including proper eye protection, proper hand protection, and proper breathing protection if needed.

Recycler personnel shall be experienced with using the proper tools required for disassembling equipment. Untrained personnel shall not disassemble Harmonic products. Unfamiliarity with tools can cause damage and injury.
### Use of Hot Keys on the Ingest Page

To activate the use of hot keys, press the **F9** key on the Ingest page. A tooltip with the characters (hot keys) will appear at the specific links/buttons/panels. Pressing the keys specified at the tooltip will perform the corresponding actions.

**NOTE:** To deactivate the hot keys, press any key that is irrelevant to the hot key.

ProMedia Capture supports the following keystroke commands:

Table C–1: ProMedia Capture Keystroke Commands

<table>
<thead>
<tr>
<th>Key Strokes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Navigate to the Ingest page</td>
</tr>
<tr>
<td>H</td>
<td>Navigate to the History page</td>
</tr>
<tr>
<td>P</td>
<td>Navigate to the Presets page</td>
</tr>
<tr>
<td>T</td>
<td>Navigate to the Templates page</td>
</tr>
<tr>
<td>S</td>
<td>Navigate to the Settings page</td>
</tr>
<tr>
<td>O</td>
<td>Logout</td>
</tr>
<tr>
<td>N</td>
<td>Connect to source</td>
</tr>
<tr>
<td>D</td>
<td>Disconnect from source</td>
</tr>
<tr>
<td>MI</td>
<td>Copy in-point timecode from the player</td>
</tr>
<tr>
<td>MO</td>
<td>Copy out-point timecode from the player</td>
</tr>
<tr>
<td>JI</td>
<td>Seek in-point timecode</td>
</tr>
<tr>
<td>JO</td>
<td>Seek out-point timecode</td>
</tr>
<tr>
<td>L</td>
<td>Log clip</td>
</tr>
<tr>
<td>C</td>
<td>Initialize crash capture</td>
</tr>
<tr>
<td>R</td>
<td>Start crash capture</td>
</tr>
<tr>
<td>E</td>
<td>Stop crash capture</td>
</tr>
<tr>
<td>A</td>
<td>Open the Alarms window</td>
</tr>
</tbody>
</table>
Use of Hot Keys on the Ingest Page

Users can also use the Tab key to navigate through the Ingest page for inputting job properties. When an item is highlighted (focused), the value can be changed by using the standard keys for Windows for that specific input control.

For example, you can perform the following actions:

- Type the value on the textbox.
- Press the Up Arrow key and the Down Arrow key for selecting the options on the drop-down menu.
- Press the Enter key for clicking a focused button.
- Press the Enter key for checking/unchecking a check box.

Navigating on the Panel

You can perform the following actions:

- On the expandable panel, use the Up Arrow key and Down Arrow key to expand or collapse the panel.
- When a grid is focused, use the Up Arrow key and Down Arrow key to select different rows.
- When a row is selected, pressing the Enter key will show the Action menu of the selected item. Then, using the Up Arrow key and the Down Arrow key together with the Enter key, an selected action can be performed on the selected item.

### Table C–1: ProMedia Capture Keystroke Commands continued

<table>
<thead>
<tr>
<th>Key Strokes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Go to the Capture Settings tab within Source Settings &amp; Job Settings area on the left of the Ingest page.</td>
</tr>
<tr>
<td>2</td>
<td>Go to the Device Control area in the middle of the Ingest page.</td>
</tr>
<tr>
<td>3</td>
<td>Go to the Job Operation area on the right of the Ingest page.</td>
</tr>
</tbody>
</table>

**NOTE:** Number keys specified above (i.e. 1, 2, 3) DO NOT refer to the keys at NumPad.