

**V2.3.1 Release Notes**

October 20, 2009

This Release Notes document describes the key product features, enhancements, bug fixes and known issues for hardware and software systems utilizing Pipeline, Pipeline Quad and Pipeline HD Dual hardware, and Pipeline for Mac OS X and Pipeline Control for Windows software. This release consists of **Pipeline for Mac OS X** software v2.3.1, **Pipeline Control for Windows** software v2.1, **Pipeline HD Dual** Main firmware and **Pipeline SC/Quad** firmware (both Main and App Loader). Included in this document are installation and update instructions; system requirements; and, technical support contacts.

**Key features/improvements/fixes:**

- **Pipeline Control for Windows** application – v2.1.0
  - **New** - Adds Log and Capture functionality
    - Direct VTR control
  - **New** - Import of GVG 4 EDL files generated from Final Cut Pro or Avid systems
  - **New** – Now allows for Pipeline use without Bonjour service being active
  - **Improvement** - Updated hinting of codec and audio selections based on input signal, Pipeline type and wrapper chosen
  - **Improvement** – Support for 16 channels of audio (Pipeline HD Dual only)
  - **Improvement** – Support for 24 bit audio
  - **Improvement** – Support for circular disk/RAM buffer
  - **Improvement** – Improved time code input
  - **Improvement** – Improved Preview panel display
  - **Improvement** – Improved error reporting
  - **Fixed** - Regional decimal symbol option issue
- **Pipeline for Mac OS X** application – v2.3.1
  - **New** - Adds Avid AAF+MXF wrapper type
  - **Fixed** – 4 channel insert edit export issue

**Snow Leopard Note:** Apple's current release of Snow Leopard contains an issue that prevents compatibility with Pipeline for Mac OS X software. Apple is working to fix this issue and will have an update to Snow Leopard very soon.

- **Pipeline HD Dual** Main firmware – v2.2.52902
  - **Improvement** - Update to IMX codec
- **Pipeline SC/Quad** Main firmware – v2.2.51446
  - **Improvement** - Update to IMX codec
  - **Fixed** - Confidence monitoring issue
- **Pipeline SC/Quad** App Loader firmware – v2.0.47984
  - **Fixed** – Possible flash memory corruption issue

**Pipeline release consists of:**

- **Pipeline Control for Windows** installer – v2.1.0.52168
- **Pipeline for Mac OS X** installer – v2.3.1.3
- **Pipeline HD Dual** Main firmware – v2.2.52902
- **Pipeline SC/Quad** Main firmware – v2.2.51446
- **Pipeline SC/Quad** App Loader firmware – v2.0.47984



## Known Issues:

### General

- **Pipeline HD Dual** systems do not currently support
  - Confidence monitoring
  - Playout
- Some host system motherboard's built-in network adapters do not perform adequately to support HD and multiple stream SD workflows
  - Disabling the NIC's Network Firewall protocol and QOS Protocol eliminates this issue.
- **TIFOConverter** utility no longer supported or available
- Some NAS shared storage network client software do not perform well when Pipeline Control writes a QuickTime 'open' file to them
  - Enabling Pipeline Control's disk buffering feature eliminates this issue.
- To prevent inadvertent Pipeline communication interruptions, set *Screen Saver* to "Never"

### Pipeline Control for Windows (v2.1.0.52168)

- Requires Pipeline device firmware rev 2.2 or later
- No playout support is available in this release
- When using FlipFactory Publish with FlipFactory v7.0 the FlipFactory server instance may not display in the pick list; in this case enter the FlipFactory IP Address directly as **<FlipFactory IP Address:9000>**
- Disk Buffering is required when writing to NAS, Shared Storage or network shared volumes
- Using >50% of a network device's bandwidth can cause capture failures
  - No more than two HD captures per GigE network device
- Requires QuickTime 7.5.5 or later
- QuickTime's "DirectDraw acceleration" advanced video preference needs to be enabled
- Windows XP Pro 64-bit and Vista Ultimate 64-bit operating systems require 64-bit version of Bonjour for Windows
  - [http://download.info.apple.com/Mac\\_OS\\_X/061-5788.20081215.5t9Uk/Bonjour64Setup.exe](http://download.info.apple.com/Mac_OS_X/061-5788.20081215.5t9Uk/Bonjour64Setup.exe)
- Support for Avid DNxHD requires Avid LE codec installation. Download codec from:
  - <http://www.telestream.net/application-content/pipeline/avid-codec>
- Previewing Video during capture can consume excess CPU cycles that can cause frame loss or capture failures. It is recommended that in most situations Preview Video be turned off during capture.

### Pipeline Control for Mac OS X application (v2.3.1.3)

- Requires Mac OS X Leopard 10.5
- When using FlipFactory Publish with FlipFactory v7.0 the FlipFactory server instance may not display in the pick list; in this case enter the FlipFactory IP Address directly as **<FlipFactory IP Address:9000>**
- Disk Buffering is required when writing to NAS, Shared Storage or network shared volumes
- Using >50% of a network device's bandwidth can cause capture failures
  - No more than two HD captures per GigE network device
- Requires QuickTime 7.5.5 or later
- Requires a Video card supporting Quartz Extreme and OpenGL accelerated surfaces
- Support for Avid DNxHD requires Avid LE codec installation. Download codec from:
  - <http://www.telestream.net/application-content/pipeline/avid-codec/>
- Previewing Video during capture can consume excess CPU cycles that can cause frame loss or capture failures. It is recommended that in most situations Preview Video be turned off during capture.

### Pipeline plug-in log/capture tool for Mac OS X (v2.3.1.3)

- Plug-in for Final Cut Pro **Export** does not currently support **HD codecs**
- Compatible with Mac OS X 10.5 (Leopard) only
- Requires QuickTime 7.5.5 or later

- Intel Core Duo or greater is required
- Does not support editable open QuickTime files

### Multi-Pipeline Controller application (V2.2)

- Not compatible with Pipeline Control for Mac OS X v2.0

### Pipeline HD Dual firmware (v2.2)

- No playout support
- HD to SD down conversions are not production quality
- Codecs NOT supported in this release
  - Uncompressed SD 10 bit
  - DVCPro 50

### Pipeline SC/Quad SD firmware (v2.2)

- Codecs NOT supported in this release
  - DVCPro 50

### FlipFactory direct support

- FlipFactory Pipeline Control applet does not support **Pipeline HD Dual**
- No direct **Pipeline HD Dual** stream source support
- No **Pipeline HD Dual** EDL monitor support

## Installation and Update instructions

**Note:** Pipeline v2.1 or later software requires that your Pipeline device's firmware be upgraded to v2.2 or later. See instructions below.

### Pipeline Control for Windows software:

- Run **Pipeline Installer MSI** and follow the on screen instructions
  - The installer will check for .NET Framework and Avid LE Codecs
    - These are required to be installed prior to Pipeline Control
- To run the Pipeline Control application select **Pipeline Control** from the **Start->Programs->Telestream**

### Pipeline for OS X software:

- Run **Pipeline Control.pkg** and follow the on screen instructions
  - The installer will place the **Pipeline Control** application into the user's application folder and install the **Pipeline plug-in for Final Cut Pro** log and capture tool
- To run the Pipeline Control application select **Pipeline Control** from the applications folder
- The **Pipeline plug-in for Final Cut Pro** can be opened directly from Final Cut Pro or Episode v5.0 or later



### Pipeline firmware update:

Follow the installation instructions contained in the **Pipeline User Guide** located on the Pipeline support web site at: <http://www.telestream.net/telestream-support/pipeline/support.htm>

**Note:** There are two firmware files for this release, SC/Quad *Main* and SC/Quad *App Loader*. The *App Loader* firmware is low level system control that runs on boot up. The *Main* firmware controls the hardware during normal operation. Update both *Main* and *App Loader* firmware to bring your Single Channel or Quad Pipeline up to the latest release by installing the Main firmware first followed by the App Loader firmware.

## Pipeline software application reference:

<i>Pipeline software feature matrix</i>	<i>Pipeline Control for Windows application V2.1</i>	<i>Pipeline Control for Mac OS X application V2.3</i>	<i>Pipeline Plug-in (Log/Capture) V2.3</i>
Supports Pipeline HD Dual	X	X	X
Supports Pipeline SC and Quad	X	X	X
24 hour recurring scheduled record	X	X	
24 hour recurring scheduled playout		X	
Log/Capture document with deck control	X	X	X
Record & Automate document	X	X	
Web Service API	X	X	
Open directly from Final Cut Pro			X
Open directly from Episode Desktop			X
Edit while capture	X	X	
Transcode while capture (FlipFactory/Episode Engine)	X	X	
Import Pipeline EDL files	X	X	X
Import/Export Final Cut Interchange XML files	X	X	X
Create QuickTime 'Open' mov directly	X	X	
Create QuickTime 'Closed' mov directly	X	X	X
Creates TIFO files directly	X	X	
Create Avid AAF/MXF OPAtom files directly	X	X	
Create Generic MXF OP1a files with DV\DVCPProHD\IMX video essence	X	X	
Standard Definition/High Definition Codecs	X	X	X

Fig. 1.0 - Pipeline software application software feature matrix

## General System Requirements (also see hardware configurations below)

- Intel Core 2 Duo, Intel Quad Core CPU or greater
- 2GB RAM
- GigE or faster Ethernet adapter
- Video card supporting Quartz Extreme and OpenGL accelerated surfaces (Mac OS X)

### System Software:

- Mac OS X Version 10.5 (Leopard) – [Tiger – Mac OS X 10.4 or earlier is *not* supported]

**Mac OS X 10.6 Snow Leopard Note:** Apple's current release of OS X 10.6 Snow Leopard contains an issue that prevents compatibility with Pipeline for Mac OS X software. Apple is working to fix this issue and will be releasing an update to Snow Leopard very soon.

- Pipeline firmware v2.2 or later
- QuickTime Version 7.5.5 or later
- Final Cut Pro Version 5.0.1 or later is required when using Pipeline plug-in
- Windows XP Pro SP2 (or later), Windows Vista Ultimate or Windows 7
  - Pipeline firmware v2.2 or later

- .NET Framework v3.5 SP1
- QuickTime Version 7.5.5 or newer
- Bonjour for Windows (when using Bonjour discovery mode)

**System requirements for Pipeline/FlipFactory**

- FlipFactory v6.0 with Update Packs 1-5 or FlipFactory v6.1
  - Pipeline HD file support requires FlipFactory v6.1 with Update Pack 2 (or later) and Pipeline HD Update 6.1.46371 patch.
  - Concurrent Pipeline ingest streams may vary depending on CPU and disk speeds
  - Recommended server spec:
    - Dual 2.3Ghz (or higher) Intel Quad Core CPU
    - Dedicated RAID-0 media storage
    - 4GB RAM
- Bonjour for Windows (when using Bonjour discovery mode)

**Network and Hard Disk Performance Requirements (per stream)**

CODEC	Disk read/write (MB/s)	Network throughput (Mb/s)	Storage required with 8 channels of audio
<b><i>SD Codecs</i></b>			
Photo Motion JPEG	0.75	8	5GB/hr
DV/DVCPro	4.4	35	15GB/hr
IMX30	5.3	43	16GB/hr
IMX40	7	56	20GB/hr
IMX50	8.3	67	25GB/hr
ProRes 422	7.3	58	21GB/hr
Uncompressed 8bit 422	22	175	80GB/hr
<b><i>HD Codecs (range based on codec and bit rate)</i></b>			
DVCPro HD	16.5	135	73GB/hr
ProRes 422 HQ	10-36	62-240	50-100GB/hr
DNxHD	10-36	62-240	50-100GB/hr

**Recommended Hardware Systems\***

**Standard Definition\*\* (ingest only)**

**Single channel system**

Intel Dual Core 2.0Ghz CPU, 2GB RAM, SATA 1.5GBs 7200 RPM media storage drive (separate from OS drive)

**Two channel system**

Intel Dual Core 2.0Ghz CPU, 2GB RAM, minimum 2 drive RAID-0 SATA 1.5GBs 7200 RPM media storage partition (separate from OS drive)

**Four channel system**

Intel Quad Core (4 cores) 2.33 GHz CPU, 4GB RAM, minimum 3 drive RAID-0 SATA 1.5GBs 7200 RPM media storage partition (separate from OS drive)

**Eight channel system**

Intel Dual Quad Core (8 cores) 2.33 GHz CPU, 6GB RAM, minimum 4 drive RAID-0 SATA 3GBs 7200 RPM media storage partition (separate from OS drive)

**High Definition\*\* – DVCPro HD (ingest only)**

**Single channel system\*\*\***

Intel Dual Core 2.53Ghz CPU, 2GB RAM, minimum 2 drive RAID-0 SATA 7200 RPM media storage drive (separate from OS drive)

**Two channel system\*\*\***

Intel Quad Core 2.8 GHz CPU, 6GB RAM, minimum 4 drive RAID-0 SATA 1.5GBs 7200 RPM media storage partition (separate from OS drive)

**Three/Four channel system\*\*\***

Dual Intel Quad Core 2.8 GHz CPU, 6GB RAM, minimum 6 drive RAID-0 SATA 1.5GBs 7200 RPM media storage partition (separate from OS drive)

**Five channel system\*\*\***

Dual Intel Quad Core (8 cores) 3.0 GHz CPU, 8GB RAM, minimum 8 drive RAID-0 SATA 1.5GBs 7200 RPM media storage partition (separate from OS drive)

**High Definition\*\* - DNxHD 220/Pro Res 422 HQ (ingest only)****Single channel system\*\*\***

Intel Dual Core 2.53Ghz CPU, 2GB RAM, minimum 4 drive RAID-0 SATA 7200 RPM media storage drive (separate from OS drive)

**Two channel system\*\*\***

Dual Intel Quad Core (8 cores) 2.8 GHz CPU, 6GB RAM, minimum 6 drive RAID-0 SATA 1.5GBs 7200 RPM media storage partition (separate from OS drive)

**Three channel system\*\*\***

Dual Intel Quad Core (8 cores) 3.0 GHz CPU, 8GB RAM, minimum 8 drive RAID-0 SATA 1.5GBs 7200 RPM media storage partition (separate from OS drive)

**\*All systems assume media storage local (internal or direct attached) to the host system with adequate storage to support 24 hours of content at the chosen format, and drive array is less than 80% full without serious fragmentation.**

**\*\*Edit while ingest and transcode while ingest workflows require increased disk I/O performance to support the additional read processes, and may require disk buffer cache drive system (see Pipeline User Guide disk buffering details).**

**\*\*\*Viewing HD preview stream(s) can consumes high levels of CPU which may cause dropped frames. It is recommended that preview be turned off during capture.**

**\*\*\*\* To insure quality of service when writing to a NAS, share storage location or network share your Pipeline system must support disk buffering and have it enabled.**

**Pipeline Support**

For Pipeline technical support, visit the Pipeline support web site at <http://www.telestream.net/telestream-support/pipeline/support.htm>.