



## V2.4.2 Release Notes (updated)

Pipeline for Windows Maintenance Release

September 1, 2010

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 Control for Windows** software v2.4.2. Included in this document are installation and update instructions; system requirements; and, technical support contacts.

### Key features/improvements/fixes:

- **Pipeline for Windows** application – v2.4.2
  - **Improved** – Added advanced file writing flag option (for *Advanced users only*)
  - **Fixed** – Fixes metadata exchange issue when using Publish to FF in Log & Capture doc
  - **Fixed** – Fixes issue with schedule not rolling over and restarting at 12am
  - **Fixed** – Fixes IMX30 MOV wrapped files display issue on play out servers
  - **Fixed** – Fixed Omneon Time Code read issue in QuickTime wrapped files
  - **Fixed** – Fixed issue with Web Service control remove clip status too soon.
  - **Fixed** – Fixed memory allocation issue in Schedule document when segments are back to back. .

### Pipeline release consists of:

- **Pipeline Control for Windows** installer – v2.4.2.64199

### Known Issues:

#### General

- *Pipeline HD Dual* systems do not currently support
  - Confidence monitoring mode
- Playout supported for QuickTime files only
- Following currently do not support playout:
  - HD Dual device
    - ProRes SQ/HQ and DNxHD at 1440x1080 resolutions
    - Any file with 23.98p frame rate
    - DVCPHD 1080p files
  - SC and Quad devices
    - Pro Res SQ with 4 or more channels of audio
    - IMX with 8 channels of audio
- Single channel and Quad channel devices capture a maximum of 8 channels of audio
- Play out of 720p material with more than 4 channels of audio will require disk access speeds exceeding the normal recommendations.
- Choose the XDCAM MXF container when capturing clips for use with Avid edit solutions
- Schedule files created with v2.1 or earlier will not import into v2.4 or later.
- 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
- 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>**
- 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.

- 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.
- To prevent inadvertent Pipeline communication interruptions, set *Screen Saver* to “Never”
- Use of CAT5 or CAT5e cabling is not supported. All cabling runs are required to be CAT6

### **Pipeline Control for Windows (v2.4.2.64199)**

- Requires Pipeline device firmware rev 2.2 or later
- When dragging QuickTime files across the Pipeline Print To Tape UI a hang of up to 1 minute can occur
- 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>

## **Installation and Update instructions**

**Note:** Pipeline v2.4 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 codec/wrapper reference:**

	Wrappers				
	QuickTime	MXF OP1a	XDCAM MXF OP1a	Avid AAF+MXF OPAAtom	TIFO
<b>Codecs</b>					
DV25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DVCPRO25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DVCPRO HD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
IMX	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ProRes 422	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DNxHD (VC-3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Motion JPEG A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
MPEG-2 I-frame	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Ancillary data support matrix:

	Ancillary data contained in Video essence	All ancillary data contained in TIFO file data track for use with FF/Vantage	QuickTime CC track created (608 or 708)
DV/DVCPro	No	Yes	Yes
IMX/MPEG-2 I-frame	Yes, in VBI lines	Yes	Yes
Pro Res/Pro Res HQ	Yes, proprietary Apple spec	Yes	Yes
DNxHD	Yes, proprietary Avid spec	Yes	Yes
DVCProHD	Yes	Yes	Yes

### Pipeline play out support matrix:

	23.98fps	25fps	29.97fps	50fps	59.94fps
<b>Standard Definition</b>					
DV25, DVCPRO25, IMX, MPEG 2 I-frame, ProRes 422 SQ/HQ**	—	Yes	Yes	—	—
<b>High Definition</b>					
DVCProHD 720p	—	—	—	Yes	Yes
DVCProHD 1080p	No	No	No	—	—
DVCProHD 1080i	—	Yes	Yes	—	—
Apple ProRes 422 720p SQ/HQ (960)	—	—	—	No	No
Apple ProRes 422 720p SQ/HQ (1280)	—	—	—	Yes	Yes
Apple ProRes 422 1080p SQ/HQ (1440)	No	No	No	—	—
Apple ProRes 422 1080p SQ/HQ (1920)	No	Yes	Yes	—	—
Apple ProRes 422 1080i SQ/HQ (1440)	—	No	No	—	—
Apple ProRes 422 1080i SQ/HQ (1920)	—	Yes	Yes	—	—
DNxHD 720p	—	—	—	Yes	Yes
DNxHD 1080p	No	Yes	Yes	—	—
DNxHD 1080i (TR145 8-bit Thin Raster)	—	No	No	—	—
DNxHD 1080i (145 8-bit, 220 8-bit, 220 10-bit)	—	Yes	Yes	—	—

### 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:

- Windows XP Pro SP3 (or later), Windows Vista Ultimate, Windows 7, Windows Server 2003 and 2008 (32 bit and 64 bit editions)
  - 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)

## 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>			
Motion JPEG A	0.75	8	5GB/hr
DV/DVCPro	4.4	35	15GB/hr
IMX30	5.3	43	16GB/hr
IMX40	7	56	20GB/hr
IMX50/DVCPro50	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<sup>1</sup>

### Standard Definition

#### Single channel system

- CPU - Intel Dual Core 2.0Ghz CPU or faster
- RAM - 2GB RAM minimum
- Network's sustained bandwidth for Pipeline channel – 75Mb/s
- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 32 or 64 bit
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 10MB/s
  - Play out only – 12MB/s
  - Transcode/Edit/Disk Buffering while Capture – 20MB/s

#### Two channel system

- CPU - Intel Dual Core 2.0Ghz CPU or faster
- RAM - 2GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 150Mb/s
- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 32 or 64 bit
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 20MB/s
  - Play out only – 24MB/s
  - Transcode/Edit/Disk Buffering while Capture – 40MB/s

#### Four channel system

- CPU - Intel Quad Core (4 cores) 2.33 GHz CPU or faster
- RAM - 4GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 300Mb/s

- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 64 bit only
- Media Storage sustained read and/or write read and/or write speeds (separate from OS drive)
  - Capture only – 40MB/s
  - Play out only – 48MB/s
  - Transcode/Edit/Disk Buffering while Capture – 80MB/s

#### **Eight channel system**

- CPU - Intel Quad Core (4 cores) 2.33 GHz CPU or faster
- RAM - 4GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 600Mb/s
  - Use an adapter with a minimum of two (2) 1Gb ports
  - Port aggregation may be necessary
- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 64 bit only
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 80MB/s
  - Play out only – 100MB/s
  - Transcode/Edit/Disk Buffering while Capture – 175MB/s

#### **High Definition<sup>2</sup> – DVCPro HD (ingest only)**

##### **Single channel system<sup>3</sup>**

- CPU - Intel Dual Core 2.53Ghz CPU or faster
- RAM - 3GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 150Mb/s
- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 32 or 64 bit only
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 20MB/s
  - Play out only – 30MB/s
  - Transcode/Edit/Disk Buffering while Capture – 45MB/s

##### **Two channel system<sup>3</sup>**

- CPU - Intel Quad Core 2.8 GHz CPU or faster
- RAM - 6GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 300Mb/s
- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 64 bit only
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 40MB/s
  - Play out only – 60MB/s
  - Transcode/Edit/Disk Buffering while Capture – 100MB/s

##### **Three/Four channel system<sup>3</sup>**

- CPU - Dual Intel Quad Core 2.8 GHz CPU or faster
- RAM - 6GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 600Mb/s
  - Use an adapter with a minimum of two (2) 1Gb ports
  - Port aggregation may be necessary
- Operating System –

- Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 64 bit only
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 80MB/s
  - Play out only – 120MB/s
  - Transcode/Edit/Disk Buffering while Capture – 200MB/s

### **Five channel system<sup>3</sup>**

- CPU - Dual Intel Quad Core (8 cores) 3.0 GHz CPU or faster
- RAM - 8GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 750Mb/s
  - Use an adapter with a minimum of two (2) 1Gb ports
  - Port aggregation may be necessary
- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 64 bit only
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 120MB/s
  - Play out only – 180MB/s
  - Transcode/Edit/Disk Buffering while Capture – 300MB/s

### **High Definition<sup>2</sup> - DNxHD 220/Pro Res 422 HQ (ingest only)**

#### **Single channel system<sup>3</sup>**

- CPU - Intel Dual Core 2.53Ghz CPU or faster
- RAM - 2GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 260Mb/s
- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 32 or 64 bit only
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 40MB/s
  - Play out only – 60MB/s
  - Transcode/Edit/Disk Buffering while Capture – 100MB/s

#### **Two channel system<sup>3</sup>**

- CPU - Dual Intel Quad Core (8 cores) 2.8 GHz CPU or faster
- RAM - 6GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 520Mb/s
  - Use an adapter with a minimum of two (2) 1Gb ports
  - Port aggregation may be necessary
- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 64 bit only
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 100MB/s
  - Play out only – 140MB/s
  - Transcode/Edit/Disk Buffering while Capture – 220MB/s

#### **Three channel system<sup>3</sup>**

- CPU - Dual Intel Quad Core (8 cores) 3.0 GHz CPU or faster
- RAM - 8GB RAM minimum
- Network's sustained bandwidth for Pipeline channels – 800Mb/s
  - Use an adapter with a minimum of two (2) 1Gb ports
  - Port aggregation may be necessary

- Operating System –
  - Mac OS X 10.5 or 10.6
  - Windows XP Pro, Vista Ultimate, 7 Ultimate, Server 2003 R2
    - 64 bit only
- Media Storage sustained read and/or write speeds (separate from OS drive)
  - Capture only – 140MB/s
  - Play out only – 200MB/s
  - Transcode/Edit/Disk Buffering while Capture – 320MB/s

1 - 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.

2 - 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).

3 - 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.

4 - *Playout of the preserved VANC requires compatible hardware devices.*

## Pipeline Support

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