Content Delivery Solutions
Pinnacle MediaStream™

connecting
creativity

PINNACLE SYSTEMS
www.pinnaclesys.com

Image Courtesy of Southern Cross Broadcasting

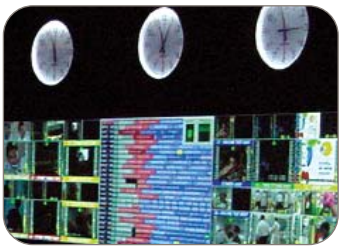


Image Courtesy of Starz Encore

Content Delivery:

It's about workflow. In today's competitive world, broadcasters and other video professionals must do more with fewer people and less capital. That's why the infrastructure you build must comprehend a streamlined process to ingest, edit, and play content to air. Gone are the days when you edit a promo, dub it to tape, only to re-encode it back into the on-air server. Tight budgets and strained headcount no longer permit this inefficiency. We know you would rather focus your energy on driving your business and creativity, rather than waste time and money hand-carrying content around your facility.

Pinnacle Systems understands your challenge. We're delivering proven solutions today to improve workflow from ingest, to edit, to playout.

Blending video with advanced IT networking, a new class of cost-effective Pinnacle MediaStream™ solutions-and an expanded line of Pinnacle Liquid non-linear editors-facilitate a tapeless workflow where multiple applications use the same content without transcoding. Imagine the possibilities for sports highlights, breaking events, and dynamic promo creation. Solutions like these are on-air today.

Tying it all together, Pinnacle's innovative and scalable Palladium™ Media Server operates at the core, underpinned with no-single-point-of-failure and legendary 24/7 reliability. For central storage, Palladium Store offers uncompromised storage solutions for all needs including, editing, play-to-air, and news. There's a Palladium Store configuration to match every need, from small workgroups to the world's largest networked on-air systems.

In sum, these exciting Pinnacle products combine to deliver workflow solutions with unparalleled flexibility and operational cost savings. Learn how Pinnacle can help to streamline your workflow…

MediaStream

LARGEST INSTALLATION OF SD/HD VIDEO SERVERS

Pinnacle MediaStream is the solution of choice for all play-to-air applications. Offering complete scalability from small channel count independent storage solutions to systems with over 100 channels in a shared storage configuration, MediaStream has the capabilities needed by broadcasters today and tomorrow.

MediaStream 8000

MISSION CRITICAL BROADCAST SERVER

MediaStream 8000 is a brand new MediaStream client designed specifically to work with Pinnacle's Palladium Media Server. The MediaStream 8000 features an all new CPU system with more than 10 times the power of the previous generation of MediaStream.

The MediaStream 8000 is designed to be extremely flexible-offering configurations in both Independent and shared storage options. The MediaStream 8000 has the flexibility to address any requirement. As a client on a Palladium Media Server, the MediaStream 8000 can work independently to play content to air or in concert with other Pinnacle products, such as Liquid editors to provide complete capture, edit and playout solutions.

Image Courtesy of Arirang TV, Korea

Image Courtesy of Pennsylvania Public Television Network

Image Courtesy of Sveriges UtbildningsRadio AB

MediaStream 8000 with Independent Storage

Pinnacle's new MediaStream 8000 delivers all the functionality MediaStream is known for—standard and high definition in the same server, automatic up-conversion from SD to HD, mission-critical reliability and 1000's of channels on-air daily worldwide. Based on a powerful new CPU subsystem, the MediaStream 8000 sets a new standard for mission-critical play-to-air solutions needed in on-air operations.

MediaStream has long been the choice for mission-critical spot and program play-to-air applications. The MediaStream 8000 adds even greater functionality to the MediaStream family by providing configurations for both independent storage as well as shared Networked Storage configurations. Now, MediaStream customers can start with independent storage and easily upgrade to shared Networked Storage down the road. And, the MediaStream 8000 is completely backwards compatible with the existing MediaStream line.

MediaStream 8000 with Networked Storage

SIMPLE, COST-EFFECTIVE SHARED STORAGE FOR THE

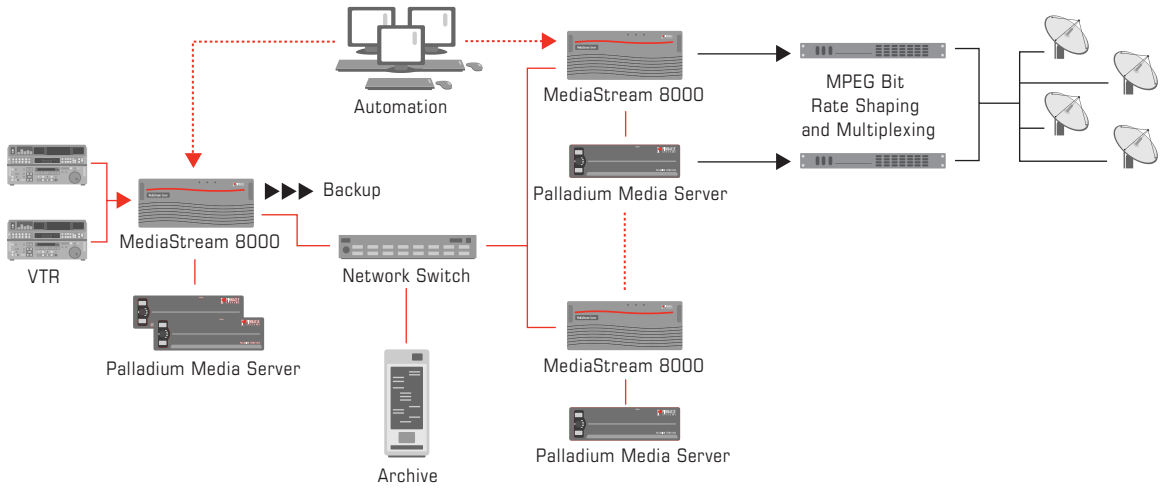
The MediaStream 8000, set up in a shared storage configuration, offers scalability to more than 100 channels and virtually unlimited storage capacity. It combines the operational simplicity and scalability of our Palladium Media Server architecture with the mission-critical reliability broadcasters demand for multi-channel on-air ingest and playout operations.

On-air today with leading broadcasters worldwide, the Palladium Media Server provides instant access to any media file or feed located anywhere on the network. The underlying storage architecture provides no single point of failure with full redundancy of all critical components. In the rare event part of the storage system should fail, you'll stay on the air with MediaStream.

Key Features

- Independent Storage or Full Shared Storage
- Featuring Pinnacle's MPEG-2 Decoder with SD, HD, MXF and ASI Functionality at Standard SD Prices
- Automatic SD to HD Up-Conversion
- Up to 16 Channels of Video I/O per 8000 Chassis
- Eight Channels of Audio with Every Video Channel
- Highly Scalable RAID Protected Storage
- Redundant Power Supplies Standard
- On-air Worldwide Today!
- Supported by Automation and Archive Partners

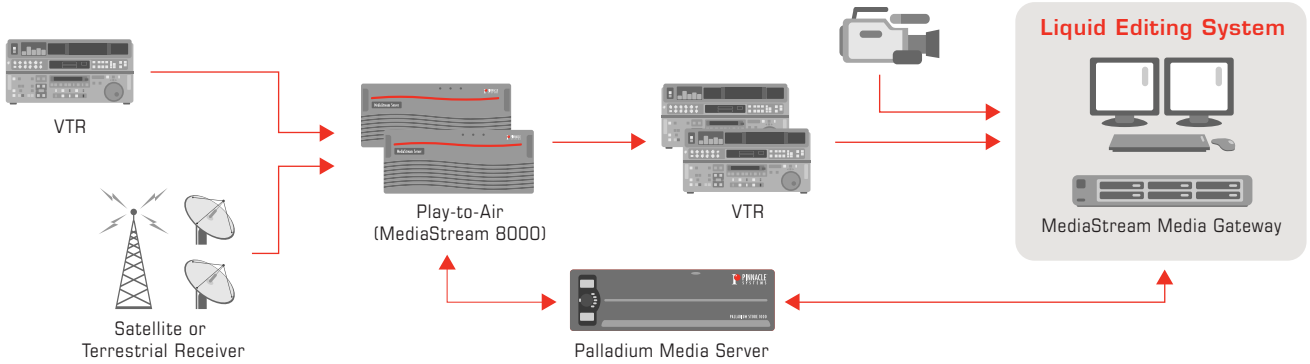
MediaStream 8000 with Independent Storage



MediaStream 8000 with Independent Storage for Multi-channel Playout

The MediaStream 8000 is shown here in an independent storage configuration providing a networked main-buffer solution for large multi-channel deployments, such as NVOD, DBS, or Centralcasting facilities. This architecture offers a high level of reliability and scalability and is proven on-air today in the world's largest multi-channel operations serving 200 channels and beyond.

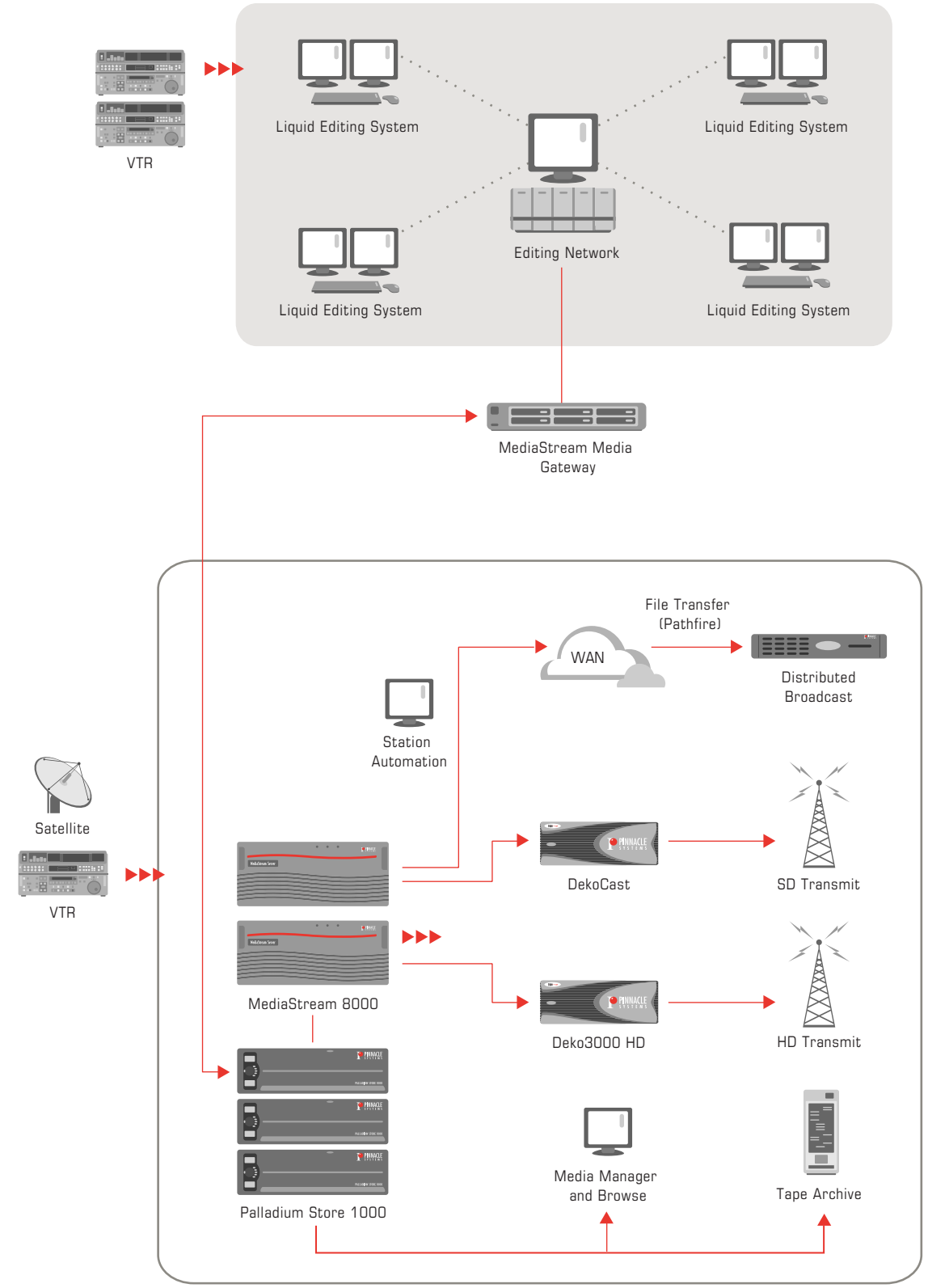
MediaStream 8000 with Networked Storage



Liquid Editing with MediaStream

Pinnacle's MediaStream 8000 and Liquid editors enable content to be directly exchanged and manipulated for promo creation,graphics and cuts editing. Adoption of MXF (Material Exchange Format) makes this possible. Content ingested by MediaStream in MXF format can be edited on Liquid and content captured on Liquid can be played-out on MediaStream.

Content Delivery: Ingest, Edit, Playout



Technical Specifications for MediaStream

Video Channels
- Up to 16 Video Channels per Chassis

Video Compression
- SD 4:2:0 Long GOP MPEG to 15 Mb/s
- SD 4:2:2 Long GOP MPEG to 50 Mb/s
- SD 4:2:0 I-Frame Only MPEG to 15 Mb/s
- SD 4:2:2 I-Frame/Long-GOP MPEG-2 to 50 Mb/s MXF
- HD 4:2:0 Long GOP MPEG to 50 Mb/s
- HD 4:2:2 Long GOP MPEG to 50 Mb/s (Optional)
- ASI I/O to 20 Mb/s on Output, 50 Mb/s on Input

Video Formats
- 4x3 or 16x9
- Input: Serial Digital Component 525/625; NTSC/PAL
- Output: Serial Digital Component 525/625; NTSC/PAL (Analog Composite)
- High Definition 1080i and 720p

Audio Channels
- Eight Channels of Audio (Four Stereo Pairs) per Video Channel

Audio Processing
- Musicam Compression at 256 kb/sec (Through a Sample Rate Converter)
- Pre-compressed AC-3 on AES/EBU
- Dolby Digital® and Dolby-E® (16- and 20-bit)
- Uncompressed (16- and 20-bit)

Audio Formats
- Input: AES/EBU Digital; Embedded
- Output: AES/EBU Analog; Embedded

Storage
- Arrays available with 240 and 500 hours of storage @ 8Mb/s
- Expandable to Over 1,000 Hours of Storage with Multiple Palladium Store 1000 Arrays

Vertical Blanking Interval
- Preserve any 10 user-selected lines per frame of 8-bit Y only or preserve any eight user-selected lines per field of 10-bit Y or YC (where a YC 'line' counts as two lines)
- Lines available for capture:
  525: Lines 10-21 and 273-284
  625: Lines 7-22 and 320-335
- NTSC closed caption (line 21 both fields) conversion to ATSC style close captioning into the MPEG picture user data

Networking
- Storage: Networked Shared Storage via Fully Redundant Fibre Channel Network with No Single Point of Failure Architecture
- Archive Connectivity: ConnectPlus 1000 Provides Gigabit Ethernet Connectivity
- Wide Area Network Connectivity Available through ConnectPlus1000 Utilizing Gigabit Ethernet

Power Supplies
- 100V-240V Power Supply; 50-60 Hz
- MediaStream Interface System Console (PC and Monitor): 100-240V, 50-60 Hz

Control Protocols
- RS-422; VDCP (Video Disk Control Protocol)
- Networking DLL (Dynamic Link Library) Protocol
- Archive Control: Avalon Archive DLL Protocol

Environmental
- Operating Temperature: +10 - +35 Degrees Celsius
- Humidity: 15% to 80% Non-condensing
- Operating Altitude: 10,000 Feet (3,100 Meters)
- Storage Temperature Range: -40 - +70 Degrees Celsius

For More Information

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