ediX

Data Sheet
XTRMX January 2018
XTRMX.com/edix

ediX 2.2

- Remote Editing
- Proxy-free workflow
- Integrated with Adobe Premiere Pro
- Audio Support up to 8 tracks
- Storage agnostic

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> ediX offers remote editing by streaming the source content from the hosting-storage to an editor workstation. Using ediX, the editor may work on remote content seamlessly, as if the content was local.
> ediX also enables a proxy-free workflow, by streaming the high-resolution content on demand instead of relying on proxy files.

- **Format agnostics:** XTRMX supports most of the industrial formats: DNxHD, ProRes, X/AVC, H254/5, XDCAM, DPX, EXR and more.
- **Storage agnostics:** The remote content might be hosted either on a storage in the cloud, or a remote on-premises repository, or even on a local storage on another user's workstation.
- **Adobe Premiere Pro integrated:** Adobe Premiere Pro CC is a professional video editing application used in film, broadcast, and web content creation. Remote clips in Adobe Premiere Pro, are imported using XTRMX importer (an Adobe Premiere Pro extension) and treated seamlessly like any source – just as if those were local files.
- **Adaptive Bitrate/Resolution:** The XTRMX in-house developed protocol allows dynamic stream adaptation, based on the available bandwidth, from 8Mbps for 1080P, all the way down to less than 0.3Mbps at 1CIF resolution for extremely narrow bandwidth
- **Audio Support:** Up to 8 tracks of audio is supported. Audio confirmation (wave form) and random-access audio-scrubbing is included.
- **Remote rendering:** Once the editing is done, the rendering is deployed remotely (using Adobe Media Encoder) with the original content as the source.
- **Security:** Streaming content protection is assured by SSL encryption in conjunction with token-based authentication via a secured real-time transport protocol. Files are never moved from their secure storage.

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System Overview

ediX software environment is compound of:

- XTRMX Streaming Service: Software components that are responsible to:
  - facilitates remote editing sessions (user authentication, robustness, security)
  - streaming content for the remote editing
- XTRMX Rendering Service
  - Rendering execution
- Storage: where the original media is stored, and streamed using XTRMX to the remote editing workstations.
  The XTRMX streaming service, rendering service and the storage component compose the "Media Streaming Unit".
- Editing Workstations: user end-points with an Adobe Premiere Pro CC and the ediX plugin installed.
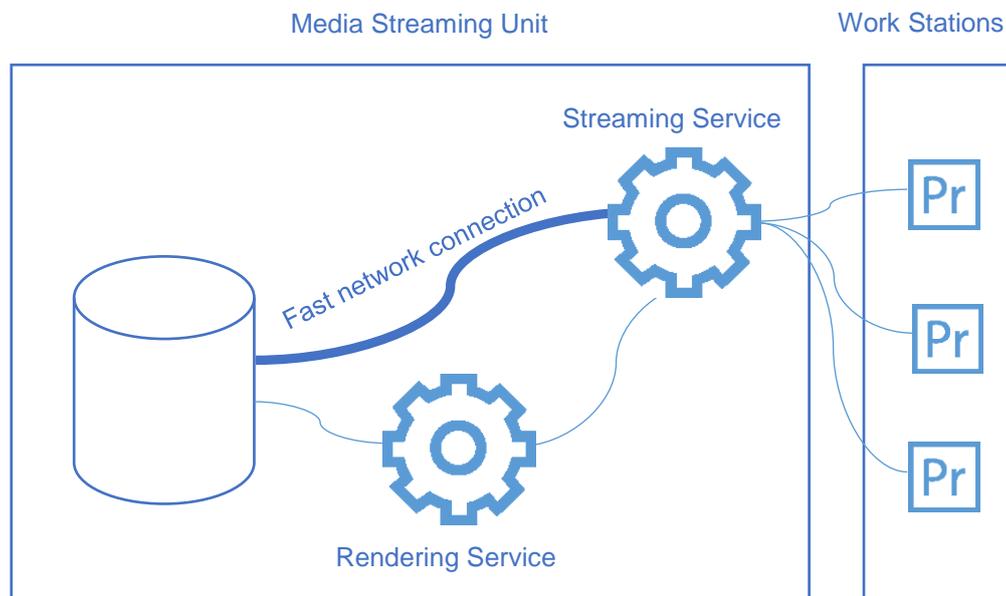
ediX Servers

The ediX servers might be installed either "on the cloud" or on the premises.
ediX requires two servers' installations:

- ediX streaming server: Streaming content to the remote editing workstations
- ediX Rendering server: Remote rendering execution

Although theoretically both servers can be installed on the same machine, we recommend keeping the servers separated so the rendering jobs resources-consumption won't interfere with the real-time streaming process.

The following sections describe the pre-requisites of each of those servers.

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ediX Streaming Server

Specification

Operating System: Windows Server 2016 R2 or 2016 / Windows 10
RAM:64 GB RAM and up.
GPU/CPU: The server's GPU/CPU determines the performances in terms of concurrent streams. The following configurations are validated and benchamrked. The performance of each server spec (in terms of number of concurrent streams) is given based on the assumption below:

Server specification	Concurrent streams
i5-5200U@2.2GHz, OpenCL 2.0 Support	1
Xeon E5-2620V4@2.1GHz, Tesla M60	16
Xeon E5-2620V4@2.1GHz, Tesla P100	18
Xeon E5-2690V4@2.6GHz, 2 x Tesla M60	22

assumptions and constraints
1) Source format: XDCAM50 1920x1080 29.97fps, with 4 audio streams (PCM 24bit 48KHz).
Important note: As the sources used for this benchmark are 4:2:2 chrominance-sampled, the decoding hardware acceleration was limited. Other source formats gave significantly better results. We used these results as a lower-bound.
2) Streaming format configured to HEVEC 960X540 3Mbps
3) All streams were playing simultaneously.
4) Maximum CPU/GPU capacity was set to 85% of the actual maximum capacity.

Storage Bandwidth

To assure efficient streaming, the streaming server has to read from the storage using a UNC protocol from the storage at a rate of at least 60fps.

Ports

By default, ediX uses the following ports:
- ediX Server: 443
- ediX streaming: 8640-8740

These ports are configurable via the administration portal.

ediX Rendering Server

Specifications

- Windows Operating System, RAM & processors according to Adobe Media Encoder system requirements
- The following software component should be installed on the rendering server:
  - Adobe Premiere Pro© 2018 (v12.0 and up) + Adobe Media Encoder©
  - ediX rendering plugin

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ediX Workstation

Specifications
- Operating System:
    - o Windows (8.x and up)
    - o MacOS© (10.6 and up)
- Adobe Premiere Pro (v11.0 and up)
- i5 Processor and up, with Open-CL enabled (version 1.2 and up)
- For best performances, an NVIDIA GPU of Kepler architecture (or higher) is preferred

Network Streaming Bandwidth

- For smooth playback, the default stream (720p) requires 4.5Mb/sec on the download direction (from the server to the workstation). Two concurrent streams (for example, two videos layered one on top of the other) will require about twice as much (~9Mb/sec) and so on. However, the stream bitrate and resolution are configurable.
- The bitrates given below are average bitrates required by the stream while playing, sorted by the stream resolution (see "Bandwidth" column below). However, since the NLE uses a play-ahead caching policy, the bandwidth required from the source to the target for smooth playback and scrubbing, is higher than the average stream bitrate (see "Required Bandwidth" column below).
- The association below of the configured resolution and the avg. streaming bandwidth is based on our best practices and experience with XTRMX HVEC compression. That said, the bitrate and resolution may be configured independently by the system administrator.

Streaming Resolution	Avg. Bandwidth / stream	Required Bandwidth / stream
1920x1080	8.0 Mbps	12.0 Mbps
960x540/1080x720	3.0 Mbps	4.5 Mbps
704X480	0.3 Mbps	1.0 Mbps

About XTRMX

A leading innovator in remote collaborative media, editing and review solutions, XTRMX works to provide users with a native experience for simultaneous multi-users realtime video collaboration, that renders versioning and needless back and forth approval processes obsolete, therefore reduce and simplify media-related pipelines.

Powered by the groundbreaking XTRMX SDK media engine, XTRMX solutions work to simplify **syncing media content and data between remote users, content and storages**, enabling them to work together **as if they're all in the same room**.

On top of XTRMX SDK, XTRMX developed products for simultaneous & realtime video manipulation, without upload or download the actual content, yet distributed users can work on it simultaneously from any device or location: With xView, a leading video review tool for the pro video production market and ediX, a solution for proxy-free and remote editing workflows, XTRMX creates value for creatives by enabling simultaneous & real time video manipulation.

XTRMX solutions are optimized for any instance where content needs collaborative review and assessment and extends well beyond the media/entertainment industry, offering a disruptive workflow enhancement to any discipline where content, users and systems are apart. In the AR/VR industry, designers can collaborate on the same model regardless of their geographical location; two doctors on opposite sides of the world can inspect MRI DICOM results, manipulate and analyze it together as if they were in the same room; civil engineers, managers and clients can interface with the same construction plan, adding layers, nimbly navigating and adjusting plans as if they were around the same table; and so on.