

Data Sheet XTRMX December 2017 XTRMX.com/edix



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



ediX 2.2

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: In Adobe Premiere Pro ©, the remote clips 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. At rest, there is zero-caching on the client side, only the frame on-screen exists at a client. A configurable, visible watermark identifying the content source and end point client, is inserted at the origination of the stream. Files are never moved from their secure storage.



System overview

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ediX software environment is compound of:

- XTRMX Streaming Service: Software components that are responsible to:
 - o facilitates remote editing sessions (user authentication, robustness, security)
 - \circ 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 NLE and an XTRMX-NLE-compatible plugin



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: 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 realtime streaming process.

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



Pre Requisites

ediX Streaming Server specification

The following specification descibes the XTRMX ediX server for on-premise installation:

Operating System: Windows Server 2016 R2 or 2016.

RAM:128 GB RAM

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 turms of number of concurrent streams) is given based on the assumption below:

Server specification	Concurrent streams
i7- 7700HQ@2.80 GHz, GTX 1050	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 must read from the storage using a UNC protocol from the storage at a rate of at least 60 fps.

Rendering Server specification

- Windows Operating System, RAM & processors according to <u>Adobe Media Encoder system</u> <u>requirements</u>
- The following software component should be installed on the rendering server:
 - Adobe Premiere Pro© 2018 + Adobe Media Encoder©
 - o ediX rendering plugin

ediX Workstation specification

- Operating System:
 - Windows© (8.x and up)
 - \circ $\,$ MacOS© (10.6 and up)
- Adobe Premiere Pro© 2018
- For best performances, an NVIDIA GPU of Kepler architecture (or higher) is preferred



Network Streaming Bandwidth

- The bitrates given below are average bitrates required by the stream while playing. However, since the NLE uses a play-ahead caching policy, the bandwidth required from the source to the target for a smooth playback and scrubbing, is about double the average stream bitrate.
- 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	16.0 Mbps
960x540/1080x720	3.0 Mbps	6.0 Mbps
704X480	0.3 Mbps	1.0 Mbps

Ports

By default, ediX uses the following prots:

- ediX Server: 8630
- ediX streaming: 8640-8740

These ports are configurable via the administration portal.



About XTRMX

XTRMX developed a platform to sync media content and data, between remote users and storages. In a nutshell, the framework is powered by an on-the-fly transcoding and processing engine, that delivers media content on demand by low-latency streaming, without uploading or downloading the source itself. The platform comprise two uniqe features:

- 1) Remote access to media content either files based or from another source (such as an NLE timeline) for both browse and control, regardless of where the content is stored.
- 2) Multiple users can not only simultaneously view the same media-assets in sync, but can also manipulate the media content simultaneously: Any modification applied by one user, is reflected on the other users in realtime.

This engine is exposed with a mature, simple SDK, allowing to integrate with existing applications and transform them (or some of their aspect) into realtime, multi-users controlled.

On top of this engine, XTRMX developed "xView" – a professional tool for realtime, remote video review, and "ediX" – a product for remote editing. XTRMX products integrated with Adobe Premiere Pro (c), Avid Media Composer (c) and Shotgun RV (c).