



xView
Data sheet
XTRMX February, 2017



VERSION INFORMATION

Version	Date	Remarks	Author
2.1	22.11.2016	First Release	XTRMX
3.1	2.2.2017	Native-client	XTRMX

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xView



xView is a professional review tool intended for the broadcast and the post-production industries. xView allows multiple users to review video content together, in real-time, regardless of their physical locations. Among the key features are:

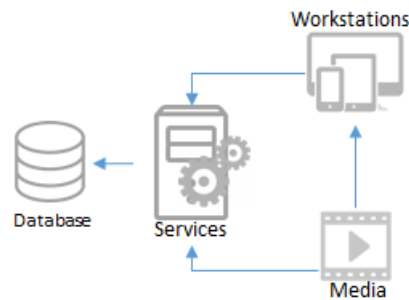
- **Collaborative Transport:** Transport control usage (play, pause, scrub, frame+, frame-) is collaborated among the users. As one user manipulates the transport, all collaborators are updated in real-time.
- **Frame Accurate, Random-access stream:** Transport control is frame-accurate, allowing frame-by-frame stepping without drop-frames.
- **Content Location:** Reviewed video content is either remote (hosted in remote storage or on the cloud), or local. In both cases no preliminary upload/download is needed.
- **Frame Annotation:** Textual and graphical frame-referenced annotations can be added.
- **Live Chat:** Voice and textual chat are available.
- **Premiere/Avid integration:** Allows reviewing and manipulating premiere content by another collaborator in a simultaneous, realtime manner. The premier and the browser may review the EDL collaboratively, and use the xView panel – annotation and chat – through a premiere panel as well as from the browser. Avid Media Composer integration is planned as well for the coming releases.
- **High Resolution:** xView can work with any device using a standard IP connection. That said, xView can also be adjusted to high-bandwidth and powerful hardware to output a high-resolution stream.
- **Native Resolution:** Whenever the stream is paused, the users can collaboratively zoom in to the native-resolution size.

System overview

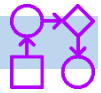


xView software environment is compound of:

- XTRMX Services: Software components that are responsible to facilitate review sessions:
 - facilitate review sessions (user authentication, robustness, security)
 - Users and Project management
 - Stream-transcoding for multiplatform review
- Storage: where the reviewed media is stored – accessed either by the workstations or by XTRMS services.
- Database: Where the services storing information regarding xView-projects, xView-users and xView-sessions
- Workstations: user end-points that participate in the review sessions



Workflow



On premises vs SaaS

xView server can be installed in two configurations types – SaaS and On-premises:

SaaS: XTRMX server is installed on XTRMX cloud. In that case, no server is required on the client machine, and the server specification section below is irrelevant.

The “xView remote storage” is hosted on XTRMX cloud storage.

On Premises: The server installed on the site machine. In that case, the server machine is supplied by the client, and has to follow the “Server Specification” section (further below in this document). The “xView remote storage” in that case, is hosted anywhere accessible to that server.

“Local source” vs “Remote source”

xView is capable to review either “local” or “remote” sources.

A “local source” in this scope means a source which is accesible to one of the users’ workstation.

The workstation in this case become “a streamer” and has to follow the *streamer specification* in the *workstations specification* part.

A “remote source” in this scope means content that is accessible via an “XTRMX streamer” component. The XTRMX streamer may be installed on any compatible hardware - a workstation, server or cloud – and it provide accessibility to a configurable “remote storage” to any of the collaborators.

The supported formats for local and remote sources are detailed in the *supported formats* section.

File-review vs NLE-review

xView is capable to review either files or NLE content.

xView 2.1 is capable of integrating to *Adobe Premiere Pro*. Future xView releases will integrate other NLEs such as *Avid* and *Final Cut Pro*.

For File review, the client require no installation – the review is done using the browser.

For NLE-review, an xView plugin has to be installed on the NLE machine.

Browser-based vs Native-based

xView workstation comes in two flavours: Browser or native-based. The Browser-based require no client-installation. Any user, from any device or location, using the browser itself, may register to the system and join an xView session. Constrained by the browser capabilities, the stream resolution while playing or scrubbing is limited to 4CIF, and the native image is presented when paused.

However, using a dedicated browser-extension, a native-based workstation may be installed. In that case, xView is capable to use the full resources of the machine. As a result, the playback/scrubbed stream is at high resolution (HD/FHD, depends on the hardware specification), and the native image is presented when paused.



Workflows

The following table summarizes the possible workflow and the required client and server installation which is required for each:

Project Type	Workflow	Client Installation	Stream Resolution*
Adobe Premiere/ Avid Media Composer Project	A user connects to XTRMX via the xView plugin. The other collaborators join via their web-browsers.	xView plugin has to be installed on the NLE machine	Up to Full-HD
Local source	A user streams a source which is accessible through his/her workstation. All users collaborate via their web-browser	Not required. Installing an xView extension is essential for best resolution.	Streamer without extension: UMD (480x272)
			Streamer with extension: FHD (1920x1080)
			Receiver without extension: 4CIF (704x576)
			Receiver with extension: FHD (1920x1080)
Remote source	The source is accessible to an XTRMX-streamer server. All users collaborate via their web-browser.	Not required. Installing an xView extension is essential for best resolution.	Receiver without extension: 4CIF (704x576)
			Receiver with extension: FHD (1920x1080)

(*) The above stream resolutions are for playback/scrubbing. While paused, the image resolution is the native one. Likewise, the resolutions presented may be dynamically downgraded in case the machine resources or the network throughput does not support it.

Pre Requisites

Server specification

XTRMX server comes in two flavours: On-premises and Cloud-service.

If the Cloud-service option is used, then this section is irrelevant. Otherwise, the following specification describe the XTRMX server on site:

Operating System

Windows Server 2016 R2 or 2016.

RAM

128 GB RAM

GPU/CPU

The server's GPU/CPU determine the performances in terms of concurrent sessions. The following configurations are available, and the performances of each (as the number of concurrent sessions) is given based on the assumption below:

Server specification	Mixed session	Uniform session	Concurrent users	Maximum users
i7-6785R@3.90 GHz, GTX 1070	1	2	18	70
2 Xeon E5-2620 v3@2.40 GHz, Grid K2	24	34	300	1200
2 Xeon E5-2690 v4@2.60 GHz, Grid K2	60	85	765	3060

assumptions and constraints

- 1) There are 3 concurrent collaborators per session in average.
- 2) A "uniform session"; all collaborators stream the same resolution.
A "mixed session": Some of the users require different format (i.e. some collaborators using mobile or tablets). The calculation assume a ratio of 2 uniform session : 1 mixed session.
- 3) Only 1/4 of the total user are concurrently using the system at any given time (Based on statistics courtesy of "Web Performances Inc")
- 4) Maximum CPU/GPU capacity is set to 80% of the actual maximum capacity.
- 5) Streaming format assumed to be Full-HD at 30fps
- 6) Not more than 1/3 of the total concurrent sessions are playing at any given time (the rest are either scrubbing or at rest)

Workstation specification

The client specification depends on the required incoming/outgoing resolution, the client's role (reviewer or source-streamer) and if an NLE-integration is required:

- **Reviewer (Incoming stream only):**
 - Operating System:
 - Windows (8.x and up)
 - Mac (10.6 and up)
 - Android (5.x and up)
 - iPhone/iPad (9.x and up)
 - Browser: Chrome V 50.x and up
 - Max resolution: Full-HD
 - For max resolution:
 - CPU: i7
 - GPU: Preferably NVIDIA GPU of at least Kepler architecture
- **Streamer (Both incoming and outgoing streams):**
 - Operating System:
 - Windows (8.x and up)
 - Mac (10.6 and up)
 - Browser: Chrome V 50.x and up
 - Max resolution: Full-HD
 - CPU: i7-
 - GPU: Preferably NVIDIA GPU of at least Kepler architecture. To stream up to Full-HD with the native-resolution, a GPU of at least second-generation Maxwell is preferable.

Supported formats

The review media files may be hosted either locally (i.e. on a user's local device or otherwise accessible from the user's workstation) or in the configured remote storage.

Local content which is streamed for reviewing by xView web-client (where no extension was installed), has to be compatible with the browser-formats (see below). The remote-storage and xView-extension scenarios, support formats according to XTRMX Modus Engine supported formats (see below).

Video container/codecs:

Browser (Web-client)	Modus Engine (Remote/Native)
VP8 / WebM	VP8 / WebM
VP9 / WebM	VP9 / WebM
H264 / Mp4	H264 / Mp4
MPEG-4/Mp4	MPEG-4/Mp4
	Elementary H264
	Elementary H265
	ProRes
	DNxHD
	DPX
	EXR
	XDCAM/MXF-RAW
	DV/MXF-RAW

Audio container/codecs:

Browser (Web-client)	Modus Engine (Remote/Native)
PCM / WAV	PCM / WAV
Vorbis / WebM	Vorbis / WebM
Vorbis / Ogg	Vorbis / Ogg
Mpeg1L3/MP3	Mpeg1L3/MP3
AAC / MP4	AAC / MP4
FLAC / Ogg	FLAC / Ogg
	Mpeg1L2

Image:

Browser (Web-client)	Modus Engine (Remote/Native)
Jpeg	Jpeg
WebP	WebP
GIF	GIF
PNG	PNG
TIFF	TIFF
	DPX
	EXR

Adobe Premiere Integration

Adobe Premiere Version 10.3.0 and up (2015.3 Release and up)
Avid Media Composer is planned as well in future releases

Minimal Network bandwidth

Minimal network upload bandwidth is 3 Mbps.

Ports

By default, xView use the following ports:

- xView Servers: 8050, 8080, 8888, 8090
- xView Streaming: 6001-7000

However, those ports are configurable via the xView administration portal

Technical Support

XTRMX-support is divided into two tiers. A tier of customer-engineer is optional, if a customer allocates the resources.

1st Tier Support: 1st Tier Is responsible to get a customer call/incident report, and react as stated in the SLA. XTRMX 24/7 support operates in USA, Singapore and India through field engineers that work under standard SLA.

2rd Tier Support: 1st tier will either close the call by resolving the issue or escalate it to the 2rd tier, which is handled by XTRMX engineers.

XTRMX can also certify customer's stuff to be 1st tier support at the customer premises.