



milestone

XProtect® Professional 2019 R2 Specification Sheet



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! Please note:

XProtect Professional enters maintenance mode on June 19, 2019, and this 2019 R2 release is the final version to be released of the product. [Click here](#) for more information.

Feature Overview

XProtect Professional server modules

- **Open platform:**
Open application programming interface/software development kit (API/SDK) supports seamless integration with third-party applications
- **Multi-server and multi-site video surveillance solution:**
Unrestricted recording of video from IP cameras, IP video encoders and selected digital video recorders (DVRs) with analog cameras
- **Wide IP camera and device support:**
Supports more than 7,000 IP cameras, encoders and DVRs from 150+ different manufacturers
- **ONVIF™ and PSIA compliant:**
Supports ONVIF™ and PSIA compliant cameras and devices
- **Optimized recording storage management:**
Unique data storage and archiving solution that combines superior performance and scalability and cost-efficient, long-term video storage
- **Wide compression technology support:**
Supports a variety of compression methods: MJPEG, H.263, MPEG-4 Pt. 2 Simple Profile and Advanced Simple Profile, H.264/MPEG-4 AVC, and MxPEG
- **Dual streaming:**
Hardware use is optimized with two independent, configurable video streams, one for live viewing and one for recording. No client configuration needed
- **System configuration wizards:**
Guide the user through the process of adding cameras, configuring video and recording, adjusting motion detection and configuring users
- **Built-in video motion detection:**
Independent of camera model
- **Automatic license activation:**
Automatic online or offline activation with a 30-day camera license grace period
- **Privacy masking:**
Enables administrators to define privacy masks for individual cameras, to hide areas in the camera view that must not be visible

or recorded in order to comply with local legislation

- **Easy installation:**
Start the installation with a few mouse clicks – all languages and applications in one installer (Management Application supports 11 languages). Unified installer that is shared between all XProtect Professional VMS products¹. Users can add components or remove them from the installation at a later time
- **Supported by the Software Manager:**
Deploy XProtect Professional centrally via the Software Manager utility
- **Support for the Customer Dashboard**
Resellers can monitor the health of installed systems with a valid and active Milestone Care Plus, so actions can be taken proactively before the issue becomes a problem for the customer. This offers peace of mind to system owners

XProtect Professional client modules

- **Power of choice:**
Use any combination of the three available clients, XProtect Web Client for Express and Professional and XProtect Mobile for Express and Professional
- **View live video:**
Use any client for constant live monitoring
- **View recorded video:**
Use any client to view incidents which occurred in the past
- **Situational awareness:**
With support for Maps and Alarms, XProtect Smart Client for Express and Professional offers real-time situational awareness
- **Common design:**
The three XProtect clients share a common design and basic functionalities, such as camera views, enabling a seamless switch between interfaces
- **PTZ Control:**
Pan-tilt-zoom (PTZ) cameras can be controlled with any of the clients; therefore, suspicious activity can be investigated
- **Share or export recordings:**
Export video in native database format and share with external viewers using the XProtect Smart Client for Express and Professional - Player. Moreover, instantly share exports between XProtect Mobile for

¹ XProtect Professional and XProtect Express

Express and Professional and XProtect Web Client for Express and Professional using a server side export to avoid moving large files through remote connections

- **Output control and event triggering:**
Use any of the clients to activate system events or trigger outputs on the connected devices
- **Push Notifications**
Receive push notifications in XProtect® Mobile for Express and Professional when alarms are triggered or alarms are assigned to a specific user. Even when the application is not running
- **Available in 30 languages**
Use any of the clients in your preferred language from the list of the 30 languages supported

Detailed Product Features

XProtect Professional server modules

Management Application

- A single Management Application provides a consolidated point of access to XProtect Professional Recording Servers
- System configuration wizards guide the user through the process of adding cameras, configuring video and recording, adjusting motion detection and configuring multiple users
- Device scanning enables the fast discovery of camera devices using methods such as Universal Plug and Play, broadcast and IP range scanning
- Smart bulk configuration option allows simultaneous changes to the settings across multiple devices in few clicks
- The adaptable application behavior guides novice users, while expert users can optimize the application for a more advanced use
- The export and import of system and user configuration data enables a reliable system operation and fast system recovery
- System cloning enables users to efficiently clone multiple systems with the same or similar configuration
- The import of offline configuration data enables offline editing of configuration data including camera and device definitions
- Each time a configuration change is confirmed, automatic system restore points are created enabling an easy rollback to previously defined system configuration points. This also enables the cancelation of undesired configuration changes and restoration of earlier valid configurations
- Automatic configuration wizard helps users to configure the system when the Management Application starts for the first time

Recording Server

- Native 64-bit recording server provides the optimal utilization of available hardware resources
- Flexible multi-site, multi-server license structure charged per camera and per recording server

- Unrestricted number of installed cameras with simultaneous recording and live view. If users have more than 250 cameras in total, Milestone recommends the use of XProtect Professional+, XProtect Expert or XProtect Corporate
- The recording quality depends entirely on the camera and video encoder capabilities: no software limitation (30+ frames per second per camera)
- Cameras supporting SSDP, mDNS or ONVIF Discovery are automatically discovered and installed in the default Smart Client view
- The Milestone Customer Dashboard allows resellers to take immediate action and fix any problems on a customer's installation for example: a broken camera, hard disk failure, etc.
- Dual streams from cameras can be optimized individually on compression, resolution and frame rate, meeting recording and live monitoring requirements
- Bandwidth is optimized with multi-streaming by splitting a single camera video stream to different streams for live view and recording, therefore they can each be optimized independently with respect to frame rate and resolution
- Simultaneous digital multi-channel video and audio recording and live viewing (relaying)
- Connectivity to cameras, video encoders and selected DVRs supports MJPEG, H.263, MPEG-4 Pt. 2 Simple Profile and Advanced Simple Profile, H.264/MPEG-4 AVC, and MxPEG
- Recording technology: secure high-speed database holding JPEG images or MPEG4 and MxPEG streams including audio
- Unrestricted recording capacity with multiple archives possible per day
- Hourly to daily database archiving with optional automatic move to network drive saves storage capacity on the local server – with images still available transparently for playback
- Start recording on event
- Authenticate access based on Microsoft Active Directory user account, or XProtect user name and password
- Authorize access privileges per Microsoft Active Directory user account/group, XProtect user profile or grant full access
- Audit logs of exported evidence by user and file
- Audit logs of client user activity by time, location and camera
- Local console management of the Recording Server accessible from the notification area

- Start and stop Recording Server service
- Access to Recording Server configuration settings
- Access to Recording Server help system
- View system status and log information
- Built-in web server for download and launch of clients and plug-ins
- Remote access for XProtect Smart Client for Express and Professional, XProtect Web Client for Express and Professional and XProtect Mobile for Express and Professional
- User profiles control access to: live view, PTZ, PTZ presets, output control, events, listen to microphone, talk to speaker, manual recording; playback, AVI export, JPG export, XProtect (database) export, sequences, Smart Search and audio – as well as set up views, edit private views and edit shared public views
- Client-initiated start of recording based on a predefined recording time or manual stop and access privileges
- Start cameras on live view requests from clients
- Built-in camera independent motion detection; choice of fully adjustable to sensitivity or automatic sensitivity adjustment, zone exclusions and recording activation with frame rate speed up and alert activation through email or SMS
- Two-way audio enables an integrated control of microphones and speakers connected to IP devices
- On predefined events Matrix remote commands are automatically sent to display live video remotely on computers running XProtect Smart Client for Express and Professional
- Flexible notification (sound, email and SMS) and camera patrolling scheduling, triggered by time or event
- Up to 50 PTZ preset positions per camera
- Absolute and relative PTZ positioning
- PTZ go-to preset position on events
- Combine PTZ patrolling and go-to positions on events
- Set multiple patrolling schedules per camera per day. For example, for day, night and weekends
- PTZ scanning on supported devices: viewing or recording while moving slowly between PTZ positions
- Video motion-detection sensitive PTZ patrolling among selected presets allows sending of wipe and wash commands to supported PTZ models
- Copy a Smart Client – Player to all hard drives used for recording and archiving. A Smart Client Project file is also created

(when the recording server is shut down), making it simple and easy to access video even if the hard drive is removed from the server

Mobile Server

- Runs as a dedicated service allowing it to be installed with an existing installation or on dedicated hardware for more demanding installations
- Can transcode video so the streams are robust and can adapt to changing connection bandwidth. The server also optimizes the use of available bandwidth to get the best possible stream quality
- Several options for the administrator to configure the system to meet performance expectations. Including optional transcoding, client-side decoding, or a dynamic combination depending on streams
- The Mobile server plugin in the Management Application gives access to the XProtect Mobile for Express and Professional server management in order to change default settings and read out miscellaneous status information
- Multiple XProtect Mobile for Express and Professional servers can be installed in parallel, offering redundant setups and/or allowing more simultaneous users. They also allow users to connect to a server of their choice
- Can be configured through the tray controller to easily adjust or update settings
- Use either a default-generated certificate for HTTPS encrypting the connection to the XProtect Mobile for Express and Professional server or provide your own custom certificate
- Support for two-step verification for log-in
- All configuration of Video Push is done from the server; therefore, users can download and use the XProtect Mobile for Express and Professional client without having to do any configuration
- Supports creating server-side export through XProtect Web Client for Express and Professional and XProtect Mobile for Express and Professional. The XProtect Mobile for Express and Professional management plugin allows administrators to configure codec used as well as manage ongoing and completed exports
- Automatically installs the XProtect Web Client for Express and Professional. No additional setup is needed
- Smart Connect can automatically configure network addresses and validate external connectivity, as well as invite users to start

using XProtect Mobile for Express and Professional

- Video decoding in Mobile Server takes advantage of processing power in Graphical Processing Units. This includes the GPU part of the Intel CPU (requires CPU with support for Intel Quick Sync Video) and in the GPU of additional external NVIDIA cards

XProtect Professional client modules

XProtect Smart Client for Express and Professional

- Choice of simplified or advanced modes depending on current user need
- Application theme support with choice of dark or light theme
- Dedicated task-oriented tab for the Sequence Explorer in addition to the traditional Live and Playback tabs
- Installed per default on a Recording Server for local viewing and playback of video and audio
- Camera search-as-you-type function, which promptly finds cameras, type of cameras and views in the system with the ability to create temporary views to display all or a subset of cameras matching the search criteria
- User initiated recording on cameras with a predefined time for example, default five minutes. Subject to privileges set by administrator
- Support for native 64-bit operating systems
- Independent playback capability allows for instant play back of recorded video for one or more cameras, while in live and playback mode
- Interactive, multi-layered maps provide the operator with a comprehensive overview of cameras, devices and layouts of an entire surveillance installation
- In simplified mode, the Export Panel provides an intuitive way to export video from multiple cameras in native database format and share with external viewers using the XProtect Smart Client for Express and Professional Player.
- In advanced mode, users can seamlessly export video in various formats including video from multiple cameras, with evidence viewer, data logs and user notes included
- The storyboarding function makes it possible to include video sequences from different or overlapping time intervals from different cameras in the one and the same export
- When exporting video in AVI or MKV format, the export can be played back in a standard player application. When exporting in MKV format the video is exported in the same format as originally recorded (similar to creating database export), as long as privacy masking is not enabled, and video is recorded in H.264, JPEG or MPEG-4, except for MPEG-4 short header mode
- Quickly gather and refine evidence using Smart Search to locate changes or objects in the video
- With multi-channel, two-way audio, it is easy to communicate with people at gates/entrances or broadcast messages to many people at once
- Live view digital zoom allows zoomed-out recordings while the operator can digitally zoom in to see details
- "Update on Motion Only" optimizes CPU use by letting motion detection control whether or not the image should be decoded and displayed. The visual effect is a still image in the view until motion is detected
- Shared and private camera views offer from 1x1 up to 10x10 layouts in addition to asymmetric views
- Views optimized for both 4:3 and 16:9 screen ratios
- Multiple computer monitor support with a main window and any number of either windowed or full screen views
- Hotspot function for working in detail with a camera selected from a view containing multiple cameras
- Carousel function allows a specified view to rotate between predefined cameras with individual timing and order with multiple appearances. Carousel function can be controlled allowing the operator to pause the carousel function and to switch to previous or next camera
- Overlay buttons provide intuitive control of cameras, camera-integrated devices and other integrated systems directly from the camera view
- Matrix function to view live video from multiple cameras through the Image Server in any view layout with customizable rotation path, remotely controlled by XProtect Smart Client for Express and Professionals or Recording Servers sending Matrix remote commands
- Send Matrix remote commands to display live video remotely on computers running XProtect Smart Client for Express and Professional

- Cameras' built-in audio sources available in live and in playback
- Separate pop-up window displaying sequences and time intervals in thumbnail previews, the Sequence Explorer gives a visual overview of recorded video combined with smooth navigation
 - Presents recorded sequences for individual cameras, or all cameras in a view
 - Available in both live and playback modes
 - Smooth navigation with sliding preview and "drag-and-throw" function for video thumbnails
 - Instant playback of video sequences
- Application options allow users to adapt the layout and personalize the application to their particular preferences
- Dual authorization offers an optional additional level of system security, where XProtect Smart Client for Express and Professional users are granted access to the system only when a second user or supervisor has confirmed the log-in with a successful authorization of the first user
- Create, edit or delete PTZ presets (not possible for PTZ type 2, where PTZ presets are stored in the camera device, but can't be modified from the XProtect software)
- Control PTZ cameras by using;
 - PTZ preset positions
 - PTZ point-and-click control
 - Overlay buttons
 - PTZ zoom to a defined rectangle
 - Video overlaid PTZ control
 - Virtual joystick function
 - Joystick
- 360° ImmerVision Enables® panomorph lens technology removes blind spots and allows operators to track, detect and analyze the entire area in live or playback mode. Only one camera license required for the 360° panomorph lens
- Camera Navigator allows for easy tracking of objects
- Milestone Integration Platform Software Development Kit (MIP SDK) 4.5 plug-in support
- Video decoding is done to significantly reduce the CPU load and improve performance of the recording servers. Supports video decoding done in the GPU part of the Intel CPU (requires CPU with support for Intel Quick Sync Video) and in the GPU of additional external NVIDIA cards

XProtect Smart Client for Express and Professional - Player

- Play back recorded or received video and audio evidence
- Offers a simplified and even more user-friendly interface compared to the XProtect Smart Client for Express and Professional, including the capability to switch back to the full XProtect Smart Client for Express and Professional interface, with almost the same functions as the XProtect Smart Client for Express and Professional
- Instant one-click playback for easy viewing of exported video evidence
- Advanced second-level investigation tools make it easy to refine exported video and re-export the most essential evidence
- The project tool allows users to merge video exports or archives from two different locations or XProtect systems together into one new export
- View up to 100 time-synched cameras during playback
- Scrollable activity timeline with a magnifying feature
- Instant search of recordings based on date/time and activity/alarm
- Evidence can be generated as a printed report, a JPEG image, an AVI or MKV film or in XProtect format
- Export audio recordings in WAV or AVI format
- Audio in MKV export is PCM, therefore it is available in a decoded version of what was originally recorded
- Export video digitally zoomed to view area of interest only and to minimize export footprint size
- Re-export evidence in XProtect, AVI or MKV format with the XProtect Smart Client for Express and Professional - Player for instant, easy viewing by authorities
- Encryption and password protection option for exported recordings and files
- Ability to add comments to exported evidence, also encrypted
- De-interlacing of video from analog cameras
- 360° ImmerVision Enables® panomorph lens technology
- Automatically copied to all hard drives used by the Recording Server to store recordings and archives

XProtect Web Client for Express and Professional

- Access XProtect Smart Client for Express and Professional views through a browser to avoid using any advanced features

- Shared views can be managed centrally via the server with administrator/user rights and user groups
- Play back video easily including fast/slow playback, single frame step and jump to date/time with frame preview while adjusting time
- Search for cameras and views to quickly find specific cameras in the system
- Control PTZ cameras remotely using preset positions or PTZ mouse gestures
- Dynamic bandwidth optimization when streaming from server to client giving a better use of bandwidth
- Create AVI, MKV or database export files
- Create investigations with one or more cameras to quickly access them from anywhere and convert to exports when needed
- Export on the server to avoid moving large video files back and forth. Users can download only the files they need or save them to download when a faster connection is available
- Trigger outputs and events with live view of related camera
- System login using XProtect username and password
- System login using Microsoft Active Directory user
- Support for two-step verification for log-in
- Secure connection through HTTPS
- No installation required
- Digital pinch to zoom enables users to zoom in on a part of the image for closer review and to conduct a detailed investigation of video when using megapixel or high-definition cameras
- Play back recordings from the database and select a specific time or recorded sequence to start playback, step through recordings and select a playback speed
- View recordings from the database while keeping an eye on what is currently happening. The client displays a live picture-in-picture frame of the same camera when in playback mode. The picture-in-picture can be moved by dragging and double-tapping will return to live view
- Control PTZ cameras manually or by selecting predefined presets for quick navigation
- Video Push allows users to use the camera in their mobile device as any other camera in the installation. It is very easy to use and requires no setup in the mobile device
- Trigger outputs and events: Administrators can use their mobile device to trigger outputs connected to the XProtect VMS or trigger user-defined events to have greater control on the go
- View access control events and grant/deny access to the premises if an access control system is integrated via the XProtect Access add-on product.
- Connect securely to the XProtect Mobile for Express and Professional server using HTTPS encryption
- Export on the server to avoid moving large video files back and forth. Download only the required files or save them to download later when a faster connection is available
- View and manage alarms with easy access to related video recordings
- Receive push notifications when new alarms are triggered, or alarms are assigned to a user
- Automatic server setup with Smart Connect
- Support for two-step log-in verification

XProtect Mobile for Express and Professional

- Supports any mobile device running Android® 5.0 and iOS9 or newer versions
- Add login credentials for multiple servers in the XProtect Mobile for Express and Professional Client to easily switch between sites or different connection addresses
- Views are inherited from the connected XProtect VMS system. The client automatically obtains the user's private and shared views from the system to be used as camera lists in the XProtect Mobile for Express and Professional client
- A view with all cameras is automatically generated, allowing the XProtect Mobile for Express and Professional client to be used when no views are set up. It also provides a quick way of searching through cameras
- Cameras can be viewed in full screen to better view any details. It is also possible to search through cameras in a view while in full screen by swiping left or right
- Search for cameras and views to quickly find specific cameras in the system

Integration options

- XProtect's open SDK makes it possible to incorporate video in a business process through the seamless integration of third-party applications, such as video analytics and access systems
- Compatible with XProtect® Access, an add-on to enable easy integration of third-party access control solutions with Milestone's video management solutions. Users of the

Smart Client have a consolidated interface to operate the access control systems with dedicated functions to effectively monitor access events, manually assist passages and conduct investigations on specific access points or cardholders

- Two-way synchronization of alarm states between access control system alarms and XProtect alarms. Changing the state of an alarm in one system automatically updates the state of the alarm in the other system. Requires support by the XProtect® Access plug-in
- Compatible with XProtect® Retail, an add-on to perform advanced data analysis. Based on transaction data from point-of-sale (POS) or automated teller machines (ATMs), XProtect Retail links data with corresponding video from relevant cameras
- Compatible with XProtect® Transact that directly links video with transaction data from POS or ATMs. Transactions and corresponding video can be monitored live or viewed later to identify shrinkage, fraud or simply validate a transaction
- With Milestone Interconnect, XProtect Corporate provides continuous monitoring of alarm status from XProtect servers, video surveillance cameras and external devices
- Compatible with XProtect Screen Recorder, an add-on function that enables XProtect VMS to inconspicuously capture screen recordings of any Microsoft Windows-based PC or POS terminal. Captured screen recordings are managed just like camera recordings and can be viewed in live and playback mode and exported for evidence
- Integrates with systems such as access control, alarms, gates and building management using hardware input/output (I/O), internal events and TCP/IP events

Miscellaneous

System Requirements

Please find the system requirements per product here:
<https://www.milestonesys.com/support/resources/system-requirements>

Supported languages

For details on supported languages, please refer to:
<http://www.milestonesys.com/SupportedLanguages>

! Please note:

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Licensing structure

Base server license

- A XProtect Professional base server license is mandatory to install the software; it may be installed on a single computer designated as master server per software license code (SLC). The software may be installed on any number of slave server computers per designated master server using the same SLC
- The base server license contains the XProtect Professional server module and XProtect® Mobile for Express and Professional server, plus the client modules XProtect Smart Client for Express and Professional, XProtect Smart Client for Express and Professional – Player, XProtect Web Client for Express and Professional and XProtect Mobile for Express and Professional

Camera license

- To connect cameras, audio devices, video encoders and other devices to XProtect Express, one device license is needed per camera or other IP based device connected to the system. Each IP device connected to the system through an already licensed IP device also requires a device license. This does not apply to multi-lens cameras and encoders with up to 16 connected analog cameras. Please check the list of supported devices at <https://www.milestonesys.com/community/business-partner-tools/supported-devices>. An unlimited number of camera licenses may be purchased

Client license

- The XProtect Professional client modules: XProtect Smart Client for Express and Professional, XProtect Smart Client for Express and Professional – Player, XProtect Web Client for Express and Professional and XProtect Mobile for Express and Professional do not require additional licenses and can be installed and used on any number of terminals