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# OnGuard XProtect Access Architecture and Design

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**Prepared by:**

*Milestone and LenIS2*

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## General Description

This document contains the current best practices for designing integrated OnGuard and XProtect systems. Please contact LenelS2 or Milestone engineering teams for help with your project's design.

## Software Version Compatibility & Documentation

Please refer to the compatibility matrix documents and user guides available at the following links:

(XProtect Access) – <https://download.milestonesys.com/lenels2xpa/>

## Rules of Design

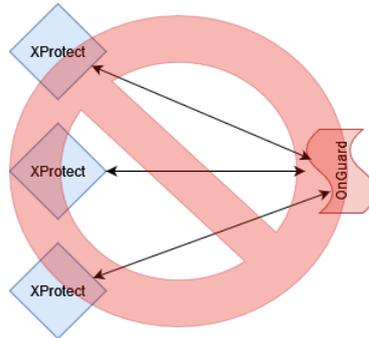
Documented performance thresholds and corresponding design recommendations:

Technology System	Single Server	Total System Size	Total Servers
XProtect (VMS)	100 Cameras/NVR.	5,000 Cameras per Management Server.	100 NVRs per Management Server.
XProtect (Access)	100 Events/sec sustained & 300 Events/sec peak.	1x XProtect Access to OpenAccess connection per XProtect Management Server.	No limit – Milestone Federated Architecture or Interconnect allow XProtect to scale, and regionalized architecture allow OnGuard to scale.
OnGuard (OpenAccess)	1x OpenAccess connection per OnGuard Application Server.	1x XProtect Access integration per OnGuard Application Server.	No limit - Regionalized architecture allows unlimited scalability.

*\* These thresholds are only suggestions related to the XProtect Access integration which may contradict other documented information from Milestone and OnGuard. It is highly recommended to contact your Milestone and OnGuard engineering team to calculate actual system performance.*

### XProtect Access – performance thresholds

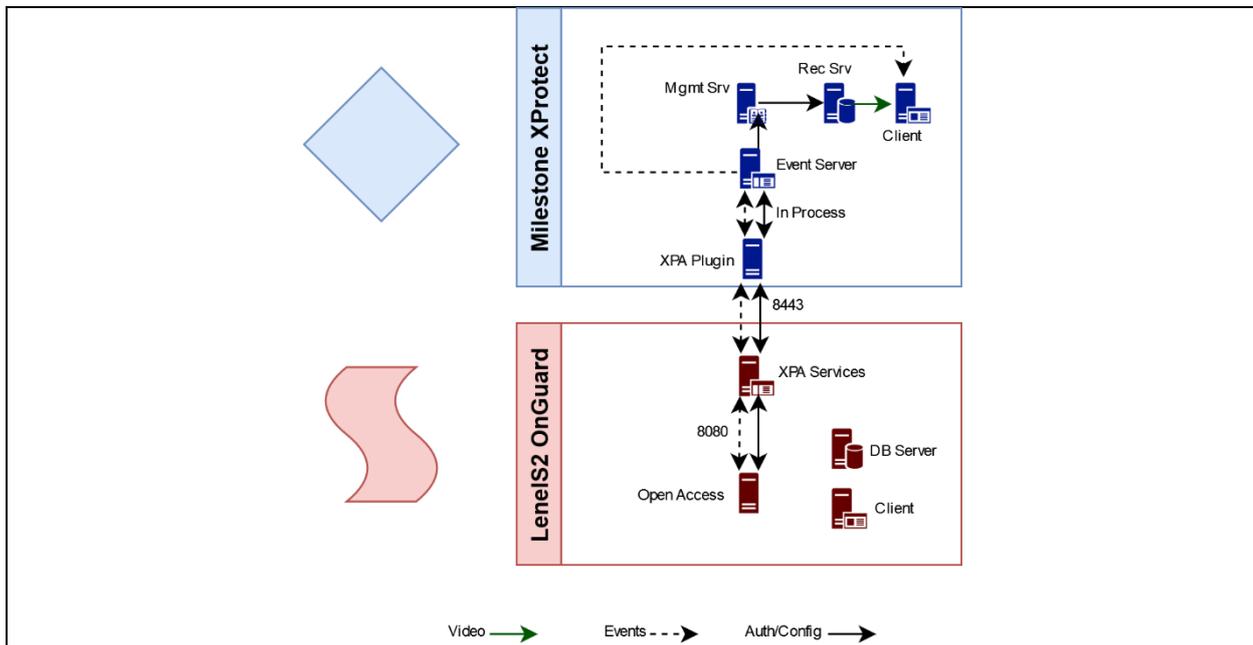
- 1- 100 cameras or less per Recording Server.
  - 5000 cameras per XProtect Management Server.
- 2- 100 events per second on the XProtect Event Server.
  - Peaks up to 300 events per second.
- 3- One OpenAccess to a single XProtect Access connection.
- 4- One XProtect Access connection to one OnGuard OpenAccess server.



Scaling beyond this limit only becomes possible by adding individual one-to-one connections with a regionalized OnGuard. Multiple concurrent connections to OpenAccess can lead to resource competition, performance degradation, and system failure.

## Recommended Solution Design – XProtect Access

### XProtect Access – one to one

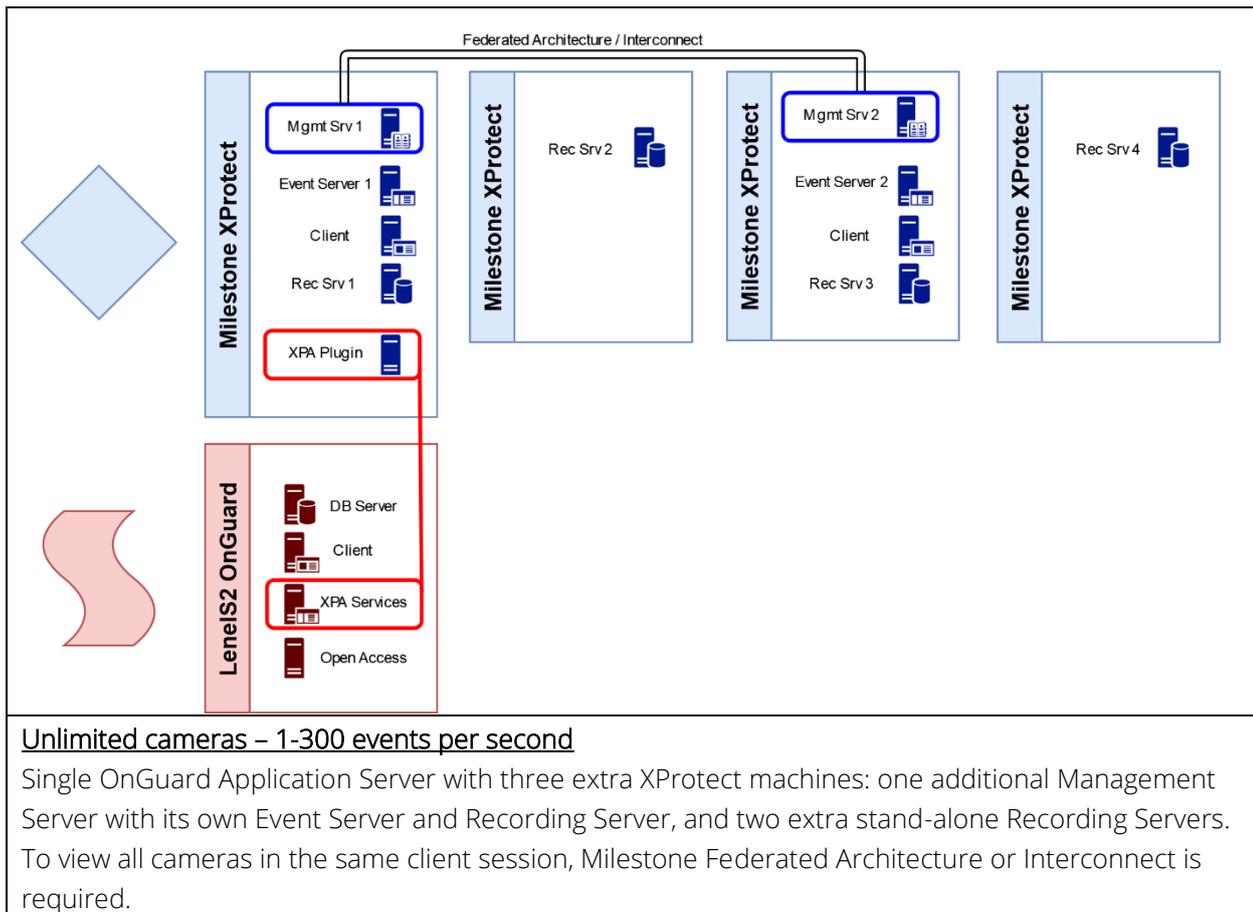


#### 1-100 cameras and 1-300 events per second

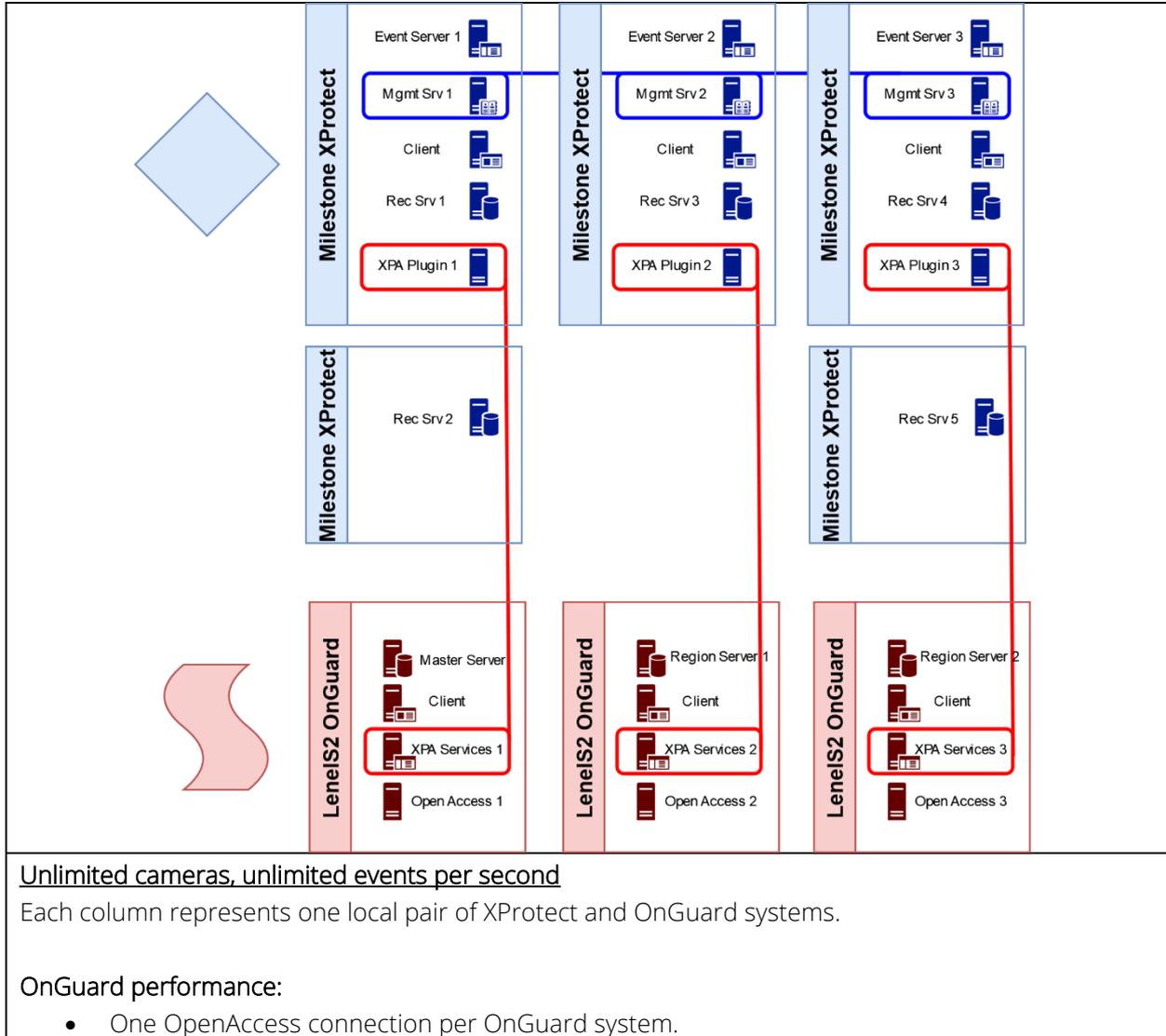
As system design scales, data flow, port, and connection details do not change - data flow is removed to focus on required components.

The XPA Plugin in the Milestone XProtect environment runs within the Event Server process. Communication and data moving between the XPA Plugin and the Event Server doesn't traverse the network. XPA Services can be installed on the OnGuard Application Server, or it can run on a stand-alone machine in the network.

### XProtect Access – scaling up with XProtect



### XProtect Access – Enterprise

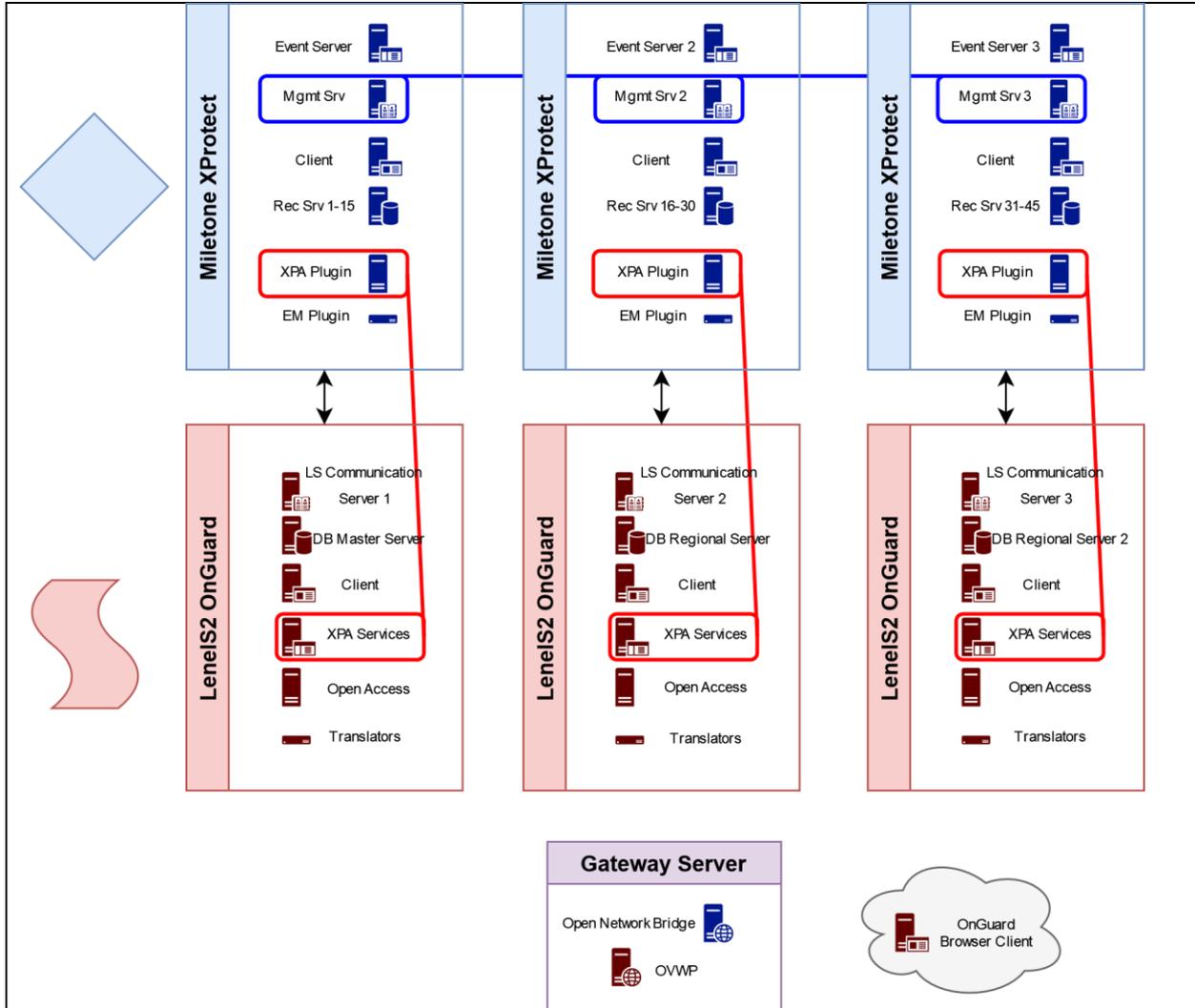


## Combined System Design – Open Video & XProtect Access

The Open Video integration is owned and supported by LenelS2. Milestone Systems does not provide any support for the Open Video integration. This document is for information only.



### Combined - Enterprise



Unlimited cameras, unlimited Recording Servers, unlimited events per second

**Milestone performance:**

- <60 cameras per Recording Server.
- >300 events per second – system wide.
- <100-300 events per second per Event Server.
- <100% CPU during Get Configuration – on each Management Server.

**OnGuard performance:**

- <1.5GB memory on each LS Communication Server.
- Only one OpenAccess integration with XProtect Access.