Network Edge Platform for Surveillance Video Analytics

Flexible Network Edge Platform

- 19" 3U rackmount server
- Large 15 PCI Express card capacity
- Scalable compute performance
- Support for compute accelerator cards
- Capability to interface to a variety of network and camera interfaces
- Huge storage capacity through SATA drives or NVMe M.2 SSDs

The one key factor that has held back the effectiveness of video surveillance for public safety and security is that it takes human evaluation and assessment to use surveillance data. Artificial intelligence (AI), in the form of video analytics (VA) and machine learning, is fundamentally changing the concept of video surveillance, creating new opportunities to fully utilize, in real time, all the "eyes" of the security system.

Today, intelligent surveillance systems can identify events of interest and alert security personnel immediately to suspicious events, enabling an rapid response that can potentially prevent a dangerous situation. Soon, facial recognition, people holding weapons, even suspicious behavior, will be within reach of these advanced VA applications.

Many current solutions, which include the cameras, edge analytical appliances, and specific VA applications, distribute the required compute resources between those various elements and the cloud. These systems can offer very effective solutions, but are constrained by the need to upgrade all the components within the surveillance system. What about legacy system upgrades, or mixed upgrades with new and existing hardware installations? Is there a flexible way to add VA to a variety of deployment scenarios?

Flexible Solution

To implement this enabling technology, and more rapidly deploy surveillance VA it is essential that a variety of options exist for upgrading or adding to existing systems. A retrofit VA edge platform needs
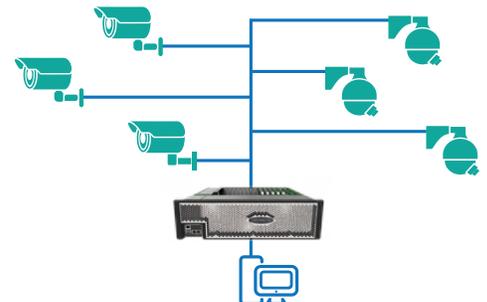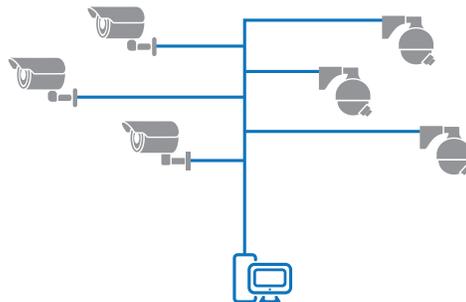
Utilize an edge platform to add video analytics to existing systems

to have significant flexibility to handle various compute performance requirements, camera and network interface requirements, and storage options that may be required depending on the existing infrastructure configuration. Having a highly flexible, configurable edge platform, simplifies the engineering for a variety of VA applications, and creates a standardized platform for a variety of fielded installations.

The Artesyn MaxCore™ IPC Platform

The Artesyn MaxCore™ IPC system offers an incredibly flexible platform as an edge video analytics micro server. A simplified block diagram is shown in Figure 1. A potential platform configuration is illustrated in Figure 2.

The MaxCore IPC platform has 15 PCI Express slots, an Intel® Xeon® Processor D CPU, and integrated PCIe Gen 3.0 switching. This large PCIe slot capacity offers a range of integration options:

- Additional CPU resources can be added through various Artesyn CPU PCIe add-in cards which support E3, i7, and i5 class processors.

- GPU or other accelerator cards can also be added depending on the needs of the VA or the edge inferencing requirements.

- A variety of camera interfaces, using standard PCIe add-in cards, including analog and digital cameras, as well as different network communication requirements.

This PCIe card capacity allows this edge platform to serve as a data or video aggregation point, simplifying installations and the network.
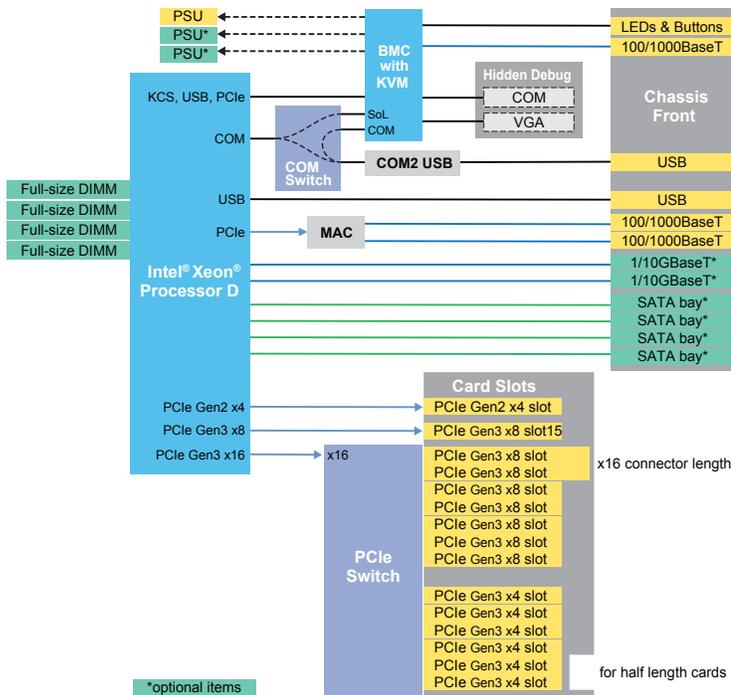

Artesyn MaxCore™ IPC Platform

The MaxCore IPC platform offers large and flexible storage capacity options. Up to four SATA drives can be integrated into the platform itself, providing large storage capabilities with either HDDs or SSDs, or the PCIe slots can be used for storage with Artesyn NVMe M.2 SSD carrier cards.

This combination of flexible compute performance, highly flexible camera and network interfaces, and very large storage capacity options allows one edge platform to be used across a wide range of surveillance installations, simplifying the deployment and retrofit options. The flexibility to change PCIe cards for compute resources, accelerator cards, camera interfaces or additional storage provides a future-proof platform that can be upgraded and reconfigured as technology changes.

Learn More

Artesyn can support demonstration evaluations, integration services, and other support requirements. *Learn more about the MaxCore IPC platform.*
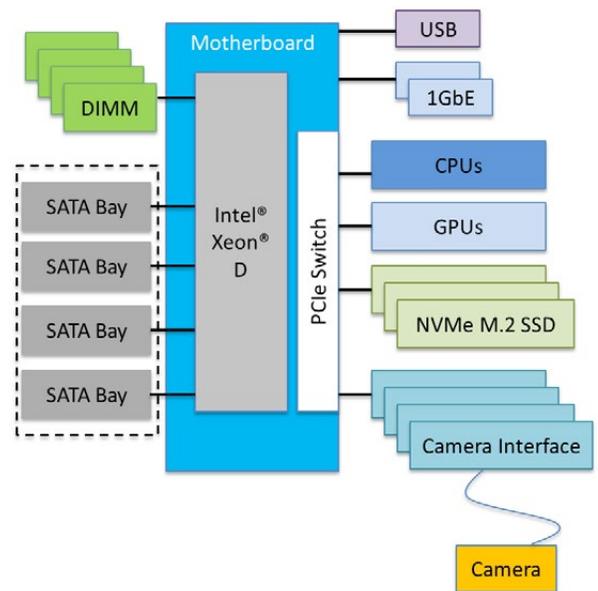

Figure 1. MaxCore™ Simplified Block Diagram

Figure 2. Edge Surveillance Configuration

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