

Video Analytics Architectures

	Agent Vi's IPoIP™ (distributed) architecture	Server based architecture	Edge based architecture
Detection performance	High Algorithms have access to raw video before compression, the architecture provides significant processing resources to enable high end image processing algorithms.	Medium – High Limited by quality of the available compressed video or by limited processing resources, or both.	Low – High Limited processing available in embedded environment. In some cases, a specific algorithm has been isolated and optimized to achieve high performance.
Feature set	High <ul style="list-style-type: none"> • Comprehensive range of analytics rules • No limit on no. and type of rules running on a camera • Support for fixed and PTZ cameras • Ability to create inter camera detection scenarios 	Medium – High <ul style="list-style-type: none"> • Some offer a variety of rules • No. of rules on a camera is usually limited • Most products do not offer PTZ support • No inter camera detection scenarios 	Low <ul style="list-style-type: none"> • Usually a small variety of rule types • No. of rules on a camera is typically limited to 1-2 • Some products offer PTZ support • No inter camera detection scenarios
Scalability	High A server with a quad core processor can support up to 200 cameras running any combination of analytics rules. Server capacity can easily be increased to thousands by adding additional processors or server machines.	Low A server is required for each 4 to 16 cameras.	High A server is usually required only for management and setup operations and can support a large number of edge devices.
Bandwidth usage	Low Each edge device uses an average bandwidth of 25 kilobytes / second when performing analytics.	High When the server processes compressed video, typical network usage is 500 kilobytes / second and higher.	Low Data is usually transmitted only when an event is detected.
Upgrade path	"Future Proof" Since most new features are developed on the server side, there is little need to upgrade edge device firmware when a new product version is released. Future increases in required processing resources are easily handled by adding an additional server.	Reasonable Software upgrades are relatively easy because of the Server based platform. Problems occur when a new feature requires additional processing resources and an existing server supporting 8 cameras can suddenly only support 6.	Problematic Each newly developed feature or bug fix requires firmware updates on the edge device. In large installations this can become an issue. Newer algorithms requiring more processing resources may not be compatible with deployed edge devices and may require hardware replacement.