

Configurations & System Design

Configuration Scenarios for designing and implementing CompleteView Video Management Software.

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Introduction

CompleteView Video Management Software products can be used with Analog & IP video sources and can scale up to large multi-site distributed systems. This document will demonstrate a variety of installation sizes and scenarios using CompleteView. Additionally, CompleteView can be installed on hardware provided by Salient or can be obtained as software only, and installed on a Commercial Off The Shelf (COTS) hardware platform; this is also demonstrated.

Installation Example, Analog

In this installation example, analog cameras are directly connected to the CompleteView server. Video capture cards are installed in the server and the analog video feeds terminate directly into the cards. Up to 16 cameras can be directly connected per server.

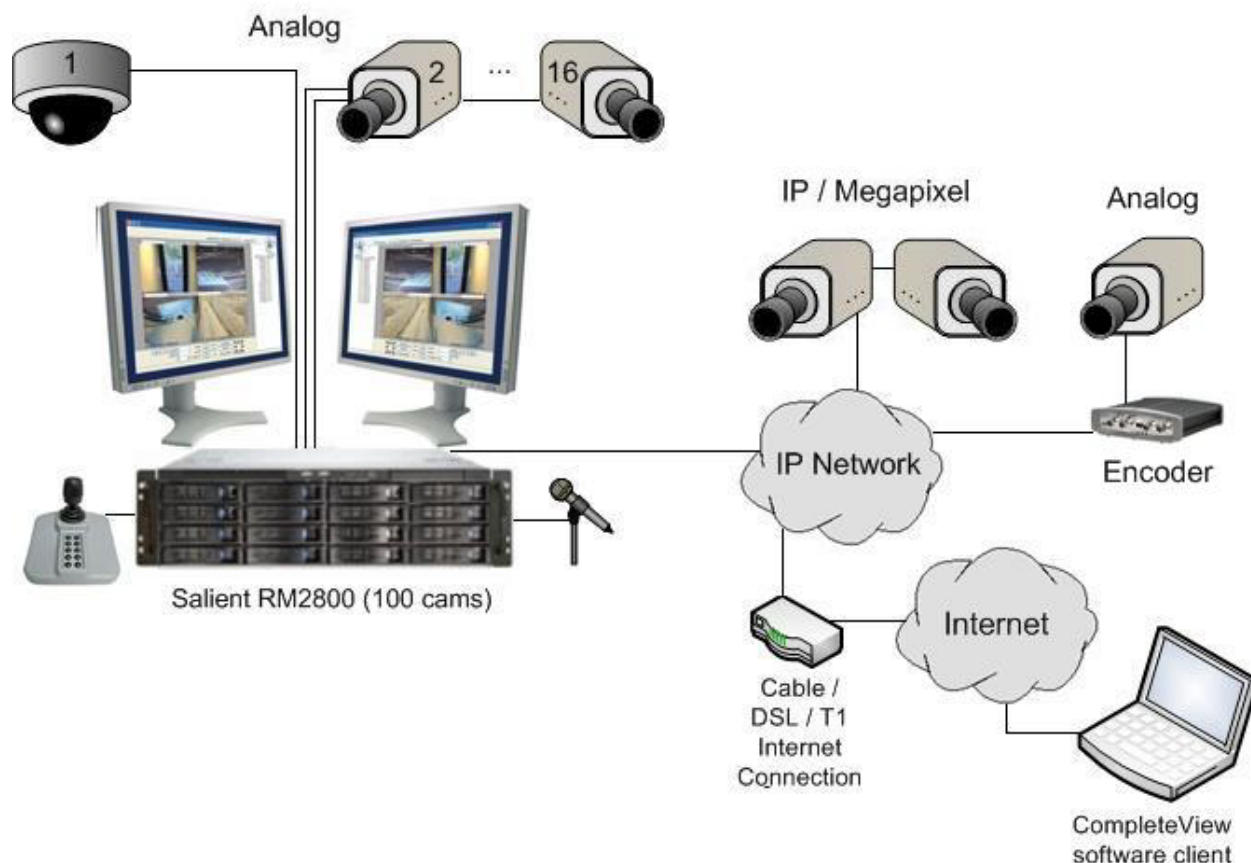
Pan, Tilt and Zoom (PTZ) cameras can also be connected. PTZ camera movements are controlled directly by the CompleteView server, which has support for a variety of PTZ control protocols (over 20 at the time of this writing). In this scenario, audio is recorded with the video and a joystick is used to control PTZ cameras.

If this server was connected to an IP network, multiple CompleteView servers could be managed together and video from multiple CompleteView servers could be viewed on the same monitor, if desired.



Installation Example, Hybrid

Network Connected, Standalone Hybrid System



Scenario Two: Hybrid Installation

In this example, the CompleteView server is supporting a mixed analog and IP or hybrid installation. Up to 16 analog cameras can be directly connected per server. A mix of standard resolution, Megapixel and High Definition IP cameras are also recording to the server.

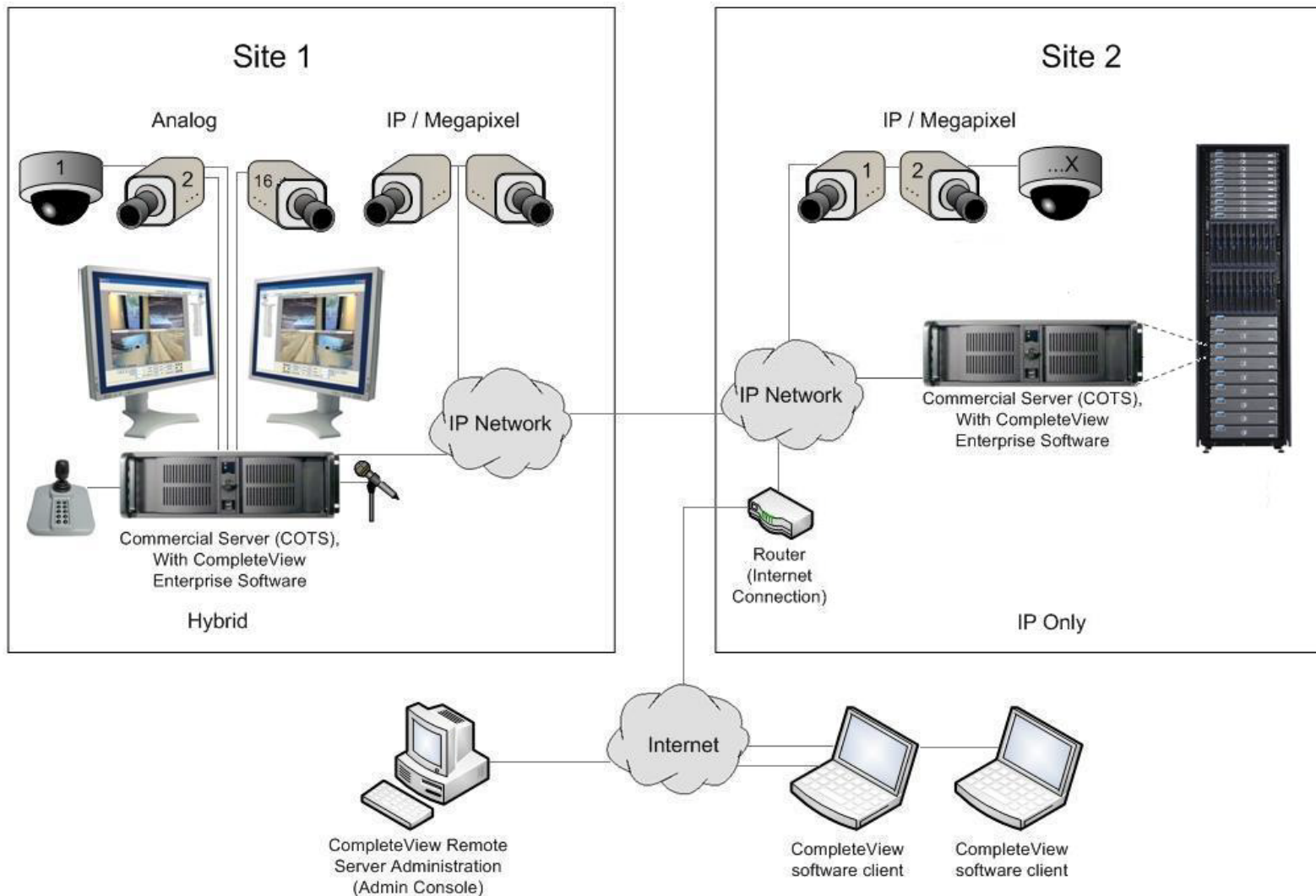
Additional analog cameras can be recorded to the server by connecting them to an encoder. The video is streamed over the IP network and is treated as an IP camera video feed by CompleteView.

CompleteView Standard and Enterprise editions have no limit to how many cameras can be used on one server simultaneously. The only limitation is what the server hardware and IP network will support. An enterprise model Salient RM2800 server is used, which can support up to 100 cameras under typical conditions. The actual number of cameras that can be used on a server is dependent on many factors such as camera resolution, frame rate, compression type, motion detection & live viewing of video.

Cameras can be viewed remotely from another computer located anywhere. Remote connections over the local IP network or the Internet are supported. Any CompleteView client software application can be used, including the Video Client, Alarm Client or Web interface. The server settings can be managed remotely. Server as well as device status can be viewed using CompleteView's Admin Console, locally or remote.

Installation Example, Enterprise Hybrid / IP

Multi-Site, Campus System



Multi-site, high camera-count enterprise installation.

In this installation example we have multiple sites integrated together. Site 1 has a hybrid installation using some analog and some IP cameras. Site 2 is 100% IP camera based. A mix of standard resolution, megapixel and PTZ cameras are used. CompleteView software is installed on Commercial Off The Shelf servers instead of Salient hardware.

In this installation many servers are used and managed together. A component of the CompleteView Standard and Enterprise editions called Admin Console is used to manage all the servers simultaneously. Additionally, if there is a problem with storage, cameras, or servers the administrator can instantly see this and proactively respond to and troubleshoot issues.

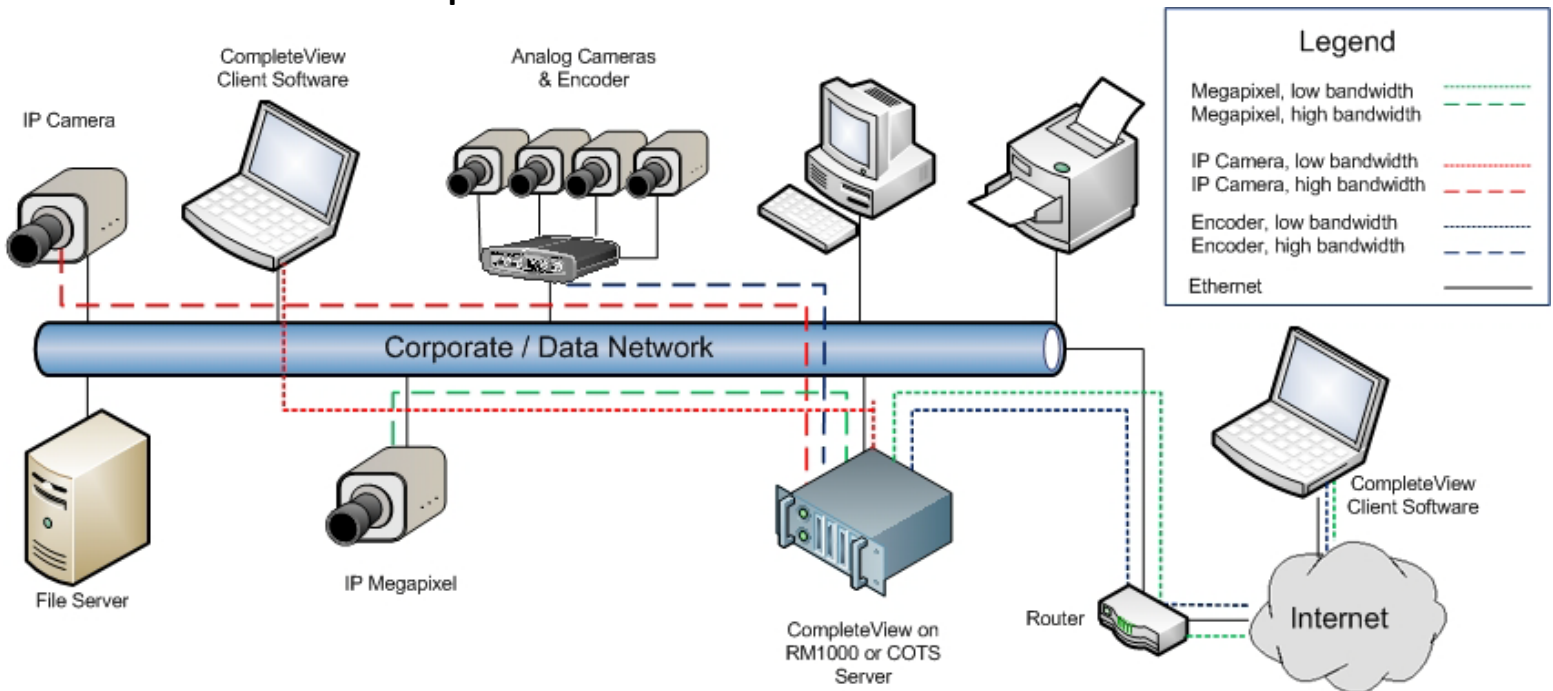
Administration and live viewing can be done from any workstation on the local network, or, if enabled can be accessed over the Internet.

Network Diagram & Data Flow

Introduction

This section will explain how video data flows over the network when using a CompleteView system. Two network configuration examples will be examined.

IP Video on the Corporate LAN

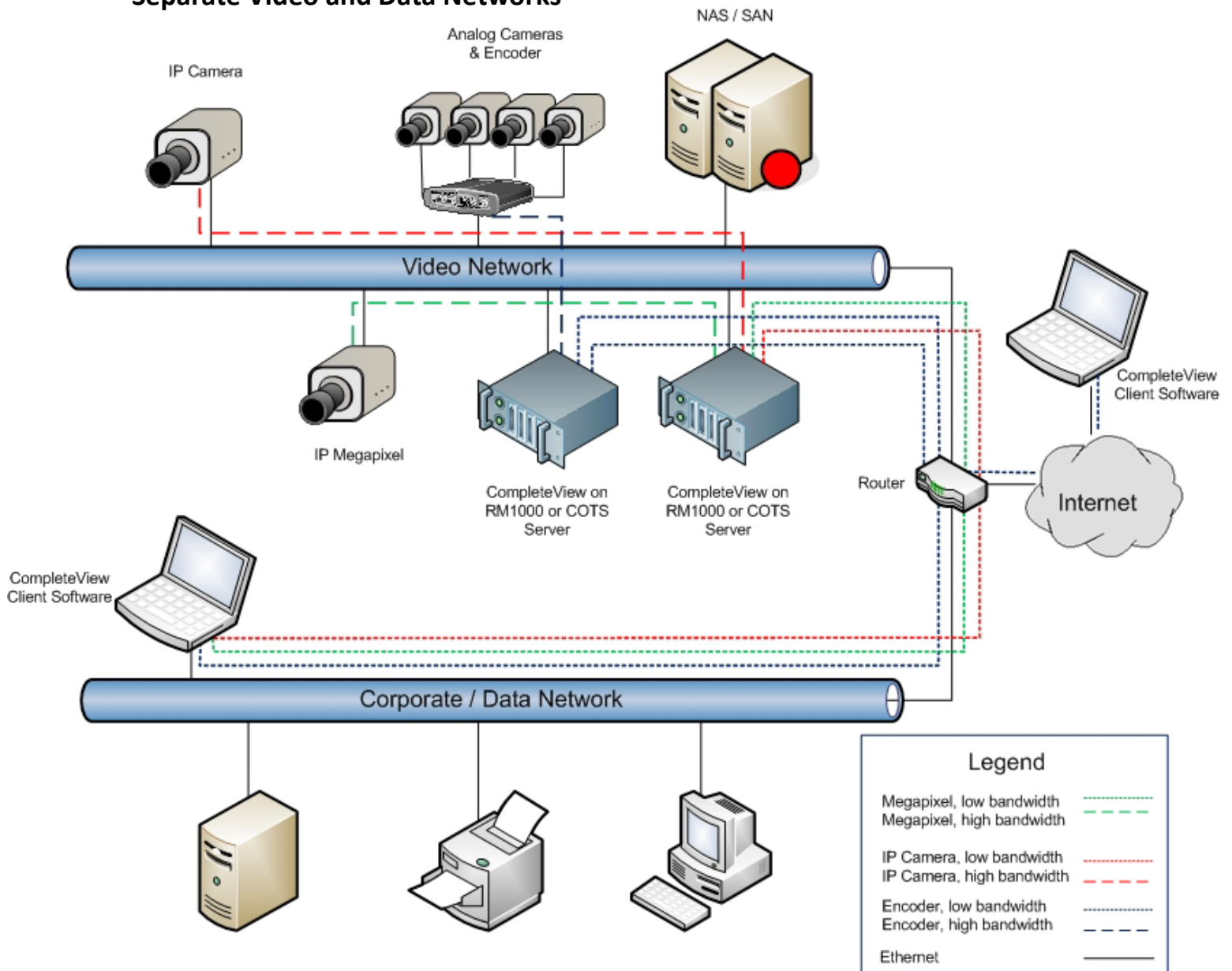


In low camera count installations it may be feasible to transport the video from IP cameras over the existing corporate network. Most Local Area networks (LAN) have a significant amount of unused bandwidth available which can be used to support the IP video installation without any noticeable impact on the business applications running on the network.

In this example high bandwidth video streams are being recorded to the CompleteView server and low bandwidth streams are pushed to clients viewing the video. This is because of a feature specific to the CompleteView software called Dynamic Resolution Scaling. Video is

configured to record at whatever resolution the administrator requires. If the client application is viewing the video at a resolution lower than what is being recorded, the CompleteView server only transmits the necessary resolution to fill the video window on the client screen. This has no impact on the video being recorded. This feature optimizes the amount of bandwidth required to transmit video on the corporate network. This also has no negative impact on the quality of the video being viewed on the client because the video would have been resized when it reached the client workstation to fit in a viewing area smaller than the original video resolution.

Separate Video and Data Networks



Installations with higher camera counts and higher resolution cameras may require a separate video network. This does not require a significant amount of additional equipment. The existing Ethernet



infrastructure is used but a new network switch is added. The Ethernet cables connecting IP cameras and encoders to the network terminate to the new switch which is dedicated to the cameras and video management software servers. The new switch supporting the video network is connected to the corporate network by a router.

Computers running CompleteView client software are able to access the video from the video network through the router, however video associated with recording, archiving and other operations will not be transmitted over the corporate network. This means a lower impact on users and applications accessing the corporate network.

As in the previous example, high resolution and high bandwidth video is being downloaded to the CompleteView server for recording. Dynamic Resolution Scaling reduces the bandwidth necessary to transmit the video to client viewing stations which are located both on the corporate network and over the Internet. In addition, video from multiple CompleteView servers is being viewed simultaneously on a client workstation.

About Salient: Salient Systems **CompleteView**[™] is the premiere application software for IP and analog video management. As an industry leader in open standards for digital video surveillance, Salient's advanced software suite provides enterprise-level video management which is scalable and easily adapts to evolving business needs. With **CompleteView** enabling your enterprise you can monitor, maintain and manage cameras, servers and users from anywhere, at any point, at any time.

About the Author: Brian Carle is the Product Manager for Salient Systems Corporation. Prior to Salient he worked as the ADP Program Manager for Axis Communications.

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