

Support for High Definition Cameras.

Support for High-Definition IP Cameras

Kevin O'Neal

DeVry University

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My choice for the 150 high definition surveillance cameras would be the Aventura CAM-IPM-2D-29P-IRVP 2 Megapixel IP Dome Camera. This camera has 2.0 Megapixel Resolution (1600x1200), Infrared/IR Cut Filter up to 60ft. and POE (Power Over Ethernet) support.



These cameras should be combined with the Cisco Catalyst 3750-24PS switch at the access layer. 20 cameras should be combined on a single switch creating 160 mbps of maximum bandwidth per switch. By using 2 IP cameras at each location, redundancy can be created in the event of a switch failure. At each location, each of the two cameras would be on separate switches. The Cisco 3750 series access switches are IEEE 802.3af, QoS, and rapid spanning-tree compliant. The 8 Cisco Catalyst 3750-24PS access switches should be combined with 2 or more Cisco WS-X4624-SFP-E line cards installed in a Cisco Catalyst 4506-E Chassis with redundant, hot-swappable power supplies and redundant, hot-swappable Supervisor Engine 6-E's. The Cisco Catalyst 4506-E with up to 6 slots per chassis allows for both redundancy and scalability. In this merged distribution and core layer, the next step would be the media servers at a rate of 16 cameras per media server. In this configuration each switch will support up to 20 cameras per switch leaving scalable room and room for redundancy at the access layer. The 24 port GigE, of the merged distribution and core layers should more than match the 8 mbps needed for the constant high-def data flow to each port.

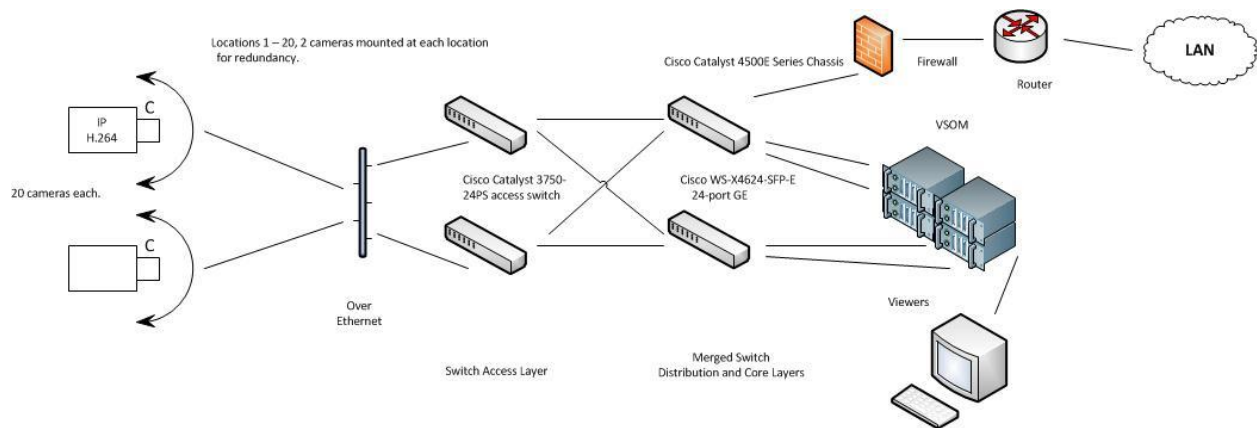


In this network scheme, all 150 cameras will be segmented away from the rest of the network for security reasons. The Cisco hierarchical model is followed with the access layer and the merged

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distribution/core layer. Firewalls would protect security feeds along with utilization of Cisco IOS security protocols and commands from the rest of the LAN. Physical and virtual redundancy requirements would be satisfied in both the access layer and the merged distribution/core layer. With the use of the Cisco Catalyst 3750 and 4500-E series switches, minimal rack space is used because of integration. At the distribution/core layer, connection to video servers (and optional audio) would utilize QoS and spanning tree protocol to ensure seamless streaming of the H.264 codec streams at 5fps.

Other cameras researched were: Aventura CAM-IPM-03D-21IR-VP, Vivotek IP7361 Day/Night 2MP Outdoor Bullet Network IP Camera and AXIS Q1910 Thermal Network Camera.



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