Date: April 5, 2021

Prepared For:

Newport Mesa Unified School District
Jonathan Geiszler
2985 Bear St., Bldg. A
Costa Mesa, California 92626

Project Description:

RFI #104-21
INSTALL AND IMPLEMENTATION OF A
DISTRICTWIDE INTEGRATED SECURITY SYSTEM

Prepared By:

Salvador Palacios
Account Executive
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20917 Higgins Court
Torrance, CA 90501

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Cover Letter

April 5, 2021

Jonathan Geiszler
Director of Purchasing & Warehouse
Newport-Mesa Unified School District
2985 Bear Street, Building A
Costa Mesa, CA 92626

Dear Mr. Geiszler,

VectorUSA is pleased to respond to Newport Mesa Unified School District's (NMUSD) RFI# 104-21 Install and Implementation of a Districtwide Integrated Security System. Statements made in the following information enclosed for the District's review and consideration are true and correct. VectorUSA has an extensive background serving customers in a wide variety of industries with true turnkey solutions. VectorUSA's Physical Security Division helps businesses and organizations prevent crime, eliminate intellectual property breaches, decrease vandalism, and assist with putting together lockdown procedures and emergency evacuation programs. Our physical security expertise includes consulting, designing, facility upgrades, implementation of various physical security technologies while providing ongoing training, support, and managed services for a wide variety of technology-based systems.

Headquartered in Torrance, California, with additional offices in Arizona, California, and North Carolina, our team consists of over 300 employees including, but not limited to consultants, network and system engineers, technical personnel, business development and customer service agents. Some of our business partners include Avigilon, Salto, HP, Cisco, Milestone, Atlas, Singlewire, and other strategic technology vendors that specialize in a diverse array of technologies. These partnerships allow us to provide "A La Carte" services and solutions that help our customers achieve their desired business outcomes. VectorUSA is licensed in the State of California (No. 654046) holding current C-7, C-10, C-61/D56 and B licenses.

In closing, VectorUSA is fully capable to design, build, integrate and manage the following proposed Avigilon and HP solution for a districtwide turnkey deployment inhouse with no need to outsource any of the job. We look forward to the possibility of assisting NMUSD with advance technology initiatives that ultimately drive success. We appreciate the opportunity to submit this response for your consideration and stand ready to respond to any questions or interviews for additional information. Your point of contact will be Salvador Palacios.

Respectfully,



Salvador Palacios
Account Executive
(310) 436-1090
salvadorpalacios@vectorusa.com

June 26, 2020

To whom it may concern:

Re: Manufacturer Authorization Letter

This letter is to confirm that the company at the address noted below is a certified Avigilon Service Provider and is a Partner in good standing.

Vector USA
20917 Higgins Ct,
Torrance, CA, 90501
United States

In order to be an Avigilon Service Provider in good standing, a company is promptly paying all invoices, has an adequate number of employees who are fully certified as having been trained through Avigilon training programs on how to install and provide first line of support for all Avigilon products, and has completed several Avigilon solution implementations.

This letter is subject to review and renewal on an annual basis, and good standing can be revoked at any time. Please contact the undersigned if you have any questions.

Sincerely,

AVIGILON CORPORATION

Per: 
Ryan Nolan
AVP, Avigilon Global Sales
Office: 214-445-4650

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Executive Summary

VectorUSA is pleased to propose an Avigilon solution considering that Avigilon Security Solutions are designed as easy-to-use software and hardware IP network products that include image capture, analysis, storage, transfer, and playback of high-quality video surveillance footage with visually lossless compression (no perceptible loss of visual detail), and electronic access control management.

Avigilon Security Solutions may be configured into a customized, end-to-end, integrated intelligent security system that provides high quality video and data using relatively low bandwidth.

Avigilon Unified Security Solutions include features and advantages such as:

- NDAA and Made in America Platform
- Cyber Security and GDPR
- FIPS 140-2 Compliance
-
- Avigilon PoE based Electronic Access Control
- School Lockdown Feature (Panic Button or Red Card, Rules, Schedule Override, Law Enforcement access)
- Wireless Lock hardware Integration (To be used for specific doors with no infrastructure)
- Unusual Activity Detection
- Automatic event detection
- Pattern-based analytics algorithms
- Teach-by-example self-learning capabilities
- Object classification and search
- Appearance search
- COVID-19 Features Included
- Focus of Attention
- Avigilon Native Facial Recognition (Extra License Cost)
- License Plate Recognition (To be used at parking Entries)
- Alarm monitoring and Intrusion System Integration
- Open Platform and Integrations with third party platforms
- Video export and archive to central location
- Bandwidth Control through HDSM Smart Codec Technology
- Enterprise-level server and Site management
- Extended video wall viewing
- Avigilon Cloud Services
- Remote viewing via mobile devices through secure central CLOUD-CONNECTED authentication

VectorUSA would be able to design the system based on below tested and verified architectures, utilizing existing or new HPE Server and Storage platform meanwhile covering the Avigilon VMS requirements.

- HPE DL380, 580, Apollo 4200 and 4500 physical server platform
- HPE Nimble Hybrid platform
- VMWare Enterprise to support full redundancy and GPU usage to support appearance search on Avigilon VMS platform

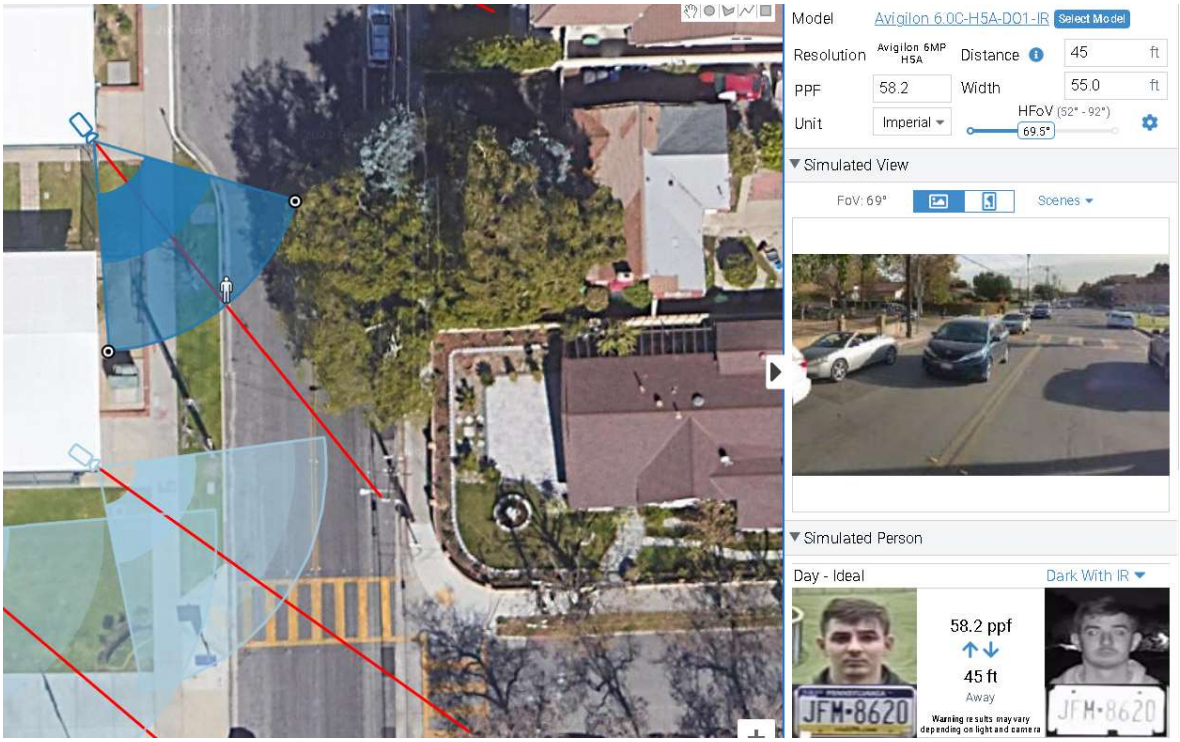
Solution Narrative

Design Criteria

VectorUSA utilizes IPVM and Avigilon design and simulation tool for demonstrating the area coverage and pixel density calculation on target distance.

This simulation tools makes the design phase as smooth as possible, providing the confidence on camera placement and revision ahead of time.

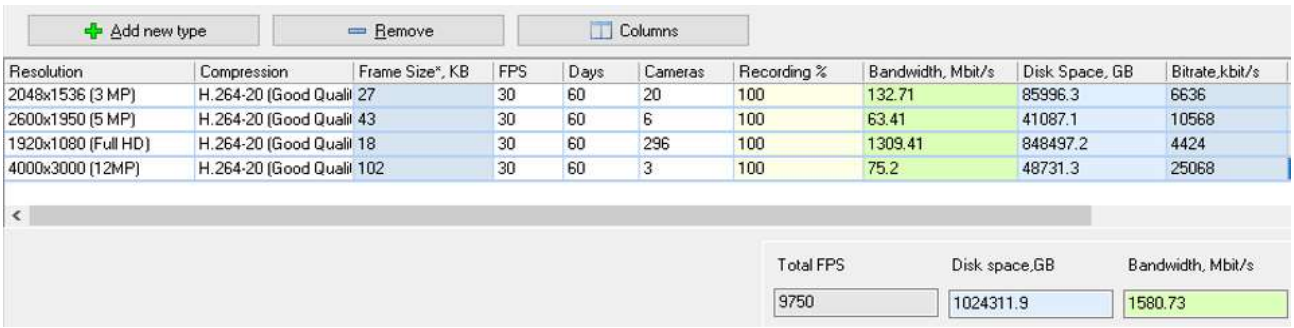
Please see below samples as the results of the IPVM calculator as reference:



Server and Storage Calculation

VectorUSA utilizes combination of the Avigilon, and OpenPlatform Calculators for storage and bandwidth calculation.

VectorUSA will size the servers considering computing resource requirement for failover and redundancy aspect.

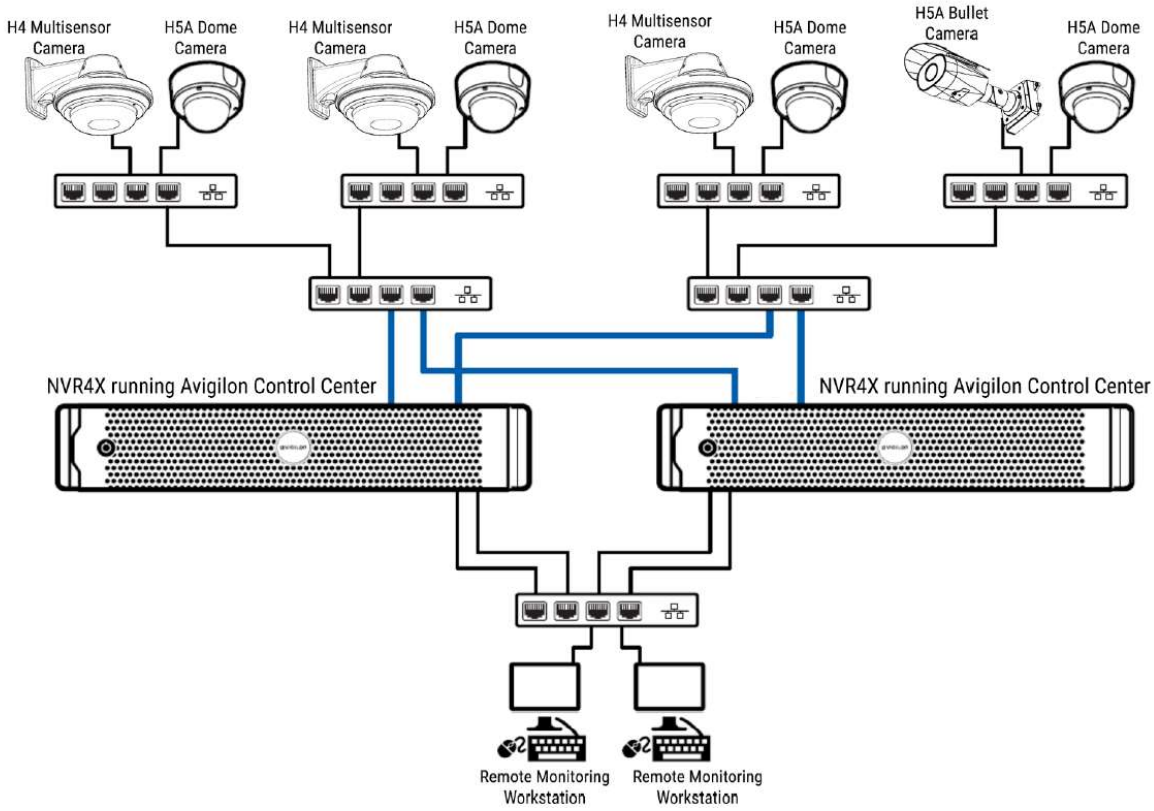


Resolution	Compression	Frame Size*, KB	FPS	Days	Cameras	Recording %	Bandwidth, Mbit/s	Disk Space, GB	Bitrate,kbit/s
2048x1536 (3 MP)	H.264-20 (Good Quali	27	30	60	20	100	132.71	85996.3	6636
2600x1950 (5 MP)	H.264-20 (Good Quali	43	30	60	6	100	63.41	41087.1	10568
1920x1080 (Full HD)	H.264-20 (Good Quali	18	30	60	296	100	1309.41	848497.2	4424
4000x3000 (12MP)	H.264-20 (Good Quali	102	30	60	3	100	75.2	48731.3	25068

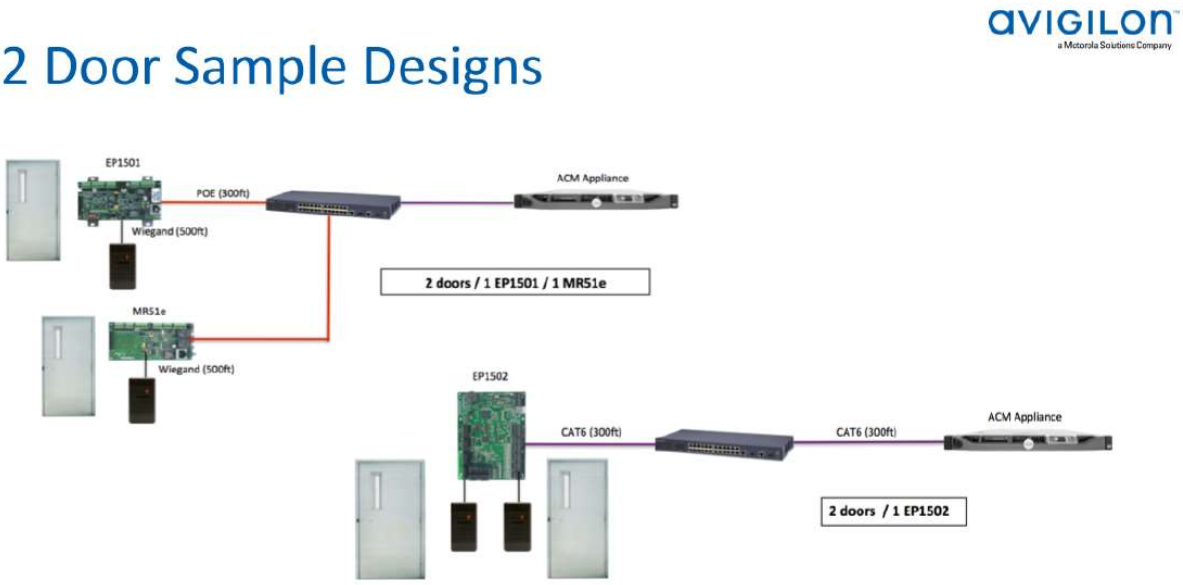
Total FPS	Disk space,GB	Bandwidth, Mbit/s
9750	1024311.9	1580.73

Solutions Diagram

Sample Network Topology for ACC

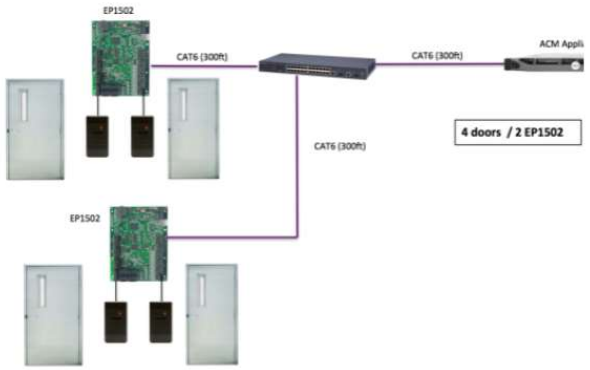


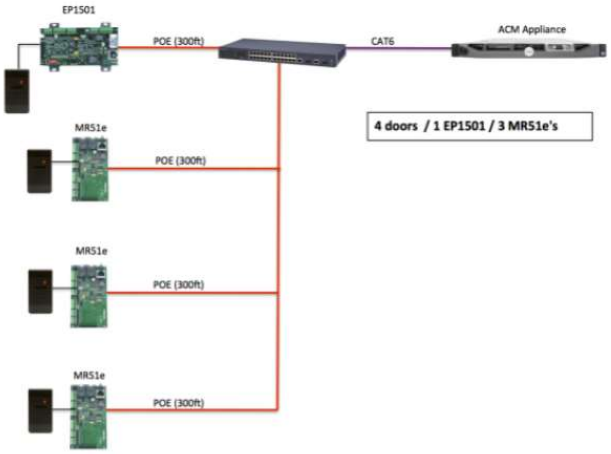
Sample Topology for ACM



avigilon
a Motorola Solutions Company

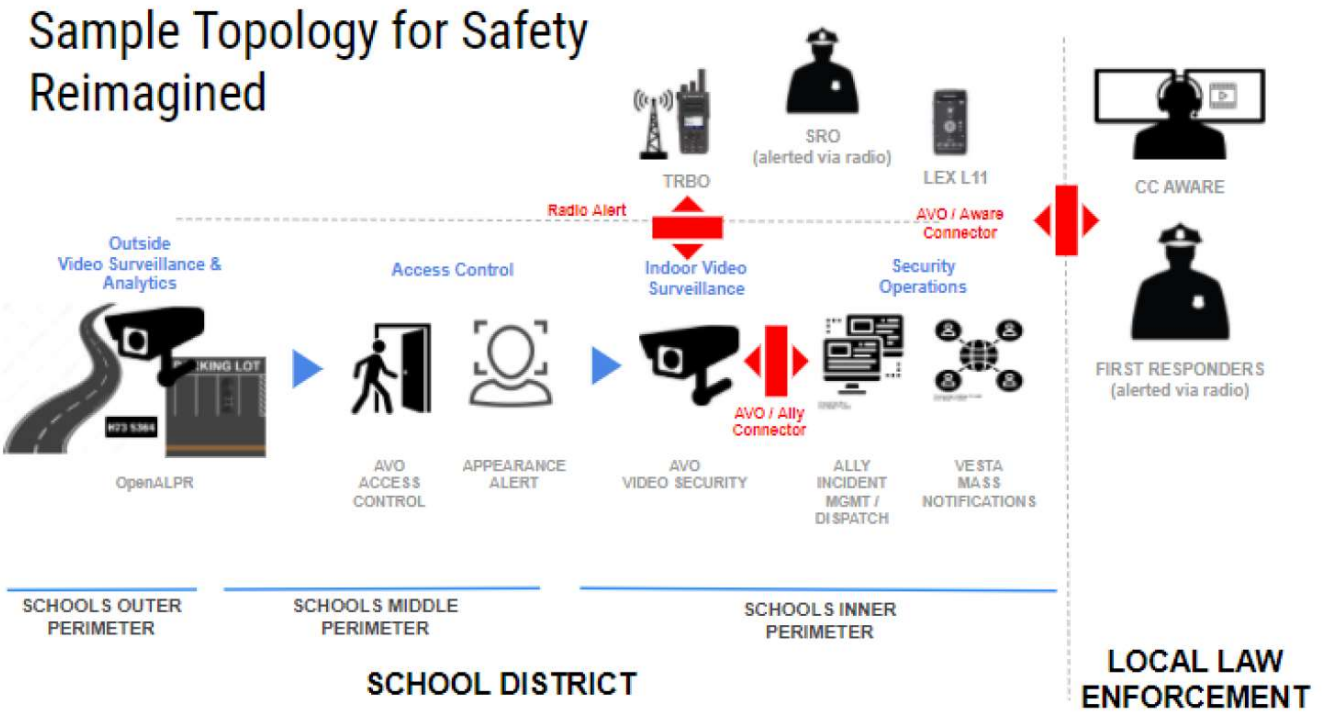
4 Door Sample Designs







KEY FEATURES	BENEFITS
Reduced hardware costs	Reduce the cost and complexity of added hardware by connecting the Mercury controller directly to the panel interface module, gateway or communications hub for a secure wireless path to the lock.
Modular design	Flexibility to customize the lock to meet the needs of the application now, and purpose-built to allow for customizing the lock rather than replacing it in the future, with little to no operational disruption.
Increased security	Turn any keyed door or sensitive area into a monitored access door to improve security in and around facilities.
Flexible lock configurations	Ability to customize the reader type, chassis type, locking functions, power options, lever styles, finishes and more according to the needs of the application.
No integration license fee	Ability to add wireless locks to new and existing projects without additional licensing fees.



Solution Benefits

The VectorUSA Avigilon/HPE solution provides the following benefits.

SECURITY STAFF EXPERIENCE:

Ease of Use
User-friendly software is straightforward and intuitive, allowing staff to operate and manage the system, whether they are an IT novice or an expert.

Focus of Attention
Avigilon Focus of Attention interface shows a comprehensive topology of your entire camera population, with nodes that represent each camera, grouped in a honeycomb formation according to how cameras are organized in the Site View.

Powerful Search
Avigilon Appearance Search™ technology sorts through hours of footage with ease to quickly locate a specific person or vehicle of interest across an entire campus in real-time.

Quick Action
Access Control Manager (ACM) generated door events allow you to create rule-based actions and notifications for quick on-site responses, including immediate school-wide lockdown.

Unified System
ACM™ integrates with Avigilon Control Center (ACC) video management software to provide you with a powerful and unified security solution that helps you proactively monitor and secure your sites.

IT MANAGEMENT EXPERIENCE:

- Ease of Management on HPE Server/Storage platform based on local IT experience and Hardware availability
- Database redundancy through distributed management database
- Five Years Warranty included on Camera Hardware.
- Avigilon IP Cameras firmware update through ACC VMS
- Avigilon IP Cameras password update through ACC VMS
- Monitoring System Health
- Active Directory integration and ease of user management on both ACC and ACM applications
- NO ANNUAL SUPPORT Cost for Avigilon ACC and ACM licenses (Only for major release change if needed)
- Camera Failover license included (Cameras at branch libraries would be able to record on Central library servers in case of hardware failure)
- Limited Lifetime Warranty on Aruba switches included.

The VectorUSA proposed Avigilon solution will provide NMUAD full camera coverage and secure door access with Visitor Management capabilities on one single pane of glass. VectorUSA will perform a site survey to determine the ideal locations for cameras and to ensure that all necessary door access hardware is provided for.

RFI Questionnaire

I. General Requirements	
A. Deploy systems and integration with the best value to the District	Avigilon's Access Control Manager (ACM) and Avigilon Control Center (ACC) have been deployed at many school districts across North America. ACC's total cost of ownership is lower compared to other solutions because of how our software is licensed. Our channel licenses are a one time purchase. We do not have annual recurring fees for incremental version updates (e.g. from v7.00 to v7.99) or technical support. We also offer a 5 year advance replacement warranty on our cameras and NVRs. No training fees. One time licensing rather than annual recurring fees
B. Implement proven and reliable technology	ACM supports field hardware produced by Mercury Security which has the largest installed base of any OEM Access Control panel manufacture and has been in business since 1992. The H5A camera line features our next-generation video analytics technology to help focus your attention on potentially critical events, providing a smarter and more powerful video security solution from the moment you set it up. 5 Year warranty included. https://www.avigilon.com/products/cameras-sensors/ https://www.avigilon.com/products/video-infrastructure/nvr https://www.avigilon.com/products/ai-video-analytics/ When connected to Avigilon Control Center (ACC) software, the Avigilon AI Appliance adds patented Avigilon self-learning video analytics and Avigilon Appearance Search™ technology to almost any IP camera. Fourth-generation Avigilon Network Video Recorders (NVRs) offer our highest capacity, retention and throughput to provide secure, reliable and scalable platforms for high-performance security solutions. NVR4s come standard with optimized recording technology, a three-year Avigilon limited warranty with dedicated support and numerous additional features, including Avigilon Appearance Search technology.
C. High to medium-high system maturity level	Avigilon's products have been manufactured, sold, and deployed since 2006.

D. Scalable	ACM supports up to 2048 doors on a single server (or virtual instance). You can grow beyond this by adding additional ACM instances for limitless scalability. ACC can support >300 cameras per server, >10,000 cameras per site, and >100 servers per site. Although no limits are imposed by licensing, actual limits will depend on the hardware environment. Avigilon has tested up to the numbers indicated. Additionally, Avigilon's storage solutions can scale up to 1.5PB, if necessary.
E. Flexible – communication/ issues at individual schools. Some have better connections than others.	ACC can operate in low bandwidth networks because of our High Definition Stream Management (HDSM) technology, which sends you only the portion of the image that you need. That means you get incredible image quality and resolution with only a tiny amount of bandwidth and storage. HDSM is all about intelligently managing bandwidth and storage, which means that you never have to worry about adding more megapixels. HDSM keeps file sizes small, so you can add cameras while keeping bandwidth and hardware needs low. Using less data and less bandwidth means you can scale up while keeping costs down, with minimal impact on network resources.
F. Serviceable by NMUSD staff	NMUSD staff can contact Avigilon technical support directly via phone and email. Avigilon also provides free online training and an online help center for both video and access control, which can be found at help.avigilon.com
G. Simple and efficient integration	Avigilon cameras and ACC conform to ONVIF standards. ONVIF is a global and open industry forum with the goal of facilitating the development and use of a global open standard for the interface of physical IP-based security products. ONVIF creates a standard for how IP products within video surveillance and other physical security areas can communicate with each other.
H. Support for wireless solutions	Avigilon cameras can operate on wireless networks, provided there is sufficient throughput and reliable connectivity, but wired networks are preferred.
I. Compatible with District's HP servers	Avigilon recommends using Avigilon branded servers, because they are purpose built to provide secure, reliable, and scalable platforms for high-performance security solutions, but ACC can run on 3rd party servers, including HP, provided that they meet or exceed our recommendations.

J. Deployable in a virtual server environment	**Avigilon ACM:** ACM Virtual is a Certified VMware Ready solution designed for deployment on a virtual server, maintaining scalable design while reducing capital and operating expenditures Avigilon ACM also has upcoming support for Hyper-V. **Avigilon ACC:** Avigilon has not done any formal testing with virtualization. You will generally get better performance running ACC within a native host OS on a physical server, but as long as the ACC Server process is allocated sufficient resources more than the recommended system requirements, there should not be any issues. Allocate additional resources (CPU and memory) to the virtual machine for ACC Server. You need to consider the virtualization overhead when you plan for the hardware of your host server.
K. Active Directory integration	ACM supports Active Directory integration via LDAP. ACC supports Active Directory integration.
L. Multiple local integrators (single regional integrator is not acceptable)	There are multiple Avigilon partners in the Southern California Region including (but not limited to) BlueViolet Networks, VectorUSA, Johnson Controls & Multicard.
M. Direct manufacturer support	Avigilon offers direct support for sales and support from regional teams and direct 24/7 end user tech support via our +1 888-281-5182 number. All services are at no additional cost.
N. No sole source equipment	Avigilon products can be purchased from any of our partners in the region.
O. Strong cyber-security support – Manufacturer responses must discuss cyber-security plan in response and also explain how firmware updates are performed	When using Avigilon cameras along with Avigilon ACC software, camera firmware is automatically pushed out to connected cameras as a part of the software update process. Users can optionally choose to defer these updates, although it is not recommended. Firmware can also be updated as a batch operation using Avigilon's Camera Configuration Tool, or by logging directly into a camera's web interface. See attached flyer in supplemental documents
P. No biometrics	Facial recognition is an optional, paid (licensed) feature of ACC. It is not available by default.

Q. Audio capability 1. Voice communication capability desired but voice recording will be disabled per District policy	Avigilon cameras come with an audio input and output for connecting external microphones and speakers. A few of our camera models come with a built in microphone. Voice recording can be turned on or off in the ACC Client software.

II. Access Control	
A. Access control technology not susceptible to cloning	ACM allows the use of secure, encrypted credentials in a variety of technologies. ACM fully supports OSDP for secure and supervised reader communications.
B. Proximity technology access cards (contactless smartcards)	ACM fully supports contactless smart card technology
C. Support for wireless solutions	Wireless Lock Support for Allegion, Assa Abloy & Salto.
D. Lockdown controls	ACM provides a single button-quick emergency lockdown of all entry points in case of emergency (external threat, etc.) and also allows for handling multiple emergencies simultaneously.
E. Integration with Intrusion Detection Systems	Supported
F. Consideration for future Cloud deployment	Yes
G. Mercury Security or similar intelligent panels available to multiple manufacturers (panels supported by only one system software manufacturer are not acceptable)	Our system works with Mercury Security.

III. Video Surveillance	
A. Consider integration with Police Department	We would need to know what video system the Police Department currently uses to determine what kind of integration is possible, but our system can be set up to be accessed by the Police Department through Avigilon Cloud Services (ACS), either through a web browser connection or by using our mobile application.
B. Local video recording server at each site	Video is recorded to on-premise NVRs.
C. Redundancy/backup	Avigilon NVRs are configured for either RAID 60, RAID 6, or RAID 5. Cameras can be configured to record to failover servers in the event that the primary server fails or loses connectivity.
D. Public monitor in admin waiting area	A workstation running the ACC Client or ACC Virtual Matrix can be displayed on a monitor in the admin waiting area.

E. Support for video analytic	Avigilon's H5A cameras and H4A multi-sensor cameras come with Avigilon self-learning video analytics features for object detection and classification for live or forensic events. These analytics include: ● Objects in Area ● Object Loitering ● Objects Crossing Beam ● Object Appears of Enters Area ● Object Not Present in Area ● Objects Enter Area ● Objects Leave Area ● Object Stops in Area ● Direction Violated ● Camera Tampering ● Social Distancing (H5A Only) ● Occupancy Counting When H5A cameras or H4A multi-sensor cameras are paired with the appropriate NVR, ACC can generate events/notifications when it detects a person not wearing a mask and can perform Appearance Searches, which allows a user to search for people or vehicles based on physical characteristics.

IV. Video Recording	
A. Standard video compression (H.264/H.265)	Avigilon H5A and H4 Multisensor cameras support both the H.264 and H.265 codecs. This can be configured on a per camera basis.
B. 45 days recorded video	The system will be designed with the appropriate server or servers to achieve the required video retention.

C. Motion sense recording	Motion detection can be used to trigger video recording. You can also configure the system to generate motion events that can be used when searching video or to trigger notifications and rules. There are two types of motion detection available: **Classified Object Motion Detection** analyzes the video and only reports the motion of vehicles or persons. This option is only available to Avigilon self-learning video analytics devices. **Pixel Motion Detection** observes the video stream as a whole and considers any change in pixel as motion in the scene. This option is available to most cameras that are connected to the system.
D. 5-10 frames per second recording rate	Avigilon's cameras are capable of recording up to 30 frames per second (fps), depending on the camera model. The recording rate can be configured on a per camera basis.

V. Video IP Cameras	
A. Vandal resistant camera housings that conceal direction of view	Avigilon's H5A Indoor and Outdoor domes and bullets have an IK10 impact rating. The H4A surface and pendant mount multi-sensor cameras also have an IK10 impact rating. Optional dome and multi-sensor camera covers with a smoked bubble can be purchased to be used instead of covers that have a clear bubble.
B. Minimum 3 Megapixel resolution	Avigilon's H5A cameras come in resolutions up to 8MP. H4A Multi-sensor cameras come in resolutions up to 8MP per sensor.
C. Onboard storage	Avigilon's H5A cameras and H4A multi-sensor cameras come with either a microSD or SD slot depending on the camera form factor.

VI . Intrusion Detection	
A. Support existing Ademco/Honeywell systems	Can be interfaced using outputs and inputs.
B. Integration with the Access Control System to provide for disarming the Intrusion Detection by presenting access credentials to record an audit trail	Supported with Intrusion Detection interfacing.

Additional RFI Response Requirements

Similar and Completed Solution Deployments in K-12 Schools with 20,000 ASA or higher

1. Irvine Unified, CA (ADA 35,000)	
Contact Name	Don Grudem
Email	dongrudem@iusd.org
Phone Number	(949) 936-5350

2. Fullerton Unified, CA (ADA 13,000)	
Contact Name	Sam Ricchio
Email	sam_ricchio@fulltertonsd.org
Phone Number	(714) 447-7483

3. Tustin Unified, CA (ADA 23,000)	
Contact Name	Doug Heckathorn
Email	dheckathrorn@tustin.k12.ca.us
Phone Number	(714) 730-7305

4. Oak Park Unified, CA (ADA 4,000)	
Contact Name	Enoch Kwok
Email	ekwok@oakparkusd.org
Phone Number	(818) 735-3201

5. Irvine Valley College, CA	
Contact Name	Anna Petrossian
Email	apetrossian@ivc.edu
Phone Number	(949) 541-5708

Budgetary Costs for Purchasing

At VectorUSA, we work with Avigilon to meet the needs of Newport-Mesa Unified School District. **In order to provide accurate pricing**, there are numbers of factors that will affect the overall solution (for instance: obstructed views, amount of area needed to be covered, corners, lighting, megapixels needed per area etc.). We will work closely with Newport-Mesa Unified to give you the fewest cameras with the most coverage as well as the best solution for access control. Before giving accurate pricing, a site walk would be needed to give an accurate estimate. As mentioned, there are no recurring fees with Avigilon and free online training and support are included.

Pricing should be considered when given by a partner integrator. VectorUSA and Avigilon can negotiate pricing and special district wide discounts to all partners so Newport-Mesa Unified will receive a fair price across the board.

Below is a sample setup for a high school with MSRP (not including integrator or partner discounts):

Avigilon Equipment and Parts		
Video Surveillance:		
Model Name	**Description**	**MSRP**
2.0C-H5A-DO1-IR	2.0 MP (1080p) WDR, LightCatcher, Day/Night, Outdoor Dome, 3.3-9mm f/1.3 P-iris lens, Integrated IR, Next-Generation Analytics	$1,000
2.0C-H5A-D1-IR	2.0 MP (1080p) WDR, LightCatcher, Day/Night, Indoor Dome, 3.3-9mm f/1.3 P-iris lens, Integrated IR, Next-Generation Analytics	$850
4.0C-H5A-DO1-IR	4.0 MP WDR, LightCatcher, Day/Night, Outdoor Dome, 3.3-9mm f/1.3 P-iris lens, Integrated IR, Next-Generation Analytics	$1,142
4.0C-H5A-D1-IR	4.0 MP WDR, LightCatcher, Day/Night, Indoor Dome, 3.3-9mm f/1.3, P-iris lens, Integrated IR, Next-Generation Analytics	$992
4.0C-H5A-BO1-IR	4.0 MP WDR, LightCatcher, 3.3-9mm f/1.3 P-iris lens, Integrated IR, Next-Generation Analytics	$1,142
5.0C-H5A-BO2-IR	5.0 MP WDR, LightCatcher, 9-22mm f/1.6 P-iris lens, Integrated IR, Next-Generation Analytics	$1,245
6.0C-H5DH-D1-IR	2x 3MP H5A Dual Head Camera. Indoor camera with built-in IR, Next-Generation Analytics	$1,300
10.0C-H5DH-D1-IR	2x 5MP H5A Dual Head Camera. Indoor camera with built-in IR. Next-Generation analytics.	$1,500
15C-H4A-3MH-180	3x 5 MP, WDR, LightCatcher, 4mm, Camera Only	$1,800
15C-H4A-3MH-270	3x 5 MP, WDR, LightCatcher, 2.8mm, Camera Only	$1,800
20C-H4A-4MH-360	4x 5 MP, WDR, LightCatcher, 2.8mm, Camera Only	$2,100
ACC7-ENT	ACC 7 Enterprise Edition camera license	$290
POE-INJ2-60W-NA	Indoor single port Gigabit PoE++ 60W	$150
H4-MT-POLE1	Pole mount adapter for use with H4A-MT-WALL1, H4-BO-JBOX1, H4SL, H4F, H4 PTZ, H4 IR PTZ and H4 Multisensor cameras.	$90
H4-BO-JBOX1	Junction box for the H4A HD Bullet, H4SL HD Bullet, or H4 Thermal cameras.	$90
H4AMH-AD-IRIL1	Optional IR illuminator ring, up to 30m (100ft), for use with H4AMH-DO-COVR1.	$330

IRPTZ-MNT-WALL1	Pendant wall mount adapter. For use with H4 IR PTZ or H4A-MH-AD-PEND1 on H4 Multisensor.	$95
H4AMH-DO-COVR1	Dome bubble and cover, for outdoor surface mount or pendant mount, clear.	$160
H4AMH-AD-PEND1	Outdoor pendant mount adapter.	$160
H4-MT-CRNR1	Corner mount adapter for use with H4A-MT-Wall1, H4-BO-JBOX1, H4SL, H4F, H4 PTZ, H4 IR PTZ and H4 Multisensor cameras.	$90
P20172-B21	HPE DL380 Gen10 4208 1P 32GB-R 2X500GB SSD-P816i-a NC 64TB HDD WIN SRV19 STD 2x800W RPS Server (Local Avigilon/HPE Recording Server)	$19,000
Access Control		
Model Name and Description		**MSRP**
Avigilon 3.0C-H4VI-RO1-IR - Avigilon H4 Video Intercom		$970.32
Avigilon H4VI-AC-RELY1		$101.25
Avigilon H4VI-MT-SURF1 - Surface mount adapter for H4 Video Intercom.		$189.86
Avigilon AC-APP-64R-ENT-6 - Access Control Manager Enterprise 6 –Web-Based PACS Plus Appliance for 64		$6,166.00
Avigilon AC-MER-CONT-LP1501 - Intelligent Controller, Linux Based with 1 door,2 inputs and 2 outputs, PoE+ Support		$1,224.00
Avigilon AC-ALL-SCH-PIM400-1501-LC - 900 MHz Panel Interface Module for 16 door intelligent controller (AC-MER CONT-1DR)		$2,953.80
Avigilon AC-HID-READER-SIGNO-40NKS-00-000000 - Signo40, Wall mount, 13.56mHz &125kHz, OSDP/Wiegand, Pigtail, Mobile Ready, BLE		$549.00
Schlage AD-400-CY-70-SI-SPA-626-P6-RH-4B-13-247-10-025-1 3/4"-S123 - Cylindrical Lock		$3,402.00
Schlage AD-400-993S-70-SI-SPA-626-P6-RHR-4B-1 3/4"-S123 - Surface Rod Trim		$3,735.00
SDC 45-A - UniFLEX™ 45 Universal Electric Strike/Door Release		$172.85
SDC 30-4-12-U - 30 Series - Ss Electric Strike 12vdc Dull Stainless		$812.75
HID DTC4250E - ID Card Printer & Encoder		$2,965.01
HID 2100CGGNN - iCLASS Card, 2k Bits (256 Bytes) w/ 2 App Areas, Unprogrammed, Front: Plain White Gloss Finish, Back: Plain		$5.30

Supplemental Data



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a Motorola Solutions Company

School Safety and Security

Avigilon provides comprehensive video security and access control solutions that help you create a safe and secure environment and protect what is most valuable — your students, staff and faculty.

Quick Action

Access Control Manager (ACM) generated alarms allow you to create rule-based actions and notifications for quick on-site responses, including immediate school-wide lockdown.

Powerful Search

Avigilon Appearance Search™ technology sorts through hours of video with ease to quickly locate a specific person or vehicle of interest across school grounds in near real-time.

Ease of Use

User-friendly software is straightforward and intuitive, allowing your School Resource Officer to operate and manage the system, whether they are an IT novice or an expert.

Easy Integration and Cost Savings

Our open platform security solutions allow for easy integration with your existing systems and technology. Our video management system (VMS) works with both HD and analog cameras. Our cameras are compatible with a variety of VMS platforms and our access control solutions support open field hardware from other leading manufacturers.

Efficient Bandwidth Management

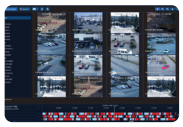
Avigilon's High Definition Stream Management (HDSM) and HDSM SmartCodec™ technologies reduce bandwidth and storage needs while maintaining image quality.

Avigilon Solutions for Education



Unusual Motion Detection

Continuously learns what typical activity in a scene looks like and then detects and flags unusual motion, revealing events that may have otherwise been missed.



Avigilon Control Center (ACC) Software

Allows easy review of live or recorded video with a simplified screen layout, AI-powered features, and the ability to quickly scrub the timeline and access video without a wait.



H4 Video Intercom

Combines a 3 MP wide dynamic range, low-light camera, with a high-performance intercom featuring noise reduction and echo-canceling technologies.



Analog Video Encoder

Convert standard analog video feeds into H.264 digital streams — a cost-effective way to include legacy cameras in a network-based IP-system.



Access Control Manager™ System

Browser-based access control solution allows you to immediately respond to alerts and record student attendance during school fieldtrips, routine security drills and emergency evacuations via the ACM Verify™ browser.

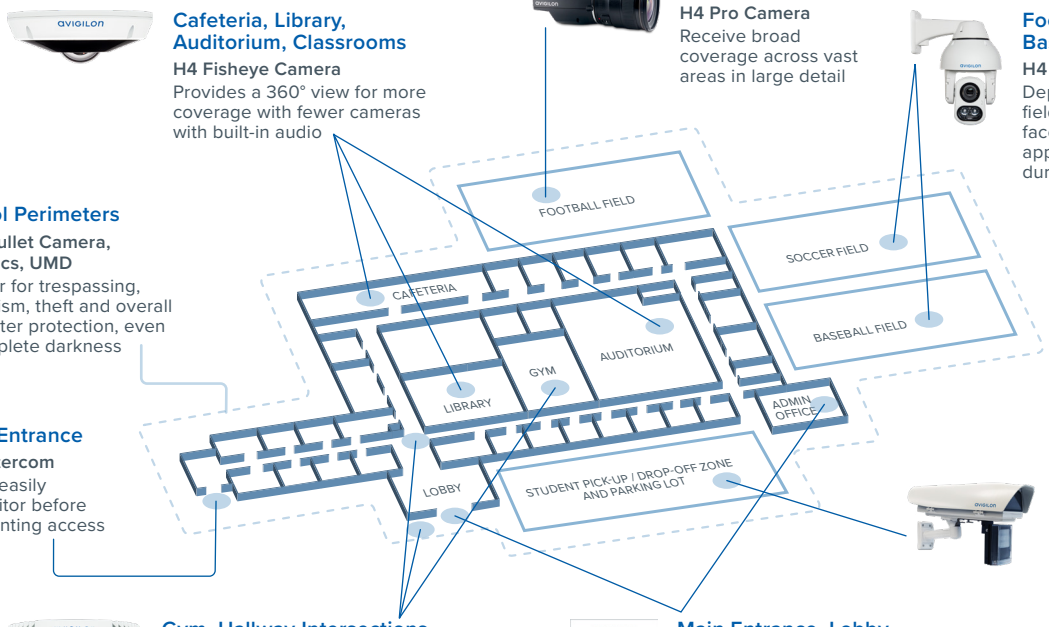
Avigilon, a Motorola Solutions company, designs, develops and manufactures solutions in video analytics, cloud, security cameras, video management software and hardware, and access control. Avigilon is an industry leader and, together with Motorola Solutions, provides integrated solutions for video security, access control and critical communications. Avigilon is proud to offer 24/7 technical support and complimentary software training.

For more information, asksales@avigilon.com

Images of product features and user interfaces have been simulated for illustrative purposes.

NA

Next Generation Safety for the Next Generation



Cafeteria, Library, Auditorium, Classrooms
H4 Fisheye Camera
Provides a 360° view for more coverage with fewer cameras with built-in audio



Football Field
H4 Pro Camera
Receive broad coverage across vast areas in large detail

Football, Soccer and Baseball Fields
H4 IR PTZ Camera
Deploy in between fields to strategically face the camera to the appropriate sports field during its season



School Perimeters
H5A Bullet Camera, Analytics, UMD
Monitor for trespassing, vandalism, theft and overall perimeter protection, even in complete darkness



Employee Entrance
H4 Video Intercom
Quickly and easily identify a visitor before remotely granting access



Gym, Hallway Intersections, Building Corners
H4 Multisensor, Analytics, Avigilon Appearance Search Technology
Locate students or unauthorized visitors across campus



Main Entrance, Lobby and Admin Office
ACM System
Manage security in one place. Instantly detect someone at the entrance and verify the situation with camera views on a unified, easy-to-use system.

Pick-up/Drop-off Zone, Parking Lot
H4 LPC
Quickly find captured license plate video for investigations
H4 Multisensor Camera
Monitor for vandalism, theft and suspicious activities

SUCCESS STORIES

How Wilson County Schools are Using Avigilon Solutions



With approximately 18,500 students, 2,000 staff and 21 campuses, Wilson County Schools (WCS) realized that the legacy security cameras and technology several of its schools were equipped with were no longer sufficient. It had to update its security system while staying within budget.

WCS is satisfied knowing that their campuses are now fully monitored, helping staff and students feel much safer at school. Moreover, Avigilon access control solutions allow administrative and security personnel to limit access to classrooms and hallways as soon as a potentially critical event is detected — but staff can still enter and exit spaces easily with the touch of their badge.

FULL CASE STUDY **avigilon.com/wilson-county-schools**

RESOURCES

Education Grants Help

Investment in technology, particularly in our schools, is essential to help you create a safe educational environment. From video security and analytics to access control, technology aids in preventative protection for educational institutions. Federal, state and local grant opportunities may be available to help you create a safe educational environment. Leverage the Education Grants Help program to receive complimentary assistance on grant research, application reviews and more for your video security solution.

Visit info.avigilon.com/education-grants-help

Dedicated Education Team

With a dedicated Avigilon Education team supporting you at every step, you can feel confident in creating a safe environment for your students, staff and faculty to work, study and play. Get in touch with one of our Education Specialists.

Visit info.avigilon.com/education

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AVIGILON CONTROL CENTER™ 7 SOFTWARE

Avigilon Control Center (ACC) 7, our latest and most advanced version of ACC™ video management software, is designed to revolutionize how operators interact with and gain situational awareness from their video security systems.

FOCUS OF ATTENTION (FOA) INTERFACE

A cutting-edge user interface for live video monitoring that leverages AI and video analytics technologies to determine what information is important and should be presented to security operators.

UNUSUAL MOTION & ACTIVITY DETECTION

Advanced AI technology that highlights the unanticipated by automatically flagging unusual motion and activity. This edge-based intelligence technology distinguishes between typical and atypical events by continuously learning from observation of scenes over time. Unusual Motion Detection (UMD) detects atypical movement, while Unusual Activity Detection (UAD) is object-aware and detects the anomalous speed and location of people and vehicles.

UMD is available on H5SL, H5M, H4SL, H4A and H4 Mini Dome cameras. UAD is available on our H5A camera line.

FACIAL RECOGNITION

AI-powered facial recognition technology that helps organizations accelerate response times by identifying people of interest. People of interest are identified based on one or more secure watch lists managed by authorized users at the organization. Populate watch lists easily by uploading images or finding faces from recorded video. Afterwards, an Appearance Search can quickly be started for any person on a watch list.

Avigilon cameras licensed for facial recognition will search the configured face watch lists for potential matches. If a match is found, operators can be notified either using the FoA interface or through ACC alarms using armed panels or the alarm view. ACC will display the video image that triggered the alarm along with the reference image from the watch list, enabling operators to verify the match and act quickly.



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AVIGILON APPEARANCE SEARCH™ TECHNOLOGY

Sophisticated AI-powered video search engine that sorts through hours of video with ease to help quickly locate a specific person or vehicle of interest across an entire site or multiple sites running the same version of ACC software. Search for a person or vehicle of interest by entering a physical description, uploading a photo, or finding an example in recorded video.



ACCESS CONTROL UNIFICATION

ACC software works together with the Access Control Manager (ACM) system to receive and act on ACM™ door events, hardware input events and access grants, empowering operators to unlock access doors directly from a camera view. Identity Verification dynamically displays ACM credentials with ACC camera views. Identity Search can help find a person of interest using their ACM cardholder information.



CLOUD-CONNECTED ACC

Avigilon Cloud Services (ACS) connects existing ACC sites to the cloud for easy and secure remote access to video from a standard web browser. Operators can leverage centralized System Health Monitoring to assess the operational state of cameras and servers from a central location. Benefit from future enhancements of ACS by updating to the latest versions of ACC software.

CYBERSECURITY & PRIVACY PROTECTION

ACC security measures include strong password enforcement, connection authentication and data encryption, as well as strict user permissions to access search functionality that uses personally-identifiable information. Blurred Export helps support compliance with new data protection and privacy requirements of GDPR by allowing you to export Appearance Search results in ACC software while blurring the background of the camera view to feature only the person of interest in the video.

FEDERAL GOVERNMENT COMPLIANCE WITH FIPS 140-2 CERTIFIED ENCRYPTION

For U.S. government agencies and enterprises that require FIPS-compliant cryptography, ACC software offers an option to use Microsoft Windows' FIPS 140-2 certified cryptographic libraries to comply with IT policies.

On the camera side, ACC offers the option to turn on licensed FIPS cryptography on Avigilon cameras. To establish a chain of trust between systems, ACC can be configured to require valid signed certificates from cameras before establishing a trusted connection with them and generate a report on all cameras without valid certificates.

LICENSE PLATE RECOGNITION ANALYTICS

Automatically reads license plate information from vehicles, linking it to both live and recorded video. Create and import multiple vehicle license plate watch lists for instant alarm notification when a license plate match is detected, or search and quickly find specific captured license plate video for verification and investigation.

COVID-19 RESPONSE TECHNOLOGY

Operate safely and comply with local health and safety guidelines with the help of powerful video analytics – natively available to operators on ACC 7 software with no additional licenses required:

Occupancy Counting: Automate the manual counting of people entering and exiting a facility or area. Use real-time cloud-based dashboards on mobile tablets to instruct customers on when to enter or queue.

Social Distancing: Run cloud-based reports in ACS to proactively identify where and when social distancing guidelines are not being followed for corrective action.

No Face Mask Detection: Automate the detection of people not wearing face masks, complete with alarms to flag violations in real-time. Run cloud-based reports in ACS to identify where corrective action is required.

Avigilon H4 Thermal Elevated Temperature Detection (ETD): ACC is built to work seamlessly with the new Avigilon H4 Thermal ETD solution, which offers a low friction, contactless alternative to traditional screening methods.

For more information visit avigilon.com/acc

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*Images of product features and/or interfaces have been simulated for illustrative purposes.

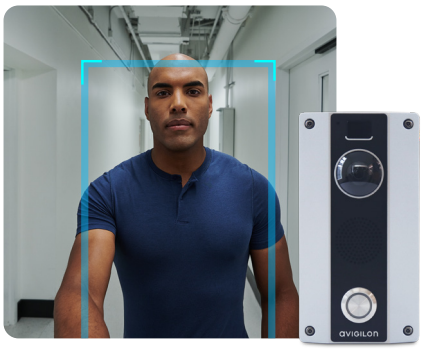
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ACC AND ACM UNIFICATION

ACCESS CONTROL THAT WORKS SEAMLESSLY WITH VIDEO SECURITY

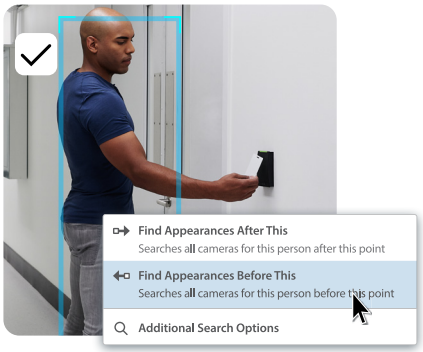
Our Access Control Manager (ACM) system integrates with Avigilon Control Center (ACC) video management software to provide you with one simple, powerful and unified security solution to help you focus on what matters most.



Using ACM™ and ACC™ software, you can instantly verify if a person seen carding in on camera matches the ID photo associated with the access card they're using, then lock or unlock the door right from your ACC client. Respond to H4 Video Intercom calls from anywhere with push notifications from the ACC Mobile 3 app.



From the same screen you can search for that person by using our Identity Search feature.

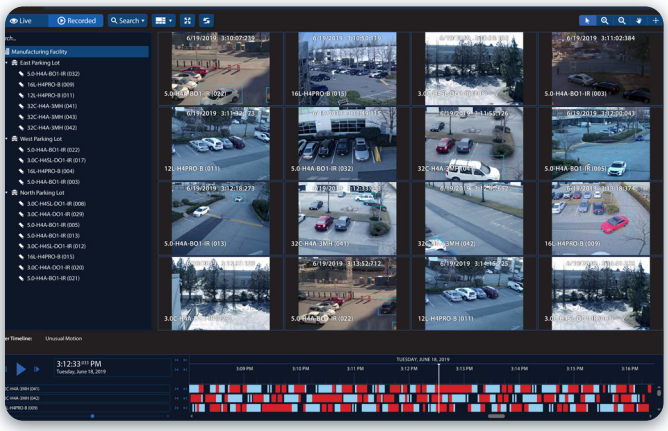


Using the video from the most recent time they carded in, you can easily use Avigilon Appearance Search™ technology to help find their current location on-site or to see where else they have been. It's that simple.

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ACC SOFTWARE FEATURES



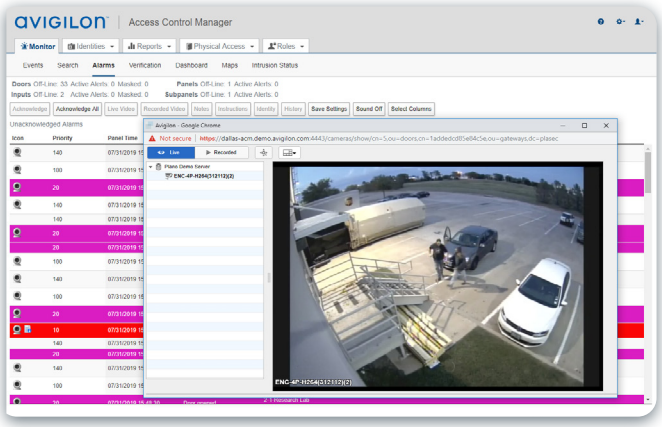
POWERFUL SEARCH

Avigilon Appearance Search technology sorts through hours of video with ease to quickly locate a specific person or vehicle of interest across an entire facility in near real-time.

FOCUS OF ATTENTION INTERFACE

A cutting-edge user interface for live video monitoring that leverages AI and video analytics technologies to determine what information is important and should be presented to security operators.

ACM SYSTEM FEATURES



100% BROWSER-BASED SYSTEM

No server or client software installation required, delivering a ready-to-deploy solution that saves you time.

OPEN-PLATFORM HARDWARE

Integrates with hardware from Mercury Security and HID Global® that scales from just a few readers to larger, more distributed installations.

COMBINED FOR A POWERFUL SECURITY SOLUTION

IDENTITY SEARCH

Enables fast search for a person of interest using their ACM cardholder information. You can then use Avigilon Appearance Search technology to determine that person's current or previous location on site.

QUICK ACTION

ACM generated door events allow you to create rule-based actions and notifications for quick on-site responses, including immediate facility lockdown.

For more information visit avigilon.com/products/access-control/acm-and-acc-unification

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Hewlett Packard Enterprise

Digital data sheet

HPE ProLiant DL380 Gen10 Server

ProLiant DL Servers



What's new

- Security through firmware and optional chassis intrusion options
- HPE performance leadership with Persistent Memory
- HPE innovation with Intelligent System Tuning
- Modular chassis with greater drive capacity and flexibility
- Supports Intel® Xeon® Processor Scalable Family

Overview

What is your server bottleneck…storage, compute, expansion?

The world's best-selling server [1] just got better. The HPE ProLiant DL380 Gen10 Server delivers the latest in security, performance and expandability. While backed by a comprehensive warranty, makes it ideal for any server environment. Standardize on the industry's most trusted compute platform.

The HPE ProLiant DL380 Gen10 Server is securely designed to reduce costs and complexity, the Intel® Xeon® Processor Scalable

Family with up to a 71% performance gain and 27% increase in cores [2], plus the HPE 2666 MT/s DDR4 SmartMemory supporting 3.0 TB [6] and up to 11% [3] faster than 2400 MT/s. It supports 12 Gb/s SAS, and up to 20 NVMe drive plus a broad range of compute options. HPE Persistent Memory, optimized on HPE ProLiant Servers, offers unprecedented levels of performance for databases and analytic workloads. Run everything from the most basic to mission critical applications, and deploy with confidence.

Features

Flexible Design Making Your Investment Expand As Your Business Needs Grow

The HPE ProLiant DL380 Gen10 Server has an adaptable chassis, including new HPE modular drive bay configuration options with up to 30 SFF, up to 19 LFF or up to 20 NVMe drive options along with support for up to 3 double wide GPU options.

HPE Persistent Memory, delivers unprecedented levels of performance and data resiliency for databases and analytic workloads. With up to 27x faster [4] application checkpoint operations and 20x faster [5] restores, HPE delivers the fastest persistent memory in the market at TB-scale.

In conjunction with the embedded SATA HPE Dynamic Smart Array S100i Controller for boot, data and media needs, the redesigned HPE Smart Array Controllers allow you the flexibility to choose the optimal 12 Gb/s controller most suited to your environment, and operate in both SAS and HBA mode.

Along with an embedded 4x1GbE, you have a choice of HPE FlexibleLOM or PCIe standup adapters which offer a choice of networking bandwidth (1GbE to 40GbE) and fabric so you can adapt and grow to changing business needs.

Supporting a wide range of operating environments from Azure to Docker to ClearOS in addition to traditional OSes.

Security Innovations

Only Hewlett Packard Enterprise offers industry standard servers with major firmware anchored directly into the silicon. With security protection built in across the server life-cycle starting with Silicon Root of Trust.

Millions of lines of firmware code run before server operating system boots and with Run-Time Firmware Validation, enabled by HPE iLO Advanced Premium Security Edition, the server firmware is checked every 24 hours verifying validity and credibility of essential system firmware.

Secure Recovery allows server firmware to roll back to the last known good state or factory settings after detection of compromised code.

Additional security options are available with Trusted Platform Module (TPM) to prevent unauthorized access to the server and securely store artifacts used to authenticate the server platforms while the Intrusion Detection kit logs and alerts when the server hood is removed.

World-Class Performance

HPE innovation with Intelligent System Tuning optimizes workload performance using customized profiles to tune internal resources, with improved throughput for all workloads including latency-sensitive workloads such as high-frequency trading with jitter smoothing.

The HPE ProLiant DL380 Gen10 Server supports industry standard technology leveraging the latest Intel® Xeon® Processor Scalable Family with up to 28 cores, 12 Gb SAS and 3.0 TB [6] of HPE DDR4 SmartMemory.

The HPE ProLiant DL380 Gen10 supports up to three double wide or five single wide GPUs for workload acceleration.

Industry Leading Services and Ease of Deployment

The HPE ProLiant DL380 Gen10 Server comes with a complete set of HPE Technology Services, delivering confidence, reducing risk and helping customers realize agility and stability.

HPE Pointnext Services simplifies all stages of the IT journey. Advisory and Transformation Services professionals understand customer challenges and design an optimal solution. Professional Services enables rapid deployment of solutions and Operational Services provides ongoing support.

Services provided under Operational Services include: Flexible Capacity, Datacenter Care, Infrastructure Automation, Campus Care, Proactive Services and Multi-vendor coverage.

HPE IT investment solutions help you transform to a digital business with IT economics that align to your business goals.

Technical specifications — HPE ProLiant DL380 Gen10 Server

Processor family	Intel® Xeon® Scalable 8100 series Intel® Xeon® Scalable 6100 series Intel® Xeon® Scalable 5100 series Intel® Xeon® Scalable 4100 series Intel® Xeon® Scalable 3100 series
Number of processors	1 or 2
Processor core available	28 or 26 or 24 or 22 or 20 or 18 or 16 or 14 or 12 or 10 or 6 or 4
Processor cache	8.25 MB L3 11.00 MB L3 13.75 MB L3 16.50 MB L3 19.25 MB L3 22.00 MB L3 24.75 MB L3 27.50 MB L3 30.25 MB L3 33.00 MB L3 35.75 MB L3 38.50 MB L3
Processor speed	3.6 GHz, maximum depending on processor
Power supply type	2 Flexible Slot power supplies, maximum depending on model
Expansion slots	8, for detail descriptions reference the QuickSpecs
Maximum memory	3.0 TB with 128 GB DDR4 [6]
Memory slots	24 DIMM slots
Memory type	HPE DDR4 SmartMemory
System fan features	Hot-plug redundant fans, standard
Network controller	HPE 1 Gb 331i Ethernet adapter 4-ports per controller and/or optional FlexibleLOM, depending on model
Storage controller	1 HPE Smart Array S100i and/or 1 HPE Smart Array P408i-a and/or 1 HPE Smart Array P816i-a and/or 1 HPE Smart Array E208i-a, depending on model
Minimum dimensions (W x D x H)	44.55 x 73.03 x 8.74 cm
Weight	14.76 kg
Infrastructure management	HPE iLO Standard with Intelligent Provisioning (embedded), HPE OneView Standard (requires download) (standard) HPE iLO Advanced, HPE iLO Advanced Premium Security Edition, and HPE OneView Advanced (optional)
Warranty	3/3/3 - Server Warranty includes three years of parts, three years of labor, three years of onsite support coverage. Additional information regarding worldwide limited warranty and technical support is available at: http://h20564.www2.hpe.com/hpsc/wc/public/home. Additional HPE support and service coverage for your product can be purchased locally. For information on availability of service upgrades and the cost for these service upgrades, refer to the HPE website at http://www.hpe.com/support

Additional resources

QuickSpecs

hpe.com/h20195/v2/GetDocument.aspx?docname=a00008180enus

HPE Pointnext

HPE Pointnext leverages our breadth and depth of technical expertise and innovation to help to accelerate digital transformation. A comprehensive portfolio that includes—Advisory, Professional, and Operational Services is designed to help you evolve and grow today and into the future.

Operational Services

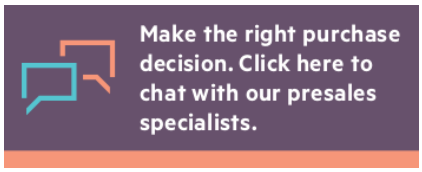
- **HPE Flexible Capacity** is a new consumption model to manage on-demand capacity, combining the agility and economics of public cloud with the security and performance of on-premises IT.
- **HPE Datacenter Care** offers a tailored operational support solution built on core deliverables. It includes hardware and software support, a team of experts to help personalize deliverables and share best practices, as well as optional building blocks to address specific IT and business needs.
- **HPE Proactive Care** is an integrated set of hardware and software support including an enhanced call experience with start to finish case management helping resolve incidents quickly and keeping IT reliable and stable.
- **HPE Foundation Care** helps when there is a hardware or software problem offering several response levels dependent on IT and business requirements.

Advisory Services includes design, strategy, road map, and other services to help enable the digital transformation journey, tuned to IT and business needs. Advisory Services helps customers on their journey to Hybrid IT, Big Data, and the Intelligent Edge.

Professional Services helps integrate the new solution with project management, installation and startup, relocation services, and more. We help mitigate risk to the business so there is no interruption when new technology is being integrated in the existing IT environment.

Call to action:

marketplace.hpe.com/category?catId=15351&reqCatId=1010026818&catlevelmulti=15351_3328412_241475_1010026818&country=US&locale=en



[1] With one HPE ProLiant Server shipping every 14.6 seconds and more than 39.3 million sold, HPE ProLiant Servers are the undisputed market share leader. CQ3'16 IDC Server Tracker

[2] Intel® measurements. Up to 71% performance increase of Intel Xeon Platinum vs. previous generation E5 v4 average performance based on key industry-standard benchmark calculations submitted by OEMs comparing 2-socket Intel Xeon Platinum 8180 to E5-2699 v4 family processors. Any difference in system hardware or software design or configuration may affect actual performance. May 2017. Up to 27% performance increase of Intel Xeon Platinum vs. previous generation comparing 2-socket Intel Xeon Platinum 8180 (28 cores) to E5-2699 v4 (22 cores). Calculation 28 cores/22 cores= 1.27 = 27%. May 2017.

[3] The Gen10 2666 MT/s memory speed is 11% faster than that of Gen9 2400 MT/s, enabling faster server performance

[4] TPC-C Benchmark Throughput with Checkpoint (trans/sec). Calculated Time to Checkpoint and Restore a Docker Container running MySQL, compare Persistent memory vs. SSD, November 2016.

[5] HPE Internal Labs test. HPE Scalable Persistent Memory, restarting 1000 GB Hekaton Database is as fast as restarting 200 GB database or 20x, March 31, 2017.

[6] Coming in second half of 2017

Sign up for updates

Hewlett Packard Enterprise

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Image may differ from actual product
PSN1010026818USEN, March 21, 2018.

Hewlett Packard Enterprise

Digital data sheet

HPE Apollo 4200 Gen10 Server

Apollo Systems



What's new

- Supports Intel® Xeon® Scalable Processor Family.
- Optional rear storage upgrade to support up to 6 SFF NVMe solid state drives (SSDs).
- Higher bandwidth and more balanced system architecture design, and without trade-offs between drive bays and I/O slots.
- Firmware-level security and optional chassis intrusion options.
- Flexible HPE Smart Array Gen10 Controllers

Overview

Are you looking for a 2U ultra-dense and rack-scale system providing the right balance of capacity, performance, and security for your data storage intensive workloads? The HPE Apollo 4200 Gen10 Server offers an architecture optimized for Big Data Analytics, Software-Defined Storage, backup and archive, and other data storage intensive workloads. Its unique, easily serviceable 2U design saves data center space with up to 28 LFF or 54 SFF hot-plug drives. It delivers accelerated performance with a superior bandwidth and balanced architecture, Intel Xeon Scalable Processors, and NVMe connected SSDs. The focus on security extends from FIPS 140-2

support and encryption features to meet different performance requirements for storage solutions.

- Sort for daisy-chaining of out-of-band management network ports.

Level 1 validated storage controllers down to the system silicon level, taking full advantage of HPE innovations in firmware protection, malware detection, and recovery. With HPE GreenLake Flex Capacity and HPE Financial Services, you can combine the economic agility benefits of consumption-based IT with the performance and security of on-premise.

Features

Ultra-dense and Rack Scale

Highest data storage density in a unique, easier to service 2U standard rack depth chassis.

Up to 28 Large Form Factor (LFF) or 54 Small Form Factor (SFF) hot-plug drives and without I/O compromises.

Support for daisy-chaining of out of band management network ports for 95% reduction in management network port consumption per 42U rack.

Workload-optimized with Accelerated Performance

Balanced system architecture with 62% higher bandwidth from three Intel UltraPath Interconnect (UPI) design.

The latest generation Intel Xeon Scalable Processors with up to 24 cores each and DDR4 2666MT/s HPE SmartMemory for up to 66% faster bandwidth.

Up to six NVMe-connected SFF SSDs for low latency and high bandwidth metadata access or data caching.

HPE Smart Array Gen10 Controllers with up to 65% better random and up to 25% better sequential performance, along with network controllers up to 100Gb/s.

Data Secure by Design

HPE iLO 5 and HPE Silicon Root of Trust technology provides firmware protection, malware detection, and firmware recovery.

Optional HPE Smart Encryption for storage controller-based FIPS 140-2 Level 1 data at rest encryption.

Optional Defective Media Retention service to maximize sensitive data control in the event of a drive failure.

Ready for Your Applications, to be Consumed Your Way, Without Headaches

Validated with a wide range of Big Data and Analytics, Software-Defined Storage, backup and archive, and other data storage-intensive applications.

Consumption-based IT through HPE GreenLake Flex Capacity for economic agility of public cloud with the performance and security of on-premises IT.

Backed by services from HPE Pointnext, including support automation in the event hardware components fail.

Technical specifications — HPE Apollo 4200 Gen10 Server

Memory	16 DIMM slots for HPE DDR4 SmartMemory, maximum 1.0 TB
Memory protection features	HPE Advanced Memory Error Detection Technology, including Fast Fault Tolerance (selected memory options)
Power	Up to 2 power supplies, choice of 800W or 1600W hot-plug and redundant
Network	Embedded dual-port 1 GbE and optional PCIe NICs up to 100 Gb/s
Storage	Up to 24 LFF or 48 SFF front hot-pluggable drive bays optional rear storage upgrade with 4 LFF, 2 SFF + 2 FHHL Riser, or 6 SFF NVMe drive cages support for SAS, SATA, and NVMe drives
Form factor	2U standard rack depth
System configuration(s)	Front 24 LFF with optional 4 LFF, 2 SFF + 2 FHHL Riser or 6 SFF NVMe Rear Drive Cages Front 48 SFF with optional 2 SFF + 2 FHHL Riser or 6 SFF NVMe Rear Drive Cages
CPU	Intel® Xeon® Scalable 8100 series, Intel® Xeon® Scalable 6100 series, Intel® Xeon® Scalable 5100 series, Intel® Xeon® Scalable 4100 series
Boot capabilities	Direct from SSD, HDD, Dual M.2 SSD, internal USB, MicroSD, network
Accelerator type supported	HPE PCIe Workload Accelerators
Minimum dimensions (H x W x D)	8.75 x 44.80 x 82.55 cm (dimensions without bezel)
Weight	22.34 kg (empty), 40.60 kg (fully loaded)
Warranty	3/3/3 - Server Warranty includes three years of parts, three years of labor, three years of onsite support coverage. Additional information regarding worldwide limited warranty and technical support is available at: http://h20564.www2.hpe.com/hpsc/wc/public/home. Additional HPE support and service coverage for your product can be purchased locally. For information on availability of service upgrades and the cost for these service upgrades, refer to the HPE website at http://www.hpe.com/support

For additional technical information, available models and options, please reference the QuickSpecs

Call to action



HPE Pointnext

HPE Pointnext leverages our breadth and depth of technical expertise and innovation to help to accelerate digital transformation. A comprehensive portfolio that includes—Advisory, Professional, and Operational Services is designed to help you evolve and grow today and into the future.

Operational Services

- **HPE Flexible Capacity** is a new consumption model to manage on-demand capacity, combining the agility and economics of public cloud with the security and performance of on-premises IT.
- **HPE Datacenter Care** offers a tailored operational support solution built on core deliverables. It includes hardware and software support, a team of experts to help personalize deliverables and share best practices, as well as optional building blocks to address specific IT and business needs.
- **HPE Proactive Care** is an integrated set of hardware and software support including an enhanced call experience with start to finish case management helping resolve incidents quickly and keeping IT reliable and stable.
- **HPE Foundation Care** helps when there is a hardware or software problem offering several response levels dependent on IT and business requirements.

Advisory Services includes design, strategy, road map, and other services to help enable the digital transformation journey, tuned to IT and business needs. Advisory Services helps customers on their journey to Hybrid IT, Big Data, and the Intelligent Edge.

Professional Services helps integrate the new solution with project management, installation and startup, relocation services, and more. We help mitigate risk to the business so there is no interruption when new technology is being integrated in the existing IT environment.

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