Avigilon Control Center 5.0 software with HDSM™

Avigilon™ Control Center (ACC) is the industry's easiest-to-use video management software, and has revolutionized how security professionals manage and interact with high-definition video. As a distributed network platform with enterprise-class reliability, Avigilon Control Center is able to efficiently capture, manage and store high-definition surveillance video while intelligently managing bandwidth and storage. Avigilon Control Center can be pre-installed and configured on an Avigilon Network Video Recorder (NVR) or work as stand-alone software, to meet the needs of any type of installation.

Avigilon Control Center records and manages both video and audio from Avigilon's line of megapixel cameras (from 1 MP to 29 MP). ACC can seamlessly integrate conventional analog cameras, along with a broad range of third-party IP cameras and encoders, giving you the ability to build a hybrid system – providing you with a budget-conscious migration from analog to digital. ACC's easy-to-use interface allows personnel to evaluate and respond to events with minimal training.

HDSM Technology

Avigilon Control Center uses our unique HDSM software technology to efficiently compress and preserve image quality while intelligently managing HD image transmission throughout the Avigilon system — sending only the requested portions of captured images to operator workstations. This technology delivers the best possible image quality while providing immediate savings in transmission bandwidth allowing operators to use less powerful workstations and thereby reducing costs. Our HDSM™ technology leverages leading imaging, hardware, data compression and information technologies to maximize performance of the Avigilon system.

COLLABORATIVE INVESTIGATIONS
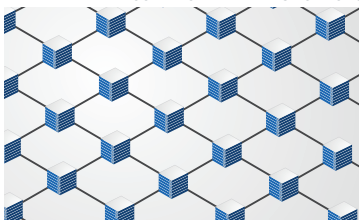
ENTERPRISE SERVER MANAGEMENT

INTELLIGENT VIRTUAL MATRIX

Avigilon Control Center 5.0 Features

User Interface

Powerful software doesn't have to be complicated. That's why we've made the easiest-to-use interface on the market even easier. Avigilon Control Center's system explorer functionality gives you more control over what you see at your workstation or video wall by allowing you to resize the interface — so you can focus on image windows rather than a complicated screen layout. For greater efficiency, we've made the controls you use most often the easiest to access, and the ones you use the least, tucked away nearby for easy accessibility.

Collaborative Investigations

ACC 5.0 allows multiple operators to view and interact with the same layout and interface in real time. Now a user can push their feed to another workstation, and they both have complete control to manipulate and maneuver it on their own, saving the users time by letting them demonstrate incidents and review HD video together — all without ever being in the same room.

Available in: Enterprise

Crash-Proof Enterprise Server Management

Up to 100 servers can be synchronized as a single cluster, operating as one unit, with no dedicated management server required. So if one goes down, the others are still fully operational and already have the information and settings that would normally be lost. And adding new servers is as easy as plugging them in — they'll automatically grab all the user's information and settings, with no setup required.

Available in: Enterprise

Intelligent Virtual Matrix

With ACC 5.0, you can flawlessly transform your static video wall into an intelligent video wall, finally utilizing its full capabilities — easily maneuver through camera feeds, manipulate your wall's layout, interact with video, zoom, rewind, isolate, and much more.

Available in: Enterprise

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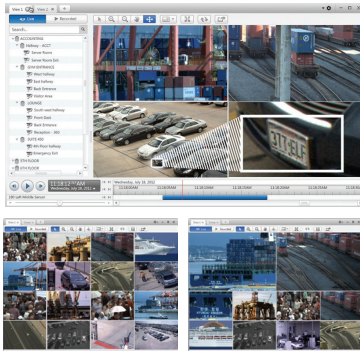
Multi-Megapixel High-Dynamic-Range Image Display

- Analyze detailed regions from single or multiple cameras.

- Use viewing tabs to allow single operators to switch between multiple cameras located throughout large enterprise systems.

- Digitally zoom and pan within an image with a mouse or surveillance joystick. Automatic dynamic contrast enhancement reveals low-light details for unmatched digital PTZ performance.

- View live or recorded high-definition surveillance footage.

Data Protection and Storage Management

- Redundant recording to multiple NVRs allows a full live mirror of all high-definition video. Automatic fail-over NVRs ensure uninterrupted recording if an NVR becomes unavailable.

- Integrated backup and restore functionality allows recorded HD video from multiple cameras to be securely transferred from an NVR on a defined schedule.

- Allocate more storage capacity to recent events and taper archived surveillance footage for maximum record times with data aging.

Integrated Graphic Mapping for System Layout

- Graphic-mapping interface lets operators layout cameras and servers on an imported map for easy navigation of large surveillance systems.

- Maps can be layered and nested, allowing easy navigation through satellite maps, multi-story buildings and very large areas.

HD Recording and Playback Timeline

- Timeline interface with integrated drag-to-zoom capability allows full control over high-definition surveillance video playback, in forward and reverse, at variable speeds—up to 8 times faster than real time.

- Rapidly updating playback system allows intuitive jog or shuttle playback to identify key events and subtle changes.

Bandwidth Management and Remote Viewing

- Fine-tune camera bandwidth usage to optimize image quality and network bandwidth availability with HDSM™.

- Remotely connect to multiple recorders to view live and recorded surveillance footage over the local area network (LAN) or a wide area network (WAN) connection.

Bookmark and Export HD Surveillance Footage

- Bookmark and export movies or still images in industry-standard formats or in Avigilon loss-less format for third-party forensic work.

- Exported video can be managed via the Avigilon Control Center Player — which provides all the tools required for analyzing and reviewing captured HD surveillance footage.

- Bookmarked events are indexed to allow rapid searching using user defined metadata.

Video Search

- Unique sub-region thumbnail searching allows you to rapidly find small changes within HD surveillance, covering large areas.

- Quickly and accurately navigate through large amounts of recorded high-definition video with camera-specific event logs.

- Search through alarms, point-of-sale transactions, license plates and bookmarks.

## Advanced Control Center Features

Alarm Monitoring

- Allows the creation of complete end-to-end workflows for the monitoring, assignment, and acknowledgement of alarms.

- Can be triggered by any internal system event, as well as external third-party access control and building management system triggers.

POS Transaction Engine

- Link HD surveillance footage (viewed instantly) with transaction data to address compliance requirements and reduce shrinkage and theft.

- Exception filtering and reporting allows the triggering of events when transactions match specified criteria.

Acquisition Manager

- Ensures that all Avigilon cameras, regardless of resolution, are always configured to collect the best possible image over a wide range of lighting conditions.

- Configure multiple independent camera-specific motion-detection zones for pre- or post-motion-triggered recording.

IP Cameras

NVR w/ NVMS

Internet

Local Area Network

Analog Video Encoder & Analog Cameras
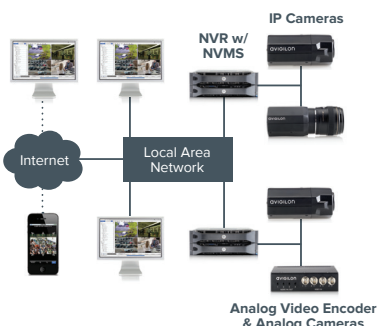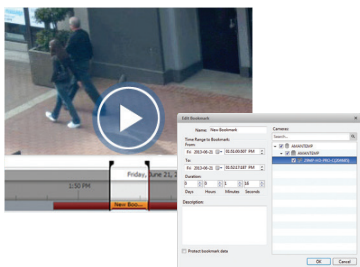
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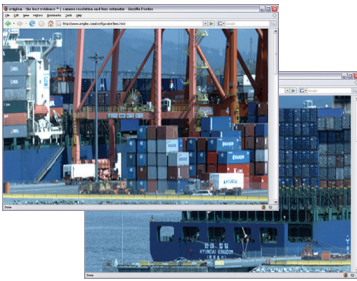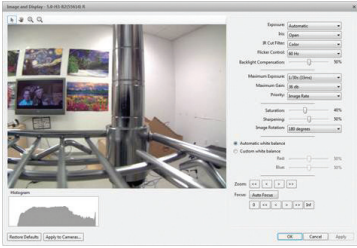
Simple Camera and Server Installation

- Unique plug-and-play capabilities for NVRs and cameras automatically identify themselves on the network, without manual configuration or searching—eliminating complex network configuration.

Detailed Management, Monitoring, and Reporting of System Status and Security

- Detailed logs of storage, network, and overall system status to ensure the highest possible system uptime for critical applications.

- Powerful rules engine lets administrators and operators map any camera or system event to an action, such as triggering output alarm relays, for faster identification and improved response times.

- Programmable email alerts provide rapid remote notification in the event of camera tampering, a system alert, an alarm or a motion event.

Scalable Integration with Legacy Systems

- Distributed architecture features a .NET-based API that can easily be integrated with other systems, such as access control and building management.

- Benefit from a new level of HD video surveillance while maintaining a single interface and minimizing training costs.

CORE, STANDARD & ENTERPRISE

To create the best-matched system for your surveillance needs, the Avigilon Control Center software is offered in three editions: Core, Standard and Enterprise. The Enterprise edition includes more advanced features for a sophisticated solution, whereas the Standard edition is used for more focused needs or for those looking to transition to HD surveillance in the most cost-effective way. ACC Core is an entry-level version of our award-winning software that delivers advanced high-definition surveillance capabilities, ease of use, and superior image quality to smaller implementations. No matter what the size of your installation, you can customize a solution that is right for you.

System	Core	Standard	Enterprise
Number of cameras per server	24	48	128
Number of servers per site	1	1	100
Number of concurrent server connections	1	24	Unlimited
Number of client licenses per server	2	5	Unlimited
High-Definition Stream Management™ (HDSM™)	Yes	Yes	Yes
Industry's most powerful VMS engine	Yes	Yes	Yes

Device Support	Core	Standard	Enterprise
Automatic device discovery	Yes	Yes	Yes
Third-party IP cameras & encoders	Yes	Yes	Yes
ONVIF cameras & encoders	Yes	Yes	Yes
HD, HD H.264, HD panoramic cameras	Yes	Yes	Yes
Avigilon encoders	Yes	Yes	Yes
H.264 support	Yes	Yes	Yes
MPEG4 support	Yes	Yes	Yes
MJPEG support	Yes	Yes	Yes
JPEG2000 support	Yes	Yes	Yes
HD professional cameras	No	No	Yes

Client	Core	Standard	Enterprise
Powerful, easy-to-use client interface	Yes	Yes	Yes
Web browser client interface	Yes	Yes	Yes
Joystick support	Yes	Yes	Yes
ACC mobile / gateway	Yes	Yes	Yes
Saved views	No	Yes	Yes
Maps	No	Yes	Yes
Web pages	No	Yes	Yes
Windows user authentication	No	No	Yes
Editable Site View	No	No	Yes
Intelligent Virtual Matrix	No	No	Yes
Collaborative investigations	No	No	Yes

Recording, Searching and Playback	Core	Standard	Enterprise
Hourly configurable recording schedule	Yes	Yes	Yes
Loss-less recording	Yes	Yes	Yes
Pixel search	Yes	Yes	Yes
Thumbnail search	Yes	Yes	Yes
Event search	Yes	Yes	Yes
Multi-camera export	Yes	Yes	Yes
Live export	Yes	Yes	Yes
POS transaction search	No	Yes	Yes
Alarm search	No	No	Yes

For the most current list of integrations and add-ons supported by Avigilon Control Center, please visit avigilon.com

Add-On Modules and Integrations	Core	Standard	Enterprise
Point of Sale Transaction Engine	No	Yes	Yes
[Avigilon developed and supported integrations](#)	No	Yes*	Yes
[3rd party system integrations](#)	No	Yes	Yes

*RS2 AccessIt, DDS Aamadeus 5 and DSX only

Additional Features	Core	Standard	Enterprise
E-Mail event notification (motion & system event)	Yes	Yes	Yes
Digital input email trigger	No	Yes	Yes
Manual digital output trigger	No	Yes	Yes
Audio recording	No	Yes	Yes
Audio output	No	Yes	Yes
Rules engine	No	3	Unlimited
Redundant recording	No	No	Yes
Failover connections	No	No	Yes
Alarm management	No	No	Yes
Scheduled and one-time backup	No	No	Yes

Avigilon Control Center 5.0 software with HDSM™

Detailed Product Features

Integration Options

• Records and manages video from the full range of Avigilon high definition cameras.

  • Avigilon HD Cameras (1 – 5 Megapixel)
  • Avigilon HD Dome Cameras (1 – 5 Mega pixels)
  • Avigilon Panoramic HD Dome Cameras (8 Megapixel)
  • Avigilon Day/Night H.264 HD Cameras (1– 5 Megapixel)
  • Avigilon Day/Night H.264 HD Dome Cameras (1– 5 Megapixel)
  • Avigilon HD Bullet Cameras (1– 5 Megapixel)
  • Avigilon HD Micro Dome Cameras (1– 2 Megapixel)
  • Avigilon HD Pro Cameras (8 – 29 Megapixel)
  • Avigilon Day/Night HD PTZ Dome Camera (1–2 Megapixel)
  • Composite video from analog cameras, PTZ domes and thermal imagers via Avigilon ENC-4PORT and ENC-4P-H264 analog encoders

• Supports the recording and management of a wide range of third-party video and audio sources including:

  • ACTi Cameras/Encoders
  • Arecont Cameras
  • Axis Cameras/Encoders
  • Bosch Cameras/Encoders
  • IQInvision Cameras
  • Mobotix Cameras
  • ONVIF 1.00, 1.01, and 1.02 Cameras
  • ONVIF Profile S Cameras
  • Panasonic Cameras
  • Pelco Cameras
  • Samsung Cameras/Encoders
  • Samsung Techwin cameras
  • Sanyo Cameras
  • Scallop Cameras
  • Sightlogix Cameras
  • Sony Cameras
  • VideoIQ Cameras/Encoders

• Supports the control of digital input triggers and triggering digital outputs through an I/O board.

• The Avigilon Application Programming Interface (API) enables the seamless integration of Avigilon video surveillance with third-party applications to receive:

  • Bi-directional alarm event processing for monitoring and acknowledgement
  • Card access activity events
  • Digital input events
  • Intrusion zone events

• The Alarms tab provides the ability to monitor live alarm events received by access systems integrated with the Avigilon software. Users are given the ability to assign, acknowledge and investigate alarm video.

• The Armed Image Panels display live alarms as they are triggered within the video monitoring workspace, and provides the ability to acknowledge and investigate the live video.

• Integration alarms only need to be acknowledged in one system to be marked as acknowledged and processed in both.

• Avigilon develops and maintains integrations to a variety of 3rd party applications. The current list of available integrations is provided here: http://avigilon.com/support-and-downloads/for-software/acc-integration-and-plug-in-downloads/

• Avigilon offers an SDK for 3rd parties to create system integrations with the Avigilon Control Center software. Some of the available integrations are listed here: http://avigilon.com/support-and-downloads/for-software/system-integration-features/

• Receives and translates transaction information from point-of sale sources in multiple encoding formats.

• Provides the ability to link point-of-sales sources with video for the ability to monitor and review sales transactions.

• Rules can be used to generate events based on point-of-sale transaction exceptions.

Recording

• Streams live and recorded video up to 60 frames per second.

• Streams live and recorded video from cameras up to a resolution of 29 MP (6576 x 4384).

• Decompresses H.264 video through the client graphics card to optimize the client's total processing power.

• No proprietary recording hardware, hardware multiplexer or time-division technology is required for running the Avigilon system.

• Scalable to support up to 100 servers and/or 2000 cameras per site.

• All recorded video and audio is digitally signed using 256- bit encryption so video can be authenticated for evidentiary purposes.

• All command and control data is securely transmitted via TCP/IP using cryptographic keys based on SSL to prevent eavesdropping or tampering.

• External system alarms can be can be pre-selected and configured to be monitored and trigger event driven video operations.

• Video and audio recording can be defined by a recording schedule assigned to each video source.

• Recording schedules are based on event types that trigger video recording over a time period each day per week. Event types include:

  • Continuous
  • Motion
  • Digital Inputs
  • Alarms
  • POS Transactions

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- Video recording can also occur manually by user triggered recording.

- Each recorded event includes a pre-event and post-event recording option to provide context for a given situation.

- Reference frame recording is an option when no events are detected.

- Motion detection is provided for each individual video source with adjustable sensitivity, threshold and detection zones.

- Primary and secondary video stream from each H.264 video source is recorded and maintained for a set amount of time before the primary stream is discarded as a means of increasing record time.

- The maximum recorded video retention time can be set for each video source.

Security

- Each system user can be granted specific live monitoring, investigative, system administration, and device access.

- Live monitoring operator access includes:

  - View live images
    - Use PTZ controls
    - Lock PTZ controls
    - Trigger manual recording
    - Trigger digital outputs
    - Listen to microphones

  - Broadcast to speakers

- Investigative operator access includes:

  - View recorded images
    - Export images
    - Backup images

  - Initiate collaboration sessions
  - Access to individual video and audio sources

- System administrator access includes:

  - Manage saved views
  - Manage maps
  - Manage web pages
  - Manage virtual matrix monitors
  - Manage user sessions
  - View server status

- Setup cameras

- Setup sites

- Setup servers

- Device access can be specific to cameras, encoders, maps, web pages and saved views.

- Windows Active Directory groups can be imported and automatically synchronised with the Avigilon system.

- Imported Windows users can use their Windows crednetials to access the Avigilon system.

System Administration

- Recorded video can be automatically backed up on a schedule.

- Automatic backups can be configured to span a specific time period, cameras, or age of video.

- The system can be set to delete the oldest backups when the disk is full to make room for new video recordings.

- Backup video can be saved to:

  - Local folder
  - Mapped network drive
  - Storage area network
  - USB or direct attached storage

- Email notifications are available to tell users and system administrators when an event or system health error occurs. Emails can be set to occur on a schedule, and can include camera snapshots related to an event.

- The system maintains an information log which can be used to trigger rules or email notifications:

  - Server Events
  - Device Events
  - User Events
  - Alarm Events
  - POS Transaction Events

- When a rule is triggered, the system can be set to execute any of the following actions in response:

  - User Notification Actions
  - Monitoring Actions
  - Device Actions
  - PTZ Actions
  - Alarm actions

- Users can be set to receive customized on-screen messages related to a rule event.

- On-screen messages are displayed in one location and the importance of each message is color coded.

- A maintenance log and audit trail of all system errors and events is accessible through the client software and the Admin Tool.

- The health of all servers within a cluster can be monitored, with the option to export the information in PDF format.

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Video and Audio Controls

- Pan, tilt, zoom (PTZ) controls through the RS-485 interface of a video source can also be used and configured by the Avigilon system.

- The following PTZ camera protocols are supported by Avigilon systems:

- American Dynamics Sensormatic

  - AXSYS
  - AXSYS DCU
  - Ernitec ERNA
  - Honeywell Diamond
  - Kalatel ASCII
  - Pelco D
  - Pelco P
  - TEB Ligne
  - Vicon extended
  - Vicon normal
  - Videotec Legacy
  - Videotec MACRO

- The network settings for a video and audio source can be changed through the Avigilon software.

- Each camera's image quality and image rate can be changedn without affecting the settings of other cameras.

- The system automatically displays an H.264 camera's secondary stream for live viewing when there is insufficient bandwidth to display the primary stream.

- A camera's exposure, iris, IR filter, backlight compensation, gain, priority, sharpening, saturation, focus, and white balance can be set through the Avigilon system.

- The image dimensions of a JPEG2000 camera video can be changed.

- Camera image can be rotate 90°, 180° or 270°.

- Privacy zones can be added to a camera's field of view to block private areas in live and recorded video.

- Manually triggered video recording can be set to stop after a maximum recording duration.

- Audio input, output, gain and volume can be changed.

- Optional full-duplex two- way audio communication.

- Any audio source can be linked to any video source.

System Display and Control

- Supported joysticks, include:

  - Traditional style matrix controller with Pan, Tilt, Zoom, display control and function.
  - USB "gaming style" joystick controller.
  - Microsoft's Kinect© controller.

- Keyboard commands can control:

  - User Notification Actions
  - Monitoring Actions
  - Device Actions
  - PTZ Actions

- Alarm Actions

- 1 to 36 video streams can be displayed simultaneously on a single monitor with the following standard layouts:

  - Full Screen
  - 2 x 2
  - 3 x 3
  - 4 x 4
  - 5 x 5
  - 6 x 6
  - 1 x 5
  - 1 x 7
  - 1 x 12
  - 2 x 8

- Live and recorded video can also be displayed in non-standard, customizable layouts.

- The system can be set to bias video display to a lower frame rate or to a lower image resolution if the client network bandwidth or client processing power is insufficient to display the full frame rate and image resolution.

- The following information can be displayed over live or recorded streaming video:

  - Camera Name
  - Camera Location
  - Timestamp
  - Record Indicator
  - Motion Activity

- The ability to stream video and audio is limited only by the system hardware capabilities.

- The application window display can be shared with other users for collaborative investigations while viewing both live and recorded video.

- Live and recorded video and audio can be streamed simultaneously on the same monitor.

- Avigilon Virtual Matrix software can be used to provide remote control of multiple monitor displays, including video walls, that can be controlled by remote users with the appropriate rights and permissions.

- The same live or recorded video stream can be viewed at different zoom levels and areas of interest.

- Switch from live to recorded video on demand for an instant replay of recently recorded video.

- Create and save customized video stream layouts for easy access

- Display video in full-screen view.

- Save views for reuse.

- Cycle through a series of opened views (guard tour) based on a specified interval.

- All video sources connected to the system are displayed.

- Drag and drop a video source from a tree of video sources into a window for live or recorded video and audio monitoring.

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- Drag and drop a saved view from a tree of views into a window for live or recorded video and audio monitoring.
- Configure how the tree of video sources, maps, web pages and views is displayed.
- Armed image panel is one or more regions in a window for displaying video directly linked to triggered alarms and rules.
- Alarms can be acknowledged directly from an armed image panel.
- Digital outputs can be manually triggered from the video monitoring area.

Maps

- Create a map to represent the physical location of cameras and other devices throughout the surveillance system.
- Maps are created from images stored in JPEG, BMP, PNG, or GIF image formats.
- Maps can contain links to other maps and reference a subsection of a camera's field of view.
- Drag and drop a video source from a map into a window for live or recorded video and audio monitoring.
- Cameras on a map are highlighted if the camera is linked to an alarm that has been triggered.
- A map within a map is highlighted if it contains a camera that is linked to an alarm that has been triggered.

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System Requirements

System requirements for a machine that will only be used as a remote monitoring client with a single monitor with a resolution of 1280 x 1024. Additional monitors and higher resolutions may require additional processing resources.

Avigilon Control Center Client

	Recommended
Operating System	Windows XP with Service Pack (SP) 2 or later, Window Vista, or Windows 7 (32-bit or 64-bit)
Processor	Intel Dual Core 2.0 GHz
System RAM	2 GB
Video Card	PCI Express, DirectX 10.0 compliant with 256 MB RAM
Network Interface	1 Gbps
Hard Disk Space	500 MB

System requirements for a HD NVR Server with a recording capacity of 32 MB/s (256 Mbps) from up to 128 cameras. The specifications below are intended for an HD NVR Server with only remote viewing.

Avigilon Control Center Server - Server Configuration

	Recommended
Operating System	Windows XP SP2, Windows XP SP2 x64, Windows Vista 64-bit, Windows Server 2003 SP2, Windows Server 2008, or Windows 7.
Processor	Intel Quad Core Xeon 2.0 GHz
System RAM	4 GB DDR2
Network Interface	1 Gbps Intel Pro/1000 or Broadcom NetXtreme II server adapters
Hard Drives	SATA-II 7200 RPM Enterprise Class Hard Drives

System requirements for a HD NVR Workstation with a recording capacity of 10 MB/s (80 Mbps) from up to 64 cameras and the ability to view live and recorded image data locally. This system should be able to support up to two monitors with a resolution of 1280 x 1024 each.

Avigilon Control Center Server - Workstation Configuration

	Recommended
Operating System	Windows XP SP2, Windows XP SP2 x64, Windows Vista 32-bit or 64-bit, Windows Server 2003 SP2, Windows Server 2008, or Windows 7
Processor	Intel Quad Core Xeon 2.0 GHz
System RAM	2 GB DDR2
Network Interface	1 Gbps
Video Card	nVidia Quadro FX 570 dual DVI
Hard Drives	SATA-II 7200 RPM Hard Drives

Avigilon Control Center Gateway can be installed on the same computer as Avigilon Control Center Server, but for optimal performance results it is recommended that the Gateway be installed separately. The Gateway can handle up to 36 concurrent video streams if installed on a computer with the listed requirements:

Avigilon Control Center Gateway

	Recommended
Operating System	Windows XP SP2, Windows XP SP2 x64, Windows Vista 64-bit, Windows Server 2003 SP2, Windows Server 2008, or Windows 7
Processor	Quad Core 2.0 GHz
System RAM	4 GB DDR2
Hard Drive Capacity	500 MB