intuVision® VA

“the all-seeing”

Installation Guide

intuVision Video Analytics (intuVision VA) is intended for use with stationary cameras. intuVision VA installation options include the stand-alone system, the distributed system, the web server, and the remote client.

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System Requirements

The following operating system and hardware requirements are recommended for optimal functioning of intuVision VA.

Operating Systems

- Microsoft Windows 10,
- Windows 11, or
- Microsoft Windows Server (with Desktop Experience Installed)
- Linux Ubuntu 18.04

Licensing

Default licensing option for intuVision VA is a "site license", which requires an internet connection for activation. Specifically, the computer running intuVision VA will need to be able to access intuVision licensing server at: licensing.intuvisiontech.com, and have the port: 8344 open.

If an internet connection is not feasible, please contact your sales representative for alternate licensing options.

Hardware

Hardware requirements for intuVision VA depend on the number of video streams to be analyzed and the video resolution.

Video analytics is a computationally intense process as each pixel in each video frame needs to be operated on in various parts of the process. An increase in the number of cameras results in a linear increase in the required processing capacity. intuVision VA is fully GPU (Graphics Processing Unit) enabled and can off-load video processing to the GPU's with NVIDIA compatible graphics cards.

Our recommendation for video resolution and framerate for the analytics processing is around 4CIF and 10-15 fps. In general, higher resolution does not mean better results unless the views have significant field depth and the objects that need to be tracked are only a few pixels in size. Higher video resolution will result in a higher processing load. For example, 4CIF video will have 4 times the processing load as compared to CIF video.

Sample hardware requirements for the evaluation system and a typical deployment system are provided below. Upon request, we can provide a list of capacity test results for various hardware configurations to enable our users to select hardware for their deployments.

Hardware requirements for Evaluation System

The evaluation system comes with a license that allows for one camera to be used at a time, hence the hardware requirements are minimal.

- CPU: Intel i3 Dual Core with 2 GB RAM, or equivalent
- 256 GB storage
- NVIDIA GPU card (not necessary but recommended to increase processing efficiency and capacity)

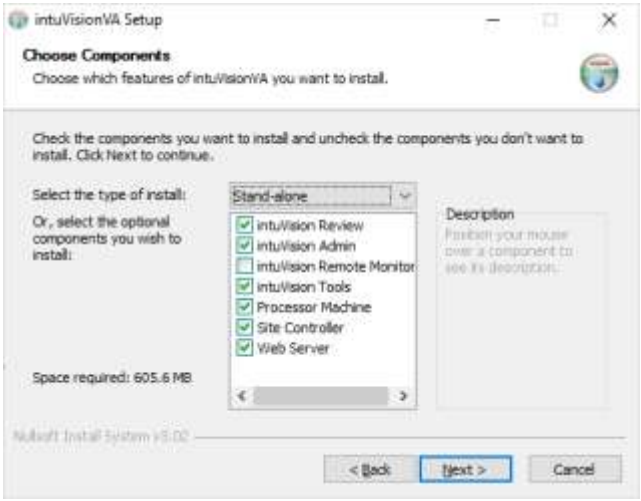
Hardware requirements for a sample stand-alone deployment system (for ~32 cameras)

- CPU: Intel i7 5930K with 4 GB RAM, or equivalent
- 10 GB Storage
- NVIDIA GForce GT 960 GPU card (not necessary but recommended to reach 32 camera capacity)

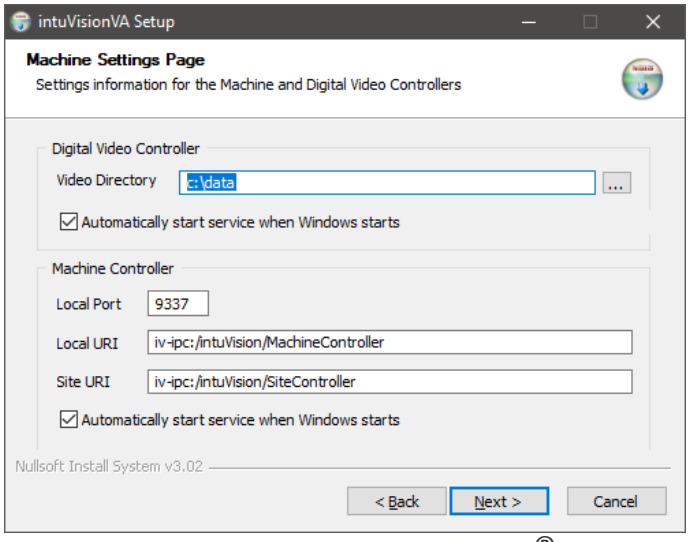
Stand-Alone Installation:

To deploy a stand-alone system, you will install all needed system components on a single computer. Stand-alone deployment option is recommended for small sites for up to 30-35 cameras where all the video analytics processing and event alarm database can take place on one computer.

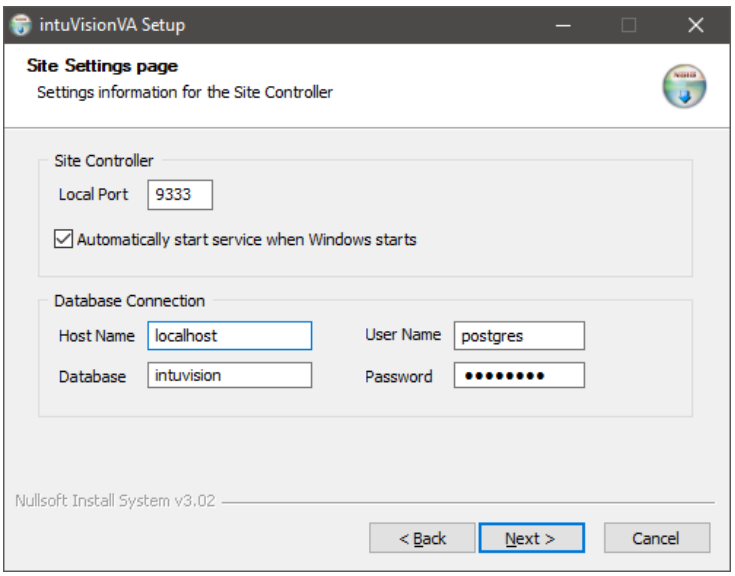
1) Open the intuVision Installer, click **Next** on the first page to continue the installation, and click **I Accept** to accept the intuVision License Agreement.
2) Choose the intuVision Components you wish to install on your computer. For a default stand-alone installation, use the drop-down menu to select "Stand-alone". Click **Next**.



3) Choose the destination folder and start menu folder (if desired), clicking **Next** after each.
4) If desired, change the default **Video Directory**. If this is a production system, it is recommended that you set both the Digital Video Controller and Machine Controller to "*Automatically start when Windows starts*". Click **Next** to proceed.



5) Click through the **Web Server Settings Page**, typically these settings do not need to be changed. If this is a production system, it is recommended that you set the Web Server to "*Automatically start when Windows starts*".
6) Finally, enter a username/password for your database – we recommend user name: postgres, password: intuvision. This will create the user name and password for your Postgres installation. If this is a production system, it is recommended that you set the Site Controller to "*Automatically start when Windows starts*".



7) Click **Next**, and intuVision VA begins installation!

To start intuVision VA after installation, open the Admin Application. The Admin Application will request the username and password (the default is admin/admin) and will prompt you to start the system components.

When the Admin Application is opened for the first time, you will be prompted to enter your license information. If intuVision VA has been previously installed, the license field will auto-populate.

Distributed Installation:

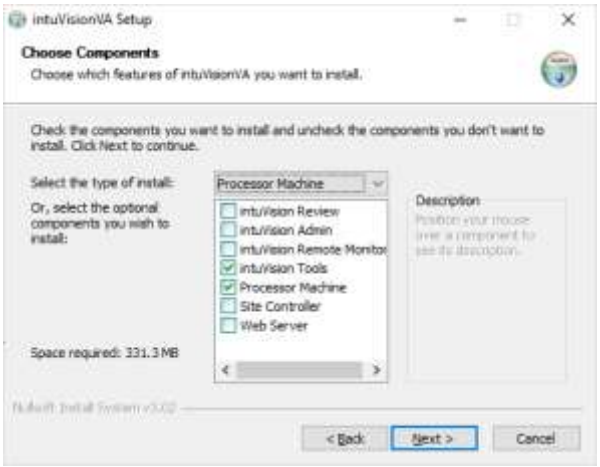
For larger deployments, intuVision VA supports a distributed system architecture. The distributed system consists of a "Site Controller" computer, where all configuration and event information is stored, and multiple "Processor Machine" computers responsible for processing groups of cameras. By distributing cameras over processor machines connected to a site controller, the video analytics system can scale up for a large number of cameras in a balanced manner.

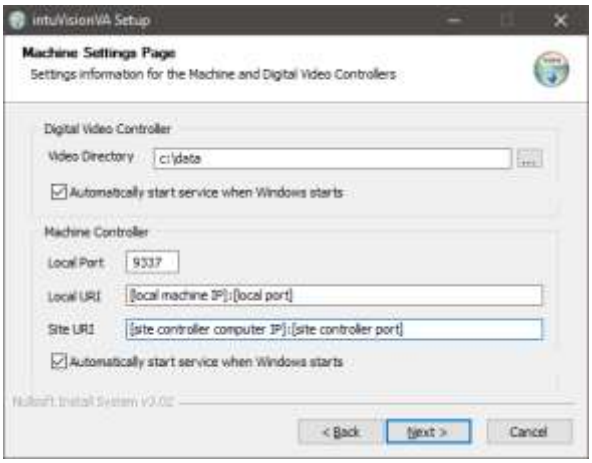
Site Controller Computer

For the computer with the site controller, follow the **Stand-Alone Installation** directions, only selecting the desired system components. The site controller computer requires a license.

Processor Machine

For processor machine installation:





1) Open the intuVision Installer, click **Next** on the first page to continue the installation, and click **I Accept** to accept the intuVision License Agreement.
2) Choose **Processor Machine** on the **Choose Components** list. Click **Next**.
3) On the **Machine Settings Page**, you must change the **local and site URIs**. If this is a production system, it is recommended that you set both the Digital Video Controller and Machine Controller to "*Automatically start when Windows starts*".
    a. The **Local URI** should be *[[local machine IP]:[local port]*, replacing [local machine IP] with the local machine IP and [local port] with the local port (specified by intuVision VA, typically 9337). **The local port must match the specified port.**
    b. The **Site URI** is the same format as the previous, but with the information of the site controller machine. This should be *[[site controller machine IP]:[site controller port]*, replacing [site controller machine IP] with the site controller IP and [site controller port] with the site controller port (specified by intuVision VA, typically 9333).

4) Click **Next** and your installation begins! Please note, you will need to start the intuVision services by right-clicking on the intuVision icon in your system tray, and selecting “Start intuVision”.
5) When you open the Admin Application connected to your Site Controller, you will be notified that a processor machine is trying to register. Click “Yes” to allow the machine to connect.

Repeat these steps for any additional Processor Machines.

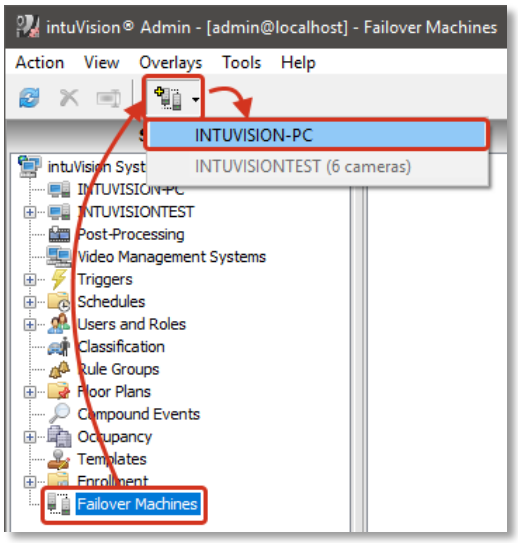
Failover Machine

You can optionally set a processor machine as a failover for another machine in case the primary goes down or stops processing. **Please note**: this supports processor machine failover/redundancy. Site Controller level failover/redundancy is not included.

Follow the "Processor Machine" installation instructions for the failover machine. Once installed, follow the instructions below to set it as a failover machine and configure settings.

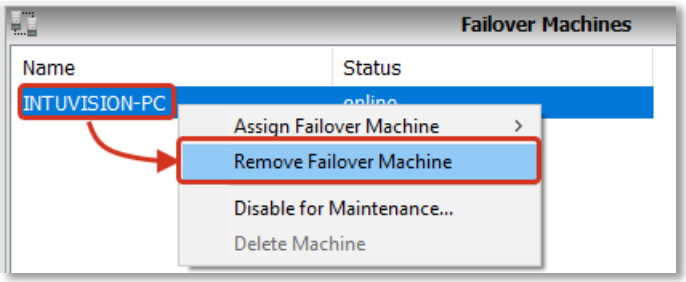
To set a processor machine as a failover machine:

1) In the Admin Application, navigate to "Failover Machines" in the system tree.
2) Once on the "Failover Machines" page in the intuVision Admin, click on the "Assign Failover Machine" icon in the toolbar. From the drop-down, select the desired machine.

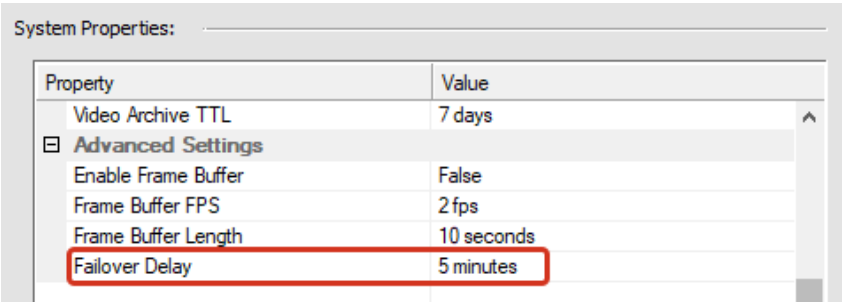


Please note: Failover Machines cannot be assigned cameras for processing. If a machine is already processing cameras in intuVision VA, it will not be eligible for use as a Failover Machine.

To remove a Failover Machine: right-click on the machine, and select "Remove Failover Machine".



You can adjust **Failover Delay** on the intuVision System Page, under System Properties. Default failover delay is 5 minutes.

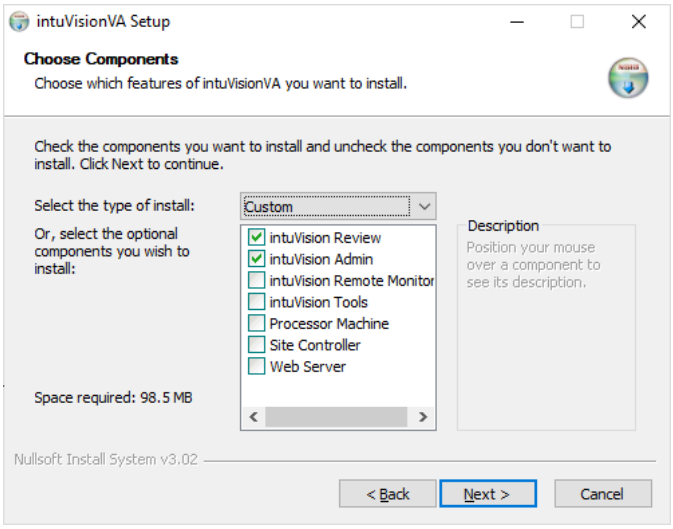


Remote Client Installation

Users can access, control, and monitor intuVision VA from a remote computer, with a remote installation of the Admin and Review Applications. If your license allows for remote client installation, one or both of them can be installed at a remote location.

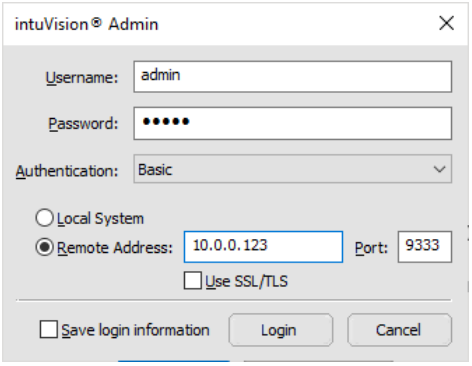
To install either the intuVision Admin or the intuVision Review:

1) Start the intuVision VA installer on the desired machine.
2) In the **Choose Components** list, choose intuVision Review and/or intuVision Admin as desired.



3) Click Next, select the destination folder and the Start Menu folder, and the components install.

When running the intuVision Admin or Review Applications on the client computer, simply select **Remote Address** and enter the IP address and port of the computer intuVision VA is running on. The port is typically 9333 unless changed during install.



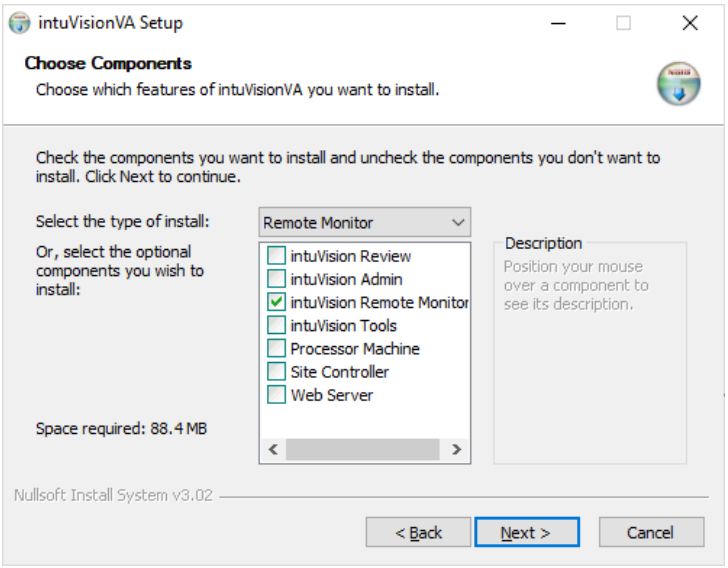
Remote Monitor Installation

Many video analytics sites are not directly monitored, instead, they are used to collect count information or rely on triggers being sent to third-party hardware or to a VMS. If the services go down or the machine running intuVision VA is shut down or loses power, it may not be immediately apparent.

The Remote Monitor can be installed on a separate machine on your network and will monitor your video analytics system. If it loses connection with the system, either due to network or computer failure, you will receive an email notification, allowing you to react immediately.

To install the Remote Monitor:

1) Using the same installer with which you installed intuVision VA, open the installer.
2) **License Agreement** - Accept the intuVision License Agreement.
3) **Choose Components** - Select only the **intuVision Remote Monitor**. If you also wish to install the intuVision Admin or Review applications, you can select those at this time.



4) **Choose Install Location** - Select the desired destination folder.
5) **Choose Start Menu Folder** - Select the desired start menu folder.
6) **Remote Monitor Settings** -
   a) **Site Controller Address** - the IP address and port of the machine on which the Site Controller is installed. Typically this is [IP address]:[port], where the default port is 9333.
   b) **SMTP Server and Credentials** - enter the required SMTP information for your email account.
   c) **Recipients** - enter the desired recipients, separated by semicolons.

d) **Automatically start service** - select if you would like this service to automatically start when Windows starts.
e) **Test Settings** - select if you would like to test your SMTP settings before continuing with the installation.

7) Once the settings have been entered, click "Next" to begin the installation. You will need to right click on the intuVision System Monitor in your system tray (next to the date and time on your Windows Taskbar) to start the intuVision Remote Monitor after the installation.

System Components

intuVision VA is developed with a flexible architecture to support distributed and growing systems. If only one machine is being used, install all components.

intuVision Review: Application which allows for review of events and manipulation of event information (graphing, heatmap generation, event search, etc.). intuVision Review can be installed on Site Controller machine or can remotely access the Site Controller from another machine.

intuVision Admin: Application which allows for system setup, including adding and configuring cameras and events, adding users, linking VMS systems, adding scheduling, etc. Like the intuVision Review Application, it can be installed on the Site Controller machine or can remotely access the Site Controller from another machine.

Site Controller: System component associated with running the over-all system. The intuVision VA license must be associated with the Site Controller machine. Only one Site Controller is installed per installation (despite the possibility of multiple machines).

Processor Machine: System component associated with processing cameras. Multiple Processor Machines can be added to one Site Controller (see distributed setup for details), without additional licenses.

intuVision Tools: Tools for fine tuning and trouble shooting an intuVision VA installation, typically not needed for an evaluation. Includes: intuVisionSpy and VideoSourceSample

Web Server: intuVision VA Web Server, used for browser based event review, RSS feeds, web API, and input triggers.