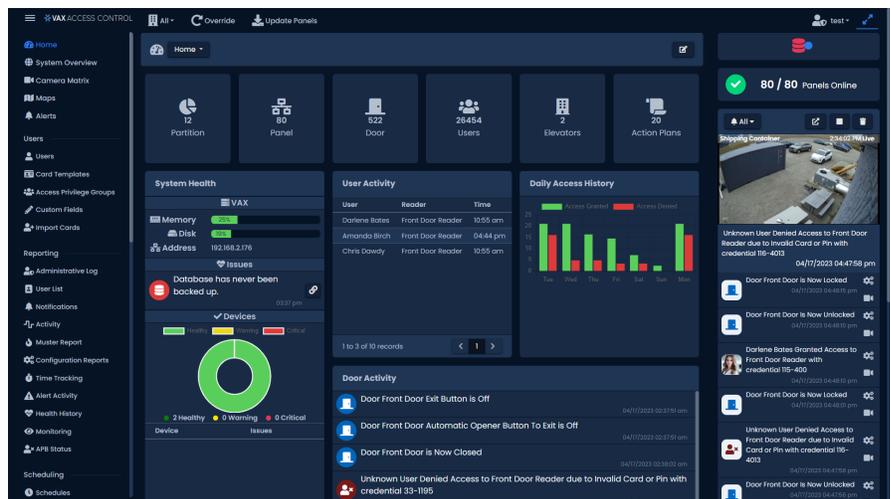


Installation Upgrade Guide



Access Control System ver. 3.1

XX274-40-06



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Vicon Access Control (VAX) Installation/Upgrade Guide

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Table of Contents

Introduction	iv
Vicon Software - End User License Agreement	v
Copyright	vii
1. Getting Started	1
Overview	1
Server Requirements	1
Operating Systems Supported	2
Installation Procedures	2
New Installation VAX	2
Upgrading VAX	7
System Monitor	7
Frequently Asked Questions	8
Client Installation	9
Supported Browsers	9
Accessing the Server	10
Frequently Asked Questions	10
2. Upgrading VAX	12
Software Upgrades	12
Download the Latest Version of VAX	12
Prerequisite Installation	12
Upgrade Installation	12
Panel Firmware Updates	12
Troubleshooting Firmware Update Problems	14
Frequently Asked Questions	14
3. Where to go From Here	16
4. Support	17

Introduction

Vicon is proud to present Vicon Access Control (VAX). This guide is designed to assist you in planning, installing and configuring your new access control system. Although we have gone to great lengths to ensure the installation process is intuitive and straight forward, we do recommend reading this guide in its entirety before installing a Vicon Access Control access system. Thank you for your business.

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Chapter 1. Getting Started

Overview

VAX is a modern HTML5 web-based client/server access control system. The server application is designed to be installed on a stand-alone PC and may be accessed using one or more clients via a web browser. The VAX server software consists of:

- **VAX Web Server:** The Web Server's responsibility is to host the web application and facilitate client access to managing your access control system.
- **VAX System Manager** System Manager's responsibility is to manage backing up and restoring the database, as well as manage multi tenant configuration, general server configuration.
- **VAX System Monitor:** The System Monitor allows you to view the status and offers limited control over the web server and backup/restore utilities.
- **Database Provider** VAX uses a relational database to store the configuration and notifications from the access control system. It can be configured to use either of the following databases:
 - **Microsoft SQL Server Database** The VAX software can be configured to use a local or remote Microsoft SQL Database. You may opt to use the free (included) SQL Express 2019 or your own pre-installed instance of Microsoft SQL. Please Note: A minimum version of 2008 is required.
 - **Postgres** The VAX software can be configured to use a local or remote PostgreSQL database. You may opt for the installer to install it, or use your own existing instance. Please Note: A minimum of Postgres v12 is required.

Server Requirements

The VAX application server is designed to run on a modern PC running Microsoft Windows 10 or Windows Server 2016 is recommended for optimal performance.

Note

It is possible to install the VAX software on a shared PC, however where possible, we do recommend a standalone installation for optimal performance and reliability. It is also possible to install VAX on a virtual machine, off-site, or in the cloud. For more information regarding Panels communicating with the Panel through the internet, please see the relevant section within the master tech guide.

- 2GHz or faster 32-bit (x86) or 64-bit (x64) processor. Two or more cores recommended.
- 4GB RAM for 32-bit and 64-bit .
- 10GB Free Hard Drive Space (Additional space required for database).
- Windows 10 Home or Higher (Windows 7 Not Supported). Windows 10/11 Supported.
- Microsoft .Net Framework 4.8.1.
- Microsoft SQL Server 2016 or SQL Server 2016 Express or Higher (SQL Express installation available from the VAX Installer).

Note

The computer specifications are the minimum standards for a basic system. When a system includes a large number of clients (10+), controllers (50+), and/or users (2000+), additional server power is strongly recommended.

Operating Systems Supported

Note

Please note this refers to operating systems able to run the server software. Clients are supported regardless of OS version as long as HTML5 is supported. For more information on supported client web browsers, please see the section called “Supported Browsers”

Table 1.1. Supported Operating Systems

Operating System	Notes
Windows 11 Professional (32 and 64 bit)	
Windows 11 Home (32 and 64 bit)	
Windows 10 Professional (32 and 64 bit)	
Windows 10 Home (32 and 64 bit)	
Windows Server 2016 (Any Version)	
Windows 8 Professional (32 and 64 bit)	
Windows 8 Home (32 and 64 bit)	
Windows Server 2016	

The following operating systems are unsupported. VAX cannot be successfully installed on these operating systems:

Table 1.2. Unsupported Operating Systems

Operating System (Not Supported)	Notes
Windows XP (any version)	Missing hostable web core
Windows Vista (any version)	Missing hostable web core
Windows 8/7 Starter Edition	Missing components
Windows 7 Home Basic	Missing components
Windows Server 2003 (any version)	Missing hostable web core
Windows RT	ARM Specific

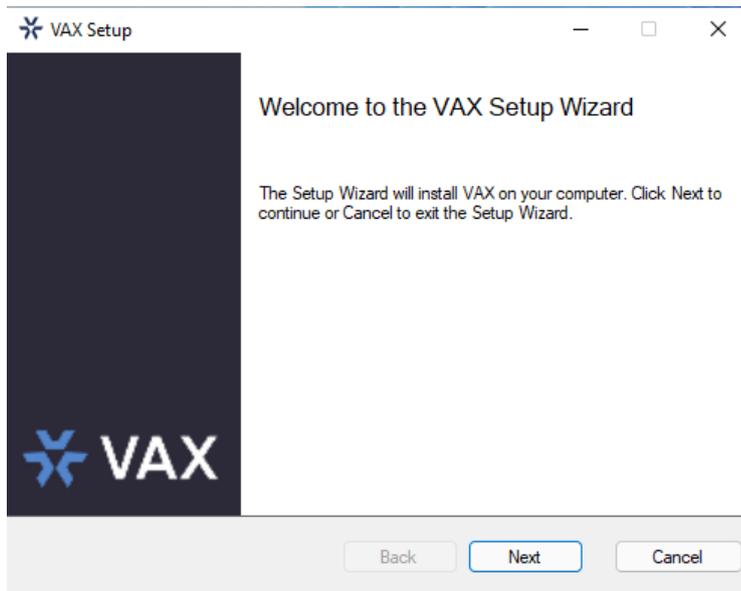
Installation Procedures

This section covers the installation of VAX and some frequently asked questions.

New Installation VAX

1. Locate and run the file called "VAX.exe" on your installation media or download and run the installer from our website.
2. On older operating systems, the installer may require an installation of .NET Framework 4.5.1. If needed, the installer will execute the bundled .NET framework installer prior to launching the VAX installer. Once the necessary prerequisite installed, the installer will automatically launch the VAX application installer.

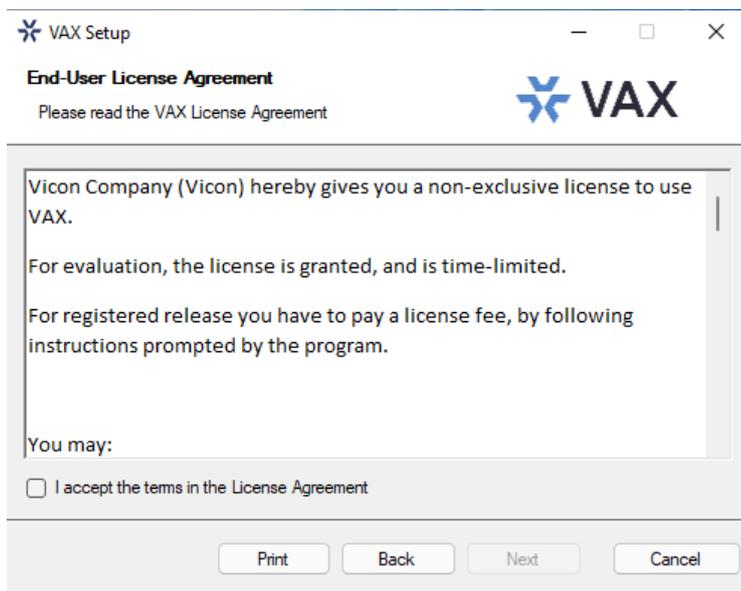
Figure 1.1. VAX Application Installer



After the VAX Installer has loaded, click the **Next** button to continue.

3. On the following screen, please read and accept the License Agreement. This agreement must be accepted in order to proceed with the VAX installation. Click **Next**.

Figure 1.2. VAX License Agreement



4. The next step is to choose the installation type:
 - **Typical installation** is recommended for normal installations. It uses the default settings for the listening ports, uses the local NT SERVICE accounts for the services, creates inbound rules for the listening ports in Windows Firewall and generates a self-signed certificate.
 - **Advanced Installation** is recommended for users who wish to use an external SQL Server or may need advanced configuration options for domain environments. You are given far more control over various VAX configuration options.

5. The Database Selection page allows you to select which database provider to install or use and allows you to configure the connection settings VAX will use to access the database.

Figure 1.3. VAX Database Selection

- **Database Provider** Either SQL Server or PostgreSQL can be used as the database. For new installations, we would recommend to use SQL Server. If upgrading an existing installation, these fields should auto populate.

Note

It is recommended to use SQL Server when hosting the database on the same machine as the VAX software.

- **Install New Server / Use Existing Server** If you have an existing installation of the database provider, you can select it in the **Server** dropdown field. Otherwise you can select **Install New Server** to install the selected database provider and configure it for use with VAX.
- **Server** The Server field allows to you to enter the address of the database server. If SQL Server and Use Existing Server is selected, the Server field dropdown will show a list of detected instances of SQL Server.

If you are updating an existing installation, the Server field will populate with the existing configured SQL server.

- **Database** The Database Name is the unique name given to the database within the database server. The dropdown will show a list of databases that it detected in the selected server.
- **Username** An optional field for the username to authorize the software to access the database. This field is not required for basic installation and is used for authorizing to your own external database provider.
- **Password** An optional field for the password to authorize the software to access the database. This field is not required for basic installation and is used for authorizing to your own external database provider.

6. **[Advanced Installation Only]** Communication Setup allows you to modify the ports used by the software to host web services and communication servers.

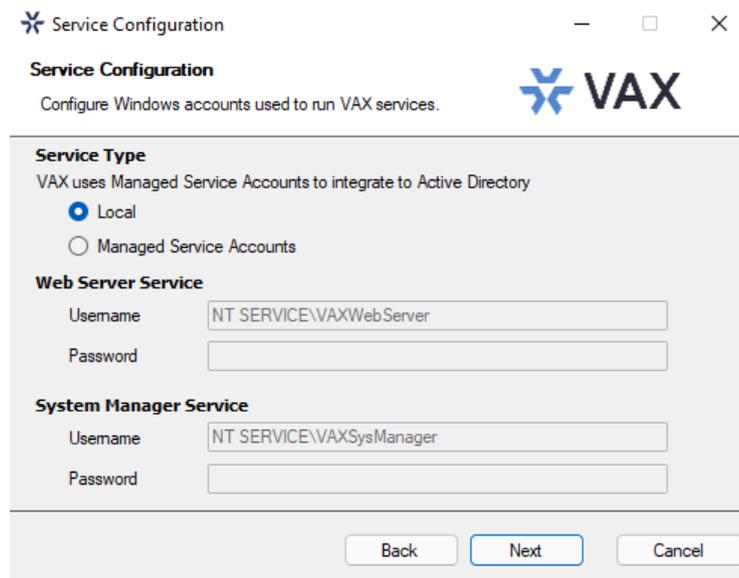
Web Server: The web server service is responsible for providing the web based interface and APIs. The **HTTPS Port** is the port the server will listen on for web communications, by default is **11001**.

Panel Communication: The web server service hosts a server to communicate with our panels. The **TCP/UDP Port** is the port the server will listen on for panel connections, by default is **9876**.

System Manager: The system manager service is responsible for managing database backups and server configuration. The **HTTPS Port** is the port the server will listen on for management communication, by default it is **11002**.

7. **[Advanced Installation Only]** Service Configuration allows you to configure the accounts used to host the Web Server and System Manager services. The **Local** option will use NT SERVICE accounts, which are special virtual Windows accounts used to host services. The **Managed Service Account** option is used for Active Directory integration to permit the services access to query the domain. Creating Managed Service Accounts is outside the scope of this installation manual.

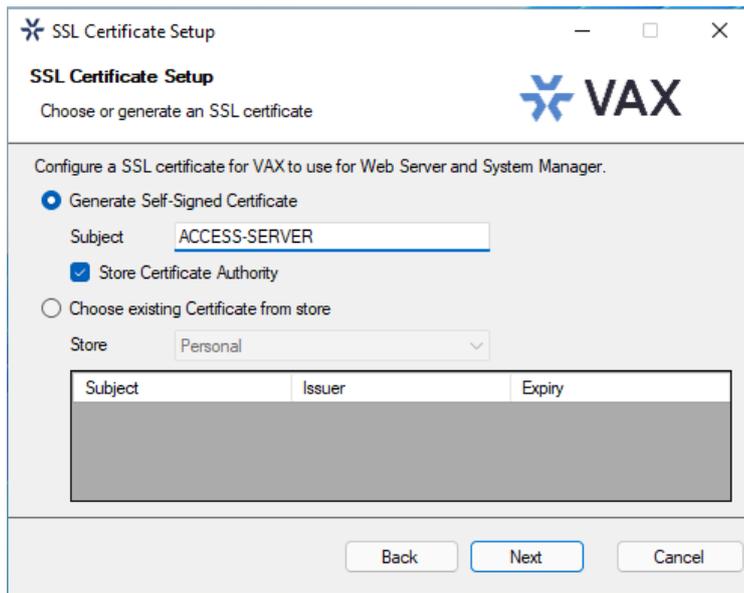
Figure 1.4. VAX Service Configuration



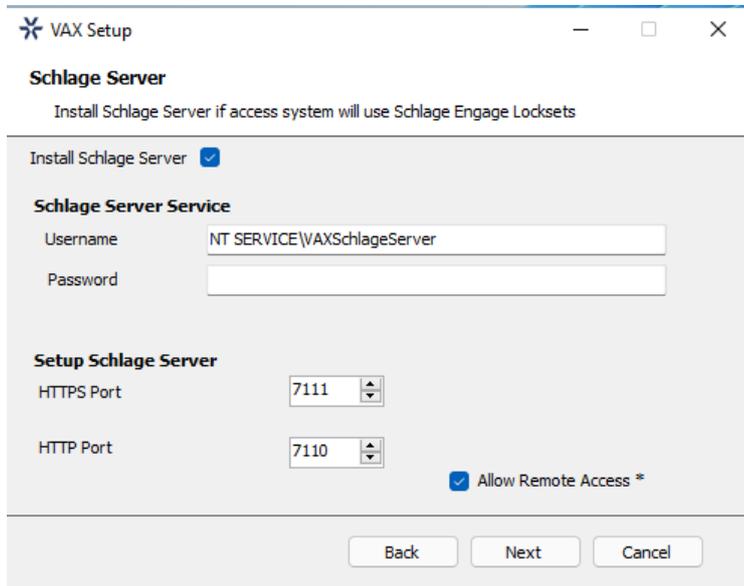
8. **[Advanced Installation Only]** SSL Certificate Setup allows you to generate or select an SSL certificate to use to host the Web Server and System Manager web services. The **Generate Self-Signed Certificate** option will generate a new certificate with the specified subject to use. Self-Signed certificates will generate a warning when browsing to the software as the browser can't validate the issuer of the certificate. Selecting the **Store Certificate Authority** will remove this warning on the installation computer only, by storing the signing certificate as a certificate root.

The **Choose an existing Certificate from store** option will let you select a certificate from the Windows Certificate Store that has a valid private key. Certificates that have been imported into Windows will show here.

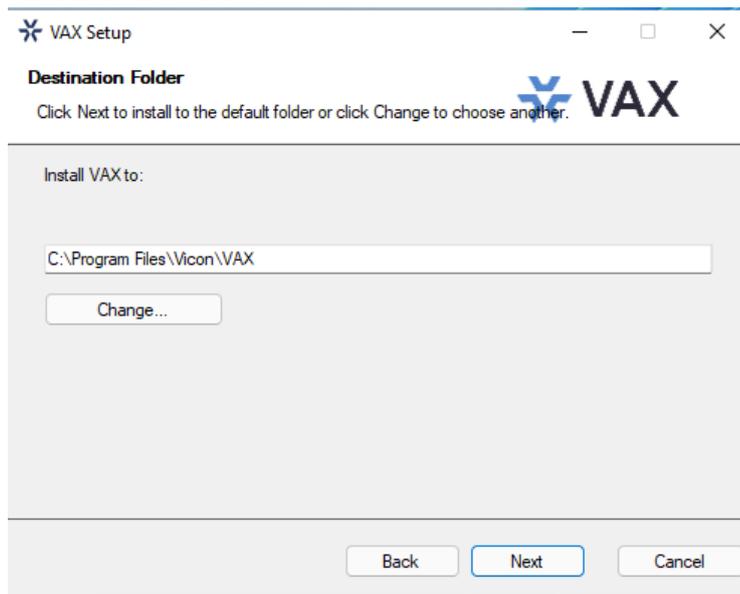
SSL Certificates can be managed after installation in System Manager under Settings → Certificates.

Figure 1.5. VAX SSL Certificate Setup

9. **[Advanced Installation Only]** Schlage Server is a separate service which communicates with Schlage Engage gateways and locksets. If you require the use of the Schlage lockset integration, check the **Install Schlage Server** option and customize the Schlage server ports or service accounts as required.

Figure 1.6. VAX Schlage Server

10. The next step is to select the installation directory where you would like the VAX application to be installed.

Figure 1.7. VAX Destination Folder

11. You have now completed the configuration portion of the installer. Click **Install** to perform VAX installation and **Finish** when the installation completes.

Upgrading VAX

Periodic updates are released to VAX to enhance features, fix bugs or improve compatibility. VAX does not offer separate upgrade packages. Our standalone installer is capable of installing a new software instance or upgrading an existing instance of the VAX software.

Upgrade Installation

Depending on how you've installed VAX, the procedure for upgrading the VAX software may require some steps not covered in this section. Please see Chapter 2, *Upgrading VAX* for more details on these extra steps. We recommend doing a backup of your VAX database prior to upgrading. For more information about backing up your database, please see the relevant section within the master tech guide. We also recommend stopping the VAX service via **System Monitor** prior to installation. Please note, if the installer does not contain a newer version than the currently installed version, you will not be given the option to perform an upgrade.

Updating Firmware

In some cases, in order to utilize the latest version of VAX, a firmware update is also required on the Panels (please, see the relevant section within the master tech guide).

System Monitor

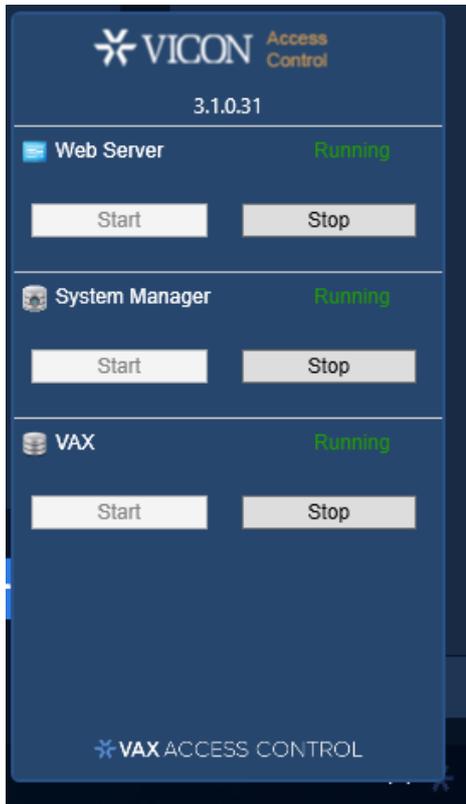
System Monitor is a tray application that shows you the status and offers limited control over the web server process. It can give you several useful shortcuts when the icon is right clicked. It will also show you the current version of your VAX software.

Once VAX is installed on the server, the system monitor icon will sit in the system tray (by the clock, highlighted below). If you do not see this icon, it may be hidden. You can use the arrow icon in the system tray to display hidden icons. You can also launch the System Monitor from the start menu of the computer VAX is installed on.



To view the System Monitor, simply click on the icon and a small window will appear near your system tray (pictured below).

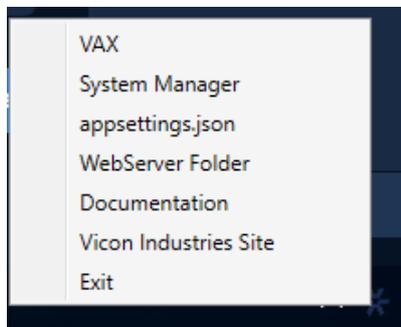
Figure 1.8. System Monitor Window



Once the System Monitor window is open, you can use the **Start** and **Stop** buttons to start and stop the Services used by VAX. This can be useful if the database or web service don't start automatically.

Tip

If you right click on the System Monitor icon, you'll get several useful shortcuts.



Frequently Asked Questions

Q: Do I have to use SQL Express 2019 or can I use my own database software?

- A:** We support any Microsoft SQL Server from 2016 to present or Postgres v12 or later, however when using our software to install SQL Express, you can be assured it is configured optimally for our system. If you choose to use you own database server instance, you will need to ensure the correct privileges and protocols are available for connection. This is something we generally only recommend for technicians or network Administrators who are well versed in the installation and configuration of SQL Server. Also please note different versions of SQL have different operating system and PC requirements. If you choose to use a different version, please ensure your PC meets the requirements for that version.
- Q: Do you support Windows Vista or Windows XP operating systems?**
- A:** At this time there is no plan to support operating systems earlier than Microsoft Windows 10. We are committed to ensuring the software works with future versions of Microsoft Windows.
- Q: I received an SQL error during VAX installation. What should I do?**
- A:** As part of the VAX installation, you are required to provide the correct SQL information which the installer uses to configure a number of VAX database and security options. If this information is incorrect, it will need to be corrected before you are able to successfully install the VAX software. If you have chosen to install SQL Express as part of the VAX installation, the settings should automatically be populated. However if you have chosen to use a custom database version and/or instance, you will need to manually populate these settings.
- Q: What is the maximum database size supported?**
- A:** If you are using Postgres, there is no maximum database size. If you are using Microsoft SQL Server, the maximum database size is a direct limitation of the version of SQL installed, not the VAX software. If you have used the default SQL Express 2019 installation, the maximum database size is 10GB. Earlier versions of SQL Express prior to 2008 generally had a limitation of 2GB.
- Q: Is VAX 32-bit or 64-bit?**
- A:** VAX is a 32-bit application designed to run both in native 32-bit operating systems and on 64-bit operating systems capable of 32-bit emulation (x64). There is no plan to support a native 64-bit installation as the VAX software will not benefit from the increased addressing 64-bit provides.

Client Installation

VAX supports client connectivity via web-based access. As a result, there is no VAX client software to install; rather you use your web browser to access the VAX server.

Supported Browsers

The list of browsers supported is by no means a comprehensive list. These are browsers that receive testing by Vicon Industries. Although other browsers may work, we do not provide technical assistance with them. We are always looking for user feedback in deciding what browsers to provide first class support for and we will expand the list of supported browsers as their market share dictates.

Table 1.3. VAX Browser Support

Browser	Version	Supported	Notes
Google Chrome	24.0+	Yes	Vicon Industries's browser of choice
Mozilla Firefox	20.0+	Yes	
Microsoft Internet Explorer	11	Yes	Note: IE11 is required for certain camera integrations.

Browser	Version	Supported	Notes
Microsoft Internet Explorer	6.0 to 10	No	No modern HTML5 Support
Microsoft Edge	20.0+	Yes	Note: Some issues with browsing to localhost address via DNS name. IP address or remote client work fine.
Apple Safari	6.0+ (Mac/iOS)	Yes	

Accessing the Server

Once you have ensured you have a browser that supports the VAX software, accessing the VAX software is very simple. If you are accessing the server from the PC it has been installed on, a start menu link is provided; otherwise you will need to enter the address manually into your web browser.

Accessing VAX From the PC the Server Software is Installed on:

During installation a shortcut is placed in your start menu for VAX. The link for VAX can be located by clicking Start -> All Programs -> VAX and finally clicking on "**Launch VAX.**"

Accessing VAX From a Remote PC:

Open your web browser and within the address bar enter the address of the VAX Server using the format: **https://NameOfTheComputer:11001**

Alternatively, you can use the IP address of the server if the server is using a static IP address using the format: **https://192.168.1.100:11001**

Example 1.1. Accessing VAX server remotely

https://ComputerName:11001 (default port is 11001)



Once you have entered the address, press Enter to navigate to the VAX software.

Frequently Asked Questions

Q: Why is browser XXX not supported?

A: Web browsers although similar in appearance differ greatly in terms of features. We at a minimum require HTML5 support and many standard compliant browsers not listed in our supported list, will work just fine with our software. In order to provide the best possible experience, we do provide a set of recommended browsers. Browsers not mentioned in the recommended list may work fine but should issues occur, we do only provide technical support for browsers listed as supported.

Q: Do I require Windows 7 or newer on the client?

A: No. One of the benefits to web-based software is the flexibility it offers for connectivity. The client software is not limited by operating system but rather by the browser installed on the client machine. Windows XP is generally the oldest version of Windows we would recommend and Mac and Mobile platforms are fully supported as long as a supported web browser is used.

Q: Can I access VAX without using SSL (HTTPS protocol)?

A: No. For the sake of security, we do not support unencrypted connections.

Q: I'm using an unsupported browser and there are graphical anomalies or issues attempting use the VAX software. How do I resolve?

A: Use a supported browser. We do not provide support for any browser not listed as supported. However if you feel there would be a benefit in supporting a browser not in our supported list, we would love to hear from you. At a very minimum, HTML5 will always be required.

Q: I'm using Internet Explorer 10 which is listed as supported but I am still experiencing graphical anomalies or issues with the VAX software. How do I resolve?

A: Internet Explorer has a feature called Compatibility Mode which is enabled by default for Intranet (not public facing) sites. To achieve the best experience in Internet Explorer browsers, we recommend this feature be disabled for our application.

To disable Compatibility Mode in Internet Explorer 10, refer to the following steps:

1. Open Internet Explorer and press F12 to open the Developer Tools.
2. At the very top of the new Window you will see two drop-down lists, one labelled 'Browser Mode' and one labelled 'Document Mode'. Ensure Browser Mode is IE10 (or higher) and Document Mode is IE10 Standards (or higher).
3. In Internet Explorer 11, click on the gear icon on the top right of the web browser window.
4. Select "Compatibility View Settings".
5. Ensure the checkbox labeled "Display Intranet sites in Compatibility View" is not selected.

Chapter 2. Upgrading VAX

This chapter covers the process of upgrading VAX, the pre-requisites for upgrading, and how to update the firmware on the Panels (the door and elevator control boards).

Software Upgrades

Periodically, updates are released to VAX to enhance features, fix bugs or improve compatibility. VAX does not offer separate upgrade packages. Our standalone installer is capable of installing a new software instance or upgrading an existing instance of the VAX software. All licensed instances of VAX are entitled to software updates as they are released.

Download the Latest Version of VAX

Visit our VAX downloads page at:

<https://www.vicon-security.com/software-downloads-library/vax-access-control-software/>

You'll be prompted for credentials to download; please contact Vicon Industries for these details.

Prerequisite Installation

In order to upgrade VAX, the following requirements will need to be met.

- Upgrade must be performed from the computer on which VAX is currently installed.
- You must be logged in as the same Windows Login that installed VAX (due to database permissions).
- If the upgrade includes a firmware update for the panels, UDP port 9876 must not be blocked.

Upgrade Installation

The procedure for upgrading the VAX software is identical to that of a fresh install. (Please, see the section called "Installation Procedures"). We recommend doing a backup of your VAX database prior to upgrading. For more information about backing up your database, please see the relevant section within the master tech guide. We also recommend stopping the VAX service via **System Monitor** prior to installation.

Note

During installation, it's advised you click "Advanced" and ensure information such as the database connection looks correct.

Panel Firmware Updates

Periodically when we enhance VAX, firmware upgrades to your Panels will be required with the software updates. Updating a Panel's firmware is a relatively straight forward process.

Warning

While in firmware update mode Panels are non-functional. They will not respond to card presentations, do not generate notifications and place the Door into a lock-down state. To limit the impact this has on your site, we suggest only placing 1 Panel at a time into Firmware Update Mode.

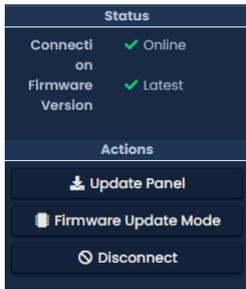
1. When a Panel attempts to connect to the VAX application and the firmware is found to be out of date, you will see an indicator at the bottom of the notification panel on the right side of the screen.

2. In order for a Panel to have its firmware updated we must place it into Firmware Update Mode. To do this we will navigate to the System Overview page in the software. Click on the "x/x Panels Online" box above the Notifications area **or** in the left navigation menu, click on **System Overview**.

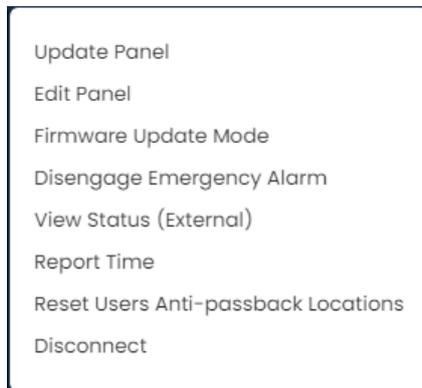


3. On the System Overview you will see a list of all Panels in your system. Any Panels that require a firmware update will show a Critical status and if you expand it, the **Firmware Version** will show Outdated.

Figure 2.1. System Overview Showing Firmware Out of Date Message



4. The next step is to place your Panels into Firmware Update Mode. This can be accomplished on the System Overview page.
 - a. On the right side of Panel, click on the blue gear icon, pictured below. A context menu will appear.



- b. Select 'Firmware Update Mode' from the context menu.
 - c. The Panel will now disconnect and attempt to update its firmware.

 **Note**

You can perform multiple firmware updates at the same time if needed.

5. The VAX server will accept incoming connections from Panels in firmware update mode on **UDP Port 9876** and automatically apply the latest matching firmware for your Panel. Once complete, the server will instruct the Panel to reboot into normal mode, at which point the Panel will resume normal operation. If the panel does not connect to the server on UDP 9876 within 60 seconds, the panel will reboot.
6. Repeat the above process on all panels that indicate they require a firmware update. After all Panels have had their firmware updated, we recommend doing a update to all your Panels. The 'Update Mode' status icon on the Dashboard under Devices menu will disappear automatically, or you can refresh the page.

Troubleshooting Firmware Update Problems

Panel continues to show firmware out of date after placing it into firmware update mode. If a Panel continues to show it requires a firmware update after placing the panel into firmware update mode and coming back online, ensure there isn't any third party firewall blocking UDP port 9876. Ensure there are no enterprise firewall solutions between the server and the Panel on the network blocking UDP port 9876.

Panel does not come back online after placing into firmware update mode. If a panel does not come back online after several minutes, we recommend physically checking the LCD of the panel.

- If the LCD shows the message "Run Application Timeout", power down the panel by unplugging the Cat5 from the left side of the board. Press and hold the button labeled Enter (SW3) while plugging in the cat5. This will place the panel back into firmware update mode.
- The LCD on the panel will show the current server address it is looking to update its firmware from, if you see this set as 192.168.2.10, it could indicate it had a problem during the update. Try the above suggestion or change the VAX server's IP address temporarily to 192.168.2.10 with a 255.255.255.0 subnet mask.

Frequently Asked Questions

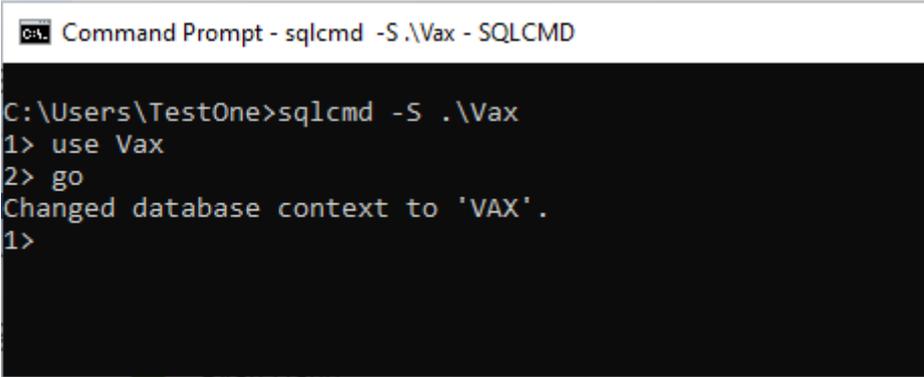
Q: How can I check if my Windows login can upgrade VAX?

A: To check if your account has the right permissions, we can simply make a connection to the VAX database and see if we're denied or granted access. This may require the assistance of IT staff or Vicon Industries.

1. Open a command line with administrator privileges (right click cmd.exe, 'Run as Administrator').
2. At the command line, type: 'SQLCMD -S .\VAX' (your instance name may be different). Click 'ENTER'.
3. At the '1>', type 'USE VAX' and press 'ENTER'.
4. At the '2>', type 'GO' and press 'ENTER'.

If you see the message "Changed database context to 'VAX'.", your Windows account has permission to upgrade VAX.

Figure 2.2. Command Prompt: Backup



```
Command Prompt - sqlcmd -S .\Vax - SQLCMD
C:\Users\TestOne>sqlcmd -S .\Vax
1> use Vax
2> go
Changed database context to 'VAX'.
1>
```

If you see the message "The server principal "computer/user" is not able to access the database "VAX" under the current security context!", your Windows account does not have permission to upgrade VAX.

Q: My Windows login doesn't have permission to upgrade VAX; how do I find out which account does?

A: Due to the manner that SQL database permissions work, when VAX is initially installed, the Windows login installing the software gets implicit permission to access the database. Likely (but not always), we can find this user account name by checking a log file generated by the MS SQL installer.

1. Browse to your installation directory of SQL server (usually located in "C:\Program Files \Microsoft SQL Server").
2. Use the search bar to search all folders for a file called "sql_common_core_Cpu64_1.log" or "sql_common_core_Cpu32_1.log". Open the file in notepad.
3. Once you've opened the file, use the 'find' function and look for the string "appdata". The first result should show the path to the user directory of the correct Windows login.

If the Windows login is unavailable, or does not exist anymore, please contact Vicon Industries.

Chapter 3. Where to go From Here

Once you've installed or upgraded Vicon Access Control; the Vicon Access Control Tech Guide is also installed into the server along side our application. This guide contains all other information about configuring Vicon Access Control.

You can access the guide via two methods once Vicon Access Control is installed/updated.

1. In Windows 10 and 11, a shortcut to the VAX Tech Guide PDF file is placed in the Start Menu in the folder VAX. It will be called "VAX Documentation".
2. In Windows 8, the shortcut will be located on the Metro Start Screen. The shortcut will be called "VAX Documentation".
3. You can also browse directly to the VAX Tech Guide PDF. It will be located "C:\Program Files (x86)\Vicon\VAX\Documentation". The file will be called "SystemDocumentation.pdf".

Note

Your installation directory may differ slightly from the above.

Chapter 4. Support

End Users:

Vicon Industries does not generally support end users directly as we rely on our vast network of trained dealers and installers to service our products in the field. If your system requires service, we recommend contacting your dealer/installer. If you do not know who your dealer is, you can contact Vicon Industries and we will assist you in finding a local dealer/installer.

Dealers/Installers:

Vicon Industries support is available to dealers Monday to Friday between 9AM and 5PM EST to assist with any installation related issues you may have.

Website

Vicon Industries offers a number of technical guides and resources via our website: <https://www.vicon-security.com>

Email

Email support is available through our website at <https://www.vicon-security.com/learn-and-support/support-and-sales-contacts/>. Please allow 24 - 48 business hours for a response.

Phone

If time sensitive support is required, we do offer both local and toll-free support numbers during normal business hours. Outside our regular business hours, please allow 24 to 48 business hours for response. You may reach us at:

- **Toll Free (North America only):** 800-348-4266