VAX Domain Installation

Intended Audience

Dealers or IT administrators installing VAX using managed service accounts in a domain environment for LDAP integration or to permit installation where domain group policies prevent standard installation using local service accounts.

Minimum Requirements

VAX requires a Windows computer with the minimum requirements:

Operating System:	Windows 7, 8, 10, Server 2008R2, Server 2012
Processor:	2 GHz or faster 32-bit or 64-bit. Utilizes all available cores.
Memory:	4GB RAM minimum, 8GB or more recommended depending on size.
Hard Drive:	100MB for application, 10GB for database, plus backups
Network:	100Mbps LAN, static IP or DHCP Reservation or DNS Name.

Prerequisites

VAX installs a few different prerequisites before installation:

- Microsoft .NET Framework 4.5.2
- Microsoft SQL Server 2012 Express
- Microsoft SQL CLR Types
- Microsoft SQL Management Objects

Components

There are five components in VAX that run in various ways:

Web Server   Service
Hosts main web server on TCP 11001 and communication server on TCP 9876 for panels.

System Manager   Service
Hosts web server on TCP 11002 for database backup / restore and tenant management.

System Monitor   Tray Application
Runs on startup, tray access to manage services, SSL certificates or access VAX.

Firmware Updater   Desktop Application
Hosts firmware server on UDP 9876 for panels. UI shows progress and status of update.

Backup Runner   Scheduled Task
Backup task managed by System Manager. Backs up SQL database, profile pictures and maps.

Step 1: Service Account Creation

In order to have VAX run in a domain environment or use LDAP integration, the Web Server and System Manager will require managed service accounts to be created on the AD server.

1. On the Active Directory server, open **Active Directory Users and Computers**.
2. Expand the domain forest and right click on **Managed Service Accounts**.
3. In the context menu, hover over **New**, then click on **User**.

4. In the First name and User logon name field, enter: **VAXWebServer**
5. Click **Next**

6. Enter a unique string random password in the **Password** and **Confirm Password**. This will be required during installation.
7. Uncheck **User must change password at next login** and check **Password never expires**.
8. Click **Next**
9. Click **Finish**
10. Repeat **Steps 3-9** for a **VAXSysManager** user.
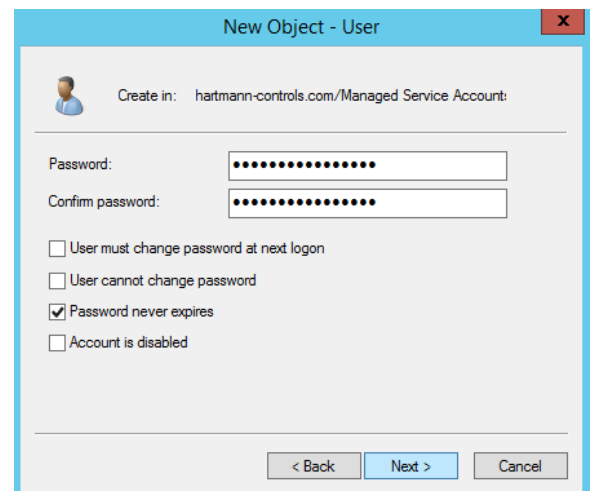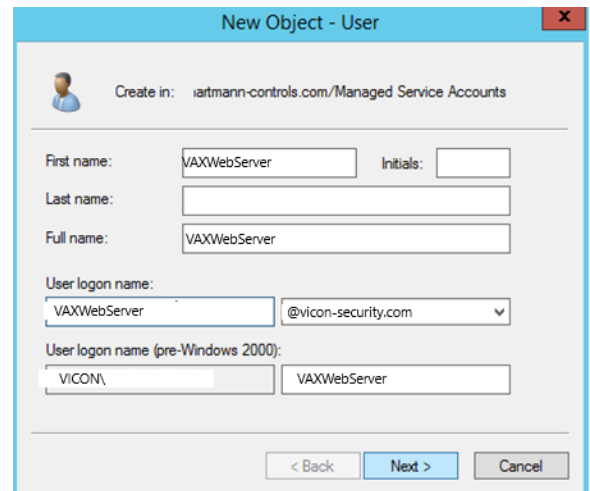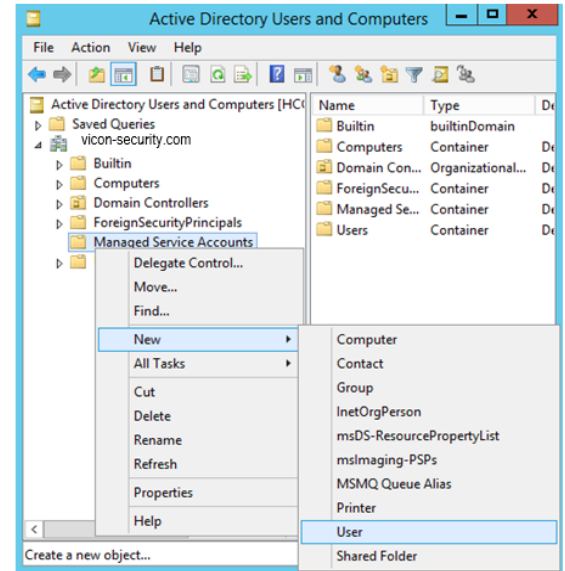
Step 2: Service Account Policies – Logon as a Service

The accounts created need to be given permission to log as a service on the PC running VAX. This is done in the Local Security Policy on that PC, however a domain group policy can override and lock it out. In that case, the group policy applied to that PC will need to be modified instead. This is outside our scope of support and will need to be performed by the customer's IT staff.

1. With an administrator account on the PC hosting VAX, open **Local Security Policy**.
2. On the left panel, expand **Local Policies,** then click on **User Rights Assignment.**
3. In the list of policies on the right side, search for **Log on as a service.** Right click on the policy and click on **Properties.**

   Note: If this option is greyed out, the domain administrator will need to edit it in the Group Policy applied to the computer hosting VAX. It can be found in **Window Settings -> Security Settings -> Local Policies -> User Rights Assignment.** They will need to force a group policy using **gpupdate** in the command prompt on the hosting server.

4. In the Properties window, click on **Add User or Group**.
5. In the Select Users, Computers, Service Accounts or Groups window, enter the service account **VAXWebServer** in the provided text box.
6. Click **Ok** to add to the list.
7. Repeat **Steps 4-6** for **VAXSysManager**.
8. Click **Apply** and **OK** on the Properties window to finish.
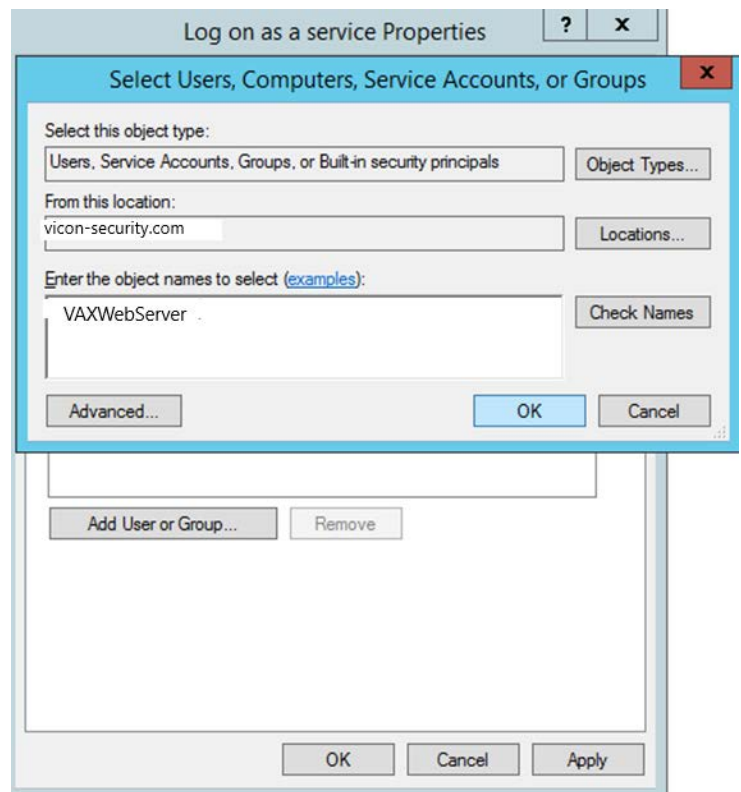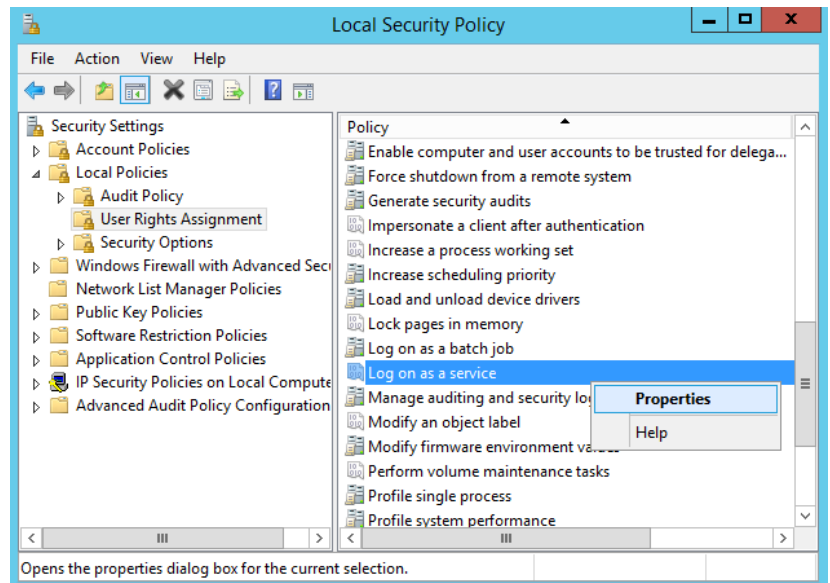
Step 3: Service Account Policies – Local Administrator

The service accounts require local administrator rights on the hosting PC in order to host a HTTP server. Accomplishing this varies if your hosting VAX on the domain controller or not.

On a Domain Controller

1. Open **User Accounts** in **Control Panel.**
2. Click on **Manage User Accounts.**
3. Click on **Add.**
4. Enter **VAXWebServer** in **User name** and your **Domain.** Click **Next.**
5. Select **Administrator** and click **Next.**
6. Click **Finish.**
7. Repeat steps 3-6 for **VAXSysManager.**
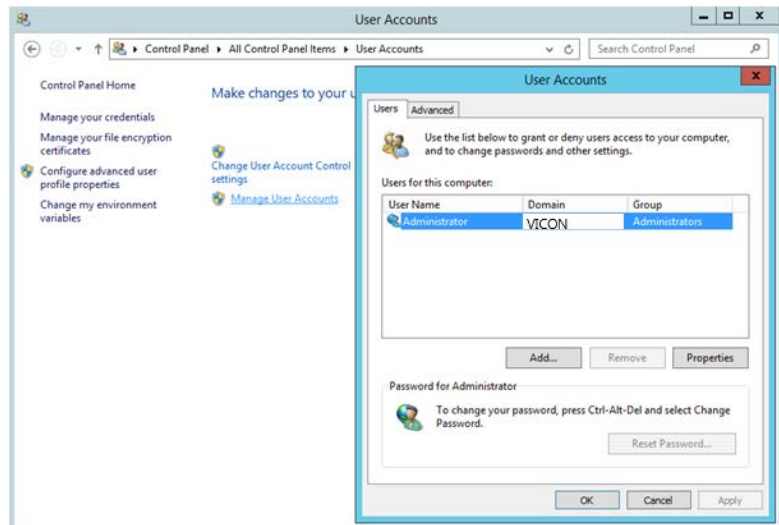
Non-Domain Controller

1. Open **Local Users and Groups** (lusrmgr.msc)
2. In the left pane, left click on **Groups.**
3. Right click on **Administrators** and select **Add to Group…**
4. Click on **Add…**
5. Enter **VAXWebServer** and click **OK.**
6. Repeat step 4 and 5 with **VAXSysManager**.
7. Click **Apply** and **OK.**
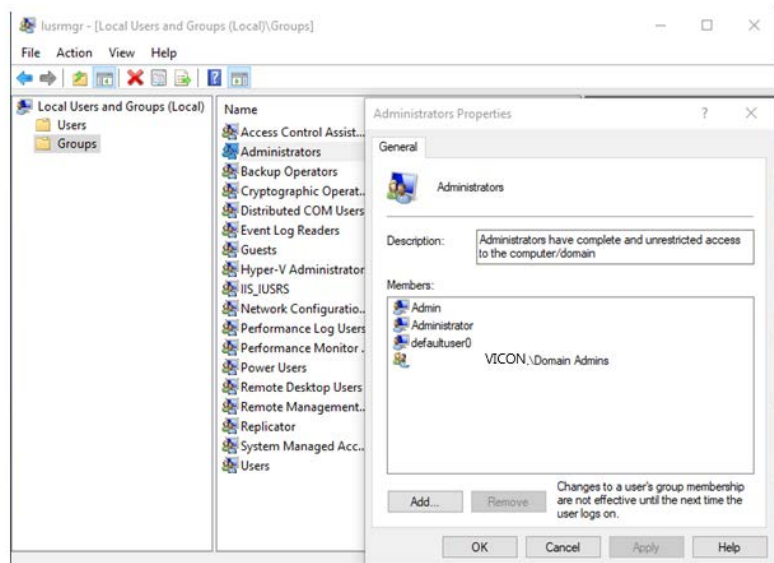
Step 3: Installing VAX

VAX can be found at www.vicon-security.com in the Software Downloads menu.

1. Open **VAX.exe**
2. Press **Install**. This will check for listed components, and if necessary download and install them. You can unselect SQL Server if you wish to use an existing instance.

3. Once all the components are installed, the VAX Setup will launch.
4. Click **Next**
5. Read EULA, check acceptance box and click **Next.**
6. On the Installation Type page, click **Advanced.**
7. On the Database Configuration page, you can change where VAX looks for the database. If you wish to use an existing SQL server, the administrator installing needs to have permission to create databases and grant login permissions. Otherwise the service accounts will need to added and given permission to the SQL server by the Database Administrator.
8. The defaults work for the SQL Database we install as a prerequisite. If SQL Server was already installed and we didn't install it, you will need to change the **Instance Name**. Click **Next** once you've confirmed your database settings.
9. On the Service Configuration page, replace NT SERVICE with your domain name and enter the associated passwords set in Step 1.
10. You may also change the ports used if desired, for example 11001 to HTTPS default 443.
11. Click **Next**
12. The Firewall Configuration page will configure Windows Firewall for VAX. If you have any third-party firewalls, they will need to have rules to allow TCP 11001, 11002, TCP/UDP 9876.
13. The SSL Configuration page provides an option to store the root certificate that signs the self-signed certificate used by the Web Server and System Manager. It is recommended to have a proper SSL certificate if allowing remote access. Click **Next.**
14. Select a path to install VAX then click **Next.** Click **Install.**
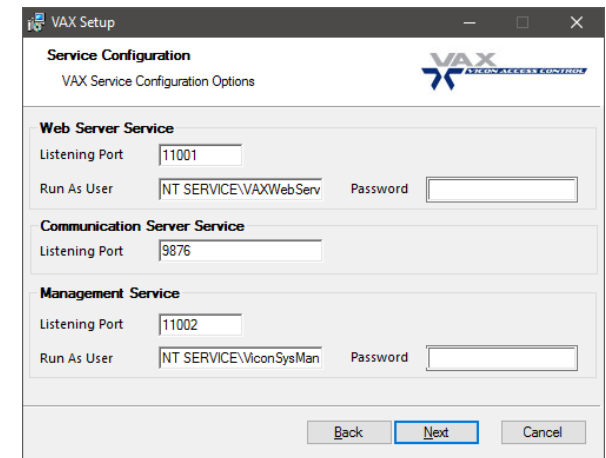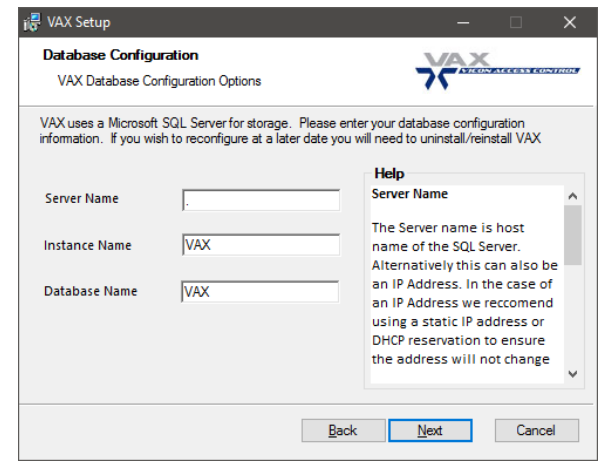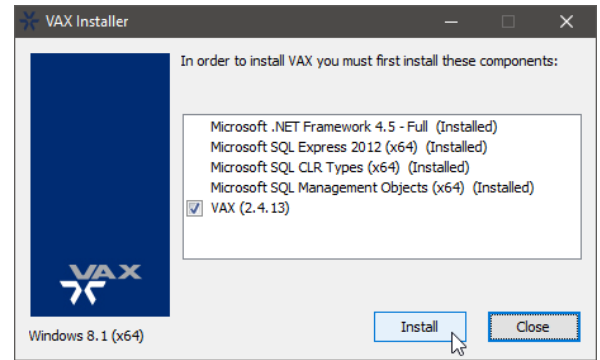
Step 4: Initial Configuration

Once the installer is complete, you will have a VAX folder in your Start Menu and the System Monitor in your taskbar.

1. Using a web browser, you can access the software by the following links:
   - Localhost - https://localhost:11001
   - Computer Name - https://PC-NAME:11001
   - Local IP - https://192.168.2.10:11001
   - Remote IP (requires port forwarding) – https://123.245.123.245:11001

   Alternatively, use can right click on System Monitor in your tray and select **VAX** to quickly access software from server PC or use the **Launch VAX** link in the Start Menu.

2. When the database is first created, you will land on the Initial Configuration page when you first browse to VAX.

   Server Address
   It's important now to determine what the main address the panels are going to connect with. It can be any of the following depending on topology:
   - Computer Name (CARDSERVER)
   - Local IP (192.168.2.10)
   - Public IP (123.245.123.245)
   - Domain (access.securitycorp.org)

   For more information, refer to our Network Topology guide.

   Dealer Information
   Optional contact information that shows on the top of the page to allow easy access for maintenance and support.

   Initial Administrator
   The dealer or user who will be responsible for maintaining the access control system. Additional administrators with varying privileges can be added after.

Name	2 – 64 characters
Username	Email address
Password	6 – 16 characters

Email Configuration

Email configuration is optional but recommended. It can be used to send notifications or to reset passwords.

You may use your own company's mail server, or use a free account from one of the many online providers.

SMTP Server	Required if using SMTP
SMTP Server Port	
Requires SSL	☐
Reply Address	user@email.com
Username	Optional
Password	SMTP Password
Send Test Email	☐

Gmail Settings

Gmail requires you to change a setting or create a app password when using two-factor authentication.

SMTP Server: smtp.gmail.com
SMTP Port: 587
Requires SSL: Yes
Reply Address: youremail@gmail.com
Username: youremail@gmail.com

Hotmail / Live / Outlook Settings

SMTP Server: smtp.live.com
SMTP Port: 587
Requires SSL: Yes
Reply Address: youremail@live.com
Username: youremail@live.com

Yahoo Settings

Yahoo also requires you to allow less secure sign in or generate an app password.

SMTP Server: smtp.mail.yahoo.com
SMTP Port: 465
Requires SSL: Yes
Reply Address: youremail@yahoo.com
Username: youremail@yahoo.com

3. Once you're entered in all the settings, press **Create Customer** at the bottom right of the page.
4. The page will refresh to the login screen, enter the Initial Administrator credentials from the last page and press **Login.**

Troubleshooting

Installer – Service could not be installed

Issue: This error generally occurs when the service account specified on the **Service Configuration** page is doesn't exist.

Solution #1: Click Cancel, restart installation and re-enter the service accounts. Make sure the account is formatted as DOMAIN\ACCOUNT and exists on the computer.

Solution #2: It can also be caused if you've just uninstalled and the service gets stuck as marked for deletion. This can be confirmed by looking starting it in **Services.** A reboot will clear out the stuck service.

Installer - Service failed to start

Issue: Installer attempted to start service but failed.

Solution: More details about this error can be found in the **Event Viewer** under **Windows Logs -> System.** Some common reasons are:

- Service account password is incorrect.
- Account doesn't have 'Logon as a Service' privileges.

Service Stopping or Site Inaccessible

Issue: The VAX Web Server stops after starting or starts but the web service is unavailable.

Solution: This indicates that our service is starting, but either is missing permissions, the database is unavailable or an error occurred. To find out more, you will need to look in the **Application.log** found in the default path **C:\Program Files (x86)\Vicon\VAX\WebServer\Logs**

Scroll to the end and look for ERROR just after the time and date. Here is some common startup errors and resolutions:

System.Net.HttpListenerException: Access is denied
Issue: This indicates that the service account does not have local administrator rights.
Solution: Refer to Step 3 for instruction on giving administrator rights.

A network-related or instance-specific error occurred while establishing a connection to SQL Server.
Issue: VAX was unable to connect to the SQL server. This could mean the SQL server isn't running or that the connection string is incorrect.

Solution #1: Left click on System Monitor in your taskbar, verify the bottom **VAX** entry is running. Start the database if it is not running.

Solution #2: Open **VAX.exe.config** (can be accessed via right-clicking on System Monitor). Look for a string that looks like:

Data Source=COMPUTERNAME\VAX;Initial Catalog=VAX

Verify that the computer name and SQL instance name are correct.

Cannot create file '…\VAX.mdf' because it already exists.

Issue: SQL Server attempted to create database, but an existing database file exists. This can occur if you uninstall SQL server then reinstall.

Solution #1: If you don't want the old database, you can simply browse to folder specified and delete the **VAX.mdf** and **VAX_log.ldf** files.

Solution #2: If you wish to keep that database, open a **Command Prompt** and enter:
sqlcmd –S .\vax
CREATE DATABASE vax ON (FILENAME = N'C:\Program Files\Microsoft SQL Server\MSSQL11.VAX\MSSQL\Data\VAX.mdf'), (FILENAME = N'C:\Program Files\Microsoft SQL Server\MSSQL11.VAX\MSSQL\Data\VAX_log.ldf') FOR ATTACH ;
GO