

The computer industry is very fast moving, with larger and faster technologies supplanting previous hardware releases within six to nine months. Some of the specifications listed may no longer be available, having been replaced with faster CPUs, larger hard-drive capacities, or more memory (RAM). Vanguard Appraisals understands how rapid the technology changes. This document is designed to be a *guide* when purchasing new, or upgrading existing equipment.

Some jurisdictions have implemented virtual machine servers to consolidate several servers and save in their overall hardware costs. **CAMAvision software performs fine in a virtualized environment.** Discuss this option with your server vendors or IT professional.

Technical Support

Vanguard likes to provide technical support via a zero-install instance of TeamViewer (<http://support.camavision.com>) however your IT may already have a solution in place for your office.

Internet access is necessary for workstation or server support.

Possible options include:

- Bomgar (www.bomgar.com) appliance
- Citrix GoToMyPC
- LogMeIn
- Microsoft Remote Desktop Connection
- Other VPN solution

Workstation Minimum

- Intel i3 processor (or similarly classed AMD brand) **or faster**
- 2 GB RAM **or greater**
- 60 GB Hard Drive **or greater**, but this is dependent on other installed software
- Operating System: Windows 7, Windows 8.x, Windows 10
- Internet Explorer 8
- 64 MB Video Card, with a minimum 1024x768 screen resolution
- CD-ROM or DVD Drive
- Mouse or other pointing device
- Connection to Windows supported printer (either via a network or direct connection)
- Monitor
- Ethernet 100/1000 NIC
- For Remote Desktop Support, workstations should have access to the Internet.

Workstation Recommended

- Intel i5 (or similarly classed AMD brand) **or faster**
- 4 GB RAM **or greater**
- 128 GB Hard Drive **or greater**, but this is dependent on other installed software
- Operating System: Windows 7, or Windows 8.x, Windows 10
- Internet Explorer 11 or MS Edge or Google Chrome or Firefox
- 128 MB Video Card, with a minimum 1024x768 screen resolution and support for two monitors.
- CD-ROM or DVD Drive
- Optical Mouse
- Connection to Windows supported printer (either via a network or direct connection)
- Two >19" LCD Monitors
- Ethernet 1000 NIC
- For Remote Desktop Support, workstations should have access to the Internet.

Please consult your IT technicians for additional hardware or software requirements for your jurisdiction.

Optional Equipment

- Backup device and/or DVD/CD-RW burner for backups

Remote Laptop Recommended

- Intel i5 (or similarly classed AMD brand) **or faster**
- 4 GB RAM **or greater**
- 128 GB Hard Drive **or greater**, (dependent on amount of parcels to be stored)
- Operating System: Windows 7, or Windows 8.x, Windows 10
- Screen resolution must support a minimum 1024x768
- Wireless 802.11g/n/ac
- USB ports
- CD-ROM or DVD Drive (optional)
- For Remote Desktop Support, workstations should have access to the Internet.

Please consult your IT technicians for additional hardware or software requirements for your jurisdiction.

Optional Laptop Equipment

- Automobile charger adapter (inverter)
- External mouse and keyboard
- USB Flash Drive (2GB or larger)

Tablet Computers

Tablets are becoming a popular choice for CAMAvision while out in the field. However there are things to consider before purchasing:

- Battery life – i7 processor has about 4 hours, Atom processors have up to 10 hours.
- Performance - Intel i7 vs. i5 vs i3 vs. Intel M
- Screen size / Brightness / Glare
- Weight
- Durability
- 4G LTE cost

CAMAvision *cannot* be installed on Windows RT, so be careful to purchase the correct version.

(A) File Server/Database Server Combo Minimum Specification

- Intel Quad Core processor (or similarly classed AMD brand) **or faster**
- 4 GB RAM **or greater**
- 500 GB Hard Drive (dependent on amount of parcels to be stored and if photographs are included)
- Operating System: Windows 2008 Server R2 / Windows Server 2012 / Windows Server 2016
- DVD-ROM Drive
- USB Ports
- Printer supported by Microsoft Windows (for print server)
- Backup device
- Ethernet (100/1000 NIC) connectivity
- Relational database¹⁰

(B) Dedicated File Server Minimum Specification (database will be located elsewhere)

- Intel Quad Core processor (or similarly classed AMD brand) **or faster**
- 4 GB RAM **or greater**
- 500 GB Hard Drive **or greater** (dependent on amount of parcels to be stored and if photographs are included)
- Operating System: Windows 2008 Server R2 / Windows Server 2012 / Windows Server 2016
- DVD-ROM Drive (optional)
- USB Ports
- Printer supported by Microsoft Windows (for print server)¹
- Backup device
- Ethernet (100/1000 NIC) connectivity

(C) Dedicated Database Server Minimum Specification

- Intel Quad Core processor (or similarly classed AMD brand) **or faster**
- 4 GB RAM **or greater**
- 500 GB Hard Drive **or greater** (dependent on amount of parcels to be stored and if photographs are included)
- Operating System: Windows 2008 Server R2 / Windows Server 2012 / Windows Server 2016
- DVD-ROM Drive (optional)
- USB Ports
- Backup device
- Ethernet (100/1000 NIC) connectivity
- Relational database¹⁰

¹⁰ CAMAvision **includes** a relational database called Firebird which has proven to be very fast and stable. Microsoft SQL Server is supported, but may require licenses to be purchased from a software vendor.

Optional Recommended Database Server Equipment

- RAID hard drive configuration

Estimates of hard disk capacity should not be conservative. Consider if your server is going to be shared by multiple departments. Allowances for a higher end server should be considered if the file server or database server is to be shared.

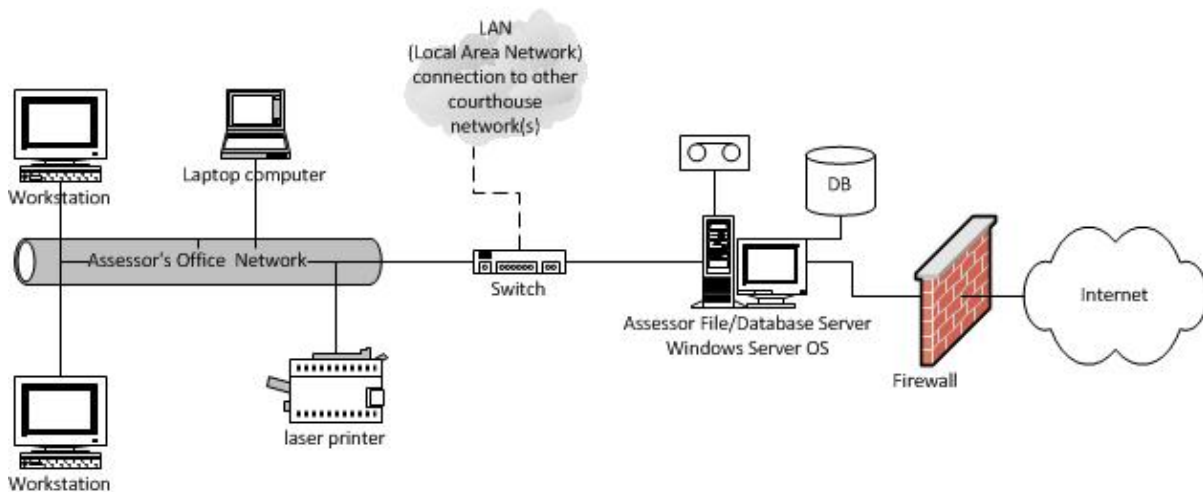
CAMAvision, whether using Firebird or MS-SQL Server is database intensive. Consequently disc I/O should be carefully evaluated. Better performance and access can be achieved if 10K spindle speeds (or higher) hard drives are used.

Sample Networking Configurations

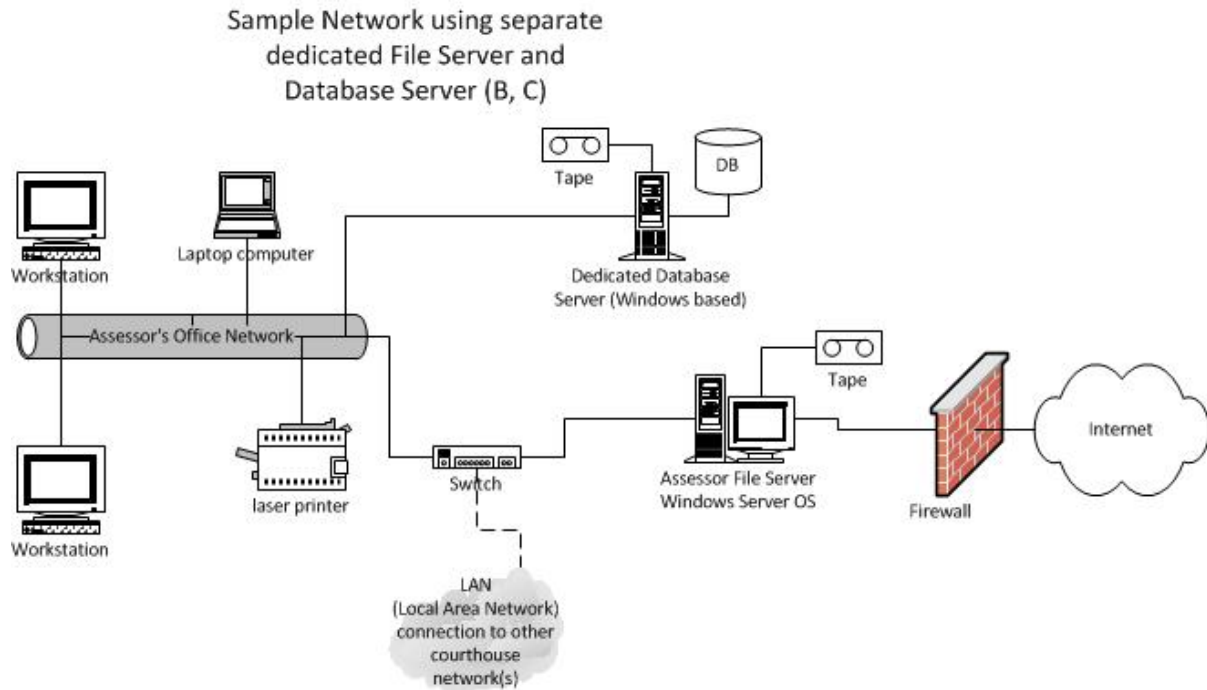
The following examples illustrate a couple simple networking configurations for CAMAvision. Note that the A, B, and C configuration letters refer to the file/database server specifications outlined above.

Sample one shows a single PC sharing both the File Serving and Database Serving responsibilities. This computer must be running Windows 2008 Server R2, Windows Server 2012, or Windows Server 2016.

Sample Network using single File
Server/Database configuration
(A)
(for Windows network only)



Example 2 illustrates a dedicated File Server PC and Database Server combo. In this case, the File Server can be Windows 2008 R2 Server, Server 2012, or Server 2016. The dedicated database server can be Windows 2008 Server R2, Server 2012, or Server 2016.



Additional Notes

1. It is important to be always stay up to date on all the latest Service Packs, security patches and any hot fixes for the respective Operating System on **each** PC (this includes network servers).
2. Laser printers, especially color lasers, are more desirable over other InkJet printers for professional looking reports.
3. CAMAvision **includes** a relational database called Firebird which is proven to be very fast and stable.
4. Optionally the database backend can be Microsoft SQL Server 2005, SQL Server 2008R2, SQL Server 2012, SQL Server 2014, or SQL Server 2016. However use of MS SQL Server may require licenses to be purchased from a software vendor. Use if MS SQL Server Express is not recommended in part because Microsoft has built-in physical database size limitations.
5. For Firebird users, any anti-virus/malware scanners should be configured to skip Firebird (*.FB2 and *.IB) files.