The computer industry is very fast-moving, with larger and faster technologies supplanting previous hardware releases within six to nine months. Vanguard Appraisals understands how rapidly technology changes. This document is designed to be a *guide* when purchasing new or upgrading existing equipment. Some of the specifications listed may no longer be available, having been replaced with faster CPUs, larger hard-drive capacities, or more memory (RAM). Operating Systems (both desktop and server) may reach the end of life before this document is updated. Keep this in mind when considering both server and workstation purchases. It is recommended you check Microsoft's online product lifecycle guides for the latest information. Vanguard *does not* support installation on end-of-life operating systems.

Some jurisdictions have implemented virtual machine (VM) servers to consolidate several servers and save on their overall hardware costs. **CAMAvision software performs fine in a virtualized server environment** *when given adequate resources*. Discuss this option with your server vendors or IT professionals.

Technical Support

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

Internet access is necessary for workstation or server support.

Possible alternate options include:

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

Workstation Recommended

• Intel i7 (or similarly classed AMD brand) or faster

• 8 GB RAM *or greater*

• 128 GB Hard Drive *or greater*, but this is dependent on the OS and other installed software

• Operating System: Windows 10 or Windows 11

• Microsoft Edge or Google Chrome or Firefox

• Video with a minimum 1024x768 screen resolution and support for two+ monitors.

• CD-ROM or DVD Drive (optional)

• Optical Mouse

• Connection to a Windows-supported printer (either via a network or direct connection)

• Two >19" 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.

Workstation Minimum

• Intel i5 processor (or similarly classed AMD brand) *or faster*

• 4 GB RAM *or greater*

• 60 GB Hard Drive *or greater*, but this is dependent on the OS and other installed software

• Operating System: Windows 10

• Microsoft Edge or Google Chrome

• Video with a minimum 1024x768 screen resolution

• CD-ROM or DVD Drive (optional)

• Mouse or another pointing device

• Connection to a 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.

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 the number of parcels to be stored)

• Operating System: Windows 10 or Windows 11

• Screen resolution must support a minimum 1024x768

• Wireless 802.11g/n/ac/ax

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

• Battery life – i7 processor has about 4-6 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 or 5G LTE costs

CAMAvision *cannot* be installed on Windows RT or Windows 10X, so be careful to purchase the correct version.

(A) File Server/Database Server Combo Minimum Specification

• Intel multi-core processor (or similarly classed AMD brand) *or faster*

• 8 GB RAM *or greater*

• 500 GB Hard Drive *or greater* (dependent on the number of parcels to be stored and if photographs and documents are included)

• Operating System: Server 2016 / Server 2019

• DVD-ROM Drive (optional)

• USB Ports

• Printer supported by Microsoft Windows (for print server)

• Backup device

• Ethernet (100/1000 NIC) connectivity

• Relational database[1]

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

• Intel Quad Core processor (or similarly classed AMD brand) *or faster*

• 8 GB RAM *or greater*

• 500 GB Hard Drive *or greater* (dependent on the number of parcels to be stored and if photographs and documents are included)

• Operating System: Server 2016 / Server 2019

• 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*

• 8 GB RAM *or greater*

---

[1] CAMAvision **includes** a relational database called Firebird 3 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.

• 500 GB Hard Drive *or greater* (dependent on number of parcels to be stored and if photographs are included)

• Operating System: Windows Server 2016 / Server 2019

• DVD-ROM Drive (optional)

• USB Ports

• Backup device

• Ethernet (100/1000 NIC) connectivity

• Relational database (Firebird is provided by Vanguard)

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.

Additional Notes

1. It is important to always stay up to date on all the latest Service Packs, security patches, and any hotfixes 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 2012R2[2], SQL Server 2014, SQL Server 2016, SQL Server 2017, or SQL 2019. Use of MS SQL Server may require licenses to be purchased from a software vendor. Vanguard can only provide limited DBA support for SQL Server and cannot be responsible for installation and service packs.
5. Use if MS SQL Server Express is *not* recommended in part because Microsoft has built-in physical database size limitations.
6. For Firebird users, any anti-virus/malware scanners should be configured to skip Firebird (*.FB3 and *.IB) files.
7. There's been some success running CAMAvision through Citrix VDI or as a RemoteApp. However, Vanguard is not able to test all scenarios. Before committing to such a configuration, this needs to be tested by the local IT and they assume all responsibility for setup and configuration.

---

[2] Microsoft's lifecycle support date for SQL Server 2012R2 ends 10/10/2023.