CS Orthodontic Imaging Software 11.14
CS OMS Imaging Software 11.14

Minimum System Requirements: Lists the lowest functional specifications for our hardware and software. To assure optimal performance and future upgrade capability more system RAM, higher end graphics cards, and faster CPU's are suggested.

	Carestream Dental strongly adheres to compliance with Microsoft Windows operating systems and hardware compatibility found at https://sysdev.microsoft.com/en-US/Hardware/lpl/. Only non-emulated Windows operating systems and hardware listed in this document have been fully tested and certified with CS Orthodontic/OMS Imaging Software.		
Product	**Recommended**	**Minimum Required ***	**Notes**
Imaging Server	• Intel® Xeon® E31220 Processor or better • 16 GB RAM • 1 TB or larger hard drive for data storage • At least 20 GB for software installation on the on the C-Drive • 32-bit 1280x1024 resolution capable video card • Monitor supporting 1280 x1024 resolution, 32-bit color (See note 10 on Pg. 7) • 100/1000 NIC using a Gigabit Ethernet switched network 64-bit Only Windows Server 2019 Windows Server 2016 Windows Server 2012 R2	• Intel Core2 Duo Processor 3.0 GHz or faster CPU • 8 GB RAM • 500 GB or larger hard drive for data storage • At least 20 GB for software installation on the on the C-Drive • 32-bit 1280x1024 resolution capable video card • Monitor supporting 1280 x1024 resolution, 32-bit color (See note 10 on Pg. 7) • Ethernet 100/1000 NIC 64-bit Only Windows Server 2019 Windows Server 2016 Windows Server 2012 R2 Windows 10 Professional	Dedicated Image Server requirement is for a computer where the software will not be used by office staff. If the server computer will also be used as a workstation the requirements for Imaging Server and Imaging Workstation should be reviewed. Use whichever is better for each component. If the server will be used to view 3D Volumes, it must also meet the requirements for the CS 3D Imaging Viewing Workstation Windows 10 is limited to 20 concurrent connections when used as a server. Concurrent connections refer to the number of devices connected. A workstation or device can have more than one connection. You may experience the concurrent connections limit with less than 20 workstations actually connected. Microsoft does not recommend installing SQL Server on a Domain Controller.
Imaging Workstation	• Intel® Xeon® E31220 Processor or better • 16 GB system RAM • 80 GB hard drive with at least 20 GB for software installation on the on the C-Drive • Ethernet 100/1000 NIC • Available high-speed USB 2.0 port • VGA/HDMI–compatible video card with 1,024MB dedicated video memory Supporting DirectX 9.0c or better • Monitor supporting 1280 x1024 resolution, 32-bit color (See note 10 on Pg 7) 64-bit Only Windows 10 Professional	• Pentium 4, 3.2 GHz or faster • 8 GB system RAM • 80 GB hard drive with at least 20 GB for software installation on the on the C-Drive • Ethernet 100/1000 NIC • Available high-speed USB 2.0 port • VGA/HDMI–compatible video card with 512MB dedicated video memory Supporting DirectX 9.0c • Monitor supporting 1280 x1024 resolution, 32-bit color (See note on 10 Pg 7) 64-bit Windows 10 Professional	Video card and image size: • For 512 MB installation, images should be limited to 5 Megapixel or less • For 1,024 MB installation, images should be limited to 7 Megapixel or less • For images larger than 7 Megapixel, more RAM and higher end graphics card are required. *For RVG 6500 see Install Guide (SM728)*

Imaging Workstation With 3D Preview	• Intel® Xeon® E31220 Processor or better • 16 GB system RAM • 80 GB hard drive with at least 20 GB for software installation on the on the C-Drive • Ethernet 100/1000 NIC • Available high-speed USB 2.0 port • Dedicated graphics card with 1 GB Dedicated Video RAM supporting OpenGL v3.3 • Monitor supporting 1280 x1024 resolution, 32-bit color (See note 10 on Pg 5) • NVIDIA/ATI based graphics card with 512 MB of RAM supporting 64-bit Only Windows 10 Professional	• Pentium 4, 3.2 GHz or faster • 8 GB system RAM • 80 GB hard drive with at least 20 GB for software installation on the on the C-Drive • Ethernet 100/1000 NIC • Available high-speed USB 2.0 port • Monitor supporting 1280 x1024 resolution, 32-bit color (See note on 10 Pg 5) • NVIDIA/ATI based graphics card with 512 MB of RAM supporting OpenGL v3.3 64-bit Windows 10 Professional	Video card and image size: • For 512 MB installation, images should be limited to 5 Megapixel or less • For 1,024 MB installation, images should be limited to 7 Megapixel or less • For images larger than 7 Megapixel, more RAM and higher end graphics card are required.
CS Cloud Sender Server	The CS Cloud Sender Server PC should meet the Imaging Workstation minimum requirements plus these additional requirements: 1 TB or larger hard drive for data storage 64-bit Only • Windows Server 2019 • Windows Server 2016 • Windows 10 Professional	The CS Cloud Sender Server PC should meet the Imaging Workstation minimum requirements plus these additional requirements: 500 GB or larger hard drive for data storage 64-bit Only • Windows Server 2019 • Windows Server 2016 • Windows 10 Professional	If the Sender Server computer will also be used as a workstation the requirements for Imaging Server and Imaging Workstation should be reviewed. Use whichever is better for each component. If the Sender Server will be used to view 3D Volumes, it must also meet the requirements for the CS 3D Imaging Viewing Workstation Windows 10 is limited to 20 concurrent connections when used as a server. Concurrent connections refer to the number of devices connected. A workstation or device can have more than one connection. You may experience the concurrent connections limit with less than 20 workstations actually connected.
CS Cloud Local Imaging Computer	CS Cloud workstation PCs that will be used to run CS Ortho/OMS Imaging should meet the Imaging Workstation recommended requirements	CS Cloud workstation PCs that will be used to run CS Ortho/OMS Imaging should meet the Imaging Workstation minimum requirements	CS Cloud workstation computers that will use CS Orthodontic/OMS Imaging for downloading photos or for X-ray image acquisition must meet the requirements for *Imaging Workstation* and *CS 3D Imaging Viewing Workstation* if appropriate
CS 9000 Panoramic/Cephalometric Acquisition PC	See Imaging Workstation	See Imaging Workstation	
CS 8000 Ethernet Connection Panoramic/Cephalometric Acquisition PC,	**Imaging Workstation plus these additional requirements:** **Additional Requirements** • Two 100/1000 NIC's	**Imaging Workstation plus these additional requirements:** **Additional Requirements** • Two 100/1000 NIC's	

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CS 3D Imaging Software Viewing Workstation	• CPU: Intel Core i7-2600 (2nd Generation) processor • 16 GB System RAM (32 GB if using MAR) • 7200 RPM hard drive with SATA interface storage • Dedicated graphics card with 1 GB Dedicated Video RAM supporting OpenGL v3.3 • 17" Display able to support minimum 32-bit 1280x1024 resolution • NVIDIA/ATI based graphics card with 512 MB of RAM supporting 64-bit Only Windows 10 Professional	• CPU: 2.4 GHz Core Duo • 8 GB System RAM (16 GB if using MAR) • 300 MB hard drive space available on the system disk. • 1.5 GB hard drive space available on system disk for implants • NVIDIA/ATI based graphics card with 512 MB of RAM supporting OpenGL v3.3 CS 3D Imaging – PDIP Module • CPU: Intel Core i7-2600 (2nd Generation) processor • 8 GB System RAM • 7200 RPM hard drive with SATA interface storage • Dedicated graphics card with 1 GB Dedicated Video RAM supporting OpenGL v3.3 • 17" Display able to support minimum 32-bit 1280x1024 resolution 64-bit Only Windows 10 Professional	**The listed requirements are for CS 3D Imaging software. When used with CS OMS\Orthodontic Imaging use the Imaging Workstation entry when better** Storage space varies depending on imaging device The minimum recommended video card is the nVidia GeForce 450GTS or higher. If this or any other higher quality video board is unable to be used it may be substituted with a 512MB Glide 1.2 compatible video card with reduced performance.
CS Model	• CPU: 2.4 GHz Intel Duo Core • 2 GB System RAM • 30 MB hard drive space available to install the software • 80 GB free space to use the software • NVIDIA/ATI-based graphics card supporting OpenGL v3.3 or higher with 512 MB of Dedicated Video RAM • 17" Display able to support minimum 32-bit 1280x1024 resolution 64-bit Only Windows 10 Professional	• CPU: 2.4 GHz Intel Duo Core • 2 GB System RAM • 30 MB hard drive space available to install the software • 80 GB free space to use the software • NVIDIA/ATI-based graphics card supporting OpenGL v3.3 or higher with 512 MB of Dedicated Video RAM • 17" Display able to support minimum 32-bit 1280x1024 resolution 64-bit Only Windows 10 Professional	**The listed requirements are for CS Model software. When used with CS OMS\Orthodontic Imaging use the Imaging Workstation entry when better**
CS Model+	**CS Model with these additional requirements:** • 16 GB System RAM • 100 MB hard drive space available on local disk to install the software 64-bit Only Windows 10 Professional	**CS Model with these additional requirements:** • 8 GB System RAM • 100 MB hard drive space available on local disk to install the software 64-bit Only Windows 10 Professional	**The listed requirements are for CS Model+ software. When used with CS OMS\Orthodontic Imaging use the Imaging Workstation entry when better**
CS 7400 System	**Imaging Workstation plus this additional requirement:** • Available USB 2.0 port 64-bit Windows 10 Professional	**Imaging Workstation plus this additional requirement:** • Available USB 2.0 port 64-bit Windows 10 Professional	

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	Imaging Workstation plus these additional requirements:	Imaging Workstation plus these additional requirements:	
CS 9000 3D, 9300 Select, CS 9300, CS 8100 3D SC or CS 8100 3D Acquisition PC	• 8 GB System RAM • Hard drive: • 4 GB free for software installation • 500 GB free for data storage • Removable/portable, external hard disk drive for data backup • Video Card options: • Cuda version 6.4 • Compute capability 1.1 • Nvidia based board on PCI Express video bus with minimum 2 GB Video RAM • Ethernet: • One GBit NIC for the X-ray unit • One 100/1000 NIC for LAN connection • Mouse with 2 buttons and a scroll wheel <u>64-bit Only</u> Windows 10 Professional	• 8 GB System RAM • Hard drive: • 4 GB free for software installation • 500 GB free for data storage • Removable/portable, external hard disk drive for data backup • Video Card options: • Cuda version 6.4 • Compute capability 1.1 • Nvidia based board on PCI Express video bus with minimum 2 GB Video RAM • Ethernet: • One GBit NIC for the X-ray unit • One 100/1000 NIC for LAN connection • Mouse with 2 buttons and a scroll wheel <u>64-bit Only</u> Windows 10 Professional	*See Item 9 under **Notes and functional requirements** for more information on 3D acquisition PC A 3D Acquisition PC is supplied by Carestream Dental in certain markets. Please check with your sales representative or dealer to verify availability in your region. Documented requirements are for computer replacement or markets where the unit does not include a computer
CS 8200 3D Acquisition PC	**CS 8100 3D plus these additional requirements:** • 16 GB System RAM • Graphic Card options: • Cuda version 10.1 or higher • Cuda Compute Capability 3 and higher. • Nvidia based board on PCI Express video bus with minimum 4 GB Video RAM	**CS 8100 3D plus these additional requirements:** • 16 GB System RAM • Graphic Card options: • Cuda version 10.1 or higher • Cuda Compute Capability 3 and higher. • Nvidia based board on PCI Express video bus with minimum 4 GB Video RAM	

| CS 8200 3D (Neo Edition) Acquisition PC | **CS 8200 3D plus these additional requirements:**
• Graphic Card options:
  • Cuda version 11.6 or higher
  • Cuda Compute Capability 5 and higher.
• Display 1920x1080 minimum screen resolution and 16:9 aspect ratio. | **CS 8200 3D plus these additional requirements:**
• Graphic Card options:
  • Cuda version 11.6 or higher
  • Cuda Compute Capability 5 and higher.
• Display 1600x900 minimum screen resolution and 16:9 aspect ratio. | |

	Imaging Workstation plus these additional requirements:	Imaging Workstation plus these additional requirements:	

CS 9600 Acquisition PC	• 16 GB System RAM
	  • 16 GB for PDIP option
	  • 32 GB for CS MAR option
	• Hard drive:
	  • 4 GB free for software installation
	  • 500 GB free for data storage
	• Removable/portable, external hard disk drive for data backup
	• Video Card options:
	  • Cuda version 6.4
	  • Compute capability 1.1
	  • Nvidia/ATI based board supporting Open GL 3.3 with 512 MB Video RAM on AGP x8 video bus
	• Ethernet:
	  • One GBit NIC for the X-ray unit
	  • One 100/1000 NIC for LAN connection
	• Mouse with 2 buttons and a scroll wheel
	<u>64-bit Only</u>
	Windows 10 Professional
		• 8 GB System RAM
		  • 32 GB for CS MAR option
		• Hard drive:
		  • 4 GB free for software installation
		  • 500 GB free for data storage
		• Removable/portable, external hard disk drive for data backup
		• Video Card options:
		  • Cuda version 6.4
		  • Compute capability 1.1
		  • Nvidia/ATI based board supporting Open GL 3.3 with 512 MB Video RAM on AGP x8 video bus
		• Ethernet:
		  • One GBit NIC for the X-ray unit
		  • One 100/1000 NIC for LAN connection
		• Mouse with 2 buttons and a scroll wheel
		
		<u>64-bit Only</u>
		Windows 10 Professional
			*See Item 9 under **Notes and functional requirements** for more information on 3D acquisition PC
			
			A 3D Acquisition PC is supplied by Carestream Dental in certain markets. Please check with your sales representative or dealer to verify availability in your region.
			
			Documented requirements are for computer replacement or markets where the unit does not include a computer

CS 8100 / CS 8100SC / CS 8100SC Access Panoramic / Ceph Acquisition PC	• 250 GB Hard drive with 4 GB for software installation • Graphics-based board on PCI Express video bus with a minimum of 1,024 MB of video RAM • One Gigabit Ethernet for connection for the CS 8100 <u>64-bit Only</u> Windows 10 Professional	• 8 GB system RAM if CS 8100 SC / CS 8100SC Access • 250 GB Hard drive with 4 GB for software installation • Graphics-based board on PCI Express video bus with minimum of 512 MB of video RAM • One Gigabit Ethernet for connection for the CS 8100 <u>64-bit Only</u> Windows 10 Professional	

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RVG Connect, RVG 5x00/6x00 Sensors or CS1500/CS1600/C S1200 Intraoral Cameras	**Hardware**
	Intel® Xeon® E31220 Processor or better
	16 GB system RAM
	250 GB free disk space.
	Ethernet 100/1000 NIC
	Available high-speed USB 2.0 port
	256 MB video card Supporting DirectX 9.0c
	
	Operating System
	64-bit only
	  Windows 10: Professional
		Hardware
		Intel Core2 Duo Processor 3.0 GHz or faster CPU
		8 GB system RAM
		80 GB free disk space.
		Ethernet 100/1000 NIC
		Available high-speed USB 2.0 port
		256 MB video card Supporting DirectX 9.0c
		
		Operating System
		64-bit only
		  Windows 10: Professional
			Review the Imaging Viewing Workstation requirements. Use the better requirement for each component
			
			For RVG 6500, see the Installation Guide (SM728).

CS7600 System Acquisition Workstations	**Imaging Workstation plus these additional requirements:** 64-bit Windows 10 Professional	**Imaging Workstation plus these additional requirements:** 64-bit Windows 10 Professional	
CS 3500 Acquisition Workstations		**For Laptop** • Intel Core i7 3630QM 2.4Ghz processor • Video card nVidia GeForce GTX 660M /Quadro K2100M or better **For Desktop** • Intel Core i7 3770 Quad 3.4Ghz processor • Video card ATI HD 7850 or nVidia GeForce GTX 560Ti or better • Video card driver must support OpenGL 3.3, and OpenCL 1.1 • 8 GB or higher RAM • 80GB of free disk space • Standard CRT/LCD monitor supporting 1440x900 or higher resolution • Available USB 2.0 high speed port 64-bit Only Windows 10 Professional	**The listed requirements are for CS 3500 Acquisition software. When used with CS OMS/Orthodontic Imaging use the Imaging Workstation entry when better**
CS 3600/3700 Acquisition Workstations		**For Laptop** • Intel Core i7 4700QM 2.4Ghz processor • Video card nVidia GeForce GTX 970M /Quadro M3000M or better **For Desktop** • Intel Core i7 3770 Quad 3.4Ghz processor • Video card nVidia GeForce GTX 760 or better • Video card driver must support OpenGL 3.3, and OpenCL 1.1 • 16 GB or higher RAM • 80GB of free disk space • Standard CRT/LCD monitor supporting 1440x900 or higher resolution • Available USB 2.0 h high speed port 64-bit Only Windows 10 Professional	**The listed requirements are for CS 3600 Acquisition software. When used with CS OMS/Orthodontic Imaging use the Imaging Workstation entry when better**

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Imaging Multi Location Solution (Non-Cloud)

Product	Hardware	Supported Operating Systems
Application Server	• Intel Core2 Duo Processor 2.0 GHz or faster CPU • 4 GB RAM (8 GB or higher recommended) • 200 GB hard drive with at least 20 GB for software installation on the on the C-Drive • Ethernet 100/1000 network card • VGA/HDMI-compatible Graphics card with 512 MB or higher video memory and a minimum resolution of 1280x1024 • Standard CRT/LCD monitor with a minimum of 1280x1024 screen resolution	<u>64-bit Only</u> Windows Server 2012 R2 – with SQL 2008
Remote PC Based	Remote PC's that will be used to run CS Ortho/OMS Imaging should meet the Imaging Workstation requirements	For systems that will view 3D volumes, see requirements for 3D Software Viewing Workstations. .
Thin Clients	Any device capable of running Microsoft RDP software and suppports network connectivity using TCP/IP. The device should be capable of generating a display with at least 1280x1024 resolution.	
Wide Area Network	Carestream Dental Recommends using a high speed, dedicated, point to point connection between offices such as a T1 circuit	Transferring of data between offices is limited to the amount of bandwith dedicated to the connection between offices and the amount of traffic on your network. Low bandwith connections or large amounts of traffic can greatly affect the speed of viewing and saving images between offices.

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Notes and functional requirements:

1. Microsoft Word 2000- 2010, Outlook or Outlook Express installed and configured
2. Installed and up to date Antivirus (some configuration may be needed for optimal performance: Heuristic and real time or office hours scanning disabled)
3. High speed Internet connection for remote support
4. Photo quality printer and/or flatbed scanner with transparency adapter recommended
5. Document scanning requires a TWAIN complaint scanner.
6. Backups and restore system in place: We suggest that you perform a nightly backup on removable media and keep that media in a fireproof safe off-site.
7. An Uninterruptable Power Supply with shutdown software installed at the server machine is recommended.
8. Consult a qualified IT professional about a RAID system installation for your image server.
9. Acquisition PC's are single purpose built and must not have any additional software or peripherals such as a printer or other IO equipment installed or attached.
10. Orthotrac v14 requires a video card and monitor supporting 1920 x 1080 resolution, 32-bit color. If you are using this software you must use a monitor of this resolution or higher, regardless of any lower resolution monitor requirements listed above.
11. When comparing minimum system requirements between Carestream Dental hardware, Carestream Dental software or Windows, use the superior hardware specification.
12. Carestream Dental does <u>not</u> certify our software on Virtual Machines or an Emulated OS, however the client may choose to use either at their own risk

Windows XP, Vista, Windows 7, Windows 8 and Windows 10 compatibility notes:

- No Home versions of Microsoft Windows are tested or supported
- Windows XP is not supported for any Carestream Dental hardware or software.
- Microsoft Small Business Server is not a supported operating system.
- Server and workstations should be kept current with all Windows service packs and critical updates.
- Microsoft Windows 10: Microsoft Edge browser is now currently supported by our online training products (Carestream Dental Institute).
- CS 9500, CS 8000 PCI, RVG UI, RVG 5000, RVG 6000, STV/1000 acquisition stations WILL NOT have Windows 10 compatibility.
- **Microsoft Windows Note:** Microsoft has discontinued support for Windows XP and Windows Server 2003. For this reason, as of March 31, 2016, Carestream Dental will no longer support Windows XP or Windows Server 2003.
- Microsoft has discontinued support for Windows 7 and Windows Server 2008 as of January 14, 2020. If Windows 7 or Windows Server 2008 is being used, Microsoft is strongly recommending that you upgrade your OS. These operating systems are no longer supported by CS Orthodontic Imaging or CS OMS Imaging software.
- When using Windows 10 as a Server, concurrent connections refer to the number of devices connected. A workstation or device can have more than one connection. You may experience the concurrent connections limit with less than 20 workstations actually connected.

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