eRAD PACS eVolution Workstation Requirements

Requirements for eRAD PACS eVolution viewer

Component		Recommended	Diagnostic Workstation
CPU**		4 core/8 logical (Intel i5, i7 or equivalent)	6 core/12 logical (workstation processor)
RAM		8GB, or 2-times the size of the largest data set.	16GB, or 2-times the size of the largest data set.
Disk	Program		
	Cache Size	100GB	100GB
	Type	SSD (SATA or NVMe)	SSD (NVMe)
Dedicated GPU	Basic Use		
	Plugins (Reconstruction, Volume 3D, Image Fusion)	DirectX 11 compatible Min 1GB RAM	DirectX 11 compatible Min 2GB RAM
NIC card		1000 Mbps	1000 Mbps
Operating System		Windows 10 64-bit.	Windows 10 64-bit.
Browser *See note about Java plug-in support.*		IE11 or later, Edge, Mozilla Firefox, or Google Chrome (preferred)	IE11or later, Edge, Mozilla Firefox, or Google Chrome (preferred)
		For full web viewer, browser must support HTML5, WebGL and websockets	For full web viewer, browser must support HTML5, WebGL and websockets
Input devices		3-button mouse with scroll wheel, Microphone	3-button mouse with scroll wheel, Microphone
Other		For eRAD Scheduler, media creation and import, and document scanning, Java VM v1.6 or later required	For eRAD Scheduler, media creation and import, and document scanning, Java VM v1.6 or later required

** Processor cores and speed
- The eRAD PACS viewer is multi-threaded, running some tasks in parallel to maximize CPU usage but with a special threading mechanism to avoid blocking other Windows tasks. Some of the more significant parallel tasks are as follows:
- Parsing the session data (more priors require more parsing)
- Image enhancement processing
- Decompression (studies containing many images require more decompression)
- Image manipulation (e.g., magnification, adjusting window and level)

- For a workstation meeting the minimum supported CPU configuration only, the number of cores and the processor speed might affect viewer performance. No strict method or rule exists for making this determination. The minimum supported CPU recommendation provided above is based on experience but might not be best for every situation.
- If a workstation uses the recommended CPU or better, viewer performance is affected by the processor's general capabilities and not by the relationship between number of cores and processor clock rate.

Nuance Dragon Naturally Speaking plug-in module: Supports *Dragon Medical Practice Edition 4*. The workstation must satisfy the following requirements:

- CPU: Minimum: 2.2 GHz Intel® dual core or equivalent AMD processor. Faster processors yield faster performance.
- Free hard disk space: 4GB if DVD installation
- RAM: 4 GB for all operating systems
- Supported Operating Systems:
  - Windows 7, 8.1, and 10, 64-bit
  - Windows Server 2008 R2
  - Windows Server 2012
  - Windows Server 2012 R2
  - Windows Server 2016
- Internet Explorer 11 or the current version of Chrome or Edge for online Help and for installation if installing from the Web
- Microsoft .NET Framework version 4.5.2 or later. Generally, the .NET Framework is pre-installed on Windows 7, 8.1, and 10 computers. If you do not have it installed, you are prompted to install it during Dragon's installation. Nuance does not provide the .NET Framework with your installation; you must download the installation file from microsoft.com.
- An audio input device capable of 16-bit recording for dictation. For a list of recommended devices, see https://support.nuance.com/compatibility/.

Additional comments
Windows 7 and 8 notes:
- The following changes to Windows 7 and 8 defaults are required or recommended:
  o Set the Windows User Access Control (UAC) default setting to its lowest setting, *Never Notify*.
  o If Direct 3D is enabled in the eRAD PACS viewer, Windows Aero function should be disabled.
  o Add the eRAD PACS viewer (epviewer.exe or pbuilder.exe) to the Windows Defender excluded file types.
- The following changes to browser defaults are recommended for performance optimization:
  o Disabled the pop-up blocker (all browsers),
  o Disable web site phishing filter (IE11).
  o Disable SmartScreen filtering (IE11).
- Some restrictions apply to Philips SpeechMike devices. See notes on microphone devices below. Philips SpeechMike and foot pedal devices require the drivers from the Philips SpeechExec v5.0 SR4 CD.
- If using multiple display controllers, each one must be WDDM 1.1 compliant and have their WDDM 1.1 driver installed.

Mammography:
- Rendering full-field digital mammography images for diagnostic interpretation requires FDA cleared monitors. eRAD offers compliant models. Others exist. Check with your preferred monitor manufacturer for a list of complying models.

Microphones and foot pedals:
- Any Windows-compliant microphone can be used for recording dictation. Any Windows-compliant foot pedal can play back a recording.
- Philips SpeechMikes are required when using the integrated microphone controls and for speech recognition. Windows 7 and later support USB versions (only) of the following models: PowerMic II, LFH-3500/3510 series, SMP-3700/3710.
- Philips Foot Control ACC2320 and AC2330 have been validated for the report editor panel.
- Requires Philips SpecchMike firmware version 2.50 or later.
- Philips Device Control Center corresponding to the installed device is required for all SpeechMikes and foot pedals starting with v7.2 build 101 and v7.3 build 1.

Anti-virus software
- The eRAD PACS viewers will not function when the following anti-virus packages are installed: Kapersky Anti-virus.

RAM amount notes:
- A series consisting of fewer than 750 512x512 images or 3000 256x256 image requires 1GB of RAM to render. 2GBs of RAM renders series consisting of twice as many images of the same size.

eRAD PACS Web Viewer:
- Requires HTML5-compliant browser and support for WebGL and websockets. Chrome, Firefox, Internet Explorer 11, and Edge comply with these standards.

Java plug-in support:
- The following features require java plug-in support in the web browser: Scheduler module calendar. At the time of this writing, compliant browsers include the following: Microsoft Internet Explorer version 11.
  - Note: eRAD PACS v7.2 and v7.3 requires java plug-in support in the browser for the following features: DICOM media import, document scanning, document upload.
  - In eRAD PACS eVolution, document scanning and media uploading use a *JNLP* file to launch the Java VM application. Some web browsers may display a warning about this file type. Acknowledge these prompts to proceed.