Modalities and Review Stations

Modalities must be part of or capable of connecting to a network. All modalities must be part of the same network.

Local review stations are to be on the same network as modalities and AXIS server. Any PC or Mac with browser capable of running Microsoft Silverlight 5 may be used as a review station.

Non-Networked or Remote Review Stations

It is possible to use a remote or non-networked PC or Mac as a review station given that the below site requirements are met.

   -*Static external IP address*
   -*SSL certificate*
   -*Internet connectivity*

Server and Server Operating System

The AXIS application requires a Physical or Virtual server running Windows Server 2008R2 or Windows Server 2012R2.

The AXIS application requires Microsoft SQL Server 2008R2, 2012R2 or SQL 2014.

Microsoft SQL Server express (free version) may be used if necessary. Limitations exist with SQL Express, please contact technical support for more information. *Please see the end of this document for important SQL version information*

Both Microsoft SQL Server and the AXIS application may be installed on the same Server or can reside on separate server.

Storage Requirements

Storage Requirements vary and are dependent on the number of connected imaging modalities, modality type, image save format, and patient flow. Basic guidelines for initial storage can be found in the Minimum requirements tables. Certain Ophthalmic devices such as the Heidelberg Spectralis, Optos, etc. produce larger files which will require more storage than report based modalities.

Hardware Minimum Requirements

	Minimum	Recommended
Modalities	3-10	3-10
Processor	4 Core CPU	6 Core CPU
Free RAM	8 GB min.	12 GB
Free hard disc capacity	300 GB min.	500 GB.
Screen resolution	1280 × 800 pixels min.	1920 × 1080 pixels.
Operating system	Windows Server 2008 R2 (64 bit, Windows Server 2012 (64 bit), Windows Server 2012 R2 (64 bit),	Windows Server 2012 (64 bit), Windows Server 2012 R2 (64 bit),

	Minimum	Recommended
Modalities	11-25	11-25
Processor	6 Core CPU	8 Core CPU
Free RAM	12 GB min.	16 GB
Free hard disc capacity	750 GB min.	1 TB
Screen resolution	1280 × 800 pixels min.	1920 × 1080 pixels.
Operating system	Windows Server 2008 R2 (64 bit, Windows Server 2012 (64 bit), Windows Server 2012 R2 (64 bit),	Windows Server 2012 (64 bit), Windows Server 2012 R2 (64 bit),

	Minimum	Recommended
Modalities	25 +	25 +
Processor	8 Core CPU	12 Core CPU
Free RAM	16 GB min.	24 GB
Free hard disc capacity	1.5 TB min.	2.5 TB
Screen resolution	1280 × 800 pixels min.	1920 × 1080 pixels.
Operating system	Windows Server 2008 R2 (64 bit, Windows Server 2012 (64 bit), Windows Server 2012 R2 (64 bit),	Windows Server 2012 (64 bit), Windows Server 2012 R2 (64 bit),

	Minimum	Recommended
Small Practice	25 +	25 +
Small Clinic	8 Core CPU	12 Core CPU
Large Clinic	16 GB min.	24 GB
Hospital	1.5 TB min.	2.5 TB
Screen resolution	1280 × 800 pixels min.	1920 × 1080 pixels.
Operating system	Windows Server 2008 R2 (64 bit, Windows Server 2012 (64 bit), Windows Server 2012 R2 (64 bit),	Windows Server 2012 (64 bit), Windows Server 2012 R2 (64 bit),

Minimum Requirements: 3 to 10 modalities

	Minimum	Recommended
Processor	*4 CPU Cores*	*6 CPU Cores*
Storage	*300 GB RAID 1, 5, or 10; Local or NAS/SAN* *(Varies based on presence of historic import and modality types*)*	*500 GB RAID 1, 5, or 10; Local or NAS/SAN* *(Varies based on presence of historic import and modality types*)*
Memory	*8 GB RAM* *(Amount of RAM varies based on type of modalities, DICOM service presence, and other server tasks)*	*12 GB RAM* *(Amount of RAM varies based on type of modalities, DICOM service presence, and other server tasks)*
Operating System	• *Windows Server 2008 R2 32/64-bit* • *Windows Server 2012 32/64-bit* • *Windows Server 2012 R2 32/64-bit*	• *Windows Server 2008 R2 64-bit* • *Windows Server 2012 64-bit* • *Windows Server 2012 R2 64-bit*

Minimum Requirements: 11 to 25 modalities

	Minimum	Recommended
Processor	*6 CPU Cores*	*8 CPU Cores*
Storage	*750 GB RAID 1, 5, or 10; Local or NAS/SAN* *(Varies based on presence of historic import and modality types*)*	*1 TB RAID 1, 5, or 10; Local or NAS/SAN* *(Varies based on presence of historic import and modality types*)*

Memory	12 GB RAM (Amount of RAM varies based on type of modalities, DICOM service presence, and other server tasks)	16 GB RAM (Amount of RAM varies based on type of modalities, DICOM service presence, and other server tasks)
Operating System	• Windows Server 2008 R2 64-bit • Windows Server 2012 64-bit • Windows Server 2012 R2 64-bit	• Windows Server 2008 R2 64-bit • Windows Server 2012 64-bit • Windows Server 2012 R2 64-bit

Minimum Requirements: 25 and greater modalities

	Minimum	Recommended
Processor	8 CPU Cores	12 CPU Cores
Storage	1.5 TB RAID 1, 5, or 10; Local or NAS/SAN (Varies based on presence of historic import and modality types*)	2.5 TB RAID 1, 5, or 10; Local or NAS/SAN (Varies based on presence of historic import and modality types*)
Memory	16 GB RAM (Amount of RAM varies based on type of modalities, DICOM service presence, and other server tasks)	24 GB RAM (Amount of RAM varies based on type of modalities, DICOM service presence, and other server tasks)
Operating System	• Windows Server 2008 R2 64-bit • Windows Server 2012 64-bit • Windows Server 2012 R2 64-bit	• Windows Server 2008 R2 64-bit • Windows Server 2012 64-bit • Windows Server 2012 R2 64-bit

Network Bandwidth Requirements

	Minimum	Recommended
Single Physician Practice	*5 Mbps / 5 Mbps*	*10 Mbps / 10 Mbps*
Small Physician Practice (2-4)	*10 Mbps / 10 Mbps*	*20 Mbps / 20Mbps*
Rural Health Clinic (5 docs)	*20 Mbps / 20 Mbps*	*25 Mbps / 25 Mbps*
Large Physician Practice (5-25)	*25 Mbps / 25 Mbps*	*50 Mbps /50 Mbps*
Hospital	*100 Mbps / 100 Mbps*	*150 Mbps / 150 Mbps*
Academic/Large Medical CTR	*1 Gbps / 1 Gbps*	*1 Gbps / 1Gbps*

NOTE: The Tables above outline minimum system requirements, enhancements to these requirements will boost performance depending on the number of modalities, modality types, and overall system and network configuration. For more information, please contact Sonomed Escalon support staff at (800) 676-0043.

REMOTE ACCESS (Wide-Area-Network)

- To review images outside of the office network, a static external IP address for the office that can forward port 443 to an internal IP or an existing method of Citrix/VPN external remote access.
- Virtual Private Networks such as Microsoft's L2TP/IPsec VPN Client, IPsec tunnels , and SSL VPN connections may be mandatory in the future for the security of patient health data.

SQL Server Versions

Depending on which version of SQL you have it may not be able to use all the CPU cores that your server has. For the 25+ device tier we recommend the Enterprise version since the server will have 8+ Cores.

Sonomed Escalon™

SQL Server Edition	Maximum Compute Capacity Used by a Single Instance (SQL Server Database Engine)
Enterprise Edition: Core-based Licensing[1]	Operating system maximum
Developer	Operating system maximum
Evaluation	Operating system maximum
Business Intelligence	Limited to lesser of 4 Sockets or 16 cores
Standard	Limited to lesser of 4 Sockets or 16 cores
Web	Limited to lesser of 4 Sockets or 16 cores
Express	Limited to lesser of 1 Socket or 4 cores
Express with Tools	Limited to lesser of 1 Socket or 4 cores
Express with Advanced Services	Limited to lesser of 1 Socket or 4 cores