# System Requirements for LUMEDX Hosted Solutions

**LUMEDX**

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| Revision History | | |
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| **Revision** | **Date** | **Description** |
| 103-01268-010 | 03/05/2020 | Added support for Windows Server 2019 and SQL Server 2019, removed support for Windows Server 2008 R2 and SQL Server 2008. |
| 103-01268-009 | 03/27/2019 | Added support for Windows Server 2016 and SQL Server 2016 and 2017, Office 365, updated required version of ,NET Framework, added LXDocumentView Control requirements. |
| 103-01268-008 | 12/20/2017 | Removed the limitations on Windows 10 and Microsoft Office. |
| 103-01268-007 | 04/28/2017 | Removed 32-bit option for Windows 7, updated support for .NET to 4.6.1, Windows 10, and Office 2016. |
| 103-01268-006 | 10/25/2016 | Added Datamed Server requirements, added an Administration Workstation requirement. |
| 103-01268-005 | 05/13/2016 | Added new requirements for two different Edge Servers (with or without HealthView CardioPACS), updated product names to be consistent with the Releases website, increased storage and memory, added Image Cache size customization requirement, removed Early Adopter limitation from IE 11, Windows Server 2012 and SQL Server 2012, updated SAN, NAS, or DAS information. Included the exception that CardioPACS products are not supported in a Citrix environment. |
| 103-01268-004 | 03/01/2016 | Increased workstation memory requirement to 8 GB. |

# Hardware and Software General Requirements

The following general requirements and instructions apply to all LUMEDX hosted systems:

- The hardware specifications listed in this document are recommendations to provide a three to five year hardware lifecycle for new system deployments. The requirements are based on running LUMEDX products and listed third-party products only. Installation and performance of any additional non-LUMEDX products have not been taken into consideration and may have negative impact if not properly planned and provided for. Running additional applications, or running applications in a particularly large or busy site, will require additional resources. If you have questions regarding any of the hardware and software requirements, contact your LUMEDX representative.
- These requirements are for a SaaS-only environment and do not support running LUMEDX products in a mixed environment or a mixed legacy environment.
- Microsoft, Citrix and other third-party products listed in this document are not LUMEDX products. LUMEDX products will work in these environments if your site has qualified support teams to insure they are installed, configured, and maintained according to the manufacturer's installation and best practice procedures. Exception: CardioPACS products are not supported in a Citrix environment.
- Unless otherwise specified in this document, all third-party software products must be maintained with the most recent Service Packs.
- LUMEDX recommends that all LUMEDX software be installed on the servers and workstations directly from the CD Image files. LUMEDX does not support workstation imaging or ghosting.
- Except where explicitly noted in the documentation, LUMEDX does not support custom work performed either by the client or by third parties not associated with LUMEDX.
- LUMEDX recommends a minimum effective download speed of 25 Mbps between the server and the client. Refer to the *LUMEDX Platform Integration Guide* for information about security and port settings.
- LUMEDX recommends that the client confirm adequate network capacity and performance prior to go-live.
- LUMEDX cannot guarantee product latency and/or performance over a WAN due to variances in effective bandwidth and network topography.
- LUMEDX uses WebEx or Mitel online meeting sessions for technical support and assistance. If your site does not support this method, then your site will need to supply LUMEDX with the relevant VPN information.
- Clients must purchase two Edge Servers, one for Test and one for Production. The only difference between the Test and Production Edge servers is the CardioPACS cache storage size.
- Early Adopter support for other software on Client Workstations and Servers means that this software has received limited testing in-house at LUMEDX, but it has not been fully tested in all configurations in use at client sites. Use of this software in a production environment at client sites does not require a LUMEDX Pre-Installation Software Agreement. If any issues are discovered, please report them to LUMEDX Technical Support.

> **Caution: Possible delays in therapy**
> **Mitigations:**
> - The Client is expected to ensure that at least two persons at the Client facility are knowledgeable LUMEDX System Administrators.
> - The Client is expected to have at least two LUMEDX workstations on site that meet the minimum system requirements in this document. This redundancy allows users to immediately move to another workstation if workstation problems are encountered.
> - If this system is considered mission-critical by the client, provision of a redundant internet infrastructure to reduce the risk of loss of connectivity is highly recommended.
> - The Edge Servers reduce the risk of mission-critical patient data being unavailable. The PACS Edge server requirements are based on maintaining one to two years of HealthView CardioPACS data on site. Maintaining additional data on site may require additional capacity. Image cache size needs to be determined by each client on a case-by-case basis.

# LUMEDX Hosted Solutions Client Workstation Requirements

| | Operating System | Other Software | Processor | Memory | Hard Drive / Storage Media | Peripheral Devices | # |
|---|---|---|---|---|---|---|---|
| **HealthView Workstation** | Windows 10 64-bit or Windows 7 64-bit | • Adobe Reader<br>• Internet Explorer 8 or 11, 32-bit<br><br>**HeathView CardioPACS workstations additional requirement:**<br>• .NET Framework 4.6.1<br><br>**LUMEDX Report Editors using LXDocumentView Control requirements:**<br>• .NET Framework 4.6.1<br>Visual Studio 2015 or 2017 | Dual Core | 8 GB RAM | 140 GB<br><br>20 GB partition for OS<br><br>**Diagnostic HealthView CardioPACS workstations**: 200 GB temp cache free space | 104 key enhanced keyboard<br>Mouse<br>CD/DVD RW<br><br>LCD color monitor running at 1920x1080. Optimal usability: 20"- 24" size.<br><br>**Diagnostic HealthView CardioPACS workstations:** Medical Device Grade Display 256MB Dual DVI Graphics Card, Dual DVI flat panel LCD color monitors with Resolution 1280x1024 @ 60Hz, Brightness 300cd/m2, Dot Pitch 0.27mm, Response Time 8 ms. | |
| **Dedicated Administration Workstation** | Windows 10 64-bit or Windows 7 64-bit | • .NET Framework 4.6.1, 4.0, and 3.5<br>• Microsoft Office Professional: Access, Excel, Word, and Tools components.<br>   ○ Office 365, 2016 32-bit, 2013 32-bit, or 2010 32-bit<br>• Internet Explorer 8 or 11, 32-bit<br>• Adobe Reader<br><br>**LUMEDX Report Editors using LXDocumentView Control requirements:**<br>• .NET Framework 4.6.1<br>Visual Studio 2015 or 2017 | Dual Core | 8 GB RAM | 140 GB<br><br>20 GB partition for OS | Access to this workstation is for LUMEDX personnel using the VPN and RDP | |

# LUMEDX Hosted Solutions Client Server Requirements

| Line Item | Server | Operating System and Components | LUMEDX Products | Other Software | Processor | Memory | Hard Drive Storage Media | # |
|---|---|---|---|---|---|---|---|---|
| 1. | **Hybrid SaaS Secure Transport Client** | Windows Server 2019, 2016 or 2012 R2 | Secure Transport Client<br><br>TCPIP Receive Client<br><br>TCPIP Send Client | Adobe Reader | Dual Core | 4 GB RAM | 20 GB partition for OS<br><br>100 GB free space in a separate partition for applications | |
| 2. | **Edge Server** | Windows Server 2019, 2016, or 2012 R2 | Secure Transport Client<br><br>TCPIP Receive Client<br><br>TCPIP Send Client | • .NET Framework 4.6.1<br><br>**Autodistribution Additional Requirement:**<br>If you are using AutoDistribution, outbound communication into the hospital, Datamed, or Results Reporting, this server needs to connect to the LUMEDX Data Center via the VPN<br><br>**HealthView ECG Manager  Additional Requirements:**<br>• DatamedRcv<br>• DatamedWL is required for orders to carts<br><br>**AutoDistribution Suite Additional Requirement:**<br>• Adobe Reader | Dual Core | 8 GB RAM | SAN, NAS or DAS. Must support SMB 2.1 or 3.0 shares with Windows NTFS permissions.<br><br>50 GB (OS Partition)<br><br>150 GB (Application Partition)<br><br>2x - 1 Gb NIC (redundant)<br><br>Redundant Power Supplies<br><br>Battery backup UPS<br><br>**ECGMS Additional Requirement:**<br>• 1x USB port<br><br>**AutoDistribution Additional Requirement:**<br>• Fax Modem | |

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| Line Item | Server | Operating System and Components | LUMEDX Products | Other Software | Processor | Memory | Hard Drive Storage Media | # |
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| 3. | Datamed Server | One of the following: Windows 7 x86 or x64, Windows Server 2019, 2016, or 2012 R2 | N/A | • Microsoft .NET Framework 4.6.1<br>• DatamedFT or DatamedWL Service.<br><br>DatamedFT can be run inside a virtual machine that runs a compatible operating system. DatamedFT has been tested with VMWare Products: Server, ESX/ESXi Server, Workstation, and Fusion. The virtual machine must have access to the HASP USB security key, which typically resides on the host computer. For single-server installations, the key can be plugged into the host computer and assigned to the VM. | Quad Core | 1 GB | 40 GB for program operation.<br><br>If EKGs will be archived they require approximately 50-200MB per 1000 EKGs, depending on format.<br><br>NIC 10/100/1000. Two NICs are required if the server straddles two LANs.<br><br>One USB port for the DatamedFT license key.<br><br>For fault-tolerant configurations including vMotion, a USB-to-Ethernet adapter such as AnywhereUSB can be used.<br><br>Video: 1024 x 768 or greater | |

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| 4. | **PACS Edge Server** | Windows Server 2019, 2016, or 2012 R2 | Apollo Advance<br><br>HealthView CardioPACS<br><br>Secure Transport Client<br><br>TCPIP Receive Client<br><br>TCPIP Send Client<br><br>MWL MPPS SCP Add-On for CardioSchedule and Orders<br><br>ADT Import Interface<br><br>HL7 Orders Import Interface<br><br>Auto Distribution Suite | • .NET Framework 4.6.1, and 4.0<br>• Microsoft Office Professional Access, Excel, Word, and Tools components:<br>  o Office 365, 2016 32-bit, 2013 32-bit, or 2010 32-bit<br>• SQL Server 2019, 2017, 2016, or 2012 Standard Edition: Database Engine, Integration Services, Workstation Components.<br>  o This server needs to connect to the LUMEDX Data Center via a VPN.<br><br>**HealthView ECG Manager Additional Requirements:**<br>• DatamedRcv<br>• DatamedWL is required for orders to carts<br><br>**AutoDistribution Suite Additional Requirement:**<br>• Adobe Reader | 2x – 2.4 GHz Quad Core | 16 GB RAM | SAN, NAS or DAS.<br><br>50 GB (OS Partition)<br><br>100 GB (SQL Partition)<br><br>200 GB (Application Partition)<br><br>1TB Minimum (Image Cache partition). Image cache size needs to be determined by each client on a case-by-case basis. Contact your LUMEDX representative for help calculating the amount of space you require.<br><br>2x - 1 Gb NIC (redundant)<br><br>1x USB port<br><br>Redundant Power Supplies<br><br>Battery backup UPS<br><br>**AutoDistribution Suite Additional Requirement:**<br>• Fax Modem | |