

Minimum Laserfiche Rio Hardware Specifications

Note: The estimates and advice in this paper are intended as guidelines only, not as rules. We cannot guarantee the hardware we suggest will always be sufficient for every organization's configuration.

Because the number of active, concurrent users is incredibly important when considering appropriate hardware for an installation, we suggest an estimate of one-in-four—that is, for every four total users (licenses), one user is likely to be accessing the system at any given time. For a 200-user license enterprise implementation, you'll want to plan for your system to accommodate 50 simultaneous users at any given time.

Note: Throughout this paper, we will use the term "users" to refer to simultaneous, concurrent user load on the system. This term used here should not be confused with the number of named user licenses or the previous Laserfiche licensing schema of "concurrent user licenses."

If your customer, organization, or department will deploy Laserfiche over the Web (e.g., Web Access or Weblink), take note of the number of users who will use Laserfiche this way, in order to calculate the amount of traffic that will be accessing your Web servers.

Please Note that Laserfiche can be configured to run in a virtual environment. Please see separate Virtualization Considerations Document.

Server and System

For 10 - 25 User Systems that will be adding between 200 – 1,000 documents per day

CPU	Quad Core or better
Memory	16 GB RAM or more when Laserfiche and SQL will be installed on the same server, minimum of 8GB RAM per server used
Operating System	Windows Server 2012 R2 or above, 64 Bit – Latest Version Preferred
Database Engine	Microsoft SQL Server 2019+, 2017+, 2016 SP2+, 2014 SP3+ (Client must provide MS SQL licensing.) – Latest Version Preferred <i>[Note: A SQL CAL will be needed for each Laserfiche user. This can be achieved through purchasing individual CALs or a processor license. Public Portal and/or Web Access require a MS SQL processor license.]</i>
Framework	Latest .Net Version in relation to your OS (Client responsible for install)
Browser	Edge or Chrome – latest versions Chrome Recommended
Hard Drives	Minimum of 15GB could go up to 75GB Depending on number of users & documents added each day* Assume 10,000 Standard Images (black and white, Type IV TIFF, 8.5” by 11” in size, scanned in at 300 DPI) per 1 GB of hard drive space RAID 5 array recommended Minimum of 5GB of Free Space Required on the C Drive for Laserfiche Installation Data Access speeds increase with Solid State Drive (SSD)
NIC	Gigabit recommended for optimal speeds
Network Licenses	Laserfiche uses one Windows license for all Laserfiche users
UPS/Tape Backup	UPS and tape or other backup system to ensure data integrity
Virtual Environment	Laserfiche can be configured to run in a virtual environment. A technical whitepaper is available on request

**Please note that all storage estimates listed are for three years which is the estimated life of current off-the-shelf hardware*

Workflow, Laserfiche Client/Server and Audit Trail all require a separate database, they can all be on the same box with the exception of the Audit Trail database which benefits from its own SQL server due to its resource-intensive reporting functions

Client Responsibilities

- The client is responsible for acquiring, installing, and configuring the MS SQL server software.
- The client is responsible for purchasing, installing, and configuring the Server Operating System.
- The client is responsible for installing .Net on all servers and workstations.
- The client is responsible for purchasing, configuring, and implementing any SQL maintenance/backup plans.
- The client is responsible for testing the integrity of their backups on a regular basis.

Server and System

For 50 - 100 User Systems that will be adding between 200 – 3,000 documents per day

CPU	Quad Core or better, per server
Memory	16 GB RAM or more when Laserfiche and SQL will be installed on the same server, minimum of 8GB RAM per server used
Operating System	Windows Server 2012 R2 or above, 64 Bit – Latest Version Preferred
Database Engine	Microsoft SQL Server 2019+, 2017+, 2016 SP2+, 2014 SP3+(Client must provide MS SQL licensing.) – Latest Version Preferred <i>[Note: A SQL CAL will be needed for each Laserfiche user. This can be achieved through purchasing individual CALs or a processor license. Public Portal and/or Web Access require a MS SQL processor license.]</i>
Framework	Latest .Net Version in relation to your OS (Client responsible for install)
Browser	Edge or Chrome – latest versions Chrome Recommended
Hard Drives	Storage size is Dependent on number of users & documents added each day* For Systems adding < 1000 documents per a day Minimum of 45GB could go up to 105GB For Systems adding >1000 documents per a day Minimum of 105GB could go up to 210GB Assume 10,000 Standard Images (black and white, Type IV TIFF, 8.5” by 11” in size, scanned in at 300 DPI) per 1 GB of hard drive space 3 separate RAID arrays recommended – See below table for more details Minimum of 5GB of Free Space Required on the C Drive for Laserfiche Installation Data Access speeds increase with Solid State Drive (SSD)
NIC	Gigabit recommended for optimal speeds
Network Licenses	Laserfiche uses one Windows license for all Laserfiche users
UPS/Tape Backup	UPS and tape or other backup system to ensure data integrity
Virtual Environment	Laserfiche can be configured to run in a virtual environment. A technical whitepaper is available on request

**Please note that all storage estimates listed are for three years which is the estimated life of current off-the-shelf hardware*

A Dual Server Configuration is recommended with Laserfiche, web access on single server and Microsoft SQL on its own machine

Workflow, Laserfiche Client/Server and Audit Trail all require a separate database, they can all be on the same box with the exception of the Audit Trail database which benefits from its own SQL server due to its resource-intensive reporting functions

	Sizing Calculations	Storage Arrays
Laserfiche volume storage	Assume 10,000 images per 1 GB of hard drive space	RAID 5 Serial Attached SCSI recommended Serial ATA OK
SQL data file	10-15% of total volume storage	RAID 1 or RAID 10 Serial Attached SCSI recommended with fast drives
SQL log file	5-10% of total volume storage	RAID 1 or RAID 10 Serial Attached SCSI recommended with fast drives

Client Responsibilities

- The client is responsible for acquiring, installing, and configuring the MS SQL server software.
- The client is responsible for purchasing, installing, and configuring the Server Operating System.
- The client is responsible for purchasing, configuring, and implementing any SQL maintenance/backup plans.
- The client is responsible for testing the integrity of their backups on a regular basis.

Server and System

For 200+ User Systems that will be adding between 200 – 10,000 documents per day

CPU	Minimum of Dual Core per server when using three-server configuration
Memory	16 GB RAM or more when Laserfiche and SQL will be installed on the same server, minimum of 8GB RAM per server used
Operating System	Windows Server 2012 R2 or above, 64 Bit – Latest Version Preferred
Database Engine	Microsoft SQL Server 2019+, 2017+, 2016 SP2+, 2014 SP3+(Client must provide MS SQL licensing.) – Latest Version Preferred <i>[Note: A SQL CAL will be needed for each Laserfiche user. This can be achieved through purchasing individual CALs or a processor license. Public Portal and/or Web Access require a MS SQL processor license.]</i>
Framework	Latest .Net Version in relation to your OS (Client responsible for install)
Browser	Edge or Chrome – latest versions Chrome Recommended
Hard Drives	Storage size is Dependent on number of users & documents added each day* For Systems adding <1000 documents per a day Minimum of 75GB could go up to 120GB For Systems adding >1000 documents per a day Minimum of 120GB could go up to 660GB Assume 10,000 Standard Images (black and white, Type IV TIFF, 8.5” by 11” in size, scanned in at 300 DPI) per 1 GB of hard drive space 3 separate RAID arrays recommended – See below table for more details Minimum of 5GB of Free Space Required on the C Drive for Laserfiche Installation Data Access speeds increase with Solid State Drive (SSD)
NIC	Gigabit recommended for optimal speeds
Network Licenses	Laserfiche uses one Windows license for all Laserfiche users
UPS/Tape Backup	UPS and tape or other backup system to ensure data integrity
Virtual Environment	Laserfiche can be configured to run in a virtual environment. A technical whitepaper is available on request

*Please note that all storage estimates listed are for three years which is the estimated life of current off-the-shelf hardware

Recommend three-server configuration: Laserfiche, Web Access, and Microsoft SQL each on their own machine.
Recommended Dedicated Laserfiche SQL Installation

Workflow, Laserfiche Client/Server and Audit Trail all require a separate database, they can all be on the same box with the exception of the Audit Trail database which benefits from its own SQL server due to its resource-intensive reporting functions.

	Sizing Calculations	Storage Arrays
Laserfiche volume storage	Assume 10,000 images per 1 GB of hard drive space	RAID 5 Serial Attached SCSI recommended, Serial ATA OK
SQL data file	10-15% of total volume storage	RAID 1 or RAID 10 Serial Attached SCSI recommended with fast drives
SQL log file	5-10% of total volume storage	RAID 1 or RAID 10 Serial Attached SCSI recommended with fast drives
Tempdb	5% of total volume storage	Shared with SQL log file

Client Responsibilities

- The client is responsible for acquiring, installing, and configuring the MS SQL server software.
- The client is responsible for purchasing, installing, and configuring the Server Operating System.
- The client is responsible for purchasing, configuring, and implementing any SQL maintenance/backup plans.
- The client is responsible for testing the integrity of their backups on a regular basis.

Backup

Laserfiche recommends a disk-to-disk-to-tape process: backing up to disk first—which can usually be the SAN, NAS, or DAS device—and then backing up the disk to a rotating set of tapes. If storing on a DAS, we recommend a large RAID 5 array with a number of SATA disks, or at least enough capacity for one month’s worth of grandfather-father-son rotation. Larger systems should use LTO-standard backup tapes. Smaller systems with less data to back up can use smaller-capacity DAT drives.

Web Server Specifications for Laserfiche Web Components (Public Portal and/or Web Access)*:

CPU	Minimum 4 cores or greater
Memory	Minimum 8GB or greater
Operating System	Windows Server 2012 R2 or above
Web Server	Microsoft IIS 8.0 (Windows Server 2012); Microsoft IIS 10.0(Window Server 2016); Microsoft IIS 10.0(Window Server 2019)
Browser	Edge or Chrome – latest versions Chrome recommended
Framework	Latest .Net Version in relation to your OS (Client responsible for install)
NIC	Gigabit recommended for optimal speeds
Network Licenses	Laserfiche uses one Windows license for each Laserfiche user
Back-ups	Installed backup agent for existing back-up system

****If you anticipate high usage from the Laserfiche Web components (Web Access or Public Portal), we advise the Web Server be a separate server.***

If you require external/public access, an additional DMZ server is strongly recommended for security reasons.

For any of the Laserfiche Web-based components (e.g., Web Access, WebLink/Public Portal, Laserfiche Forms Portal), if the client desires website security via SSL, the client is responsible for acquiring, installing, configuring and maintaining that certificate.

With more than 100-150 concurrent users, a second Web Access server is recommended to support network load balancing.

Laserfiche Forms/Workflow Server Specifications*:

CPU	Minimum 4 cores or greater
Memory	12 GB or greater
Operating System	Windows Server 2012 R2 or above, Latest Version Preferred
Web Server	Microsoft IIS 8.0 (Windows Server 2012); Microsoft IIS 10.0(Window Server 2016); Microsoft IIS 10.0(Window Server 2019)
Framework	Latest .Net Version in relation to your OS (Client responsible for install)
Browser	Edge or Chrome – latest versions Chrome recommended
NIC	Gigabit recommended for optimum speeds
Network Licenses	Laserfiche uses one Windows license for all Laserfiche users
Back-ups	Installed backup agent for existing back-up system

****Laserfiche Forms Notes:***

- ***Microsoft IIS must be installed on the Forms server.***
- ***Laserfiche Forms will work with Laserfiche 9.0.1 (and above), and either Laserfiche Rio or Avante are required (Laserfiche Forms will not work with Classic, Executive or Desktop systems).***
- ***One Forms server can only access one Laserfiche repository. If you have more than one Laserfiche repository, separate Forms servers would be required for each repository.***

- **Hardware requirements may fluctuate based on the number of users logged into the server. If you expect to have many simultaneous connections to the Forms server, you may want to configure it with a faster CPU and/or add more RAM. If you have any questions on your specific situation, please contact your General Code representative.**
- **If you are using Forms with Direct Email Approval, then you will need an email account with an Inbox that Forms can check.**

Full User / Scanner Workstation:

CPU	Intel i3 7 th Gen or better
Memory	8 GB or greater (Windows 10, Windows 11)
Operating System	Supported: Windows 10, Windows 11
Browser	Edge or Chrome – latest versions Chrome recommended
Hard Drive	Hard drive running at a minimum of 7,200 rpm 3 GB of free disk space for software and temporary files created during scanning
Framework	Latest .Net Version in relation to your OS (Client responsible for install)
NIC	Access to the network server running Laserfiche
Monitor	Resolution 1366X768 or better recommended for optimal viewing
USB Port	Available USB 2 port for scanner connection if the scanner will support a USB connection

“Light” User Workstation (e.g., primarily retrieval user):

CPU	Intel i3 7 th Gen or better
Memory	Operating System minimum or greater
Operating System	Supported: Windows 10, Windows 11
Browser	Edge or Chrome – latest versions Chrome recommended
Hard Drive	At least 1 GB of free disk space
Framework	Latest .Net Version in relation to your OS (Client responsible for install)
NIC	Access to the network server running Laserfiche
Monitor	Resolution 1366X768 or better recommended for optimal viewing

QuickFields Agent Processing PC

CPU	Intel i3 7 th Gen or better
Memory	16 GB RAM or more
Operating System	Windows 10, Windows 11 or Server 2012 R2 or above, 64 bit
Framework	.NET 4.7+
Hard Drives	120 GB or higher SATA SSD
NIC	Gigabit 10/100/1000 Ethernet

- QuickFields is extremely intensive on the CPU and disk I/O, so a Quad Core processor and SSD are highly recommended.

Mobile Operating Systems

Products	iOS 7	iOS 8+	Android 5.0	Windows 10	Windows 11
Laserfiche Mobile 10.3	Y	Y	Y	Y	Y
Laserfiche Mobile 10.4	N	Y	Y	Y	Y

Laserfiche Mobile 11.0	N	Y	Y	Y	Y
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Web Browsers

Products	Chrome	Firefox	Safari	Edge
Web Access 10/11	Y	Y	Y	Y
Forms 10/11 publicly available pages	Y	Y (10+)	Y	Y
Forms 10/11 authenticated user pages	Y	Y (12+)		Y
Web Administration Console 9.0	Y	Y	Y	
Weblink 10/11	Y	Y	Y	Y
Weblink 9	Y	Y	Y	

*** No longer supported in Web Client 10.1 and later.*

**** No longer supported in Forms 10.2 and later.*

ICC Community Development Solutions

781 Elmgrove Road | Rochester, NY 14623

www.icc-cds.com

855.436.2633

LFsupport@icc-cds.com