

Document Manager Enterprise Technical Requirements

Summary

Document Manager Enterprise Edition can be deployed as either a Web application, client-server desktop application or a mix of both. The choice of deployment will depend on many factors including functionality, integration, deployment and access requirements. Document Manager Enterprise Edition has the following key components:

- Server components:
 - Application Server to host the Document Logistix client installation files, and to host optional Document Logistix services.
 - Microsoft® SQL Database for the document indexes.
 - File Shares/Servers/NAS to store the document files.
 - Web Server to run the Document Manager Web services.
 - Optional Full Text Index Server to OCR (Optical Character Recognition) and index the document content.
 - Optional Capture Server(s) for batch scanning (DLX Batch Capture).
- One or more client workstations for the Document Manager desktop application.

Installation can be performed using one server to host all the server-based components or multiple servers hosting individual components, depending upon the scale of the implementation and the specification of the servers. It is possible to deploy the servers as virtual servers so long as the host hardware has sufficient resources.



IMPORTANT: If combining any of the Server components on a single server machine, ensure the specifications stated for any of the individual components are adhered to.

Document Manager can scale from five to thousands of users; however, the server infrastructure must be capable of supporting the required number of users.

For web deployments, it is possible to deploy multiple web servers and balance the load between them. The decision to implement multiple web servers will depend upon the number of concurrent transactions occurring and numbers of documents being ingested concurrently.

For the desktop application, the client runtime files are installed locally on each workstation or can be deployed via remote services like Terminal Server or Citrix.

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Application Server

The minimum requirements for the Document Manager Enterprise Edition Server are:

- **Operating System:**

- Windows Server® 2019, Windows Server® 2016 or Windows Server® 2012 with 4 CPU cores and minimum 8 gigabyte (GB) of RAM.



NOTE: Whilst it is 'possible' to use desktop operating systems for the Server, this is only suggested for test/demonstration situations. If using a desktop operating system for the server, there will be restrictions on concurrent connections and performance.

- 100-megabits-per-second (Mbps) network interface (minimum), 1 Gbps suggested.

SQL Server Specification

Document Manager supports Microsoft® SQL Server® 2019, SQL Server® 2016, SQL Server® 2014 and SQL Server® 2012 (including Express editions) on the following platforms:

- Windows Server® 2019, Windows Server® 2016 or Windows Server® 2012 with 2 CPU cores (4 suggested) and minimum 8 GB of RAM (16 GB suggested)
- 10 GB available disk space for the database (SSD suggested for high transaction use)
- 10 GB available disk space or more for database snapshots.
- 100-Mbps (minimum) network interface, 1Gbps suggested.



NOTES:

- Disk space for the database will depend on the number of documents and volume of transactions. Each transaction is audited in the database and can result in large databases. As a rough gauge, a relatively active database with 40 million documents over 10 years can grow to 150 GB.
- Virtual Servers can be used for SQL Server, and if so, the number of CPU cores can be reduced to 2 if the number of concurrent transactions is low. SQL Server is typically licensed per CPU core, so this option is sometimes used.

SQL Server Express has limitations on RAM and database size (limits differ depending on SQL Server version) meaning it is suitable for 'smaller' installations, typically up to 800,000 documents and 15 users.

Document Storage Requirements

Document Manager will utilise storage on any network device that provides SMB storage accessible via a Universal Naming Convention (UNC) path. This includes Windows servers, Network Attached Storage (NAS) devices and UNIX® servers running Network File System (NFS)/SAMBA.

The following figures are provided as a guide for provisioning system storage space. More detailed figures are available from Document Logistix on request.

- 50 KB for each letter-sized single-sided black and white image page
- 100 KB for each legal-sized single-sided black and white image page
- 100 KB for a simple Office application document

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- 8 MB for each uncompressed legal-sized single-sided greyscale image
- 1 MB for each legal-sized single-sided true colour image saved as a PNG file (300dpi)
- An allocation for other documents (for example, you could use the average file size of existing network drives to estimate the required storage).

A typical rule of thumb for storage of monochrome A4 documents is 1 GB per 20,000 50-KB pages/documents.

Other Document Storage Devices

Installations not utilising the Desktop client (Document Manager 5 Web-only deployments) can additionally use these alternative storage systems for document storage:

- SQL Server BLOBs (documents are saved to the SQL database)
- Microsoft Azure BLOBs (documents are saved to the Microsoft Azure cloud for storage).

The size calculations above are still valid for these alternative storage options.

Web Server

The Document Manager Web module is an optional installation and is an HTML5 application. Minimum requirements are:

- **Operating System:** Windows Server® 2019, Windows Server® 2016 or Windows Server® 2012 and 2012 R2 (4 CPU cores, minimum 8 GB of RAM).
- **15 GB available disk space (ideally SSD)**
- **100-megabits-per-second (Mbps) network interface (minimum), preferably 1 Gbps.**

Web Server Prerequisites:

- Internet Information Services (IIS) Version 7.0 or later.
- .NET Framework version 4.7.2.

NOTES:

- It is possible to deploy multiple Web Servers using load balancing technology. If this is done, the load balancing should be configured to ensure persistent routing to the same Web Server for each client session.
- The decision on when to deploy multiple Web Servers will be based on the number of concurrent transactions (retrievals/searches), the types of documents being viewed and concerns over redundancy. The point at which another Web Server should be added will vary but as a starting point, consider a maximum of 100 concurrent users per Web Server.

OCR Server(s)

OCR Servers are used where the optional Batch Scan module with automatic OCR indexing is deployed. The specification of the servers is subject to the volume and complexity of the documents being read and will vary from 2 CPU Cores with 4 GB of RAM to 8 CPU Cores with 16 GB of RAM. For exact requirements, please consult your Document Manager supplier.

Full Text Server Specification

The Full Text Search feature is an optional installation and consists of three services that can be installed on the same server or different servers:

- OCR Service – performs full-page OCR of image documents.
- Indexer Service – builds a full-text index database of the key words.
- Search Service – searches the full-text database for required words.

The Full Text Server should be:

- Windows Server® 2019, Windows Server® 2016 or Windows Server® 2012, 4 CPU cores with minimum 4 GB of RAM (8 GB suggested).

The Full Text Server can optionally be the same server as the machine hosting SQL Server.

- i** **NOTE:** If planning to use Full-Text Search in Document Manager, you must ensure that you have enough free disk space on the host server. To optimise the index files, the Search Service requires that you have at least twice the amount of free disk space as the size of the index files. As a guide, the service optimises the index files when 50,000 documents have been added to Document Manager and an index file will be approximately 5 KB in size for each document added. For example, if you have 2 GB of index files, you must have at least 4 GB of free disk space.

Client Workstation Specification

- Windows® 10 Pro and Enterprise editions, Windows 8 Pro and Enterprise (with minimum 4 GB of RAM, 8 GB suggested).
- Microsoft® .NET Framework version 4.5.2 is required.
- SVGA adapter and compatible minimum 15-inch monitor capable of displaying at least 1024 × 768 resolution.
- 100 MB available disk space.
- Intel built-in or PCI Express graphics card.
- A suitable amount of disk space for caching.
- Ethernet or Wi-Fi™ connection, 100-Mbps (minimum).
- One of the following Internet browsers: Google® Chrome, Microsoft Edge, Internet Explorer® (version 11), Mozilla® Firefox®.
- Optional TWAIN scanner drivers or Kofax® VRS interfaced scanner (contact Document Logistix for a list of suggested scanners/drivers).

i **NOTES:**

- Not all scanners have 64-bit driver support – please check before ordering.
- Whilst Internet Explorer 11 is supported, it will not deliver optimal performance and therefore Document Logistix and Microsoft recommend using Microsoft Edge in preference.

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Minimum Requirements and Prerequisites for Mobile Tablets

- Any device with a Web browser supporting HTML5.
- For Apple iPad, iOS must be 6 (or later).
- A suitable amount of disk space for caching.
- Wi-Fi connection or minimum 3G wireless network connection.

NOTES:

- Document Manager Web runs on browsers that support HTML5. Some features may display differently on different browsers as not all browsers support HTML5 in the same way. If you are unsure how well your browser supports HTML5, visit the *HTML5 Test* site at html5test.com to check.
- If you intend to install the *Pi Dashboard* business intelligence software to integrate with Document Manager Web 5.6 or later and use the Internet Explorer web browser, you must use Internet Explorer version 10 or later.

Microsoft® Office Integration

Document Manager integrates with Microsoft® Office 2019, Microsoft® Office 2016, Microsoft® Office 2013, Microsoft® Office 2010, the 2007 Microsoft® Office system and Microsoft® Office 2003, providing the facility to save and open Office documents directly to and from Document Manager.

Email Archive

The optional Email Archive service will run as a service on Windows Server® 2019, Windows Server® 2016 and Windows Server® 2012 and communicate with any mail database supporting IMAP or POP3, typically Microsoft® Exchange Server 2003 or later (with support for Journaling).

Network Infrastructure

Document Manager operates over TCP/IP to communicate with SQL Server, the document store and the various optional services. The speed of transmission and available bandwidth will directly affect the performance of Document Manager.

Test the network performance by transferring a 10-MB file from the server to the workstation. This should take approximately one second on a 100-Mbps Ethernet connection. Try the test again but transferring the file from the workstation to the server. If the transfer time is more than about five seconds, performance of Document Manager will be impaired.

Document Manager can be run across Wide Area Networks (WANs) but performance will not be as responsive as a Local Area Network (LAN). For example, on a DSL connection, the time to open a document could be in the region of seven seconds compared to two seconds on a LAN.

Scanners

Document Manager supports a wide range of scanners using the TWAIN 1.9 interface. Both 32-bit and 64-bit TWAIN drivers are supported but not all scanner manufacturers provide 64-bit drivers at the time of writing, so please check before purchasing.

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Document Manager also supports Kofax® Virtual Re-Scan image enhancement drivers and these are suggested where original image quality varies or is unpredictable. In addition, Document Manager supports PaperStream® IP from Fujitsu.

Ensure the workstation to be used for scanning has sufficient resources and adequate connectivity, usually USB 2.0 or 3.0, or FireWire. If in doubt, please contact the scanner manufacturer. Document Manager also supports 'Scan from Disk' to allow easy interfacing with multi-function copier/printer/scanner devices with network connectivity.

Typical System Configurations (assuming Document Manager 5 Web)

10 Users, 50 documents a day:

- Combined SQL and File Server on Windows Server machine 4 CPU core with 8 GB RAM
- Web Server 4 cores 8 GB RAM
- Microsoft SQL Server Express

50 Users, 500 documents a day:

- Combined SQL and File Server 4 CPU core with 8 GB RAM
- Microsoft SQL Server 2012/2014/2016/2019
- 4 CPU Core IIS Server with 8 GB RAM

250 Users, 1000 documents a day:

- Dedicated SQL Server, 4 CPU cores with 16 GB RAM
- Microsoft SQL Server 2012/2014/2016/2019
- Application Server – 4 CPU cores with 8 GB RAM
- Single IIS Server 4 CPU cores with 8 GB RAM



NOTE: If high levels (100) of concurrent transactions (searches/viewing/ingesting) are expected, consider load balancing additional Web Server(s).

Storage Guidelines

Number of 50 KB Docs/Day	Docs/Month assuming 5-day Week	Storage Requirements per Annum
50	1,083	650 MB
250	5,416	3.25 GB
500	10,833	6.5 GB
1,000	21,666	13 GB
5,000	108,333	65 GB

Load Balancing Web Servers

If using a load balancing appliance, this should be configured to ensure sessions started between a client and a server persist to the same server.

Disk Performance for Document Manager 5

Document Manager 5 Web Servers are very disk-IO-intensive and disk speed is as important as CPU specification. Where possible, the Web Server(s) should make use of an SSD disk (or disks) for the operating system, the Document Manager 5 Web application and the Document Manager 5 Web cache folder. An SSD is not necessary for the main document stores.

Azure Configurations for Document Manager 5

Document Manager 5 can be deployed in Azure; however, Azure is a highly configurable environment and whilst it is possible to get great performance in Azure, it is also easy to get it wrong.

It is specifically worth noting that although basic virtual machine (VM) images provide the required RAM and CPU recommendations for Document Manager 5, they are limited on disk IOPS (input/output operations per second), which can significantly slow down performance. You should specify a VM size with a maximum IOPS of at least 6400 (at the time of writing, that would typically be 'D4s_v3'; however, Azure VM names and terminology are ever-changing).

The disk system attached to the VM should also be 'managed' (as opposed to unmanaged) and 'Premium SSD' (as opposed to 'Standard SSD', which has low IOPS). There is no specific requirement to make the main document storage an SSD ('Standard HDD' should suffice), but of course, subject to budget considerations, the faster the disk, the better the experience.

If you intend to provision and manage your own infrastructure in Azure, please follow the above guidelines but seek the services of a suitably trained IT professional with experience and familiarity in managing Azure environments.