

Customer Expectation Setting

Recommended Core Server Configurations

DocuShare is optimized for 300,000 to 2,000,000 documents (depending on how much metadata is stored per document).

To improve performance, the DocuShare Database Connector and an enterprise class database such as Oracle or Microsoft SQL Server must be used for DocuShare sites with more than 250 client access licenses (CALs).

For the best performance return on your hardware investment, add memory, multiple CPUs, and high speed Ultra SCSI or Fibre Channel attached disk drives.

Balance disk drive workload across disk drive controllers and physical disk drives. For example dedicate one disk drive and controller pair for the database and another for DocuShare.

High speed RAID arrays are recommended. A fault tolerant RAID Level such as Level 5

For best performance, on sites with at least 300,000 documents or 350 active users, DocuShare and the database applications should each run on their own dedicated server hardware. In other words one server dedicated to DocuShare and another server dedicated to an Oracle, Microsoft SQL Server, or IBM DB2 database applications. The server with the most CPU, RAM, and HDD resources should be the database server.

Server backup options that are applicable to the recommended configurations need to be considered. Server backup should be a daily process for data recovery and protection.

Note: Sun Solaris servers *generally* perform better than similarly configured Windows or Linux servers.

Note: DocuShare is tested to run on 32-bit operating systems.

Windows 2000/2003 & Linux Servers

DocuShare Server with 50 CALs and up to 60,000 Documents

- Intel or AMD platforms running Windows 2000 Server with SP4, Windows 2003 Server with SP1, Red Hat Linux Enterprise AS or ES v.3, an SUSE Linux Standard or Enterprise Server v.8.0
- 3.0 GHz Pentium 4 or AMD Athelon MP processor or better
- 3 GB RAM
- 10/100 Mb Ethernet NIC
- (2) 80 GB Ultra SCSI Hard Drive(s) (option to purchase additional drives)
- Uninterruptible Power Supply

Specs roughly match Dell PowerEdge SC430 (<\$3,000)

DocuShare Server with up to 250 CALs, 100 Concurrent Guest Access Licenses, and up to 250,000 Documents

- Intel or AMD platforms running Windows 2000 Server with SP4, Windows Server 2003 Standard Edition with SP1, Red Hat Linux Enterprise AS or ES v.3, an SUSE Linux Standard or Enterprise Server v.8.0
- DocuShare Enterprise Database Connector utilizing IBM DB2, Microsoft SQL Server, or Oracle as a backend database for metadata storage
- Two 2.2 GHz Xeon Processors each with 1 MB cache or AMD Opteron 200 Series Processor or better
- 4 GB memory
- Dual on-board 10/100 MB NICs
- 80 GB Ultra3 SCSI Hard Drives
- Uninterruptible Power Supply

Specs roughly match Dell PowerEdge 2800 or HP ProLiant DL145 (<\$5,000)

DocuShare Server with up to 1000 CALs and 250 Concurrent Guest Access Licenses and up to 1,000,000 Documents

- Intel or AMD platforms running Windows 2000 Enterprise Server with SP4, Windows Server 2003 Enterprise Edition with SP1, Red Hat Linux Enterprise AS or ES v.3, an SUSE Linux Standard or Enterprise Server v.8.0
- DocuShare Enterprise Database Connector utilizing IBM DB2, Microsoft SQL Server, or Oracle as a backend database for metadata storage (must purchase DB Connector and DB)
- Four 2.8 GHz Xeon Processors each with 2 MB cache
- 16 GB Memory
- Dual on-board Gigabit NICs
- Hot-swappable 73 GB 15K RPM SCSI Ultra 320 hard drive(s) (option to purchase additional drives)
- Uninterruptible Power Supply

Specs roughly match Dell PowerEdge 6800 or HP ProLiant DL585, with add-ons (<\$30,000)

DocuShare Server with up to 2000 CALs and 250 Concurrent Guest Access Licenses and up to 2,000,000 Documents

- Intel or AMD platforms running Windows 2000 Enterprise Server with SP4, Windows Server 2003 Enterprise Edition with SP1, Red Hat Linux Enterprise AS or ES v.3, an SUSE Linux Standard or Enterprise Server v.8.0

- DocuShare Enterprise Database Connector utilizing either Microsoft SQL Server or Oracle as a backend database for metadata storage (must purchase DB Connector and DB)
- Eight Xeon 2.8 MHz Processors each with 2 MB cache
- 32 GB Memory
- Dual on-board Gigabit NICs
- Hot-swappable 73 GB 15k RPM Ultra 320 SCSI Hard Drive(s) (option to purchase additional drives)
- Uninterruptible Power Supply

Specs roughly match Dell PowerEdge 6800 or HP ProLiant DL585 plus options (<\$150,000)

Sun Solaris 8 or 9 Platforms

DocuShare Server with up to 250 CALs and 100 Concurrent Guest Access Licenses, and up to 250,000 Documents

- Solaris 8 or 9 OS (or higher)
- Two 1.28 GHz UltraSPARC-III Processors
- 4 GB memory
- 10/100/1000BASE-T Ethernet Port
- 36 GB Ultra160 SCSI disks (option to purchase additional drives)
- Uninterruptible Power Supply

Specs roughly match Sun Fire V210 "Large" Server configuration with add-ons (<\$6,000).

DocuShare Server with up to 1000 CALs and 100 Concurrent Guest Access License, and up to 1,000,000 Documents

- Solaris 8 or 9 (or higher)
- DocuShare Enterprise Database Connector utilizing Oracle as a backend database for metadata storage (must purchase DB Connector and Oracle)
- Four 1.2 GHz 64-bit UltraSPARC-III Cu Processors
- 16 GB memory
- 1 10/100/1000BaseT F/W UltraSCSI Ethernet
- Uninterruptible Power Supply

Note: Disk storage must be added to the above configuration.

Specs roughly match Sun V440 Server configuration with add-ons (from \$43,000).

DocuShare Server with up to 2500 CALs and 250 Concurrent Guest Access License, and up to 2,000,000 Documents

- Solaris 9 OS (or higher)
- DocuShare Enterprise Database Connector utilizing either Microsoft SQL Server or Oracle as a backend database for metadata storage (must purchase DB Connector and DB)
- 8 1.2 GHz UltraSPARC IV Processors

- 64 GB memory
 - Dual Port LVD SCSI/Dual Fast Ethernet PCI Adapter
 - Uninterruptible Power Supply
- Note:** Disk storage must be added to the above configuration.

Specs roughly match Sun V890 Server configuration.

The Most Heavily Used DocuShare Site at Xerox

The Xerox eDocuShare site is the most heavily used DocuShare site at Xerox. The site is used by a diverse population of users from many Divisions within Xerox. The site is accessible to employees from the corporate Intranet as well as the Internet.

The Database server and the DocuShare server are on separate processors as shown below. This server receives over 2 million page requests a month.

Server 1 – DocuShare Server

- Dedicated IBM 445
- Red Hat Enterprise Linux AS 3
- Apache 1.3.33 Web Server
- Quad 2.2 GHz Xeon CPUs -
- 16 GB of RAM
- 2TB Document Storage allocated on SAN, RAID 5

Server 2 – Oracle 10g Server

- Shared IBM 445
- Red Hat Enterprise Linux AS 3
- Quad 2.2GHz Xeon CPUs
- 12 GB RAM

eDocuShare Statistics

- 1.5 million Documents, 325,000 Collections, 17,000 named user accounts. Estimated 40,000 guest users.
- 510,000 page requests per week on average.

Recommended Configurations DocuShare LDAP Extension

DocuShare 4.0 Server Operating System (OS) Platforms

- Windows 2000 Server with SP4
- Windows 2003 Server
- Solaris 8 or 9
- Red Hat Linux Enterprise AS or ES v.3, an SUSE Linux Standard or Enterprise Server v.8.0

LDAP Version 3

- iPlanet Directory Service 4.1.X (or higher)
- Microsoft Windows 2000 or 2003 Server Active Directory
- Sun Java System Directory Server 5.2

Estimating Disk Space

Determine Current Usage. Examine existing disk drive sources for documents to be moved into the DocuShare repository (e.g., from My Computer, click each network drive to obtain the amount of used space). Use the total number as a starting point (**SP**).

For an imaging solution, scan ten **typical** customer documents to a directory in the format you will be using (e.g., tif, pdf). Display the Properties window on the folder and the collection for the disk space information. Then estimate the total number of documents to be scanned to DocuShare.

1. **Account for Indexing Overhead.** *Multiply SP by 1.3* to account for the indexing overhead. Indexing increases storage requirements anywhere from 15%-35% per document. The wide range depends on whether metadata only is indexed (when uploading image files, DocuShare indexes properties only), how much metadata per document (just document title, or title, summary, description, keywords and additional metadata), or metadata and content (when uploading text documents, DocuShare indexes properties and content). If DocuShare is to be used to store image files only, multiply the SP by 1.15. If DocuShare is to be used to store documents, multiply the SP by 1.35. This number is the **SPIO**.
2. **Determine Document Versions.** *Multiply SPIO by the estimated number of document versions to keep.* By default, DocuShare keeps four versions of a document (when a fifth version is "checked in," the first is overwritten). Many documents, particularly image files, will only have one version. These documents are stored to a collection to share, and not for collaboration. Some documents, however, may have many versions. If a good estimate cannot be determined, use 1.4. *Multiply SPIO by 1.4* to determine the initial estimated disk space requirements.
3. **Plan for Growth.** How many documents will be added or updated each month? What's the life span of a document? Will documents be removed or archived after one year? 7 years?

DocuShare Database (DB) Connector

For customers with more than 250 users or 300,000 documents an enterprise class database is **strongly** recommended. DocuShare connects to IBM DB2, Microsoft SQL Server, or Oracle databases.. Advantages to using the DB Connector include:

- ❑ Increases the amount of metadata, and therefore documents that can be stored.

- ❑ Provides performance superior to MSDE or PostgreSQL.
- ❑ DocuShare has been optimized for DB2, MS-SQL Server and Oracle. DocuShare can open a greater number of connections (using one DB user account) and therefore return results faster.

Note: MSDE allows only five connections. Therefore, if ten users submit search queries simultaneously, DocuShare can pass five to MSDE and five must be queued. DB2, MS-SQL and Oracle do not have this limitation.

DocuShare High Capacity Server

For customers with larger capacity requirements (more than 300,000 documents), using the High Capacity Server features in DocuShare 5 is recommended

- ❑ The High Capacity feature includes connectors to IBM DB2, Microsoft SQL Server, and Oracle.
- ❑ Indexing and search enhancements necessary to achieve acceptable performance beyond 300,000 documents
- ❑ The LDAP/Active Directory Connector for User Account authentication

Recommendation: Double the memory of the selected configuration when DocuShare High Capacity Server shares a single server with a MS SQL Server or Oracle.

DocuShare Records Manager

DocuShare Records Manager (DSRME) is an optional add-on for DocuShare. DSRME works with the IBM DB2 Records Manager (IRM) system. The record information is stored in the IRM, which manages the record's life cycle and provides an audit trail. To ensure the security of your stored records, DocuShare Records Manager is compliant with the U.S. DoD 5015.2 standard.

The system requirements listed below are minimum requirements. These requirements are in addition to the requirements for a DocuShare Server.

The best performance is achieved with a 3 server configuration; (1) DocuShare Server, (1) Database Server, (1) IBM Records Manager Server.

Database System Requirement

- ❑ 2.0 GHz (non-Celeron) processor or equivalent AMD 64-bit Opteron (32-bit support mode only>
- ❑ 2.0 GB RAM
- ❑ 40 GB Free Disk Space
- ❑ CD ROM Drive

Refer to the appropriate database system installation guide for details

Records Manager Engine

- ❑ 2.0 GHz (non-Celeron) processor or equivalent AMD 64-bit Opteron (32-bit support mode only>

- 2.0 GB RAM
- 40 GB Free Disk Space
- CD ROM Drive

Operating System

- Microsoft Windows Server 2000 w/SP4 or 2003 w/SP1

Databases

- Microsoft SQL Server 2000 w/SP3
- Oracle 9i v.9.2.0.5 or higher

Refer to the appropriate database vendor's system guides for installation and configuration details

Records Manager Software

(Included on DocuShare Records Manager CD-ROMs)

- DocuShare 4.1.0
- DocuShare 4.1.0 DSRM Add-on
- IBM Records Manager 4.1.1
- DataDirect Technologies JDBC Drivers
- Microsoft SQL Server 2000 driver for JDBC SP3
- IBM WebSphere Application Server 5.1
- Fix Packs 5.1 FP1, FP2, FP3 (cumulative fixes)
- IRM 4.1.2 Upgrade
- IRM 4.1.2.001 Hotfix 1
- IRM 4.1.2.002 Hotfix 2

Refer to the DocuShare Records Manager Installation Guide and the IBM DB2 Records Manager guides for installation and configuration details.

NOTE: As of 31 March 2006 Microsoft SQL Server 2005 or Oracle 10 was not supported by IBM Records Manager.

Enterprise Deployment of DocuShare High Availability Feature

DocuShare High Availability feature has been tested for use in a clustered failover environment that includes:

- 4 highly scalable servers with cluster software
- 2 Fibre Channel Switches,
- 2 Gigabit Ethernet NICs
- Data storage RAID Array or SAN

And the following platform specific requirements:

Linux Cluster

- Linux-HA Heartbeat 1.2.3 software
- Serial null modem cable

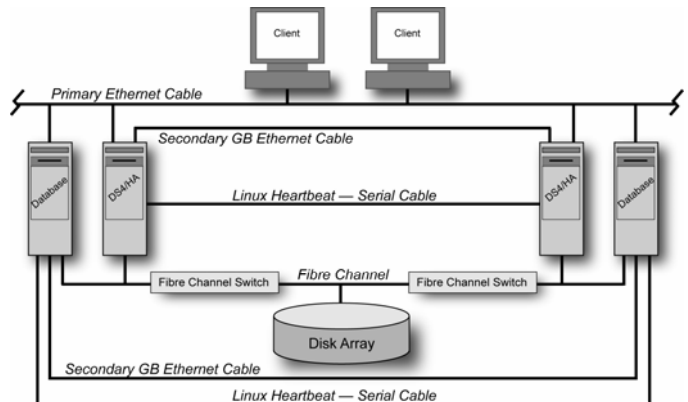
Solaris Cluster

- Sun Cluster software

Windows Cluster

- Enterprise or Data Center editions of Microsoft Windows Server 2003
- Two servers are configured with DocuShare 4 High Availability.
- Two servers provide failover ability for Microsoft SQL 2000 Enterprise, or Oracle 9i or 10g in a clustered environment.

- Data is stored on a SAN or RAID Array
- Systems are backed up using an enterprise level file backup system.



DocuShare 5 Thresholds

For "core" servers matching mid-level specifications:

- Maximum recommended: 10,000 collections (folders)
- Maximum recommended: 250 users
- Maximum recommended: 300,000 documents

For "core" servers matching high-end specifications, plus the Database Connector to an external enterprise database:

- Maximum recommended: 20,000 collections (folders)
- Maximum recommended: 2,500 users
- Maximum recommended: 500,00 – 1 million documents

For servers matching high-end specifications configured to use multiple Search Index (docucoll) directories and the Database Connector to an external enterprise database.

- Maximum recommended: 100,000 collections (folders)
- Maximum recommended: 10,000 users
- Maximum recommended: 2 million documents. Actual limitations unknown, dependent on hardware environment, data, and usage patterns

Customer Support

Xerox Customer Support is provided at 1-800-835-9013 (within the United States) from 9:00 a.m. to 7:00 p.m. Eastern Standard Time, Monday through Friday (except holidays). Assistance also is available online at <http://www.xerox.com/docushare/support>.

Special considerations or performance limitations identified by Xerox and understood by the customer:

I have reviewed and understand this information and my responsibilities to support the product:

Customer Key Operator and Key Contact for ordering/installation

Customer Systems Analyst/Designate for network installation

Xerox or Partner Sales Representative

Xerox or Partner Systems Analyst

Terms and product names used in this document may be trademarks or registered trademarks of their respective companies and are hereby acknowledged.