FOIAXpress

Recommended System Requirements

v11.11.0

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FOIAXpress v11.11.0 Recommended System Requirements

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1 About This Manual

The purpose of this manual is to provide an overview of the environment required to set up to deploy the FOIAXpress (FX) application. This document introduces the recommended hardware and software required to begin the process of installing the application and related components. This document also offers basic networking recommendations to provide some performance gains.

Additionally, this manual provides recommendations for setting up an Azure FOIAXpress environment. You'll also find sections on Public Access Link (PAL) system requirements, Collaboration Portal requirements, and recommendations for using the Electronic Document Review (EDR) module.

2 FOIAXpress Recommended System Requirements

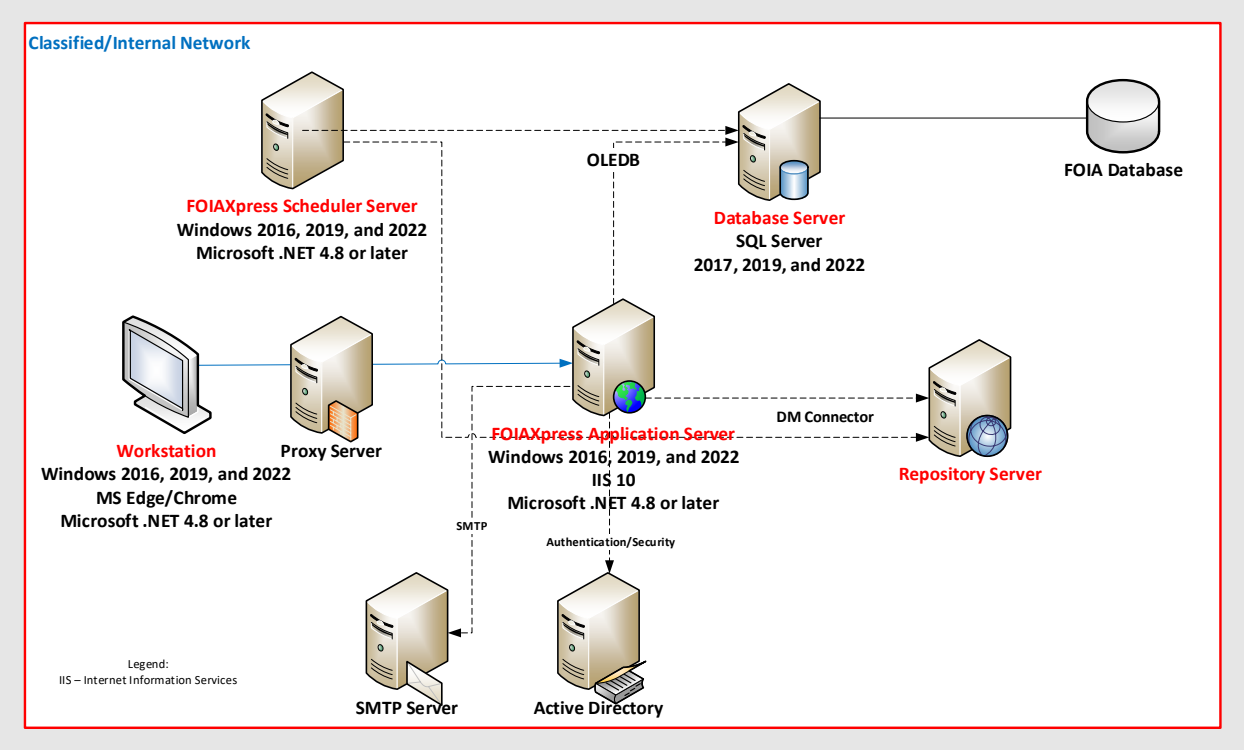
2.1 FX Requirements Overview

FOIAXpress is a Microsoft Internet Information Services (IIS) based web application running with a SQL Server (2017/2019/2022) backend database. FOIAXpress Server Suite includes the following server components:

- FOIAXpress Database Server: The FX database is installed on a SQL Database Server. The FX database stores and manages information related to requesters, requests, document data information, and the FX application configuration. The database includes Full Text search for indexing data.
- FOIAXpress Application Server: FX Web Application is an IIS (Internet Information Services) based Web application. The FX Web Application consists of .NET components and ASPX pages. The FX Web Application Server communicates with the FX Database Server through the .NET components.
- FOIAXpress Repository Server: FOIAXpress documents (original) and correspondence documents are stored on the respective repository server (File repository)
- FOIAXpress Scheduler Server: The FOIAXpress scheduler services does the following.
    - Delivers requested documents to the FOIA requester either through email or other selected methods.
    - Supports the full text search feature in FX. When documents or correspondence are added to FX, the text on the image pages is scanned, OCR'd, indexed and stored in the database by the service.
    - Allows users to schedule the running of a report and delivery of saved report criteria.
    - Synchronizes the FX Requester and Request Reading Room related information with the FX PAL Web Portal, which is accessible to the general public to make and track FOIA requests. This service is not used if an agency does not use the PAL Web Portal application.
    - Utilizes the FX Electronic Document Review (EDR) module to further speed and improve FOIA processing by reducing time spent searching and reviewing relevant documents.

- Optional Servers, if modules are purchased:
    - FOIAXpress EDR Server: FOIAXpress Electronic Document Review is a module that de-duplicates ingested data sources .This server helps further speed up and improve FOIA processing.
    - FOIAXpress PAL Server: Public Access Link (PAL) Application is an IIS (Internet Information Services) based Web application. The PAL Application consists of .NET components and ASPX pages. The PAL Application Server communicates with the FOIAXpress and PAL Database Server through the .NET components.

The following diagram illustrates a high-level view of the FOIAXpress architecture:

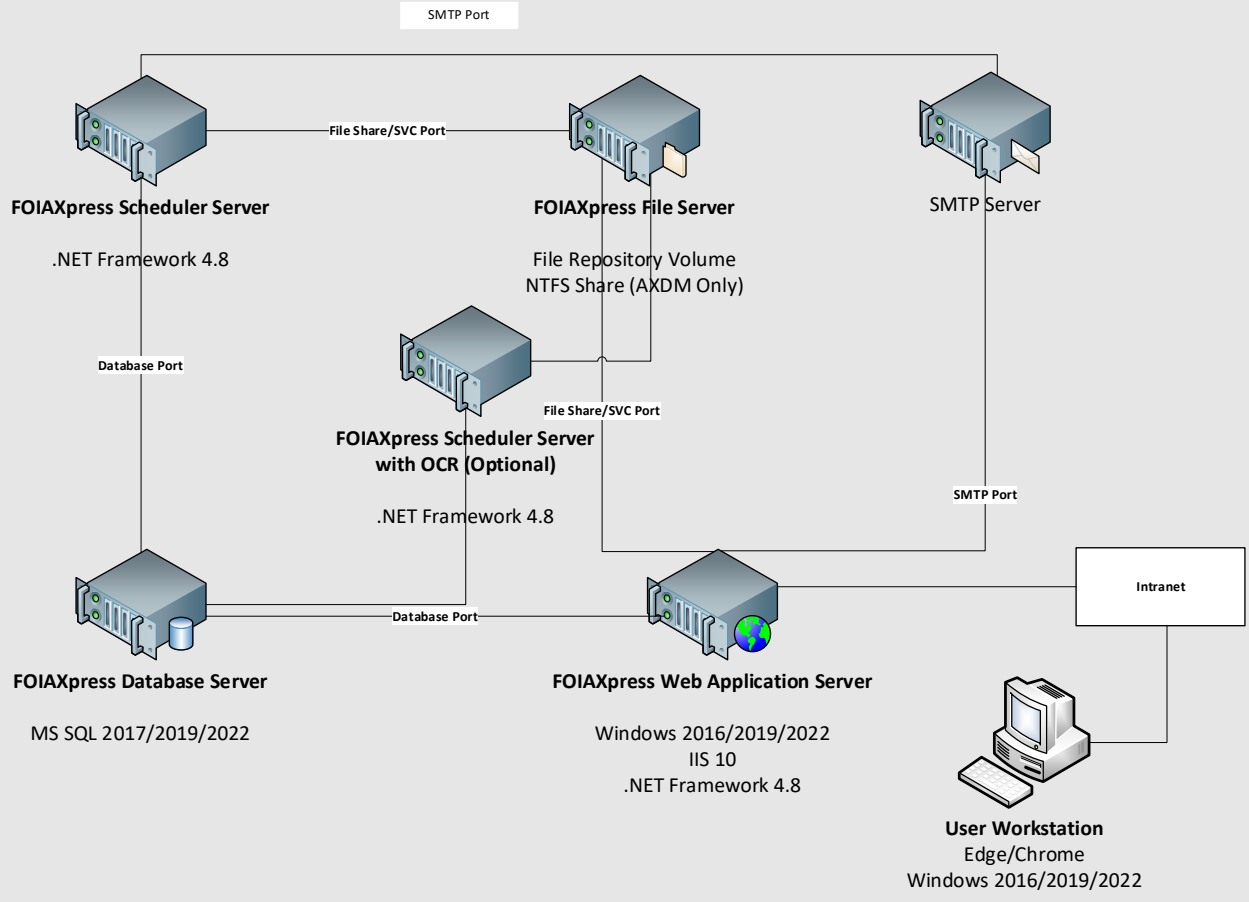


(!!) Note: The FOIAXpress application and all other components can be installed on a single server if the organization size and workload are minimal. However, it is highly recommended to house the database, application and scheduler on separate servers due to the high volume of processing required by the CPU.

The following pages detail various server configurations based on the number of users. It is always best to consult with OPEXUS to review specific FOIAXpress requirements to determine the optimal server configuration to be utilized.

2.2 Server Configuration Scenarios

The following scenarios are to provide an idea of the layout and architecture of the FOIAXpress system.



2.2.1 1 to 20 Users Scenario – Single Server Configuration

The following table outlines the configuration requirements for organizations utilizing a single server for one to 20 users:

Component	Hardware	Operating System	Software Needed
Application	Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 250 GB or more	Windows 2016/2019/2022	Microsoft SQL server 2017/2019/2022 Microsoft .NET Framework 4.8 Microsoft IIS 10 (Web Server)
Database	Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 250 GB or more	Windows 2016/2019/2022	Microsoft SQL server 2017/2019/2022 Microsoft .NET Framework 4.8 Microsoft IIS 10 (Web Server)
Scheduler	Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 250 GB or more Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 250 GB or more	Windows 2016/2019/2022	Microsoft SQL server 2017/2019/2022 Microsoft .NET Framework 4.8 Microsoft IIS 10 (Web Server)

Component	Hardware	Operating System	Software Needed
Repository	Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 250 GB or more Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 250 GB or more	Windows 2016/2019/2022	Microsoft SQL server 2017/2019/2022 Microsoft .NET Framework 4.8 Microsoft IIS 10 (Web Server)

2.2.2 21 to 100 Users Scenario – Three Server Configuration

The following table outlines the configuration requirements for organizations utilizing three servers for 21 to 100 users:

Component	Hardware	Operating System	Software Needed
Application	Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 160 GB or more	Windows 2016/2019/2022	Microsoft SQL server 2017/2019/2022
Database	Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 160 GB or more	Windows 2016/2019/2022	Microsoft SQL server 2017/2019/2022

Component	Hardware	Operating System	Software Needed
Scheduler	Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 40 GB or more	Windows 2016/2019/2022	Microsoft .NET Framework 4.8
Repository*	N/A*	N/A*	N/A*

***(!!) Note: Documents can be stored on either the Application or Scheduler system.**

2.2.3 101 to 500 Users Scenario – Three Server Configuration

The following table outlines the configuration requirements for organizations utilizing three servers for 101 to 500 users:

Component	Hardware	Operating System	Software Needed
Application	Core: 8 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 40 GB or more	Windows 2016/2019/2022	Microsoft .NET Framework 4.8 Microsoft IIS 10 (Web Server)
Database	Core: 4 or more GHz: 2.5 or more RAM: 16 GB or more Hard disk: 160 GB or more	Windows 2016/2019/2022	Microsoft SQL server 2017/2019/2022

Component	Hardware	Operating System	Software Needed
Scheduler	Core: 8 or more GHz: 2.5 or more RAM: 16 GB or more Hard disk: 40 GB or more	Windows 2016/2019/2022	Microsoft .NET Framework 4.8
Repository*	N/A*	N/A*	N/A*

***(!!) Note: Documents can be stored on either the Application or Scheduler system.**

2.2.4 More than 500 Users Scenario – Four Server Configuration

The following table outlines the configuration requirements for organizations utilizing four servers for more than 500 users:

Component	Hardware	Operating System	Software Needed
Application	Core: 8 or more GHz: 2.5 or more RAM: 16 GB or more Hard disk: 40 GB or more	Windows Server 2016/2019/2022	Microsoft .NET Framework 4.8 Microsoft IIS 10 (Web Server)
Database	Core: 8 or more GHz: 2.5 or more RAM: 16 GB or more Hard disk: 160 GB or more	Windows Server 2016/2019/2022	Microsoft SQL server 2017/2019/2022

Component	Hardware	Operating System	Software Needed
Scheduler – Without OCR	Core: 8 or more GHz: 2.5 or more RAM: 16 GB or more Hard disk: 40 GB or more	Windows Server 2016/2019/2022	Microsoft .NET Framework 4.8
Scheduler – With OCR	Core: 4 or more GHz: 2.5 or more RAM: 8 GB or more Hard disk: 40 GB or more	Windows Server 2016/2019/2022	Microsoft .NET Framework 4.8
Repository*	N/A*	N/A*	N/A*

***(!!) Note: Documents can be stored on either the Application or Scheduler server.**

2.2.5 Additional Information

2.2.5.1 Application Server Notes

Please review the following notes regarding the Application Server prior to configuration:

- IIS is not installed or enabled by default in the Microsoft Windows Server operating system. To successfully install FOIAXpress, IIS must first be installed and enabled. For further details concerning those installations, contact the hardware and/or software vendor.
- HTTP Redirection feature must be installed for IIS.
- HTTP Activation must be installed as part of the .Net Framework installation.

2.2.5.2 Database Server Notes

FOIAXpress does not require a dedicated database server and can be set up on an existing database server.

2.2.5.3 Repository Server Notes

Please review the following notes regarding the Repository Server prior to configuration:

1. FOIAXpress File Server contains the following:
    a. Documents
    b. Correspondence Templates
    c. Downloaded Documents
    d. Electronic Reading Room Documents
    e. PNG Cache location
2. For image files (tiff and jpeg), the following table shows the minimum required disk space.
    a. If a document contains 20 pages (tiff or jpeg images), the minimum required hard disk space for storing the document is 4.5 MB.
    b. Similarly, if there are 1000 such documents (total 20,000 Pages), then the required hard disk space is 4.5 GB.
3. Page size is estimated at approximately 75 KB per TIFF (compressed) file. Page size may vary depending on the file size, image quality, and content.
4. For Correspondence Templates, Downloads Documents and Electronic Reading Room Documents, additional disk space is required when using the FOIAXpress application.
5. The FOIAXpress Repository Server can also be configured on the Application Server if the file server type is NTFS. Additional hard disk capacity may be required over time due to the accumulation of documents.

2.2.5.4 General Notes

Please review the following notes prior to configuration:

1. For FOIAXpress EDR processing, it is recommended to have a dedicated server.
2. As with any application, an increase in the number of records will result in the necessity of additional storage for the server's hard drive. Additionally, an increase in the number of concurrent users on a server will result in an increase of RAM required for that server.
3. Hard Disk capacity is dependent on the amount of data in the database and the number of documents stored in FOIAXpress Document Management (FXDM).

2.3 Client Workstation

The table below outlines the minimum requirements for the Client Workstation:

Component	Requirements
Hardware	Intel Dual Core, 2.3 GHz processor or higher 4 GB RAM or higher 80 GB or higher
Screen Resolution	1024 x 768 or higher
Operating System	Windows 2016/2019/2022
Software	MS Edge/Google Chrome Microsoft .NET Framework 4.8

(!!) Notes:

- **The Client workstation should have Microsoft Windows 2016/2019/2022 installed.**
- **FOIAXpress does not support RTF and WPD formats as Correspondence Editors.**

Below are additional requirements for Client Workstations configured for the Zero Footprint Viewer:

Component	Requirements
Operating System	Windows 2016/2019/2022

Component	Requirements
Software	Microsoft .NET Framework 4.8 MS Edge/Google Chrome
Screen Resolutions	1920x1080, 1680x1050, 1600x1200, 1440x900, 1400x1050, 1280x1024, 1280x960, 1280x800, or 1152x864

(!!) Notes:

- **Consult the software vendor for additional information concerning the Zero Foot Print Viewer.**
- **Documents with WPD and RTF file formats are not supported.**

2.4 Scanning Workstation

The table below outlines the minimum requirements for the FOIAXpress Scanning Workstation:

Component	Requirements
Hardware	Intel Dual Core, 2.3 GHz processor or higher 4 GB RAM or higher 80 GB or higher
Operating System	Windows 2016/2019/2022
Software	MS Edge/Google Chrome Microsoft .NET Framework 4.8
Scanner	Scanner should support TWAIN Drivers and have a minimal optical resolution of 300dpi.

(!!) Note: Please consult with the hardware and/or software vendor for further details regarding a specific scanning device.

3 Azure System Recommendations

3.1 Azure Server Environment Recommendations

The following subsections describe the recommended server environment for FOIAXpress (FX) Azure Deployment, as well as the FX Public Access Link (PAL) Azure Environment.

3.1.1 Recommendations for FOIAXpress Server Environment

The following table lists the recommended server components, including Virtual Machine (VM), database (DB), etc. for the FOIAXpress App Server environment.

See section 2 of this document for a diagram of the proposed deployment architecture for an eFOIA system in Azure GovCloud.

Component	Recommendation
Application Server	▪ Install Windows VM (version 2016 or higher) with IIS 10.0 ▪ Install FOIAXpress Application Server on the windows VM
Database Server	▪ SQL Server database using Azure SQL DB (PaaS) ▪ Version 2017, 2019, and 2022
File Storage	▪ Install Windows VM (version 2016 or higher) and enable File Share (using UNC path) ▪ FOIAXpress folders/files can be shared so that other servers can access it using UNC path
Scheduler Servers (EDR, OCR, DDS, Sync)	Install Windows VM (version 2016 or higher) and install FOIAXpress Scheduler Services for each of these service server instances

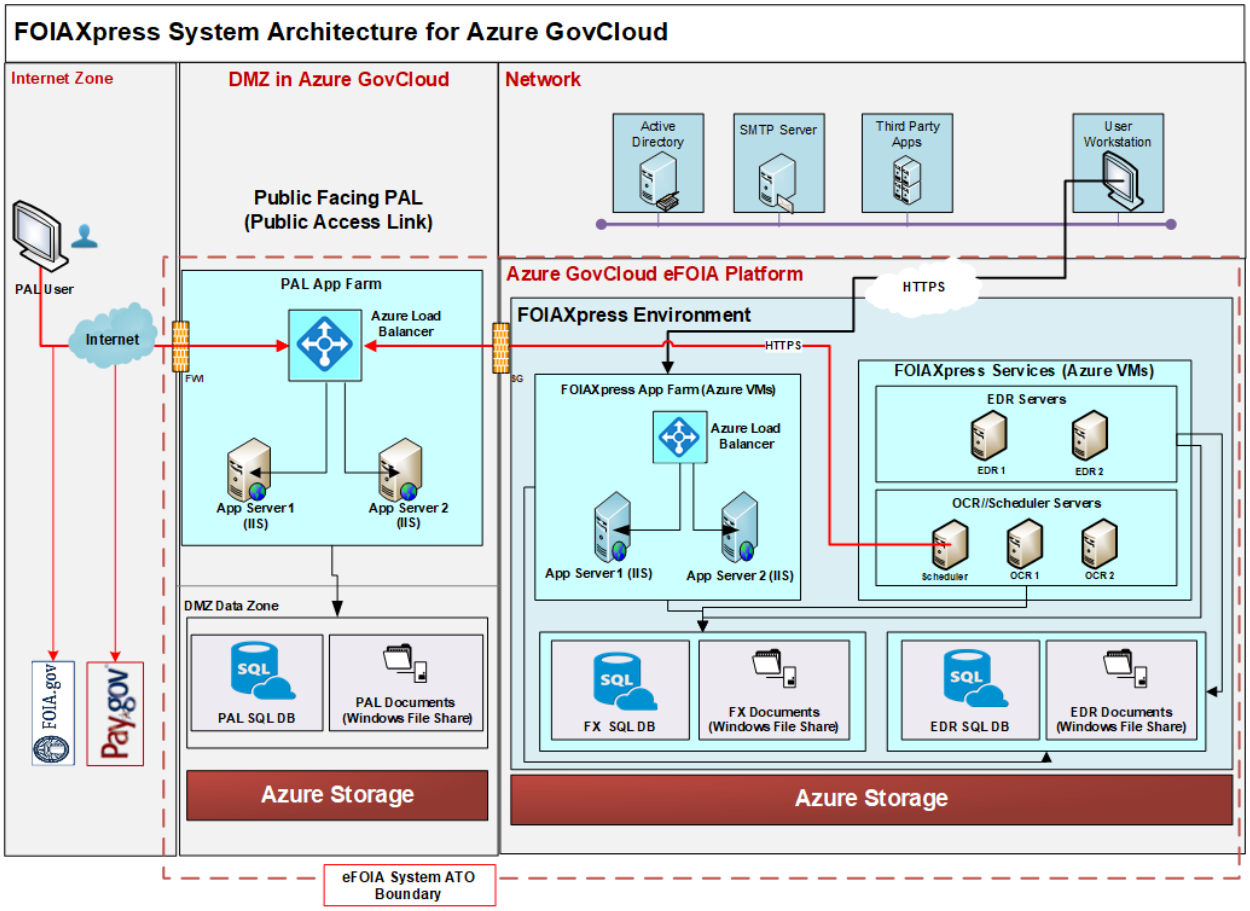
3.1.2 Recommendations for PAL Server Environment

The following table lists the recommended server components (VM, DB, etc.) for the FOIAXpress PAL App Server environment.

Component	Recommendation
Application Server	▪ Install Windows VM (version 2016 or higher) with IIS 10.0 ▪ Install FOIAXpress Application Server on the windows VM
Database Server	▪ SQL Server database using Azure SQL DB (PaaS) ▪ Version 2017, 2019, and 2022
File Storage	▪ Install Windows VM (version 2016 or higher) and enable File Share (using UNC path)

3.2 Architecture Diagram from Deployment in Azure GovCloud

The following architecture diagram depicts the proposed FX system deployment in an Azure GovCloud cloud environment. Service server instances can be added or removed per the performance and scalability requirements. This diagram includes the optional Electronic Document Review (EDR) Services deployment.



4 EDR Hardware & Software Requirements

The FOIAXpress Electronic Document Review (EDR) module is an add-on to the FOIAXpress application. The purpose of this manual is to provide a brief overview of the potential architecture scenarios and recommended systems requirements necessary to run the EDR module in conjunction with the FOIAXpress application.

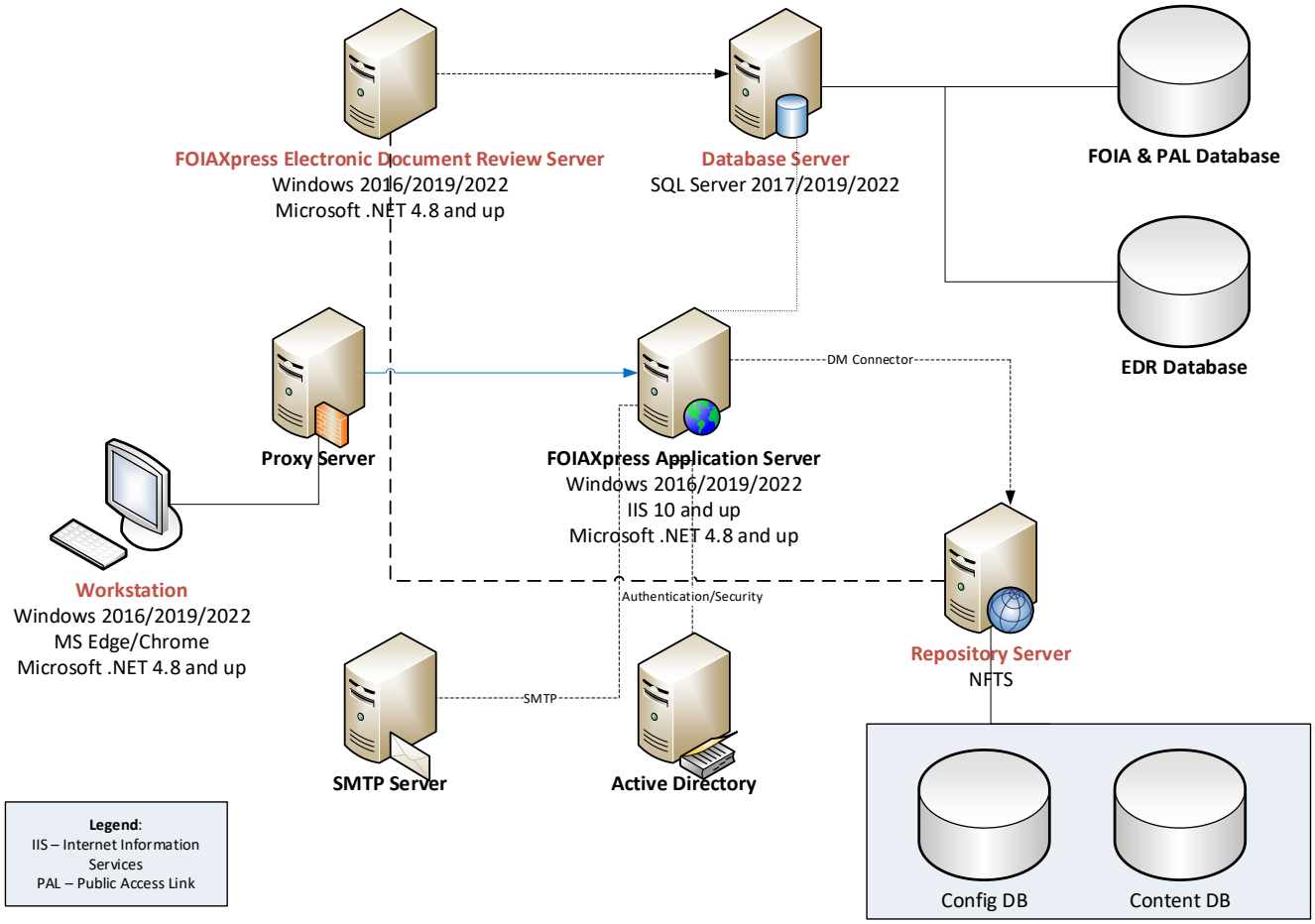
- FOIAXpress is an IIS (10.0) based web application running with a SQL Server (2017, 2019, and 2022).
- The FOIAXpress Repository Server stores the FOIAXpress documents (original) and correspondence document on the respective repository server.
- The FOIAXpress Electronic Document Review module is integrated within the FOIAXpress Application Server.
- The FOIAXpress Electronic Document Review Service is required to process the Electronic Document Review jobs and is installed on one or more separate servers.
- The FOIAXpress Database Server stores and manages information related to requesters, requests, document data information, and the FOIAXpress application configuration. This server can be used to host one or more separate FOIAXpress Electronic Document Review databases.

4.1 EDR Advisory

FOIAXpress Electronic Document Review processes large data sets, which will result in increased CPU, RAM, disk and network utilization, potentially over extended periods of time (hours). OPEXUS strongly recommends the Scenario 2 (advanced) described in the next section to minimize the impact of EDR processing on the performance of the FOIAXpress application. Additionally, exceeding the recommend requirements listed will also increase performance of EDR processing. FOIAXpress EDR Recommended System Requirements Page 4 of 10.

4.2 Scenario 1 (Simple)

This scenario displays the minimal hardware required and is suitable for EDR environments where only one EDR request is processed at a time with up to 1 GB or 5,000 documents. The scenario features a single FOIAXpress Electronic Document Review Service server with the FOIAXpress Electronic Document Review database as a separate database on the same database server used by the FOIAXpress application.



The minimum system requirements are detailed below:

4.2.1 FOIAXpress Electronic Document Review Service Server

Type	Requirements
Hardware	Core 2.50 GHz 8 GB RAM 80 GB or higher hard disk drive (see notes below). Hard drive must be 7200 RPM or faster 1000 MB Ethernet (NIC)
Operating System	Windows 2016/2019/2022 32- or 62-bit operating systems are supported

Type	Requirements
Software	Microsoft .NET Framework 4.8 FOIAXpress Scheduler Service with EDR Service Feature

(!!) Note: Additional hard disk drive space is required on the drive that contains the Windows Temp folder, typically the C: drive, equal to the maximum size of the documents for any EDR request. The space used will become available again after the EDR request has been processed. For example, if a user wishes to perform Electronic Document Review on a 1 GB set of documents, the FOIAXpress Electronic Document Review Service Server must have at least 1 GB of hard disk space available.

4.2.2 FOIAXpress EDR Database Server

Type	Requirements
Hardware	8 Core 2.50 GHz 16 GB RAM 150 GB or higher hard disk drive (see notes below) Hard Drives to be 7200 rpm or faster 1000 MB Ethernet (NIC)
Operating System	Windows 2016/2019/2022 32-bit and 64-bit Database Engines are supported
Software	Microsoft SQL Server 2017/2019/2022

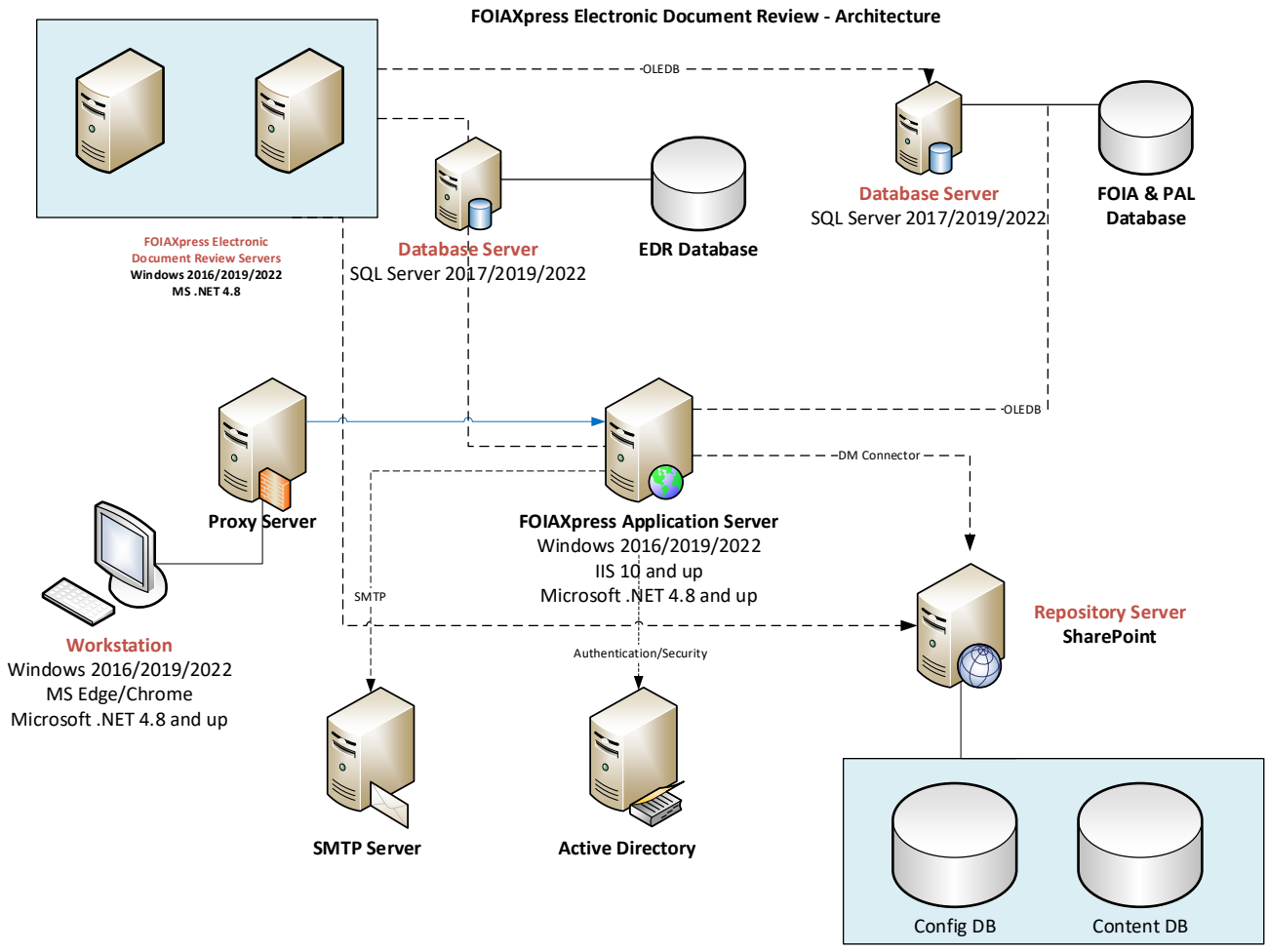
(!!) Notes:

- **The FOIAXpress Electronic Document Review database(s) are installed on the existing FOIAXpress Database Server.**

- **For SQL Server databases:**
  - **Microsoft SQL Server supports only the Microsoft Windows operating system (2016, 2019, and 2022). Please refer to the database server system requirements specified by the manufacturer.**
  - **Additional hard disk drive space is required; 25 MB of space should be allocated per each 10 MB ingested.**

4.3 Scenario 2 (Advanced)

This scenario displays the hardware required for higher performance and is suitable for EDR environments where multiple EDR requests (or requests with more than 1 GB or 5,000 documents) are processed at a time. This scenario features multiple FOIAXpress Electronic Document Review Service servers with the FOIAXpress Electronic Document Review database on a separate database server than the one used by the FOIAXpress application.



4.3.1 FOIAXpress Electronic Document Review Service Server

The recommended system requirements are detailed below:

Type	Requirements
Hardware	4 Core Intel Xeon E5-2640 2.50 GHz 8 GB RAM 80 GB or higher hard disk drive(see notes below) Hard Drives to be 7200 rpm or faster 1000 MB Ethernet (NIC)
Operating System	Windows 2016, 2019, and 2022 32-bit and 64-bit Database Engines are supported
Software	Microsoft .NET Framework 4.8 FOIAXpress Scheduler Service with EDR Service Feature

(!!) Notes:

- **Multiple FOIAXpress Electronic Document Review Service Servers improve performance.**
- **For SQL Server configurations Client software installation is not required.**
- **Additional hard disk drive space is required on the drive that contains the Windows Temp folder, typically the C: drive, equal to the maximum size of the documents for any EDR request. The space used will become available again after the EDR request has been processed.**
    - **For example, if a user wishes to perform Electronic Document Review on 1 GB set of documents, the FOIAXpress Electronic Document Review Service Server must have at least 1 GB of hard disk space available.**

4.3.2 FOIAXpress Database Server

The recommended system requirements are detailed below:

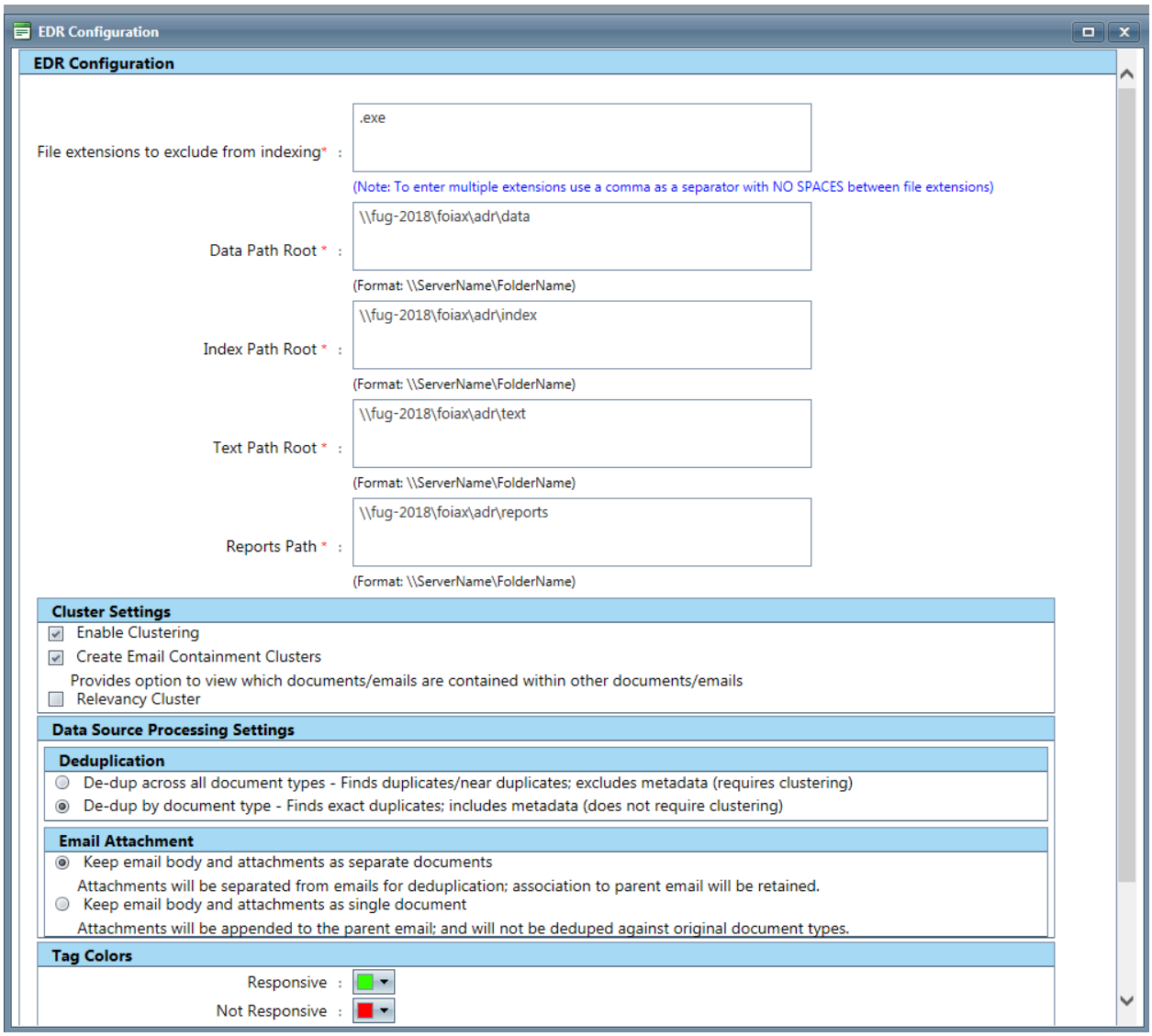
Type	Requirements
Hardware	4 Core Intel Xeon E5-2640 2.50 GHz 8GB RAM 150 GB or higher hard disk drive(see notes below) Hard Drives to be 7200 rpm or faster 1000 MB Ethernet (NIC)
Operating System	Windows 2016, 2019, and 2022 32-bit and 64-bit Database Engines are supported
Software	Microsoft SQL Server 2017/2019/2022

Notes:

- **The FOIAXpress Electronic Document Review database(s) are installed on the existing FOIAXpress Database Server.**
- **For SQL Server databases: Microsoft SQL Server supports only the Microsoft Windows operating system (2016, 2019, and 2022). Please refer to the database server system requirements specified by the manufacturer.**
- **Additional hard disk drive space is required; 20 MB of space should be allocated per each 10,000 documents reviewed.**

4.4 Additional Hard Disk Storage Considerations

The EDR Configuration options in the FOIAXpress application enable the system to store EDR-related files in specified locations. Access this page via **Administration > Electronic Document Review > EDR Configuration**:



The following are the additional hard disk drive storage considerations for three of the destinations:

- Data Path Root

    - If the path is on the same server as the FOIAXpress Electronic Document Review Service Server, additional hard disk drive space is required equal to double the maximum size of the documents for any EDR request.
        - For example, if a user wishes to perform Electronic Document Review on 1 GB set of documents, the FOIAXpress Electronic Document Review Service Server must have at least 2 GB of hard disk space available (1 GB to hold the request documents and 1 GB for the working files generated). The 1 GB of space for the working files will become available again after the EDR request has been processed.
- Index Path Root
    - Allocate 500 MB of space per 1 GB in a request.
    - The disk space used will continue to increase after each request has been processed.
- Text Path Root
    - Allocate 500 MB of space per 1 GB in a request.
    - The disk space used will continue to increase after each request has been processed.
- Reports Path
    - Allocate an equal amount of space as the size of the documents that are exported.
    - The disk space used will continue to increase after each export.

5 PAL Recommended System Requirements

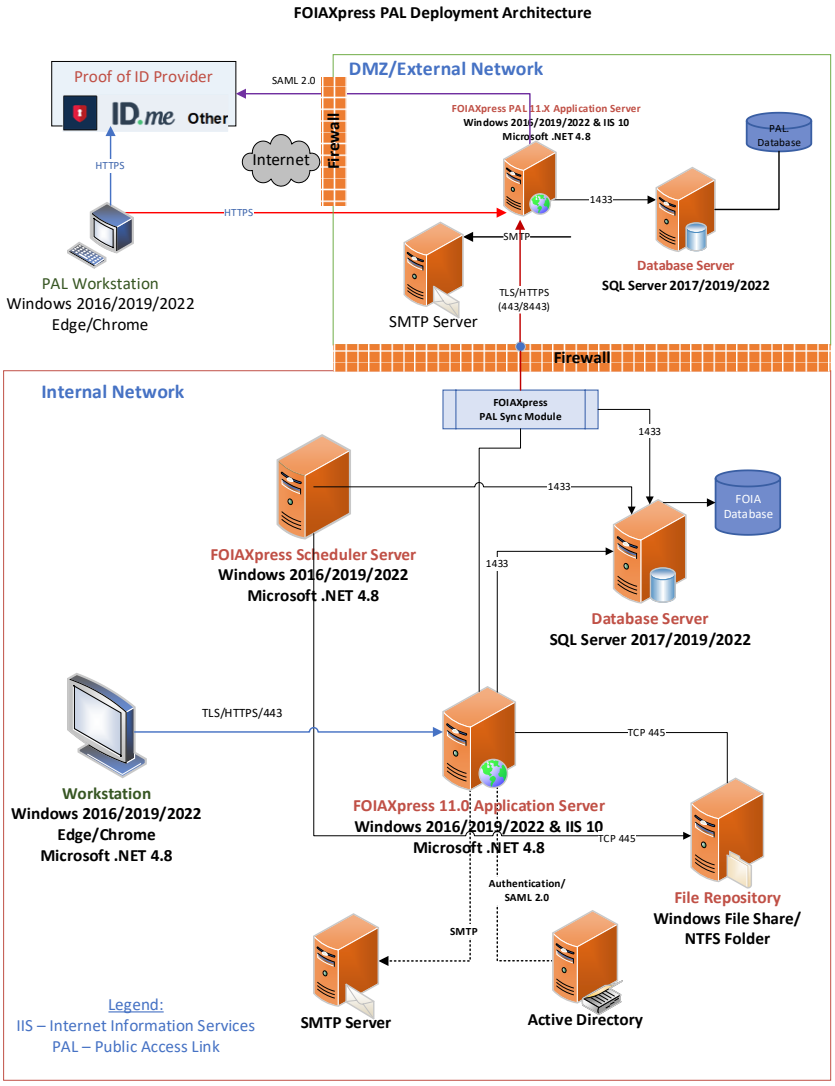
5.1 About PAL

The purpose of this section is to provide an overview of the environment you will need to set up to deploy the Public Access Link (PAL) application for FOIAXpress. This document also introduces recommended hardware, software, and basic networking configuration(s) you will need to begin the PAL installation process.

FOIAXpress PAL facilitates the submission of Freedom of Information Act (FOIA) requests over the internet and allows information to be published to an Electronic Reading Room. The FOIAXpress PAL server suite includes the following:

- PAL - FOIAXpress Database Server: The FOIAXpress PAL database server is required to create and manage the FOIAXpress PAL database, which is used to store data including information related to requesters, requests, lookup information, and configuration data. This data is stored in database tables.
    - PAL - FOIAXpress Application Server: The FOIAXpress PAL Application server is a Web application. The FOIAXpress PAL Application Server consists of .NET components and ASPX pages, and communicates with the database server through the .NET components.
- PAL - FOIAXpress File Server: The FOIAXpress PAL documents (Electronic Reading Room and Downloaded documents from FOIAXpress) will be stored in these File Server folders.

The FX-PAL Architecture is illustrated in the figure below.

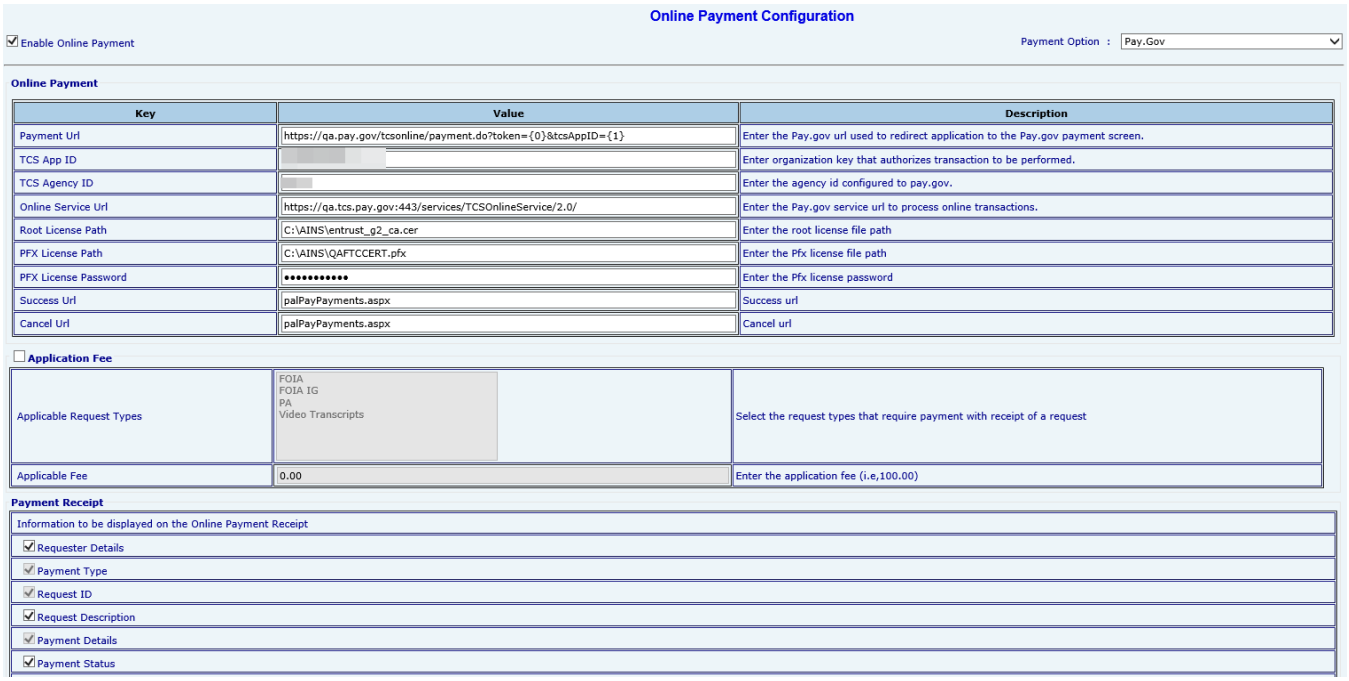


5.1.1 Pay.gov Additional Configuration Information

Pay.Gov requires additional configuration beyond standard FX and PAL Configuration. The following subsections contain:

- **Pay.Gov Configuration**: This subsection contains information regarding Online Payment Configuration, PAL Status Notifications, Email Template Configuration.
- **Payment and Refunds**: Consult this subsection for information about rendering payments and issuing refunds within FX.
- **Payment Information**: This subsection provides guidance on viewing the payment information for payments that have been rendered.
- **Refund Using Pay.gov**: Consult this subsection for instructions on how to issue a refund using Pay.gov.

- **Testing**: This subsection provides instructions on how to test payments after application configuration.



Online Payment Configuration

Enable Online Payment

Payment Option : Pay.Gov

Online Payment

Key	Value	Description
Payment Url	https://qa.pay.gov/tcsonline/payment.do?token={0}&tcsAppID={1}	Enter the Pay.gov url used to redirect application to the Pay.gov payment screen.
TCS App ID		Enter organization key that authorizes transaction to be performed.
TCS Agency ID		Enter the agency id configured to pay.gov.
Online Service Url	https://qa.tcs.pay.gov:443/services/TCSOnlineService/2.0/	Enter the Pay.gov service url to process online transactions.
Root License Path	C:\AINS\entrust_g2_ca.cer	Enter the root license file path
PFX License Path	C:\AINS\QAFTCCERT.pfx	Enter the Pfx license file path
PFX License Password	••••••••••	Enter the Pfx license password
Success Url	palPayPayments.aspx	Success url
Cancel Url	palPayPayments.aspx	Cancel url

Application Fee

Applicable Request Types	FOIA FOIA IG PA Video Transcripts	Select the request types that require payment with receipt of a request
Applicable Fee	0.00	Enter the application fee (i.e,100.00)

Payment Receipt

Information to be displayed on the Online Payment Receipt
Requester Details
Payment Type
Request ID
Request Description
Payment Details
Payment Status

5.2 System Requirements

The PAL System requirements are detailed in the subsections below.

5.2.1 PAL Database Server

The table below details the minimum requirements for the PAL Database server:

Type	Requirements
Hardware	▪ 4 Core Processor ▪ 4 Gigabytes (GB) Random Access Memory (RAM) ▪ 160 GB Hard drive (7200 rpm or faster)
Operating System	Windows Server 2016/2019/2022 with the latest service packs
Software	Microsoft SQL server 2017/2019/2022 with latest service packs

5.2.2 PAL Application Server

The table below details the minimum requirements for the PAL Application server:

Type	Requirements
Hardware	▪ 4 Core Processor ▪ 4 GB RAM ▪ 80 GB Hard drive (7200 rpm or faster)
Operating System	Windows Server 2016/2019/2022 with the latest service packs
Software	▪ Microsoft .NET Framework 4.8 or later ▪ Internet Information Service 7.5/8.5/10

(!!) Notes:

- **IIS is not installed or enabled by default in the server operating system. In order to successfully install PAL you must first install and enable IIS.**
- **Additionally, Windows Search Service must be enabled to perform content searches of documents located in the PAL Reading Room.**

5.2.3 PAL File Server

The table below details the minimum requirements for the PAL File Server:

Type	Requirements
Hardware	▪ 4 Core Processor ▪ 4 GB RAM ▪ 60 - 160 GB Hard drive (7200 rpm or faster)
Operating System	Windows Server 2016/2019/2022 with the latest service packs
Volume	If documents are to reside on a server other than the FOIAXpress PAL Application server, a share must be setup between the FOIAXpress PAL application and file servers.

(!!) Notes:

- **FOIAXpress PAL File server uses NT File System (NTFS) for file storage.**
- **FOIAXpress PAL File server contains the following:**
  - **Delivered (sanitized) documents**
  - **Electronic Reading Room Documents**

5.2.4 Client Workstation

The table below details the minimum requirements for the Client Workstation:

Type	Requirements
Monitor	17”: with 1024x768 resolution or greater

Type	Requirements
Web Browser	▪ Microsoft Edge ▪ Google Chrome ▪ Firefox ▪ Mobile/Tablet

5.2.5 Virtualization Server

The table below details the minimum requirements for a virtualized server:

Type	Requirements
Configuration	▪ 4 processor ▪ 4 GB RAM ▪ 40 GB disk
Operating System	Windows Server 2016/2019/2022 with the latest service packs
Software	Microsoft .NET Framework 4.8 or later with latest service packs

(!!) Note: Based upon the agency's environment, this server may require additional RAM or hard disk space and may include additional software applications not mentioned in this manual.

5.3 Server Configuration Scenarios

While there are numerous possible server configurations, not all can be listed here. The following scenarios are provided to give you an idea of the layout and architecture of the PAL system. Your environment may differ.

As with any application, an increase in the number of records and data on the system will result in additional storage requirements for the server's hard drive. Additionally, an increase in the number of concurrent users on a server will result in an increase of RAM required for that server. For further information concerning additional memory or hard disk space for any server, please consult with your hardware and/or software vendor.

(!!) Notes:

- **Hard Disk capacity is dependent on the amount of data in the database and the amount of documents stored in the PAL Reading Room.**
- **The Users columns below represents the maximum capacity for concurrent users with the given amount of RAM. If you project a higher number of potential concurrent users in your PAL environment, an appropriate amount of RAM is required. If the max concurrent users goes above the thresholds defined below, end users may experience slowdown and site performance issues.**
- **Oracle Servers are no longer supported. Only SQL Server 2017/2019/2022 and Windows Server 2016/2019/2022 are supported.**

5.3.1 Scenario 1 (Any # of Users, 2 Servers)

The first scenario contains any number of users, and utilizes two servers.

- FOIAXpress PAL Database server
- FOIAXpress PAL Application server and File server in one system

Server	Users	Processor (CPU)	RAM	Hard Disk Capacity
Database	50	4 Core Processor	2 GB	80 GB
Database	100	4 Core Processor	4 GB	80 GB
Database	250	4 Core Processor	8 GB	80 GB
Application & Repository	50	4 Core Processor	4 GB	80 GB
Application & Repository	100	4 Core Processor	4 GB	80 GB
Application & Repository	250	4 Core Processor	8 GB	80 GB

5.3.2 Scenario 2 (Any # of Users, 1 Server)

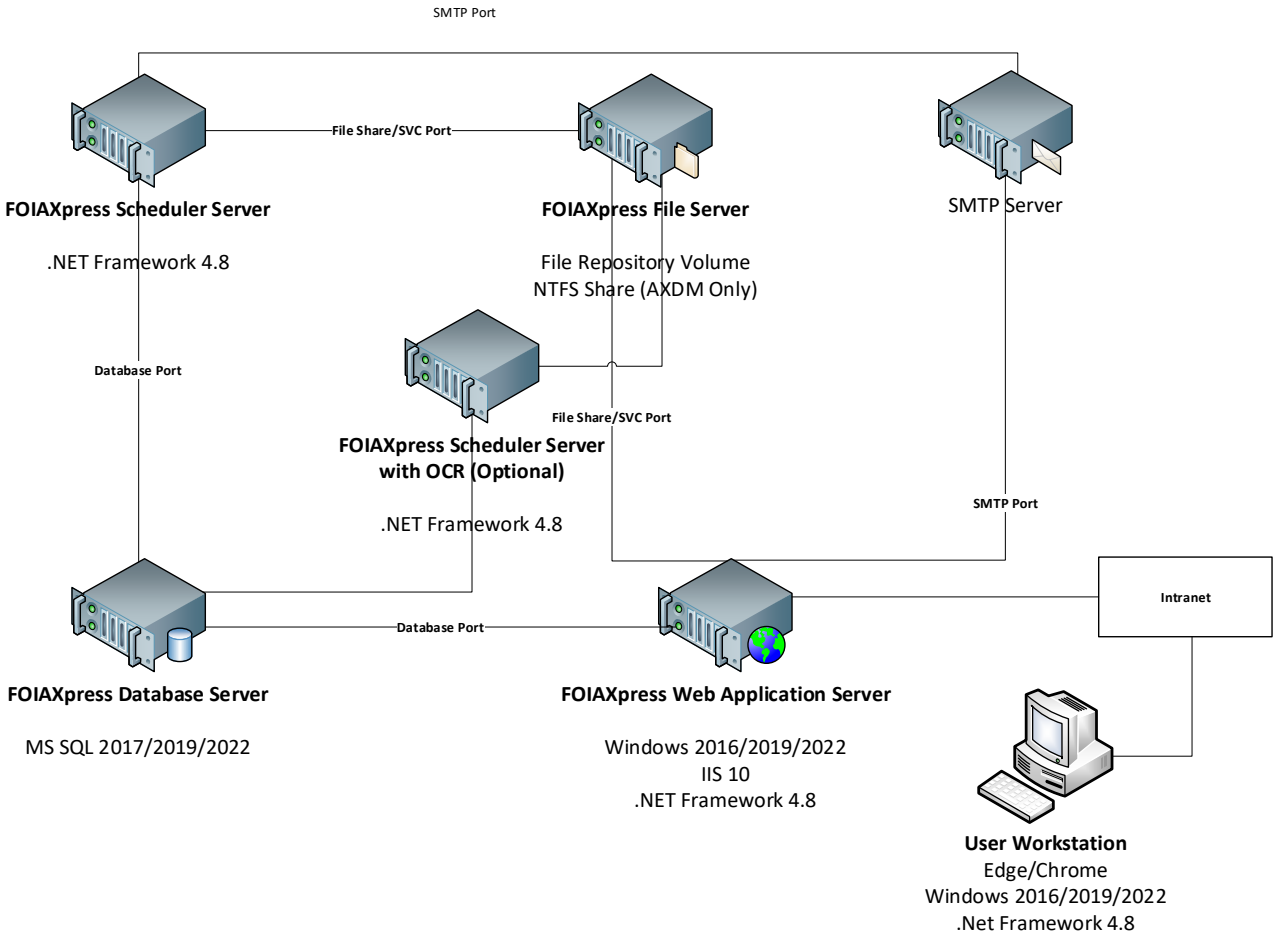
The second scenario contains any number of users, and utilizes one server:

- FOIAXpress PAL Database server, Application server and File server in one system

Server	Users	Processor (CPU)	RAM	Hard Disk Capacity
Database, Application & Repository	50	4 Core Processor	4 GB	80 GB
Database, Application & Repository	100	4 Core Processor	8 GB	80 GB
Database, Application & Repository	250	4 Core Processor	16 GB	80 GB

5.3.3 Server Configuration Diagram

The FX PAL server configuration is illustrated in the following diagram:


SMTP Port
File Share/SVC Port
FOIAXpress Scheduler Server
.NET Framework 4.8
FOIAXpress File Server
File Repository Volume
NTFS Share (AXDM Only)
SMTP Server
Database Port
File Share/SVC Port
FOIAXpress Scheduler Server with OCR (Optional)
.NET Framework 4.8
SMTP Port
Intranet
Database Port
FOIAXpress Database Server
MS SQL 2017/2019/2022
FOIAXpress Web Application Server
Windows 2016/2019/2022
IIS 10
.NET Framework 4.8
User Workstation
Edge/Chrome
Windows 2016/2019/2022
.Net Framework 4.8

6 Collaboration Portal Requirements

The purpose of this section is to provide an overview of the environment you will need to set up to deploy the Collaboration Portal for FOIAXpress. This document also introduces recommended hardware, software, and basic networking configuration(s) you will need to begin the Collaboration Portal installation process.

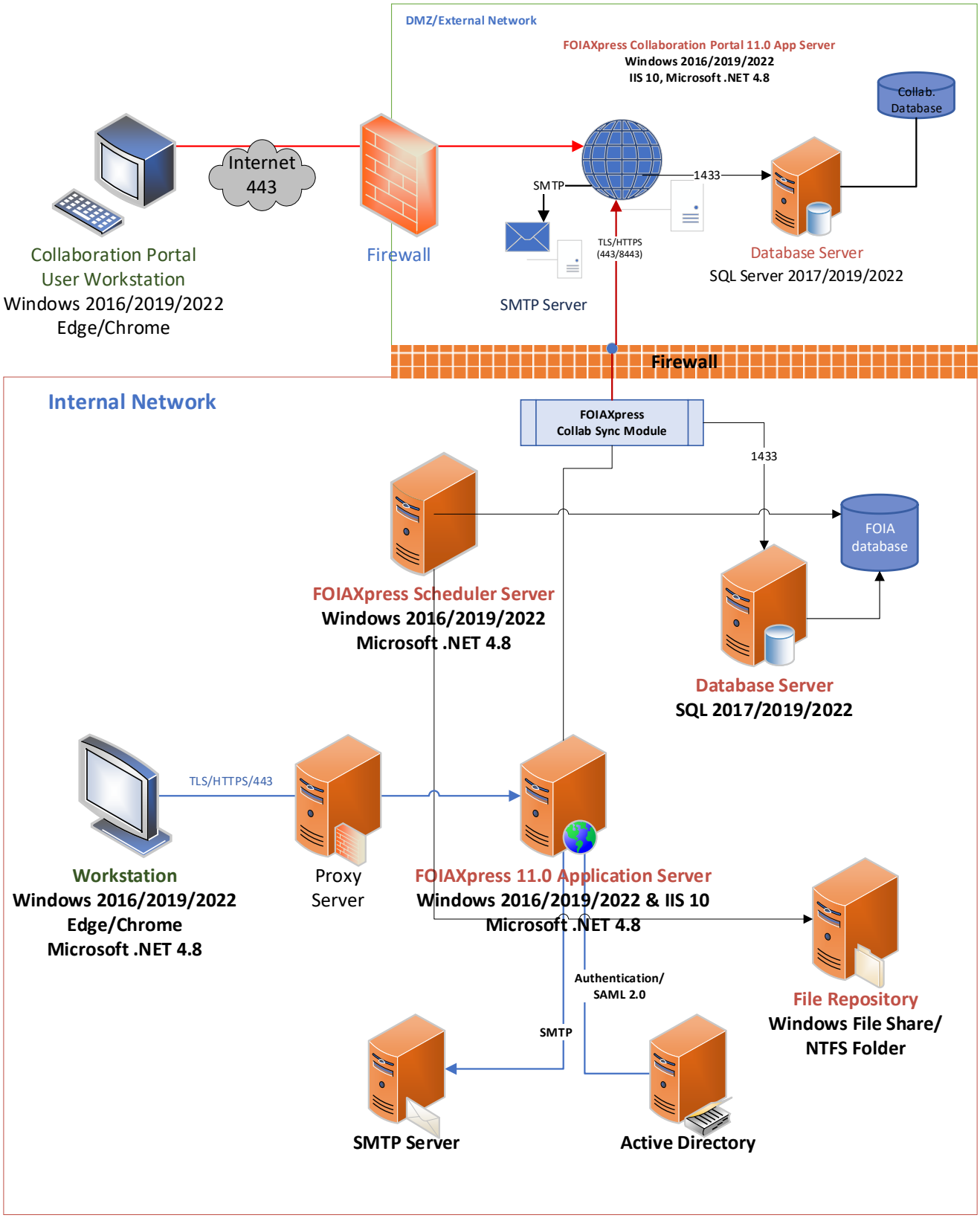
6.1 About the Collaboration Portal

FOIAXpress Collaboration Portal provides a platform for FOIAXpress users to work together on requests with others outside their FOIAXpress environment. The FOIAXpress Collaboration Portal server suite includes the following:

- FOIAXpress Collaboration Database Server: The FOIAXpress Collaboration database server is required to create and manage the FOIAXpress Collaboration database, which is used to store data including information related to requesters, requests, lookup information, and configuration data. This data is stored in database tables.
- FOIAXpress Collaboration Application Server: The FOIAXpress Collaboration Application server is a Web application. The FOIAXpress Collaboration Application Server consists of .NET components and ASPX pages and communicates with the database server through the .NET components.
- FOIAXpress Collaboration File Server: The FOIAXpress Collaboration documents will be stored in these File Server folders.

The Collaboration Portal Architecture is illustrated in the figure below.

FOIAXpress with Collaboration Portal Deployment Architecture



6.2 Collaboration Portal System Requirements

The Collaboration Portal system requirements are detailed in the subsections below.

6.2.1 Collaboration Database Server

The table below details the minimum requirements for the Collaboration Database server:

Type	Requirements
Hardware	▪ 4 Core Processor ▪ 4 Gigabytes (GB) Random Access Memory (RAM) ▪ 160 GB Hard drive (7200 rpm or faster)
Operating System	Windows Server 2016/2019/2022 with the latest service packs
Software	Microsoft SQL server 2017/2019/2022 with latest service packs

6.2.2 Collaboration Application Server

The table below details the minimum requirements for the Collaboration Application server:

Type	Requirements
Hardware	▪ 4 Core Processor ▪ 4 GB RAM ▪ 80 GB Hard drive (7200 rpm or faster)
Operating System	Windows Server 2016/2019/2022 with the latest service packs
Software	▪ Microsoft .NET Framework 4.8 or later ▪ Internet Information Service 10

(!!) Notes:

- **IIS is not installed or enabled by default in the server operating system. In order to successfully install Collaboration you must first install and enable IIS.**

6.2.3 Collaboration File Server

The table below details the minimum requirements for the Collaboration File Server:

Type	Requirements
Hardware	▪ 4 Core Processor ▪ 4 GB RAM ▪ 60 - 160 GB Hard drive (7200 rpm or faster)
Operating System	Windows Server 2016/2019/2022 with the latest service packs
Volume	If documents are to reside on a server other than the FOIAXpress Collaboration application server, a share must be setup between the FOIAXpress Collaboration application and file servers.

(!!) Notes:

- **FOIAXpress Collaboration File server uses NT File System (NTFS) for file storage.**
- **FOIAXpress Collaboration File server contains the following:**
    - **Collaboration documents**

6.2.4 Client Workstation

The table below details the minimum requirements for the Client Workstation:

Type	Requirements
Monitor	▪ 17”: with 1024x768 resolution or greater
Web Browser	▪ Google Chrome ▪ MS Edge

6.2.5 Virtualization Server

The table below details the minimum requirements for a virtualized server:

Type	Requirements
Configuration	▪ 4 processor ▪ 4 GB RAM ▪ 40 GB disk
Operating System	Windows Server 2016/2019/2022 with the latest service packs
Software	Microsoft .NET Framework 4.8 or later with latest service packs

(!!) Note: Based upon the agency's environment, this server may require additional RAM or hard disk space and may include additional software applications not mentioned in this manual.

6.3 Collaboration Server Configuration Scenarios

While there are numerous possible server configurations, not all can be listed here. The following scenarios are provided to give you an idea of the layout and architecture of the Collaboration system. Your environment may differ.

As with any application, an increase in the amount of records and data on the system will result in additional storage requirements for the server's hard drive. Additionally, an increase in the amount of concurrent users on a server will result in an increase of RAM required for that server. For further information concerning additional memory or hard disk space for any server, please consult with your hardware and/or software vendor.

(!!) Notes:

- **Hard Disk capacity is dependent on the amount of data in the database.**
- **The Users columns below represents the maximum capacity for concurrent users with the given amount of RAM. If you project a higher number of potential concurrent users in your Collaboration environment, an appropriate amount of RAM is required. If the max concurrent users goes above the thresholds defined below, end users may experience slowdown and site performance issues.**

- **Oracle Servers are no longer supported. Only SQL Server 2017/2019/2022 and Windows Server 2016/2019/2022 are supported.**

6.3.1 Scenario 1 (Any # of Users, 2 Servers)

The first scenario contains any number of users, and utilizes two servers.

- FOIAXpress Collaboration Database server
- FOIAXpress Collaboration Application server and File server in one system

Server	Users	Processor (CPU)	RAM	Hard Disk Capacity
Database	50	4 Core Processor	2 GB	80 GB
Database	100	4 Core Processor	4 GB	80 GB
Database	250	4 Core Processor	8 GB	80 GB
Application & Repository	50	4 Core Processor	4 GB	80 GB
Application & Repository	100	4 Core Processor	4 GB	80 GB
Application & Repository	250	4 Core Processor	8 GB	80 GB

6.3.2 Scenario 2 (Any # of Users, 1 Server)

The second scenario contains any number of users, and utilizes one server:

- FOIAXpress Collaboration Database server, Application server and File server in one system

Server	Users	Processor (CPU)	RAM	Hard Disk Capacity
Database, Application & Repository	50	4 Core Processor	4 GB	80 GB
Database, Application & Repository	100	4 Core Processor	8 GB	80 GB
Database, Application & Repository	250	4 Core Processor	16 GB	80 GB