Deltek Project Information Management

Recommended Hardware Requirements for Deltek PIM 23

Deltek

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Contents

Overview

This document is aimed at server administrators to identify the hardware required to provision the Deltek PIM application. It provides minimum and recommended hardware specifications for the following:

- Document storage
- Up to 99 users
- 100 to 199 users
- 200 to 299 users
- 300 to 499 users
- 500 to 999 users
- 1000 to 1500 users
- 1500 to 2000+ users
- Cache servers
- Development, Training & Test servers.

Best Practice Recommendations

Considerations

When looking to provision hardware for Deltek PIM, the following should be taken into consideration:

- None of the Deltek PIM components, including its data, can be implemented on a domain controller.

- All drives are recommended to be SSD, in accordance with the metrics in the Recommended SSD Specifications section.

- If you are looking at these hardware recommendations from an established PIM environment migration or upgrade perspective, the drive sizes may need to be increased depending on your usage.

- Memory specifications are dedicated recommendations, therefore for virtual environments the dynamic memory allocation feature cannot be utilized and must be disabled.

- If you plan to share resources with another application and/or service, please contact Deltek for advice.

- If you opt for minimum specifications, you may experience some performance issues over time.

- All specifications provided are based on dedicated resources. These have been calculated based on average usage of the Deltek PIM application over a 3-year period.

- As server usage is difficult to predict, we recommend live testing and system monitoring to determine your ongoing hardware requirements. We cannot guarantee against the need to upgrade your existing hardware in any situation.

- The document storage recommendations have been listed under the Deltek PIM Web Server; however, this location can be placed on a SMB-compatible server that is accessible to Deltek PIM via a UNC path.

- If the Deltek PIM installation is to be integrated with Deltek Vision, the SQL instance running Deltek PIM must be an equal or higher version than the SQL instance running Deltek Vision.

Recommended SSD Specifications

For optimum performance of your PIM system, Deltek recommends using the following SSD specification for disks that actively process system writes.

	Recommendation
Volume Size	1 – 16 TB
Durability	99.8 – 99.9%
Max IOPS / Volume	16,000
Max Throughput / Volume	1000 MB/s
Max IOPS / Instance	260,000
Max Throughput / Instance	7,500 MB/s
Latency	Single Digit Millisecond

Recommended Drive Configurations

To ensure the robustness of your system, it is crucial to safeguard your operating system drive (usually labelled as C:\) and establish dedicated drives for usage cases that are likely to expand over time. This practice is especially critical for elements such as SQL databases, Workflow databases, file stores, as well as their associated index and extract stores. The subsequent table illustrates this concept, though it should be noted that its implementation will vary depending on your server environment.

Whether you are administering a single- or multi-server environment, you should look to adopt the concepts laid out in the table below, providing sufficient storage for each usage case and consider whether your infrastructure is capable of accommodating growth for each physical drive, as needed.

	Recommended Disk Setup
Web Server	C:\ (Operating System) D:\ (Website Installation)
SQL Server	C:\ (Operating System) D:\ (Data) E:\ (Logs) F:\ (Backup) G:\ (Temp)
Search Server	C:\ (Operating System) D:\ (Extracts) E:\ (Index) F:\ (Paging File)
File Server	C:\ (Operating System) D:\ (Data)
Workflow Server	C:\ (Operating System) D:\ (Data)

Document Storage

The table below outlines the average amount of documents published to Deltek PIM per user per month. These recommendations are based on an average user publishing 300MB of documents per calendar month.

	Estimated Published Documents	Estimated Storage (MB)
Emails	193	153
Word Documents	19	13
Excel Spreadsheets	15	5
PowerPoint Presentations	2	14
PDF Documents	39	34
Drawings	10	7
Others (Zip Archives, Photos etc.)	73	73
Total	**351**	**299**

Server Requirements

The following sections provide guidance for server requirements based on the expected number of users.

1 to 99 Users

To support up to 99 users, a single server with the following hardware requirements is recommend for the provision of Deltek PIM.

Server 1: PIM Application Web Server, SQL Database, Workflow Engine, Search Service

Operating System	Windows Server 2016 (Minimum) Windows Server 2019 (Recommended)
SQL Server	Microsoft SQL Server 2016 Standard (Minimum) Microsoft SQL Server 2022 Standard (Recommended)
Processor	4 CPU Cores, 1.4 GHz or faster (Minimum) 6 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	32 GB (Minimum) 48 GB (Recommended) Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	1 TB SSD (Minimum) 1.3+ TB SSD (Recommended) Accommodates the following components: ▪ Installation: 5 GB ▪ Database Data: 25 GB ▪ Logs: 2.5 GB ▪ Document Storage: 1.1 TB ▪ Document Index: 110 GB ▪ Workflow Data: 25 GB

100 to 199 Users

To support between 100 and 199 users, it is recommended that two servers are provisioned. The second server is recommended for the Microsoft SQL database to facilitate the additional demand on resources and to provide better overall performance.

Server 1: PIM Application Web Server, Workflow Engine, Search Service

Operating System	Windows Server 2016 (Minimum) Windows Server 2019 (Recommended)
Processor	4 CPU Cores, 1.4 GHz or faster (Minimum) 4 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	12 GB (Minimum) 24 GB (Recommended) Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)

Hard Drive	2 TB SSD (Minimum)
	2.5 TB SSD (Recommended)
	Accommodates the following components:
	  ▪ Installation: 5 GB
	  ▪ Document Storage: 2.2 TB
	  ▪ Document Index: 220 GB
	  ▪ Workflow Data: 50 GB

Server 2: PIM Data SQL Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2022 (Recommended)
SQL Server	Microsoft SQL Server 2016 Standard (Minimum) Microsoft SQL Server 2022 Standard (Recommended)
Processor	4 CPU Cores, 1.4 GHz or faster (Minimum) 4 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	32 GB (Minimum) 48 GB (Recommended) Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)

Hard Drive	100 GB SSD (Minimum)
	100+ GB SSD (Recommended)
	Accommodates the following components: ▪ Database Data: 50 GB ▪ Database Logs: 5 GB

200 to 299 Users

To support between 200 and 299 users, it is recommended that three servers are provisioned. The additional servers are recommended for the Microsoft SQL database and the Deltek PIM search service component, as each of these will benefit from a dedicated resource to enable better overall performance.

Server 1: PIM Application Web Server, Workflow Engine

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2019 (Recommended)
Processor	4 CPU Cores, 1.4 GHz or faster (Minimum)
	4 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	12 GB (Minimum)
	24 GB (Recommended)
	Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	3 TB SSD (Minimum)
	3.4+ TB SSD (Recommended)
	Accommodates the following components:
	▪ Website installation: 5 GB
	▪ Document Storage: 3.3 TB
	▪ Workflow Data: 75 GB

Server 2: PIM Data SQL Server

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2022 (Recommended)
SQL Server	Microsoft SQL Server 2016 Standard (Minimum)
	Microsoft SQL Server 2022 Standard (Recommended)
Processor	4 CPU Cores, 1.4 GHz or faster (Minimum)
	6 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	48 GB (Minimum)
	64 GB (Recommended)
	Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)

Hard Drive	150 GB SSD (Minimum)
	150+ GB SSD (Recommended)
	Accommodates the following components:
	▪ Database Data: 75 GB
	▪ Database Logs: 7.5 GB

Server 3: PIM Search Server

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2022 (Recommended)
Processor	4 CPU Cores, 1.4 GHz or faster (Minimum)
	6 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	12 GB (Minimum)
	16 GB (Recommended)
Hard Drive	500 GB SSD (Minimum)
	500+ GB SSD (Recommended)
	Accommodates the following components:
	▪ Document Index: 330 GB

300 to 499 Users

To support between 300 and 499 users, it is recommended that three servers are provisioned. The additional servers are recommended for the Microsoft SQL database and the Deltek PIM search service component, as each of these will benefit from a dedicated resource to enable better overall performance.

Server 1: PIM Application Web Server, Workflow Engine

Operating System	Windows Server 2016 (Minimum) Windows Server 2019 (Recommended)
Processor	6 CPU Cores, 1.4 GHz or faster (Minimum) 8 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	12 GB (Minimum) 16 GB (Recommended) Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	5 TB SSD (Minimum) 5.7+ TB SSD (Recommended) Accommodates the following components: ▪ Website installation: 5 GB ▪ Document Storage: 5.5 TB ▪ Workflow Data: 125 GB

Server 2: PIM Data SQL Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2022 (Recommended)
SQL Server	Microsoft SQL Server 2016 Standard (Minimum) Microsoft SQL Server 2022 Standard (Recommended)
Processor	6 CPU Cores, 1.4 GHz or faster (Minimum) 8 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	48 GB (Minimum) 64 GB (Recommended)

Hard Drive	250 GB SSD (Minimum)
	250+ GB SSD (Recommended)
	Accommodates the following components:
	▪ Database Data: 125 GB
	▪ Database Logs: 12.5 GB

Server 3: PIM Search Server

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2022 (Recommended)
Processor	6 CPU Cores, 1.4 GHz or faster (Minimum)
	6 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	24 GB (Minimum)
	32 GB (Recommended)
Hard Drive	700 GB SSD (Minimum)
	700+ GB SSD (Recommended)
	Accommodates the following components:
	▪ Document Index: 550 GB

500 to 999 Users

To support between 500 and 999 users, it is recommended that three servers are provisioned. The additional servers are recommended for the Microsoft SQL database and the Deltek PIM search service component, as each of these will benefit from a dedicated resource to enable better overall performance.

Server 1: PIM Application Web Server, Workflow Engine

Operating System	Windows Server 2016 (Minimum) Windows Server 2019 (Recommended)
Processor	6 CPU Cores, 3 GHz or faster
Memory	32 GB Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	6.5 TB SSD Accommodates the following components: ▪ Website installation: 10 GB ▪ Document Storage: 6 TB ▪ Workflow Data: 125 GB

Server 2: PIM Data SQL Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2022 (Recommended)
SQL Server	Microsoft SQL Server 2016 Standard (Minimum) Microsoft SQL Server 2022 Standard (Recommended)
Processor	8 CPU Cores, 2.2 GHz or faster
Memory	128 GB
Hard Drive	1 TB SSD Accommodates the following components: ▪ Database Data: 500 GB ▪ Database Logs: 300 GB ▪ Database Backups and Temp: 250 GB

Server 3: PIM Search Server

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2022 (Recommended)
Processor	6 CPU Cores, 3.0 GHz or faster
Memory	48 GB
Hard Drive	1 TB SSD
	Accommodates the following components:
	▪ Installation: 10 GB
	▪ Document Index and Extract Storage: 1 TB

1000 to 1500 Users

To support between 1000 and 1500 users, it is recommended that five servers are provisioned. The additional servers are recommended for the Microsoft SQL database, the Deltek PIM search service component, the workflow engine, and the file server, as each of these will benefit from a dedicated resource to enable better overall performance.

> **Note:** If you are migrating or upgrading your PIM application, you may need to increase the drive sizes, depending on your usage. Please note that these are generic hardware recommendations. When your organization reaches this size, Deltek recommends that you contact your Deltek Account Manager to get a tailored hardware specification recommendation based on your PIM usage footprint.

Server 1: PIM Application Web Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2019 (Recommended)
Processor	6 CPU Cores, 3 GHz or faster
Memory	32 GB Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	500 GB SSD Accommodates the following components: ▪ Operating system: 120 GB ▪ Website installation: 300 GB PIM installation files and file storage should be separate from the OS drive
Optional	Load balancing over 2 servers

Server 2: PIM Data SQL Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2022 (Recommended)
SQL Server	Microsoft SQL Server 2016 Standard (Minimum) Microsoft SQL Server 2022 Standard (Recommended)
Processor	8 CPU Cores, 3 GHz or faster
Memory	128 GB Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)

Hard Drive	2 TB SSD
	Accommodates the following components:
	▪ Operating system: 120 GB
	▪ Data: 1 TB
	▪ Logs: 300 GB
	▪ Backup: 500 GB
	▪ Temp: 250 GB

Server 3: PIM Search Server

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2022 (Recommended)
Processor	6 CPU Cores, 3 GHz or faster
Memory	48 GB
Hard Drive	2 TB SSD
	Accommodates the following components:
	▪ Operating system: 120 GB
	▪ Extracts: 500 GB
	▪ Index: 500 GB
	▪ Paging file: 500 GB
Optional	Load balancing over 2 servers

Server 4: PIM Workflow Server

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2022 (Recommended)
Processor	6 CPU Cores, 3 GHz or faster
Memory	32 GB
Hard Drive	500 GB SSD
	Accommodates the following components:
	▪ Operating system: 120 GB
	▪ Data: 250 GB

Server 5: PIM File Server

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2022 (Recommended)
Processor	4 CPU Cores, 3 GHz or faster

Memory	32 GB
	Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	6 TB SSD
	Accommodates the following components:
	▪ Operating system: 120 GB
	▪ Data: 6 TB

1500 to 2000+ Users

When your organization reaches this scale, the guideline specifications outlined below may not exactly meet your performance expectations. Therefore, we strongly recommend that you contact your Account Manager to arrange a review of your PIM usage and to tailor any specific recommendations accordingly.

To support between 1500 and 2000+ users, it is recommended that seven servers are provisioned. The additional servers are recommended for the Microsoft SQL database, the Deltek PIM search service component, the workflow engine, and the file server, as each of these will benefit from a dedicated resource to enable better overall performance. We also recommend load balancing the application web server and the search server.

> **Note:** When your organization reaches this scale, the guideline specifications outlined below may not exactly meet your performance expectations. Therefore, we strongly recommend that you contact your Deltek Account Manager to arrange a review of your PIM usage and to tailor any specific recommendations accordingly.

Server 1: PIM Application Web Server

Operating System	Windows Server 2016 (Minimum)
	Windows Server 2019 (Recommended)
Processor	6 CPU Cores, 3 GHz or faster
Memory	32 GB
	Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	500 GB SSD
	Accommodates the following components:
	▪ Operating system: 120 GB
	▪ Website installation: 300 GB
	PIM installation files and file storage should be separate from the OS drive
Optional	Load balancing over 2 servers

Server 2: PIM Data SQL Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2022 (Recommended)
SQL Server	Microsoft SQL Server 2016 Standard (Minimum) Microsoft SQL Server 2022 Standard (Recommended)
Processor	8 CPU Cores, 3 GHz or faster
Memory	128 GB Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	5 TB SSD Accommodates the following components: - Operating system: 120 GB - Data: 2 TB - Logs: 1 TB - Backup: 1 TB - Temp: 500 GB

Server 3: PIM Search Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2022 (Recommended)
Processor	6 CPU Cores, 3 GHz or faster
Memory	48 GB
Hard Drive	2.5 TB SSD Accommodates the following components: - Operating system: 120 GB - Extracts: 1 TB - Index: 1 TB - Paging file: 250 GB
Optional	Load balancing over 2 servers

Server 4: PIM Workflow Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2022 (Recommended)
Processor	6 CPU Cores, 3 GHz or faster
Memory	32 GB
Hard Drive	2.5 TB SSD Accommodates the following components: - Operating system: 120 GB - Persistent Store: 1TB - Data Store: 1 TB

Server 5: PIM File Server

Operating System	Windows Server 2016 (Minimum) Windows Server 2022 (Recommended)
Processor	4 CPU Cores, 3 GHz or faster
Memory	32 GB Please liaise with Deltek for additional memory requirements if you are implementing Deltek PIM Business Intelligence (BI)
Hard Drive	6+ TB SSD Accommodates the following components: - Operating system: 120 GB - Data: 6 TB

Cache Server

A single cache server with the following hardware specifications is required to provision a PIM installation.

Operating System	Windows Server 2016 (Minimum) Windows Server 2019 (Recommended)
Processor	1 CPU Cores, 1.4 GHz or faster (Minimum) 4 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	4 GB

Hard Drive	100+ GB SSD
	Accommodates the following components:
	▪ Installation: 5 GB
	▪ Document Storage:
	    ○ 1 – 20 Users: 380 GB
	    ○ 20 – 49 Users: 930 GB
	    ○ 50 – 99 Users: 1.88 TB
	    ○ 100+ Users: ~540 MB per user, per month

Additional Servers

When implementing a development, training, or test server, the usage of the server dictates the recommended hardware requirements.

Development and Test Servers

If you want to create a development server to test Deltek PIM extensions, or a test server to test the latest updates to Deltek PIM, we recommend the following server hardware to support up to 10 concurrent users.

Server 1: PIM Application Web Server, SQL Database, Workflow Engine, Search Service

Operating System	Windows Server 2016 (Minimum) Windows Server 2019 (Recommended)
SQL Server	Microsoft SQL Server 2016 Standard (Minimum) Microsoft SQL Server 2022 Standard (Recommended)
Processor	4 CPU Cores, 1.4 GHz or faster (Minimum) 6 CPU Cores, 2.0 GHz or faster (Recommended)
Memory	12 GB (Minimum) 32 GB (Recommended)
Hard Drive	200 GB SSD (Minimum) 200+ GB SSD (Recommended) Accommodates the following components: - Installation: 5 GB - Database Data: 25 GB - Database Logs: 2.5 GB - Document Storage: 105 GB (based on 10 concurrent users) - Document Index: 11 GB - Workflow Data: 25 GB

Training Server

If you want to create a training server, for example to train new users to the business, you should use the above recommendations for live production servers to provide a consistent user experience, based on the expected number of concurrent users.

Additional Server Considerations

Before provisioning hardware for an additional installation of Deltek PIM, you should consider the following points:

- A different URL address is required to provision an additional Deltek PIM installation, for example pimtest.server.com. This may require an additional SSL certificate if your current SSL certificate does not cover the additional URL address.

- If you use an existing Microsoft SQL server that is used for another Deltek PIM installation, resources could be split between the installations, which may cause performance issues.

- Additional installations of Microsoft SQL Server may require additional licensing.

- It is possible to use a virtual snapshot of an existing installation of Deltek PIM to create a secondary instance for testing, training, or development purposes. However, this will require reconfiguring and re-licensing before it can be used.

- During the installation of an additional Deltek PIM installation, the same data will be cloned from another installation. This includes project, enquiry, and document records. The actual documents will not be copied; however, you must configure an additional document storage location to prevent any conflicts.

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