
Photo Supreme Server Edition

- System Requirements -

This documentation is provided or made accessible "AS IS" and "AS AVAILABLE" and without condition, endorsement, guarantee, representation, or warranty of any kind and IDimager Systems assumes no responsibility for any typographical, technical, or other inaccuracies, errors, or omissions in this documentation. IDimager System reserves the right to periodically change information that is contained in this documentation.

Introduction

Photo Supreme is “Digital Asset Management” software. Photo Supreme makes it possible to manage your image files by categorizing them. It will categorize the files based on the available details of the file, this includes technical photo details, but also the location of the file on disk, etc. Apart from those properties you can add tags to the images, enrich the files with descriptions, or add custom information. This may sound like a very time-consuming task, but once you’ve worked yourself through that, you will benefit from the many advantages. With Photo Supreme at hand, you will be able to quickly retrieve your images using all kinds of criteria or combinations.

The Server Edition of Photo Supreme is available for Windows as well as macOS platforms. The software uses a server side and a client side. This manual describes the requirements for the Server Edition.

Server Hardware

<i>Use a dedicated configuration as the server. It is recommended to use a configuration that is not being used to run other software or tasks.</i>	
CPU type <i>This depends on the number of concurrent users that will make use of the software.</i>	At least 2 cores, preferably 4 or more cores
Internal memory <i>This depends on the number of concurrent users that will make use of the software.</i>	At least 8GB internal memory. 16GB or more is recommended.
Drive type	Database storage on an SSD Image file storage on SSD or HDD
Drive space <i>This depends mainly on the volumes of image files that need to be managed in Photo Supreme</i>	At least 20GB of free drive space Per 100,000 images an additional drive space of 50GB is needed. Best to keep an overhead of 60GB per 100K
Operating System	The server side can run on Windows, macOS or Linux. Using a Windows server is recommended, but not required. Windows 10 Pro or Windows Server 2012 or higher macOS 10.11.6 or higher Linux

Designing the Machine¹

When designing a bare metal server, there are a few things that need to be taken into consideration. These are CPU, RAM, Disk, and network card in a minority of cases.

CPU

Choosing the right CPU may be a crucial point in the database performance. When dealing with larger data, CPUs speed will be important - but also CPUs with larger L3 caches will boost performance as well. Having more and faster cores will help the operating system and the database to be more efficient in utilizing them. On the other hand, using CPUs with larger L3 caches is good for larger sets of data.

CPUs have at least 2 caches: L1 (a.k.a. primary cache) and L2 (a.k.a. secondary cache). L1 is the smallest and the fastest cache, which is embedded into the CPU core. L2 cache is just a bit slower than L1, but also larger than L1. L2 is used to feed the L1 cache.

Unlike L1 and L2 caches, which are unique to each core, L3 cache is shared between cores. L3 cache is slower when compared to L1 and L2 - however, it is shared across all the cores available. Also please note that L3 cache is still faster than RAM. Having a larger L3 cache will boost CPU performance while dealing with a larger set of data. This will also be beneficial for parallel queries.

RAM

Cheapest among the rest of the hardware, and the better for database performance. Operating systems tend to utilize the available memory and try to cache as much data as possible. More caching will end up with less disk I/O, and faster query times. When buying new hardware, we suggest adding as much RAM as possible in the first place. Adding more RAM in the future will be more expensive from the financial side and the technical side (will require downtime unless you have a system with hot swap RAM).

Disk

If the application, is I/O bound (read and/or write intensive), choosing a faster drive set will improve the performance significantly. There are multiple solutions available, including NVMe and SSD drives.

Using separate tablespaces and drives for indexes and data will increase the performance especially if the database runs on SATA drives. This is usually not needed for SSD and NVMe drives. We suggest using RAID 10 for data.

Network card

Even though network cards seem to be irrelevant to the performance of a database, when the data grows a lot, faster or bonded network cards will speed up base backups as well.

¹ Based on <https://www.enterprisedb.com/postgres-tutorials/introduction-postgresql-performance-tuning-and-optimization>