PMXpert®
Preventive Maintenance Software

ENTERPRISE EDITION

# Why ENTERPRISE EDITION?

PMXpert is available in Standard Edition or Enterprise Edition. They both have very similar features and functions, so... what's the big difference?

### A Tale of Two Databases

The essential difference between the two versions is the kind of database they are built upon. PMXpert Standard Edition is built on a MS-Access™ database while PMXpert Enterprise Edition is built on an MS-SQL™ database.

At this point you may be thinking "OK, so what?" Well, if you want the tech details, simply turn to the next page for more technical explanations. For the non-tech people though, here are the essentials you need to know when evaluating which version of PMXpert Software is the right one for you.

### Network Optimized

PMXpert Enterprise Edition's MS-SQL database places less demand on your network than Standard Edition's MS-Access database. It's increased efficiency of data transfer means stronger reliability for your network and better speed using less bandwidth - even with wireless or dial-up connections.

### Save More Information

PMXpert Standard Edition's MS-Access database stores up to 2GB of data about your assets, resources, facilities, suppliers and more. Depending upon which version of MS-SQL your network employs (Express or Full)*, Enterprise Edition's MS-SQL database stores from a ''low" of 10GB, up to any size you need - limited only by the size of your hard drive. Enterprise Edition even allows you to more easily and efficiently save communication attachments.

** Your network must have MS-SQL installed in order to run Enterprise Edition. MS-SQL Express is a free 'lite' version available at no cost while Full MS-SQL Server Software is an additional cost.*

### Faster Speed Performance

While Standard Edition's MS-Access database provides solid performance, Powerusers will find that Enterprise Edition's MS-SQL database offers increased efficiency in the way it processes, saves and filters data. In short, this means Enterprise Edition works faster with noticeably quicker response.

### Increased Reliability

PMXpert Enterprise Edition's MS-SQL database is more robust and "bulletproof" than MS-Access databases - virtually eliminating the risk of data corruption. For you, this means your PMXpert Enterprise Edition will be safer from crashes, corruption or loss of data - with no downtime.

### More Users at Same Time

PMXpert Standard Edition is optimized for organizations with less than 5 users using the software at the same time - with up to a maximum of 10 concurrent users possible (although speed and performance will decrease the higher the number). PMXpert Enterprise Edition provides increased speed and performance for organizations with any number of concurrent users – without affecting performance.

### Greater Extensibility with VirtualAssistants

PMXpert Standard Edition offers a series of optional modules allowing you to further tailor either version of PMXpert to your unique needs, however, Enterprise Edition's more powerful SQL backbone allows for even greater expansion with the powerful VirtualAssistant suite. This series of automation services are only available for Enterprise Edition.

PMXpert®
Preventive Maintenance Software

the complete solution to simplify maintenance, work orders and inventory

call toll-free 1-866-920-7996
or email sales@pmxpert.com

# Why **ENTERPRISE EDITION**?
## Technical Discussion

To summarize some of the notable differences you will see between Standard and Enterprise editions, they are as follows:

- Access (Standard Edition) is prone to performance issues with more than 5 concurrent users, and is designed for no more than 10. MS-SQL (Enterprise Edition) does not have a cap on concurrent users. Therefore with the Enterprise edition you will see a significant improvement in speed of use, especially when filtering data or compiling reports.
- Access is more prone to data corruption, particularly in environments where wireless connections occur. MS-SQL eliminates all data corruption.
- Total size limitation for an Access database is 2 gigabytes. MS-SQL Express (Free Version) has 5x the capacity at up to 10 gigabytes. And if you have a full MS-SQL Server it's unlimited (up to the capacity of your hard-drive). Therefore, with the Standard (Access) Edition it is foreseeable that eventually you would need to purge old data or upgrade
- When storing documents/attachments in the Standard Edition, they are saved somewhere on your server and then linked to within PMXpert. Access to these files is limited to those who can access these folders on your server. Whereas the Enterprise (MS-SQL) Edition actually embeds the document into the database.

### Why is MS-SQL better than MS-Access?

#### Reliability:

- With Access, you are writing directly to the data tables. If a client machine crashes while writing data this will usually cause the back-end database to also crash and become corrupt.
- The same thing will occur if the network fails, has a glitch or temporarily becomes overloaded. This problem becomes more apparent as the amount of data or the number of users increases.
- With MS-SQL Server the clients do not talk directly with the tables but with a data manager on the server. If a client machine crashes, or the network hiccups, this will not affect the underlying tables; instead the data manager realizes that the transaction has not been completed and does not commit the partially transmitted data to the database. The database therefore continues to run without problem.
- The client/server system also maintains an automatic 'transaction log' (if this is turned on). If a backup has to be restored the transaction log can be run and should restore all completed transactions up to the time of the crash.

*The following comes from Microsoft's website at [http://support.microsoft.com/kb/300216](http://support.microsoft.com/kb/300216)*

*"Microsoft Jet is a file-sharing database system. A file-sharing database is one in which all the processing of the file takes place at the client. When a file-sharing database, such as Microsoft Jet, is used in a multi-user environment, multiple client processes are using file read, write, and locking operations on the same shared file across a network. If, for any reason, a process cannot be completed, the file can be left in an incomplete or a corrupted state. Two examples of when a process may not be completed is when a client is terminated unexpectedly or when a network connection to a server is dropped.*

*Microsoft Jet is not intended to be used with high-stress, high-concurrency, 24x7 server applications, such as Web, commerce, transactional, and messaging servers. For these types of applications, the best solution is to switch to a true client/server-based database system such as Microsoft Data Engine (MSDE/MS-SQL Express) or Microsoft MS-SQL Server. When you use Microsoft Jet in high-stress applications such as Microsoft Internet Information Server (IIS), customers have reported database corruption, stability issues such as IIS crashing or locking up, and also a sudden and persistent failure of the driver to connect to a valid database that requires re-starting the IIS service."*

#### Performance:

With Access all tables involved in a form, report or a query are copied across the network from the server to the client's machine. The tables are then processed and filtered to generate the required recordset.

While our product can return multiple records at the same time, a MS-SQL database is better equipped to handle the processing of this information.

This can affect performance in two ways:

- First, MS-SQL Server is highly optimized and can usually perform the required Filtering much more quickly than the client machine
- Second, the amount of data sent across the network link is vastly reduced. For most databases the main performance bottleneck is data transmission over the network hence reducing this can give a really dramatic improvement in performance.

Predicting likely performance improvements is very difficult but an average overall speed improvement of 3 to 5 times, and possibly much more, would not be unexpected.

#### Network Traffic:

Network traffic can be greatly reduced when using a MS-SQL database. This both improves network reliability and can also improve the performance of the network for other software.

Where there is a slow connection, such as over a telephone dial-up, Access is usually so slow as to be all but unusable (this depends upon the amount of data) whereas a MS-SQL Server application, if designed for this environment, can still be perfectly useable.

#### Low Bandwidth:

- In all low bandwidth situations Access/JET usually performs so slowly as to be unusable while a correctly designed MS-SQL Server system can be similar in speed to running it over a LAN in some situations.
- Dial-up. Allowing remote salesmen, off-site workers, home workers, out of hour's users and the like to dial into the network over the normal telephone lines. Most file server databases are completely unusable over dial-up unless some additional technology, such as Terminal Server, is used (and this brings its own complications).
- WAN. If you want to link more than one site to a database then typically you would use a WAN (Wide Area Network). Irrespective of the communications technology used (which would usually be leased line, VPN {Virtual Private Network} or ISDN); WANs tend to have a low bandwidth compared to LANs and in addition are often heavily loaded with traffic. Traditional file server databases do not work well over a WAN and will often have both performance problems and reliability problems (owing to the less than perfect connections that most WANs provide).
- Internet. A database that is being run over the Internet needs to be stable, scalable, able to handle heavy loads and capable of coping with failed connections; none of which are usually associated with file server database architectures. Small scale, non-critical databases can be run over the Internet but in most situations you should migrate to a client/server design.
- Wireless LAN. These are increasingly popular and are usually fine for accessing a spreadsheet or Word document where a wired solution is inconvenient or is just not practical. However file/server databases do not usually work well over most wireless links due to the low bandwidth that they offer (even a 10Mhz wireless link will usually operate at only half of that speed or less).

#### Scalability

Microsoft recommends that a file server system such as Access is designed for small workgroups and is scalable to up to 10 concurrent clients. We have found that any more than 5 concurrent user's starts to degrade performance rapidly as more users are added. With the MS-SQL Server client/server architecture many hundreds, or even thousands (with the appropriate infrastructure), of concurrent users can be supported without significant performance degradation.

#### Drawbacks

- MS-SQL Server is a (much) bigger and more complex beast than is Access.
- Less suitable for a company with no IT support staff (in-house or outsourced)
- It can cost more to implement than does Access, however there is a free (MS-SQL Express) version that can be downloaded from Microsoft.



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