



## What Is WinDSX SQL & When Should I Use It?

DSX now has two different versions of the WinDSX software. Our traditional WinDSX software and a version called WinDSX SQL. The difference between the two is the type of database used to store the system information. The WinDSX software uses Microsoft Access files to store data and the WinDSX SQL software uses Microsoft SQL Server™ to store data.

There are several differences between storing data in Access files and SQL Server. In order to define these differences I have to talk a little about how each one works. When using Access to store the data we have a centralized shared set of database files that reside on a file server. Each of the WinDSX workstations is capable of reading and writing data to and from the shared files. Each workstation is responsible for looking up data on it's own as well as it is responsible for writing any changes into the database.

With this type of a system you can see that there is a possibility for several different workstations to be reading and writing to the database at the same time. Also each workstation is pulling and pushing all of the database info through the LAN, which uses up bandwidth.

When using SQL Server to store the data we have a centralized set of database files that reside on the SQL Server PC. Each of the WinDSX workstations uses TCP/IP to make requests to the SQL Server. The SQL Server program executes the request and returns the results. This is very different than how things happen in the Access database.

When you use the Access version each workstation actually “touches” the database. With SQL Server only the SQL Server program touches the database. This results in a database that is much less susceptible to corruption. The risk of database corruption is decreased in two different ways. First the liability of a network error causing corruption is eliminated as the only program that touches the database is SQL Server which is running on the same PC with the database. Second the possibilities of simultaneous or conflicting writes to the same records are eliminated, as the SQL Server program will only service one request at a time.

Additionally SQL Server is designed to handle very large database files and a high number of users. Increasing resources (speed, RAM) to the SQL Server PC without making any hardware changes to the Workstations can enhance your systems overall performance. SQL Server also provides more security for the system data, as it is much harder to get to the data.

Basically SQL Server stands between the world and the data. Its job is to protect the data from unauthorized access, maintain the health of the database, and respond to requests from the workstations.

However this additional robustness and security comes at a price. There needs to be a PC dedicated to running SQL Server. Microsoft SQL Server has to be purchased, and someone will have to administrate it. Setting up and maintaining a SQL Server PC is a profession, people who do it are called Data Base Administrators (DBA).

You will need a DBA or someone with extensive SQL Server experience to setup SQL Server and to keep it working. You will not be able to just send a regular field Technician to the site and tell him to figure it out. Additionally DSX cannot help you do it over the phone. If you don't have someone that already knows how to setup and administer SQL Server you need to contract someone to help you.



So now that we know what SQL Server is and how it is better when do we need to use it? There are a few things that should be examined that will help you make the judgment call.

- ❑ If there will be any workstations that will be attaching to the database through a WAN connection then you should definitely use SQL. A WAN connection would be any connection that is not at least 10 Mbit. An example would be that the network between two buildings is connected via a T1 line. The computers in the building that have to go through the T1 line would be considered on a WAN. The reason we would use SQL in this situation is that the WAN connection is slower and inherently more prone to errors. In the Microsoft Access database version of our software this would expose the database to a much higher potential risk of corruption.
- ❑ If the network within a building (LAN) were not reliable then you would also want to use SQL Server. The reasons for this are the same as above. In order for an Access database to function well we require a very reliable link between the workstations and the file server.
- ❑ If the customer wants to keep a lot of history on hand you should use SQL Server. It can manage very large database files and may allow a customer to keep years of history on line. This versus Access where the history log files must be archived regularly (monthly) to prevent them from getting to large.
- ❑ If the customer is going to have a large population of Cardholders or is going to be making extensive changes to the database on a daily basis you should use SQL Server.
- ❑ In a lot of cases the customers will ask for the SQL Server version if you let them know that it is available and that it provides a higher degree of security and reliability. It is a judgment call as to when to use it, but these are some good guidelines. Examine the needs of the customer and pick the product that fits the site.
- ❑ Remember to use SQL Server there must be a minimum of two PCs or computers. One PC is used to run the Microsoft SQL Server™ and one for the WinDSX SQL Communications Server. The WinDSX Communications Server cannot run on the same PC as Microsoft SQL Server™.