



## Frequently Asked Questions

### Which database solution is right for you?

When selecting a version there are a number of factors that need to be considered. The normal ones are stability, scalability and cost. This document provides some background information to help assist in this decision process.

There are three main reasons how access databases can become corrupted.

First: an operating system flaw. Many operating systems will cache changes to network files locally and update them at a later point. This caching gets very complicated when multiple users are accessing the file. If the operating system doesn't handle the caching correctly then a corruption will occur. There is a known problem with Windows 2000 prior to SP2 and with Novel (many problems in many versions).

The second, and most common reason, is a network disconnect or error. When updating an Access database all file maintenance is done by the work station. When a single record is updated space has to be allocated, indexes have to be updated, and the data needs to be written. There may be dozens of read and writes that need to take place to update the single record. If there is any kind of network disruption during this update then some tasks will remain undone. This will corrupt the database. Often these corruptions are due to bad NIC cards, network cables, hubs, brown outs, etc.

The third, and least frequent, problem is a serious hardware error. For example a bad hard drive.

MSDE / SQL Express and SQL Server solve the two most common issues by moving all file maintenance to the server. MSDE / SQL Express and SQL Server are applications that run on your server with your data. Alliance/MFG will send simple commands to the server requesting work to be done. The server will then carry out all the file updates necessary.

If there is a disruption in the network either the command will fail to be received and nothing will be done, or the command will have been received and the server can finish making all updates without needing to be connected to the network. There are no caching problems since the workstation is not updating files directly. There are no network problems since network disruptions will not affect the file updates.

The only problems that MSDE / SQL Express and SQL are subject to are serious hardware problems. If the hard drive fails, the database will still be corrupted. However, SQL Server even offers tools to protect you from this error. It can keep a log of all changes on a separate hard drive. These changes can then be re-applied to a backup of the data to recover after drive failures. Setting this up can be complicated and hard drive failures are rare so this is generally overkill.

### **Alliance/MFG – MDB database**

This is the entry level database platform. The Access database uses a “Jet” database engine where the theoretical number of concurrent users is 255. We would recommend that the maximum number of concurrent users is 10.

If your business requires less than 10 users and the system will be used for a normal amount of transaction processing (approx 12,000 transactions)

### **Alliance/MFG – MSDE (Microsoft SQL Server 2000 Desktop Engine)**

MSDE is a cut down version of SQL. It offers some of the benefits of SQL without having to purchase SQL server licenses.

There are a couple of main limitations with MSDE:

1. The MSDE / SQL Express database has a “workload governor” this starts to restrict performance by allowing a small wait before each read or write of the datafile. The “workload governor” only becomes active when there are 8 concurrent operations in process. Our experience with MSDE / SQL Express installs for up to 20 users the wait is not noticeable.

2. No GUI interface (there are no SQL Server Enterprise Manager, SQL Server Profiler, Query Analyzer, Database Upgrade Wizard, Index Tuning Wizard, Import and Export Wizards, and so on).

If your business looks like it will get near or exceed 10 users, requires remote access, requires web based reporting or that there is going a large amount of transactions then the recommendation would be for MSDE

### **Alliance/MFG – SQL Server Express**

SQL Server 2005 Express is the free version of the Microsoft SQL Server 2005 database. It replaces MSDE (Microsoft SQL Server 2000 Desktop Engine), which was based on Microsoft SQL Server 2000.

SQL Server 2005 Express includes the new SQL Server 2005 database engine enhancements and a new graphical user interface (GUI) tool called SQL Server 2005 Management Studio Express Edition.

SQL Server 2005 Express has a number of important advantages over MSDE, such as visual configuration tools, XML data support, and simplified deployment of applications.

SQL Server 2005 Express has some important advantages over MSDE. Some of these advantages are: Increased maximum database size, No workload governor, SQL Server 2005 Management Studio Express Edition, CLR integration, new data types, User instance support, Reporting Services & SQL Service Broker

### **Alliance/MFG – SQL database**

If your business looks like it will get near or exceed 20 users, requires remote access, requires SQL management tools (see MSDE limitations), requires web based reporting or that there is going a large amount of transactions then the recommendation would be for SQL.

There is an additional cost for SQL server and licenses (approx £3,800 – SQL server, £1,200 per 5 client pack). We would only recommend moving to SQL if the business used other applications that would benefit from using SQL server.

### **What happens if I start with MDB?**

If the business starts with a small number of users and a MDB database and you need to upgrade the amount of users and database Exact Manufacturing Systems supplies a migration tool that will convert an MDB database to MSDE / SQL EXPRESS / SQL Express or SQL

### **What versions of MSDE / SQL can I use with Alliance/MFG?**

Microsoft SQL Server ®™2000, Microsoft SQL Server ®™2005, Microsoft SQL Express ®™ or Microsoft SQL Server 2000 Desktop Engine ®™