# SQL Server Express

Dear Monitor Pro Customer,

Due to licensing changes and business agreements with Microsoft Corporation and UGS Corporation, Schneider Automation will be shipping only SQL Server 2005 products with Monitor Pro starting June 1, 2007. This change will impact shipments of existing Monitor Pro 7.x products and provide additional options for customers who wish to utilize the latest SQL Server technology from Microsoft.

| Product and Version | Shipments Prior to June 2007 | Shipments after June 2007 | New SQL Server Options |
|---|---|---|---|
| Monitor Pro 7.2 | SQL 2000 Personal/Standard | SQL 2005 Express | SQL 2005 Standard/Enterprise |
| Monitor Pro 7.6 | SQL 2000 Personal/Standard | SQL 2005 Express | SQL 2005 Standard/Enterprise |

We will begin shipping the SQL Server 2005 Express CD with all versions of Monitor Pro.  This new installation CD includes a script to create the default "FLINK" database and the "flink" user with "flink" password for use with tasks that access the relational database.

**SQL Server 2005 Express Features:**

- **Users = unlimited** (Express is limited by operating system CAL connections and other size limitations.
  There are no SQL CALs for Express),
- **Number of CPUs = 1** (Will run on dual-core and multi-CPU systems, but uses only 1 CPU),
- **Maximum RAM = 1 GB** (We suggest limiting memory usage of SQL Server to 192 MB for average systems),
- **Maximum Database Size = 4 GB** (This may be the critical point for customers),
- **64-bit support provided by WOW** (Windows on Windows feature for running x86 code on x64 Operating System),
- **No redundancy features for the database** (We suggest using a dedicated SQL Server computer with RAID disks),
- **No Reporting Services support for the Manufacturing/Production Management portal** (The advanced version of Express has Reporting Services, but not all of the tools are available for customers to leverage the portal).

Some customers will find that SQL Server 2005 Express has too many limitations for their implementation. Customers who need more than 4 GB storage for a single database or need high availability of data redundancy will need to consider purchasing SQL Server 2005 Standard or Enterprise editions.

**SQL Server 2005 Standard Edition Features:**

- **Database Mirroring for redundant databases,**
- **Available in x86 or x64 versions,**
- **Reporting Services built into the product** (choice on installation)**,**
- **Report Builder built into the product for user customization of portal reports,**
- **Flexible CAL options.**

In the past, the number of SQL Server CALs was equal to the number of Monitor Pro CALs. This is no longer true due to changes in Microsoft licensing and the lack of the "floating CAL" concept that we previously supported with Monitor Pro.

Please contact your Schneider local representative to order SQL Server 2005.

**SQL Server CALs** come in 3 different types:

1. **Device CAL** – This CAL is tied to a particular computer or device on the network. It does not matter who is logged into this computer; the hardware is licensed to connect. This would be the choice for Monitor Pro clients in the control room where the computer will always be running the Monitor Pro client.

2. **User CAL** – This is a named user account on the SQL Server. This user may access the SQL Server from any computer. This choice would be for "floating" Monitor Pro users who access the system using Client Builder from different computers, but always the same person. If you have multiple people in this situation, you will need to purchase a CAL for each of them.

3. **Per CPU** – The cost for this license is per CPU on the SQL Server computer. The connections are unlimited and no other CALs are required. This is a great choice for large deployments with a mix of SCADA, MES, and Production Management Portal users.

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**Additional Notes:**

- SQL Server 2005 Express is shipped on a separate CD for Monitor Pro 7.x versions.
- For a detailed comparison of SQL Server 2005 Express, Standard, and Enterprise Editions, see the Microsoft web site at: http://www.microsoft.com/sql/prodinfo/features/compare-features.mspx
- Customers who order the SQL Server 2005 Standard Edition will need to specify the number of CALs for the SQL Server installation. The total number of SQL CALs must be greater than the number of Monitor Pro CALs to adhere to the license agreement. Each Monitor Pro CAL needs to have a corresponding SQL CAL. The Monitor Pro Server also needs a Device CAL. Thus, the SQL CAL count needs to be at least the Monitor Pro CAL count + 1.
- Microsoft offers individual **user** licenses small or medium systems or **processor** licenses for deployments with a large number of users. The processor license provides an unlimited number of users.
- For new Monitor Pro 7.x licenses, customers will receive a SQL Server 2005 Express license with Monitor Pro by default. SQL Server 2005 Standard or Enterprise Editions will only be shipped if specifically ordered.
- For upgrades, customers will receive a SQL Server 2005 Express license with Monitor Pro by default. If you want the SQL Server 2005 Standard or Enterprise Edition licenses, they would need to order and pay for those separately. Upgrade customers who already have a SQL Server 2000 implementation may continue to use that system as long as they conform to the license agreements defined by Microsoft. Additional CALs must be purchased from Microsoft directly for expansion to existing systems.
- A SQL Server key is no longer needed and is not shown on the Exhibit A.


## Scenario #1

Upgrade Customer: Let's assume you have Monitor Pro 7.0 with SQL Server 2000 and you want to upgrade to Monitor Pro 7.6 with SQL Server 2005.

You can just convert and run! SQL Server 2005 Express Edition is included with the upgrade. However, you may purchase optional Standard or Enterprise versions of SQL Server 2005, if desired.

The SQL Server 2005 choice is where you may need to consider additional issues. Do you know your current space requirements? How big is your current database (or should you back it up and purge it more often)? Do you use replication or other database redundancy? Use the following grid of questions to help make this decision:

| Decision Point | Express | Standard | Enterprise |
|---|---|---|---|
| Data storage requirement less than 4 GB? | X | | |
| Data needs redundant storage? | | X | X |
| Stand-alone computer and up to 5 users? | X | | |
| Future plans to use Traceability? | | X | X |
| Plans to use Production Management Portal? | | X | X |
| Backup and maintenance online? | | | X |
| Report Builder and other Reporting Tools? | | X | X |


## Scenario #2

ECS Customer: Let's assume you have Monitor Pro v2.0/2.1 and SQL Server 2000 (or earlier) and you want to upgrade to Monitor Pro 7.6 and SQL Server 2005.

You need to understand the size of the application and any optional modules to determine the correct size and options for your upgraded system. The Monitor Pro upgrade utility is available to give you some general guidelines, but your own knowledge of the installed system is usually the best source for information.

The database upgrade will take the same evaluation of the existing system as in Scenario #1. You need to look at the grid and the types of CALs to determine the count and mix required. Even though Monitor Pro v2.0 and 2.1 did not include a version of SQL Server, you will receive the SQL Server Express Edition with the upgrade.

Upgrades like this will require an upgrade of the hardware and the operating system. Some customers were using Windows 2000, but many were still using NT. Review the hardware and software requirements for Monitor Pro 7.6 to get the right combination of computer hardware and operating system. The price of hardware today allows most customers to upgrade to multi-core processors for the Monitor Pro systems for minimal investment. Monitor Pro's architecture is uniquely positioned to utilize dual core AMD and multi-core Intel systems.

**Scenario #3**

Upgrade Customer: In this scenario, assume that you have a Monitor Pro 7.2 without maintenance, and you want to upgrade to 7.6, but you are on a tight budget.

You need to size the system with the upgrade utility. Much like Scenario #2, the new system needs to meet at least the minimum size requirement for the existing application.

If you are using Monitor Pro 7.2 with SQL Server 2000, you do not need to upgrade the database layer at this time. We continue to support SQL Server 2000 with Monitor Pro 7.6. However, if the database storage requirements and CAL counts are minimal, you could upgrade to the included SQL Server 2005 Express at no additional charge.

Simple architectures with 1-3 clients can continue to have the SQL Server on the same computer as the Monitor Pro Server as long as there is enough RAM (2 GB RAM suggested). You may have tried to run bigger systems on a single server. Schneider Automation suggests that the SQL Server database reside on a separate computer. This allows the database to expand to utilize available RAM and have full access to the hard disk bandwidth. This architecture is particularly important for redundant Monitor Pro servers. Because the Monitor Pro system is more likely to fail because it has so many complex real-time processes running and network connections, moving the SQL Server database to a dedicated computer allows the failover to have minimal impact on stored data and provides for best performance.

**Scenario #4**

Upgrade customer: In the final scenario, let's assume you Monitor Pro 7.2 redundant systems and want to upgrade everything.

Since these are redundant systems, you should purchase the SQL Server 2005 Standard Edition and have it reside on a dedicated computer. Database CALs need to be reviewed to ensure you get the correct solution with SQL Server 2005. The CAL count needs to include the Monitor Pro servers as additional Device CALs (2 CALs for a redundant system) and then evaluate the client counts to determine the mix of Device and User CAL counts.