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MSC/PATRAN Database Replacement

■ New MSC/PATRAN Database

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MSC/PATRAN Version 8 introduces the first phase of a multiple phase project to replace the core database engine. The new database features the latest in Object-Oriented design. It completely replaces InterBase in the V8 release, but leaves the existing MSC/PATRAN architecture essentially in place.

The objective of the first phase has been to implement the new database engine with an emphasis on data integrity and stability, not necessarily to improve performance. While the new engine lays the foundation for improved features and performance, the user will experience performance that in general is similar to Version 7.5 for UNIX systems.

For the Windows NT version, importing files such as MSC/NASTRAN input (BDF), results (OP2), and MSC/PATRAN Neutral (OUT) files can be 6 to 8 times faster than in MSC/PATRAN V7.5.

While performance will be emphasized in future releases, there are many substantial user benefits that come with the new database:

Benefits   **Binary Compatibility (Limited):** MSC/PATRAN databases are now binary compatible across the HP, IBM, SGI and SUN UNIX platforms. Databases can be copied and used among any of these four platforms without porting.

Automatic Database Porting: Databases created on the Digital UNIX and Windows NT platforms are not binary compatible with those created on the HP, IBM, SGI and SUN UNIX platforms. Porting between these platforms will now be handled in an automated fashion by the DB Port utility. The user may simply copy a database from an incompatible platform to his machine and open it from the File/Open menu. Porting will take place automatically.

Note though that porting (between platform types) and conversion (upgrading from a previous version to V8) cannot be performed simultaneously. If a database is both a previous version and from an incompatible platform porting and conversion must be performed separately.

Automatic Database Conversion: Conversion of databases from previous MSC/PATRAN versions to V8 will be done automatically as the database is opened. This functionality is unchanged from previous versions of MSC/PATRAN. When a pre-Version 8 database is detected, it will automatically be copied and converted.

Reduced Database Size: In this release, users will notice smaller databases. The empty database size has been reduced to 1.8MB, and depending on the model, database size reductions of 25% are possible.

Automatic Database Compaction: The new database will re-use and compact empty space more efficiently than before. Version 8 databases will automatically reclaim any unused space whenever they are saved or closed. Manual compaction of databases is no longer necessary.

Limitations   The new MSC/PATRAN Database has the following three limitations, due to the elimination of InterBase:

GBAK: As V8 databases no longer use InterBase, the GBAK function no longer works on them. Binary compatibility on HP, IBM, SGI and SUN and the automated DB Port function however eliminate the need for this tool when moving databases between platforms.

QLI: QLI no longer works with V8 databases. This utility was used to determine database versions and to query and edit the database file. To determine the version of a database in V8 however, a user can simply type "pdbversion <db name>". The query and edit functions of QLI are not available in V8, but are scheduled to be provided at a later date in a new database query tool.

NFS Mounted NT Disks: With the elimination of InterBase, MSC/PATRAN can now open databases on NFS mounted disks across UNIX and NT platforms. Due to a lack of standardization in the software which mounts NT and UNIX disks via NFS however, file locking in this situation is inoperable.

This means if a user opens a database on a UNIX platform, another user could access it simultaneously via an NT machine without warning. Simultaneous database access causes errors to occur, and therefore this type of access is not recommended.