



## InterBase in Version 8 or later

■ Overview

■ Installing InterBase on UNIX

■ Installing InterBase on Windows NT

■ Upgrading Databases

■ InterBase Problems and Resolutions

## B.1 Overview

As of MSC/PATRAN version 8, the Patran Database System (PDB) has replaced the InterBase database system. For more information on the PDB system see **The PDB Database System** (p. 81). InterBase is still required, however, to upgrade databases from versions prior to 8. This appendix covers the installation and setup of InterBase for this purpose.

## B.2 Installing InterBase on UNIX

InterBase must be installed on any machine that will run MSC/PATRAN and will convert databases from versions prior to 8. Systems that will act strictly as file servers or will not perform database conversions for old databases do not need to install InterBase

### B.2.1 Installing InterBase with mscsetup

InterBase installs like other packages from mscsetup. Mount the CD-ROM and execute mscsetup as described in **Installing MSC/PATRAN with mscsetup** (p. 29) then follow the steps below.

#### B.2.1a Select Client Installation

Select an installation type for the MSC/PATRAN core application:

1. Standard Installation.  
Install the MSC/PATRAN GUI and associated files including the InterBase database subsystem and complete on-line help facility and results validation/verification files for Hewlett Packard 9000 systems.  
426 megabytes required
2. Full Installation.  
Install standard files plus the MSC/PATRAN analysis manager, database access programmer's toolkit, and PCL utilities for Hewlett Packard 9000 systems. 525 megabytes required.
3. Client Installation.  
Install a local copy of InterBase on the target host.  
Client system will access all other files via NFS from an existing installation on a Hewlett Packard 9000 host. 7 megabytes required.
4. Custom Installation.  
Select specific architectural and optional components to install.

NOTE: If an up-to-date InterBase directory is present in /usr/interbase, you must select "Custom Installation" to overwrite it. Also, installation of InterBase requires root and therefore will not be able to create a usable InterBase configuration unless you terminate this session and reinvoke mscsetup as root.

D. Deselect.

Remove MSC/PATRAN Core Application from the list of products to install.

X. Completely exit this installation now.

Enter 1-4, D, or X (default = 1)? 3

MSC Installation and Setup - MSC/PATRAN Core Application Options

Please wait...

### B.2.1b Selecting the Installation Base Directory

You will be prompted for an installation base directory. This is the NFS mount point of a MSC/PATRAN installation.

Consult your operating system documentation on how to establish NFS mounted directories from file servers to clients.

For example, assume MSC/PATRAN is installed on a machine called “alpha” in /msc. The client machine, “beta”, mounts that directory (alpha:/msc) as /alpha\_mount/msc. The installation base directory would be given as /alpha\_mount/msc, and the `mscsetup` utility would create links from the provided installation target directory to /alpha\_mount/msc. So if the installation target directory is /msc on “beta”:

```
# ls -l /msc
drwxrwxrwx   7 root  sys  1024 Apr 21 19:43 interbase40g
lrwxr-xr-x   1 root  sys   22 Nov 11 13:08 patran80 ->
    /alpha_mount/msc/patran80
```

The `mscsetup` utility request follows:

MSC Installation and Setup - PATRAN V7.5 Installation Base Directory

You have selected a client installation of MSC/PATRAN. A client relies on the ability to access an existing standard or full installation base directory via NFS from a remote system.

Please supply the pathname to the bin subdirectory of an existing installation base directory from which this host will access files which are not installed locally.

Do you wish to continue (default = Y)?

Enter the PATRAN installation base directory (no default)?

### B.2.1c Client InterBase Installation

InterBase installs in the provided target directory. See **Inputting the Installation Directory** (p. 33), and then links to the required /usr/interbase path.

The utility creates links, and spawns /usr/interbase/install to complete the installation. You do not need to supply input for this install.

Preparing to install InterBase version V4.0G

Creating /usr/interbase symbolic link ...

```
+ ln -s /tmp/rosstest/interbase40g /usr/interbase
```

Options prerequisite testing completed.

Press ENTER or RETURN to continue...

MSC Installation and Setup - PATRAN V7.5 Installation Base Directory

You have selected a client installation of MSC/PATRAN. A client relies on the ability to access an existing standard or full installation base directory via NFS from a remote system.

Please supply the pathname to the bin subdirectory of an existing installation base directory from which this host will access files which

are not installed locally.

Do you wish to continue (default = Y)?

MSC Installation and Setup - Installation

No additional user input will be required.

Writing new playback file, `/tmp/mscsetup.pbk`

Changing to installation directory

Loading installation files. Tue Apr 22 16:07:36 PDT 1997

Using CD-ROM /CDROM

Begin loading files from common/gunzip.tar

Verifying CD load operation...

Begin loading files from hpux/interbase40g.tar

Verifying CD load operation...

Decompressing installation files. Tue Apr 22 16:59:51 PDT 1997

Decompression complete.

Unpacking installation files. Tue Apr 22 16:59:57 PDT 1997

Unpack complete.

Configuring Products. Tue Apr 22 17:00:01 PDT 1997

Configuring MSC/PATRAN Core Application

Creating external component link...

Creating directories, setting modes...

Setting user customizations...

Miscellaneous configuration commands...

Invoking /usr/interbase/install...

Linking client directory from base patbase/patran80...

Linking client directory from base patbase/viewer50...

Installation complete. Tue Apr 22 17:00:06 PDT 1997

---

## B.2.2 Installing on a UNIX Client without a Local InterBase

It is possible to run MSC/PATRAN without a local installation of InterBase. MSC recommends that you use the Client configuration procedure described above; then delete the local installation of InterBase and replace it with a link to the NFS mount point. In this case, where:

```
# ls -l /msc
drwxrwxrwx  7 root  sys  1024 Apr 21 19:43 interbase40g
lrwxr-xr-x  1 root  sys   22 Nov 11 13:08 patran80 ->
    /alpha_mount/msc/patran80
```

1. Delete the local interbase40g:

```
# rm -r /msc/interbase40g
```

2. Replace it with a link to the mounted MSC/PATRAN installation:

```
# ln -s /alpha_mount/msc/interbase40g /msc/interbase40g
```

**Important:** Note that `/usr/interbase` is already linked to the installation directory (`/msc/interbase40g` in this example). You must run the InterBase installation utility to create certain run-time library links:

```
/usr/interbase/install
```

Note that you may receive error messages about a failed `chmod` command. Ignore these messages.

## B.2.3 NFS Access (UNIX Only)

InterBase has the capability to bypass NFS and use its own “InterBase Access” method to access files on remote machines. For installations using InterBase only to convert old databases The MacNeal-Schwendler Corporation recommends using “NFS Access” only.

### NFS Access Setup

When MSC/PATRAN accesses a database, it switches to NFS Access if the database has a marker file present. The marker file has the same filename as the database with “\_m” appended. For example,

```
% ls ~/patran_files
newmodel.db
newmodel.db.jou
newmodel.db_m
patran.ses.01
```

The marker file contains the full path to the database as viewed by the MSC/PATRAN client system. It is a text file that you can create and view with normal UNIX utilities and editors. If a valid marker file exists at the time you open a new or existing database, MSC/PATRAN invokes the NFS Access method.

To set MSC/PATRAN for automated marker file handling:

1. Pick File from the MSC/PATRAN main menu.
2. Select either Open Database or New Database.
3. Turn the Enable NFS Access toggle button ON.

With this option set MSC/PATRAN creates a new marker file or uses an existing marker file.

You can default the “Enable NFS Access” toggle button to ON by setting an environment variable, P3\_ENABLE\_NFS\_DB\_ACCESS. See [Environment Variables](#) (p. 70) for additional information.

```
% setenv P3_ENABLE_NFS_DB_ACCESS yes
```



## Creating NFS Access Marker Files by Hand

To create a marker file manually execute the following commands:

```
% cd <db_location>
% echo `pwd`/test.db > test.db_m
```

If you wish to manually maintain you own marker files, be certain that you move and update the marker file whenever you move the database. Alternatively, you can set MSC/PATRAN to automatically create and update marker files.

## B.2.4 InterBase and Semaphores on UNIX

For InterBase to function properly, each MSC/PATRAN Client must have sufficient semaphores. It is rare that the system defaults are insufficient to run InterBase. However, this can occur if you use other relational database products such as Oracle or Sybase.

The following table lists the minimum number of semaphores needed for InterBase. This is in addition to those required by other products.

**Table 2-1 InterBase System Kernel Requirements<sup>a</sup>**

<b>Digital UNIX</b>	25 lock manager semaphores
<b>HP-UX</b>	32 + 32 <sup>b</sup> lock manager semaphores = 64 total semaphores
<b>IBM RS/6000 AIX</b>	32 + 32 <sup>b</sup> lock manager semaphores = 64 total semaphores
<b>SGI IRIX</b>	25 + 25 <sup>b</sup> lock manager semaphores = 50 total semaphores
<b>Sun Solaris</b>	25 + 25 <sup>b</sup> lock manager semaphores + 16 central server semaphores = 66 total semaphores

- The required values are for one workstation and not for one PATRAN user session. The values are listed in clusters.
- The second block of semaphores is necessary only for sites upgrading from MSC/PATRAN Version 1.3-2 or earlier who must upgrade databases, or wish to run the earlier version concurrently.

For information on how to modify system kernel parameters, consult your Operating System documentation. The following are the key kernel parameters and their definitions and requirements for InterBase:

<b>SEMMNI</b>	The maximum number of semaphore clusters that can be allocated on the workstation. Each entry in the semaphores section from the “ipcs -a” output, is a single semaphore cluster. The default value for most machines is 10. InterBase uses 1, except on the Sun, where it uses 2.
<b>SEMMNS</b>	The maximum number of semaphores that can be allocated on the workstation. The sum of the NSEMS column from the “ipcs -a” output, must be less than or equal to the SEMMNS value. The default value for most machines is 60. InterBase uses up to 81, depending on the machine type.
<b>SEMMNU</b>	The maximum number of semaphore undo structures in the workstation. The default value is usually 30. InterBase uses about one undo structure per MSC/PATRAN session. Set SEMMNU to at least equal to the number of simultaneous MSC/PATRAN or InterBase sessions that you expect.
<b>SEMMSL</b>	The maximum number of semaphores associated with a single cluster or semaphore ID. The default value is usually what SEMMNS is set to. Set SEMMSL to at least 32 (33 on Sun Solaris) for InterBase.

## B.3 Installing InterBase on Windows NT

InterBase is required only for the conversion of databases from MSC/PATRAN v7.6 or earlier.

The MSC/PATRAN on Windows NT setup Wizard handles the installation of InterBase. The MacNeal-Schwendler Corporation recommends installing InterBase at the same time as MSC/PATRAN on Windows NT if you expect to convert databases older than v8.

1. Run the setup.exe Wizard as described in **Installing MSC/PATRAN with the Setup Wizard** (p. 56)
2. Select the MSC/PATRAN product. InterBase is part of the “Typical” and “Full” installations, but can be selected individually under “Custom” in the event you wish to install only InterBase.
3. Select an installation directory. The default is `C:\IBSERVER`.
4. When prompted select “Automatic” as the reconnect option for “single client server.”

## B.4 Upgrading Databases

MSC/PATRAN automatically upgrades old databases to the current version when you open them. If you have a large number of databases, we recommend that you upgrade these in one “batch” process. Note that once a database is converted, it cannot be reopened in an older version.

**Important:** MSC strongly recommends that you backup all MSC/PATRAN databases prior to running a batch `p3convert`. A catastrophic system failure could result in database corruption.

The following command converts files from their current database schema version to the version of `p3convert` (i.e., the latest version):

```
# <installation_dir>/patran8x/bin/p3convert <file1.db> <file2.db>
```

You must supply at least one filename, but you can supply as many filenames as you want.

**Important:** Be sure that both the `/tmp` directory and the database directories have sufficient space (at least triple the largest database size) or database corruption could result. If there is insufficient space in the `/tmp` partition, InterBase can be instructed to use a different partition for scratch. Enter the following command prior to running `p3convert`:

```
# setenv TMP <directory_path>
```

## B.5 InterBase Problems and Resolutions

**General Fix:** Use NFS Access as opposed to InterBase Access. By turning on the “Enable NFS Access” marker file, many network setup requirements are eliminated.

See also **NFS Access (UNIX Only)** (p. 134) for details.

**Problem 1:** When I start up MSC/PATRAN, I get the error:

Connection Rejected or Connection Refused

**Resolution 1:** Make sure you have installed the InterBase `/usr/interbase` directory, and its files on each designated MSC/PATRAN Client machine, and on each designated User File Server machine, following the instructions in **Installing InterBase with mscsetup** (p. 129).

If the `/usr/interbase` files already exist on each MSC/PATRAN Client, execute the InterBase `install` script file by entering the following as root (make sure no one is currently running MSC/PATRAN on the local machine!):

```
# cd /usr/interbase
# ./install
```

Also, if your database is mounted on a remote machine make sure you have turned on **NFS Access (UNIX Only)** (p. 134). This is applicable only to UNIX installations.

**Problem 2:** When I start MSC/PATRAN and try to open my database, I get the error:

Operating System Directive SEMGET Failed, No Such File or Directory

I was able to open the same database in a previous MSC/PATRAN session.

**Resolution 2:** The semaphores allocated by InterBase for a previous MSC/PATRAN session, may not have been released. To release them, execute the following command (but be sure no one on the local machine is currently running MSC/PATRAN, or accessing a MSC/PATRAN database!):

```
# rm /usr/interbase/gds.lock*
# /usr/interbase/bin/gds_drop -l
```

(Note the “l” is a lowercase “L”.)

If this fails be sure the system kernel is properly configured and reboot the workstation. See **InterBase and Semaphores on UNIX** (p. 135).

**Problem 3:** When I attempt to start up MSC/PATRAN on a UNIX workstation, it crashes with the following error:

```
System shutdown due to signal SIGSEGV ...
```

Then when I test InterBase by running the QLI test procedure documented under **Using QLI to Examine InterBase Databases** (p. 143), I get the following error:

```
cannot access shared library
```

**Resolution 3:** Execute the InterBase `install` script file by entering the following as root (make sure no one is currently running MSC/PATRAN or accessing a MSC/PATRAN database file on the local machine!):

```
# cd /usr/interbase
# rm gds.lock*
# ./install
```

**Problem 4:** When I try to start MSC/PATRAN on a UNIX workstation, I get the following error:

```
Fatal Lock Manager Error: Semaphores Exhausted
```

or

```
Fatal Lock Manager Error: semget failed
```

**Resolution 4:** Other applications running on the workstation that rely on semaphores, may have used them up. Thus, you may need to increase the number of semaphores, based on the number needed by both InterBase and the other applications that use semaphores. See the section **InterBase and Semaphores on UNIX** (p. 135)

**Problem 5:** When I attempt to use QLI, p3convert, gbak, or another database utility on the Windows NT platform, I get the following message:

```
Your username and password are not defined.
```

**Resolution 5:** Set the following environment variables in Control Panel | System under the Environment tab.

```
ISC_USER = pflib
ISC_PASSWORD = WELCOME
```

Note that these variables are case sensitive.

**Problem 6:** When I try to start MSC/PATRAN, I get the error:

```
Fatal Lock Manager Error: Inconsistent lock table version
number
```

**Resolution 6:** To correct this, login to the workstation as root and do the following:

Note the names of the `gds*` files under `/usr/interbase`:

```
# ls -l /usr/interbase/gds*
```

1. Remove the `gds*` files:

```
# rm /usr/interbase/gds*
```

2. Recreate the `/usr/interbase/gds*` files using the UNIX `touch` command. Change the new files' protections, as follows:

```
# chmod 777 /usr/interbase/gds*
```

3. Execute the command:

```
# /usr/interbase/bin/gds_drop -A
```

The `gds_drop` command resets InterBase by dropping the semaphores being used by InterBase.

4. Then, test InterBase by following **Using QLI to Examine InterBase Databases** (p. 143).

If this fails check the system kernel configuration and reboot the workstation.

**Problem 7:** When I attempt to start up MSC/PATRAN, I get the following error:

```
Unable to install GBAK: Segment failed
```

**Resolution 7:** The proper file setup is done by running the InterBase `install` script file on each workstation that is executing MSC/PATRAN, and on each workstation that is storing the MSC/PATRAN user files.

Enter the following as root (make sure no one is currently running MSC/PATRAN or accessing a MSC/PATRAN database file on the local machine!):

```
# cd /usr/interbase
# ./install
```

If this fails you may have to reinstall Interbase using the `mscsetup` client procedure. See **Installing InterBase on UNIX** (p. 129)

**Problem 8:** When I try to start MSC/PATRAN, I get the error:

```
libgds.lib.so.0 not found unable to start lock manager
```

**Resolution 8:** Be sure `/usr/interbase/lib` is owned by **root** and has **read-execute** privileges, and the files under `/usr/interbase/lib` have at least **read** privilege. Then execute the Interbase `install` script as above.

**Problem 9:** When I try to open a database I get:

Requested file is not a valid database

or

Invalid transaction handle, missing ready

**Resolution 9:** Switch the database to NFS Access by setting the “NFS Marker File” switch on in the database “OPEN” or by setting the correct environment variable. See **NFS Access (UNIX Only)** (p. 134). This error can also occur when the directory defined by the TMP environment variable (or defined in the site\_setup file mentioned above) is not writable by the user. Make sure that this directory is local and writable by all users.

It is also possible that the database is corrupted. Make a backup copy of the database and compact it by opening MSC/PATRAN and choosing Compact... under the File menu. Try opening the compacted copy.

**Problem 10:** I attempt to open an old database and get the following message in a dialog box:

File is not a valid database

In the root window (the window from which MSC/PATRAN was run) I see messages such as:

Invoking p3convert\_1x12....

....

Updating the ANALYSIS\_ELEMENT\_SUMMARY records.

Enabling the relation triggers.

no permission for REVOKE access to TABLE\$USER\_PRIVILEGES

\*\*\*Error: p3convert\_1x12 failed

**Resolution 10:** MSC/PATRAN is using InterBase to upgrade an older database. See **InterBase in Version 8 or later** (p. 127) for additional information. The problem stems from an earlier version of MSC/PATRAN which placed the creators name as the owner of the database. If a different user attempts to upgrade the database he/she is denied permission.

This problem should not occur on Windows NT databases.

A script is provided with MSC/PATRAN which will correct this problem. At the UNIX prompt, execute the following command:

```
% <install_dir>/patran8x/bin/fixDb <database_name.db>
```

Open the file in MSC/PATRAN and it will convert properly.



**Problem 11:** I attempt to open an old database and get the following message in a dialog box:

File is not a valid database

In the root window (the window from which MSC/PATRAN was run) I see messages such as:

Invoking p3convert\_1x12....

....

Updating the NODE records.

\*\*\*Error: p3convert\_1x12 failed

This error will always occur immediately after the NODE update.

**Resolution 11:** MSC/PATRAN is using InterBase to upgrade an older database. See **InterBase in Version 8 or later** (p. 127) for additional information. The problem stems from an earlier version of MSC/PATRAN which incorrectly wrote certain Node information. The p3convert\_1x12 utility does not recognize the information.

This problem should not occur on Windows NT databases.

A utility is provided with MSC/PATRAN which will correct this problem:

1. The database must be at schema version 1.11 (equivalent to v6.2) for the utility to work properly. Use the following command to determine the current version:

```
% <install_dir>/patran8x/bin/dbVersion -p <database_name.db>  
1.10
```

The value returned is the current schema version. Run the individual p3convert utilities to bring the schema version to 1.11. The p3convert\_1x10 updates a 1.09 database to 1.10, p3convert\_1x11 a 1.10 database to 1.11, etc. For the above example:

```
% <install_dir>/patran8x/bin/p3convert_1x11 <database_name.db>
```

2. Run the chkdb62 utility to fix the database:

```
% <install_dir>/patran8x/bin/chkdb62 <database_name.db>
```

Open the file in MSC/PATRAN and it will convert properly.

---

## Using QLI to Examine InterBase Databases

If you encounter problems accessing databases with MSC/PATRAN, you may get more informative error messages by accessing the database using the Interbase QLI utility.

1. Run the InterBase QLI utility by entering:

```
% /usr/interbase/bin/qli
```

```
Welcome to QLI
Query Language Interpreter
```

2. Access the database by entering:

```
QLI> ready <db_name>
```

Under **Windows NT** you must enter the MSC/PATRAN user and password

```
QLI> ready <db_name> user "pflib" password "WELCOME"
```

3. Display the control table with the print command:

```
QLI> print control_info
```

QLI should list something like the following:

MAX PARAM ID	MAX CONFIG ID	CURRENT CONFIG ID	ACTIVE LOAD CASE	COORDINATE FRAME ID	CURRENT SPECTRUM ID
1	1	3	0	1	0
1	1	1	1	1	
		1	1		1
1	6	2	1	1	1
3	4	0	2	0	1
		1	1	2	1
1	1	1	1	1	1
1	2	1	1	1	1
1	1	1	1	1	1
1	0	0	0	0	0
0	0	2	0	0	0
0	0	0	1.11.3		

Version 7.0-B029 04/19/97 06:53:16 PM (pflib.v7mod)

0

34 36 0

DEFAULT

4. Exit QLI by typing "quit":

```
QLI> quit
```

If you get errors during this process there may be a problem with the InterBase installation.