

InterBase 5.5

Embedded Installation Guide



InterBase[®]
SOFTWARE CORPORATION

100 Enterprise Way, Suite B2, Scotts Valley, CA 95066 <http://www.interbase.com>

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Introduction

About this document

This document is a guide for InterBase developers who want to include the InterBase software in the installation of vertical applications on the Wintel platform. This guide contains the details you need to customize the installation and configuration of an InterBase client or server, and to integrate it within the installation of your own software product. This kind of configuration is called an *embedded installation* of InterBase.

This document contains guidelines for embedded installation of InterBase Client and Server 5.5 for Windows NT and Windows 95.

The guide is not meant to cover InterBase software versions other than 5.5. If you use this guide to design embedded installations for other versions of InterBase, the software is likely to be installed improperly and might not function.

Do not use this document for customizing installation of the InterBase Server for Novell NetWare, SCO OpenServer, Linux, or any brand of UNIX. These instructions cover only InterBase for Windows NT 4.0 and Windows 95.

The system to which you deploy your product might or might not already have InterBase installed as part of another vertical software application. There are certain checks you must perform as part of your installation to ensure that your product is harmonious with other software.

Note Throughout this document, the variable `%SYSTEM32%` refers to the Windows system directory. This is most often `C:\Windows\System` on Windows 95 and `C:\WinNT\System32` on Windows NT. Any installation of these operating systems can override these default locations for the system directory. The Windows API call `GetSystemDirectory()` returns the true location of the system software.

In a nutshell

InterBase Software Corp. tries to make deployment of InterBase software as easy as possible:

1. Copy all or a subset of the files in the InterBase product, and include them in your product installation.
2. Activate the software with InterBase keys that you include with the copy of InterBase you deploy.
3. Pay deployment royalties to InterBase Software Corp. based on the number of copies of InterBase software you deploy.

Installation checklist

The following is a high-level summary of installation procedure for InterBase client and server:

1. Perform pre-install checks for an existing InterBase installation. See “Preinstall checks” on page 9.
2. Copy the InterBase client library *GDS32.DLL* to the Windows system directory and the Messages file *INTERBASE.MSG* file to the InterBase root directory, unless newer versions of these files exist on the system. See “Installing GDS32.DLL and INTERBASE.MSG” on page 12.
3. Copy all other required files and desired optional files to the target directory.
4. Merge the new keys with any existing key file. See “Installing software activation keys” on page 13.
5. Configure the InterBase registry keys. Set new reference counts to 1; increment existing reference counts. See “Windows registry information” on page 14.
6. Enter shared files into the shared DLL section of the Windows registry. See “Shared files and reference counts” on page 15.

For InterBase clients, skip the next step:

7. Configure and start the InterBase Server and Guardian services. See “Windows service configuration” on page 16.

Uninstallation checklist

The following is a high-level summary of the uninstallation procedure for the InterBase client and server. Make sure it is safe to do these steps without interfering with another application that uses InterBase. See later sections in this document for details on how to perform each step.

1. Make sure the InterBase server is not running.
2. Remove the **InterBase Server** service and the **InterBase Guardian** service from the Windows NT services or the Windows 95 **Run** registry key.
3. Remove InterBase registry information from the Windows registry database. Remember to decrement shared DLL key values. Do not delete the keys unless you reduce the values to zero.
4. If you reduce the reference counts to zero, delete the respective files. Certain files, listed in Appendix A, “Files by Component”, are exceptions and are never deleted.

Overview of components

The InterBase product is a collection of files, but you can think of these files as comprising a number of logical groups, or components. See Appendix A, "Files by component," for a detailed list of files included in each component listed below.

Component	Description
Server	32-bit multi-user server
Client	32-bit client required to connect to InterBase servers
Command tools:	
...database management	GBAK.EXE, GFIX.EXE, GSPLIT.EXE
...user management	GSEC.EXE
...database query	ISQL.EXE
GUI tools:	
...database management	Graphical server administration, data definition, and query tools for Win32; required to administer user accounts
...database query	WISQL.EXE for Win32
...user management	GSEC.EXE , used by IBMGR.EXE
ODBC	INTERSOLV [®] InterBase ODBC 3.0 compliant driver for InterBase for Win32
Developer tools	C/C++ Language header and library files for developing applications using the native InterBase API
Online documentation	On-line documentation for InterBase; requires Adobe Acrobat Reader With Search, which is on the InterBase 5.5 CDROM, and can also be downloaded from the web site http://www.adobe.com/prodindex/acrobat/readstep.html Distributing Acrobat Reader With Search is royalty free; refer to the license documentation with that product, and fill out the redistribution paperwork on the Adobe web site.
Examples:	
...databases	A sample personnel management and sales database
...API programming	Sample InterBase applications using embedded SQL, Dynamic SQL (DSQL), and the InterBase API

TABLE 1 InterBase product components



Installation Procedure

This chapter details the steps necessary to install InterBase programmatically. It assumes that you have the requisite files and that you know how to extract them from your compressed installation image.

The chapter also assumes that you are a qualified Windows programmer and need no instruction on how to perform programming tasks with your installation technology (for instance, InstallShield). In particular, you should be familiar with performing file versioning and Windows registry database manipulation using your installation authoring tools.

Preinstall checks

There are a number of checks you should perform before installing InterBase. These ensure that you do not conflict with an existing copy of InterBase.

1. Check the platform.

This InterBase 5.5 Embedded Installation Guide documents installation customization on Microsoft Windows NT 4.0 or Windows 95 on Intel hardware only. InterBase 5.5 does not support DEC Alpha hardware or the Windows NT 3.51 operating system.

The full InterBase product including the online documentation and Acrobat Reader With Search requires approximately 36MB of disk space. A minimal server installation requires 11MB. This does not include space used by your databases themselves, the space used by growth of the InterBase log file, or temporary space used during data sorting operations. If you choose to install a subset of files, refer to the file sizes listed in the table in Appendix A: "Files by Component."

IMPORTANT You cannot install InterBase software or databases onto mapped drives or UNC paths. The software and databases must be on a drive local to the machine on which you are using InterBase.

2. Check for an existing copy of GDS32.DLL.

Check the following locations for *GDS32.DLL*:

- %SYSTEM32%

An older version of InterBase might not have *GDS32.DLL* installed in the Windows system directory. Check the following locations:

- Subdirectory *bin* under the directory named in the registry value:

```
HKEY_LOCAL_MACHINE
  SOFTWARE
    InterBase Corp
      InterBase
        CurrentVersion: RootDirectory
```

- Subdirectory *bin* under the directory named in the registry value:

```
HKEY_LOCAL_MACHINE
  SOFTWARE
    Borland
      InterBase
        CurrentVersion: RootDirectory
```

- Directories named in registry value:

```
HKEY_CURRENT_USER
  Environment: path (Windows NT only)
```

- Directories named in registry value:

```
HKEY_LOCAL_MACHINE
  System
    CurrentControlSet
      Control
        Session Manager
          Environment: path (Windows NT only)
```

- Directories named in registry value:

```
HKEY_LOCAL_MACHINE
  SOFTWARE
    Borland
      Database Engine: DLLPATH
```

- Directories named in the PATH environment variable in *C:\AUTOEXEC.BAT*

If you don't find *GDS32.DLL* at any of these locations, you can be confident that your installation is executing on a "clean" system that doesn't have a previous copy of InterBase installed.

If you find *GDS32.DLL*, use your installation authoring tool to check the file version of the DLL. Such tools often do version checking automatically.

If *GDS32.DLL* is present, but has no DLL version information, it is the InterBase library from version 4.0 or 4.1. You must abort your installation at this point, and direct the user to remove the old InterBase software before installation of InterBase 5.5 can proceed. The InterBase 5.5 software cannot install over InterBase 4.0 or 4.1.

IMPORTANT It's okay to upgrade *GDS32.DLL* with a newer version, but *do not replace an existing DLL with an older version*. Many installation authoring tools perform version checking automatically.

3. Find the key file and messages file.

If an existing version of InterBase is installed, find the InterBase home directory in the Windows registry:

```
HKEY_LOCAL_MACHINE
  SOFTWARE
    InterBase Corp
      InterBase
        CurrentVersion: RootDirectory
```

In the root directory denoted in that registry key, find the files *IB_LICENSE.DAT* and *INTERBASE.MSG*.

For InterBase 4.2.1 and earlier, you will find the configuration in:

```
HKEY_LOCAL_MACHINE
  SOFTWARE
    Borland
      InterBase
        CurrentVersion RootDirectory
```

The files in the indicated directory might adhere to the 8.3 naming style, and have the names *IB_LICEN.DAT* and *INTERBAS.MSG*.

If these two files are not present, you can be confident that you are installing on a clean system (or an invalid installation of InterBase). If the files and registry keys are present, you must assume that a copy of the InterBase software exists on the system.

4. Check if an InterBase server is running.

If an InterBase server is running, abort your installation, require the user to shut down the InterBase server, and resume installation. To detect a running InterBase server, use the Windows API to find the InterBase service by its window class name in the following way:

EXAMPLE 2.1 Checking if an InterBase server is running

```
if (FindWindow("IB_Server", "InterBase Server")
    || FindWindow("IB_Guard", "InterBase Guardian"))
{
    /* Issue an error message and abort */
}
```

An uninstall should also fail if a server is running.

5. Find the security database.

On InterBase server hosts, you might find the security database *ISC4.GDB* present in the InterBase root directory. If the file is not present, copy a new one from your product install.

IMPORTANT

If *ISC4.GDB* is present, *do not overwrite it*. It might contain user entries on which another application depends. The same applies to *ISC4.GBK*.

If you need to set up users for your InterBase application, it is safest to configure them after InterBase is installed and running, by executing the **GSEC** tool, or programmatically by calling the user administration API functions in InterBase 5.5, specifically *isc_add_user()*. This function creates users without destroying the existing user entries in the security database. Refer the InterBase *API Guide* for details.

Copy a fresh *ISC4.GBK* only if no security database exists at the time of your installation.

Note Once InterBase 5.5 accesses *ISC4.GDB*, the internal structure of the security database alters to a slightly different format and InterBase 4.2 and earlier might not read it correctly. Use the **GBAK** tool in the InterBase 4.2 product to make a backup of the security database in a format that is upwardly compatible.

IMPORTANT Do not delete *ISC4.GDB* when you uninstall. It is nearly impossible to safely remove the security database, given that another InterBase-enabled application might have added user configurations to the file before or after you installed your application.

Installing GDS32.DLL and INTERBASE.MSG

GDS32.DLL is the client application interface library, and *INTERBASE.MSG* contains the text of all the client and server error messages. These files are required both in a client installation and in a server installation.

- If you found an existing copy of *GDS32.DLL* on the system during the preinstall checks, you should not install your copy of *GDS32.DLL* over the existing one unless yours is a more recent version. Use the Windows API to determine the **file version** of an existing copy of the DLL. If there is no file version, then this DLL is from InterBase 4.0 or 4.1. *Do not install over version 4.0 or 4.1 files*—you should abort the installation at this point and insist that the user remove the old version of InterBase.
- Do not install *GDS32.DLL* over a copy of that DLL that is newer than the one you are installing.
- After you have followed all the guidelines above to determine that it is appropriate to do so, copy *GDS32.DLL* into the Windows system directory, *%SYSTEM32%*.
- You should make sure the messages file is matched with the *GDS32.DLL*. If you install an upgraded *GDS32.DLL*, you must also install a new *INTERBASE.MSG*. If you do not install *GDS32.DLL* because a newer copy already exists on the system, do not install *INTERBASE.MSG*. Compare the modification date of the MSG file with that of the DLL file; they will have similar modification dates if they go together. As of InterBase 5.0 and later, the dates of all InterBase product files are artificially set to reflect the release date and product version.
- After you have installed these files, update the registry to reflect a reference count for *C:\PROGRAM FILES\INTERBASE CORP\INTERBASE\INTERBASE.MSG* and *%SYSTEM32%\GDS32.DLL*. See “Shared files and reference counts” on page 15.

Installing other files

You should install all other files for client or server operation at this stage. Most files go in the InterBase root directory as denoted by the registry value:

```
HKEY_LOCAL_MACHINE
  SOFTWARE
    InterBase Corp
      InterBase
        CurrentVersion RootDirectory
```

This is noted as *%INTERBASE%* in the lists below.

Minimum server installation

The minimum set of files necessary for server operation are:

- *%INTERBASE%\BIN\IBSERVER.EXE*
- *%INTERBASE%\IBCONFIG*
- *%INTERBASE%\IB_LICENSE.DAT*
(see “Installing software activation keys” on page 13)
- *%INTERBASE%\INTERBASE.MSG*
(see “Installing GDS32.DLL and INTERBASE.MSG” on page 12)
- *%INTERBASE%\ISC4.GBK* and *%INTERBASE%\ISC4.GDB*
- *%SYSTEM32%\GDS32.DLL*
- *%SYSTEM32%\MSVCRT.DLL*

Minimum client installation

The minimum set of files necessary for client operation are:

- *%INTERBASE%\IB_LICENSE.DAT*
(see “Installing software activation keys” on page 13)
- *%INTERBASE%\INTERBASE.MSG*
(see “Installing GDS32.DLL and INTERBASE.MSG” on page 12)
- *%SYSTEM32%\GDS32.DLL*
(see “Installing GDS32.DLL and INTERBASE.MSG”)
- *%SYSTEM32%\MSVCRT.DLL*

Installing software activation keys

There are multiple options for activating InterBase client functionality and server functionality. Refer to Chapter 3 of the InterBase 5.5 *Operations Guide* for details on these options. InterBase software functionality is activated by keys representing distinct client and server options. Installing each key correctly is important for both client installations and server installations.

The keys are stored as ASCII strings in the file *IB_LICENSE.DAT* in the InterBase root directory. Software activation keys appear one per line.

You can install the keys while you install the InterBase software, before you start the InterBase service. If you install them after the service has started, they do not take effect until you restart the service. The InterBase service does not start if there are no valid server keys.

You must append to rather than overwrite an existing key file, because another installation of InterBase might have installed keys to enable other functionality. If *IB_LICENSE.DAT* does not exist prior to your installation, create it first.

The capabilities activated on the server are the union of the capabilities activated by each key line. Therefore, appending one key file to another effectively merges the two.

Use only keys that you have been given expressly as deployment keys from InterBase Software Corporation. Refer to *LICENSE.TXT* in the InterBase root directory for the legal text of the InterBase license agreement.

Windows registry information

A crucial step during installation of InterBase client or server is to configure entries in the Windows registry database. Without properly performing the registry configuration, InterBase might not function at all for your application or for other applications which use InterBase on the same host.

Use of the Windows registry database

There are several reasons for entries in the registry:

- To provide information about the directory where InterBase files are installed
- To configure automated invocation of the InterBase service
- To track reference counts on shared files so that uninstallation does not remove a file on which another package depends
- To allow access to InterBase files on the system path (Windows NT only; use the `PATH` environment variable in `C:\AUTOEXEC.BAT` on Windows 95)

Installing InterBase registry information

The following command-line tool, which is included in the InterBase distribution, performs the majority of the registry configuration. It does not maintain reference counts on files. You can invoke this command from your installation application.

```
instreg install "C:\Program Files\InterBase Corp\InterBase"
```

The argument is the directory in which you installed InterBase; substitute your choice in for the path given above.

You can also create registry key items with your installation authoring tools, or with the Windows API.

InterBase use count

When you install the InterBase software, increment the registry value `UseCount` at each level shown below:

```
HKEY_LOCAL_MACHINE
  Software
    InterBase Corp: UseCount
      InterBase: UseCount
        CurrentVersion: UseCount
```

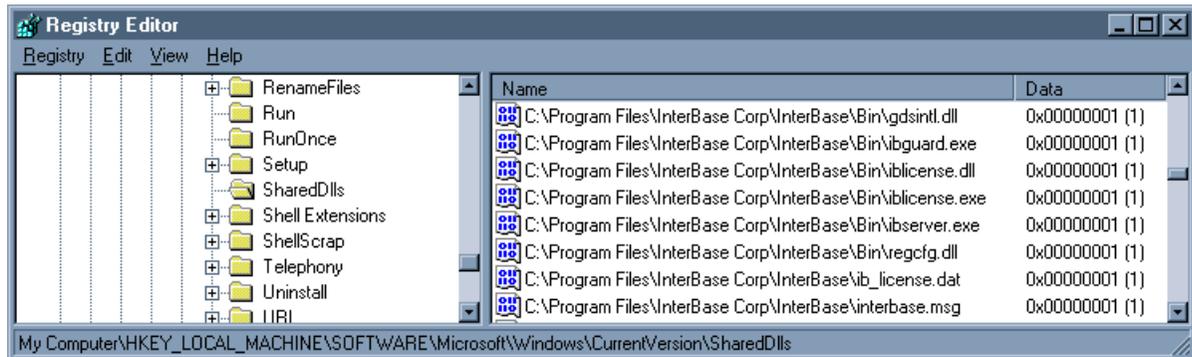
This indicates that you have installed a copy of InterBase. In the event that another application installs and subsequently uninstalls InterBase, the `UseCount` dictates whether the uninstallation routine should delete the InterBase registry key and product files or leave them in place. Only when the uninstallation decrements the `UseCount` and it reaches zero is it okay to remove the InterBase registry key and files.

Shared files and reference counts

Files that are shared between multiple packages, or multiple installations of the same package, must maintain reference counts in the registry.

Even if your install does not copy a given file to the system because a newer version already exists, you should still update the reference count so that the uninstallation of another package does not delete a file on which your package depends.

FIGURE 2.1 SharedDLLs registry key



The key of the registry is:

```
HKEY_LOCAL_MACHINE
  Software
    Microsoft
      Windows
        CurrentVersion
          SharedDLLs
```

The named values in this key are full pathnames of files that maintain reference count information.

The value data are numbers, indicating the number of software packages that depend on the respective file. When you install InterBase, you should increment the number associated with each file. When you uninstall, you should decrement the number.

See Appendix B, “InterBase Registry Reference,” for a list of the files to track in the SharedDLLs key.

Configuring the TCP/IP services entry

InterBase must have an entry in the *SERVICES* file to provide the mapping between the InterBase service by name and its port address on the server.

Note This is necessary on both server and client. It is necessary on Windows 95, Windows NT, and any other client or server operating system.

Check the file for an entry that reads:

```
gds_db          3050/tcp
```

If the entry is not there, add it to the file. *SERVICES* is a simple ASCII format file, and it is okay to append the `gds_db` entry to the end of the file, as long as it occupies a line of text by itself, with CR/LF (newline) characters at the end of the line.

The *SERVICES* file is located in:

- `C:\WINDOWS\SERVICES` on Windows 95
- `%SYSTEM32%\DRIVERS\ETC\SERVICES` on Windows NT

If the *SERVICES* file is not present, then TCP/IP is not installed on the system. You must install TCP/IP and configure the *SERVICES* file before connecting to a remote database.

Note You don't need to configure the *SERVICES* file if you don't use TCP/IP. For example, if you use NetBEUI for an InterBase client to connect to Windows NT server, or IPX/SPX for an InterBase client to connect to a NetWare server.

Windows service configuration

On Windows NT, InterBase can run as a service, that is, in the background even when no user is logged in at the NT console. This section describes the steps necessary to configure and start the InterBase service.

Windows 95 does not support services.

Make sure that the InterBase Server is not running while you are installing, configuring, and starting InterBase. See "Check if an InterBase server is running." on page 11.

Configuring InterBase as an NT service

Use the following command-line utility that is included with InterBase 5.5 to configure the InterBase service on Windows NT:

```
instsvc install "C:\Program Files\InterBase Corp\InterBase" -auto
```

Note that `instsvc` configures only the InterBase server to run as an NT service; the InterBase Guardian service is not configured by `instsvc`. Guardian is a process that monitors the InterBase server process and restarts it if it terminates abnormally. Guardian is optional, but if you choose to run it, you must use the Windows API to configure it as a service.

EXAMPLE 2.2 Creating the Guardian service

```
SC_HANDLE service;
if (!(service = CreateService((SC_HANDLE) manager,
    "InterBaseGuardian",
    "InterBase Guardian",
    SERVICE_ALL_ACCESS,
    SERVICE_WIN32_OWN_PROCESS|SERVICE_INTERACTIVE_PROCESS,
    SERVICE_AUTO_START, /* alternative is SERVICE_DEMAND_START */
    SERVICE_ERROR_NORMAL,
    "C:\\Program Files\\InterBase Corp\\InterBase\\bin\\ibguard.exe -s",
    NULL, NULL, NULL, NULL, NULL)))
    return 1; /* error */
CloseServiceHandle(service);
```

```

if (!(service = CreateService((SC_HANDLE) manager,
    "InterBaseServer",
    "InterBase Server",
    SERVICE_ALL_ACCESS,
    SERVICE_WIN32_OWN_PROCESS|SERVICE_INTERACTIVE_PROCESS,
    SERVICE_DEMAND_START, /* must be DEMAND if Guardian starts it */
    SERVICE_ERROR_NORMAL,
    "C:\\Program Files\\InterBase Corp\\InterBase\\bin\\ibserver.exe -s -g",
    NULL, NULL, NULL, NULL, NULL))
    return 1; /* error */
CloseServiceHandle(service);
return 0;

```

Configure the entries with the `-s` option to invoke them as services. The `ibserver` service should also be invoked with the `-g` option if and only if it is used with Guardian.

Note A process that configures services must have Administrator privileges.

Configuring InterBase as a Windows 95 peer-to-peer server

InterBase can function as a database server on Windows 95, but you should not use Windows 95 as a server platform when you require a high-performance, stable server for multiple clients.

To configure the InterBase service to start upon boot of a Windows 95 host, add `ibserver.exe` to the **Run** registry key. See Appendix B, "InterBase Registry Reference" for details on the **Run** key.

If you choose to run the Guardian service, add `ibguard.exe` instead to the **Run** key; in that configuration, the Guardian starts the InterBase server.

Starting InterBase services

Once the InterBase service is registered with the system, you can start the service by running the command-line tool:

```
instsvc start
```

Instsvc does not start the Guardian service. You must do this with the Windows API.

EXAMPLE 2.3 Starting the Guardian service

```

SC_HANDLE service;
if (!(service = OpenService(manager, "InterBaseGuardian",
    SERVICE_ALL_ACCESS)))
    return 1; /* error */
if (!StartService(service, 0, NULL))
{
    CloseServiceHandle(service);
    return 1; /* error */
}
CloseServiceHandle(service);
return 0;

```

If you start Guardian, it starts the InterBase service. You must not manually start both.

Note A process that configures services must have Administrator privileges.

ODBC installation

To enable client applications to use the INTERSOLV® InterBase ODBC 3.0 driver, you must install the files listed in the table below. These files are distributed as part of the InterBase 5.5 product.

File pathname	Purpose
%SYSTEM32%\IBINT13.DLL	INTERSOVLV® InterBase ODBC driver
%SYSTEM32%\IBBAS13.DLL	
%SYSTEM32%\IBUTL13.DLL	
%SYSTEM32%\IVODBC.LIC	
%SYSTEM32%\IBDRV13.HLP	INTERSOVLV® InterBase ODBC driver Windows help files
%SYSTEM32%\IBDRV13.CNT	
%SYSTEM32%\IBINT13.HLP	

TABLE 2 Files in the ODBC component

ODBC client installation also requires installation and configuration of the InterBase client files. See “Installing GDS32.DLL and INTERBASE.MSG” on page 12.

Note InterBase Software Corporation cannot legally provide the ODBC redistribution procedure to detail driver manager configuration and data source configuration.

To get the ODBC redistribution instructions, see the Microsoft ODBC 3.0 SDK documentation. You can download the ODBC SDK from the Microsoft web site and read the Microsoft ODBC SDK license terms and documentation. Refer to the following URL:

<http://www.microsoft.com/data/odbc/download.htm>

Uninstallation Procedure

This chapter details steps you should take to uninstall an embedded copy of InterBase as part of your own product uninstallation.

Stopping the InterBase service

Make sure you can stop the InterBase service without interfering with other applications that use InterBase. Another application package might be in operation, connecting to the same service you are uninstalling.

The safest policy is to abort the uninstall routine if the InterBase service is running (see “Check if an InterBase server is running.” on page 11), and insist that the user manually stop the service using the Windows NT Control Panel.

Uninstalling InterBase

Follow the steps below to remove the InterBase server product entirely. You can use the InterBase utilities for some of this, or implement code to do it using the Windows API.

1. Decrement reference counts.

Before removing any InterBase services or files, first decrement the reference counts:

```
HKEY_LOCAL_MACHINE
  Software
    InterBase Corp: UseCount
      InterBase: UseCount
        CurrentVersion: UseCount
    Microsoft
      Windows
        SharedDLLs: *
```

See Appendix B, “InterBase Registry Reference” for a list of InterBase-related files in the SharedDLLs registry key.

Note If the reference counts are greater than zero after you decrement them, another package has installed InterBase, and may need to use it. If this is the case, *stop here* and do not proceed to the following steps.

Do not remove the product if the reference count is zero *before* you decrement it: it could mean that another uninstall improperly registered a file and its reference count in the registry, and therefore your uninstall cannot infer that it is safe to remove the file without affecting another application.

2. Shut down the service.

If you are certain that it is safe to stop the service programmatically, use the InterBase utility:

```
instsvc stop
```

This stops both the InterBase service and the Guardian service.

Alternately, you can use the Windows API to stop the service.

EXAMPLE 3.1 Stopping the Guardian service

```
SC_HANDLE service;
SERVICE_STATUS svc_status;
if (!(service = OpenService(manager, "InterBaseGuardian",
    SERVICE_ALL_ACCESS)))
    return 1; /* error */
if (!ControlService(service, SERVICE_CONTROL_STOP, &svc_status))
{
    CloseServiceHandle(service);
    return 1; /* error */
}
/* Wait for the service to actually stop before returning. */
do {
    if (!QueryServiceStatus(service, &svc_status))
    {
        CloseServiceHandle(service);
        return 1; /* error */
    }
} while (svc_status.dwCurrentState == SERVICE_STOP_PENDING);
CloseServiceHandle(service);
return 0;
```

Note A process that configures services must have Administrator privileges.

3. Remove the service.

You can remove InterBase from its place as a Windows NT service using instsvc:

```
instsvc remove
```

You can remove the Guardian service and the InterBase service using the Windows API:

EXAMPLE 3.2 Removing the Guardian service

```
SC_HANDLE service;
if (!(service = OpenService(manager, "InterBaseGuardian",
    SERVICE_ALL_ACCESS)))
{
    return 1; /* error */
}
```

```
if (!DeleteService(service))
{
    CloseServiceHandle(service);
    return 1; /* error */
}
CloseServiceHandle(service)
return 0;
```

4. Remove registry items.

If the UseCount of InterBase reaches zero, you can remove registry items using your installation authoring tools.

Refer to Appendix B, “InterBase Registry Reference,” for a list of registry items you should consider removing.

5. Delete files.

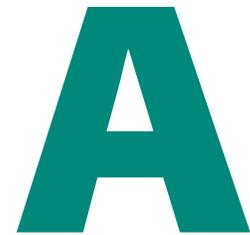
If a reference count in the **SharedDLLs** key reaches zero, you can safely delete the file.

If UseCount reaches zero, delete the files under the InterBase root directory and also the *GDS32.DLL* library in the Windows system directory.

Do not delete *ISC4.GDB* and *ISC_CONFIG*. It is customary to leave configuration files like these even after uninstalling the software. The user may choose to reinstall and the information in these files may not exist anywhere else.

IMPORTANT Do not delete *MSVCRT.DLL*.





Files by Component

Below is a list of all files in the InterBase product.

A full installation of InterBase 5.5 including documentation and shared DLL's uses a total of 23,846KB in the InterBase installation directory and 2843KB in the Windows system directory.

Most of the filenames given below are relative to the InterBase installation root. This is typically *C:\Program Files\InterBase Corp\InterBase*. Other paths are in the Windows system directory, *%SYSTEM32%*.

The table below describes each file's function and any special considerations. The table also gives information about which files are essential for proper functioning of the client and the server, and whether reference counts for the files should be tracked in the registry. Files that appear in more than one component are marked with an †.

Filename	Size	Description / Notes	Req'd on client	Req'd on server	Shared DLL
InterBase: Server	4578KB				
.\Bin\ibguard.exe	22KB	InterBase Guardian executable	no	no	Yes
.\Bin\ibserver.exe	1318KB	InterBase Server executable	no	Yes	Yes
.\Bin\gdsintl.dll	581KB	International character sets and collation information	no	no	Yes
.\ibconfig	1KB	File of server configuration information	no	Yes	no
.\ib_license.dat	1KB	File with keys that enable client or server functionality; put deployment keys in this file	Yes	Yes	Yes
.\interbase.log	—	Error log is created by client and server if not present; <i>you do not distribute it</i>	no	no	no
.\interbase.msg†	117KB	Error messages for client and server software	Yes	Yes	Yes
.\isc4.gbk	3KB	Backup of factory-ship (empty) security database, used if the security database is corrupted	no	Yes	no
.\isc4.gdb	244KB	Security database, storing usernames and passwords; <i>never uninstall or overwrite this file</i>	no	Yes	no

Filename	Size	Description / Notes	Req'd on client	Req'd on server	Shared DLL
.\license.txt†	18KB	Legal text of InterBase client and server license agreement; <i>you must distribute this with all copies of InterBase client and server</i>	Yes	Yes	no
.\readme.txt†	2KB	Brief notes about this InterBase version, pointers to documentation	no	no	no
.\ReleaseNotes.pdf†	455KB	InterBase 5.5 summary; viewable with Acrobat Reader	no	no	no
.\Bin\iblicense.exe†	30KB	InterBase License Manager	no	no	Yes
.\Bin\iblicense.dll†	20KB				
.\Bin\iblockpr.exe	69KB	Lock table analysis; required to be installed on the server to enable lock statistics report by Server Manager for Windows (IBMGR32)	no	Yes	no
.\Bin\instreg.exe†	6KB	Utility to install/remove most InterBase registry database entries; use either this or the Windows API	no	no	no
.\Bin\instsvc.exe†	8KB	Utility to install/start/stop/uninstall the InterBase service; use either this or the Windows API	no	no	no
.\Bin\lgstat.exe	25KB	Database analysis; required to be installed on the server to enable database statistics report by Server Manager for Windows (IBMGR32)	no	Yes	no
.\Bin\regcfg.exe	30KB	InterBase Service Configuration Tool	no	no	no
.\Bin\regcfg.dll	311KB	InterBase Service Configuration application extension			Yes
.\Bin\lbserver.hlp	21KB	InterBase server-specific help and contents	no	no	no
.\Bin\lbserver.cnt	1KB				
.\Bin\Perform.hlp	33KB	Brief tips on improving performance, help and contents	no	no	no
.\Bin\Perform.cnt	1KB				
%SYSTEM32%\mfc42.dll	933KB	Microsoft runtime library	no	Yes	Yes
%SYSTEM32%\gds32.dll†	328KB	InterBase client library; used by server for local access	Yes	Yes	Yes
InterBase: Client		1342KB			
.\interbase.msg†	117KB	Error messages for client and server software	Yes	Yes	Yes
.\license.txt†	18KB	Legal text of InterBase client and server license agreement; <i>you must distribute this with all copies of InterBase client and server</i>	Yes	Yes	no
.\readme.txt†	2KB	Brief notes about this InterBase version, pointers to documentation	no	no	no
.\ReleaseNotes.pdf†	455KB	InterBase 5.5 summary; viewable with Acrobat Reader	no	no	no
.\Bin\iblicense.exe†	30KB	InterBase License Manager	no	no	Yes
.\Bin\iblicense.dll†	20KB				
.\Bin\instreg.exe†	6KB	Utility to install/remove most InterBase registry database entries; use either this or the Windows API	no	no	no

Filename	Size	Description / Notes	Req'd on client	Req'd on server	Shared DLL
.\Bin\instsvc.exe†	8KB	Utility to install/start/stop/uninstall the InterBase service; use either this or the Windows API	no	no	no
.\Bin\lb32.hlp	57KB	Master help file, has contents of other help files	no	no	no
.\Bin\lb32.cnt	3KB				
.\Bin\lbgloss.hlp	25KB	InterBase glossary & definitions help and contents	no	no	no
.\Bin\lbgloss.cnt	1KB				
%SYSTEM32%\gds32.dll†	328KB	InterBase client library; used by server for local access	Yes	Yes	Yes
InterBase: Command tools	377KB	Total of Command tools subcomponents			
InterBase: Command tools: database management	232KB				
.\Bin\gbak.exe	177KB	Backup utility; required to be installed on the server to enable backup or restore by Server Manager for Windows (IBMGR32)	no	Yes	no
.\Bin\gfix.exe	33KB	Database configuration utility; required to be installed on the server to enable database configuration by Server Manager for Windows (IBMGR32)	no	Yes	no
.\Bin\gsplit.exe	22KB	Splits output of GBAK into multiple files	no	no	no
InterBase: Command tools: user management	27KB				
.\Bin\gsec.exe†	27KB	Security database utility; required to be installed on the server to enable user administration by Server Manager for Windows (IBMGR32)	no	Yes	no
InterBase: Command tools: database query	118KB				
.\Bin\isql.exe	118KB	Console-mode query shell and SQL script interpreter	no	no	no
InterBase: GUI tools	1699KB	Total of GUI tools subcomponents			
InterBase: GUI tools: database management	1398KB				
.\Bin\comdg32.exe	235KB	Communications Diagnostics Tool	no	no	no
.\Bin\comdg32.dll	92KB				
.\Bin\comdg32.ini	1KB				
.\Bin\Comdg32.hlp	12KB	Communications Diagnostics tool help and contents	no	no	no
.\Bin\Comdg32.cnt	1KB				
.\Bin\ibmgr32.exe	786KB	InterBase Server Manager for Windows	no	no	no
.\Bin\gbak32.dll	192KB				
.\Bin\lbnmgr32.hlp	74KB	InterBase Server Manager help and contents	no	no	no
.\Bin\lbnmgr32.cnt	5KB				
InterBase: GUI tools: user management	27KB				

Filename	Size	Description / Notes	Req'd on client	Req'd on server	Shared DLL
.\Bin\gsec.exe†	27KB	Security database utility; required to be installed on the server to enable user administration by Server Manager for Windows (IBMGR32)	no	Yes	no
InterBase: GUI tools:					
database query					
274KB					
.\Bin\wisql32.exe	243KB	Windows Interactive SQL query tool	no	no	no
.\Bin\Wisql32.hlp	29KB	Windows ISQL help and contents	no	no	no
.\Bin\Wisql32.cnt	2KB				
InterBase: ODBC					
790KB INTERSOLV® InterBase ODBC 3.0					
%SYSTEM32%\ibint13.dll	130KB	ODBC driver libraries; required on client host to enable	no	no	Yes
%SYSTEM32%\ibbas13.dll	301KB	ODBC client applications to interface with InterBase client library			
%SYSTEM32%\ibutl13.dll	293KB				
%SYSTEM32%\ivodbc.lic	1KB	ODBC license file	no	no	Yes
%SYSTEM32%\ibdrv13.hlp	46KB	ODBC driver Windows help files	no	no	Yes
%SYSTEM32%\ibdrv13.cnt	2KB				
%SYSTEM32%\ibint13.hlp	17KB				
InterBase: Developer tools					
626KB					
.\Bin\gpre.exe	322KB	Embedded SQL code preprocessor; used only during application development	no	no	no
.\Include\ibase.h	81KB	C/C++ header file for InterBase client SDK interface	no	no	no
.\Include\ib_util.h	1KB	Utility functions to supplement InterBase API; C and Pascal	no	no	no
.\Include\ib_util.pas	1KB	include files			
.\Include\iberror.h	27KB	InterBase error code definitions; automatically included by ibase.h	no	no	no
.\Lib\gds32.lib	39KB	Borland C++ client import library	no	no	no
.\Lib\gds32_ms.lib	145KB	Microsoft Visual C++ client import library	no	no	no
.\Lib\ib_util.lib	1KB	Utility import library	no	no	no
.\Lib\ib_util_ms.lib	2KB	Utility import library	no	no	no
.\Lib\ib_udf.dll	7KB	InterBase standard UDF dynamic library	no	Yes	no
.\Lib\ib_util.dll	4KB	Utility dynamic library	no	Yes	no
InterBase: Documentation					
16086KB Online books; viewable with Acrobat Reader					
.\Doc\APIGuide\APIGuide.pdf	3220KB	InterBase 5.5 API Guide	no	no	no
.\Doc\DataDef\DataDef.pdf	2236KB	InterBase 5.5 Data Definition Guide	no	no	no
.\Doc\LangRef\LangRef.pdf	2622KB	InterBase 5.5 Language Reference	no	no	no
.\Doc\OpGuide\OpGuide.pdf	2416KB	InterBase 5.5 Operations Guide	no	no	no
.\Doc\ProgGd\ProgGd.pdf	2843KB	InterBase 5.5 Programmer's Guide	no	no	no

Filename	Size	Description / Notes	Req'd on client	Req'd on server	Shared DLL
.\Doc\Tutorial\Tutorial.pdf	745KB	Teach Yourself InterBase 5.5	no	no	no
.\Doc\Tutorial*.sql	60KB				
.\Doc\IB5index.pdx	2KB	Acrobat index, to enable online books to be searchable	no	no	no
.\Doc\IB5index*	1945KB				
InterBase: Examples	1298KB				
InterBase: Examples: Database	1089KB				
.\Examples\database\employee.sql	2KB	Script to act on <i>EMPLOYEE.GDB</i>	no	no	no
.\Examples\database\employee.gbk	72KB	Backup of <i>EMPLOYEE.GDB</i>	no	no	no
.\Examples\database\employee.gdb	458KB	Employee & sales database	no	no	no
.\Examples\database\intlemp.gbk	80KB	Backup of <i>INTLEMP.GDB</i>	no	no	no
.\Examples\database\intlemp.gdb	477KB	<i>EMPLOYEE.GDB</i> with international character sets	no	no	no
InterBase: Examples: API	209KB				
.\Examples\API*.h, *.c, *.e, *.def, *.sql	177KB	Example API and embedded SQL programs: C source and supporting DDL files	no	no	no
.\Examples\API\Makefile.bc	9KB	Borland C++ Makefile for examples	no	no	no
.\Examples\API\Makefile.ms	9KB	Microsoft Visual C++ Makefile for examples	no	no	no
.\Examples\ib_udf.sql	16KB	SQL script to enable UDFs in a given database	no	no	no
InterBase: Common	1139KB				
.\ibuninst.exe	277KB	ISC uninstallation application	Yes	Yes	Yes
.\ibinstall.dll	65KB	ISC installation application extension; called by ibuninst.exe and setup.exe	Yes	Yes	Yes
%SYSTEM32%\setupapi.dll	316KB	Win32 setup API, called by ibinstall.dll; never deleted or overwritten	Yes	Yes	Yes
%SYSTEM32%\cfgmgr32.dll	57KB	Win32 setup API, called by ibinstall.dll; never deleted or overwritten	Yes	Yes	Yes
%SYSTEM32%\msvcr7.dll	272KB	Microsoft runtime library; never deleted	Yes	Yes	Yes
%SYSTEM32%\odbc32.dll	86KB	ODBC core file; ODBC installer; never deleted	Yes	Yes	Yes
%SYSTEM32%\odbcint.dll	66KB	ODBC core file; translation resources for installer; never deleted	Yes	Yes	Yes
.\ibuninst.xxx	—	ISC uninstall information	no	no	no

B

InterBase Registry Reference

HKEY_LOCAL_MACHINE

Software\InterBase Corp

UseCount

The “UseCount” item denotes how many times the InterBase product has been installed on this server. Earlier versions of InterBase did not set this item in the registry, so if your install code finds the “Software\InterBase Corp” key, but no UseCount item, assume that the UseCount data was meant to be “1”, and your code should create the item and set its value to “2”. If the UseCount item does exist, increment it when you install InterBase. Decrement when you uninstall InterBase. If you reduce the value to zero, delete the registry key.

You should create the UseCount value under the InterBase Corp, InterBase, and subordinate CurrentVersion registry keys.

Software\InterBase Corp\InterBase

UseCount

See UseCount above.

Software\InterBase Corp\InterBase\CurrentVersion

UseCount

See UseCount above.

DefaultClientMode = “-r”

You can safely ignore this value in your custom installation application. It is used only by the old-style multi-process InterBase server technology.

DefaultMode

You might see this value after installing InterBase; however it created by mistake in some versions of the InterBase installer; it is supposed to be the DefaultClientMode value. It is safe to ignore this value in your installation application.

GuardianOptions = “1”

“1” = autostart, “0” = manual start

RootDirectory = "C:\Program Files\InterBase Corp\InterBase"

This determines where the ibserver process looks to find *IB_LICENSE.DAT* and *INTERBASE.MSG*.

ServerDirectory = "C:\Program Files\InterBase Corp\InterBase\bin\"

This is the location where *IBSERVER.EXE* and *IBGUARD.EXE* are installed.

Version = "WI-V5.5.0"

This is the version of InterBase you are installing.

Software\Microsoft\Windows\CurrentVersion\Run

Note Configure *only one* of the following server Run items on Windows 95. Also note that use of these registry items is mutually exclusive with use of the Windows 95 Startup program group. Do not configure both.

InterBase Server = "C:\Program Files\InterBase Corp\InterBase\Bin\ibserver.exe"

Use this item on Windows 95 to configure the system to start the InterBase Server automatically during boot. This configuration is not used on Windows NT; instead configure InterBase as a service.

InterBase Guardian = "C:\Program Files\InterBase Corp\InterBase\Bin\ibguard.exe"

Use this item on Windows 95 to configure the system start the InterBase Guardian automatically during boot. This configuration is not used on Windows NT; instead configure InterBase as a service.

Software\Microsoft\Windows\CurrentVersion\SharedDlls

C:\Program Files\InterBase Corp\InterBase\iblicense.dat
 C:\Program Files\InterBase Corp\InterBase\interbase.msg
 C:\Program Files\InterBase Corp\InterBase\bin\ibserver.exe
 C:\Program Files\InterBase Corp\InterBase\bin\ibguard.exe
 C:\Program Files\InterBase Corp\InterBase\bin\gdsintl.dll
 C:\Program Files\InterBase Corp\InterBase\bin\iblicense.dll
 C:\Program Files\InterBase Corp\InterBase\bin\iblicense.exe
 C:\Program Files\InterBase Corp\InterBase\bin\regcfg.dll
 %SYSTEM32%\GDS32.DLL
 %SYSTEM32%\mfc42.dll
 %SYSTEM32%\msvcrt.dll
 %SYSTEM32%\ODBCCP32.DLL
 %SYSTEM32%\ODBCINT.DLL

These items in the SharedDlls key are the reference counts for shared InterBase files. See "Shared files and reference counts" on page 15.

Note The SharedDlls registry key is not present on a freshly installed Windows system that has no other software. Your installation application must contain logic to check that the key is present before creating values under that key. The SharedDlls registry key is created by most software packages, including those that make use of InstallShield technology.

Software\Microsoft\Windows\CurrentVersion\Uninstall\InterBase

Note The following items are used only by the InterBase product uninstallation. You as a VAR writing a customized install/uninstall should implement your own uninstall solution. They are included here only for historical documentation purposes.

DisplayName = InterBase

This is the string that appears in **Control Panel | Add/Remove Software...**

UninstallString = "C:\Program Files\InterBase Corp\InterBase\ibuninst.exe" "C:\Program Files\InterBase Corp\InterBase\ibuninst.001"

This is the command to run to uninstall InterBase.