*GemStone*®

# *GemConnect Installation Guide*

For use with GemStone/S
on Windows on Intel-compatible Systems

July 2010

Version 2.2.2

G<small>EM</small>S<small>TONE</small>S™

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## *Preface*

This document explains how to install GemConnect version 2.2.2.

For information regarding new and modified features in this release of GemConnect, please refer to the *GemConnect Release Notes* for version 2.2.2.

These documents are also available on the GemStone Technical Support website, as described below.

## Technical Support

GemStone's Technical Support website provides a variety of resources to help you use GemStone products.

#### GemStone Web Site: http://support.gemstone.com

Use of this site requires an account, but registration is free of charge and provides immediate access.

All GemStone product documentation is provided in PDF form on this website. Documentation is also available at

#### http://www.gemstone.com/documentation

In addition to documentation, the support.gemstone.com website provides:

▸ Bugnotes, identifying performance issues or error conditions that you may encounter when using a GemStone product.

▸ TechTips, providing information and instructions that are not otherwise included in the documentation.

▸ Compatibility matrices, listing supported platforms for GemStone product versions.

This material is updated regularly; we recommend checking this site on a regular basis.

## Help Requests

You may need to contact Technical Support directly, if your questions are not answered in the documentation or by other material on the Technical Support site.

Requests for technical assistance may be submitted online, or by email or by telephone. We recommend you use telephone contact only for more serious requests that require immediate evaluation, such as a production system down. The support website is the preferred way to contact Technical Support.

**Website: http://techsupport.gemstone.com**

**Email: support@gemstone.com**

**Telephone: (800) 243-4772 or (503) 533-3503**

Your GemStone support agreement may identify specific designated contacts who are responsible for submitting all support requests to GemStone. If so, please submit your information through those individuals.

If you are reporting an emergency by telephone, select the option to transfer your call to the Technical Support administrator, who will take down your customer information and immediately contact an engineer. Non-emergency requests received by telephone will be placed in the normal support queue for evaluation and response.

When submitting a request, please include the following information:

▸ Your name, company name, and GemStone server license number.

▸ The versions of all related GemStone products, and of any other related products, such as Oracle.

▸ The operating system and version you are using.

▸ A description of the problem or request.

▸ Exact error message(s) received, if any, including log files if appropriate.

Technical Support is available from 8am to 5pm Pacific Time, Monday through Friday, excluding GemStone holidays.

## 24x7 Emergency Technical Support

GemStone offers, at an additional charge, 24x7 emergency technical support. This support entitles customers to contact us 24 hours a day, 7 days a week, 365 days a year, for issues impacting a production system. For more details, contact your GemStone account manager.

## Training and Consulting

Consulting and training for all GemStone products are available through GemStone's Professional Services organization. GemStone periodically offers training courses at our offices in Beaverton, Oregon, or training can be arranged at your location. Contact your GemStone account representative for more details or to obtain consulting services.

*Contents*

## Chapter 1. Installing GemConnect version 2.2.2

*Chapter*

# 1 *Installing GemConnect version 2.2.2*

This document describes how to install GemConnect 2.2.2 on workstations running the Windows operating system. It also explains how to upgrade an existing GemConnect installation.

Please review the *GemConnect Release Notes* for details of the changes before upgrading to this version. If you are upgrading from a version earlier than 2.2, please review the Release Notes for each intermediate version, to see the full set of changes.

We recommend that this installation be done by an experienced system administrator. If you need more information, the *Installation Guide* for your GemStone/S server tells how to install the GemStone system, and lists any additional requirements for network communications between your workstation and GemStone.

For GemConnect to work properly with the rest of the GemStone system and your relational server, you must follow every step of this installation procedure.

## System Requirements

Before installing GemConnect, ensure that the following system requirements are satisfied.

### GemStone server

▸ A GemStone/S object server, installed and started according to instructions in the appropriate *Installation Guide.*

GemConnect version 2.2.2 is compatible with GemStone/S version 6.2 and later. Older versions may require recompile and relink in order to load the user action library.

## Platform

‣ A supported platform for the GemStone server product and version you will be using. See the *Installation Guide* for your GemStone server product for more information.

**Table 1.  Supported GemStone server versions and platforms for GemConnect v2.2.2**

| GemStone/S 6.5.7 | GemStone/S 64 Bit 2.3.1.6 | GemStone/S 64 Bit 2.4.4 |
|---|---|---|
| ‣ Solaris 2.8, 2.9, and 2.10<br>‣ AIX version 5.2, 5.3, and 6.1<br>‣ Linux Red Hat ES 5.0<br>‣ Windows XP<br>‣ Windows 2003<br>‣ Windows Vista<br>‣ Windows 7 | ‣ Solaris 2.9 and 2.10<br>‣ AIX version 5.3 and 6.1<br>‣ HP-UX 11.11 and 11.31 on PA-RISC<br>‣ Linux SuSE ES 10 | ‣ Solaris 2.9 and 2.10 on SPARC<br>‣ Solaris 2.10 on x86<br>‣ AIX version 5.3 and 6.1<br>‣ HP-UX 11.11 and 11.31 on PA-RISC<br>‣ HP-UX 11.31 on Itanium<br>‣ SuSE Linux ES 10 |

This Installation Guide provides instructions for installing GemConnect version 2.2.2 on GemStone/S servers running on Windows Platforms. To install GemConnect on GemStone/S or GemStone/S 64 Bit servers running on Unix and Linux Platforms, see the *GemConnect Installation Guide* for Unix and Linux.

## Disk Space

‣ Approximately 1 megabyte for GemConnect system files

## RAM

‣ 2 megabytes per GemStone session (See the *System Administration Guide* for other configuration recommendations.)

## Relational Database Server

‣ An Oracle 9i or later relational database server must be running and available via the `%ORACLE_HOME%` environment variable. GemConnect on Windows was built and tested with Oracle version 9.2.0. If you are not running with this version of Oracle, you may need to relink your GemConnect libraries. This is described in the *GemConnect Programming Guide*. If you have difficulty with this, contact GemStone Technical Support

‣ If GemStone and your relational database server run on different machines, you will also need Oracle Net9/Net10 (supersedes SQL*Net). Be sure that it is installed and running on the machine where GemStone will be running, so that GemStone will be able to communicate with the relational database.

## C compiler

See the *Installation Guide* for your GemStone server product and version for specific C compiler details.

A C compiler is required only for customizing GemConnect. It is used to relink with any changes you make in the C language source module provided with GemConnect,

or to relink with modules for other Oracle versions or GemStone libraries. You do not need a C compiler if you do not expect to relink GemConnect.

# Install GemConnect

These steps provide instructions to do the following:

▶ Create the GemConnect installation directory from the distribution media

▶ Setup the environment

▶ Install the GemConnect files in your GemStone repository

The process is the same whether you are installing GemConnect for the first time, or if you are upgrading from a previous GemConnect version.

**Step 1.** Log in to a machine that has the GemStone repository server installed on it.

Log in to the same user account that was used to install GemStone. Make sure the `%GEMSTONE%` environment variable is set.

**Step 2.** Create an installation directory.

You can install the GemConnect files into almost any directory. Administration is easier, however, if you install GemConnect in a directory you create from top-level directory you installed the GemStone server software. For example, if the GemStone server directory is:

`c:\server\GemStone6.5.7-x86.Windows_NT`

then install GemConnect under `c:\server`. For example,

**C:\server> mkdir** `c:\server\GemConnect2.2.2`

From now on, we'll refer to your site's Gemstone installation directory, such as `c:\server\GemStone6.5.7-x86.Windows_NT`, as *GSInstallDir*, and your site's GemConnect directory, such as `c:\server\GemConnect2.2.2`, as *GCInstallDir*. When you see *GSInstallDir* or *GCInstallDir* in a command or pathname, substitute the name of the corresponding directory.

Move to the disk drive and directory where you will install GemConnect software:

`c:\>` **cd** *GCInstallDir*

**Step 3.** Copy the GemConnect distribution file to this directory. GemConnect is provided as a zipped archive file with a name similar to `GemConnect-2.2.2+oracle9i-x86.Windows_NT.zip`.

**Step 4.** Unzip the distribution file using unzip. For example:

`c:\server\GemConnect2.2.2>` **unzip GemConnect-2.2.2+oracle9i-x86.Windows_NT.zip**

*InstallDir* now contains the contains the following subdirectoriesand files:

`PACKING.txt     verora.txt     doc     make     ualib`

See Table 1.3 for tables describing the contents of each file and directory.

**Step 5.** Set the GemStone environment.

Using the control panel, set the $GEMSTONE and $path environment variables to point to the GemStone installation.

**Step 6.** Copy the appropriate GemConnect shared library into the GemStone object server shared library directory.

First, move to the `ualib` subdirectory of the GemConnect installation directory.

```
cd GCInstallDir\ualib
```

For example,

```
cd c:\server\GemConnect2.2.2\ualib
```

Next, copy the GemConnect for Oracle `.dll` file to the `%GEMSTONE%\ualib` directory. For example:

```
c:\server\GemConnect2.2.2\ualib>
    copy oraapi222-32.dll %GEMSTONE%\ualib
```

If you prefer, you can do this copy using the Windows Explorer GUI.

**Step 7.** Check the shared library file protection settings.

Check that GemConnect users have access to GemConnect directories and all the directories above them in the directory tree.

Make sure that the files have the appropriate permissions for your site.

# Add GemConnect to your GemStone Repository

You add GemConnect to your existing GemStone repository with the following steps.

> *Note*
> *The following examples assume a GemStone/S v6.5.7 server. Use the appropriate*
> *default names for your server installation. The procedure is the same for all server*
> *products and versions.*

**Step 1.** Back up your GemStone repository.

Before you begin the installation or upgrade, make sure a current backup of your GemStone repository exists. If you need to make one, use the GemStone backup method described in the *System Administration Guide.*

**Step 2.** Ask users to log off GemStone.

**Step 3.** Check to be sure a GemStone network server (NetLDI) process is running.

To create a NetLDI service with the default name of `netldi65`, type the following command at a Windows NT command prompt:

```
c:\> netldi create
```

To start a NetLDI process on your workstation, type the following command at a Windows command prompt:

```
c:\> netldi start
```

For information about additional options for the `netldi` commands, see the *System Administration Guide.*

**Step 4.** Set the Oracle environment for this user. The GemConnect filein loads the GemConnect library, which requires access to the Oracle libraries.

The ORACLE_HOME environment variable should be set to the directory containing the relational software.

Using the control panel, set the `path` environment variable to include the `%ORACLE_HOME%/lib` directory.

**Step 5.** Log in to the GemStone server as SystemUser, using linked Topaz. For instance:

```
c:/> topaz -l
topaz> set gemstone gemserver65
topaz> set user SystemUser password swordfish
topaz> login
[Info]: LNK client/gem GCI levels = 55/55
[Info]: User ID: SystemUser
[Info]: Repository: gemserver65
[Info]: Session ID: 3
[Info]: GCI Client Host: <Linked>
[Info]: Gem / Pgsvr PIDs: 4908 / -1
[Info]: Login Time: 07/21/10 15:23:43 PDT
successful login
topaz 1>
```

*WARNING:*
*Logging in to GemStone as SystemUser is like logging in to your workstation as root—an accidental modification to a kernel object can cause a great deal of harm. Use the DataCurator account for all system administration functions except those that **require** SystemUser privileges, such as upgrades and full restores.*

## File In the New Classes

**Step 6.** File in the GemConnect for Oracle classes and methods, using the following Topaz command line:

```
topaz 1> input gsoraapi.gs
```

The filein writes output to a file `gsoraapifilein22.log` in the current directory.

**Step 7.** Check for errors in the install.

The number of errors will appear at the end of the file-in process. The error line should look similar to the following:

```
topaz 1> obj ErrorCount
0
```

If the number is greater than zero and there were no other topaz errors, check the output file `gsoraapifilein22.log` for details on what failed. Note that topaz errors such as typing errors or login failures will be included in the errorcount. If the source of the problem is not clear, contact GemStone Technical Support.

**Step 8.** Log out of GemStone.

```
topaz 1> logout
```

**Step 9.** Leave Topaz and return to the operating system prompt.

If you want to do something else in Topaz, reset the user name, unless you want to be SystemUser, and type the **login** command again. Otherwise, type **quit** to return to an operating system prompt.

```
topaz> quit
```

This completes the GemConnect installation or upgrade procedure. GemConnect is now ready for use with your GemStone system. For further information on using GemConnect, see the *GemConnect Programming Guide*

# Installed Files and Directories

This section contains a table that shows the directories and files installed by the GemConnect installation process.

Table 1.3 shows the directories and files installed under the GemConnect installation directory.

**Table 1.3  Files in GemConnect installation**

| Directory | File Name | Function |
|-----------|-----------|----------|
| | `PACKING` | Packing file for GemConnect |
| | `verora.txt` | GemConnect version information |
| `make` | `Makefile32` | Makefile to rebuild shared library for Gem-Stone/S |
| `make` | `gsrdbapi.hf` | Exported functions and variables for the GemConnect interface (header file) |
| `make` | `gsrdbapi.ht` | Exported types and definitions for the Gem-Connect interface (header file) |
| `make` | `gsoraapi.gs` | GemStone Smalltalk source code for Gem-Connect for Oracle |
| `make` | `gsoraapi.ht` | Exported Oracle types and definitions for rebuilding the user-action library (header file) |
| `make` | `gsorapublic.c` | Public source module for adding functional-ity |
| `make` | `liboraapi222-32.lib` | Used to relink shared library (archive library) for GemStone/S |
| `make` | `patchlevel.h` | Patch level and version information for Gem-Connect |
| `ualib` | `oraapi222-32.dll` | User action shared library for GemStone/S |