
GemStone®

GemStone/S 64 Bit Windows Client Installation Guide

Version 3.1.0.2

December 2012

vmware®

GEMSTONE[™]
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PATENTS

GemStone software is covered by U.S. Patent Number 6,256,637 "Transactional virtual machine architecture", Patent Number 6,360,219 "Object queues with concurrent updating", Patent Number 6,567,905 "Generational garbage collector with persistent object cache", and Patent Number 6,681,226 "Selective pessimistic locking for a concurrently updateable database". GemStone software may also be covered by one or more pending United States patent applications.

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About This Documentation

This document explains how to install the GemStone/S 64 Bit Windows client for version 3.1.0.2.

Terminology Conventions

The term “GemStone” is used to refer to the server products GemStone/S 64 Bit and GemStone/S; the GemStone Smalltalk programming language; and may also be used to refer to the company, previously GemStone Systems, Inc., now a division of VMware, Inc.

Technical Support

GemStone Website

<http://support.gemstone.com>

GemStone’s Technical Support website provides a variety of resources to help you use GemStone products:

- ▶ **Documentation** for released versions of all GemStone products, in PDF form.
- ▶ **Downloads and Patches**, including past and current versions of GemBuilder for Smalltalk.
- ▶ **Bugnotes**, identifying performance issues or error conditions you should be aware of.
- ▶ **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. Technical Support is available to customers with current support contracts.

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

Website: <http://techsupport.gemstone.com>

Email: techsupport@gemstone.com

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

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 client Smalltalk products.
- ▶ 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 VMware/GemStone holidays.

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Installing GemStone/S 64 Bit v3.1.0.2 Windows Client

This chapter describes the procedure for installing GemBuilder for C, the Windows client component for GemStone/S 64 Bit version 3.1.0.2.

This client installation provides shared libraries that can be used to log in from a client running on Windows to a GemStone/S 64 Bit server on a server machine, utilities such as topaz and glist that run on the Windows client, and provide the include files to link client GCI applications and user actions on the Windows client. The GemStone/S 64 Bit server does not run directly on the Windows platform.

The version of the GemStone/S 64 Bit client libraries should match that of the GemStone/S 64 Bit server you will be connecting to.

Check the System Requirements

For system requirements for the client Smalltalk applications, refer to the documentation that is provided with your client smalltalk product. If you are using GemBuilder for Smalltalk, refer to the additional requirements in the GemBuilder for Smalltalk installation Guide.

Operating system versions

- ▶ Windows server 2008 R2
- ▶ Windows 7
- ▶ Windows 2003 Standard Edition, Service Pack 1
- ▶ Windows XP 5.1

If you are using GemBuilder for Smalltalk, you should also ensure that your version of client Smalltalk – VisualWorks or VisualAge – is supported on the given OS version, and that GemBuilder for Smalltalk is supposed on that version.

C/C++ Compiler / Debugger

- ▶ Microsoft Visual Studio 2008 Version 9.0.21022.8 RTM
- ▶ Microsoft Visual C++ 2008 91605-270-6514982-60495

GemStone requires a C/C++ compiler only if you are developing C or C++ code for user actions or for a C or C++ application. This compiler is required only for development work, not for execution.

Installing the GemBuilder for C client

Perform the following steps to install GemStone/S 64 Bit Windows client components.

1. As the Windows Administrator account or as an account that belongs to the Administrators group, log in to the client machine.
2. Select an installation directory, *InstallDir*, and make this directory the current working directory.
3. GemStone/S 64 Bit is provided as a zipped archive file with a name similar to `GemBuilderC3.1.0.2-x86.Windows_NT.zip`. Move this distribution file to the directory location in which GemStone will be installed, *InstallDir*.
4. Unzip the distribution file using `unzip`. For example:

```
% unzip GemBuilderC3.1.0.2-x86.Windows_NT.zip
```

InstallDir now contains a GemStone directory with a name similar to `GemBuilderC3.1.0.2-x86.Windows_NT`.

In addition to several subdirectories, this directory also contains two text files: `PACK-ING`, which lists all of the GemStone files, and `version.txt`, which identifies the particular product and release of this GemStone client.

Set the Environment

Perform the following steps to properly configure the operating environment.

You may not need to do this if you are not running the GemStone/S 64 Bit services, such as `topaz` and `gslis`, on the Windows client. However, you may need to configure your windows path to include the directory containing the shared library files.

1. Add or update the **GEMSTONE** environment variable. This is required only if you will be executing `topaz` or `gslis` on the windows client, or linking a user action or shared library.
 - a. Open the Control Panel.
 - b. From the Control Panel, double-click the System icon.
 - c. Click on the Advanced tab, then on the Environment Variables button.

- d. Set the environment variable GEMSTONE to the *full pathname* of your new GemStone installation directory.

If this is a new installation, in the System Environment Variables list, click on the **New** button, and enter the full path, starting with the drive, of your new Gemstone Installation directory.

If you are updating an existing installation, select GEMSTONE in the System Environment Variables list. Click on the **Edit** button, and update the value with your new GemStone new installation directory

2. Add or update the **path** environment variable. This is required if your client Smalltalk library loading uses the %path% to locate the client shared libraries, as well as when running topaz, gslis, or linking a user action or shared library.
 - a. Open the Control Panel.
 - b. From the Control Panel, double-click the System icon.
 - c. Click on the Advanced tab, then on the Environment Variables button.
 - d. In the System Environment Variables list, select the path variable, and click on the **Edit** button. Add the full path, starting with the drive, to the bin directory of your new Gemstone installation to the front of the path string.

If you are updating an existing installation, remove the previous GemStone directory from the path.

Define the NetLDI Service Name

To log in remotely to a GemStone/S 64 Bit server, there must be a NetLDI service running on the server machine. A NetLDI is not needed and can not be run on the Windows client.

By default, the server NetLDI name is `gs64ldi`. In order to log in using the name of the NetLDI service, `gs64ldi` or the name you select, this service name should be defined in your Windows client TCP/IP network database, and define the same port number as defined on the server.

If you do not define the NetLDI name and port on the Windows client, you can still login using the port number, rather than the name.

1. The TCP/IP network database is:

```
C:\WINDOWS\system32\drivers\etc\services
```

2. Add an entry similar to the following to the network database:

```
gs64ldi 50377/tcp #GemStone 3.1.0.2
```

This port number must be the same as the NetLDI service you will connect to on the GemStone/S 64 Bit server machine.

Configuring GBS on Windows

This chapter describes how to configure your GemBuilder for Smalltalk (GBS) application on Windows to run with GemStone/S 64 Bit version 3.1.0.2.

NOTE

GemStone/S 64 Bit version 3.1.0.2 requires the use of GBS version 7.5 and VisualWorks Smalltalk v7.9 or later, or GBS 5.4.1 and VA Smalltalk 8.0.3 or later. Earlier GBS versions cannot log into GemStone/S 64 Bit 3.1.0.2 due to changes including shared library requirements and naming.

See “GBS and Client Smalltalk Versions and Platforms” on page 12 for the versions of GBS and client Smalltalk that may be used with GemStone/S 64 Bit v3.1.0.2.

In addition to using the appropriate version of GBS, you must use GemStone/S 64 Bit 3.1.0.2 client libraries to be able to log in to the GemStone/S 64 Bit 3.1.0.2 server. This chapter describes how to use the GemStone/S 64 Bit 3.1.0.2 Windows Client installation to allow a GBS application running on Windows to connect to a GemStone/S 64 Bit 3.1.0.2 server.

GBS and Client Smalltalk Versions and Platforms

The following table summarizes GemBuilder for Smalltalk, client Smalltalk and client operating system support for GemStone/S 64 Bit v3.1.0.2.

GemStone/S 64 Bit v3.1.0.2 requires GBS version 7.5, in order to log in. Older versions of GBS will not be able to log into v.3.1.0.2.

GBS version 7.6

VW 7.9.1 32-bit	VW 7.9.1 64-bit	VW 7.9 32-bit	VW 7.9 64-bit
<ul style="list-style-type: none"> ▶ Windows 2008 R2, Windows 7, and Windows XP ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10 and 11, and RedHat Linux ES 5.5 and 6.1 	<ul style="list-style-type: none"> ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10 and 11, and RedHat Linux ES 5.5 and 6.1 	<ul style="list-style-type: none"> ▶ Windows 2008 R2, Windows 7, and Windows XP ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10 and 11, and RedHat Linux ES 5.5 and 6.1 	<ul style="list-style-type: none"> ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10 and 11, and RedHat Linux ES 5.5 and 6.1

GBS version 7.5

VW 7.9.1 32-bit	VW 7.9.1 64-bit	VW 7.9 32-bit	VW 7.9 64-bit
<ul style="list-style-type: none"> ▶ Windows 2008 R2, Windows 7, and Windows XP ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10 and 11, and RedHat Linux ES 5.5 and 6.1 	<ul style="list-style-type: none"> ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10 and 11, and RedHat Linux ES 5.5 and 6.1 	<ul style="list-style-type: none"> ▶ Windows 2008 R2, Windows 7, and Windows XP ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10 and 11, and RedHat Linux ES 5.5 and 6.1 	<ul style="list-style-type: none"> ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10 and 11, and RedHat Linux ES 5.5 and 6.1

GBS version 5.4.1

VA Smalltalk 8.5.2	VA Smalltalk 8.5	VA Smalltalk 8.0.3
<ul style="list-style-type: none"> ▶ Windows 2008 R2, Windows 7, and Windows XP 	<ul style="list-style-type: none"> ▶ Windows 2008 R2, Windows 7, and Windows XP 	<ul style="list-style-type: none"> ▶ Windows 2008 R2, Windows 7, and Windows XP

For more details, see the *GemBuilder for Smalltalk Installation Guide* for the appropriate version of GBS.

GemStone/S 64 Bit 3.1.0.2 Windows Client

To allow GemStone/S 64 Bit clients to connect from 32-bit GBS applications and to run topaz on Windows, GemStone/S 64 Bit provides a separate Windows installation, with the name GemBuilder for C. This installation provides:

- ▶ The 32-bit client libraries to be used by GBS for RPC logins from Windows.
- ▶ The ability to run topaz on Windows, to login RPC to a GemStone/S 64 Bit server on UNIX, Linux, or Macintosh.
- ▶ The ability to run gslis on Windows, to get information about GemStone services running on remote UNIX, Linux, or Macintosh servers

The process for installing the GemStone/S 64 Bit Windows Client is described in Chapter 1, starting on page 7.

If you do not require topaz or gslis on Windows, you may wish to extract only the client libraries from the Windows installation, and move these files to an appropriate directory on the client, as described in the next section.

Copying only the Client Shared Libraries

If you have installed the full GemStone/S 64 Bit Windows Client product per the instructions in Chapter 1, you do not need to follow these steps.

However, if you do not need the server components other than the shared libraries, you can simplify your resulting installation by only copying the required shared libraries.

The required client shared libraries can be found in the GemStone shared library directory:

```
InstallDir\GemBuilderC3.1.0.2-x86.Windows_NT\bin
```

The following files are required:

```
libgcirpc-3.1.0.2-32.dll  
libssl-3.1.0.2-32.dll  
msvcr90.dll
```

Note that when you specify a shared library for GBS to load, you only specify one library, **libgcirpc-3.1.0.2-32.dll**; however, the other libraries must also be available.

There are several options when copying these shared libraries:

- You may copy these libraries to the working directory of your client Smalltalk image, or to a directory under %VISUALWORKS%\bin or the VA-Smalltalk bin subdirectory.
- You may copy these libraries to an existing or newly created directory that is on the machine search path %PATH%.
- You may copy these shared libraries to a directory that is not on the path, and specify the absolute path and filename of the library in GBS.

Installing Client Libraries into GBS

This section describes the procedure for configuring GBS to recognize the server shared libraries.

1. Quit and restart the Smalltalk VM (if you have not already done so), and ensure that you have positioned the set of required v3.1.0.2 client libraries in your intended location. Note that while a specific named library is loaded, the other required library files must be available; normally they are in the same directory.
2. Specify the correct library file to load using the GBS configuration parameter `libraryName`. You can set this parameter using the GBS settings dialog; select the tab titled "Server Communication" and the field `libraryName`:

You may also set the `libraryName` by executing an expression of the form:

```
GbsConfiguration current libraryName: libNameString
```

The `libraryName` may be set to a full path and filename, just the filename, or to an empty string. These options are listed below.

If the system fails to load the library it finds, the resulting error dialog allows you to navigate to and select the specific library file.

The following are the options for specifying the library file that should be loaded:

- Set `libraryName` to the full path and file name of the client library file. For example:

```
GbsConfiguration current libraryName:  
'InstallDir\GemBuilderC3.1.0.2-x86.Windows_NT\bin\libgcirpc-  
3.1.0.2-32.dll'
```

This does not require that the directory containing the libraries be on the `%PATH%`.

- Set `libraryName` to the file name of the client library file. For example,

```
GbsConfiguration current libraryName:  
'libgcirpc-3.1.0.2-32.dll'
```

This requires that the libraries be in a directory on the `%PATH%`, in the current working directory, or in the client Smalltalk executable directory.

- Leave `libraryName` set to the empty string. This is the default. This requires that the client libraries be in the current working directory, or in the client Smalltalk executable directory. Be sure to verify that no other versions of GemStone shared libraries are in these locations.

- Use the file dialog to select the library name and path.

If the library name specified by `libraryName` cannot be loaded, the resulting notification provides the option of selecting a file using a file dialog. The load error may be due to an incorrect `libraryName`, copying the wrong library, or an additional required library failing to load.

Navigate to the location of the shared library and select the file. The dialog provides filename filtering, so only valid library names will appear.

Selecting a file will set `libraryName` to the full path selected.

3. Save your image to preserve the new `libraryName` setting. To ensure the correct libraries are loaded on image startup, exit and restart your image.