GemStone®

GemStone/S 64 Bit™ Windows Client Installation Guide

Version 3.3.5

May 2017

INTELLECTUAL PROPERTY OWNERSHIP

This documentation is furnished for informational use only and is subject to change without notice. GemTalk Systems LLC assumes no responsibility or liability for any errors or inaccuracies that may appear in this documentation.

This documentation, or any part of it, may not be reproduced, displayed, photocopied, transmitted, or otherwise copied in any form or by any means now known or later developed, such as electronic, optical, or mechanical means, without express written authorization from GemTalk Systems.

Warning: This computer program and its documentation are protected by copyright law and international treaties. Any unauthorized copying or distribution of this program, its documentation, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted under the maximum extent possible under the law.

The software installed in accordance with this documentation is copyrighted and licensed by GemTalk Systems under separate license agreement. This software may only be used pursuant to the terms and conditions of such license agreement. Any other use may be a violation of law.

Use, duplication, or disclosure by the Government is subject to restrictions set forth in the Commercial Software - Restricted Rights clause at 52.227-19 of the Federal Acquisitions Regulations (48 CFR 52.227-19) except that the government agency shall not have the right to disclose this software to support service contractors or their subcontractors without the prior written consent of GemTalk Systems.

This software is provided by GemTalk Systems LLC and contributors “as is” and any expressed or implied warranties, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall GemTalk Systems LLC or any contributors be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.

COPYRIGHTS

This software product, its documentation, and its user interface © 1986-2017 GemTalk Systems LLC. All rights reserved by GemTalk Systems.

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.

TRADEMARKS

GemTalk, **GemStone**, **GemBuilder**, **GemConnect**, and the GemStone and GemTalk logos are trademarks or registered trademarks of GemTalk Systems LLC, or of VMware, Inc., previously of GemStone Systems, Inc., in the United States and other countries.

VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Sun, **Sun Microsystems**, and **Solaris** are trademarks or registered trademarks of Oracle and/or its affiliates. **SPARC** is a registered trademark of SPARC International, Inc.

Intel, Pentium, and **Itanium** are registered trademarks of Intel Corporation in the United States and other countries.

Microsoft, **MS**, **Windows, Windows 7**, **Windows 2008**, and **Windows 8** are registered trademarks of Microsoft Corporation in the United States and other countries.

Linux is a registered trademark of Linus Torvalds and others.

Red Hat and all Red Hat-based trademarks and logos are trademarks or registered trademarks of Red Hat, Inc. in the United States and other countries.

Ubuntu is a registered trademark of Canonical Ltd., Inc., in the U.S. and other countries.

SUSE is a registered trademark of Novell, Inc. in the United States and other countries.

AIX, **POWER6**, **POWER7**, and **POWER8** are trademarks or registered trademarks of International Business Machines Corporation.

Apple, **Mac**, **Mac OS**, and **Macintosh** are trademarks of Apple Inc., in the United States and other countries.

Other company or product names mentioned herein may be trademarks or registered trademarks of their respective owners. Trademark specifications are subject to change without notice. GemTalk Systems cannot attest to the accuracy of all trademark information. Use of a term in this documentation should not be regarded as affecting the validity of any trademark or service mark.

GemTalk Systems
15220 NW Greenbrier Parkway
Suite 240
Beaverton, OR 97006

Preface

About This Documentation

This document explains how to install the Windows Client component of GemStone/S 64 Bit™ version 3.3.5, and how to upgrade GemStone clients on Windows from previous GemStone/S 64 Bit versions.

The Windows Client component allows GemBuilder for Smalltalk (GBS) or other GCI applications, running on Windows to log into the GemStone/S 64 Bit server. It also provides tools and utilities that can help in administering your GemStone/S 64 Bit server. The GemStone/S 64 Bit server does not run directly on Windows.

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

Terminology Conventions

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

Technical Support

Support Website

gemtalksystems.com

GemTalk's website provides a variety of resources to help you use GemTalk products:

- **Documentation** for the current and for previous released versions of all GemTalk products, in PDF form.

- **Product download** for the current and selected recent versions of GemTalk software.
- **Bugnotes**, identifying performance issues or error conditions that you may encounter when using a GemTalk product.
- **TechTips**, providing information and instructions that are not in the documentation.
- **Compatibility matrices**, listing supported platforms for GemTalk 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 assistance may be submitted online, 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: techsupport.gemtalksystems.com

Email: techsupport@gemtalksystems.com

Telephone: (800) 243-4772 or (503) 766-4702

When submitting a request, please include the following information:

- Your name and company name.
- The versions of GemStone/S 64 Bit and of all related GemTalk 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 GemTalk holidays.

24x7 Emergency Technical Support

GemTalk 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 GemTalk Support Renewals.

Training and Consulting

GemTalk Professional Services provide consulting to help you succeed with GemStone products. Training for GemStone/S is available at your location, and training courses are offered periodically at our offices in Beaverton, Oregon. Contact GemTalk Professional Services for more details or to obtain consulting services.

Table of Contents

Chapter 4. Installing GemStone/S 64 Bit Windows Client

System Requirements 7
Installing the GemStone/S 64 Bit Windows Client 8
Set the Environment 8
Define the NetLDI Service Name 9

Chapter 5. Configuring GBS for GemStone/S 64 Bit

Supported GBS client Smalltalk Platforms with Windows 12
GBS Setup or Upgrade Procedure 13
Upgrade GBS to a version that supports v3.3.5 14
Update GBS to reference v3.3.5 libraries 14

Chapter

1 Installing GemStone/S 64 Bit Windows Client

This chapter describes the procedure for installing GemBuilder for C, the Windows client component for GemStone/S 64 Bit version 3.3.5.

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**, **gslist**, and **VSD** that can be run on the Windows client, and provides the include files used to link client GCI applications on the Windows client.

The GemStone/S 64 Bit server does not run directly on the Windows platform.

System Requirements

The following system requirements are for the GemStone/S Server component and shared libraries.

For system requirements for the client Smalltalk Environments, and for GemBuilder for Smalltalk (GBS) supported platforms, refer to the documentation that is provided with your client smalltalk product, and to the *GemBuilder for Smalltalk installation Guide*.

GBS depends on the client shared libraries provided by this distribution; support for GBS client platforms is limited to platforms that are supported by the GemStone/S 64 Bit server as documented in this installation guide.

Operating system versions

- Windows 10
- Windows 8
- Windows server 2008 R2
- Windows 7

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 supported on that version.

Installing the GemStone/S 64 Bit Windows 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 `GemStone64BitClient3.3.5-x86.Windows_NT.zip`. Extract the contents of this archive into the directory location in which GemStone will be installed, *InstallDir*.

   You may perform this extraction using unzip or another uncompress application, or using Windows Explorer.
4. Verify that *InstallDir* now contains a GemStone directory with a name similar to `GemStone64BitClient3.3.5-x86.Windows_NT`.

   The following directories and files are included:

`bin\`	64-bit shared libraries and executables for **VSD**, **topaz**, and **gslist**.
`lib\`	64-bit TCL libraries for 32-bit VSD, and lib files
`bin32\`	32-bit shared libraries and executables for **VSD**, **topaz**, and **gslist**.
`lib32\`	32-bit TCL libraries for 32-bit VSD, and lib files
`licenses\`	GemStone licence file and licenses for open-source code included with GemStone.
`include\`	Include files used for GCI applications
`PACKING`	Listing of all files in the distribution
`sys\`	contains the Topaz help file
`version.txt`	Contains information on the particular product and release of this GemStone client.

   There are several other empty standard directories included.

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 **gslist**, 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 **gslist** on the windows client, or linking a 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**, **gslist**, or linking a 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, either 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 within your login parameters, rather than the name.

To define a NetLDI name on the Windows client:

1. Open the TCP/IP network database, which is located at:

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

2. Add an entry similar to the following :

   ```
   gs64ldi 50377/tcp #GemStone 3.3.5
   ```

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

3. Save the file and exit.

Chapter

2 Configuring GBS for GemStone/S 64 Bit

While the GemStone/S 64 Bit Windows Client provides a number of server utilities that can be run on Windows, the primary purpose of the GemStone/S 64 Bit Windows Client is to provide the libraries that support client applications on Windows, such as GemBuilder for Smalltalk (GBS) client applications.

For instructions for updating GBS clients that are running on Linux, see the *GemStone/S 64 Bit Installation Guide* for Linux; for GBS clients running on Solaris/SPARC, see the *GemStone/S 64 Bit Installation Guide* for Solaris.

GBS clients are not supported on Solaris/x86, AIX, or Macintosh.

For a table of all supported GBS and client Smalltalk platforms, see the *GemStone/S 64 Bit Release Notes* for v3.3.5.

This chapter describes how to configure or update your client Smalltalk application using GBS on Windows to run with a GemStone/S 64 Bit version 3.3.5 server.

The GemStone/S 64 Bit v3.3.5 server requires a compatible version of GBS; versions of GBS earlier than v8.1 for VisualWorks Smalltalk, or v5.4.3 for VA Smalltalk, cannot be used with GemStone/S 64 Bit v3.3.5 or later.

In addition to using the appropriate version of GBS, you must use GemStone/S 64 Bit 3.3.5 client libraries with your GBS client application, to be able to log in to the v3.3.5 server. These libraries are specific to the GemStone/S 64 Bit server version and to the client platform. Only RPC logins are available from Windows.

The GemStone/S 64 Bit Windows Client provides both 64-bit libraries and 32-bit libraries.

- With 64-bit VisualWorks environments, you must use the 64-bit GemStone client libraries
- With 32-bit VisualWorks and VA Smalltalk environments, you must use 32-bit libraries.

For instructions on installing and configuring GBS, see the *GemBuilder for Smalltalk Installation Guide* for the appropriate version of GBS.

Supported GBS client Smalltalk Platforms with Windows

The following client Smalltalk versions are supported on Windows platforms:

GemBuilder for Smalltalk v8.2

- **VisualWorks 8.1.1 (32-bit and 64-bit)**
  - Windows 10
  - Windows 8
  - Windows 2008 R2
  - Windows 7
- **VisualWorks 7.10.1 (32-bit)**
  - Windows 8
  - Windows 2008 R2
  - Windows 7
- **VisualWorks 7.10.1 (64-bit)**
  - Windows 7

GemBuilder for Smalltalk v8.1

- **VisualWorks 7.10.1 (32-bit)**
  - Windows 8
  - Windows 2008 R2
  - Windows 7

GemBuilder for Smalltalk v5.4.3

- **VA Smalltalk 8.6.2**
  - Windows 10
  - Windows 8
  - Windows 2008 R2
  - Windows 7
- **VA Smalltalk 8.5.2**
  - Windows 2008 R2
  - Windows 7

GBS Setup or Upgrade Procedure

Shared Libraries for GBS Client Node

The GBS client requires a set of shared libraries (.dlls) that are provided as part of the GemStone server product distribution. Since the GemStone/S 64 Bit server itself is not available for Windows, the Windows Client distribution is provided, which includes the shared libraries as well as other server utilities that can be run on Windows.

When these client shared libraries are loaded into the VisualWorks or VA Smalltalk image in which GBS code is installed, the GBS client can log into the GemStone server.

The shared libraries must be the same version as the GemStone server. Since they are loaded into the client smalltalk VM, they must be appropriate for the client platform and client executable bit size (32-bit or 64-bit).

You can either install the full GemStone/S 64 Bit Windows Client on your GBS client node, or just copy the specific shared libraries you need.

Full GemStone/S 64 Bit Windows Client installation on client node

One option for installation is to install the complete GemStone/S 64 Bit Windows Client on the client machine.

In addition to the shared libraries, the GemStone/S 64 Bit client installation includes tools such as topaz, gslist, and VSD, that may be useful to run on your client.

To perform this installation, follow the instructions in Chapter 1 of this *Installation Guide*.

Libraries only

If you do not require tools such as **gslist**, **vsd**, or **topaz** on the client, you do not need to install the full GemStone/S 64 Bit Windows Client on the client node. You may just copy the set of library files that GBS requires.

32-bit VisualWorks or VA Smalltalk clients:

For RPC logins from 32-bit VisualWorks or VA Smalltalk, the following files need to be copied to the client node:

```
%GEMSTONE%\bin32\libgcirpc-3.3.5-32.dll
%GEMSTONE%\bin32\libssl-3.3.5-32.dll
%GEMSTONE%\bin32\msvcr100.dll
```

64-bit VisualWorks clients:

For RPC logins from 64-bit VisualWorks, the following files need to be copied to the client node:

```
%GEMSTONE%\bin\libgcirpc-3.3.5-64.dll
%GEMSTONE%\bin\libssl-3.3.5-64.dll
%GEMSTONE%\bin\msvcr100.dll
```

GBS provides a number of options as to where to place the shared libraries on the client machine. Refer to the *GemBuilder for Smalltalk Installation Guide* for details on these options.

Upgrade GBS to a version that supports v3.3.5

Versions of GBS earlier than 8.1 for VisualWorks and 5.4.3 for VA Smalltalk cannot be used with GemStone/S 64 Bit v3.3.x.

If you are currently running with an older version of GBS, you will need to upgrade the GBS client, and possibly also upgrade VisualWorks or VA Smalltalk to a more recent version, in order to use these clients with v3.3.5.

See the *GemBuilder for Smalltalk Installation Guide* for installation instructions, and the *GemBuilder for Smalltalk Release Notes* for details on the changes in these versions.

Update GBS to reference v3.3.5 libraries

Once you have installed the GemStone server on the GBS client machine, or copied the appropriate shared libraries, you need to ensure that the client Smalltalk executable – a VisualWorks or VA Smalltalk application – will load the v3.3.5 libraries.

Determining library name to specify

Whether or not you have a full GemStone/S 64 Bit Windows client installation on the client or have copied a few libraries, there is a specific library name you will specify to have GBS load using the `libraryName:` parameter.

32-bit VisualWorks or VA Smalltalk clients:

```
libgcirpc-3.3.5-32.dll
```

64-bit VisualWorks clients:

```
libgcirpc-3.3.5-64.dll
```

Setup GBS to load the new libraries

- If you have set the GBS configuration parameter `libraryName:`, update this to the new library name, and save your image.
- If you have set the GBS configuration parameter `libraryName:` to an empty string, ensure that no other client libraries of the same name are in the current working directory or the bin directory or subdirectory of your VisualWorks image's VISUALWORKS directory. This is not applicable to VA Smalltalk.
- For a new GBS application, refer to the *GemBuilder for Smalltalk Installation Guide* for details on the library loading setup options.

Stop and restart the client VM

GBS loads the client libraries into the client Smalltalk VM the first time a GemStone server call is made after each startup of the VM.

GBS is now ready to use.