GemStone®

Visual Statistics Display (VSD)
Release Notes

Version 5.5.1

November 2020

GEMTALK™
SYSTEMS

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.

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 © 1986-2020 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 GemTalk logo are trademarks of GemTalk Systems LLC, or of VMware, Inc., previously of GemStone Systems, Inc., in the United States and other countries.

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

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

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

Microsoft, **Windows**, and **Windows Server** 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** and **VisualAge** are trademarks or registered trademarks of International Business Machines Corporation.

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

CINCOM, **Cincom Smalltalk**, and **VisualWorks** are trademarks or registered trademarks of Cincom Systems, Inc.

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 LLC
15220 NW Greenbrier Parkway
Suite 240
Beaverton, OR 97006

Chapter

1 VSD 5.5.1 Release Notes

Overview

Visual Statistics Display (VSD) version 5.5.1 is a new release of the VSD product, including a number of new features and bug fixes.

These release notes describe changes between the previous version of VSD, version 5.5, and version 5.5.1.

This version of VSD supports statmonitor files generated from:

▶ All versions of GemStone/S 64 Bit™
▶ All versions of 32-bit GemStone/S
▶ All versions of GemBuilder™ for Smalltalk (GBS)

VSD and GemStone/S 64 Bit 3.6

GemStone/S 64 Bit 3.6 writes statmonitor data files with a slightly updated format, with a new line containing the statmonitor command line. As a result, VSD 5.5 or later is required in order to read statmonitor files generated by GS64 v3.6 or later.

VSD 5.5.x can read data files generated by older versions of GS64, as well as by v3.6.

Supported Platforms

VSD version 5.5.1 is verified and supported on the following platforms:

▶ (64-bit) Windows 7 and Windows 10
▶ Solaris 10 and 11.4 on x86
▶ AIX 7.1 and 7.2
▶ Red Hat Linux ES 6.x, 7.x and 8.x; and Ubuntu 16.04, 18.04, and 20.04
▶ OS X 10.14.6 (Mojave) with Darwin 18.7.0 kernel, and OSX 10.15.6 (Catalina) with Darwin 19.6.0 kernel, on x86

Changes in this release

VSD on Mac is now distributed as an Apple-notarized .dmg

On more recent versions of OSX 10.15 (Catalina), the GateKeeper security restrictions have been changed for downloaded executables, resulting in applications being quarantined by default if they are downloaded via a web browser.

To allow the downloaded distribution to run correctly, the VSD distribution for Mac now conforms to Apple's security protocols. The distribution is now provided as a .dmg that is signed and notarized by Apple, rather than a .zip file.

To install VSD on the Mac, double click on the file to open it, and drag the installation tree to your installation directory.

Support for automatic rollover of statmonitor data files

Statmonitor supports an periodic automatic restart of the file it is writing to (using the **-r** and **-R** arguments). Previously, when the statmonitor file was being viewed in VSD with auto-update, it was difficult to be aware of, and continue viewing, after the rollover to a new file. There are a number of changes to improve using VSD's auto-update with statmonitor's auto-restart.

New feature: Auto-append

Auto-append is a new feature in VSD. With auto-append enabled, the next statmonitor file that appears in the same directory as the original file (regardless of the name of the new file), is automatically opened and appended to the existing view. This feature requires auto-update to be enabled. When the menu item **File > Auto Append Next File** is checked, it will automatically also check the **Auto Update** menu item.

Note that there is no check to determine if the files actually are both part of the same series of statmonitor data files; since filenames can be generated flexibly, it's not possible to definitely determine this. If you have multiple statmonitor processes writing files in the same directory, each will be appended; this does not cause problems, but may make it difficult to make sense of VSD charts.

You may use auto-append on more than one series of data files at a time within a single VSD session, as long as the statmonitor data files are in different directories.

The vsd command line **-A** option has been added which starts off VSD in auto-update and auto-append modes.

Auto-append is not supported on Windows.

Change in semantics of green color on sample count

When a file is appended, or during auto-update, the Main Window shows the sample count in green for processes that are updating.

Previously, these remained green even when the file was no longer being actively updated. Now, after a configurable timeout period, the font color reverts to black and a message is printed in the status bar of the main window.

Configuring auto-update timeout

The timeout for automatic update (the time before the font changes from green to black, to indicate that it is no longer updating), is by default 90 seconds. This allows for statmonitor write intervals up to this interval to not be treated as no longer active.

You can change the timeout using the dialog opened by the Main Window menu **Main > Settings > Change Inactive File Timeout**.

vsd -u option

The **vsd -u** option was de-supported in v5.2, although it was not removed and continued to work for simple cases. This option has been restored; it is not supported on Windows.

The updated usage is:

```
Usage: vsd [-b color] [-h] [ [-a][-A][-u] file1+ [directory] ]
  Options:
    -a   Open and append (as if they were one file) one or more
         files.
    -A   Open and append (as if they were one file) one or more
         files and enable continuous append with auto-append mode.
    -b color
         Set the master background color. Color may be a hex RGB
         value (e.g. #d3d3ff) or a valid color name (e.g. white).
         The list of recognized color names may be found at:
         http://www.tcl.tk/man/tcl8.6/TkCmd/colors.htm
    -h   Print this help screen and exit.
    -u   Open one or more files and enable auto-update mode.
    -v   Print version information and exit.
```

Opening files using wild cards

On the command line, you may specify more than one file using the wild card. This, however, uses the OS file ordering. If you escape the star, it allows VSD to sort the files from oldest to newest, and load in that order.

For example, to load and append a set of files and allow auto-append of new files:

```
vsd -A $GEMSTONE/statmons/\*.gz
```

On windows, you can escape the path separator using the caret, for example:

```
vsd -a C:\statmons\stat^*.gz
```

Templates Syntax allow ! (not) name operator

The syntax for vsd templates allows you to limit a statistic by the type of process and by the name of the process. For example,

```
Gem+ {*Gc*} ...
```

This expression matches all Gems whose name include 'Gc'.

Now, you can use the ! operator to specify processes to exclude, by name.

For example,

```
{Stn {!pagemgrThread} ...
```

This matches all Stone processes whose name does not include 'pagemgrThread'.

Built-in templates no longer include unnecessary page manager lines

Many of the built-in templates, such as "Garbage", display lines for Stone statistics. Since the Page Manager is a thread in the Stone and has type Stn, lines for the page manager were inadvertently included on the resulting charts. Now, using the new **not** operator, these are not displayed. Note that since templates are cached in .vsdtemplates, you will need to delete that file (making sure to save any custom templates you have defined), before you will see the updated templates.

Displaying command-line options for statmonitor data file

In GemStone/S 64 Bit v3.6 and later, the statmonitor executable writes the command line used to start statmonitor to the statmonitor data file. This is displayed in VSD, in the dialog displayed by Main Window **File > Info...**

Font menus consolidated

The dialogs to set the fonts in VSD were located with the other functions for a particular window, and so in a number of different places; this made management difficult. Now, all fonts selection menu items are together, under the Main Window menu **Settings > Fonts**.

Bugs Fixed

Appending data files did not work correctly with open chart windows

When a chart window was open on one or more statistics, and a data file was appended, the open chart window was not updated, and new chart window on that statistic showed invalid data. (#41951).

Cannot restart VSD if previous shutdown was in directory with space

VSD remembers the last directory from which a file was loaded, and reads this the next time VSD starts. If the directory name included a space, VSD did not parse this correctly and errored on startup. (#48980)

Tear-off menus

Many VSD menus included the ability to detach, using a dashed line menu item at the top of the menu. These did not function correctly and have been removed.

Multiple files with different per-process system stats can have issues

Statmonitor data can be written with or without per-process system stats (statistics such as UserTime, which are collected from the OS for GemStone processes such as the Stone). If two files were loaded into VSD that differed in whether they included per-process system stats, VSD did not update the statistics list correctly for those processes correctly. (#49003) Now, these are handled as statistics for different versions, that is, with an index appended to the statistics name.