

SilverMark's Test Mentor for VisualWorks 5i.4, 7.0 and up

Installation instructions and other information (readme)

SilverMark, Incorporated
5511 Capital Center Drive
Suite 510
Raleigh, North Carolina 27606
Toll free: (888) 588-0668
International: 01.919.858.8300
Fax: 01.919.858.8308
<http://www.silvermark.com>
Internet: support@silvermark.com

Welcome to SilverMark's Test Mentor for VisualWorks. SilverMark's Test Mentor is the only automated testing solution designed specifically for applications developed with Smalltalk, and the only automated testing tool that is integrated directly with the VisualWorks development environment. This README file contains information you need to install SilverMark's Test Mentor.

Contents:

- INSTALLATION 2**
 - DOWNLOADABLE DISTRIBUTION 2
 - Distribution files separately downloadable* 2
 - Distribution files* 2
 - PREREQUISITES 3
 - INSTALLING TEST MENTOR INTO A VISUALWORKS IMAGE 3
 - Loading examples* 5
 - Loading SUnit support* 5
- GETTING STARTED..... 5**
 - BROWSE THE MANUAL 5
 - OTHER DOCUMENTS 5
 - HANDLING CUSTOM WIDGETS AND CHANGES TO BASE CODE..... 5
 - A FIRST USE OF THE PRODUCT 6
 - PLANNING FOR THE FUTURE 6
- KNOWN PROBLEMS AND LIMITATIONS..... 6**
- A FAST OVERVIEW OF SILVERMARK'S TEST MENTOR..... 6**
 - WHAT DOES TEST MENTOR DO FOR ME? 6

<i>Why is this important?</i>	6
WHY DO YOU NEED TO AUTOMATE YOUR TESTING?	7
WHY SHOULD YOU SELECT SILVERMARK'S TEST MENTOR?	7
GETTING HELP	8
DOCUMENTATION	8
SERVICE AND TECHNICAL SUPPORT	8
DEFECT REPORTING.....	8
YOUR SATISFACTION	9
TRADEMARKS	9

Installation

Check your disk space. The total required for STM installation is 3.0 MB at minimum. Test Mentor is distributed electronically from the SilverMark web site or in the **\$(VisualWorks)\goodies\other\SilverMark** directory of the VisualWorks 7.2 and later releases.

Downloadable distribution

Test Mentor is available for download as a self extracting-ZIP file. The file required is dependent on the version of VisualWorks you are using:

Distribution files separately downloadable

- stmvw5i.exe – Test Mentor for VisualWorks 5i.4.** Download this self extracting zip file if you are installing Test Mentor into VisualWorks 5i.4
- stmvw7.exe – Test Mentor for VisualWorks 7.0.** Download this self extracting zip file if you are installing Test Mentor into VisualWorks 7.0
- stmvw71.exe – Test Mentor for VisualWorks 7.1.** Download this self extracting zip file if you are installing Test Mentor into VisualWorks 7.1
- stmvw72.exe – Test Mentor for VisualWorks 7.2.** Download this self extracting zip file if you are installing Test Mentor into VisualWorks 7.2
- stmdoc11.pdf** – Test Mentor documentation

Distribution files

Test Mentor is composed of the following files in the given locations:

File	Explanation	Location
TestMentor.pcl	Root Test Mentor parcel	\$(VISUALWORKS)\goodies\other\SilverMark\parcels
TestMentor.pst		"
STM-Developer.pcl	Test Mentor parcel	"
STM-Developer.pst		"
STM-Runner.pcl	Test Mentor parcel	"
STM-Runner.pst		"
STM-Support.pcl	Test Mentor parcel	"
STM-DocTool.pcl	Test Mentor parcel	"
STM-DocTool.pst	(VisualWorks 5i only)	"
STM-RunnerFor5i.pcl	Test Mentor parcel for (VisualWorks 5i only)	"
STM-RunnerFor5i.pst		"

STM-RunnerFor7.pcl	Test Mentor parcel for (VisualWorks 7 only)	“
STM-RunnerFor7.pst	(VisualWorks 7 only)	“
STM-Calculator.pcl	Calculator example parcel	“
STM-Calculator.pst		“
STM-Examples.pcl	Sales lead examples parcel	“
STM-Examples.pst		“
STM-SUnit.pcl	Bridge between Test Mentor and SUnit	“
STM-SUnit.pst		“
SUnit.pcl	Modified version of SUnit to support Test Mentor	“
SUnit.pst		“
readme.txt	Readme (just a pointer to readme.pdf)	\$(VISUALWORKS)\goodies\other\SilverMark\
readme.pdf	Readme (this file)	“
Install.txt	Installation instructions (just a pointer to readme.pdf)	“
stmVWSalesLeadExample.pdf	Documentation for sales lead example	“
StmVWWidgetExtensions.pdf	Documentation on how to extent widgets to work with Test Mentor	“
SMISalesLeadData.Stm	Sales lead example test data	“

Note: **\$(VisualWorks)** == the VisualWorks installation directory.

Prerequisites

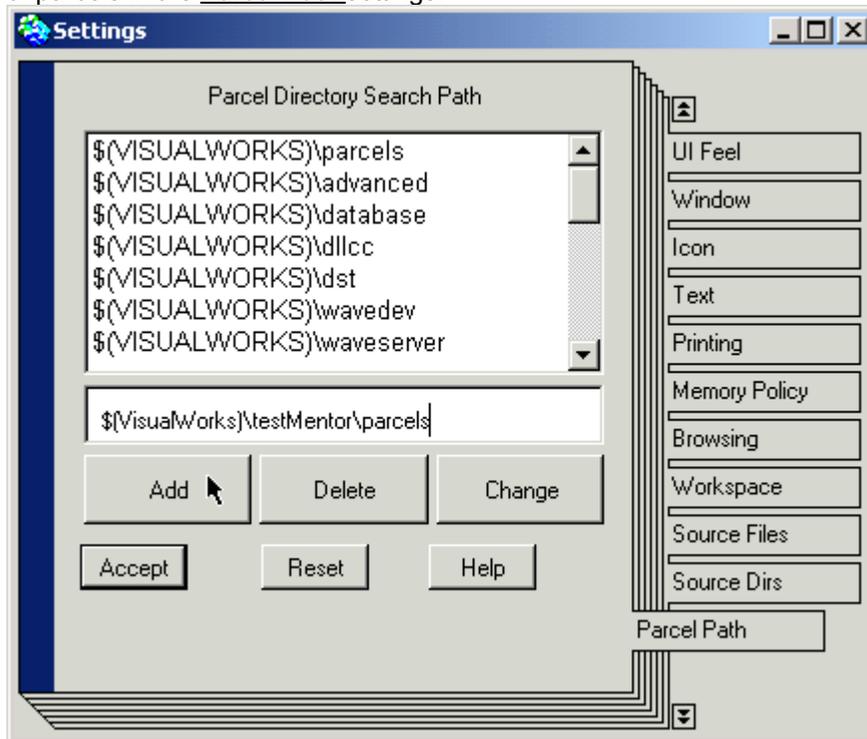
- ❑ VisualWorks V5i.4, 7.x
- ❑ 3.0Mb storage

Installing Test Mentor into a VisualWorks Image

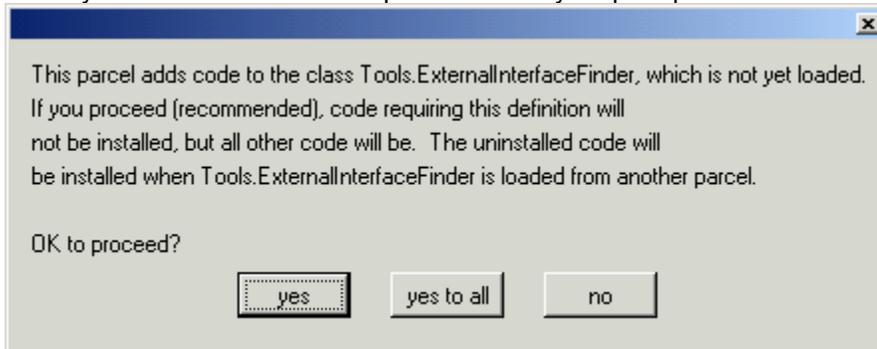
NOTE: Whenever possible, we recommend that you install Test Mentor into an image that does not have any previous versions of Test Mentor already loaded.

1. Copy or download the self extracting zip file, **stmvw_****exe** to a directory and execute it.
2. When prompted for a destination directory for the files, answer the value that you currently have set for your VisualWorks home directory, **\$(VisualWorks)**. In other words, place the files into the directory of your VisualWorks installation, such as **c:\visualworks**. This will automatically disburse the files into the appropriate subdirectories listed in the table above.

3. Open a parcels browser or prompt for a parcel to load
4. Load the parcel **TestMentor.pcl**. This file is located in the **\$(VisualWorks)\goodies\other\SilverMark\parcels** directory. Test Mentor is made up of several parcels. This parcel will load all the required parcels automatically.
Optional: You can add the Test Mentor parcel directory to the list of default parcel directories by first adding **\$(VisualWorks)\goodies\other\SilverMark\parcels** to the list of parcels in the Parcel Path settings:



5. When you load the **TestMentor** parcel You may be prompted with the following.



This is a result of loading the BOSS parcel, which is required by Test Mentor. If you see this prompt, simply respond with **Yes to all** to continue.

6. You are now ready to use Test Mentor. If this is your first time using the product and you do not possess a license key, you may evaluate the product for 30 days by entering a blank for the key when the registration prompt appears. **Note:** If the registration prompt appears, the view you opened will close. Just open it again and proceed as normal.

Loading examples

If you wish to follow the examples in the *Getting Started* section of the manual (stm doc11.pdf), load the **STM-Calculator.pcl** parcel.

If you wish to view a simple sales lead example and tests for it, install **STM-Examples.pcl**. This is a simple demonstration sales lead program, as well as a set of tests for it. (Please see further discussion of this example in the document, **stmVWSalesLeadExample.pdf**)

Loading SUnit support

You may optionally load a parcel that provides a bridge between Test Mentor and SUnit. This enables Test Mentor to discover and run SUnit tests with no work on your part. The benefit to this is that you can use Test Mentor's advanced timing and code coverage profiling tools on your existing SUnit tests, as well as better results management.

To load SUnit support

1. Load the **STM-SUnit.pcl** parcel in the **\$(VisualWorks)\goodies\other\SilverMark\parcels** directory
2. Load the **SUnit.pcl** parcel in the **\$(VisualWorks)\goodies\other\SilverMark\parcels** directory. This is a modified version of SUnit. The **TestCase** class has been modified to subclass **SilverMark.StmSuite**, and a few methods in the TestMentor category were added.

Now when you start the Test Mentor Editor, you will see all your subclasses of **TestCase** appear in the list of suites, and all test methods within them appear as instance method steps.

Getting Started

Browse the manual

The first thing to do is browse the Test Mentor manual to get a general feel for the product. This document is downloaded separately from the SilverMark web site. Follow the calculator example in the *Getting Started* section of the manual.

Other documents

- ❑ **stmVWSalesLeadExample.pdf** – A brief description of the example sales lead application and how to approach testing it.
- ❑ **stmVWWidgetExtensions.pdf** – A description of the process for adding extensions to Test Mentor to handle custom and modified widgets. Read this if you have custom or modified widgets.

Handling custom widgets and changes to base code

SilverMark's Test Mentor is designed to work without modification with all standard VisualWorks widgets. If you have added your own custom widgets or changed any base widgets, you may experience recording or playback problems with those widgets. To eliminate surprises, you will need to identify any custom widgets or changes to base code.

Refer to **stmVWWidgetExtensions.pdf** for instructions on how to extend your widgets so Test Mentor can record and play back interactions with them, or contact support@silvermark.com to discuss your widgets with an engineer.

A first use of the product

Select some part of your application and use Test Mentor to create a simple GUI recording based test for it. Don't worry about the structure of your test right now. You are just playing around. Put your application back into the state that it was in before you recorded the test and try playing the test back. Did the test play back correctly? If not, you may not have put your application back in the same state as when you recorded your test. Another possible cause of problems is that you have encountered a custom widget or some other change. If, after a few minutes of exploration, you cannot find the cause the problem, give SilverMark a call. We live and breathe automated testing and should be able to help you right along.

Planning for the future

Now that you have a little experience under your belt, it's time to start planning for broader application of automated testing. SilverMark's Test Mentor is unique as far as automated testing tools go, because it is built on the notion that tests (suites and scenarios) are reusable components. Try to think about how you might partition your tests so that they are composed of reusable building blocks. You will find that if you adopt this approach, over time your test development activity will evolve from that of creating small, reusable scenarios to creating scenarios that are simply assemblies of existing scenarios. Note that this type of structuring is not mandatory, but over the long term, it is the most efficient approach to test creation and helps position your tests for scalability and maintainability, and promotes test sharing in a team test creation environment.

SilverMark personnel have a great deal of experience creating tests. You may want to give SilverMark support a call to discuss ideas and strategies.

Known Problems and limitations

Playing back recorded interactions with a modal dialog, will hang if the test ends without closing the dialog as part of the test. Please ensure that any dialog recordings include steps to close the dialog.

A Fast Overview of SilverMark's Test Mentor

What does Test Mentor do for me?

SilverMark's Test Mentor is the solution for automated testing of application's developed with VisualAge and VisualWorks Smalltalk. It is the only automated testing solution specifically designed for and integrated with the Smalltalk development environment.

Why is this important?

Because SilverMark's Test Mentor is integrated with the Smalltalk development environment it enables you to do things like:

- record and play back user interface interactions for all widgets
- test your domain (model) objects
- manage versions of your tests with ENVY/*developer* or STORE
- generate test cases directly from UML Modeler designs
- share tests between development and packaged images
- automatically measure method coverage and performance
- harness the power of Smalltalk to script your tests

Why do you need to automate your testing?

As companies increase their reliance on complex client-server applications for day-to-day operations, reliability, availability and performance become increasingly critical.

Defects can creep in at any time during code development or maintenance. Seemingly trivial changes to complex applications can have far-reaching consequences. Failure to adequately ensure quality causes embarrassment and financial hardship for too many organizations. Economic penalties for defects can include but are not limited to increased support expenses, lost revenues, and customer dissatisfaction. Organizations that understand the penalties of delivering applications with defects incorporate formal testing into their development processes.

In order to adequately evaluate the quality of a system, tests should be created that exercise a representative set of paths within the context of any relevant states that the system under test may be in. Creating manual test scripts is usually the starting point for formalized testing, but with frequent development cycles, repeated manual testing quickly becomes the dominant consumer of valuable human resources. It is also difficult to ensure exact repeatability when tests are manually executed, possibly by different people.

The answer to this problem is to move effort expenditure from repetitious manual testing to automation whose cost can be amortized over the development and maintenance lifetime of an application. This encourages frequent testing throughout the application life cycle so defects are caught early when they are less costly to fix. In addition, automated testing ensures exact repeatability, which is often a challenge with manual testing - particularly when different people are executing tests.

An additional benefit of incorporating automated testing into your development process is that those tests not only serve as vehicles for communicating problems to developers, but they also verify that those problems are fixed, and ensure that they do not creep back in to the system at a later time. Also, once a base of automated tests has been created, time can be spent extending test coverage rather than repeating manual tests.

Automated testing implies adoption of a test automation tool. An ideal test automation tool should:

- Automate test creation
- Supply a mechanism for reusing test components
- Encourage the reuse of test components
- Be designed specifically for an application's operating and development environment

Why should you select SilverMark's Test Mentor?

SilverMark's Test Mentor is ideal because it is the only complete automated testing solution designed specifically to test applications created using VisualWorks or VisualAge Smalltalk and VisualAge Generator.

It satisfies the above requirements by providing user interface interaction recording facilities that automate test creation and an architecture that enables tests to be reused within other tests. This minimizes maintenance overhead and enables test developers to rapidly build broadly scoped tests out of existing tests.

SilverMark's Test Mentor operates from WITHIN the Smalltalk image. This gives it full visibility to all domain objects for deep testing of frameworks and subsystems. SilverMark's Test Mentor, as well as the tests that it generates, are 100% pure Smalltalk so test developers do not need to learn a new scripting language or source control system.

This offers several distinct advantages:

- Test cases have access to all objects, whether they are visual or non-visual.
- Interactions with all widgets - even Extended Widgets - can be recorded and played back. Also, because SilverMark's Test Mentor has direct access to all widget objects, their exact state can be verified.
- Changes in widget position do not affect operation. When an automated user interface test tool that operates outside of the image cannot recognize a widget, it generates a mouse click at the position where it guesses the widget should be. If the screen resolution changes or the widget is moved in any way, the test becomes invalid. Executing from within the Smalltalk image solves this problem because all widgets are addressable at the object level.
- Most test tools offer a procedure-based scripting language. Because tests created with SilverMark's Test Mentor are scripted in Smalltalk, test developers are free to exploit inheritance, polymorphism and Smalltalk class extensions, if they choose, to create more sophisticated, reusable tests.
- Because tests are executed within the image, method coverage during test execution can be measured.
- SilverMark's Test Mentor leverages the platform portability inherent in IBM Smalltalk so tests are portable across platforms to the same degree as the underlying Smalltalk code.
- Because tests are executed within the image, exceptions do not halt the test. When an exception does occur during a test, the walkback stack is logged and execution continues. This permits unattended operation. Tests can be configured to cease on failures if there is no point in continuing on an exception.

SilverMark's Test Mentor is implemented with an open architecture. Extensions or modifications to fit special needs can be easily added. For example, it is a simple matter to extend the tool to accommodate custom widgets.

Getting Help

SilverMark provides 90 days of free support for Test Mentor to REGISTERED users. Additional support contracts may be purchased for an annual fee and include phone support bug fixes - contact SilverMark for details.

When you report a problem, please try to have as much supporting information available as possible. It helps a great deal if you can email test cases (Smalltalk class fileout or parcel) directly to SilverMark. Some questions you may be asked are:

- What was the goal of the test?
- Do the recorded steps seem to describe your interactions or are there inconsistencies?
- What errors or exceptions are in the results (please send results, if possible)
- Has this test run correctly before?
- Are there any custom widgets in the recorded view?

Documentation

Documentation is available for download from the SilverMark web site (www.silvermark.com).

Service and technical support

For service and technical support, send e-mail to support@silvermark.com. SilverMark may provide additional support in the form of forums or technical reports. You will be notified of how to access this information when it becomes available.

Defect reporting

For defect reporting, send e-mail to support@silvermark.com. Please provide as much detail as possible, as well as specific information on the operating system or any modified or extended widgets you may be using. When sending in a support request please provide as much information as possible. The following details will be needed for us to provide prompt support:

1. Version and serial number of Test Mentor

2. Version number of the VisualWorks product you are using
3. Version number of the operating system you are using
4. Any special information about your configuration.

Your Satisfaction

Your satisfaction with SilverMark, Inc. is important to us. If you are not totally satisfied with this product, please let us know. Tell us what is not meeting your expectations and why you are dissatisfied. Provide your name, your organization's name, your telephone number, and Internet e-mail address so that we can contact you. We will work with you to resolve your concerns.

SilverMark, Incorporated
5511 Capital Center Drive
Suite 510
Raleigh, North Carolina 27606
Toll free: (888) 588-0668
International: 01.919.858.8300
Fax: 01.919.858.8308
<http://www.silvermark.com>
Internet: support@silvermark.com

Trademarks

SilverMark, Inc., Smalltalk Test Mentor, SilverMark's Test Mentor and Visual Verification Wizard are trademarks of SilverMark, Inc.

OS/2 and VisualAge are trademarks of International Business Machines Corporation.

VisualWorks is a trademark of Cincom, Inc.

Microsoft and Windows are trademarks of Microsoft Corporation.