DriverStudio and SoftICE Driver Suite Installation Guide

Release 3.1

COMPUWARE

Technical support is available from our Technical Support Hotline or via our FrontLine Support Web site.

Technical Support Hotline:
1-800-538-7822

FrontLine Support Web Site:
http://frontline.compuware.com

December 10, 2003

Table of Contents

Preface

This manual describes how to get started using your Compuware® DriverStudio™ or SoftICE Driver Suite™ software.

Who Should Read this Manual

This manual is intended for new DriverStudio or SoftICE Driver Suite users and for users of previous versions of DriverStudio or SoftICE Driver Suite who want an overview of new installation procedures.

New users should read Chapter 1 to get an overview of DriverStudio and SoftICE Driver Suite installation concepts before installing the product.

Users of previous versions of DriverStudio or SoftICE Driver Suite can proceed to Chapter 2 and follow the installation instructions. Then, they should read the Release Notes to see how this version of DriverStudio or SoftICE Driver Suite differs from previous versions.

This manual assumes that you are familiar with the Windows interface and with software development concepts.

What this Manual Covers

This manual contains the following chapters:

- **Chapter 1, *Concepts,*** provides conceptual information regarding the DriverStudio and SoftICE Driver Suite installation, as well as information about how to obtain a license.
- **Chapter 2, *Quick Install,*** helps you decide what kind of installation you require, provides a brief description of a basic DriverStudio and SoftICE Driver Suite installation, and helpful tips. In addition, the final section describes how to launch the DriverStudio Configuration wizard and access help and information on further configuring your DriverStudio environment.

Conventions Used in this Manual

This book uses the following conventions to present information.

- Screen commands and menu names appear in **bold typeface**. For example:

  Choose **Item Browser** from the **Tools** menu.

- Computer commands and file names appear in `monospace typeface`. For example:

  The ***Using SoftICE*** manual (`Using SoftICE.pdf`) describes...

- Variables in computer commands and file names (for which you must supply values appropriate for your installation) appear in *`italic monospace type`*. For example:

  Enter **`http://`*`servername`*`/cgi-win/itemview.dll`** in the **Destination** field...

Chapter 1
Concepts

- Overview
- Host and Target Machines
- DriverStudio and SoftICE Driver Suite Configuration Types
- Obtaining a License

This chapter provides conceptual information regarding the DriverStudio and SoftICE Driver Suite installation, as well as information about how to obtain a license.

Overview

There are two basic DriverStudio and SoftICE Driver Suite configurations: host systems and target systems. You can also configure a machine to be both a host and a target for use in single-machine debugging. Host functionality consists of user-side GUI-intensive programs. Target functionality consists of device drivers that run in kernel mode. Depending on the particular application, it can run on the host (for example, DriverWorks or DriverNetworks), run on the target (for example, SoftICE), or distributed across the host and target (Visual SoftICE, DriverStudio Configuraton, TrueTime, and BoundsChecker). The user sits at the host machine, from where he or she can control multiple target systems, over a TCP/IP, Serial, or 1394 Firewire network.

Host and Target Machines

DriverStudio and SoftICE Driver Suite are integrated suites used in kernel mode software development. Because kernel mode software is a part of the operating system, sometimes it is difficult to develop such software without interfering with the operation of the development machine itself. Because of this, DriverStudio and SoftICE Driver Suite use the concept of host and target machines. The concept is quite simple: Software is either developed on a host machine, but is run and debugged on a target machine, or software is developed, run, and debugged entirely on the target machine.

Host Machines

Host machines provide the development environment. This includes the Microsoft DDK, the C++ compiler and linker used to compile the new code, the build tools and batch files required to build the product, and several development aids. The kernel developer, who is in charge of developing the driver, sits at the host machine and controls both development and testing from his system.

Target Machines

Target machines run the drivers to be tested. You do not need to have a full development environment on a target machine. The DDK, compiler, and linker all reside on the host system. But once the developer has built a driver that needs to be tested, that driver gets loaded on the target machine, and the developer can control the target remotely from his host machine and do the debugging and testing work there.

How Debugging Can Work

A typical sequence of events is:

1. The developer implements new code on the host machine, then compiles, links and builds the code into a new device driver.
2. The developer uploads the device driver executables from the host to the target machine.
3. The developer installs the driver on the target machine, rebooting it if necessary.
4. The developer proceeds to debug the target machine from the host.

In its simplest form, this concept only involves one host and one target, and this is how many debuggers work.

DriverStudio and SoftICE Driver Suite Configuration Types

Because of the host and target machine concept, DriverStudio and SoftICE Driver Suite provide several configuration types.

Host Configurations

Host configurations include user-mode components of DriverStudio, such as DriverWorkbench, Visual SoftICE, the Frameworks Wizards, SoftICE Symbol Loader, and the SoftICE remote user program (SIREMOTE). You can debug any target machines that you have access to over the network. Control of these remote targets can be done through DriverWorkbench or the Namespace Extension.

Target Configurations

Target configurations include kernel mode components such as the SoftICE, TrueCoverage and TrueTime drivers. Note that these configurations require a host machine to do debugging.

Single-Machine Configurations

Single-machine configurations include both host and target functionality. With these configurations, you can do single-machine debugging.

The Distributed Protocol

DriverStudio and SoftICE Driver Suite implement a distributed protocol that allow them to have multiple hosts and multiple targets on the same network. In addition, DriverWorkbench is equipped with a remote target selector window, so that a developer sitting at a host machine can link to remote target machines and perform BoundsChecker, Visual SoftICE, TrueCoverage, and TrueTime analysis remotely on the target. Virtually all functionality available through the DriverWorkbench is available both on the host machine and on a remote target machine, as long as the host machine can “see” that target over the network. To help with this, DriverStudio and SoftICE Driver Suite include the Namespace Extension, which enhances the level of remote control a host developer can exercise over multiple remote targets accessible through a TCP/IP network.

However, some user-mode components still must be run on the target machine. The Symbol Loader can be run on both the host and target machines.

Obtaining a License

In order to obtain your license file, you must follow the instructions listed on the yellow paper in your product box. You can also go to www.compuware.com/license to submit your request for a license file. In the meantime, you can install your product as a 14-day evaluation.

Chapter 2
Quick Install

- Deciding what You Should Install
- Installation Choices
- Quick Installation Instructions
- Installation Tips
- Launching DSConfig

This chapter helps you decide what kind of installation best meets your needs, provides a brief description of a basic DriverStudio and SoftICE Driver Suite installation, and helpful tips. In addition, “Launching DSConfig” describes how to launch the DriverStudio Configuration wizard and access help and information on further configuring your DriverStudio environment.

Deciding what You Should Install

What you need to install is determined by the way you intend to use DriverStudio or SoftICE Driver Suite. There are essentially two ways to run the product: single-machine and dual-machine environments.

The Single-Machine Installation

You should choose a single-machine installation if you want the convenience of having the development and debug environment on one machine.

The Dual-Machine Installation

You should choose a dual-machine installation if you will be developing items that might require remote debugging, (for example, video drivers) or if you like the relative safety of not having your development and debug environments on the same machine.

Installation Choices

DriverStudio and SoftICE Driver Suite have three basic installation types:

- Host and Target
- Host only
- Target only

A combination of the following types is also valid. For instance, you can have a host and target installation on a development machine, which could debug locally (single-machine) and still debug a driver loaded on a target machine in a lab (dual-machine). For this scenario to work, you would need to conduct a host and target installation on one machine, and a target-only installation on at least one other machine.

Host and Target Installation

If you are planning on working in a single-machine debugging situation, you would select **Host and Target Install** from the CD autorun, and select **Both Host and Target** at the **Select Machine Configuration** screen. This is the only configuration that allows for single-machine use of the tools.

Installing only the Host

The host-only installation installs the host portion of the product alone. That is, this installs the binaries used for interpreting data that is provided by the target machine; it does not install the data collection binaries. This option is for true dual-machine debugging scenarios. It requires an additional installation of target components on at least one other machine.

You can conduct a host-only installation by selecting **Host and Target Install** from the CD autorun, and then selecting **Host Only** at the **Select Machine Configuration** screen.

Installing only the Target

The target-only installation installs only the target portion of the product. That is, this installs the binaries used for collection of data on the target machine. The target machine cannot interpret any data. This option is for true dual-machine debugging scenarios. It requires an additional installation of host components on another machine.

You can conduct a target-only installation by selecting one of the target installers from the CD autorun. There are several target-type installations, and they all have the same basic effect; the difference is only the environment in which they will operate.

Quick Installation Instructions

The following instructions guide you through the process of installing the DriverStudio/SoftICE Driver Suite tools:

1. Insert the product CD into your CD-ROM drive.
   If you have the autorun feature enabled, Setup runs automatically. If not, open the **Add/Remove Programs** control panel and click **Install**.
2. Select the correct installation type for your debugging situation from the splash screen.
   For information on how to choose the correct installation type for your debugging situation, refer to “Deciding what You Should Install” on page 5.
3. Accept the license agreement, and click **Next**.

Note: If this is a target-only installation, skip to step 7.

4. Enter the user-name, organization, and serial number for the product, and click **Next**.
   For help on entering the serial number, refer to “Installation Tips” on page 8.
5. Select a license type, and click **Next**.
   If you have your license file, select **License File or Server**. If you do not yet have your license file, refer to the section “Obtaining a License” on page 4.
6. Enter the location of the license file, and click **Next**.
7. Change the installation directory, if you want, by editing the installation path to point to where you want the files to reside on your machine, and click **Next**.

8 Choose the type of installation (Skip this step for Target installations).
For more information on choosing the right installation type, refer to “Installation Choices” on page 6.

9 Select the features that are required for this machine or debug session (this selects the components that will be installed on the machine), and click **Next**.

10 Click **Install** to begin copying and installing files.
You can click **Back** to return to the previous screen, if you need to, and amend your selected features before you click **Install**.

The installer finishes copying files and displays a configuration screen. You can, if you want, click **Finish** to close the configuration screen, complete the installation process, and return to finish configuring DriverStudio later. Refer to “Launching DSConfig” on page 10.

11 Fill out the **DriverStudio Email Update Notification Subscription** form, and click **Modify Subscription** to submit it to Compuware.

12 Register your product from the registration screen, or print out the registration form and send it in later.

13 Click **Finish,** and reboot the machine if prompted.

Installation Tips

The following sections provide tips you may find helpful during installation, if you encounter any problems.

Entering Your Serial Number

Find the product serial number on your registration card or CD envelope. It is a twelve-digit number that includes hyphens. Enter the serial number, grouped exactly as shown, in the hyphen-separated fields provided.

Serial Number Does Not Seem to be Working?

Check that you are installing the correct product and product version. Serial numbers are specific to a particular release of the product.

Installation Problems?

A common cause of installation problems is the presence of “leftover” files from previous installations in your system **temp** directory. If you encounter errors during the installation process, try deleting the contents of your system **temp** directory, then re-installing the product.

Choosing a Display Adapter for Use with SoftICE

During installation, if your display adapter is not supported, try selecting the Universal Video Driver (Display Adapter Selection in the SoftICE Setup Wizard).

If your adapter fails the display adapter test, you should try downloading the latest display drivers from your display adapter’s manufacturer.

Lost Ethernet Connection After Installation

This might not be a problem. It might be just a misunderstanding of how the Visual SoftICE network debugging operates. Visual SoftICE uses a dedicated network that becomes the connection for debugging only. So, if your connection to the debugger is working, but the connection to the Internet is not, then this is normal.

Compuware suggests that the target machine have two network cards: one PCI network card for normal network operation, and another PCI network card for the Visual SoftICE debugger. The only other alternative is to use the Virtual NIC (VNIC) driver in addition to the installed connection.

Problems Rebooting the Target Machine after Installation

Try connecting with the host (“master” for Visual SoftICE) and check the status of the target to see if it has reached a breakpoint. A major cause of this behavior is the “stop on boot” setting. Once the target is up and running, use DSConfig to check the “stop on boot” setting for the target, and modify it according to your needs.

Launching DSConfig

The DriverStudio Configuration wizard (DSConfig) provides a centralized utility for configuring all of the individual components of DriverStudio, including the DriverWorkbench environment. The DSConfig help files, which you can access via the Help button in the DSConfig utility, provide more detailed information on all the configuration options. Complete the following steps to launch DSConfig:

From the System Tray

1. Right-click on the gear-shaped DSConfig icon in the System Tray.
2. Select **Settings** from the pop-up menu.

From the Start Menu

1. Select **Programs** from the **Start** menu.
2. Select the applicable product, **Compuware DriverStudio** or **SoftICE Driver Suite,** from the **Programs** menu.
3. Select **Settings** from the applicable product menu.

Index

S

T

V

W