TimeScan THC Release 3.0

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How to Use This Guide

This preface describes the format, layout, and purpose of this guide.

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- Purpose of This Guide
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Purpose of This Guide

The *TimeScan THC 3.0 Getting Started Guide* describes how to install the TimeScan THC software on a management PC and connect the management PC to a TimeHub SSU. It also gives a brief overview of the software's interface, includes troubleshooting information, and explains how to uninstall the software from the management PC.

Who Should Read This Guide

Chapter 1, Introduction and General Information, is written for audiences who need general information about the software, and users who need to know the requirements for installing and using the software. Chapter 2, Installing TimeScan THC 3.0, explains how to connect a management PC to a TimeHub SSU, make necessary configuration settings to establish communications between the two, and install the software. Chapter 3, TimeScan THC 3.0 Overview provides a brief overview of the software's interface, and explains how to access the software's on-line help system, where further information and user instructions can be found. Chapter 4, Troubleshooting provides troubleshooting information should the software not install properly, not connect to the SSU, or should you encounter problems when using the software. If you need to remove the TimeScan THC software from the management PC, consult Appendix B, Uninstalling the TimeScan THC Software.

Structure of This Guide

This guide contains the following sections and appendixes:

Chapter, Title	Description
Chapter 1, Introduction and General Information	Provides an overview of the software, and describes its major features and the management functions it supports. It also describes the hardware and software requirements for the management PC and SSU, as well as cabling requirements, for successful installation and operation of the software.
Chapter 2, Installing TimeScan THC 3.0	Contains procedures for connecting and configuring the management PC and SSU, installing the TimeScan THC software, starting the software, and stopping the software.
Chapter 3, TimeScan THC 3.0 Overview	Provides a brief orientation to the software's user interface, briefly describes the function of the various screens, and explains how to access the on-line help system.

Chapter, Title	Description
Chapter 4, Troubleshooting	Provides help for correcting various problem scenarios that you might experience when installing the software, establishing a connection between the management PC and SSU, or using the software.
Appendix A, Configuring TCP/IP on the PC	Explains how to configure the management PC with a static IP address and subnet mask.
Appendix B, Uninstalling the TimeScan THC Software	Explains how to uninstall the TimeScan THC software from the management PC.
Index	Provides references to individual topics within this guide.

Conventions Used in This Guide

This guide uses the following conventions:

- **Acronyms and Abbreviations** – Terms are spelled out the first time they appear in text. Thereafter, only the acronym or abbreviation is used.

- **Revision Control** – The title page lists the printing date and versions of the product this guide describes.

- **Typographical Conventions** – This guide uses the typographical conventions described in the table below.

When text appears this way...	... it means:
TimeScan THC 3.0 Getting Started Guide	The title of a document.
CRITICAL **Local** **Remote Comm**	An operating mode, alarm state, status, or chassis label.
Select **File**, **Open**...	Click the Open option on the File menu.
Press **Enter** Press **;**	A named keyboard key or interface button. The key name is shown as it appears on the keyboard or in the interface. An explanation of the key's or button's acronym or function immediately follows the first reference to the key/button, if required.
`Username:` `Continue with installation?`	Text in a source file or a system prompt or other text that appears on a screen.

When text appears this way...	... it means:
`PING` `STATUS`	A command you enter at a system prompt or text you enter in response to a program prompt. You must enter commands for case-sensitive operating systems exactly as shown.
must have *read-write* permissions	A word or term being emphasized.
Symmetricom ***does not*** recommend...	A word or term given special emphasis.

Warnings, Cautions, Recommendations, and Notes

Warnings, Cautions, Recommendations, and Notes attract attention to essential or critical information in this guide. The types of information included in each are explained in the following examples.

Warning: To avoid serious personal injury or death, *do not* disregard warnings. All warnings use this symbol. Warnings are installation, operation, or maintenance procedures, practices, or statements, that if not strictly observed, may result in serious personal injury or even death.

Caution: To avoid personal injury, *do not* disregard cautions. All cautions use this symbol. Cautions are installation, operation, or maintenance procedures, practices, conditions, or statements, that if not strictly observed, may result in damage to, or destruction of, the equipment. Cautions are also used to indicate a long-term health hazard.

ESD Caution: To avoid personal injury and electrostatic discharge (ESD) damage to equipment, *do not* disregard ESD cautions. All ESD cautions use this symbol. ESD cautions are installation, operation, or maintenance procedures, practices, conditions, or statements that if not strictly observed, may result in possible personal injury, electrostatic discharge damage to, or destruction of, static-sensitive components of the equipment.

Electrical Shock Caution: To avoid electrical shock and possible personal injury, do not disregard electrical shock cautions. All electrical shock cautions use this symbol. Electrical shock cautions are practices, procedures, or statements, that if not strictly observed, may result in possible personal injury, electrical shock damage to, or destruction of components of the equipment.

Recommendation: All recommendations use this symbol. Recommendations indicate manufacturer-tested methods or known functionality. Recommendations contain installation, operation, or maintenance procedures, practices, conditions, or statements, that provide important information for optimum performance results.

Note: All notes use this symbol. Notes contain installation, operation, or maintenance procedures, practices, conditions, or statements, that alert you to important information, which may make your task easier or increase your understanding.

Related Documents and Information

Other helpful documents and software tools are listed below. See your Symmetricom representative or sales office for a complete list of available documentation.

- TimeScan THC on-line help
- *TimeHub 5500 System Manual*
- *TimeHub 5500 TL1 Reference Manual*

Note: Symmetricom offers training courses designed to enhance your knowledge Symmetricom products. Contact your local representative or sales office for a complete list of courses and outlines.

Where to Find Answers to Product and Document Questions

For additional information about the products described in this guide, please contact your Symmetricom representative or your local sales office. You can also contact us on the web at www.symmetricom.com.

What's New In This Guide

Issue 1 is the initial release of the TimeScan THC 3.0 Getting Started Guide.

Chapter 1 Introduction and General Information

This chapter describes the software and provides an overview of the minimum system requirements.

In This Chapter

- Software Description
- Requirements

Software Description

TimeScan THC is a powerful local management application that is used for accessing and controlling Symmetricom's TimeHub 5500 synchronization supply unit (SSU). The intuitive graphical user interface (GUI) employed by TimeScan THC allows users to access much of the TimeHub's functionality without knowledge of its TL-1 programming language, instead using simple point-and-click operations.

TimeScan THC is designed to run on IBM-compatible desktop or notebook PCs running Windows 95, 98, ME, NT, 2000, and XP, and can communicate with TimeHub 5500 SSUs over either an RS-232 serial connection or a TCP/IP network connection, as shown in Figure 1-1.
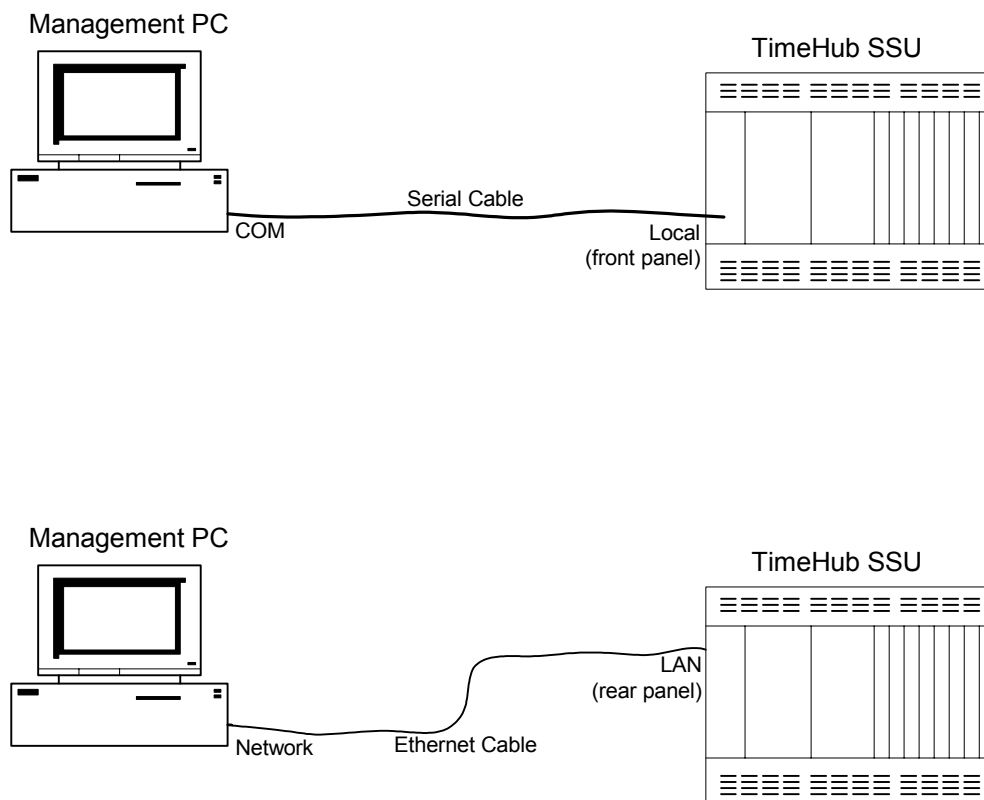
Figure 1-1.   Methods of connecting a Management PC to a TimeHub SSU

Notes:

1. TimeScan THC is not compatible with PCs running Windows 3.1.

2. If the TimeHub SSU has not been configured for TCP/IP operation, TimeScan THC must initially use an RS-232 serial connection to access the SSU.

Supported Management Functions and Features

Version 3.0 of the TimeScan THC software supports TimeHub SSUs containing firmware versions *R4236A and below.* The software provides support for the following management functions and features:

Fault Management

The fault management features provided by TimeScan THC include the following:

■ An **Alarm Message** screen, which displays a listing of the SSU's current alarms, color-coded according to the severity of each alarm. Filtering functions allow only alarms having selected severities to be displayed.

■ An **Event Log** screen, which displays the contents of the event logs that are maintained on the SSU's clock cards.

■ An **Auto Msg** screen, which displays a log of automatic output (AO) messages from the SSU.

■ A **Threshold** screen, which allows the user to make various settings related to each measurement threshold for selected input channels and performance measurement types.

■ An **Event Setup** screen, which allows the user to choose the alarm types that are logged into the event log, and set the severity level of each alarm.

Configuration Management

The configuration management features provided by TimeScan THC include the following:

■ **Input** and **Output** screens, which allow provisioning and control of SSU input and output cards and ports.

■ Screens that allow configuration of certain system settings, such as the SSU's date, time, and system ID (SID).

■ Screens that allow configuration of certain SSU **Local**, **LAN**, and **Remote Comm** port settings.

■ Screens that allow you to enter and send Transaction Language 1 (TL-1) commands to the SSU, and view TL-1 responses from the SSU.

Performance Management

The performance management features provided by TimeScan THC include the following:

■ A screen that allows you to graph the data collected by the SSU on specified input channels for various performance measurements, and plot them against a choice of several performance masks, if desired.

Security Management

The security management features provided by TimeScan THC include the following:

- A **User Administration** screen, which allows system users of the appropriate security level to add, manage, and delete users in the SSU's security database.

- An **Active Sessions** screen, which shows the TCP/IP sessions that are currently logged into the SSU.

- A **Mode of Operation** menu, which allows the setup of various users of the TimeScan software having either *Basic Mode* (SSU configuration view-only) privileges or *Advanced Mode* (SSU configuration view/modify) privileges.

Features Added in Version 3.0 of TimeScan THC

The following features have been added in version 3.0 of the TimeScan THC software, relative to the previous version:

- Support for TimeHub SSUs with firmware version R4236A has been added. Version R4236A affects the TimeScan THC interface as follows:

  – The Input sub-tab under the Configuration tab for the main shelf has been enhanced to show the new keyword SELMDE under "Input Selection Mode," and a set of new controls has been added under "Operation Mode."

  – The Input sub-tab under the Configuration tab for the remote shelf has been enhanced to show the new keyword SELMDE under "Input Selection Mode."

- Full support for TimeHub SSUs with older firmware has been added. If TimeScan THC 3.0 is connected to a TimeHub SSU with older firmware, functionality that is specific to those versions of firmware is displayed.

- The functionality of the "Enable All/Disable All" pop-up menu that is on the Output sub-tab under the Configuration tab is relative to the connector cards present. Based on the connector cards present, ports 1-20 or 21-40 or 1-40 will be enabled or disabled.

Note: The "Enable All/Disable All" pop-up menu is accessed by right-clicking on the Port or Enable rows under "Configuration."

- A parameter, "SERIAL RETRY COUNT," has been added to the SmartVW.INI file. In case of Serial connections, if a response is not returned from the TimeHub SSU, the software will re-send the same TL1 command for the number of times specified by this parameter. The default value is 5.

Requirements

TimeScan THC is designed to run on IBM-compatible PCs running various versions of the MicroSoft Windows operating system. The PC used for management, the TimeHub SSU being managed, and the cabling between them must meet the requirements as detailed in this section.

Minimum Requirements - Management PC

Operating System
The PC must be running one of the following operating systems:

- Windows 95c or above

- Windows 98 Second Edition

- Windows Millennium Edition (Me)

- Windows NT 4.0 with Service Pack 4 and above

- Windows 2000

- Windows XP

Hardware
The following minimum PC hardware requirements must be met in order to install and use TimeScan THC:

- The PC must meet the minimum system requirements for the version of the Windows operating system that it is running. Refer to the operating system's documentation for these minimum system requirements.

- 10 MB of additional free hard disk space is required to install TimeScan THC.

- If TimeScan THC is to access the TimeHub SSU via an RS-232 serial connection, the PC must have an RS-232 communications port.

- If TimeScan THC is to access the TimeHub SSU via a TCP/IP LAN connection, the PC must have a 10Base-T capable Ethernet port.

> **Note:** If the TimeHub SSU has not been configured for TCP/IP operation and the PC will be used to manage that SSU, the PC *must* have an RS-232 serial communications port to initially access the SSU.

Minimum Requirements - TimeHub SSU

The TimeHub SSU must contain a Management Card (part number 090-55542-01) in order to communicate with the management PC.

Cabling Requirements

- *For connection to the front or rear-panel **Local** serial port on TimeHub,* a DB-9 female to DB-9 male straight-through interface cable is required.

- *For connection to the rear-panel **Remote Comm** serial port on TimeHub,* a DB-9 female to DB-25 male null-modem (serial crossover) cable is required.

- *For connection to the **LAN** port on TimeHub,* an RJ-45 Ethernet cable is required.

Chapter 2 Installing TimeScan THC 3.0

This chapter describes how to configure the management PC and TimeHub hardware, install the TimeScan THC software on the management PC, and start the software.

In This Chapter

- Installing TimeScan THC 3.0
- Starting the TimeScan THC 3.0 Software
- Stopping the TimeScan THC 3.0 Software

Installing TimeScan THC 3.0

The TimeScan THC software is included on the CD labeled *TimeScan THC For TimeHub 5500 for Windows 95/98/2000/NT*. Have that CD available before beginning this installation procedure. In addition, ensure that the requirements for the management PC, TimeHub SSU, and cabling have been met before beginning this installation procedure. Refer to Requirements in Chapter 1 for more information.

The following procedures explain how to make necessary changes to the hardware and install the TimeScan THC software.

Decide Which Connection Method to Use

TimeScan THC is capable of communicating with a TimeHub SSU using either a local *serial* connection or *TCP/IP* network connection. The following guidelines explain how to decide which connection method is appropriate:

- If the TimeHub SSU has not yet been configured for network operation and TimeScan TSC will be used to configure the SSU, then the PC on which TimeScan THC will be installed needs to be capable of serial communications, so the *RS-232 Serial* connection method must be used.

- If the TimeHub SSU has been configured for network operation (that is, it has been assigned an IP address and subnet mask), then TimeScan THC can use either serial or TCP/IP to communicate with the SSU, so either the *RS-232 Serial* or *TCP/IP* connection method can be used, depending upon the capabilities of the PC.

Notes:

1. Refer to Minimum Requirements - Management PC in Chapter 1 if necessary for information on minimum requirements for the management PC.

2. You must know the IP address of the TimeHub SSU in order to establish communications with it using the TCP/IP connection method.

Connect the PC to the TimeHub

The simplest way of connecting the PC to the TimeHub SSU is using a direct cable connection between the two units, as described below:

If the RS-232 Serial connection method is being used:

1. Connect the female end of an appropriate serial interface cable to the RS-232 serial port on the management PC.

2. Connect the other end of the serial interface cable to either the front or rear-panel **Local** connector on the TimeHub SSU, or to the rear-panel **Remote Comm** connector on the TimeHub.

> **Note:** Refer to Cabling Requirements in Chapter 1 if necessary for information on the cables that should be used.

If the TCP/IP connection method is being used:

■ Connect an RJ-45 Ethernet cable from the Ethernet connector on the PC to the **LAN** connector on the TimeHub SSU.

Configure PC Communications

If the RS-232 Serial connection method is being used:

Proceed directly to Install TimeScan THC 3.0 on the PC, below, to install the TimeScan THC software.

If the TCP/IP connection method is being used:

The IP address of the PC must be on the same subnet as the TimeHub SSU. If it is not, then go to Appendix A, Configuring TCP/IP on the PC for instructions on how to set the IP address and subnet mask on the PC.

Install TimeScan THC 3.0 on the PC

> **Note:** If you will be installing TimeScan THC on a management PC that is running Windows NT, 2000, or XP, ensure that you are logged on with administrator privileges.

1. If the PC has a previous version of TimeScan THC installed on it, uninstall the previous version before installing TimeScan THC 3.0.

   Refer to Appendix B, Uninstalling the TimeScan THC Software for information on uninstalling the software.

2. Insert the CD labeled *TimeScan THC For TimeHub 5500 for Windows 95/98/2000/NT* into the PC's CD-ROM drive. If AutoRun is enabled on the PC, the CD should launch automatically and display the screen shown in Figure 2-2.
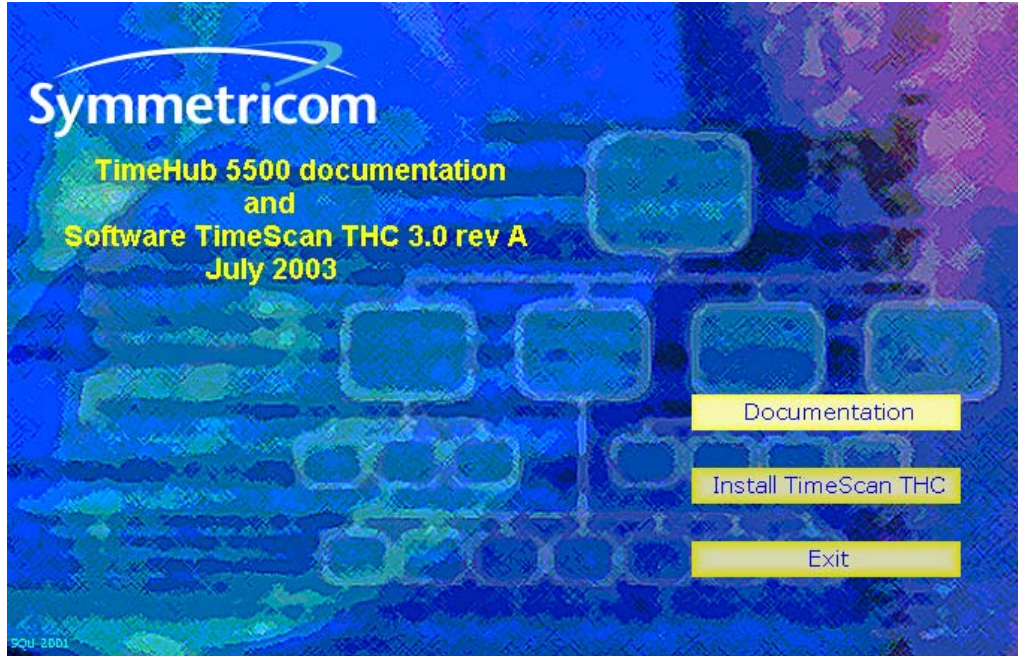

Figure 2-2.   TimeHub/TimeScan CD Main Screen

Note: If the CD does not launch automatically, open the Windows Explorer on the PC and double-click "`startcd.exe`" that is in the `\intro` directory of the CD.

- The **Install TimeScan THC** button begins the software installation process.

- The **Documentation** button allows you to access PDF versions of the following documentation:

  - *TimeHub 5500 System Manual*

  - *TimeHub 5500 TL1 Reference Manual*

  - Software License Agreement

  - Software Warranty Agreement

  You can also install a copy of the Adobe Acrobat Reader, which is required to view the PDF documentation files, from the Documentation screen.

3. Click on the **Install TimeScan THC** button.

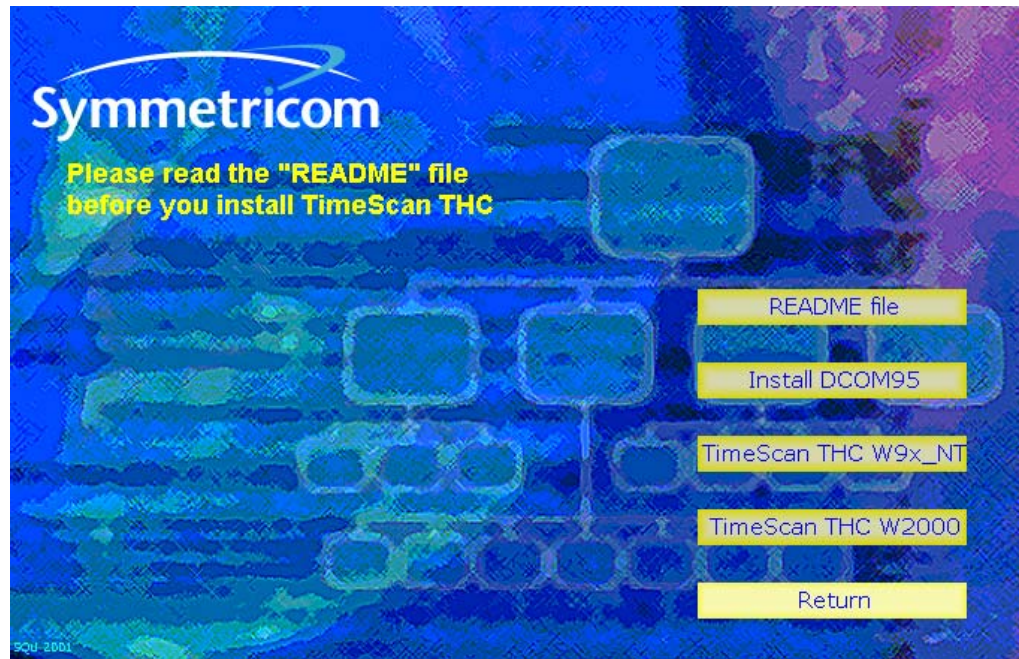When the button is clicked, the screen shown in Figure 2-3 appears.

Figure 2-3.   TimeScan Installation Screen

4. Click on the appropriate button in the installation screen, depending upon the Management PC's operating system:

–   *If the management PC is running Windows 95, 98, Me, or NT,* click the **TimeScan THC W9x_NT** button.

–   *If the management PC is running Windows 2000 or XP,* click the **TimeScan THC W2000** button.

When the button is clicked, the InstallShield Wizard starts, a splash screen and then a "Preparing Setup" screen appear momentarily, and then the InstallShield Wizard welcome screen appears.

Notes:

1. At some point during the following steps you might be prompted to overwrite existing files. You must allow the system to do so for the installation to complete successfully. If the files to be overwritten are needed for future use by other applications, quit the installation process and copy the files that are to be overwritten to another directory before restarting the installation process.

2. If at some point during the following steps a message appears stating that some DLLs are locked, then choose the **Reboot** option when prompted by the system, and continue with the installation after the system has finished rebooting.

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5. Click the **Next >** button.

    When the **Next >** button is clicked, the "Choose Destination Location" screen appears. This screen allows you to either accept the default destination folder presented, or you can click the **Browse...** button to choose an alternate destination folder. The *destination folder* is the folder on the PC into which the TimeScan THC application files will be installed.

    Recommendation: Accepting the default destination folder is recommended.

6. After choosing the destination folder or accepting the default folder, click the **Next >** button.

    When the **Next >** button is clicked, the InstallShield Wizard begins installing the software. As the software files are installed, a Setup Status screen indicates the progress of the installation. When the software installation is complete, the "InstallShield Wizard Complete" screen appears.

7. If prompted to restart the computer, perform one of the following actions in the "InstallShield Wizard Complete" screen:

    –   Click the **Yes, I want to restart my computer now** radio button, then click the **Finish** button to restart the PC.

    –   Click the **No, I will restart my computer later** radio button, then click the **Finish** button to defer restarting the PC.

    Note: If you choose not to restart the computer, it must be restarted at some point later on to complete the software installation process.

8. *If the PC is running a version of Windows 95 that is less than version C (Windows 95c),* click the **Install DCOM95** button and follow the on-screen instructions to install the `DCOM95 module`.

9. Click the **Return** button in the TimeScan installation screen (Figure 2-3) to return to the TimeHub/TimeScan CD main screen (Figure 2-2).

10. In the TimeHub/TimeScan CD main screen, click the **Exit** button, if desired, to exit the CD.

Starting the TimeScan THC 3.0 Software

The following procedure explains how to start the TimeHub THC software, and verify that it is communicating with the TimeHub SSU.

1. On the Windows desktop, select **Start**, **Programs**, **TimeScan THC 3.0**, **TimeScan THC 3.0**.

   The TimeScan THC 3.0 splash screen appears momentarily, and then the TimeScan main screen appears. If the application is being opened for the first time, the main screen appears similar to Figure 2-4.
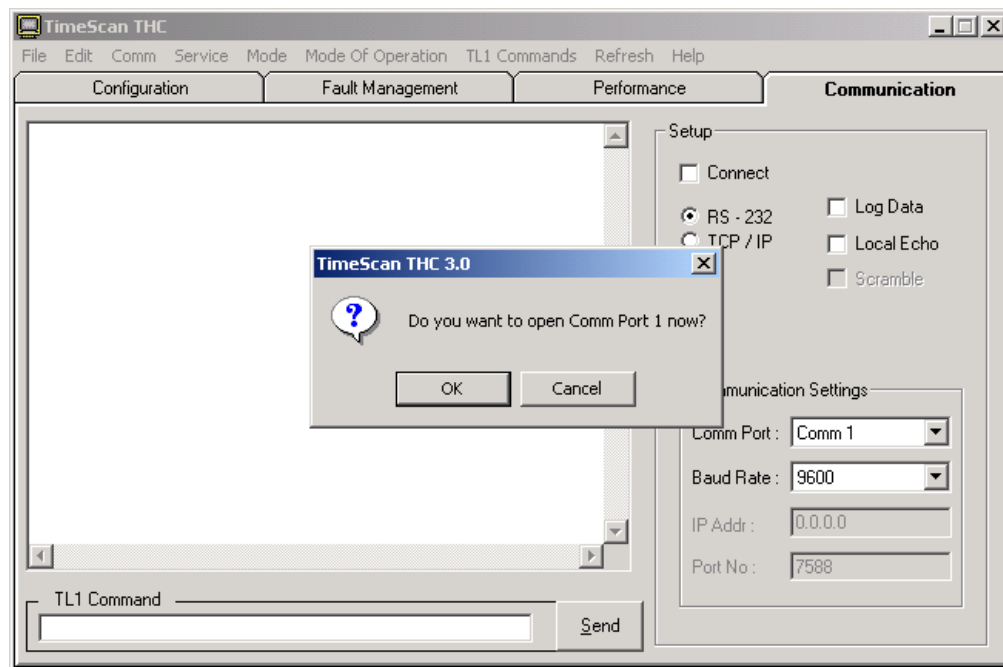

Figure 2-4.   TimeScan Main Screen

   The message box displaying the message `Do you want to open Comm Port 1 now?` appears if TimeScan is being opened for the first time, or has never successfully established communications with a SSU. If TimeScan THC had previously established communications with a SSU, the message box will ask you if you want to connect using the parameters of the previous connection.

2. Perform one of the following options, as is appropriate:

   – *If the message box shown in* Figure 2-4 *is displayed and the management PC is connected to the SSU via the PC's COM 1 port*, go to Step 3.

   – *If the message box shown in* Figure 2-4 *is displayed but the management PC is not connected to the SSU via the PC's COM 1 port*, go to Step 4.

–*If the message box displays the message "Connect to: <previous>" and <previous> specifies the parameters of the current connection*, go to Step 3.

–*If the message box displays the message "Connect to: <previous>" but <previous> does not specify the parameters of the current connection*, go to Step 4.

3. Click the **OK** button in the message box:

Note: If SSU-level security is enabled on the SSU and the management PC can establish basic communications with the SSU, you will be prompted at this point with a login box in which you must log into the SSU to continue. Refer to Understanding Security in Chapter 3 for more information.

–If the connection attempt is successful, a series of TL1 messages will scroll in the left side of the display as TimeScan THC retrieves the current settings of the SSU. If the connection attempt is successful, you have successfully installed and configured TimeScan THC. Do not continue with this procedure. You are finished.

–If the connection attempt fails, clear the failure message box if one appears and then continue with Step 5.

4. Click the **Cancel** button in the message box and continue with Step 5.

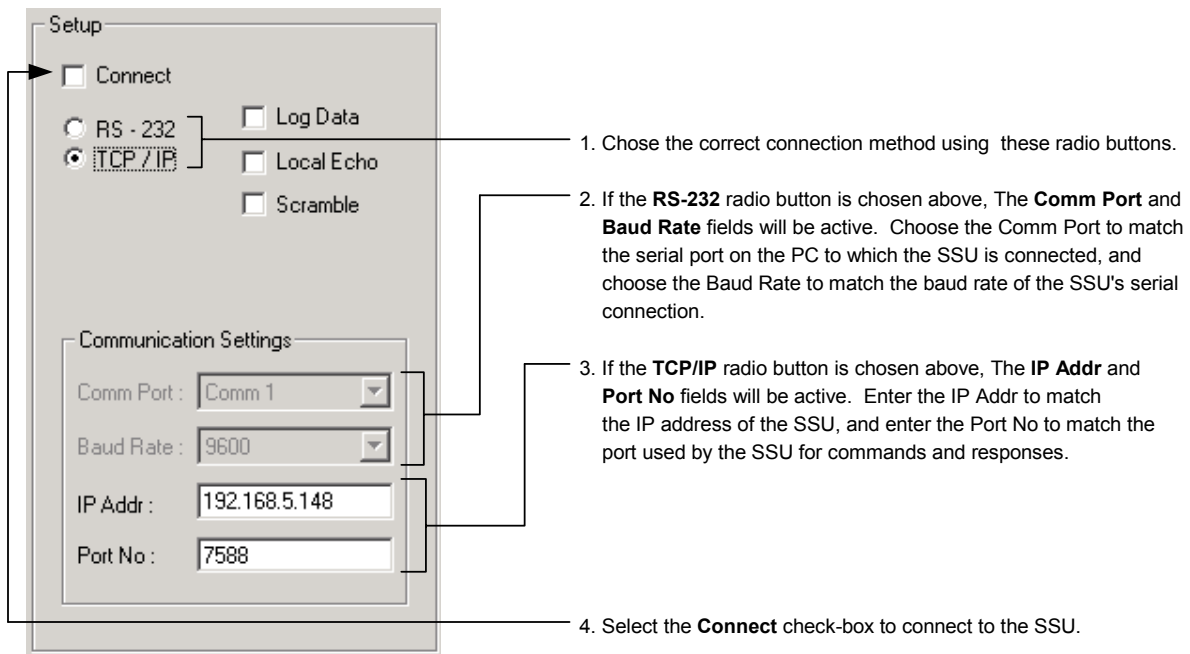5. Make appropriate modifications to the communications settings and attempt connection as shown in Figure 2-5.

1. Chose the correct connection method using these radio buttons.

2. If the **RS-232** radio button is chosen above, The **Comm Port** and **Baud Rate** fields will be active. Choose the Comm Port to match the serial port on the PC to which the SSU is connected, and choose the Baud Rate to match the baud rate of the SSU's serial connection.

3. If the **TCP/IP** radio button is chosen above, The **IP Addr** and **Port No** fields will be active. Enter the IP Addr to match the IP address of the SSU, and enter the Port No to match the port used by the SSU for commands and responses.

4. Select the **Connect** check-box to connect to the SSU.

Figure 2-5.   Communications Setup

> **Note:** If SSU-level security is enabled on the SSU and the management PC can establish basic communications with the SSU, you will be prompted with a login box after you select the **Connect** check-box in which you must log into the SSU to continue. Refer to Understanding Security in Chapter 3 for more information.

– If the connection attempt is successful, a series of TL1 messages will scroll in the left side of the display as TimeScan THC retrieves the current settings of the SSU. If the connection attempt is successful, you have successfully installed and configured TimeScan THC.

– If the connection attempt fails, go to Chapter 4, Troubleshooting to troubleshoot the setup.

Stopping the TimeScan THC 3.0 Software

1. Select **Exit** from the **File** menu in the TimeScan main screen.

   A message box displaying the message `Exit Application?` appears

2. Click the **OK** button in the message box to close TimeScan THC 3.0.

Chapter 3 TimeScan THC 3.0 Overview

This chapter provides an overview to the various screens within the TimeScan THC's user interface.

In This Chapter

- Overview
- Understanding Security
- Interface Navigation
- Main Tabs and Sub-Tabs
- The Menu Bar
- Obtaining Further Information

Overview

TimeScan THC is a software application that can be used to perform a variety of *management functions* on TimeHub 5500 SSU *network elements*. The TimeScan software is designed around the ISO-standardized "FCAPS" model, and supports the following functional management areas:

- *Fault management*
- *Configuration management*
- *Performance management*
- *Security management*

The TimeScan THC software's user interface is conveniently organized to correspond with these functional management areas, and to group other related functions as well. This chapter explains the features of the TimeScan THC software's user interface.

Understanding Security

When using the TimeScan THC software, you might encounter the following security modes:

SSU-Level Security

Security can be enabled or disabled individually on TimeHub SSUs. When SSU-level security is used, a *security database* is created and maintained on each SSU. The security database contains the name of each user that can log in to the SSU, along with the *security level* of each user, which dictates the level of access that the user has to the SSU's resources.

If security is enabled on the SSU that you are attempting to connect with, a Login box will appear as soon as the connection attempt is initiated. To complete the connection and use the TimeScan software, you must log in to the SSU using your assigned user name and password. Once successfully logged into the SSU, you will have access the SSU as dictated by your assigned security level.

Users having the security level of "Security" can add or delete other users in the SSU's security database, and change the profiles of existing users, while any user can change their own SSU login password in the SSU's security database. Those capabilities are found by accessing **User Administration...** in the **Service** menu of the TimeScan software.

Application-Level Security

The TimeScan THC software has its own security system, which determines whether or not users of the software can view and modify settings on the SSU being accessed, or only view them. This is referred to as the user's mode of operation, of which there are two modes:

■ *Basic Mode* — When using the software in Basic Mode, you can view configuration details of the TimeHub SSU but cannot modify any settings.

■ *Advanced Mode* — When using the software in Advanced Mode, you can view and modify configuration details of the TimeHub SSU.

> **Note:** Your level of access will also depend on your security level setting on the SSU, if SSU-level security is enabled on the SSU.

If you attempt any software operations while in Basic Mode which require an Advanced Mode login, a message box appears instructing you to log into the software in Advanced Mode.

Interface Navigation

Figure 3-6 shows the navigational elements of the TimeScan THC user interface.
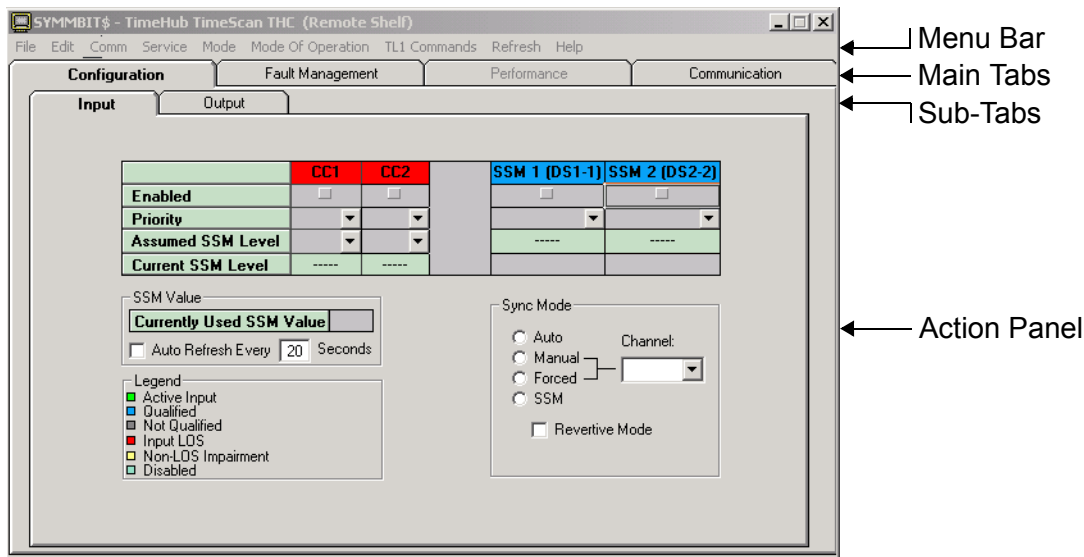
Figure 3-6.   TimeScan THC Interface Navigational Elements

The user interface is conveniently organized so that the more commonly-used functions of the software are grouped and accessible via the four *main tabs*. Clicking on one of the main tabs presents sub-groupings of related functions on *sub-tabs*, and clicking on one of the sub-tabs displays the settings and messages related to that sub-tab in the *action panel*. Other software functions can be accessed via the menus in the *menu bar*.

Main Tabs and Sub-Tabs

This section provides a brief description of the functions that can be accessed under each main tab and sub-tab in the TimeHub THC software's interface.

Configuration Tab

Select on the Configuration tab to perform configuration management functions on the connected TimeHub SSU. The following sub-tabs are included:

- **Input** — Selecting this sub-tab displays the current values of all input-related settings in the TimeHub SSU. You can also change these settings under this sub-tab. Figure 3-7 shows the action panel that is displayed when the Input sub-tab is selected.


	CC1		CC2			SSM 1 (DS1-1)		SSM 2 (DS2-2)	
Enabled	☑		☑			☑		☑	
Priority	11	▼	12	▼		2	▼	3	▼
Assumed SSM Level	7	▼	1	▼		-----		-----	
Current SSM Level	-----		-----			2		2	

SSM Value
Currently Used SSM Value   6
☐ Auto Refresh Every 20 Seconds

Legend
■ Active Input
■ Qualified
■ Not Qualified
■ Input LOS
□ Non-LOS Impairment
□ Disabled

Sync Mode
○ Auto
○ Manual ─┐   Channel:
○ Forced ─┘   [▼]
◉ SSM

☑ Revertive Mode
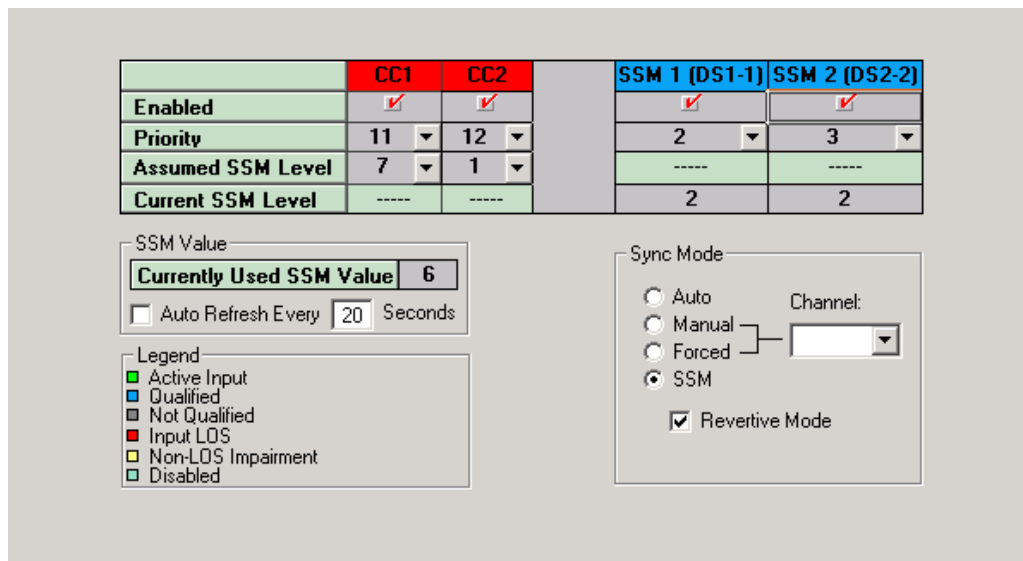
Figure 3-7.   Configuration : Input Action Panel

> **Notes:**
>
> 1. The actual appearance and layout of the Configuration : Input action panel depends on a variety of factors, including the version of TimeHub firmware, whether the TimeHub is configured as a main shelf or remote shelf, and the setting of the DETAIL parameter in the SmartVW.INI file.
>
> 2. The DETAIL parameter shows or hides some controls on the Input sub-tab under the Configuration tab.
>
> 3. TimeScan THC determines whether the TimeHub is a main shelf or remote shelf by querying the value of the MAINCLK keyword using the RTRV-EQPT command.
>
> 4. Clock card model numbers 090-555442-02 and 090-555442-01 display nine input channels or five input channels respectively on the Input sub-tab under the Configuration tab.

- **Output** — Selecting this sub-tab displays the current values of all output-related settings in the TimeHub SSU. You can also change these settings under this sub-tab. Figure 3-8 shows the action panel that is displayed when the Output sub-tab is selected.
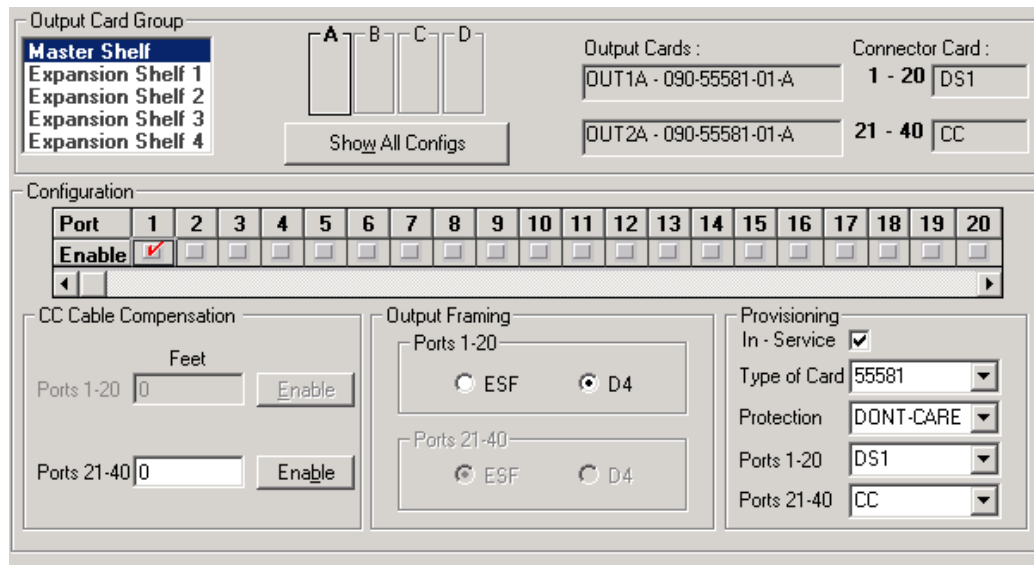
Figure 3-8.   Configuration : Output Action Panel

Fault Management Tab

Select the Fault Management tab to perform fault management functions on the connected TimeHub SSU. The following sub-tabs are included:

- **Event Setup** — Selecting this sub-tab displays a listing of all of the TimeHub SSU's alarms and events, and allows you to view and set the action to be taken by the TimeHub when each particular alarm/event condition is detected. You can also set whether each alarm or event will be logged in the Event Log when it occurs and is cleared. Figure 3-9 shows the action panel that is displayed when the Event Setup sub-tab is selected.

Alarm Description	Priority Actions	Log
Input Loss Of Signal	Non-Alarm	☑
Input Loss Of Framing	Non-Alarm	☑
Input AIS	Non-Alarm	☑
Pull-In Range Exceeded	Non-Alarm	☑
Measurement Beyond Threshold	Non-Alarm	☑
Disqualified By Measurement	Non-Alarm	☑
Input Excessive Phase Hits	Minor	☑
Input Disqualified	Minor	☑
Tracking This Input	Non-Alarm	☑
Holdover Mode	Major	☑
Drift Exceeds Limits	Non-Alarm	☑
Measurement Range Exceeded	Non-Alarm	☑

Figure 3-9.   Fault Management : Event Setup Action Panel

- **Threshold** — Selecting this sub-tab displays various settings related to each measurement threshold for a selected input channel and performance measurement type, and allows you to change those settings. Figure 3-10 shows the action panel that is displayed when the Threshold sub-tab is selected.

Performance Measure: TDEV, MRTIE, LMRTIE, FFOFF, SPREAD

Input Channel: PRS, 1, 2, 3, 4

	Use For Qualifying Input	Threshold (nsec)	Report Threshold Crossings	Include In Auto-Upload	Good Meas. Required
1S	☑	0.000	☑	☑	
4S	☑	0.000	☑	☑	
16S	☑	0.000	☑	☑	
64S	☑	0.000	☑	☑	
256S	☑	0.000	☑	☑	
1024S	☑	0.000	☑	☑	
	-----		-----	-----	
	-----		-----	-----	

Figure 3-10.   Fault Management : Threshold Action Panel

■ **Auto Msg** — Selecting this sub-tab displays a chronological listing of the automatic messages that have been generated by the TimeHub SSU. Performance monitor data, which is a type of automatic message, is not shown under this sub-tab. The Alarm Cutoff feature (disengagement of the SSU's audible alarm relay) is also accessed under this sub-tab. Figure 3-11 shows the action panel that is displayed when the Auto Msg sub-tab is selected.

Figure 3-11.   Fault Management : Auto Msg Action Panel

■ **Event Log** — Selecting this sub-tab displays a viewer for the Event Log that is stored on a selected CLK card of the 5500 TimeHub. You can also clear the Event Log on a selected CLK card under this sub-tab. Figure 3-12 shows the action panel that is displayed when the Event Log sub-tab is selected.

Figure 3-12.   Fault Management : Event Log Action Panel

Performance Tab

Select this tab to display graphs of the performance data collected by the SSU for specified input channels. The measurement type to graph can be specified, and the graph can be plotted against several selectable performance masks. Figure 3-13 shows the action panel that is displayed when the Performance tab is selected.

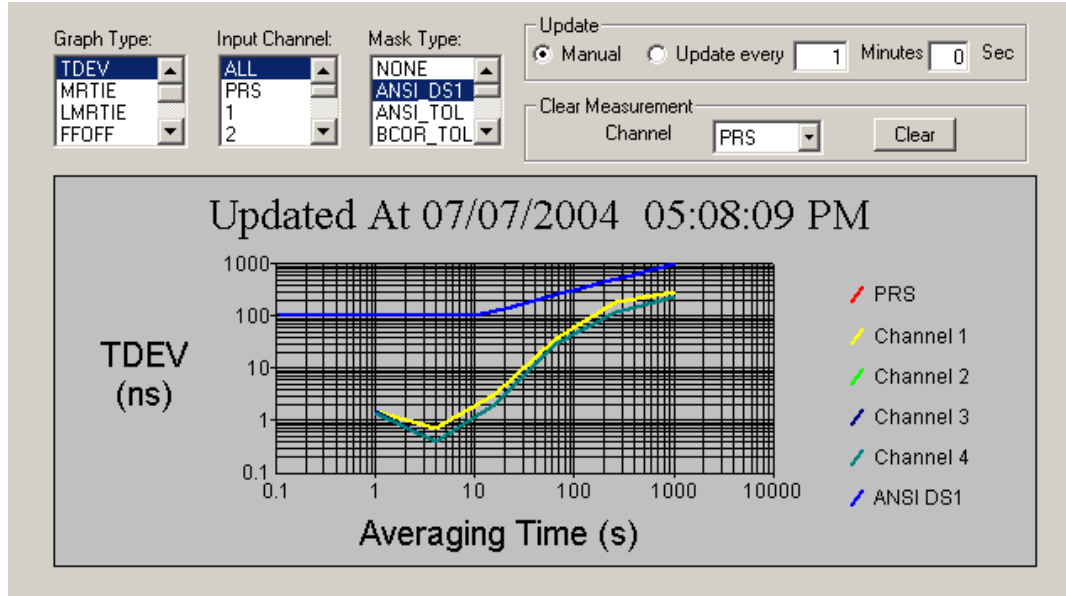*Figure 3-13.   Performance Action Panel*

Note: Performance graphs can be printed or saved to a file from the **File** menu that appears in the menu bar.

Communication Tab

Selecting this tab displays certain settings related to RS-232 serial or TCP/IP communications between TimeScan THC and the TimeHub SSU, and allows you to change the settings. The area that is on the left side of the action panel provides a record of the TL1 output messages that are produced by the TimeHub SSU. You can also enter and send TL1 commands to the SSU from under this tab. Figure 3-14 shows the action panel that is displayed when the Communication tab is selected.
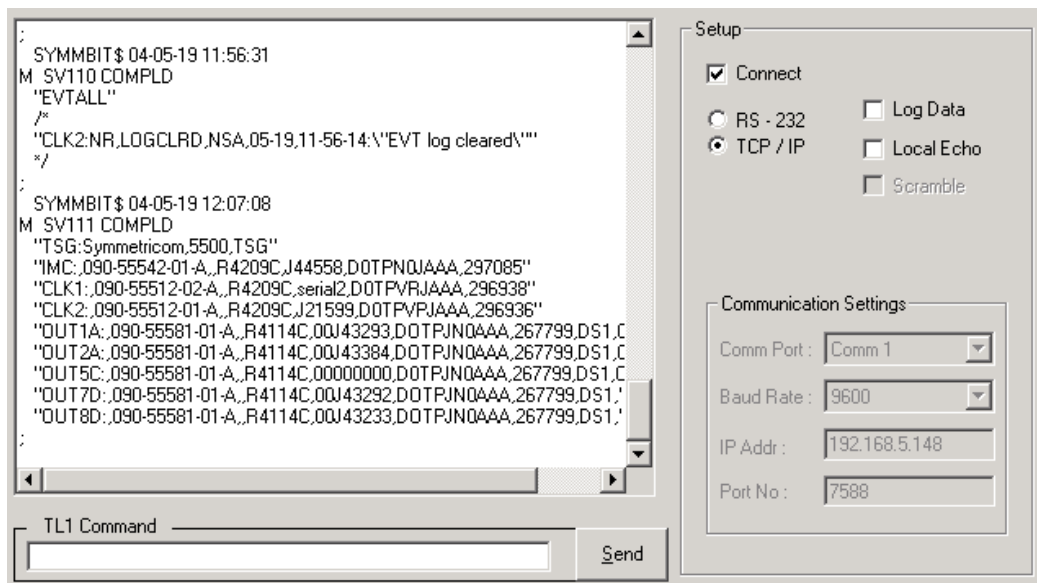

Figure 3-14.   Communication Action Panel

The Menu Bar

This section provides a brief description of the functions that can be accessed under each menu in the menu bar of the TimeHub THC software.

File Menu

The following items are under the File menu:

- **Save Graph…** — Used to save the performance data graph.

- **Print Graph…** — Used to print the performance data graph.

- **Exit** — Used to exit the TimeScan THC application. Upon exit all of the settings that are saved in the TimeScan THC Initialization File are updated so that they will be remembered for the next application startup.

Edit Menu

This menu provides features that are applicable to the large command response display area and the TL1 command text area on the Communication Screen. The following items are under the Edit menu:

- **Copy** — Takes the highlighted text from the command response display area and copies it to the clipboard. From there it can be pasted into other applications as well as back into the TL1 command text area (for repeatedly sending the same or similar commands).

- **Paste** — Pastes the contents of the clipboard into the TL1 command text area on the Communication Screen.

- **Clear Screen** — Clears the main Command Response Display Area on the Communication Screen.

- **Select All** — Provides a quick way to highlight all of the text in the command response display area of the Communication Screen.

For these selections to work the user must have the Communication Screen displayed and should have activated the response display area (by clicking anywhere within it).

Comm Menu

This menu contains items that are used to facilitate establishing communication between the computer and the 5500 TimeHub BITS. The following items are under the Comm menu:

- **Connect** — Establishes the communication link between the TimeScan THC software and the TimeHub SSU when selected. This menu item is selected when a check mark precedes it in the menu listing.

- **Change TimeHub Target ID** — Opens a dialog box in which you can assign or change the TimeHub SSU's Target Identifier (<tid>) by entering the new or changed Target Identifier into the field in the dialog box, then clicking the **OK** button. When a Target Identifier has been assigned, TL1 commands will only be executed by the SSU if the assigned <tid> and the SSU's System Identifier (<sid>) match.

- **RS-232, TCP/IP** — If a communication with a single TimeHub using one of these interfaces is being established, enter the communication settings on the Communication Screen. If support multiple connections is needed, use the Database feature to create and save multiple setups. Before a TCP/IP connection can be attempted, the network parameters must be configured. Go to Service->Configure TCP/IP.

- **Local Echo** — Enables or disables local echo. Local echo is enabled when a check mark precedes it in the menu listing.

- **Log Data to Disk...** — Opens a "file chooser" dialog box in which you can create or specify a file on the management PC to which TL1 responses from the SSU will be logged.

- **Baud Rate** — Opens a secondary menu in which you can choose the baud rate that the management PC's selected serial interface will use to communicate with the SSU.

- **Comm Port** — Opens a secondary menu in which you can choose the serial communications port on the management PC that TimeScan THC will use to communicate with the SSU.

- **Log In** — If the security feature is enabled on the SSU, this menu item will be active. Selecting it then opens a dialog box from which you can log into the SSU by typing a valid SSU User ID and Password into the fields in the dialog box, then clicking the **OK** button.

- **Log Out** — Logs you off of the SSU.

Service Menu

The following items are under the Service menu:

- **Set TimeHub Date and Time** — Opens a dialog box in which you can set the date and time on the SSU by entering it into the field in the dialog box, then clicking the **OK** button. The dialog box shows the required format in which the date and time must be entered. The date and time is used as a reference date and time for system operation and reporting.

- **Set TimeHub System ID** — Opens a dialog box in which you can set the System Identifier (<sid>) of the SSU by entering the new or changed System Identifier into the field in the dialog box, then clicking the **OK** button.

- **Set Port Configuration** — Opens the Port Configuration dialog box (Figure 3-15) in which you can set the Local and Remote port Automatic Message (AO) reporting mode, terminate the current session, and disable logins to the local and remote ports.
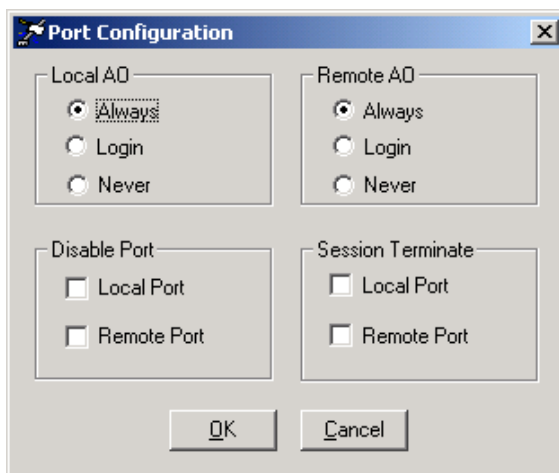

Figure 3-15.   Port Configuration dialog box

■ **Configure TCP/IP** — Opens the TCP/IP Configuration dialog box (Figure 3-16) in which you can initially set or modify several TCP/IP LAN network parameters.
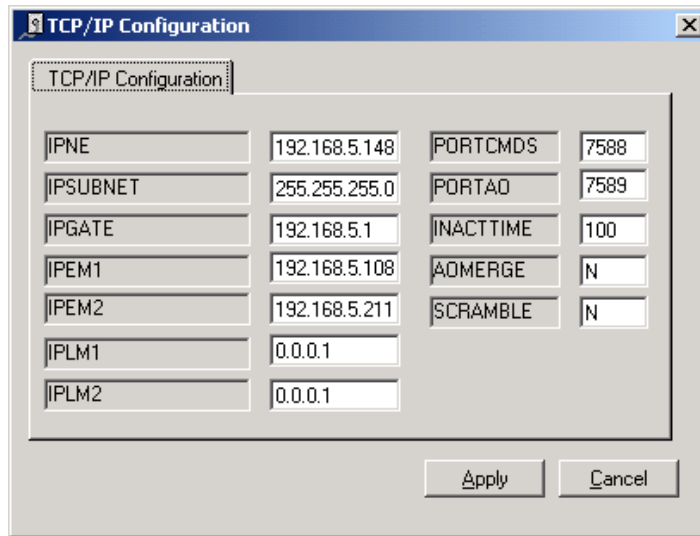

Figure 3-16. TCP/IP Configuration dialog box

■ **User Administration** — Opens the User Administration dialog box (Figure 3-17) in which users having the appropriate permissions can add or delete SSU users, and change existing user profiles. Any logged in user can also use the dialog box to change their own SSU login password.
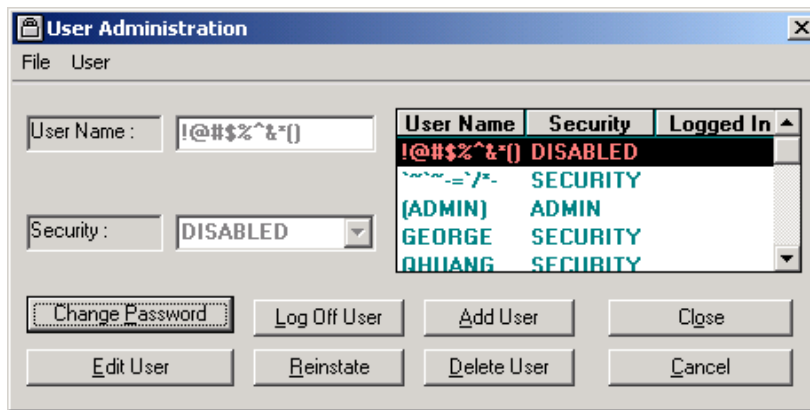

Figure 3-17. User Administration dialog box

■ **Show Active Sessions** — Opens a dialog box which displays the Session ID, User name, and IP Address (Client IP) of each client that is currently logged in remotely to the SSU. The information displayed can be updated at any time by clicking the **Update Now** button.

■ **Port Alarm Clear** — If the Configuration :Output sub-tab is selected, this menu item is active. It allows you to attempt to clear output card port alarms for the selected output card group.

Mode Menu

The following items are under the Mode menu:

- **TimeHub** — This menu item always appears as selected.

- **Database** — Opens the Database dialog box (Figure 3-18) in which you can manage a database of communication setups for multiple TimeHub SSUs.
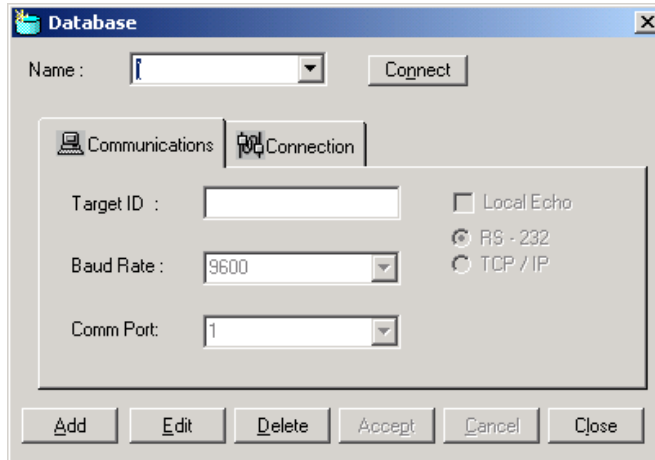

Figure 3-18.   Database dialog box

- **Automatic Messages** — Opens a separate Automatic Messages viewer, which is very similar to the action panel of the Fault Management : Auto Msg sub-tab.

- **Command Response** — Opens a separate Command Response viewer, which is very similar to the area that is on the left side of the action panel of the Communication tab.

- **Alarm Messages** — Opens an Alarm Message viewer (Figure 3-18), which displays a list of current alarms, color-coded according to the severity of each. Filtering functions allow only alarms having selected severities to be displayed, and the viewer can be refreshed manually or automatically at a preset interval.
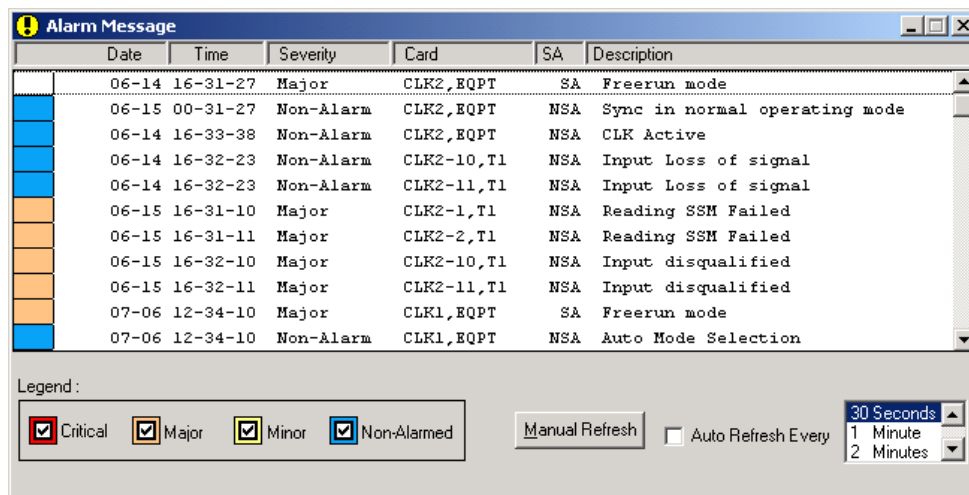

Figure 3-19.   Alarm Message viewer

Mode Of Operation Menu

The following items are under the Mode Of Operation menu:

■ **Advanced Mode** — Opens a dialog box in which you can log into the TimeScan THC software in Advanced mode. Selecting it opens a dialog box from which you can log in by selecting a valid User Name and entering the required Password in the dialog box, then clicking the **Login** button. You must be logged into the software in Advanced Mode in order to use the software to modify any settings of the TimeHub SSU's hardware.

LogOff — Logs the user out of Advanced Mode, and into Basic mode. In Basic Mode you can view configuration details of the TimeHub SSU but cannot modify any settings.

■ **Change User Details** — Opens the Advanced Mode dialog box (Figure 3-20) in which the Administrator user can add or delete other Advanced mode users, and change existing user information. Any logged in Advanced Mode user can also use the dialog box to change their own login password.
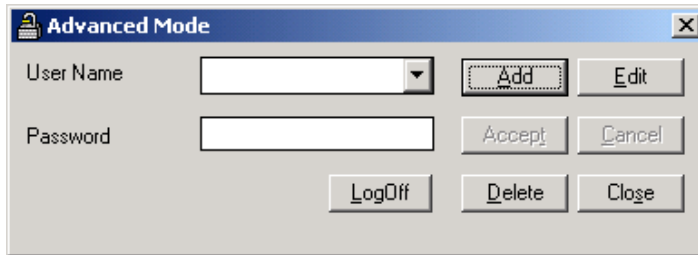

Figure 3-20.   Advanced Mode dialog box

■ **Basic Mode** — Logs the user out of Advanced Mode, and into Basic mode. In Basic Mode you can view configuration details of the TimeHub SSU but cannot modify any settings.

TL1 Commands Menu

This menu is used to send frequently used TL1 commands for retrieve operations. The following items are under the TL1 Commands menu:

■ **RTRV-NETYPE-ALL** — Retrieves inventory information about the TimeHub SSU. The details obtained can include the company name, model number, Equipment type and the details of Management Card, CLK, and Output Driver Cards. The syntax for the equivalent TL1 command is:

```
RTRV-NETYPE-ALL:::<ctag>;
```

■ **RTRV-COND** — Retrieves information about CLK Cards, input cards, input signals, and Output Driver Cards. The syntax for the equivalent TL1 command is:

```
RTRV-COND:::<ctag>;
```

■ **RTRV-ALM** — Retrieves a list of all currently active alarms. The syntax for the equivalent TL1 command is:

```
RTRV-ALM:::<ctag>;
```

> **Note:** The Retrieve Alarm (RTRV-ALM) command is similar to the Retrieve Condition (RTRV_COND) command, except that the Retrieve Alarm command only reports events that are the result of a critical, major, or minor alarm condition occurring.

Refresh Menu

This menu provides a way to force the TimeScan THC screens to refresh. The following items are under the Refresh menu:

■ **Refresh Active Screen** — Forces an immediate update of the information in the action panel currently being displayed.

■ **Refresh All Screens** — Forces an immediate update of the information in the action panel currently being displayed, plus schedules all other interface screens to be updated the next time they are accessed.

Help Menu

The following items are under the Help menu:

■ **Contents** — Invokes the TimeScan THC on-line help system. Refer to Obtaining Further Information for more information.

■ **About Symmetricom TimeScan THC** — Displays a screen identifying the version of TimeScan THC software in use.

Obtaining Further Information

More detailed information on the features contained on any of the tabs, sub-tabs, and menus can be found in the TimeScan THC on-line help system. The help engine used by the TimeScan THC on-line help is Microsoft Windows Help (WinHelp) Version 5.0, and contains all of the general help features inherent in that help engine. The on-line help system can be accessed using the following methods:

■ Select **Contents** from the **Help** menu in the TimeScan main screen. In this case, the help page viewer is invoked containing the "TimeScan THC Help Contents" help page. The "TimeScan THC Help Contents" help page contains a series of hyperlinks to the other topics in the help system.

- Select the tab, sub-tab, or menu for which you want more information, then press the **F1** key on the management computer's keyboard. In this case, the help page viewer is invoked containing the specific help page for the selected tab, sub-tab, or menu.

Chapter 4 Troubleshooting

This chapter contains troubleshooting information for the TimeScan THC software.

In This Chapter

■ TimeScan THC Troubleshooting

TimeScan THC Troubleshooting

Use the troubleshooting information below to troubleshoot and fix problems with the TimeScan THC software as well as related problems such as those that can occur with the connection between the management PC and the TimeHub SSU.

Problems Installing TimeScan THC on the PC

Errors occur during installation or upon initial startup.

Possible Cause: Some versions of the Windows operating system require that you are logged on as a power user or administrator in order to successfully install programs.

Solution: Log into management PC as a user with power user or administrator privileges before attempting to install the software.

Problems Connecting Over a RS-232 Serial Connection

The connection attempt times out.

Possible Cause: The wrong type of cable is being used for the connection between the management PC and SSU.

Solution:

– If connecting to the rear-panel "Remote" connector, ensure that a crossover cable is being used.

– If connecting to one of the "Local" connectors, ensure that a straight-through cable is being used.

Possible Cause: The communication settings (Comm Port; Baud Rate) set on the Communication tab of the TimeScan THC software are incorrect or do not match the communication settings of the SSU.

Solution:

– Ensure that the Comm Port setting set on the Communication tab of the TimeScan THC software matches the COM port on the management PC that is connected to the SSU.

– Ensure that the Baud Rate setting set on the Communication tab of the TimeScan THC software matches the baud rate set for the serial port on the SSU.

Possible Cause: The "SSUCmdTimeOut" setting in the SmartVW.INI file is set too low.

Solution: Locate the SmartVW.INI file on the management PC's hard drive, open it, and edit the file to increase the value of the SSUCmdTimeOut parameter.

Problems Connecting Over a TCP/IP Network Connection

The connection attempt fails.

Possible Cause: The communication settings (IP Addr; Port No) set on the Communication tab of the TimeScan THC software do not match the TCP/IP communication settings of the SSU.

Solution: Ensure that the IP address and port settings set on the Communication tab of the TimeScan THC software match the IP address and port set on the SSU.

Possible Cause: The "SSUCmdTimeOut" setting in the SmartVW.INI file is set too low.

Solution: Locate the SmartVW.INI file on the management PC's hard drive, open it, and edit the file to increase the value of the SSUCmdTimeOut parameter.

Problems While Connected

You cannot log into Advanced Mode to change SSU settings.

Possible Cause: You might be using the incorrect password. Note that the user account used to log into the SSU is separate from the user account used to log into Advanced Mode. The password used to log into the SSU might be different from the password used to log into Advanced Mode. Refer to Understanding Security in Chapter 3 for more information.

Solution: Use the correct password to log in, or ask an Administrator user to provide you with a user account for Advanced Mode.

You see the response but not the command in the Command Response screen or on the Communication tab.

Possible Cause: Local echo is not enabled on either the SSU or the TimeScan THC software.

Solution: Enable local echo in the TimeScan Software by selecting the **Local Echo** check-box on the **Communication** tab.

The TL1 command prints out twice before every response in the Command Response screen or on the Communication tab.

Possible Cause: Local echo is enabled on both the SSU and the TimeScan THC software.

Solution: Disable local echo in the TimeScan Software by deselecting the **Local Echo** check-box on the **Communication** tab.

The TimeScan THC software runs very slowly

Possible Cause: Automatic uploading of performance data (AUTOPM) is enabled on the SSU.

Solution: Disable automatic uploading of performance data on the SSU while using the TimeScan THC software to manage it.

Appendix A Configuring TCP/IP on the PC

This appendix explains how to configure TCP/IP on the management PC, so that it can be used with TimeScan THC to manage a TimeHub SSU over a network connection.

In This Appendix

■ Configuring TCP/IP

Configuring TCP/IP

In order to use TimeScan THC to manage a TimeHub SSU over a TCP/IP network connection, the management PC that is running the TimeScan THC software must be configured with an IP address that is on the same subnet as the TimeHub SSU. The following procedures explain how to configure the IP address and subnet mask on PCs with various Windows operating systems so that it can communicate with the TimeHub SSU.

Caution: To avoid network problems, use the following procedures only if the management PC is directly connected to the SSU.

Although it is possible to set up the PC and SSU to communicate over a shared network, you must be very careful to choose an address that does not conflict with other networked devices on the network. If you desire to configure the PC and SSU to communicate on a shared network, contact your network administrator.

Note: The following procedures assume that the TCP/IP protocol is already installed on the management PC. If the TCP/IP protocol is not already installed on the PC, refer to the operating system's documentation for details on how to install it.

Windows 95/98/Me

The following procedure explains how to configure the IP address and subnet mask on a Windows 95, 98, or Me PC.

1. On the Windows desktop, click the **Start** button, then **Settings**, and then **Control Panel**. The "Control Panel" window appears.

2. Double-click the **Network** icon. The "Network" dialog box appears.

3. In the "Network" dialog box, click the **Configuration** tab, then select the TCP/IP line for the applicable Ethernet adapter.

4. Click the **Properties** button to invoke the "TCP/IP Properties" dialog box.

5. In the "TCP/IP Properties" dialog box, click the **IP Address** tab, then select the **Specify an IP address** radio button.

6. Enter an IP address that is on the same subnet as the TimeHub SSU into the **IP Address** field.

   For example, if the IP Address of the TimeHub SSU is 192.168.5.34 and its subnet mask is 255.255.255.0, any IP address from 192.168.5.1 to 192.168.5.254 other than 192.168.5.34 can be entered.

7. Enter the subnet mask used by the TimeHub SSU into the **Subnet Mask** field.

8. Click the **OK** button to close the "TCP/IP Properties" dialog box, then click the **OK** button in the "Network" dialog box.

> **Note:** A message might appear asking you to insert the Windows installation disk, or to install additional files. Follow the on-screen instructions to install any additional needed files.

9. Restart the PC. The PC is now configured to communicate with the TimeHub SSU.

Windows NT

The following procedure explains how to configure the IP address and subnet mask on a Windows NT PC.

1. On the Windows desktop, click the **Start** button, then **Settings**, and then **Control Panel**. The "Control Panel" window appears.

2. Double-click the **Network** icon. The "Network" dialog box appears.

3. In the "Network" dialog box, click the **Protocols** tab, then select the TCP/IP line for the applicable Ethernet adapter.

4. Click the **Properties...** button to invoke the "Microsoft TCP/IP Properties" dialog box.

5. In the "Microsoft TCP/IP Properties" dialog box, click the **IP Address** tab, then select the **Specify an IP address** radio button.

6. Enter an IP address that is on the same subnet as the TimeHub SSU into the **IP Address** field.

   For example, if the IP Address of the TimeHub SSU is 192.168.5.34 and its subnet mask is 255.255.255.0, any IP address from 192.168.5.1 to 192.168.5.254 other than 192.168.5.34 can be entered.

7. Enter the subnet mask used by the TimeHub SSU into the **Subnet Mask** field.

8. Click the **OK** button to close the "Microsoft TCP/IP Properties" dialog box, then click the **OK** button in the "Network" dialog box.

> **Note:** A message might appear asking you to insert the Windows installation disk, or to install additional files. Follow the on-screen instructions to install any additional needed files.

9. Close the "Control Panel" window.

    The PC is now configured to communicate with the TimeHub SSU.

Windows 2000

The following procedure explains how to configure the IP address and subnet mask on a Windows 2000 PC.

1. On the Windows desktop, click the **Start** button, then **Settings**, and then **Control Panel**. The "Control Panel" window appears.

2. Double-click the **Network and Dial-up Connections** icon. The "Network and Dial-up Connections" dialog box appears.

3. In the "Network and Dial-up Connections" dialog box, double-click the **Local Area Connection** line for the applicable Ethernet adapter (usually the first one listed). The "Local Area Connection Status" dialog box appears.

4. Click the **Properties** button to invoke the "Local Area Connection Properties" dialog box.

5. In the "Local Area Connection Properties" dialog box, select the **Internet Protocol (TCP/IP)** line, then click the **Properties** button. The "Internet Protocol (TCP/IP) Properties" dialog box appears.

6. In the "Internet Protocol (TCP/IP) Properties" dialog box, select the **Use the following IP address** radio button.

7. Enter an IP address that is on the same subnet as the TimeHub SSU into the **IP address** field.

    For example, if the IP Address of the TimeHub SSU is 192.168.5.34 and its subnet mask is 255.255.255.0, any IP address from 192.168.5.1 to 192.168.5.254 other than 192.168.5.34 can be entered.

8. Enter the subnet mask used by the TimeHub SSU into the **Subnet mask** field.

9. Click the **OK** button to close the "Internet Protocol (TCP/IP) Properties" dialog box, then click the **OK** button in the "Local Area Connection Properties" dialog box.

10. Close the "Local Area Connection Status" dialog box by clicking the **Close** button.

11. Restart the PC, if prompted. The PC is now configured to communicate with the TimeHub SSU.

Windows XP

The following procedure explains how to configure the IP address and subnet mask on a Windows XP PC.

1. On the Windows desktop, click the **Start** button, then **Control Panel**. The "Control Panel" window appears.

2. Double-click the **Network Connections** icon. The "Network Connections" dialog box appears.

3. In the "Network Connections" dialog box, double-click the **Local Area Connection** icon. The "Local Area Connection Properties" dialog box appears.

4. In the "Local Area Connection Properties" dialog box, select the **Internet Protocol (TCP/IP)** line, then click the **Properties** button. The "Internet Protocol (TCP/IP) Properties" dialog box appears.

5. In the "Internet Protocol (TCP/IP) Properties" dialog box, select the **Use the following IP address** radio button.

6. Enter an IP address that is on the same subnet as the TimeHub SSU into the **IP address** field.

   For example, if the IP Address of the TimeHub SSU is 192.168.5.34 and its subnet mask is 255.255.255.0, any IP address from 192.168.5.1 to 192.168.5.254 other than 192.168.5.34 can be entered.

7. Enter the subnet mask used by the TimeHub SSU into the **Subnet mask** field.

8. Click the **OK** button to close the "Internet Protocol (TCP/IP) Properties" dialog box, then click the **OK** button in the "Local Area Connection Properties" dialog box.

9. Close the "Network Connections" dialog box. The PC is now configured to communicate with the TimeHub SSU.

Appendix B Uninstalling the TimeScan THC Software

This appendix explains how to uninstall the TimeScan THC software.

In This Appendix

- Uninstalling the TimeScan THC Software

Uninstalling the TimeScan THC Software

The following procedures explain how to remove the TimeScan THC software from the management PC.

Note: If you will be uninstalling TimeScan THC from a management PC that is running Windows NT, 2000, or XP, ensure that you are logged on with administrator privileges.

Windows 95/98/Me

The following procedure explains how to uninstall the TimeScan THC software from a Windows 85, 98, or Me PC.

1. On the Windows desktop, click the **Start** button, then **Settings**, and then **Control Panel**. The "Control Panel" window appears.

2. Double-click the **Add/Remove Programs** icon. The "Add/Remove Program Properties" dialog box appears.

3. Select `TimeScan THC 3.0` in the list of currently installed programs, then click the **Add/Remove...** button.

4. In the "TimeScan THC 3.0 Setup" dialog box that appears, click the **Remove** radio button, then click the **Next >** button.

5. When the `Do you want to completely remove the selected application and all of its components?` question box appears, click the **Yes** button.

   The uninstall wizard then removes the application files.

Note: If you receive the prompt `Shared File detected; Want to uninstall?` related to the DAO35.dll and DAO2535.tlb files, click **No** to bypass the removal of those components.

---

6. If desired, click the **Yes, I want to restart my computer now** radio button, then the **Finish** button to restart the PC, otherwise, click the **No, I will restart my computer later** radio button, then click the **Finish** button.

Note: If you choose not to restart the computer, it must be restarted at some point later on to complete the software removal process.

Windows NT

The following procedure explains how to uninstall the TimeScan THC software from a Windows NT PC.

1. On the Windows desktop, click the **Start** button, then **Settings**, and then **Control Panel**. The "Control Panel" window appears.

2. Double-click the **Add/Remove Programs** icon. The "Add/Remove Programs Properties" dialog box appears.

3. Select `TimeScan THC 3.0` in the list of currently installed programs, then click the **Add/Remove...** button.

4. In the "TimeScan THC 3.0 Setup" dialog box that appears, click the **Remove** radio button, then click the **Next >** button.

5. When the `Do you want to completely remove the selected application and all of its components?` question box appears, click the **Yes** button.

   The uninstall wizard then removes the application files.

> **Note:** If you receive the prompt `Shared File detected; Want to uninstall?` related to the DAO35.dll and DAO2535.tlb files, click **No** to bypass the removal of those components.

6. Click the **Finish** button to complete the software removal process.

Windows 2000

The following procedure explains how to uninstall the TimeScan THC software from a Windows 2000 PC.

1. On the Windows desktop, click the **Start** button, then **Settings**, and then **Control Panel**. The "Control Panel" window appears.

2. Double-click the **Add/Remove Programs** icon. The "Add/Remove Programs" dialog box appears.

3. Select `TimeScan THC 3.0` in the list of currently installed programs, then click the **Change/Remove** button.

4. In the "TimeScan THC 3.0 Setup" dialog box that appears, click the **Remove** radio button, then click the **Next >** button.

5. When the `Do you want to completely remove the selected application and all of its components?` question box appears, click the **Yes** button.

The uninstall wizard then removes the application files.

Note: If you receive the prompt `Shared File detected; Want to uninstall?` related to the DAO35.dll and DAO2535.tlb files, click **No** to bypass the removal of those components.

6. If desired, click the **Yes, I want to restart my computer now** radio button, then the **Finish** button to restart the PC, otherwise, click the **No, I will restart my computer later** radio button, then click the **Finish** button.

Note: If you choose not to restart the computer, it must be restarted at some point later on to complete the software removal process.

Windows XP

The following procedure explains how to uninstall the TimeScan THC software from a Windows XP PC.

1. On the Windows desktop, click the **Start** button, then **Control Panel**. The "Control Panel" window appears.

2. Double-click the **Add or Remove Programs** icon. The "Add or Remove Programs" dialog box appears.

3. Select `TimeScan THC 3.0` in the list of currently installed programs, then click the **Change/Remove** button.

4. In the "TimeScan THC 3.0 Setup" dialog box that appears, click the **Remove** radio button, then click the **Next >** button.

5. When the `Do you want to completely remove the selected application and all of its components?` question box appears, click the **Yes** button.

The uninstall wizard then removes the application files.

Note: If you receive the prompt `Shared File detected; Want to uninstall?` related to the DAO35.dll and DAO2535.tlb files, click **No** to bypass the removal of those components.

6. If desired, click the **Yes, I want to restart my computer now** radio button, then the **Finish** button to restart the PC, otherwise, click the **No, I will restart my computer later** radio button, then click the **Finish** button.

Note: If you choose not to restart the computer, it must be restarted at some point later on to complete the software removal process.

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