THALES

ProtectToolkit 5.9.1
ProtectServer HSM

TROUBLESHOOTING GUIDE

Document Information

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PREFACE: About the ProtectServer HSM and ProtectToolkit Troubleshooting Guide

This guide describes solutions to issues you might encounter while installing, configuring, or using a ProtectServer HSM with ProtectToolkit 5.9.1.

Before referring to the information in this guide, refer to the Customer Release Notes for a list of known issues in ProtectToolkit 5.9.1 that Thales plans to resolve in upcoming releases.

Refer to the following chapters to resolve any other issue you are experiencing:

> "Installation Troubleshooting" on page 8

If the issue you are experiencing is not described in this guide, contact Thales Customer Support for further assistance.

This preface also includes the following information about this document:

> "Document Conventions" below

> "Support Contacts" on page 7

For information regarding the document status and revision history, see "Document Information" on page 2.

Document Conventions

This document uses standard conventions for describing the user interface and for alerting you to important information.

Notes

Notes are used to alert you to important or helpful information. They use the following format:

> **NOTE**   Take note. Contains important or helpful information.

Cautions

Cautions are used to alert you to important information that may help prevent unexpected results or data loss. They use the following format:

> **CAUTION!**   Exercise caution. Contains important information that may help prevent unexpected results or data loss.

Warnings

Warnings are used to alert you to the potential for catastrophic data loss or personal injury. They use the following format:

> ****WARNING**** **Be extremely careful and obey all safety and security measures. In this situation you might do something that could result in catastrophic data loss or personal injury.**

Command Syntax and Typeface Conventions

Format	Convention
bold	The bold attribute is used to indicate the following: > Command-line commands and options (Type **dir /p**.) > Button names (Click **Save As**.) > Check box and radio button names (Select the **Print Duplex** check box.) > Dialog box titles (On the **Protect Document** dialog box, click **Yes**.) > Field names (**User Name:** Enter the name of the user.) > Menu names (On the **File** menu, click **Save**.) (Click **Menu > Go To > Folders**.) > User input (In the **Date** box, type **April 1**.)
italics	In type, the italic attribute is used for emphasis or cross-references to other documents in this documentation set.
<variable>	In command descriptions, angle brackets represent variables. You must substitute a value for command line arguments that are enclosed in angle brackets.
[**optional**] [<optional>]	Represent optional **keywords** or <variables> in a command line description. Optionally enter the keyword or <variable> that is enclosed in square brackets, if it is necessary or desirable to complete the task.
{**a|b|c**} {<a>|<b>|<c>}	Represent required alternate **keywords** or <variables> in a command line description. You must choose one command line argument enclosed within the braces. Choices are separated by vertical (OR) bars.
[**a|b|c**] [<a>|<b>|<c>]	Represent optional alternate keywords or variables in a command line description. Choose one command line argument enclosed within the braces, if desired. Choices are separated by vertical (OR) bars.

Support Contacts

If you encounter a problem while installing, registering, or operating this product, please refer to the documentation before contacting support. If you cannot resolve the issue, contact your supplier or Thales Customer Support.

Thales Customer Support operates 24 hours a day, 7 days a week. Your level of access to this service is governed by the support plan arrangements made between Thales and your organization. Please consult this support plan for further information about your entitlements, including the hours when telephone support is available to you.

Customer Support Portal

The Customer Support Portal, at https://supportportal.thalesgroup.com, is where you can find solutions for most common problems. The Customer Support Portal is a comprehensive, fully searchable database of support resources, including software and firmware downloads, release notes listing known problems and workarounds, a knowledge base, FAQs, product documentation, technical notes, and more. You can also use the portal to create and manage support cases.

> **NOTE** You require an account to access the Customer Support Portal. To create a new account, go to the portal and click on the **REGISTER** link.

Telephone

The support portal also lists telephone numbers for voice contact (Contact Us).

CHAPTER 1:   Installation Troubleshooting

This section describes solutions to issues you might encounter while installing a ProtectServer HSM or ProtectToolkit 5.9.1 software components.

Refer to the following chapters to resolve the issue you have encountered during installation:

> "ProtectServer HSM Installation Issues" below

> "ProtectToolkit Installation Issues" on the next page

ProtectServer HSM Installation Issues

This section describes solutions to some issues you might encounter while installing a ProtectServer HSM. It contains the following sections:

> "ProtectServer PCIe 2 Installation Issues" below

> "ProtectServer External 2 and ProtectServer External 2 Plus Installation Issues" below

> "Fault Diagnosis Utilities" on the next page

ProtectServer PCIe 2 Installation Issues

If you encounter any issues when installing the ProtectServer PCIe 2 into a new server/host computer, try installing the ProtectServer PCIe 2 onto a different PCI express slot. The design of certain motherboards or the associated BIOS may prevent proper communication with a ProtectServer PCIe 2. For example, certain PCI express physical slots are intended for use only with a video card or another specific type of hardware, and the ProtectServer PCIe 2 may not work correctly in these slots.

ProtectServer External 2 and ProtectServer External 2 Plus Installation Issues

Each ProtectServer External 2 and ProtectServer External 2 Plus is tested during manufacture to ensure a high level of quality. In the unlikely event the unit is not functioning correctly, please check if you have followed the installation procedures correctly, while paying particular attention to the power source and network cable connection, and then test the unit by following the testing procedures for your HSM:

> ProtectServer External 2: First Login and System Test in the "ProtectServer External 2 Installation and Configuration" section of the *ProtectServer and ProtectToolkit Installation Guide*.

> ProtectServer External 2 Plus: First Login and System Test in the "ProtectServer External 2 Plus Installation and Configuration" section of the *ProtectServer and ProtectToolkit Installation Guide*.

> **NOTE**   The unit has no user serviceable parts. Please do not disassemble the unit to resolve problems unless directed by a Thales support engineer.
>
> If it ever becomes necessary to get into the BIOS, press **<Delete>** as the ProtectServer External 2 or ProtectServer External 2 Plus boots.

Fault Diagnosis Utilities

The SafeNet hardware maintenance utilities **hsmstate** and **hsmreset** can be used to carry out simple fault diagnosis. These utilities are included in the ProtectServer HSM Access Provider installation.

For more information about these utilities, see Utilities Command Reference in the "ProtectToolkit Software Installation" section of the *ProtectServer and ProtectToolkit Installation Guide*.

Fault Diagnosis Procedure

From a command prompt, execute **hsmstate**. The output from the utility should include "... `NORMAL mode, Responding`".

If the utility reports "... `HALTED due to a failure`":

1. Execute **hsmreset**.

2. Following the reset, check to see if the **hsmstate** is now reporting NORMAL operation.

If the utility reports "... `waiting for tamper cause to be removed`":

1. Check to see that any connected external tamper detectors are correctly configured.

2. Make sure the adapter is sitting firmly and correctly in the PCIe slot.

ProtectToolkit Installation Issues

This section describes solutions to some issues you might encounter while installing ProtectToolkit 5.9.1 software components.

> **NOTE** Thales recommends using the Unix Installation Utility to install ProtectToolkit on a Unix/Linux system. If you experience issues while installing ProtectToolkit on Unix/Linux manually, uninstall all packages and begin a fresh installation using the Unix Installation Utility. For more information, refer to Installing ProtectToolkit on Unix/Linux in the "ProtectToolkit Software Installation" section of the *ProtectServer and ProtectToolkit Installation Guide*.

The following table lists some commonly encountered installation issues by operating system:

Operating System	Problem	Solution
Windows/Unix/Linux	The system locks up after installation of the ProtectServer PCIe 2 Access Provider device driver package. This may happen if a prior version of the device driver exists on the system.	1. Power down and remove the adapter. 2. Power up. 3. Uninstall all versions (old and new) of the ProtectServer PCIe 2 Access Provider / device driver package. 4. Power down and reinstall the adapter. 5. Power up and reinstall the ProtectServer PCIe 2 Access Provider package.
Windows/Unix/Linux	Following reinstallation of a previously removed adapter or the addition of another adapter, the device driver cannot find the device or an adapter is not responding.	Confirm that the adapter(s) are firmly seated in the PCIe slot, then uninstall the ProtectServer PCIe 2 Access Provider package. Following this, perform a fresh install of the ProtectServer PCIe 2 Access Provider package.
Windows	When installing a Windows driver, you may receive a warning that the SafeNet driver is not signed.	This message can safely be ignored. If you have received this message, the version you have received was released before it completed the Microsoft WHQL process. While we do submit the Windows versions of our drivers for Windows Hardware Quality Labs (WHQL) certification, we do not normally hold back a product release or an important update while validation is pending. **NOTE** This assurance applies only to software that you have received directly from Thales or via a trusted third-party seller.

Operating System	Problem	Solution
Windows	The MSI (Microsoft Installer) application does not complete installation, or is left in an unstable state.	This fault can occur if there are no free IRQs that can be assigned to the device. Make sure the device is assigned an IRQ. The IRQs assigned to devices are usually displayed when a system is powered up.
Windows	When operating multiple adapters under Windows 2000 or later, the adapters run slowly or even stall. Some commands may work correctly on one adapter, but not the other.	This problem may be resolved by resetting the configuration data in the host system BIOS.
Unix/Linux	Packages to install or uninstall are not visible while using the Unix Installation Utility.	If no packages are shown to install or uninstall, close the utility, check that you are logged on as **root**, and ensure your current directory is on the DVD or directory before running the utility again.
Unix/Linux	The screen is confused or does not display correctly while using the Unix Installation Utility.	This utility relies on the **TERM** environment parameter when creating colors and measuring screen size, so make sure this is set correctly. The most common values are **xterm** or **vt100**. For example, to set **TERM** to **vt100**: **# TERM=vt100# export TERM** > If the screen is confused, run the utility in "plain" mode as follows: **# ./safeNet-install.sh -p** > If the size of the terminal is not correctly set by **termcap** (for example: the headings disappear off the top of the screen), override the screen size with the **-s** option: **# ./safeNet-install.sh -s 24x80** > If using an X system terminal window, do not resize the window while running the utility, as it cannot sense the change.

Operating System	Problem	Solution
Unix/Linux	The backspace key does not operate correctly while using the Unix Installation Utility.	On some terminals, the backspace key does not operate correctly. If, after typing a number and then backspace, the terminal returns "**2^H**" instead of an actual backspace: > Type the current **KILL** character (normally **^U**) and then enter the desired number (you will need to do this each time a backspace is required) > Exit the utility (perhaps with **^C**) and use the **stty(1)** command to correct the erase character before restarting the utility: **# stty erase ^H** where **^H** is the character created by pressing the backspace key. This will fix the problem semi-permanently, for the current session in that terminal.