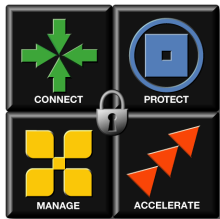
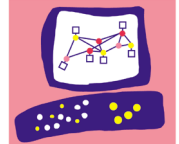


# Check Point® SecureXL Turbocard User Guide



Check Point™  
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We Secure the Internet.

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# SecureXL Turbocard

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## Introduction

The SecureXL Turbocard is a PCI-based card providing intelligent hardware-based acceleration for Check Point Enterprise Suite NG network management and security software. This full-sized PCI board provides three Gigabit Ethernet ports for use in Check Point server platforms running SecurePlatform. Using an IBM Network Processor and a Corrent IPsec VPN Processor, the Turbocard provides multi-gigabit performance in any scenario: firewall, NAT, VPN (3DES & AES), small packets and large packets.

## Latest Documentation and Software Drivers

The latest documentation, and software drivers for SecureXL Turbocard, can be found at:

<http://www.checkpoint.com/techsupport/freedownloads.html>

# Getting Started

## Package Contents

When you open the box, verify that you received the following:

- SecureXL Turbocard full length PCI Card.
- SecureXL Turbocard Software and Documentation CD.
- Check Point NG Products Suite CD (includes SecurePlatform).
- Warranty Card.
- User Guide (this document).
- Release Notes.

## Hardware Installation

### Safety Precautions



**Warning** - You can receive a potentially lethal electrical shock, or you can damage your computer if you do not observe the following safety precautions while installing the card.

- Remove any metallic objects or jewelry from your hands and wrists.
- Use only insulated or non-conducting tools.
- Verify that the computer is turned off and that the power cord is unplugged before opening the case.
- To safeguard against harmful static discharge, perform the installation or removal of your card in a static-free environment.
- Always wear a properly grounded wrist strap or other personal anti-static devices when handling electrical circuit boards.
- Stand on an anti-static mat.

### Install Hardware

- 1** Remove the cover of the computer case.
- 2** While wearing an anti-static strap, remove the SecureXL Turbocard from the anti-static shipping bag.
- 3** Select an empty 64-bit PCI/PCI-X slot for use by the SecureXL Turbocard.
- 4** Remove the cover plate for the PCI slot that you have just selected, using a screwdriver if appropriate.

- 5 Holding the card by the edges, align the connector edge of the card with the connector dock in the PCI/PCI-X slot and insert the card until it is firmly seated in the PCI/PCI-X slot.
- 6 Apply even pressure at both corners of the card and push the card until it is firmly seated in the PCI/PCI-X slot.
- 7 The card will be seated properly when the following conditions are met:
  - The connector edge is aligned with the connector dock of the slot.
  - The bottom of the connecting edge is flush against the base of the slot.
  - Secure the card with the card clip or screw.



**Warning** - Do not use excessive force when seating the PCI card, as this may damage the computer or the card. If you have difficulty seating the card, remove the card from the slot, realign the card with the connector dock and try again.

- 8 Replace the cover on the computer case and disconnect any personal anti-static devices.
- 9 Reconnect the server to an external power supply.

## Software Installation

### Installing SecureXL Turbocard Drivers on SecurePlatform

Refer to the latest Release Notes for instructions on how to install the SecureXL Turbocard Software.

### Uninstalling SecureXL Turbocard Drivers

Refer to the latest Release Notes for instructions on how to uninstall the SecureXL Turbocard Software.

# Troubleshooting

## Interfaces are not available upon initial boot-up

- Have you installed the SecureXL Turbocard drivers?
- Have you rebooted after the SecureXL Turbocard drivers installation?

If you answered yes to both questions, proceed as follows:

- 1** Verify that the SecureXL Turbocard is properly installed:
  - a** Login to SecurePlatform
  - b** Switch to expert mode by typing: `expert`
  - c** Type `turbocard check`.  
If the software and hardware are installed correctly the following message should be printed on the screen: `Self Test Passed`.  
If a failure message is displayed, proceed to step 2.
- 2** Verify that the SecureXL Turbocard Hardware is properly installed:
  - a** Shutdown the system.
  - b** Power the system off.
  - c** Verify that the SecureXL Turbocard is properly seated in the PCI slot.
  - d** Power the system on.
  - e** Execute step 1 again. If it fails, move to step 3.
- 3** Try moving the SecureXL Turbocard to another PCI slot, if available. Execute Step 1 again. If fails, move to step 4.
- 4** If the same failure occurs after conducting steps 1-3, proceed as follows:
  - a** Reboot.
  - b** Login to SecurePlatform.
  - c** Switch to expert mode by typing: `expert`.
  - d** Log boot messages to a file by typing `dmesg > boot.log`.
  - e** Contact a support representative or reseller and provide the `boot.log` file

## **SecureXL Turbocard Interfaces are not available in a system with National Semiconductor Network Interface Cards**

Systems that have 10/100/1000 National Semiconductor (DP83280) based Network Interface Cards (NIC) may prevent SecureXL Turbocard from initializing. Since SecureXL Turbocard uses the same National Semiconductor component as other NIC cards, the standard `ns83280` NIC driver provided by Linux may attempt to claim the SecureXL Turbocard and prevent its software from loading.

To check if this is a problem:

- 1** Type the following command:

```
cat /etc/modules.conf
```

- 2** If any of SecureXL Turbocard interfaces are aliased with `ns83280` (i.e. alias `ethX ns83280`) then modify the `modules.conf` file by removing those lines using a text editor (for example, `vi`).
- 3** Save the file.
- 4** Reboot the system.

If the problem persists contact a support representative or your reseller.

## **Ethernet/Fast Ethernet (10/100) connection does not work**

SecureXL Turbocard accelerated ports are Gigabit Ethernet only. They will not link with upstream 10/100 ports. In order to connect 10/100 ports to the Turbocard use an external 10/100/1000 Ethernet Switch.

## **VPN throughput is less than full GB rate**

VPN traffic is encapsulated by IPSec headers, which add a fixed number of bytes per packet depending on the encryption method. (There may be slightly larger packet expansion when using AES than with DES encryption.) Therefore, line utilization for clear text is limited to about 88%-94% of the line utilization for encrypted packets.

## Diagnostics

The SecureXL Turbocard diagnostics utility provides two operation modes:

- System Self Test - used to validate the data path via the SecureXL Turbocard, ensuring that the card and system software are properly installed.
- Full Diagnostic Suite Dump – provides a dump of specific tests that establish the availability status of that functional component. In addition, it checks for accurate installation of that component. This Suite is for Technical Support and Field Engineers.

The diagnostics options are provided by a menu-based interface through the command line using the following command invocation (the commands must be executed while in SecurePlatform “expert” mode):

```
#turbocard diag
```

System Self Test can also be executed by running the command:

```
#turbocard check
```

Version information for the SecureXL Turbocard Drivers installed can be obtained by running the command:

```
#turbocard ver
```

# Technical Specifications

## Cryptographic Capabilities

- 512-bit, 768-bit, 1024-bit, 1536-bit, and 2048-bit RSA public/private key processing.
- 512-bit, 768-bit, 1024-bit, 1536-bit, and 2048-bit Diffie-Hellman session-key.
- 512-bit, 768-bit, 1024-bit, DSA signing and verification.
- HMAC-SHA-1 and HMAC-MD5 message authentication.
- DES (all key sizes), 3DES (all key sizes), AES (128-bit) encryption algorithms.
- IPsec ESP packet encryption/authentication.
- 128-bit Anti-replay acceleration.
- Public Key processing accelerated via PKCS#11 API.

## Bus Interface

PCI version 2.2 compliant for 32/64bit, 33/66 MHz bus interfaces.

## Network Interfaces

Three RJ-45 connectors for 1000BASE-T Ethernet Interface Only.

## Physical Dimensions and Weight

- Height: 4.20 inches.
- Length: 12.28 inches.
- Weight: 19.9 oz.

## Environmental Operating Range

- Operating temperature: 0 to 50 C (32 to 149 F).
- Humidity: 10% - 90% non-condensing.

## Power Requirements

Power Requirements: +3.3 volt or +5.0 volts, +/-5% supply.

## Agency Certifications

- Emission/Susceptibility: FCC Class B, CE (EN55022/24), ICES-003 Class B, VCCI Class B.
- Safety: UL 60950, CSA C22.2, #60950, TUV GS.

