

Hardware Installation Guide

Alacritech® 100x4 Quad-Port Server Adapter

Alacritech® 100x2 Dual-Port Server Adapter

Alacritech® 100x1 Single-Port Server Adapter

Preface

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Alacritech 100x4 Quad-Port Server Adapter, Alacritech 100x2 Dual-Port Server Adapter and Alacritech 100x1 Single-Port Server Adapter Hardware Installation Guide, Eighth Edition (May 2002).

This document describes the hardware installation of the 100 Series of server adapters from Alacritech, Inc. This document is the official reference source for all revisions/releases of these products until rescinded by an update.

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Patents

One or more United States and international patents apply to Alacritech products, including without limitation: U.S. Patent Nos. 6,226,680., 6,247,060., 6,334,153, 6,389,479, 6,393,487, 6,427,171, 6,427,173, and 6,434,620.

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Organization of This Guide

This guide covers the installation for the Alacritech 100 Series of server adapters and contains the following sections:

Chapter 1 - Introduction, provides a general introduction to the 100 Series of server adapters and the SLIC technology on which they are based.

Chapter 2 - Hardware Installation, includes the specifications for the hardware and the procedure required to install the hardware component.

Chapter 3 – Software Installation and Support, provides a list of possible problems and their solutions.

Appendix A – Hardware Warranty and Information, provides the text of the Limited Lifetime Hardware Warranty for the hardware component. This section also includes instructions for returning a defective product, the text of the Limitation of Liability and Remedies statement, and Compliance and Conformity statements.

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1 Introduction

1.1 About this Guide

This guide describes how to install the Alacritech® 100 Series of server adapters.

1.1.1 Naming conventions

Because this guide applies to the 100x4 Quad-port, 100x2 Dual-port and 100x1 Single-port server adapters, the general term **100 Series** applies to all versions of the adapter, except where indicated.

1.2 Description

The 100 Series of Server Adapters are multi-port 64-bit Fast Ethernet server adapters that employ Alacritech's patented SLIC® (Session-Layer Interface Card) technology, which uses an innovative application-specific integrated circuit (ASIC) for protocol processing.

SLIC technology increases server performance and efficiency.

- Protocol processing is offloaded onto the server adapter, freeing the CPU for application processing and maximizing throughput.
- A unique ASIC utilizes an Internet Protocol Processor (IPP), optimized for protocol processing, which delivers faster performance than general purpose CPUs.

SLIC eliminates the burden of protocol processing on the host CPU. By offloading protocol data processing, SLIC technology frees the

CPU for application processing, boosting both network and server performance.

1.3 Specifications

Port Speeds	IEEE Auto Negotiation: 10/100 or 20/200 with full duplex Ethernet: 10 Mbps or 20 Mbps with full duplex
Connectors	RJ-45
Media	10BaseT: Category 3, 4, or 5 Twisted Pair; 100BaseTX: Category 5 Twisted Pair
Bus Type	64-bit bus master PCI v2.2, Universal Card Compatible with 32-bit PCI 2.2 Low Profile Enabled (100x1)
Reliability	MTBF 250,000 hours
Power	1.6A @ 5V typical (100x4) 1.3A @ 5V typical (100x2) .75A @ 5V typical (100x1)
Safety	UL/c (UL), IEC950, UL1950, CSA C22.2, IEC 60950
Environmental Factors	Temperature: 0 to 55° C Relative humidity: 5% to 85% non-condensing Altitude: 3000 m maximum
EMC Standards Compliance	IEEE 802.3 10BaseT IEEE 802.3u 100BaseTX Fully compliant auto-negotiation FCC class B EN55022 Class B, CE, VCCI B
Diagnostic LEDs	Link speed/integrity and network activity for each individual channel

1.4 100 Series Multi-port Adapter Card Diagram

Below is a diagram of the LED locations and ports of the 100x4 Quad-port Server Adapter. The 100x2 Dual-port Server Adapter is similar, but does not have the bottom two ports or corresponding set of LEDs.

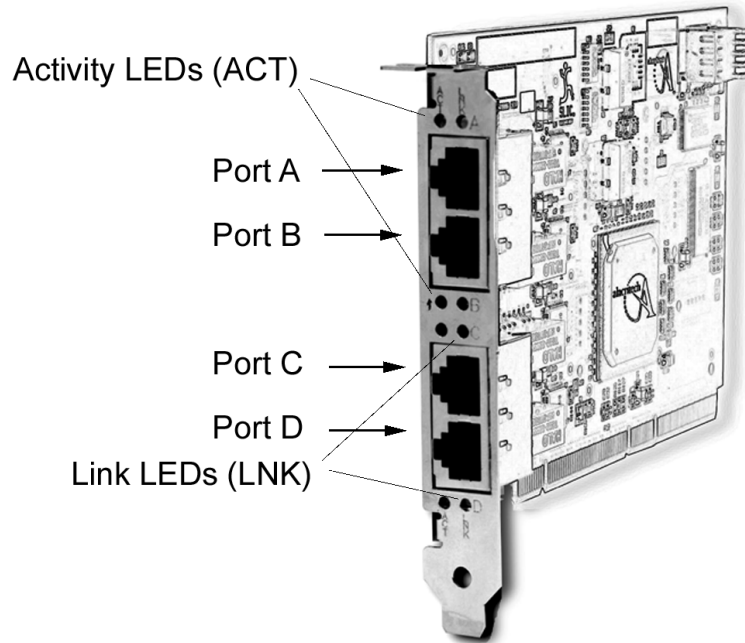


Figure 1: 100x4 Quad-port Server Adapter Interface

1.5 100 Series Single-port Adapter Card Diagram

Below is a diagram of the LED locations and port of the 100x1 Single-port Server Adapter. LEDs show Link, Activity, and 100TX mode.

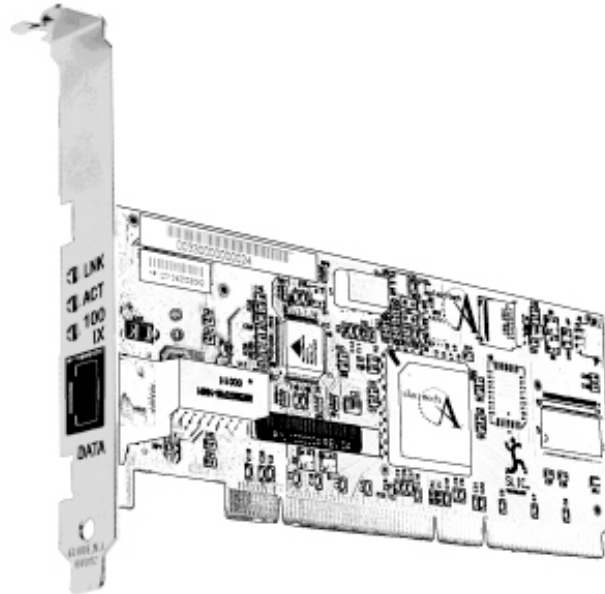


Figure 2: 100x1 Single-port Server Adapter Interface

2 Hardware Installation

2.1 Hardware Installation Overview

The 100 Series was designed for servers on an Ethernet or Fast Ethernet network using TCP/IP.

The Server computer must have the following features:

- Supported Operating System (see readme on CD for latest OS support)
- One available bus-mastering PCI slot
- CD-ROM or CD compatible drive, or network CD drive for software installation.

The network should have the following features:

- 10Base-T Ethernet (10Mb) using Category 3, 4, or 5 Twisted Pair or 100Base-TX Fast Ethernet (100Mb) using Category 5 Twisted Pair with RJ-45 connectors
- TCP/IP.

2.2 Installing the Low Profile Bracket

The 100x1 Single-Port Server Adapter includes a low profile bracket to facilitate installation in a low profile slot. To install a 100x1 Server Adapter in a low profile PCI slot, the bracket on the rear of the card will need to be changed with the included low profile bracket.

1. Remove the two 4-40 x 3/16 screws bottom side of the card.
2. Install the low profile PCI bracket - P/N 9012, making sure that the mounting tabs are on the bottom side of the board and the screws secured from the component (top) side. See Figure 3 for details.

To revert a 100x1 Server Adapter from low profile to standard PCI the bracket on the rear of the card will need to be changed to the original bracket.

1. Remove the two 4-40 x 3/16 screws from the topside of the card.
2. Install the standard PCI bracket - P/N 6588, making sure that the mounting tabs are on the top (component) side of the board and the screws secured from the bottom side. See Figure 3 for details.

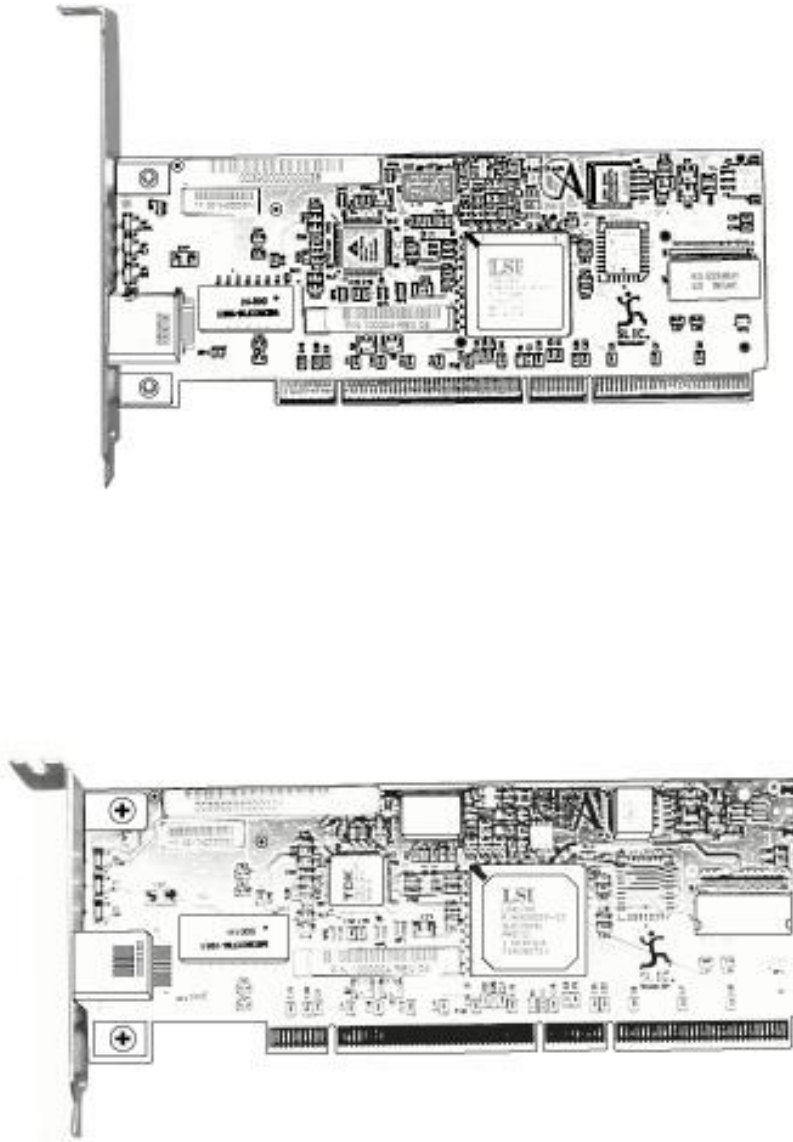


Figure 3 Mounting detail for standard and low profile brackets

2.3 Hardware Installation

Note: Alacritech server adapters use components that are sensitive to ESD. Proper ESD handling and storage should be followed.

Note: Windows 2000 automatically loads driver software upon detection of new PCI hardware. To aid this process, the Windows 2000 software pre-installation must be performed before hardware is installed.

1. Turn off and unplug the computer. Failure to do so could endanger you, and may damage the adapter or computer.
2. Remove the computer cover, and install the 100 Series adapter in any available bus-mastering PCI slot. Use a 64-bit PCI slot, if available, to maximize system performance. The 100 Series is fully compatible with 32-bit PCI slots, and 3.3 volt or 5.0 volt PCI slots. Some PCI slots have fasteners, which must be secured in order for the adapter card to function correctly.
3. Replace the computer cover, turn on and boot the computer.

3 Software Installation and Support

3.1 Alacritech Automated Customer Support

You can reach Alacritech's automated support service 24 hours a day, every day. The service contains the most up-to-date information about Alacritech products. You can access the most current drivers, installation instructions, troubleshooting information, and general product information.

Support: <http://www.alacritech.com/html/techsupport.html>

Corporate: <http://www.alacritech.com>

3.2 Readme Files on Your Product CD-ROM

For product errata, see the readme text files. To view the files, go to the Alacritech Product CD. Open the files with any text editor.

3.3 Installing the Adapter Software

For information about installing driver software, open the **Users Guide Rev xx.pdf** file in the **doc** directory on the CD ROM.

Where "x" is the version of the documentation release.

The PDF files can be read using Acrobat® Reader software available from Adobe Systems Incorporated at <http://www.adobe.com>

Appendix A Hardware Warranty and Information

LIMITED LIFETIME HARDWARE WARRANTY

Alacritech warrants to the original owner that the hardware product delivered in this package will be free from defects in material and workmanship. This warranty does not cover of the product if it is damaged in the process of being installed or improperly used.

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE ARISING OUT OF ANY PROPOSAL, SPECIFICATION, OR SAMPLE.

This warranty does not cover replacement of adapter products damaged by abuse, accident, misuse, neglect, normal wear and tear, alteration, repair, disaster, improper installation, or improper testing. If the adapter product is found to be defective, Alacritech, at its option, will replace or repair the hardware product at no charge except as set forth below provided that you deliver the adapter product along with a Return Material Authorization (RMA) number (see below), along with proof of purchase, either to the dealer from whom you purchased it or to Alacritech with an explanation of any deficiency.

With the same RMA procedure, at your option, Alacritech will refund your purchase price if the product is found to be defective and is returned within three months of the purchase date.

If you ship the adapter product, you must assume the risk of damage or loss in transit. You must use the original container and pay the shipping charge.

Alacritech may replace or repair the adapter product with either new or reconditioned parts, and any adapter product, or part thereof replaced by Alacritech becomes Alacritech's property. Repaired or replaced adapter products will be returned to you at the same revision level as received or higher, at Alacritech's option. Alacritech reserves the right to replace discontinued adapter products with an equivalent current generation adapter product.

Returning a Defective Product

Before returning any adapter product, contact Alacritech Customer Support and obtain a Return Material Authorization (RMA) number by using the automated support service at <http://www.alacritech.com/support>.

If the Customer Support Group verifies that the adapter product is defective, they will have the RMA department issue you an RMA number to place on the outer package of the adapter product. Alacritech cannot accept any product without an RMA number on the package.

Limitation of Liability and Remedies

ALACRITECH'S SOLE LIABILITY HEREUNDER SHALL BE LIMITED TO DIRECT, OBJECTIVELY MEASURABLE DAMAGES. IN NO EVENT SHALL ALACRITECH HAVE ANY LIABILITY FOR ANY INDIRECT OR SPECULATIVE DAMAGES (INCLUDING, WITHOUT LIMITING THE FOREGOING, CONSEQUENTIAL, INCIDENTAL, AND SPECIAL DAMAGES) INCLUDING, BUT NOT LIMITED TO, INFRINGEMENT OF INTELLECTUAL PROPERTY, REPROCUREMENT COSTS, LOSS OF USE, BUSINESS INTERRUPTIONS, LOSS OF GOODWILL, AND LOSS OF PROFITS, WHETHER ANY SUCH DAMAGES ARISE OUT OF CONTRACT NEGLIGENCE, TORT, OR UNDER ANY WARRANTY, IRRESPECTIVE OF WHETHER ALACRITECH HAS ADVANCE NOTICE OF THE POSSIBILITY OF ANY SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, ALACRITECH'S TOTAL LIABILITY FOR ALL CLAIMS UNDER THIS AGREEMENT SHALL NOT EXCEED THE PRICE PAID FOR THE PRODUCT. THESE LIMITATIONS ON POTENTIAL LIABILITIES WERE AN ESSENTIAL ELEMENT IN SETTING THE PRODUCT PRICE. ALACRITECH NEITHER ASSUMES NOR AUTHORIZES ANYONE TO ASSUME FOR IT ANY OTHER LIABILITIES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

CRITICAL CONTROL APPLICATIONS: Alacritech specifically disclaims liability for use of the adapter product in critical control applications (including, for example only, safety or health care control systems, nuclear energy control systems, or air or ground traffic control systems) by Licensee or Sublicensees, and such use is entirely at the user's

risk. Licensee agrees to defend, indemnify, and hold Alacritech harmless from and against any and all claims arising out of use of the adapter product in such applications by Licensee or Sublicensees.

SOFTWARE: Software provided with the adapter product is not covered under the hardware warranty described above. See the applicable software license agreement that shipped with the adapter product for details on any software warranty.

FCC COMPLIANCE STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Move the computer away from the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

The Interference Handbook

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00345-4.

NOTE: In order to maintain compliance with the limits of a Class B digital device, Alacritech requires that you use network cables of a specific quality when connecting this device. For 100BASE-TX operation, your network cables must be Category 5, twisted pair wiring. For 10BASE-T operation, use Category 3, 4 or 5 twisted-pair wiring. If you use this adapter in a residential environment, you must use Category 5 cables.

Changes or modifications not expressly approved by Alacritech could void the user's authority to operate this equipment.

FCC DECLARATION OF CONFORMITY

We, Alacritech Inc., at
234 E. Gish Road
San Jose, CA 95112
(408) 287-9997

declare under our sole responsibility that the product
Alacritech SLIC P/N's 100000, 100001, 100004, 100005, and 100007
Comply with Part 15 of the FCC Rules. Operation is subject to the
following two conditions: (1) This device may not cause harmful
interference, and (2) this device must accept any interference received,
including interference that may cause undesired operation.

VCCI Declaration Of Conformity

This 100000, 100001, 100004, 100005, and 100007 are Class B products
based on the standard of the Voluntary Control Council For Interference by
Information Technology Equipment (VCCI). If this is used near a radio or
television receiver in a domestic environment, it may cause radio
interference. Install and use the equipment according to the instruction
manual.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準
に基づくクラスB情報技術装置です。この装置は、家庭環境で使用すること
を目的としています。この装置がラジオやテレビジョン受信機に近接して
使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

EN Declaration of Conformity

The 100000, 100001, 100004, 100005, & 100007 have been tested in
accordance with the application of Council Directive 89/336/EEC, Article
4a. Conformity is declared by the application of EN55022 Class B (CISPR
22), EN55024, and EN60950.

Compliance is dependent upon the use of shielded data cables.