

Alacritech Release 6.3.1.1 Release Notes

Date: Tues. December 14, 2004

=====

Contents

- Introduction
- Content List
  - + File Versions
- Caveats
- Features
  - + Legacy Operating System Support
- Known Issues
  - + Open Bugs
  - + Integration Issues
- Resolved Issues
- Users Guide
- Support and Feedback Mechanism
- Bug Reports

Introduction

=====

This is the release of the 6.3.1.1 driver for Alacritech Server Accelerators and iSCSI Accelerators for Microsoft Windows platforms.

This release supports Microsoft Windows 2000, Windows XP, and Windows Server 2003. Windows NT 4.0 is not supported in this release.

This general release is intended for all Alacritech customers.

This file provides details on known outstanding bugs, support issues and feedback mechanisms for this release.

Content List

=====

This release contains the following file and directories:

autorun.inf

Launches the installation process on a Windows system if it is located on CD media.

bin

Contains tools for reading documentation in PDF format. a.k.a Adobe Acroread[TM].

doc

Files and documentation associated to Alacritech's hardware and software products. This includes the Alacritech Server and Storage Accelerator Users Guide.

setup.exe

The Alacritech Accelerator Setup application, which allows the Alacritech drivers and libraries to be installed properly on your system.

readme.html

Front end introduction to the driver.

readme\_files

Folder containing files referenced by readme.html

RelNotes.txt

This file.

w2k

The software drivers, libraries, and utilities for Windows 2000, Windows XP and Windows 2003.

File Versions:

=====

File	Version	Description
slic100.sys	6.3.1.1	Network Miniport Driver
atcp.sys	6.3.1.1	TCP Offload Driver
slicteam.sys	6.3.1.1	Link Aggregation (Teaming) Driver

Caveats

=====

No Caveats.

Features

=====

This release adds no new features. It is strictly a bugfix release.

Details on new features as well as features that were available in previous drivers can be found in the Users Guide.

Designed for Microsoft Windows

=====

[the following paragraph applies to all current Alacritech hardware products except the single port 10/100 card (part no 2000-10004)]\*

These drivers are digitally signed and the Alacritech Accelerator hardware meets the Designed for Microsoft Windows Server 2003 and Designed for Microsoft Windows 2000 Server logo requirements. The Designed for Windows logo associated with Alacritech's products applies to the base level networking functionality supported by the SLIC100 driver as well as the link aggregation functionality supported by the SLICTEAM driver.

\* The SLIC100 (network miniport) driver in this release is not WHQL qualified for the single port 10/100 card because the 10/100 card is classified as a desktop product and therefore needs to support wake-on-lan IAW the latest WHQL requirements. Unfortunately, the physical hardware for the 10/00 card doesn't support wake-on-lan, but the 6.3.1.1 driver will still work perfectly fine.

## Legacy Operating System Support

=====

This release does not support Windows NT4.0. Support for Alacritech Server Accelerators on NT4.0 is still available in the form of our 5.x series of drivers.

## Known Issues

=====

This section contains a list of currently understood issues. Both open bugs and known integration issues are documented based on this specific release. Please review the current open bugs and known issues before filing a bug report. See the Support and Feedback section below for details on reporting bugs.

## Open Bugs

=====

Bug 00678 [w2k,XP,2k3]

Alacritech behavior does not match Microsoft for network tunables

Some tunables for Windows are not evaluated and interpreted by the Alacritech drivers, particularly TcpMaxDataRetransmissions.

Workaround - Please see the Alacritech Server Accelerator FAQ for more details.

Bug 00704 [XP]

atcp fails to initialize after attempting to open MSTCP

If Alacritech adapter is physically present in a NT4.0 workstation that is subsequently upgraded to Windows XP, and then the Alacritech 6.0.1.0 driver is installed, atcp cannot contact MSTCP, causing most networking services and protocols to fail. This bug only applies to upgrades from NT 4.0.

Workaround - Uninstall and physically remove Alacritech cards before upgrading from Windows NT.

Bug 00807 [XP]

Uninstall leaves trash in registry

After uninstalling Alacritech cards, errant entries left in registry will cause any subsequent installation of any NICs to start Local Area Connection numbers to skip, as if the Alacritech cards were still installed.

Workaround - If you encounter this problem, use the 'remove' program (run in a cmd window) included in the w2k directory of the Alacritech distribution to clean up the errant registry entries.

Bug 00989 [ALL]

ATCP will not enforce "Require Kerberos Trust" policy

When windows IP Security Policy "Require Kerberos Trust" is in place, connections via Alacritech interfaces bypass this policy, allowing connections to untrusted hosts.

Workaround - Disable "Alacritech TCP fastpath driver" on interfaces that require this policy.

Bug 00997 [All]

Hummingbird NFS Maestro used with ATK causes BSOD

Also occurs with ADIC SNFS. Both programs fail to register a callback and instead use TDI\_RECEIVE, which is something we didn't anticipate. This bug will be fixed in next major release 7.1.x.x.

Workaround - No customer workaround, but developers can modify their code to register a callback that simply returns STATUS\_DATA\_NOT\_ACCEPTED in order to avoid hitting this bug.

Bug 01018 [ALL]

ATCP will not hand out in half closed state

Half closed connections will not get the benefit of TCP offload.

Workaround - No customer workaround. Developers don't send large amounts of data while in half close. This is a fairly rare condition in real world, and Alacritech has no plans to fix this bug.

Resolved Issues

=====

Resolved Since 6.3.0.5

=====

Bug 01087 [w2k]

slicuser program in the 6.3.0.5 package does not work on Japanese Windows 2000 Server SP3/4

It does now.

Bug 01052 [2k3]

Invalid IP address on boot of iSCSI cluster

On fast multi-processor nodes of an MS cluster that use iSCSI resources under certain conditions, Alacritech interfaces would come up with an Invalid IP address (0.0.0.0) as reported by ipconfig.

Bug 01040 [all]

Systems fail to boot with teaming configured

Many multiproc systems failed to boot, or took 20 min+ to boot if teaming was configured in 6.3.0.5 release. This bug was introduced in 6.3.0.5.

Bug 01003 [all]

Crash on in atcp.sys on 4 proc system

Another route cleanup problem.

Bug 01002 [all]  
Can't create team after upgrade

If multiple interfaces are installed but no team exists, and at least one interface doesn't have link, and the system is then upgraded to 6.3.0.5, it is then impossible to form a network team.

Bug 00990 [w2k,2k3]  
Route table not properly updated after cluster failover

The route table update method was not SMP safe, causing multiple bad things to happen during cluster failover. Typically, Invalid IP message [2k3] or Duplicate IP [w2k], but also hangs or crashes could result.

Bug 00926 [w2k,2k3]  
Disabling TCP offload on team causes network failure

On some systems, disabling TCP offload on a team causes partial network failure. When customer disabled offload, some of their servers would not boot, and others would boot, but took a long time, and had problems establishing connections.

Bug 00787 [w2k,XP]  
Team Configurator race condition

If you dissolve a network team, but don't exit the team configurator (slictray), and then proceed to enable/disable network interfaces, any and/or all network interfaces may become unusable.

Resolved Since 6.2.2.0  
=====

Bug 00991 [all]  
Incomplete network read when SO\_RCVBUF changed from default

If a socket application changes the value of SO\_RCVBUF from the default, and then receives data while in a half-closed state, under certain conditions not all of the data will be delivered to the application.

Bug 00975 [all]  
Incorrect Uninstall Behavior when iSCSI and Network cards installed

If both a 1000x1 network accelerator and a SES1001[FT] iSCSI Accelerator are installed in the same system and the 1000x1 is subsequently removed, all of the alacritech drivers and other associated files will also be removed, leaving the SES1001 completely non-functional.

Bug 00889 [all]  
System crashes when thousands of connections are established

If thousands of sockets are opened and closed, the system can crash.

Resolved Since 6.2.1.0  
=====

Bug 00951 [w2k,2k3]  
BSOD in atcp while enabling offload on cluster

On Windows 2003 cluster, if offload is initially disabled, system will crash if offload is subsequently enabled.

Bug 00963 [2k3]  
NetBT network name fails after cluster failover

Mapped network shares become unavailable after cluster failover. Attempting to browse the share results in a "network name does not exist". Eventually, the share does return, but it takes at least 15 minutes.

Bug 00965 [all]  
Hang/delay on Windows iSCSI Target Software

Alacritech ignores the push flag by default on well framed protocols such as CIFS and iSCSI. Certain Windows-based iSCSI target software, including products from DataCore and Stringbean Software will hang waiting for data if the push flag is ignored. A new registry setting is available to change push flag processing for iSCSI. Changes to this parameter are not required for proper operation of the Microsoft iSCSI Software Initiator.

Using Regedit, add a new parameter to:  
HKEY\_LOCAL\_MACHINE/SYSTEM/CurrentControlSet/Services/ATCP/parameters

IgnorePushPort3260  
Data Type: REG\_DWORD  
Range: 0 or 1  
Default: 1

Description: This key determines whether the push flag is ignored for iSCSI traffic on port 3260. Set the value to 0 to not ignore the push flag.

Bug 00967 [w2k,2k3]  
Interaction between DHCP and Cluster IP addresses

If an interface configured for DHCP is disconnected when a system is booted and clustering software is installed, the DHCP IP address for this down interface is erroneously added to the "cluster" interface.

Resolved Since 6.2.0.3  
=====

Bug 00922 [all]  
Dissolving team hangs network properties

On some multi-processor hosts, dissolving a network team can cause the network properties window to freeze. Other times, the network properties may show one teaming state while the Alacritech team configurator displays a conflicting state.

Bug 00940 [all]  
BSOD running during bus pattern variation test

Bug 00942 [all]  
Mismatch test results on large queue tests  
Bug 00943 [all]  
Loss of link during overnight test run

Internal load testing show some data tests at high load levels can cause system crashes to occur when data is arriving from multiple connections across multiple storage devices. In addition, occasional link drops occurred with iSCSI during heavy load testing. All three bugs were directly tied to contention with internal queue locking resources.

Bug 00948 [all]  
Cannot disable network interface

On some systems if you try to disable certain Alacritech interfaces, the disable will not occur, and usually accompanied an error message stating that the interface is not Plug-and-Play compatible.

Resolved Since 6.1.0.5  
=====

Bug 00817 [all]  
Open/Close timeout values much too big

iSCSI login traffic hangs up when communicating with a UNH target. This is the result of the target not responding to a graceful close request (FIN). The subsequent abort (RST) occurs after 15 seconds with a standard NIC, but takes 375 seconds with our card.

Bug 00883 [all]  
Race condition on connection setup

Multi-processor system can crash in atcp if network applications start immediately on boot.

Bug 00894 [all]  
Double trip on IRP completion

Double trip on IRP completion causing duplicate frees of the same memory. In most cases this will appear to be a crash caused by an unhandled exception by an application or higher level protocol (usually HTTP).

Bug 00895 [all]  
STATUS\_NO\_MEMORY returned by Client Receive

Encountered on Server 2003 when running intensive web traffic.

Bug 00898 [all]  
TCP checksum error for -0

Algorithmic error was causing a -0 [0xffff] TCP checksum when it should have been +0 [0x0000]. Most TCP stacks are OK with either one since the original RFC got it wrong, but some stacks such as the one used by PowerQuest disk image insist that it be corrected.

Bug 00903 [all]

W2K3 server crashes under heavy load.

It appears that a session was being passively established on one processor while the application side was initializing on the other processor. The session initialization had seen the SYN, built a socket, converted the file object over to ATCP, and was in the process of sending the SYN/ACK. The application was issuing an IRP which tripped appears to have tripped on the converted file object. This appears to be a possible race on initialization.

Bug 00914 [all]

Card resets when window update exceeds max\_rcvwin

The card crashes when it receives a window update that exceeds the maximum receive window for the connection. The erroneous update was caused by faulty handout logic.

Bug 00916 [all]

Crash in atcp when forming or removing team.

System could BSOD when forming or removing a network team as atcp was not properly checking the current validity of routing information.

Bug 00919 [all, 100Mbit only]

Network card resets in slowpath

The card could reset when doing a network write of data that has more than 15 elements that fit into a single frame.

Bug 00920 [w2k, SAK only]

No event log message on reset

On Windows 2000 + Server Appliance Kit, the slic100.sys would fail to write an event log message whenever it was forced to reset a card. [Microsoft appears to have made an unpublished change to the NDIS API in SAK]

Bug 00954 [all]

COPY and XCOPY command produce unexpected results

Mapped drives could become unexpectedly unmapped (using XCOPY) or files could prematurely be closed (when using COPY) when issuing the COPY or XCOPY command, from a Windows Command Prompt window, on a directory containing a large number of files.

Resolved Since 6.1.0.3

=====

Bug 00871 [all]

System crash on NAS cluster

Crash encountered on cluster system with four processors, release 6.0.1.0 installed (ATCP/SLIC).

Bug 00874 [all]

Initial connect retrans timer issues

Initial TCP connection timeout of 75 sec (TVTCP\_KEEP\_INIT) and retransmit interval timing do not match Microsoft behavior, causing too long of a timeout interval for live video environments.

Bug 00875 [all]

Cluster NAS with teaming crashes during high traffic.

Cluster NAS with teaming crashes during high traffic. BugCheck 0xD1 (0x34,0x2,0x0,0xBF898313)

Bug 00888 [2k3]

2k3 cluster traffic is shunted to Microsoft stack

When running HPStress against a Windows 2003 cluster, with HSB teamed 1000x1 cards, fpstat and the perfmon SLIC object both reported that there was zero network traffic. No fastpath, No slowpath.

Resolved Since 6.0.1.0

=====

Bug 00753 [w2k]

Various installation problems

Installation of Alacritech cards in systems with large numbers of network interfaces installed (50+) causes multiple networking service failures for existing non-alacritech interfaces. removing and reinstalling the non-Alacritech interfaces will usually restore network functionality.

This bug has been determined to be caused by a limit in the number of bindings allowed by NetBT, and typically occurs on systems that are shipped with a pre-configured windows image (like NAS boxes). Contact the system manufacturer for information on how to remove preinstalled adapters from the system image.

Bug 00756 [w2k,XP]

Dell 1650 hangs with iSCSI I/O to disk

A Dell 1650 hangs when doing iSCSI I/O to two different iSCSI target vendors, using Microsoft draft 20 iSCSI initiator. This bug has been determined to be caused by a bug in the ServerWorks HE-SL chipset.

Bug 00808 [XP]

Dissolving team can cause LAC properties window to hang

If you dissolve a network team in XP by bringing up the team configurator from the properties window of the Network connection for the team itself (the recommended method for win2k), the properties window will hang after the team is dissolved. You can safely kill the window with the task manager. To avoid the problem, use the slictray device to make any teaming changes on Windows XP.

Bug 00819 [all]

Client crash when running Veritas NetBackup

Using W2K SP3 and release 6.0.1.0, a stop was encountered. The stop was also encountered with 5.50 release.

STOP 0xD1 (0x00350204, 0x00000002, 0x00000000, 0xF71CC115)

Bug 00822 [all]

Cannot configure teaming on Non-English install

When FEC configurator is launched on Japanese language OS, the configurator screen is blank. None of the configured Alacritech adapters appear on the configurator screen.

Bug 00833 [all]

ATCP crash: Address BFB0A03C base at BFAF6000

I just got the blue screen on an HP LP2000r running 4-port card:  
STOP: 0x000000D1 (0x00000099, 0x00000002, 0x00000000, 0xBFB0A03C)  
DRIVER\_IRQL\_NOT\_LESS\_OR\_EQUAL  
Address BFB0A03C base at BFAF6000, Date Stamp 3e9b5cf7 - atcp.sys

Bug 00841 [w2k,2k3]

Cluster crashes when disabling teamed interface.

When disabling an interface with teaming configured, an ASSERTION failure (or BSOD) may be taken in pagmini.c at line 982 if a static IP address is configured for the disabled interface.

Bug 00862 [all]

Card crashes in Intel SCB2 Server Motherboard

Customer is experiencing sporadic card resets in their systems that are based on the Intel SCB2 Motherboard.

Resolved Since 5.5.0

=====  
00339 Adding routes handled incorrectly

Exchange of routing information is not handled correctly when both Alacritech and non-Alacritech interfaces exist on the same host and IP addresses are moved from one to the other. This can cause either total loss of connectivity for some routes, or loss of connectivity of TCP traffic only.

00437 ATCP connect failure with multiple interfaces similarly configured

Routing code does not check to see if an interface with a higher priority route is actually up (cable connected).

00503 Routes missing from atcp route table

Not all persistent routes getting in to route table. Not sure if this is a problem with table size or reading the registry, but customer has 226 persistent routes, and only 135 end up in atcp route table (according to atkroute anyway)

00514 atcp can fail to find adapter

There are instances where atcp can fail to bind to an adapter. Specifically, it's possible that a weird PCI device can cause the registry query to determine if a device is atcp-linkable to fail, and in the current code we will stop looking for more devices after the first attempt fails.

00516 Stuck in slowpath running netperf on Windows

Stuck in slow-path when running Netperf with requests below ~32k between two SLIC adapters on Windows. This results in high CPU and low throughput

00557 ATCP: ipaddress issues with MS Cluster + DFS

Setup: multinode cluster with Alacritech Gig cards for public interface and shared DFS filesystem.

After a cluster fails over to a back up node, when the failed (primary) node is brought back online, the backup node refuses to release the virtual server IP address, causing the primary node to get a "duplicate IP address" message. Of course, this causes the virtual server that requires that IP address to remain offline.

00574 ATCP: Route add/delete not handled correctly

If a route to a destination already exists, a new one will not be added to the atcp route table, even if it is a better route (like through a local interface). If multiple routes to a destination exist in the MS route table, but only one exists in atcp, deleting any of the MS routes with delete the atcp route.

00582 ATCP: Self-referential FTP on cluster system doesn't work

A system is configured with ATCP and cluster services. A self-referential FTP session is attempted. The session cannot be established through all of the system's IP addresses.

00590 ATCP: Client connection failure after idle period

When system is configured with ATCP on clients and server, the clients fail to recover after an idle period.

00654 ATCP: Interface and default gateway metrics not initialized

Registry parameters "InterfaceMetric" and "DefaultGatewayMetric" are not used for initialization in ATCP.

00672 ATCP: Connection parameter changes require flush

When the value of connection parameters, such as keep alive, is changed any offloaded connection should be flushed back to the host to synchronize.

00679 ATCP: FTP data connection (receiving [mput]) hang

While running FTPTEST, some data connections (receiving a file transfer from FTP MPUT) spuriously result in a hang condition.

00698 System hangs or crashes running 1-byte test on 8-way system

When running a multithreaded application that blasts 1-byte transactions across a SLIC interface between 2 8-way systems, the systems will hang or crash.

00711 Oracle database test program hangs with SLIC cards

When running the Oracle database program, the connections between the two systems hang up.

00712 Oracle socket test program kills card, system.

When running the oracle socket test program between two 8-way systems, the systems lock up and/or the card dumps.

00715 ATCP: Changes to non-SLIC interface not tracked

Changes to the status of non-SLIC interfaces (such as disabling of the interface in NDIS, or the connection status changing) are not visible to ATCP. The potential for making "bad" routing selections may occur.

00717 Failures after establishing thousands of connections

After thousands of connections are established, connections start to drop off.

00791 Bad ipcsum in fastpath send

Fastpath send ipcsum generation (SetIPHdr) does not handle the double carry case correctly if the target address has certain values. This causes numerous flushes on the connection.

## Readme

=====

The readme.html contained with distribution should be used as the starting point for learning about this driver.

## Users Guide

=====

There is a Users Guide contained in the doc directory provided to customers for use with Alacritech Accelerators. For details on installation, management, teaming, and interoperability issues, please review the Users Guide, as full details have been provided there.

## Support and Feedback Mechanism

=====

Before Contacting Customer Support, please browse the troubleshooting section of the Users Guide, as well as the appropriate section of the online FAQs. Should you need to contact customer support, please gather all of the

information requested in the Bug Reports section below before initiating contact.

To contact Alacritech customer support you may use one of the following methods:

Email: [support@alacritech.com](mailto:support@alacritech.com)

Phone: 877.341.8267

Your request for assistance will be responded to in a timely manner.

#### Bug Reports

=====

Please include the following information when sending in a bug request:

#### Hardware:

- CPUs
- Amount of memory
- PCI busses
- Number of Alacritech accelerators
- Other network interfaces

#### Software:

- Windows Version (2000, XP, 2003)
- Windows Service Pack version
- Version of Alacritech drivers

#### Log information:

- Event Viewer details related to Alacritech
- Windows dump files (if there is a crash)

#### Testing environment:

- What software is being tested
- What types of tests reproduce the problem
- Where is the failure occurring
- What has been done to try and solve the problem

#### 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, 6,434,620, 6,591,302, 6,470,415, 6,658,480, 6,687,758, 6,697,868, 6,751,665, 6,757,746, and 6,807,581.

900121 Rev 2