Release Notes 2.5.5r1

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1.0 PREFACE

Introduction   These release notes provide important supplemental information about Endace Measurement Systems' software driver package 2.5.5r1 for Linux/FreeBSD and Windows.

The notes contain the latest information about the features supported in this release.

Trademarks   The term Microsoft® used within the context of this document is the registered trademark of Microsoft® that relates to all software, products, and services such as Windows 2000 Server and Windows Server 2003.

1.1 Important information about 2.5.5r1

Description   The 2.5.5r1 release is an update to the 2.5.5 release. It contains a number of new features and fixes to customer issues.

New Features   The 2.5.5r1 release now includes firmware and software for our Co-Processor applications which include IP Filtering and ATM AAL5 Reassembly. These applications are supported under Linux and Windows, with the following proviso:

- IP Filtering for the DAG 3.8S and DAG 4.3S cards are currently not supported under Windows.
- Issues may be seen when using the IP Filter under Windows while swapping the filters.
- The snort compiler is currently not available for Windows.

Please note that IP Filtering and ATM AAL5 Reassembly require the appropriate Endace DAG card with Co-Processor Daughter card option fitted.

Fixes to customers issues   This release fixes two known customer issues.

1. This release fixes an issue reported to us whereby dag_attach_stream will not close properly on multi-threaded software and a segfault error occurs.

2. This release also resolves an issue which has been reported that affects the reliability of programming the ROM on the DAG 3.7T cards.

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1.1 Important information about 2.5.5r1, continued

General Firmware updates

In this release the DAG 3.7G P/F and DAG 3.7T firmware has been updated. Customers using these cards are advised to upgrade to the 2.5.5r1 release.

In this release HDLC transmit is not supported on the DAG 3.7T.

Erratum

Endace is aware of an incompatibility between our PCI-X cards and PCI Express based chipsets which use the Intel 6700PXH PCIE/PCIX bridge.

The symptoms of this incompatibility include unreliable register accesses and system crashes during capture sessions involving both receive streams on IP Filter designs.

Endace is actively working to resolve this issue. In the mean time, please avoid motherboards based on Intel E7500 series and Intel 900 series chipsets, or if that is not possible, avoid using both receive streams concurrently.

1.2 Supported Products

Description

The 2.5.5r1 release supports the following Endace products.

DAG	Link Type	Ports
3.5S	OC3c/12c ATM/PoS	1 ch
3.6D	DS3 ATM	2 ch
3.6ET/P	10/100 Ethernet	2 ch
3.6GE	10/ 100/Gigabit (Copper) Ethernet	1 ch
3.7G	10/100/1000 Copper Ethernet	2 ch
3.7T	E1/T1 HDLC/ATM	16 ch
3.8S	OC3c/12c ATM/PoS	2 ch
4.2GE	Optical Gigabit Ethernet	2 ch
4.3S	OC48c ATM/PoS	1 ch
4.3GE	Optical Gigabit Ethernet	2 ch
6.1SE	OC192c/10G Ethernet	1 ch
6.2SE	OC192c/10G Ethernet	1 ch

2.0 LINUX/FREEBSD

Introduction   The various operating system issues relating to use of Endace DAG cards.

In this section   This section covers the following topics of information.

- Linux
- FreeBSD 4.x

2.1 Linux

2.1.1 Tested Linux Distributions

NOTE: This release has been tested using the Debian 'Sarge' Linux distribution and Redhat Enterprise Linux 3.0. Redhat Enterprise Linux 4.0 has not been tested. Issues reported from customers using RedHat 4.0 and Fedora Core 3 have now been resolved.

2.1.2 Redhat RPMs Available

FEATURE: RPM format packages of the 2.5.5r1 release are available for Redhat Enterprise Linux 3.0.

2.2 FreeBSD 4.x

NOTE: No issues to report at time of release.

3.0 MICROSOFT WINDOWS

Description   Microsoft Server 2000, Microsoft Windows XP and Microsoft Windows 2003 Server are now supported.

In this chapter   This chapter covers the following sections of information.

- WinPCAP Capture API now Supported
- Source not Supplied
- dagconvert and dagfwddemo Tools Require WinPCAP Library

3.1 WinPCAP Capture API now Supported

NOTE: DAG enabled WinPCAP is now available from the Endace Website. Only one WinPCAP application can be run on each DAG card at once. The native DAG API is also available for data capture.

3.2 Source not Supplied

Description   Unlike the Linux/FreeBSD release, source code for the Windows driver and libraries is not supplied. Source code for some tools is provided as examples of the use of the DAG API.

These example tools include `dagsnap` for disk capture, `dagbits` for real-time packet processing, `dagflood` for packet trace transmission, and `dagfwddemo` for inline packet inspection and transmission.

3.3 dagconvert and dagfwddemo Tools Require WinPCAP Library

NOTE: To use the supplied `dagconvert` tool to convert DAG ERF format packet traces into `pcap` format the WinPCAP package must be installed. Note the Ethereal program can also read DAG ERF format natively and convert file formats. To build `dagfwddemo` from source the WinPCAP library must be installed, including the files `pcap.h`, `pcap-stdinc.h`, `net/bpf.h`, and `wpcap.lib`.

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4.0 GENERAL NOTES

Introduction   There are a number of features and general issues that affect all Endace DAG cards as described in the following sections of information.

The general issues that affect all Endace DAG cards include transmit capable firmware used by default, variable and fixed length packet capture, and the PCI/PCI-X bus speed detector.

In this section   This section covers the following topics of information.

- Transmit Firmware Now Used by Default
- NTP must now be running by Default
- Variable and Fixed Length Packet Capture
- PCI/PCI-X bus Speed Detection
- DAG Cards Heating During Operation
- Coprocessor Expansion Connection
- Small Form Factor Pluggable Transceiver Introduction

4.1 Transmit Firmware Now Used by Default

NOTE: The 2.5.5r1 software release supports packet transmission for the DAG 3.7G, 3.8S, 4.3S and 4.3GE. The standard receive-only firmware previously supplied for these cards has been replaced in this release with firmware that can both transmit and receive.

This change does not affect receive-only applications. See the relevant user manuals and packet transmit documentation for more details.

4.2 NTP must now be running by Default

NOTE: If you are synchronizing the DAG card using GPS it is now a requirement to have NTP running on the machine that the DAG card is installed in.

4.3 Variable and Fixed Length Packet Capture

NOTE: This release includes support for variable length (*varlen*) and fixed length (*novarlen*) packet capture for the DAG 3.6E(T/P), 3.6GE, 3.7G, 3.7T, 3.8S, 4.3S and 4.3GE products.

The DAG 6.1S and 6.2S provide variable-length capture capability (*varlen*) but not fixed-length capture (*novarlen*).

4.4 PCI/PCI-X bus Speed Detection

NOTE: For products that support operation at multiple bus speeds the DAG
configuration programs (*dagthree*, *dagfour*, and *dagsix*) report the speed at
which the host PCI/PCI-X bus is operating.

The PCI/PCI-X compatibility of Endace products is indicated in the
following table.

DAG	Link Type	Type	Width	Supported Bus Speeds
3.5S	OC3/12c	PCI	32b	33MHz
3.6D	DS3 ATM	PCI	32b	33MHz
3.6ET/P	10/100 Ethernet	PCI	32b	33MHz
3.6GE	10/100/Gigabit Ethernet	PCI	32b	33MHz
3.7G	10/100/Gigabit Ethernet	PCI	32b/64b	33MHz
3.7T	E1/T1	PCI	32b	33MHz
3.8S	OC3/12c	PCI-X	64b	66MHz
4.2GE	Gigabit Ethernet	PCI	64b	33/66MHz
4.3S	OC48c	PCI-X	64b	66/100/133MHz
4.3GE	Gigabit Ethernet	PCI-X	64b	66/100/133MHz
6.1SE	OC192/10GE	PCI-X	64b	66/100/133MHz
6.2SE	OC192/10GE	PCI-X	64b	66/100/133MHz

4.5 DAG Cards Heating During Operation

NOTE:

The DAG cards may become hot during normal operation. Certain
devices on the DAG circuit board can reach temperatures of 65°C
(150°F) or more during normal operation.

This includes periods when no network equipment is connected. Allow
the card time to cool before handling.

4.6 Coprocessor Expansion Connection

NOTE: The DAG 3.8S, 4.3S and 4.3GE provide an expansion connector suitable
for use with the Endace SC-range of coprocessors. This delicate high-
bandwidth connector is protected by a plastic cover which should not be
removed in normal operation.

Keeping the plastic cover in place at all times will ensure the connector
remains undamaged and ready for attachment of a coprocessor.

4.7 Small Form Factor Pluggable Transceiver Introduction

FEATURE: New revisions of the DAG 3.8S, DAG 4.3S, and DAG 4.3GE cards are being introduced with Small Form Factor Pluggable (SFP) transceivers, sometimes known as mini-GBICs.
This allows the specification of these products for use with different or multiple physical layers.
For further information please see the Endace website or contact sales@endace.com.

5.0 ENDACE CARDS

Description   This section describes new features, bug-fixes and known issues for
Endace DAG cards.

In this chapter   This chapter covers the following sections of information.

- DAG 3.5S Card
- DAG 3.6D Card
- DAG 3.6E Card
- DAG 3.6E Card
- DAG 3.7G Card [P/F]
- DAG 3.7T Card
- DAG 3.8S Card
- DAG 4.2GE Card
- DAG 4.3S Card
- DAG 4.3GE Card
- DAG 6.1SE Card
- DAG 6.2SE Card

5.1 DAG 3.5S Card

NOTE: The feature described below affect only Endace DAG 3.5S ATM/ PoS
Monitoring Interface Cards.

The DAG 3.5S card does not perform AAL5 FCS tests on received packets.
ATM cell header checksums are tested, and cells with non-correctable
HEC errors are dropped.

5.2 DAG 3.6D Card

Description   The features and issues described below affect only Endace DAG 3.6D
DS3 Network Monitoring Interface Cards.

In this section   This section covers the following topics of information.

- ADM Encapsulation Supported
- ATM Functionality
- Statistics Counters not Available

5.2.1 ADM Encapsulation Supported

NOTE: The DAG 3.6D card now supports both PLCP and ATM Direct Mapping (ADM) encapsulations for ATM.

5.2.2 ATM Functionality

NOTE: The DAG 3.6D card captures all ATM cells on both interfaces. Note that ATM AAL5 packet reassembly is not performed.

5.2.3 Statistics Counters not Available

NOTE: The DAG 3.6D card documentation describes programmable statistics counters as being available via *dagthree.* These counters are not available in this release, and attempting to read them will produce incorrect values.

5.3 DAG 3.6E Card

Description   The features and issues described below affect only Endace DAG 3.6ET and DAG 3.6EP 10/100Mb Ethernet Network Monitoring Interface Cards.

In this section   This section covers the following topics of information.

- DAG 3.6ET Card and DAG 3.6EP Card Differences
- Frames have rxerror bit set Frames have rxerror bit set
- Autonegotiation With DAG 3.6ET Card
- Status Flags and Statistics not Persistent

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5.3.1 DAG 3.6ET Card and DAG 3.6EP Card Differences

NOTE: The DAG 3.6E card can be ordered in one of two configurations:

DAG 3.6ET - Tap
DAG 3.6EP - Port

The DAG 3.6ET card allows monitoring of an existing full-duplex 10/100 Ethernet network link. An on-board passive tap allows network traffic to pass through the link unimpeded while a faithful copy is presented to the DAG card.

The passive tap operates even when the DAG 3.6ET card is powered-down. Both directions of the link are monitored simultaneously with data from each direction being presented to the DAG 3.6ET's two monitoring ports.
The DAG 3.6ET card is equivalent to the DAG 3.5E card in almost all respects.

The DAG 3.6EP card provides two 10/100 Ethernet ports which can be used to terminate an Ethernet network link such as a SPAN monitoring port, or may be used in conjunction with an external splitter to monitor an existing link.

The DAG 3.6EP card is not a suitable replacement for the DAG 3.5E card and is not equivalent to the DAG 3.6ET card.

5.3.2 Frames have rxerror bit set

FIXED: An issue has been fixed whereby when using a DAG 3.6EP/T card all frames have the rxerror bit set. This issue was fixed in 2.5.5.

5.3.3 Autonegotiation With DAG 3.6ET Card

ISSUE: The DAG 3.6ET card simply monitors activity on the attached network link and is not capable of transmitting data onto the link. Consequently, the DAG 3.6ET does not participate in the Ethernet autonegotiation process.

However, the DAG 3.6ET card can determine the speed of the monitored link without participating in the autonegotiation process, but the mechanism may not be 100% reliable.
In cases where the assessment is made incorrectly, select the correct link speed manually using the *dagthree* configuration tool.

This issue does not effect the DAG 3.6EP which is capable of participating in the Ethernet autonegotiation process.

5.3.4 Status Flags and Statistics not Persistent

ISSUE: The DAG 3.6ET/P card reports physical status information about the network links being monitored with the command: `dagthree -si`. Unlike other DAG cards, the information reported represents the instantaneous state of the network link, not the accumulated state since the previous query.

5.4 DAG 3.6E Card

Description The features and issues described below affect only Endace DAG 3.6GE 10/100/Gigabit Ethernet Network Monitoring Interface Cards.

In this section This section covers the following topics of information.

- DAG 3.6GE Card Performance on Highly Loaded Gigabit Ethernet Networks
- Autonegotiation Requires Card to be Configured Correctly
- Forcing Gigabit Mode not Always Successful

5.4.1 DAG 3.6GE Card Performance on Highly Loaded Gigabit Ethernet Networks

NOTE: The DAG 3.6GE card is a 32b/33MHz PCI device. Assuming 80 percent availability, no other PCI devices on the same bus for example, the PCI bus is capable of handling approximately 850Mb/s of data whereas a fully loaded gigabit Ethernet link is capable of presenting 1000Mb/s to the monitoring port.

Sustained bursts of full-rate network traffic may result in packet loss due to bandwidth limitations of the PCI bus. In these circumstances, the DAG 3.6GE card internal loss counter will accurately record the number of packets that were dropped.

5.4.2 Autonegotiation Requires Card to be Configured Correctly

NOTE: The DAG 3.6GE card is capable of autonegotiating with an Ethernet peer to 10Mbit, 100Mbit, or 1000Mbit modes. However, unlike the DAG 3.6E, the DAG 3.6GE card must be fully configured before autonegotiation can take place.

Firmware must first be loaded using the `dagld` command and the card must be initialised with the `dagthree default` command. See the DAG 3.6GE Manual for information card configuration.

5.4.3 Forcing Gigabit Mode not Always Successful

NOTE: The Ethernet standard requires that network peers establish a 1000Mbit link between themselves through the autonegotiation process. Therefore, forcing the DAG 3.6GE card to 1000Mbit mode with the `dagthree 1000` command may not always succeed if the network peer insists on autonegotiation.

5.5 DAG 3.7G Card [P/F]

Description The features and issues described below affect only Endace DAG 3.7G (P/F) 10/100/Gigabit Ethernet Network Monitoring Interface Cards.

In this section This section covers the following topics of information.

- Difference Between DAG 3.7GP Card and DAG 3.7GF Card
- Loss Counters May be Incorrect

5.5.1 Difference Between DAG 3.7GP Card and DAG 3.7GF Card

NOTE: The 3.7GP card is a dual-port copper gigabit Ethernet card with 10/100/1000 Mbps send and receive capability on each port. Each port can be connected to an external splitter or SPAN monitoring port to enable traffic capture on two separate links.

Alternatively, the card can be used in an in- line mode with traffic forwarded across the card as well as being transferred to host memory.

The 3.7GF adds "fail-safe" relays with hardware watchdog, so that in the event of a power interruption, or a hardware or software failure on the host, traffic will be switched to by-pass the monitoring card and network connectivity will be maintained.

5.5.2 Full OS Support now Available

NEW FEATURE: The DAG 3.7G card is now fully supported under Windows, Linux and FreeBSD.

5.5.3 Loss Counters May be Incorrect

NOTE: Loss counters may indicate higher packet loss than has actually occurred.

5.6 DAG 3.7T Card

Description   The features and issues described below affect only Endace DAG 3.7T card E1/T1 Network Monitoring Interface Cards.

In this section   This section covers the following topics of information.

- HDLC transmit not Supported
- ATM now Supported
- ATM ATM Transmit now Supported
- Early DAG 3.7T Cards Require `dagthree` Option

5.6.1 HDLC transmit not Supported

ISSUE: HDLC transmit is not supported in the 2.5.5 or 2.5.5r1 release.

5.6.2 ATM now Supported

NEW FEATURE: The firmware shipped in this release now supports capture of packets from both HDLC and ATM channels.

5.6.3 ATM Transmit now Supported

NEW FEATURE: The firmware shipped in this release now supports the transmission of packets from ATM channels.

5.6.4 Early DAG 3.7T Cards Require `dagthree` Option

ISSUE: All DAG 3.7T cards fitted with a 1.544MHz crystal oscillator instead of a 2.048MHz oscillator require an extra option to be used during configuration. All DAG 3.7T cards with serial numbers below #4415 are affected, except for card #4163. For these cards after loading firmware, the `dagthree` option `-1` must be used, for example `dagthree –d dag0 -1 default`.

5.7 DAG 3.8S Card

Description   The features and issues described below affect only Endace DAG 3.8S card OC3c/12c Network Monitoring Interface Cards.

In this section   This section covers the following topics of information.

- Packet/Cell Transmission
- PCI-X bus Configuration
- No Support for PCI
- DAG 3.8S Card Internal Pipeline Packet Retention
- DAG 3.8S Card Incorrect Counters
- Stopping Transmission While Sending Packets

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5.7.1 Packet/Cell Transmission

NOTE: The firmware shipped with the DAG 3.8S card supports ATM cell and HDLC packet transmission and reception simultaneously.

5.7.2 PCI-X bus Configuration

NOTE: The DAG 3.8S card is intended for use in a PCI-X expansion socket. The DAG 3.8S card announces itself to the host system as a 66MHz-capable product and will function correctly in a PCI-X bus operating at 66MHz.

5.7.3 No Support for PCI

NOTE: The DAG 3.8S card is a PCI-X product and will not operate correctly when used in a PCI socket.

Some PCI-X equipped motherboards provide the means to select PCI or PCI-X bus protocol for each expansion socket.

Ensure the DAG 3.8S card is inserted into a socket that has been configured for PCI-X operation.

5.7.4 DAG 3.8S Card Internal Pipeline Packet Retention

ISSUE: With software release 2.5.5r1 the DAG 3.8S card may retain up to 1 packet in internal buffer memory at the end of a capture session. Using the `dagthree align64` option will work around this issue.

5.7.5 DAG 3.8S Card Incorrect Counters

ISSUE: The programmable counters in the DAG 3.8S may over or under count events by up to 10%. The capture operation is not affected.

5.7.6 Stopping Transmission While Sending Packets

ISSUE If the transmission process is stopped while the DAG card is in the process of transmitting a packet or cell, the first cell or packet sent after transmission is restarted may be corrupted.

5.8 DAG 4.2GE Card

Description   The features and issues described below affect only Endace DAG 4.2GE Gigabit Network Monitoring Interface Cards.

In this section   This section covers the following topics of information.

- DAG 4.2GE Internal Pipeline Packet Retention
- Early DAG 4.2GE Card may not respond to `dagreset`

5.8.1 DAG 4.2GE Internal Pipeline Packet Retention

ISSUE: With software release 2.5.5r1 the DAG 4.2GE may retain up to 1 packet in internal buffer memory at the end of a capture session.

5.8.2 Early DAG 4.2GE Card may not respond to `dagreset`

Description   The DAG 4.2GE may occasionally stop responding to `dagreset`, `dagrom`, or `dagld` commands. This can be resolved by rebooting the host PC. This issue only affects DAG 4.2GE cards with serial numbers below 2787.

5.9 DAG 4.3S Card

Description   The features and issues described below affect only Endace DAG 4.3S OC48c Network Monitoring Interface Cards.

In this section   This section covers the following topics of information.

- Packet Cell Transmission
- PCI-X bus Configuration
- No Support for PCI
- DAG 4.2S Card and DAG 4.3S Card Differences
- 4.3S Card Internal Pipeline Retention Packet
- Stopping Transmission While Sending Packet
- AMD Update

5.9.1 Packet Cell Transmission

Description   The firmware shipped with the DAG 4.3S card supports ATM cell and HDLC packet transmission and reception simultaneously.

5.9.2 PCI-X bus Configuration

Description   The DAG 4.3S card is intended for use in a PCI-X expansion socket. The DAG 4.3S announces itself to the host system as a 133MHz-capable product and will function correctly in a PCI-X bus operating at 66MHz, 100MHz, or 133MHz.

The `dagfour` configuration tool reports the speed at which the PCI-X bus is operating.

5.9.3 No Support for PCI

NOTE: The DAG 4.3S card is a PCI-X product and will not operate correctly when used in a PCI socket.

Some PCI-X equipped motherboards provide the means to select PCI or PCI-X bus protocol for each expansion socket. Ensure the DAG 4.3S card is inserted into a socket that has been configured for PCI-X operation.

5.9.4 DAG 4.2S Card and DAG 4.3S Card Differences

NOTE: Records generated by the DAG 4.3S card will by default include the packet CRC field. Records generated by the DAG 4.2S do not include the CRC field. The DAG 4.3S card can be configured to suppress the CRC field, thereby creating records similar to the DAG 4.2S, by using the `nopasscrc` option with the `dagfour` configuration command.

The DAG 4.2S card performs header compression on received frames whereas the DAG 4.3S card does not.

Both the above issues impact the wire-length (`wlen`) value that is reported for received frames.

5.9.5 DAG 4.3S Card Internal Pipeline Retention Packet

NOTE: With software release 2.5.5r1 the DAG 4.3S card may retain up to 1 packet in internal buffer memory at the end of a capture session. Using the `dagfour align64` option will work around this issue.

5.9.6 Stopping Transmission While Sending Packet

NOTE: If the transmission process is stopped while the DAG card is in the process of transmitting a packet or cell, the first cell or packet sent after transmission is restarted may be corrupted.

5.9.7 AMD Update

FIX: A firmware issue has been fixed on the DAG 4.3S which may have caused the FPGA not to respond.

5.10 DAG 4.3GE Card

Description   The features and issues described below affect only Endace DAG 4.3GE Gigabit Ethernet Network Monitoring Interface Cards.

In this section   This section covers the following topics of information.

- Packet Transmission
- PCI-X bus Configuration
- No Support for PCI
- Facility Loopback not Supported
- DAG 4.3GE Card Internal Pipeline Packet Retention
- Stopping Transmission While Sending Packet

5.10.1 Packet Transmission

NOTE: The firmware shipped with the DAG 4.3GE card supports Ethernet packet transmission and reception simultaneously.

5.10.2 PCI-X bus Configuration

NOTE: The DAG 4.3GE card is intended for use in a PCI-X expansion socket.

The DAG 4.3GE card announces itself to the host system as a 133MHz-capable product and will function correctly in a PCI-X bus operating at 66MHz, 100MHz, or 133MHz.

The `dagfour` configuration tool reports the speed at which the PCI-X bus is operating.

5.10.3 No Support for PCI

NOTE: The DAG 4.3GE card is a PCI-X product and will not operate correctly when used in a PCI socket. Note that some PCI-X equipped motherboards provide the means to select PCI or PCI-X bus protocol for each expansion socket.

Ensure the DAG 4.3GE card is inserted into a socket that has been configured for PCI-X operation.

5.10.4 Facility Loopback not Supported

NOTE: Note that unlike the DAG 4.2GE, the DAG 4.3GE does not provide a facility loopback feature.

5.10.5 DAG 4.3GE Card Internal Pipeline Packet Retention

Description   With software release 2.5.5r1 the DAG 4.3GE may retain up to 1 packet in internal buffer memory at the end of a capture session.

Using the `dagfour align64` option will work around this issue.

5.10.6 Stopping Transmission While Sending Packet

Description   If the transmission process is stopped while the DAG card is in the process of transmitting a packet, the first packet sent after transmission is restarted may be corrupted.

5.11 DAG 6.1SE Card

Description   The features described below only affect Endace DAG 6.1SE OC192c/STM-16c 10GBASE-LR 10GBASE-LW Network Monitoring Interface Cards.

In this section   This section covers the following topics of information.

- PCI-X bus Speed
- No Support for PCI
- Support for 10Gb Ethernet
- FreeBSD Support

5.11.1 PCI-X bus Speed

NOTE: The DAG 6.1SE card is intended for use in a PCI-X expansion socket. The DAG 6.1SE announces itself to the host system as a 133MHz-capable product and will function correctly in a PCI-X bus operating at 66MHz, 100MHz, or 133MHz.

The `dagsix` configuration tool reports the speed at which the PCI-X bus is operating.

5.11.2 No Support for PCI

NOTE: The DAG 6.1SE card is a PCI-X product and will not operate correctly when used in a PCI socket. Note that some PCI-X equipped motherboards provide the means to select PCI or PCI-X bus protocol for each expansion socket.

Ensure the DAG 6.1SE card is inserted into a socket that has been configured for PCI-X operation.

5.11.3 Support for 10Gb Ethernet

FEATURE: The DAG 6.1SE is intended for use with SONET OC192c or SDH STM-64c POS networks, as well as 10GBASE-LR and 10GBASE-LW Ethernet.

5.11.4 FreeBSD Support

ISSUE: There is a known issue when using the DAG 6.1SE under FreeBSD where data capture may fail after some time. The captured data stream becomes misaligned and cannot be read successfully.

5.12 DAG 6.2SE Card

Description The features described below only affect Endace DAG 6.2SE OC192c/STM-16c 10GBASE-LR 10GBASE-LW Network Monitoring Interface Cards.

In this section This section covers the following topics of information.

- PCI-X bus Speed
- No Support for PCI
- Increase in Data Capture Performance over DAG 6.1SE Card
- Support for 10Gb Ethernet
- Updated Thermal Management

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5.12.1 PCI-X bus Speed

NOTE: The DAG 6.2SE card is intended for use in a PCI-X expansion socket. The DAG 6.2SE card announces itself to the host system as a 133MHz-capable product and will function correctly in a PCI-X bus operating at 66MHz, 100MHz, or 133MHz.

The `dagsix` configuration tool reports the speed at which the PCI-X bus is operating.

5.12.2 No Support for PCI

NOTE: The DAG 6.2SE is a PCI-X product and will not operate correctly when used in a PCI socket. Note that some PCI-X equipped motherboards provide the means to select PCI or PCI-X bus protocol for each expansion socket.

Ensure the DAG 6.2SE is inserted into a socket that has been configured for PCI-X operation.

5.12.3 Increase in Data Capture Performance over DAG 6.1SE Card

NOTE: The DAG 6.2SE is a refinement of the DAG 6.1SE that offers lower-cost and increased performance. Internal datapath capacity has been increased by 33% and on-card buffering increased to 2Mbytes.

The DAG 6.2SE is capable of presenting up to 1.064GBytes/sec to the host system compared to 800Mbytes/sec for the DAG 6.1SE.

Actual results will depend heavily on the capability and configuration of the host system.

5.12.4 Support for 10Gb Ethernet

FEATURE: The DAG 6.2SE is intended for use with SONET OC192c or SDH STM-64c POS networks, as well as 10GBASE-LR and 10GBASE-LW Ethernet.

5.12.5 Updated Thermal Management

NOTE: The DAG 6.2SE Revision C card features a new active thermal management system to prevent cards overheating in situations with limited airflow.

Once the PP FPGA firmware is loaded with `dagld`, the `dagsix default` command must be run within one minute to initialize the thermal management system to avoid hardware damage.

The Revision C cards include a thermal sensor and speed controlled fan. If the card becomes too hot, it will automatically reset the PP FPGA.

The host PC will print the error message "dag0: thermal overload". The PC should be rebooted before further use.

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6.0 DAG APPLICATION PROGRAMMER'S INTERFACE ISSUES

Introduction   The DAG application programmer's interface issues include the update and incomplete full error handling.

These changes only affect developers working directly with the DAG API.

Contact support@endace.com for an updated Programmers Guide for the API.

In this chapter   This chapter covers the following sections of information.

- DAG Application Programmer's Interface Update
- Error Handling not Complete

6.1 DAG Application Programmer's Interface Update

FEATURE: The native DAG API in the 2.5.5r1 release is at version 1.6. This update introduces new functions but preserves code compatibility with earlier API 1.x releases.

These changes only affect developers working directly with the DAG API. Contact support@endace.com for an updated Programmers Guide for the 1.6 API.

6.2 Error Handling not Complete

Description   Full error handling is not complete in the MS Windows port of the DAG API.