

AT-ANC10S

PCI-Express 10 Gigabit Network Interface Card

The Allied Telesis AT-ANC10S dual-port direct attach 10 Gigabit Ethernet PCI-Express Network Interface Card (NIC) is the next-generation NIC, featuring SR-IOV offload combined with standard Ethernet functionality. Together, these features provide the necessary performance and bandwidth critical to I/O-intensive applications such as virtualization and High Performance Computing (HPC).



Optimized for Virtualization

Using multi-port cards in virtualized environments is critical to the application in order to provide redundancy and data connectivity for the workloads in virtual machines. Due to specific slot limitations, and the need for redundancy/data connectivity, it is usually recommended that virtualized servers use 10 Gigabit ports to satisfy the I/O demands.

Virtual Machine Device Queues (VMware Direct-Path)

VMware Direct-Path (SR-IOV) reduces I/O overhead on the hypervisor in a virtualized server by performing data sorting and uniting it in the network silicon. This feature requires an operating system (OS) that supports VMware Direct-Path (SR-IOV).

Virtual Machine Device Queues (VMDQ) make use of multiple queues in the network controller. As data packets enter the card, they are sorted, and packets travelling to the same destination or virtual machine are grouped together in a single queue. The packets are sent to the hypervisor, which directs them to their respective virtual machines. Removing the strain of packet filtering and sorting from the hypervisor improves overall CPU usage and throughput.

The AT-ANC10S provides improved performance with next-generation technology (VMware Direct-Path, Netqueue, SR-IOV), which includes

features such as loop back (inter-VM communication) and priority-weighted bandwidth management. The number of data queues per port is increased to 64, and the interface card also supports multicast and broadcast data on a virtualized server.

Superior Functionality

The AT-ANC10S includes dedicated hardware and processors to process frames at the highest levels in the operating system for both transmit and receive paths — advantageous for virtualization applications.

More Bandwidth with PCIe

The PCI-Express (PCIe) design provides the maximum possible bandwidth and bus efficiency. Other benefits include capability and low power consumption.

Performance and Reliability

Allied Telesis validates its NICs over a variety of operating systems and platforms, ensuring compatibility. The AT-ANC10S takes full advantage of the PCI-Express bus architecture to maximize network throughput. Teaming enables Smart Load Balancing (SLB) to help increase throughput and fault tolerance when multiple adapters are configured to work together to share traffic and provide data reliability with failover.

New Features

Management Software

- ▶ VLAN, VxLAN support
- ▶ Link aggregation LACP
- ▶ Link aggregation smart switch
- ▶ Failover

Advanced Properties

- ▶ Jumbo frames (up to 9KB)
- ▶ Checksum offloading
- ▶ PCI-Express v2.0 compliant
- ▶ 802.3x flow control
- ▶ Processes receive and transmit frames at the highest level
- ▶ IEEE 802.1p-based traffic prioritization
- ▶ PXE remote boot support
- ▶ Standard height brackets included
- ▶ Microsoft certified drivers
- ▶ RoHS compliant
- ▶ Teaming for Layer 2, 4, and 5
- ▶ Giant Send Offload (GSO)
- ▶ Message Signal Interrupt (MSI and MSI-X)
- ▶ Receive Side Scaling (64 queues)
- ▶ Transmit Side Scaling (64 queues)
- ▶ Transmit Queues (64)
- ▶ Receive Queues (64)
- ▶ On-board 78KB memory
- ▶ CPU task offload
- ▶ TCP segmentation
- ▶ SNMP
- ▶ IPv6
- ▶ SR-IOV
- ▶ Data Center Bridging (DCB)
- ▶ Enhance Transmission Selection (ETS)
- ▶ Quantized Congestion Notification (QCN)
- ▶ Data Center Bridging Capability Exchange protocol (DCBx)
- ▶ Adapter Fabric Extender (AFEX)

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Powerful Control Software

The AT-ANC10S provides an unprecedented level of governance across the entire network, enabling detailed tests, analysis, and diagnostics for each network adapter installed in the system. It includes utilities to help configure VLANs and

set up teams for link aggregation, SLB, failover, and more.

The AT-ANC10S includes a comprehensive Microsoft Windows utility which performs detailed tests, diagnostics, and analysis.

Specifications

Bus Type

PCIe x 8

Windows Server 2012
Windows Server 2012 R2
Windows Hyper-V
Citrix XenServer
VMware
Linux 2.6

Connectors

SFP+

Network Type

10 Gigabit

Available Solaris

Speed

10 Gigabit (dependent on SFP+ module)

Status Indicators

LED, for SFP+ slots

LINK Off: Empty slot or the transceiver has not established a link to a remote device

Steady On: The transceiver has established a link to a remote device

ACT Off: Empty slot or the transceiver is not transmitting or receiving network traffic

Blinking: The transceiver is transmitting or receiving network traffic

Management Features

WMI

ACPI 1.1

PXE 2.1 Boot ROM

SNMP

Ethernet Standards

IEEE 802.1p Quality of Service
IEEE 802.1Q VLANs
IEEE 802.2 LLC
IEEE 802.3ac MAP
IEEE 802.3 10 Ethernet
IEEE 802.3x Flow control auto-negotiation
IEEE 802.3ad Link aggregation
IEEE 802.1Qaz Enhance Transmission Selection (ETC)
IEEE 802.1Qbb PFC
IEEE 801.1Qau Quantized Congestion Notification (QCN)

Drivers

Supported Windows Server 2008 (32 and 64 bit)
Windows Server 2008 R2

Physical Characteristics

Dimensions (W x H) 16cm x 6.89cm (6.3in x 2.71in)
Weight: 78.0 g (2.8 oz)

Ships with low-profile bracket attached to interface card. Standard bracket included in packaging. AT-ANC10S/2+SP10SR combo ships with 2 SP10SR optics plugged into the interface card.

Compliance

RoHS

UL

FCC/EN55022 Class B

TUV

EN55024

CE

C-TICK

VCCI

Ordering Information

AT-ANC10S/2-xxx

PCIe 2 x 10 Gigabit SFP+ Network Interface Card

AT-ANC10S/2+SP10SR-xxx

PCIe 2 x 10 Gigabit Network Interface Card, 2 x SP10SR Combo

Where xxx = 001 for single pack
901 for single pack, Federal and Government



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