

Acme Packet Net-Net 3820

Overview

Acme Packet's Net-Net 3820 is our mid-range platform for enterprises and service providers. The 1RU Net-Net 3820 features Acme Packet's custom hardware design tightly integrated with Net-Net OS to provide the critical controls for delivering trusted, first-class real-time communications—voice, video and multimedia sessions—across IP network borders.

Designed for smaller service providers and small to mid-sized enterprises, the Net-Net 3820 platform delivers most of the same functions and features as Acme Packet's high-end platforms. Redundant power supply options, NEBS compliance, and a system architecture that leverages Acme Packet's advanced hardware are just a few of the attributes that make the Net-Net 3820 a natural choice when uncompromised reliability and performance is needed in an entry-level platform.

Acme Packet Edge

- Carrier-class functionality in an entry-level system
- Advanced system design delivers robust controls at network borders
- Hardware-acceleration for advanced media control

Applications

- Enterprise SBC
- Security-focused EBC for governments
- Small service provider SBC: access & interconnect
- Net-Net SBC clustering
- Session routing proxy (SRP)

Key Features

- Multi-processor architecture
- Basic & advanced function NIUs
- Supports up to 8,000 signaled sessions
- High availability, redundant components
- NEBS compliant
- FIPS 140-2 certification

Benefits

- Cost savings with uncompromised functionality
- Flexibility: multiple configuration & deployment options
- Scale: small to mid-range services & applications
- Adaptability: wide variety of applications & services

Acme Packet
Net-Net 3820



Net-Net 3820

System Capacity, Performance and Availability

The Net-Net 3820 platform supports up to 8,000 sessions, offers high availability operation for non-stop service and includes hardware acceleration options for encryption, transcoding and QoS measurement. The Net-Net 3820 delivers the following platform capabilities:

Session capacity*:

- Up to 8,000 simultaneous signaled sessions

High-availability (HA) configuration:

- Active/standby systems (1:1 redundancy) with check-pointing of signaling, media and configuration state for no loss of service

In-line, wire-speed QoS measurement processor option

Two-level encryption acceleration hardware options:

- Session set-up: IPsec tunnels and TLS sessions
- Traffic encryption/decryption: IPsec and SRTP

IPsec tunnel capacity:

- Up to 1,000 tunnels with manual keys
- Up to 120,000 tunnels with IMS-AKA

SIP-TLS capacity:

- Up to 200,000 connections

SRTP capacity:

- Up to 10,000 call legs

Transcoding capacity:

- Up to 7,200 transcoded sessions

Local route table entries:

- Up to 1,000,000 routes

Network interfaces:

- 4 active 10/100/1000 Mbps Ethernet interfaces (fiber or copper)

System throughput:

- 5 Gbps

Power supplies:

- Single or dual field-replaceable AC or DC power supplies

Supported Configurations

The Net-Net 3820 operates Net-Net OS for services and applications requiring low to mid-range session border control or session routing proxy functionality.

Session Border Controller (SBC)

Acme Packet SBCs offer broad and comprehensive controls for session-based communications. The Net-Net 3820's hardware architecture and components leverage Acme Packet's Net-Net OS to support our integrated SBC configuration, the Net-Net Session Director (SD). The Net-Net SD-3820 can be utilized in services and applications that support up to 8000 simultaneous sessions.

The Net-Net SD-3820 can also operate as part of a Net-Net SBC cluster powered by Acme Packet's Net-Net Access Session-aware Load Balancer (A-SLB). Net-Net SBC clusters support up to two million subscribers without requiring architectural forklifts or network disruptions.

For further details on Acme Packet SBC products and configurations, contact an Acme Packet representative or refer to the Net-Net OS and SBC data sheets at www.acmepacket.com.

Session Routing Proxy (SRP)

The Net-Net 3820 supports our session routing proxy (SRP)

configuration, the Net-Net Session Router (SR), for efficient routing of SIP-based interactive communication sessions.

The Net-Net SR-3820 supports up to one million route table entries in Acme Packet's Open Session Routing architecture (OSR), simplifying and consolidating core and inter-network session routing to reduce capital and operational expenditures.

For further details on the Net-Net SR and Acme Packet's OSR architecture, contact an Acme Packet representative or refer to the Net-Net OS and Net-Net SR data sheets at www.acmepacket.com.

* Performance and capacity vary by signaling protocol, call flow, codec, configuration and feature usage.

Net-Net 3820

Hardware

The Net-Net 3820 is a 1U rack-mountable (1RU) system. With its integrated multi-processor design, the Net-Net 3820 offers mid-range session processing and capacity, with system throughput and redundancy features typically found in higher-end systems. This makes the Net-Net 3820 an excellent fit

for smaller service providers and enterprises that rely heavily on communications infrastructure, services and applications to drive their businesses.

The front of the Net-Net 3820 features three air intake fans, status LEDs, a single RJ-45 serial console

interface and pinhole used for hard system resets. The rear of the Net-Net 3820 includes a single network interface unit (NIU) slot as well as slots for redundant, load sharing AC or DC power supply units (PSU).



Net-Net 3820 front



Net-Net 3820 rear

Network Interface Units

The rear slot of the Net-Net 3820 accommodates a single Network Interface Unit (NIU) module. Net-Net 3820 NIUs are offered in a variety of configurations to address a wide range of network, service and application scenarios.

All Net-Net 3820 NIUs include four Ethernet interfaces for signaling, media and data traffic. The NIUs also integrate the system alarm and management interfaces, including those used for the physical configuration of high-availability (HA) system pairs.

Net-Net 3820 NIUs are offered with the following interface speeds and connection types:

- 10/100/1000 Mbps with copper RJ45 connectors
- 10/100/1000 Mbps via small form factor-pluggable (SFP) copper transceiver
- 1 Gbps via small form factor-pluggable (SFP) connectors for copper or fiber optic transceiver connectivity

Encryption and QoS Monitoring and Reporting Options

To meet the demands of scalable, high-quality interactive communications, Net-Net 3820 NIUs offer a variety of on-board hardware and processor options designed to offload the 3820 CPU from processor-intensive functions such as security and QoS monitoring and reporting.

Net-Net 3820 1 Gbps NIUs with SFP interfaces can accommodate on-board processor options for IPsec and SRTP encryption, QoS monitoring and reporting, or both.

On-board encryption acceleration hardware enables secure communications without compromising end user or subscriber quality of experience (QoE).

QoS monitoring and reporting hardware monitors and measures each media flow through the system, calculating quality scores (such as Mean Opinion Score, or MOS), and

aggregating the information into data for transmission to external reporting or accounting systems. On-board QoS monitoring and measurement is also utilized for real-time functions such as QoS-based routing and load balancing, also without compromising end user or subscriber quality of experience (QoE).

Net-Net 3820 Advanced Function NIUs

Net-Net 3820 advanced function NIUs help the Net-Net 3820 deliver a combination of performance, capacity and functionality unmatched by other platforms in its class.

With a distributed, multi-processor approach that leverages the latest DSP and multi-core processors, the Net-Net 3820 is capable of performing many of the functions offered by our high-end systems, at the reduced capacity levels required by many enterprises as well as smaller service providers.

Net-Net 3820



Transcoding NIU

Acme Packet's Transcoding NIU for the Net-Net 3820 delivers a low to mid-range hardware-based transcoding solution that complements the high-capacity transcoding offered on our high-end platforms. With this NIU, the Net-Net 3820 supports up to 7200 transcoded sessions.

The Transcoding NIU also features QoS monitoring and reporting hardware for both transcoded and non-transcoded sessions. The Net-Net 3820 Transcoding NIU

may be populated with up to twelve transcoding modules, each supporting up to 600 transcoded sessions, for pay-as-you-grow scalability.

Enhanced Traffic Control NIU

Acme Packet's Enhanced Traffic Control (ETC) NIU offers a unique and highly-advanced design, with enhanced capabilities that address a wide range of next-generation services and applications.

The ETC NIU is a high-performance multi-processor engine for the Net-Net 3820 that combines

multiple hardware-accelerated functions including:

- High-capacity SRTP encryption
- High-capacity termination for SIP-TLS
- Separate, dedicated processors for high capacity IPsec encryption and TCP termination
- Integrated hardware for QoS monitoring and reporting

The extensible multi-core, multi-processor architecture of the ETC NIU is also capable of supporting additional applications and functions as new requirements emerge.

Physical

Dimensions	Height: 4.37 cm (1.72 in) Width: 43.43 cm (17.10 in) Depth: 48.26 cm (19.00 in) (Not including mounting hardware)
Weight	8.62 kg (19 lbs) fully configured
Colors	Front panel: Midnight black with Glacier blue trim
Temperature	Operating: 32 °F to 104 °F (0 °C to +40 °C) Storage: -4 °F to 149 °F (-20 °C to +65 °C)
Relative humidity	10 to 85%, non-condensing
Air flow	50 cfm front to back
Heat dissipation	100W (341 BTU/hour) typical, 200W (682 BTU/hour) maximum
Power dissipation	100W typical, 200W maximum

Power

AC Power	Single or dual field-replaceable power supplies Dual power supplies are redundant and load sharing, 300 VA max Voltage: Autoranging 100-240 VAC wide input with power factor correction Frequency: 50/60 Hz Current: 3A x 2 rating Cable: 2.0 meter 18 AWG 3-wire cable, with 3-lead IEC-320 receptacle on the power supply end & a country-dependent plug on the power source end
-48 VDC power option	Single or dual field-replaceable power supplies Dual power supplies are redundant and load sharing, 300 VA max Voltage: -48 VDC (+/-10%) nominal in North America. Maximum range is -40 VDC to -60 VDC Current: 7A x 2 rating Cable: 18 AWG recommended minimum, with at least 3 conductors rated for at least 140 °F (60 °C)
-72 VDC power option	Voltage: -72 VDC nominal in Russia Cable: 18 AWG recommended minimum, with at least 3 conductors rated for at least 140 °F (60 °C)



Specifications

Chassis	<p>1U, rack-mount</p> <p>Front: power & HA status LEDs, physical system reset pinhole, console</p> <p>Rear: one network interface unit slot (signaling, media & management interfaces)</p> <p>Power supplies: single or dual AC or DC, field replaceable</p> <p>Optional mounting brackets for front/rear or center-mount in 19" or 23" rack</p>
Memory	<p>2 GB for active configuration & logs</p> <p>256 MB internal flash memory for runtime image & backup configurations</p> <p>Optional storage expansion module for local CDR backup</p>
Content addressable memory (CAM)	<p>128K entries for static & dynamic ACLs, media control rules & ARP entries</p>
Encryption options	<p>TLS:</p> <ul style="list-style-type: none"> • Software-based encryption for low capacity TLS sessions • Secure Services Module (SSM) hardware accelerator option for high capacity TLS sessions <p>SRTP:</p> <ul style="list-style-type: none"> • Network Interface Unit (NIU)-based encryption processors <p>IPsec:</p> <ul style="list-style-type: none"> • Tunnel set-up: software-based for use of manual keys; Secure Services Module (SSM) hardware accelerator option for use of dynamic keys • Traffic encryption: NIU-based encryption processors
Network interface units (NIU)	<p>Supports network interfaces for signaling, media & data</p> <p>Basic NIUs & options:</p> <ul style="list-style-type: none"> • Four 10/100/1000 Mbps Ethernet copper ports (RJ-45 connector) • Four 1000 Mbps Ethernet fiber or four 10/100/1000 Mbps copper ports (requires SFP transceivers) • Four 1000 Mbps Ethernet fiber or four 10/100/1000 Mbps copper ports with inline IPsec/SRTP encryption processors (requires SFP transceivers) • Four 1000 Mbps Ethernet fiber or four 10/100/1000 Mbps copper ports with inline QoS measurement processors (requires SFP transceivers) • Four 1000 Mbps Ethernet fiber or four 10/100/1000 Mbps copper ports with inline IPsec/SRTP encryption and QoS measurement processors (requires SFP transceivers) <p>Transcoding NIU:</p> <ul style="list-style-type: none"> • Four 1000 Mbps Ethernet fiber or four 10/100/1000 Mbps copper ports (requires SFP transceivers) • Up to twelve on-board transcoding digital signal processor (DSP) modules • Inline QoS measurement processors <p>Enhanced Traffic Control NIU:</p> <ul style="list-style-type: none"> • Four 1000 Mbps Ethernet fiber or four 10/100/1000 Mbps copper ports (requires SFP transceivers) • Integrated high-capacity encryption (IPsec, SRTP, TLS) processors • Inline QoS measurement • Integrated hardware-based SIP-TLS and TCP processing <p>NIU management interfaces—included on all NIU options:</p> <ul style="list-style-type: none"> • Two 10/100/1000 Mbps interfaces with RJ-45 for HA node configurations • One 10/100/1000 Mbps interface with IPsec encryption processor and RJ-45 for management networks (Optional IPsec encryption of management interface via encryption capable NIU) • One RS-232 serial console interface with RJ-45 connector (only rear or front interface may be used at any time) • One alarm interface with RJ-45 connector

Regulatory

Product bears CE¹ marking indicating compliance with the 99/5/EC directive, which includes EN & IEC standards for safety & EMI.

Safety	US: UL ² 60950-1, 2 nd edition Canada: CSA ³ 60950-1-07, 2 nd edition EU: EN ⁴ 60950-1:2006
EMC	US: FCC ⁵ Part 15 (CFR 47) Class A limits Canada: ICES ⁶ -003 Issue 4, Class A limits EU: EN 55022:2006 +A1:2007 Class A limits Australia: CISPR 22 and C-Tick Japan: VCCI ⁷ Class A limits
Immunity	EU: EN 300 386 v1.4.1
NEBS compliance	GR-63 GR-1089 SR-3580: Level 3
U.S. Department of Defense Security	FIPS 140-2 compliant Defense Information Systems Agency (DISA) Unified Communications Requirements (UCR) compliant Listed: DISA Unified Capabilities Approved Product List (UCAPL)

¹CE = European Compliance

²UL = Underwriters Laboratory

³CSA = Canadian Standards Association

⁴EN = European Norm

⁵FCC = Federal Communications Commission

⁶ICES = Interference-Causing Equipment Standard

⁷VCCI = Voluntary Control Council for Information Technology Equipment



© 2012 Acme Packet, Inc. All rights reserved. Acme Packet, Session-Aware Networking, Net-Net and related marks are trademarks of Acme Packet. All other brand names are trademarks or registered trademarks of their respective companies.

The content in this document is for informational purposes only and is subject to change by Acme Packet without notice. While reasonable efforts have been made in the preparation of this publication to assure its accuracy, Acme Packet assumes no liability resulting from technical or editorial errors or omissions, or for any damages resulting from the use of this information. Unless specifically included in a written agreement with Acme Packet, Acme Packet has no obligation to develop or deliver any future release or upgrade or any feature, enhancement or function.

100 Crosby Drive
Bedford, MA 01730 USA
t +1 781.328.4400
f +1 781.275.8800
www.acmepacket.com