Acme Packet Net-Net 9200

data sheet

Overview

Acme Packet's Net-Net 9200 platform offers carrier-grade performance, capacity and availability for service provider and large enterprise deployments in a single 7 RU chassis-based system. This system platform operates Net-Net OS and supports Acme Packet session border controller (SBC) and session routing proxy (SRP) configurations, functions and features. The Net-Net 9200 also supports high capacity transcoding and transrating for a wide selection of wireline and wireless codecs. It provides the critical controls for delivering trusted, first class interactive communications—voice, video and multimedia sessions—across IP network borders. These controls span five areas - security, service/application reach maximization, SLA assurance, revenue and cost optimization, and regulatory compliance.

Solutions

For service providers, the Net-Net 9200 plays a critical role in next-gen, converged fixed-mobile architectures including 3GPP IMS, 3GPP2 MMD, ATIS, ETSI TISPAN, GSMA, the Multi-Service Forum and PacketCable 2.0. It secures the subscriber access and interconnect/peering borders and enables interoperability of heterogeneous endpoints, service infrastructure elements and networks to maximize service reach. It controls admission, overload, IP network transport and session routing to assure SLAs, maximize revenues and minimize costs. Lastly, it enables regulatory compliance with emergency service (E911), national government priority service (GETS) and lawful intercept (CALEA) requirements.

For enterprises and contact centers, the Net-Net 9200 enables the secure delivery of a broad range of interactive communications services and applications ranging from basic VoIP to Service Oriented Architecture (SOA)-enabled unified communications. It secures the borders to the service provider IP network, the private VPN connecting major enterprise or contact center sites and the Internet for connecting remote offices, teleworkers and callers to the contact center. It ensures interoperability of both legacy IP-PBX equipment and next-generation unified communications platforms and manages their traffic load and resource availability.

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System capacity, performance and availability

The Net-Net 9200 platform satisfies high-end session border control and core session routing requirements in terms of capacity, performance and availability:

- Session capacity* – up to 40,000 or 100,000 media sessions w/hardware-based QoS monitoring/reporting, capacity based upon network processing unit (NPU) option
- IPsec tunnel capacity – up to 400,000 tunnels
- Two-level encryption acceleration hardware – IKE SA/IPsec tunnel setup, SIP-TLS encryption/decryption, and IPsec traffic encryption/decryption
- Local route table capacity – Up to 2 million routes
- System throughput – 5Gbps or 20Gbps, based upon network processing unit option
- Transcoding and transrating capacity - up to 8,000 sessions in SBC configurations
- Network interfaces – up to eight active 1Gbps (fiber or copper) or two active 10Gbps Ethernet interfaces, fully-redundant with optional in-line, wire-speed hardware acceleration module for IPsec encryption/decryption
- Management
  - Interfaces – 1 dedicated 10/100/1000Mbps Ethernet, one RS-232 serial console interface, one alarm interface, on-board encryption hardware for secured management sessions
  - Performance – dedicated CPUs for management and related services such as SNMP and accounting
  - Optional 500GB storage expansion module for call detail record storage and backup
- High-availability – 100% hardware redundancy in chassis with check-pointing of signaling, media, IPsec tunnel & configuration state for no loss of service
  - 1:1 redundancy for SPU, NPU, NIU and MIU
  - 2:1 redundancy for TCU
- Packaging – 7U rack-mount system

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

Session Border Controller (SBC) configurations

The Net-Net 9200 operates Net-Net OS to support integrated or decomposed SBC deployment models. As an integrated SBC, the Net-Net 9200 tightly integrates signaling and media control within the platform and provides comprehensive support for SIP, H.323 and SIP-H.323 interworking. Net-Net OS offers proven signaling interoperability with all major softswitches, IMS CSCF elements, SIP servers, H.323 gatekeepers, call agents, application servers, media servers, media gateways, IP PBXs and numerous IP-based voice and video endpoints. As a decomposed SBC, the Net-Net 9200 operates as a SIP signaling firewall, protecting itself, as well as the service provider or enterprise communications service and application delivery infrastructure, from malicious or non-malicious signaling overloads and attacks.

For high-capacity centralized transcoding applications, the Net-Net 9200 supports a dedicated transcoding gateway configuration that offloads expensive, processor-intensive transcoding and transrating functions from other network elements such as media gateways or distributed SBCs. Net-Net 9200 transcoding hardware features full redundancy and supports a wide variety of wireline and wireless codecs with highly-efficient DSP resource utilization that scales modularly to meet access or interconnect requirements. Highly flexible transcoding/transrating policies and codec management provide optimal media control within service provider and large enterprise and contact center environments. The Net-Net 9200 also supports non-dedicated distributed transcoding when configured as an integrated SBC.

Specific SBC configuration options for the Net-Net 9200 include:

- **Net-Net Session Director (SD)** – Integrated SBC with multi-protocol signaling and media control
- **Net-Net Signaling Firewall (SF)** – Decomposed SBC with SIP signaling security and other control functions
- **Net-Net Transcoding Gateway (TG)** – Highly-scalable dedicated transcoding configuration for SIP-signaled media

As an access SBC in next-generation network (NGN) architectures such as IMS, TISPAN, MSF and PacketCable 2.0, the Net-Net 9200 functions as a P-CSCF, E-CSCF, and IMS-AGW to complement other NGN access or core functions offered by 3rd parties or Acme Packet partners in their products. At NGN interconnect borders, the Net-Net 9200 supports the IWF, I-BCF and TrGW functions.

Net-Net 9200 SBCs can also be configured to operate as members of a Net-Net SBC cluster when used in conjunction with Acme Packet's Net-Net Session-aware Load Balancer (SLB). Net-Net SBC clusters can be based on any Net-Net SBC configuration to support up to 2 million subscribers without requiring architectural forklifts or network disruptions.

Session Routing Proxy (SRP) configuration

The Net-Net 9200 Session Router (SR) is a high-performance session routing proxy (SRP) for efficient routing of SIP-based interactive communication sessions—voice, video, instant messaging and multimedia—within and between networks. The Net-Net SR plays a central role in Acme Packet's Open Session Routing Architecture (OSR) which is designed to simplify and consolidate core and inter-network session routing and reduce capital and operational expenditures.

In Acme Packet's Open Session Routing architecture, the Net-Net SR consolidates routing control, reducing costs. The Net-Net SR works in conjunction with best-of breed routing database products and services from Acme Packet partners. These complementary product vendors and service providers offer centralized routing databases and database provisioning tools for dynamic route selection. Acme Packet's Net-Net SR queries these databases using industry-standard ENUM, SIP and DNS protocols. The Net-Net SR's local route tables may be provisioned by Acme Packet's Net-Net Route Manager Central (RMC).

Using these databases, the Net-Net SR dynamically routes sessions between all types of network borders – access and interconnect, IP and TDM. More specifically, the Net-Net SR routes sessions between stateful service control elements such as Acme Packet SBCs, wireless Mobile Switching Centers (MSC), IMS subscriber call control elements, CLASS 5 softswitches, Cable Modem Termination Systems (CMTS) and softswitches controlling media gateways. Since the source and destination SIP signaling elements are session-stateful, the Net-Net SR can operate in a stateless or transaction-stateful mode, maximizing its performance.

Common SBC & SRP functions

Net-SAFE, Acme Packet's SBC security framework, is supported via the tight integration of the Net-Net 9200 hardware and Net-Net OS software. Net-SAFE features powerful denial-of-service/distributed denial-of service protection at the L3, L4, IPsec and SIP signaling level; and intrusion detection/prevention capabilities. Other security features support dynamic access control, topology hiding, privacy and confidentiality, service infrastructure DoS/DDoS protection, virus and SPIT protection, and service fraud prevention.

Net-Net Central, our next-generation management platform, delivers highly-scalable configuration and fault, performance and security management for Acme Packet products and solutions. Its flexible high-availability architecture accommodates very large networks and provides extensibility for hosting advanced management application add-ons. Through its dashboard summary and multiple configuration views, Net-Net Central facilitates flow-through provisioning, capacity planning and comprehensive performance and fault-monitoring with "at-a-glance" status indicators that simplify real-time network-wide management. Through standard interfaces including SNMP, SFTP, XML and SOAP, Net-Net Central also integrates with OSS/BSS ecosystems to deliver advanced service fulfillment, service assurance, billing and mediation.

Net-Net 9200 specifications	
Chassis	• 7U, mid-plane design • Front – 7 slots for (1 or 2) SPU, (1 or 2) NPU and (0 to 3) TCU • Rear – 6 slots for (2 or 4) NPU and (1 or 2) MIU
Signaling processing unit (SPU)	• Supports signaling processing and control using multiple CPUs with dedicated memory in a tightly integrated signaling pipelining architecture • HA configuration – one active/one standby (1:1 HA)
Network processing unit (NPU)	• Supports wire-speed network-layer processing for signaling, media & data DoS/DDoS protection & media control • Hardware assisted QoS measurements • ACLs, media control rules and ARP entries • HA configuration – one active/one standby (1:1 HA)
Transcoding unit (TCU)	• Supports transcoding and transrating at IP-IP network borders in SBC configurations — Wireline codecs : G711 a-law & mu-law, G.729 A/B, G.722, G.723.1, G.726-16, G.726, G.726-40, G.728, iLBC — Wireless codecs: AMR, G.722.2 (AMR-WB), GSM EFR, GSM FR, EVRC0/EVRC-A, EVRC-B, SMV — Fax interworking — DTMF interworking • (1 to 4) transcoding modules (TCM) supported per TCU • TCU configuration options — One active — One active, one standby (1:1 HA) — Two active, one standby (2:1 HA)
Network interface unit (NIU)	• Supports service network interfaces for signaling and media traffic • NIU configuration options: — Four 1000Mbps Ethernet interfaces - configurable for fiber SX or LX or copper via SFP transceiver — Four 1000Mbps Ethernet interfaces with in-line wire-speed IPsec encryption/decryption hardware – configurable for fiber SX or LX or copper via SFP transceiver — Four 10/100/1000Mbps Ethernet interfaces - copper via RJ-45 connector — One 10Gbps Ethernet interface – SX, LX or TX connector via SFP+ transceiver — One 10Gbps Ethernet interface with in-line wire-speed IPsec encryption – SX, LX or TX
Management interface unit (MIU)	• Supports management interfaces and operations • MIU features: — One 10/100/1000Mbps Ethernet interface with IPsec encryption with RJ-45 connectors for management networks — One RS-232 serial console interface with RJ-45 connector — One alarm interface with RJ-45 connector — HA configuration - one active/one standby (1:1 HA) — Optional 500GB storage expansion module
Power	• Two redundant load sharing supplies, 1500 VA max
AC power option	• Voltage: 90-240 VAC wide input with power factor correction • Frequency: 50/60 Hz • Current: 17A load-shared across two power supplies • Cable: 2.5 meter 12 AWG 3-wire cable, with 3-lead IEC-320 EN 60320 C19 receptacle on the end of each cord, and a country-dependent plug on the power source end
DC power option	• Voltage: -48 VDC nominal in North America. Maximum range is -40.5 to -60 VDC. • Current: 32A load-shared across two power supplies • Cable: 8 AWG recommended minimum, with at least 3-lead IEC 320 EN 60320 C13 rated for at least 140° F (60° C)

Physical	
Dimensions	• 12.25 in H x 17.25 in W x 20.50 in D • 31.12 cm H x 43.82 cm W x 52.07 cm D
Weight	• 68 lbs, 30.8 kg
Colors	• Front panel – Midnight black with Glacier blue trim
Temperature	• Operating: 32ºF to 104ºF, 0ºC to +40 ºC • Storage: -4ºF to 149ºF, -20ºC to +65 ºC
Relative humidity	• 10% to 85%, non-condensing
Air flow	• 400 cfm front to back, redundant fan tray assemblies
Heat dissipation	• 2,400 BTU/hour typical, 4,000 BTU/hour maximum
Power dissipation	• 1500W maximum
Regulatory	• Product bears CE[1] marking indicating compliance with the 99/5/EC directive, which includes the following EN and IEC standards for safety and EMC
Safety	• US: UL[2] 60950-1, 2nd edition • Canada: CSA[3] 60950-1-07, 2nd edition • EU: EN[4] 60950-1:2006
EMC	• US: FCC[5] Part 15 (CFR 47) Class A limits • ICES[6]-003 Class A limits • EU: EN55022 :2006 +A1:2007 Class A limits • Germany: 1 TR 9 • Japan: VCCI[7] Class A limits
Immunity	• EN 300 386 v1.4.1
NEBS	• GR-63 • GR-1089 • SR-3580 - Level 3 compliant

[1]CE = European Compliance
[2]UL = Underwriters Laboratory
[3]CSA = Canadian Standards Association
[4]EN = European Norm
[5]FCC = Federal Communications Commission
[6]ICES = Interference-Causing Equipment Standard
[7]VCCI = Voluntary Control Council for Information Technology Equipment

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