

Oracle Communications Acme Packet 6400



The Acme Packet 6400 combines groundbreaking performance, capacity, and system throughput with field-proven and comprehensive session border controller functions and features in a compact and energy efficient design.

Overview

The Acme Packet 6400 one rack unit (1RU) form factor design is based on next-generation hardware that leverages state-of-the-art components and 64-bit symmetrical multiprocessing (SMP) in a modular system developed for growth and flexibility. It operates the same version of Acme Packet OS as all other Acme Packet platforms for ease of management and uncompromised field-proven functionality in many product configurations and options. The 6400 provides for flexible deployment at high-volume network access or interconnect borders and within the service provider signaling core.

Based on a common architecture that tightly integrates Acme Packet OS with Oracle's distributed multiprocessor hardware, the 6400 can handle the signaling and media traffic generated by next-generation services such as voice over Long Term Evolution (VoLTE); rich communication services (RCS) and enhanced RCS (RCS-e), and high-definition video calling. It features Oracle's carrier-class high availability (HA) and Network Equipment Building Systems (NEBS) certification to ensure nonstop operation and survivability in the most business-critical services and applications.

Capabilities

Acme Packet 6400 session border controller (SBC) features and capabilities

FEATURE	CAPABILITIES
Security	- Granular access control - IP address and SIP signaling concealment - Layer three through five topology hiding and signaling overload controls - IP telephony spam protection - Stateful deep packet inspection - Signaling and media encryption
Interoperability	- SIP message normalization - Response code translation - Session Description Protocol (SDP) and Dual Tone Multi-Frequency (DTMF) manipulation - Number and uniform resource identifier (URI) manipulation - Signaling message header manipulation - Protocol interworking: Transmission Control Protocol (TCP), User Datagram Protocol (UDP), Stream Control Transmission Protocol (SCTP) - Encryption interworking: Transport Layer Security (TLS), Mutual TLS, Secure Real-time Transport Protocol (SRTP)

Breakthrough performance in a compact and energy efficient design

Applications

- Service provider SBC for access and interconnect applications
- High-performance SIP session routing
- Combination access SBC with IMS core and session management functions

Key features

- Turn-key, 1RU form factor supporting up to 160,000 signaled sessions and 4,000,000 registered devices
- Hardware-accelerated transcoding for optimal performance
- Redundant HA configurations
- 40 Gb/sec system throughput
- Leverages proven SBC design with state-of-the-art components

Key benefits

- Capable of supporting up to 4,000,000 simultaneous subscribers
- Protects investment in existing SBC infrastructure
- Meets all service requirements in efficient 1RU form factor
- Reduced total cost of ownership

	• Network address translation (NAT) and firewall traversal • IP address translation: private/public • Transcoding • Session routing based on Microsoft Active Directory query • Microsoft Teams Direct Routing • Message Session Relay Protocol (MSRP)
Reliability	• Standby SIP registrar with caching for remote site survivability • Stateful signaling and media failover • Quality of service (QoS) marking, virtual local area network (VLAN) mapping, access control • Registration storm avoidance • Call rate limit enforcement • Trunk load balancing • Stateful session routing • QoS-based routing
Regulatory Compliance	• Session prioritization for emergency services • Internet Engineering Task Force (IETF) standard SIP Recording (SIPREC) interface • Call detail records (CDRs) with local or remote storage via RADIUS
Cost Management	• Least cost routing • Codec Negotiation
Management	• Browser-based GUI (Oracle Enterprise Session Border Controller only) • SIP monitoring and tracing tool • SNMP, Syslog, REST, SFTP, RADIUS interfaces

System capacity, performance, and availability

Acme Packet 6400 systems leverage common state-of-the-art components, design and system architecture. The 6400 platform delivers up to 40 Gb/sec of system throughput, supports up to 160,000 sessions, offers high availability (HA) operation for nonstop service, and supports quality of service (QoS) measurement and hardware-assisted transcoding.

Acme Packet 6400 capacity, performance, and availability¹

CAPABILITY	DESCRIPTION
Media session capacity	Up to 160,000 simultaneous anchored media sessions Up to 40,000 SIPREC sessions Up to 70,000 MSRP sessions
Subscriber capacity	Up to 4,000,000 registered subscribers (UDP/TCP) Up to 1,000,000 TLS subscribers
SIP calls per second (CPS)	Up to 1,700 calls per second (in a fully redundant configuration)
IPSec capacity	Up to 850k subscribers with IMS Authentication and Key Agreement (IMS AKA) Up to 1,000 tunnels with IKEv1, IKEv2
SRTP capacity	Up to 70,000 encrypted call legs
Two-level encryption acceleration hardware	IPsec tunnel and TLS session setup, IPsec and SRTP traffic encryption/decryption
High availability configuration	Active/standby systems (1-to-1 redundancy) with check-pointing of signaling, media, and configuration state for no loss of service
Management	Front panel display with HA standby and active LEDs, power and alarm indicators; rear panel console, management, alarm interfaces
Route table capacity	Up to 20 million routes
Packaging	1RU system
Maximum system throughput	40 Gb/sec

Network session delivery and control infrastructure

Oracle's network session delivery infrastructure enables enterprises and service providers to manage the many challenges in the delivery of IP voice, video, and data services and applications.

Service provider solutions are deployed at network borders and in the IP service core to help fixed-line, mobile, wholesale, and over-the-top service providers optimize revenues and realize long-term cost savings.

In the enterprise, session delivery infrastructure solutions seamlessly connect fixed and mobile users, enabling rich multimedia interactions and automating business processes for significant increases in productivity and efficiency.

Related products

- Oracle Communications Session Border Controller
- Oracle Enterprise Session Border Controller

Network Interfaces	Chassis integrated 4x10 Gb/sec Ethernet ports
HW-based transcoding	Up to 60,000 transcoded sessions (G.711- G.729)
Fan assemblies	4 user-serviceable hot-pluggable fan assemblies
Management and HA interfaces	Chassis integrated
Internal storage	960 GB solid state drive

¹ Performance and capacity numbers vary by signaling protocol, call flow, codec, configuration, and feature usage.
Performance and capacity estimates based on hardware design projections.

Supported configurations

Acme Packet 6400 operates Oracle's Acme Packet Operating Software (Acme Packet OS) to deliver flexible product configuration and deployment options. The below table describes the Oracle product configurations supported by Acme Packet 6400.

Acme Packet 6400 supported configurations

PRODUCT	DESCRIPTION
Oracle Communications Session Border Controller	Session border controller (SBC) integrating controls for real-time communications signaling and media traffic
Oracle Enterprise Session Border Controller	Securely Connects Enterprise VoIP and UC systems to SIP Trunking and Wide Area Network Services.

Hardware

Acme Packet 6400 is a 1RU rack-mountable system. The Acme Packet 6400 features Oracle's integrated multiprocessor design to achieve the industry's highest system-level performance and capacity for signaling, media, and encryption. Acme Packet 6400 platforms also feature carrier-grade transcoding capacity and features. Powerful network processor drive system throughput up to 40 Gb/sec. The versatility, carrier-grade hardware design, and high-availability makes the 6400 suitable for deployment at large service provider access and interconnect network borders and within the IP Multimedia Subsystem (IMS) signaling core.

Acme Packet 6400 includes four 10 GbE interfaces for signaling, media, and data traffic. The system supports Enhanced Small Form-Factor Pluggable (SFP+) transceivers for 10 GbE interfaces.

To enable secure communications without compromising end user or subscriber quality of experience (QoE), the Acme Packet 6400 system accommodates encryption for Internet Protocol Security (IPsec) and Secure Real-Time Transport Protocol (SRTP) encryption of media traffic, and high-volume Transport Layer Security (TLS) or IPsec key negotiation for services or applications that require encrypted signaling.

The Acme Packet 6400 system also accommodates up to 18 Quad Digital Signaling Processing (DSP) modules for audio transcoding of up to 60,000 simultaneous sessions. DSP modules can be populated incrementally for "pay-as-you-grow" scalability.

The Acme Packet 6400 platform monitors and measures each media flow through the system, calculating quality scores (such as Mean Opinion Score) and aggregating the information into data for transmission to external reporting or accounting systems. Onboard 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 QoE.

Acme Packet 6400 detailed specifications

The table below describes the detailed physical properties, power specifications, and regulatory compliance of the Acme Packet 6400 platform.

Detailed specifications

PHYSICAL PROPERTIES	SPECIFICATION
Chassis	1 RU, rackmount in four-post cabinet or two-post center mount - Front: Display console, front bezel, fan pack assemblies (remove lid) - Rear: Console ports, three management ports, redundant power supplies (AC or DC)
Network Processor	- Coordinates signaling, media, encryption and transcoding, and management subsystems - Drives up to 40 Gb/sec overall system throughput via Four 10 Gbps Ethernet interfaces (SFP+) for signaling and media 10 Gb/sec Ethernet ports with enhanced small form-factor pluggable transceivers (SFP+) for short and long reach options: - SFP+ short reach—10 GBase-SR 850 nm transceiver for operation in multimode fiber link applications to 300 m - SFP+ long reach—10 GBase-LR 1310 nm transceiver for operation in single-mode fiber (SMF) link applications to 10 km - Two 10/100/1000 Mb/sec interfaces with RJ-45 for HA - One 10/100/1000 Mb/sec interface with RJ-45 for management - One RS-232 serial console interface with RJ-45 connector
Transcoding	- Support for up to 18 Quad DSP-based transcoding modules per system - Supported codecs: - Wireline – G.711 10, G.711 20, G.722, G.723.1, G.726, G.729A/B, iLBC, Opus, SILK - Wireless – AMR-NB, AMR-WB, GSM-FR, EVRC, EVRC-B, EVS - T.38 fax interworking
PHYSICAL	DETAILS
Dimensions (not including mounting hardware)	- Height: 4.37 cm (1.72 in.) - Width: 43.64 cm (17.18 in.) - Depth: 67.56 cm (26.40 in.)
Weight	13.4kg (29.6 lbs) without transcode modules
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%, noncondensing
Airflow	181 CFM (max) front to back
Power Dissipation	360 typical, 980W maximum
POWER	SPECIFICATION
Power supply	Dual power supplies: Redundant, load sharing, 2000W maximum
AC power option	- Voltage: Auto-ranging 100 AC to 240 AC wide input with power factor correction - Frequency: 50/60 Hz - Current: 2x 100A@120VAC or 5AA@240VAC

DC power option	- Voltage: -48 DC (+/-10%) nominal in North America (maximum range: -40 DC to -72 DC) - Current: 2 x 30A@ -48VDC - Cable: 6 AWG recommended minimum, with at least two conductors rated for at least 140°F (60°C)
REGULATORY	DETAILS
Certifications ^{1,2}	- NRTL TUV (US, Canada,) - NOM Addendum (Mexico) - CE (Europe) - International CB Scheme - VCCI (Japan) - KC (Korea) - RCM (Australia, New Zealand) - BSMI (Taiwan) - Anatel (Brazil) - IRAM Form B (Argentina) - BIS (India) - TEC / EMC (India) - ICASA (South Africa) - UKCA (United Kingdom)
Other ²	2014/35/EU Low Voltage Directive 2014/30/EU EMC Directive 2011/65/EU RoHS Directive 2012/19/EU WEEE Directive - NEBS Level 3 - ETSI: EN 300 019 - ETSI EN 300 386 - Seismic: GR-63-CORE requirements for earthquake zone 4

¹ Other country regulations/certifications may apply

² All standards and certifications referenced are to the latest official version. For additional detail, please contact your sales representative

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