

Oracle Communications Acme Packet 6400



The Acme Packet 6400 delivers high performance, capacity, and system throughput together with established session border controller functions and features, all 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 other Acme Packet platforms, providing management consistency and established functionality across multiple configurations. 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 is designed to support signaling and media traffic for 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 support continuous operation and survivability in demanding services and applications environments.

Capabilities

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

FEATURE	CAPABILITIES
Security	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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) 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)

High 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
- Supports up to 4,000,000 simultaneous registered subscribers under optimal configuration
- Hardware-accelerated transcoding for optimal performance
- Redundant HA configurations
- 40 Gb/sec system throughput
- Utilizes established SBC design with advanced components

Key benefits

- Helps organizations maximize previous SBC infrastructure investments
- Meets all service requirements in efficient 1RU form factor
- Reduced total cost of ownership

Reliability	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Least cost routing Codec Negotiation
Management	<ul style="list-style-type: none"> 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 highly resilient 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 UDP subscribers Up to 2,000,000 TCP subscribers 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 980,000 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 to help reduce the risk of service disruption during failover
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 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 based on Oracle Communications Session Border Controller S-Cz10.1 software release.

Network session delivery 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 pursue revenue optimization and help support long-term cost-efficiency goals.

In the enterprise, session delivery infrastructure solutions seamlessly connect fixed and mobile users, enabling rich multimedia interactions and automating business processes to help support improvements in productivity and efficiency.

Related products

The following Oracle products are part of the network session delivery infrastructure:

- Oracle Communications Session Border Controller
- Oracle Communications Session Router
- Oracle Communications Subscriber-Aware Load Balancer
- Oracle Enterprise Session Border Controller
- Oracle Session Delivery Management Cloud
- Oracle Communications Operations Monitor
- Oracle Enterprise Operations Monitor
- Oracle Enterprise Communications Broker

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 Communications Session Router*	Session routing proxy (SRP) for SIP session routing between core and access networks and interconnects
Oracle Enterprise Session Border Controller	Helps securely connect enterprise VoIP and UC systems to SIP trunking and wide area network services
Oracle Enterprise Session Router*	Designed to help control the routing of large volumes of SIP session signaling messages

*S-Cz10.0p7 and newer

Hardware

Acme Packet 6400 is a 1RU rack-mountable system. The Acme Packet 6400 features Oracle's integrated multiprocessor design to deliver high 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 support deployment at large service provider access and interconnect network borders as well as 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.

The Acme Packet 6400 system supports Internet Protocol Security (IPsec) and Secure Real-Time Transport Protocol (SRTP) encryption for media traffic, helping organizations address secure communications requirements while maintaining end user and subscriber quality of experience (QoE).

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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Support for up to 18 Quad DSP-based transcoding modules per system Supported codecs: <ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> Height: 4.37 cm (1.72 in.) Width: 43.64 cm (17.18 in.) Depth: 67.56 cm (26.40 in.)
Weight	<ul style="list-style-type: none"> 13.4kg (29.6 lbs) without transcode modules
Temperature	<ul style="list-style-type: none"> Operating: 32°F to 104°F, 0°C to +40°C Storage: -4°F to 149°F, -20°C to +65°C
Relative humidity	<ul style="list-style-type: none"> 10% to 85%, noncondensing
Airflow	<ul style="list-style-type: none"> 181 CFM (max) front to back
Power Dissipation	<ul style="list-style-type: none"> 360 typical, 980W maximum
POWER	SPECIFICATION
Power supply	<ul style="list-style-type: none"> Dual power supplies: Redundant, load sharing, 2000W maximum
AC power option	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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}	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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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