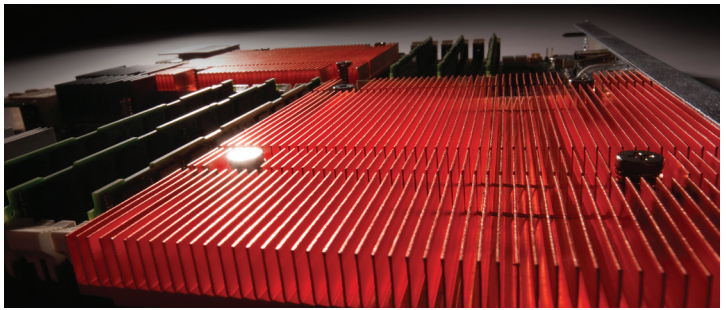


PERIMETA SESSION BORDER CONTROLLERS

FORTIFY YOUR EDGE. PROTECT YOUR CORE.



- Architected for distributed signaling & media
- Integrated, co-located and distributed options
- Flexible hardware/software deployment models
- Designed to sustain high SIP message rates
- Power to support increased multimedia traffic
- Interworking with diverse networks

THE PERIMETER OF YOUR COMMUNICATIONS ARCHITECTURE IS ONLY AS STRONG AS ITS WEAKEST LINK. BEYOND THE BOUNDARY OF YOUR MANAGED INFRASTRUCTURE LIE MANY THREATS TO THE CONTINUITY OF YOUR SERVICE OFFERINGS AND TO THE INTEGRITY OF YOUR NETWORK. FORTIFY YOUR EDGE AND PROTECT YOUR CORE WITH THE PERIMETA PORTFOLIO OF SESSION BORDER CONTROLLERS.

REINFORCE YOUR BORDER

As NGN technology makes its relentless drive towards all-IP LTE, IMS and RCS, current internetworking devices must also change. More SIP endpoints - featuring voice and video plus presence and instant messaging - demand not only more memory footprint, increased CPU cycles and greater throughput capacity but an entirely new way to address both signaling and media control.

With the continued adoption of the session initiation protocol as an enabler for rich communications services, there will no longer be a predictable correlation between signaling and media transport. This greatly complicates the dimensioning of classic SBC appliances.

Simultaneously, the communications industry is transitioning from being defined by specialized hardware to focusing on open and programmable software running on standard hardware or virtualized in private or public cloud computing environments. Liberated from old hardware-based deployment models, carriers can realize savings in Capex and Opex while benefiting from a more flexible network on which they can launch innovative new applications and services more quickly.

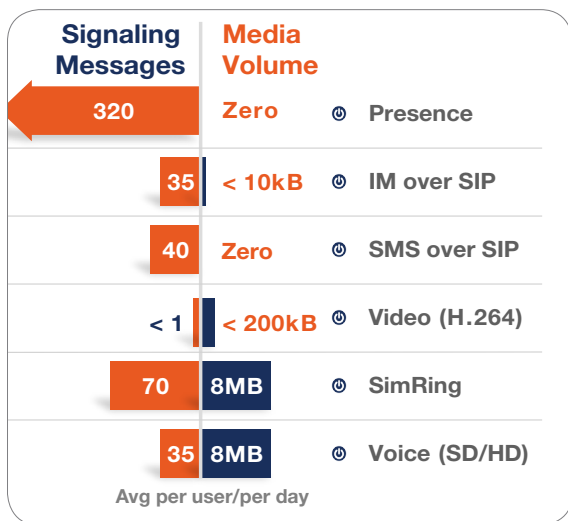
Perimeta, from Metaswitch Networks, is the first in a new generation of session border controllers (SBCs) designed specifically to address these problems in small to large wireless or wireline networks at both the access layer and on carrier interconnects.

The Perimeta architecture has two distinct components: a Signaling Session Controller (SSC) and a Media Session Controller (MSC). Built for distributed operation, the SSC and MSC may be either co-located or geographically dispersed around the network. Combining both SSC and MSC functionality on discrete processor instances, the Perimeta Integrated Session Controller (ISC) provides a consolidated solution for smaller deployments.

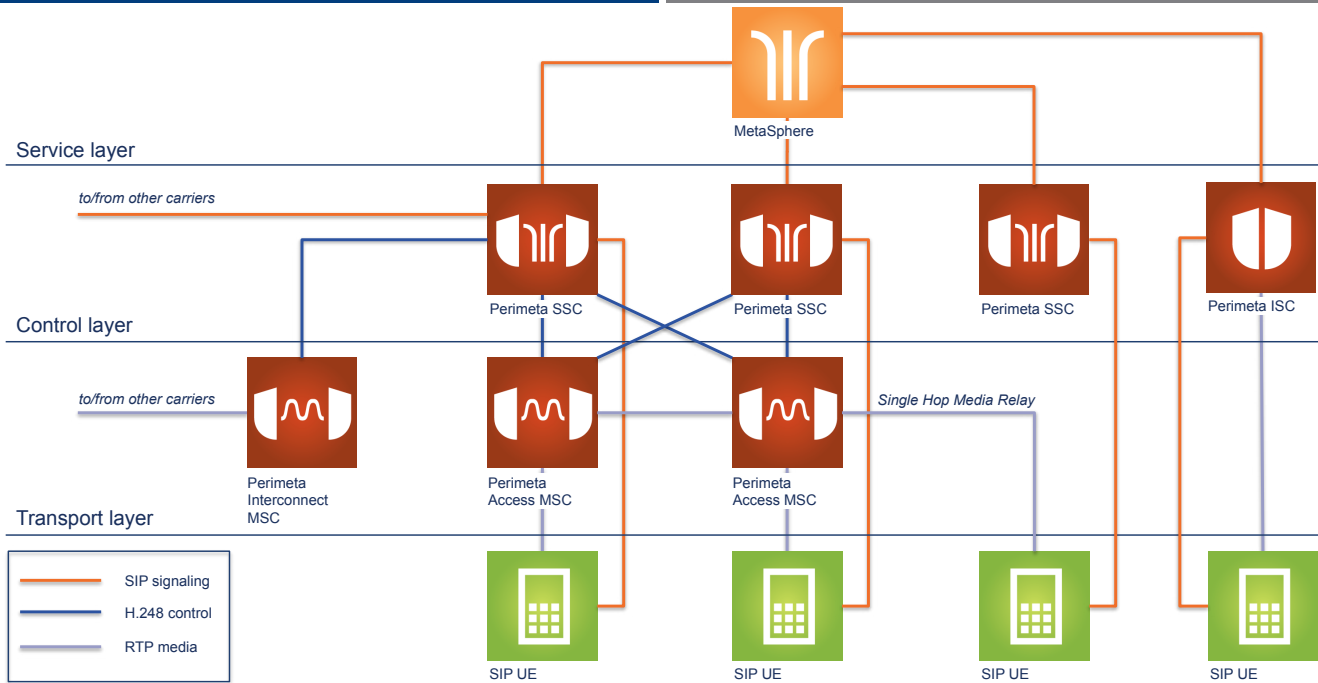
Perimeta is also architected as a pure software solution, able to run on standard commercial off-the-shelf (COTS) hardware or even virtualized in the cloud. Perimeta's advanced software provides cutting-edge performance and platform flexibility, while allowing for reuse of existing hardware and for great cost savings.

Our distributed, software-based solution enables totally independent, cost effective scaling of signaling and media in a variety of deployment models to suit your needs.

This approach complies with 3GPP specifications for SBCs within IMS, which is employed in 4G/LTE, ETSI/TISPAN and CableLabs PacketCable 2.0 standards.



Signaling growth will outpace media in NGN



Deployment of Perimeta ISC, SSC and MSC functions in NGN/IMS, showing distributed signaling and media between SSC and MSC, integrated signaling and media on ISC, MSC control by multiple SSCs, and "single hop media relay" technique where SSCs share one MSC in the media path

THE ROLE OF SESSION CONTROL

Session border controllers reside either at the interconnect point between two network providers or at the access boundary between a managed carrier infrastructure and residential or enterprise customers. With critical but diverse functions that include security, traffic management and accessibility/interworking, SBCs must perform their tasks without affecting network performance or resiliency.

SECURITY

Perimeta's intelligent blacklisting and rate-limiting functions protect vulnerable devices from distributed denial of service (DDoS) or flooding attacks. Topology-hiding techniques protect your network from exposure to attack. Perimeta's high performance back-to-back user agent (B2BUA) rewrites elements of SIP messages to ensure header privacy and session privacy.

TRAFFIC MANAGEMENT

Perimeta's overload prevention and adaptive traffic management protect your network from continuously extreme or bursty signaling and media loads. Intelligent traffic management guarantees that signaling and media packets are processed and queued optimally.

Packets are marked with standardized differentiated services code points (DSCP) for proper handling by intermediate network switches and routers. This prevents undue media delay and jitter while keeping signaling post dial delay metrics low and preventing extreme retransmission storms.

ACCESSIBILITY / INTERWORKING

Perimeta enables multiple types of networks, protocols and devices to work together seamlessly, making it faster and easier for you to expand your network and deploy innovative new applications while retaining existing services and investments.

SIP is used in many variations and interpretations in multi-vendor networks. Perimeta's SIP Message Manipulation Framework can provide interworking and repair of these disparate implementations, modifying SIP headers and message bodies that proxies cannot to ensure that session control functions operate in every circumstance.

Perimeta enables NAT traversal for both SIP and RTP traffic, maintaining flows between endpoints on either the public or private IP interfaces.

Perimeta's comprehensive media transcoding function simplifies communication between different networks and endpoints, providing up to 32K transcoding sessions in a single Perimeta instance. Perimeta provides two distinct transcoding options:

- Perimeta implements **transcoding in software** that can be run on any supported platform, including COTS, virtualized or cloud. This option simplifies your hardware procurement and configuration, and allows you to quickly extend transcoding capacity where and when you need it, and at reduced cost.
- Perimeta also offers **transcoding using add-on PCIe cards**, that can be installed in any suitable COTS server and are compatible with virtualized SBC systems. These cards use state-of-the-art DSPs to provide unrivalled transcoding density and power efficiency for high-scale systems.

For more info go to www.metaswitch.com/sbc-transcoding.

THE PERIMETA PORTFOLIO

The Perimeta product portfolio has been designed for performance. Perimeta's multi-threaded software architecture and multi-core platforms deliver superior packet and SIP message throughput while performing high-touch functions such as packet marking and header manipulation. By working closely with Intel, Perimeta provides the strength to resist DoS attacks by discarding packets at line rate. Even under extreme overloading scenarios, Perimeta continues to operate at its optimum — processing valid session requests and forwarding traffic without compromising quality of service or security.



Perimeta SSC

SIGNALING SESSION CONTROLLER (SSC)

The Signaling Session Controller can support the large proportion of signaling messages in next generation networks. The SSC is built to operate in rich unified communications environments, facilitating the explosive growth in SIP messages brought on by services such as sim-ring, presence and IM. As signaling growth outpaces media, additional SSC capacity can be easily installed.

While solely responsible for processing SIP traffic, one or more SSCs can direct voice and video RTP streams across multiple, distinct, Perimeta Media Session Controller platforms. These can be either collocated or geographically dispersed around an access network. While also acting as a P-CSCF, the SSC performs the role of an IMS-ALG or IBCF and controls these MSC elements over a standard H.248 reference interface.



Perimeta MSC

MEDIA SESSION CONTROLLER (MSC)

The Media Session Controller is specifically designed to handle the rapidly rising data rates and number of IP endpoints in next generation networks. Decoupled from the task of processing an ever-increasing number of SIP signaling messages, the MSC is ideally suited for media-rich unified communications environments, where not only wideband audio but bandwidth-intensive high definition video is making up a larger percentage of fixed and mobile broadband calls.

MSC platforms perform the role of an IMS-AGW or Tr-GW function. The MSC is controlled by one or more Metaswitch Perimeta Signaling Session Controllers or Integrated Session Controllers over a standardized H.248 reference interface. An MSC can be controlled by multiple SSCs or ISCs to provide more flexibility and resiliency in the network, in particular to provide redundancy in the event that a single connection with a controlling SSC or ISC fails.

Perimeta Media Session Controllers may be either collocated with the SSC function or geographically dispersed around an access network. As the MSC is scaled independently of the signaling controller, network operators can realize significant cost saving when building-out next generation networks.



Perimeta ISC

INTEGRATED SESSION CONTROLLER (ISC)

The ISC combines both the SSC and MSC functions in a single platform. It is built to operate in environments where the consolidation of session control functions is optimal, but where continued VoIP migration, along with the introduction of new multimedia applications, is challenging current SBC implementations. While integrated within a common platform, the two distinct functions operate autonomously in a distributed manner.

One or more ISCs can also control multiple MSCs in the same way as an SSC can.

UNIQUE SOFTWARE + STANDARD HARDWARE = FLEXIBILITY

Perimeta is the only session border controller architected as a pure software solution. It is a critical component in the march towards network functions virtualization (NFV) and in helping to transition operators into being true software telcos.

Unlike other SBCs, Perimeta is not dependent on any proprietary equipment, such as network processors. Instead, Perimeta can run on standard server hardware. Perimeta's unique software-based architecture allows for extremely flexible deployment models.

You can deploy Perimeta on the following platforms:

- Metaswitch's CH6010 high-availability ATCA chassis.
- Dell R620 or R720 server.
- Other commercial off-the-shelf servers (BYOH) - please contact us for more details on qualifying hardware.
- Virtualized on a hypervisor.
- Virtualized in a cloud computing environment.

Perimeta leverages the unprecedented processing power of today's standard hardware to produce unrivalled performance and scalability, even without specialized hardware.

Running the Perimeta SBC on highly scalable standardized and open platforms allows you to protect and enable a network of any size with reduced time-to-market and much lower Capex and Opex compared with SBCs that rely on specialized hardware.



Available on ATCA chassis or any standard COTS hardware

DEFEND NEW REVENUE STREAMS

Faced with the explosive growth of SIP endpoints and the escalation of SIP messages associated with applications such as presence and instant messaging, Perimeta's native distributed, software-based architecture affords tremendous advantages over the previous generation of appliance-based integrated session border controllers. The reduction in capital expenditure and operational costs is realized from fewer platforms, COTS hardware, virtualization and the simplified centralization of signaling. For fixed-line, mobile or competitive carriers, the Perimeta product portfolio meets the requirements of next generation infrastructures, such as LTE and IMS, while delivering the performance required to support rich unified communications services that are innovative, sticky and can deliver on the promise of increasing revenue.

POLICING PACKETS ON THE NETWORK PERIMETER

Perimeta session border controllers provide granular ingress packet coloring, connection admission control and rate limiting of messages. This eliminates congestion which in turn prevents damaging network-wide retransmission storms and guarantees low, reliable, post dial delay metrics. By classifying traffic and constantly monitoring metrics such as registration, call set-up and message rate, Perimeta can prioritize messages related to calls in-progress while active queue management intelligently handles new session establishment requests.

Comprehensive policies and dynamic routing functions can be applied to all calls passing through a Perimeta SSC or ISC platform, thereby enabling source and destination number, CIC or domain-based routing. Sessions may also be directed to specific trunks using static, least-cost or time-of-day metrics. In addition, Perimeta can automatically detect the availability of adjacent peers or load-balance across trunks with identical costs.

ENABLING RCS AND RCS-E

The Rich Communications Suite (RCS / RCS-e) of services (Joyn) presents an opportunity for service providers to stage an offensive strike against competing over-the-top (OTT) telephony applications.

Perimeta supports the Message Session Relay Protocol (MSRP) to fully enable RCS / RCS-e, including IM in session mode, file transfers, and photo and video sharing. Combine Perimeta with RCS to provide a new, integrated communications service for your users and combat the threat of OTT.

COMPLETE NETWORK TRANSPARENCY

Metaswitch's Perimeta SBC in concert with the MetaView Service Assurance Server provides the network management tools necessary to reduce operational costs, enhance subscriber satisfaction and simplify network deployment.

Service providers must be able to diagnose and troubleshoot problems as they arise in the network. However, third party diagnostics and troubleshooting tools are expensive to buy and deploy, and inject a level of complexity that incurs unnecessary operational costs for service providers.

When you deploy Perimeta with the Service Assurance Server, you get unprecedented visibility into the operation of your network without the complexities or expense of external monitoring devices.