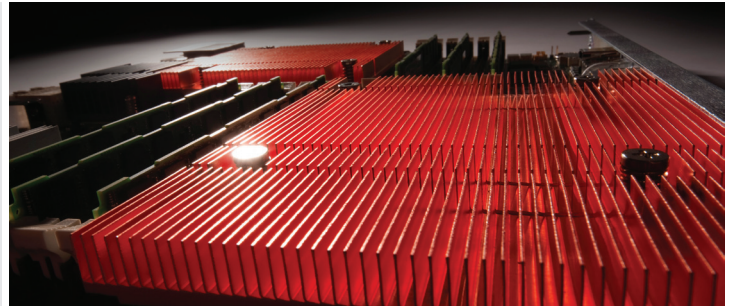


PERIMETA SESSION BORDER CONTROLLERS

FORTIFY YOUR EDGE. PROTECT YOUR CORE.



- A new generation of session border controllers
- Architected for distributed signaling & media
- Integrated, co-located and distributed options
- Built for advanced network infrastructures
- Designed to sustain high SIP message rates
- Power to support increased multimedia traffic

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. INNOVATIVE APPLICATIONS AND MULTIMEDIA ENDPOINTS ARE INCREASING THE LOAD ON SIGNALING BACKBONES AND ARE STRETCHING THE CAPACITY LIMITS OF TRANSPORT AND SESSION-LAYER ELEMENTS. MEANWHILE, THE RAPID ADOPTION OF THESE APPLICATIONS IS RESULTING IN MORE MALICIOUS ATTACKS AND THEFT-OF-SERVICE ATTEMPTS THAT EXPLOIT NETWORK VULNERABILITIES. ADDRESSING THESE CONTRASTING DEMANDS ON CUSTOMER ACCESS OR INTER-CARRIER TRUNKS REQUIRES A FRESH APPROACH TO SESSION BORDER CONTROL.

REINFORCING 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.

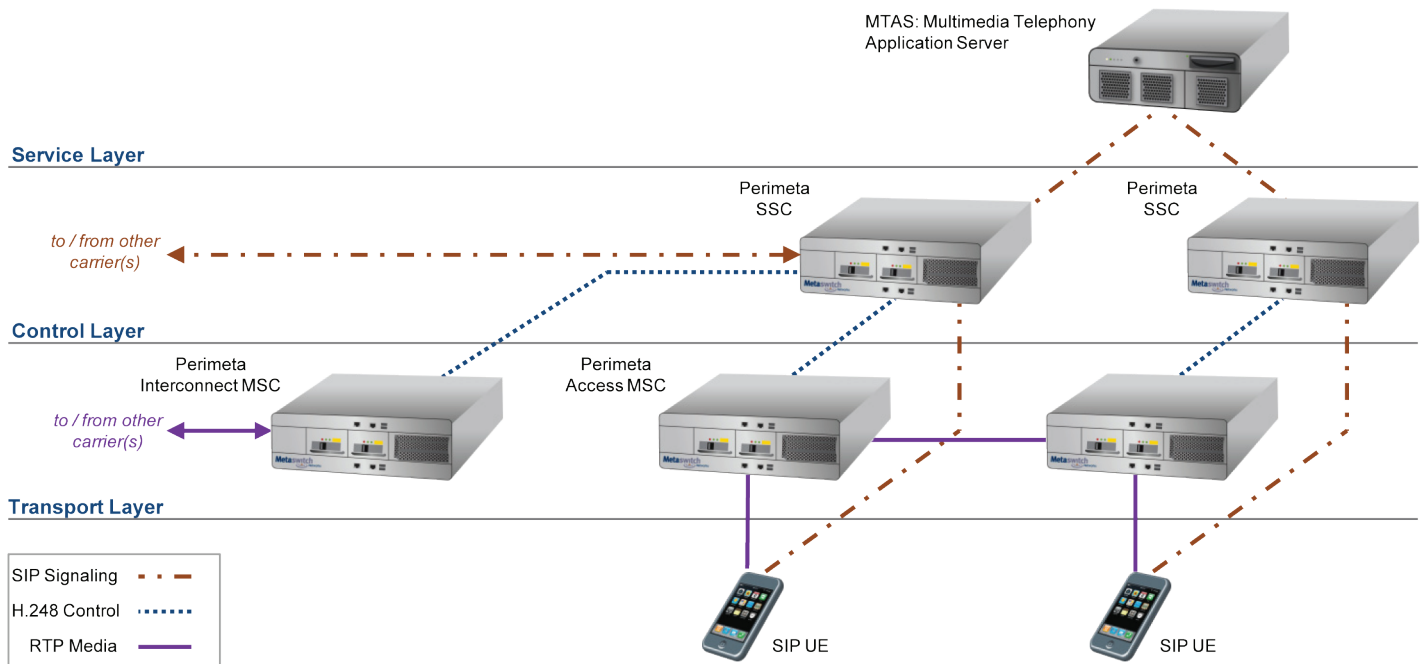
Perimeta, from Metaswitch Networks, is the first in a new generation of session border controllers (SBCs) designed specifically to address these problems in small to large wireless or wireline networks at both the access layer and on carrier interconnects.

The Perimeta architecture has two distinct components: a Signaling Session Controller (SSC) and a Media Session Controller (MSC). Uniquely purpose-built for distributed operation within their respective control and transport layers, individual platforms, performing each independent function, may be either co-located or geographically dispersed around the network.

Our distinctive solution enables totally independent, cost effective scaling of these critical control elements.

Combining both SSC and MSC functionality on discrete processor instances within a single modular chassis, the Perimeta Integrated Session Controller (ISC) provides a consolidated solution for smaller deployments.

This approach complies with 3GPP specifications for session border controllers within the IP multimedia subsystem (IMS), which is employed in 4G/LTE, ETSI/TISPAN and CableLabs PacketCable 2.0 standards.



Distributed deployment of Perimeta SSC and MSC functions in NGN/IMS

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. SBCs are playing an increasingly vital role in the delivery of communications services. With critical but diverse functions that include security, traffic management and accessibility, these platforms must operate effectively but transparently - performing their tasks without affecting network performance or resiliency.

SECURITY

The Perimeta portfolio protects vulnerable devices from distributed denial of service or flooding attacks by implementing intelligent, comprehensive blacklisting and rate-limiting functions on sessions which traverse the platform. Topology-hiding techniques further protect the carrier from exposure to attack. Essential for both access and interconnect deployments, header privacy and session privacy are ensured by rewriting the appropriate elements of the SIP messages. This is achieved by Perimeta's high performance back-to-back user agent (B2BUA).

TRAFFIC MANAGEMENT

Perimeta's overload prevention techniques and adaptive traffic management capabilities protect both the session controller and the other network elements from the effects of continuously extreme or bursty signaling and media loads. Intelligent traffic management guarantees that signaling and media packets are optimally processed and queued appropriately within the platform. They are then marked on egress 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

The continuity of media, controlled by the Session Initiation Protocol, can be severely compromised by standard infrastructure enablers such as network address translation. Perimeta enables NAT traversal for both SIP and RTP traffic, maintaining flows between endpoints on either the public or private IP interfaces. While SIP is a ratified standard, many diverse interpretations and variations of the protocol are employed in today's multi-vendor networks.

The Perimeta portfolio can provide interworking and repair of these disparate implementations, modifying SIP headers and message bodies that proxies cannot and thus ensuring that granular session control functions operate appropriately in all circumstances and under all conditions.

THE PERIMETA PORTFOLIO

Offered exclusively on the Metaswitch high availability commercial off-the-shelf (COTS) ATCA platform, the Perimeta product portfolio has been designed for performance. Leveraging CPU interrupt mitigation and zero copy DMA packet extraction techniques, the Perimeta's multi-core platform and multi-threaded software architecture delivers superior packet and SIP message throughput while performing high-touch functions such as packet marking and header manipulation. 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.

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, the SSC 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.

MEDIA SESSION CONTROLLER (MSC)

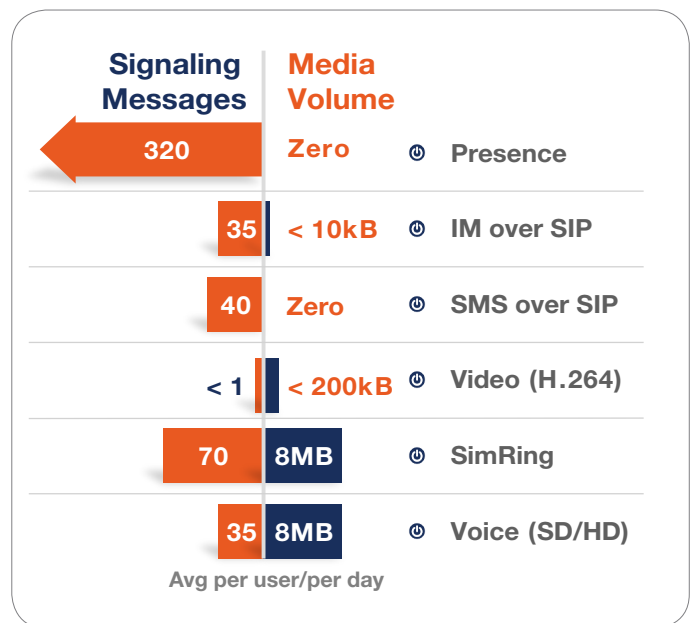
The Media Session Controller is specifically designed to handle the rapidly rising data rates and number of IP endpoints in next generation networks. Decoupled from the task of processing an ever-increasing number of SIP signaling messages, the MSC is ideally suited for media-rich unified communications 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 Metaswitch Perimeta Signaling Session Controllers or Integrated Session Controllers over a standardized H.248 reference interface.

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.

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.



Signaling growth will outpace media in NGN

POLICING PACKETS ON THE NETWORK PERIMETER

Evolving all-IP communications networks depend on an increasing number of peering and access interconnects to deliver ubiquitous service across physical and logical domains. Sophisticated and granular control of the traffic that traverses these links is required to ensure that sessions are handled as efficiently and cost-effectively as possible, at the point of egress from the host carrier's infrastructure.

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.



The Perimeta high availability ATCA platform

COMPLETE NETWORK TRANSPARENCY

Integrated with our exclusive MetaView Service Assurance Server, Perimeta session border controller platforms feature embedded, end-to-end, session tracing capabilities that provide granular diagnostics down to the individual signaling and control protocol packet payload. This enables comprehensive always-on post-analysis, without the need to deploy expensive packet capture probes around the entire network. Individual session traces include detailed protocol flow information and contain every internal routing and processing decision made by the Signaling Session Controller; insight that can dramatically reduce mean-time-to-repair metrics.

Perimeta also exports detailed unsampled call quality records to the MetaView Service Assurance Server. Combining these with records collected from other network elements and endpoints, MetaView can provide objective quality of experience measurements while delivering a comprehensive end-to-end view of overall network performance. Perimeta delivers total visibility without degrading router performance with netflow records or implementing costly network analytics or probe/collector components.

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 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 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.