

## SIP trunking and enterprise session border controllers

solutions note

### Overview

SIP (the Session Initiation Protocol) has emerged as the signaling protocol of choice for IP telephony and Unified Communications (UC). A standards-based protocol, SIP is supported in a wide variety of IP communications products including PBXs, UC servers, and videoconferencing systems as well as hard-phones, soft-phones and instant messaging clients. Businesses can leverage SIP to extend IP communications to mobile users and remote sites over private IP networks and the Internet. In addition, many service providers now offer SIP trunking services – flexible, cost-effective alternatives to PRI (Primary Rate Interface) trunks for PSTN origination/termination. SIP trunks and interactive IP communications help businesses reduce OPEX and CAPEX and improve productivity and collaboration by tying together disparate IP telephony islands and by leveraging a common IP infrastructure for data and all forms of interactive IP communications including voice, video and instant messaging.

### E-SBCs solve SIP trunking implementation challenges

As with any new technology, enterprises must solve a number of technical issues when implementing SIP trunks:

**Security** – conventional firewalls and application layer gateways (ALGs) weren't designed to support real-time interactive IP communications. SIP trunking can open enterprises to DoS attacks, viruses, IP telephony spam and other threats.

**Interoperability** – SIP specifications are less rigid than traditional ITU telecom specifications. SIP implementation variances can lead to interoperability issues across multivendor systems and service provider networks.

**Reliability** – varying service quality and availability can degrade call quality.

Businesses are deploying Enterprise Session Border Controllers (E-SBC) to mitigate multi-vendor, multi-protocol interoperability issues, safeguard user confidentiality and privacy, and ensure service quality and integrity in end-to-end IP communications networks. E-SBCs are typically deployed in data centers, main offices or large regional offices to protect and control private and public IP network borders.

Acme Packet E-SBCs are specifically designed to address the full range of security, interoperability and reliability challenges businesses often encounter when delivering IP telephony, interactive video and unified communications across IP networks. Acme Packet offers enterprise solutions for a wide variety of applications and businesses – from SMBs to large enterprises – in any industry or market segment.

### SIP trunking and interactive IP applications

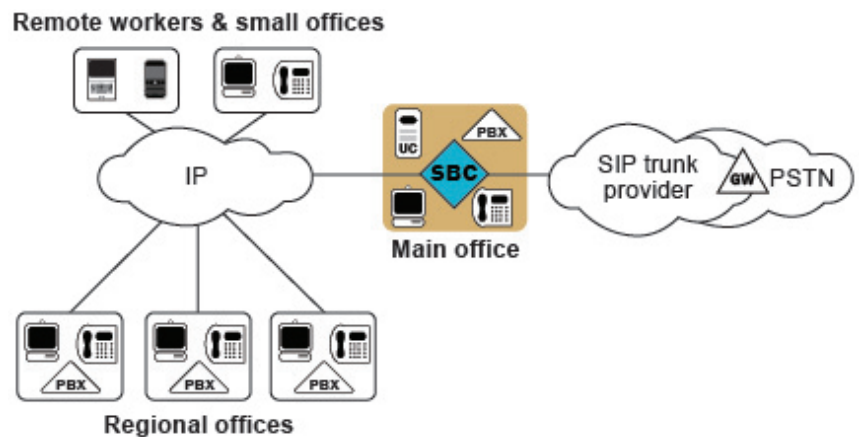
SIP trunks help enterprises enhance business communications and contain costs in a wide variety of applications, including:

- **PSTN origination/termination** – companies can consolidate trunks and reduce long distance and international calling fees by using a SIP trunk service provider for cost-effective PSTN access.
- **Site-to-site connectivity** – businesses can bypass the PSTN and leverage the IP network for toll-free calls between sites including satellite offices and international locations.
- **Hosted services access** – enterprises can use SIP trunks to efficiently connect to hosted service providers (hosted PBX, contact center, collaboration, conferencing etc.) to improve business agility and reduce capital equipment expenditures and staffing needs.
- **Contact center modernization** – businesses can utilize SIP trunks to implement virtual contact centers, to improve customer service and agent productivity, and to eliminate excessive take back and transfer (TBX) fees.
- **UC enablement** – organizations can improve communications and enhance collaboration by delivering presence-based voice, video and instant messaging over a common IP infrastructure.
- **Business-to-business connectivity** – enterprises can “federate” with suppliers and business partners to improve productivity and enhance business processes.

## SIP trunking cost savings and business benefits

SIP trunking lets enterprises reduce OPEX and CAPEX by consolidating infrastructure, making more efficient use of trunking facilities and reducing PSTN access charges. Many businesses have reduced their telecommunications costs by as much as 30-70% by migrating to SIP. In addition, SIP trunking helps companies enhance business agility, improve business continuity and boost worker productivity. SIP trunking financial and business advantages include:

- **Lower facility costs** – according to Gartner<sup>1</sup>, SIP trunks cost at least 28% less than PRI trunks with comparable throughput. While a PRI is capable of carrying 23 voice channels over a T1 (and 30 over an E1) Gartner's experience with SIP trunking suggests that at least 50 conversations can be supported on a single T1 line - with no impact on call quality.
- **Cost-effective scalability** – PRIs must be leased in increments of 23 (or 30) channels. With SIP trunking businesses only pay for the capacity they need. In addition, many SIP trunk service providers support a “bursting” option to temporarily throttle capacity to accommodate intermittent traffic spikes.
- **Converged voice/data** – by combining voice and data over the same IP infrastructure, businesses can eliminate duplicate interoffice T1/E1s or leverage more cost-effective Ethernet private line services to reduce OPEX.
- **Consolidated network architecture** - enterprises can significantly reduce CAPEX and OPEX by consolidating PBXs and UC servers into centralized data centers. By aggregating trunks into a few data centers, many businesses have reduced their total number of voice trunks by 30-50% without impacting capacity.
- **Toll-free on-net calling** – businesses can eliminate PSTN fees and improve communications with small offices, teleworkers and international sites by carrying internal calls over the IP network.
- **Simplified pricing** – while conventional trunk service providers charge additional fees for supplemental features, most SIP trunk providers include advanced features along with some quantity of free DID numbers and long distance minutes as part of the fixed monthly service fee.
- **Toll arbitrage** – enterprises can extend leverage with service providers and reduce long distance and international calling fees by implementing least call routing (LCR) across multiple SIP trunk service providers.
- **Equipment reduction** – businesses can retire legacy PSTN media gateways and eliminate associated maintenance and support costs by moving to an end-to-end IP network.
- **Contact center cost containment** – contact centers can eliminate costly take back and transfer (TBX) fees (millions of dollars per month in the largest operations) by redirecting calls over the IP network.
- **Simplified management** – businesses can streamline network operations, billing and administration and reduce OPEX by consolidating equipment and infrastructure and by simplifying adds, moves, and changes.
- **Greater business agility** – with SIP trunking, enterprises can add capacity dynamically (compared to days or even weeks for PRIs) to address rapidly-evolving business requirements and mitigate lost opportunities.
- **Network survivability** – enterprises can implement cost-effective disaster recovery plans by consolidating PBXs and UC servers into redundant data centers, plus leverage remote offices and home-based workers for affordable business continuity in the event of primary office closings.



*End-to-end IP network reduces CAPEX and OPEX*

1 Gartner RAS Core Research Note G00200653, Jay Lassman, Bern Elliot, 1 June 2010