



Hosted PBX Platform-as- a-Service Offering



Hosted PBX Platform Overview

VoIP Logic's Hosted PBX Platform-as-a-Service (PaaS) delivers cloud-based PBX functionality encompassing traditional PBX features as well as cutting-edge Unified Communications features. It is available over the Public Switched Telephone Network (PSTN), dedicated IP circuit, or the public Internet for Service Providers to leverage as part of their overall communications and/or Information Technology offer to business customers.

Typically, Hosted PBX is provided by telephone, cable, and wireless service providers, using equipment located at a 'core' centralized or at geographically redundant data centers. The commercial customer, organization or Service Provider does not need to buy or install call processing equipment on the office site, other than telephone handsets handset aggregator devices or other SIP capable hardware or software. The Service Provider can use the same hosted communications core switching equipment to service thousands of customers locally, nationally or worldwide.

VoIP Logic's Hosted PBX PaaS offers both the traditional Class 5 switch features and services, in addition to more advanced services often categorized as Unified Communications which include integrating business phone services with desktop computing and mobile smartphones as well as the deep technical capabilities that allow Service Providers call routing freedom, service definition flexibility and generally, a broad range of decision-making capabilities that allow them ongoing control over the marketed service.

VoIP Logic Unified Communications Example

Image 1: VoIP Logic Unified Communications Example



VoIP Logic provides the complete portfolio of core Hosted PBX platform technology for a Service Provider. This, in turn, allows a Service Provider to focus personnel and capital resources in aid of improving time to market, sales and marketing efforts directly related to revenue growth, front line customer technical support, product development and device strategies; rather than on infrastructure development and deep technical support.

Key Components of VoIP Logic's Hosted PBX Platform

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Application Server

[INSERT ONE SENTENCE DEFINING WHAT AN APPLICATION SERVER DOES].
 VoIP Logic uses the BroadSoft Application Server to provide user features. The VoIP Logic PaaS provides an extensive list of standard PBX call functionality as well as a growing list of enhanced features including video calling, ACD/call center, conference calling, web collaboration, SIP Trunking and Unified Communications clients for computers and smart devices. Service Providers always have the ability to integrate to third-party software via programmatic interfaces (APIs) for both provisioning and call management to meet any service needs that they find necessary.

All setup and configuration can be managed either through a native web portal or through a customized or an off-the-shelf third party OSS/BSS interface. With its powerful feature capabilities, its geographic redundancy failover capabilities and the unsurpassed scalability of PaaS application technology, VoIP Logic's deployment of the BroadWorks Hosted PBX application server empowers Service Providers to manage and grow their telephony business on a growing foundation of reliable features housed on a resilient/redundant platform.

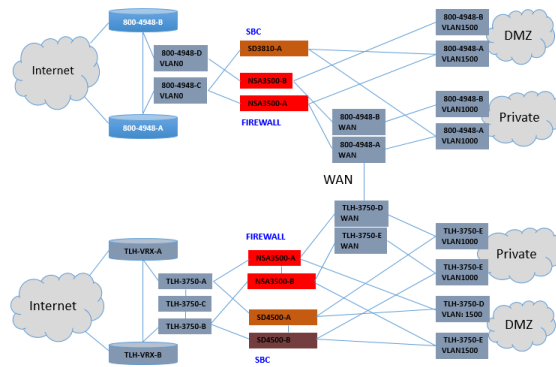


Image 2: VoIP Logic Infrastructure

Session Border Controller

A session border controller (SBC) is a multi-purpose device used in VoIP networks to provide control over the signaling and/or media involved in setting up, conducting, and tearing down voice, video or other interactive media communications.

SBCs reside in between an access network (public IP, MPLS, private IP, private circuits, etc.) and a backbone infrastructure to provide service to enterprises and their end point devices or between two service providers in a peering environment, or between.

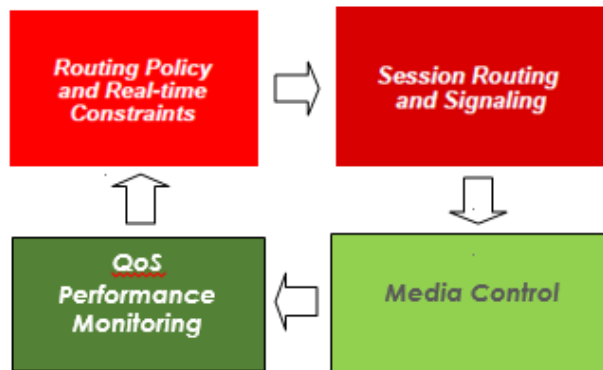


Image 3: Oracle Routing Policy example

Access SBC

VoIP Logic employs Oracle Communications' Acme Packet Net-Net SBCs as part of its platform for access network control.

In aggregate, these devices maintain full session state and offer the following functions:

- Security – protect the network and other devices from attacks such as denial of service.
- Connectivity – allow different parts of the network to communicate by, for example, supporting NAT traversal.
- Quality of service – the QoS policy of a network and prioritization of flows is often implemented by the SBC.
- Regulatory – many times the SBC is expected to provide support for regulatory requirements such as emergency calls and lawful interception.
- Statistics – since all sessions that pass through the edge of the network pass through the SBC, it is a natural point to gather statistics and information on these sessions.

Peering SBC

VoIP Logic employs Genband's Quantix-series SBCs as part of its platform for VoIP Peering and routing which allows Service Providers, by partitioned control, to provision, route and manage call information in a self-sufficient manner.

Peering supports flexibility in SIP Trunking in the following ways:

- Customers have the assurances that all SIP Trunking traffic transits over VoIP Logic's resilient core infrastructure, but still have complete controls over their SIP Traffic
- SPP still get the assurances of VoIP Logic's resilient core infrastructure even though they do not require the active customer level rerouting and monitoring capabilities in the Advanced Peering offering provides.

Media Gateway

Media Gateways are a media translation service that converts digital media streams between disparate telecommunications networks such as PSTN, SS7, Next Generation Networks (2G, 2.5G and 3G radio access networks), VoIP and PBXs.

VoIP Logic's Media Gateway array enable converged multimedia communications across multiple transport protocols such as MPLS-VPNs and Internet Protocol (IP). Media Gateways also provide call stream corrections to normalize echo and the use of DTMF tones.

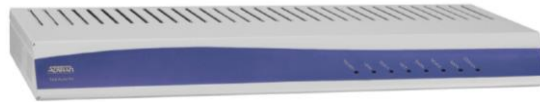
Our Media Gateways are deployed as redundant servers in our core infrastructure. Each server has a mirrored instance of the Broadsoft Media Gateway application. Using a Hosted Media Gateway configuration provides the following advantages over customer on-site Media Gateway installations for Service Providers:

- Allows VoIP Logic Service Provider Partners (SPPs) to provide the translated voice and data content in a converged call over a single managed packet network (LAN, WAN, or VPN) that interfaces directly to a legacy PBX
- SPPs can provide media translation support without having to install Media Gateway Servers at each customer premise.
- Ensures SPPs of high availability to Media Gateway Services. Worries about premises based device failures are removed.

- Upgrades and Maintenance are no longer a worry, since all the Media Servers are mirrored. This reduces the need to work with disparate devices at customer premise across multiple networks.
- VoIP Logic's use of the Broadsoft Media Gateway application means that Media Gateway translation capabilities are tightly aligned to the Application Server avoiding any mismatches from non-aligned technology evolution.

Integrated Access Devices (IADs) and other Edge Access Equipment

IADs and Edge Access Devices combine multiple voice and data features, network firewall, and SIP Application Level Gateway (ALG) into a single network services gateway. Typical models may have up to 4 T1 WAN interfaces or a single Ethernet WAN, a 4 port managed VLAN switch, a call quality (QoS) probe and a Wireless Access Point. Some models may also include integrated analog phone and line ports.



VoIP Logic supports a Bring Your Own IAD model which currently has all leading IAD brands deployed in production environments including Adtran, Edgewater, Audiocodes, NET (Sonus) and Mediatrix.

The advantages of VoIP Logic's model for offering Service Providers an open option on bringing their own IADs is that it provides flexibility when deciding what devices can meet a customer's premise based Gateway/IAD needs, while still offering a diverse list of high quality, well known and validated devices from which to choose. This allows SPPs to deploy devices more quickly without the need for time consuming expensive testing and validation for each new device they wish to add to their inventory.

Telephones and other End User Devices and Clients

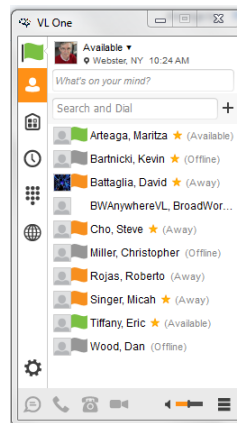
A VoIP handset or VoIP client software allows telephone calls to be made over an IP network such as the Internet that uses packet switching as opposed to the PSTN. The phones and soft clients use control protocols such as SIP or SCCP (Skinny Client Control Protocol). These IP phones can be simple software-based soft-phones, mobile applications,



purpose-built hardware devices that appear much like an ordinary telephone or an analog telephony adapters (ATA) that plugs into any ordinary telephone via an RJ11 interface.

VoIP Logic supports a Bring Your Own Device model. We currently have all leading telephone devices deployed including Polycom, Cisco, Panasonic, Bria, X-lite, Snom, Aastra, Grandstream, Portico and Yealink.

One of the central advantages of VoIP Logic's model is that it offers Service Providers to choose the device(s) that work best for their target market. VoIP Logic has over 100 models (and growing) of the most popular IP Deskphones and soft clients already tested and validated. This includes over 90% of the IP Voice Voice end user device market. This large validation selection usually allows SPPs to deploy new devices more quickly.

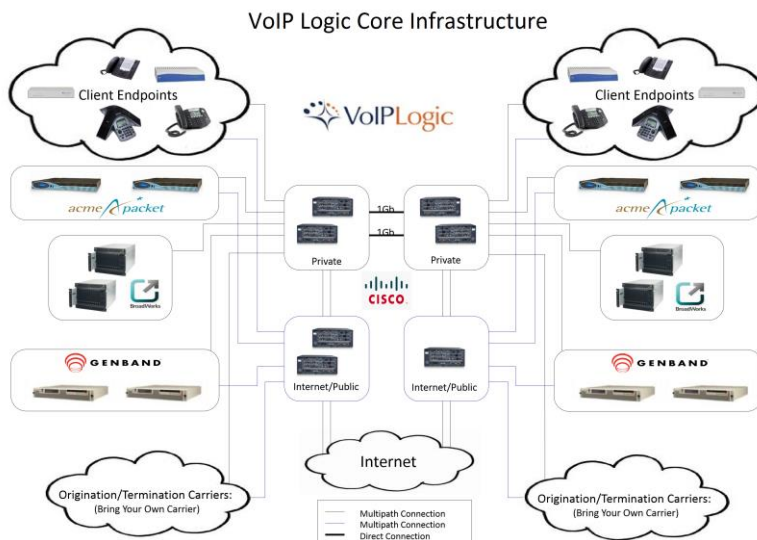


IP

Monitoring and Troubleshooting Platform

While each network device may provide limited independent monitoring and troubleshooting tools, a network-wide monitoring and support tool is necessary to ensure proper deployment and troubleshooting across a Service Providers dispersed Hosted PBX network. This must include all parts of the core infrastructure and will, ideally, extend out to include the business premises.

VoIP Logic offers Oracle Communication's Palladion SIP monitoring software package. This monitoring and support platform gives Service Providers full visibility to the call sessions traversing all components within the core PaaS. Palladion compliments and integrates with the Service Provider's monitoring and support capabilities at the customer premise. This allows the SPP to maintain direct control of the customer premise, while receiving VoIP Logic's support with the core VoIP infrastructure.



The benefits of VoIP Logic's Palladion system are:

- **DASHBOARD** — allows you to view at a glance the information most important to you.
- **USER TRACKING** — aggregates information about each single SIP End User of the monitored platform.
- **CALL DETAIL** — The Segments tab shows details about each call leg including State per call leg, Call-ID, From and To tags, Request-URI.
- **CALL FLOW** — The software gathers SIP messages from multiple points on the core network and correlates them in call legs, which are then merged into calls.
- **ACTIVE CALL MONITOR** — The Recent Calls table shows the recent and history information about the calls that were started in the last few days. The calls from this table are updated in real-time as their state changes.
- **REGISTRATIONS** — allows the examination of the registration events detected on the monitored platform. Registration events are generated using the SIP protocol method 'REGISTER'.
- **USER DEVICES** — provides statistics about user devices as well as detailed information about users per device.
- **VOICE QUALITY** — The probes associated with the Palladion platform gather voice quality information and attempt to derive a MOS quality score. The information collected related to quality is:
 - The number of lost packets.
 - The variance of delays between the received packets (jitter).
 - The distribution of lost packets inside the stream.
 - The codec used.

VoIP Logic Hosted PBX Enhancements and Add-Ons

VoIP Logic's Hosted PBX PaaS can be enhanced with numerous enhancements that can expand revenue opportunities. These include:

- ACD with Call Recording Capabilities: VoIP Logic offers Call Center with Call Recording delivered as a flexible Platform-as-a-Service add-on to our Hosted PBX offering. VoIP Logic offers a high degree of flexibility to the SPPs CC/ACD Product offerings. The platform we offer is based on OrecX and BroadWorks.

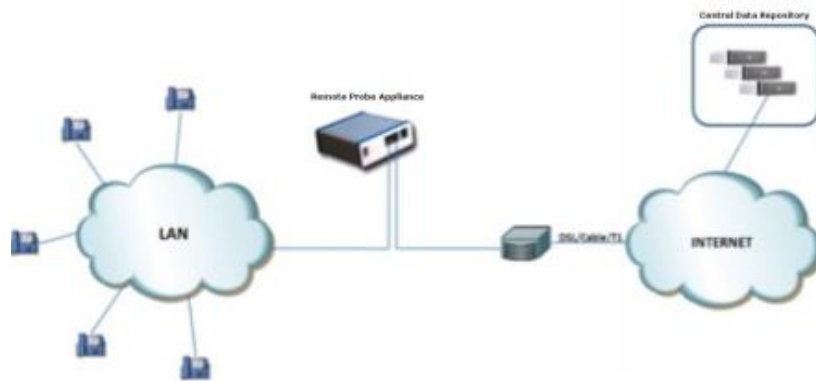
- Hosted PBX full integration linkage to the Broadworks SIP Trunking Platform.

- Soft Clients and Dialers: A variety of simple dialers and multi-media capable collaboration soft clients are available to enhance the Hosted PBX offering. These soft devices are fully interoperated the Broadworks platform and with numerous other hard and soft end devices.

- Service Provider Control and Flexibility Options include every aspect of the physical and virtual relationship on the VoIP Logic Platform. These options include:

- Physical, switched and routed collocation and peering options
- Server hosting
- PaaS server virtualization
- Hosted services licensing options
- Third Party Partner Support and Flexibility
- End Point Options and Control
- Programmable Desktop Share and Web Collaboration:
- Fully functional End Point Device Interoperability labs.
- Full configuration flexibility and support
- Portals

- Marketing, Administration and User Guide support
- Dedicated VoIP Logic supported Service Provider Partner Portal to provide an extended library of technical, product and marketing details to SPPs.



A more detailed description of the features and services available related to using the [VoIP Logic Hosted PBX Platform-as-a-Service \(PaaS\) offering](https://voiplogic.com) can be found at voiplogic.com or by contacting your VoIP Logic Account Manager.