VOIPBOX

VOICE OVER IP ENHANCEMENT

VOIPBOX appliances provide dramatic enhancement of Voice over IP (VoIP), with up to 10x more calls over an ADSL line.

Limitations of VoIP

- Voice calls are symmetrical in terms of bandwidth requirements; they need the same amount upstream and downstream. The number of simultaneous calls is limited by the slower upload speed (typically 256Kbit/s).

- Voice information can be compressed to use only 8kbit/s per call. However, the way it is packaged for broadband networks means each call typically ends up using at least 42kbit/s.

- Standard QoS techniques do not work very well for voice carried over links with less than about 1000Kbit/s. Voice information gets delayed because it has to wait for a free slot on the link in order to be sent. Since people's voices do not incorporate such delays this causes issues with voice quality.

- In addition, standard QoS techniques can not allocate more than 70% of the available link bandwidth reliably. So, on a standard broadband link, three calls is the absolute maximum that can be achieved before quality starts to suffer.

- Broadband is usually part of a public or shared network, making security a concern.

Smashing the VoIP performance barrier

VOIPBOX is powered by revolutionary Vibe technology. This delivers ground-breaking performance by addressing the technical limitations of VoIP.

- Voice is treated as a data stream with very specific requirements in terms of priority and spacing between packets, allowing more of the capacity of the link to be used.

- The bandwidth budget is reduced to that of the compression format used, so that a G.729 call really does use 8Kbit/s over the ADSL link.

- Voice and data can readily coexist on a single link. Classes of data can be given their own share of available bandwidth in a much more granular way than traditional QoS.

- **VOIP**BOX enabled sites can be joined together to form private networks, which means that security is easier to control.

- ADSL lines can be bonded providing more bandwidth and resilience allowing the loss of a line without losing calls in progress.
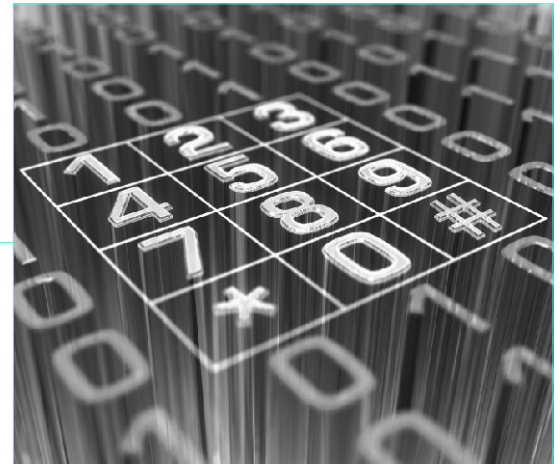
VOIPBOX Benefits

Better bandwidth utilisation

- Up to 28 simultaneous calls and data transfer down a residential spec broadband line

- up to 500% increase in traffic density over existing infrastructure and simultaneous co-existence with other data traffic, with no degradation in speech quality

Save money

- More channels for given bandwidth, less bandwidth for given traffic

- Single link for both data and voice traffic

Improve call quality

- VoIP Quality of Service (QoS) radically improved

- Reduced latency and jitter to sub 1ms

- Rapid failover to back up link improves resilience with no loss of calls

- Business quality voice traffic on IP

Flexible deployment

- Across corporate WAN or by bandwidth provider to end-users

Intuitive Interface
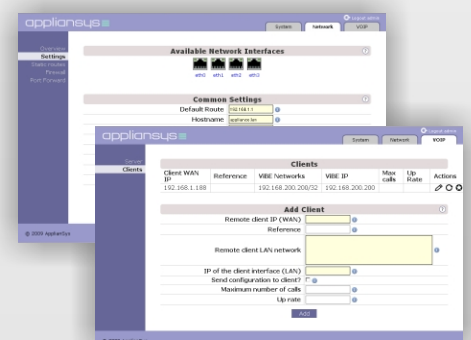
Codec	With **VOIP**BOX each call uses	Without **VOIP**BOX each call uses	No of calls per 256kps of bandwidth with **VOIP**BOX
G.729	8.1kbps	42.4kbps	28 (+700%)
G.711	64.1kbps	106kbps	3 (+50%)
G.722	32.1kbps	63.6kbps	7 (+233%)
GSM	13.1kbps	42.4kbps	17 (+340%)

VOIPBOX delivers huge performance increases. These translate into major benefits: cost savings and QoS improvements in either enterprise WANs or Service Provider networks.

Transforming Service Provider VoIP offerings

As a service provider you can deploy a router to act as a **VOIP**BOX client on your customers site. For larger sites you can put a **VOIP**BOX**020** client between the router and the LAN switch. The **VOIP**BOXclient strips out repetitive data before sending the payload on to the router. In the core of the network, you can deploy a single **VOIP**BOX server - or a cluster if resilience is required - to rebuild the traffic and deliver it on to its destination. This may be another **VOIP**BOX enabled link as part of a private network, an IP telephony provider or any form of data to any internet location.

Hosted VoIP Service Provider using **VOIP**BOX to supply high capacity over ADSL
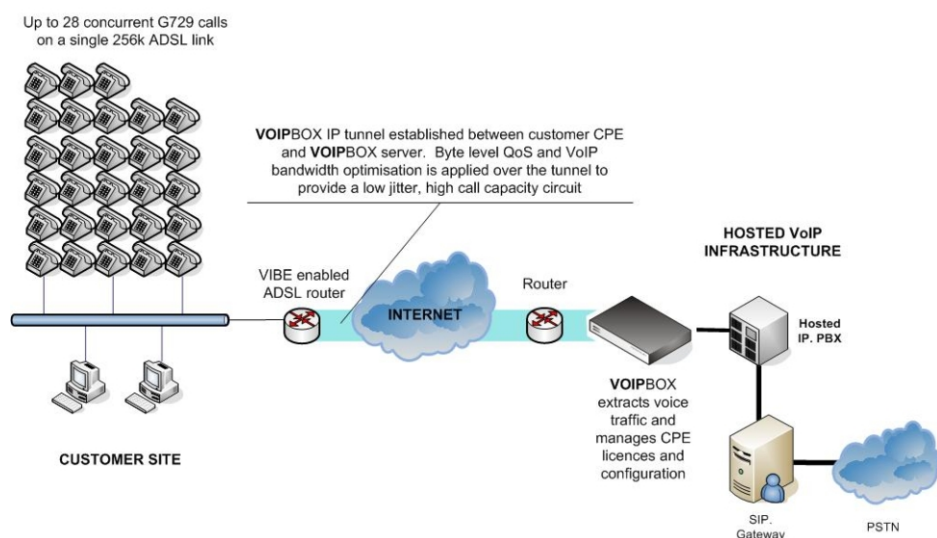
Rock solid appliance

VOIPBOX is a hardened Linux based appliance optimized for performance, robustness, security and ease of management.

The custom Linux OS has been developed by ApplianSys specifically for creating secure appliances. Our approach, refined over several years and employed across our appliance range, has been to build from the ground up, supporting the core application with only the most critical network tools.

A key aspect is use of solid-state storage, with no hard drives in these appliances. Hard drives account for 90% of hardware failures, so **VOIP**BOX is 10x more reliable than alternatives. It is also more robust in situations where there is a power loss, with no loss of data or settings and immediate reboot.

Key Features

- Supports simultaneous Voice and Data on the same bandwidth

- Supports multiple codec's

- Unique compression technology

- Utilises secondary bandwidth for back up (i.e. ISDN2)

- Bonding of ADSL Lines

- Scalable solution for all ATM bandwidth

- Operates over Satellite links

- Reduces jitter to sub 1ms

- Support for Real Time Trans-coding

VOIPBOX**020/060**

Form Factor:	Micro Format
Licence:	Up to 100 calls
Ethernet:	2 x 10/100E Network Interfaces
Flash Memory:	1 x OS/application and user-data
OS:	Linux
Dimensions:	6.2 x 0.9 x 6.1 (ins)
	157.5 x 22.9 x 154.9 (mm)
Weight (max):	0.5 kg
Power Supply:	External AC Power Supply
Operating Temp:	10 to 37.8 C (50 to 100 F)

VOIPBOX**030/080**

Form Factor:	Compact
Licence:	Up to 300 calls
Ethernet:	2 x 10/100E Network Interfaces
Flash Memory:	1 x OS/application and user-data
OS:	Linux
Dimensions:	12 x 2.1 x 11 (ins)
	305 x 54 x 279 (mm)
Weight (max):	5.0 kg
Power Supply:	External AC Power Supply
Operating Temp:	10 to 37.8 C (50 to 100 F)

VOIPBOX**120/320**

Form Factor:	1U Rack Mountable
License:	Up to 1,000 calls
Ethernet:	2 x GbE Network Interface
Flash Memory:	1 x OS/application, 1 x user-data
OS:	Linux
Dimensions:	19 x 1.75 x 17 (ins)
	482.6 x 44.5 x 432 (mm)
Weight (max):	8.0 kg
Power Supply:	Single Internal AC Power Supply
Operating Temp:	10 to 37.8 C (50 to 100 F)

Note: Technical Specification is subject to change. Please ask for details

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