

Information Note

Vega Voice Prioritisation



When a customer is using an ITSP to service their telephone calls, the key measure of success is the quality of the voice calls made through that ITSP.

In home and small office situations the broadband link is often not very 'fat'; if data traffic is being sent over the broadband link as well as voice traffic, the voice packets can get swamped by the data packets, resulting in choppy audio and hence dissatisfied users.

The solution is to prioritise the voice traffic over the data traffic.

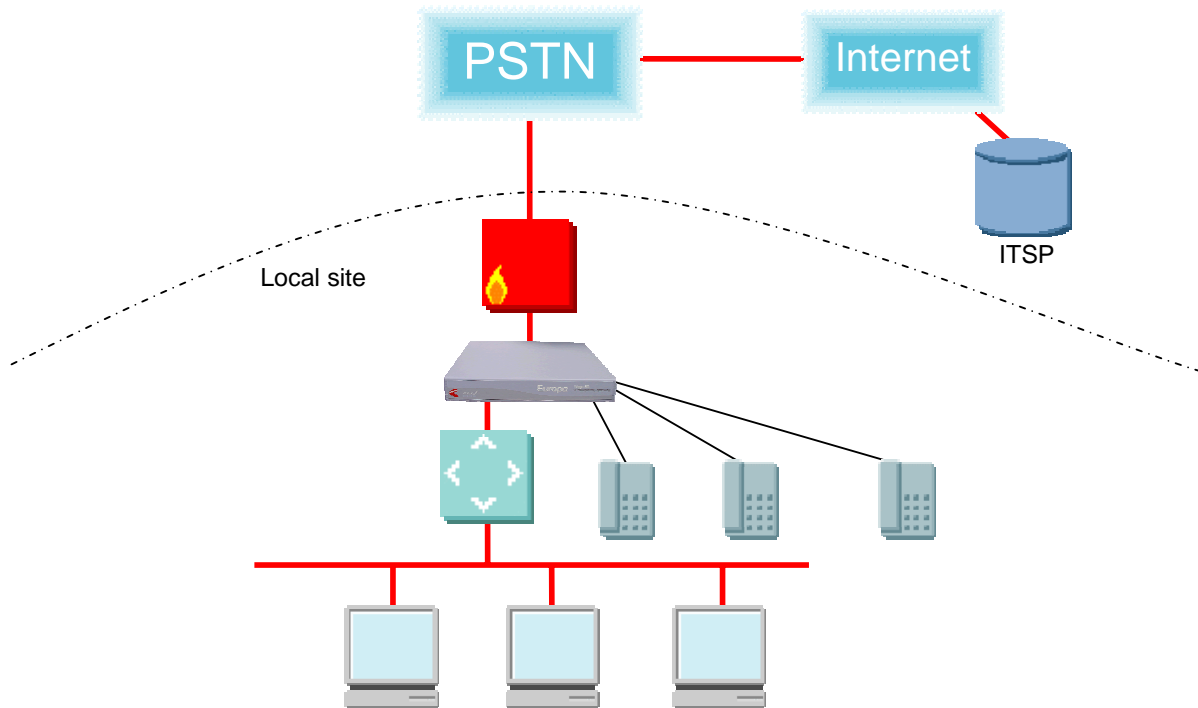
- Some routers support QoS LAN packet marking and so can give voice traffic a higher priority than say e-mail, web browsing or file transfer traffic. This type of router, however, is normally only available in larger organisations.
- Now, from Release 8.2 VoIP traffic prioritisation over other data traffic is available within the Vega gateway itself.

By configuring the Vega to operate in bridge mode, instead of the 2 LAN interfaces being designed to connect to two separate subnets – for separation of voice and management access, to span a firewall to allow internal voice traffic and management traffic on one interface and external traffic on the other, or to use the two LAN interfaces in separate subnets for resilience – the Vega can use the LAN interfaces as a WAN (upstream) interface and a LAN (downstream – towards the internal network) interface.

In this mode the Vega is designed to take control of all LAN traffic (both voice and data), so that it can ensure that the LAN link to which it sends data is not saturated. (A saturated link results in excessive packet jitter and then packet loss – unacceptable for voice traffic.)

By configuring maximum bandwidth figures for each of the LAN interfaces, the Vega knows how much traffic it can safely send through each LAN interface. The Vega will send its own generated traffic out as priority and will then pass through any data traffic up to the maximum transmit bandwidth specified.

Provided that there is enough link bandwidth to carry all the voice call traffic, the Vega can therefore guarantee no loss of voice packets, and hence high quality voice calls.



By default **Vega Europa** gateways are configured in bridge mode – other Vega gateways can have bridge mode enabled if required.

The configuration parameters are:

Enable bridge mode

- This can only be configured from the command line interface:

```
[lan]
  bridge_mode=1 ; set to 0 for LAN 1 / LAN 2 operation
```

LAN 1 (WAN side) link bandwidth (kbps)

```
[lan.if.1]
  max_tx_rate=0 ; set to transmit bandwidth available on LAN 1
```

LAN 2 (LAN – internal network facing) link bandwidth (kbps)

```
[lan.if.2]
  max_tx_rate=0 ; set to transmit bandwidth available on LAN 2
```

On the web browser:

LAN link bandwidths can be set up in the LAN Configuration section of the LAN page.

LAN Configuration									
LAN Port	Use DHCP	IP Address	Subnet	Allow Full Duplex	Allow 10 BASE-T	Allow 100 BASE-TX	Enable 802.1pQ	Accept non 802.1pQ tagged frames	Tx Rate Limit (kbps)
1	<input checked="" type="checkbox"/>	172.19.1.97	255.255.255.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	240
2		bridge mode		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10000

LAN link bandwidths are defined as the maximum transmit (or outbound) speed from the Vega, specified in kbps. A value of 0 means there is no limit.

Typically:

- LAN 1 ADSL speed will be a little less than 256kbps (uplink speed)
- LAN 2 will be either 10,000kbps or 100,000kbps

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