

Information Note

Vega 400 LAN configuration



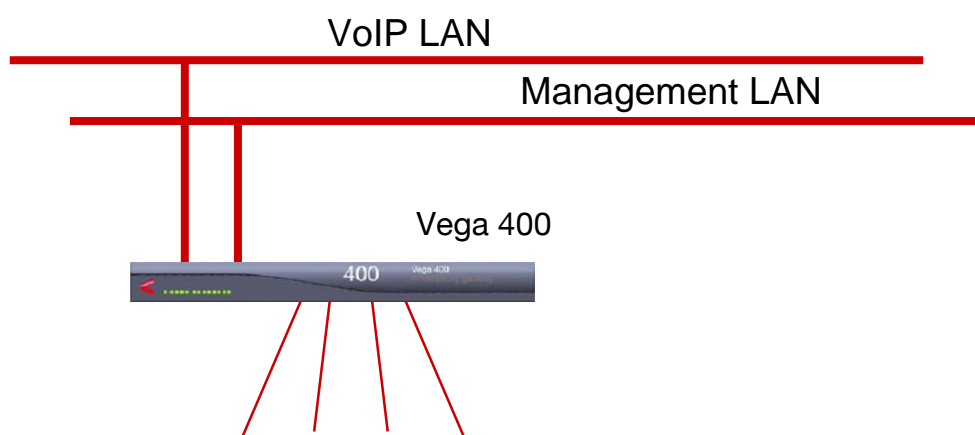
1. Introduction

In Vega 400 gateways two LAN interfaces are provided in order to enable additional system configurations to be supported. Specifically, the availability of two LAN interfaces is designed to support the following scenarios:

1. Separate management and VoIP LANs, e.g. PTO Network or Remote PoP
2. Gateway in parallel with a firewall

Where dual LAN interface operation is not required, Vega 400 gateways can be configured to use just a single LAN interface.

1.1 *Separate management and VoIP LANs, e.g. PTO Network or Remote PoP*

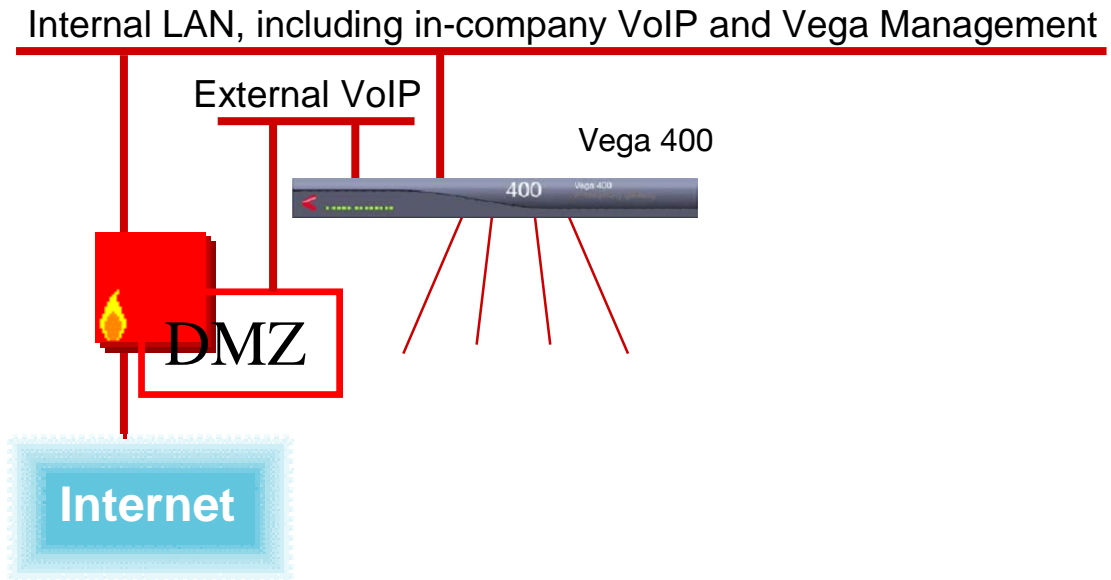


Some PTOs have dedicated VoIP LANS and dedicated management LANs and wish to keep the two types of IP traffic completely separate right up to the gateway device. The dual LAN interfaces on the Vega 400 allow them to achieve this, and therefore they are able to keep tight control over bandwidth issues, guaranteeing high quality audio connections over VoIP.

For customers installing remote PoPs, where security of the unit's management is seen as a high priority, again, the ability to separate VoIP and management LANs is beneficial. In this case

management traffic can be connected to a VPN router and transported securely back to the management centre.

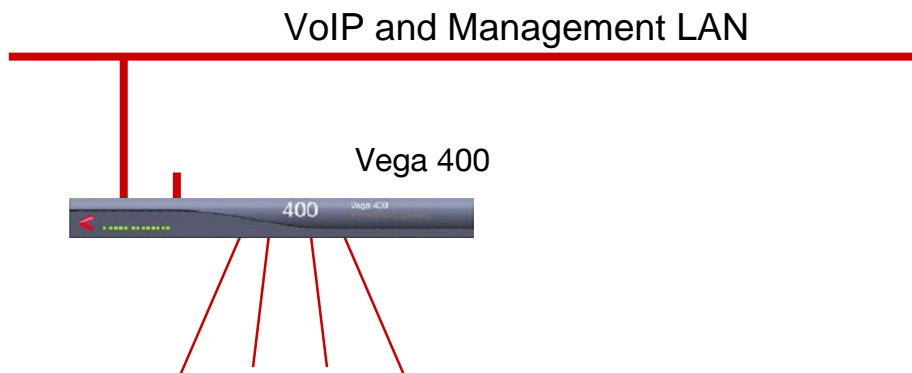
1.2 Gateway in parallel with a firewall



VoIP traffic causes heavy loading on firewalls – the RTP traffic carrying the audio creates a load on the firewall that can cause it to introduce latency and jitter on the IP packets, and under certain circumstances can actually cause it to drop packets. To avoid the RTP traffic having to be passed through the firewall the Vega 400 can be connected both to the inside network (to handle internal VoIP calls and management traffic) and to the DMZ of the firewall (to handle VoIP calls from the Internet).

As the Vega does not support LAN to LAN communications (IP calls can only terminate as telephony calls, no VoIP to VoIP calling is supported), the Vega does not jeopardise the security of the firewall.

1.3 Single LAN interface operation



For traditional single LAN interface configuration VoIP and management traffic can be configured to use just a single interface on the Vega 400.

2. LAN IP address, Subnet mask and Physical interface configuration

The IP address details can be found on the LAN page, in the LAN Interfaces section. By selecting [Modify](#) next to the appropriate interface, the low level LAN interface details may be configured.

In the Basic LAN section, the Static IP address and Static Subnet Mask values may be configured (if DHCP is selected the current IP address and current Subnet Mask are displayed).

The choice of DHCP or Static selection of IP address and subnet mask for this interface is made by configuring the 'Enable' parameter in the DHCP section.

Physical interface configuration, 10 base T, 100 base TX and Half / Full duplex LAN operation is configured in the Physical Layer section.

3. LAN Profile configuration

Vega gateways use LAN profiles to define the type of IP traffic handled on each LAN interface. By default three LAN profiles exist:

- LAN profile 1 – configured to limit traffic to / from LAN interface 1 only
- LAN profile 2 – configured to limit traffic to / from LAN interface 2 only
- LAN profile 3 – configured to allow traffic to / from both LAN interfaces 1 and 2

By default, the names given to the three profiles are an example of the way the LAN profiles can be used.

- LAN profile 1 – is named 'Management'
- LAN profile 2 – is named 'Calls'
- LAN profile 3 – is named 'All'

This names the profiles as they might be used in the 'Separate VoIP and Management LAN' case shown above.

For general use it makes it easier to understand their purpose by renaming them:

- LAN profile 1 – re-name to 'LAN_1_only'
- LAN profile 2 – re-name to 'LAN_2_only'
- LAN profile 3 – re-name to 'LAN_1_and_LAN_2'

The various Vega functions that use the LAN can now be configured to work under specific LAN profiles.

On the LAN page, associate LAN profiles with:

- LAN Configuration – this defines which interface(s) to use for LAN events that do not have their own specific LAN profile setting; this includes ping, radius, snmp, dns, ...
- FTP
- TFTP
- NTP
- Telnet
- WebServer

For SIP Vega gateways, on the SIP page, in the General section, associate a LAN profile with:

- SIP traffic – this defines which interface(s) to use for SIP traffic (signalling and media). (This LAN profile parameter also specifies the interface on which the LAN gateway is connected.)

For H.323 Vega gateways, on the H.323 page, in the Interfaces section, under interface ID =1, associate a LAN profile with:

- H.323 traffic – this defines which interface(s) to use for H.323 traffic (signalling and media). (This LAN profile parameter also specifies the interface on which the LAN gateway is connected.)

For H.323 Vega gateways, on the H.323 page, in the H.323 Gatekeeper section, associate a LAN profile (labelled QoS profile) with:

- H.323 gatekeeper traffic – this defines which interface(s) to use for H.323 gatekeeper traffic (GRQ, RRQ, ARQ, IRR etc).

4. DHCP or not DHCP

The IP address details for LAN functions may be obtained either through use of DHCP or by setting up static IP addresses.

Typically in deployment situations either all LAN functions will have IP address details served by a DHCP server, or all will be defined statically in the Vega. The Vega 400, however, is flexible enough to allow individual LAN functions to be configured to get their IP address from DHCP, or to have a static IP address configured. The one proviso is that if anything is to have its IP address defined by DHCP, then the IP Address and Subnet Mask for the interface on which the DHCP server being used resides, must be defined by DHCP (i.e. Enable must be selected in the DHCP section for that specific LAN interface).

Whether an IP address is defined by DHCP or by static configuration is controlled on both the LAN interface configuration page and also in the sections where the Static IP address is set up for the relevant LAN function.

LAN interface page configuration.

The configuration in the LAN interface configuration page is really for backward compatibility of configuration with previous Vega gateways – it is recommended that in the DHCP section all items are selected, the only exception being the DHCP 'Enable' parameter which defines whether DHCP is to be used on this interface – which is configured as required. All entries must be selected if the 'DHCP / Static configuration in the same section as the Static IP address is configured' (see below) method of configuration is to be used.

DHCP / Static configuration in the same section as the Static IP address is configured.

In the sections where Static IP addresses are configured, there is also a configuration parameter 'Use DHCP Settings From Interface'; this parameter takes values 0, 1, or 2:

- 0 means 'use the Static IP address'
- 1 means 'use DHCP server on interface 1 to get the IP address'
- 2 means 'use DHCP server on interface 2 to get the IP address'

'Use DHCP Settings From Interface' is available in

- LAN > Lan Configuration section for the LAN Gateway IP address
- LAN > FTP Parameters section for FTP Server IP address
- LAN > TFTP Parameters section for TFTP Server IP address
- LAN > NTP Parameters section for NTP Server IP address

DNS Servers are handled slightly differently; 'Use DHCP Settings From Interface' allows DNS server addresses to be supplied from either the DHCP server on interface 1, the DHCP server on interface 2, or neither DHCP server. Whatever the value of 'Use DHCP Settings From Interface', static values may also be set up. DHCP provided DNS Server IP addresses are used in priority over the statically defined DNS IP addresses.

5. Notes

1. The Vega 400 LAN interfaces are designed to connect to separate LAN subnets. Do not connect LAN interface 1 and LAN interface 2 to the same subnet.
2. The Vega 400 assumes that there is just one interface with a LAN gateway connected. The LAN interface to which the LAN gateway is connected is defined by the setting of LAN profile in the SIP or H.323 page.
The other interface is assumed to require communication only with devices in its local subnet.
3. Default configuration:
The 'delivered from factory' and the 'boot menu reset' configuration provides a system configured to use DHCP to get all its IP addresses. The LAN profiles are configured such that FTP, TFTP, NTP, DNS, ping, snmp. Radius etc all use LAN interface 1, Calls and access to the LAN gateway is via LAN interface 2 and telnet and web browsing may be performed from either LAN interface 1 or LAN interface 2.

In detail:

On the LAN page, set:

- LAN Configuration LAN profile = 1
- LAN Configuration Use DHCP Settings From Interface = 2
- FTP LAN profile = 1
- FTP Use DHCP Settings From Interface = 1
- TFTP LAN profile = 1
- TFTP Use DHCP Settings From Interface = 1
- NTP LAN profile = 1
- NTP Use DHCP Settings From Interface = 1
- DNS Use DHCP Settings From Interface = 1
- Telnet LAN profile = 3
- WebServer LAN profile = 3

For SIP Vega gateways, on the SIP page, in the General section, set:

- SIP traffic LAN Profile = 2

For H.323 Vega gateways, on the H.323 page, in the Interfaces section, under interface ID =1, set:

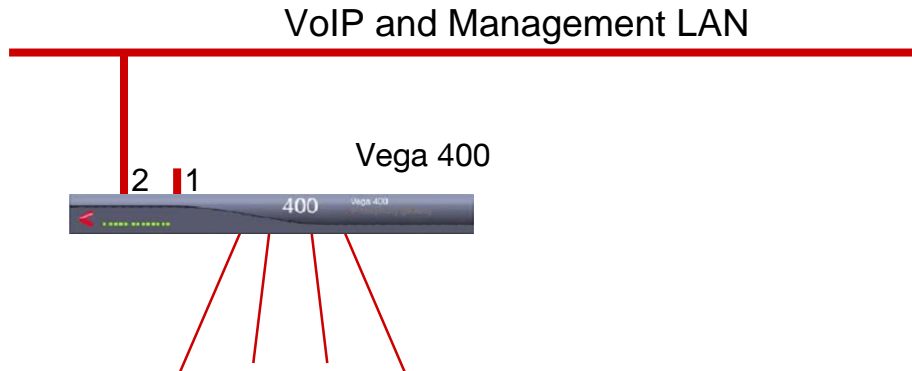
- H.323 Interface 1 LAN Profile = 2

For H.323 Vega gateways, on the H.323 page, in the H.323 Gatekeeper section, set:

- H.323 gatekeeper QoS Profile = 2

6. Example LAN Profile configurations

6.1 Example 1 - Configuration of LAN Profile values for single LAN interface operation



To configure the Vega to use just one LAN interface, for example LAN interface 2, the LAN interface nearest the outside of the chassis:

On the LAN page, set:

- LAN Configuration LAN profile = 2
- FTP LAN profile = 2
- TFTP LAN profile = 2
- NTP LAN profile = 2
- Telnet LAN profile = 2
- WebServer LAN profile = 2

For SIP Vega gateways, on the SIP page, in the General section, set:

- SIP traffic LAN Profile = 2

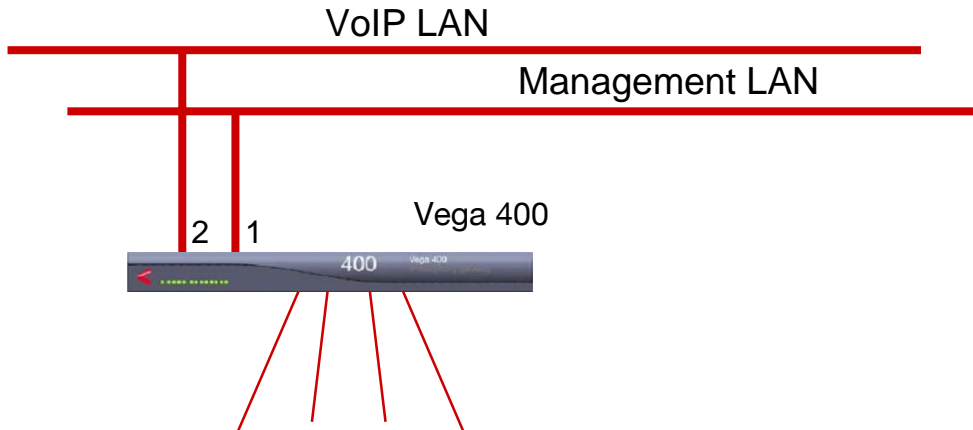
For H.323 Vega gateways, on the H.323 page, in the Interfaces section, under interface ID =1, set:

- H.323 Interface 1 LAN Profile = 2

For H.323 Vega gateways, on the H.323 page, in the H.323 Gatekeeper section, set:

- H.323 gatekeeper QoS Profile = 2

6.2 Example 2 - Configuration of LAN Profile values for Separate management and VoIP LANs, e.g. PTO network or Remote PoP



To configure the Vega to use LAN interface 1 for Management and LAN interface 2 for VoIP calls:

On the LAN page, set:

- LAN Configuration LAN profile = 1
- FTP LAN profile = 1
- TFTP LAN profile = 1
- NTP LAN profile = 1
- Telnet LAN profile = 1
- WebServer LAN profile = 1

For SIP Vega gateways, on the SIP page, in the General section, set:

- SIP traffic LAN Profile = 2

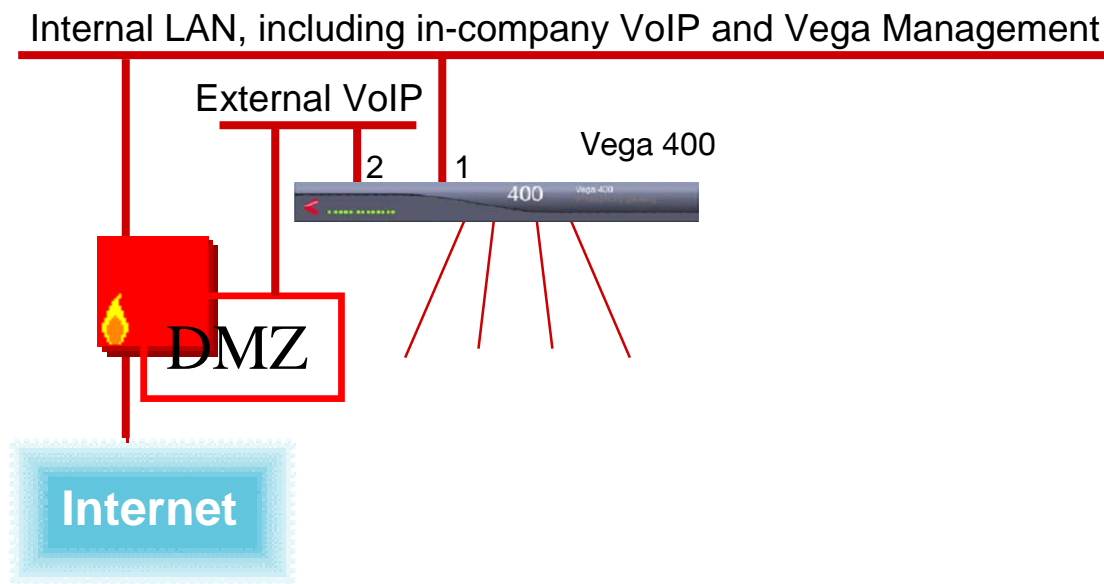
For H.323 Vega gateways, on the H.323 page, in the Interfaces section, under interface ID =1, set:

- H.323 Interface 1 LAN Profile = 2

For H.323 Vega gateways, on the H.323 page, in the H.323 Gatekeeper section, set:

- H.323 gatekeeper QoS Profile = 2

6.3 Example 3 - Configuration of LAN Profile values for Vega installed in parallel with a firewall



To configure the Vega to use LAN interface 1 for Management and internal VoIP calls and LAN interface 2 for external VoIP calls:

On the LAN page, set:

- LAN Configuration LAN profile = 1
- FTP LAN profile = 1
- TFTP LAN profile = 1
- NTP LAN profile = 1
- Telnet LAN profile = 1
- WebServer LAN profile = 1

For SIP Vega gateways, on the SIP page, in the General section, set:

- SIP traffic LAN Profile = 3

For H.323 Vega gateways, on the H.323 page, in the Interfaces section, under interface ID =1, set:

- H.323 Interface 1 LAN Profile = 3

For H.323 Vega gateways, on the H.323 page, in the H.323 Gatekeeper section, set:

- H.323 gatekeeper QoS Profile = 3

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