Initial configuration
Vega 50 6x4 FXS
# (SIP) – R8.0

This document describes how to configure the FXS ports on a Vega 50 6x4 gateway, using the web browser interface. The configuration described will allow the Vega to be rapidly installed and tested.

The instructions below will configure the Vega 50 6x4 to operate as follows:

- Calls made by any of the attached analogue phones will be routed to the SIP proxy (or if no SIP proxy to a specific IP address); the Vega will pass on any dialled digits.
- Calls received from the SIP proxy (or if no SIP proxy, from a VoIP device) will be routed to the appropriate telephone based on the 3-digit extension number presented.
- Phones 401 and 402 will be directly connected to the 2 FXO ports connected to the PSTN if the Vega is powered down, or is undergoing an upgrade.
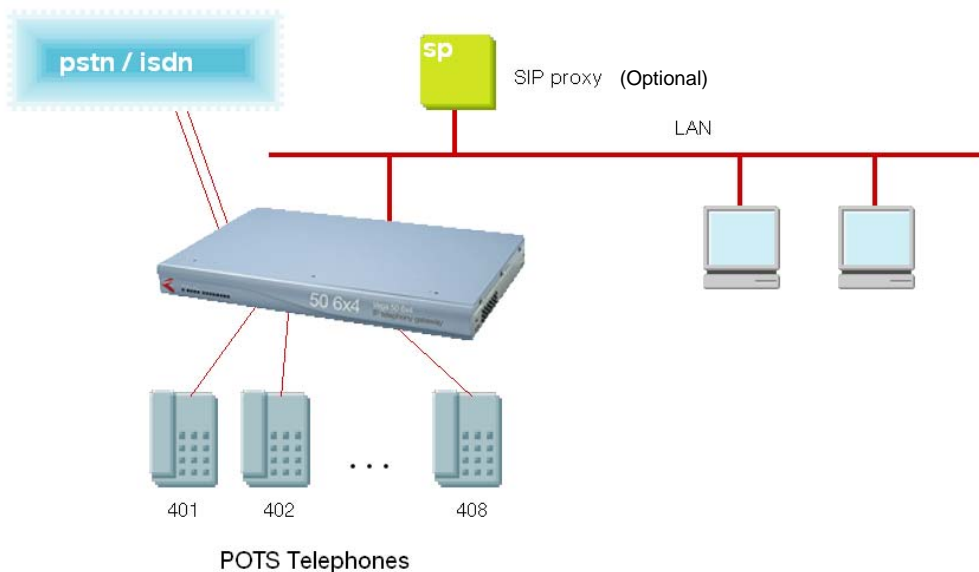
Although the Vega 50 6x4 supports two LAN interfaces, in this example configuration, only one LAN interface, LAN 1, will be used.

Notes are included describing the changes required if there is no SIP proxy in the installation and calls are to be routed to a specific destination device.

The configuration process is broken down into 12 stages as follows:

1   Connect your Vega to LAN, Telephone and Power
2   Configure the basic LAN parameters
3   Configure password and login timeout
4   Check and configure LAN settings and Host name
5   Configure the Dial Plan
6   Configure SIP Proxy parameters
7   Configure Audio parameters
8   Configure Authentication
9   Configure Registration
10   Configure POTS parameters
11   Save Changes
12   Archive Vega Configuration

Please also see:
13   Technical Support
14   Advanced configuration

1. Connect your Vega to LAN, Telephone and Power
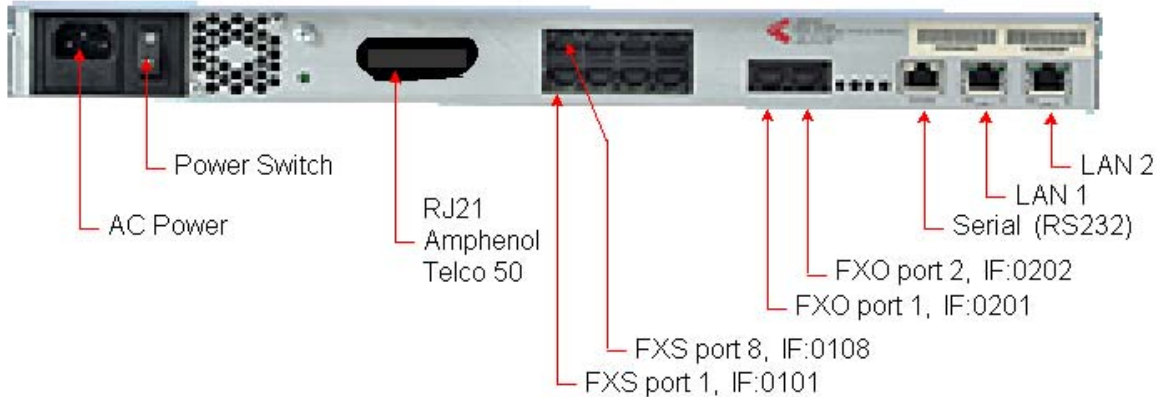
Before installing your Vega, ensure that you read the VegaStream VoIP Gateways Safety and Compliance Information document.

LAN:
Using the yellow booted cable(s) connect the LAN port(s) on the Vega to a standard or fast Ethernet hub or switch (10 baseT or 100 baseTx). The connector nearest the ferrite core should be plugged into the Vega.

For this configuration just connect the LAN 1 interface to the hub or switch.

⚠️ **WARNING!**	If both LAN interfaces, LAN 1 and LAN 2 are to be used, the interfaces must be on separate subnets.

Telephony:
The connector locations at which the FXS telephone ports are available, depends upon where in the Vega the FXS interface cards are plugged. If an FXS card is plugged into interface slot 1, FXS ports will be available on the RJ45 connector at locations IF 1 to IF 4 and on the RJ21 / Amphenol / Telco 50 connector. With an FXS card plugged into interface slot 2, FXS ports will be available on the RJ45 connector at locations IF 5 to IF 8 and on the RJ21 / Amphenol / Telco 50 connector. With FXS card(s) are plugged into interface slots 3 to 6, these FXS ports will be available on the RJ21 / Amphenol / Telco 50 connector only.

Note the port numbers on the RJ45 connector block increase in an anticlockwise direction from the bottom left corner.

IF 8	IF 7	IF 6	IF 5
IF:0108	IF:0107	IF:0106	IF:0105
IF 1	IF 2	IF 3	IF 4
IF:0101	IF:0102	IF:0103	IF:0104

FXO 1	FXO 2
IF: 0201	IF: 0202

Telephone lines can be connected to the two FXO ports.

See the 'Vega 50 6x4 product details' document for pinouts and cabling.

> ⚠️
> **WARNING!**
> When BRI ports are fitted, two of the four BRI signals are brought out to the associated RJ21 / Amphenol / Telco 50 connector pins. In this situation DO NOT connect anything to these pins on the RJ21 / Amphenol / Telco 50 connector.

Power:
Insert the power cable into the AC power inlet on the Vega and switch on. The power LED on the front panel will illuminate.

LAN LEDs will also illuminate indicating 10 (baseT) or 100 (base TX) connection. The LAN LEDs are duplicated on the front and rear of the Vega. The LEDs blink off to indicate LAN activity.

After a short while the Vega Ready LED will illuminate – the Vega is ready to be configured.

2. Configure the basic LAN parameters

If a DHCP server is available, by default, the Vega will automatically pick up an IP address. If you know the IP address served to the Vega, skip this section and start at section 3.

If DHCP is <u>not</u> to be used to provide the Vega with an IP address, or you need to check the IP address provided to the Vega, connect the serial interface of the Vega to a PC serial interface using the supplied RJ45 to 9 way female D-Type connector cable.

Configure a terminal emulator program (such as Microsoft's HyperTerminal) for:

- Speed   = 115200 baud
- Data bits   = 8
- Parity   = none
- Stop bits   = 1
- Flow Control = none

Press <Enter> to get the Username: prompt

At the prompts enter the default user name and password

```
Username: admin
Password: admin
```

If this is your first login you will be presented with the opportunity to select the firmware to run (SIP or H.323):

```
=====================================================================
CHANGE ACTIVE PARTITION:

Partition 1: SIP   Firmware            (ACTIVE)
             Version: 08.00 for hardware type 11
             Image: VEGA-6x4_R080S005

Partition 2: H.323 Firmware
             Version: 08.00 for hardware type 11
             Image: VEGA-6x4_R080H005

Type PART2 to activate partition 2, or EXIT to leave unchanged.
=====================================================================
```

- ➢ Ensure that the partition marked as ACTIVE is the SIP partition, if it is not, then select the other partition as instructed and reboot the Vega[1].
- ➢ If the SIP partition is already marked as ACTIVE, then type EXIT

Once the firmware has been selected and activated, from the command prompt, display the current IP address by typing:

- ➢ show lan.if.1.ip

---

[1] If the partition is changed, after the reboot perform a 'factory reset' before continuing configuration.

If this is not the IP address required, it can be overridden, together with other LAN parameters by typing:

> ➢ `set lan.if.1.use_dhcp=0`
> ➢ `set lan.if.1.ip=aaa.bbb.ccc.ddd`
> ➢ `set lan.if.1.subnet=eee.fff.ggg.hhh`
> ➢ `set lan.gateway.ip=iii.jjj.kkk.lll`
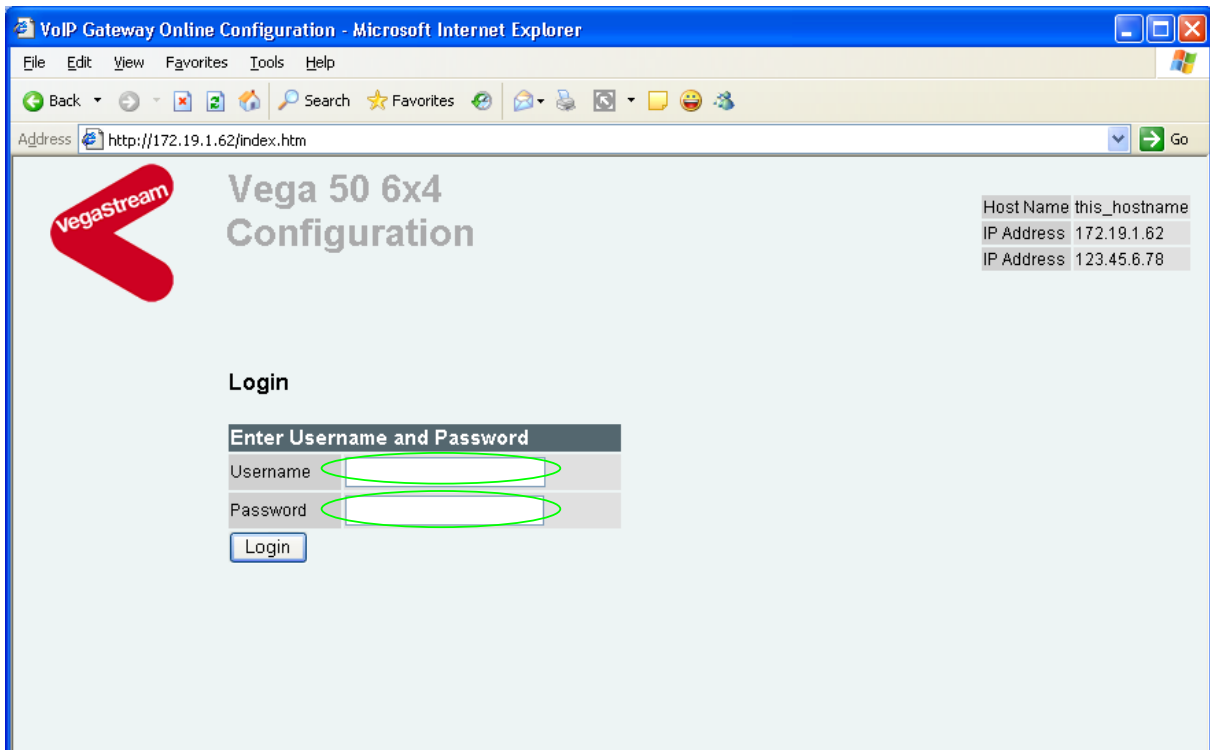> ➢ `set lan.gateway.dhcp_if=0`
> ➢ `set sip.lan_profile=1`
> ➢ `save`
> ➢ `reboot system`

3. Configure password and login timeout

Now configuration will be carried out using a web browser.

> ➢ Enter the IP address of the Vega into the "Address" field of your web browser.
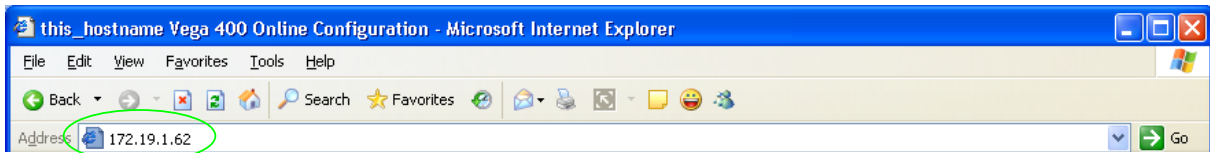
You will then be presented with the login page:

Enter the default Username and Password
> ➢ Username: `admin`
> ➢ Password: `admin`
> ➢ Select Login

If you have not already selected the firmware to run (SIP or H.323) the boot manager will automatically be displayed allowing you to select the code to run, SIP or H.323.

Boot Manager

Please check the current active firmware version below, and select a different partition if required.
If a new partition is selected then a reboot system will be needed to activate that version.

Change Active Partition

○ Partition 1   SIP Version 08.00 for hardware type 11
               VEGA-6x4_R080S005a Aug 7 2006 09:23:31

○ Partition 2   H323 Version 08.00 for hardware type 11
               VEGA-6x4_R080H005 Aug 10 2006 09:04:28

Continue ...

> ➢ Ensure that the partition selected is the SIP partition, if it is not, then select it
> ➢ Press Continue ...

If the partition is changed then the Vega will automatically reboot; in this case you will need to log in again once the reboot is complete[2].

If the partition is not changed then the management page will be displayed.

---

[2] If the partition is changed, after the reboot perform a 'factory reset' before continuing configuration.
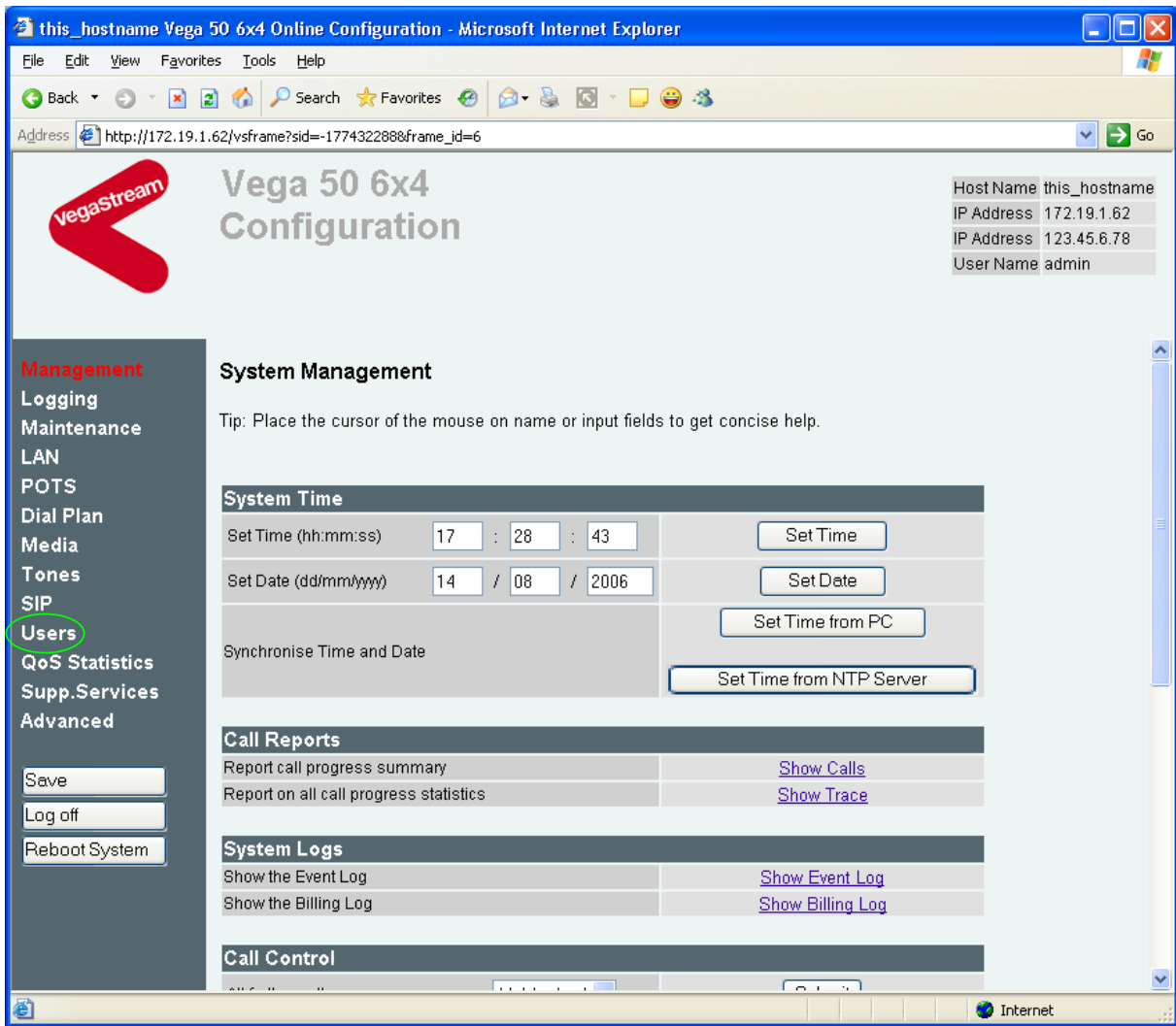
> ➢ On the left hand side menu select Users
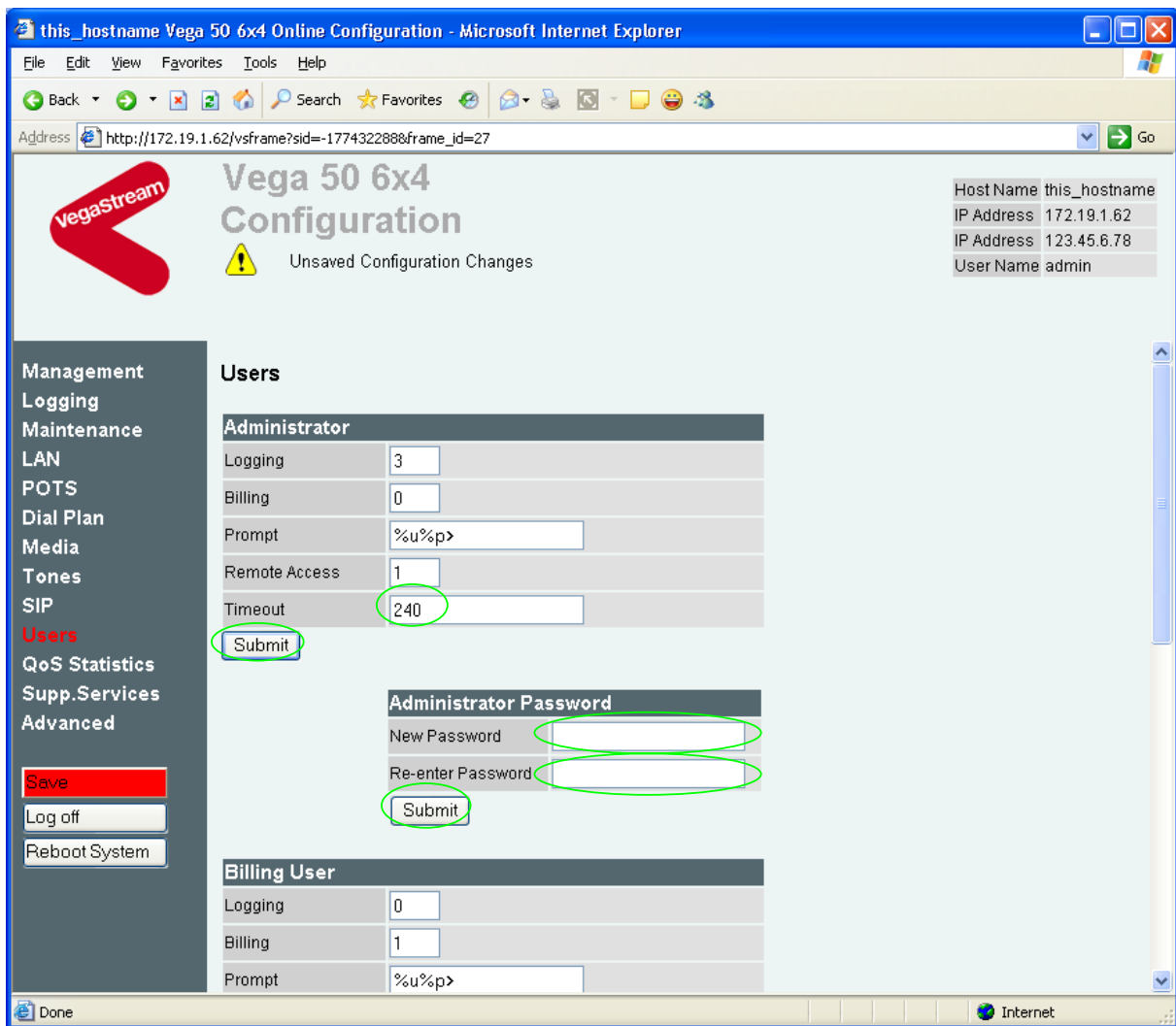
Recommended: Change the password
> ➢ enter New Password and Re-enter Password then
> ➢ select [Submit] and then click "here" to return

Optional: Change the timeout[3] – default is 240 seconds;
> this can be extend to 7200 seconds (2hrs)
> ➢ select [Submit] and then click "here" to return

---

[3] If the web browser interface is not used for this length of time the Vega will automatically log off the session. This change is only activated by logging out and back into the web browser session.

4. Check and configure LAN settings and Host name

➢ On the left hand side menu select LAN
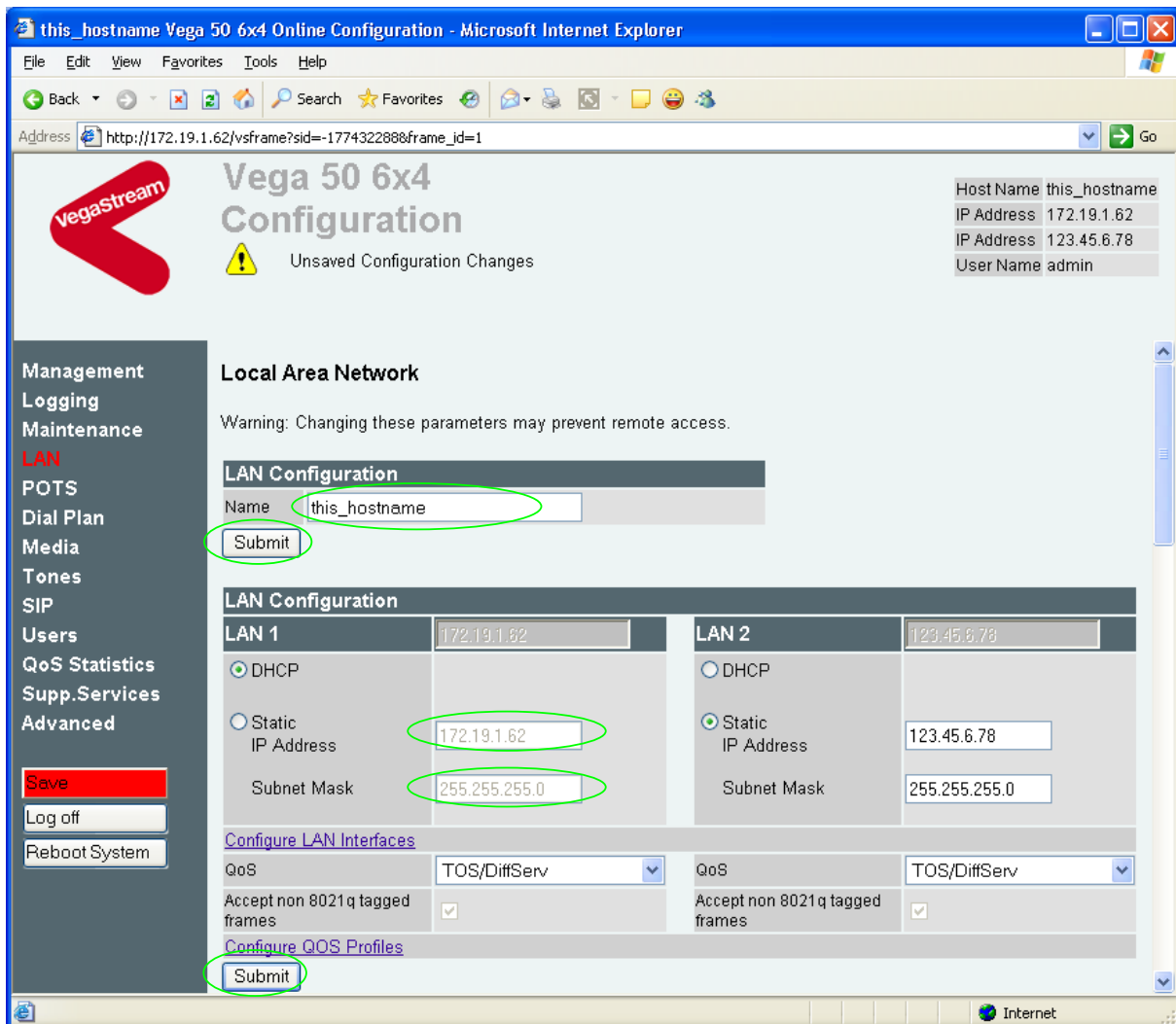
In this configuration scenario we are just going to use LAN interface 1, so in the next steps we will configure both calls and management traffic to be routed via LAN interface 1.

➢ If the Vega has a DNS name associated with its IP address, in the **LAN Configuration** section:

   set Name = <the DNS name of the Vega>

➢ select [Submit] and then click "here" to return

In the **LAN Configuration, LAN 1** section

Ensure that the IP address and subnet mask are configured correctly. With DHCP enabled the current values collected by DHCP are shown 'greyed out'

➢ If static configuration of the IP information is required select 'Static IP Address' and configure the values as required.

➢ If changed select [Submit] and then click "here" to return

In the **LAN Configuration, LAN 1** section

> Select Configure_LAN_Interfaces

LAN >LAN Interfaces

LAN Configuration				
LAN 1	172.19.1.51		**LAN 2**	0.0.0.0
Physical Layer			**Physical Layer**	
Enable Full Duplex	☐		Enable Full Duplex	☐
Enable 10baseT	☑		Enable 10baseT	☑
Enable 100baseTX	☑		Enable 100baseTX	☑

Submit

Recommended: In the **Physical Layer** section for **LAN 1**, leave ticked only 100baseTx or 10 baseT (not both) – whichever is appropriate

Optional: In the **Physical Layer** section, ticked 'Full Duplex' to allow the Vega to attempt to negotiate a full duplex LAN connection *(this gives increased bandwidth on the LAN link)*

> select [Submit] and then click "here" to return

If you are planning to use LAN interface 2 – check its configuration too.

⚠️

WARNING!

If both LAN interfaces, LAN 1 and LAN 2 are to be used, the interfaces must be on separate subnets.

Now continue configuring the other LAN parameters:

> On the left hand side menu select LAN
> Scroll down to the **Default LAN Gateway Address** section

Default LAN Gateway Address	172.19.1.10
⦿ DHCP From server on LAN interface	1-LAN1 ⌄
○ Static Address	172.19.1.10

Submit

> If DHCP is selected, the interface ID pull down defines the LAN interface (and hence the DHCP server) to get the gateway's IP address from – leave it as 1-LAN1
> If a static IP address is required configure it here, either as a DNS name, or a dotted decimal IP address.
> If changed, select [Submit] and then click "here" to return

➤ Scroll down to the **Calls** section

➤ Ensure that the LAN profile is 1-LAN_1
➤ If it needs changing, change it, then select [Submit] and then click "<u>here</u>" to return

➤ Scroll down to the **Ping, etc.** section

➤ Ensure that the LAN profile is 1-LAN_1
➤ If it needs changing, change it, then select [Submit] and then click "<u>here</u>" to return

Now scroll to the relevant sections on the page that need configuring:

DNS parameters
➤ Scroll to the **DNS Parameters** section and expand the box

DNS server IP addresses can be set up using both DHCP served DNS servers and also statically defined DNS Servers.

➢ Ensure that 'Use DNS Server defined by DHCP on Lan Interface' = 1-LAN 1

➢ If it needs changing, select [Submit] and then click "here" to return

Optional: If static DNS servers are to be defined,

➢ configure their IP addresses in the Static DNS Servers section

(Press [Add] if more than 3 static entries are required)

➢ Select [Submit] and then click "here" to return

The current list of DNS Server IPs to use can be found by clicking on the pull down tab on the greyed out DNS Server list combo box.

(Note, the DHCP supplied DNS server will be used in preference to statically defined servers, unless the DHCP defined server is also statically defined, when the static order will be used.)

Telnet, ssh, Web browser, https access parameters

➢ Scroll to the **Management Access** section and expand the box

➢ Set Telnet LAN Profile = 1-LAN_1
➢ Set Web Server LAN Profile = 1-LAN_1
➢ Select [Submit] and then click "here" to return

FTP and TFTP parameters
  ➢ Scroll to the **FTP/TFTP Parameters** section and expand the box

  ➢ Select the preferred (default) method for performing file transfers – typically use TFTP if
    you are on the same site as the Vega, or use FTP if you are of a different site
  ➢ Select [Submit] and then click "here" to return

To configure FTP:

  ➢ set up Static IP Address *(either as a DNS name or as a dotted decimal IP address)*
  ➢ select [Submit] and then click "here" to return

> ➢ Select Configure_FTP

LAN > FTP Parameters

FTP Parameters	
Login ⦿ Anonymous Login ◯ Username Login	
FTP Username Password	whatever ●●●●●●●●
FTP Ping Test	☑
FTP Timeout	20
FTP port	21
Abort Socket Before Closing	☐

Submit

Optional: If username login (rather than anonymous login) is required
> ➢ select 'Username Login'
> ➢ enter FTP username
> ➢ enter Password
> ➢ select [Submit] and then click "here" to return

To configure TFTP:

TFTP Parameters	
TFTP Server IP Address	172.19.1.53
⦿ DHCP From server on LAN interface	1-LAN 1
◯ Static Address	172.19.1.53
LAN Profile	1-LAN_1

Configure TFTP
Submit

Optional: If a static IP address is required
> ➢ select 'Static Address'
> ➢ set up Static IP Address *(either as a DNS name or as a dotted decimal IP address)*
> ➢ Ensure that the LAN profile is 1-LAN_1
> ➢ select [Submit] and then click "here" to return

NTP parameters

Set up NTP to get time updates for the real time clock – this keeps the clock accurate over long periods of time.

➢ Scroll to the **NTP Parameters** section and expand the box

▼NTP Parameters

NTP Server IP Address	0.0.0.0
DHCP From DHCP server on LAN interface	1-LAN 1 ▼
Static Address	0.0.0.0
LAN Profile	1-LAN_1 ▼

Configure NTP

Submit

Optional: If a static IP address is required
➢ select 'Static Address'
➢ set up Static IP Address *(either as a DNS name or as a dotted decimal IP address)*
➢ Ensure that the LAN profile is 1-LAN_1
➢ select Submit and then click "here" to return

➢ Select Configure NTP

LAN > NTP Parameters

NTP Parameters	
NTP Port	123
Poll Interval	0
Local Offset	0000

Submit

Optional: to set Vega to update its clock once per 24 hours and to have a time zone offset of -1hr
➢ set Poll interval = 2400
(format is HHMM)
➢ set Local Offset = -0100
(format is -HHMM or HHMM … time difference from UTC)
➢ select Submit and then click "here" to return

5. Configure the Dial Plan

Dial plans for the FXS ports are below; for dial plans to route local and emergency numbers to the FXO ports, see 14.3 "Configure Emergency numbers to route to the two FXO interfaces", and 14.4 "Configure local numbers to route to the two FXO interfaces".

Configure the dial plans for FXS interfaces
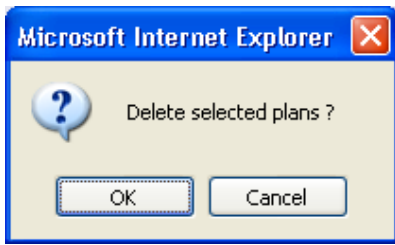 ➢ On the left hand side menu select Dial Plan

In the **Profiles** section:
  ➢ Tick the Del? Tick box against Profile ID 2,3,4
  ➢ Select Delete

> Select [OK]

Dial Planner

Del?	Profile ID	Enabled	Name	Plans	Chg?
☐	1	1	FXS_to_SIP	===>	Modify

Delete Add

In the **Profiles** section, Profile ID 1

> Select Modify

Dial Planner > Profile 1

Modify Profile

Profile ID	1
Enabled	☑
Name	FXS_to_SIP

Submit

Plans in this Profile

Del?	Plan ID	Name	Srce	Dest	Cost	Group	Chg?
☐	1	FXS_to_SIP	IF:01..,TEL:<.*>	IF:9901,TEL:<1>	0	0	Modify

Delete Add

> Set `Name = FXS_to_Proxy`
> select [Submit] and then click "here" to return

Dial Planner > Profile 1

Modify Profile

Profile ID	1
Enabled	☑
Name	FXS_to_Proxy

Submit

Plans in this Profile

| Del?	Plan ID	Name	Srce	Dest	Cost	Group	Chg?
☐	1	FXS_to_SIP	IF:01..,TEL:<.*>	IF:9901,TEL:<1>	0	0	Modify

Delete Add

In the **Plans in this Profile** section, Plan ID 1:

> Select Modify
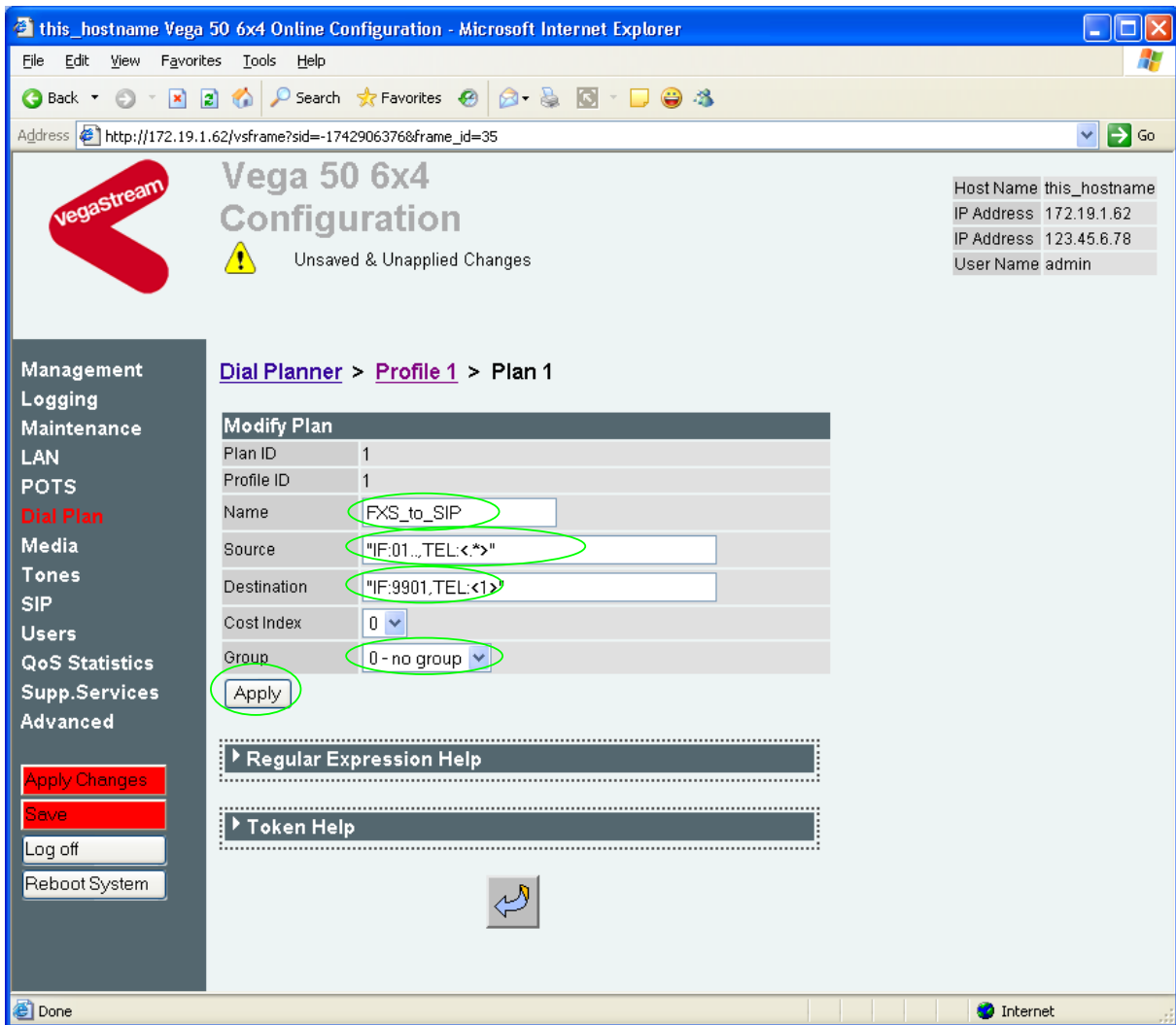
- ➢ Set Name = FXS_to_Proxy
- ➢ Set Source = IF:01..,TEL:<.*>   *(This takes a call from any of the FXS*
  interfaces and stores the telephone number
  dialled in store <1>)
- ➢ Set Destination = IF:9901,TEL:<1>   *(This routes the call to IF:9901 (the LAN) and*
  passes the received telephone number on as
  the destination telephone number)

- ➢ Set Group = 0 – no group
- ➢ select Apply and then click "here" to return

> On the left hand side menu select Dial Plan
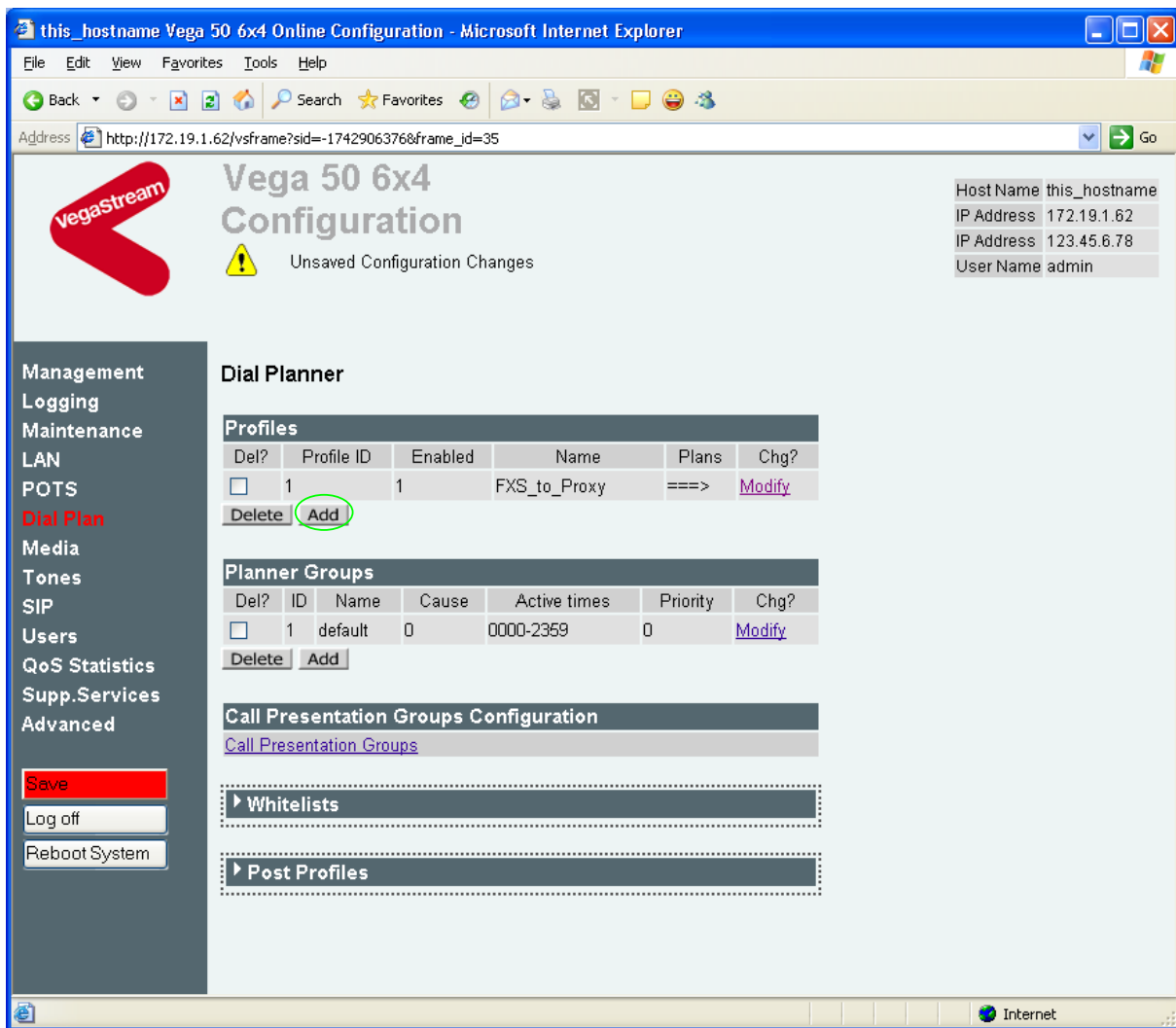
Now create a new profile and in it create a dial plan entry to handle calls being received inbound from the LAN:

In the **Profiles** section
> ➢ select [Add]

In a similar manner to configuring profile 1, configure profile 2

In the **Modify Profile** section
> ➢ set Name = Proxy_to_FXS
> ➢ select [Submit] and then click "here" to return

Modify the first plan for Profile 2:
> ➢ set Name = For_4xx
> ➢ set Source = IF:99..,TEL:4<..>   *(This dial plan handles calls from IF:99xx (LAN), made to telephone numbers 4xx; store the 2 digits received after the leading digit 4 in store <1>)*
> ➢ set Destination = IF:01<1>   *(As the last 2 digits of the extension numbers start at 01 and increase sequentially, and this matches the last 2 digits of the FXS port*

interface numbers, the digits stored in store <1> can be used as the offset into the FXS ports)

> ➢ select `Apply` and then click "<u>here</u>" to return

Note: The SIP Proxy registration will assign the correct numbers to present for each interface; when the Proxy presents a call to the Vega, the INVITE message starts something like:

`INVITE sip:403@172.19.1.51 SIP/2.0`

The digits preceding the @ (the telephone number field) must contain 4xx, the 3 digit extension number to ring.

For more details on the operation of the dial planner, including the various tokens that may be used, see the section "The Dial Planner" in the Vega Primer.

Standalone / non-proxy installations: Where a proxy is not used add a TA: token to dial plans that send calls to VoIP (i.e. to IF:9901), e.g. if the destination device is at IP address 192.168.1.54 then the dial plans above become:

Profile 1 plan 1 (change to 'Destination'):
> ➢ Set Name = `FXS_to_Proxy`
> ➢ Set Source = `IF:01..,TEL:<.*>`
> ➢ Set Destination = `IF:9901,TEL:<1>`***,TA:192.168.1.54***
> ➢ Set Group = `0 - no group`

Profile 2 plan 1 (no differences from above):
> ➢ set Name = `For_4xx`
> ➢ set Source = `IF:99..,TEL:4<..>`
> ➢ set Destination = `IF:01<1>`

6. Configure SIP Proxy parameters

Note: everything in this section, except the configuration of 'accept non proxy invites' should be skipped for __Standalone / non-proxy installations__

> ➢ On the left hand side menu select SIP

Optional: To allow devices other than the proxy to make calls directly through the Vega
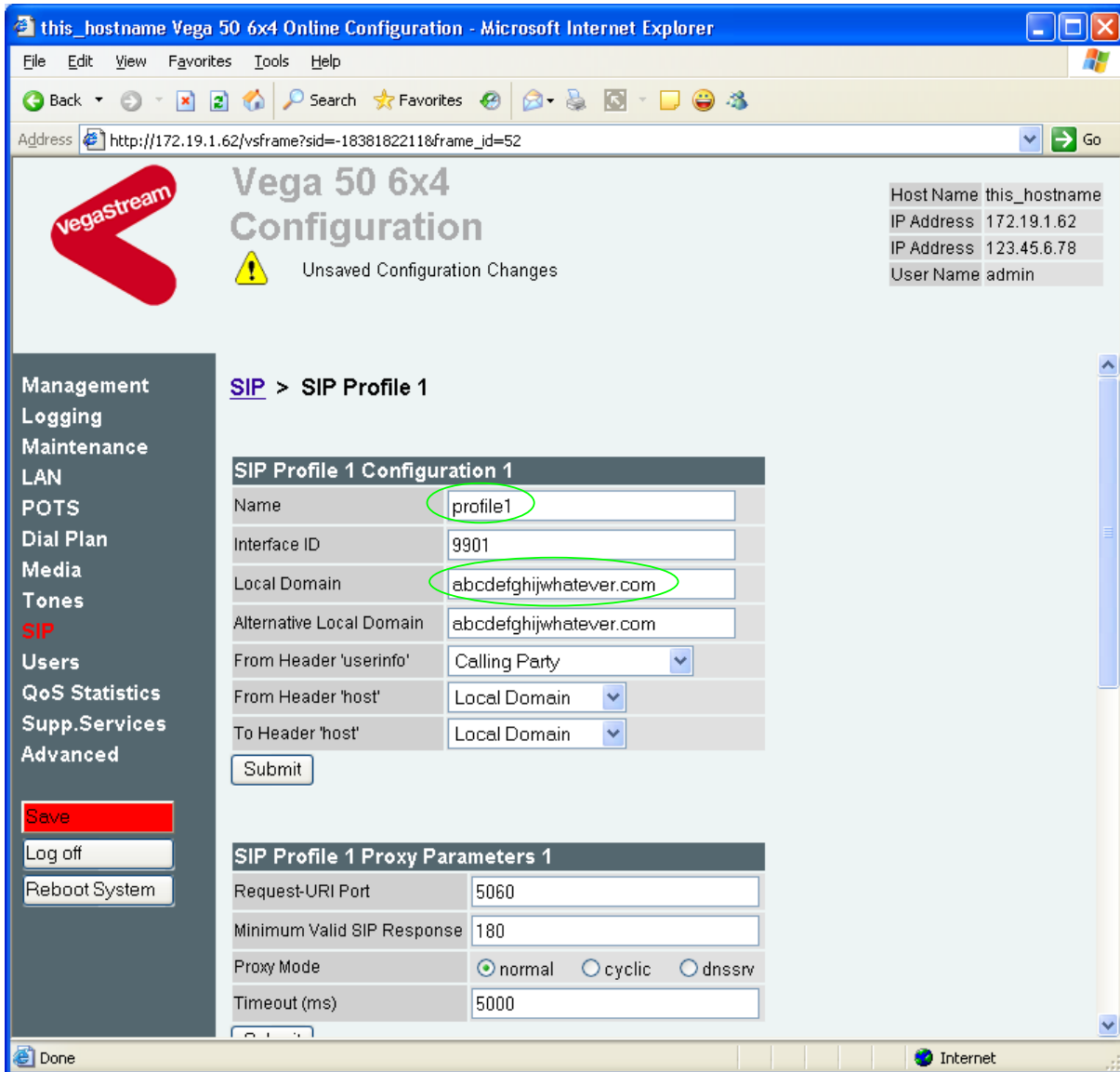
> ➢ tick `Accept Non-Proxy Invites`

If only the proxy is allowed to route SIP calls through the Vega ensure that this tick box is clear.

> ➢ select [Submit] and then click "here" to return

In the **SIP Profiles** section

> Select <u>Modify</u>

In the **SIP Profile 1 Configuration 1** section:
> set Name=MyProxy
> set Local Domain =   `Public_name_of_proxy_used_by_other_d`
                          `evices_to_send_their_INVITEs_to`
(this value is the "outside world's" name or IP address for the proxy)

> scroll down to the **SIP Profile 1 Proxy Parameters 1** section

SIP Profile 1 Proxy Parameters 1

Request-URI Port	5060
Minimum Valid SIP Response	180
Proxy Mode	⊙ normal ○ cyclic ○ dnssrv
Timeout (ms)	5000

Submit

SIP Proxy	Enable	IP/DNS Name	Port	Chg?
1	0	0.0.0.0	5060	Modify

Add Delete

➢ Select Modify

SIP > SIP Profile 1 > Proxy 1

SIP Proxy 1

Enable	☐
IP/DNS Name	0.0.0.0
Port	5060

Submit

In the **SIP Proxy 1** section:
➢ Tick Enable
➢ set IP/DNS Name =   `IP_address_of_SIP_proxy, or`
                                        `DNS_hostname_of_the_SIP_Proxy`

➢ select Submit and then click "here" to return

7. Configure Audio parameters

The availability and priority of codecs offered and accepted by the Vega 50 6x4 is defined by Media Capability Sets.

> ➢ On the left hand side menu select <u>Media</u>

*The different codecs and their indices are specified in the **Media Capability** section.*

Check that either capability set 1 or capability set 2 has the desired codecs defined and that they are defined in the preferred order of use. (The Vega will use the first codec in the list that it can negotiate.)

If not, in the **Media Capability Sets** section, in Capability Set 2:

> ➢ Select   Modify

In the **Capability Set 2** section, in Capability Indices
- ➢ List the codec indices in the required order (comma separated)

- ➢ select [Submit] and then click "here" to return

- ➢ On the left hand side menu select SIP

In the **Media** section
> ➢ Check that Capability Set = 2 (if capability set 2 contains the preferred list, or select the capability set required)
> ➢ select Submit and then click "here" to return

8. Configure Authentication

Note: everything in this section should be skipped for **_Standalone / non-proxy installations_**

In some systems – to ensure that only authorised devices are allowed to set up and clear calls – SIP authentication is used. If authentication is used, it is typically required on the SIP REGISTRATION, INVITE, ACK and BYE messages.

For authentication, a user-name, and a password can be configured.

The values for user-name and password entered here must match the values that have been configured as the authorisation user and password in the proxy.

For example, to set up authentication using
- username 'User_xxx' and
- password 'Pass_xxx'
  (where xxx is the extension number):

➤ On the left hand side menu select SIP
➤ Scroll down to the **SIP Authentication Configuration** section

➤ Select SIP_Authentication

By default, Authentication entries are set up but disabled for each analogue interface. User 1 is designed to be used for the first analogue port, use 2 for the second, etc.

In the **SIP Authentication Users** section, against the desired User

> ➢ Select Modify

e.g. for User 1

SIP > Authentication > User

Modify SIP Authentication User

SIP Authentication User 1

Enable	☐
Sip Profile	1 - profile1 ▾
Username	01
Password	user01
Subscriber	IF:0101

Submit

> ➢ Tick `Enable`
> ➢ Set `Username = User_401`
> ➢ Set `Password = Pass_401`
> ➢ Check `Subscriber = IF:0101`
>
> ➢ select Submit and then click "here" to return

Repeat the configuration for all required Authentication users.
e.g.

User	Enable	Username	Password	Subscriber
user 2	✓	User_402	Pass_401	IF:0102
user 3	✓	User_403	Pass_403	IF:0103
… etc				

(If authentication is required for calls from the FXO ports, remember that the FXO ports' port numbering starts at IF:0201.)

9. Configure Registration

*Note: everything in this section should be skipped for **Standalone / non-proxy installations***

FXS gateways are normally configured to register each FXS port individually. Each FXS port is therefore effectively handled as a separate endpoint. Registration provides the SIP proxy with two main pieces of information:
- "address" – the public address of the Vega port (the URL which other SIP endpoints will use to make calls to this port)
- "contact" – the URL which the proxy will use to forward the call to the relevant port (interface) on the Vega

When a SIP call request is sent to the SIP proxy, the SIP proxy receives the call addressed to the public address, it then performs a translation from the public address to the contact address, and uses the contact details to present the call to the Vega.

The Registration format is:
> --- address:
> ```
> Public_Address@Registration_Domain
> ```
> --- contact:
> ```
> <sip:Dn@Host_Name_or_IP_address_of_Vega>
> ```

In the Vega, `Public_Address` is made up of the registration user `Username_prefix`, `Username`, and `Username_suffix`

Other values needed for registration include:
- `Local Domain (Registration_Domain)`   … already configured in section 6 'Configure SIP Proxy parameters'
- `Dn`   … configured in registration section
- `Host_Name_or_IP_address_of_Vega`   … set up by DHCP or in section 4 'Check and configure LAN settings and Host name'

Registration message format:
> --- address:
> ```
> Username_prefixUsernameUsername_suffix@Registration_Domain
> ```
> --- contact:
> ```
> <sip:Dn@Host_Name_or_IP_address_of_Vega>
> ```

e.g. to set up registration so that the Vega registers:
> FXS Port 1
> --- address:
> ```
> 1344784401@Registration_Domain
> ```
> --- contact:
> ```
> <sip:401@Host_Name_or_IP_address_of_Vega>
> ```
> etc.

> ➢ On the left hand side menu select <u>SIP</u>

> ➢ In the **SIP Profiles** section

> ➢ Select Modify

> ➢ Scroll down to the bottom to the **SIP Profile 1 Registration Parameters 1** section

SIP Profile 1 Registration Parameters 1

Registration Request-URI Port	5060
Registration Expiry Time (ms)	600
Max Number of Registrars	3
Minimum Valid SIP Response	200
Registration Mode	⦿ normal ○ dnssrv
Timeout (ms)	5000

Submit

SIP Registrar	Enable	IP/DNS Name	Port	Chg?
1	0	0.0.0.0	5060	Modify

Add   Delete

> Select Modify

SIP > SIP Profile 1 > Registrar 1

SIP Registrar 1

Enable	☐
IP/DNS Name	0.0.0.0
Port	5060

Submit

> Tick Enable
> Set IP/DNS Name =   `IP_or_DNS_name_of_SIP_registrar_or_machine`
>   `proxying_for_the_registrar`

> select   Submit   and then click "here" to return

> On the left hand side menu select SIP
> Scroll down to the **Registration** section

In the **SIP Registration Users Configuration** section
> ➢ Select SIP Registration Users

SIP > Registration

Del?	User	Enable	Sip Profile	Dn	Username	Authentication User Index	Chg?
☐	1	0	1 - profile1	01	01	1 - User_401	Modify
☐	2	0	1 - profile1	02	02	2 - User_402	Modify
☐	3	0	1 - profile1	03	03	3 - User_403	Modify
☐	4	0	1 - profile1	04	04	4 - User_404	Modify
☐	5	0	1 - profile1	05	05	5 - 05	Modify
☐	6	0	1 - profile1	06	06	6 - 06	Modify

Add   Delete

By default, Registration entries are set up but disabled for each analogue interface. User 1 is designed to be used for the first analogue port, user 2 for the second, etc.

For User 1

> Select Modify

In the **Modify SIP Registration User** section, under **SIP Registration User 1**

➢ Tick `Enable`
➢ Ensure that the correct Sip Profile is selected
➢ Set `Dn = 401`

The value of Dn configures the 'contact information in the SIP Registration message

➢ Set `Username = 1344784401`

The value of Username configures the 'public address' information in the SIP Registration message

If Authentication will be needed for Registration

➢ Check `Authentication User Index = 1-User_401`
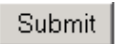
➢ Select `Submit` and then click "here" to return

Recommended: Configure the Vega to reject calls with cause code 38 if registration fails (this allows calls to be re-presented in the dial plan immediately, rather than having to wait for the SIP timeouts to find that the SIP proxy is not available to handle the INVITE)

On the left hand side menu select Advanced, and scroll to the CLI Command section:

CLI Command

Enter
> `set _advanced.sip.invite.registered=1`

> Select Submit and then close the CLI command window

Repeat the configuration for all required Registration users.
e.g.

User	Dn	Enable	Username	Authentication User Index
user 2	402	✓	1344784402	2 - User_402
user 3	403	✓	1344784403	3 - User_403
… etc				

10. Configure POTS parameters

FXS ports can be configured with telephone numbers so that they present the correct caller ID when calls are made from them.

Two FXO ports are available for powerfail fallback; the first two FXS ports are connected to these two FXO ports when the Vega is not powered or when the Vega is performing an upgrade.

No configuration is required to use these ports as fallback ports. If routing of calls to these ports is required, then see the FXO version of the Vega 50 6x4 initial configuration guide.

Configuring caller ID on FXS ports

➢ On the left hand side menu select POTS

POTS Configuration

Port Configuration

Port ID	Enabled	FXS	Caller ID	Call Waiting	Layer 1	Tx Gain	Hardware profile	Interfaces	Chg?
1	1	1	off	on	g711Alaw64k	0	1	===>	Modify
2	1	1	off	on	g711Alaw64k	0	1	===>	Modify
3	1	1	off	on	g711Alaw64k	0	1	===>	Modify
4	1	1	off	on	g711Alaw64k	0	1	===>	Modify
5	1	0	off	off	g711Alaw64k	0	1	===>	Modify
6	1	0	off	off	g711Alaw64k	0	1	===>	Modify

POTS Interface Profiles
POTS Interface Profiles

Advanced POTS Configuration
Advanced POTS

In the **Port Configuration** section, for Port ID 1

➢ Select Modify

POTS > Port 1

Modify Port

Port ID	1
Enable	☑
Layer1	g711Alaw64k ▾
Caller ID	off ▾
Call Waiting	on ▾
FXS	1
TX Gain	0 ▾
Hardware Profile	1

[Submit]

Interface Configuration

Port Index	Interface Profile	Interface ID	DN	Ring Index	Username	Usernumber	Chg?
1	1	0101	0101	2	port1	01	Modify

In the **Interface Configuration** section

> ➢ Select   Modify

POTS > Port 1 > Interface 1

Modify Interface

Port Index	1
Interface Profile	1
Interface ID	0101
Ring index	2
dn	0101
Username	port1
Usernumber	01

[Submit]

POTS Interface Profiles

Profile ID	Caller ID type	Caller ID wait	DTMF dial digit	DTMF dial timeout	Line busy cause
1	off	6000	#	5	17
2	off	6000	#	5	34

In the **Modify Interface** section
> ➢ Set the numeric part of the Caller ID in dn
> ➢ Set the textual part of the Caller ID in Username

If a space is required in the username, enclose the whole username in quotes, e.g. "Steve Hight"

> ➢ select   Submit   and then click "here" to return

Repeat for all other FXS ports.

If FXO ports are being used, see the POTS configuration section of the 'Vega 50 6x4 FXO' initial configuration guide for details of the configuration necessary for these ports.
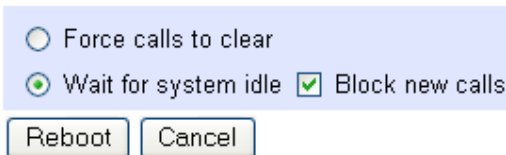
11. Save Changes

The changes to the configuration must be saved and activated. This is carried out as follows:

➢ On the left hand side menu select <u>Save</u>
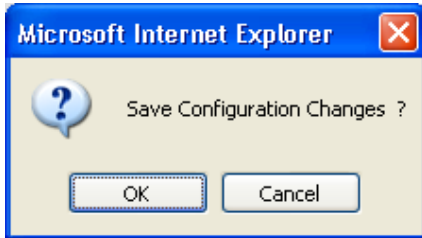
➢ Select [OK] and after the configuration has been saved click "<u>here</u>" to return

➢ On the left hand side menu select [Reboot System]

Reboot

➢ select [Reboot]

The Vega will reboot and once back on-line, it will be ready to take its first call.

12. Archive Vega Configuration

Once configured it is recommended that the configuration is archived to an external server.

To do this check that the tftp address is configured to point to a tftp server (in the LAN page), then on the left hand side menu select Advanced, and scroll to the **CLI Command** section:

CLI Command

[   ] Submit

 > in the text entry box type "`PUT tftp:initial_cfg.txt`". Select Submit .

This will send all the configuration parameters to the tftp server and save them as the file "`initial_cfg.txt`". (Note: you may want to choose a unique name rather than "`initial_cfg.txt`", especially if you are configuring more than 1 unit).

The Vega configuration can be archived to an ftp server instead of a tftp server by configuring the ftp server address in the LAN page and then typing the CLI command "`PUT FTP:initial_cfg.txt`". (Again a unique name can be used in place of "`initial_cfg.txt`")

13. Technical Support

Support information can be found on the VegaStream Support web site www.VegaAssist.com

If you require help from VegaStream support personnel, please use the serial interface or telnet into the unit, log in and then type:

> ➢   `show support`
> ➢   `sip monitor on`
> ➢   `log display on`

Carry out the interaction you want explained, then copy the information provided by the Vega and e-mail it to support@VegaStream.com together with your question.

Notes:

1. If the screens do not appear as indicated, check that Java is enabled on your web browser (Tools>internet options>Security, select internet and custom level and configure Microsoft VM Java permissions and Scripting parameters as indicated below.
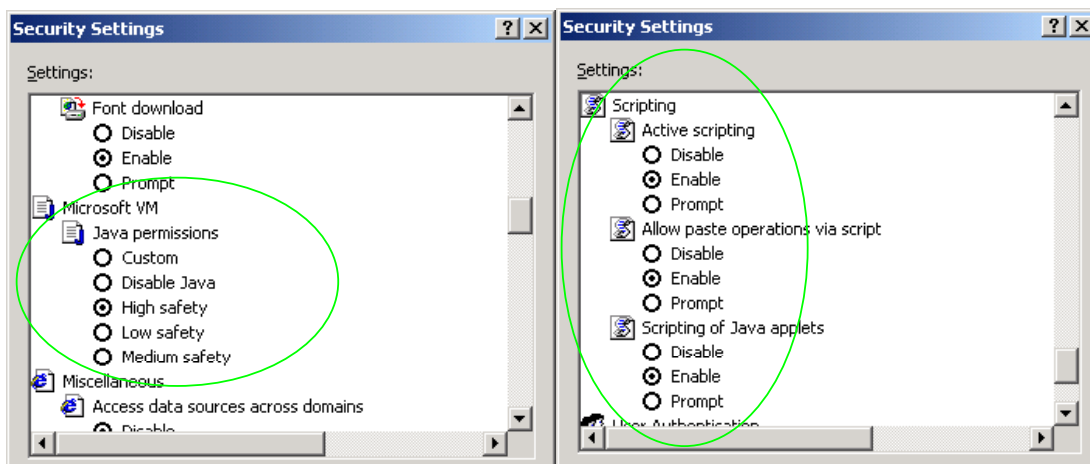
2. Where there are multiple sections – each with a Submit button – entries must be made to one section at a time, and those entries confirmed by the Submit button before the next section is altered. Each Submit button only confirms entries for its own section. Any changes in other sections will be discarded when the Submit is pressed.

3. Loss of audio mid call – consider reducing the selection of available codecs (see section 6). Some equipment, when presented with multiple codecs, may try and switch codec mid-call. Vegas do not support changing codec type mid-call.

4. Mismatched audio codecs. Use SIP monitor on to identify this. If the codecs of the endpoints are mismatched this will be reported as error 606 "No matching media". To rectify, enable the appropriate audio codec (see section 6).

5. Outbound calls from the Vega send the INVITE to "Default Proxy Host Name/IP" with the request line: "INVITE sip: <dest TEL:>@Default Proxy Host Name/IP".

14. Advanced configuration

Vega 50 6x4 units have further configurable parameters that may be desirable to configure in order to fully integrate them into the attached infrastructure.

14.1 Hook-flash, call hold and transfer

See IN_27 FXS Call Transfer for details on configuration and operation.

14.2 Country specific ring tones

See IN_16 Progress Tones and IN_29 Country Tones for details on configuration.

14.3 Configure Emergency numbers to route to the two FXO interfaces

In many cases it is preferable to route emergency calls to the local FXO interfaces rather than via the SIP Proxy. The configuration below will:
- Route 999 and 112 to FXO interface 0202 – the dial plan will be tagged as 'priority' so as to clear any existing call to a local number already in progress on 0202.

Set up dial plan planner group 2 to be the 'priority call' group
Set up dial plans for 999 and 112

➢ On the left hand side menu select Dial Plan

In the **Planner Groups** section

> ➢ Select [Add]

In the **Planner Groups** section, Planner Group ID 2

> ➢ Select [Modify]

Dial Planner > Planner Group 2

Modify Group

Group ID	2
Name	default
Cause	0
Active Times	0000-2359
Priority	☐

Submit

In the **Modify Group** section
  ➢ Set Name = Emergency_Priority
  ➢ Tick the Priority tick box

  ➢ select Submit and then click "here" to return

  ➢ On the left hand side menu select Dial Plan

For use with Vega 50 6x4 FXS ports – SIP version R080S012 or greater.   © 2006 VegaStream Ltd.

In the **Profiles** section

> Select **Add**

Dial Planner

Profiles					
Del?	Profile ID	Enabled	Name	Plans	Chg?
☐	1	1	FXS_to_Proxy	===>	Modify
☐	2	1	Proxy_to_FXS	===>	Modify
☐	3	1	new_profile	===>	Modify

Delete   Add

In the **Profiles** section, Profile ID 3

> Select **Modify**

Dial Planner > Profile 3

Modify Profile	
Profile ID	3
Enabled	☑
Name	new_profile

Submit

Plans in this Profile							
Del?	Plan ID	Name	Srce	Dest	Cost	Group	Chg?
☐	1	new_plan	TEL:<....><.*>	IF:<1>,TEL:<2>	0	0	Modify

Delete   Add

In the **Modify Profile** section

> Set Name = FXS_Emergency_Calls
> select **Submit** and then click "here" to return

In the **Plans in this Profile** section

> Select **Modify**

Dial Planner > Profile 3 > Plan 1

Modify Plan	
Plan ID	1
Profile ID	3
Name	new_plan
Source	"TEL:<....><.*>"
Destination	"IF:<1>,TEL:<2>"
Cost Index	0
Group	0 - no group

Apply

0 - no group
1 - default
2 - Emergency_Priority

In the **Modify Plan** section
> ➢ Set Name = 999_Call
> ➢ Set Source = IF:01..,TEL:<999>
> ➢ Set Destination = IF:0202,TEL:<1>
> ➢ Set Cost Index = 1
> ➢ Set group = 2 – Emergency_Priority
> ➢ select ⬚Apply⬚ and then click "here" to return

Add a new plan to this profile (profile 3), the configure as follows:

In the **Modify Plan** section
> ➢ Set Name = 112_Call
> ➢ Set Source = IF:01..,TEL:<112>
> ➢ Set Destination = IF:0202,TEL:<1>
> ➢ Set Cost Index = 1
> ➢ Set group = 2 – Emergency_Priority
> ➢ select ⬚Apply⬚ and then click "here" to return

The result should be as follows:

Dial Planner > Profile 3

Modify Profile	
Profile ID	3
Enabled	☑
Name	FXS_Emergency_Calls

Submit

Plans in this Profile							
Del?	Plan ID	Name	Srce	Dest	Cost	Group	Chg?
☐	1	999_Call	IF:01..,TEL:<999>	IF:0202,TEL:<1>	1	2	Modify
☐	2	112_Call	IF:01..,TEL:<112>	IF:0202,TEL:<1>	1	2	Modify

Delete   Add

Remember to Save the changes.

## 14.4 Configure local numbers to route to the two FXO interfaces

In many cases it is preferable to route local calls to the FXO interfaces rather than via the SIP Proxy. The configuration below will:
• Route calls prefixed by 1344 to FXO interface 0201, or if that is busy to 0202

Set up Call Presentation Group to send calls to interfaces 0201 and 0202
Set up dial plan to route calls where the telephone number prefix is '1344' to the Call Presentation Group virtual interface.

> ➢ On the left hand side menu select Dial Plan
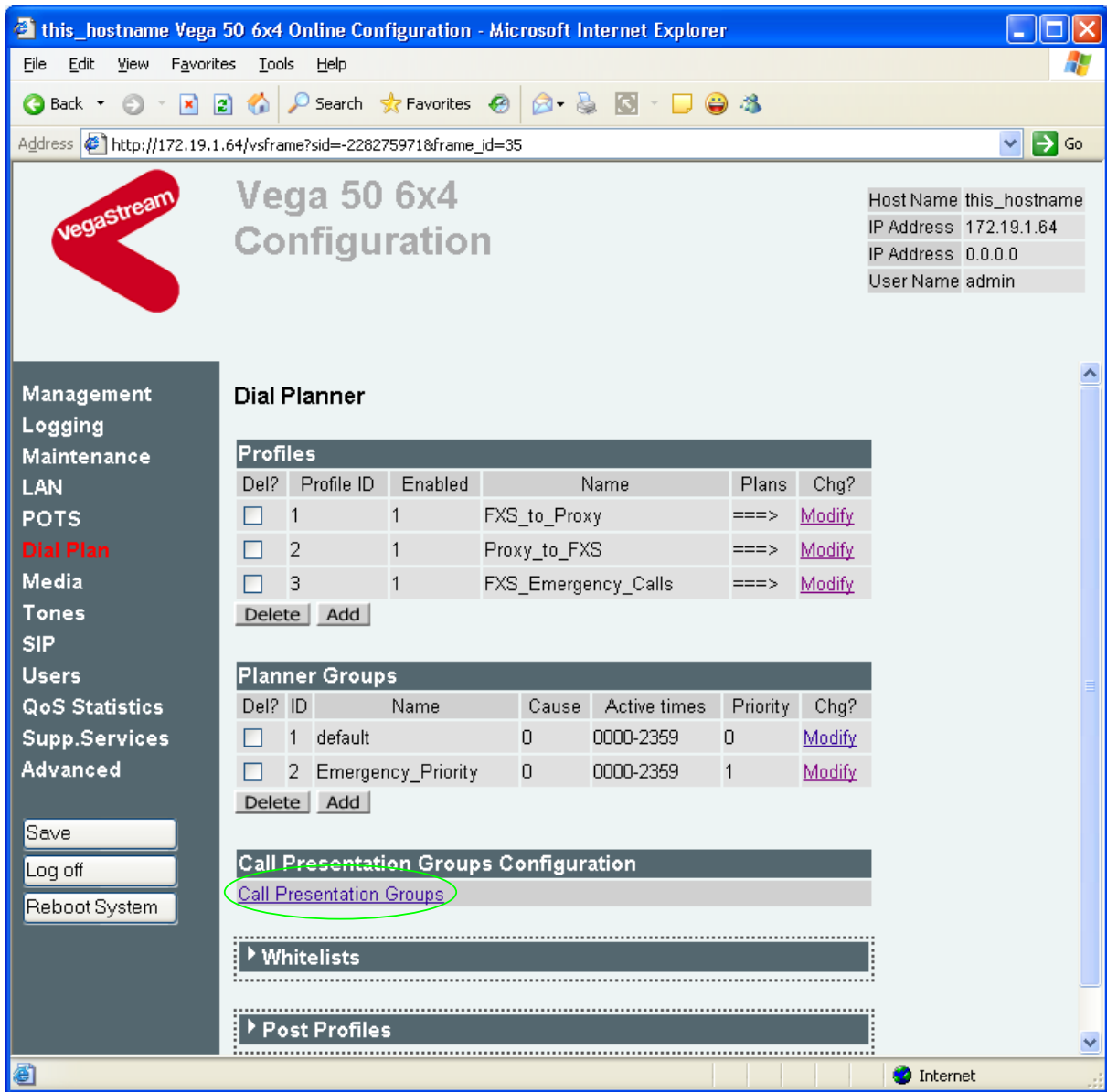
In the **Call Presentation Groups Configuration** section
> ➢ Select Call Presentation Groups

In the **Call Presentation Groups** section
> ➢ Select Modify

In the **Call Presentation Group 1** section
- ➢ Set Name = Local_Calling_Hunt
- ➢ Tick Enable
- ➢ Set Sequence Mode = Linear_up
- ➢ Set Max Destination Attempts = 2
- ➢ Set Cause = 34
- ➢ Set Destinations = IF:0201|IF:0202
- ➢ select Submit and then click "here" to return

- ➢ On the left hand side menu select Dial Plan

In the **Profiles** section
- ➢ Select Add

In the **Profiles** section, Profile ID 4

- ➢ Select Modify
- ➢ Set Name = Local_calls_to_FXO
- ➢ select Submit and then click "here" to return

Dial Planner > Profile 4 > Plan 1

Modify Plan	
Plan ID	1
Profile ID	4
Name	new_plan
Source	"TEL:<...><.*>"
Destination	"IF:<1>,TEL:<2>"
Cost Index	0
Group	0 - no group

Apply

In the **Modify Plan** section
> Set Name = 1344_to_local_hunt
> Set Source = IF:01..,TEL:<1344.*>
> Set Destination = IF:1001,TEL:<1>

> select Apply and then click "here" to return

Remember to Save the changes.

Further details on Vega parameters and configuration may be found in the Vega Primer and other documents available on www.VegaAssist.com.