

Initial configuration

Vega 100 T1 (H.323)

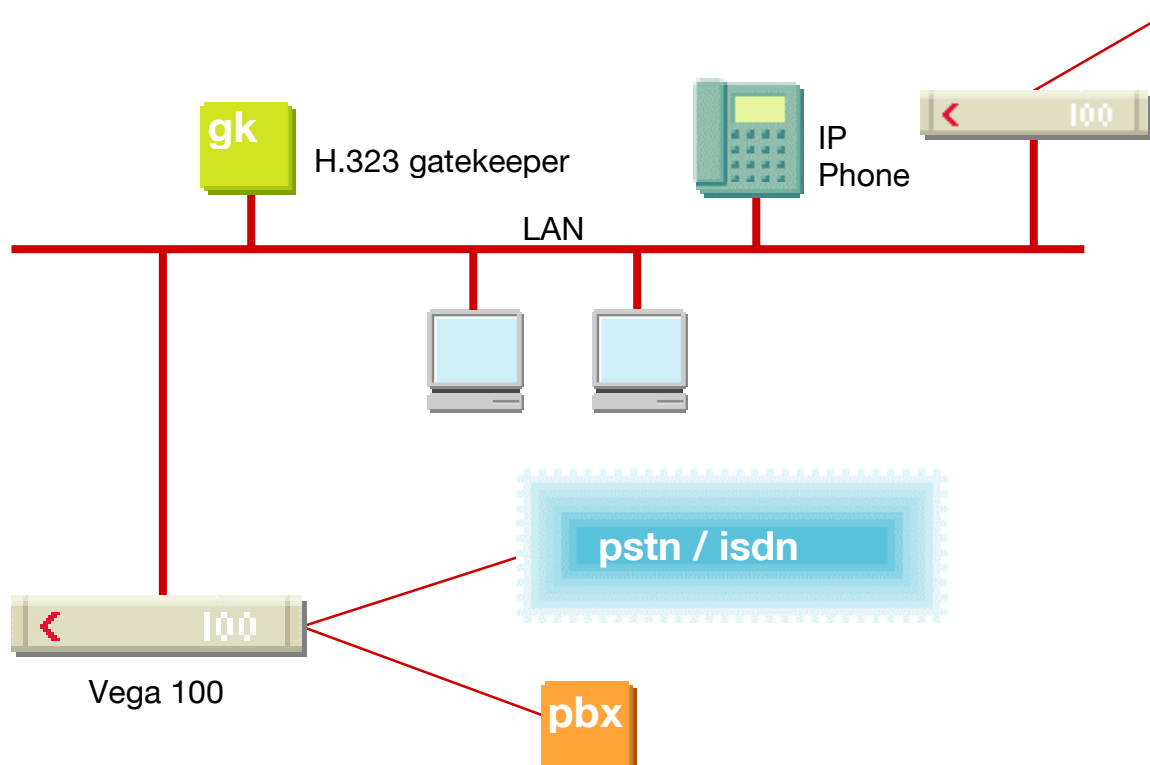
Gatekeeper mode – R5.1



This document describes how to configure the Vega 100 T1 H.323 unit 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 100 to be a transparent trunking gateway allowing a gatekeeper to deliver calls to, and receive calls from both a PBX and the PSTN.

- Calls made from the PBX or PSTN to the Vega will be forwarded using the gatekeeper. The telephone number passed to the Vega will be forwarded unchanged to the gatekeeper.
- Calls made from the gatekeeper to the Vega will be forwarded to the PSTN or to the PBX based on the leading two digits of the telephone number passed. A leading 01 will cause the call to be routed to the PSTN, and a leading 02 will cause the call to be routed to the PBX. The digits following the 01 or 02 will be passed as the dialed digits.



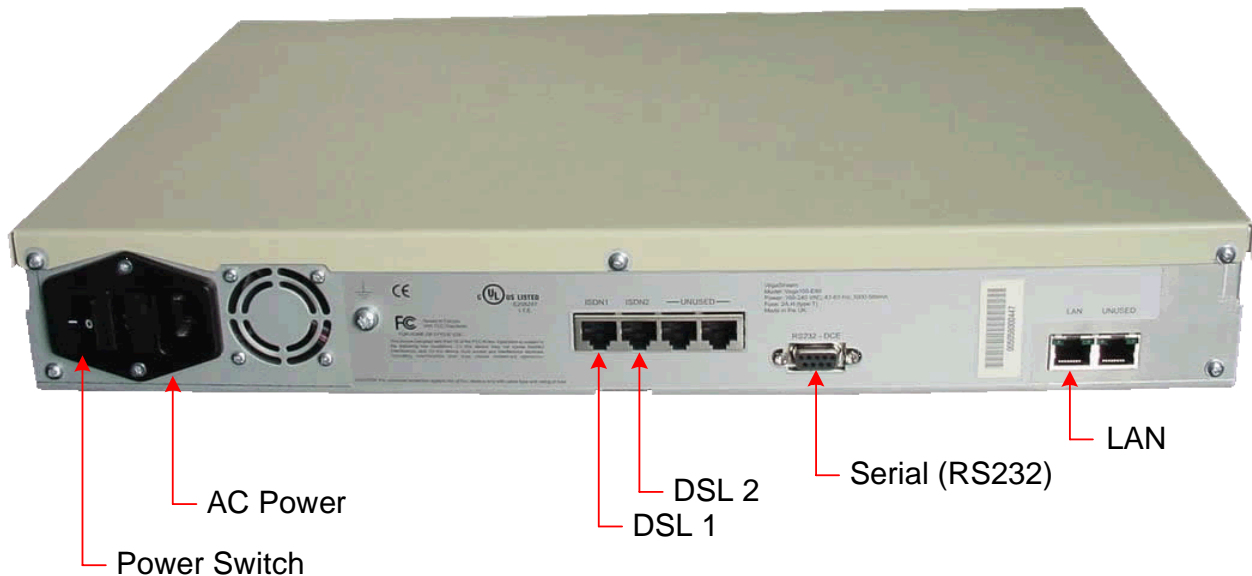
The configuration process is broken down into 11 stages as follows:

- 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 Select Gatekeeper mode
- 6 Configure the Dial Plan
- 7 Configure audio parameters
- 8 Configure DSLs
- 9 Configure pointer to CD ROM documentation
- 10 Save Changes
- 11 Archive Vega Configuration

Please also see:

- 12 Technical Support
- 13 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 connect the LAN port on the Vega [5] 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.

Telephony:

Connection to a PBX - If you are connecting the Vega 100 to a PBX, the Vega 100 acts as the NeTwork equipment and a red-booted cable must be used.

For each trunk that is to be connected to the PBX, insert one end of a red booted cable into one of the Vega 100 DSL sockets [DSL 1 or DSL 2] and the other end to the PBX.

Connection to the PSTN - If you are connecting the Vega 100 directly to the public telephone network it acts as the Terminal Equipment and the blue-booted cable must be used.

For each trunk that is to be connected to the PSTN, insert one end of a blue booted cable to one of the Vega 100 DSL sockets [DSL1 or DSL2] and the other end to the PSTN terminating box.

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.

The LAN LEDs will also illuminate indicating 10 (baseT) or 100 (baseTx) connection, and the FDX LED will illuminate if Full Duplex mode has been negotiated.

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 [3](#).

If DHCP is not 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 a 9 way male to female straight through 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

To display the current IP address, type:

```
> show lan.ip
```

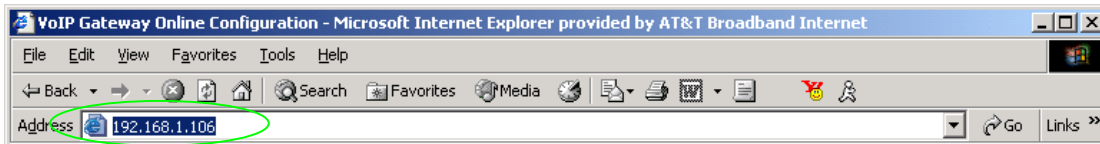
If this is not the IP address required, it can be overridden, together with other LAN parameters by typing:

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

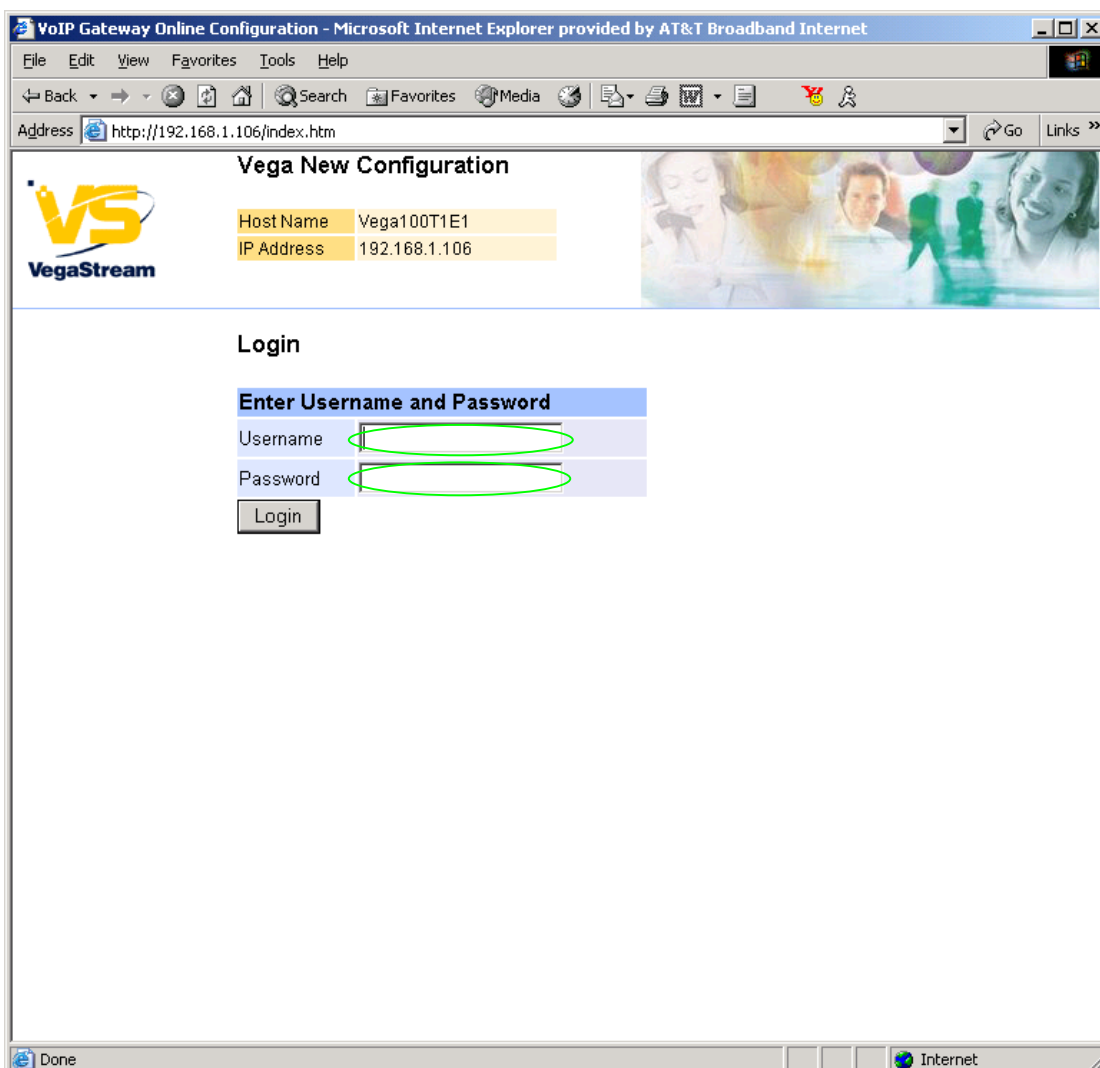
3. Configure password and login timeout

Now configuration will be carried out via a web browser.

- Enter the IP address of the Vega into the “Address” field of your web browser.

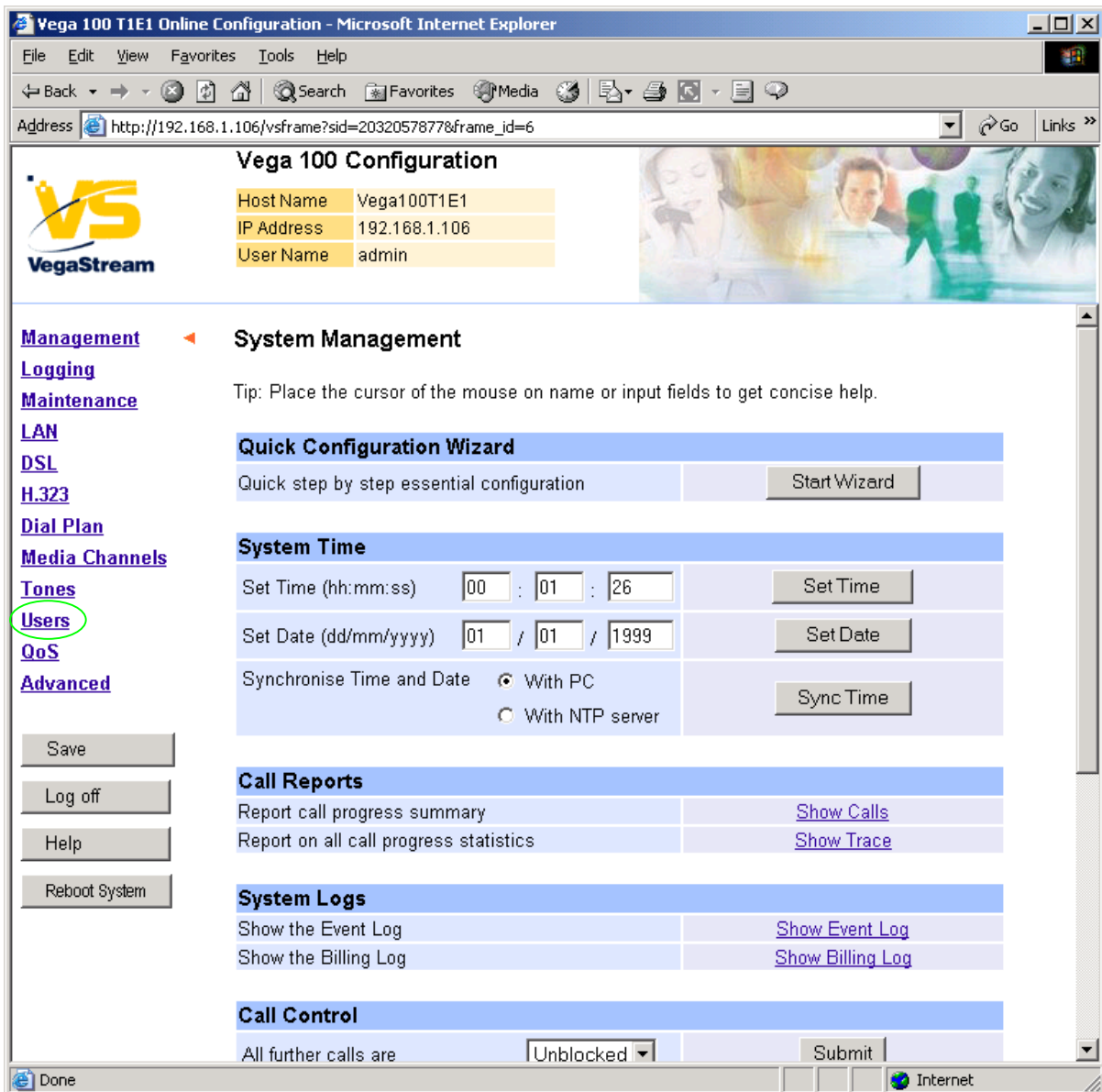


You will then be presented with the login page:

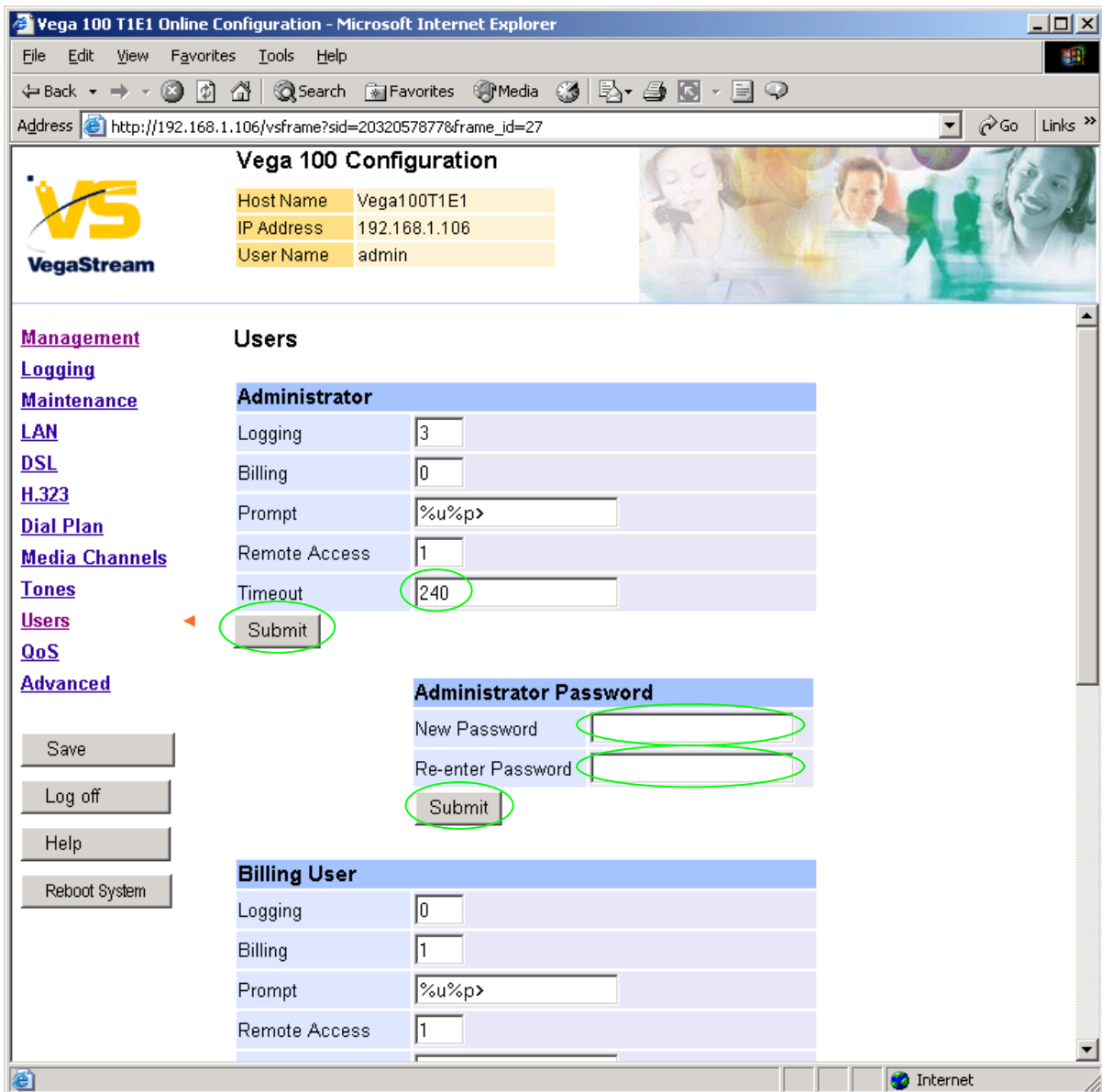


Enter the default Username and Password

- Username: admin
- Password: admin
- Select



- 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 timeout¹ – default is 240 seconds; can extend to 7200 seconds (2hrs)

- select **Submit** and then click "[here](#)" to return

¹ If the web 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 browser session.

4. Check and configure LAN settings and Host name

➤ On the left hand side menu select [LAN](#)

Vega 100 Configuration

Host Name	Vega100T1E1
IP Address	192.168.1.106
User Name	admin

⚠ Unsaved Configuration Changes

Local Area Network (changed)

Warning: Changing these parameters may prevent remote access.

Current Mode: Standard Ethernet Mode

Change to VLAN (8021q) Ethernet mode | VLAN Mode

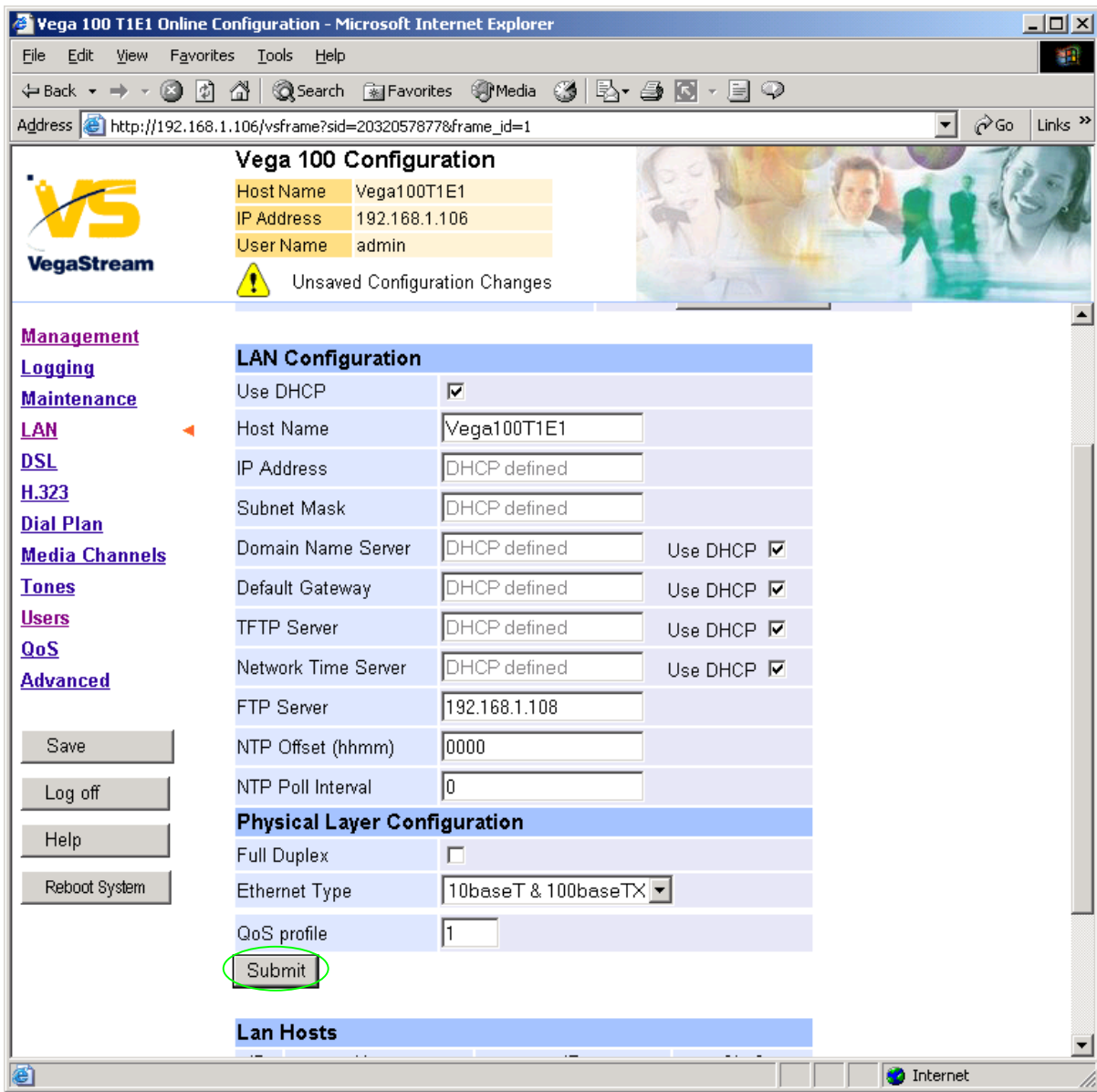
LAN Configuration

Use DHCP	<input checked="" type="checkbox"/>	
Host Name	Vega100T1E1	
IP Address	DHCP defined	
Subnet Mask	DHCP defined	
Domain Name Server	DHCP defined	Use DHCP <input checked="" type="checkbox"/>
Default Gateway	DHCP defined	Use DHCP <input checked="" type="checkbox"/>
TFTP Server	DHCP defined	Use DHCP <input checked="" type="checkbox"/>
Network Time Server	DHCP defined	Use DHCP <input checked="" type="checkbox"/>
FTP Server	192.168.1.108	
NTP Offset (hhmm)	0000	
NTP Poll Interval	0	

Physical Layer Configuration

Full Duplex	<input type="checkbox"/>
-------------	--------------------------

➤ Scroll down to see the whole of the **LAN Configuration** section



Optional: If there are any LAN values that need to be set up (e.g. NTP server or tftp server) set them up now, then

➤ Select **Submit** and then click "[here](#)" to return

5. Select Gatekeeper mode

➤ On the left hand side menu select [H.323](#)

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

Unsaved Configuration Changes

Management
Logging
Maintenance
LAN
DSL
H.323
Dial Plan
Media Channels
Tones
Users
QoS
Advanced

Save
Log off
Help
Reboot System

H.323

Current Mode: Standalone Mode

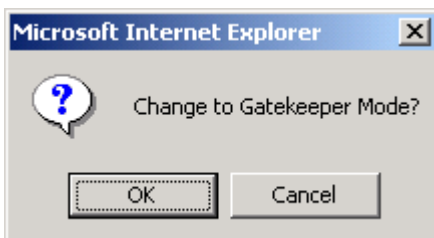
Change to Gatekeeper mode Gatekeeper Mode

H.323 LAN Configuration

Interface ID	05
Cost Index	1
Maximum Calls	60
Default Gateway	0.0.0.0
Use Fast Start	<input checked="" type="checkbox"/>
Accept Fast Start	<input type="radio"/> no <input type="radio"/> after connect <input checked="" type="radio"/> after alert <input type="radio"/> after proceeding
H245 After Fast Start	<input checked="" type="checkbox"/>
Use Early H245	<input type="checkbox"/>
Accept Early H245	<input checked="" type="checkbox"/>
Use H245 tunnelling	<input checked="" type="checkbox"/>
Accept H245 tunnelling	<input checked="" type="checkbox"/>
Setup Mapping	1
QoS profile	0

Submit

➤ Select Gatekeeper Mode



➤ Select OK

Vega 100 Configuration

Host Name: Vega100T1E1
 IP Address: 192.168.1.106
 User Name: admin

⚠ Unsaved & Unapplied Changes

Management
 Logging
 Maintenance
 LAN
 DSL
H.323
 Dial Plan
 Media Channels
 Tones
 Users
 QoS
 Advanced

H.323

Current Mode: Gatekeeper
 Change to Standalone Mode | Standalone Mode

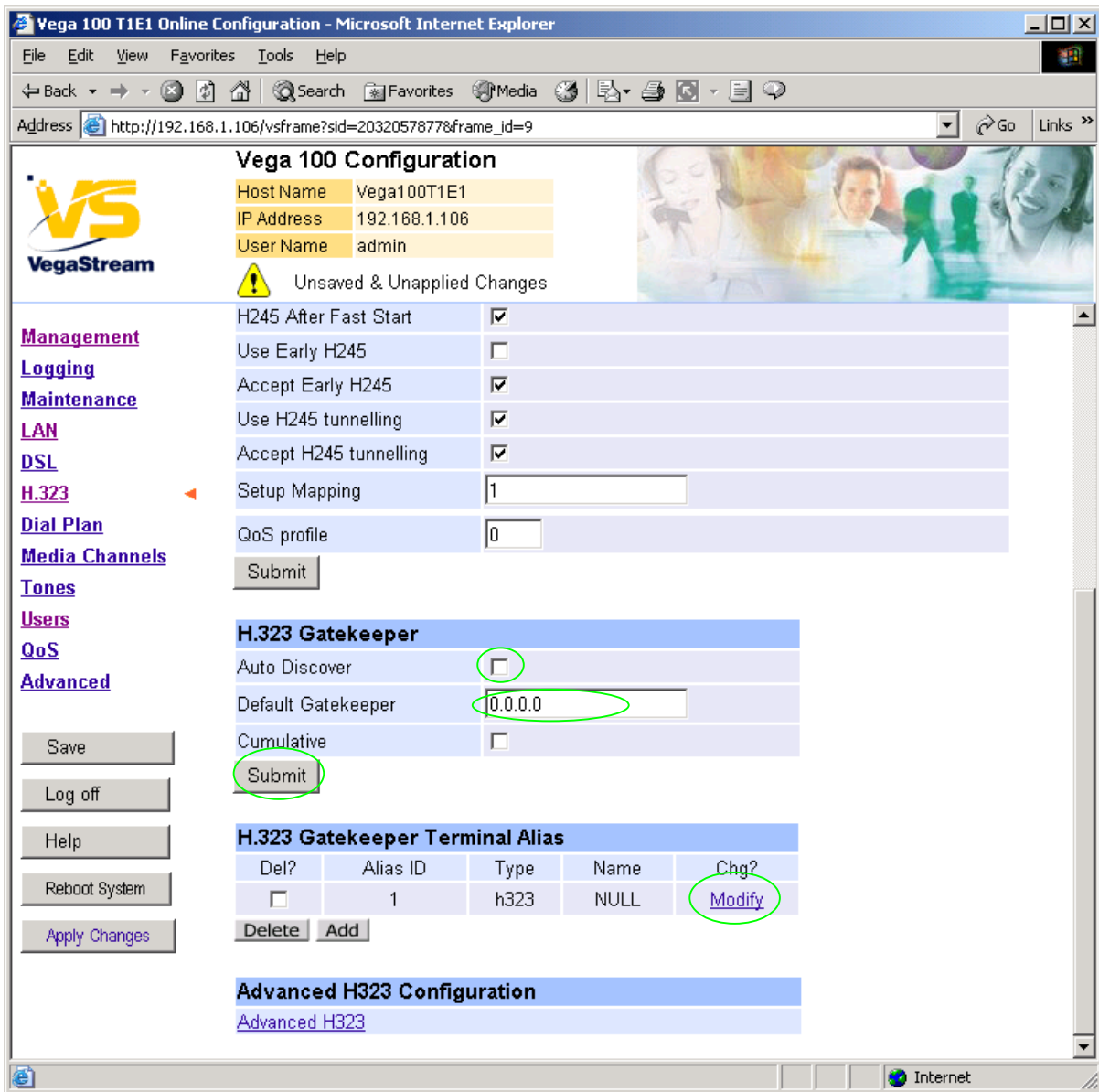
H.323 LAN Configuration

Interface ID	05
Cost Index	1
Maximum Calls	60
Default Gateway	0.0.0.0
Use Fast Start	<input checked="" type="checkbox"/>
Accept Fast Start	<input type="radio"/> no <input type="radio"/> after connect <input checked="" type="radio"/> after alert <input type="radio"/> after proceeding
H245 After Fast Start	<input checked="" type="checkbox"/>
Use Early H245	<input type="checkbox"/>
Accept Early H245	<input checked="" type="checkbox"/>
Use H245 tunnelling	<input checked="" type="checkbox"/>
Accept H245 tunnelling	<input checked="" type="checkbox"/>
Setup Mapping	1
QoS profile	0

Save | Log off | Help | Reboot System | Apply Changes | Submit

*If this Vega is to be inter-working with another Vega leave the **H.323 LAN Configuration** alone, if it is to work with other manufacturer's devices, it is often best to untick the indicated items – as these are advanced H.323 features that are not always supported by other manufacturers. Once the Vega and the other device are working in the basic H.323 mode, try enabling other features – back towards this configuration, as this will improve call setup time.*

➤ Scroll down to the bottom of the H.323 page



➤ Either configure the **H.323 Gatekeeper** “Default Gatekeeper” with the IP address of the Gatekeeper, or tick Auto Discover.

➤ select **Submit** and then click “[here](#)” to return

Configure the gatekeeper Terminal alias – this needs to match the gatekeeper’s expectations.

e.g. set it to an H.323 type alias “Vega_100”.

In the **H.323 Gatekeeper Terminal Alias** section

➤ select **Modify**

[H.323](#) > Terminal Alias 1

Modify Terminal Alias	
Alias ID	1
Type	H323
Name	NULL
Submit	

- Set Name = Vega_100
(*hint: use _ instead of space as spaces are not allowed*)
- select and then click "[here](#)" to return

H.323 Gatekeeper Terminal Alias				
Del?	Alias ID	Type	Name	Chg?
<input type="checkbox"/>	1	h323	Vega_100	Modify

If more than one alias is required then select and configure as required.

6. Configure the Dial Plan

➤ On the left hand side menu select [Dial Plan](#)

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

Unsaved & Unapplied Changes

Management
[Logging](#)
[Maintenance](#)
[LAN](#)
[DSL](#)
[H.323](#)
[Dial Plan](#)
[Media Channels](#)
[Tones](#)
[Users](#)
[QoS](#)
[Advanced](#)

Dial Planner

Profiles

Del?	Profile ID	Enabled	Name	Plans	Chg?
<input type="checkbox"/>	1	1	Vega100T1E1_default	===>	Modify

Delete Add

Planner Groups

Del?	ID	Name	Cause	Lan	Gatekeeper	Active times	Priority	Chg?
<input type="checkbox"/>	1	Default	0	off	off	0000-2359	0	Modify

Delete Add

Planner Whitelist Enable

Use Whitelist

Submit

Planner Whitelists

Del?	ID	Name	Number	Chg?
<input type="checkbox"/>	1	default	IF.*	Modify

Delete Add

Save
Log off
Help
Reboot System
Apply Changes

Firstly, turn off the default profile:

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

➤ Select [Modify](#)

[Dial Planner](#) > Profile 1

Modify Profile	
Profile ID	1
Enabled	<input checked="" type="checkbox"/>
Name	Vega100T1E1_default
<input type="button" value="Submit"/>	

- disable (un-tick) Enabled, then
- select and then click "[here](#)" to return

Now create a new profile and in it create a dial plan entry to handle calls being sent from ISDN to the LAN:

Dial Planner

Profiles					
Del?	Profile ID	Enabled	Name	Plans	Chg?
<input type="checkbox"/>	1	0	Vega100T1E1_default	===>	Modify
<input type="button" value="Delete"/>	<input type="button" value="Add"/>				

In the **Profiles** section

- Select

Dial Planner

Profiles					
Del?	Profile ID	Enabled	Name	Plans	Chg?
<input type="checkbox"/>	1	0	Vega100T1E1_default	===>	Modify
<input type="checkbox"/>	2	1	new_profile	===>	Modify
<input type="button" value="Delete"/>	<input type="button" value="Add"/>				

In the **Profiles** section, on Profile 2 (the new profile):

- Select [Modify](#)

[Dial Planner](#) > Profile 2

Modify Profile	
Profile ID	2
Enabled	<input checked="" type="checkbox"/>
Name	new_profile
<input type="button" value="Submit"/>	

- Set Name = ISDN_To_LAN
- select and then click "[here](#)" to return

Dial Planner

Profiles						
Del?	Profile ID	Enabled	Name	Plans	Chg?	
<input type="checkbox"/>	1	0	Vega100T1E1_default	===>	Modify	
<input type="checkbox"/>	2	1	ISDN_To_LAN	===>	Modify	

[Delete](#) [Add](#)

In the **Profiles** section, on Profile 2 (the ISDN_To_LAN profile):

- Select [Modify](#)

Dial Planner > Profile 2

Modify Profile	
Profile ID	2
Enabled	<input checked="" type="checkbox"/>
Name	<input type="text" value="ISDN_To_LAN"/>

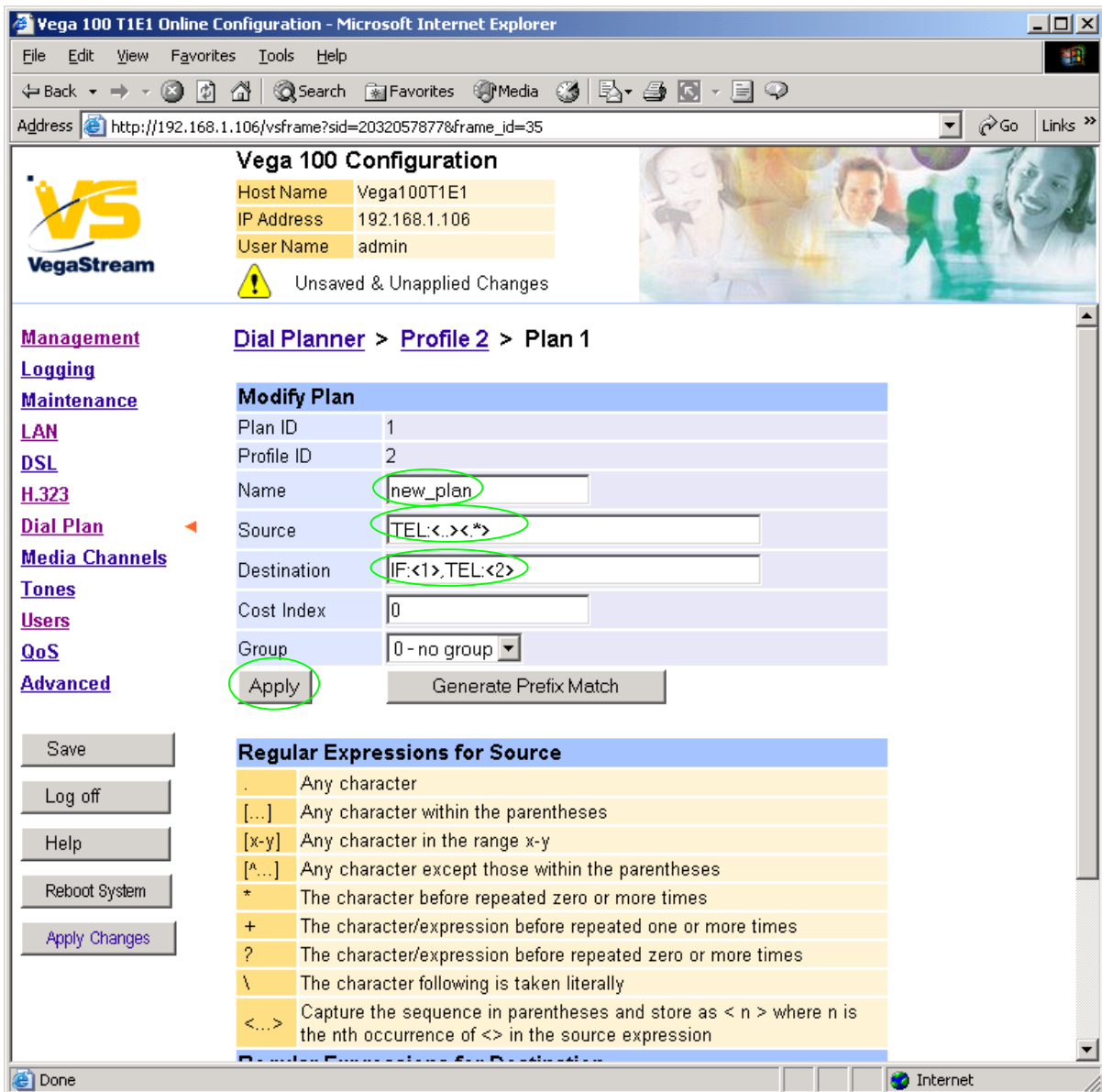
[Submit](#)

Plans in this Profile							
Del?	Plan ID	Name	Src	Dest	Cost	Group	Chg?
<input type="checkbox"/>	1	new_plan	TEL:<.><.*>	IF:<1>,TEL:<2>	0	0	Modify

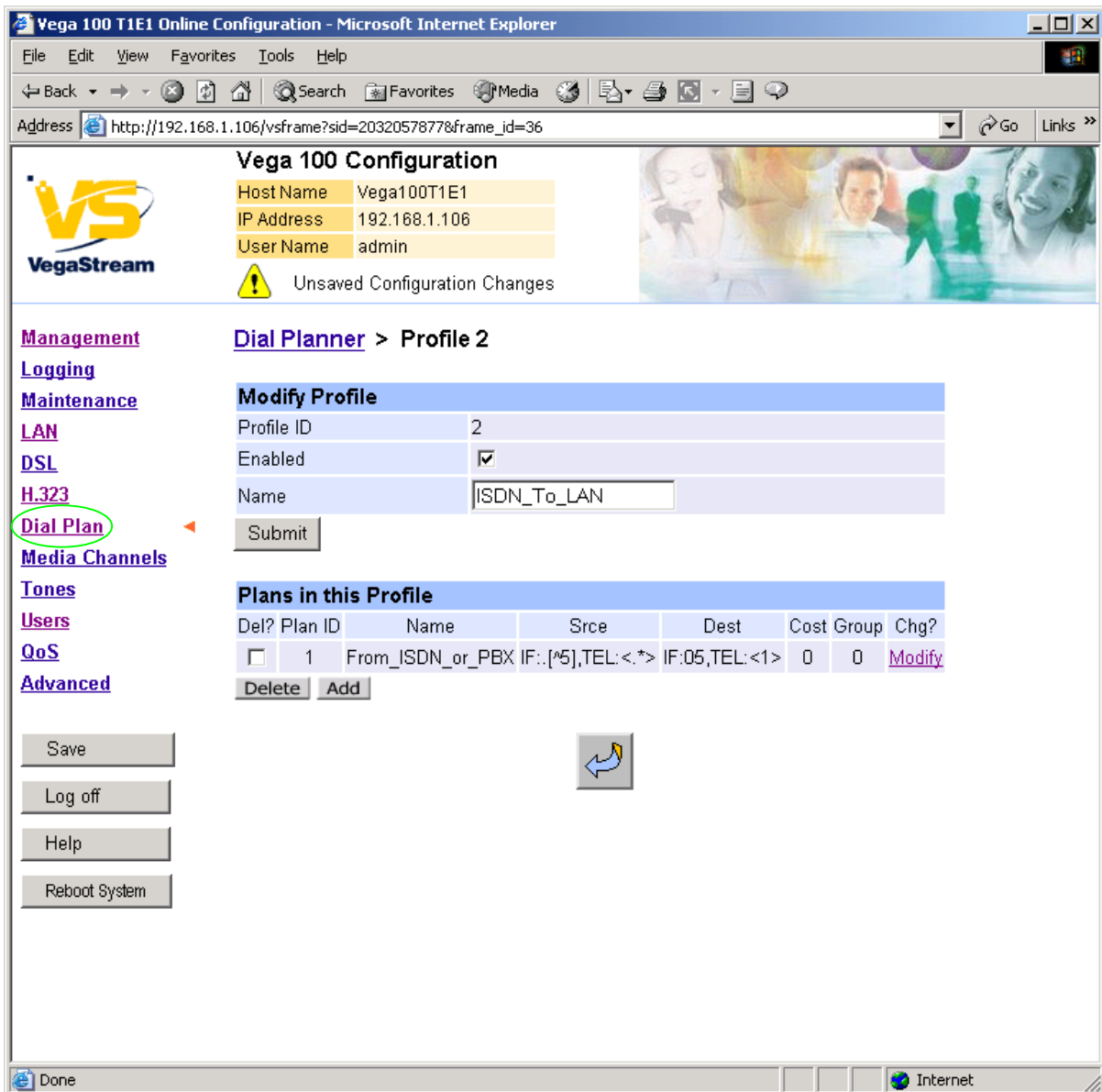
[Delete](#) [Add](#)

In the **Plans in this Profile** section:

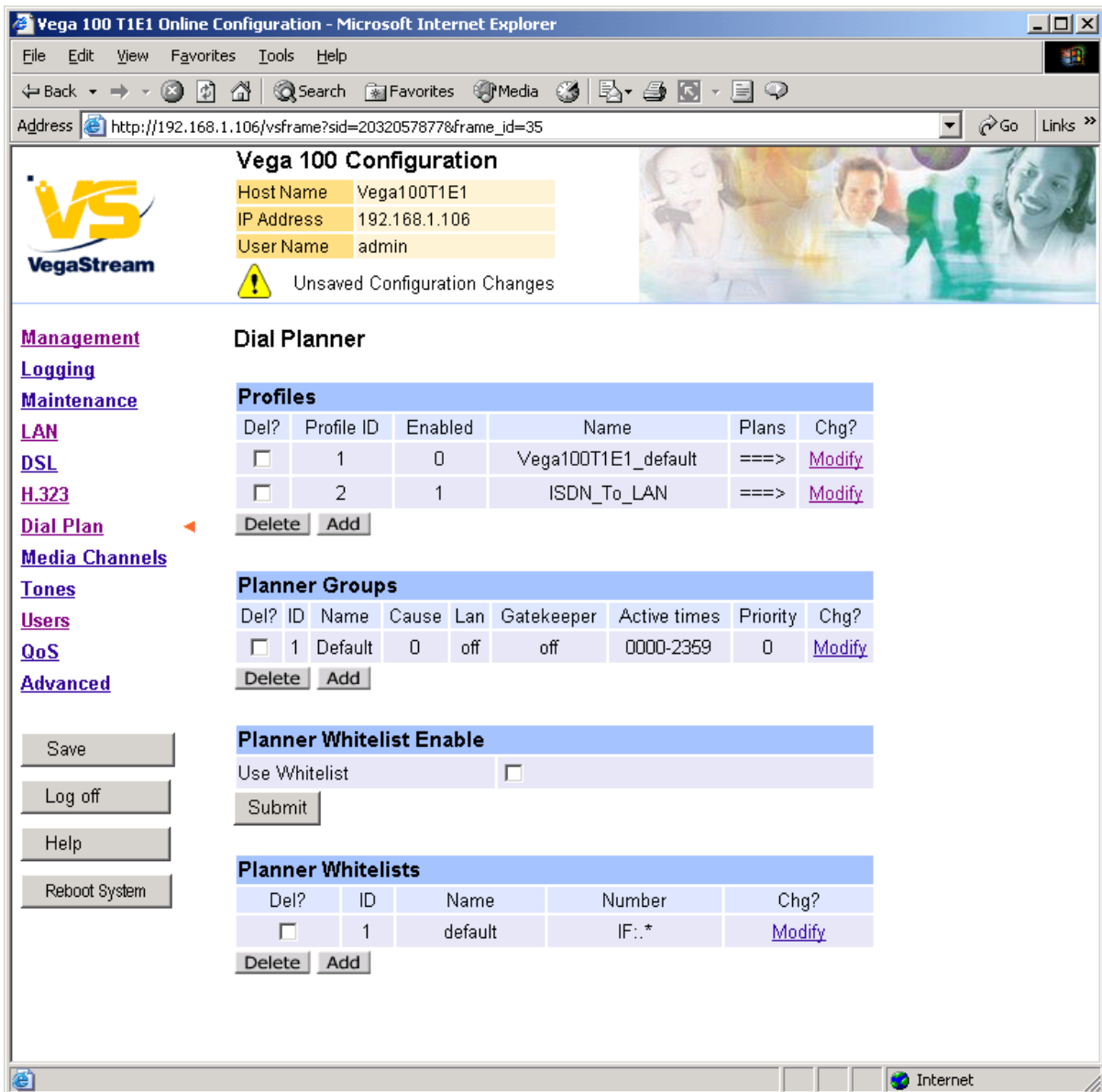
- Select [Modify](#)



- Set Name = From_ISDN_or_PBX
- Set Source = IF: . [^5] , TEL: < . * > *(This takes a call from either of the two ISDN interfaces and stores the telephone number presented in store <1>)*
- Set Destination = IF: 05 , TEL: < 1 > *(This routes the call to IF:05 (the LAN) and passes the received telephone number on as the destination telephone number)*
- 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 a similar manner to adding profile 2 add another profile, profile 3,

- Set Name = LAN_to_ISDN_or_PBX

Modify the first plan for Profile 3:

- Set Name = From_LAN
- Set Source = IF:05,TEL:<...><.*> *(For calls from IF:05 (LAN), take the first two digits presented and store them in store <1>; take any further digits and store them in store <2>)*
- Set Destination = IF:<1>,TEL:<2> *(The first two digits presented define the interface – 01 or 02 – and the remainder of the digits are passed on as the telephone number)*
- select and then click “[here](#)” to return

Note: *The gatekeeper must choose the appropriate interface on the Vega to dial out from; when the gatekeeper presents a call to the Vega, the telephone number field must contain either 01ttt...t or 02ttt...t, where ttt...t is the telephone number to dial.*

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.

7. Configure audio parameters

➤ On the left hand side menu select [Media Channels](#)

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

⚠ Unsaved Configuration Changes

Media Channels

Codec Configuration

g729AnnexA
g729
g711Alaw64k
g711Ulaw64k
g7231
T38

H.245 Capabilities

Del?	H245 Cap ID	Name	Chg?
<input type="checkbox"/>	1	g7231	Modify
<input type="checkbox"/>	2	g711Alaw64k	Modify
<input type="checkbox"/>	3	g711Ulaw64k	Modify
<input type="checkbox"/>	4	t38tcp	Modify
<input type="checkbox"/>	5	t38udp	Modify

Delete **Add**

H.245 Capability Descriptors

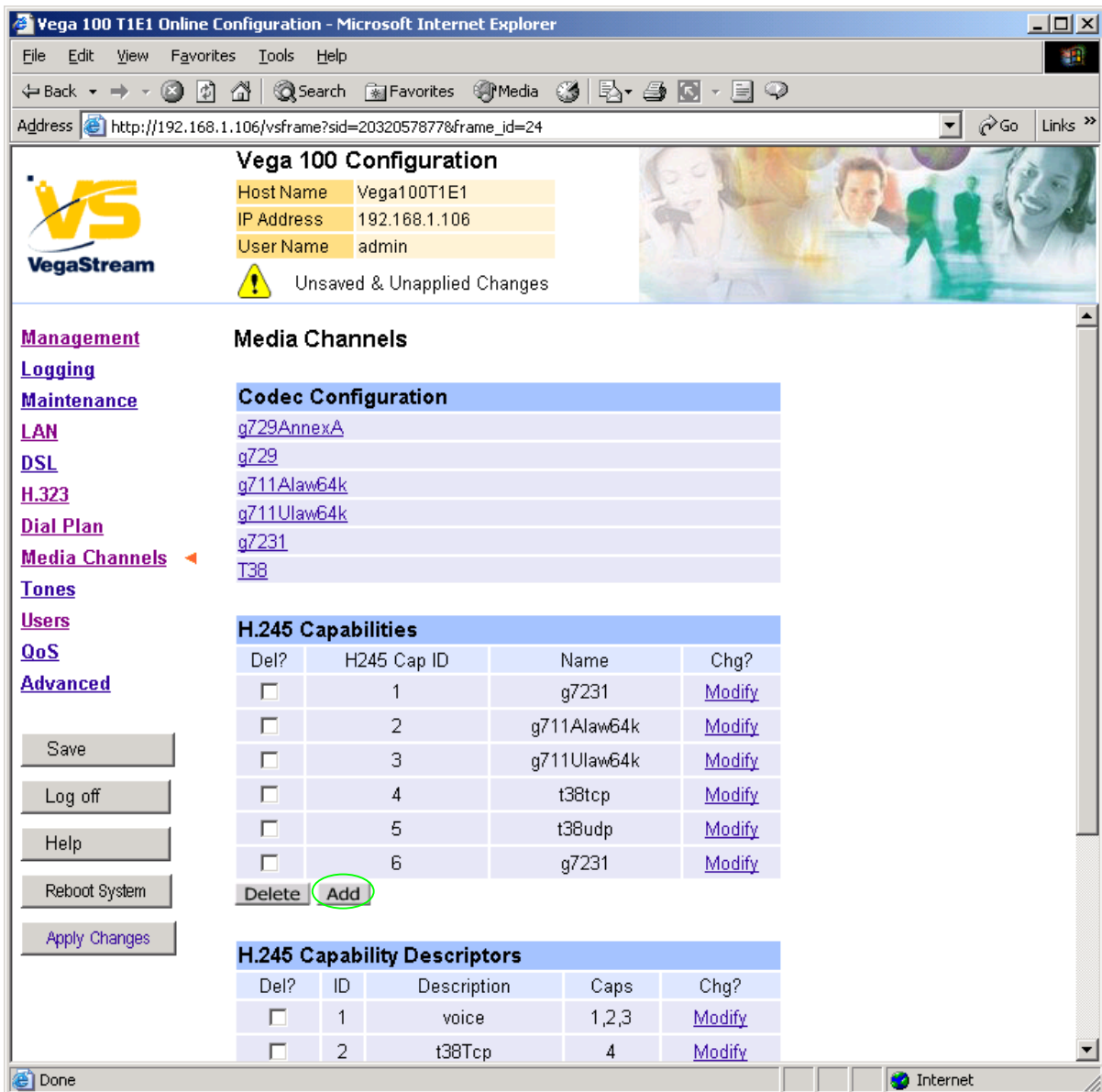
Del?	ID	Description	Caps	Chg?
<input type="checkbox"/>	1	voice	1,2,3	Modify
<input type="checkbox"/>	2	t38Tcp	4	Modify
<input type="checkbox"/>	3	t38Udp	5	Modify

Save
Log off
Help
Reboot System

Add 2 more codecs so that by default the Vega will handle calls with any of the codecs it supports.

In **H.245 Capabilities**

➤ Select **Add**



In **H.245 Capabilities**

- Select **Add**

H.245 Capabilities

Del?	H245 Cap ID	Name	Chg?
<input type="checkbox"/>	1	g7231	Modify
<input type="checkbox"/>	2	g711Alaw64k	Modify
<input type="checkbox"/>	3	g711Ulaw64k	Modify
<input type="checkbox"/>	4	t38tcp	Modify
<input type="checkbox"/>	5	t38udp	Modify
<input type="checkbox"/>	6	g7231	Modify
<input type="checkbox"/>	7	g7231	Modify

Delete **Add**

- Select [Modify](#) on H245 Cap ID 1

Media Channels > H.245 Capability 1

Modify Capability	
Capability ID	1
Name	g7231
<input type="button" value="Submit"/>	<ul style="list-style-type: none"> g711Alaw64k g711Ulaw64k <li style="background-color: #e0e0e0;">g7231 g729 g729AnnexA t38tcp t38udp

- Select required codec type – in this case g7231
- select and then click “[here](#)” to return
- Modify all H245 Cap ID entries until the list looks as follows:

H.245 Capabilities			
Del?	H245 Cap ID	Name	Chg?
<input type="checkbox"/>	1	g7231	Modify
<input type="checkbox"/>	2	g729AnnexA	Modify
<input type="checkbox"/>	3	g729	Modify
<input type="checkbox"/>	4	g711Alaw64k	Modify
<input type="checkbox"/>	5	g711Ulaw64k	Modify
<input type="checkbox"/>	6	t38tcp	Modify
<input type="checkbox"/>	7	t38udp	Modify

Now update the Capability Description list that tells the Vega which codecs it can use.

H.245 Capability Descriptors				
Del?	ID	Description	Caps	Chg?
<input type="checkbox"/>	1	voice	1,2,3	Modify
<input type="checkbox"/>	2	t38Tcp	4	Modify
<input type="checkbox"/>	3	t38Udp	5	Modify

Update entry 1 to select all voice codecs, and the other entries to configure them for the correct capability IDs.

For each capability:

- Select
- Adjust them so that they have the capabilities indicated below:

H.245 Capability Descriptors				
Del?	ID	Description	Caps	Chg?
<input type="checkbox"/>	1	voice	1,2,3,4,5	Modify
<input type="checkbox"/>	2	t38Tcp	6	Modify
<input type="checkbox"/>	3	t38Udp	7	Modify


- Scroll to the bottom of the Media Channels page:

- Set Voice Capdesc Index to 1

H.245 Preferred Index

Preferred Index	0 - no preference
Voice Capdesc Index	0 - no preference
Fax Capdesc Index	0 - no preference

Submit

- select  and then click "[here](#)" to return

This has selected all voice codecs to be offered for all calls.

With Fax Capdesc Index set to "2 - t38TCP" it has selected this codec for fax transfers. Note it is recommended that only a single T.38 codec is offered (as configured here), because if both are offered negotiations do not always complete correctly.

8. Configure DSLs

➤ On the left hand side menu select [DSL](#)

Vega 100 Configuration

Host Name: Vega100T1E1
IP Address: 192.168.1.106
User Name: admin

⚠ Unsaved & Unapplied Changes

Management
[Logging](#)
[Maintenance](#)
[LAN](#)
[DSL](#)
[H.323](#)
[Dial Plan](#)
[Media Channels](#)
[Tones](#)
[Users](#)
[QoS](#)
[Advanced](#)

DSL

DSL Configuration

Network Type: ETSI
Network Topology: E1
Line Encoding: HDB3
Framing: CRC4
Bus Master: 1

Submit

PORT Configuration

PORT ID	Enabled	NT	Clock Master	Layer 1	E1 rx Short Haul	T1 tx equalization	ISDN	CAS	Groups	Chg?
1	1	0	0	g711Alaw64k	1	sh220_330	====>	====>	====>	Modify
2	1	1	1	g711Alaw64k	1	sh220_330	====>	====>	====>	Modify

Delete Add

Save
Log off
Help
Reboot System
Apply Changes

Start by selecting the correct Network Topology – T1

DSL Configuration

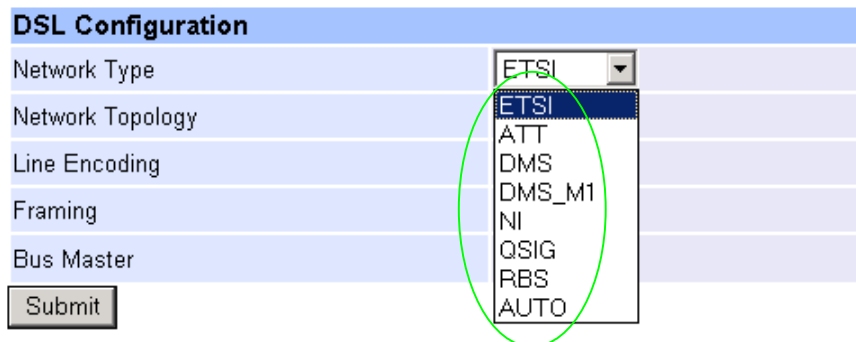
Network Type: ETSI
Network Topology: E1
Line Encoding: E1
Framing: CRC4
Bus Master: 1

Submit

➤ In the **DSL Configuration** section select the required Network Topology = T1

In the **DSL Configuration** section select the Network Type as required:

DSL



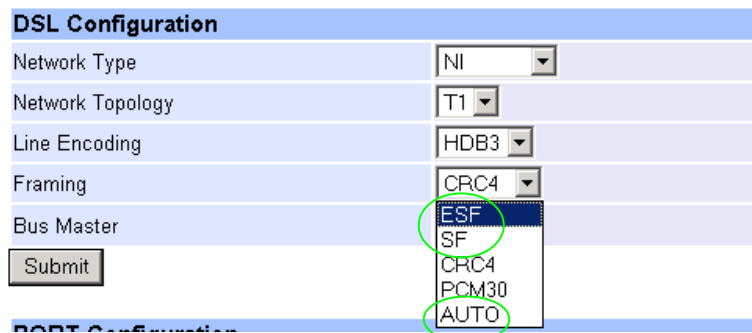
The screenshot shows the 'DSL Configuration' form with the following fields: Network Type (dropdown), Network Topology (dropdown), Line Encoding (dropdown), Framing (dropdown), and Bus Master (checkbox). The 'Network Type' dropdown is open, showing a list of options: ETSI, ATT, DMS, DMS_M1, NI, QSIG, RBS, and AUTO. The 'ETSI' option is highlighted in blue. A green circle is drawn around the dropdown menu.

- ATT = 4ESS / 5ESS
- DMS = DMS 100
- DMS_M1 – not supported on H.323 products
- NI = National ISDN NI1 / NI2
- QSIG = QSIG
- RBS = CAS RBS (Robbed Bit Signalling)
- AUTO = DMS 100

Note: ETSI is not supported on the T1 interface.

In the **DSL Configuration** section select the Framing Method as required:

DSL



The screenshot shows the 'DSL Configuration' form with the following fields: Network Type (dropdown), Network Topology (dropdown), Line Encoding (dropdown), Framing (dropdown), and Bus Master (checkbox). The 'Framing' dropdown is open, showing a list of options: ESF, SF, CRC4, PCM30, and AUTO. The 'ESF' option is highlighted in blue. A green circle is drawn around the dropdown menu.

- ESF = Extended Super-Frame – 16 state signaling
- SF = Super-Frame (also known as D4)
- AUTO = ESF

Note: CRC4 and PCM30 are not supported on the T1 interface

In the **DSL Configuration** section select the *Line Encoding* as required:

DSL

DSL Configuration	
Network Type	NI
Network Topology	T1
Line Encoding	HDB3
Framing	B8ZS
Bus Master	
<input type="button" value="Submit"/>	

- B8ZS = Bipolar with 8 zero substitution (forces line reversals regularly)
- AMI = Alternate Mark Inversion
- AUTO = B8ZS

Note: HDB3 is not supported on the T1 interface.

- select and then click ["here"](#) to return

Vega 100 Configuration

Host Name Vega100T1E1
 IP Address 192.168.1.106
 User Name admin

⚠ Unsaved Configuration Changes

DSL

DSL Configuration

Network Type NI
 Network Topology T1
 Line Encoding B8ZS
 Framing ESF
 Bus Master 1

Submit

PORT Configuration

PORT ID	Enabled	NT	Clock Master	Layer 1	E1 rx Short Haul	T1 tx equalization	ISDN	CAS	Groups	Chg?
1	1	0	0	g711Alaw64k	1	sh220_330	===>	===>	===>	Modify
2	1	1	1	g711Alaw64k	1	sh220_330	===>	===>	===>	Modify

Delete Add

Save
 Log off
 Help
 Reboot System

For the configuration indicated in the initial diagram Port 1 = connection to the PSTN and Port 2 is a connection to a PBX, and so the Vega needs Port 1 configured as TE (and a blue booted cable used on it), and Port 2 configured as NT (and a red booted cable used on it).

Bus Master needs to be configured to point to an active TE trunk – to identify where the Vega will synchronise its internal clock from – in this configuration this should be 1 (DSL 1).

These are the default settings of the Vega and so no changes are required to the Network Terminator, Clock_Master, or Bus_Master settings.

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

➤ Select [Modify](#)

Port 1

Port Configuration	
Port ID	1
Enabled	<input checked="" type="checkbox"/>
Network Terminator	<input type="checkbox"/>
Clock Master	<input type="checkbox"/>
Layer 1	g711Alaw64k
Set E1 RX short haul	<input checked="" type="checkbox"/>
T1 TX equalization	sh220_330
<input type="button" value="Submit"/>	

ISDN Configuration	
DTMF Termination Char	<input type="text" value="*"/>
DTMF Dial Timeout	<input type="text" value="2"/>
Setup Mapping	<input type="text" value="0"/>
Cause Mapping	<input type="text" value="0"/>
<input type="button" value="Submit"/>	

CAS Configuration	
ANI	<input type="checkbox"/>
DTMF Separator	<input type="text" value="*"/>
DTMF Dial Timeout	<input type="text" value="2"/>
Info	dtmf
Signal	em_wink
Tone Delay	<input type="text" value="50"/>
<input type="button" value="Submit"/>	

Groups									
Group ID	Interface ID	Cost Index	DN	First Channel	Last Channel	Alloc Channel	Tunnel Mode	Chg?	
1	01	1	*	1	30	default	off	Modify	
<input type="button" value="Delete"/> <input type="button" value="Add"/>									

In the **Port Configuration** section, set Layer 1 = g711Ulaw64k, , click ["here"](#)

In the **Groups in this DSL** section, set the Last Channel = auto, , click ["here"](#)

For a CAS RBS configuration:

In the **CAS Configuration** section, set Signal to the type of CAS RBS signalling required:

- em_wink = E & M wink start signalling
- loopstart = Loop start signalling
- gndstart = Ground start signalling
- fgd = E & M wink start signalling supporting Feature Group D for transferring ANI

➤ select and then click ["here"](#) to return

If any of the other Port parameters need changing, e.g. Network Terminator, alter them now.

- Note:
1. if NT (Network Terminator) is ticked then typically Clock Master should also be ticked; if NT is un-ticked (TE mode) then typically Clock Master should also be un-ticked.
 2. if either trunk is TE then the Bus Master value (in the ISDN Configuration section) should be set to point to the (one of the) TE trunk(s); 1 for Port 1 and 2 for Port 2.

In each section that further changes are made

- select and then click "[here](#)" to return

N.B. must be selected immediately after changes are made to a specific section. If changes are made to two sections before is pressed then only the changes made in the section whose button is pressed will be kept, other changes will be returned to their previous values.

- Repeat for the other Port (Port ID 2).

Table 1 can be used as a guide when setting up parameters for Vega 100 T1 ISDN installations.

Table 1. Network type, Line Encoding, and Topology

Product	Physical Connection	Network Topology	Network Type	DSLs	Framing	Line Encoding	Calls
Vega 100-PRI-T1	T1-1.544 Mbps	T1	AT&T 4ESS / 5ESS, NI 1 / NI 2, DMS-100	2	SF / ESF	B8ZS, AMI	23 / 46
Vega 100-PRI-T1	T1-1.544 Mbps	T1	QSIG	2	SF / ESF	B8ZS, AMI	23 / 46
Vega 100-PRI-T1	T1-1.544 Mbps	T1	CAS RBS	2	SF / ESF	B8ZS, AMI	24 / 48

9. Configure pointer to CD ROM documentation

- On the left hand side menu select [LAN](#)
- Scroll to the bottom of the screen

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

⚠ Unsaved & Unapplied Changes

Management
[Logging](#)
[Maintenance](#)
[LAN](#)
[DSL](#)
[H.323](#)
[Dial Plan](#)
[Media Channels](#)
[Tones](#)
[Users](#)
[QoS](#)
[Advanced](#)

Subnet Mask 255.255.255.0
Domain Name Server 0.0.0.0 Use DHCP
Default Gateway 192.168.1.1 Use DHCP
TFTP Server 192.168.1.108 Use DHCP
Network Time Server 0.0.0.0 Use DHCP
FTP Server 192.168.1.108
NTP Offset (hhmm) 0000
NTP Poll Interval 0

Physical Layer Configuration
Full Duplex
Ethernet Type 10baseT & 100baseTX
QoS profile 1

Submit

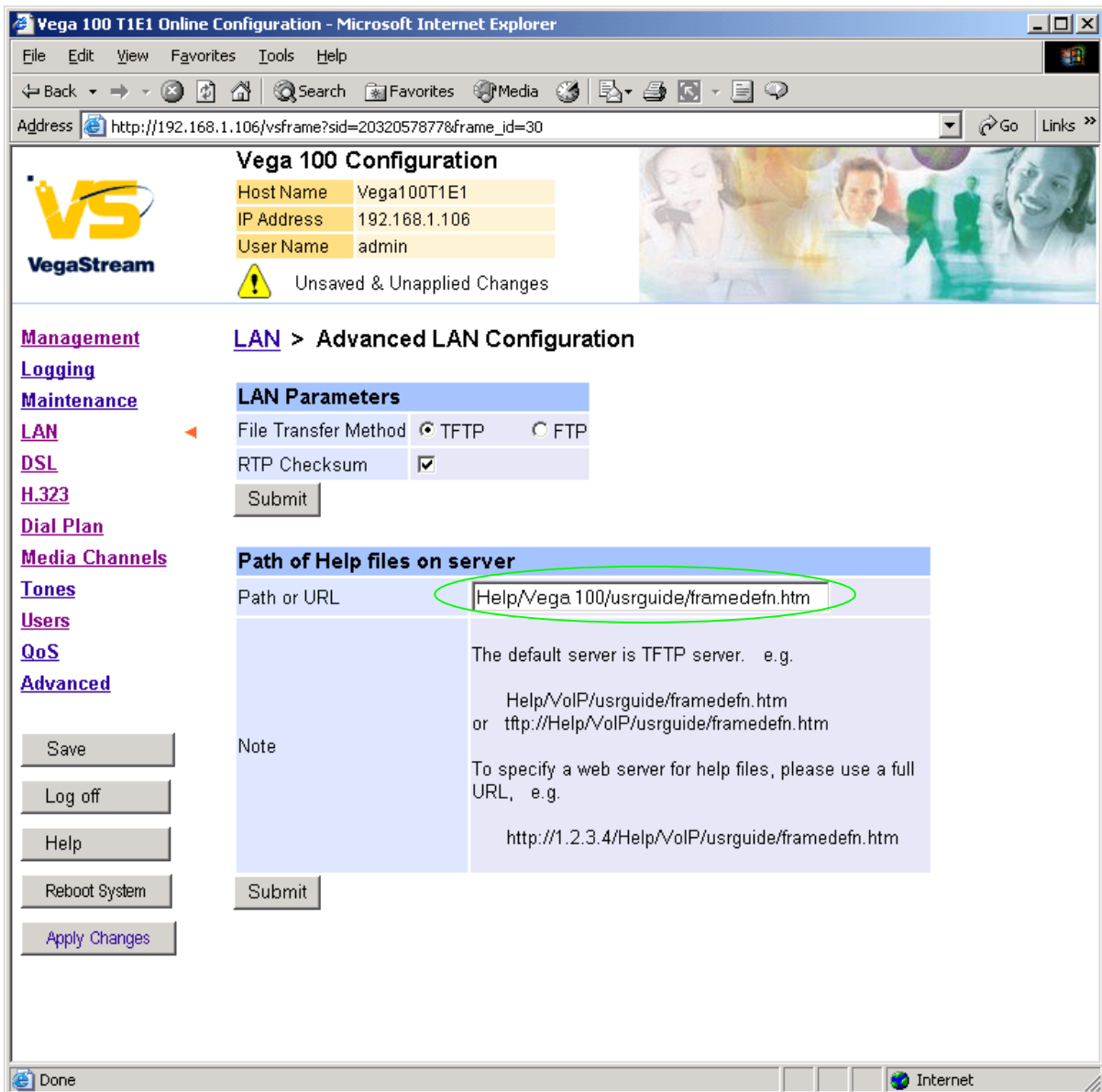
Lan Hosts

ID	Name	IP	Chg?
1	loopback	127.0.0.1	Modify

Delete Add

Advanced LAN Configuration
[Advanced LAN](#)


- Select [Advanced LAN](#)



To configure for operation using the CD in the local PC CD-ROM drive,

- Set Path or URL = D:/Content/help/v100t1h_R5.htm
... *N.B. use forward slashes "/" not back slashes "\".*

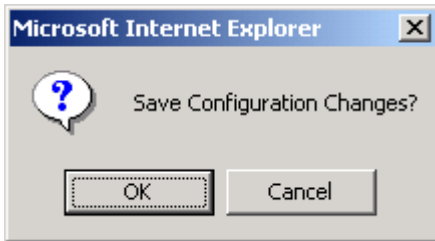
(Substitute the appropriate drive letter if D: is not the CD-ROM)

- select  and then click "[here](#)" to return

10. Save Changes

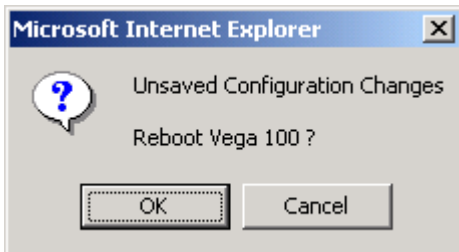
The changes to the configuration must be saved and activated. This is carried out as follows:

- On the left hand side menu select [Save](#)



- Select and after the configuration has been saved click "[here](#)" to return

- On the left hand side menu select



- Select

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

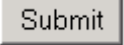
11. Archive Vega Configuration

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:



The screenshot shows a web interface section titled "CLI Command". Below the title is a text input field and a "Submit" button.

- in the text entry box type “PUT tftp:initial_cfg.txt”. Select .

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”)

If the ftp server requires a login username and password configure the following:

- set _advanced.lan.ftp.anonymous_login=0
- set _advanced.lan.ftp.username=<ftp username>
- set _advanced.lan.ftp._password-<ftp password>

12. Technical Support

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

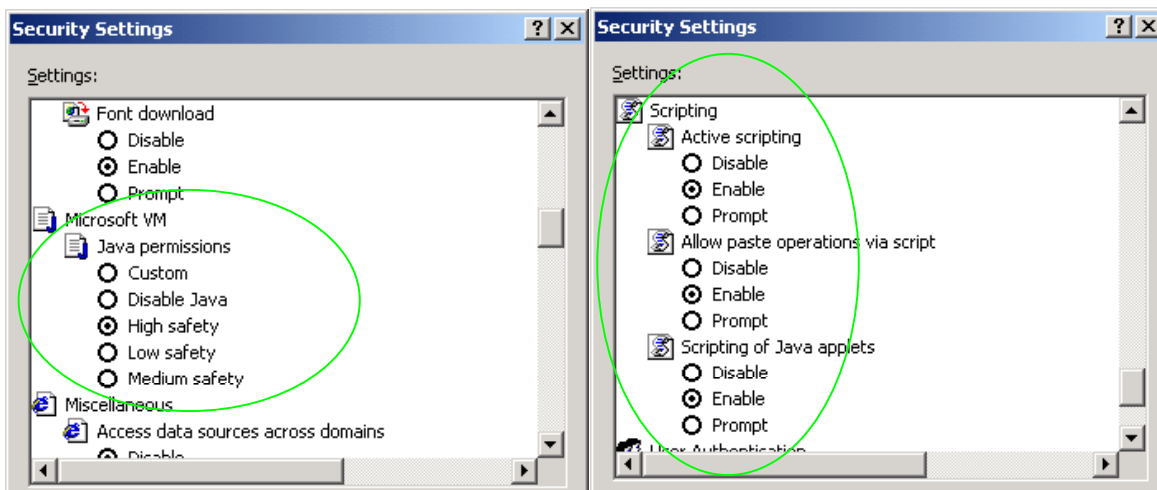
If you require help from VegaStream support personnel, please use the serial interface or telnet into the unit, log in and then type:

- show support
- 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. H.323 supports two methods for transmitting call setup details. There is a standard method and then Fast Start. To allow the Vega to accept calls using the Fast Start technique ensure “Accept Fast Start” is enabled ... see section 1.5

For the Vega to initiate calls using Fast Start ensure that “Use Fast Start” is enabled ... see section 1.5.

13. Advanced configuration

T1 units have further configurable parameters that may be desirable to configure in order to fully integrate into the attached infrastructure.

13.1 Web browser configurable parameters

13.1.1 Line impedance matching

In order to match the signal shapes produced by the Vega to the T1 line it is working with there is a parameter tx_equalisation that can be configured:

```
> set _advanced.isdn.tx_equalization=<tx_equ>
```

<tx_equ> can take the following values:

- lhlbo0 (long haul line break out 0 dB)
- lhlbo7_5 (long haul line break out -7.5 dB)
- lhlbo15 (long haul line break out -15 dB)
- lhlbo22_5 (long haul line break out -22.5 dB)
- sh0_110 (short haul 0-110 ft.)
- sh110_220 (short haul 110-220 ft.)
- sh220_330 (short haul 220-330 ft.) - default setting
- sh330_440 (short haul 330-440 ft.)
- sh440_550 (short haul 440-550 ft.)
- sh550_660 (short haul 550-660 ft.)

on the web browser interface, in the port configuration section off the DSL page:

Port Configuration	
Port ID	1
Enabled	<input checked="" type="checkbox"/>
Network Terminator	<input type="checkbox"/>
Clock Master	<input type="checkbox"/>
Layer 1	g711Alaw64k
Set E1 RX short haul	<input checked="" type="checkbox"/>
T1 TX equalization	sh220_330
<input type="button" value="Submit"/>	
ISDN Configuration	
DTMF Termination Char	
DTMF Dial Timeout	
Setup Mapping	

Long haul values are used where the distance between the Vega and the closest repeater or other ISDN endpoint is greater than 660 feet. Short haul value lengths are the distance between the Vega and the closest repeater or other ISDN endpoint.

If the appropriate test and measurement equipment is not available to check the required setting, for long haul try **lhbo0** and for short haul try **sh220_330**.

13.1.2 Channel Allocation Strategies

The Vega allows configuration of the channel allocation strategy to be used for each DSL on outgoing calls. Four options are available,

- i) *Linear_down* – where the Vega will use the highest available free channel to make the outbound call ... use this mode when the attached device is configured to make outbound calls using *Linear up*.
- ii) *Linear_up* – where the Vega will use the lowest available free channel to make the outbound call ... use this mode when the attached device is configured to make outbound calls using *Linear down*.
- iii) *Round_robin* – in this mode the Vega remembers the last allocated channel and then tries to use the next channel up from this for the next outbound call. (After reaching the highest channel ID it restarts at the lowest channel again.) ... use this mode when the attached device is configured to make outbound calls using *Round_robin* mode.
- iv) *Default* – if the DSL is configured as NT then the Vega will use the *Linear_up* scheme, and if the DSL is configured as TE then the Vega will use *Linear_down*.

By default the Vega has `chan_alloc set=Default`

Using the web browser interface:

- On the left hand side menu select [DSL](#)
- Then select the Port to alter
- Scroll to the bottom of the page

Vega 100 Configuration

Host Name: Vega100T1E1
 IP Address: 192.168.1.106
 User Name: admin

Unapplied Configuration Changes

DTMF Dial Timeout: 2
 Setup Mapping: 0
 Cause Mapping: 0

CAS Configuration

Dial Format String: .
 Digit Dial Timeout: 6
 Info: dtmf
 Signal: em_wink
 Tone Delay: 50

Groups

Group ID	Interface ID	Cost Index	DN	First Channel	Last Channel	Alloc Channel	Tunnel Mode	Chg?
1	01	1	*	1	auto	default	off	Modify

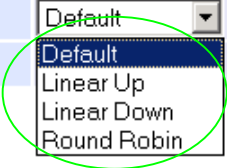
Buttons: Save, Log off, Help, Reboot System, Apply Changes, Submit, Delete, Add

In the Groups in this DSL:

- Select [Modify](#)

[DSL](#) > [Port 1](#) > [Group 1](#)

Modify Port Group	
Group ID	1
Port ID	1
Interface ID	<input type="text" value="01"/>
Cost Index	<input type="text" value="1"/>
DN	<input type="text" value="*"/>
First Channel	<input type="text" value="1"/>
Last Channel	<input type="text" value="auto"/>
Alloc Channel	<input type="text" value="Default"/>
Tunnel Mode	<input type="text" value="Default"/>
<input type="button" value="Submit"/>	



- Select the desired channel allocation strategy from the Alloc Channel pull down.
- select and then click "[here](#)" to return

- Save and reboot system to activate the change

13.2 Command Line Interface configurable parameters

These items must be configured using the Command Line interface available either using the serial connection or using a telnet session.

Connect to the Vega and log in.

13.2.1 End to End Call Proceeding

For H.323 to ISDN calls, by default the Vega will send the Call Proceeding message on the H.323 interface as soon as all the dialling information has been received.

It is possible to configure the Vega only to send the Call Proceeding on the H.323 interface once it has received the call proceeding from the outgoing call made on the ISDN interface – i.e. the call proceeding is passed from end to end rather than being generated by the Vega. This mode is useful when the Vega is not the end point in the telephony network, but is an intermediate carrier.

To set the Vega to support end to end call proceeding, at the CLI prompt type:

- Set `_advanced.isdn.end_to_end_call_proceeding=1`

To allow the Vega to generate the call proceeding message set this configuration parameter to 0.

- Save and reboot system to activate the change

13.2.2 User progress tones – towards ISDN interface

For ISDN to H.323 calls, by default if the Vega DSL is configured as TE it will connect media through before or at alerting so that progress tones are passed through from end to end (i.e. for the ISDN caller to hear ringback and other progress tones the audio must be received over the H.323 interface).

If it is required that the Vega generates these progress tones on the TE ISDN interface, then at the CLI prompt type:

- Set `_advanced.isdn.user_progress=1`
- Save and reboot system to activate the change

Notes:

1. If the Vega DSL is configured as NT it will always generate the call progress tones. E.g. ringback and disconnect tones.
2. Typically `wait_for_connect` and `user_progress` configuration parameters should either both set to 1 or both set to 0.

13.2.3 User progress tones – towards H.323 interface

For H.323 to ISDN calls, by default the Vega will act upon the in-band audio indicator in the alerting message and if present will connect the media path.

If it is required that the Vega should ignore the in-band audio indicator, and so not pass on the inband tone, then at the CLI prompt type:

- Set `_advanced.isdn.alert_with_progress=0`
- Save and reboot system to activate the change

If it is required that the Vega should always cut through the audio whatever the value of the in-band audio indicator, then at the CLI prompt type:

- Set `_advanced.isdn.alert_with_progress=2`
- Save and reboot system to activate the change

Further details on this and other parameters may be found in the Vega Primer.