Product Manual

Model: M505N

Product Description: Broadband Gateway

WAN:	**ADSL2+ / Ethernet WAN**
Ethernet:	**Qty 4 - 10/100 Ethernet**
USB:	**2.0**
WiFi:	**802.11 b/g/n 2T2R 2.4Ghz with Internal Airgain Antenna**

Manual Version: 0.1e
Manual Date: December 2014

Table of Contents

SECTION 1: MANAGEMENT ACCESS

SECTION 1.1 MANAGEMENT ACCOUNTS

Item 1 **Management Accounts**

It has been common practice, in the past, for in-field technicians, and lower level remote support, to receive full admin access.

As of “Solution Suite 3” , multiple accounts are utilized for department appropriate access to VisionNet modems.

Item 2 **Security Advisory**

Strict adherence to the following account access restrictions is advised:

High Level Access	Limited to Network Design and High Level Support departments
Medium Level Access	Limited to in-field installers and ISP employed customer support
Low Level Access	ONLY THIS LEVEL ACCESS SHOULD BE PROVIDED TO END USERS

SECTION 1.2 GUI ACCESS

STEP 1 Verify IP Information

1.A Determine the IP and Port of the service interface.

If you are accessing the unit remotely:

Determine the WAN IP and Service Port.

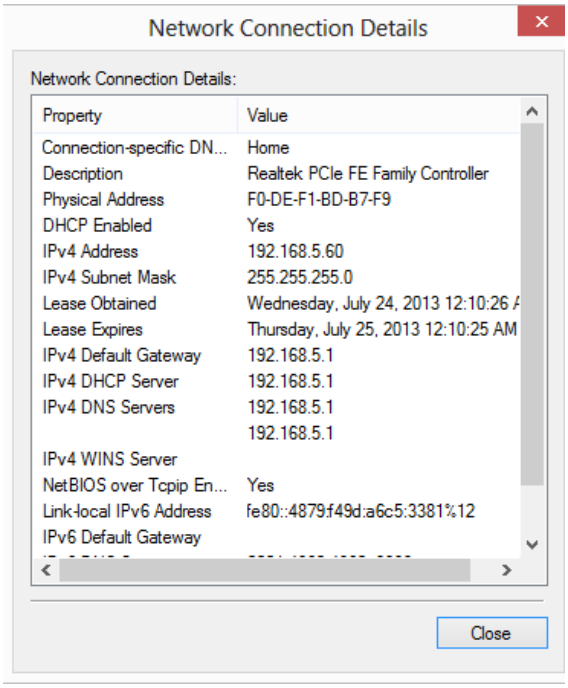
Verify that your local IP will not be blocked by any gateway, or network, ACLs.

If you are accessing the unit locally:

Determine the LAN IP of the gateway.

In a NAT, or Routed configuration, this will be your Gateway IP, assigned by DHCP.

In a Bridged configuration, you will need to statically assign an IP, to your device, within the same subnet as the gateway's unadvertised LAN IP.



Step 2 Connect via Web Browser

2.A In your browser's address bar, enter the IP Address and, if remote, port number used for access.

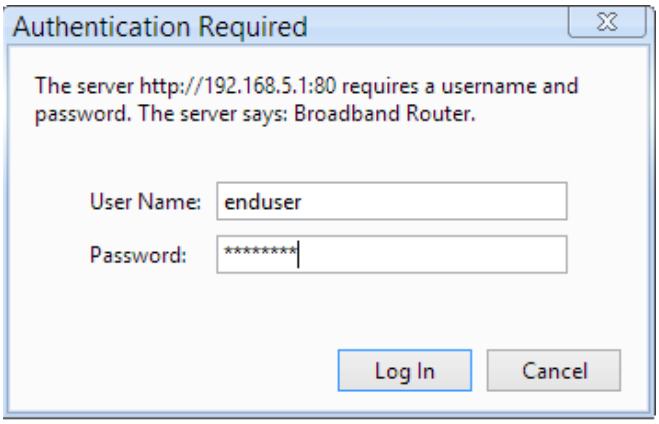
Example of WAN Access:

http://172.20.100.18

Example of LAN Access:

http://192.168.6.1

2.B When Challenged, enter the username and password associated with your account**.**



SECTION 1.3 CLI ACCESS

STEP 1 Verify IP Information

1.A Determine the IP and Port of the service interface.

If you are accessing the unit remotely:

Determine the WAN IP and Service Port.

Verify that your local IP will not be blocked by any gateway, or network, ACLs.

If you are accessing the unit locally:

Determine the LAN IP of the gateway.

In a NAT, or Routed configuration, this will be your Gateway IP, assigned by DHCP.

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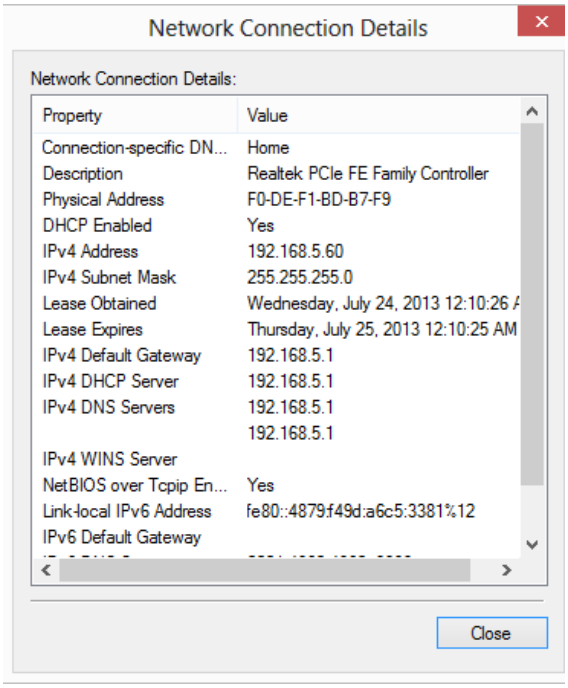


Step 2 Connect via Client

2.A Via your OS Terminal, or Console Program, you may enter the IP and Port information

Example of WAN Access:

172.20.100.18

Example of LAN Access:

192.168.6.1

2.B When Challenged, enter the username and password associated with your account**.**

SECTION 2: WAN CONFIGURATION

SECTION 2.1 WAN LOGIC OVERVIEW

Item 1 OSI RELATION

1.A WAN IF (Interfaces)

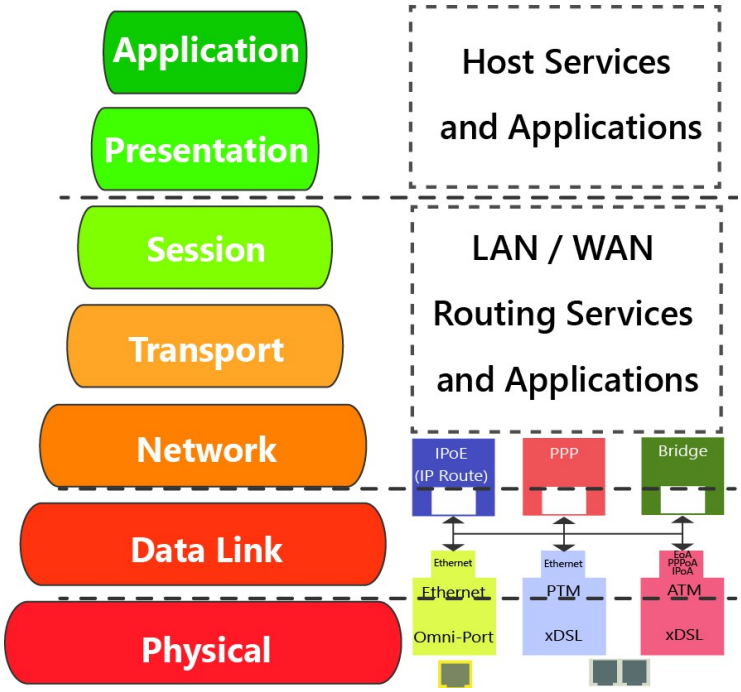
There are three possible “Layer 1 – 2” WAN Configurations Available

ATM
Available for: xDSL Interface
Most Commonly Associated with ADSL

PTM
Available for: xDSL Interface
Most Commonly Associated with VDSL2

ETH
Available for: Omni-Port WAN Interface
Building This Interface Removes the “Omni-Port” from LAN Operation

Configured Here:
Physical WAN Interfaces Used, Data Link, VLAN Mux, QoS, ATM PVC’s, ATM Non-Ethernet Services.



1.B WAN Services

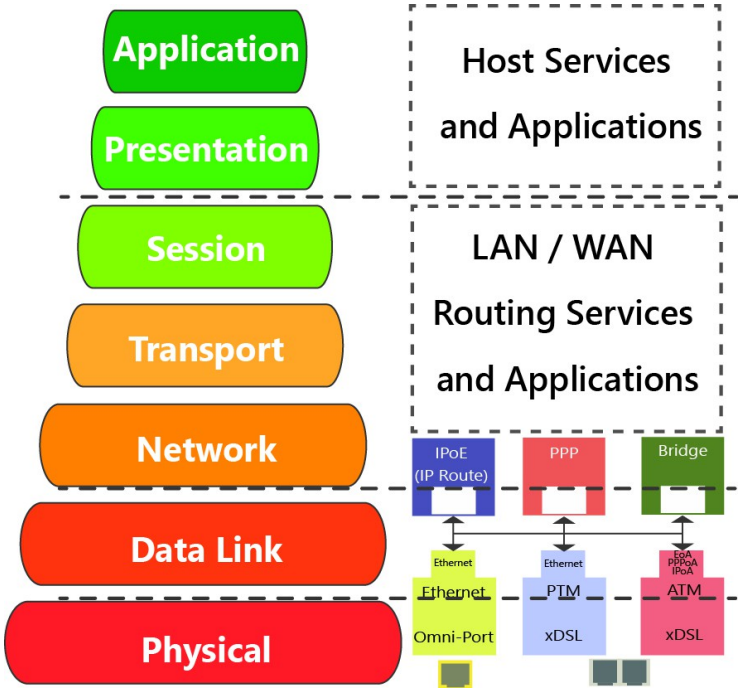
There are three possible “Layer 2 – 3” WAN Configurations Available

Bridged
Available for: ATM, PTM, ETH
Passes Traffic – No Routing

IPoE
Available for: ATM, PTM, ETH
Routing, WAN Clients (DHCP, RADVD, ETC), Firewall Type, NAT, Proxies

PPP
Available for: ATM, PTM, ETH
PPP Client, Routing, WAN Clients (DHCP, RADVD, ETC), Firewall Type, NAT, Proxies

Configured Here:
Service Type, VLAN Tagging, Routing Services, IP Services, WAN Clients and Proxies



Item 2 WAN Creation / Deletion

2.A Building WAN Services

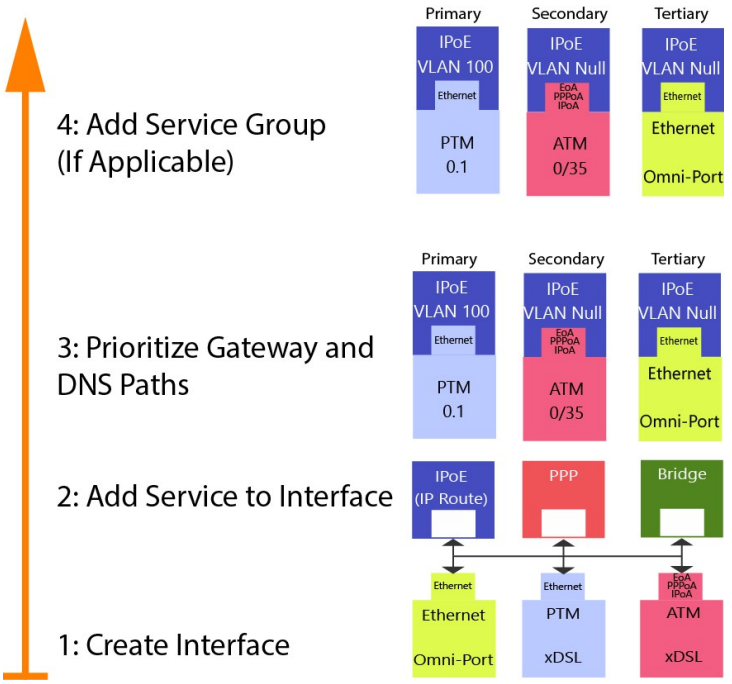
WAN Services Must be added as follows

1: Add & Define WAN Interface
ATM
PTM
ETH (Omni-Port)

2: Add and Define Service to Interface
ATM
PTM
ETH (Omni-Port)

3: Prioritize for Default Service Group
Gateway
DNS

4: Add Service Group
If Applicable



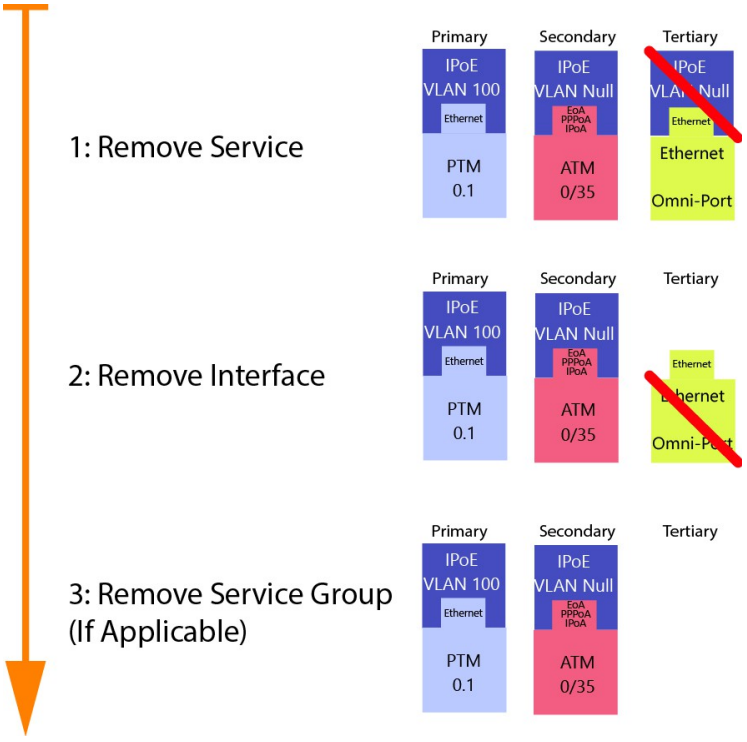
2.B Tearing Down WAN Services

WAN Services Must be removed as follows:

1: Remove WAN Service
This must be removed first

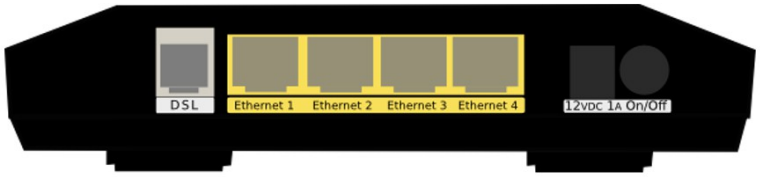
2: Remove Interface
This may not be removed unless all associated WAN Services are removed

3: Remove Service Group
Remaining Group Interfaces will not be ungrouped by default



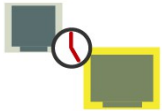
Item 3 Physical Port Prioritization

3.1 There are three Physical WAN Options



Option 1: xDSL Only

Option 2: Omni-Port WAN Only



Option 3: Activate Omni-Port on timeout

xDSL Operation

This operation only allows the xDSL port to be used for WAN operation.

This will not convert the “Omni-Port” to LAN mode if an “ETH” Interface is enabled

Omni-Port WAN Operation

This operation only allows WAN Service through the Omni-Port.

This will not remove created xDSL Services

WAN Time-out Operation

If xDSL signal is not detected, within a specified amount of time (default 120 seconds), the created Omni-Port WAN Interface will be activated.

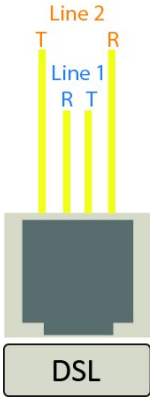
SECTION 2.2 x DSL LOGIC

Item 1 x DSL Physical Interfaces

1.A xDSL Port Layout

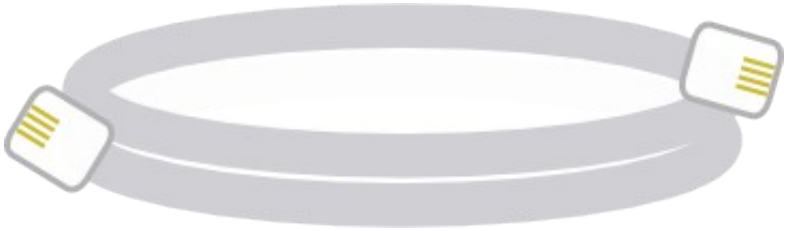
Line Pinout

The CPE is designed to operate on one line 1 Only. Only pins for Line 1 are provided



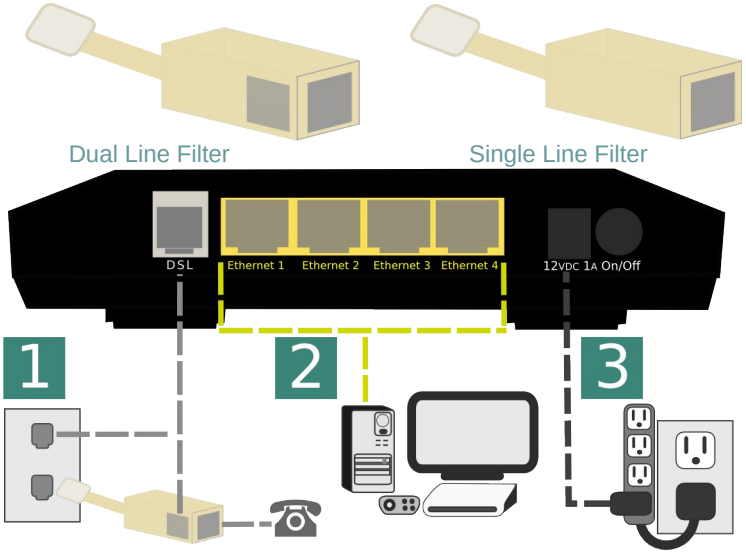
1.B xDSL Line Cord Preferences

VisionNet provides a standard xDSL cable



Item 2 Physical Installation

2.A Filters may be provided by VisionNet, or provided by a 3rd party to your company



2.B

1) Connect DSL

DSL May be connected directly to wall jack

A dual port filter may be used as well.

2) Connect Ethernet Devices

Ethernet is suggested for gaming consoles, servers, and other synchronous, latency dependent, applications

3) Connect Power

Connect power to Surge Protector

The over-voltage protection in the provided PSU is not designed to replace a proper surge protector.

2.B ADSL2+

ADSL – ADSL2+

Operating Frequency:
20 Khz – 2.2 Mhz

MaxSpeed:
24Mbps DS, 2.2Mbps US

General Operation:
ATM (PTM on some CO equipment)

Standard	ITU Standard	Max Frequency (Mhz)
ADSL	G.992.1	1.1
ADSL2	G.992.3	1.1
ADSL2+	G.992.5	2.2

Item 3 xDSL Properties

Below, is a brief summary of some xDSL protocols to familiarize yourself with:

Class	Protocol	Standard	Notes
ADSL	G.DMT	ITU G.992.1	8Mbps DS / 1.3 Mbps US
ADSL	G.Lite	ITU G.992.2	1.5 Mbps DS / 512 kbps US
ADSL	T1.413	ANSI T1.413	8Mbps DS / 1.3 Mbps US
ADSL2	ADSL2	ITU G.992.3	12 Mbps DS / 800 kbps US
ADSL2	Annex L	ITU G.992.3	Increases ADSL2 Reach to 7 km (23k ft)
ADSL2+	ADSL2+	ITU G.992.5	Doubles Frequency Range from 1.1Mhz to 2.2 Mhz.
ADSL2+	Annex M	ITU G.992.5	Changes DS / US frequency split, to double US to max 3.3 Mbps
Capability	Bitswap	ITU G.992.1	Allows for movement of bit transmission between "bins"
Capability	SRA	ITU G.992.5	ADSL2+: Allows for rate changes without re-training
Capability	Trellis	Multiple	Modulation Scheme Rate / Reach performance improvement
Capability	PhyR	Proprietary	ADSL2+: Physical Layer ReTransmission - Broadcom support only
Capability	Interleave	ITU G709	Forwarding Error Correction / delay preferred <5ms

SECTION 2.3 CUSTOMIZING xDSL PARAMETERS

Abstract

This section will provide instructions on changing xDSL parameters. Upon changing parameters, your modem will need to re-train; and you will be temporarily disconnected from WAN side connections.

This section will not explain, in detail, the various ATM based options; these should be specified by an ISPs Network Operations Center and OSP Manager.

Step 1 **Direct your browser to the xDSL Properties page**

1.A In the left-hand navigation pane, select:

WAN

xDSL Properties

Step 2 **Select the appropriate parameters for xDSL configuration**

2.A **Select Parameters**

The necessary parameters will be dictated by your network, DSLAM capabilities, and profile considerations

xDSL Properties

2.B Select “Save / Apply”

SECTION 2.4 DEFINING PHYSICAL WAN PORT OPERATION

Abstract

This section will provide instruction in specifying the physical Port used for WAN Service

Step 1 **Direct your browser to the WAN IF: Services page**

1.A In the left-hand navigation pane, select:

WAN

WAN IF: Services

Step 2 **Select the appropriate parameters for WAN Interface Selection**

2.A **xDSL Interface:**

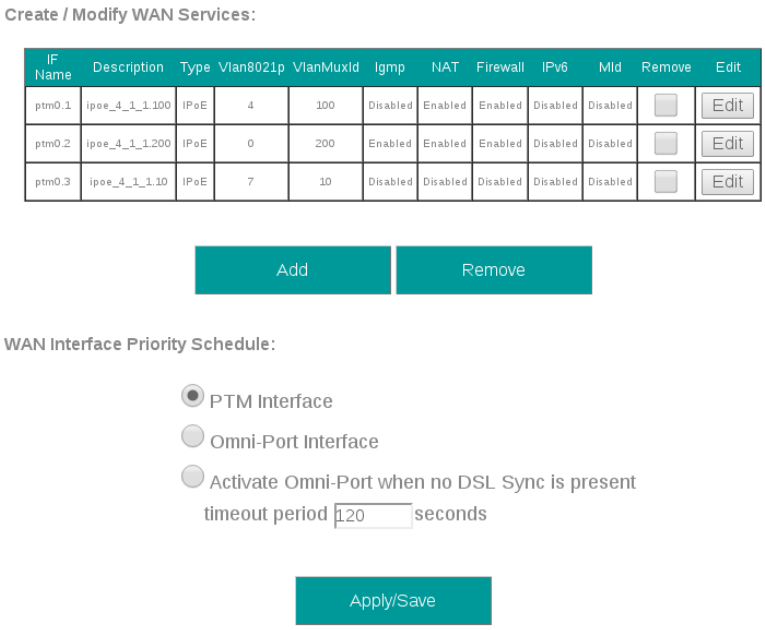
In some FW Revisions, this is labeled PTM. ATM is also supported in this mode.

Omni-Port Interface

An Ethernet interface and service must be created

Time-out

Enable Omni-Port, when no DSL Sync is present, within specified time after boot-up.



2.B Select “Save / Apply”

SECTION 2.5 CREATING AN ATM INTERFACE

Abstract

This section will demonstrate the creation of an ATM Interface, most commonly used for ADSL/2/2+ Operation.

This section will not explain, in detail, the various ATM based options; as this must be specified by an ISPs Network Operations Center and OSP Manager.

Step 1 Direct your browser to the WAN IF: ATM page

1.A In the left-hand navigation pane, select:

WAN

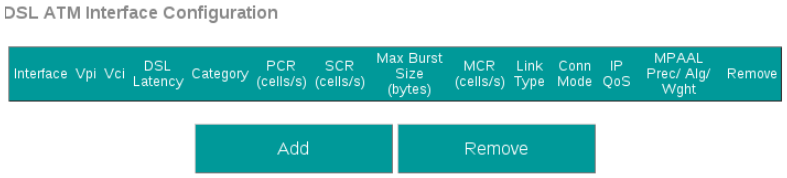
WAN IF: ATM

Step 2 Create an ATM Interface

2.A Select "Add"

Notes:
You must remove, and rebuild, an interface if you would like to change parameters.

Associated WAN Services must be removed, before an interface may be removed.



2.B **Modify Parameters**

Notes:

VPI/VCI
If you are using more than one vlan, create one PVC. The VLANs will be added during WAN Service configuration.

DSL Latency
If “Interleave” (PATH 1) is to be selected, “Fast” (PATH 0) must also be selected

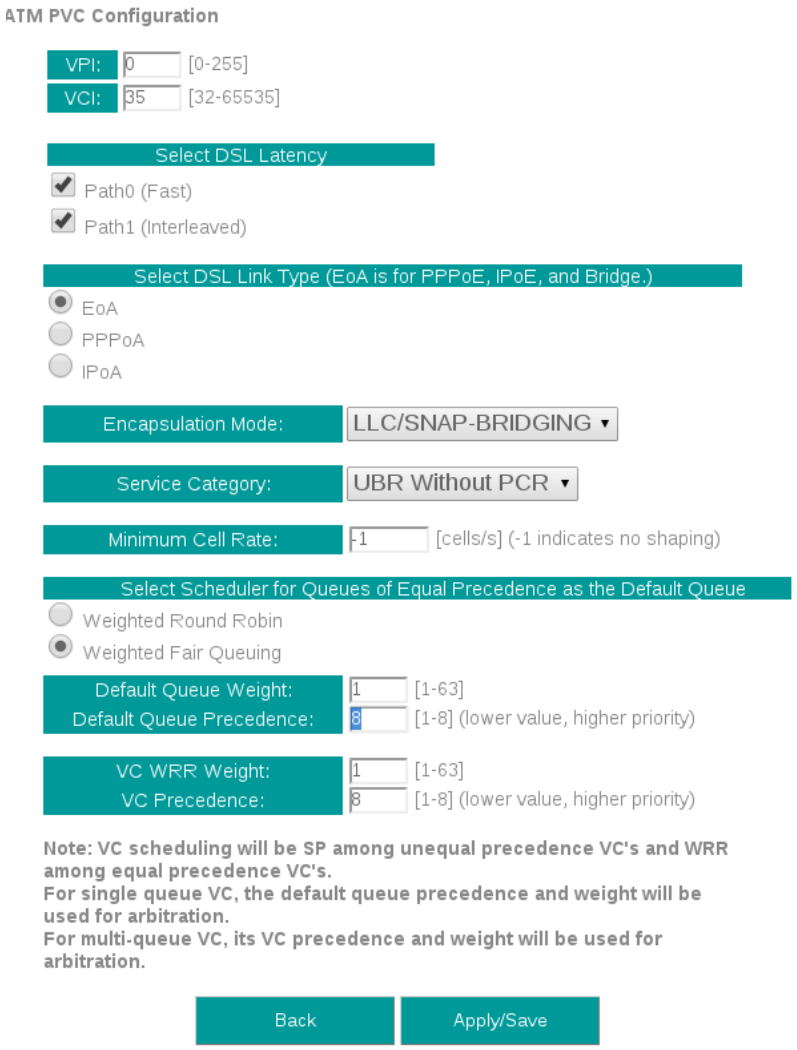
DSL Link Type
EoA (Ethernet over ATM)will be used for all Ethernet based Bridge, PPP, and IP Services; PPPoA and IPoA are exclusively ATM based

Encapsulation Mode
Default: LLC/Snap-Bridging

Service Category
Default: UBR without PCR

Minimum Cell Rate:
Default : -1

QoS Scheduler
Select WRR or WFQ
You may select Queue Weight and Precedence for the ATM.
This will affect QoS Prioritization for upstream traffic only.



2.C Select “Apply / Save”

SECTION 2.6 CREATING A PTM INTERFACE

Abstract

This section will demonstrate the creation of a PTM Interface, most commonly used for VDSL2 Operation.

This section will not explain, in detail, the various PTM based options; as this must be specified by an ISPs Network Operations Center and OSP Manager.

Step 1 Direct your browser to the WAN IF: PTM page

1.A In the left-hand navigation pane, select:

WAN

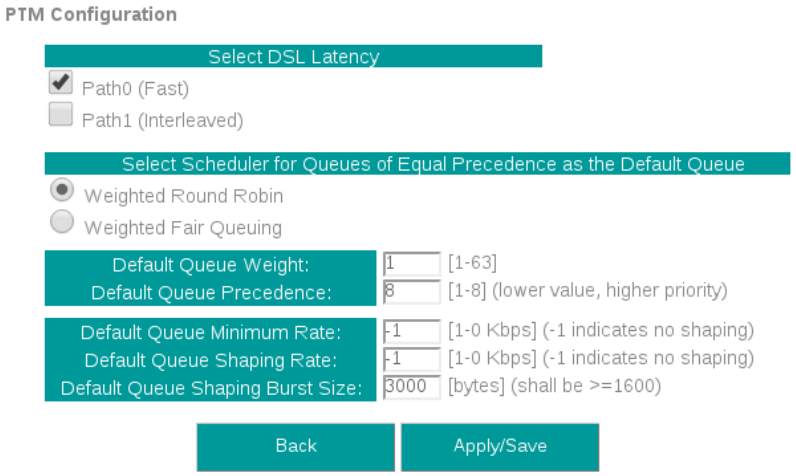
WAN IF: PTM

Step 2 Create a PTM Interface

2.A Select "Add"

Notes:
You must remove, and rebuild, an interface if you would like to change parameters.

Associated WAN Services must be removed, before an interface may be removed.



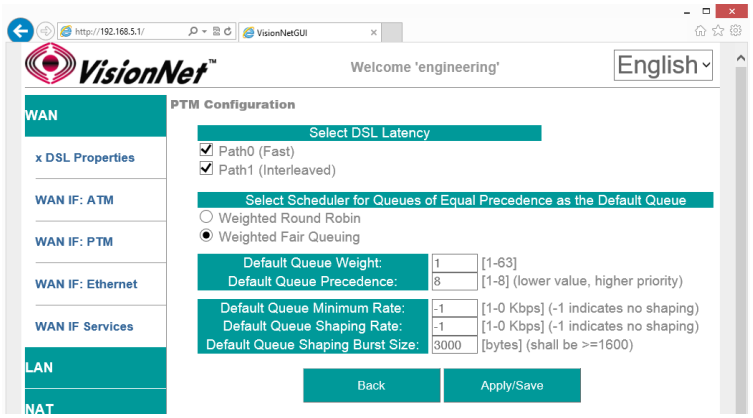
2.B Modify Parameters

Notes:

VLAN MUX
VLAN MUX is enabled by default.

DSL Latency
If "Interleave" (PATH 1) is to be selected, "Fast" (PATH 0) must also be selected

QoS Scheduler
Select WRR or WFQ
You may select Queue Weight and Precedence for the ATM.
This will affect QoS Prioritization for upstream traffic only.



2.C Select "Apply / Save"

SECTION 2.7 CREATING AN ETHERNET INTERFACE

Abstract

This section will demonstrate the creation of an Ethernet nterface, most commonly used for VDSL2 Operation.

This section will not explain, in detail, the various Ethernet based options; as this must be specified by an ISPs Network Operations Center and OSP Manager.

Step 1 **Direct your browser to the WAN IF: Ethernet page**

1.A In the left-hand navigation pane, select:

Step 2 **Create an Ethernet Interface**

2.A **Select “Add”**

Notes:
You must remove, and rebuild, an interface if you would like to change parameters.

Associated WAN Services must be removed, before an interface may be removed.

2.B **Select Ethernet Port**

Notes:

It is strongly suggested that the “Omni-Port” be used for WAN Operation.

The option to use another port if available, in the event that another

2.C Select “Apply / Save”

SECTION 2.8 CREATE / MODIFY A BRIDGED WAN SERVICE

Abstract

This section will explain creating a Bridged WAN Service; which removes any routing services from the WAN interface.

This section will not explain, in detail, the various options; as this must be specified by an ISP's Network Operations Center and OSP Manager.

Step 1 **Direct your browser to the WAN IF: Services page**

1.A In the left-hand navigation pane, select:

WAN

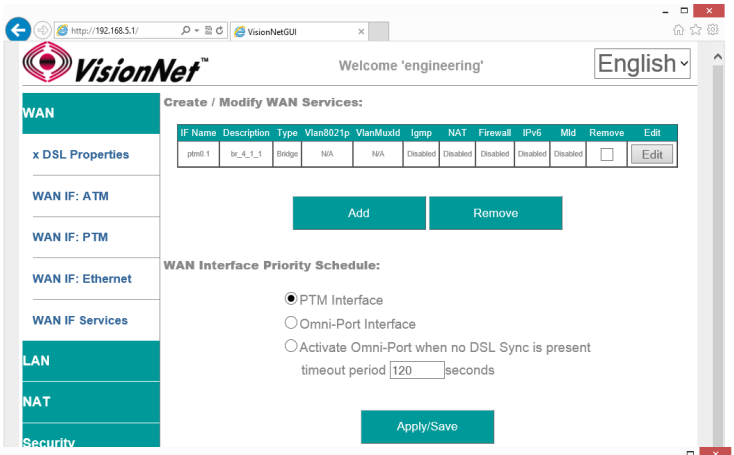
WAN IF: Services

Step 2 **Create a WAN Interface**

2.A **Select "Add"**

Notes:

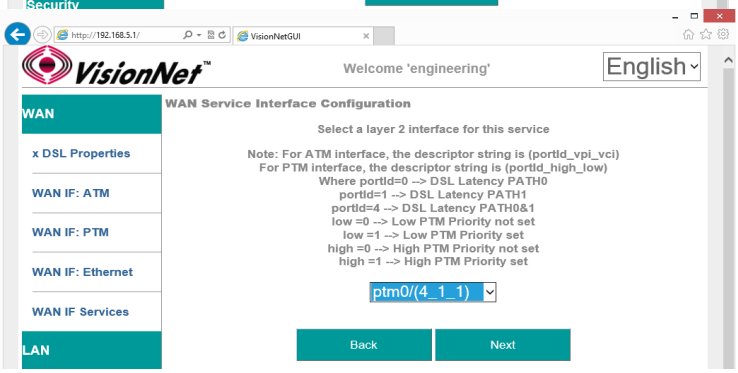
NOTE: If you wish to modify an existing connection; select the "EDIT" button located in the table row of the desired interface



2.B **Select Desired Interface**

This is the Interface that will be used for the Bridged Service

Upon selection, select "Next"



2.C Specify Basic WAN Services

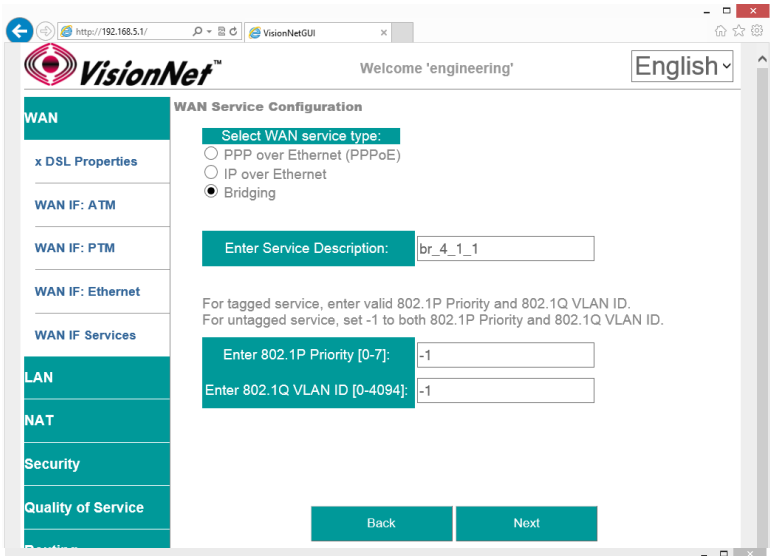
WAN Service Type: Bridging

Service Description: User Defined

802.1p: If untagged, leave as -1 (Null)

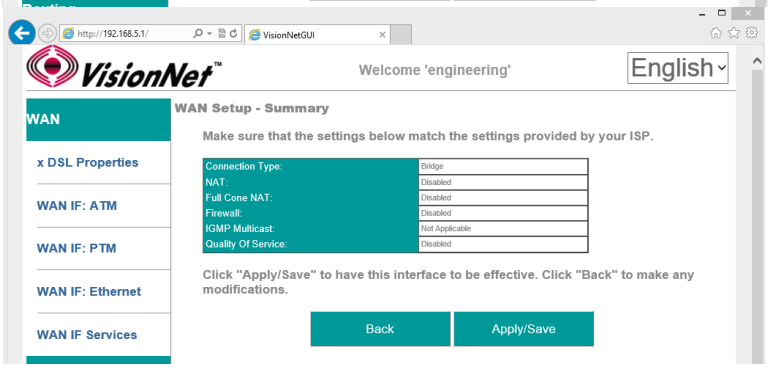
802.1q: If untagged, leave as -1 (Null)

Once complete, select “Next”



2.D WAN Summary

Upon Review, select “Apply/Save”



SECTION 2.9 CREATE / MODIFY AN IPOE WAN SERVICE

Abstract

This section will explain creating an IPoE WAN Service; which enables routing services.

This section will not explain, in detail, the various options; as this must be specified by an ISPs Network Operations Center and OSP Manager.

Step 1 **Direct your browser to the WAN IF: Services page**

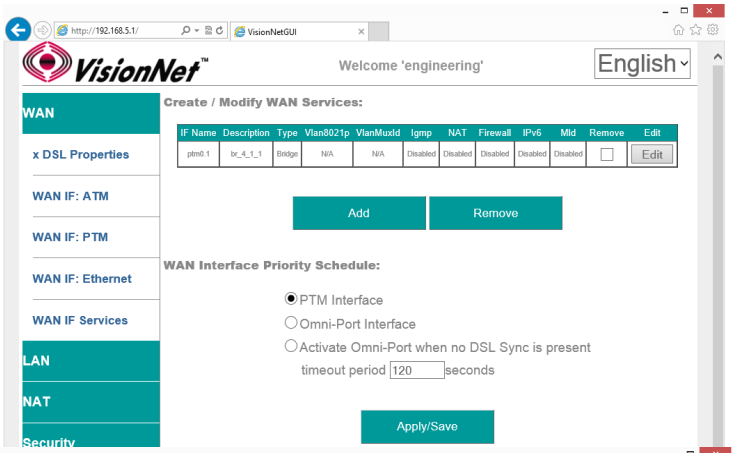
1.A In the left-hand navigation pane, select: **WAN** → **WAN IF: Services**

Step 2 **Create a WAN Interface**

2.A **Select "Add"**

Notes:

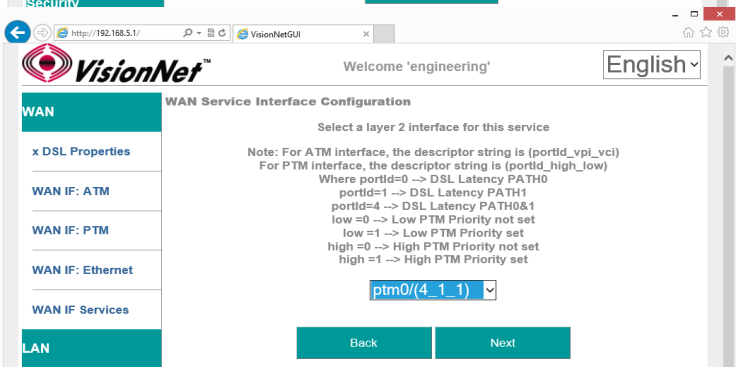
NOTE: If you wish to modify an existing connection; select the "EDIT" button located in the table row of the desired interface



2.B **Select Desired Interface**

This is the Interface that will be used for the Bridged Service

Upon selection, select "Next"



2.C Specify Basic WAN Services

WAN Service Type: IPoE

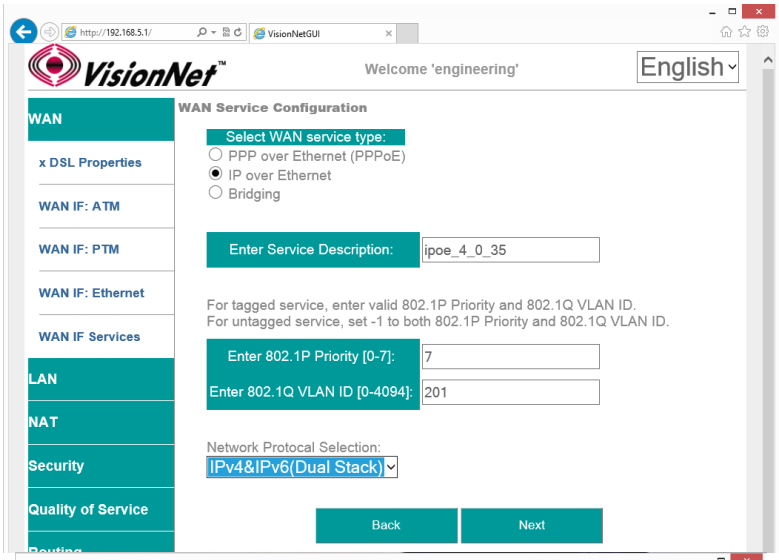
Service Description: User Defined

802.1p: If untagged, leave as -1 (Null)

802.1q: If untagged, leave as -1 (Null)

Network Protocol: IPv4, Dual Stack, or IPv6

Once complete, select "Next"



2.D Specify WAN IP Settings

WAN Service Type: IPoE

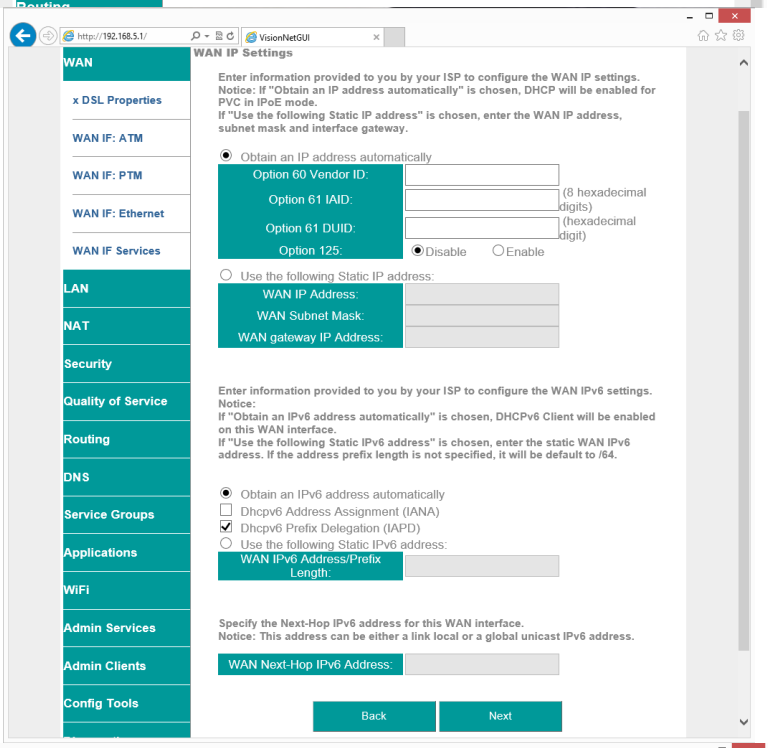
IPv4
Enable DHCP client plus desired additional DHCP Options

or enter Static IP Parameters

IPv6:
Specify applicable IPv6 Addresses

Static IPv6 may be applied; but is not advisable.

Once complete, select "Next"



2.E Specify WAN Services

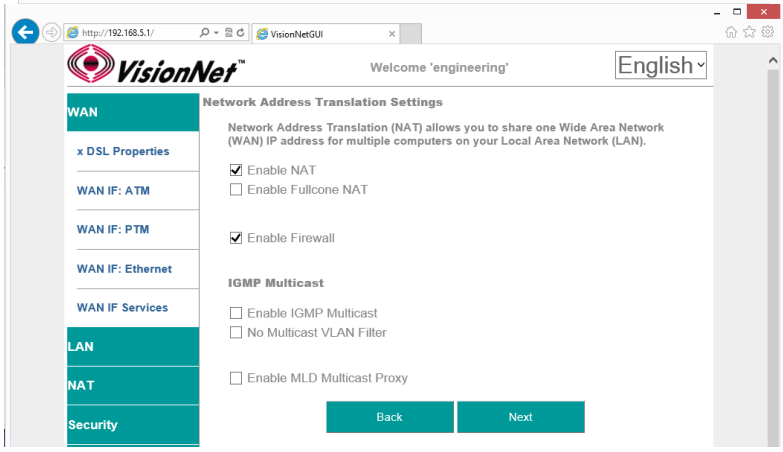
NAT:
Translation from WAN to LAN IPs

Full Cone NAT:
Augments NAT by keeping translated port associations open

Firewall:
Necessary for Management Services, Port Forwarding, etc.

Enable IGMP Multicast:
Only to be used, for IPTV WAN Services, where IGMP proxy is required. Do not enable otherwise.

No Multicast VLAN Filter



Monitor all VLANs

Enable MLD Multi-Cast Proxy
Allows MLD outside of local domain

Once complete, select "Next"

2.F Add Service to Gateway Priority List

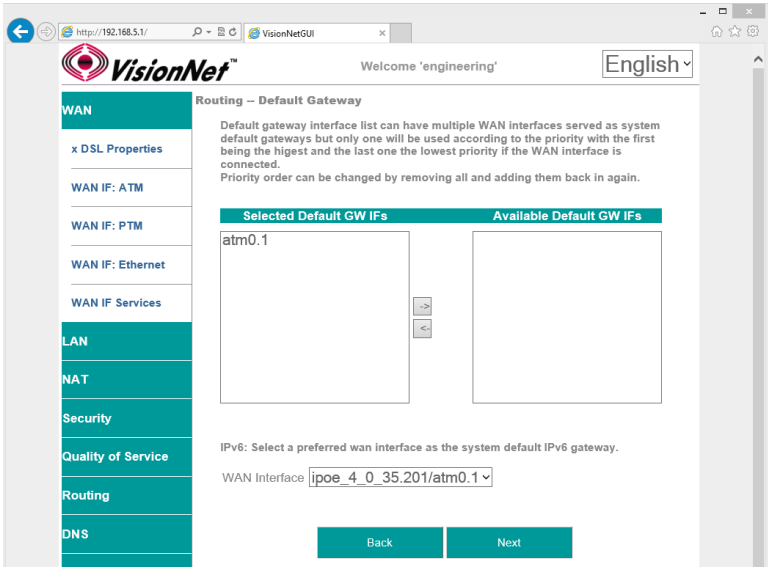
(Not available in WAN Modification; For post creation Modification See Section 4.1)

The Service will be available in the "Available Default GWs column".

Upon selection, you may place with the "Selected Default Gateways" column.

Gateway prioritization runs from top to bottom, and may be re-prioritized by removing WAN services from the left column; and then re-entering them in the desired order.

You may also select the IPv6 Default Gateway interface.



2.G Add Service to DNS Priority List

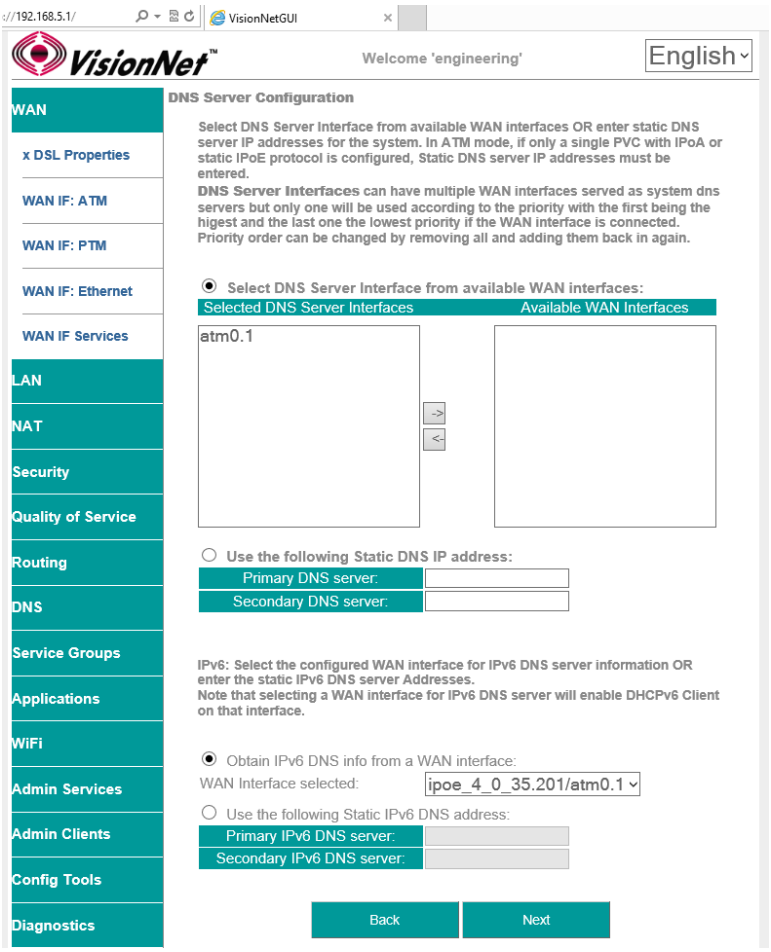
(Not available in WAN Modification; For post creation Modification See Section X)

The Service will be available in the "Available WAN Interfaces column".

Upon selection, you may place with the "Selected DNS Server Interfaces" column.

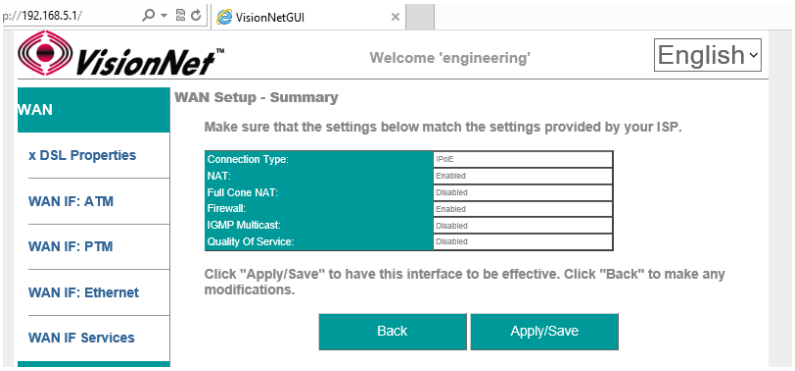
DNS Service Prioritization runs from top to bottom, and may be re-prioritized by removing WAN services from the left column; and then re-entering them in the desired order.

You may also select the IPv6 Default DNS Interface.



2.H WAN Summary

Upon Review, select “Apply/Save”



SECTION 2.10 CREATE / MODIFY A PPP WAN SERVICE

Abstract

This section will explain creating a PPP WAN Service, which may be used for routed, or proxied, IP services.

This section will not explain, in detail, the various options; as this must be specified by an ISPs Network Operations Center and OSP Manager.

Step 1 **Direct your browser to the WAN IF: Services page**

1.A In the left-hand navigation pane, select:

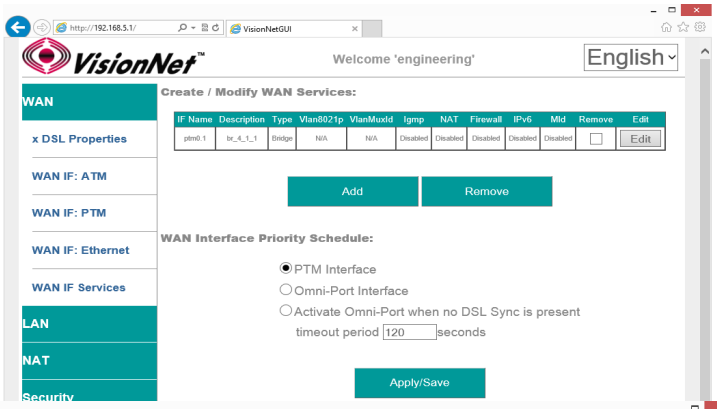
WAN

WAN IF: Services

Step 2 **Create a WAN Interface**

2.A **Select "Add"**

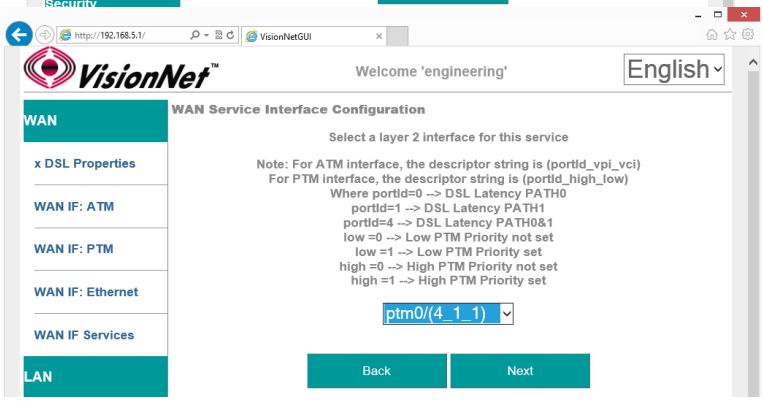
NOTE: If you wish to modify an existing connection; select the "EDIT" button located in the table row of the desired interface



2.B **Select Desired Interface**

This is the Interface that will be used for the Bridged Service

Upon selection, select "Next"



2.C Specify Basic WAN Services

WAN Service Type: PPPoE
(PPPoA is only available if selected during ATM Creation; if this is the case, then there will be no option to select services)

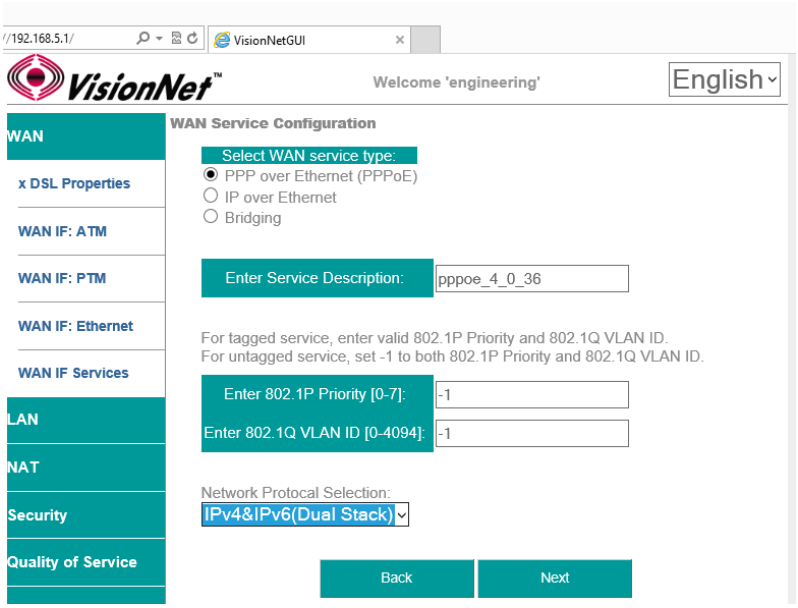
Service Description: User Defined

802.1p: If untagged, leave as -1 (Null)

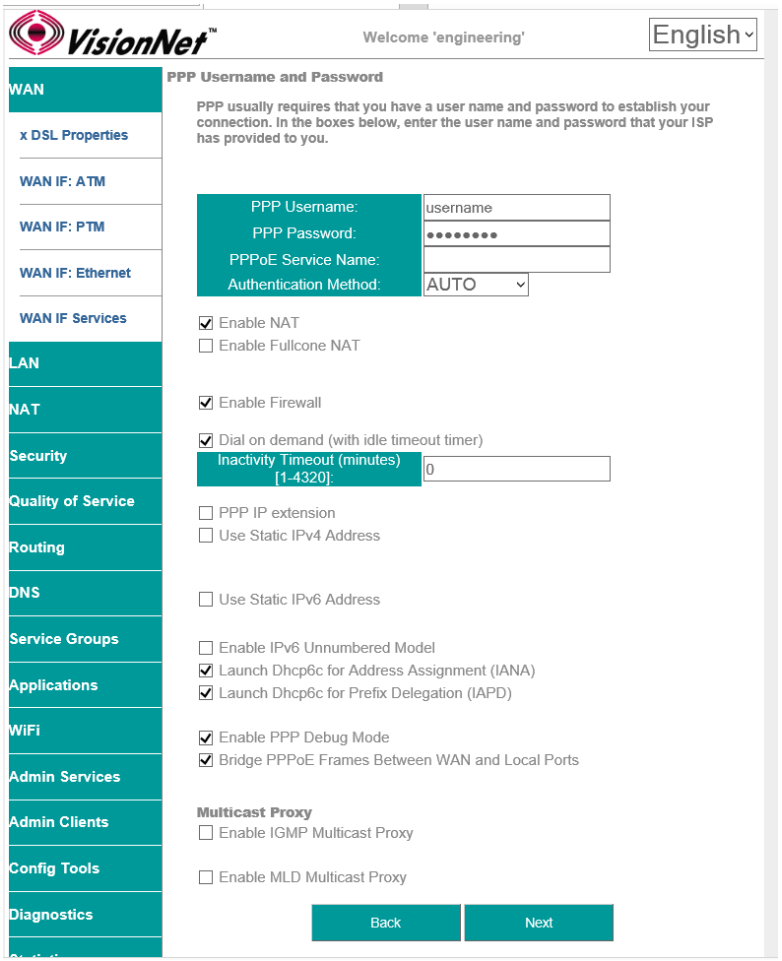
802.1q: If untagged, leave as -1 (Null)

Network Protocol: IPv4, Dual Stack, or IPv6

Once complete, select "Next"



2.D Specify WAN IP Settings



PPP Authentication Client
Username
Password
Service Name (usually blank)
Authentication Method (usually AUTO)

NAT:
Translation from WAN to LAN IPs

Full Cone NAT:
Augments NAT by keeping translated port associations open

Firewall:
Necessary for Management Services, Port Forwarding, etc.

Dial on Demand:
If enabled, PPP will disconnect, after the specified period of time, until hosts request internet access

PPP IP Extension
Disables NAT, and forward IP to first DHCP requesting host from LAN.

Static IP Settings
If Static IPs for v4, or v6, are to be assigned in lieu of DHCP

IPv6 Settings
IPv6 DHCP / RADVD settings

PPP Debug Mode
Sends all PPP service activity to syslog – for testing only

Bridge PPPoE Frames between WAN and Local Ports
Allows PPP Requests to be made from LAN Hosts

Enable IGMP Multicast:
Only to be used, for IPTV WAN Services, where IGMP proxy is required. Do not enable otherwise.

Enable MLD Multi-Cast Proxy
Allows MLD outside of local domain

Once complete, select "Next"

2.E Add Service to Gateway Priority List

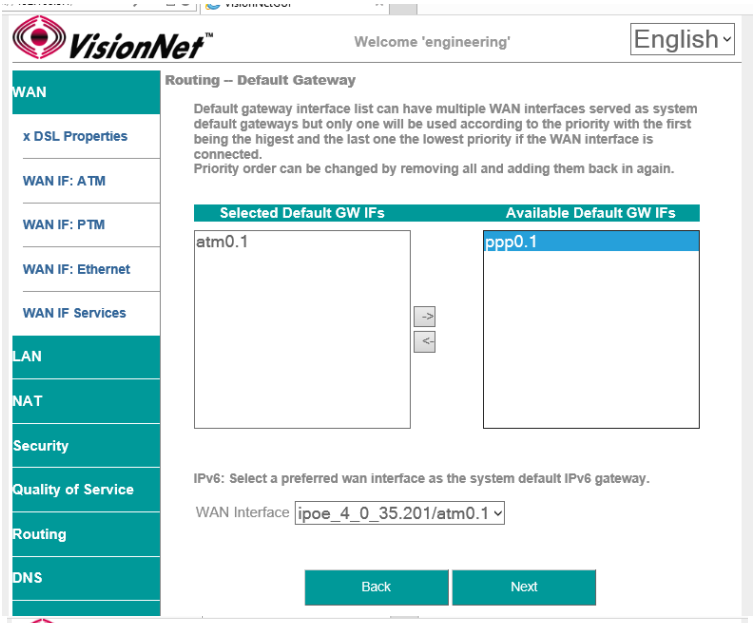
(Not available in WAN Modification; For post creation Modification See Section 4.1)

The Service will be available in the “Available Default GWs column”.

Upon selection, you may place with the “Selected Default Gateways” column.

Gateway prioritization runs from top to bottom, and may be re-prioritized by removing WAN services from the left column; and then re-entering them in the desired order.

You may also select the IPv6 Default Gateway interface.



2.F Add Service to DNS Priority List

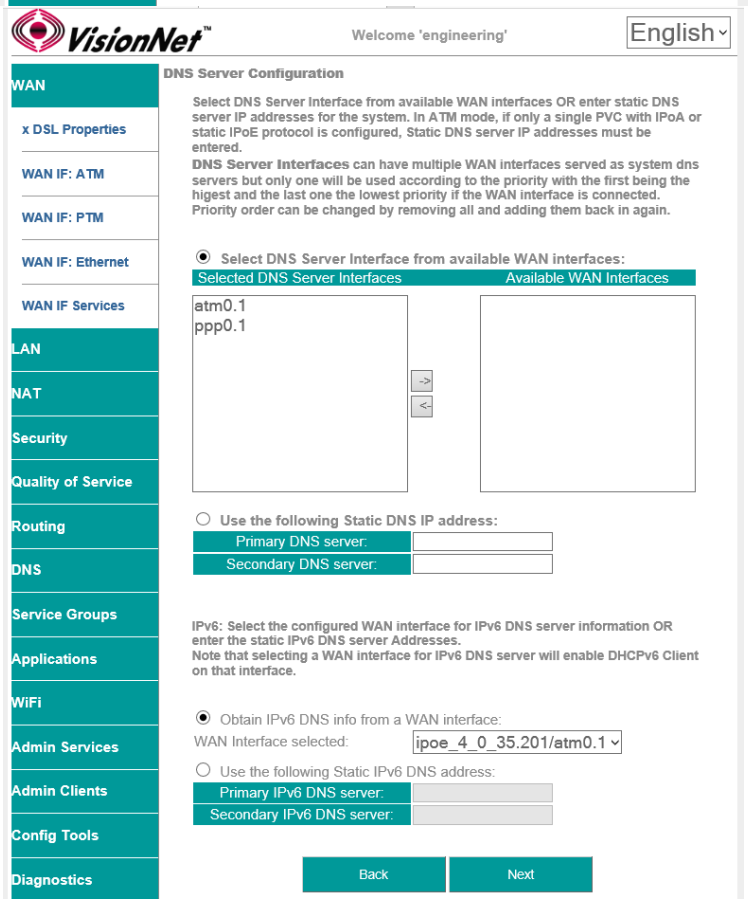
(Not available in WAN Modification; For post creation Modification See Section X)

The Service will be available in the “Available WAN Interfaces column”.

Upon selection, you may place with the “Selected DNS Server Interfaces” column.

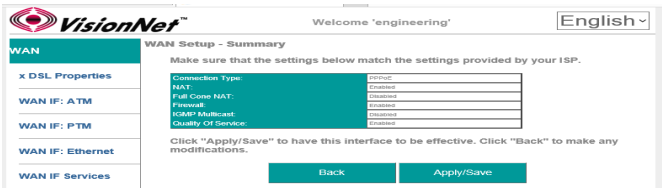
DNS Service Prioritization runs from top to bottom, and may be re-prioritized by removing WAN services from the left column; and then re-entering them in the desired order.

You may also select the IPv6 Default DNS Interface.



2.G WAN Summary

Upon Review, select “Apply/Save”



SECTION 3: IPv4 LAN CONFIGURATION

SECTION 3.1 IPv4 Configuration

Abstract

This section will depict the configuration of LAN broadcast groups. Each service group has separate IP, broadcast, and multi-cast domains. **You must configure LAN Services for each service group**

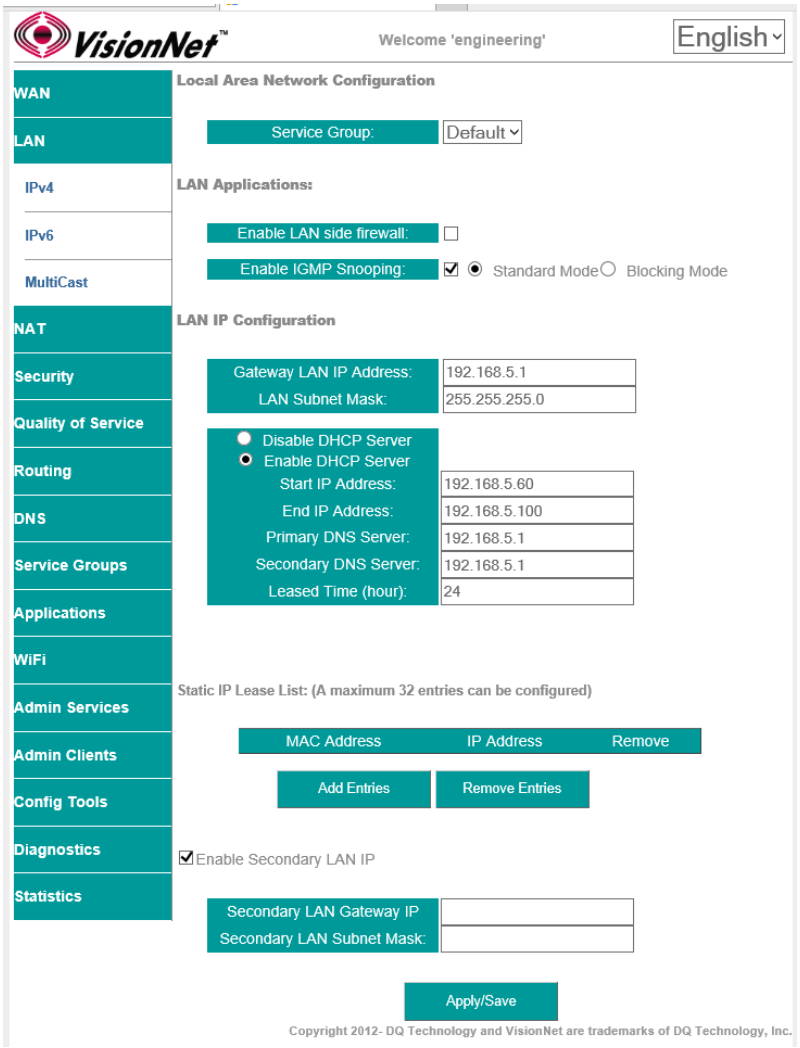
Step 1 **Direct your browser to the LAN IPv4 page**

1.A In the left-hand navigation pane, select:

LAN

IPv4

Step 2 **Configure Service Group LAN Parameters**



2.A **Service Group**

Select Service Group to Modify

LAN Firewall

When enabled, hosts will not be able to manage device via Service Group LAN IP.

Enable IGMP Snooping

When enabled, the IGMP Multicast controller will be enabled.
Standard Mode will enable snooping
Blocking Mode will prevent Multicasts

LAN IP Configuration

Gateway IP / Subnet
This will serve as the LAN Gateway IP for hosts.

DHCP Server

Configure DHCP Range within Gateway Subnet

Enter Gateway IP, for DNS Servers, if proxy is to be used.

Enter custom DNS Servers if desired.

DNS Proxy may be by-passed (WAN DNS will be passed to devices). See Section 4.X

DHCP Reservation (Static IP Lease)

Reserve IPs, within the Primary Gateway Subnet, based upon hosts MAC Addresses

Enable Secondary LAN IP

A secondary LAN IP may be implemented. No DHCP Services are assigned to this interface

Step 3 **When finished, select " Apply / Save ".**

SECTION 4: WiFi Configuration

SECTION 4.1 Enable / Disable WiFi

Abstract:

WiFi may be enabled / disabled

Step 1 **Direct your browser to the SSID page**

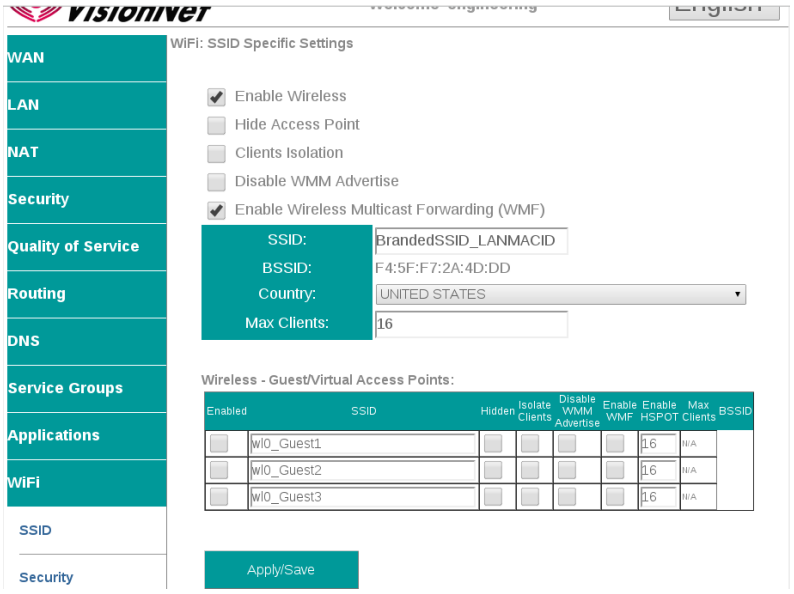
1.A In the left-hand navigation pane, select:

WiFi

SSID

Step 2 **Enable / Disable WiFi**

2.A Check / Uncheck the box labeled **"Enable Wireless"**



Step 3 **When finished, select " Apply / Save ".**

It may take up to 1 minute for your change to take effect

SECTION 4.2 Configure SSID Specific Settings

Abstract:

SSID Specific settings may be altered for optimized interoperability

Step 1 **Direct your browser to the SSID page**

1.A In the left-hand navigation pane, select: **WiFi**

SSID

Step 2 **SSID Related Settings**

2.A **ENABLE WIRELESS**

This enables / Disables WiFi services

HIDE ACCESS POINT

If this is selected, the SSID name will not be broadcasted

CLIENTS ISOLATION

This prevents ad-hoc networks; but could impede upon some applications (ie: printing)

Disable WMM Advertise

WMM is required for modern MultiMedia applications. Disable only for support of legacy devices. This will lower aggregate speed

Enable WMF

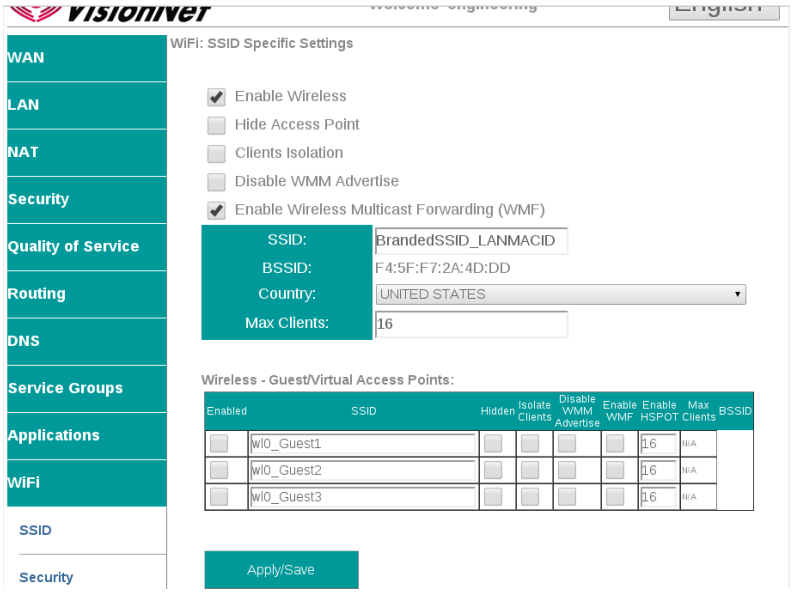
Wireless Multicast Forwarding is useful for modern Media Sharing applications

SSID Name

This is the broadcasted SSID name

Virtual / Guest networks

Mutliple SSIDs may be broadcasted (ie: temporary access). Clients will operate on the primary LAN



Step 3 **When finished, select " Apply / Save ".**

It may take up to 1 minute for your change to take effect

SECTION 4.3 WiFi Security

Abstract:

WiFi Security should always be enabled. The following directions will provide detail on configuration.

Step 1 **Direct your browser to the SSID page**

1.A In the left-hand navigation pane, select:

WiFi

Security

Step 2 **SSID Related Security Settings**

2.A **Enable WPS**
Suggested Configuration - Disabled

SSID
Select SSID

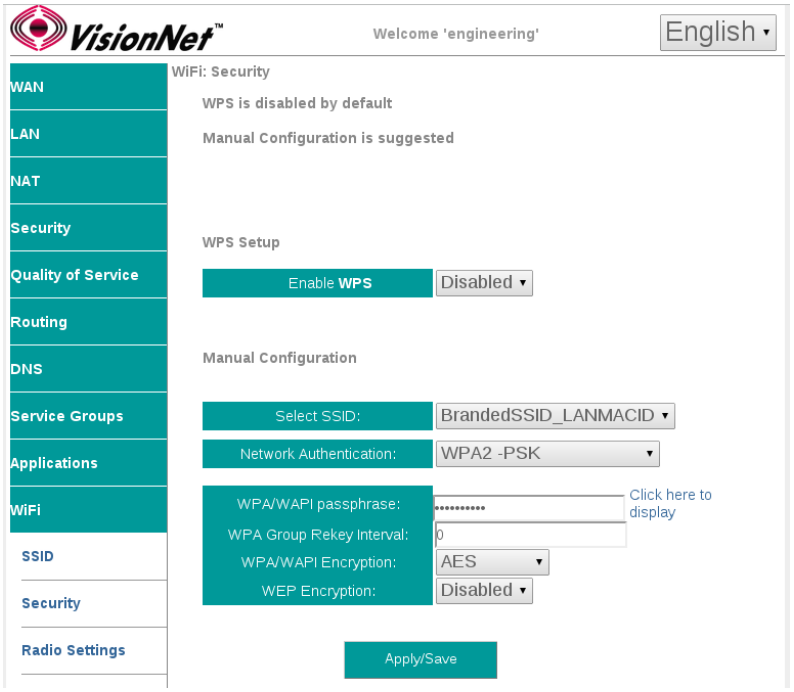
Network Authentication
Suggested Setting: WPA2-PSK

WPA Passphrase
This may be any passphrase that you like.

WPA Group Rekey Interval
Suggested Setting: 0

WPA Encryption
Suggested Setting: AES

WEP Encryption
Suggested Setting: Disabled



Step 3 **When finished, select " Apply / Save ".**

It may take up to 1 minute for your change to take effect. You will need to "forget" old network settings and re-connect all devices after making this change.

SECTION 4.4 WiFi Radio Settings

Abstract:

Most radio settings should be left as default. Below, are key settings for optimizing performance.

Step 1 **Direct your browser to the SSID page**

1.A In the left-hand navigation pane, select: **WiFi**

Radio Settings

Step 2 **SSID Related Security Settings**

2.A

Band:
This device only supports 2.4Ghz

Channel:
Auto will allow the device to auto-select a channel. This will also allow the WiFi button, located on the top front of the device, to change the channel.

802.11n/EWC
Suggested Setting: Auto

802.11n Auto
Suggested Setting: Auto

802.11n Protection
Suggested Setting: Off

802.11n Client Only
Suggested Setting: Off

RIFS Advertisment
Suggested Setting: Auto

OBSS Coexistence
Suggested Setting: Enabled

RX Chain Power Save
Suggested Setting: Disabled

RX Chain Power Save Quiet Time:
Suggested Setting: 10

RX Chain Power Save PPS:
Suggested Setting: 10

54g Rate
Suggested Setting:1Mbps

Multicast Rate
Suggested Setting: Disabled

Basic Rate
Suggested Setting: Default

Fragmentation Threshold
Suggested Setting: 2346

RTS Threshold
Suggested Setting: 2347

DTIM Threshold
Suggested Setting: 1

Beacon Interface
Suggested Setting: 100

Global Max Clients:
Suggested Setting: 16

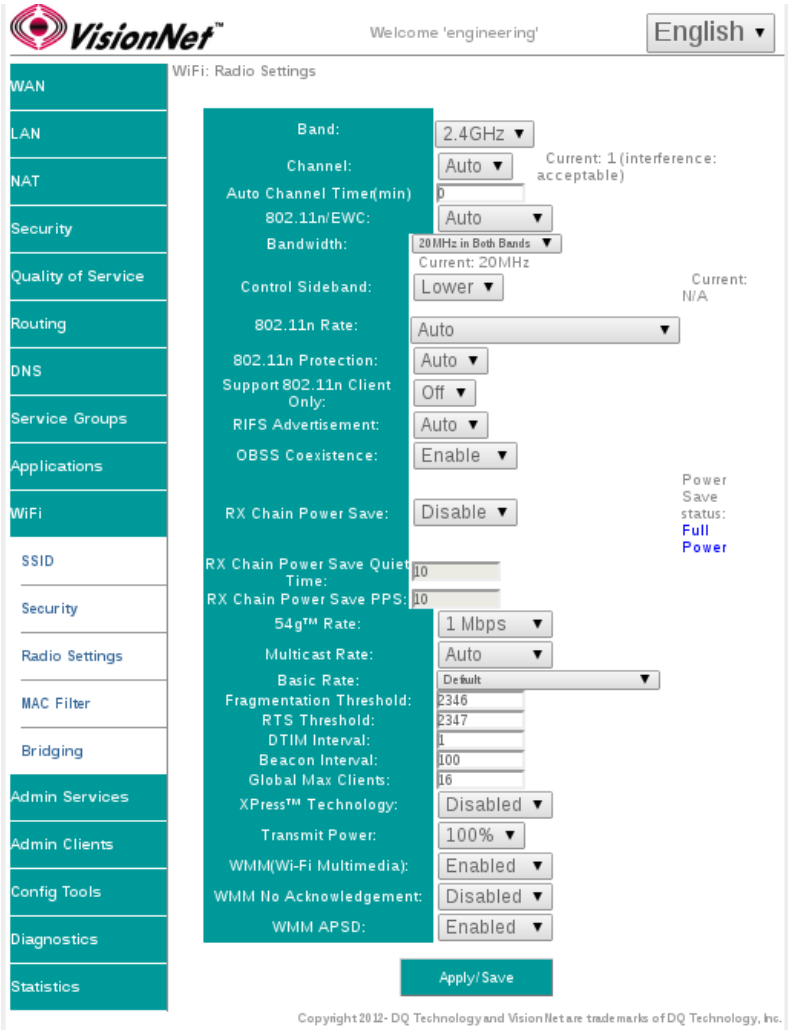
Xpress Technology
Suggested Setting: Disabled

Transmit Power
Suggested Setting: 100%

WMM
Suggested Setting: Enabled

WMM No Acknowledgement
Suggested Setting: Disabled

WMM APSD
Suggested Setting: Enabled



Step 3 **When finished, select " Apply / Save ".**

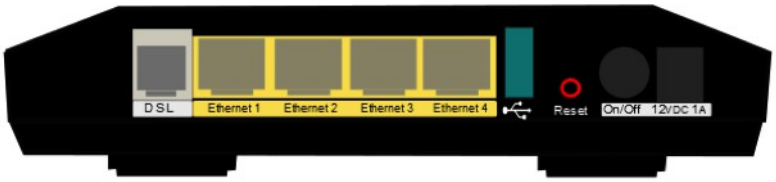
It may take up to 1 minute for your change to take effect.

SECTION 5: Product Specifications

SECTION 5.1 Product Depictions

Front Depiction

Back Depiction



SECTION 5.2 LED Functionality

Label	Description	Functionality
Power	Status Power / Router	Solid Green – Power On Off – Power Off Flashing Green 2 hz – Flashing Power on self test Flashing Red 4 hz- Failure (not bootable) or device malfunction A malfunction is any error of internal sequence or state that will prevent the device From connecting to the DSLAM or passing customer data. This may be identified at various times such after power on or during operation through the use of self testing or in operations which result in a unit state that is not expected or should not occur.
Ethernet 1	Status Ethernet Port	Off - Power Off – or – No Powered device detected Solid Green – Powered device connected ; including wake on LAN Flashing Green – LAN activity present for that port
Ethernet 2	Status Ethernet Port	Off - Power Off – or – No Powered device detected Solid Green – Powered device connected ; including wake on LAN Flashing Green – LAN activity present for that port
Ethernet 3	Status Ethernet Port	Off - Power Off – or – No Powered device detected Solid Green – Powered device connected ; including wake on LAN Flashing Green – LAN activity present for that port
Ethernet 4	Status Ethernet Port	Off - Power Off – or – No Powered device detected Solid Green – Powered device connected ; including wake on LAN Flashing Green – LAN activity present for that port LED Location specifies Link Status 10 / 100 / GbE
Wireless	Status WiFi	Off - Modem off or Wireless not activated Solid Green – Wireless activated Flashing Green 2 hz– WPS Activated – Association Period Flashing Green 4 Hz - Wireless Activity Note: Pressing the WiFi button enables a re-scan of the WiFi Spectrum
WPS	Status WPS	Off: WPS Not in use Solid Green: Devices authenticated via WPS Flashing Green: WPS authenticated activated, authenticating devices Note: Presseing the WPS button enables WPS if enabled in the GUI
DSL	Status DSL Link Line 1	Green – DSL Good Sync Off - Powered off Flashing Green - DSL Attempting sync Signal Detection – Flashing 2hz with 50% duty cycle Carrier Detected, Modem training – Flashing at 4hz with 50% duty cycle
Internet	Status Internet Connection	Internet Light – Must indicate at least one type of connection Solid Green – IP connected – no traffic passing Device has a WAN IP via either static/ DHCP/ or IPCP If PPP is used, device has authenticated and has a WAN IP Address If IP or PPPOE session is idle and dropped, light to remain green as long as ADSL is still present. Light to turn red if upon attempting new session it fails. Off – Modem Power Off. LED Should remain off if modem is in bridged mode or if DSL Connection is not present Flashing Green – Device has WAN IP Address and IP Traffic is passing through device Red – Device attempted initiate session, either authentication or to obtain an IP Address, and failed. an IP Address, and failed.

SECTION 5.3 Regulatory Advisories

FCC Caution:
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

VisionNet
Model: M505N
FCC ID: QMPM505NR31 US: DQ1DL01BM505NR31

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference and
(2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with FCC part 68 Rules.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 centimeters between the radiator and your body.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may case harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

Customer Information

This equipment complies with Part 68 of the FCC rules. Located on the equipment is a label that contains, among other information, the ACTA registration number and ringer equivalence number (REN.) If requested, this information must be provided to the telephone company. The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's contact the telephone company to determine the maximum REN for the calling area. This equipment cannot be used on the telephone company-provided coin service. Connection to Party Line Service is subject to State Tariffs. If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right the file a complaint with the FCC if you believe it is necessary.
The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service. If trouble is experienced with this equipment, please contact (Agent in the US):
Company Name: DQ Technology, Inc. Address: 5111 Johnson Drive, Pleasanton, CA, 94588, USA Tel: +1 925 730 3940 Fax: +1 925 730 3950
If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved.
This equipment uses the following USOC jacks: RJ11C It is recommended that the customer install an AC surge arrester in the AC outlet to which this device is connected. This is to avoid damaging the equipment caused by local lightning strikes and other electrical surges.