11/02/2015



Manual del router Zyxel NU-GRN8



teléfono_internet_televisión

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1 Introducción

Esta guía presenta las características del router Broadband **Zyxel NU-GRN8**. Este router se utilizará para dar acceso a Internet a una LAN de cliente.

2 Características del router Zyxel NU-GRN8

2.1 Funcionalidades y especificaciones técnicas:

En la siguiente tabla se indican las especificaciones técnicas del equipo:

Categoría	Funcionalidad	Comentarios
	MAC address Access Control	
	Hidden SSID	
	WEP - WPA / PSK - WPA2 / PSK	
Wireless Access	Wireless client list	
Point	64/128-bit WEP encryption	
	Backward compatible with IEEE802.11b	
	IEEE802.11g/n/ac	
	EN60950 / 55022 / 301489-17 / 300328-2	No homologado
	1-port 10/100/1000 Base-TX Switch, RJ-45 connector	
	Quick start wizard for internet access	
	DHCP client for cable service	
VVAN	Static IP address assignment for fixed IP networks	
	PPPoE client	No homologado
	PPTP support	No homologado
QoS	Default marking & re-marking, queues, classification.	
	NAT/PAT (dmz host, Port Redirection, Open ports)	
F :=	Flexible URL content filtering	No homologado
Firewali	Selectable DoS/DdoS protection	No homologado
	SPI (Stateful Packet Inspection)	No homologado
VPN	VPN passthrough (Ipsec, PPTP)	
	Web-based user	
	Logging via syslog	
Network	Diagnostic Function	
Management	Internet Command line Interface (Telnet)	
	Telnet Remote Access /FTP Remote access	
	Support Built-in	No homologado
	DHCP client/relay/server	DHCP Relay no homologado
. . .	Dynamic DNS	No homologado
Network Features	SNTP client	
	Call scheduling	No homologado
	DNS cache/proxy	No homologado



2.2 LED y puertos

En la parte frontal el router dispone de una serie de LED que informan sobre su estado. Son los mostrados en la siguiente figura:



Indicator	Color	Status	Description		
	Green	On	The device is powered on and the device operates normally.		
POWER		Off	The device is powered off.		
	Red	On	The device is initiating.		
	The state	Blinking	The software is upgrading.		
		On	Internet is synchronized successfully in the route mode.		
INTERNET	Green	Blinking	Internet data is being transmitted.		
		Off	Ethernet interface is disconnected.		
	Red	On	Authentication is failed.		
		On	WAN connection succeeds.		
WAN	Green	Blinking	Data is being transmitted in the WAN.		
		Off	No WAN connection.		
	Green	On	The Ethernet interface is connected.		
LAN 1~4		Blinking	Data is being transmitted through the Ethernet interface.		
		Off	The Ethernet interface is disconnected.		
	Green	On	WLAN 2.4GHz radio on.		
2.4GHz		Blinking	WLAN 2.4GHz radio transfer active.		
		Off	WLAN 2.4GHz radio off.		
	Green	On	WLAN 5GHz radio on.		
11AC		Blinking	WLAN 5GHz radio transfer active.		
		Off	WLAN 5GHz radio off.		
	Green	On	Connection succeeds under Wi-Fi Protected Setup.		
WPS		Blinking	Negotiation is in progress under Wi-Fi Protected Setup.		
		Off	Wi-Fi Protected Setup is disabled.		
USB1	Green	On	USB port, for connecting 3G data card or other USB storage devices.		
USB2		Blinking	Data is being transmitted.		
		Off	No signal is detected.		



En la parte posterior y lateral el router dispone de los siguientes **puertos** y **botones**:



Panel lateral

Interface	Description	
LAN 1~4	RJ-45 interface, for connecting the router to a PC or another network device. The LAN interfaces support 10/100/1000 Mbps self-adaptive.	
WAN	RJ45 WAN interface, for connecting WAN or the uplink network devices.	
Reset	Press the button for at least 1 second and then release it. System restores the factory default settings.	
USB2	USB interface, for connecting the 3G network card or other US storage devices.	
Power	Power interface, for connecting the power adapter.	
2.4GHz	WLAN switch, for enabling or disabling 2.4GHz WLAN function.	
11AC WLAN switch, for enabling or disabling the 5GHz WLAN for		
USB1	USB interface, for connecting the 3G network card or other USB storage devices.	
On/Off	Power switch.	



3 Configuración básica

A continuación se describe la configuración que trae de fábrica el equipo y los pasos necesarios para configurar el router y permitir que se acceda a él de forma remota desde el CPO.

Tras conectarnos al interfaz ethernet del equipo, si tenemos DHCP habilitado en el PC, el router nos habrá asignado una dirección desde la que podremos acceder a la URL http://192.168.1.1:6980 usando un navegador. Aquí se nos pedirá un usuario y una contraseña que, por defecto, son **admin** y la contraseña **Reable** (para entrar en modo administrador.



Configuración del equipo según servicio

3.1 Configuración servicio de acceso a Internet con NAT

Los servicios de acceso a Internet ofrecidos habitualmente proporcionan una dirección IP pública para asignar al router. Con este esquema, el router debe realizar NAT, es decir, traducir las direcciones IP privadas de los puestos de la LAN de cliente a la dirección pública para permitir su acceso a Internet. Este es el servicio típico y para el que se detalla la configuración a realizar:

3.1.1 Configuración de la WAN

Para configurar este tipo de acceso habremos de desplazarnos al menú "Advanced Setup">"Wan service" y hacer clic en el botón "Add" para crear la conexión.

Device Info	Wide Area Network (WAN) Service Setup
Advanced Setup Operation Mode	Choose Add, Remove or Edit to configure a WAIN service over a selected interface.
WAN Service 3G Wan Service	Interface Description Type Vlan8021p VlanMuxId Igmp NAT Firewall IPv4 IPv6 Mld Remove Edit
LAN	
NAT	Add Remove
Security	

Seleccionaremos (es la única opción disponible) el interfaz "eth4" y pulsamos el botón de "Next"

Device Info	WAN Service Interface Configuration
Advanced Setup	
Operation Mode	Select a laver 2 interface for this service
WAN Service	
3G Wan Service	Note: For ATM interface, the descriptor string is (portId_vpi_vci) Withere portId=0> DSL Latency P&TH0
LAN	portId=1> DSL Latency PATH1
NAT	portId=4> DSL Latency PATH0&1
Security	low =0> Low PTM Priority not set
Parental Control	high =0> High PTM Priority not set
Quality of Service	high =1> High PTM Priority set
Routing	
DNS	eth4/eth4 🔻
UPnP	
DNS Proxy	
Print Server	Back
Storage Service	

Marcaremos la opción de "IP over Ethernet" y pulsamos el botón "Next"

En la siguiente pantalla marcaremos la opción de obtener dirección IP automáticamente, la cual será proporcionada por el cablemódem al que estemos conectados y pulsaremos el botón NEXT.







Device Info	WAN IP Settings					
Advanced Setup Operation Mode WAN Service	Enter information provided to yo Notice: If 'Obtain an IP address If 'Use the following Static IPv4/	ou by your ISP to co automatically' is chose IPv6 address' is chose	nfigure the WAN IP settings. en, DHCP will be enabled for PV en, enter the WAN IPv4/IPv6 ad	C in IPoE mode. Idress, subnet masl	k /orefix Length and interi	face dateway.
3G Wan Service						<u>-</u> , -
LAN	Enable IDv4 for this service	-0				
NAT						
Security	🖲 Obtain an IP address autom	atically		1		
Parental Control	Option 60 Vendor ID:					
Quality of Service	Option 61 IAID:		(8 hexadecimal digits)			
Routing	Option 61 DUID:		(hexadecimal digit)			
DNS	Option 125:	Dirabla	Contraction of the second seco			
UPnP DNS Proxy Print Server Storage Service DLNA Interface Grouping IP Tunnel Certificate Multicast Packet Acceleration	Use the following Static IP a WAN IP Address: WAN Subnet Mask: WAN gateway IP Address: Primary DNS server; Secondary DNS server: Enable IPv6 for this service	ie e e e e e e e e e e e e e e e e e e		_		
Wireless Diagnostics				E	Back Next	

En la siguiente pantalla habilitaremos NAT y Firewall y pulsaremos NEXT:

NuC	om
Device Info	Network Address Translation Settings
Advanced Setup	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN)
WAN Service 3G Wan Service	🖉 Enable NAT
LAN NAT	Enable Fullcone NAT
Security Parental Control	🕑 Enable Firewall
Quality of Service Routing	IGMP Multicast
DNS UPnP DNS Prosv	Enable IGMP Multicast
Print Server	
Storage Service DLNA	Back Next
Interface Grouping IP Tunnel	

Finalmente pulsaremos Apply/Save y el equipo habrá quedado configurado para su uso detrás de un cablemódem.







Device Info Advanced Setup Operation Mode WAN Service JG Wan Service LAN NAT Security Parental Control Quality of Service Routing DNS UPnP DNS Proxy Print Server

WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

Connection Type:	Not Applicable
NAT:	Enabled
Full Cone NAT:	Disabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Disabled

Click 'Apply/Save' to have this interface to be effective. Click 'Back' to make any modifications.



3.1.2 Configuración de la LAN (Advanced Setup > LAN):

En el caso de que queramos cambiar la configuración de la LAN podremos hacerlo desde "Advanced Setup" > "LAN"

Los valores de los campos "IP Address" e "Subnet Mask" deben modificarse de acuerdo con las especificaciones de direccionamiento de la LAN del cliente. El resto de campos no es necesario modificarlos.

Por defecto, el servidor DHCP está activado, aunque lo habitual será desactivar el servicio seleccionando la opción "Disable DHCP Server". Si el cliente desea que se deje activado, se debe seleccionar la opción "Enable DHCP Server". Una vez hayamos realizado la configuración es conveniente pulsar el botón "Apply/Save" para que la misma surta efecto en el router.



Device INFO	Local Area Network	(LAN) Setup
Advanced Setup		Default
Uperation Mode	Configure the Broadba	and Router IP Address and Subnet Mask for LAN interface, GroupName
WAN Service	70.1.1	
36 Wan Service	IP Address:	192.168.0.1
IDuC Autore	Subnet Mask:	255.255.255.0
IPV6 Autoconing	—	
Security	Enable IGMP Sno	ooping
Darental Control		
Quality of Service		
Routing	Dirable DUCD C	
DNS	Disable DHCP Se	ii ver
UPnP	Enable DHCP Se Shark TD, Addresse	rver 192.169.0.2
DNS Proxy	Start IP Address:	102.100.0.2
Print Server	End IP Address:	192.168.0.254
Storage Service	Primary DNS serv	er: 192.168.0.1
DLNA	Secondary DNS s	erver: 0.0.0.0
Interface Grouping	Leased Time (hou	r): 24
IP Tunnel	Static IP Lease List	(A maximum 32 entries can be configured)
Certificate	Edit Multi L	AN Edit DHCP Option DHCP Advance setup
Multicast	MAC Addre	ess IP Address Remove
Packet Acceleration		
Wireless	Add	Endlez Kellove Endlez
Diagnostics		
Management		
	Configure the sec	ond IP Address and Subnet Mask for LAN interface

Si se quiere que los equipos obtengan estos valores por DHCP, los servidores DNS de R se pueden configurar desde "Advanced Setup" > "DNS">"DNS Server".

En caso de que queramos que el equipo adquiera los DNS automáticamente según los

valores asignados por la conexión que hayamos configurado (ADSL Directo o Indirecto)

deberemos dejar activada la casilla "Select DNS Server Interface from available WAN

interfaces"

En caso de que quiera utilizar los DNS proporcionados por R (213.60.205.175 /

213.60.205.173 para zona norte o 213.60.205.175 / 213.60.205.174 para zona sur)

deberemos especificarlos en la opción "Use the following statics DNS IP address"



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Advanced step Byearland Costrol Quality of Service Notified Parental Costrol Quality of Service Routing DNS Drand DNS Forosy Print Service DLMA Roteface Grouping IP Tunnel Certificate Multicati Packed Coderation Wielesis Diagnement Concert Det Policy Environ	Device Info	DNS Server Configuration
 Geration Mode Ma Service Gala Service Nami Cashing of Service Raving DNS server DNS server<th>Advanced Setup</th><th></th>	Advanced Setup	
WAN Service Bit Wand Security Name And Security Name Name Name Name Name Name Name Name	Operation Mode	Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mod must be actived
G Wans Service Nat National Control Quality of Service Rowing DNS D	WAN Service	DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according t
Area Security Parental Control	3G Wan Service	connected. Priority order can be changed by removing all and adding them back in again.
AT Servity Parenal Borsony Printal Scorego Draw Markinska Bransla Markinska Bransla Bransla </th <th>LAN</th> <th></th>	LAN	
Security Descended Server Interface From available WARM Interfaces Quality of service Sected DNS Server Interface Dynamic DNS Dis Server Dynamic DNS Dis Foray Print Server Dis Foray Partial Control Image: Dis Server Interface Information Control Multicast Dis Server Maagement Oto: IPVS Server: Secondary DNS server: Dis Server: Dis Dis Dis Information Control Dis Information Control Oblig Dis Information Control Multication Dis Information Control Multication Dis Information Control Dis Dis Dis Dis Information Dis Information Multication Dis Information Multication Dis the following Static Informatise for Information <th>NAT</th> <th></th>	NAT	
Parental Control Quality of Service Routing DNS DNS DNS Dynamic DNS UPaP DNS DNA Print Server Storage Service DLA Anterface Grouping IP Tunnel Certificate Multicati Packet Acceleration Wieless Diagnostics Management DDD: IPUS ******* Select the configured WAN interface for IPUS DNS server information CR enter the stalic IPUS DNS server will enable DHCPUS Clent on that interface. @ Obtain IPUS DNS info form a WAN interface for IPUS DNS server information CR enter the stalic IPUS DNS server will enable DHCPUS Clent on that interface. @ Obtain IPUS DNS info form a WAN interface for IPUS DNS server information CR enter the stalic IPUS DNS server will enable DHCPUS Clent on that interface. @ Obtain IPUS DNS iserver: Distribution IPUS DNS server:	Security	Delect DNS Server Interface from available WAN interfaces:
Quality of Service Routing DNS DNS Server Dynamic DNS UPap DNS Prossy Print Server Storage Service DLNA Interface Grouping IP Tunnil Certificate Multicast Packet Acceleration Wireless Dagostics Management Cobin IPvis DNS for on a WAN interface for IPvis DNS server information OR enter the static IPvis DNS server will enable DHCPvis Client on that interface. Cobin IPvis DNS infor form a WAN interface Output DNS interface Wireless Doto: IPVis the following Static IPvis DNS server will enable DHCPvis Client on that interface. Cobin IPvis DNS informants WAN interface for IPvis DNS server information OR enter the static IPvis DNS server will enable DHCPvis Client on that interface. Output DNS interface in IPvis DNS informants WAN interface for IPvis DNS server information OR enter the static	Parental Control	Selected DNS Server Interfaces Available WAN Interfaces
Routing DNS DNS Server Dypanic DNS UpPa DNS Frosy Print Server Storage Service DNA Materace Grouping Partinel Certificate Multicast Packet Acceleration Wirelss Dagestis Management OD: IPVG Net Not Interface for IPV6 DNS server information OR enter the static IPV6 DNS server will enable DHCPVc Cleint on that interface. Imagement Display interface selection: Imagement Imagement Display interface selection: Imagement Imagement Display interface selection: Imagement Imagement Imagement Imagement <	Quality of Service	
DNS DNS Server DNS DS DS DS DS DS	Routing	
DNS Server Dynamic DNS UPap DNS Prossy Print Server Sterage Service DLNA Interface Grouping P Tunnel Certificate Multicast Packet Acceleration Wireless Diagnostics Management ODO: IPVS server: DI-No IPVS server: Di-Stain IPVS DNS info from a WAN interface for IPVs DNS server information OR enter the static IPVs DNS server will enable DHCPvS Cleant on that interface. ODO: IPVS server: OD: DVD: Static IPVS DNS info from a WAN interface for IPVs DNS server information OR enter the static IPVs DNS to the static IPVs DNS server will enable DHCPvS Cleant on that interface. OD: DVD: IPVS server: OD: DVD: Server: DD: Server: DD: DVD: Server: DD: Server: DD: Server:	DNS	
Dynamic DNS UPAP DNS Proxy Print Server Storage Service DLNA Interface Grouping IP Tunnel Certificate Multicast Packet Acceleration Wireless Diagnostics Management OD: IPV6 ******** Select the configured WAN interface for IPv6 DNS server information OR enter the static IPv6 DNS to that selecting a WAN interface for IPv6 DNS server will enable DHCPv6 Client on that interface. IP tunnel OD: IPV6 ********* Select the configured WAN interface for IPv6 DNS server information OR enter the static IPv6 DNS to that selecting a WAN interface for IPv6 DNS server information OR enter the static IPv6 DNS to that selecting a WAN interface for IPv6 DNS server will enable DHCPv6 Client on that interface. IP tunnel IP tunn	DNS Server	
UPAP DNS Proxy Print Server Storage Service DLNA Interface Grouping IP Tannel Certificate Multicast Packet Acceleration Wirelss Dagnostics Management ODD: IPV6 INS server: DD: IPV6 INS info from a WAN interface for IPv6 DNS server information OR enter the static IPv6 DNS tote that selecting a WAN interface for IPv6 DNS server information OR enter the static IPv6 DNS tote that selecting a WAN interface WAN Interface selected: Obtain IPv6 DNS info from a WAN interface WAN Interface selected: Obtain IPv6 DNS info from a WAN interface WAN Interface selected: Obtain IPv6 DNS info from a WAN interface WAN Interface selected: Obtain IPv6 DNS info from a WAN interface WAN Interface selected: Obtain IPv6 DNS server: Obtain IPv6 DNS server: Obtain IPv6 DNS info from a WAN interface WAN Interface selected: No CONFIGURED INTERFACE Primary IPv6 DNS server:	Dynamic DNS	->
DNS Proxy Print Server Storage Service DLNA Interface Grouping IP Tunnel Certificate Multicati Packet Acceleration Wireless Diagonstics Maagement ODD: IPV6 DNS server: 213.60.205.175 Secondary DNS server: ODD: WAN Interface for IPv6 DNS server will enable DHCPv6 Clent on that interface. WAN Interface selecter: No CONFIGURED INTERFACE • Imary IPv6 DNS server: Secondary IPv6 DNS server: Secondary IPv6 DNS server: Secondary IPv6 DNS server: Secondary IPv6 DNS server:	UPnP	
Print Server Storage Service DLNA Interface forouping IP Tunnel Certificate Multicasi Packt Acceleration Wireless Dagnostics Management	DNS Proxy	-
Storage Service DLNA Interface Grouping IP Tunnal Certificate Multicast Packet Acceleration Wireless Diagnostics Management	Print Server	
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IP Tunnel Certificate Multicast Packet Acceleration Wireless Diagnostics Management ODO: IPV6 server: 213.60.205.175 Secondary DNS server: 213.60.205.175 Secondary IPv6 DNS info from a WAN interface for IPv6 DNS defress: WAN Interface selected: No CONFIGURED INTERFACE Secondary IPv6 DNS server: Secondary IPv6 DNS server: Secondary IPv6 DNS server:	Interface Grouping	
Certificate Multicast Packet Acceleration Wireless Diagnostics Management	IP Tunnel	
Multicast Packet Acceleration Wireless Diagnostics Management Primary DNS server: 213.60.205.175 Secondary DNS server: 213.60.205.173 TODO: IPV6 ####################################	Certificate	Itse the following Static DNS TP address:
Packet Acceleration Primary DVS server: [213:60.205.173] Wireless Diagnostics Management Secondary DNS server: [213:60.205.173] TODO: IPV6 ####################################	Multicast	
Wireless Secondary DNS server: 213.60.205.173 Diagnostics TODO: IPV6 ####################################	Packet Acceleration	Primary DNS server: 213.60.205.175
Diagnostics Management TODO: IPV6 ********* Select the configured WAN interface for IPv6 DNS server information OR enter the static IPv6 DNS Note that selecting a WAN interface for IPv6 DNS server will enable DHCPv6 Client on that interface. Obtain IPv6 DNS info from a WAN interface WAN Interface selected: NO CONFIGURED INTERFACE Use the following Static IPv6 DNS address: Primary IPv6 DNS server:	Wireless	Secondary DNS server: 213.60.205.173
Management TODO; IPV6 ********* Select the configured WAN interface for IPv6 DNS server information OR enter the static IPv6 DNS Note that selecting a WAN interface for IPv6 DNS server will enable DHCPv6 Client on that interface. • Obtain IPv6 DNS info from a WAN interface: WAN Interface selected: • NO CONFIGURED INTERFACE • • Use the following Static IPv6 DNS address: Primary IPv6 DNS server: Primary IPv6 DNS server: Secondary IPv6 DNS server: Apply/Save	Diagnostics	
Obtain IPv6 DNS info from a WAN interface for IPv6 DNS server will enable DHCPv6 Client on that interface. Obtain IPv6 DNS info from a WAN interface: WAN Interface selected: NO CONFIGURED INTERFACE Use the following Static IPv6 DNS address: Primary IPv6 DNS server: Secondary IPv6 DNS server: Apply/Save	Management	TODO: TDUS ********* Select the configured WAN interface for TDVS DNS rever information OR other the static TDVS DNS
 Obtain IPv6 DNS info from a WAN interface: WAN Interface selected: NO CONFIGURED INTERFACE Use the following Static IPv6 DNS address: Primary IPv6 DNS server:		Note that selecting a WAN interface for IPv6 DNS server will enable DHCPv6 Client on that interface.
 Obtain IPv6 DNS info from a WAN interface: WAN Interface selected: NO CONFIGURED INTERFACE ▼ Use the following Static IPv6 DNS address: Primary IPv6 DNS server:		
Obtain IPv6 DNS info from a WAN interface: WAN Interface selected: NO CONFIGURED INTERFACE ▼ Use the following Static IPv6 DNS address: Primary IPv6 DNS server: Secondary IPv6 DNS server: Apply/Save		
WAN Interface selected: NO CONFIGURED INTERFACE Use the following Static IPv6 DNS address: Primary IPv6 DNS server: Secondary IPv6 DNS server: Apply/Save		Obtain IPv6 DNS into from a WAN interface:
Use the following Static IPv6 DNS address: Primary IPv6 DNS server: Secondary IPv6 DNS server: Apply/Save		WAN Interface selected: NO CONFIGURED INTERFACE V
Primary IPv6 DNS server:		Use the following Static IPv6 DNS address:
Secondary IPv6 DNS server:		Primary IPu6 DNS server:
Secondary IPv6 DNS server:		
Apply/Save		Secondary IPv6 DNS server:
Abbilitage		Apply (Essa
		Whin 2406

IMPORTANTE.- Si hemos desactivado el servidor DHCP, debemos asignar al PC con el que estamos accediendo al router, una IP de la red LAN que le hemos configurado.

3.1.3 Configuración de la WLAN (Wireless LAN > General Settings):

El equipo permite la configuración y funcionamiento simultáneo de red wireless en la banda de 2,4Ghz y en la de 5 GHz.

En virtud de las necesidades del cliente el interfaz wireless podría estar desactivado por completo, funcionar solo en 2,4, funcionar solo en 5 o funcionar en 2,4 y 5 simultáneamente.

1) Configuración red wireless 2,4GHz

 a) Primeramente en el apartado "Wireless">"wl0">"Basic" habilitaremos la red wireless y seleccionaremos el país en el que va a estar ubicada la red (en nuestro caso Spain) y también especificaremos el número máximo de clientes WIFI que podremos conectar a nuestra red. Asimismo también le asignaremos la SSID correspondiente



según las normas de R (normalmente R-wlan<canal seleccionado> y atendiendo al canal que hayamos seleccionado mediante el software Netstumbler. Una vez hecho esto pulsaremos el botón "Apply/Save"

Device Info Advanced Setup Wireless wlO Basic Security MAC Filter Wireless Bridge Advanced Station Info wl1 Diagnostics Management	Wireless Basic This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the restrict the channel set based on country requirements. Click 'Apply/Save' to configure the basic wireless options. Click 'Apply/Save' to configure the basic wireless options. Hide Access Point Clients Isolation Disable WMM Advertise Enable Wireless Multicast Forwarding (WMF) SSID: Evaluation	
	BSSID: ec:19:C19:C19:C19:C19:C19:C19:C19:C19:C19:	

b) Una vez hecho esto y desde el menú "Wireless">"wl0">"Advanced", seleccionaremos el canal ("Channel") que hayamos elegido con el software Netstumbler para nuestra red wireless, asimismo también seleccionaremos el ancho de banda de 20Mhz para la banda de 2,4Ghz y pulsaremos el botón "Apply/Save".



Device Info Advanced Setup Wireless włO	Wireless Advanced This page allws you to configure adv RTS threshold, set the wakeup interv Click 'Apply/Save' to configure the a	anced features of the wireless LAN interfi al for clients in power-save mode, set the dvanced wireless options.	ace. You can select a particular channel on which to operal s beacon interval for the access point, set XPress mode and	e, force the transmiss set whether short or
Basic	Band:	2.4GHz 🔻		
MAC Filter	Channel:	6 🔻	Current: 3 (interference: acceptable)	
Wireless Bridge	Auto Channel Timer(min)	0		
Advanced	802.11n/EWC:	Auto 🔻		
Station Info	Bandwidth:	20MHz in Both Bands	Current: 20MHz	
Diagnostics	Control Cidebands		Commercia NI/A	
Management	Control Sideband;	Lower	Current: N/A	
	802.11n Rate:	Auto 🔻		
	802.11n Protection:	Off 🔻		
	Support 802.11n Client Only:	Off 🔻		
	RIFS Advertisement:	Off 🔻		
	OBSS Co-Existance:	Disable 🔻		
	RX Chain Power Save:	Disable 🔻	Power Save status:	Full Power
	RX Chain Power Save Quiet Time:	10		
	RX Chain Power Save PPS:	10		
	54g Rate:	1 Mbps 🔻		
	Multicast Rate:	Auto 🔹		
	Basic Rate:	Default	T	
	Fragmentation Threshold:	2346		
	RTS Threshold:	2347		
	DTIM Interval:	1		
	Beacon Interval:	100		
	Global Max Clients:	16		
	XPress Technology:	Disable 🔻		
	Transmit Power:	100% 🔻		
	WMM(Wi-Fi Multimedia):	Enabled T		

WMM No Acknowledgement:

WMM APSD:

c) Para configurar la encriptación deberemos hacerlo en las opciones disponibles a tal efecto bajo el epígrafe "Wireless">"wl0">"Security".

Disabled 🔻

Enabled 🔻

teléfono_internet_televisión

Apply/Save

La recomendación es desactivar WPS y utilizar siempre encriptado WPA2-PSK con cifrado AESy para reforzar la seguridad de la red wifi del cliente tal y como se muestra en la pantalla adjunta.

Device Info Advanced Setup Wireless wIO Basic Security MAC Filter Wireless Bridge Advanced Station Info wI1	Wireless Security This page allows you to configure security features of the wireless LAN interface. You may setup configuration manually OR through WiFi Prototed Setup(WPS) Note: WPS2, When both STA PIN and Authorized MAC are empty, PBC is used. If Hide Access Point enabled or Mac filte WPS Setup Enable WPS Disabled ▼							
Diagnostics Management	Manual Setup AP You can set the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength. Click 'Apply/Save' when done. Select SSID:							
	Network Authentication: WPA/WAPI passphrase: WPA Group Rekey Interval: WPA/WAPI Encryption: WEP Encryption:	WPA2 -PSK						

En caso de que queramos verificar que hemos tecleado bien la WPA2-PSK pulsaremos la opción "Click here to display" y se nos mostrará la clave introducida en una ventana pop-up de nuestro navegador.

2) Red wireless 5GHz

 a) Primeramente en el apartado "Wireless">"wl1">"Basic" habilitaremos la red wireless y seleccionaremos el país en el que va a estar ubicada la red (en nuestro caso Spain) y también especificaremos el número máximo de clientes WIFI que podremos conectar a nuestra red. Asimismo también le asignaremos la SSID correspondiente según las normas de R (normalmente R-wlan<canal seleccionado>_5G. Una vez hecho esto pulsaremos el botón "Apply/Save"



Device Info Advanced Setup Wireless wl0 wl1 Basic Security MAC Filter Wireless Bridge Advanced Station Info Diagnostics Management	Wireless This page al restrict the o Click 'Apply Click 'Apply C	Basic lows you to configure basic featur channel set based on country requivisary to configure the basic wire lable Wireless de Access Point ents Isolation sable WMM Advertise lable Wireless Multicast Forwardin R-wlan44_5G 98:3e:f0:2a:61:a0 SPAIN : 16 Guest/Virtual Access Points:	res of the uirements eless optic	wireless , ns.	LAN interfac	e. You ca	n enable	or disable the
	Enabled	SSID	Hidden	Isolate Clients	Disable WMM Advertise	Enable WMF	Max Clients	BSSID
		Broadcom1					16	N/A
		Broadcom2					16	N/A
		Broadcom3					16	N/A
	Apply/Sa	ive						

b) Una vez hecho esto y desde el menú "Wireless">"wl1">"Advanced", seleccionaremos el canal ("Channel") que hayamos elegido con el software Netstumbler para nuestra red wireless, asimismo también seleccionaremos el ancho de banda de 40Mhz para la banda de 5Ghz (hay que tener en cuenta que una vez seleccionado el ancho de banda de 40Mhz, solo estarán disponibles los canales 36,44,52,60,100,108,116,124 y 132 por lo que hay que comprobar que el dispositivo 5Ghz del cliente es capaz de conectarse a dichos canales) y pulsaremos el botón "Apply/Save".



Device Info Advanced Setup Wireless wl0 wl1 Basic Security MAC Filter Wireless Bridge Advanced Station Info Diagnostics Management

Wireless -- Advanced

This page allws you to configure advanced features of the wireless LAN interface. You can select a particular channel on which b RTS threshold, set the wakeup interval for clients in power-save mode, set the beacon interval for the access point, set XPress m Click 'Apply/Save' to configure the advanced wireless options.

Band:	5GHz 🔻	
Channel:	44 T Currer	nt: 44
Auto Channel Timer(min)	0	
802.11n/EWC:	Auto 🔻	
Bandwidth:	20MHz in 2.4G Band and 40MHz in 5G	Band 🔻 Current: 40MHz
Control Sideband:	Lower 🔻	Current: Lower
802.11n Rate:	Auto 🔻	
802.11n Protection:	Off 🔻	
Support 802.11n Client Only:	Off 🔻	
RIFS Advertisement:	Off 🔻	
OBSS Co-Existance:	Disable 🔻	
RX Chain Power Save:	Disable 🔻	Power Save status:
RX Chain Power Save Quiet Time:	10	
RX Chain Power Save PPS:	10	
54g Rate:	6 Mbps 🔻	
Multicast Rate:	Auto 🔻	
Basic Rate:	Default 🔹	
Fragmentation Threshold:	2346	
RTS Threshold:	2347	
DTIM Interval:	1	
Beacon Interval:	100	
Global Max Clients:	16	
XPress Technology:	Disable 🔻	
Regulatory Mode:	Disabled 🔻	
Pre-Network Radar Check:	60	
In-Network Radar Check:	60	
TPC Mitigation(db):	O(off) ▼	
Transmit Power:	100% 🔻	
WMM(Wi-Fi Multimedia):	Enabled •	
WMM No Acknowledgement:	Disabled 🔻	
WMM APSD:	Enabled T	
		Apply/Save



c) Este router dispone también de posibilidad de utilizar WIFI AC en 5GHz, si deseamos usar este modo deberemos seleccionar como "Bandwidth" 80Mhz tal y como se muestra en la pantalla adjunta (el canal se pondrá en modo "Auto" por defecto y no podremos seleccionar uno específico):

Device Info Advanced Setup Wireless wl0	Wireless Advanced This page allws you to configure advan RTS threshold, set the wakeup interval I Click 'Apply/Save' to configure the adv	iced features of the wireless LAN interface. Yo for clients in power-save mode, set the beaco ranced wireless options.	u can select a partion interval for the a	cular channel on whic ccess point, set XPres	ch to operate, force s mode and set whe	the transmissio ther short or Ic
wl1	Band:	5GHz 🔻				
Basic	Chappel	Auto 🔻	Currenti 126			
Security MAC Filter			Corrent, 150			
Wireless Bridge	Auto Channel Timer(min)					
Advanced	902.11n/EWC:	Auto				
Station Info	Bandwidth:	80MHz in 5G	•	Current: 40MHz		
Diagnostics	Control Sideband:			Corrent: Upper		
Management	802.11n Rate:	Auto 🔻				
	802.11n Protection:	Off 🔻				
	Support 802.11n Client Only:	Off 🔻				
	RIFS Advertisement:	Off ▼				
	OBSS Co-Existance:	Disable 🔻				
	RX Chain Power Save:	Disable 🔻		Power Save status:		Full Power
	RX Chain Power Save Quiet Time:	10				
	RX Chain Power Save PPS:	10				
	54g Rate:	6 Mbps 🔻				
	Multicast Rate:	Auto 🔻				
	Basic Rate:	Default				
	Fragmentation Threshold:	2346				
	RTS Threshold:	2347				
	DTIM Interval:	1				
	Beacon Interval:	100				
	Global Max Clients:	16				
	XPress Technology:	Disable 🔻				
	Regulatory Mode:	Disabled 🔻				
	Pre-Network Radar Check:	60				
	In-Network Radar Check:	60				
	TPC Mitigation(db):	O(off) ▼				
	Transmit Power:	100% 🔻				
	WMM(Wi-Fi Multimedia):	Enabled 🔻				
	WMM No Acknowledgement:	Disabled 🔻				
	WMM APSD:	Enabled 🔻				
				Apply/Save		



d) Para configurar la encriptación deberemos hacerlo en las opciones disponibles a tal efecto bajo el epígrafe "Wireless">"wl1">"Security".

La recomendación es desactivar WPS y utilizar siempre encriptado WPA2-PSK con cifrado AESy para reforzar la seguridad de la red wifi del cliente tal y como se muestra en la pantalla adjunta.

Device Info Advanced Setup Wireless wl0 wl1 Basic	Wireless Security This page allows you to configure security features of the wireless LAN interface. You may setup configuration manually OR through WiFi Prototed Setup(WPS) Note: WPS2, When both STA PIN and Authorized MAC are empty, PBC is used. If Hide						
Security MAC Filter Wireless Bridge Advanced Station Info	Enable WPS Disabled						
Diagnostics Management	Manual Setup AP You can set the network authentication specify whether a network key is requir Click 'Apply/Save' when done.	method, selecting data ed to authenticate to t	a encryption, his wireless network and				
	Select SSID: Network Authentication: WPA/WAPI passphrase:	R-wlan44_5G •	Click here to display				
	WPA Group Rokey Interval: WPA/WAPI Encryption: WEP Encryption:	e AES ▼ Disabled ▼ Apply/Save					

En caso de que queramos verificar que hemos tecleado bien la WPA2-PSK pulsaremos la opción "Click here to display" y se nos mostrará la clave introducida en una ventana pop-up de nuestro navegador.



3.2 Configuración servicio de acceso a Internet con NAT y servidores internos

Para esta configuración se deben seguir todos los pasos del apartado anterior. Tras ello se procederá a la apertura de puertos a servidores internos con direccionamiento privado.

3.2.1 Redirección total de puertos (DMZ Host).

Todas las conexiones entrantes se redirigirán a un equipo de la LAN. Para ello se debe acceder a la opción "Advanced Setup" > "NAT">"DMZ host" del menú principal, introducir la dirección IP del equipo al que queramos hacer la redirección total de puertos en el campo "DMZ Host IP Address" y pulsar el botón "Apply/Save".

Douico Info	
	NAT DM2 Host
Advanced Setup Operation Mode	The Broadband Router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtua
WAN Service	Enter the computer's IP address and click 'Apply' to activate the DMZ host.
3G Wan Service	el contra de la contra de la contra de la contra de entre de la contra de la cont
LAN NAT Virtual Servers ALG - Port Triagering	Clear the IP address held and click 'Apply' to deactivate the DM2 host. ■ Enable DM2 host. DMZ Host IP Address: 192.168.0.6
DMZ Host	Apply/Save



3.2.2 Acceso desde Internet a servidores existentes en la red de área local.

Para poder acceder a servidores (de FTP, Web, correo, etc.) de la LAN desde Internet, es decir, desde fuera de la red de área local, es necesario abrir los puertos, o rangos de puertos, adecuados en el router.

Tanto si los puertos a usar son los mismos en la parte WAN y en la LAN como si no, se usará la opción "Advanced Setup">"NAT" > "Virtual Servers".

Para iniciar la redirección de puertos haremos click en el botón "Add" de la venta principal de "Virtual Servers Setup"

Device Info Advanced Setup Layer2 Interface WAN Service	NAT Virtual Servers Setup Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum 32 entries can be configured.
3G Wan Service LAN NAT Virtual Servers	Server Name External Port Start External Port End Protocol Internal Port Start Internal Port End Server IP Address WAN Interface Enable/Disable Remove

En la siguiente pantalla y aunque se nos ofrece la posibilidad de usar reglas de redireccionamiento predefinidas, lo que haremos será definirlas nosotros mismos marcando la opción "Customer Server" y asignándole un nombre descriptivo. Una vez hecho esto, especificaremos la IP del equipo de la LAN al que queremos redirigir el puerto o rango de puertos y activaremos la regla en "Status". Seguidamente hemos de especificar el puerto o rango de puertos externos que queramos redirigir, el tipo de protocolo (TCP, UDP o ambos) y el puerto o rango de puertos internos de destino. Finalmente pulsaremos el botón "Apply/Save" para guardar los cambios.

Device Infe Advanced Setup Layer2 InterFace WAN Service 3G Wan Service LAN NAT Virtual Servers ALG Port Triggering DM2 Host Security Parental Control Quality of Service Routing DMS	NAT Virtual Serve Sadet the service name NOTE: That Takerral rame value as "Taker Remaining number o Uts Interface Service Name: © Salect a Service: Server IP Address: Status: Enable	rs a, and enter the ser Port End' cannol and Part Start". f entries that can pppoe_0_1_ Select One 192.168.1.4	ver IP address be modified be configure 32/ppp0 v	and d direct	dick "Apply/Sav Hy. Normally, i	re" to it is s	forward IP packets f et to the same valu	v this service to the specified server. e as "Estlernal Port End".However, if you modify "Internal Port Start", then "Internal Port End" will be set to the
DSL								Apply/Save
UPnP	Esternal Port Start	External Port Fnd	Protoco		Internal Port	Start	Internal Port Fnd	
DNS Proxy	4711	4711	TCP		4711	June	4711	
Print Server	4/11	4/11	TOP	×	4/11		4/11	
Storage Service			TCP	~				
DLNA Tabada an Canada a			TCP	×				
Interface Grouping ID Tuppel			101					
Certificate			TCP	~				
Multicast			TCP	~				
Packet Acceleration			700	-		-		
Wireless			TCP	*				
Voice			TCP	~				
Diagnostics			TCP	~		-		
Fianagement			TOP	-		_		
			TCP	*				
			TCP	<				
			TCP	~				
			TCP	~		_		
								Save/Apply

Cuando hayamos pulsado el botón" Save/Apply" nos llevará a la página principal del menú "NAT"> "Virtual Servers" en la que se nos mostrará un resumen del listado de puertos redirigidos. Podemos eliminar cada regla de redirección marcando la casilla "Remove" y posteriormente pulsando el botón "Remove"



Device Info Advanced Setup Layer2 Interface WAN Service	NAT Virtual Server Virtual Server allows you needs to be converted t	s Setup ⊔ to direct incom o a different por	ing traffic from WAN : t number used by the	iide (identified by Pro server on the LAN sid	otocol and de. A maxir	External port) to the Ir num 32 entries can be	iternal server with pr configured.	ivate IP address on th	e LAN side. The Ir	iternal port is requi	ired only if	the external port
3G Wan Service		Server Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IP Address	WAN Interface	Enable/Disable	Remove	
LAN		10/ebsen/er	4711	4711	TCP	4711	4711	192,168,1,4	0000			
NAT		or could be			i di	~ **		19011001111	PPP*			
Virtual Servers												
ALG						Add Save/Apr	by Remove					
Port Triggering						Cross Davelop	ay (manove)					

3.3 Configuración servicio de acceso a Internet con LAN enrutada

Con este esquema, el router NO debe tener activado el Firewall por lo que primeramente deberemos desactivarlo (si se lo hemos activado durante la configuración del acceso ADSL (directo o indirecto) correspondiente).Para ello y desde la pantalla "Advanced Setup">"WAN Service" editaremos la conexión que hayamos configurado inicialmente y pulsaremos el botón "Next > " hasta que lleguemos a la pantalla que se muestra a continuación, allí verificaremos que la casilla "Enable Firewall" está desmarcada (si está marcada, la desmarcamos) y finalizaremos pulsando "Next>" hasta llegar a la última pantalla en la que pulsaremos "Save"

Device Info	Network Address Translation Settings
Advanced Setup Operation Mode	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).
WAN Service 3G Wan Service	C Enable NAT
LAN IPv6 Autoconfig	Enable Fullcone NAT
NAT	Enable Firewall
Parental Control	
Quality of Service Routing	IGMP Multicast
DNS UPnP	Enable IGMP Multicast
DNS Proxy	
Storage Service	Back Next
DLNA Interface Grouping	
IP Tunnel Certificate	
Multicast	
Packet Acceleration Wireless	
Diagnostics Management	
-	

En el apartado "Advanced Setup"> "LAN" se debe marcar la casilla "Configure the second ip address and subnet mask for LAN interface" e introducir la IP y la máscara correspondiente a la lan enrutada que tengamos asignada. Finalizaremos la configuración pulsando el botón "Apply/Save".

teléfono_internet_televisión

Device Info	Local Area Network	: (LAN) Setup
Advanced Setup	Configure the Proodb	and Poulay TD Address and Subpat Mark for LAN interface GroupName Default
WAN Service	Conligure the broadba	and Rooter to Address and Sobriet Mask for CMA interface, grouphane
3G Wan Service	ID Address:	192.168.0.1
LAN	Subpot Marku	255 255 255 0
IPv6 Autoconfig	DODITEC Masks	255,255,0
NAT		coping
Security		ooping
Parental Control		
Quality of Service		
Routing	Disable DHCP Set	erver
DNS	Enable DHCP Se	rver
UPnP	Start IP Address:	192.168.0.2
DNS Proxy	End IP Address:	192.168.0.254
Print Server	Drimary DNS serv	rer: 192.168.0.1
Storage Service	Frinary DND serv	
DLNA	Secondary DNS s	erver: 0.0.0.0
Interface Grouping	Leased Time (hou	r): 24
IP Tunnel	Static IP Lease List	(A maximum 32 entries can be configured)
Certificate	Edit Multi L	AN Edit DHCP Option DHCP Advance setup
Multicast	MAC Addre	ess IP Address Remove
Packet Acceleration	Add	Entries Remove Entries
Wireless		
Diagnostics		
Management		
	1	
	Configure the sec	ond IP Address and Subnet Mask for LAN interface
	IP Address:	178.60.130.9
	Subnet Mask:	255.255.252
	and an	
		Apply/Save

4 Configuración de rutas estáticas

Accedemos al equipo a través de su dirección ip. En el menú principal nos desplazamos hasta "Advanced Setup" > "Routing" > "Static Route":

Device Info Advanced Setup	Routing Static Route (A maximum 32 entries can be configured)	
Layer2 Interface		IP Version DstIP/ PrefixLength Gateway Interface Metric Remove
WAN Service		
3G Wan Service		Add Remove
LAN		
NAT		
Security		
Parental Control		
Quality of Service Routing		
Default Gateway Static Route RIP		

Pulsamos en Add para crear una regla y la configuramos de la siguiente forma:



Device Info	Routing Static Route Add				
Advanced Setup					
Layer2 Interface	Enter the destination network address, subne	: mask, gateway AN	ID/OK available WAN	interface then click 'Ap	oply/Save' to add the entry to the routing table
WAN Service					
3G Wan Service	IP Version:		IPv4	*	
LAN	Destination IP address/prefix length:		192.168.3.0/24]	
Security	Interface			*	
Parental Control	Gateway IP Address:	192.168.1.11			
Quality of Service					
Routing	(optional: metric number should be greater th	ian or equal to zero	2		
Default Gateway	Metric:				
Static Route					Apply/Save
Routing Default Gateway Static Route	(optional: metric number should be greater th Metric:	an or equal to zero)		(Apply/Save)

- Destination IP address/prefix length : escribimos la ip/red de destino
- Interface: seleccionamos el interfaz asociado a la Gateway de la ruta estática
- Gateway IP Address: escribimos la ip WAN del router que no realiza nat.

Pulsamos en Save/Apply para guardar los cambios.

