

Using QoS on NETGEAR TA612V & WGR613V VoIP devices

The Netgear VoIP devices are fully functional VoIP TA, Router & Firewall products, they were designed to be integrated into most existing home / office network environments which may or may not already have a ROUTER or FIREWALL installed.

The NETGEAR VoIP Devices have "Diff Serv" Quality of Service (QoS) built into them; this means that when they are connected to a broadband internet connection as the Primary Router they will prioritise their voice traffic over any traffic that passes through them. The Advantage of QoS is that the quality of your VoIP calls should remain constant regardless of how much uploading, downloading, Emailing or web surfing you are doing.

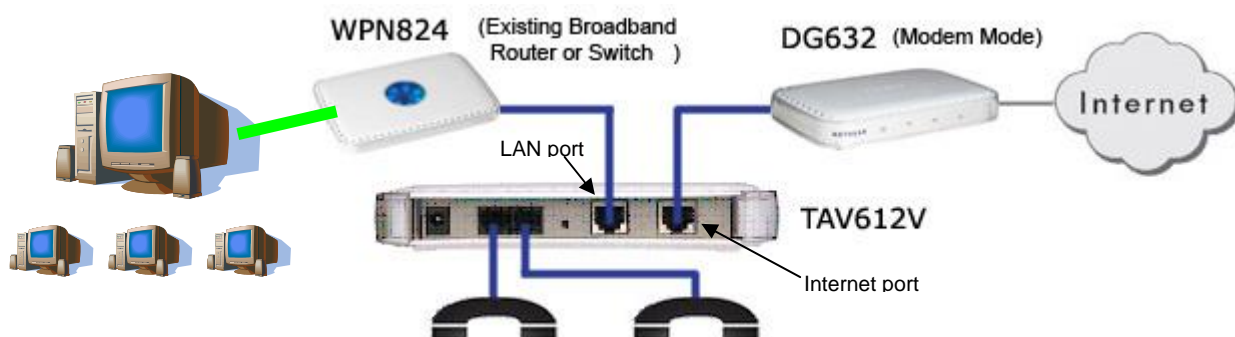
The Optimal way to use the QoS function of your NETGEAR VoIP device is to plug the INTERNET port directly into an ADSL MODEM or CABLE MODEM. If you plug your VoIP device into the LAN port of another ROUTER you may prevent the QoS from working properly.

Note: To use QoS properly It is important to identify if your ADSL MODEM or CABLE MODEM product is simply a basic modem (or bridge) or if it is an ADSL ROUTER or CABLE ROUTER. An ADSL MODEM or CABLE MODEM can only share your connection with one computer, a ROUTER can share your connection with many.

Note 2: ADSL/CABLE ROUTERS can often be put into a "Modem Mode" where they no longer act as a router, they simply act as a modem or bridge.

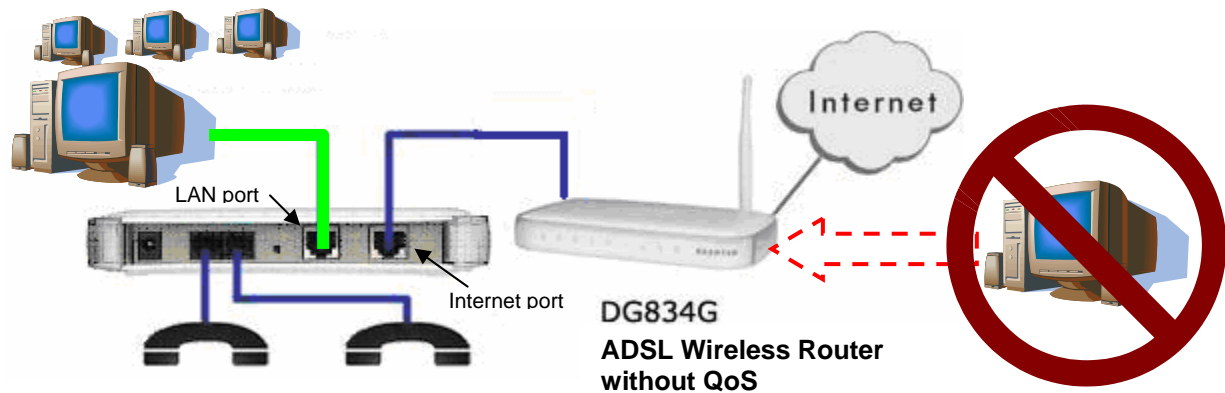
How to connect to your ADSL/Cable MODEM (recommended)

The best method is to connect the WAN port of the NETGEAR VOIP DEVICE into an ADSL modem (Bridge) or Cable Modem and use the NETGEAR VOIP DEVICE's setup wizard to setup the ADSL (PPP) or Cable connection. This allows the NETGEAR VOIP DEVICE to drive the Authentication and Public IP address directly. If you currently use an ADSL ROUTER check it's user guide to see if it can be put into "Modem mode" or "Bridge Mode" then use this method to connect your NETGEAR VoIP device to the ADSL device.



How to connect using an existing ADSL/Cable/Wireless ROUTER or GATEWAY.

You can use the NETGEAR VOIP DEVICE when connected directly to another ADSL ROUTER/GATEWAY but any other devices that are plugged directly into the back of the ADSL ROUTER/GATEWAY can still flood the Gateway's NAT and prevent any QoS advantage. For this method it is best to connect all extra devices into a Network switch on the LAN port of the NETGEAR VOIP DEVICE or if your VoIP device has more than one LAN port use those.



Note: If you encounter problems using this method you may need to enable the DMZ option of the ADSL/CABLE/WIRELESS ROUTER and point it to the IP address assigned to the NETGEAR VoIP device. Alternatively you should port forward the following ports to the NETGEAR VoIP device;

SERVICE	PORT	PROTOCOL
TFTP	69	UDP
SIP	5060	TCP
SIP(optional)	5180	TCP
RTP	10000 - 10100	UDP

Connecting to a QoS capable ADSL ROUTER/GATEWAY

If your ADSL ROUTER/GATEWAY is QoS capable and it has been configured to give priority to VoIP data then it should prioritise the NETGEAR VOIP DEVICE's voice traffic and it may be acceptable to connect computers directly without affecting your Quality of Service. Consult your ADSL ROUTER/GATEWAY User guide for instructions of how to enable it's QoS feature.

How do I enable QoS in my NETGEAR VoIP product?

Some Voice Service Providers (VSPs) have the ability to enable QoS in the NETGEAR product as part of their provisioning system, if you find QoS is already enabled and has values set it is best to leave these values as they are.

To manually setup QoS in your NETGEAR VoIP device follow the steps below;

1. Log into your Netgear VoIP product.
2. Go to the WAN SETUP page, ensure the check box labeled "Enable QoS" is ticked.
3. Specify the BANDWIDTH value as per the guide below.
4. Click APPLY.

Note: You may be prompted to set a different MTU value, this can usually be ignored but it is advisable to use 1492 or less for ADSL.

WAN Setup

Connect Automatically, as Required

Disable SPI Firewall

Default DMZ Server

Respond to Ping on Internet Port

Bandwidth (128~102400)(kbps)

Enable QoS

MTU Size (in bytes)

The value you set here depends on your broadband connection. See the next page to know what figure to put in here.

What figure should I put in for my Bandwidth?

To know which figure to put in the BANDWIDTH field you should find out the maximum SYMMETRICAL bandwidth of your broadband connection. E.g. If you have an ADSL line which is 1500/256 - the value to enter for BANDWIDTH would be 256 (because the Upstream value is the smallest).

Some example Bandwidth values are shown below;

Broadband Connection Type	Bandwidth value for QoS	Max Number of simultaneous VoIP calls
Telstra Cable	128 or 256 depending on the plan	2 or 4
Optus Cable	128 or 256 depending on the plan	2 or 4
ADSL 256/64	64	1 (not recommended)
ADSL 512/128	128	2
ADSL 512/512	512	8
ADSL 1500/256	256	4

How many simultaneous VoIP calls is my broadband connection capable of?

Netgear recommend you allow 64k of bandwidth in each direction for each FXS/VoIP port. ADSL is Asymmetric and this means you should only pay attention to the lowest figure i.e. 256/64 = 64k = 1 VoIP port. See the chart above for more examples.

Netgear recommend all VoIP devices are only used on a minimum 512/128 connection. The reason for this is if only one call is placed your data connection still has about 64k to use, but if you run two VoIP calls simultaneously then your internet connection is not likely to pass much data at all.