VoIP Compatible Consumer Routers

This article provides recommendations and guidance for users using handsets at home with NocTel. The list of compatible routers below is not absolute - user contributions of routers not included on the list below that are working are encouraged and appreciated.

Why Are Some Routers Compatible and Others Not?

Consumer routers may implement a feature known as **SIP ALG** (Application Layer Gateway). The primary purpose of SIP ALG is well-meaning: your router, with the feature enabled, attempts to scan and if necessary, modify, the VoIP data passing through it to ensure voice data is able to flow freely. While the intent is good, many implementations of SIP ALG by router manufacturers actually results in the exact opposite effect causing difficulties such as voice in one direction and calls not being received. Similarly, as router manufacturer implementation of SIP ALG can vary widely, the configuration of your home router in relation to your modem for internet connectivity and the provider of the service can also widely vary. By disabling SIP ALG on your router, you avoid further complicating the operation of your home network and the various types of data traveling in and out. In several, but not all cases, disabling SIP ALG on your home router can address handset reliability and call issues.

Recommended Consumer Routers

Routers that denote "or better" should be interpreted as a baseline model that is compatible. For example, Netgear R7000 or better would be the recommendation of an R7000, R8000, or R8500 - R8000/8500 are sequential higher end models of the R7000.

Router Make	Router Model	SIP ALG Setting Location (Relative, May Vary with Firmware Version)
Linksys	WRT1900ac	Settings->Administration tab->uncheck SIP ALG under Application Layer Gateway
D-Link	DIR-868L	Advanced Settings->Firewall Settings->uncheck SIP (ALG)
Asus	RT-AC66 or better* (68u, 87u, 88u, AC3200, GT-AC5300)	Advanced WAN->NAT Pass Through->SIP Pass Through->Set to Disable
Netgear	R7000 or better (R8000, R8500)	Advanced->WAN Setup->toggle Disable SIP ALG
Cisco	EA6500 or better (EA6900, etc.)	Router Settings->Connectivity->Administration tab->uncheck SIP ALG
Trendnet	TEW812 or better	Advanced->Firewall->ALG->toggle SIP

*Asus router models may vary as listed. The RT-AC68u is also sometimes listed simply as an AC1900, which is a designation of its operating frequencies /channel(s) (802.11ac, for example) and maximum rate (1900, 3200, etc.). This does not apply strictly to Asus routers - if a router is simply listed as "AC3200" or similar, that is not the product model.

Known Incompatible or Problematic Consumer Routers

If your home router is not listed as compatible or known incompatible and you cannot locate a setting related to SIP ALG, first attempt to update the router firmware to the latest available, and recheck the router settings - some manufacturers may not have exposed the setting until later firmware versions. Some routers *may include* SIP ALG, but not exposed through the web interface normally accessed to change settings. Such routers may require use of a telnet connection, which is highly uncommon for residential consumer routers and therefore not recommended.

Please inform us if any routers you have found to be incompatible are not listed below.

Router Make	Router Model	Incompatibility Rationale/Problems
TP-Link	Archer C7/C9 (AC1750 /AC1900, respectively)	No exposed SIP ALG toggling option in web interface
Apple	A1354 (4th Gen Airport Extreme)	No exposed SIP ALG setting, spottiness with handset stability
Apple	A1408 (5th Gen Airport Extreme)	No exposed SIP ALG setting, spottiness with handset stability
Apple	A1521 (6th Gen Airport Extreme)	No exposed SIP ALG setting, spottiness with handset stability
Comcast	DPC3939B	SIP ALG cannot be disabled, SIP traffic on port 5060 may be blocked on the router, DNS may need to be manually set to Google DNS (8.8.8.8, 8.8.4.4) for Polycom handsets as temporary work around
Netgear	Orbi Series	Orbi's mesh network may cause connection issues for VoIP devices.

Manufacturer Specific Notes

Apple

In comparison to other manufacturers implementations and options for configuration, the Airport Extremes strip configuration down to a few valid combinations - generally enabling or disabling NAT on the router with no ALGs exposed.

If Disabling SIP ALG Does Not Resolve Handset Problems

As noted above, SIP ALG is just one piece of the larger whole that is your home network. If disabling SIP ALG does not help resolve problems with your NocTel handset set up at home, a strong next step to resolution is to contact your Internet Service Provider and inquire if they allow the common ports used for VoIP or have possibly had any changes to allowing VoIP traffic. (List of ports used by NocTel - Polycom-based)

Small and Medium Business Combo Modems

Small and medium businesses may exhibit compatibility issues with NocTel handsets based on the Internet Service Provider, volume of handsets, and volume of call activity relative to the connection service. Such hardware are often referred to as "combo modems" due to the fact they are often equipped with a modem coax connection (to feed internet service into), LAN ports for devices/switches, integrated wireless router, and/or RJ-45 port for landline phone service. Due to the consolidation of many networking aspects into a single device - typically with the intent of using a single device rather than multiple for a specific service when selling bundled services (voice, internet, and cable) - the standard operation of combo modems may either not be configured properly or in some cases not be configurable to be compatible with NocTel service.

However, there are some options for workarounds:

1. Connect a router (see list above) to a LAN port of your combo modem and place this router into **Bridge Mode**. No additional configuration of this router should be necessary.
2. Several internet service providers allow residential customers to purchase and use their own modem/combo modem with their service rather than an ISP issued modem. If your ISP allows, purchase a combo modem that is known to be compatible with SIP. This option also allows you to save a bit of money each billing cycle as you are using your own equipment and cannot be assessed a modem rental fee by your ISP. However, before purchasing a modem/combo modem, be sure to verify it's compatible with both your ISP and the service option you are subscribing to. Several modems, such as the Netgear C7000 often have notes stating "DOCSIS 3.0" or "compatible with Comcast Xfinity" - be sure to gather relevant information on a potential replacement modem to ensure not only the best likelihood of SIP compatibility but also that the speeds your connection allows can be utilized.

Related articles

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- Correcting a Reboot Loop on VVX-series Phones
- Correcting a Reboot Loop on SoundPoint-series Phones
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