

HamGateXX Project

Lowering the access bar to the 44net



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Since the early 1980's the Amateur Radio (or "ham") community has had exclusive access to a large allocation of class A IPv4 TCP/IP address space thanks to the efforts of the late Brian Kantor, WB6CYT.

The purpose of these IP addresses is to encourage experimentation between amateur radio stations using the AX.25 (a variation of X.25) packet radio protocol. Over the years TCP/IP over AX.25 has been a significant challenge for the average ham radio operator. Additionally, TCP/IP services that are provided by default on the Internet were not available to users of RF based systems. The best that a ham could hope for was a rather kludgy email system.

Technology has moved along quite a bit since those early days of RF modems and 2 meter (145MHz) radio interfaces. No longer are hams stuck with using an ancient BBS system to exchange their email. Internet connectivity has allowed hams to circumvent the patchwork of RF based POP's and experiment with direct Internet access for their ham radio needs.

The law however has not moved along at the same pace. Many jurisdictions (including the USA) do not allow direct connection of Amateur Radio services to the Internet. Thus a patchwork of radio facilities exists often operating in a connectivity desert due to a lack of onward forwarding.

The HamGateXX (HamGatePA, HamGateNJ etc) project aims to create a State based closed "mesh" type network over the Internet utilizing the 44.x.x.x series of IP addresses previously secured by Kantor. It further aims to mitigate access difficulties by leveraging more modern technologies such as VPN and "mesh" networking to create a network within a network thus bypassing legal constraints.

The classic 'hub-n-spoke' implementation of the RF based AX.25 network allowed smaller, less equipped operators to connect by RF to a handful of services via their local BBS or "hub". In turn this hub was connected to other hubs via other AX.25 networks running on other frequencies. These networks were often regional and would hit a wall when a link was lost or did not exist for onward transmission of data.

By connecting local hubs to the 44net via the Internet (commonly available almost everywhere) we can overcome the ambiguities of RF links and allow those hubs to provide RF services to their local Amateur Radio population.

A regional HamGate will support a number of connectivity options ranging from IP only technologies such as VPN to RF technologies such as traditional AX.25, IL2P and even 2.5GHz HSMM.

In the AX.25 world hams are forced to use their local hub because of an aged hierarchical email addressing system. However, if they migrate to more modern TCP/IP based services such as POP3, IMAP etc then as long as they can get onto a hub they can connect to their services.

Bibliography

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