

New Jersey ampr.org addressing scheme

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Abstract:

This paper will describe the subnetting of the IPv4 address range allocated to the amateur radio community in the state of New Jersey. Currently all IPv4 addresses available to the state of New Jersey are co-ordinated by Mark Phillips, NI2O. The latest version of this document may be downloaded from <http://hamgatenj.ampr.org/docs/> ni2o@arrl.net 973 876 9308

The following IPv4 address subnet is allocated to the amateur radio community in New Jersey:

44.64.0.0/255.255.0.0

It shall be further broken down into smaller subnets so as to allow all radio hams in the state to be allocated an address that will be geographically relevant and routable.

The scheme herein is based on a “hub and spoke” principal. Each county in the state will be allocated its own subnet. A regional hub (or hubs) will be assigned numbers from their subnet and in turn the hubs will issue addresses to their users.

The master hub will be called “hamgatenj” which will reside on the Internet. The purpose of the hamgatenj will be to control traffic to and from the New Jersey network so as to meet current FCC Part 97 rules and to help prevent unwanted traffic from escaping onto an RF based LAN. Hamgatenj will not prevent RF based users from accessing the Internet should they so wish.

Where possible all hubs will be accessible from both the Internet (via hamgatenj) and a local RF LAN. Users may or may not be connected to the Internet but will be connected via RF to their local hub.

The regional hubs will be free to create any RF based LAN they so choose and are strongly encouraged to try experimental data transport methods.

Data repeaters such as D-STAR, C4FM, DMR and HamNet are also encouraged to participate in this addressing scheme. The ultimate goal is that of interoperability.

All hubs and users on the network will use the host.ampr.org naming convention. For the purposes of DNS A, AAAA and CNAME records will be allowed and where possible MX records will be populated.

A word about IP and subnets etc:

Most readers will be familiar with expressions such as “subnet”, “netmask” and “gateway” from their exposure to their cable modems at home. However, most users will not understand what these terms mean. In short, the numbers that represent these expressions describe how many IP addresses are available to the local network, how to calculate the location of any IP address and where to go if you cannot reach your intended destination address directly on your LAN.

Just like your cable modem and WiFi router the ham radio TCP/IP network uses subnets, netmasks and gateways to navigate around hosts for the purposes of sending email, viewing the DXcluster etc.

Unlike your equipment at home when you join the New Jersey ham radio data community you will be issued with a set of numbers that will not only allow you to communicate with your fellow hams but also communicate worldwide via the Internet.

Your allocation is indeed an honest-to-goodness “real” IP address. Unlike the addresses you are familiar with in your home (192.168.x.x) which are repeated almost everywhere you go your numbers are unique to you! Like all things in ham radio, the “big boys” want our stuff. There are no more IPv4 addresses available anywhere in the world and so your allocation is a valuable commodity just like your RF space. Use it or lose it!!!!

And in case you were wondering, there are PLENTY of numbers for the ham community thanks to the foresight of the original pioneers of packet radio so please use as many as you can justify. Each county has over 2000 addresses available. More is available should the need arise.

In the event that you lose interest in our data community your numbers will be returned to the pool held by your regional hub and issued to the next requesting user.

Its all in the numbers:

There are a little over 65500 IP addresses available to us in New Jersey. Of those numbers some 43000 are shared amongst the various counties around the state leaving some 22500 remaining should there be a need to “back fill” somewhere or for a special project such as HamMesh or IP-over-kite or (insert your latest mad data idea here).

Should you have a need for more numbers than is available in your county please contact your coordinator to discuss your proposals.

The IP subnet details for each county are listed below. These subnets may and probably will be further reduced to better fit the needs of any given county network.

hamgatenj.ampr.org 44.68.0.1/255.255.248.0

Subnet	44.64.0.0/21
Range	44.64.0.1 – 44.64.7.254 (2046 hosts)
Network	44.64.0.0
Broadcast	44.64.7.255
Gateway	44.64.0.1

atlanticcountynj.ampr.org 44.64.8.1/255.255.248.0

Subnet	44.64.8.0/21
Range	44.64.8.1 – 44.64.15.254 (2046 hosts)
Network	44.64.8.0
Broadcast	44.64.15.255
Gateway	44.64.8.1

bergencountynj.ampr.org 44.64.16.1/255.255.248.0

Subnet	44.64.16.0/21
Range	44.64.16.1 – 44.64.26.254
Network	44.64.16.0
Broadcast	44.64.23.255
Gateway	44.61.16.1

burlingtoncountynj.ampr.org 44.64.24.1/255.255.248.0

Subnet	44.64.24.0/21
Range	44.64.24.1 – 44.64.31.254
Network	44.64.24.0
Broadcast	44.64.31.255
Gateway	44.64.24.1

camdencountynj.ampr.org 44.64.32.1/255.255.248.0

Subnet	44.64.32.0/21
Range	44.64.32.1 – 44.64.39.254
Network	44.64.32.0
Broadcast	44.64.39.255
Gateway	44.64.32.1

capemaycountynj.ampr.org 44.64.40.1/255.255.248.0

Subnet	44.64.40.0/21
Range	44.64.40.1 – 44.64.47.254
Network	44.64.40.0
Broadcast	44.64.47.255
Gateway	44.64.40.1

cumberlandcountynj.ampr.org 44.64.48.1/255.255.248.0

Subnet	44.64.48.0/21
Range	44.64.48.1 – 44.64.55.254
Network	44.64.48.0
Broadcast	44.64.55.255
Gateway	44.64.48.1

essexcountynj.ampr.org 44.64.56.1/255.255.248.0

Subnet	44.64.56.0/21
Range	44.64.56.1 – 44.64.63.254
Network	44.64.56.0
Broadcast	44.64.63.255
Gateway	44.64.56.1

gloucestercountynj.ampr.org 44.64.64.1/255.255.248.0

Subnet	44.64.64.0/21
Range	44.64.64.1 – 44.64.71.254
Network	44.64.64.0
Broadcast	44.64.71.255
Gateway	44.64.64.1

hudsoncountynj.ampr.org 44.64.72.1/255.255.248.0

Subnet	44.64.72.0/21
Range	44.64.72.1 – 44.64.79.254
Network	44.64.72.0
Broadcast	44.64.79.255
Gateway	44.64.72.1

hunterdoncountynj.ampr.org 44.64.80.1/255.255.248.0

Subnet	44.64.80.0/21
Range	44.64.80.1 – 44.64.87.254
Network	44.64.80.0
Broadcast	44.64.87.255
Gateway	44.64.80.1

mercercountynj.ampr.org 44.64.88.1/255.255.248.0

Subnet	44.64.88.0/21
Range	44.64.88.1 – 44.64.95.254
Network	44.64.88.0
Broadcast	44.64.95.255
Gateway	44.64.88.1

middlesexcountynj.ampr.org 44.64.96.1/255.255.248.0

Subnet	44.64.96.0/21
Range	44.64.96.1 – 44.64.103.254
Network	44.64.96.0
Broadcast	44.64.103.255
Gateway	44.64.96.1

monmouthcountynj.ampr.org 44.64.104.1/255.255.248.0

Subnet	44.64.104.0/21
Range	44.64.104.1 – 44.64.111.254
Network	44.64.104.0
Broadcast	44.64.111.255
Gateway	44.64.104.1

morriscountynj.ampr.org 44.64.112.1/255.255.248.0

Subnet	44.64.112.0/21
Range	44.64.112.1 – 44.64.119.254
Network	44.64.112.0
Broadcast	44.64.119.255
Gateway	44.64.112.1

oceancountynj.ampr.org **44.64.120.1/255.255.248.0**

Subnet	44.64.120.0/21
Range	44.64.120.1 – 44.64.127.254
Network	44.64.120.0
Broadcast	44.64.127.255
Gateway	44.64.120.1

passaiccountynj.ampr.org **44.64.128.1/255.255.248.0**

Subnet	44.64.128.0/21
Range	44.64.128.1 – 44.64.135.254
Network	44.64.128.0
Broadcast	44.64.137.255
Gateway	44.64.128.1

salemcountynj.ampr.org **44.64.136.1/255.255.248.0**

Subnet	44.64.136.0/21
Range	44.64.136.1 – 44.64.143.254
Network	44.64.136.0
Broadcast	44.64.143.255
Gateway	44.64.136.1

somersetcountynj.ampr.org **44.64.144.1/255.255.248.0**

Subnet	44.64.144.0/21
Range	44.64.144.1 – 44.64.151.254
Network	44.64.144.0
Broadcast	44.64.151.255
Gateway	44.64.144.1

sussexcountynj.ampr.org **44.64.152.1/255.255.248.0**

Subnet	44.64.152.0/21
Range	44.64.152.1 – 44.64.159.254
Network	44.64.152.0
Broadcast	44.64.159.255
Gateway	44.64.152.1

unioncountynj.ampr.org**44.64.160.1/255.255.248.0**

Subnet	44.64.160.0/21
Range	44.64.160.1 – 44.64.167.254
Network	44.64.160.0
Broadcast	44.64.167.255
Gateway	44.64.160.1

warrencountynj.ampr.org**44.64.168.1/255.255.248.0**

Subnet	44.64.168.0/21
Range	44.64.168.1 – 44.64.175.254
Network	44.64.168.0
Broadcast	44.64.175.255
Gateway	44.64.168.1