

What is a Netmask?

[Main Page](#) > [FAQ](#) > [Networking](#) > **What is a Netmask?**

A **Netmask** is a 32-bit "mask" used to divide an IP address into subnets and specify the network's available hosts. In a netmask, two bits are always automatically assigned. For example, in 255.255.225.0, "0" is the assigned network address. In 255.255.255.255, "255" is the assigned broadcast address. The 0 and 255 are always assigned and cannot be used.

Netmask defines how "large" a network is or if you're configuring a rule that requires an IP address and a Netmask, the Netmask will signify to what range of the Network the rule will apply to:

IP	NETMASK	DESCRIPTION
192.168.55.161	255.255.255.255	Only applies to 192.168.55.161
192.168.55.0	255.255.255.0	Applies to IPs in the 192.168.55.0 - 192.168.55.255 range
192.168.55.240	255.255.255.240	192.168.55.240 - 192.168.55.255
192.168.55.161	255.255.255.0	192.168.55.0 - 192.168.55.255
192.168.0.0	255.255.0.0	192.168.0.0 - 192.168.255.255

Sometimes you will see that a Netmask is defined by one number, e.g., **24**. This number is the length of the Netmask in bits:

NETMASK	255.	255.	255.	255
Netmask length	8	16	24	32

So, for example, a Netmask that is 24-bits long is **255.255.255.0**:

NETMASK	255.	255.	255.	0
Netmask length	8	16	24	-

A Netmask that is 16-bits long is **255.255.0.0**:

NETMASK	255.	255.	0.	0
Netmask length	8	16	-	-

And so on.