Document Name: NAT

Network Address Translation or NAT allows you to use a public IP for a device with a private IP address within the LAN. It was designed to slow the consumption of public IPv4 addresses. There are two types of NAT, static and dynamic. The difference being how the public IP is assigned to a host, either statically assigned or dynamically assigned from a pool of addresses. PAT or NAT Overload is how devices on the inside of the network share an external IP address that uses random (ephemeral) port numbers to separate sessions. This is the most common form of NAT.

Configuration

Static Nat

The first address is your inside local address, and the second one is your inside global address that you are translating.

```
Router(config)# ip nat inside source static A.B.C.D A.B.C.D
```

If you need to translate and address to a from a specific TCP or UDP port, then use this command. The first IP is the inside local address along with its port number and the second IP is the inside global (your external IP). **This is synonymous with Port Forwarding**.

```
Router(config)# ip nat inside source static [tcp or udp] A.B.C.D [port number] A.B.C.D [port number]
```

Dynamic Nat

The address are the start and end of your NAT pool.

```
Router(config)# ip nat pool [Pool Name] A.B.C.D A.B.C.D [Netmask or Prefix length]
```

You have to have an ACL for Dynamic NAT to function. This command does not create the ACL.

```
Router(config)# ip nat inside source list [ACL #] pool [Pool Name]
```

PAT (NAT Overload)

In this example a standard ACL is used to allow traffic through.

```
Router(config)# access-list [ACL #] permit any
```

The interface that has to be specified is the outside interface.

```
Router(config)# ip nat inside source list [ACL #] interface [interface] overload
```

Show Commands

```
Router# show ip nat translations
Router# show ip nat statistics
```