**NAT (Network address translation)**

* This service is used in routers.
* Translates a set of ip address into another set of Ip address.
* Helps preserve the limited amount of IPV4 public IP addresses.
* It translates private to public and public to private.

Graphical user interface

Description automatically generated

**When a device in the LAN want to connect to the internet, The private IP address will be translated by NAT to the public IP address.**

Diagram

Description automatically generated with low confidence

**IP4 Address**

**There are 2 types of ipv4 address**

Public

* Publicly registered on the internet.
* Must have public ip to access the internet.
* There are approximately 4 billion ip address available on the internet.

Private

* It is not publicly registered.
* Cannot directly access the internet with a private IP
* Only used internally.
* Router assigns private ip

A picture containing graphical user interface

Description automatically generated

**FUTURE**

* We won’t need NAT or private ip addresses.
* New generation of IP address, called IPv6.
* Every device would have its own IP address.
* Capable to produce over 340 undecillion IP addresses.



