## Public & Private IP addresses

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Because private addresses can be used by many, individually within their own realm, they are nonroutable over a common infrastructure. When communication between a privately addressed host and a public network (like the Internet) is needed, address translation is required.

In simple words setting up IP Range authentication cannot be achieved when it is used for setting up access to eBooks for an Institution.

### Public IP addresses

A public IP address is any valid address, or number, that can be accessed over the Internet. Internet standards groups, such as the Network Information Center (NIC) or the Internet Assigned Numbers Authority (IANA), are the organizations responsible for registering IP ranges and assigning them to organizations, such as Internet Service Providers (ISPs).

In the Cloud(n) system, a public IP address is an identifier assigned to a virtual router on the network. Any resources that will be available over the Internet will require a public IP address.  Public IP addresses can be added in the Cloud Console.

### Private IP addresses

A private IP address is any number or address assigned to a device on a private TCP/IP Local Area Network that is accessible only within the Local Area Network.  For a resource inside the Local Area Network to be accessible over the Internet, a device within the Local Area Network must be connected to the Internet with a public IP address, and the networking must be appropriately configured.  The same Internet standards organizations have reserved the following three IP address ranges that will never be registered publicly:

| First IP in block | Last IP in block |
|---|---|
| 10.0.0.0 | 10.255.255.255 |
| 172.16.0.0 | 172.31.255.255 |

| 192.168.0.0 | 192.168.255.255 |
|---|---|

A private IP address is assigned to each instance created in the Cloud(n) system. Consequently, each instance may only have one private IP address, and additional private IP addresses cannot be added.

Within the range of publicly available IP addresses are specific, excluded ranges withheld for private network use. These private IP ranges are as follows:

A class 10.0.0.0 …10.255.255.255

B class 172.16.0.0 … 172.31.255.255

C class 192.168.0.0 … 192.168.255.255