**Proxy**

In computer networking, a proxy server is a server application that acts as an **intermediary** between a client requesting a resource and the server providing that resource.

**Forward Proxy**

When the proxy server communicates with actual server **on behalf of one or more clients**, then in it’s a forward proxy.  
Also known as **Client-Side proxy**.

Clients 1…n

Server

Req Request

Proxy

Res Response

(Forward proxy)

This is done for anonymity, so that client do not need to directly interact with server or share personal data. Server only knows IP of forward proxy, not of client.

This is used in organizations or institutions where there can be multiple clients and all traffic is monitored through forward proxy.

* This blocks any malicious traffic reaching the server.
* Blocking access to malicious sites.
* Caching the content of external sites at proxy.

Ex: Squid, Proxy, Tor.

**Reverse Proxy**

When the proxy server communicates with client **on behalf of one or more servers**, then in it’s a reverse proxy. Also known as **Server-Side proxy**

Servers 1…n

Client

Request

Proxy

Response

(Reverse Proxy)

This is used to maintain anonymity of servers. So that client does not know IP address of the private server which fulfilled its request. It only receives IP address of the Reverse Proxy.

* It filters all incoming traffic before sending actual requests to private servers.
* It can evenly distribute the load for application among multiple servers, hence acting as a load balancer.
* It can be used to cache response from servers.
* Can be used to mitigate the DDOS attack on server by deflating overall impact.
* Provides a single configuration point for SSL/TSL.

Ex: Nginx, Apache, HAProxy

**Limitations of Proxies**

* If our country/organization or workplace block access to certain websites. A forward proxy can be used to bypass these rules and access those sites. Hence may and may not be useful at times.
* Reverse proxy saves all servers from outer world but if it fails, then it can cause bottleneck and servers will be prone to DDOS attacks. It becomes a reason of single point of failure.