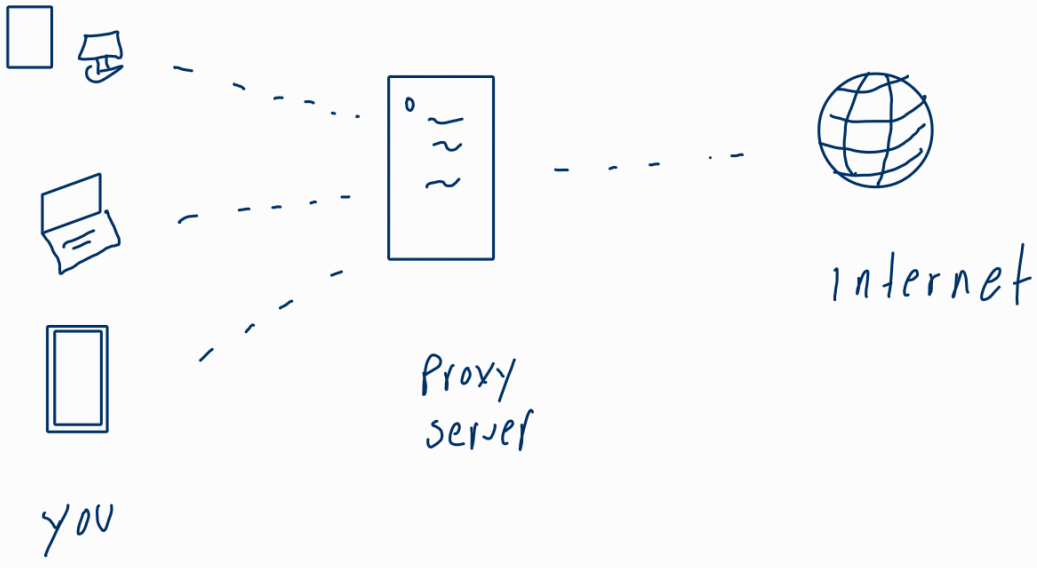
Virtual Hosts
Permite que un unico servidor web aloje multilples sitios web. En lugar de necesitar un servidor fisico para cada sitio, puedes tener un unico servidor que gestione sitio1.com, sitio2.org y blog.sitio.1.com al mismo tiempo

Hay dos tipos principales de anfitriones virtuales:

- Virtual Host basado en nombre: Este es el tipo mas comun. El servidor web distingue entre los sitios web basandose en el nombre de dominios que el cliente solicita. Cuando tu navegador pide www.sitio1.com, el servidor lee la cabecera Host de la solicitud y sabe que sitio web servir
- Virtual Host basado e direccion IP: En este caso, cada sitio web tiene su propia direccion IP. EL servidor web determina que sitio servir basandose en ladireccion IP a la que se dirige la solicitud. Es menos comun hoy en dia debido a la escasez de las direcciones IPv4

Proxys

Proxy server



basicaly Proxy works for the safety of the client. Whenever we are making any request from our local machine to hit a server which is present outside the network (From internet to internet), Proxy it the interface through which we send the request and it fetches the data from the internet on our behalf

Use Cases of Proxy

Caching - It is a very popular use case of Proxy server. It save bandwidth by caching the content and serving it back to the client instead of going to internet everytime

Anonymity - Proxy talks to the server so the final destination (server) does not know from where the request is actually coming from

Security - It act as a firewall. Multiple client machines can talk to a centralised Proxy server. It helps organisations and isps, block or filter the bad request which could impact client machines sitting inside the network

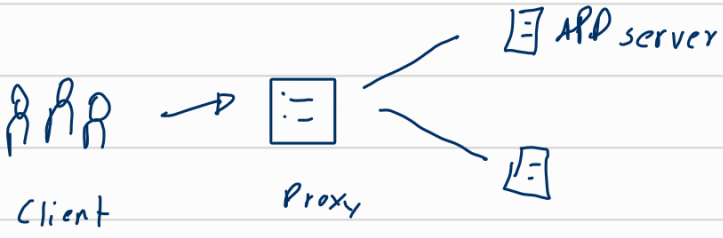
Encryption and Decryption - Proxy can encrypt and hide (mask) IP adress and sensitive data going through the requests. It only sends it in a way where you can not be discovered back

Loggin - logging can help caching the pages which are being visited often

MicroServices - This is one of the latest and very interesting use case of Proxy. There are several types of Proxy such as sidecar Proxy, HTTP Proxy, Tcp Proxy ..... we can deploy Proxy next to our aplication and it can take care of all the networking stuff

Reverse Proxy server

As the name says its just reverse of Proxy and thats why its very confusing. The main concept and the diference is that, instead of doing it from the client side (as it was in Proxy) it does it from the server side



it does the exact opposite of what a Proxy server does. Instead of Protecting the client, it Protects the server, Reverse Proxy server comes handy whenever there is any request coming from the internet, which wants to access any of our server within the network. So instead of exposing our servers, every request goes through reverse proxy server which decides where to send this request forward.

Advantages of Reverse Proxy server

Almost all the benefits we have from Proxy server including caching, security, etc, all are there in reverse Proxy too, here we have some additional benefits.

1. Load balancing - Reverse Proxy helps balancing the load among the server. Along with it reverse helps us compress (zipping) the request size which helps in increase of overall performance

2. Ingress - in Kubernetes and microservice architecture, based on the request it funnels the requests to the Particular service (it requests comes for picture API, it takes the requests to the respective service. Here it kinds of work as a router)

3. Canary Deployment - suppose, YT wants to experiment for 10% of requests to have a random generated thumbail, this can be done by reverse Proxy

Important

A Pretty Commonly asked questions is what is the difference in a reverse Proxy and load balancer?

A reverse Proxy Server can be a load balancer but load balancer has a very specific purpose of balancing the load only. Apart from it a revers Proxy servers can still work with a single server in place. It does not necessarily nee to have multiple server because reverse Proxy will still do the caching, security .....

Can Proxy and reverse Proxy be used at a same time? → Si

There is a used called "service mesh" where Proxy can also act as a reverse Proxy at a same time

Apunte Proxy vDe

Un servidor Proxy actua como un intermediario entre un cliente y un servidor destino. En lugar de que el cliente se conecte directamente al servidor final, envia la solicitud al Proxy, y este a su vez, la reenvia:

Hay dos tipos:

Proxy Directo (o Proxy de reenvio)

Se usa en redes internas, el cliente se configura para que todas tus Peticiones de salida pasen por el Proxy, muy util para:

- Filtrado de contenido
- Caché
- Seguridad

Proxy inverso

se coloca delante de 1 o varios servidores web, los clientes de internet se conectan al Proxy inverso que luego distribuye las solicitudes a los servidores internos.

usos:

Balanceo de cargas: Distribuir el tráfico entre varios servidores para evitar que uno se sature

Seguridad: Proteger los servidores internos de ataques directos

Terminacion SSL: manejar la encriptacion y desencriptacion SSL/TLS para que los servidores internos no tengan que hacerlo, liberando recursos

Application Layer Gateways (ALG)

Es un tipo de Proxy más avanzado. Mientras que un Proxy normal solo maneja Protocolos como HTTP, ALG, entiende y puede modificar el trafico de Protocolos más complejos, como FTP o SIP (para VoIP) Esencialmente, el ALG inspecciona el trafico de una aplicación especifica y ajusta la información de la red para que la comunicación funcione correctamente

Relación entre Proxies y ALGs

- Todos los ALGs son un tipo de Proxy, ya que actuen como intermediarios.
- La diferencia clave es la inteligencia que aplica al trafico. Un Proxy normal simplemente reenvia o filtra. Un ALG tiene un conocimiento Profundo del Protocolo de la aplicacion y Puede manipular los datos dentro del Paquete Para asegurar la conectividad.