<https://hub.packtpub.com/6-common-use-cases-of-reverse-proxy-scenarios/>

What is Reverse Proxy?

Proxy servers are used as intermediaries between a client and a website or online service. By routing traffic through a proxy server, users can disguise their geographic location and their IP address. Reverse proxies, in particular, can be configured to provide a greater level of control and abstraction, thereby ensuring the flow of traffic between clients and servers remains smooth.

This makes them a popular tool for individuals who want to stay hidden online, but they are also widely used in enterprise settings, where they can improve security, allow tasks to be carried out anonymously, and control the way employees are able to use the internet.

## **What is a Reverse Proxy?**

A reverse proxy server is a type of proxy server that usually exists behind the firewall of a private network. It directs any client requests to the appropriate server on the backend. Reverse proxies are also used as a means of caching common content and compressing inbound and outbound data, resulting in a faster and smoother flow of traffic between clients and servers. Furthermore, the reverse proxy can handle other tasks, such as SSL encryption, further reducing the load on web servers.

There is a multitude of scenarios and use cases in which having a reverse proxy can make all the difference to the speed and security of your corporate network. By providing you with a point at which you can inspect traffic and route it to the appropriate server, or even transform the request, a reverse proxy can be used to achieve a variety of different goals.

Benefits of using reverse proxy.

1. Load Balancing
2. Provide security by monitoring and logging traffic
3. Install certificates only on reverse proxy server\LB and avoid the installing certificates on webservers\VMs behind
4. Serves static content
5. SSL offloading\SSL termination
6. URL rewriting
7. Combine Different Websites into a Single URL Space

Let’s see each of them in details.

### **Load Balancing to route incoming HTTP requests**

This is probably the most familiar use of reverse proxies for many users. Load balancing involves the proxy server being configured to route incoming HTTP requests to a set of identical servers. By spreading incoming requests across these servers, the reverse proxies are able to balance out the load, therefore sharing it amongst them equally.

The most common scenario in which load balancing is employed is when you have a website that requires multiple servers. This happens due to the volume of requests, which are too much for one server to handle efficiently. By balancing the load across multiple servers, you can also move away from an architecture that features a single point of failure. Usually, the servers will all be hosting the same content, but there are also situations in which the reverse proxy will also be retrieving specific information from one of a number of different servers.

### **Provide security by monitoring and logging traffic**

By acting as the mediator between clients and your system’s backend, a reverse proxy server can hide the overall structure of your backend servers. This is because the reverse proxy will capture any requests that would otherwise go to those servers and handle them securely. A reverse proxy can also improve security by providing businesses with a point at which they can monitor and log traffic flowing through their network.

A common use case in which a reverse proxy is used to bolster the security of a network would be the use of a reverse proxy as an SSL gateway. This allows you to communicate using HTTP behind the firewall without compromising your security. It also saves you the trouble of having to configure security for each server behind the firewall individually.

A [rotating residential proxy](https://smartproxy.io/proxies), also known as a [backconnect proxy](https://oxylabs.io/proxies/residential-proxies" \t "_blank), is a type of proxy that frequently changes the IP addresses and connections that the user uses. This allows users to hide their identity and generate a large number of requests without setting alarms off.

A reverse rotating residential proxy can be used to improve the security of a corporate network or website. This is because the servers in question will display the information for the proxy server while keeping their own information hidden from potential attackers.

### **No need to install certificates on your backend servers with SSL Termination**

SSL termination process occurs when an SSL connection server ends, or when the traffic shifts between encrypted and unencrypted requests. By using a reverse proxy to handle any incoming HTTPS connections, you can have the proxy server decrypt the request, and then pass on the unencrypted request to the appropriate server.

Taking this approach offers practical benefits. For example, it eliminates the need to install certificates on your backend servers. It also provides you with a single configuration point for managing SSL/TLS. Removing the need for your web servers to undertake this decryption means that you are also reducing the processing load on the server.

### **Serve static content on behalf of backend servers**

Some reverse proxy servers can be configured to also act as web servers. Websites contain a mixture of dynamic content, which changes over time, and static content, which always remains the same. If you can configure your reverse proxy server to serve up static content on behalf of backend servers, you can greatly reduce the load, freeing up more power for dynamic content rendering. Alternatively, a reverse proxy can be configured to behave like a cache. This allows it to store and serve content that is frequently requested, thereby further reducing the load on backend servers.

### **URL Rewriting before they go on to the backend servers**

Anything that a business can do to easily to [improve their SEO score](https://www.semrush.com/kb/747-authority-score-backlink-scores) is worth considering. Without an investment in your SEO, your business or website will remain invisible to search engine users. With URL rewriting, **you can compensate for any legacy systems you use**, which produce URLs that are less than ideal for SEO. With a reverse proxy server, the URLs can be automatically reformatted before they are passed on to the backend servers.

### **Combine Different Websites into a Single URL Space**

It is often desirable for a business to adopt a distributed architecture whereby different functions are handled by different components. With a reverse proxy, it is easy to route a single URL to a multitude of components. To anyone who uses your URL, it will simply appear as if they are moving to another page on the website. In fact, each page within that URL might actually be connecting to a completely different backend service. This is an approach that is widely used for web service APIs.

To sum up, the primary function of a reverse proxy is load balancing, ensuring that no individual backend server becomes inundated with more traffic or requests than it can handle. However, there are a number of other scenarios in which a reverse proxy can potentially offer enormous benefits.