

Using nginx as HTTP load balancer

Agenda

大綱

- Proxy
 - Forward Proxy
 - Reverse Proxy
- Load Balancer
 - Load Balancing Methods
 - Demo
- Choose Best Load Balancing Method
- References

Proxy

- Forward Proxy
- Reverse Proxy

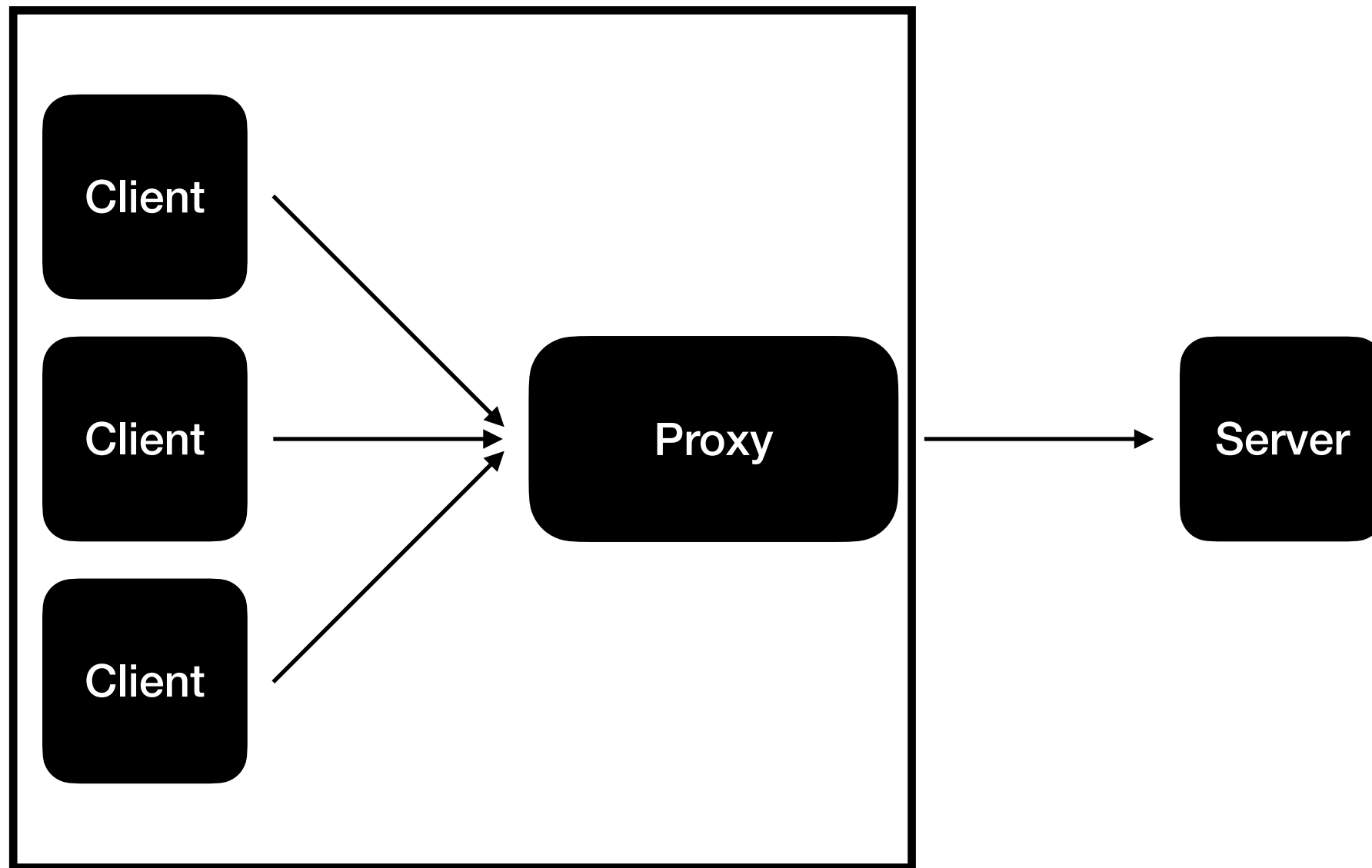
Forward Proxy

正向代理



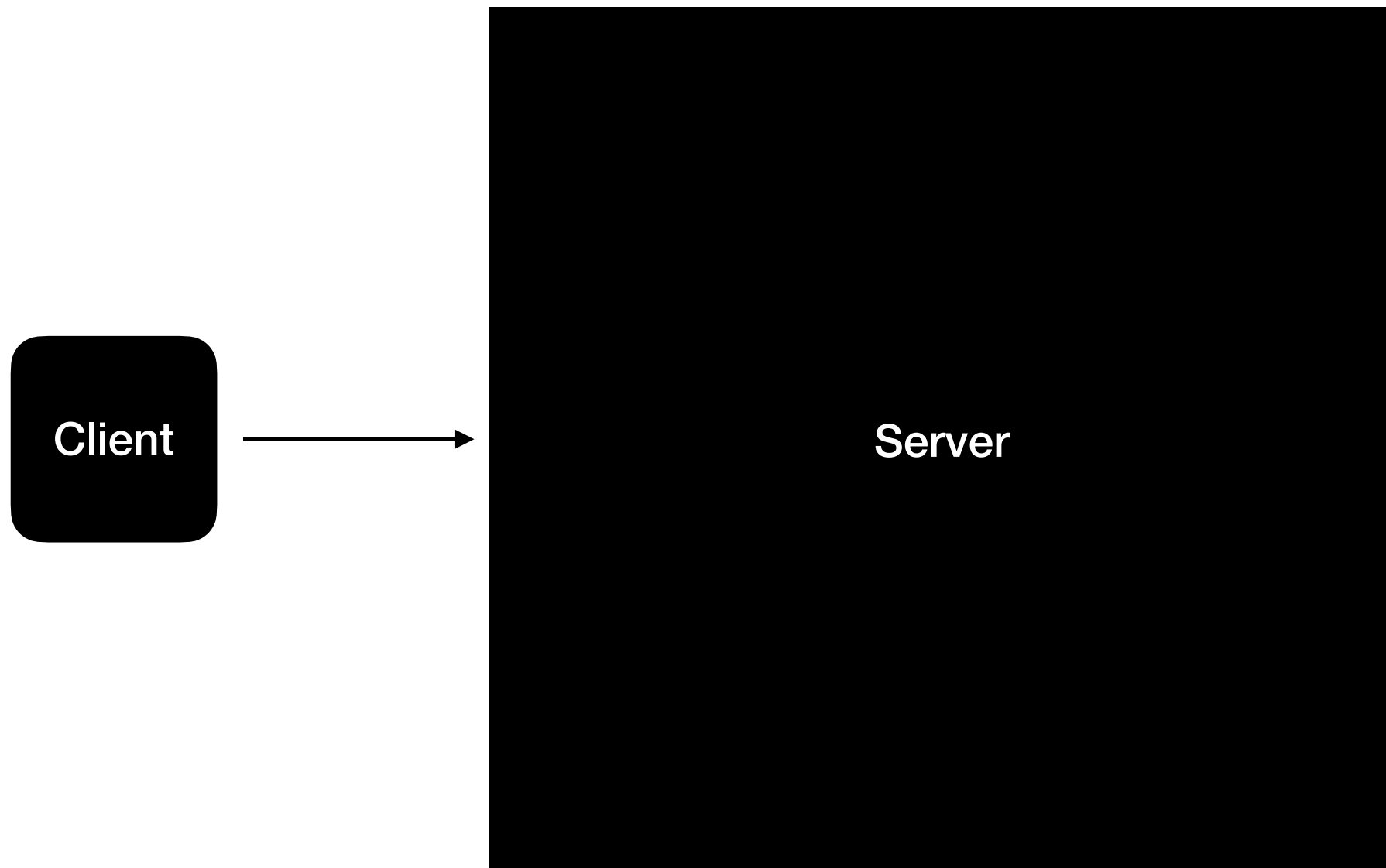
Forward Proxy

正向代理



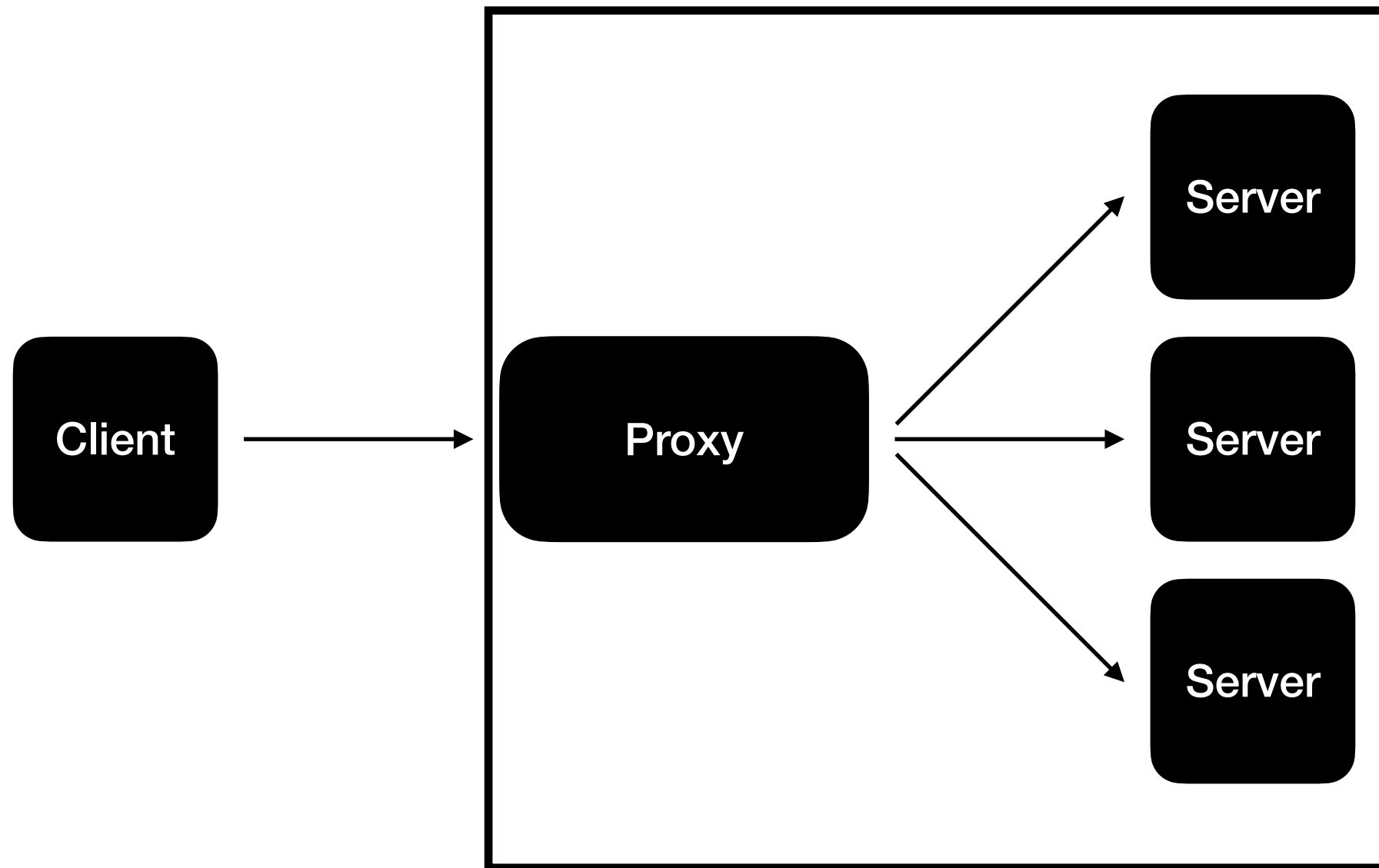
Reverse Proxy

反向代理



Reverse Proxy

反向代理



Load Balancing Methods

- Round Robin
- Least Connections
- Hashing

Round Robin

輪詢

- weight (default = 1)
 - 權重越大，負載越大
- backup
 - 當其他伺服器過載或無法服務時，backup 伺服器會被訪問

Least Connections

最少連線

- stub_status

Hashing

雜湊

- hash
- ip_hash

Hashing - hash

- 依照 key 進行雜湊後來分配伺服器

Hashing - ip_hash

- 依照 IP 來分配伺服器
- The first three octets of the client IPv4 address, or the entire IPv6 address, are used as a hashing key.

Choosing Best Load Balancing Method

Some metrics to check during testing

- CPU and memory load
- Request Latency
- Errors and failed requests

References

- https://nginx.org/en/docs/http/load_balancing.html
- https://nginx.org/en/docs/http/nginx_http_auth_basic_module.html
- https://nginx.org/en/docs/http/nginx_http_upstream_module.html
- https://nginx.org/en/docs/http/nginx_http_stub_status_module.html
- <https://www.nginx.com/blog/choosing-nginx-plus-load-balancing-techniques/>