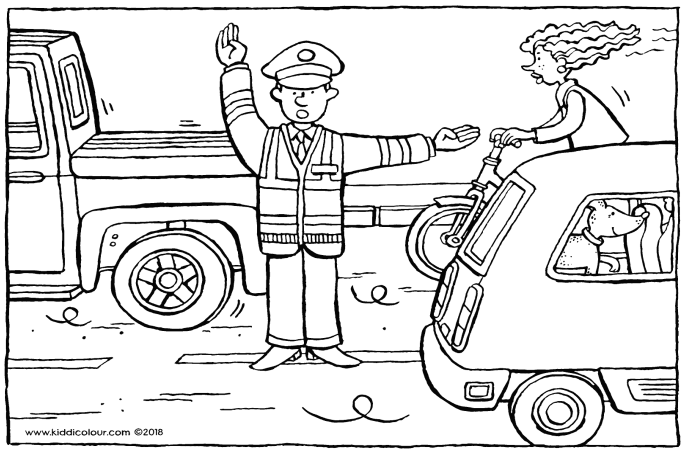
Load Balancer



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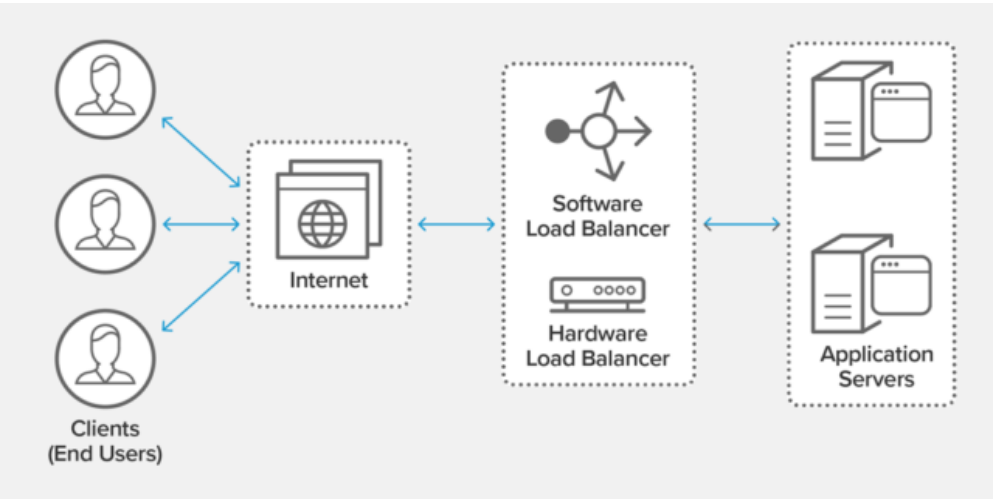

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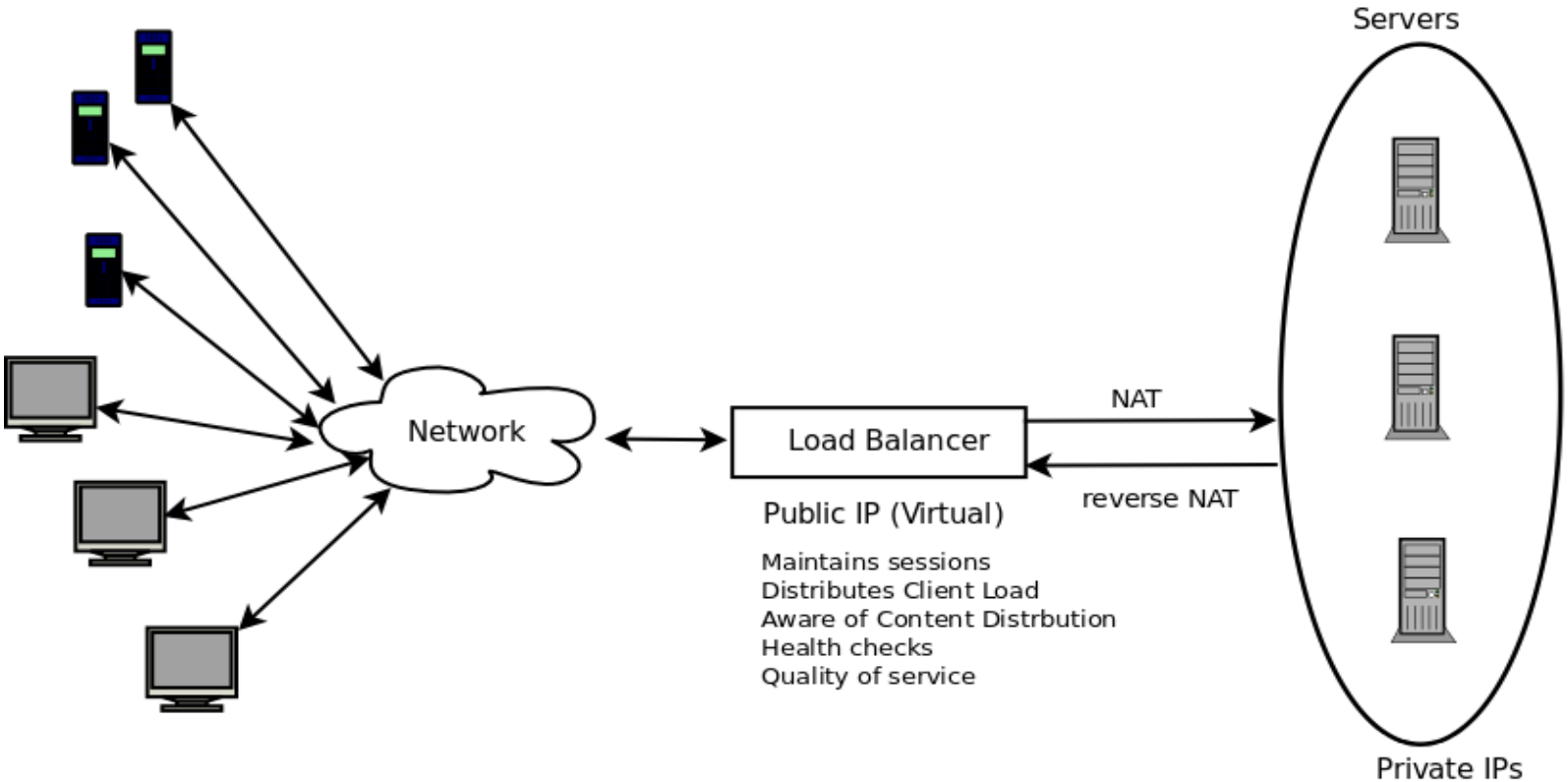
- Types of load balancers
  - Software load-balancers
  - Hardware load-balancers 
  - Switches with extended functionality

Load Balancers: The Big Picture



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- Stateful load balancing: The load balancer keeps track of state information for every session and makes load balancing decisions for each session.
  - A session is identified by the (source IP, destination IP, source port, destination port). Easier to identify for TCP than for UDP (why?)
  - Keeps a session table. We also need an idle timer to remove entries so the table doesn't fill up.

Load Distribution Methods (2)

- Round robin
- Least connections
- Weighted distribution
- Response time (in-band monitoring versus out-of-band monitoring)
- Server probes (that run on servers)
- Server load thresholds

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- Global server load balancing.
  - Use standard DNS that allows multiple addresses for the same host address
  - Use HTTP Redirect
  - Make the load balancer be the authoritative DNS server
  - Make the load balancer be the forward DNS proxy server

References

- *Load Balancing Servers, Firewalls, and Caches*. Chandra Kopparapu. Wiley.