



An introduction to CDN and the technologies behind it

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About me



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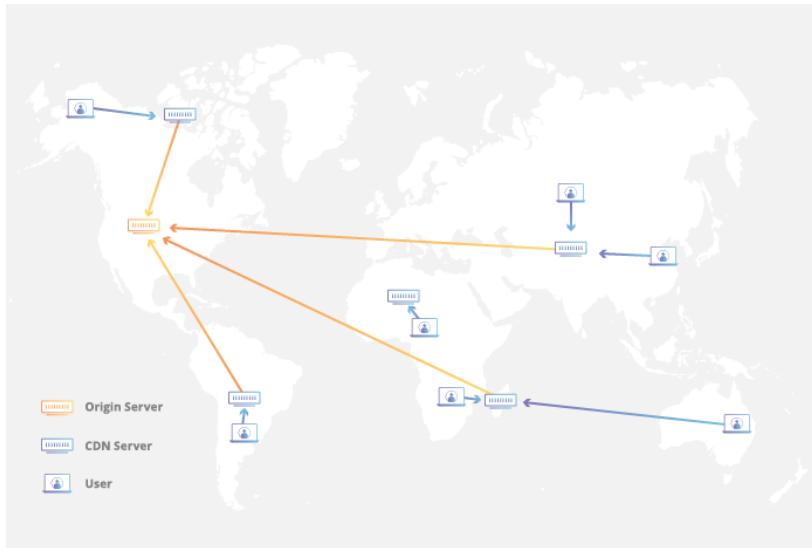
Agenda

- What's a CDN
- Without CDN
- CDN Architecture
- Inside a POP Server
- F&Q



What's a CDN

A content **delivery** network, or content **distribution** network (CDN), is a **geographically distributed** network of proxy servers and their **data centers**. The goal is to provide **high availability** and **performance** by distributing the service spatially relative to end users. [Wikipedia]



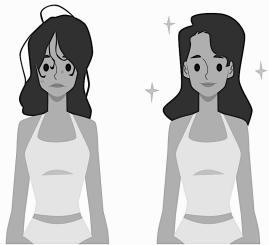
Main targets

- Improving website load times
- Reducing bandwidth costs
- Increasing content availability and redundancy
- Improving website security



Without CDN

Before After^{*}



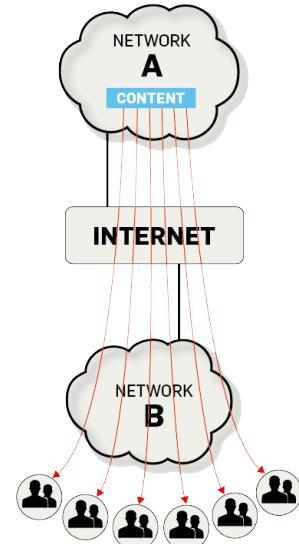
Before CDN

All requests sent to your server. You must **care** about everything.

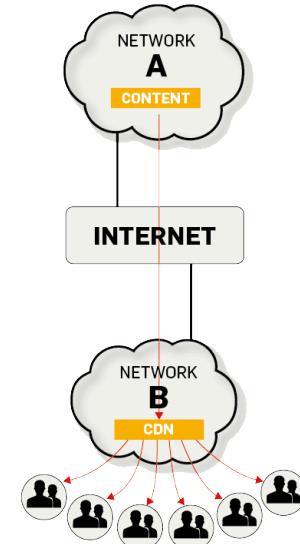
After CDN

Requests came from CDN POPs, more power to control(cache, security, and other).

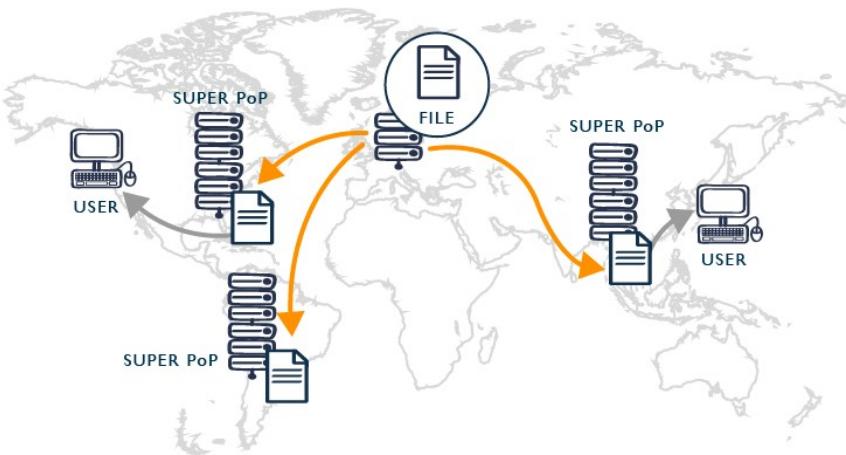
Without CDN



With CDN



CDN Architecture



Two main architectures are

- Content store (PUSH mode)

A copy of content, synced(or pushed) into the CDN POP. Before any user request, content pushed/synced from the origin server periodically and checked by the CDN pop server.

- Proxy chain (Proxy mode)

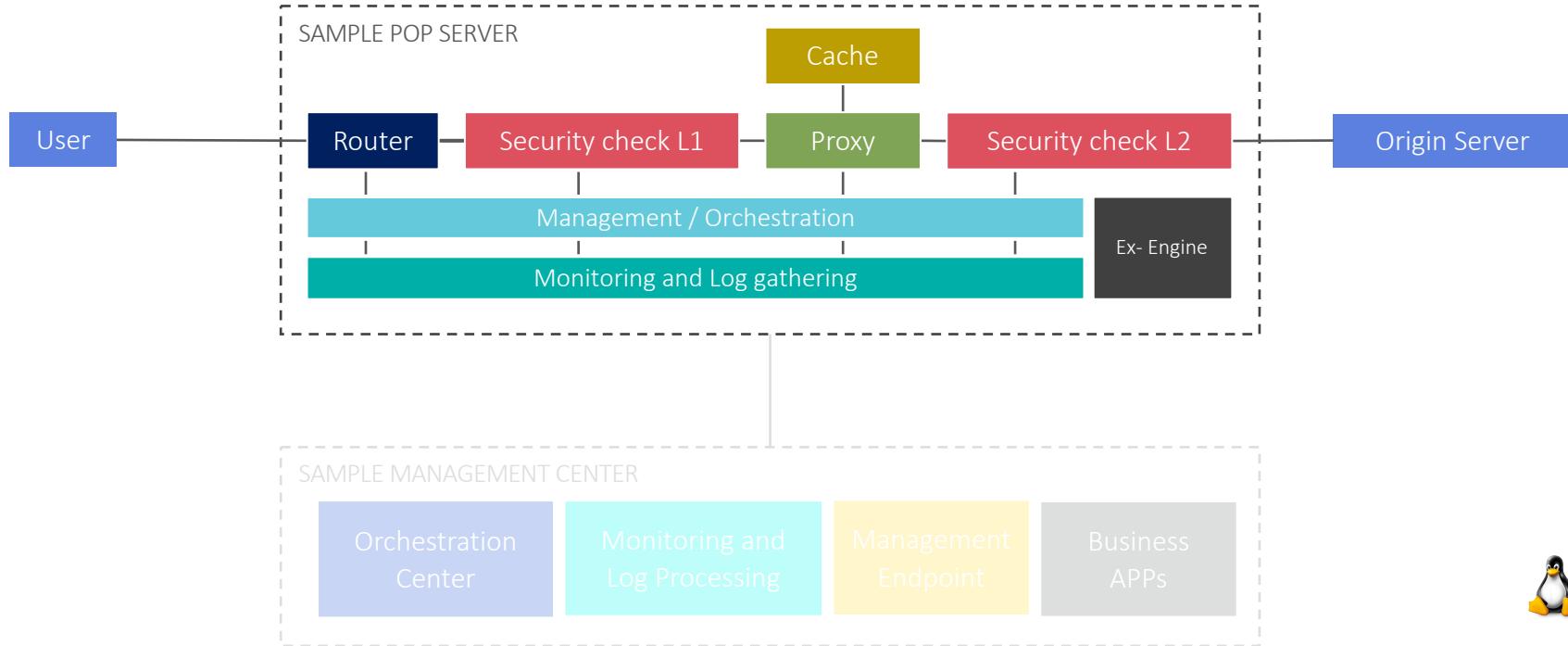
After receiving a user request, the CDN pop server proxies it to the origin server. The origin response can be stored on the CDN pop server for the same possible request in future.

* Some CDN providers support both types.



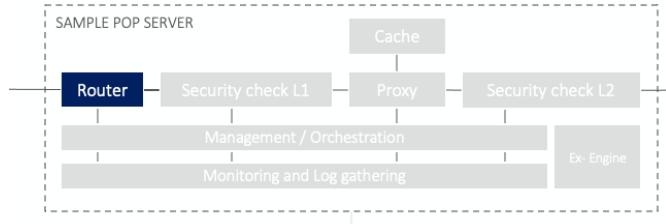
Inside a POP Server

The CDN has many pop Servers. In general all pop servers have same functionality and architecture inside.



Router

- Run internet routing protocol (BGP)
- Many providers user BGP-Anycast
- Can be a Linux daemon or an appliance or hardware
- Dynamic advertising to mitigate DDoS attacks



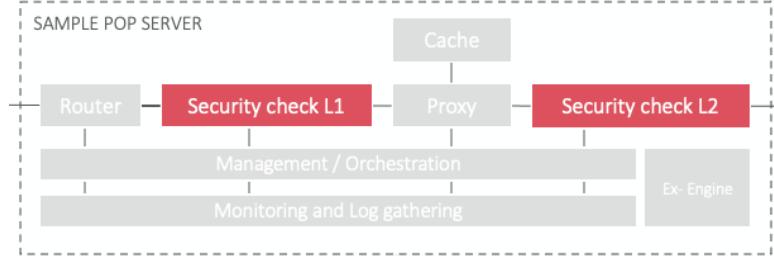
Security Layer

L1

- Check security policy in layer 3 and 4
- High performance
- Block DoS or DDoS

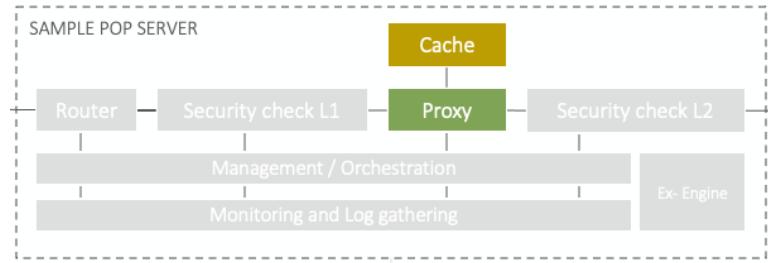
L2

- Apply security policy in L7 (As a WAF)
- More granular security policy
- Need more processor (increase response time)



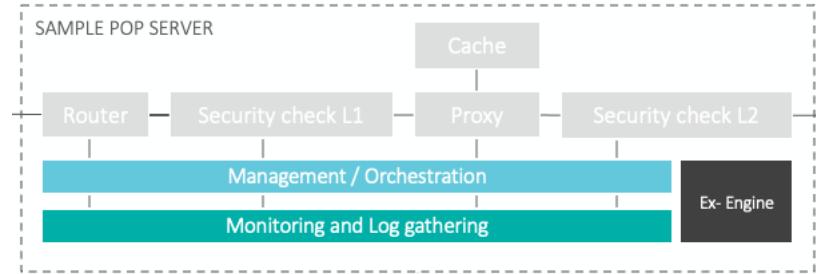
Proxy and Cache

- Process received request (generally user HTTP request)
- Apply L7 routing policy (Endpoint ACL, Load balancing,...)
- Cache origin response



Management, Log

- Agent for management service on POP server (Router, Proxy, Security , etc.)
- Synchronizing configuration with management center
- Gather logs and event from POP servers





F&Q





= Thank You

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