SOLVING HIGH DNS LATENCY ISSUES USING SMART ROUTERS

AUTHORS:
M.NITYA JAHNAVI
V.MAHITADIVYA
D.HARIHAR

TEAM

V. MAHITADIVYA

I am a firm believer in self-directed learning and have a great drive to learn new stuff.

M. NITYA JAHNAVI

I am experienced in Documentation. Empathy is one of my strongest qualities.

HARIHAR DURKI

I think of myself as a pretty persistent person. Being balanced is one of my strongest qualities.

PROBLEM STATEMENT

➢ DNS latency is the time taken to transmit the data and return from a certain location.

➢ The lower the latency, the better it is for you.

➢ Our main objective is to find out what influences DNS response latency and also DNS errors and failure mechanisms, and scalability.
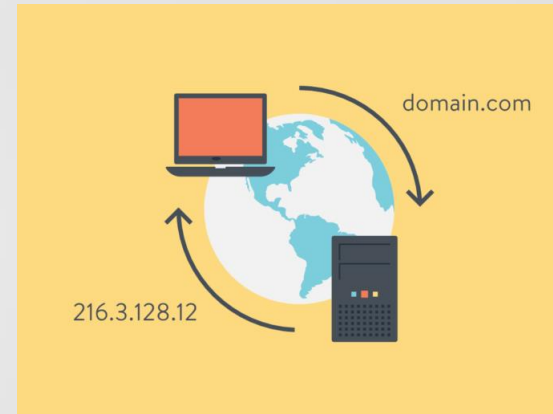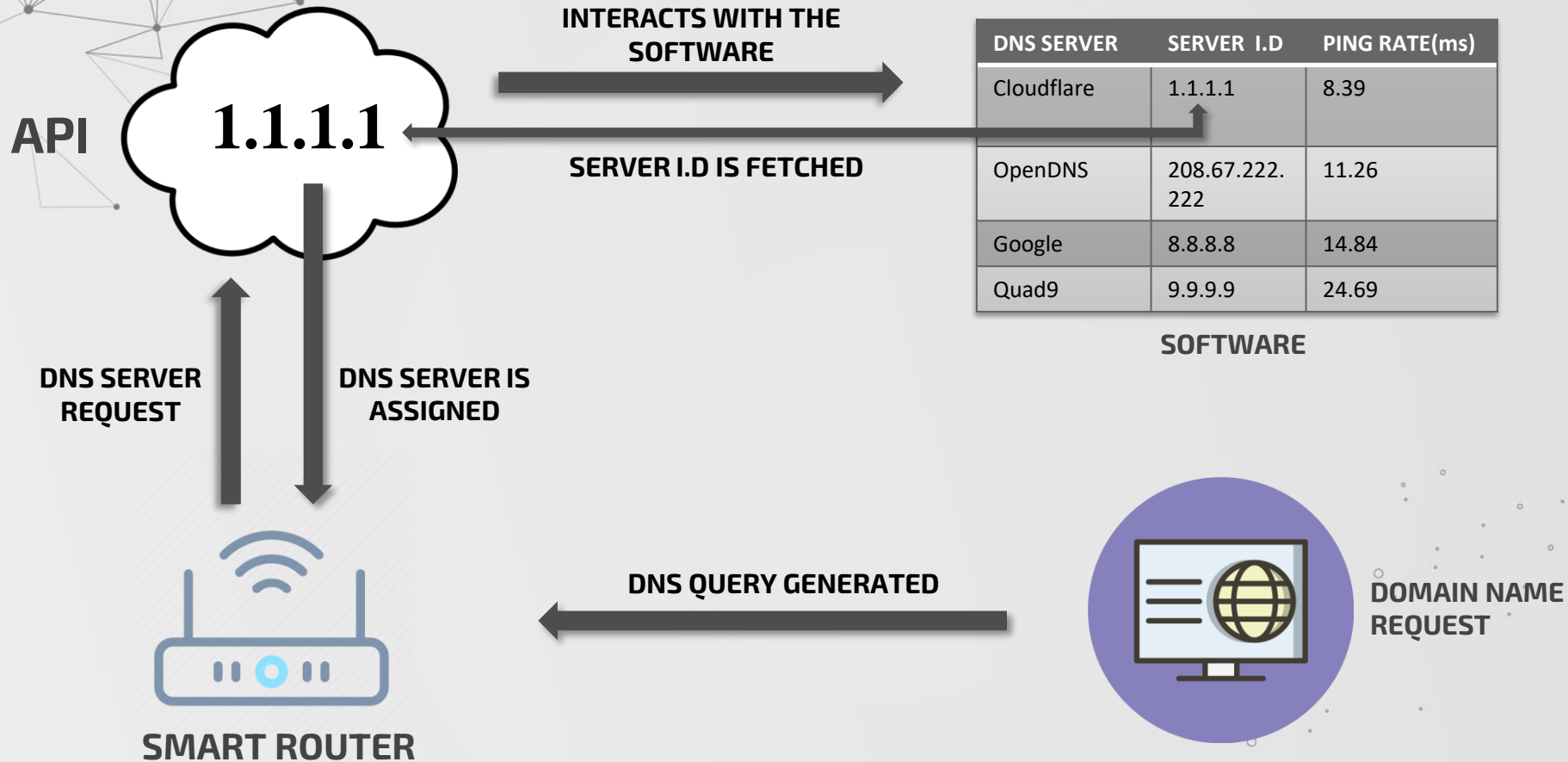
CONCEPT

➢ We create software that is similar to microservices (such as NGNIX) and focused entirely on latency tests and necessary health checks.

➢ This software will be installed in a smart router which acts as a DNS proxy.

IDEA DESIGN

API
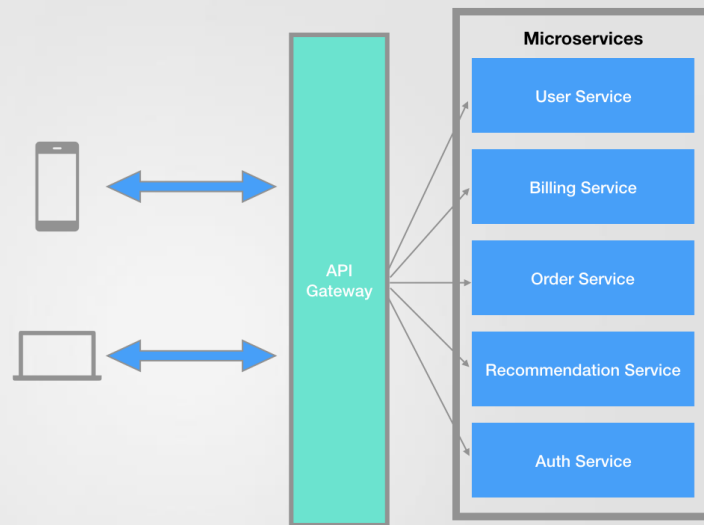
1.1.1.1

INTERACTS WITH THE SOFTWARE

SERVER I.D IS FETCHED

DNS SERVER	SERVER I.D	PING RATE(ms)
Cloudflare	1.1.1.1	8.39
OpenDNS	208.67.222.222	11.26
Google	8.8.8.8	14.84
Quad9	9.9.9.9	24.69

SOFTWARE

DNS SERVER REQUEST

DNS SERVER IS ASSIGNED

DNS QUERY GENERATED

DOMAIN NAME REQUEST

SMART ROUTER

SOLUTION

➢ Designing software to keep track of all third-party DNS servers.

➢ The router API communicates with the programme to determine the optimal DNS server for a given period of time when a DNS query is generated.

➢ The DNS server with the lowest ping rate is assigned by this software.

CONCLUSION

Initially we will be checking the ping rate and health status of the DNS servers with the help of open source health checker like uptrend.

We develop software to install in a smart router which helps in the reduction of latency issues by dynamically changing the DNS server with respect to their ping rate.

Hence the data traffic is equally distributed among all the third party DNS servers to reduce **High DNS Latency issues.**

THANK YOU