Content Distribution Network with Web Application Firewall Sprint #4

(CDN with WAF)

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Project Recap:

- **Web Server:** Build content distribution network which helps improve efficiency of web access by the use of cache servers.
- **CDN**: distribute service among large number of servers. reducing bandwidth costs
  - **DNS Server**
  - **Data Store**
  - **Varnish Cache Servers with Web Application Firewall:** web application accelerator also known as a caching HTTP reverse proxy.

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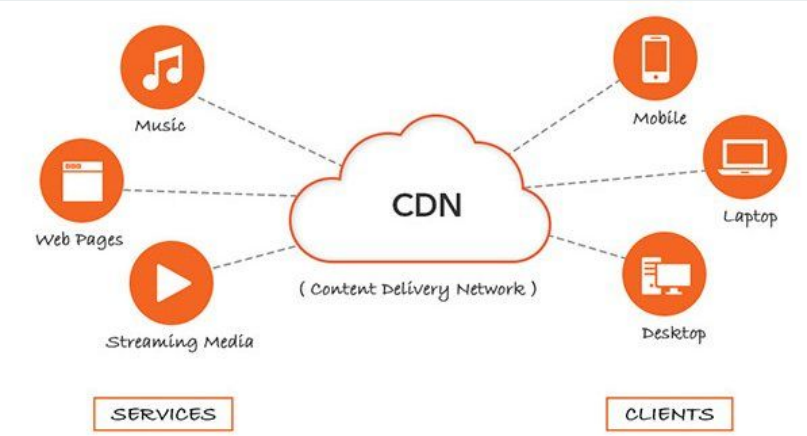
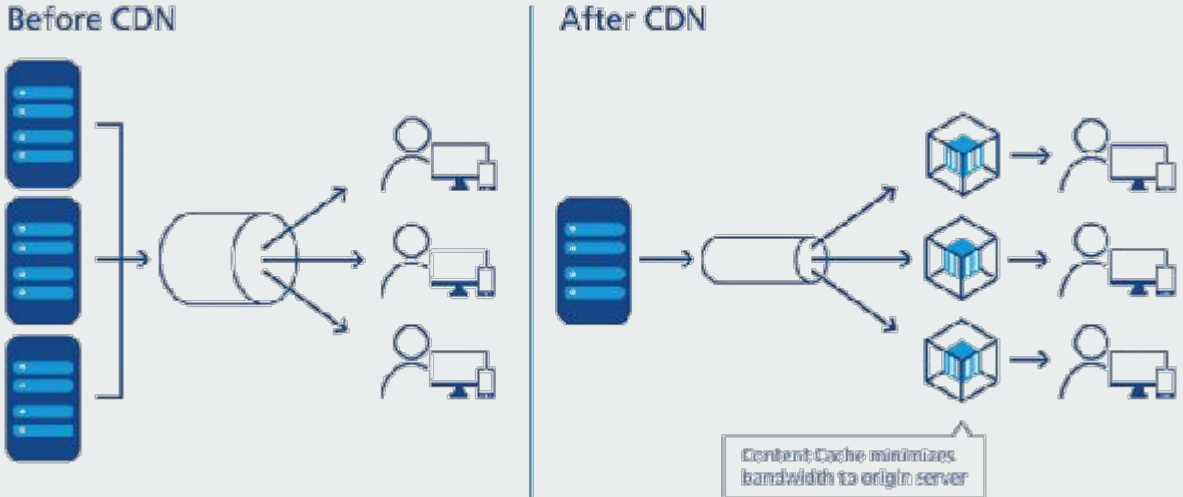
What is a CDN? (Content Distribution Network)





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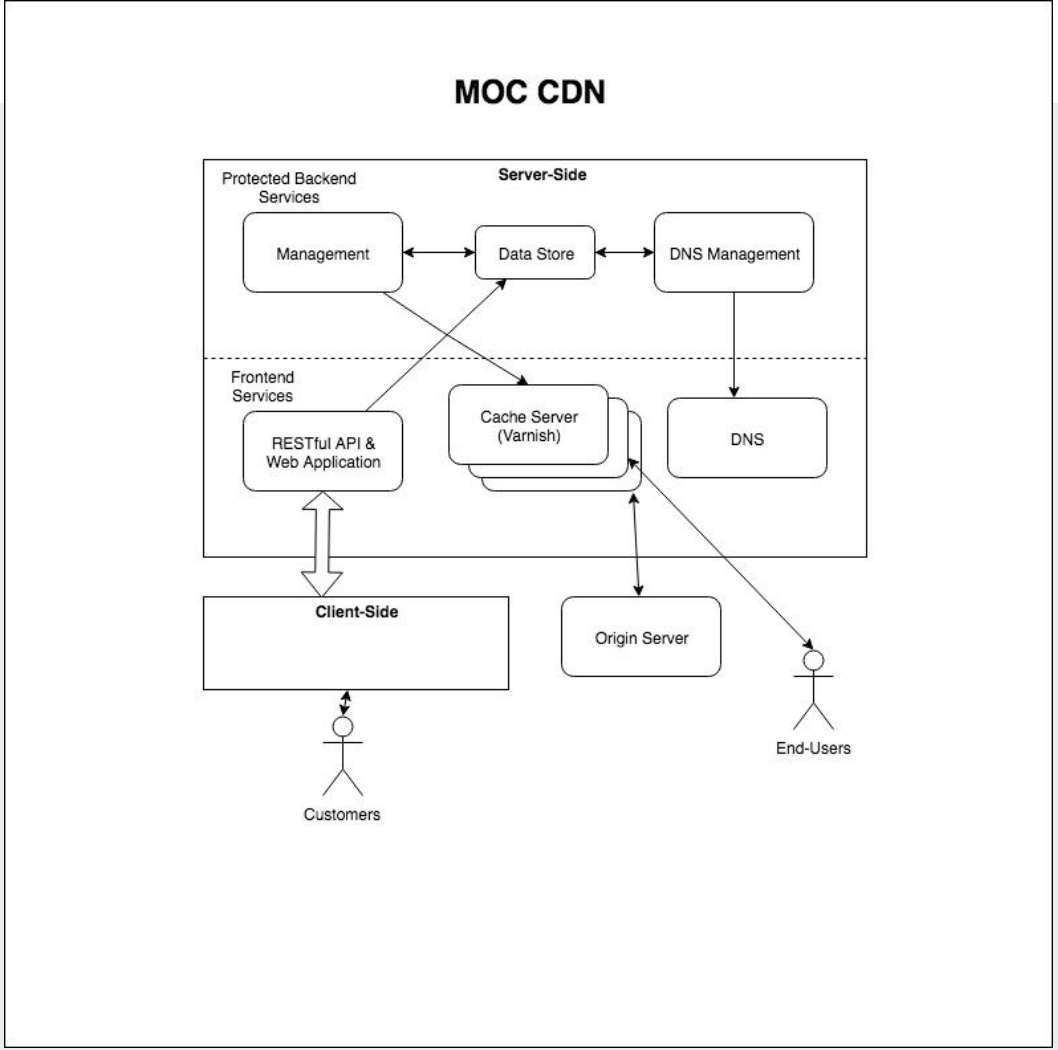
Project Architecture



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CDN Service Procedure

1) Customer has a site at fester.redgates.com
 * Has A record pointing fester.redgates.com to 1.1.1.1 as the origin server
2) Register with EC500 CDN
 * configure fester.redgates.com to be hosted with the CDN
 * In the UI customer configures hosted sitename and origin server
  (fester.redgates.com and fester.origin.redgates.com)
 * Mgmt portal tells customer the CNAME pointer to configure for hosted site name (probably fester.redgates.com.cdn.4n4nd.me)
3) Customer adds A record for fester.origin.redgates.com as 1.1.1.1
4) Customer deletes A record for fester.redgates.com
5) Customer creates CNAME record for fester.redgates.com pointing to fester.redgates.com.cdn.4n4nd.me

CDN Service Procedure

6) Registration with CDN mgmt portal creates DB entries for fester.redgates.com tracking the origin server

7) Update configuration of varnish caches to know that they host fester.redgates.com and that the origin for that sitename is fester.origin.redgates.com

8) Update DNS server to know that it hosts fester.redgates.com - and that it has CNAME to fester.redgates.com.cdn.4n4nd.me

9) Update DNS server to map fester.redgates.com.cdn.4n4nd.me to cacheset3.cdn.4n4nd.me

Progress in sprint 4

1. Updated database schematic
2. Redirect user's request to our Cacheserver
3. Connect customer's origin server to our CDN
4. Setup and test Varnish cache servers
5. Combine web_server database to dns_server
6. Service Status page improvements (dynamically add hostname on web page)

Problems encountered:

- Connection error. Could not connect to db server: TCP/IP connections on port 5432 (Postgres Database default port)

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Varnish Cache Firewall

Instead of using OWASP VFW firewall we will be using VSF

VSF aims to provide:

- A standardized framework for security-related filters
- Several core rule-sets
- A limited set of default 'handlers', for instance CGI scripts to call upon when Bad Stuff happens.

Future Plan

Sprint Objectives

- Fix port issues
- Develop the Data Store instance on MOC with autoscaling
- Autoscaling. Using MOC API to spin up new instances
    - Duplicate Varnish server. Need solve for authorization key.
- Implement VSF on Varnish Cache Server
    - Display event log of errors caught by VSF

Extended goal

- Web Server retrieve forgotten password

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Thank you, Questions?