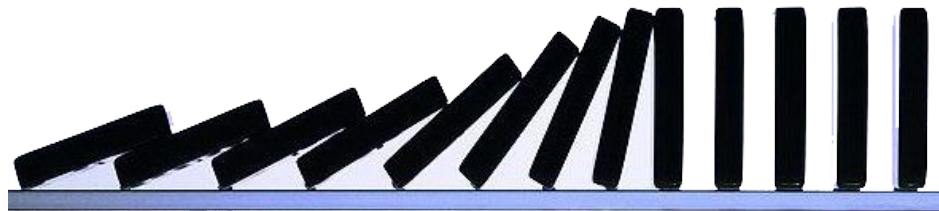
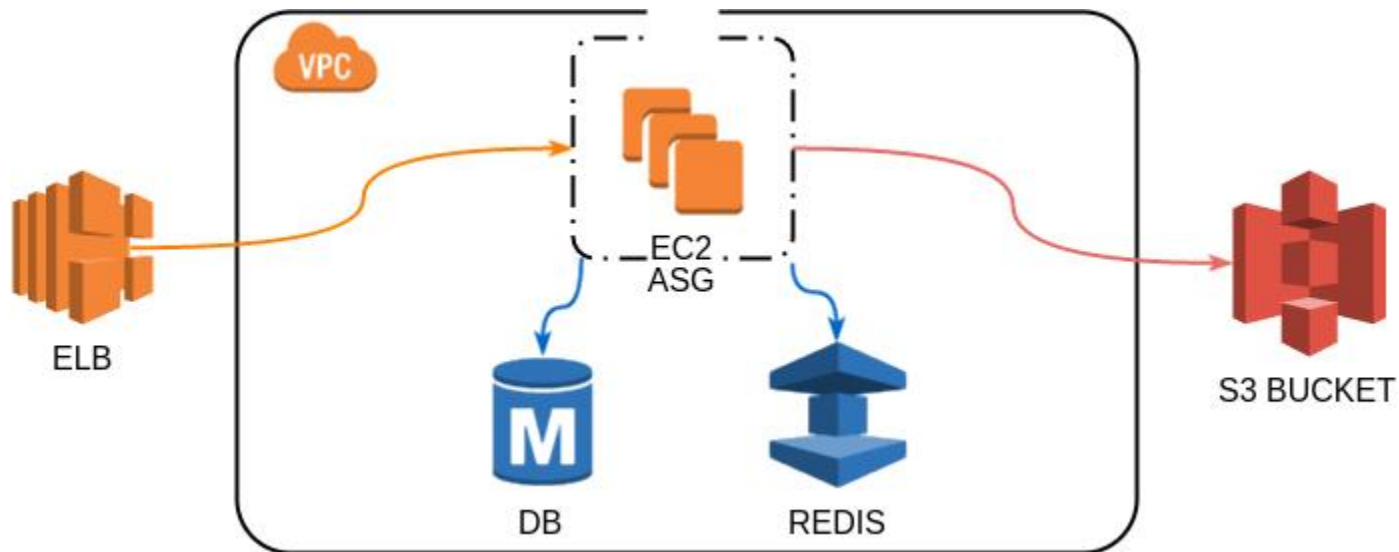


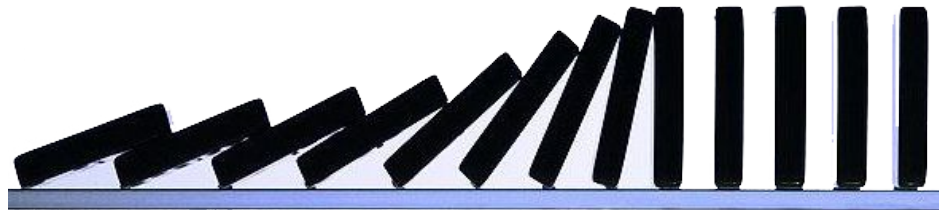
Multi tenant cloud poslovne aplikacije

Marko Bencek



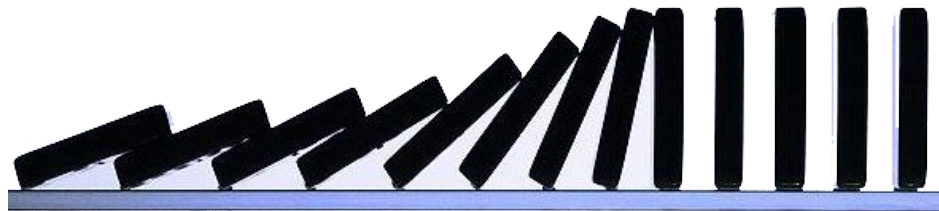
Postojeća arhitektura



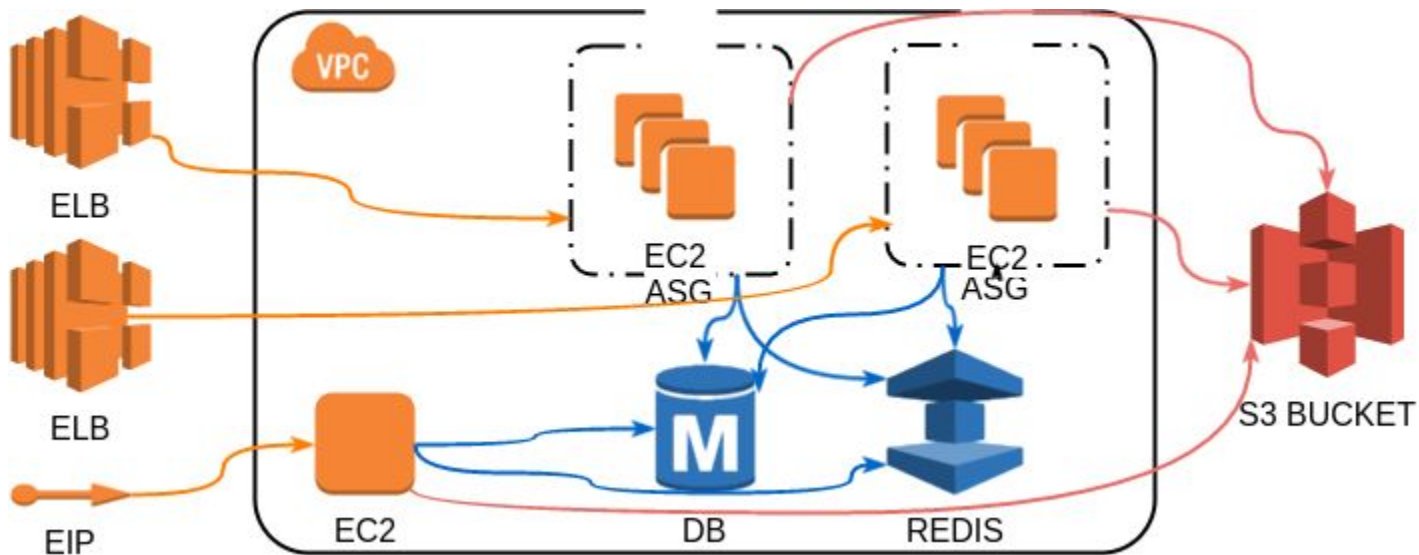


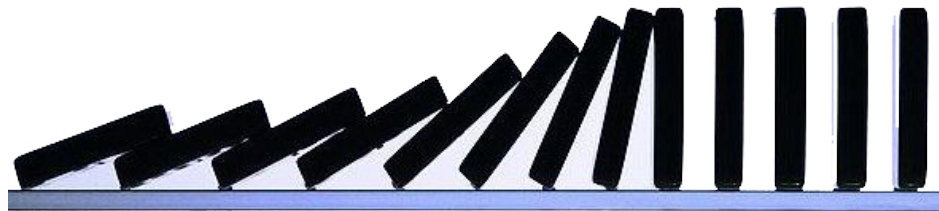
Aplikacija

- LAMP stack
- Laravel framework
- Datoteke -> S3 Bucket
- *Sessions* i *cache* -> Redis

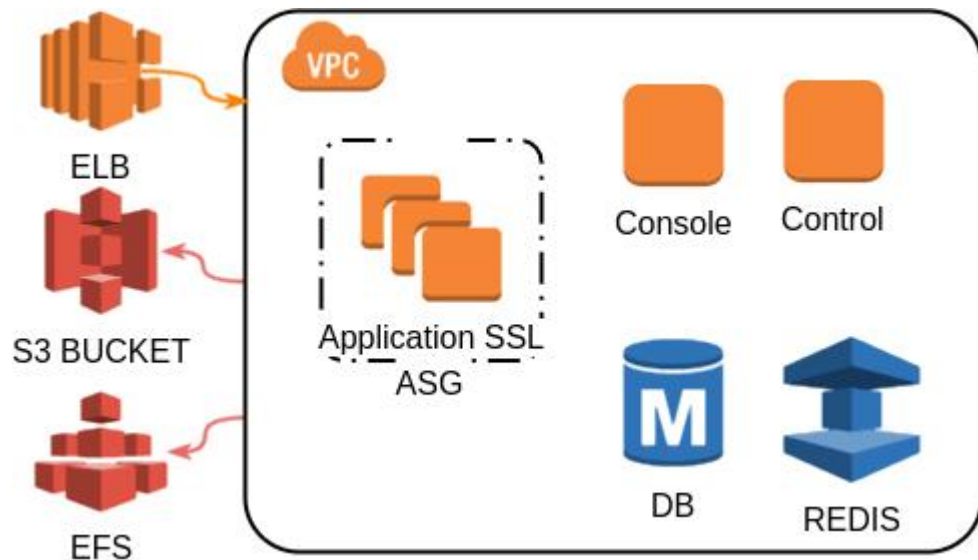


Novi tenant

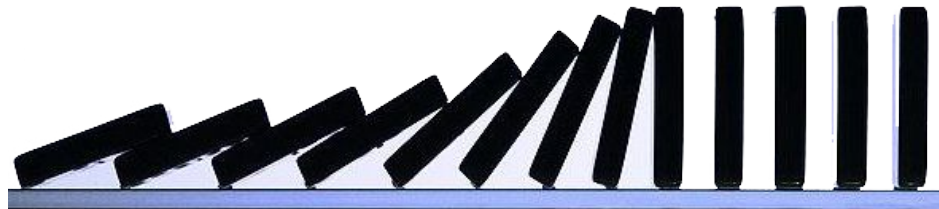




Multi tenant arhitektura

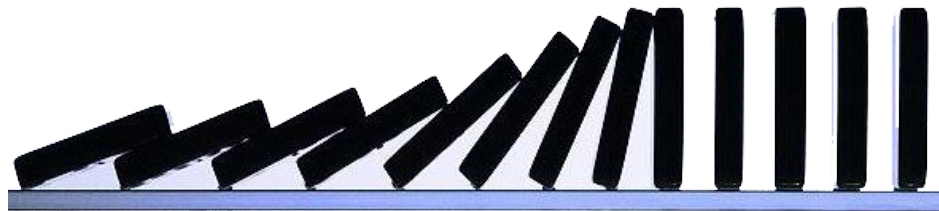


- SSL
- Vhosts
- Korisnička konzola
- Automatizacija



SSL ograničenja

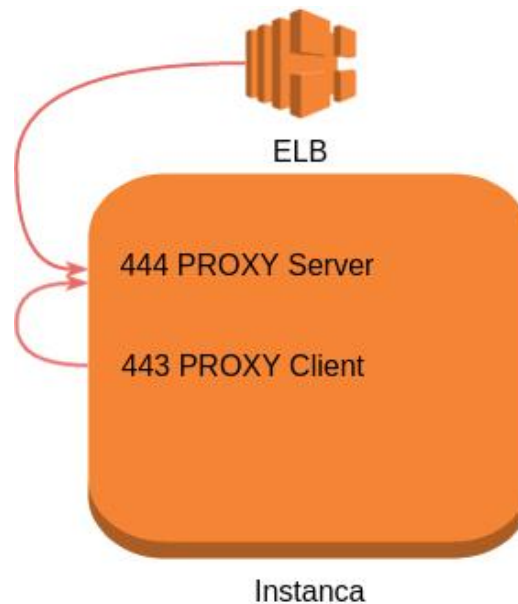
- TCP 443 konekcije na instance
TCP PROXY protokol
- SSL certifikati na svim instancama
LetsEncrypt

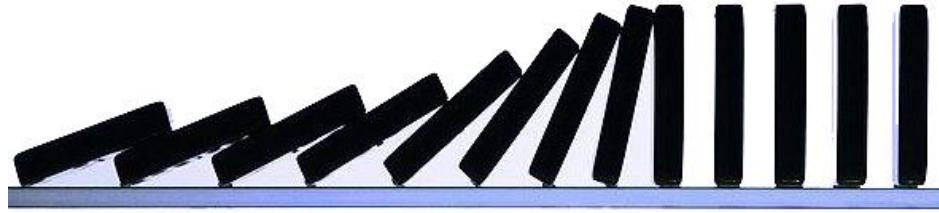


PROXY protocol

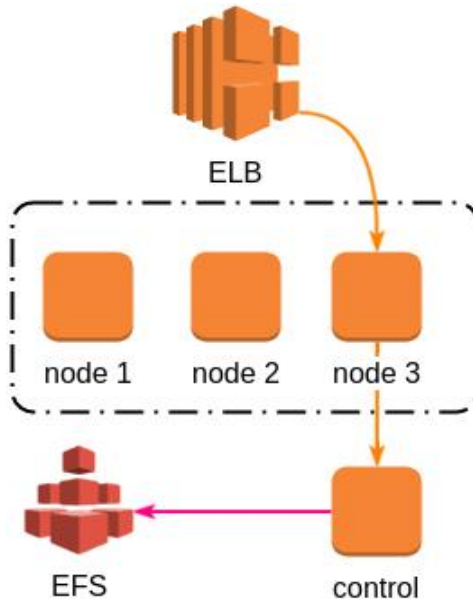


- Nema X-Forwarded-For *header*
- TCP 443 + PROXY protokol nije HTTPS
- Komplicira setup

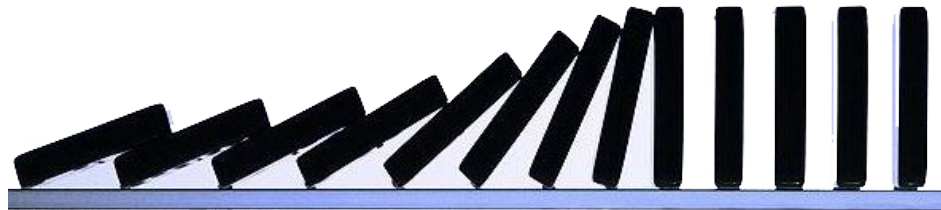




SSL - validacija domene



- Kreiranje SSL certifikata na *control* nodu
- Validacijski zahtjev na *control* nodu
- Potpisani certifikat se sprema na EFS

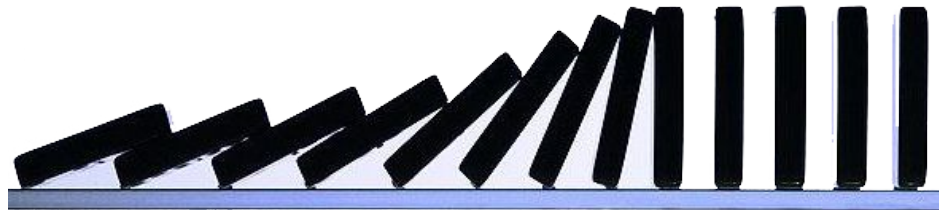


Apache Vhost

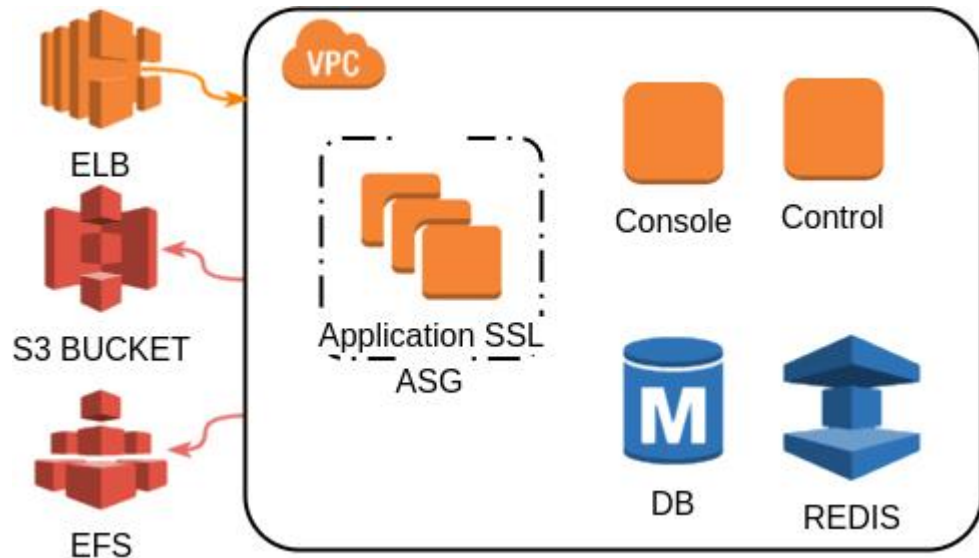
- Svaki tenant je virtualni host na Apache web serveru
- Dijelevazu i cache

- Primjer:

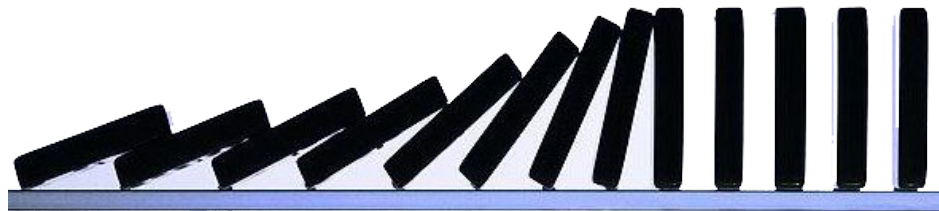
```
$ curl -IL --header "Host: algebra.hr" http://178.218.163.69
```



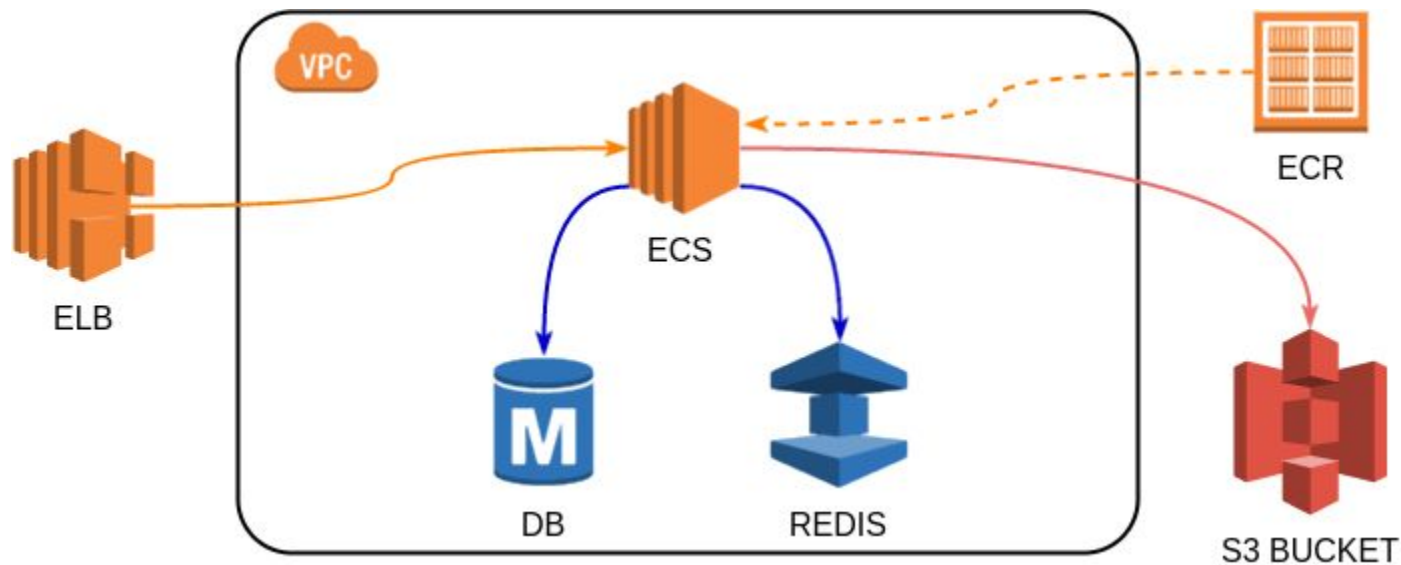
Control

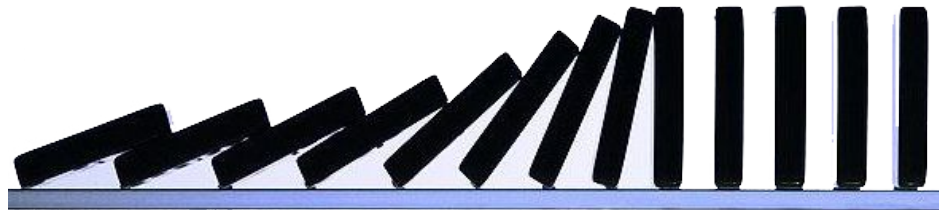


- Kreira certifikate
- Instalira i podesi priveremenu instancu
- Kreira *image*
- Podesi ASG
- Izvrši *rolling update*

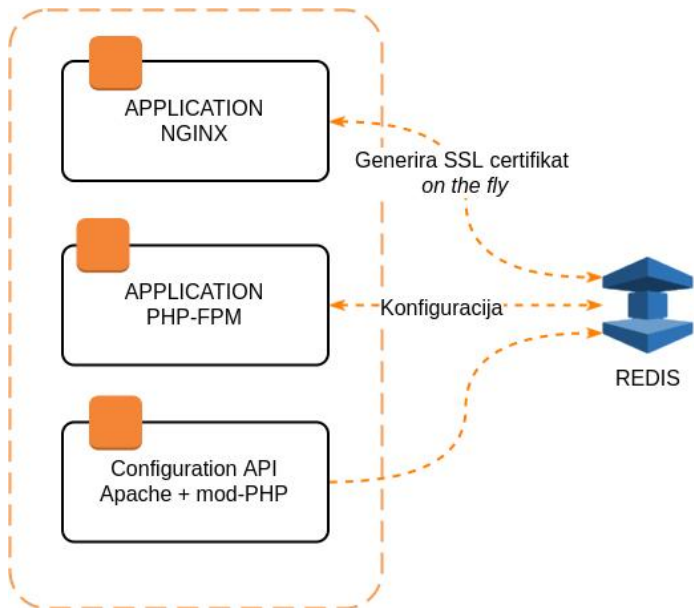


Design sa Docker kontejnerima

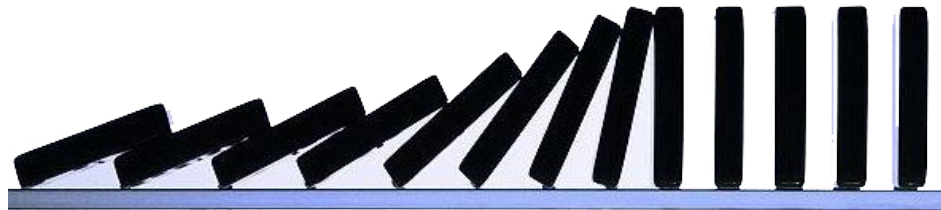




Komponente

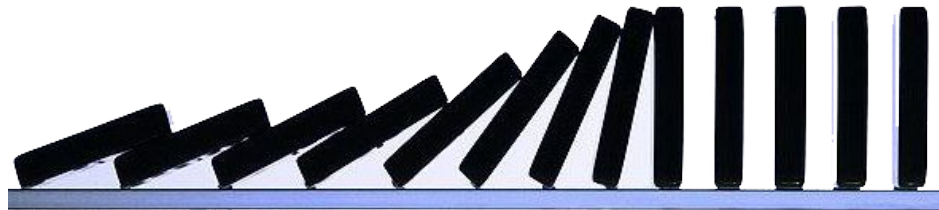


- Docker kontejneri
- Nginx - LUA - OpenResty plugin
- SSL certifikati pohranjeni u Redisu
- Konfiguracija tenanta pohranjena u Redisu
- Ne treba *Control* node



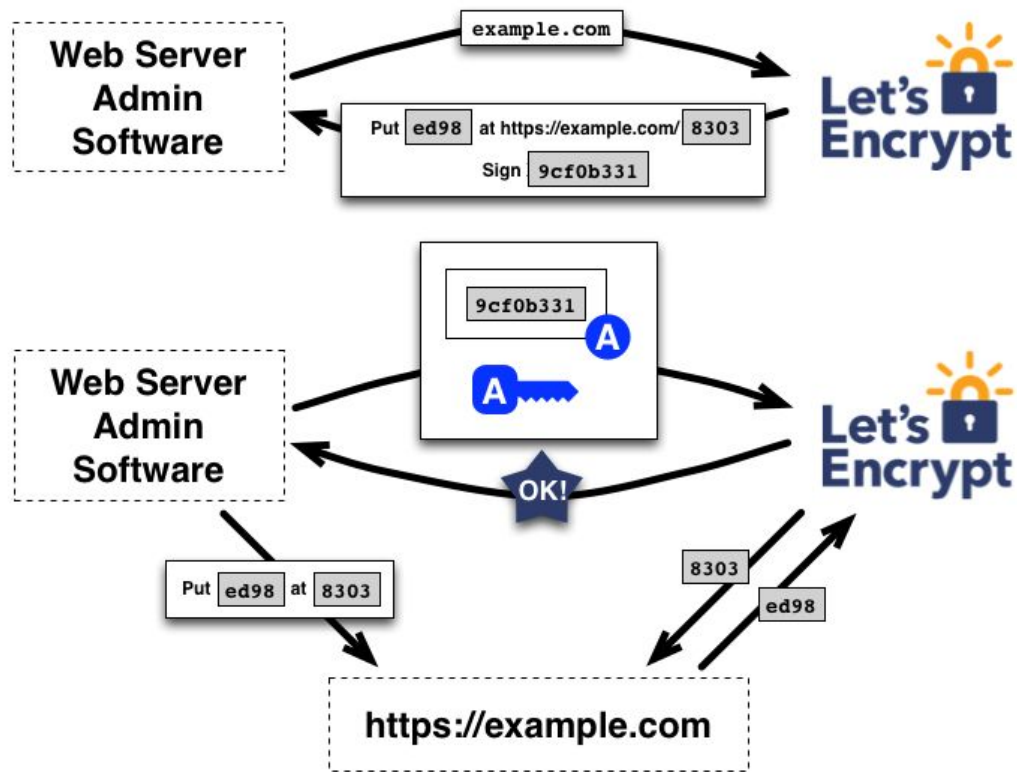
SSL certifikati

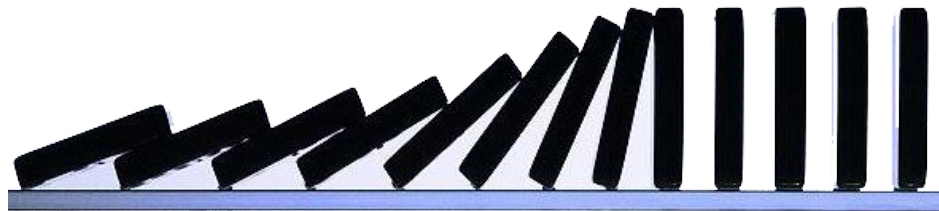
- OpenResty
- Lua-resty-auto-ssl projekt
- LetsEncrypt
- Redis key: "certs:domain.com"
- SNI
- Ne treba restart servisa



SSL certifikati

- SNI - Server Name Indication Domain Name
- lua-resty-auto-ssl
 - Kreira privatni ključ u Redis
 - Inicira LetsEncrypt
 - Odradi validaciju
 - Pospremi javni ključ u Redis





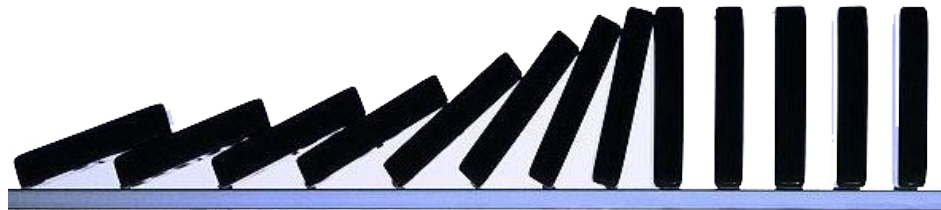
Konfiguracija

Laravel framework

- Konfiguracija umjesto .env redis key
- Redis Key: "sites:domain.com"

Nužne izmjene

- Učitavanje konfiguracije
- *Skin* i *pathovi* za tenant



Zaključak

Prednosti:

- Nema dupliciranja
- Nema potrebe za Ansible ili Puppet automatizacijom
- kontejneri ne sadrže konfiguraciju
- kontejneri skaliraju puno brže nego ec2 instance
- Developeri vole Docker