

# Docker

Containerizando um  
servidor HTTP Proxy

# Conteúdo

01

## HTTP Review

Revisando o HTTP

02

## Build a HTTP Proxy

Contruindo um proxy reverso HTTP

03

## Conclusões

O que aprendemos até agora

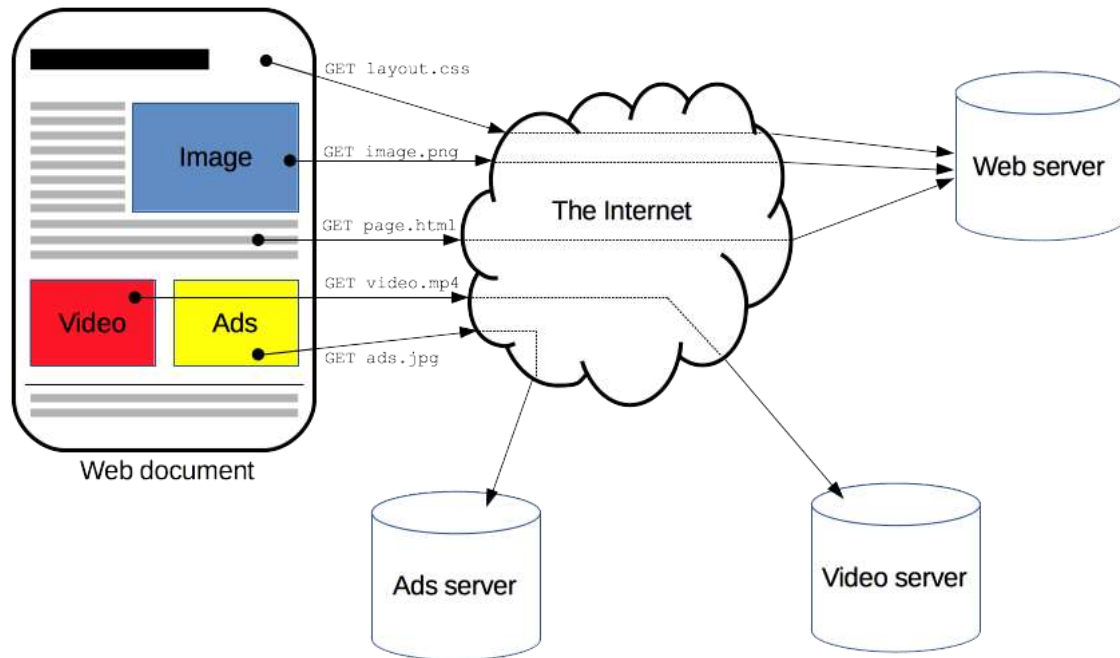


# 01

## HTTP Review

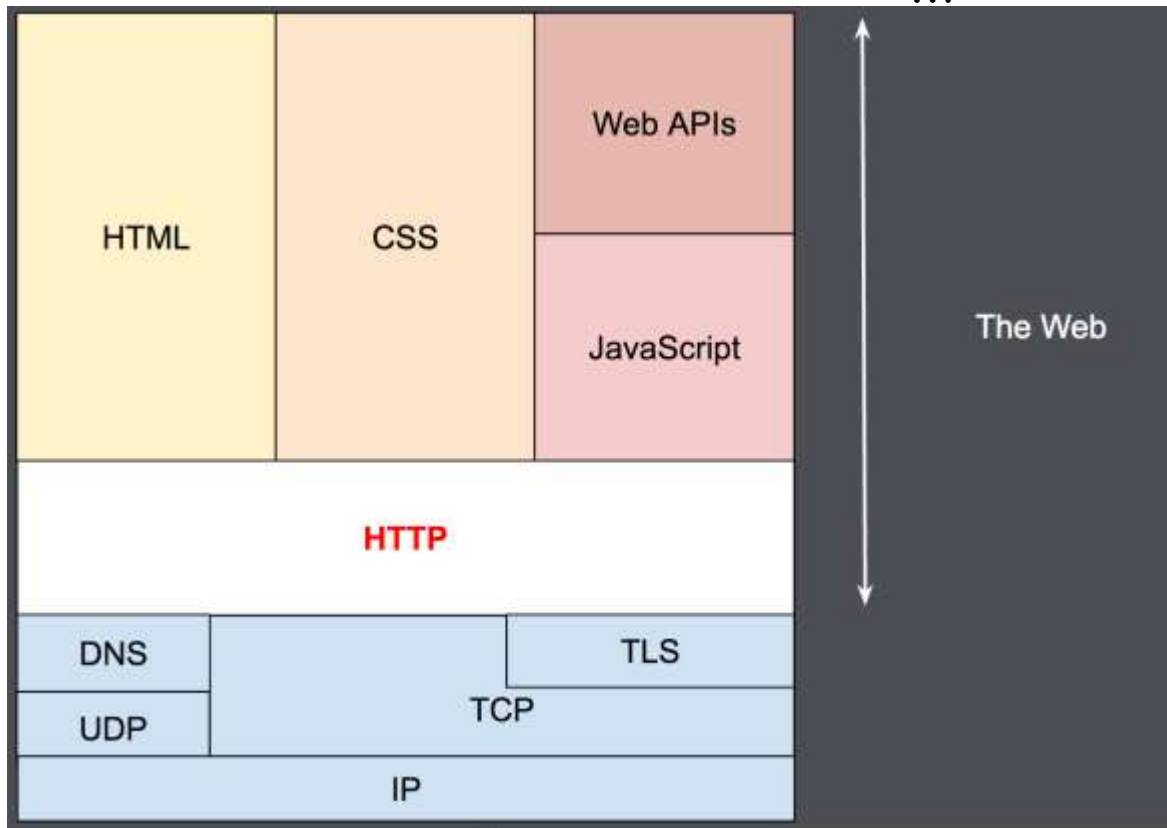
# Visão geral do HTTP

Protocolo que permite a  
obtenção de recursos,  
como documentos HTML

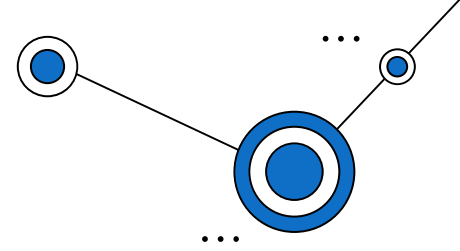


# Visão geral do HTTP

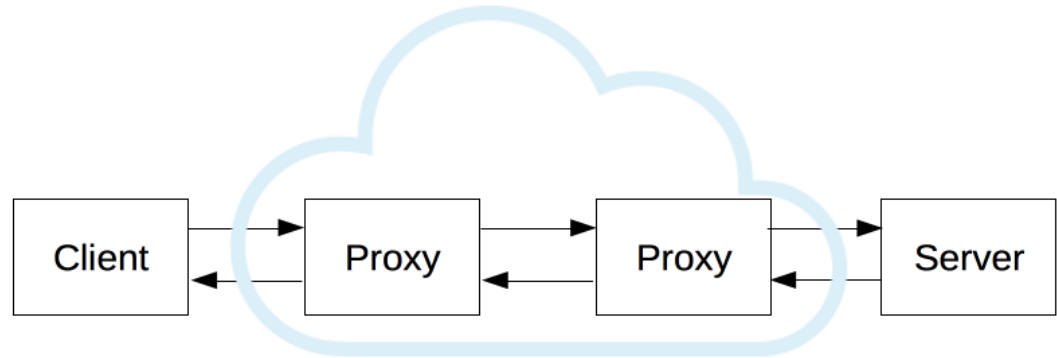
Clientes e servidores se comunicam trocando mensagens individuais (Request/Response)



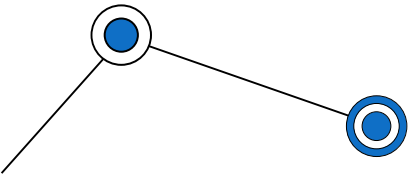
# Proxy HTTP



As requisições são enviados  
por uma entidade (agente-  
usuário ou um proxy)



Existem muitos components entre o navegador e o  
servidor que está tratando a requisição



# Fluxo HTTP

CLIENTE

SERVIDOR

Abre uma conexão

TCP

Envia uma mensagem  
HTTP

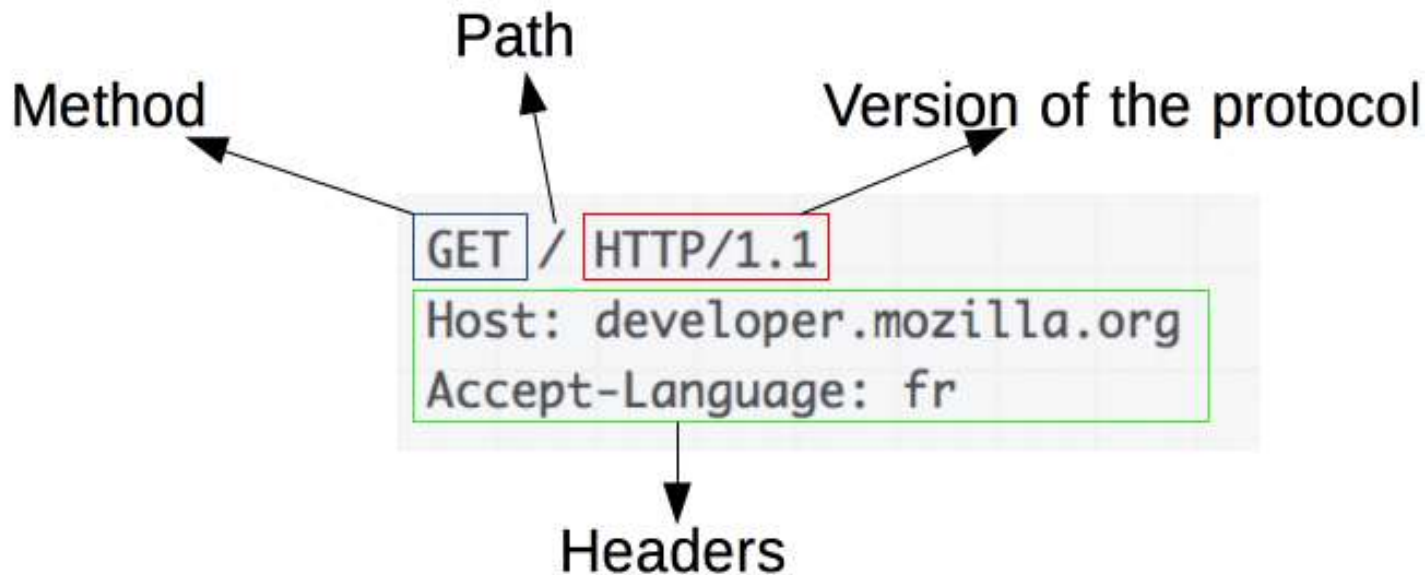
```
GET / HTTP/1.1
Host: developer.mozilla.org
Accept-Language: fr
```

Lê os  
dados

```
HTTP/1.1 200 OK
Date: Sat, 09 Oct 2010 14:28:02 GMT
Server: Apache
Last-Modified: Tue, 01 Dec 2009 20:18:22 GMT
...
```

Fecha uma conexão TCP

# Requisição HTTP





# Resposta HTTP

Version of the protocol      Status code      Status message

HTTP/1.1 200 OK

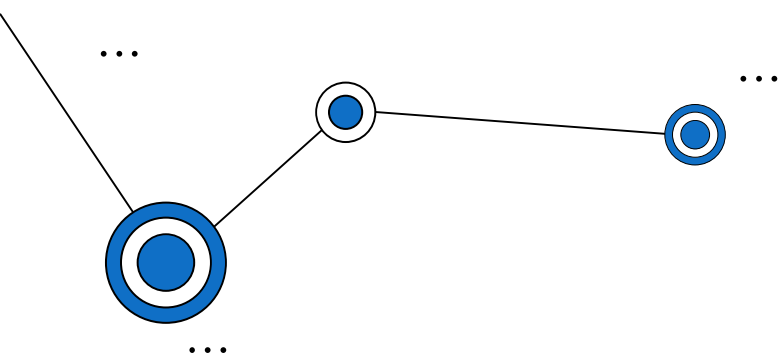
```
Date: Sat, 09 Oct 2010 14:28:02 GMT
Server: Apache
Last-Modified: Tue, 01 Dec 2009 20:18:22 GMT
ETag: "51142bc1-7449-479b075b2891b"
Accept-Ranges: bytes
Content-Length: 29769
Content-Type: text/html
```

Headers

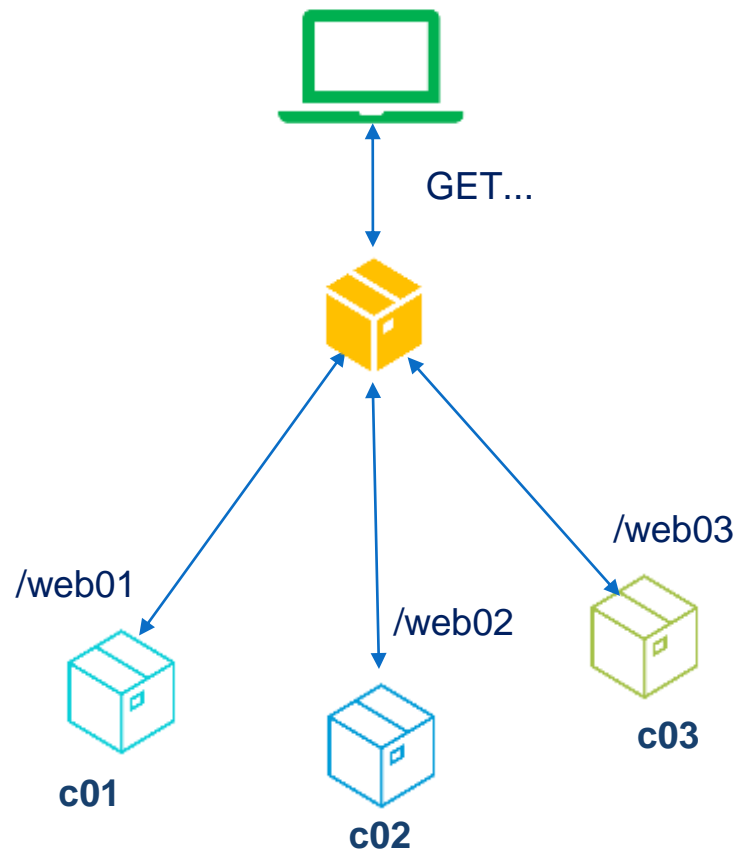
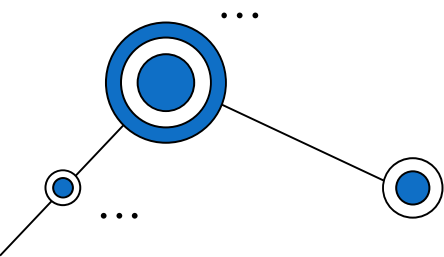
1. Respostas de informação (100-199),
2. Respostas de sucesso (200-299),
3. Redirecionamentos (300-399)
4. Erros do cliente (400-499)
5. Erros do servidor (500-599).

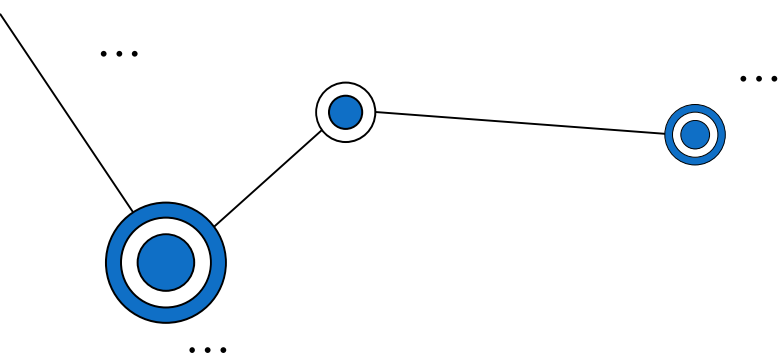
# 02

## Build a HTTP Proxy



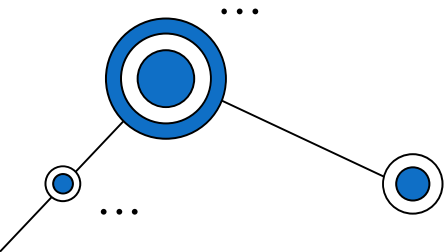
# Topologia





# Dockerfiles

<https://github.com/salesfilho/asa/tree/main/web>



c01

```
FROM nginx:latest
COPY c01.html /usr/share/nginx/html/index.html
```

Dockerfile.c01

c02

```
FROM nginx:latest
COPY c02.html /usr/share/nginx/html/index.html
```

Dockerfile.c02

c03

```
FROM nginx:latest
COPY c03.html /usr/share/nginx/html/index.html
```

Dockerfile.c03

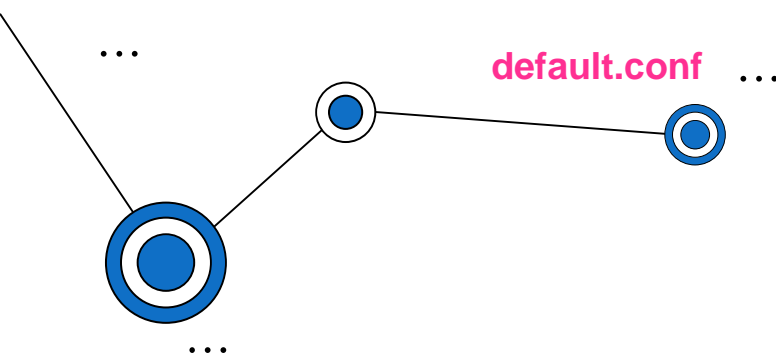
proxy

```
FROM nginx:latest

COPY ./nginx/nginx.conf /etc/nginx/nginx.conf

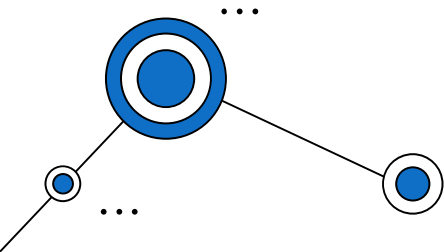
COPY ./nginx/default.conf /etc/nginx/conf.d
```

Dockerfile.proxy



# Configure proxy

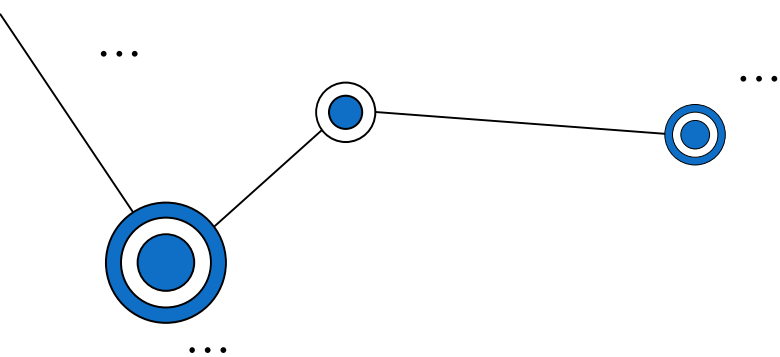
<https://github.com/salesfilho/asa/tree/main/web>



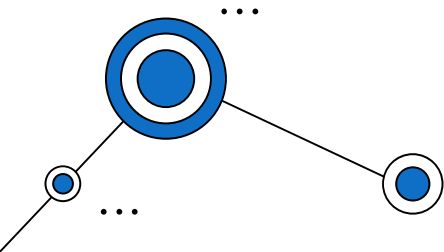
```
upstream aps01 {  
  server c01:80;  
}  
upstream aps02 {  
  server c02:80;  
}  
upstream aps03 {  
  server c03:80;  
}
```

# Aqui tem mais configs...

```
location / {  
  proxy_set_header X-Forwarded-Proto https;  
  proxy_set_header X-Url-Scheme $scheme;  
  proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;  
  proxy_set_header Host $host;  
  proxy_redirect off;  
  proxy_pass http://aps01;  
}  
location /w2 {  
  proxy_set_header X-Forwarded-Proto https;  
  proxy_set_header X-Url-Scheme $scheme;  
  proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;  
  proxy_set_header Host $host;  
  proxy_redirect off;  
  rewrite ^/w2(.*) / break;  
  proxy_pass http://aps02;  
}  
location /w3 {  
  proxy_set_header X-Forwarded-Proto https;  
  proxy_set_header X-Url-Scheme $scheme;  
  proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;  
  proxy_set_header Host $host;  
  proxy_redirect off;  
  rewrite ^/w3(.*) / break;  
  proxy_pass http://aps03;  
}
```



# Build



```
docker build -t c01 -f Dockerfile.c01 .
```

```
docker build -t c02 -f Dockerfile.c02 .
```

```
docker build -t c03 -f Dockerfile.c03 .
```

```
docker build -t proxy -f Dockerfile.proxy .
```



# Network



```
docker network create -d bridge asa-net
```

```
docker run -d --net=asa-net --name c01 c01
```

```
docker run -d --net=asa-net --name c02 c02
```

```
docker run -d --net=asa-net --name c03 c03
```

```
docker run -d --net=asa-net --name proxy proxy
```

Container

Imagem



03

Conclusões





# Conclusões

1. O protocolo HTTP muito utilizado nos serviços web
2. A utilização de proxy é muito comum na internet
3. É possível e escalável criar essas estruturas com Docker



# Thanks!

Do you have any questions?

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