

# Visão Geral

**01. Introdução à Web**

**02. Protocolo HTTP**

**03. Servidor Web**

**04. Client/Server Side**

**05. Estático Vs Dinâmico**

**06. HTML/CSS/JS**

**07. DNS**

**08. HTTP Seguro**

**09. WebServices**

**10. Comp. em Nuvem**

# Aula 1: Introdução à Web

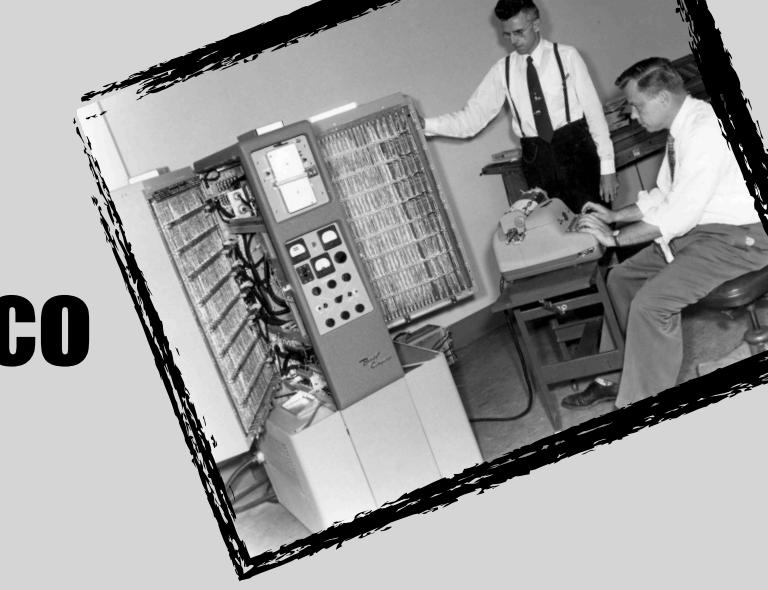
# Introdução à Web

# História da Internet

1950s



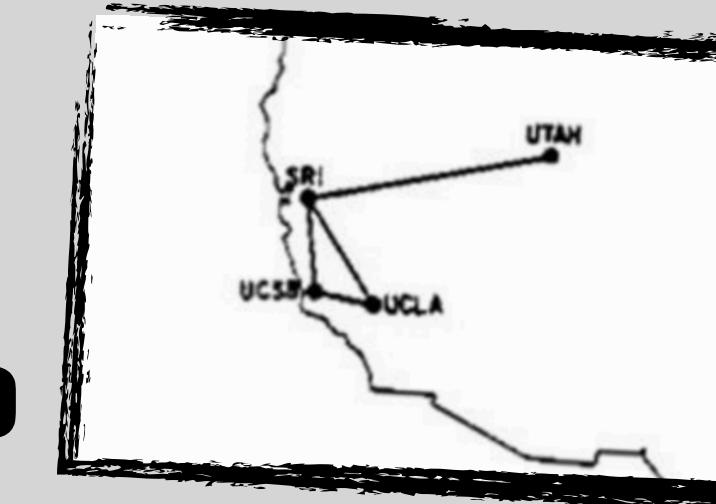
Computador Eletrônico



1960s



ARPANET - Departamento de Defesa Americano



1970s



TCP/IP - Robert E. Kahn & Vint Cerf



1980s



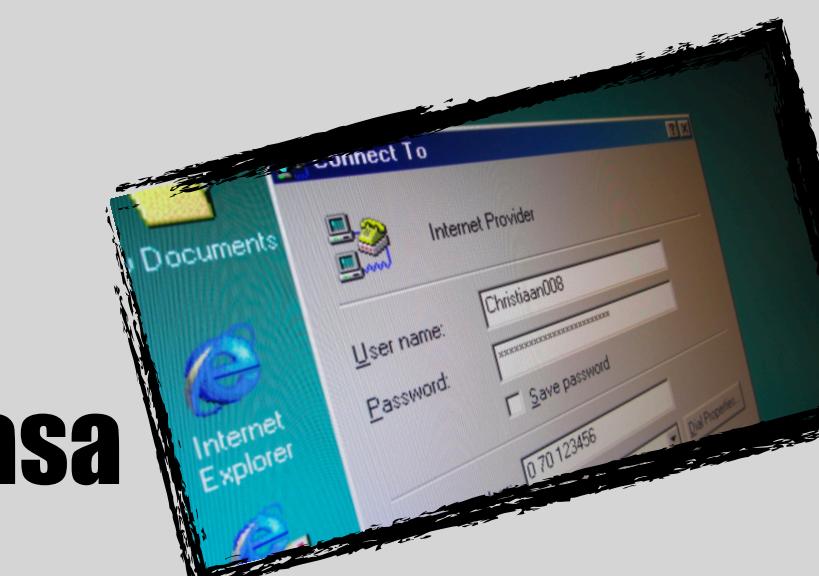
WWW - Tim Berners-Lee



1990s



Internet no Brasil

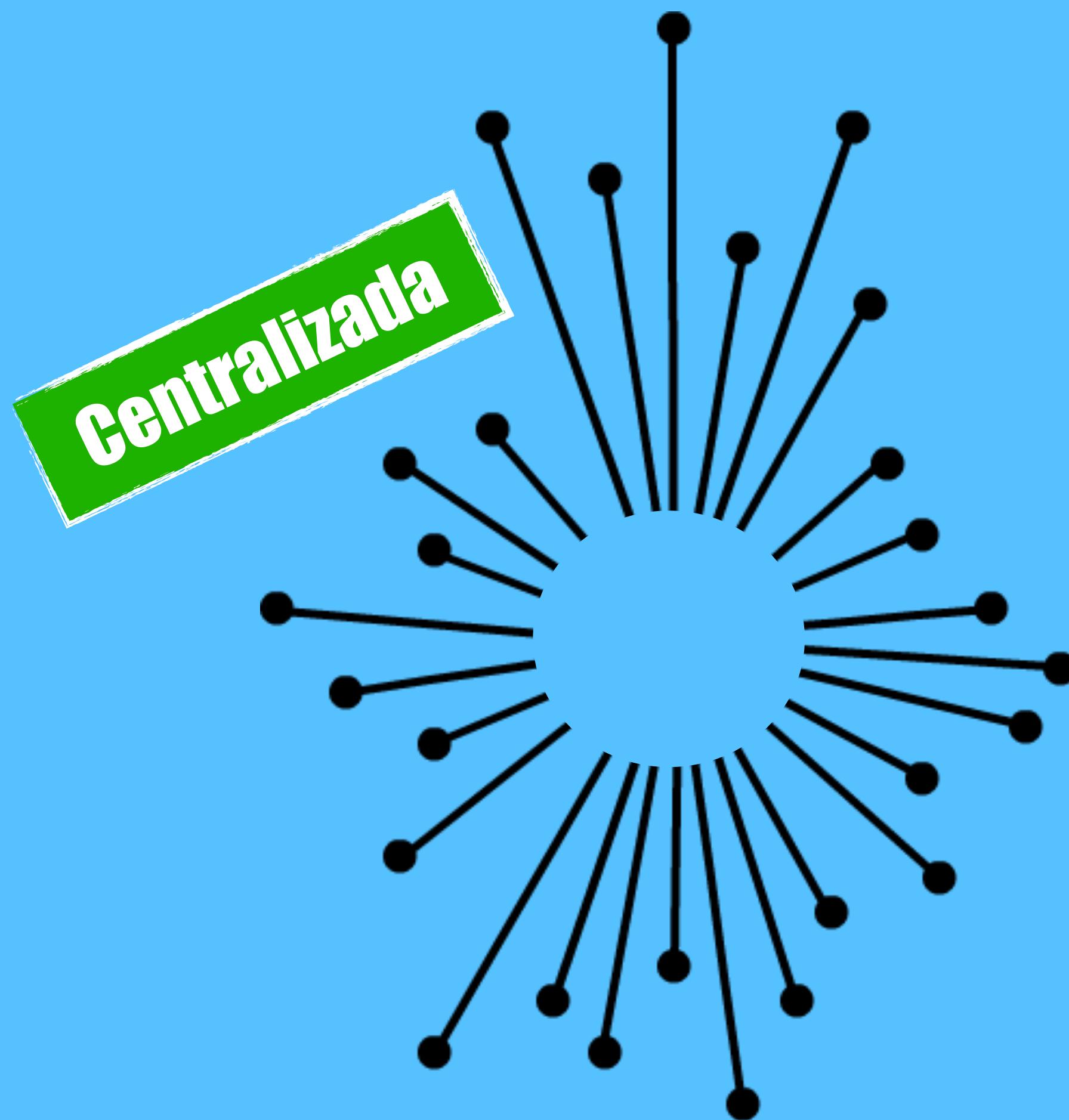


2000s

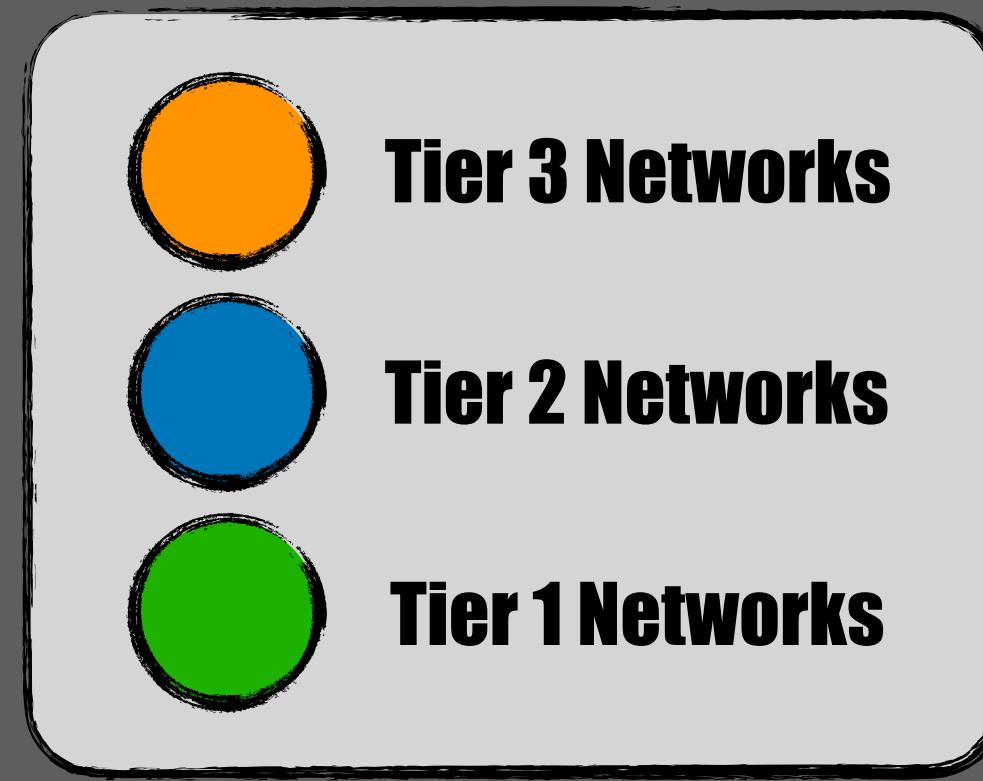
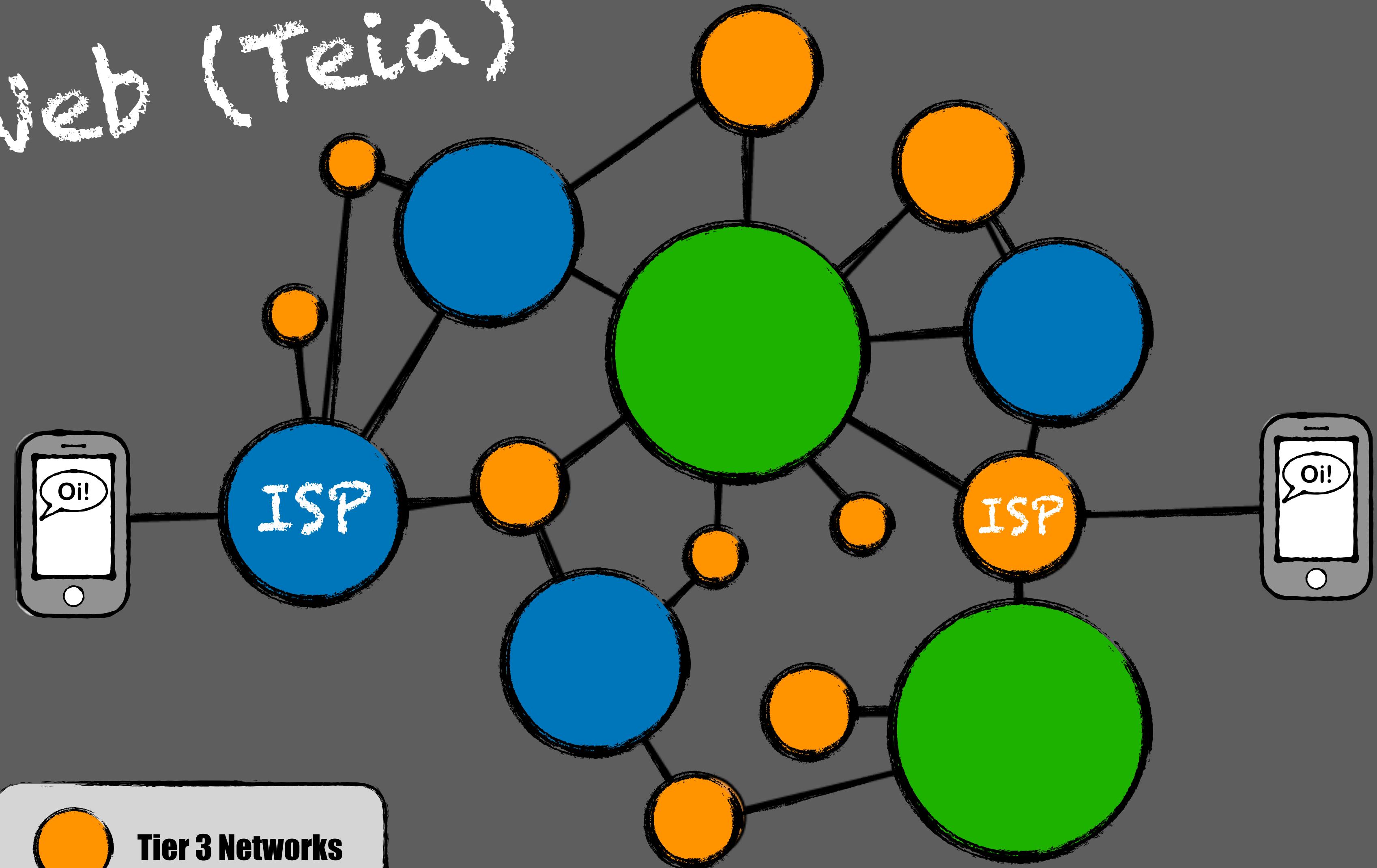


iG, Redes Sociais, Internet em Casa

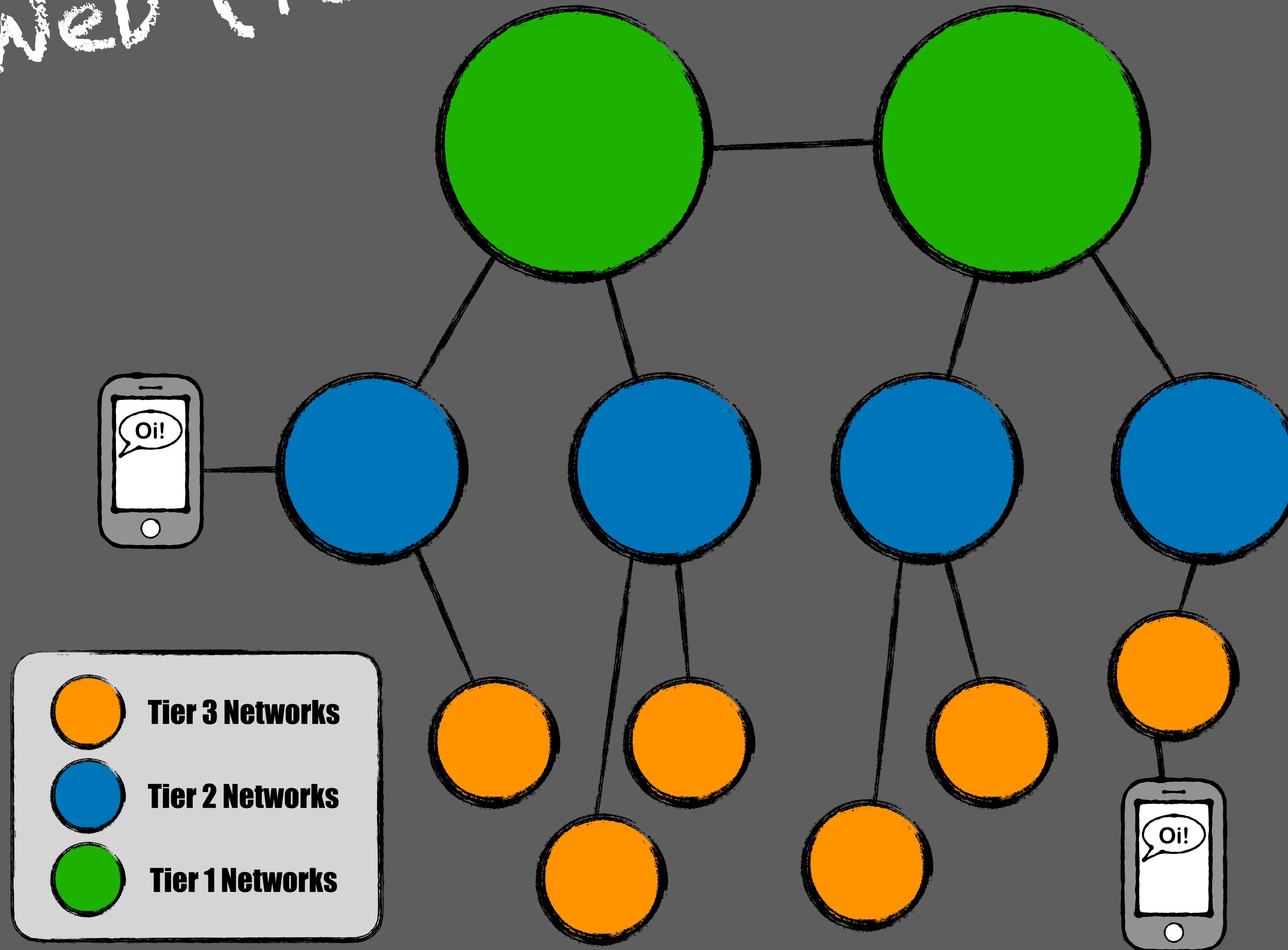
# Topologias...



Web (Teia)



Web (Teia)

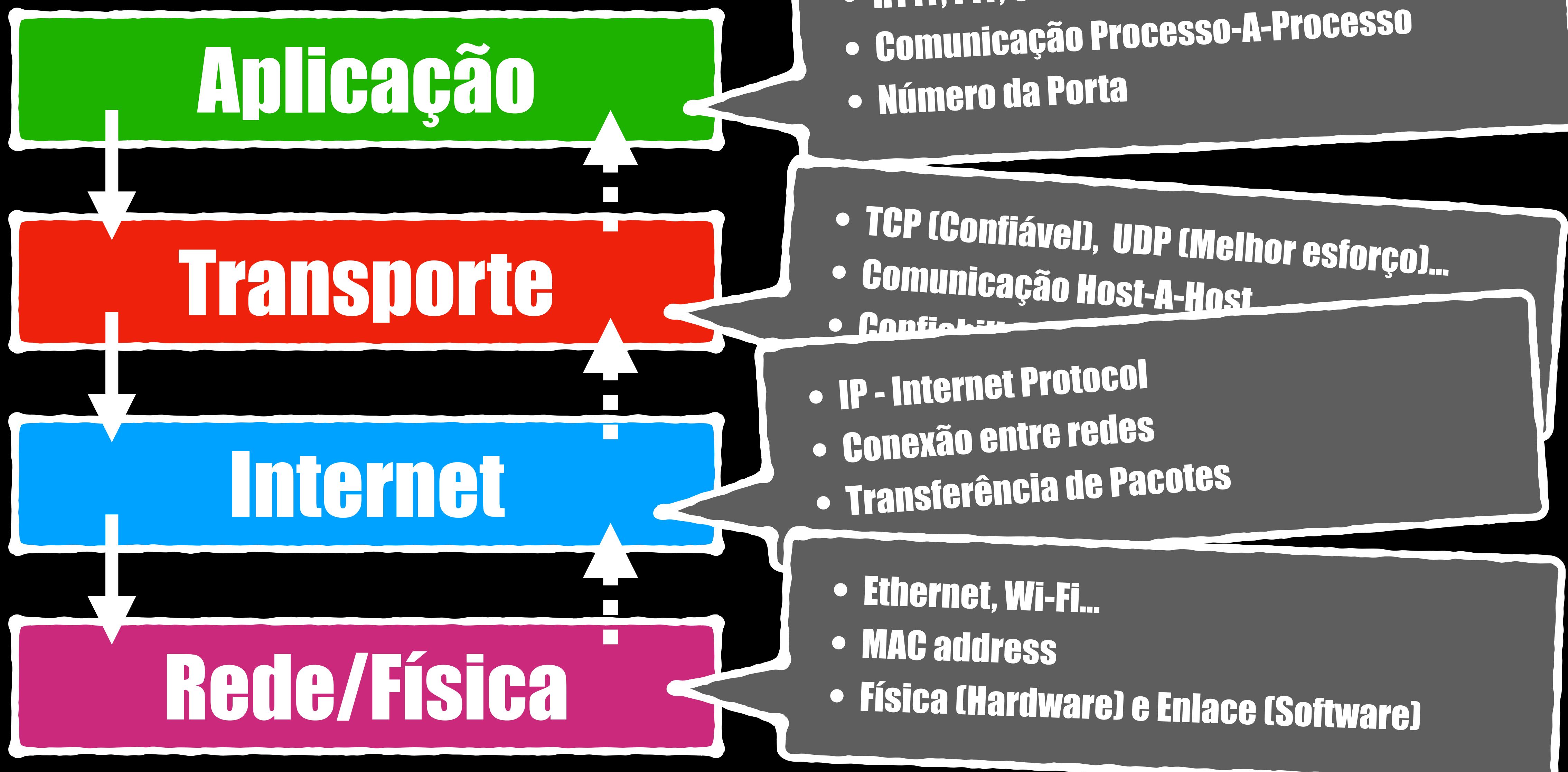


# Transmission Control Protocol/ Internet Protocol

Orientado a  
conexão e  
confiável

Roteamento  
entre Redes

# TCP/IP



# Anatomia do IPv4...

Classe A

192.168.100.230

Rede

Host

255.0.0.0

Classe B

192.168.100.230

Rede

Host

255.255.0.0

Classe C

192.168.100.230

Rede

Host

255.255.255.0

# Conceito de Porta...

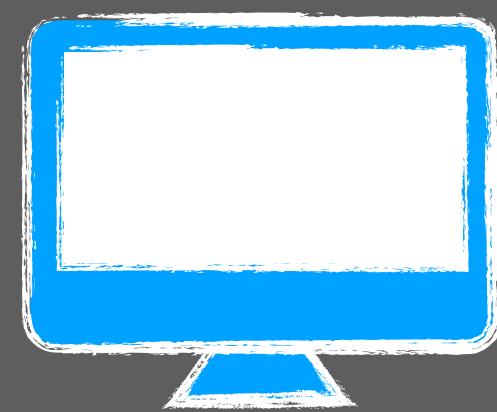
Comp. 1



10.85.0.4

- Skype
- Chrome
- Apache
- Dropbox

Comp. 2



10.85.0.5

- Github Desk
- Chrome
- Node
- MySQL

**http://10.85.0.5:8080**

PROCESSOS

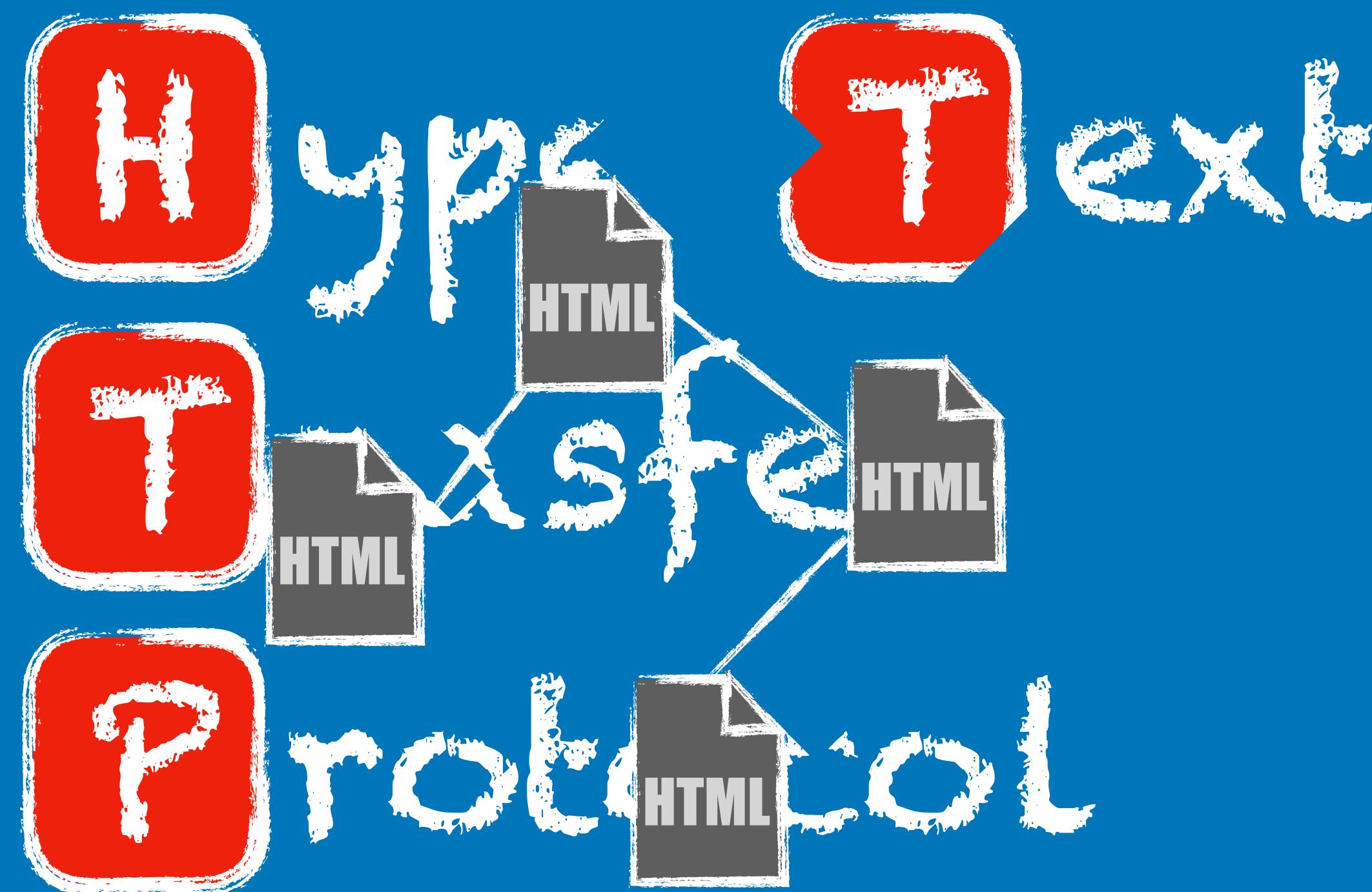
**8080**

# **Aula 2: Protocolo HTTP**

# Protocolo HTTP

HyperText  
Transfer  
Protocol

# Protocolo HTTP



# Características...

Camada de Aplicação

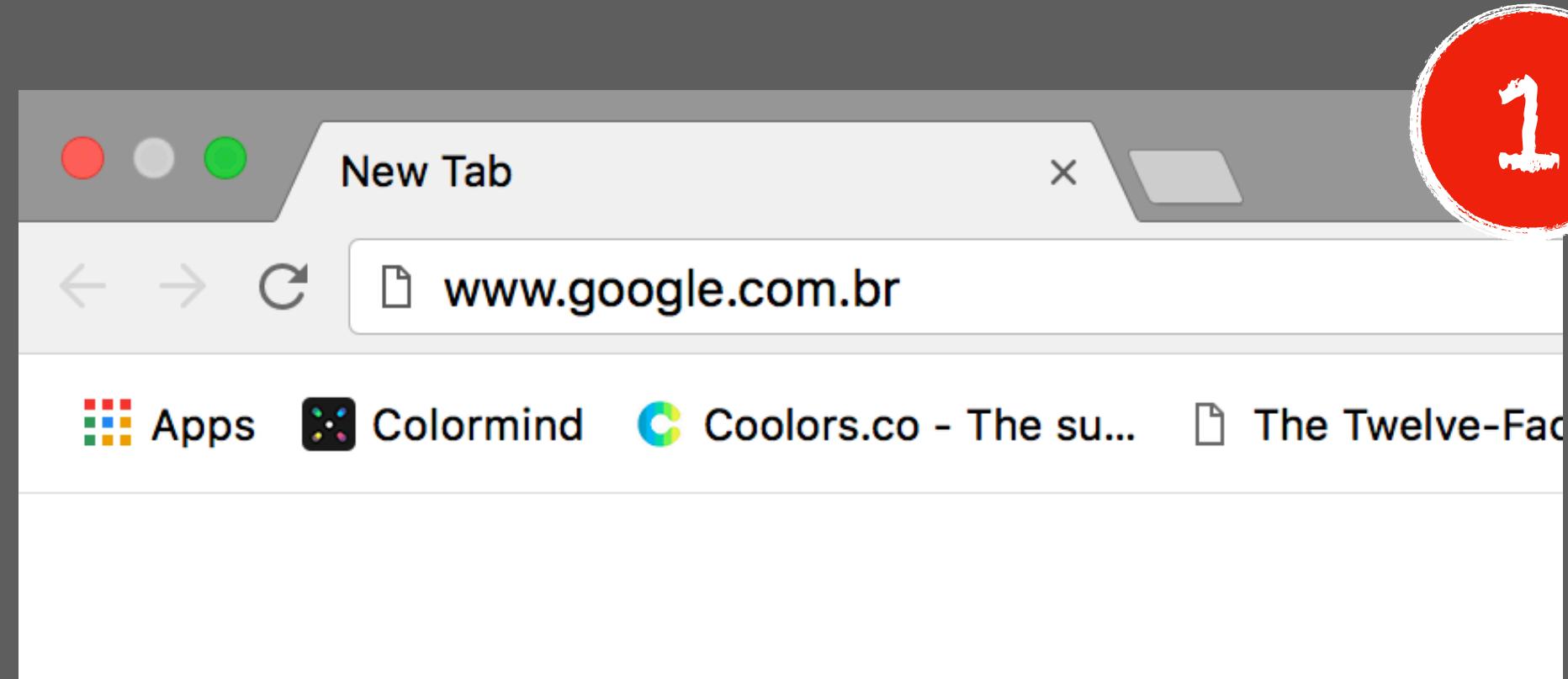
Stateless

Cliente-Servidor

TCP/IP

HTML, CSS, JS, Mídias...

# FLUXO...



1

Usuário Informa a URL

2

Browser gera a Requisição

GET / HTTP/1.1

Host: www.google.com.br

3 Servidor Web gera a Resposta

HTTP/1.1 200 OK

content-Type: text/html; charset=UTF-8

date: Mon, 30 Abril 2018 17:00:02 GMT

connection: close

content-Length: 438

<html> ...

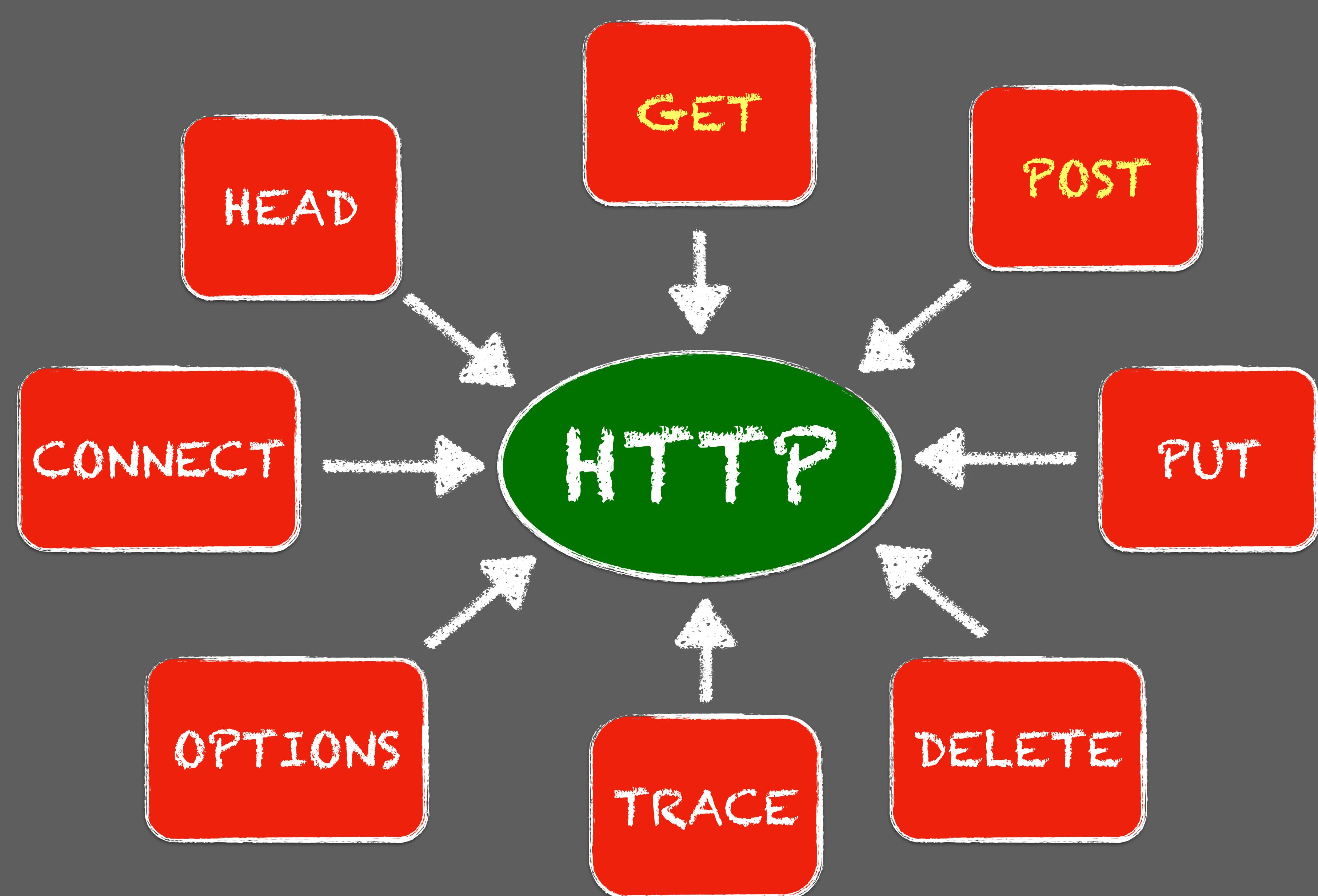
4

Browser exibe a página

A screenshot of a Google search results page. The top result is for 'Google' itself, showing the iconic logo. Below the search bar, there's a snippet of the page content.

Pesquisa Google

Estou com sorte



Métodos do HTTP

# Requisição e Resposta

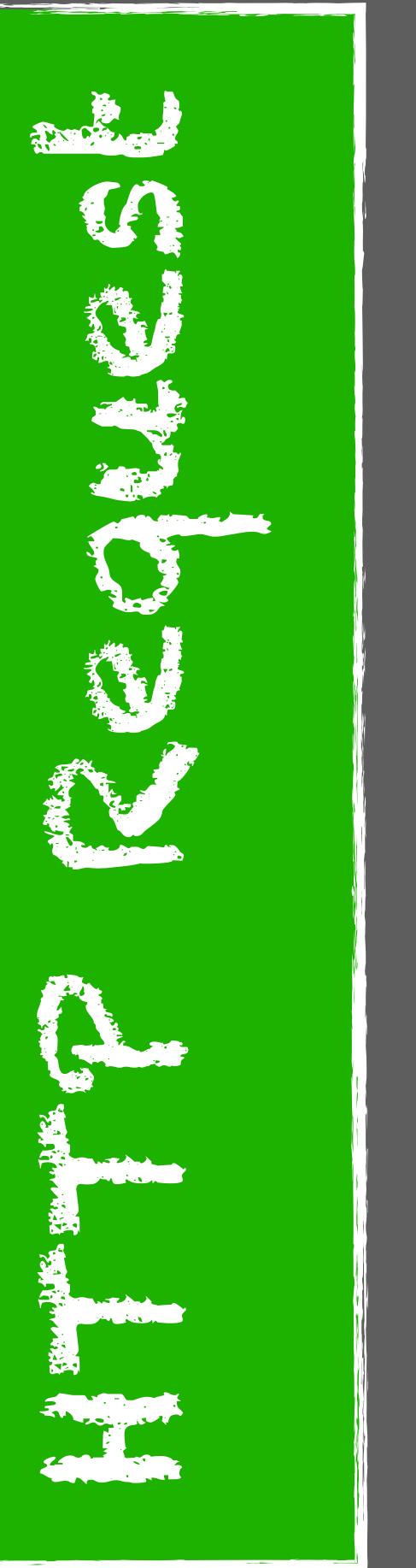
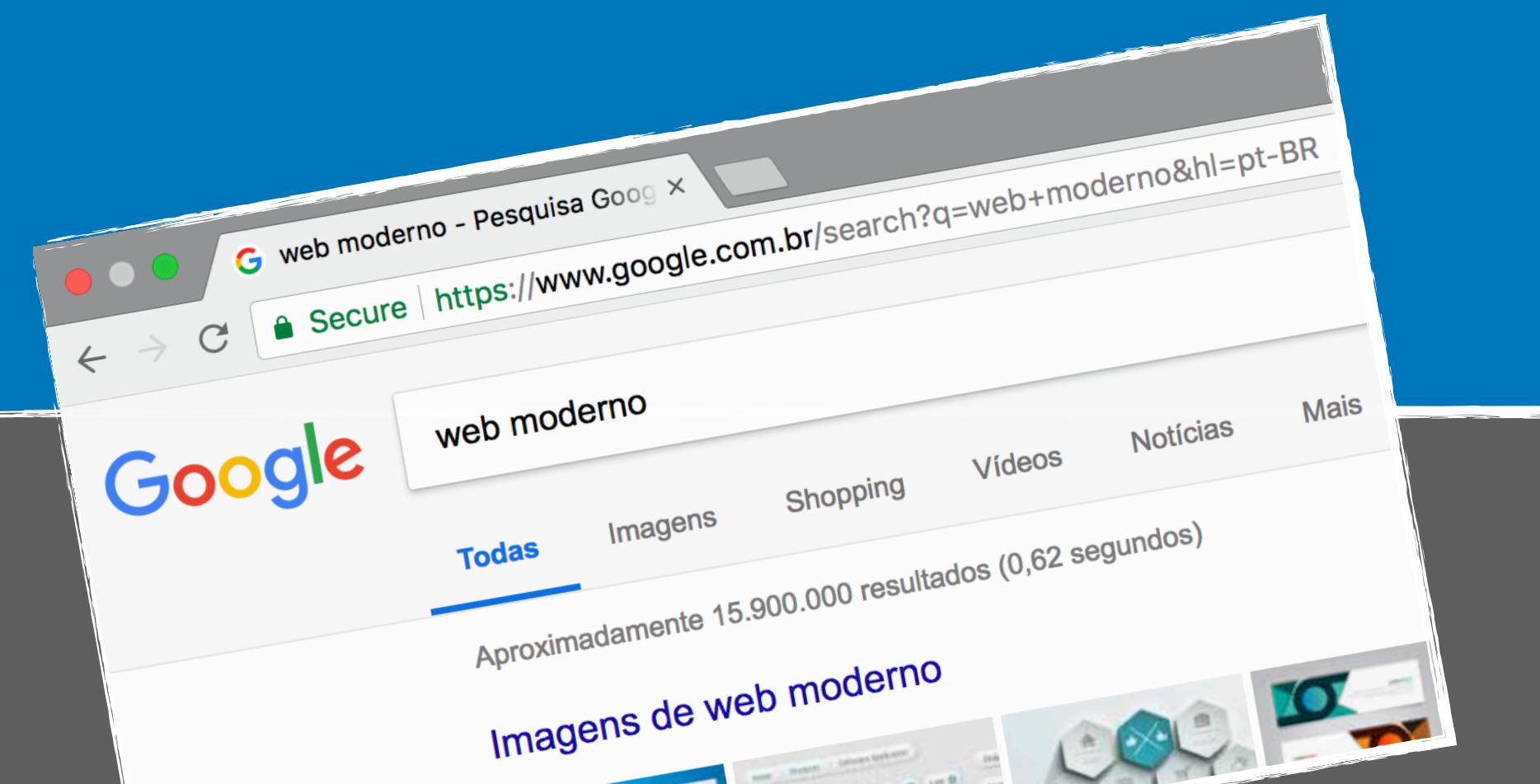


# Requisição Via GET

```
GET /search?q=web+moderno&hl=pt-BR HTTP/1.1  
host: www.google.com.br  
user-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS...  
...
```

Cabeçalho

Corpo



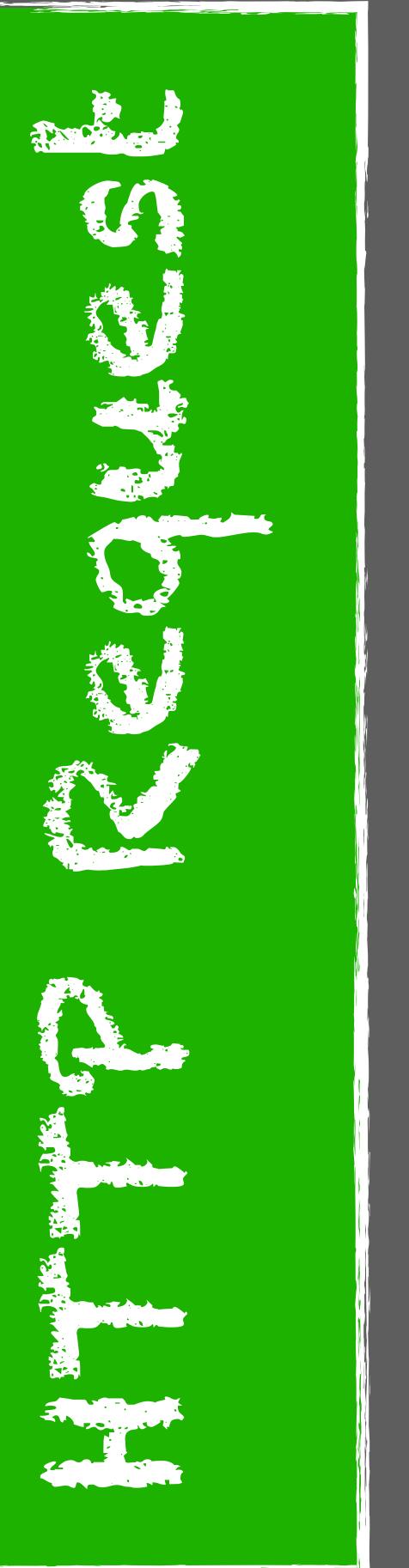
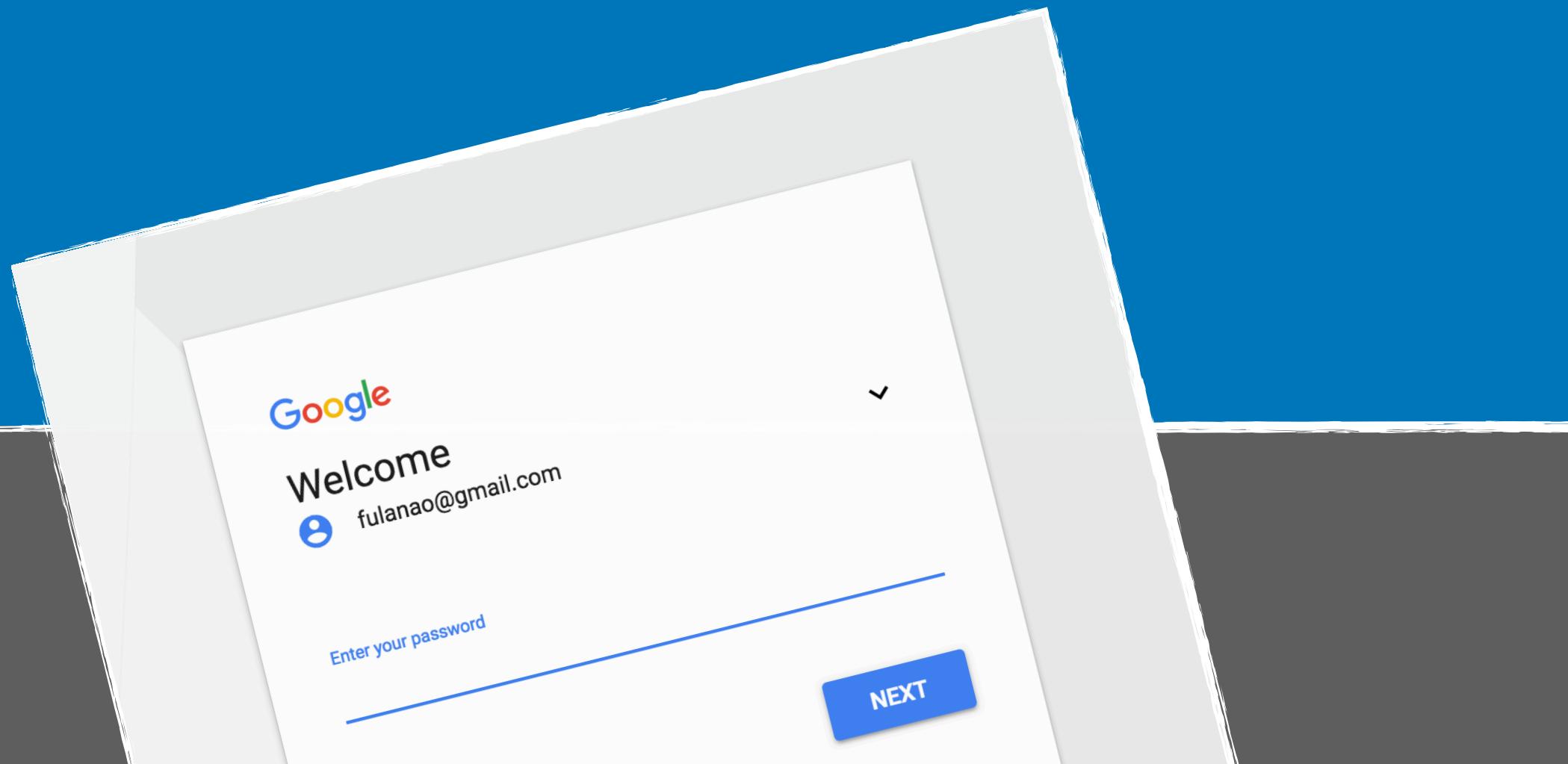
# Requisição Via POST

POST /signin HTTP/1.1  
host: accounts.google.com  
user-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS...  
...

Cabeçalho

continue=https%3A%2F%2Fmail.google.com%2Fmail%2F&service=mail&rm=false&ltmpl=default&scc=1&ss=1&osid=1&emr=1&f.req=%5B%22fulano%40gmail.com

Corpo



# Grupos de Status HTTP

• 1XX - Informação

• 2XX - Sucesso

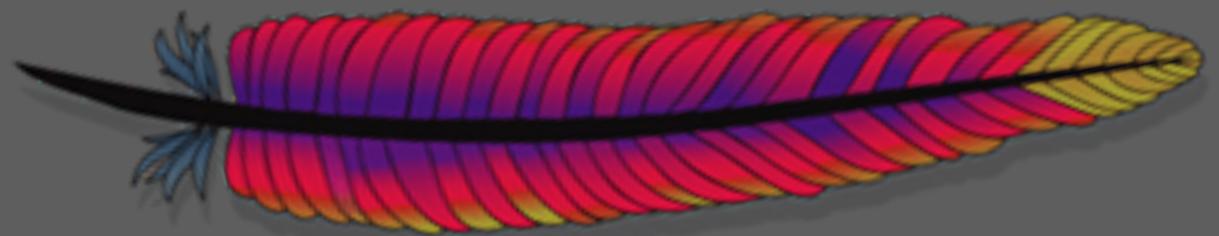
• 3XX - Redirecionamento

• 4XX - Erro no Cliente

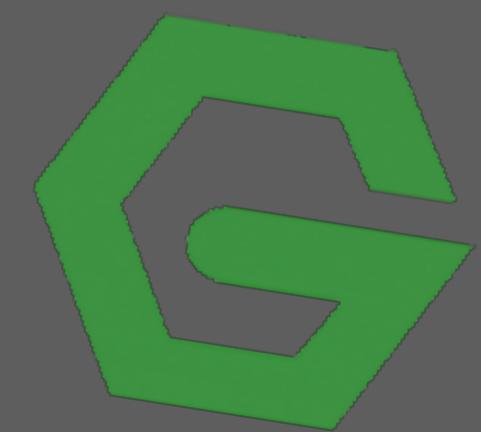
• 5XX - Erro no Servidor

# **Aula 3: Servidor Web**

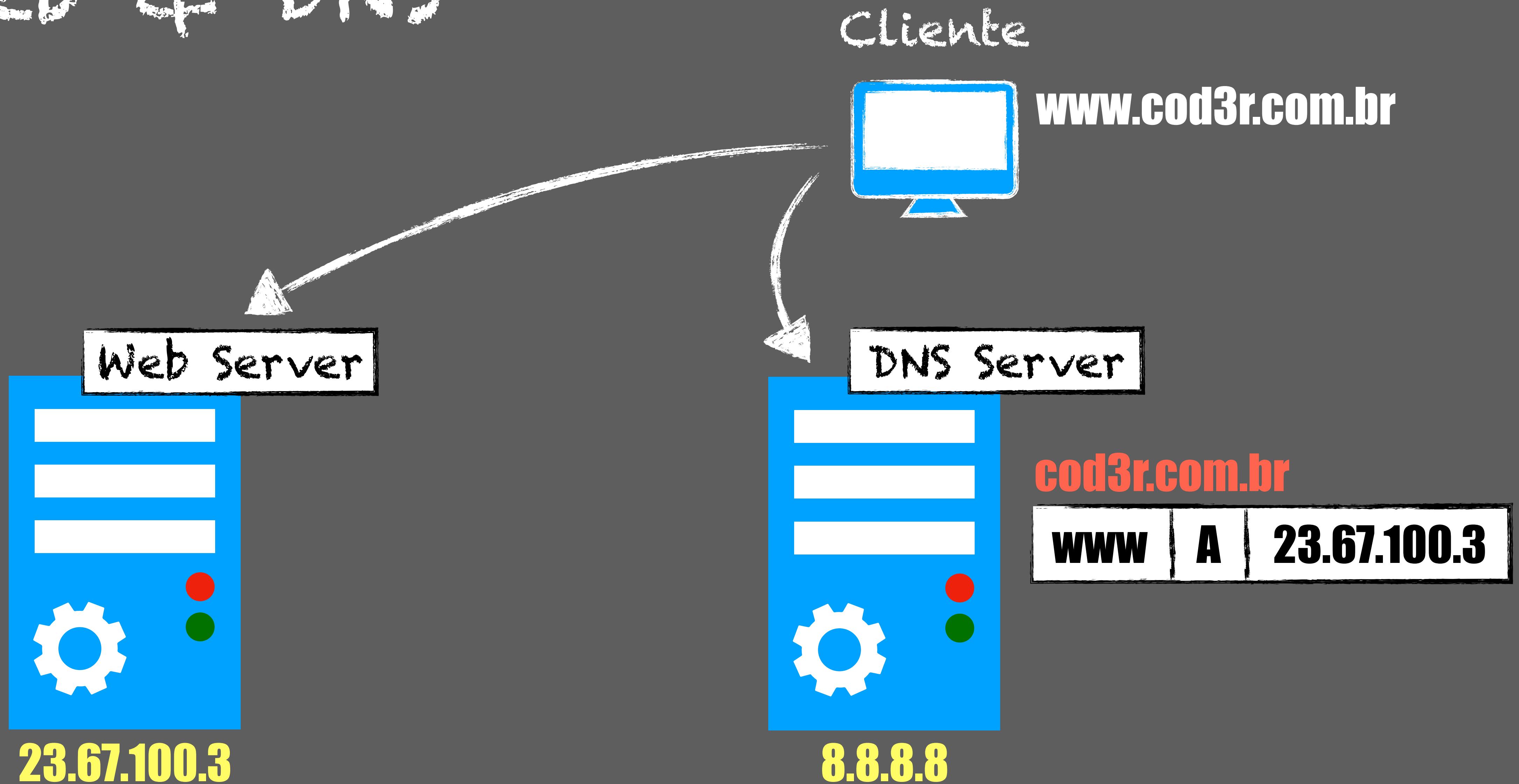
# Servidores Web



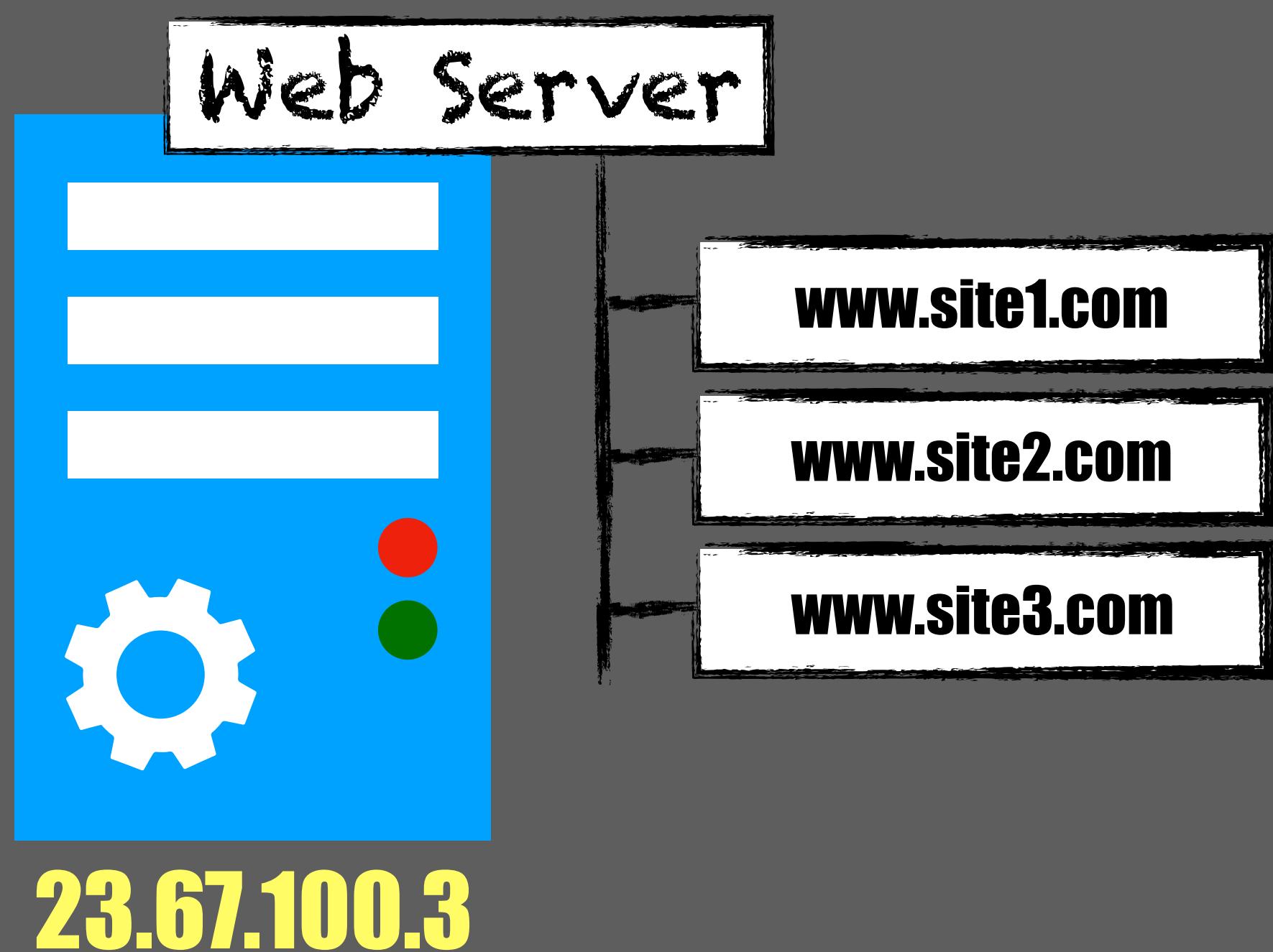
APACHE  
HTTP SERVER



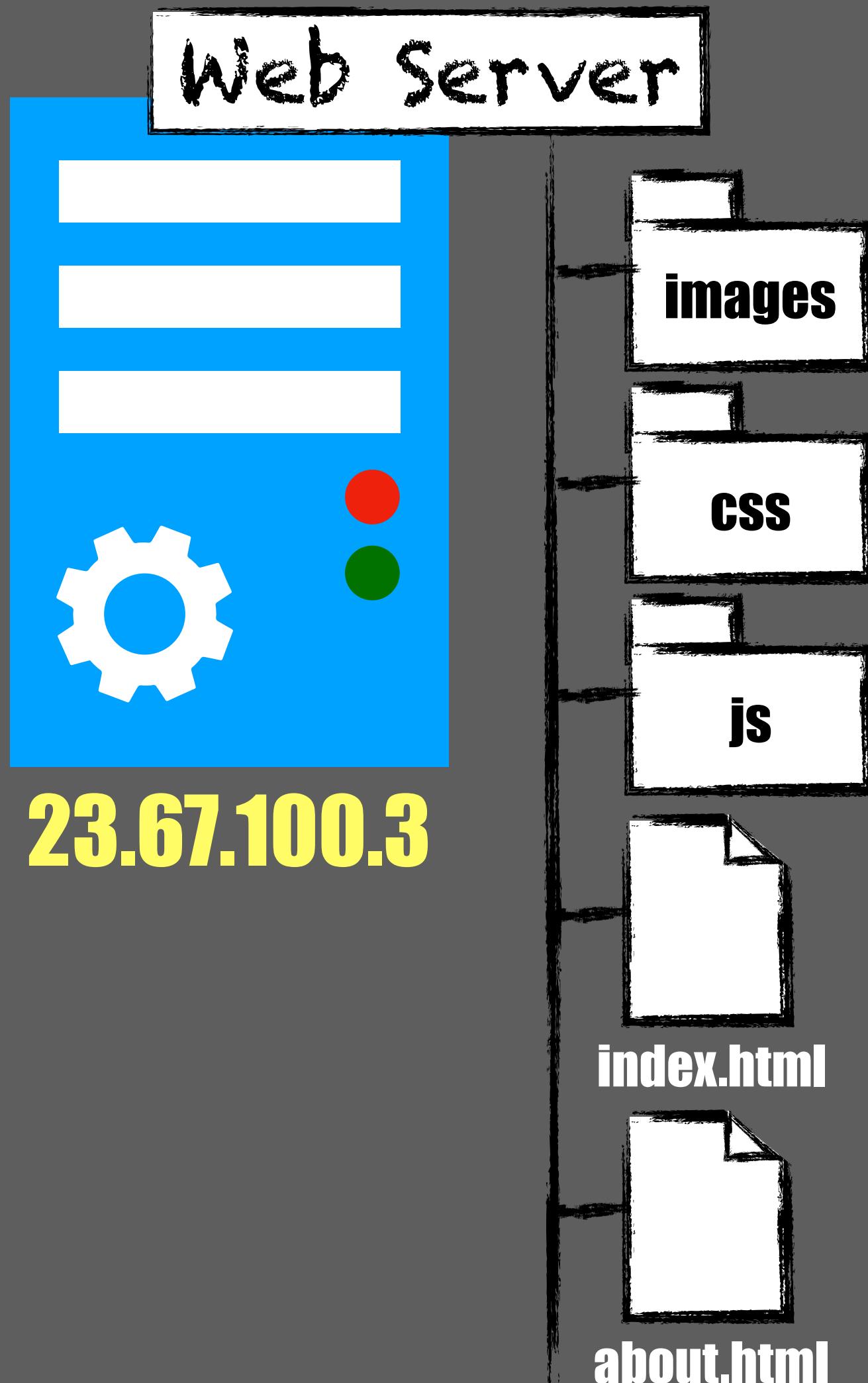
# Web + DNS



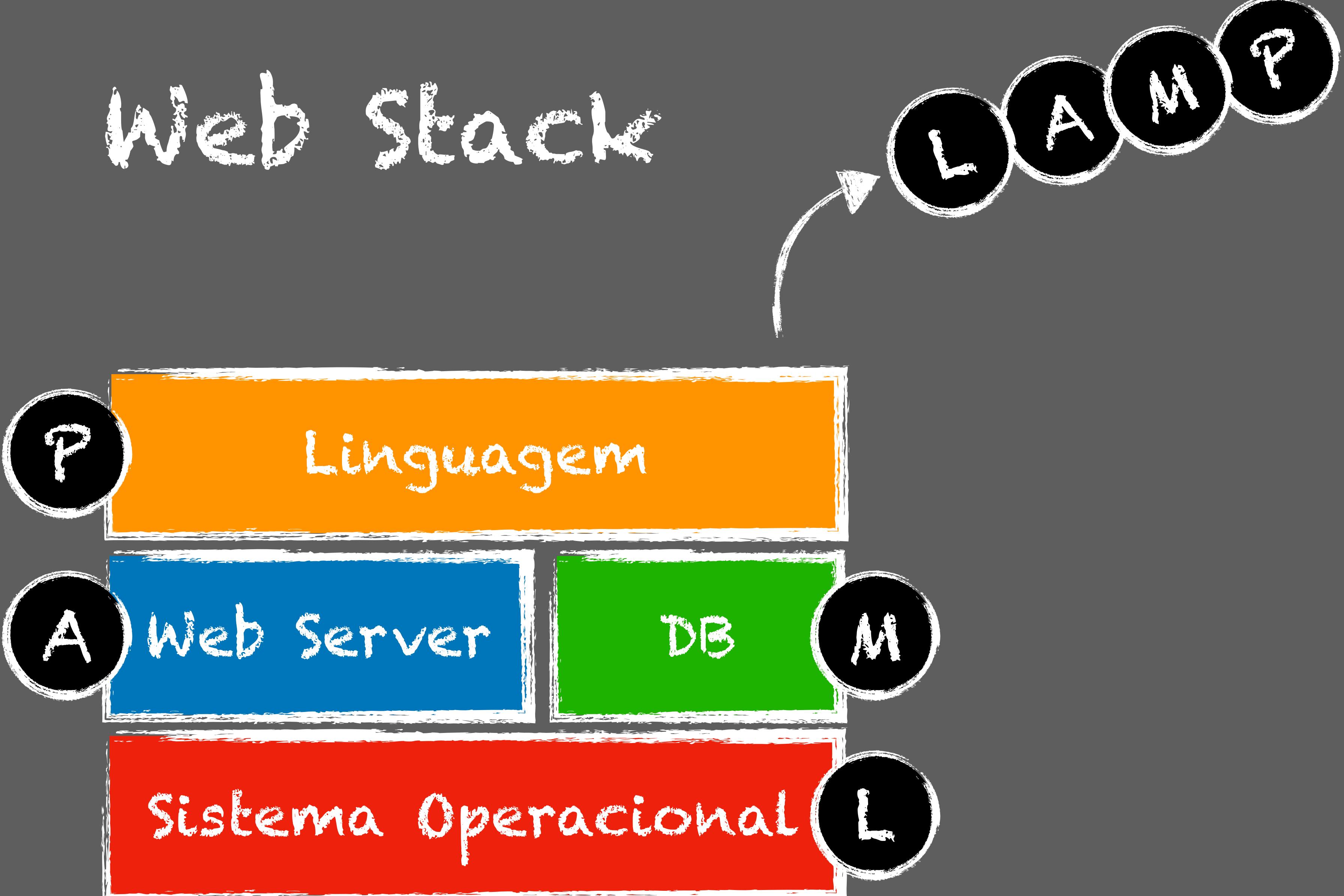
# Virtual Hosting



# Estructura de Pastas



# Web Stack

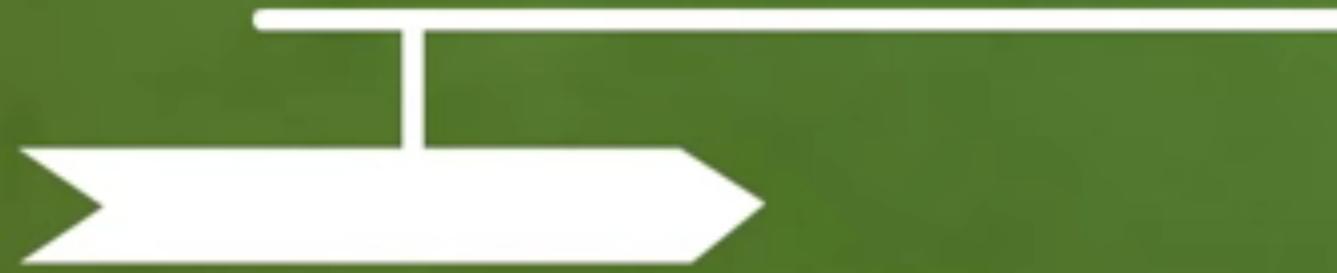


# **Aula 4: Client/Server Side**

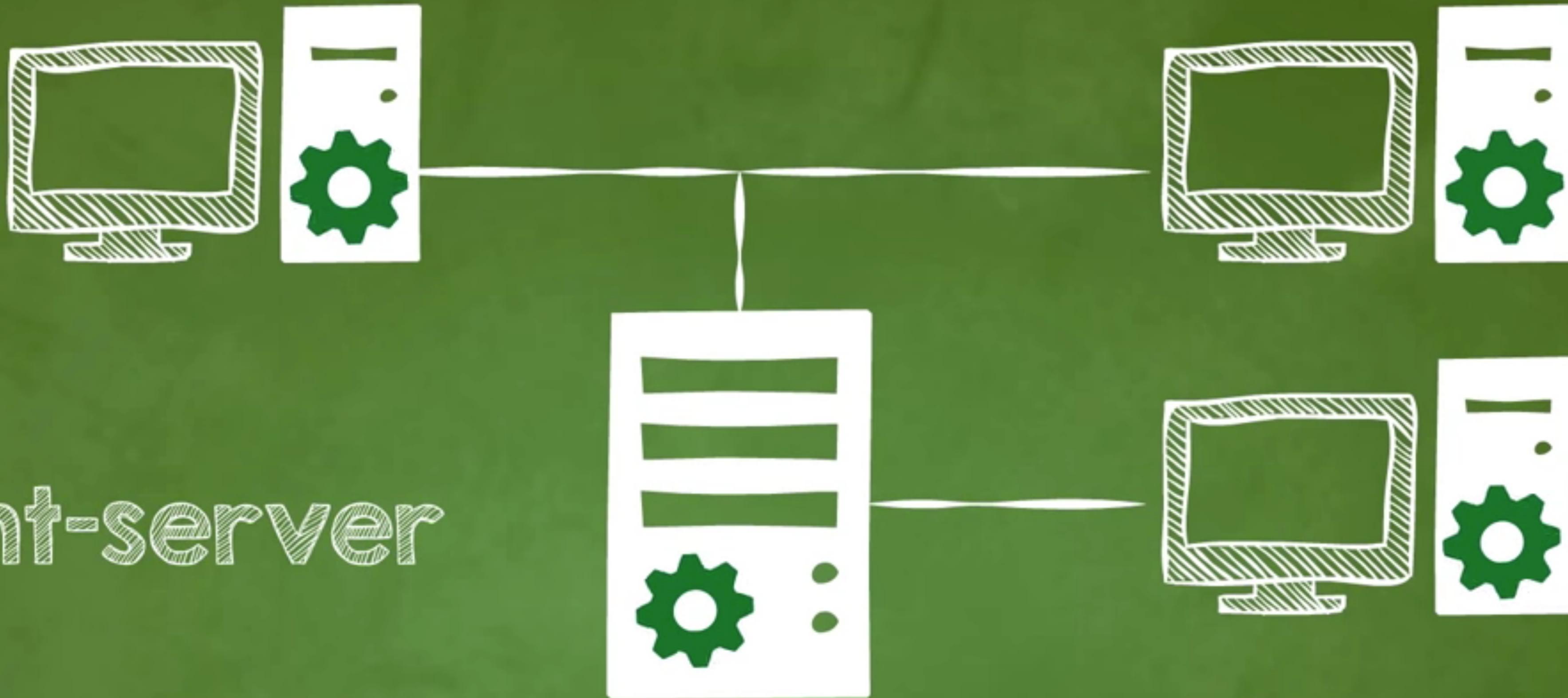


Evolução das Arquiteturas

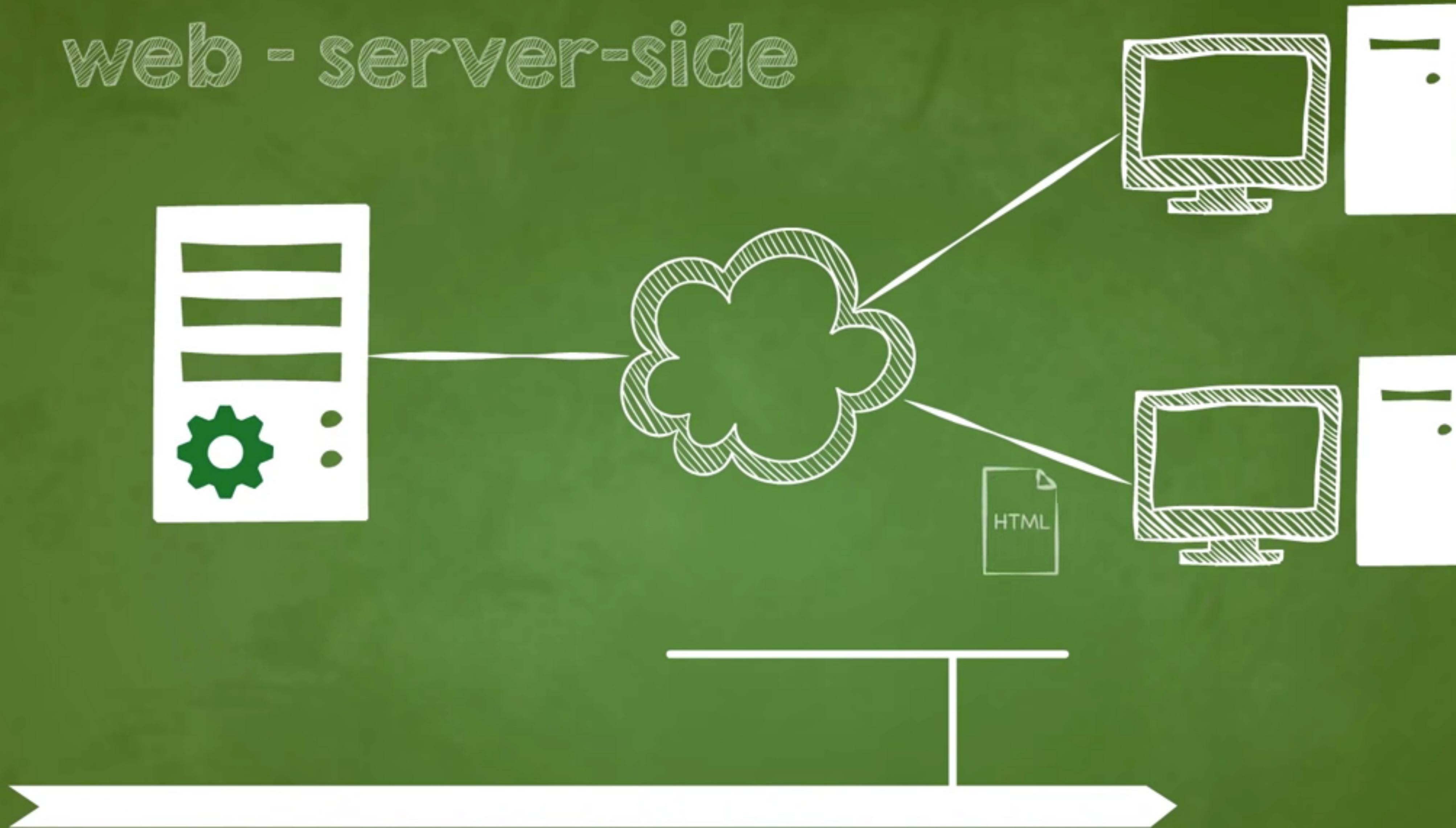
# mainframe



# client-server



# web - server-side



# front-end + services

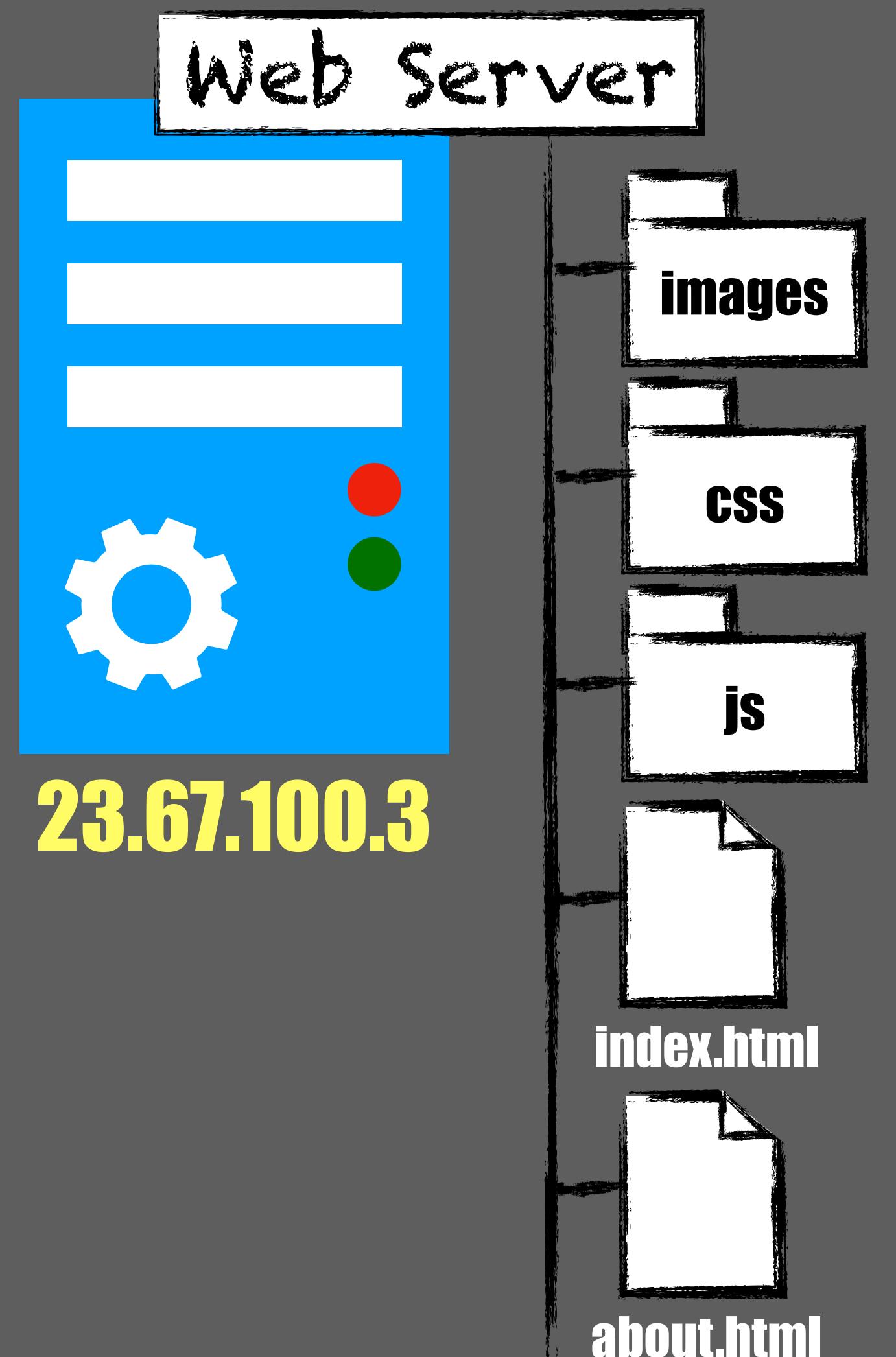


{ json }

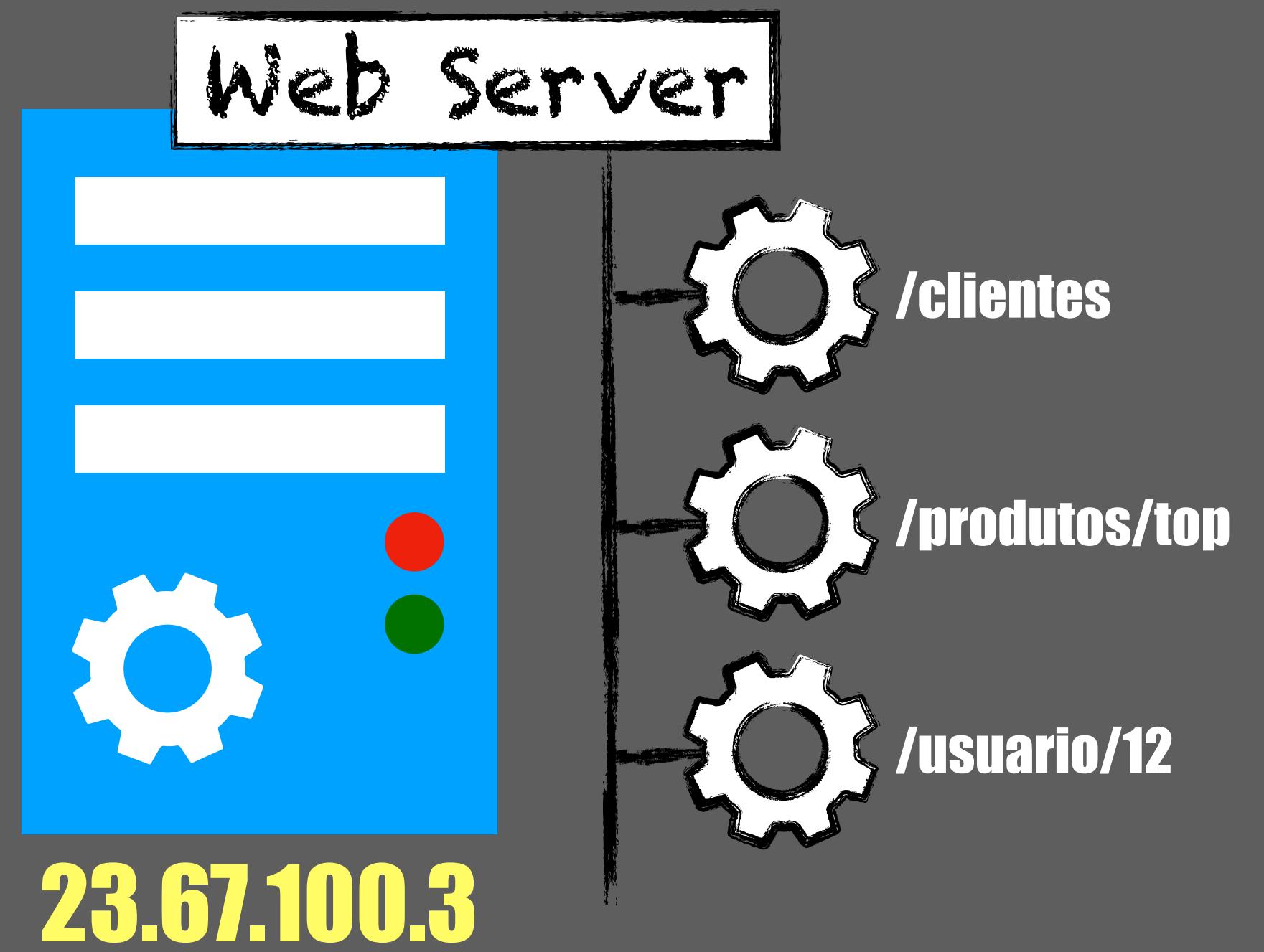


# Aula 5: Estático Vs Dinâmico

# Conteúdo Estático



# Conteúdo Dinâmico



# **Aula 6: HTML/CSS/JS**

# **Aula 7: DNS**



# Servidor DNS

Traduz os nomes de domínio  
em endereço IP

[www.cod3r.com.br](http://www.cod3r.com.br)



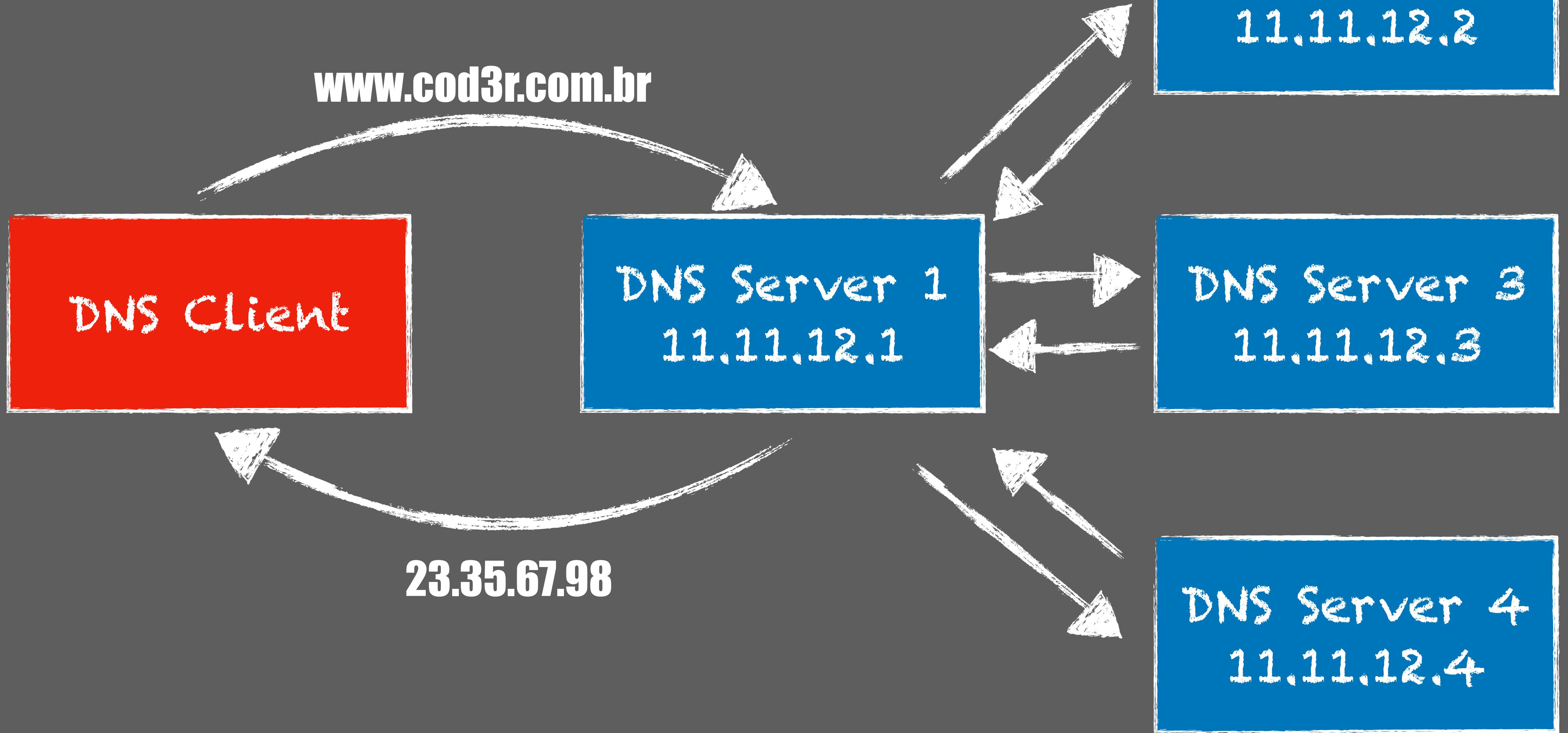
54.69.61.89

DNS funciona sobre o  
protocolo UDP na porta 53

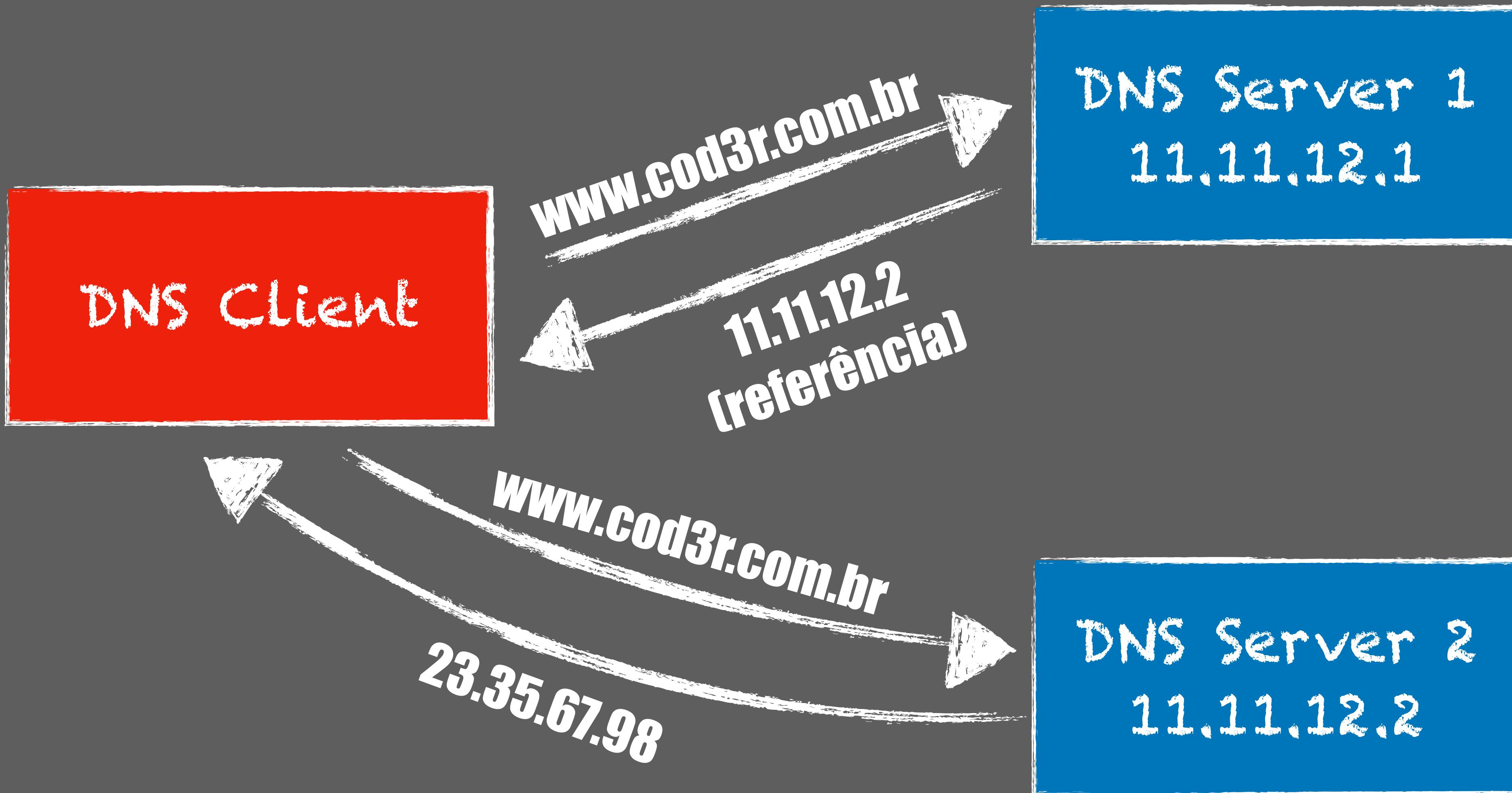
# Funcionamento Básico do DNS

- 1 Usuário informa o endereço no browser
- 2 Computador envia uma consulta DNS para o servidor local
- 3 O servidor responde com o endereço IP
- 4 Computador acessa o servidor a partir do IP obtido

# Busca Recursiva



# Busca Iterativa



# DNS Records

- A - IPv4
- AAAA - IPv6
- MX - Servidor de Email
- NS - Servidor DNS
- CNAME - Canonical Name (Apelido)

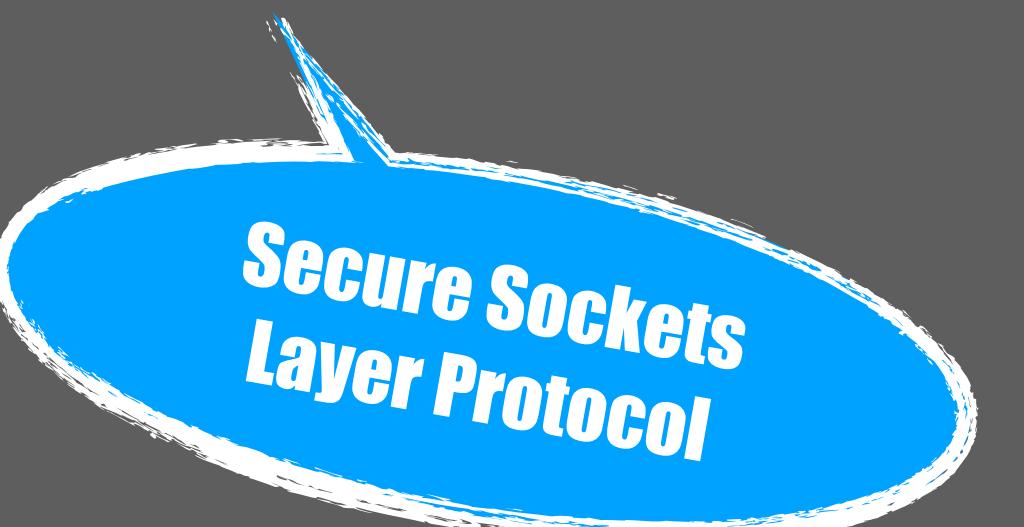
# Aula 8: HTTP Seguro

# HTTP Seguro

- HTTP + TLS

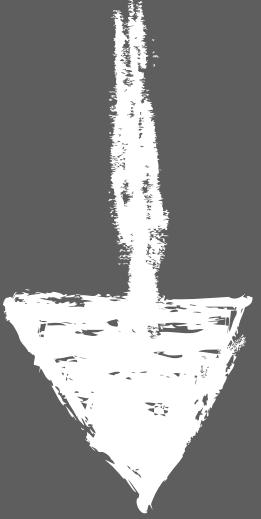


- HTTP + SSL



Certificado ↔ Protocolo

"Certificado SSL/TLS"



"Certificado usado  
com SSL/TLS"

# HTTPSeguro

- Dados criptografados usando os protocolos TLS ou SSL
- Protege contra interceptação (MITM)
- Criptografa todas as informações: URL, cookies e headers
- Usa certificados digitais

# Autoridades Certificadoras

- Organizações que emitem e validam os certificados

-  [H] SlowDownBrother • 9 points 12 hours ago  
I thought ssl certificates were around \$100 a year. Is there a free way?  
permalink embed save parent report give gold reply
- [H] isometricpanda • 41 points 12 hours ago  
lets encrypt  
permalink embed save parent report give gold reply
-  [H] SlowDownBrother • 39 points 11 hours ago  
Yes, let's. But that doesn't answer my question..  
permalink embed save parent report give gold replied

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Let's Encrypt is a **free, automated**, and **open** Certificate Authority.

[Get Started](#)[Donate](#)

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#### FROM OUR BLOG

Dec 7, 2017

#### [Looking Forward to 2018](#)

While we're proud of what we accomplished in 2017, we are spending most of the final quarter of the year looking forward rather than back.

[Read more](#)

Oct 17, 2017

#### [ACME Support in Apache HTTP Server Project](#)

We're excited that support for getting and managing TLS certificates via the ACME protocol is coming to the Apache HTTP Server Project (httpd).

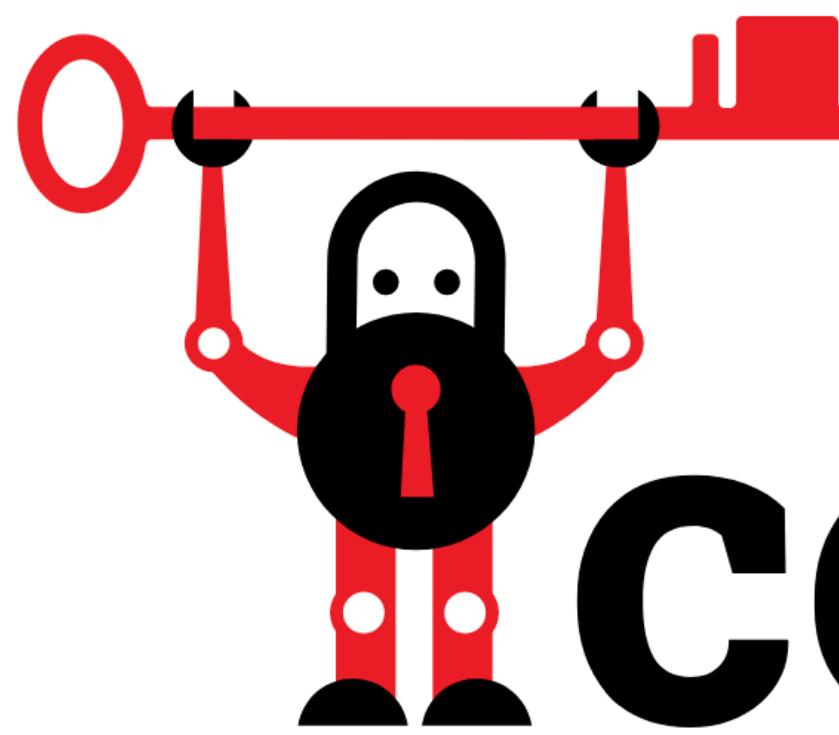
[Read more](#)

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#### MAJOR SPONSORS AND DONORS



If you are having trouble obtaining certificates using the Apache or Nginx plugins, fill out the dropdown menus below to get updated installation and usage instructions for your system.



# certbot

Automatically enable HTTPS on your website with EFF's Certbot,  
deploying [Let's Encrypt](#) certificates.

I'm using

[Software](#)

on

[System](#)

To get instructions for Certbot, choose your server software and the system it is running on from the dropdown menus above. You can then pick "advanced" if you want less automation and more control.





## Security

# 23,000 HTTPS certs will be axed in next 24 hours after private keys leak

Trustico, DigiCert come to blows as browsers prepare to snub Symantec-brand SSL

By [John Leyden](#) 1 Mar 2018 at 00:43

61 SHARE ▾



Customers of HTTPS certificate reseller Trustico are reeling after being told their website security certs – as many as 23,000 – will be rendered useless within the next 24 hours.

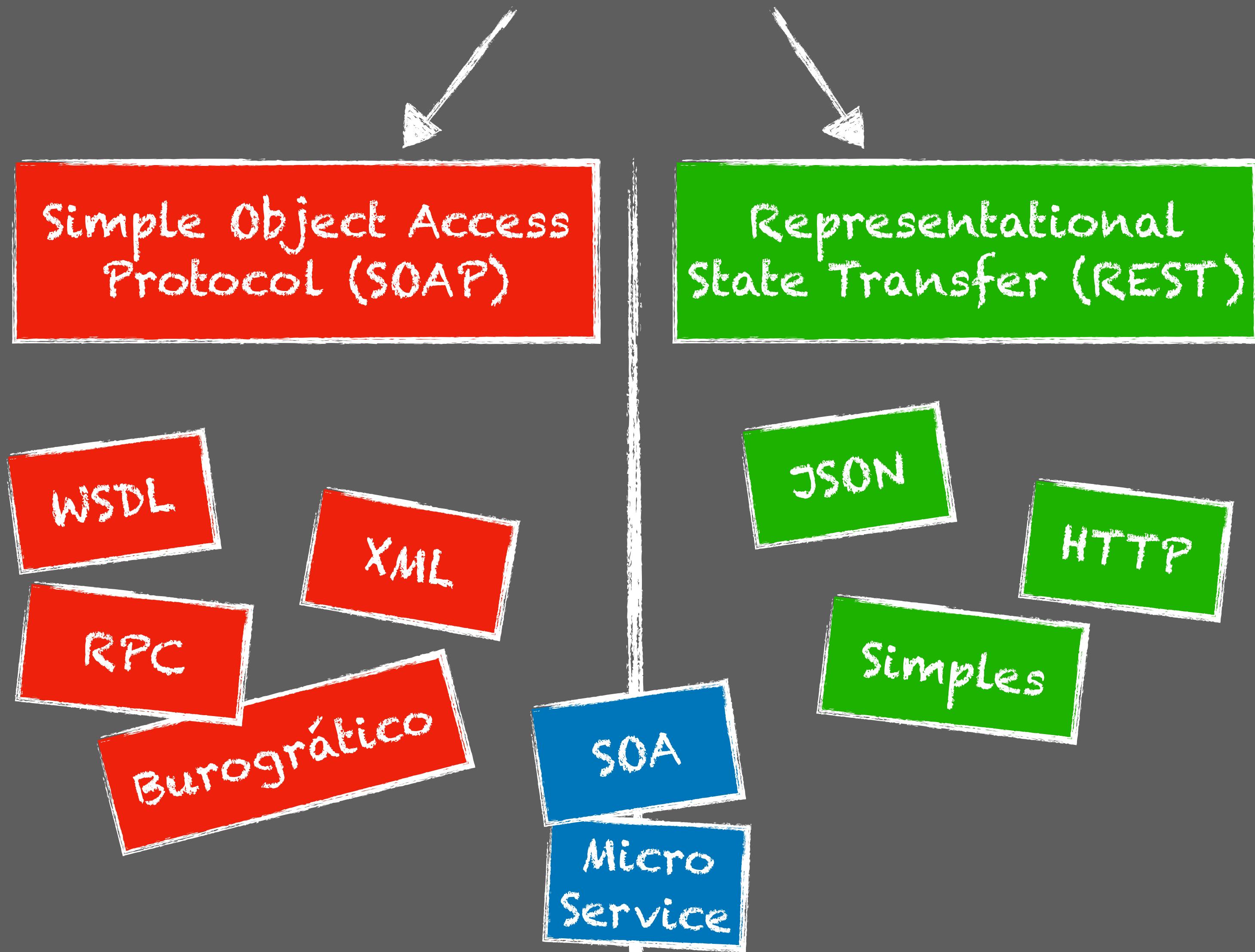
This is allegedly due to a security blunder in which the private keys for said certificates ended up in an email sent by Trustico. Those keys are supposed to be secret, and only held by the cert owners, and certainly not to be disclosed in messages. In the wrong hands, they can be used by malicious websites to masquerade as legit operations.

Unless the affected certificates are replaced in time, visitors to websites using Trustico-sold HTTPS certs will be turned away by their browsers, due to the digital certificates being revoked.

# Aula 9: WebServices

O que é  
Web Service?

# Web Service



```
- <wsdl:definitions name="MyCustomerTestService" targetNamespace="http://www.webservicetest.net">
  - <wsdl:types>
    - <xs:schema targetNamespace="http://www.webservicetest.net" elementFormDefault="qualified">
      + <xs:simpleType name="CustomerId"></xs:simpleType> ←
      + <xs:complexType name="Customer"></xs:complexType> ←
      + <xs:complexType name="Address"></xs:complexType>
    </xs:schema>
  </wsdl:types>
  - <wsdl:message name="getCustomerDataRequest">
    <wsdl:part name="CustomerRequest" type="tns:CustomerId"/> ←
  </wsdl:message>
  - <wsdl:message name="getCustomerDataResponse">
    <wsdl:part name="CustomerResponse" type="tns:Customer"/> ←
  </wsdl:message>
  - <wsdl:portType name="CustomerData">
    - <wsdl:operation name="GetCustomerData" soapAction="http://www.webservicetest.net/GetCustomerData">
      <wsdl:input name="CustomerRequest" type="tns:CustomerId"/>
      <wsdl:output name="CustomerResponse" type="tns:Customer"/>
    </wsdl:operation>
  </wsdl:portType>
  - <wsdl:binding name="CustomerSOAPBinding" type="tns:CustomerData">
    <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
    - <wsdl:operation name="GetCustomerData">
      <soap:input name="CustomerRequest" soapAction="" style="document"/>
      - <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      - <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
  </wsdl:binding>
  - <wsdl:service name="CustomerService">
    - <wsdl:port name="CustomerSOAPPort" binding="tns:CustomerSOAPBinding">
      <soap:address location="No Target Adress"/>
    </wsdl:port>
  </wsdl:service>
</wsdl:definitions>
```



# Convenções RESTful

URL	Método	Descrição
/clientes	POST	Novo cliente
/clientes	GET	Obtém todos
/clientes/36	GET	Obtém cliente 36
/clientes/12	PUT	Atualiza cliente 12
/clientes/41	DELETE	Exclui cliente 41



ESCOLHAS Arquiteturais



# Aula 10: Computação em Nuvem





