03.Nginx静态服务

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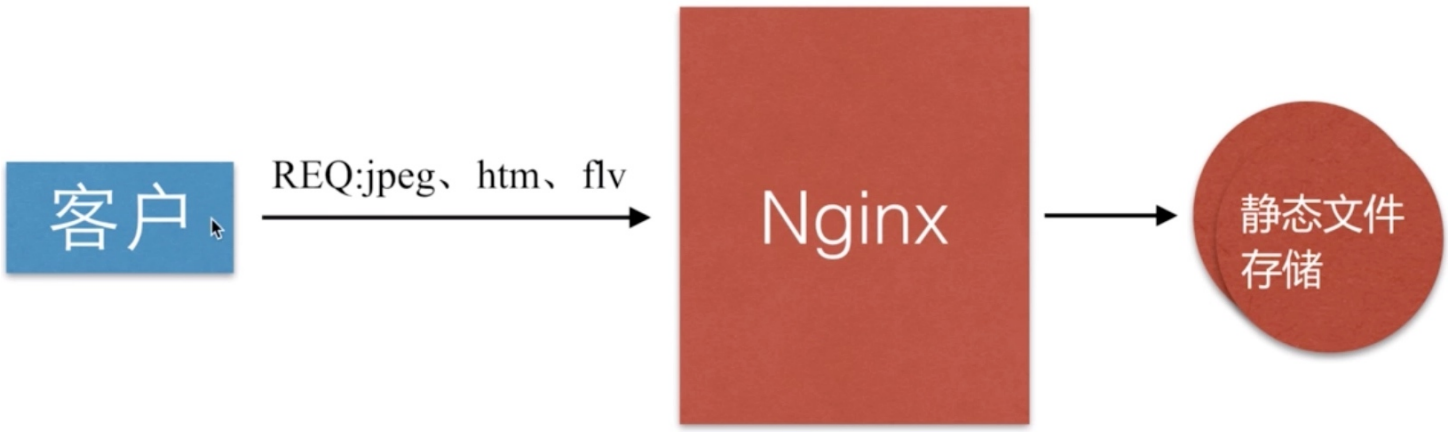
1.静态资源类型

`Nginx` 作为静态资源 `Web` 服务器部署配置, 传输非常的高效, 常常用于静态资源处理, 请求, 动静分离



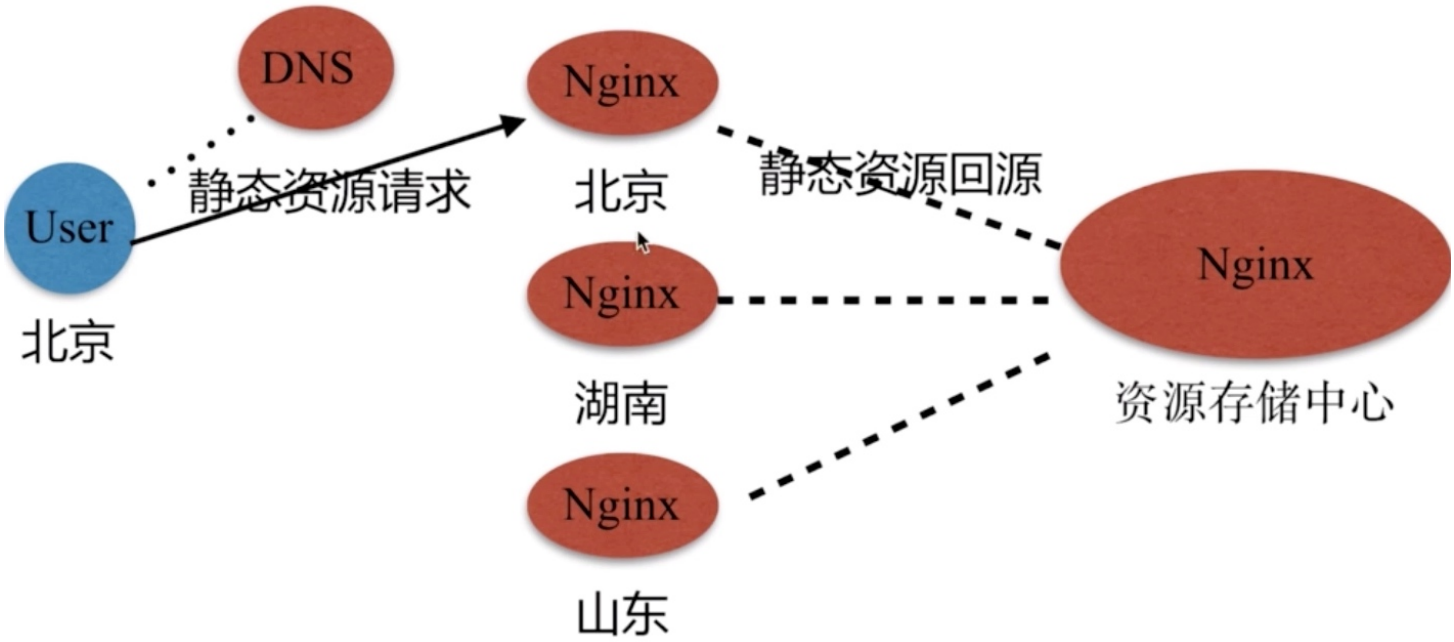
> 非服务器动态运行生成的文件属于静态资源

类型	种类
浏览器端渲染	HTML、CSS、JS
图片	JPEG、GIF、PNG

视频	FLV、Mp4
文件	TXT、任意下载文件

2.静态资源场景

静态资源传输延迟最小化



3.静态资源配置语法

1.文件读取高效 `sendfile`

```
Syntax: sendfile on | off;
Default: sendfile off;
Context: http, server, location, if in location
```

2.提高网络传输效率 `nopush`

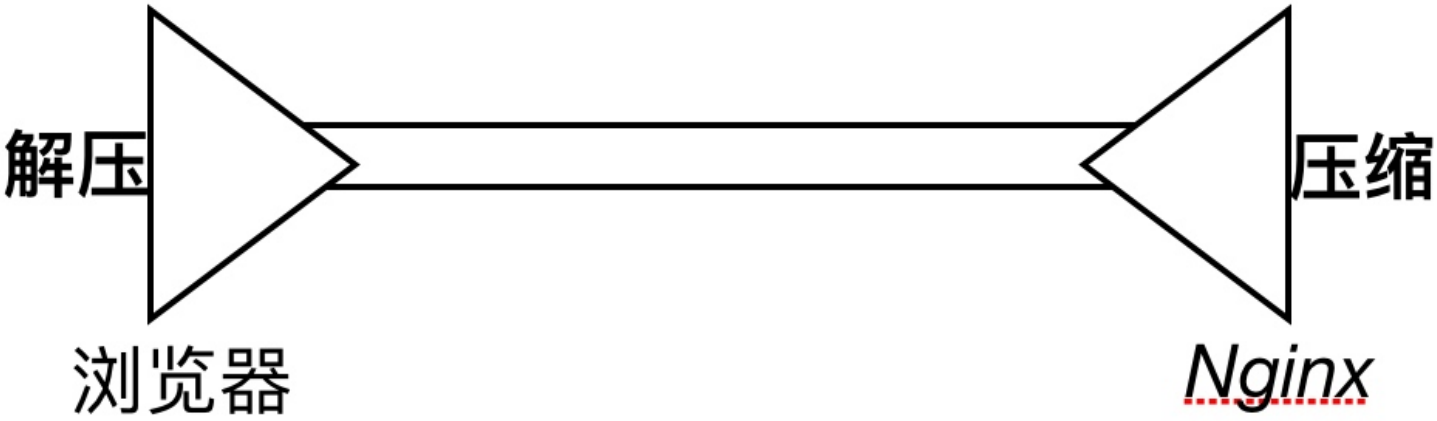
```
Syntax: tcp_nopush on | off;
Default: tcp_nopush off;
Context: http, server, location

作用: sendfile开启情况下, 提高网络包的'传输效率'
```

2.与 `tcp_nopush` 之对应的配置 `tcp_nodelay`

```
Syntax: tcp_nodelay on | off;
Default: tcp_nodelay on;
Context: http, server, location

作用：在keepalive连接下,提高网络的传输'实时性'
```

4.静态资源文件压缩

`Nginx` 将响应报文发送至客户端之前可以启用压缩功能，这能够有效地节约带宽，并提高响应至客户端的速度。



1. `gzip` 压缩配置语法

```
Syntax: gzip on | off;
Default: gzip off;
Context: http, server, location, if in location

作用：传输压缩
```

2. `gzip` 压缩比率配置语法

```
Syntax: gzip_comp_level level;
Default: gzip_comp_level 1;
Context: http, server, location

作用：压缩本身比较耗费服务端性能
```

3. `gzip` 压缩协议版本

```
Syntax: gzip_http_version 1.0 | 1.1;
Default: gzip_http_version 1.1;
```

```
Context: http, server, location

作用：压缩使用在http哪个协议，主流版本1.1
```

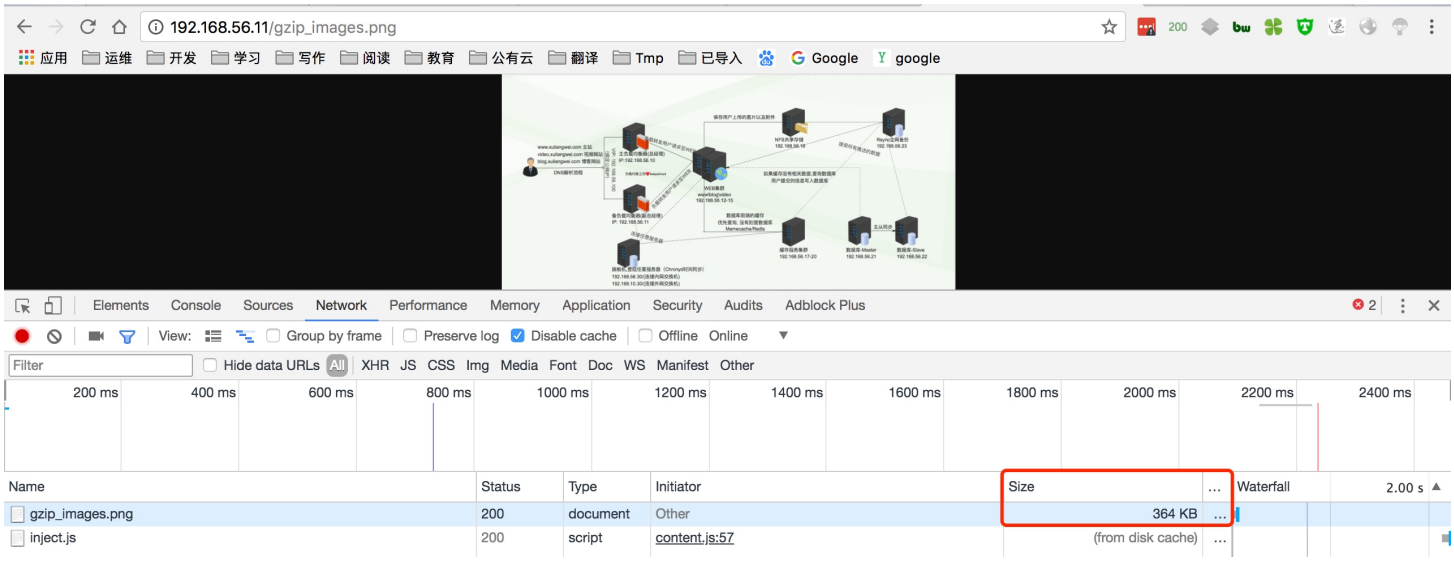
4.扩展压缩模块

```
Syntax: gzip_static on | off | always;
Default: gzip_static off;
Context: http, server, location

作用：预读gzip功能
```

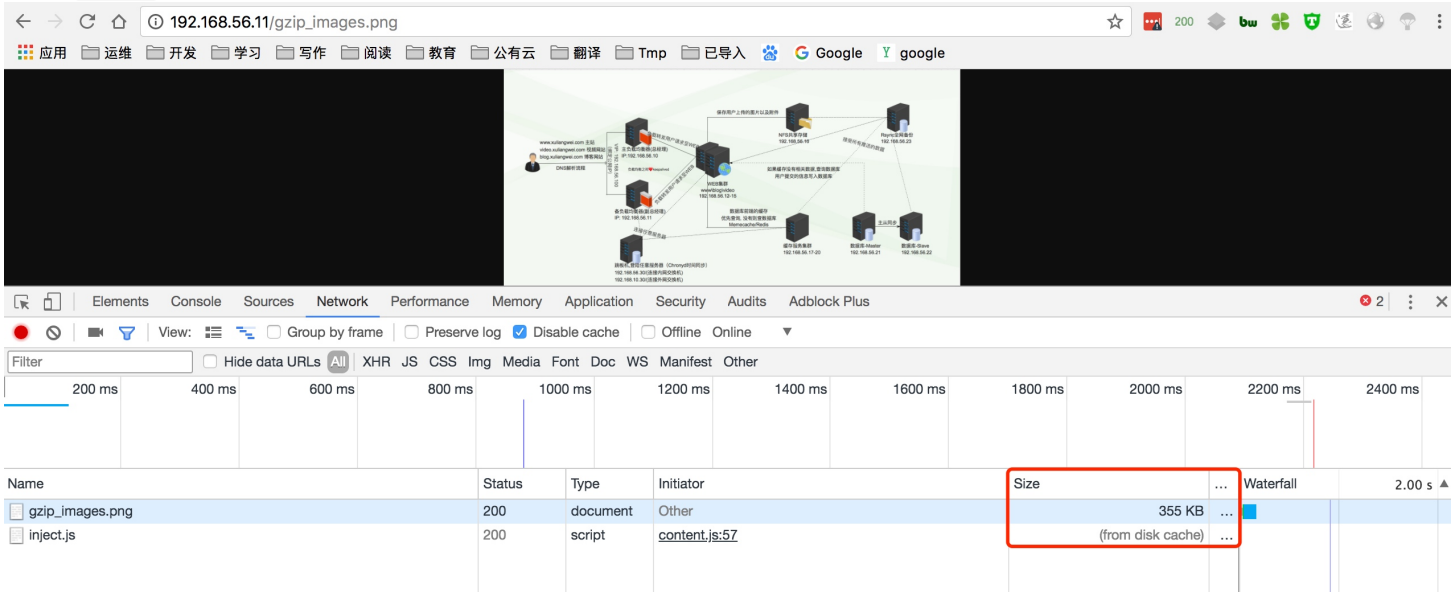
5.图片压缩案例

```
[root@Nginx conf.d]# mkdir -p /soft/code/images
[root@Nginx conf.d]# cat static_server.conf
server {
        listen 80;
        server_name 192.168.56.11;
        sendfile on;
        access_log /var/log/nginx/static_access.log main;

        location ~ .*\.(jpg|gif|png)$ {
                gzip on;
                gzip_http_version 1.1;
                gzip_comp_level 2;
                gzip_types text/plain application/json application/x-javascript app
lication/css application/xml application/xml+rss text/javascript application/x-http
d-php image/jpeg image/gif image/png;
                root /soft/code/images;
        }
}
```

没有开启 `gzip` 图片压缩



启用 gzip 压缩图片后(由于图片之前压缩过, 所以压缩比率不太明显)

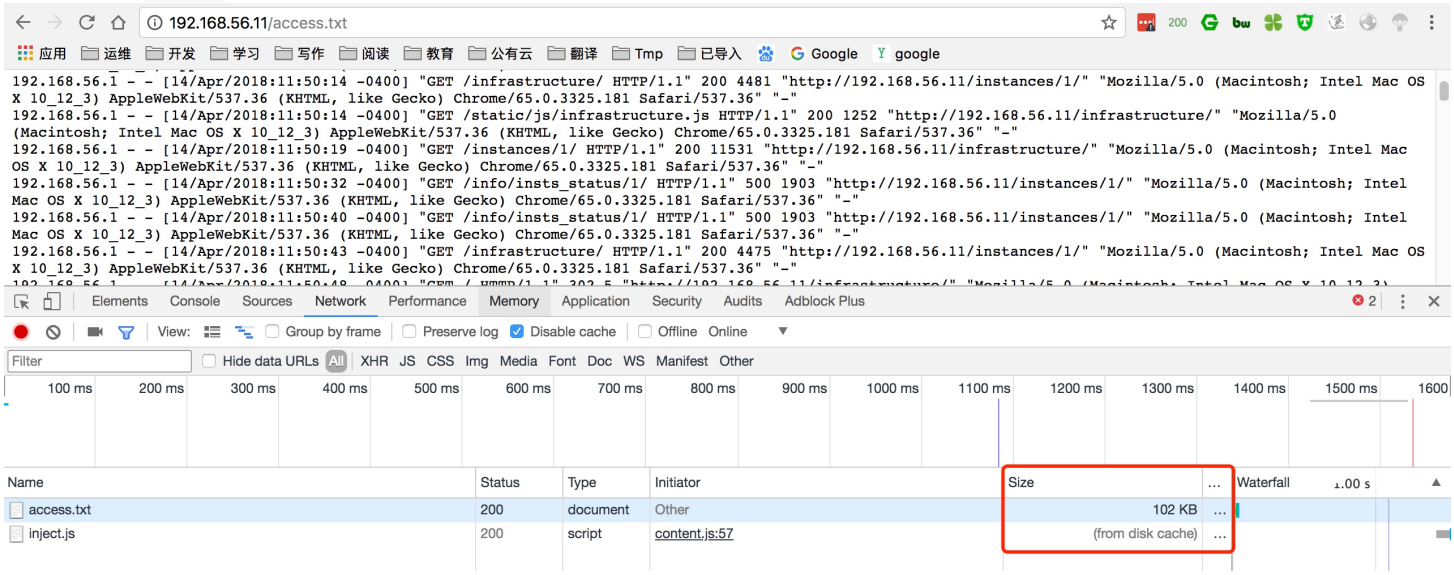


6.文件压缩案例

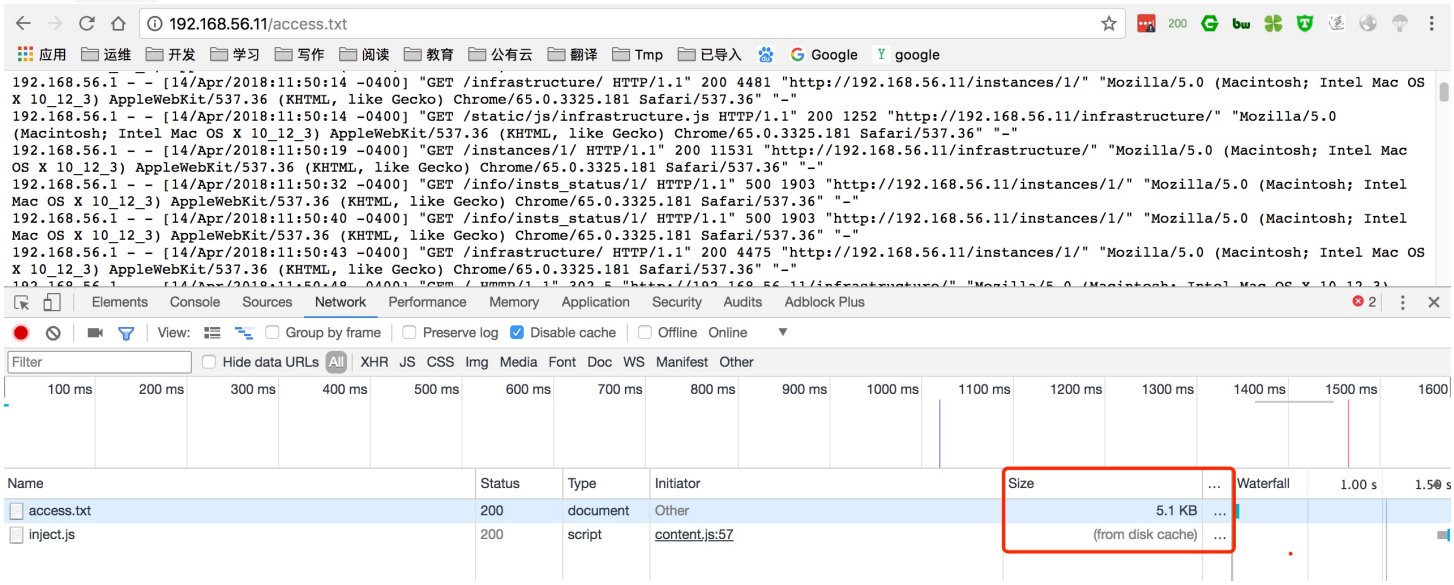
```
[root@Nginx conf.d]# mkdir -p /soft/code/doc
[root@Nginx conf.d]# cat static_server.conf
server {
    listen 80;
    server_name 192.168.56.11;
    sendfile on;
    access_log /var/log/nginx/static_access.log main;
    location ~ .*\.(txt|xml)$ {
        gzip on;
        gzip_http_version 1.1;
        gzip_comp_level 1;
        gzip_types text/plain application/json application/x-javascript application
/css application/xml application/xml+rss text/javascript application/x-httpd-php im
age/jpeg image/gif image/png;
        root /soft/code/doc;
    }
```

```
}
```

没有启用 `gzip` 文件压缩



启用 `gzip` 压缩文件



5.静态资源浏览器缓存

HTTP协议定义的缓存机制(如: Expires; Cache-control 等)

1.浏览器无缓存

> 浏览器请求->无缓存->请求WEB服务器->请求响应->呈现

2.浏览器有缓存

> 浏览器请求->有缓存->校验过期->是否有更新->呈现
>
> 校验是否过期 Expires HTTP1.0, Cache-Control(max-age) HTTP1.1

> 协议中Etag头信息校验 Etag ()
> Last-Modified头信息校验 Last-Modified (具体时间)

1.缓存配置语法`expires`

```
Syntax: expires [modified] time;
expires epoch | max | off;
Default: expires off;
Context: http, server, location, if in location

作用: 添加Cache-Control Expires头
```

2.配置静态资源缓存

```
location ~ .*\.(js|css|html)$ {
    root /soft/code/js;
    expires      1h;
}

location ~ .*\.(jpg|gif|png)$ {
    root /soft/code/images;
    expires      7d;
}
```

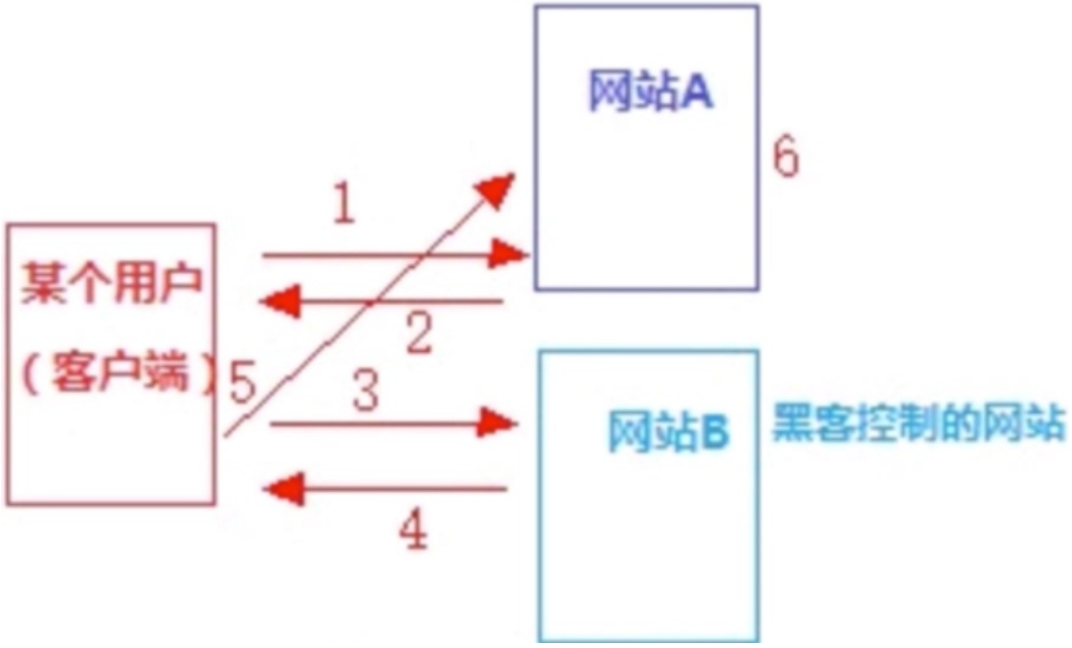
3.开发代码没有正式上线时, 希望静态文件不被缓存

```
//取消js css html等静态文件缓存
location ~ .*\.(css|js|swf|json|mp4|htm|html)$ {
add_header Cache-Control no-store;
add_header Pragma no-cache;
}
```

阿里云缓存策略帮助手册
Nginx静态资源缓存

6.静态资源跨域访问

浏览器禁止跨域访问, 主要不安全, 容易出现 `CSRF` 攻击



`Nginx` 跨域访问配置

```
Syntax: add_header name value [always];
Default: —
Context: http, server, location, if in location

Access-Control-Allow-Origin
```

1.准备 `html` 文件

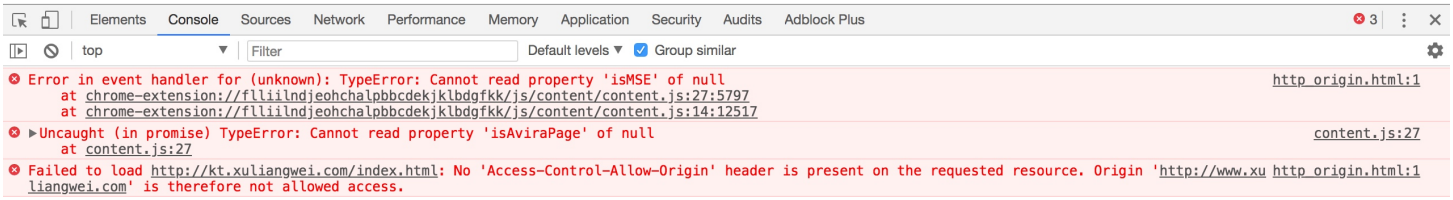
```
//在www.xuliangwei.com网站添加跨越访问文件
[root@Nginx ~]# cat /soft/code/http_origin.html
<html lang="en">
<head>
        <meta charset="UTF-8" />
```

```
        <title>测试ajax和跨域访问</title>
        <script src="http://libs.baidu.com/jquery/2.1.4/jquery.min.js"></script>
</head>
<script type="text/javascript">
$(document).ready(function(){
        $.ajax({
        type: "GET",
        url: "http://kt.xuliangwei.com/index.html",
        success: function(data) {
                alert("sucess!!!");
        },
        error: function() {
                alert("fail!!,请刷新再试!");
        }
        });
});
</script>
        <body>
                <h1>测试跨域访问</h1>
        </body>
</html>
```

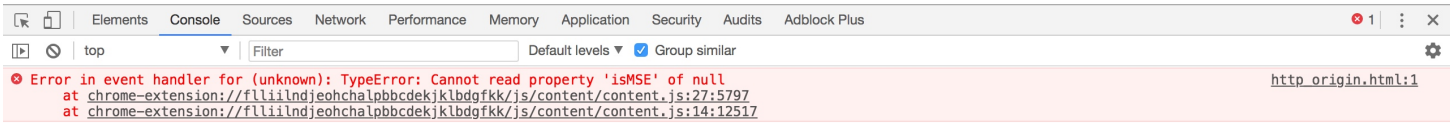
2.配置`Nginx`跨域访问

```
//运行www.xuliangwei.com域名跨域访问
[root@Nginx conf.d]# cat origin.conf
server {
    listen 80;
    server_name kt.xuliangwei.com;
    sendfile on;
    access_log /var/log/nginx/kuayue.log main;
    location ~ .*\.(html|htm)$ {
        add_header Access-Control-Allow-Origin http://www.xuliangwei.com;
        add_header Access-Control-Allow-Methods GET,POST,PUT,DELETE,OPTIONS;
        root /soft/code;
    }
}
```

没启动`header`头部访问



启动 header 头部访问



7.静态资源防盗链

盗链指的是在自己的界面展示不在自己服务器上的内容，通过技术手段获得他人服务器的资源地址，绕过别人资源展示页面，在自己页面向用户提供此内容，从而减轻自己服务器的负担，因为真实的空间和流量来自别人服务器

防盗链设置思路: 区别哪些请求是非正常用户请求

基于 http_refer 防盗链配置模块

```
Syntax: valid_referers none | blocked | server_names | string ...;
Default: —
Context: server, location
```

1.准备html文件

```
<html>
    <head>
        <meta charset="utf-8">
        <title>pachong<title>
```

```
    </head>
    <body style="background-color:red;">
    <img src="http://192.168.69.113/test.jpg">
    </body>
</html>
```

2.启动防盗链

```
//支持IP、域名、正则方式
location ~ .*\.(jpg|gif|png)$ {
valid_referers none blocked www.xuliangwei.com;
    if ($invalid_referer) {
        return 403;
    }
root /soft/code/images;
}
```

3.验证

```
//伪造协议头访问
[root@C-Server ~]# curl -e "http://www.baidu.com" -I http://192.168.69.113/test.jpg
HTTP/1.1 403 Forbidden
Server: nginx/1.12.2
Date: Tue, 17 Apr 2018 04:55:18 GMT
Content-Type: text/html
Content-Length: 169
Connection: keep-alive


//伪造协议头访问
[root@C-Server ~]# curl -e "http://www.xuliangwei.com" -I http://192.168.69.113/test.jpg
HTTP/1.1 200 OK
Server: nginx/1.12.2
Date: Tue, 17 Apr 2018 04:55:27 GMT
Content-Type: image/jpeg
Content-Length: 174315
Last-Modified: Wed, 29 Nov 2017 03:16:08 GMT
Connection: keep-alive
ETag: "5a1e2678-2a8eb"
Expires: Tue, 17 Apr 2018 16:55:27 GMT
Cache-Control: max-age=43200
Accept-Ranges: bytes
```