

2012

# 阿里技术沙龙

享技术·聚朋友

D2

## 前端性能之精确度量

aDev

iDevOps

iData TCon

```

boolean is_empty = false;
ArrayList<IP_SM_Send_List> sm_list;
IP_SM_Send_List fast_list = new IP_SM_Send_List();
fast_list.setWhere("rownum <= " + row_count);
fast_list.setOrderBy("IP_ID");
sm_list = fast_list.select(tConn);
if (sm_list.size() > 0)
{
}
else
{
}

```



```

m_service_handler.get...
low_list.setWhere("rownum <= " + row_count);
low_list.setOrderBy("IP_ID");
sm_list = low_list.select(tConn);
if (sm_list.size() > 0)
{
}
else
{
}

```

```

fast_list.setWhere("rownum <= " + row_count);
fast_list.setOrderBy("IP_ID");
sm_list = fast_list.select(tConn);

```

```

fast_list.setWhere("rownum <= " + row_count);
fast_list.setOrderBy("IP_ID");
sm_list = fast_list.select(tConn);

```

```

m_service_handler.get...
low_list.setWhere("rownum <= " + row_count);
low_list.setOrderBy("IP_ID");
sm_list = low_list.select(tConn);
if (sm_list.size() > 0)
{
}
else
{
}

```

```

fast_list.setWhere("rownum <= " + row_count);
fast_list.setOrderBy("IP_ID");
sm_list = fast_list.select(tConn);

```

# About Me

花名：阿大  [和我联系](#)

姓名：朱华军



- 2009 5.4 加入淘宝，负责淘宝旅行和彩票业务
- 目前在一淘 - UX团队担任一淘网站的前端并负责前端工具化的研究和推广工作



<http://weibo.com/realada>



<http://twitter.com/zhj3618>



[zhj3618@gmail.com](mailto:zhj3618@gmail.com)

# About Me

花名：阿大  [和我联系](#)

姓名：朱华军



- 2009 5.4 加入淘宝，负责淘宝旅行和彩票业务
- 目前在一淘 - UX团队担任一淘网站的前端并负责前端工具化的研究和推广工作

前端进化论：工具化（效率） > 工程化（规范） > 工业化（标准）

[+加标签](#)

7月11日23:55 来自iPad客户端



<http://weibo.com/realada>



<http://twitter.com/zhj3618>



[zhj3618@gmail.com](mailto:zhj3618@gmail.com)

2012

阿里技术沙龙

# About My Team

## 一淘 - UX 网站组前端团队:

- 阿里集团内部最早使用Git进行生产环境代码管理的前端团队（没有之一）
  - Git仓库代码在线浏览和分享平台
  - Git仓库管理在线维护管理系统
  - 拥有基于Git Hook的前端代码自动部署和发布系统及完善的部署日志统计和查询系统
- 拥有完善的前端Demo交付环境
  - 前端demo自动部署
  - 前端demo实时截屏



# About My Team



一淘首页

<http://demo.etao.net/ehome>

写入地址 只读地址

master ▼ Tree Commits Branches 12 Tags 29

Latest commit to the master branch

调整集分宝样式

commit [b232924f49](#) [墨峰] 2012-11-15

[ehome.git](#) /

| Name                        | Update     | Message                                      | history |
|-----------------------------|------------|--|---------|
| <a href="#">api</a>         | 2012-07-16 | [墨峰] 首页推荐排行榜                                 |         |
| <a href="#">assets</a>      | 2012-09-20 | [墨峰] 添加font文件                                |         |
| <a href="#">src</a>         | 7 days ago | [墨峰] 调整集分宝样式                                 |         |
| <a href="#">template</a>    | 7 days ago | [墨峰] 调整集分宝样式                                 |         |
| <a href="#">.gitmodules</a> | 2012-08-24 | [gitServer] Auto Update "ecommon" Remote URL |         |
| <a href="#">build.xml</a>   | 2011-12-27 | [yuli] build up to v3.0                      |         |

# About My Team



Handwritten code snippets in the background: `can is_empty = false;`, `Array<IP_SM_Send_List> sm_list;`, `IP_SM_Send_List fast_list;`, `IP_SM_Send_List();`, `Where("rownum < ", +`, `("IP_ID");`, `);`, `);`

master | Tree | Commits | Branches 12 | Tags 29

Diff selected Commits

**2012.11.15**

- 调整集分宝样式 **master** **publish/121112**  Select [Tree](#)  
[墨峰] 2012-11-15 12:11:16 commit:b232924f49
- 调整签到后按钮的宽度  Select [Tree](#)  
[墨峰] 2012-11-15 11:11:41 commit:3bf9ca7957
- 调整签到按钮的宽度  Select [Tree](#)  
[墨峰] 2012-11-15 11:11:20 commit:60073ceb68
- 调整积分显示的位置  Select [Tree](#)  
[墨峰] 2012-11-15 10:11:44 commit:2293643e32

**2012.11.13**

- 替换css sprite  Select [Tree](#)  
[墨峰] 2012-11-13 14:11:39 commit:de22c05d0d



# About My Team

## 个人设置

- 👤 基本信息
- 🔑 公钥信息**
- 📦 我的仓库
- 📌 我的部署

## 我的管理

- ☰ 分组管理
- 📦 仓库管理

### 公钥列表(4)

[添加](#)

|                  |   |                     |
|------------------|---|---------------------|
| ux.etao.net:ada  | c8:1c:ab:50:71:66:ed:04:bb:2d:e2:a3:61:bc:09:85 | 2012-10-18 21:44:59 |
| git.etao.net:git | 53:59:b5:a1:e7:cb:0d:8c:ed:0a:a3:bb:0a:42:b4:95 | 2012-10-18 21:42:03 |
| ued.etao.net:ada | 6d:42:9c:dc:71:cb:ef:e6:55:d1:c6:e8:8c:02:6b:9a | 2012-10-18 21:11:27 |
| air              | d7:b1:14:63:17:23:05:30:e3:2f:6e:4f:8d:cb:d4:e8 | 2012-09-05 09:31:25 |

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2012

阿里技术沙龙

can is\_empty = false;  
Array<SM\_Send\_List> sm\_list;  
SM\_Send\_List fast\_list;  
SM\_Send\_List();  
(rownum < "+ o  
ID");



# About My Team

## 个人设置

- 👤 基本信息
- 🔒 公钥信息
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- 📍 我的部署

## 我的管理

- 📁 分组管理
- 📦 仓库管理

### 公钥列表 / 添加公钥

公钥名称

例如：我的mac电脑、我的Ubuntu虚拟机、公司电脑等等~

公钥信息  
ssh-rsa  
AAAAB3NzaC1yc2EAAAABIwAAAQEAyTMPPkIRg0cmjBP/OCHahil  
2PYU1Qld3TGzT4cBuNGBLfkK11/Owv5mgblRFXPazhUvh/PLd19G  
4eAnpCXTDLiIG716o5JMdEFtZ2UEe1MQ61ajcsylkJP7zKkcHLnHI7  
UsK9EWUnSrkAWucA674aEv1h6DRDNmQ1PAJGXl24NyymHn81l  
hxjAXV4ufK+qoQsO1+jerg+0JFMuhUyzk1h3uATIUqhuRFdHh+yAEP

请将公钥文件 (\*.pub文件) 的内容粘贴到这里!

保存

删除





# About My Team

```
can is_empty = false;  
Array<SM_Send_List> sm_list;  
IP: SM_Send_List fast_list < " + o + SM_Send_List();  
e(rownum < " + o + SM_Send_List());
```

## 个人设置

- 👤 基本信息
- 🔑 公钥信息
- 📁 我的仓库
- 📍 我的部署

## 我的管理

- ☰ 分组管理
- 📁 仓库管理

### 仓库列表 / 编辑仓库

仓库名称  .git  
写入地址: git@git.etao.net:ehome.git  
只读地址: http://git.etao.net/ehome.git

详细说明

标签

编码

Demo  http://demo.etao.net/ehome

在webGit隐藏  是  否

保存

删除

△权限管理

# About My Team



```
zhj3618@air tsrp (demo) $ git push origin demo
Counting objects: 19, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (6/6), done.
Writing objects: 100% (7/7), 741 bytes, done.
Total 7 (delta 6), reused 2 (delta 1)
remote: 准备同步demo...
remote: 清理demo环境 [Success]
remote: 更新demo [Success]
remote: demo访问路径: http://demo.etao.net/tsrp
To git@git.etao.net:tsrp.git
 * [new branch]      demo -> demo
zhj3618@air tsrp (demo) $
```







# About My Team

```

ean is_empty = false;
Array<IP_SM_Send_List> sm_list;
IP_SM_Send_List fast_list;
fast_list = IP_SM_Send_List();
fast_list.Where("rownum < " + order_id);
if (sm_list.Where("rownum < " + order_id).Count() > 0)
{
    sm_list = normal_list.Select("rownum < " + order_id);
    insertinfo(sm_list, m_service);
}

```



ehome  
一淘首页

查看Demo 代码仓库

eseller  
开放搜索商家入驻注册页面

查看Demo 代码仓库

# WE WANT YOU

[ada@taobao.com](mailto:ada@taobao.com)

esrp

etop

etuan

# 回到主题

# 前端性能之精确度量



# 思考

## 如何用JS统计打开一个网页所用的时间



# 传统方式

```
<script type="text/javascript">
var t0 = new Date().getTime();
window.onload = function(){
    var now = new Date().getTime();
    var latency = now - t0;
    alert("page loading time: " + latency);
}
</script>
```



# 传统方式

```
<script type="text/javascript">
var t0 = new Date().getTime();
window.onload = function(){
  var now = new Date().getTime();
  var latency = now - t0;
  alert("page loading time: " + latency);
}
</script>
```

缺点：？

没有包含数据从后端返回到浏览器所消耗的时间

# 传统方式二

```
<script type="text/javascript">
var t0 = 1351323103268 ; // 后端输出的服务器时间戳
window.onload = function(){
    var now = new Date().getTime();
    var latency = now - t0;
    alert("page loading time: " + latency);
}
</script>
```

</script>

# 传统方式二

```
<script type="text/javascript">
var t0 = 1351323103268 ; // 后端输出的服务器时间戳
window.onload = function(){
    var now = new Date().getTime();
    var latency = now - t0;
    alert("page loading time: " + latency);
}
</script>
```

缺点：？

前后端需要进行时间同步修正，处理复杂

仍然无法统计到后端返回内容前所消耗的时间

# 传统方式三

```
ean is_empty = false;  
Array<IP_SM_Send_List> sm_list;  
IP_SM_Send_List fast_list;  
fast_list.setWhere("rownum <=" + row count);  
sm_list = fast_list.select(tlconn);  
if (sm_list.size() > 0)  
{  
    IP_SM_Send_List normal_list;  
    normal_list.setWhere("normal_priority = 1");  
    normal_list.select(tlconn);  
}
```



```
<!-- page 1 -->  
<script type="text/javascript">  
window.onbeforeunload = function() {  
    var t0 = new Date().getTime();  
    // 将离开page1页面的时间写入cookie  
    KISSY.Cookie.set("t0", t0);  
}  
</script>
```

```
<!-- page 2 -->  
<script type="text/javascript">  
// 从cookie获取page1页面离开时纪录的时间  
var t0 = KISSY.Cookie.get("t0");  
window.onload = function() {  
    var now = new Date().getTime();  
    var latency = now - t0;  
    alert("page loading time: " + latency);  
}  
</script>
```

# 传统方式三

```
<!-- page 1 -->
<script type="text/javascript">
window.onbeforeunload = function(){
  var t0 = new Date().getTime();
  // 将离开page1页面的时间写入cookie
  KISSY.Cookie.set("t0", t0);
}
</script>
```



```
<!-- page 2 -->
<script type="text/javascript">
// 从cookie获取page1页面离开时纪录的时间
var t0 = KISSY.Cookie.get("t0");
window.onload = function(){
  var now = new Date().getTime();
  var latency = now - t0;
  alert("page loading time: " + latency);
}
</script>
```

# 传统方式三

```
<!-- page 1 -->
<script type="text/javascript">
window.onbeforeunload = function(){
    var t0 = new Date().getTime();
    // 将离开page1页面的时间写入cookie
    KISSY.Cookie.set("t0", t0);
}
</script>
```

```
<!-- page 2 -->
<script type="text/javascript">
// 从cookie获取page1页面离开时纪录的时间
var t0 = KISSY.Cookie.get("t0");
window.onload = function(){
    var now = new Date().getTime();
    var latency = now - t0;
    alert("page loading time: " + latency);
}
</script>
```

缺点：？

页面间关联依赖，部署和实现复杂

无法统计直接进入的页面

```
can is_empty = false;
ArrayList<IIP_SM_Send_List> sm_list;
IIP_SM_Send_List fast_list = new IIP_SM_Send_List();
fast_list.setWhere("rownum <= " + row_count);
sm_list = fast_list.orderBy("IIP_ID");
if (sm_list.size() > 0) {
    IIP_SM_Send_List normal_list = new IIP_SM_Send_List();
    normal_list.setWhere("IIP_Services in (" + m_service_handler.getServiceNames() + ")");
    sm_list.addAll(normal_list);
    insertInfo(sm_list);
}
```

只有一个全局的时间，没有各个阶段的精确统计

统计在页面加在过程中进行，脚本的执行本身影响统计结果



```
can is_empty = false;
ArrayList<IIP_SM_Send_List> sm_list;
IIP_SM_Send_List fast_list = new IIP_SM_Send_List();
fast_list.setWhere("rownum <= " + row_count);
fast_list.setOrderBy("IIP_ID");
sm_list = fast_list.select(tl);
if (sm_list.size() > 0)
{
    IIP_SM_Send_List normal
    normal.li
    normal.li
    normal.li
    sm_li
    if (sm
    {
    ince
    }
```





```
can_is_empty = false;
ArrayList<IP_SM_Send_List> sm_list;
IP_SM_Send_List fast_list = new IP_SM_Send_List();
fast_list.setWhere("rownum <= " + row_count);
fast_list.setOrderBy("IP_ID");
sm_list = fast_list.select(tlConn);
```

```
if (sm_list.size() > 0)
{
    IP_SM_Send_List normal_list = new IP_SM_Send_List();
    normal_list.setWhere("rownum <= " + row_count);
    normal_list.setOrderBy("IP_ID");
    sm_list = normal_list.select(tlConn);
}
else
{
    insertInfo(sm_list);
}
```



```
can is_empty = false;  
ArrayList<IP_SM_Send_List> sm_list;  
IP_SM_Send_List fast_list = new IP_SM_Send_List();  
fast_list.setWhere("rownum <= " + row_count);  
fast_list.setOrderBy("IP_ID");  
sm_list = fast_list.select("rownum");  
if (sm_list.size() >  
{  
else  
}
```



```
can is_empty = false;
ArrayList<IIP_SM_Send_List> sm_list;
IIP_SM_Send_List fast_list = new IIP_SM_Send_List();
fast_list.setWhere("rownum <= " + row_count);
fast_list.setOrderBy("IIP_ID");
sm_list = fast_list.select("rownum");
if (sm_list.size() > 0)
{
    //
}
else
{
}
```

# W3C Navigation Timing API



- <http://www.w3.org/TR/navigation-timing/>
- <https://developer.mozilla.org/en-US/docs/API/navigationTiming>
- [http://msdn.microsoft.com/en-us/library/ff974680\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/ff974680(v=vs.85).aspx)

# W3C Navigation Timing API

定义了浏览器中一个与页面时间信息相关的JavaScript接口：

**PerformanceNavigation**



`window.performance.navigation`

**PerformanceTiming**



`window.performance.timing`

# W3C Navigation Timing API

**window.performance.navigation**

**window.performance.timing**



# W3C Navigation Timing API

`window.performance.navigation`

`window.performance.timing`

`>>> console.dir(window.performance)`

▼ navigation

TYPE\_BACK\_FORWARD

TYPE\_NAVIGATE

TYPE\_RELOAD

TYPE\_RESERVED

redirectCount

type

▶ \_\_proto\_\_

▶ timing

PerformanceNavigation { constructor=...

2

0

1

255

0

1

[xpconnect wrapped native prototype] {

PerformanceTiming { constructor=Perf...

# W3C Navigation Timing API

`window.performance.navigation`

`window.performance.timing`

`>>> console.dir(window.performance)`

▶ navigation

▼ timing

connectEnd

connectStart

domComplete

domContentLoadedEventEnd

domContentLoadedEventStart

domInteractive

domLoading

domainLookupEnd

domainLookupStart

fetchStart

loadEventEnd

loadEventStart

PerformanceNavigation { constructor=PerformanceNavigation

PerformanceTiming { constructor=PerformanceTiming

1351410372171

1351410372171

1351410376848

1351410373805

1351410373766

1351410373765

1351410372299

1351410372170

1351410372170

1351410372171

1351410376849

1351410376848

# 分析

## 打开一个网页要经过哪些步骤



点击连接

数据库查询

建立连接

DNS查询与解析

输入网址

渲染页面

返回数据

业务处理

执行脚本

加载图片



```
can_is_empty = false;  
Array<IP_SM_Send_List> sm_list;  
IP_SM_Send_List fast_list = new IP_SM_Send_List();  
fast_list.setWhere("rownum <= " + row_count);  
sm_list.setOrderBy("IP_ID");  
if (sm_list.size() > 0) {  
    IP_SM_Send_List normal_list = new IP_SM_Send_List();  
    normal_list.setWhere("IP_ServiceID in (" + m_service_IDs + ")");  
    normal_list.setWhere("rownum <= " + row_count);  
    normal_list.setOrderBy("IP_ID");  
    normal_list.select(tlConn);  
    insertInfo(sm_list, m_service_handler);  
} else {  
    // ...  
}
```



# 分析

## 打开一个网页要经过哪些步骤



network

- 点击连接
- 输入网址
- DNS查询与解析
- 建立连接

server

- 数据库查询
- 业务处理
- 返回数据

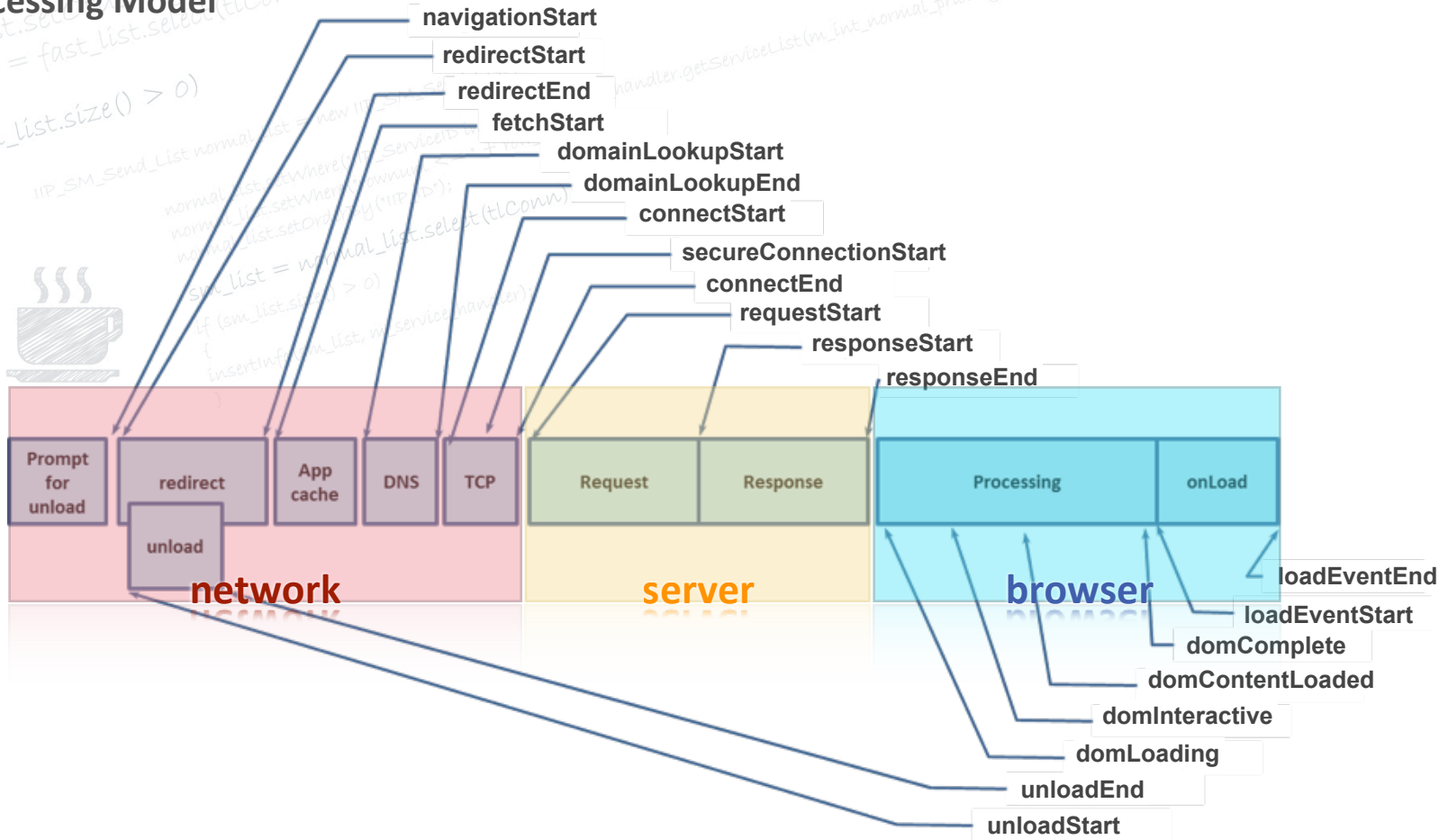
browser

- 渲染页面
- 执行脚本
- 加载图片

```
can is_empty = false;
Array<IP_SM_Send_List> sm_list;
IP_SM_Send_List fast_list = new IP_SM_Send_List();
fast_list.setWhere("rownum <= " + row_count);
sm_list = fast_list.select(tlConn);
if (sm_list.size() > 0)
{
    IP_SM_Send_List normal_list = new IP_SM_Send_List();
    normal_list.setWhere("IP_ServiceID in (" + m_service_IDs + ")");
    normal_list.setWhere("rownum <= " + row_count);
    normal_list.setOrderBy("IP_ID");
    sm_list = normal_list.select(tlConn);
    if (sm_list.size() > 0)
    {
        insertInfo(sm_list, m_service_handler);
    }
}
else
{
}
```

# W3C Navigation Timing API

## Processing Model



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
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- domainLookupStart
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- fetchStart
- connectStart
- secureConnectionStart
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- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

This attribute must return the time immediately after the user agent finishes prompting to unload the previous document. If there is no previous document, this attribute must return the same value as fetchStart

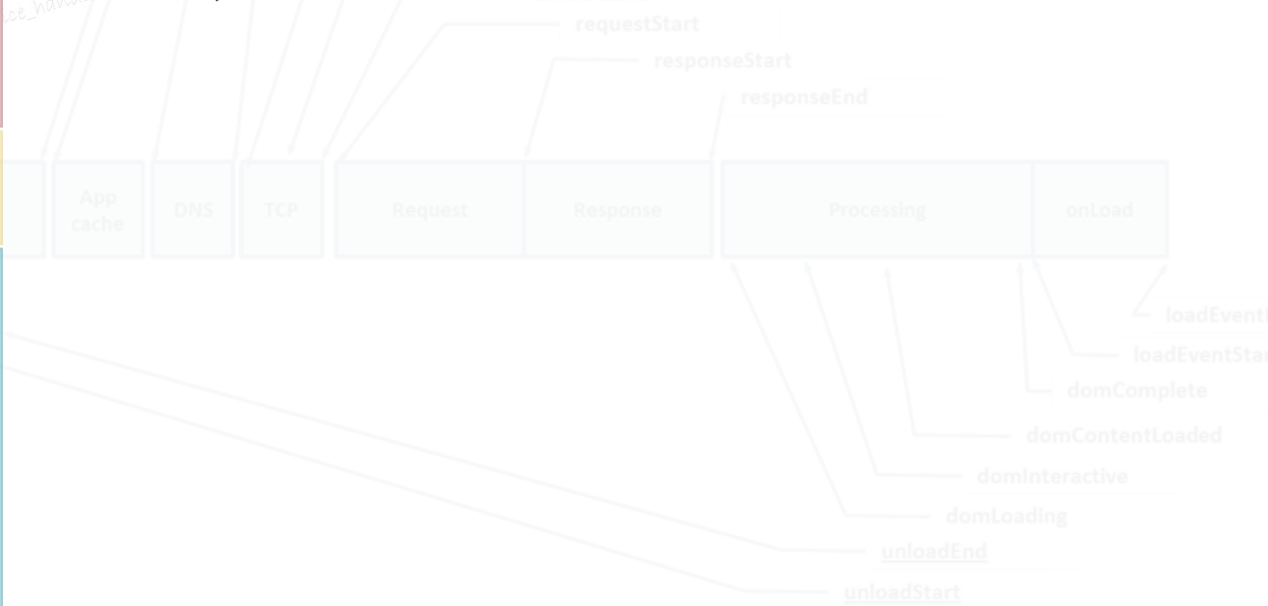


# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

If there are HTTP redirects or equivalent when navigating and if all the redirects or equivalent are from the same origin, this attribute must return the starting time of the fetch that initiates the redirect. Otherwise, this attribute must return zero



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

If there are HTTP redirects or equivalent when navigating and all redirects and equivalents are from the same origin, this attribute must return the time immediately after receiving the last byte of the response of the last redirect. Otherwise, this attribute must return zero



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

This attribute must return the time immediately before the user agent starts the domain name lookup for the current document. If a persistent connection is used or the current document is retrieved from relevant application caches or local resources, this attribute must return the same value as **fetchStart**



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

This attribute must return the time immediately after the user agent finishes the domain name lookup for the current document. If a persistent connection is used or the current document is retrieved from relevant application caches or local resources, this attribute must return the same value as **fetchStart**





# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

If the new resource is to be fetched using HTTP GET or equivalent, fetchStart must return the time immediately before the user agent starts checking any relevant application caches. Otherwise, it must return the time when the user agent starts fetching the resource



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

This attribute must return the time immediately before the user agent start establishing the connection to the server to retrieve the document. If a persistent connection is used or the current document is retrieved from relevant application caches or local resources, this attribute must return value of **domainLookupEnd**



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

This attribute is optional. User agents that don't have this attribute available must set it as undefined. When this attribute is available, if the scheme of the current page is HTTPS, this attribute must return the time immediately before the user agent starts the handshake process to secure the current connection. If this attribute is available but HTTPS is not used, this attribute must return zero



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

- navigationStart
- redirectStart
- redirectEnd
- domainLookupStart
- domainLookupEnd
- fetchStart
- connectStart
- secureConnectionStart
- connectEnd
- requestStart
- responseStart
- responseEnd
- unloadEventStart
- unloadEventEnd
- domLoading
- domInteractive
- domContentLoadedEventStart
- domContentLoadedEventEnd
- domComplete
- loadEventStart
- loadEventEnd

This attribute must return the time immediately after the user agent finishes establishing the connection to the server to retrieve the current document. If a persistent connection is used or the current document is retrieved from relevant application caches or local resources, this attribute must return the value of domainLookupEnd



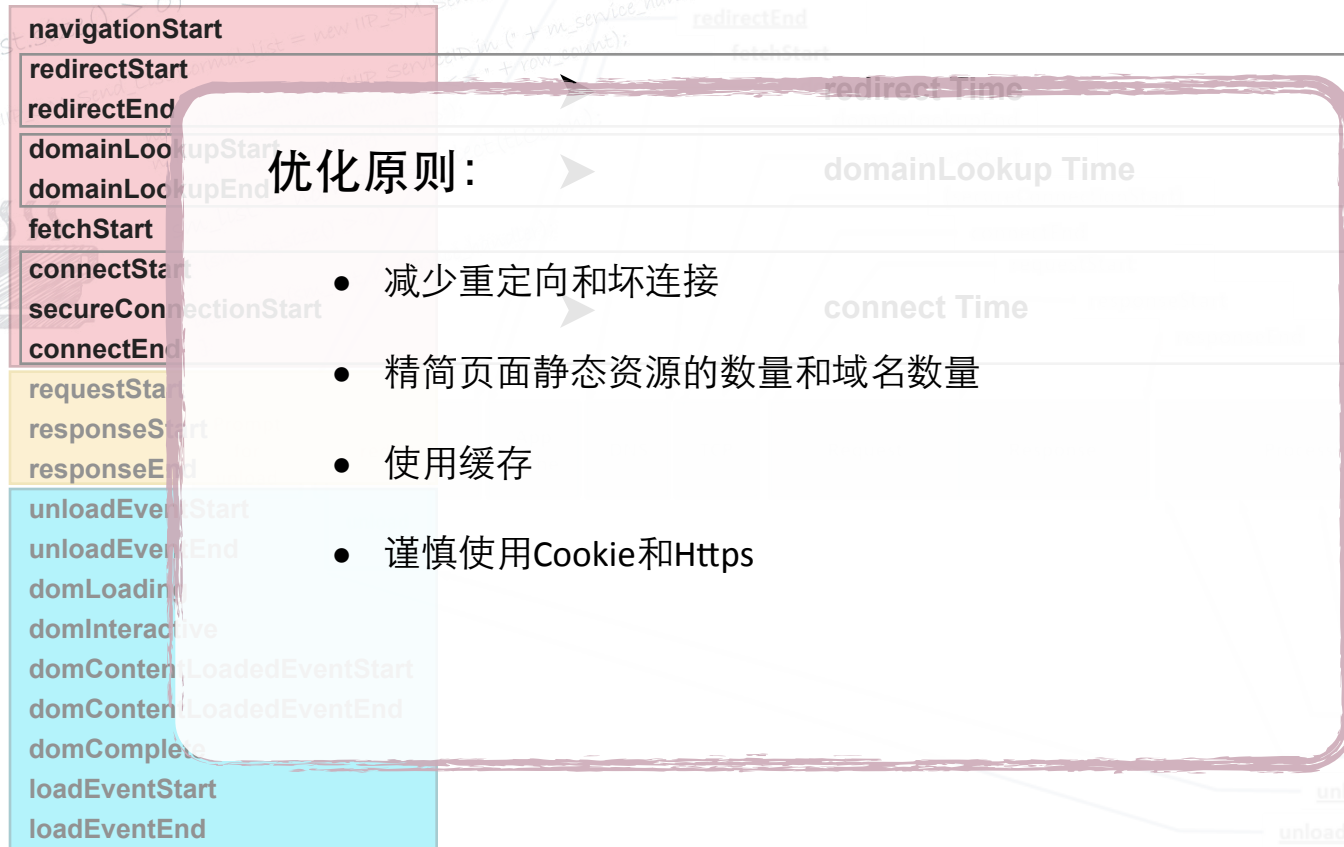
# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |                   |
|----------------------------|---|-------------------|
| navigationStart            |   |                   |
| redirectStart              | ➤ | redirect Time     |
| redirectEnd                |   |                   |
| domainLookupStart          | ➤ | domainLookup Time |
| domainLookupEnd            |   |                   |
| fetchStart                 |   |                   |
| connectStart               | ➤ | connect Time      |
| secureConnectionStart      |   |                   |
| connectEnd                 |   |                   |
| requestStart               |   |                   |
| responseStart              |   |                   |
| responseEnd                |   |                   |
| unloadEventStart           |   |                   |
| unloadEventEnd             |   |                   |
| domLoading                 |   |                   |
| domInteractive             |   |                   |
| domContentLoadedEventStart |   |                   |
| domContentLoadedEventEnd   |   |                   |
| domComplete                |   |                   |
| loadEventStart             |   |                   |
| loadEventEnd               |   |                   |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |
|----------------------------|---|
| navigationStart            |   |
| redirectStart              | ➤ <b>redirect Time</b>  |
| redirectEnd                |   |
| domainLookupStart          | ➤ <b>domainLookup Time</b>  |
| domainLookupEnd            |   |
| fetchStart                 |   |
| connectStart               | ➤ <b>connect Time</b>   |
| secureConnectionStart      |   |
| connectEnd                 |   |
| requestStart               | This attribute must return the time immediately before the user agent starts requesting the current document from the server, or from relevant application caches or from local resources |
| responseStart              |   |
| responseEnd                |   |
| unloadEventStart           |   |
| unloadEventEnd             |   |
| domLoading                 |   |
| domInteractive             |   |
| domContentLoadedEventStart |   |
| domContentLoadedEventEnd   |   |
| domComplete                |   |
| loadEventStart             |   |
| loadEventEnd               |   |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |
|----------------------------|---|
| navigationStart            |   |
| redirectStart              | ▶ redirect Time   |
| redirectEnd                |   |
| domainLookupStart          | ▶ domainLookup Time   |
| domainLookupEnd            |   |
| fetchStart                 | ▶ connect Time  |
| connectStart               |   |
| secureConnectionStart      |   |
| connectEnd                 |   |
| requestStart               | This attribute must return the time immediately after the user agent receives the first byte of the response from the server, or from relevant application caches or from local resources |
| responseStart              |   |
| responseEnd                |   |
| unloadEventStart           |   |
| unloadEventEnd             |   |
| domLoading                 |   |
| domInteractive             |   |
| domContentLoadedEventStart |   |
| domContentLoadedEventEnd   |   |
| domComplete                |   |
| loadEventStart             |   |
| loadEventEnd               |   |



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |                   |
|----------------------------|---|-------------------|
| navigationStart            |   |                   |
| redirectStart              | ➤ | redirect Time     |
| redirectEnd                |   |                   |
| domainLookupStart          | ➤ | domainLookup Time |
| domainLookupEnd            |   |                   |
| fetchStart                 |   |                   |
| connectStart               | ➤ | connect Time      |
| secureConnectionStart      |   |                   |
| connectEnd                 |   |                   |
| requestStart               |   |                   |
| responseStart              |   |                   |
| responseEnd                |   |                   |
| unloadEventStart           |   |                   |
| unloadEventEnd             |   |                   |
| domLoading                 |   |                   |
| domInteractive             |   |                   |
| domContentLoadedEventStart |   |                   |
| domContentLoadedEventEnd   |   |                   |
| domComplete                |   |                   |
| loadEventStart             |   |                   |
| loadEventEnd               |   |                   |

This attribute must return the time immediately after the user agent receives the last byte of the current document or immediately before the transport connection is closed, whichever comes first. The document here can be received either from the server, relevant application caches or from local resources

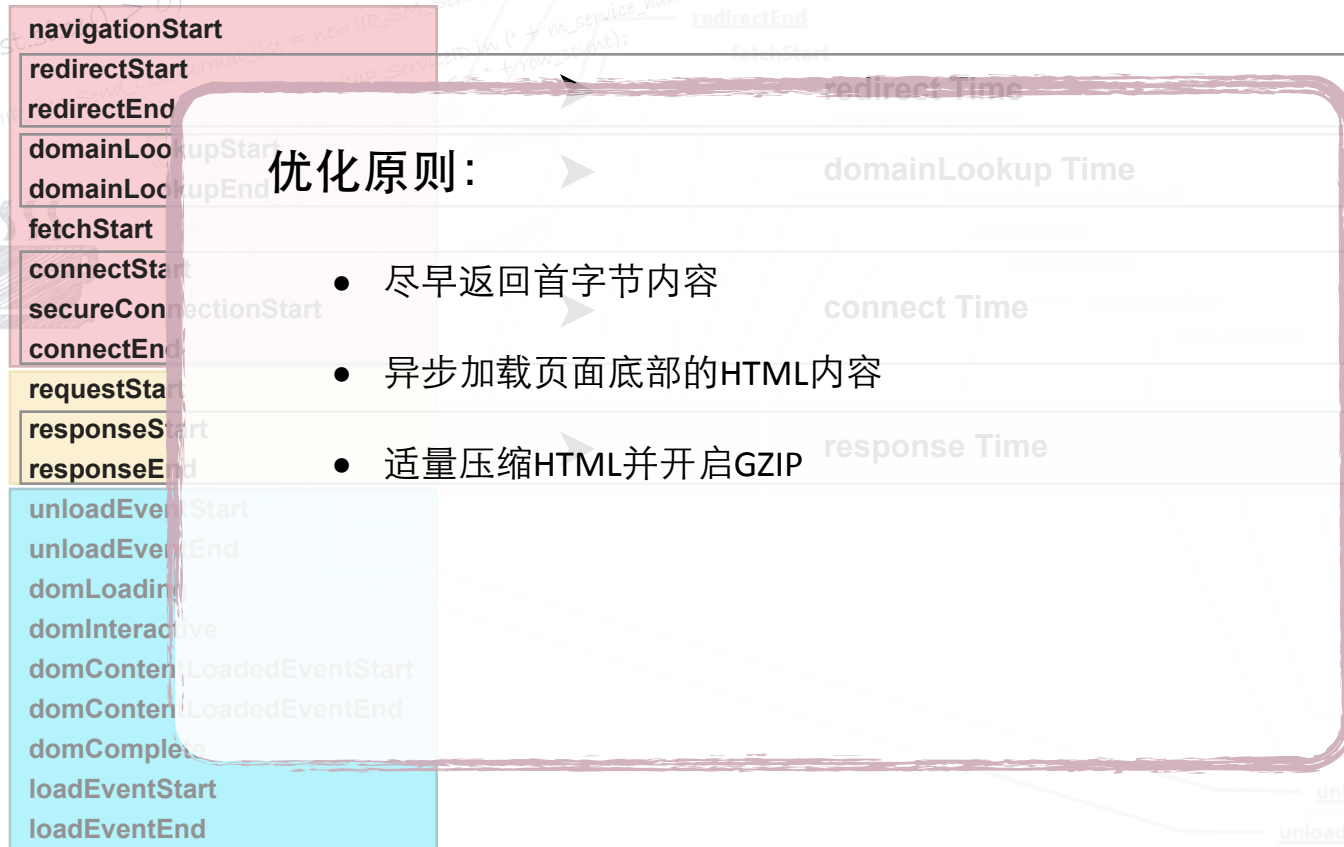
# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |                   |
|----------------------------|---|-------------------|
| navigationStart            |   |                   |
| redirectStart              | ➤ | redirect Time     |
| redirectEnd                |   |                   |
| domainLookupStart          | ➤ | domainLookup Time |
| domainLookupEnd            |   |                   |
| fetchStart                 |   |                   |
| connectStart               | ➤ | connect Time      |
| secureConnectionStart      |   |                   |
| connectEnd                 |   |                   |
| requestStart               |   |                   |
| responseStart              | ➤ | response Time     |
| responseEnd                |   |                   |
| unloadEventStart           |   |                   |
| unloadEventEnd             |   |                   |
| domLoading                 |   |                   |
| domInteractive             |   |                   |
| domContentLoadedEventStart |   |                   |
| domContentLoadedEventEnd   |   |                   |
| domComplete                |   |                   |
| loadEventStart             |   |                   |
| loadEventEnd               |   |                   |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |   |
|----------------------------|---|---|
| navigationStart            |   |   |
| redirectStart              | ➤ | redirect Time   |
| redirectEnd                |   |   |
| domainLookupStart          | ➤ | domainLookup Time   |
| domainLookupEnd            |   |   |
| fetchStart                 |   |   |
| connectStart               | ➤ | connect Time  |
| secureConnectionStart      |   |   |
| connectEnd                 |   |   |
| requestStart               |   |   |
| responseStart              | ➤ | response Time   |
| responseEnd                |   |   |
| unloadEventStart           |   | If the previous document and the current document have the same origin, this attribute must return the time immediately before the user agent starts the unload event of the previous document. If there is no previous document or the previous document has a different origin than the current document, this attribute must return zero |
| unloadEventEnd             |   |   |
| domLoading                 |   |   |
| domInteractive             |   |   |
| domContentLoadedEventStart |   |   |
| domContentLoadedEventEnd   |   |   |
| domComplete                |   |   |
| loadEventStart             |   |   |
| loadEventEnd               |   |   |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                       |   |                   |
|-----------------------|---|-------------------|
| navigationStart       |   |                   |
| redirectStart         | ➤ | redirect Time     |
| redirectEnd           |   |                   |
| domainLookupStart     | ➤ | domainLookup Time |
| domainLookupEnd       |   |                   |
| fetchStart            |   |                   |
| connectStart          | ➤ | connect Time      |
| secureConnectionStart |   |                   |
| connectEnd            |   |                   |
| requestStart          |   |                   |
| responseStart         | ➤ | response Time     |
| responseEnd           |   |                   |

unloadEventStart  
unloadEventEnd  
domLoading  
domInteractive  
domContentLoadedEventStart  
domContentLoadedEventEnd  
domComplete  
loadEventStart  
loadEventEnd

If the previous document and the current document have the same same origin, this attribute must return the time immediately after the user agent finishes the unload event of the previous document. If there is no previous document or the previous document has a different origin than the current document or the unload is not yet completed, this attribute must return zero

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |  |
|----------------------------|---|--|
| navigationStart            |   |  |
| redirectStart              | ➤ | redirect Time  |
| redirectEnd                |   |  |
| domainLookupStart          | ➤ | domainLookup Time  |
| domainLookupEnd            |   |  |
| fetchStart                 |   |  |
| connectStart               | ➤ | connect Time   |
| secureConnectionStart      |   |  |
| connectEnd                 |   |  |
| requestStart               |   |  |
| responseStart              | ➤ | response Time  |
| responseEnd                |   |  |
| unloadEventStart           |   | This attribute must return the time immediately before the user agent sets the current document readiness to "loading" |
| unloadEventEnd             |   |  |
| domLoading                 |   |  |
| domInteractive             |   |  |
| domContentLoadedEventStart |   |  |
| domContentLoadedEventEnd   |   |  |
| domComplete                |   |  |
| loadEventStart             |   |  |
| loadEventEnd               |   |  |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |   |
|----------------------------|---|---|
| navigationStart            |   |   |
| redirectStart              | ➤ | redirect Time   |
| redirectEnd                |   |   |
| domainLookupStart          | ➤ | domainLookup Time   |
| domainLookupEnd            |   |   |
| fetchStart                 |   |   |
| connectStart               | ➤ | connect Time  |
| secureConnectionStart      |   |   |
| connectEnd                 |   |   |
| requestStart               |   |   |
| responseStart              | ➤ | response Time   |
| responseEnd                |   |   |
| unloadEventStart           |   | <p>This attribute must return the time immediately before the user agent sets the current document readiness to "interactive"</p> |
| unloadEventEnd             |   |   |
| domLoading                 |   |   |
| domInteractive             |   |   |
| domContentLoadedEventStart |   |   |
| domContentLoadedEventEnd   |   |   |
| domComplete                |   |   |
| loadEventStart             |   |   |
| loadEventEnd               |   |   |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |  |
|----------------------------|---|--|
| navigationStart            |   |  |
| redirectStart              | ➤ | redirect Time  |
| redirectEnd                |   |  |
| domainLookupStart          | ➤ | domainLookup Time  |
| domainLookupEnd            |   |  |
| fetchStart                 |   |  |
| connectStart               | ➤ | connect Time   |
| secureConnectionStart      |   |  |
| connectEnd                 |   |  |
| requestStart               |   |  |
| responseStart              | ➤ | response Time  |
| responseEnd                |   |  |
| unloadEventStart           |   | This attribute must return the time immediately before the user agent fires the DOMContentLoaded event at the Document |
| unloadEventEnd             |   |  |
| domLoading                 |   |  |
| domInteractive             |   |  |
| domContentLoadedEventStart |   |  |
| domContentLoadedEventEnd   |   |  |
| domComplete                |   |  |
| loadEventStart             |   |  |
| loadEventEnd               |   |  |



# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |   |
|----------------------------|---|---|
| navigationStart            |   |   |
| redirectStart              | ➤ | redirect Time   |
| redirectEnd                |   |   |
| domainLookupStart          | ➤ | domainLookup Time   |
| domainLookupEnd            |   |   |
| fetchStart                 |   |   |
| connectStart               | ➤ | connect Time  |
| secureConnectionStart      |   |   |
| connectEnd                 |   |   |
| requestStart               |   |   |
| responseStart              | ➤ | response Time   |
| responseEnd                |   |   |
| unloadEventStart           |   | This attribute must return the time immediately after the document's DOMContentLoaded event completes |
| unloadEventEnd             |   |   |
| domLoading                 |   |   |
| domInteractive             |   |   |
| domContentLoadedEventStart |   |   |
| domContentLoadedEventEnd   |   |   |
| domComplete                |   |   |
| loadEventStart             |   |   |
| loadEventEnd               |   |   |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |   |
|----------------------------|---|---|
| navigationStart            |   |   |
| redirectStart              | ➤ | redirect Time   |
| redirectEnd                |   |   |
| domainLookupStart          | ➤ | domainLookup Time   |
| domainLookupEnd            |   |   |
| fetchStart                 |   |   |
| connectStart               | ➤ | connect Time  |
| secureConnectionStart      |   |   |
| connectEnd                 |   |   |
| requestStart               |   |   |
| responseStart              | ➤ | response Time   |
| responseEnd                |   |   |
| unloadEventStart           |   | This attribute must return the time immediately before the user agent sets the current document readiness to "complete" |
| unloadEventEnd             |   |   |
| domLoading                 |   |   |
| domInteractive             |   |   |
| domContentLoadedEventStart |   |   |
| domContentLoadedEventEnd   |   |   |
| domComplete                |   |   |
| loadEventStart             |   |   |
| loadEventEnd               |   |   |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |   |
|----------------------------|---|---|
| navigationStart            |   |   |
| redirectStart              | ➤ | redirect Time   |
| redirectEnd                |   |   |
| domainLookupStart          | ➤ | domainLookup Time   |
| domainLookupEnd            |   |   |
| fetchStart                 |   |   |
| connectStart               | ➤ | connect Time  |
| secureConnectionStart      |   |   |
| connectEnd                 |   |   |
| requestStart               |   |   |
| responseStart              | ➤ | response Time   |
| responseEnd                |   |   |
| unloadEventStart           |   | <p>This attribute must return the time immediately before the load event of the current document is fired. It must return zero when the load event is not fired yet</p> |
| unloadEventEnd             |   |   |
| domLoading                 |   |   |
| domInteractive             |   |   |
| domContentLoadedEventStart |   |   |
| domContentLoadedEventEnd   |   |   |
| domComplete                |   |   |
| loadEventStart             |   |   |
| loadEventEnd               |   |   |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |  |
|----------------------------|---|--|
| navigationStart            |   |  |
| redirectStart              | ➤ | redirect Time  |
| redirectEnd                |   |  |
| domainLookupStart          | ➤ | domainLookup Time  |
| domainLookupEnd            |   |  |
| fetchStart                 |   |  |
| connectStart               | ➤ | connect Time   |
| secureConnectionStart      |   |  |
| connectEnd                 |   |  |
| requestStart               |   |  |
| responseStart              | ➤ | response Time  |
| responseEnd                |   |  |
| unloadEventStart           |   | This attribute must return the time when the load event of the current document is completed. It must return zero when the load event is not fired or is not completed |
| unloadEventEnd             |   |  |
| domLoading                 |   |  |
| domInteractive             |   |  |
| domContentLoadedEventStart |   |  |
| domContentLoadedEventEnd   |   |  |
| domComplete                |   |  |
| loadEventStart             |   |  |
| loadEventEnd               |   |  |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|                            |   |                            |
|----------------------------|---|----------------------------|
| navigationStart            |   |                            |
| redirectStart              | ➤ | redirect Time              |
| redirectEnd                |   |                            |
| domainLookupStart          | ➤ | domainLookup Time          |
| domainLookupEnd            |   |                            |
| fetchStart                 |   |                            |
| connectStart               | ➤ | connect Time               |
| secureConnectionStart      |   |                            |
| connectEnd                 |   |                            |
| requestStart               |   |                            |
| responseStart              | ➤ | response Time              |
| responseEnd                |   |                            |
| unloadEventStart           | ➤ | unloadEvent Time           |
| unloadEventEnd             |   |                            |
| domLoading                 |   |                            |
| domInteractive             |   |                            |
| domContentLoadedEventStart | ➤ | domContentLoadedEvent Time |
| domContentLoadedEventEnd   |   |                            |
| domComplete                |   |                            |
| loadEventStart             | ➤ | loadEvent Time             |
| loadEventEnd               |   |                            |

# W3C Navigation Timing API

## PerformanceTiming interface Attribute



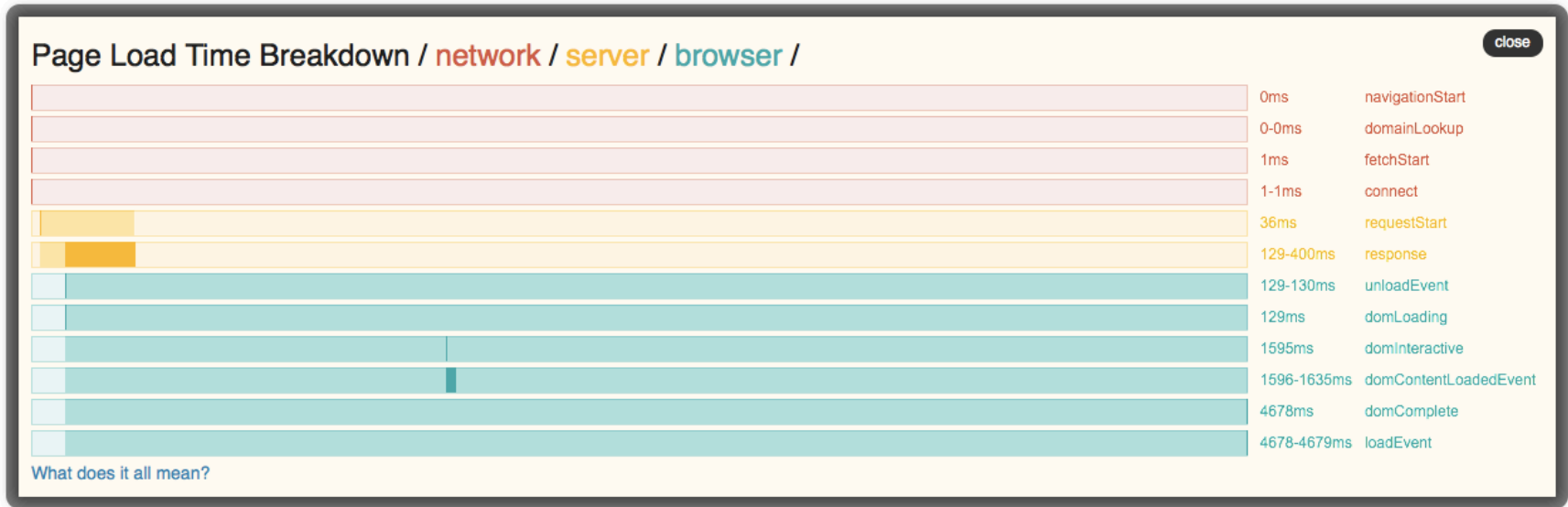
# W3C Navigation Timing API

## PerformanceTiming interface Attribute

|               |                            |      |   |     |                            |
|---------------|----------------------------|------|---|-----|----------------------------|
| 1351410372170 | navigationStart            | 0    |   |     |                            |
| 0             | redirectStart              | 0    | ▶ | 0   | redirect Time              |
| 0             | redirectEnd                | 0    |   |     |                            |
| 1351410372170 | domainLookupStart          | 0    | ▶ | 0   | domainLookup Time          |
| 1351410372170 | domainLookupEnd            | 0    |   |     |                            |
| 1351410372171 | fetchStart                 | 1    |   |     |                            |
| 1351410372171 | connectStart               | 1    |   |     |                            |
| 0             | secureConnectionStart      | 0    | ▶ | 0   | connect Time               |
| 1351410372171 | connectEnd                 | 1    |   |     |                            |
| 1351410372206 | requestStart               | 36   |   |     |                            |
| 1351410372299 | responseStart              | 129  | ▶ | 271 | response Time              |
| 1351410372570 | responseEnd                | 400  |   |     |                            |
| 1351410372299 | unloadEventStart           | 129  | ▶ | 1   | unloadEvent Time           |
| 1351410372300 | unloadEventEnd             | 130  |   |     |                            |
| 1351410372299 | domLoading                 | 129  |   |     |                            |
| 1351410373765 | domInteractive             | 1595 |   |     |                            |
| 1351410373766 | domContentLoadedEventStart | 1596 | ▶ | 39  | domContentLoadedEvent Time |
| 1351410373805 | domContentLoadedEventEnd   | 1635 |   |     |                            |
| 1351410376848 | domComplete                | 4678 |   |     |                            |
| 1351410376848 | loadEventStart             | 4678 | ▶ | 1   | loadEvent Time             |
| 1351410376849 | loadEventEnd               | 4679 |   |     |                            |

# W3C Navigation Timing API

可视化工具: Breaking Down onLoad



<http://kaaes.github.com/timing/>







# 现状

## 标准制定进度:



1 Submissions

2 Notes

3 Working Groups

2010 08.18

4 Working Drafts

2010 10.26

5 Candidate Recommendations

2011 03.15

6 Proposed Recommendations

2012 07.26

7 Recommendations



# 现状

## 浏览器支持情况:



Internet Explorer 9

standards mode



6+



7+



4.0+

# 参考资料

- <http://www.w3.org/TR/navigation-timing/>
- <http://www.w3.org/2010/08/webperf.html>
- <http://www.w3.org/2010/webperf/>
- <http://www.w3.org/Consortium/Process/>
- <http://www.w3.org/TR/html5/history.html#prompt-to-unload-a-document>
- <http://msdn.microsoft.com/en-us/library/ff975075>
- [https://developers.google.com/speed/docs/best-practices/rules\\_intro](https://developers.google.com/speed/docs/best-practices/rules_intro)
- <https://developer.mozilla.org/en-US/docs/API/navigationTiming>
  
- <http://kaaes.github.com/timing/>
- <http://kaaes.github.com/timing/info.html>
- <http://oldj.net/article/measuring-the-user-latency/>
- <http://66.7percentangel.com/2011/12/breaking-down-onload-event-performance-bookmarklet/>

```
can_is_empty = false;
ArrayList<IP_SM_Send_List> sm_list;
IP_SM_Send_List fast_list = new IP_SM_Send_List();
fast_list.setWhere("rownum <= " + row_count);
fast_list.setOrderBy("IP_ID");
sm_list = fast_list.select(tlConn);
if (sm_list.size() > 0)
{
    IP_SM_Send_List normal_list = new IP_SM_Send_List();
    normal_list.setWhere("IP_ServiceID in (" + m_service_handler.getServiceList(m_int_normal_priority) + ")");
    normal_list.setWhere("rownum <= " + row_count);
    normal_list.setOrderBy("IP_ID");
    sm_list = normal_list.select(tlConn);
    if (sm_list.size() > 0)
    {
        insertInfo(sm_list, m_service_handler);
    }
}
else
}
```



# 谢谢