

实例介绍

HTML5离线应用

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HTML5离线应用

- ◎ 离线应用介绍 10'
- ◎ Application Cache 10'
- ◎ 离线资源形式 10'
- ◎ 离线存储 10'
- ◎ 离线应用 10'
- ◎ Q&A 10'

离线应用介绍 应用场景

◎ 移动设备

- 我用智能手机？笔记本？Web应用吗？

◎ 互联网服务@移动

- Web邮箱，飞机和高铁上能看邮件？
- Web RSS，随手查看，不管网络状况？
- Web地图，在信号弱的地区也能使用？
- 你也使用Web应用吗？也需要离线吗？

离线应用介绍 兼容性

Offline web applications - Working Draft

Method of defining web page files to be cached using a cache manifest file, allowing them to work offline on subsequent visits to the page

Resources: [Sitepoint tutorial](#) [Dive Into HTML5 article](#) [Mozilla Hacks article/demo](#)

Global user stats*:

Support:	48.96%
Partial support:	1.18%
Total:	50.14%

	IE	Firefox	Safari	Chrome	Opera	iOS Safari	Opera Mini	Opera Mobile	Android Browser
Three versions back	6.0	3.0	3.1	7.0	10.0-10.1				
Two versions back	7.0	3.5	3.2	8.0	10.5	3.2			2.1
Previous version	8.0	3.6	4.0	9.0	10.6	4.0-4.1			2.2
Current	9.0	4.0	5.0	10.0	11.0	4.2	5.0	10.0	2.3
Near future		5.0		11.0	11.1				
Farther future	10.0	6.0	6.0	12.0	11.5				

Note: Currently not supported in Chrome on Linux.

Feedback

全系列!

离线应用介绍 兼容性

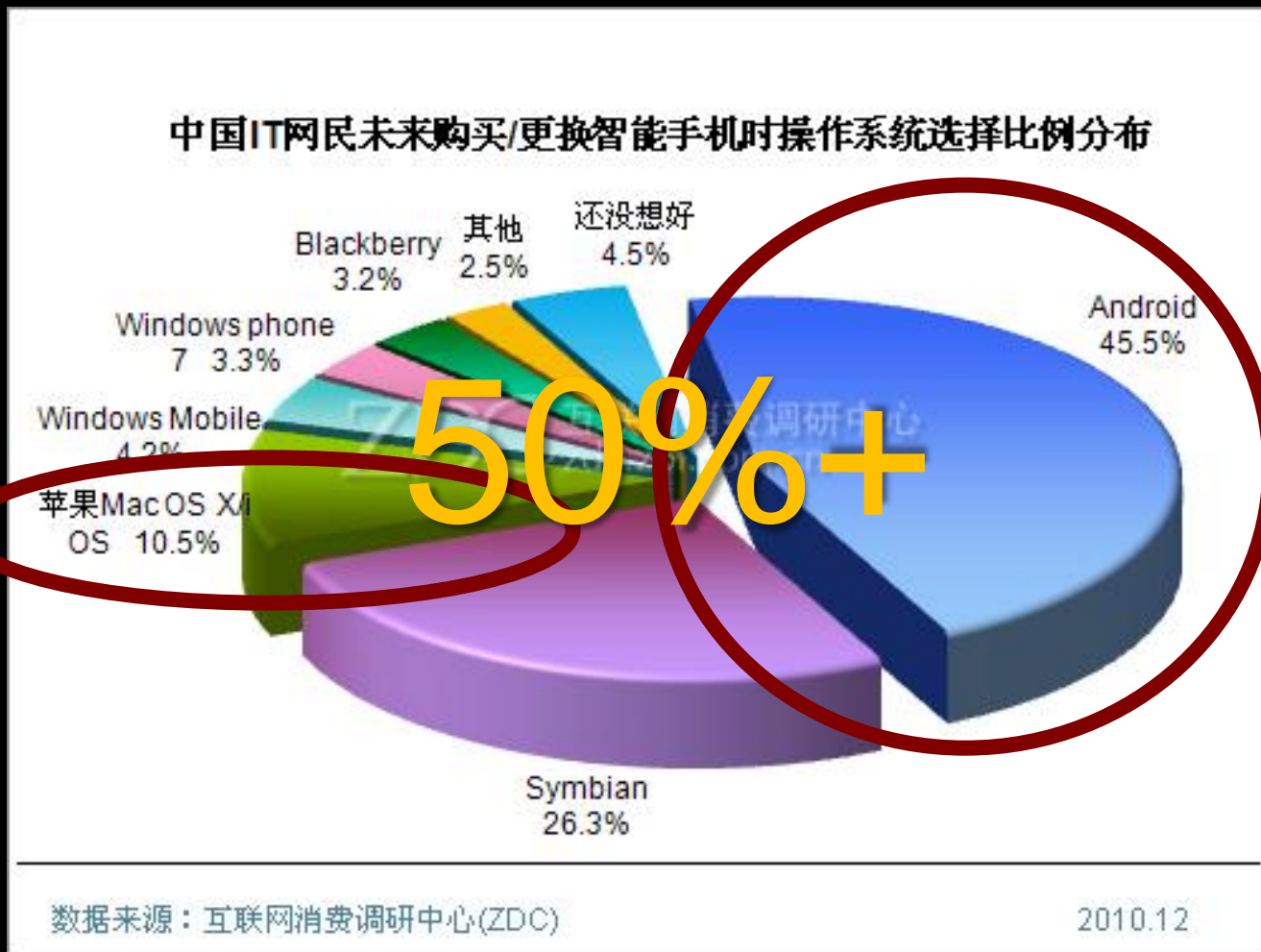
◎ 桌面端

- 杯具！IE9不支持离线
- 在中国，IE6/7/8依然占据了浏览器90%+份额
- 网络状况良好，离线需求不强

◎ 移动端

- 给力！Android和iPhone发展迅猛，已具备离线条件
- 网络状况不稳定，离线需求强

离线应用介绍 展望



离线应用介绍 作为产品

- ◎ 应用的类型？ 需要离线？
- ◎ iPhone3+和Android2.2+下？
- ◎ 额外设备访问支持？
- ◎ 离线能满足需求？

离线应用介绍 作为开发者

- ◎ 替代Native App?
- ◎ 跨平台? 减少客户端开发?
- ◎ 更熟悉Web开发?
- ◎ 发布形式? 移动Web? PhoneGap等?

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Application Cache 定义

```
1 <!doctype html>
2 <html manifest="offline.manifest"> 定义manifest
3   <head>
4     <title>Offline Web App Demo</title>
```

Application Cache manifest

```
HTTP/1.1 200 OK
Server: Up in the air
Date: Thu, 07 Apr 2011 16:29:50 GMT
```

```
Content-Type: text/cache-manifest
```

Content-Type

```
Content-Length: 144
```

```
Last-Modified: Mon, 28 Feb 2011 18:01:28 GMT
```

```
Connection: keep-alive
```

```
Accept-Ranges: bytes
```

```
CACHE MANIFEST
```

```
CACHE:
```

CACHE

```
#version 5
```

```
index.html
```

```
is /amselite is
```

```
NETWORK:
```

NETWORK

```
*
```








```
FALLBACK:
```

FALLBACK

```
get_json.php /fallback/get_json
```

```
get_html.php /fallback/get_html
```

Application Cache 生命周期 首次加载

	10	200	HTTP	offline.gzterrytan.com	/	501	text/html
	11	200	HTTP	offline.gzterrytan.com	/offline.manifest	144	text/cache-manifest
	12	200	HTTP	offline.gzterrytan.com	/js/qmsqlite.js	2,112	application/x-javascript
	13	200	HTTP	offline.gzterrytan.com	/index.html	501	text/html
	14	200	HTTP	offline.gzterrytan.com	/fallback/get_json	10	text/plain
	15	200	HTTP	offline.gzterrytan.com	/fallback/get_html	69	text/plain
	16	304	HTTP	offline.gzterrytan.com	/offline.manifest	0	

拉取两次manifest校验

Creating Application Cache with manifest <http://offline.gzterrytan.com/offline.manifest>

事件:	Checking event	1.下载Cache内容	2.下载Fallback内容
1.Checking	Downloading event		
2.Downloading	Progress event (0 of 4)	http://offline.gzterrytan.com/js/qmsqlite.js	
3.Progress	Progress event (1 of 4)	http://offline.gzterrytan.com/fallback/get_json	
4.Cache	Progress event (2 of 4)	http://offline.gzterrytan.com/index.html	
	Progress event (3 of 4)	http://offline.gzterrytan.com/fallback/get_html	
	Progress event (4 of 4)		
	Cached event		

Application Cache 生命周期 Cache加载

304 HTTP offline.gzterrytan.com /offline.manifest

HTTP/1.1 304 Not Modified

Server: Up in the air

Date: Thu, 07 Apr 2011 17:32:08 GMT

Last-Modified: Mon, 28 Feb 2011 18:01:28 GMT

Connection: keep-alive

拉取manifest校验

Document was loaded from Application Cache with manifest

Application Cache Checking event

Application Cache NoUpdate event

事件:

1.Checking

2.NoUpdate

Application Cache 生命周期 更新加载

	16	200	HTTP	offline.gzterrytan.com	/offline.manifest	144
	17	304	HTTP	offline.gzterrytan.com	/index.html	0
	18	304	HTTP	offline.gzterrytan.com	/js/qmsqlite.js	0
	19	304	HTTP	offline.gzterrytan.com	/	0
	20	304	HTTP	offline.gzterrytan.com	/fallback/get_html	0
	21	304	HTTP	offline.gzterrytan.com	/offline.manifest	0

1. 拉取两次manifest校验
2. 其他文件按照HTTP规则拉取

Document was loaded from Application Cache with manifest <http://offline.gzterrytan.com/offline.manifest>

事件:	Application Cache	Checking event	1. 下载Cache内容	2. 下载Fallback内容
1. Checking	Application Cache	Downloading event		
2. Downloading	Application Cache	Progress event (0 of 5)	http://offline.gzterrytan.com/fallback/get_json	
3. Progress	Application Cache	Progress event (1 of 5)	http://offline.gzterrytan.com/index.html	
4. UpdateReady	Application Cache	Progress event (2 of 5)	http://offline.gzterrytan.com/js/qmsqlite.js	
	Application Cache	Progress event (3 of 5)	http://offline.gzterrytan.com/	
	Application Cache	Progress event (4 of 5)	http://offline.gzterrytan.com/fallback/get_html	
	Application Cache	Progress event (5 of 5)		
	Application Cache	UpdateReady event		

Application Cache 生命周期 手动操作

> `applicationCache.update()`

可手动更新

undefined

Application Cache Checking event

Application Cache Downloading event

Application Cache Progress event (0 of 5) http://offline.gzterrytan.com/fallback/get_json

Application Cache Progress event (1 of 5) <http://offline.gzterrytan.com/index.html>

Application Cache Progress event (2 of 5) <http://offline.gzterrytan.com/>

Application Cache Progress event (3 of 5) <http://offline.gzterrytan.com/js/qmsqlite.js>

Application Cache Progress event (4 of 5) http://offline.gzterrytan.com/fallback/get_html

Application Cache Progress event (5 of 5)

Application Cache UpdateReady event

Application Cache 生命周期 手动操作

applicationCache

▼ DOMApplicationCache

```
oncached: null
onchecking: null
ondownloading: null
onerror: null
onnoupdate: null
onobsolete: null
onprogress: null
onupdateready: null
status: 4
```

▼ __proto__: DOMApplicationCache

```
CHECKING: 2
DOWNLOADING: 3
IDLE: 1
OBSOLETE: 5
UNCACHED: 0
UPDATEREADY: 4
```

```
▶ addEventListener: function addEventListener() { [native code] }
▶ constructor: function DOMApplicationCache() { [native code] }
▶ dispatchEvent: function dispatchEvent() { [native code] }
▶ removeEventListener: function removeEventListener() { [native code] }
▶ swapCache: function swapCache() { [native code] }
▶ update: function update() { [native code] }
▶ __proto__: Object
```

可切换Cache

```
window.applicationCache.addEventListener(
  'updateready',
  function(){
    window.applicationCache.swapCache();
    console.log('swap cache has been called');
  },
  false
);
```

可监听事件

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离线资源形式 JSON序列化

```
> JSON.parse('{"hello":"world","i\'m":["JSON","parsing"]}')  
▼ Object
```

hello: "world"

▼ i'm: Array[2]

0: "JSON"

1: "parsing"

length: 2

▶ __proto__: Array[0]

▶ __proto__: Object

读数据：反序列化

写数据：序列化

```
> JSON.stringify({"hello":"world","i\'m":["JSON","parsing"]})  
'{"hello":"world","i\'m":["JSON","parsing"]}'
```

IE	Firefox	Safari	Chrome	Opera	iOS Safari	Opera Mini	Opera Mobile	Android Browser
7.0	3.5	3.2	8.0	10.5	3.2			2.1
8.0	3.6	4.0	9.0	10.6	4.0-4.1		10.0	2.2
9.0	4.0	5.0	10.0	11.0	4.2-4.3	5.0	11.0	2.3
	5.0		11.0	11.1				
10.0	6.0	6.0	12.0	11.5				

离线资源形式 图片序列化

offline.gzterrytan.c... x view-source:offline...

offline.gzterrytan.com/b64img.html

Base64图片



```
1 <!doctype html>
2
3 <html>
4
5   <head></head>
6
7   <body><img class="popular_mesh-png"
8     src="data:image/.jpg;base64,/9j/4AAQSkZJRgABAQEA...
AAZQBnACAAAgAxAC4AMAAgACgAdQBzAGkAbgBrACAAASQBKAECATIBKAF...
MiksIHF1YWxpZHkgPSA4MAoA/9sAQwAGBAUGBQQBGBgUGBwcGAoQCgoJCQoUDg8MEBcUGBgXFBYWC...
goKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgo/8AAEQgBxwIIAwEiAAIRAQMRAf/EAB8AAAEFAQEBAQE...
JDNIcoIJChYXGBkaJSYnKCkgNDU2Nzg50kNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6g...
/EAB8BAAMBAQEBAQEBAQEAFAAAAGABgMEBQYHCAkKC//EALURAAIBAgQEAwQHBQQEAAECdwABAgM...
ZmdoaWpzdHV2d3h5eoKDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8iJy...
RRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfF...
BRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfF...
FABRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUUUAFfF...
p/8Arq1b/ErImOI7WYX3VvX/6FQB3tFcvbeOtDnxuuGi/wCui/4ZrXs9a068P+iXcT598fzoA0aKf...
iiigAooooAKKKKACiigAooooAKKKKACiigAooooAKKiuJ4raIyTJGg6s5AFcXr3xBS7QtFpqi6...
4j3c7NHpdke9GZtxP4YrGnlLxJqZ/eXUOKnqrFB+VaUMMcKhYkCj0FSV1Rwa+0zCWiFRGAmgtI+...
ARmCI9YOP4VG1lbOMNBGf+AirFFL1T6BdmfJpFm/8Ayy2/7vFVpdAhPMMjE2RmtmiOdGm9OUqkls...
ldD0KnIryC50uluCSUKse6mq9vb6jpUrm6ZdOMc7c9a5Z4WcdtTaNaLPagK870fx+8brBrdv5Z6ea...
7aMElnYDPsM968ouvi7o63ZSz0y5ntwceazT79cYP868g+JnjW5+Ifiry7VvNItnKwKMgNzy5z3PH...
IomCqf8A2Wvp7xL4l0nw1Z/adZvYraM52hjlmx1wvU/hXXhq/tafNLQ8jMsB9VxHsgeqexsUV5zpX...
FABRRRQAUUUUUAFfFABRRRQAUUUUUAFfFABRRRQAUUUVT1TubbtLRri8kEcatvf2FAFskKMSQA05rk...
t50vQngL90Y+g6/jVuvOm2tQDs3v/eatAD4or0KeHhDzZyTqvkaG01FFFbmqUUU2WRLo2eRgqKMs...
h/E4v3pe6j3DV/ifa4d08ssc8l3IpwVhQ/1wK5HUFjBeSZG16YqKejTnkfkSK4C206JRltqj6U6REX...
vuJ4/E/iKL/V6rOPrg/zFa+n/ErXTZkeddpIP4ZIkH6hclz5So2jFVDH1o7Sf3mdXJSnNawX3Hq2...
8N07Xouz/A+taK4r4ee0LfxNaiG4ThlJPvR5+8MDr+v5V2tfQ06sasVODOPj61GdCbplFZoKKKKOM
```

离线资源形式 静态资源

◎ 静态资源

- 文件合并

- 所有JS都被合并成单个文件
- CSS被和合并成图片文件和样式文件

- 图片

- CSS Sprites
- 图片尽量通过Base64编码合并到CSS中

离线资源形式 动态资源

◎ 动态资源

- 动态JS文件

- 可本地存储，离线时重新eval

- 图片

- 内域，svr端以base64输出图片
- 外域，没找到更好办法，只能svr端拉取再转码
 - 不过外域图片离线并不是很必要

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离线存储

◎ Web Storage

- LocalStorage
 - iPad每5M提示，适合替代Cookies中的设置值
- SessionStorage
 - 当此访问有效，可跨页面访问

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7.0	3.5	3.2	8.0	10.5	3.2			2.1
8.0	3.6	4.0	9.0	10.6	4.0-4.1		10.0	2.2
9.0	4.0	5.0	10.0	11.0	4.2-4.3	5.0	11.0	2.3
	5.0		11.0	11.1				
10.0	6.0	6.0	12.0	11.5				

离线存储

◎ Web SQL Database(SQLite)

- 被iOS和Android实现
- 使用SQL语言
- 但已被W3C列为停滞状态
 - 当前可用，相信会兼容下去。但其他浏览器不会提供

IE	Firefox	Safari	Chrome	Opera	iOS Safari	Opera Mini	Opera Mobile	Android Browser
7.0	3.5	3.2	8.0	10.5	3.2			2.1
8.0	3.6	4.0	9.0	10.6	4.0-4.1		10.0	2.2
9.0	4.0	5.0	10.0	11.0	4.2-4.3	5.0	11.0	2.3
	5.0		11.0	11.1				
10.0	6.0	6.0	12.0	11.5				

离线存储

◎ IndexedDB

- iOS和Android都没实现
- NoSQL
 - 将来会替代SQLite的，不过我们只能先用SQLite

IE	Firefox	Safari	Chrome	Opera	iOS Safari	Opera Mini	Opera Mobile	Android Browser
7.0	3.5	3.2	8.0	10.5	3.2			2.1
8.0	3.6	4.0	9.0	10.6	4.0-4.1		10.0	2.2
9.0	4.0	5.0	10.0	11.0	4.2-4.3	5.0	11.0	2.3
	5.0		11.0	11.1				
10.0	6.0	6.0	12.0	11.5				

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离线应用

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Q & A

谢谢