



2012云计算架构师峰会

Cloud Computing Architects Summit China 2012

揭示企业级IT架构转型 分享最新技术的应用落地



PhoneGap: 跨平台移动应用开发和调试

Mark Dong 董龙飞

Adobe Evangelist

weibo.com/javascriptdev

1. 移动应用开发的主要方式



**NATIVE
APP**

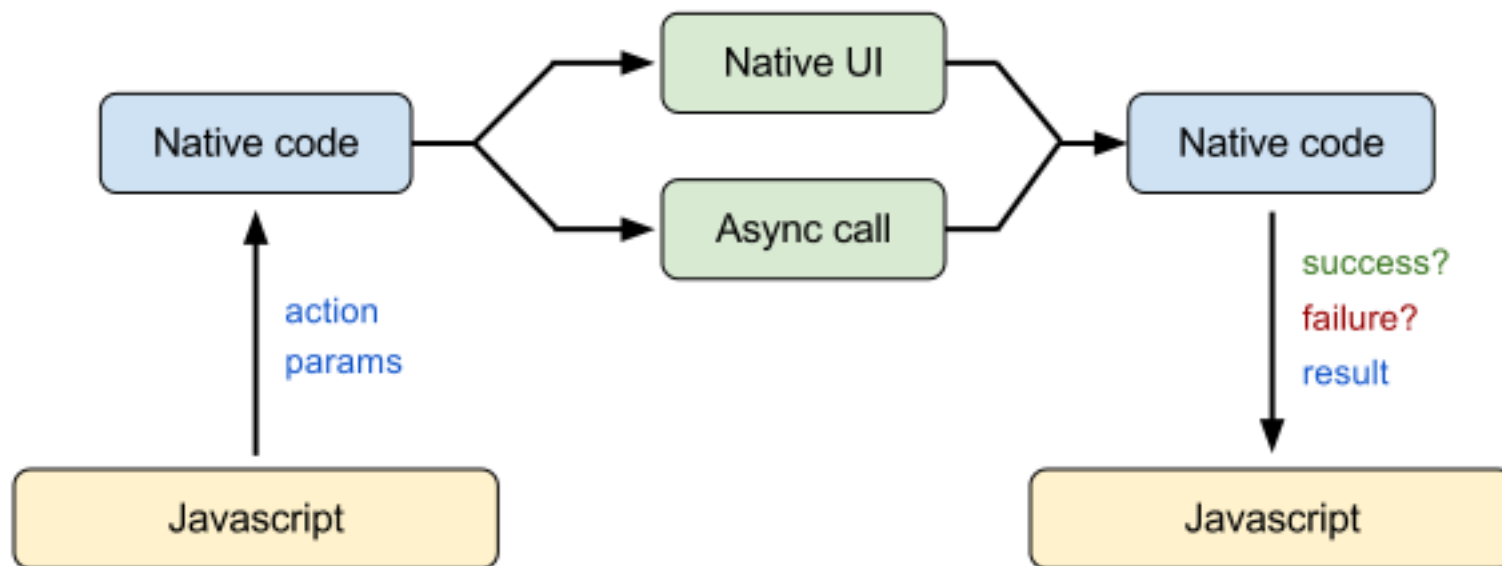


**HYBRID
APP**



**WEB
APP**

2. Hybrid App框架



3. PhoneGap



Apache Cordova is a platform
for building native mobile
application using **HTML, CSS**
and **JavaScript**



About Apache Cordova™

Apache Cordova is an effort undergoing incubation at The Apache Software Foundation (ASF), sponsored by the Apache Incubator project.

Incubation is required of all newly accepted projects until a further review indicates that the infrastructure, communications, and decision making process have stabilized in a manner consistent with other successful ASF projects. While incubation status is not necessarily a reflection of the

<http://incubator.apache.org/cordova/>



访问移动设备本地特性

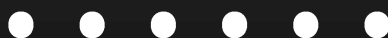


phoneGap plugin



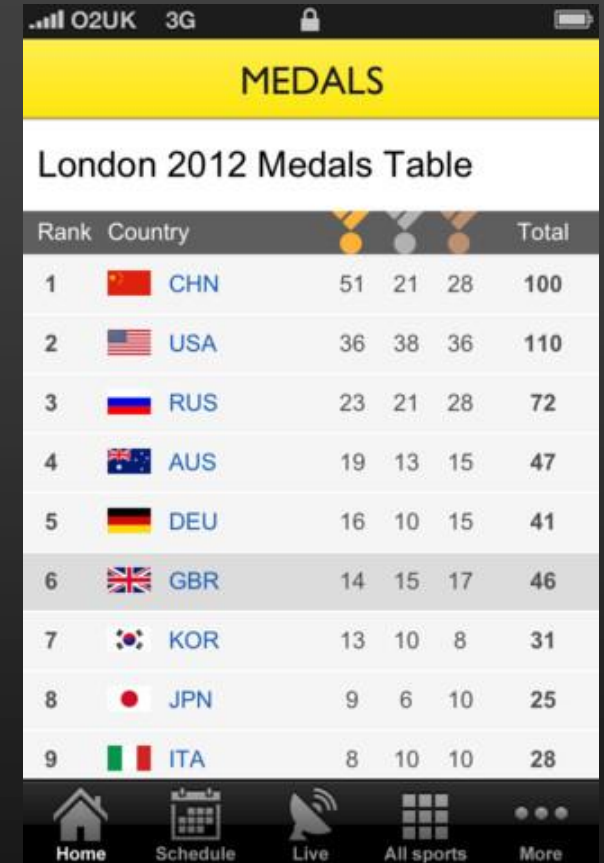
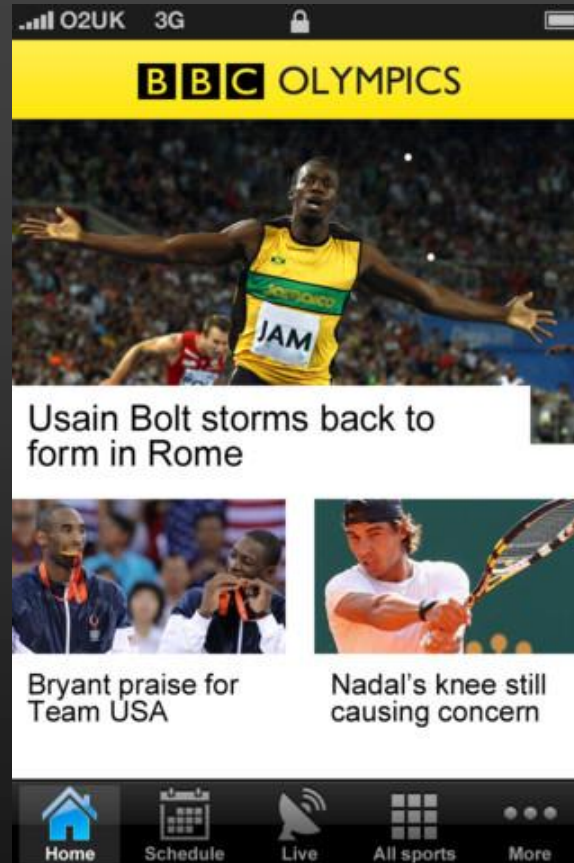
打包HTML5 App, 部署到多种平台



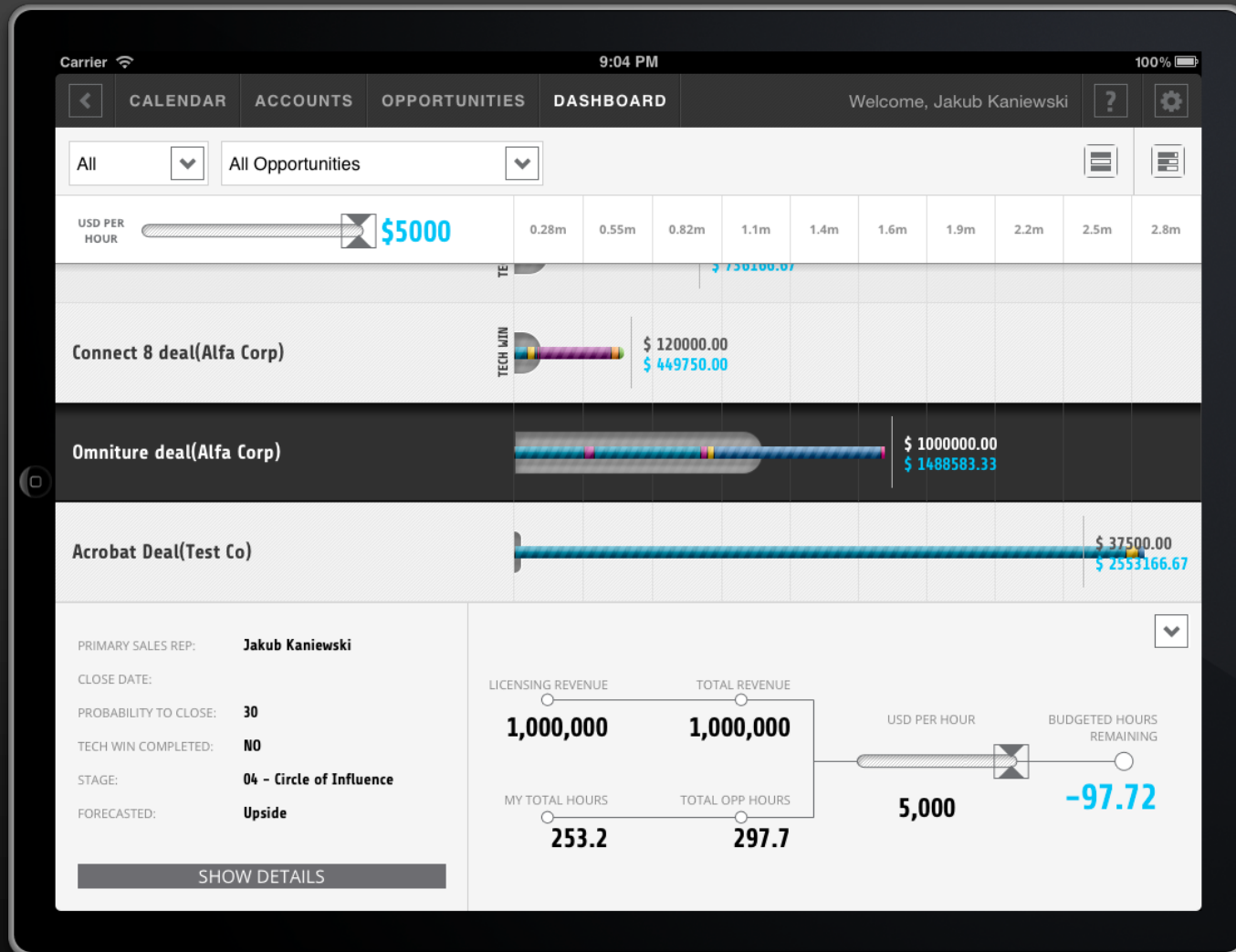


4 . 谁在使用PhoneGap?

BBC Olympic



SC INSIGHT (Adobe内部产品)



Microsoft HALO WAYPOINT





Microsoft®



Alcatel-Lucent 



Sabre

 **zynga**



Time Warner

5. PhoneGap架构



6 . PhoneGap内嵌的本地特性支持

7. PhoneGap插件

In Java

```
public class callsPGPlugin extends Plugin {
    // List Actions
    public static final String ACTION="list";
    @Override
    public PluginResult execute(String action, JSONArray data, String callbackId) {

        PluginResult result=null;

        if(ACTION.equals(action)){
            CallLogAI callLogAI = new CallLogAI(ctx);
            JSONObject callsHistory=callLogAI.fetchCallLogs(null);
            Log.d("RESULT=", callsHistory.toString());
            result=new PluginResult(Status.OK,callsHistory);
        }else{
            result=new PluginResult(Status.INVALID_ACTION);
            Log.d("CallsPlugin","Invalidate action:" + action);
        }
        return result;
    }
}
```

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<plugins>
```

```
  <plugin name="App" value="org.apache.cordova.App"/>
```

```
  <plugin name="Geolocation" value="org.apache.cordova.GeoBroker"/>
```

```
  <plugin name="Device" value="org.apache.cordova.Device"/>
```

```
  <plugin name="Accelerometer" value="org.apache.cordova.AccelListener"/>
```

```
  .....
```

```
  <plugin name="SplashScreen" value="org.apache.cordova.SplashScreen"/>
```

```
  <plugin name="Echo" value="org.apache.cordova.Echo" />
```

```
    <plugin name="CallsHistoryPlugin"  
value="com.mark.phonegap.plugin.callsPGPlugin" />
```

```
</plugins>
```

In JavaScript


```
var CallsListing=function(){};
```

```
CallsListing.prototype.list=function(successCallback,failureCallback){  
    return cordova.exec(successCallback,  
                           failureCallback,  
                           'CallsHistoryPlugin',  
                           'list',['test']  
                           );  
};
```

```
cordova.addConstructor(function(){  
    cordova.addPlugin("callsListing",new CallsListing);  
});
```

使用者调用plugin

```
window.plugins.callsListing.list(  
    function(r){printResult(r)},  
    function(e){console.log(e)}  
);
```

8. Cleaver

9. PhoneGap Debug

10. PhoneGap Build

Mark Dong

Developer Evangelist

dong@adobe.com

weibo.com/donglongfei

weibo.com/javascriptdev

```

window.plugins.callsListing.list(
    function(r){printResult(r)},
    function(e){console.log(e)}
);

```



```

CallsListing.prototype.list=function(successCallback,fa
ilureCallback){
    return PhoneGap.exec(successCallback,
failureCallback,
    'CallsHistoryPlugin',
    'list',['test']);
};

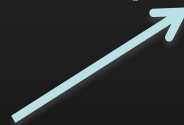
```



```

<plugin name="CallsHistoryPlugin"
value="com.mark.phonegap.plugin.callsPGPlu
gin"/>

```



```

public class callsPGPlugin extends Plugin {
    // List Actions
    public static final String
ACTION="list";
    @Override
    public PluginResult execute(String
action, JSONArray data, String callbackId) {

```

10. 如何实现JS与本地API的交互



Android



addJavaScriptInterface

WebChromClient: onJsPrompt

CallbackServer: XmlHttpRequestsever

From Native to JS

WebChromClient: 覆盖onJsPrompt

From JS to Native

CallbackServer: XmlHttpRequestsever



```
CallsListing.prototype.list=function(successCallback,failureCallback){  
    return PhoneGap.exec(successCallback,  
        failureCallback,  
        'CallsHistoryPlugin',  
        'list',['test']);  
};
```



```
PhoneGap.exec = function(success, fail, service, action, args) {  
    ...  
    var r = prompt(JSON.stringify(args), "gap:"+JSON.stringify([service,  
        action, callbackId, true]));  
    ...
```

Droidgap.java

```
public boolean onJsPrompt(WebView view, String url, String message, String
defaultValue, JsPromptResult result) {
.....

    String r = pluginManager.exec(service, action, callbackId, message, async);

.....
}
```



Pluginmanager.java

```
public String exec(final String service, final String action, final String callbackId, final
String jsonArgs, final boolean async) {
.....
    cr = plugin.execute(action, args, callbackId);
    ctx.sendJavascript(cr.toErrorCallbackString(callbackId));

.....
}
```

Java

Pluginmanager.java

```
ctx.sendJavascript(cr.toErrorCallbackString(callbackId));
```

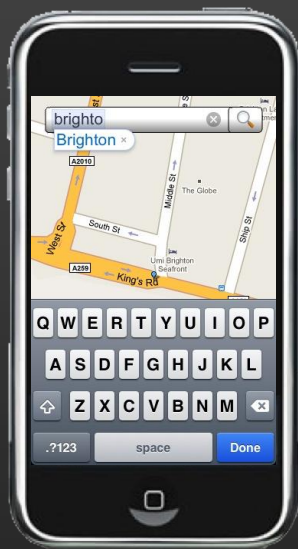


CallbackServer.java : XHR server



```
PhoneGap.Channel.join(function() {  
  
    // Start listening for XHR callbacks  
    setTimeout(function() {  
        if (PhoneGap.UsePolling) {  
            PhoneGap.JSCallbackPolling();  
        }  
    })  
  
    ...  
})
```

Javascript



IOS

实例化UIWebView

```
webView = [[UIWebView alloc] initWithFrame:webViewBounds];
```

JS到Native的通讯

```
document.location = "gap://Class.method/args"
```

Native到JS的通讯

```
UIWebView stringByEvaluatingJavaScriptFromString
```


11. debug

weinre

weinre: http://localhost:8081/demo/weinre-demo-min.html#pmuellr

http://localhost:8081/client/#pmuellr

Remote Elements Resources Network Timeline Console

```
http://opensource.org/licenses/alphabetic for full text.
* Copyright (c) 2010, 2011 IBM Corporation
-->
<html>
  <head>...</head>
  <body onload="onLoad()">
    <input id="button-start-stuff" type="button" value="start
stuff">
    <h1>this is a green h1</h1>
    <h1 class="blue">this is a blue h1</h1>
    <h1 style="color:red">this is a red h1</h1>
  <p>...</p>
  <hr>
  <p>test exceptions in callbacks:
  </p>
  <div style="margin-left:1em">...</div>
  <hr>
  <p>...</p>
  <div id="output"></div>
</body>
</html>
```

Computed Style

Styles

element.style {

Matched CSS Rules

.blue {

color: blue;

}

h1 {

color: green;

margin: 0.5em;

margin-left: 1em;

margin-left: 1em;

padding: 0.4em;

padding-left: 0.8em;

padding-left: 0.8em;

}

Metrics

Properties

Event Listeners

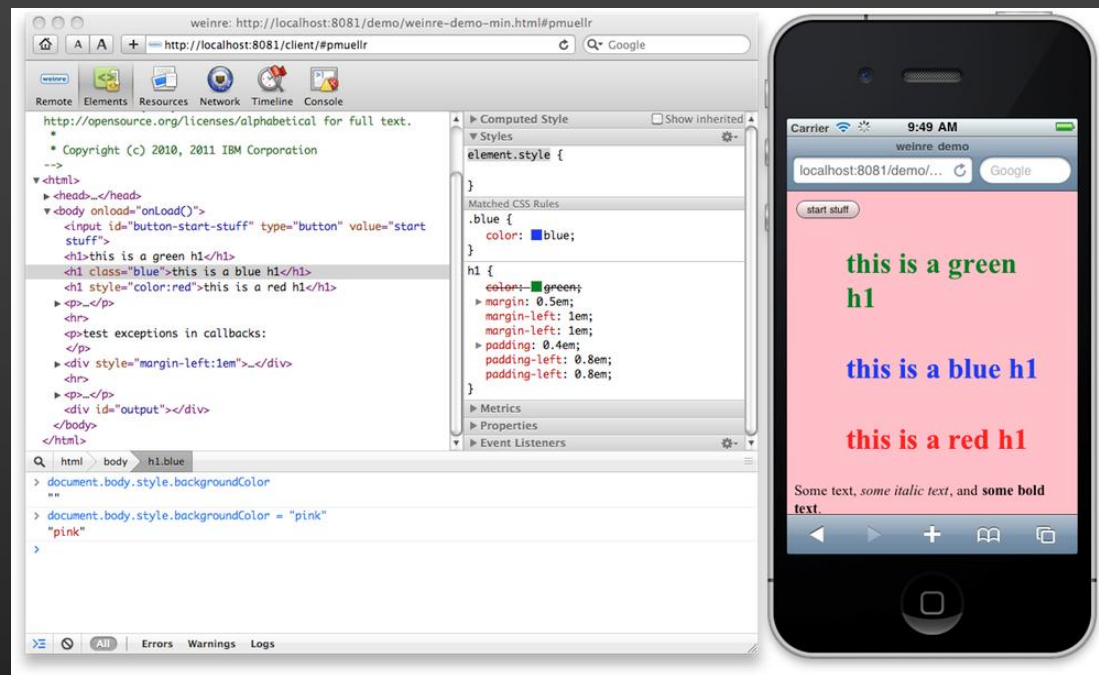
html body h1.blue

```
> document.body.style.backgroundColor
""
> document.body.style.backgroundColor = "pink"
"pink"
>
```

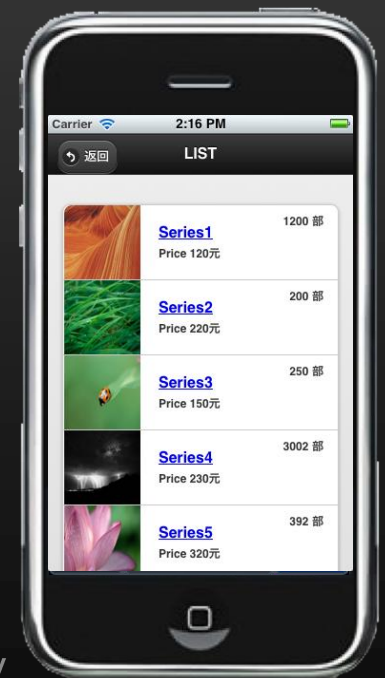
All Errors Warnings Logs



Weinre配置为Server
，开发者使用
Chrome/Safari开发工具
来远程调试移动应用



```
<script src="http://192.168.1.101:8080/target/target-script-min.js#anonymous">
</script>
```



Getting Started



Step 1: select your guid (*or just use the one we've randomly assigned*)

Step 2: inject this script into your index.html

```
<script src="http://debug.phonegap.com/target/target-script-min.js#anonymous"></script>
```

Step 3: click this link to start debugging

<http://debug.phonegap.com/client/#anonymous>

powered by 

12. 路线图

1. X (2011)

Performance , W3C compatible , 易用性

2.0 (2012)

Calendar, Message , Bluetooth, Audio/Video

Mark Dong

Developer Evangelist

dong@adobe.com

weibo.com/donglongfei

weibo.com/javascriptdev