

Google
Developer
Day 2009

深入探讨谷歌小工具高级API

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Developer
Day 2009

Outlines

- 如何建立开发环境
- 小工具的XML介绍
- 小工具API的命名空间和概括
- 深入小工具高级API
 - 核心API
 - 特色API
 - 国际化
- 提交小工具和推广小工具

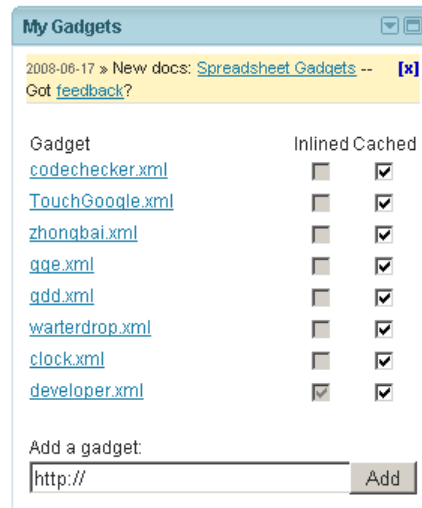
如何搭建开发环境

步骤 1: 进入iGoogle (<http://www.google.com/ig>), 添加三个小工具:

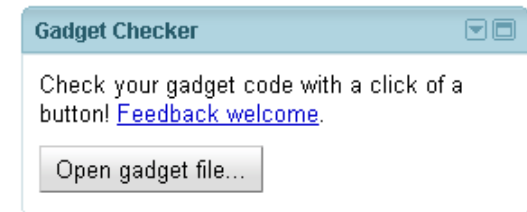
- Gadgets Maker
<http://www.google.com/ig/modules/gge.xml>
- Gadgets Developer Toolkit:
<http://www.google.com/ig/modules/developer.xml>
- Gadgets Code Checker:
<http://www.google.com/ig/modules/codechecker/codechecker.xml>



Gadgets Editor



Gadgets Developer Toolkit



Gadgets Code Checker

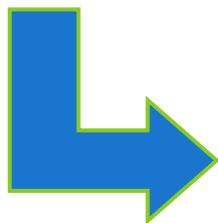
如何搭建开发环境

- **Step 2:** 在Gadgets Editor 写小工具代码。

```
1 <?xml version="1.0" encoding="UTF-8"?">
2 <Module>
3 <ModulePrefs title="hello world example" />
4 <Content type="html"><![CDATA[
5 Hello, world!
6 ]]></Content>
7 </Module>
```

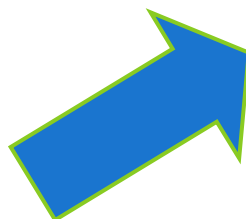
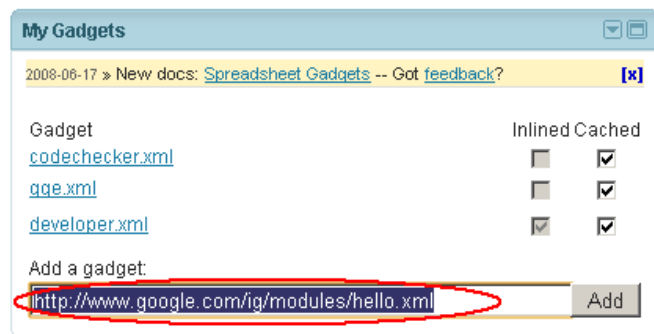
<http://www.google.com/ig/ifr?url=gge.xml&synd=open>

```
1 <?xml version="1.0" encoding="UTF-8"?">
2 <Module>
3 <ModulePrefs title="hello world example" />
4 <Content type="html"><![CDATA[
5 Hello, world!
6 ]]></Content>
7 </Module>
```



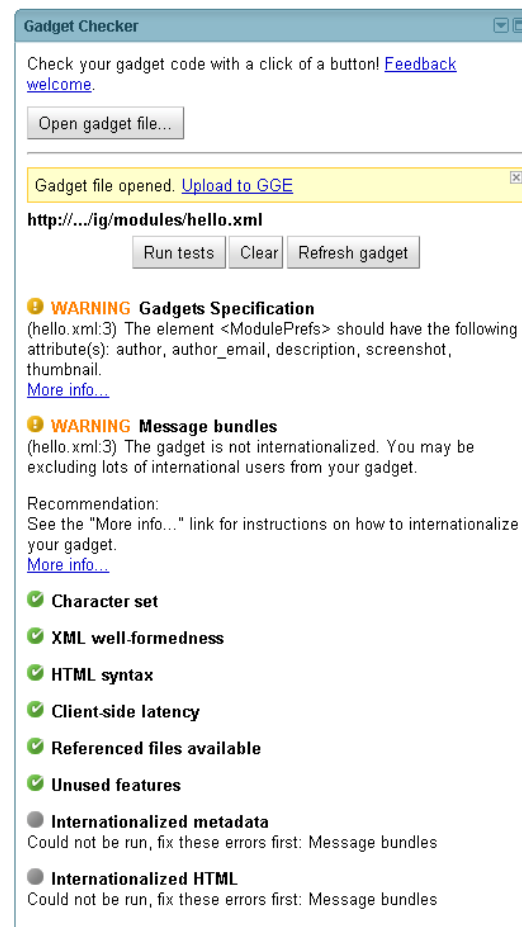
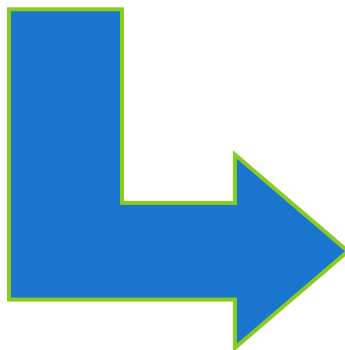
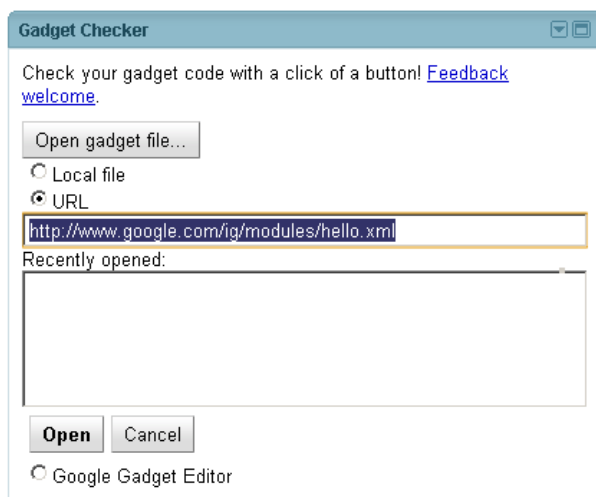
如何搭建开发环境

- **Step 3:** 保存你的代码并且把URL贴到“Gadgets Developer Toolkit”里面，来添加这个小工具：



如何搭建开发环境

- **Step 4:** 检查你的代码质量，保证代码看起来非常漂亮:



小工具的XML介绍

```
<Module>  
  <ModulePrefs title="Developer Forum"  
    title_url="http://groups.google.com/group/Google-Gadgets-API"  
    height="200"  
    author="Jane Smith"  
    author_email="xxx@google.com"/>  
  <Content ...>  
    ... content ...  
  </Content>  
</Module>
```

小工具头

小工具内容

Gadgets API / Javascript / HTML / CSS

小工具API的命名空间和概括

gadgets.*

小工具命名空间

- Core API
 - [Prefs](#)
 - [io](#)
 - [json](#)
 - [util](#)
- Feature-Specific API
 - [MiniMessage](#)
 - [Tab](#)
 - [TabSet](#)
 - [flash](#)
 - [pubsub](#)
 - [rpc](#)
 - [skins](#)
 - [views](#)
 - [window](#)

例如:

`gadgets.Prefs`
`gadgets.io`
`gadgets.Minimessage`

深入小工具高级API

- Store and Read the Prefs of Gadgets

```
var prefs = new gadgets.Prefs();  
var name = prefs.getString("name");  
var lang = prefs.getLang();
```

“Prefs” 是一个封装好的，用来存储用户在Gadgets以及iGoogle中信息的一个类库。

深入小工具高级API

- JSON 串行化



深入小工具高级API

- JSON 串行化

```
// Parses a JSON string, producing a JavaScript  
value.
```

```
<static> Object gadgets.json.parse(text)
```

```
// Converts a JavaScript value to a JSON string.
```

```
<static> String gadgets.json.stringify(v)
```

深入小工具高级API

```
var obj = {"Zhang":[1,2,3], "Li":"Engineer", "Wang":{"sex":"male"}};  
var jsonStr = gadgets.json.stringify(obj);  
var obj2 = gadgets.json.parse(jsonStr);
```



深入小工具高级API

- Useful Utils
 - **<static> String escapeString(str)**
 - Escapes the input using HTML entities to make it safer.
 - **<static> Object getFeatureParameters(feature)**
 - Returns the value of parameters for this feature.
 - **<static> Boolean hasFeature(feature)**
 - Returns whether the specified feature is supported.
 - **<static> registerOnLoadHandler(callback)**
 - Registers an onload handler — a function that's executed when the gadget loads.
 - **<static> String unescapeString(str)**
 - Reverses escapeString

深入小工具高级API

- MiniMessage

- 它是一个临时的消息，用来在小工具中显示给用户作为提示。
MiniMessage。 MiniMessages are designed to be dismissed, either programmatically or by the user. The basic types of MiniMessages are as follows:
- Dismissible messages that users can remove by clicking an [x].
- Timer messages that disappear after a specified number of seconds have elapsed.
- Static messages that must be programmatically dismissed.

深入小工具高级API

- MiniMessage

1. Import the minimessage library:

```
<Require feature="minimessage"/>
```

2. Instantiate a new MiniMessage object using the `gadgets.Minimessage()` constructor:

```
var msg = new gadgets.Minimessage(__MODULE_ID__);
```

In most cases, you'll want to make this a single global object that can be accessed from all scopes.

3. Create a new MiniMessage with some text:

```
msg.createDismissibleMessage("Please close me when you're done reading me.");
```


深入小工具高级API

- Tab



<Require feature="tabs"/>

深入小工具高级API

- Tab

```
// Initialize tabs, designate the tab named "Two" as
// the tab selected by default.
var tabs = new gadgets.TabSet(__MODULE_ID__, "Two");
```

```
var one_Id = tabs.addTab("<div style='color: red; font-weight: bold; background-color:#ccf
;'>Cool Tab</div>");
document.getElementById(one_Id).innerHTML = "Content for tab One.";
```

```
tabs.addTab("Two", "two_id");
...
</script>
<div id="two_id" style="display:none">Content for tab Two.</div>
```

深入小工具高级API

- Tab – Custom Tab CSS

CSS Class	Description
<code>.tablib_table</code>	Applies to the HTML table containing the tabs.
<code>.tablib_selected</code>	Applies to the selected tab.
<code>.tablib_unselected</code>	Applies to all unselected tabs.
<code>.tablib_spacerTab</code>	Applies to the spacer elements between each tab.
<code>.tablib_emptyTab</code>	Controls the beginning and end spacers around the tabs.
<code>.tablib_navContainer</code>	Applies to parent container, which contains all tab-related content (that is, tab headers and all individual content containers).

深入小工具高级API

- Flash



`<Require feature="flash"/>`

深入小工具高级API

- Flash

// Embeds the .swf file specified by swf_url, and displays it in the gadget at the location specified by swf_container.

```
gadgets.flash.embedFlash(swf_url, swf_container, swfVersion,  
opt_params)
```

// Injects a cached Flash file into the DOM tree. Parameters and return value are the same as embedFlash() method.

```
gadgets.flash.embedCachedFlash(swf_url, swf_container, swfVersion,  
opt_params)
```

// Returns the Flash Player's major version or zero if Flash Player is not detected.

```
gadgets.flash.getMajorVersion()
```

深入小工具高级API

- Pubsub
- **<static> publish(channelName, message)**
 - Publishes a string-type message to a channel.
- **<static> subscribe(channelName, callback)**
 - Subscribes a gadget to a message channel.
- **<static> unsubscribe(channelName)**
 - Unsubscribes the gadget from a message channel.

深入小工具高级API

- Pubsub

Publisher

```
<UserPref name="test000"  
  display_name="Message"  
  default_value="Bonjour Monde"  
  publish="true" />
```

Subscriber

```
<UserPref name="test000"  
  display_name="Message"  
  default_value="Hello World"  
  listen="true"  
  on_change="updateMessage" />
```

深入小工具高级API

•Javascript API

Include feature API

```
<Require feature="pubsub" />
```

Create a publish-subscribe object

```
var pubsub = new gadgets.pubsub(__MODULE_ID__)
```

Subscribe for a typed messages

```
pubsub.subscribe("finance_symbol",  
refreshChart)
```

Publish a typed message

```
pubsub.publish("finance_symbol", "GOOG")
```

Cancel subscription

```
pubsub.unsubscribe("finance_symbol")
```


深入小工具高级API

Google Finance

Google Finance Portfolios

The Finance Portfolio gadget can now link with the Finance Chart gadget! [Add a Finance Chart gadget!](#)

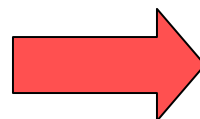
Market summary - [hide](#)

Dow	13,354.24	-24.63 (-0.18%)
Nasdaq	2,565.86	-10.83 (-0.42%)
S&P 500	1,470.15	-9.22 (-0.62%)

My Portfolio - [hide](#)

			Mkt Cap
GOOG	515.31	+0.31 (0.06%)	160.85B
MSFT	28.53	-0.28 (-0.97%)	267.48B
CSCO	30.93	+0.20 (0.65%)	187.78B
IBM	113.68	+0.44 (0.39%)	154.65B

Quotes delayed up to 20 minutes. [Disclaimer](#)



Google Finance Chart

[GOOG](#)

Zoom [1d](#) [5d](#) [1m](#) [3m](#) [6m](#) [YTD](#) [1y](#) [5y](#) [10y](#) [Max](#)

Aug 23 - Aug 27, 2007: +2.66 (0.52%)

Volume (thous / 8min)

2006 2007

[Disclaimer](#)

深入小工具高级API

- RPC

小工具API 提供 [makeRequest\(url, callback, opt_params\)](#) 函数来获取以及操作远程网站数据。

```
function getHtml() {
  var params = {};
  params[gadgets.io.RequestParameters.CONTENT_TYPE] = gadgets.io.ContentType.TEXT;
  var url = "http://www.google.com";
  gadgets.io.makeRequest(url, response, params);
};
function response(obj) {
  //obj.text contains the text of the page that was requested
  var str = obj.text;
  var html = str.substr(0, 400);
  document.getElementById('content_div').innerHTML = html;
};
gadgets.util.registerOnLoadHandler(getHtml);
```

深入小工具高级API

- RPC - Working with Different Content Types
 - TEXT -- gadgets.io.ContentType.TEXT
 - DOM -- gadgets.io.ContentType.DOM
 - FEED -- gadgets.io.ContentType.FEED
 - JSON -- gadgets.io.ContentType.JSON

E.g. gadgets.io.ContentType.TEXT

```
function getContacts() {
    var params = {};
    params[gadgets.io.RequestParameters.CONTENT_TYPE] = gadgets.io.ContentType.TEXT;
    var url = "http://gadget-doc-examples.googlecode.com/svn/trunk/opensocial-gadgets/Contacts.csv";
    gadgets.io.makeRequest(url, response, params);
};
// Callback function to process the response
function response(obj) {
    var responseText = obj.text;
    // Set CSS for div.
    var html = "<div style='padding: 5px;background-color: #FFFFBF;font-family:Arial, Helvetica;'
+ \"text-align:left;font-size:90%'>";

    // Use the split function to extract substrings separated by comma
    // delimiters.
    var contacts = responseText.split(",");
```

深入小工具高级API

- RPC

E.g. gadgets.io.ContentType.DOM

```
function makeDOMRequest() {
    var params = {};
    params[gadgets.io.RequestParameters.CONTENT_TYPE] = gadgets.io.ContentType.DOM;
    var url = "http://gadget-doc-examples.googlecode.com/svn/trunk/opensocial-gadgets/breakfast-data.xml";
    gadgets.io.makeRequest(url, response, params);
};

function response(obj) {
    // Start building HTML string that will be displayed in <div>.
    // Set the style for the <div>.
    var html = "<div style='padding: 5px;background-color: #ccf;font-family:Arial, Helvetica;'
        + "text-align:left;font-size:90%'>";
    // Set style for title.
    html += "<div style=' text-align:center; font-size: 120%; color: yellow; "
        + "font-weight: 700;'>";
    // obj.data contains a Document DOM element corresponding to the
    // page that was requested
    var domdata = obj.data;

    // Display menu title. Use getElementByTagName() to retrieve the <menu> element.
    // Since there is only one menu element in the file,
    // you can get to it by accessing the item at index "0".
    // You can then use getAttribute to get the text associated with the
    // menu "title" attribute.
    var title = domdata.getElementsByTagName("menu").item(0).getAttribute("title");
```

深入小工具高级API

- DOM most common function
 - **getElementsByTagName(tagname)**-- For a DOM document, returns an array of the element nodes whose names match tagname. You can retrieve all of the element nodes in a file by using the wildcard character (*), for example: `response.getElementsByTagName("*")`.
 - **getElementById(id)**-- For a DOM document, retrieves a single node by id.
 - **getAttribute(attrib)**-- For an element node, returns the attribute attrib. For example: `response.getElementsByTagName("menu").item(0).getAttribute("title")`.
 - **attributes** -- For an element node, returns an array of the node's attributes.

深入小工具高级API

- RPC

E.g. gadgets.io.ContentType.Feeds

```
function getFeed() {
  var params = {};
  params[gadgets.io.RequestParameters.CONTENT_TYPE] = gadgets.io.ContentType.FEED;
  params[gadgets.io.RequestParameters.NUM_ENTRIES] = new Number(entries);
  params[gadgets.io.RequestParameters.GET_SUMMARIES] = summaries;
  var url = "http://groups.google.com/group/Google-Gadgets-API/feed/rss_v2_0_msgs.xml";
  gadgets.io.makeRequest(url, response, params);
};

function response(obj) {
  // obj.data contains the feed data
  var feed = obj.data;
  var html = "";

  // Display the feed title and description
  html += "<div><b>" + feed.Title + "</b></div>";
  html += "<div>" + feed.Description + "</div><br>";
}
```

深入小工具高级API

- RPC

E.g. gadgets.io.ContentType.JSON

```
function makeJSONRequest() {
    var params = {};
    params[gadgets.io.RequestParameters.CONTENT_TYPE] = gadgets.io.ContentType.JSON;
    // This URL returns a JSON-encoded string that represents a JavaScript object
    var url = "http://gadget-doc-examples.googlecode.com/svn/trunk/opensocial-gadgets/json-data.txt";
    gadgets.io.makeRequest(url, response, params);
};

function response(obj) {
    var jsondata = obj.data;
    var html = "";
    // Process returned JS object as an associative array
    for (var key in jsondata) {
        var value = jsondata[key];
        html += key + ": ";
        // If 'value' is an array, render its contents as a bulleted list
    }
}
```

国际化(i18n)

- 提供多种语言在一个小工具中。
- 40+ 语言, 26+ 国家
- 可以在小工具里指定语言, iGoogle会自动根据当前语言来选择小工具的语言。

```
hello.xml
<?xml version="1.0" encoding="UTF-8" ?>
<Module>
  <ModulePrefs title="__MSG_title__">
    <Locale lang="en" messages="en.xml" />
    <Locale lang="zh-cn" messages="zh-cn.xml" />
  </ModulePrefs>
  <Content type="html"><![CDATA[
    __MSG_hello__
  ]]></Content>
</Module>
```

```
Title Edit
Hello, World!
```

en.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<messagebundle>
  <msg name="title">Title</msg>
  <msg name="hello">Hello, World!</msg>
</messagebundle>
```

zh-cn.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<messagebundle>
  <msg name="title">标题</msg>
  <msg name="hello">你好, 世界!</msg>
</messagebundle>
```

```
标题 编辑
你好, 世界!
```


提交小工具和推广小工具

- **步骤1:** 设置你的小工具的XML中的偏好（**preferences**）
- **步骤2:** 保证你的小工具足够鲁棒、安全。
- **步骤3:** 增加任何一个**locale**的**message bundle**。
- **步骤4:** 使别人很容易地添加小工具。
- **步骤5:** 提交你的小工具给**Google**。

Thanks

“The perfect search engine would understand exactly what you mean and give back exactly what you want.”

Larry Page, Google Co-Founder