## Atom编辑器嵌入 Node.js引擎实践

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#### Atom编辑器和Atom Shell

• Atom是GitHub出品的文本编辑器

https://github.com/atom/atom

- Atom Shell是基于Chromium和 Node.js的桌面软件开发平台 https://github.com/atom/atomshell
- Atom在Atom Shell之上构建, 并使用CoffeeScript编写

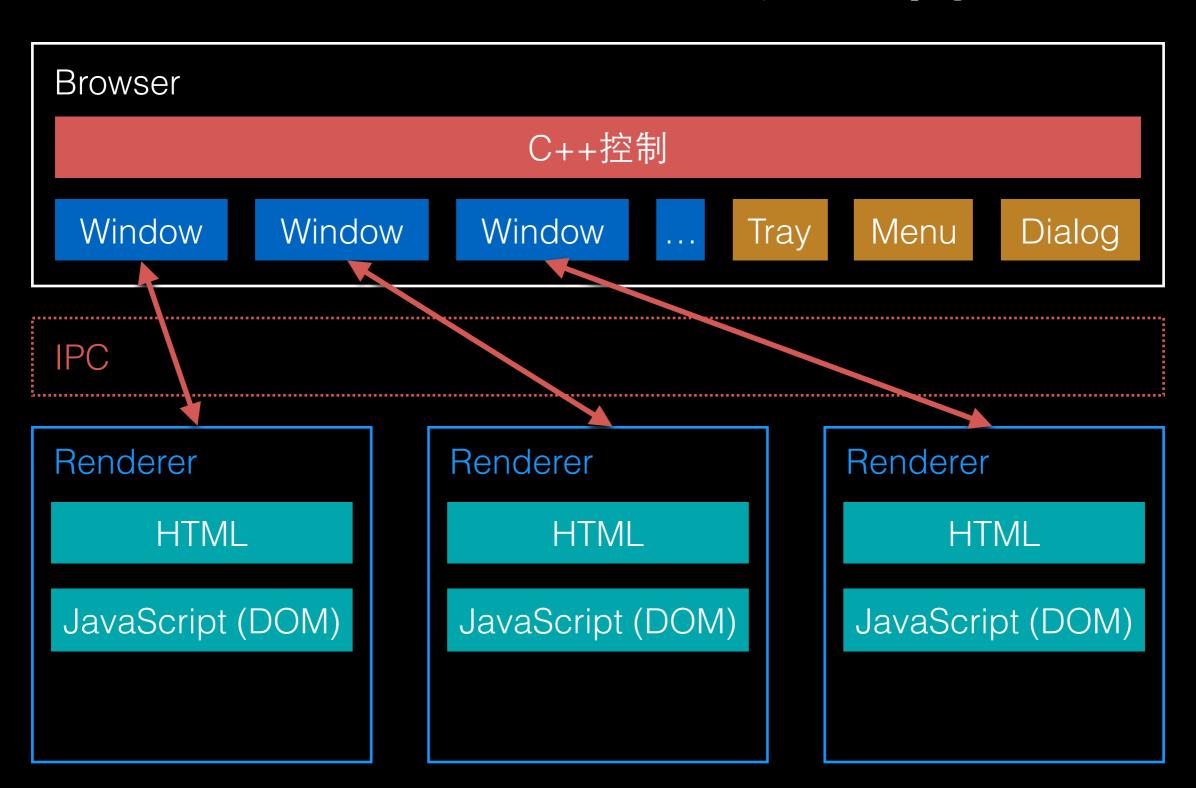
```
atom-application.coffee - /Users/zcbenz/codes/atom
▼ 🔲 atom
                                                                  * Settings x
                            atom-application.coffee x atom-win... x
 > iiii .git
                               BrowserWindow = require 'browser-window'
                               Menu = reguire 'menu'
                               app = require 'app'
                               dialog = require 'dialog'
 benchmark
                               fs = require 'fs'
                               ipc = require 'ipc'
                               path = require 'path'
                               os = require 'os'
 > III dot-atom
                               net = require 'net'

    exports

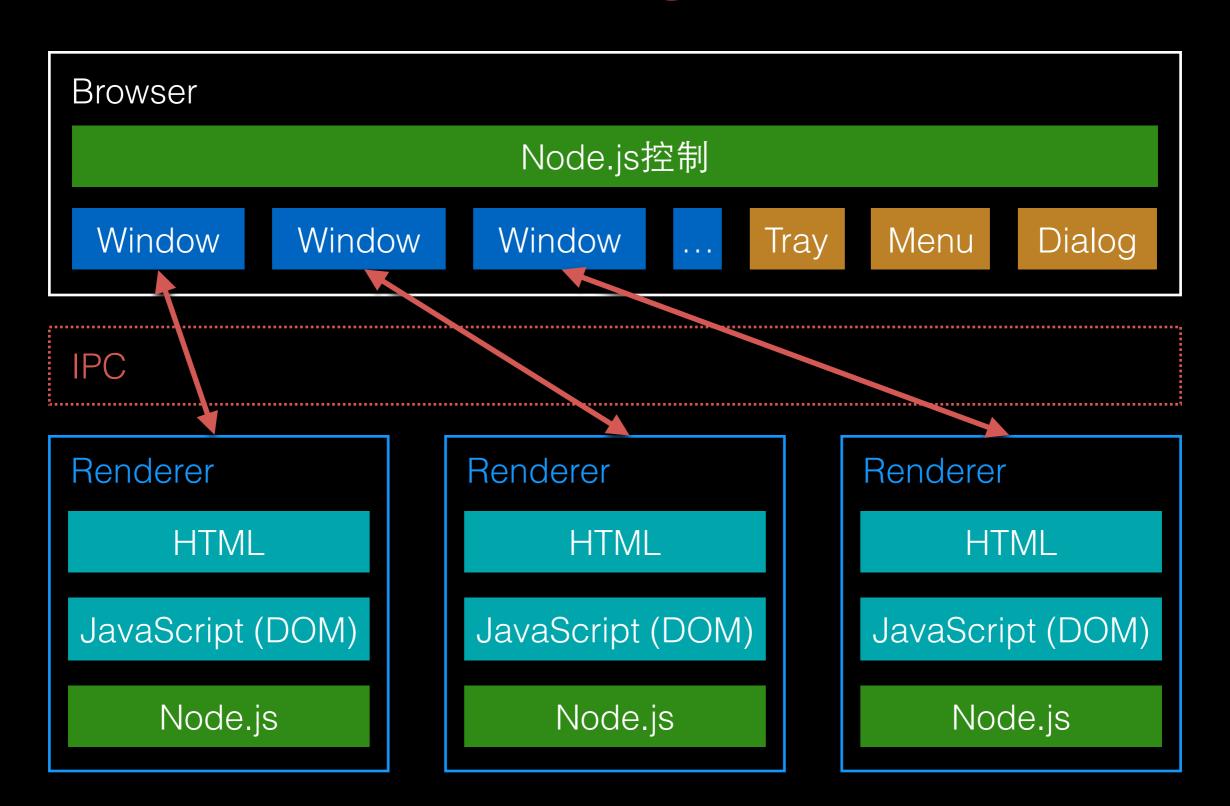
                               shell = require 'shell'
                               url = require 'url'
                               {EventEmitter} = require 'events'
                           17
                                = require 'underscore-plus'
                           18
  node modules
                           19
                               socketPath =
      resources
                           20
                                 if process.platform is 'win32'
                           21
                                    "\\\\.\\pipe\\atom-sock"
                           22
                           23
                                   path.join(os.tmpdir(), 'atom.sock')
                           24
                           25
                               # The application's singleton class.
                           26
        application-menu.c
                           27
                              # It's the entry point into the Atom applicat
                           28
                               # of the application.
                           29
        atom-protocol-han
                               module.exports =
        atom-window.coffe
                               class AtomApplication
                                  _.extend @prototype, EventEmitter.prototype
        auto-update-manas
        context-menu.coffe
                                 # Public: The entry point into the Atom app
        main.coffee
                           35
                                 @open: (options) ->
                           36
                                   createAtomApplication = -> new AtomAppli
   > node modules
                           37
      atom.coffee
                           38
                                    # FIXME: Sometimes when socketPath doesn
                           39
                                    # take a few seconds to trigger 'error'
         buffered-node-proces
                                    # or atom-shell. before it's fixed we ch
      buffered-process.coffe
                          src/browser/atom-application.coffee 10,20 J/OoffeeScriptnd Feedback
```

#### Atom Shell是可用 Node.js编程的 最小化Chromium浏览器

#### Chromium浏览器



#### Atom Shell



#### Atom Shell里的Node.js

- Atom Shell同时在Chromium浏览器的Browser端和Renderer端嵌入了Node.js引擎
- Browser端可以用JavaScript操作GUI,比如创建窗口、建立窗口菜单等,同时也能使用Node.js的API
- Renderer端则是在DOM的基础上增加了Node.js 的API

## Node.js引擎是如何 嵌入到Atom Shell中的?



1. 初始化V8引擎

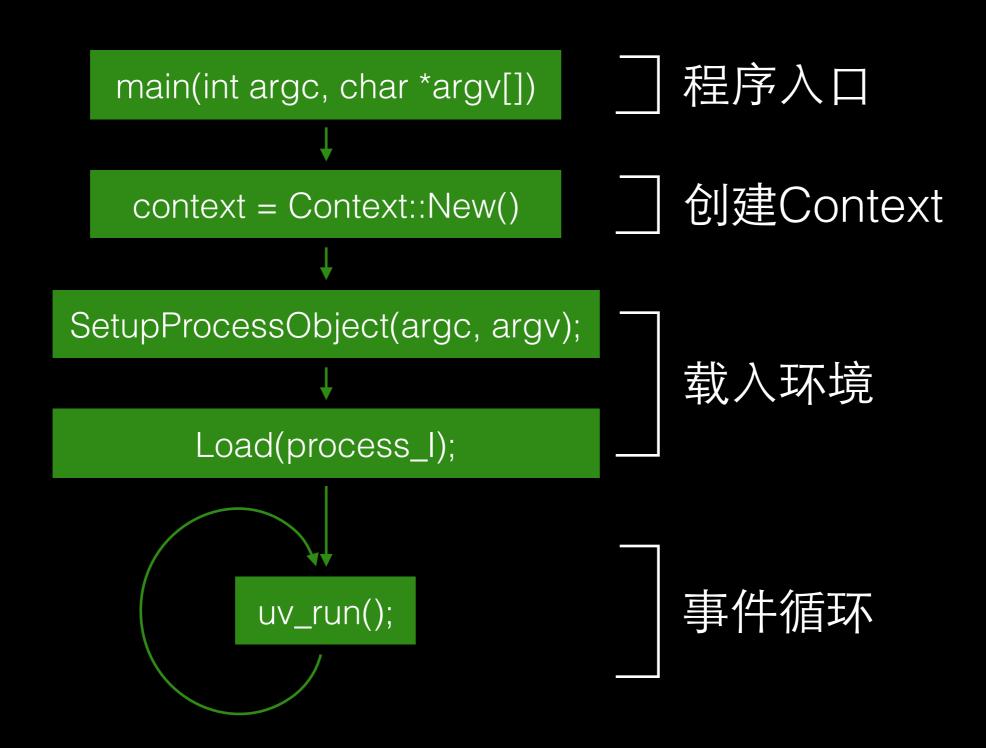
2. 载入Node.js环境

3. 进入事件循环

今天的内容

## 2. 载入Node.js环境

#### Node.js $\leq 0.10.x$



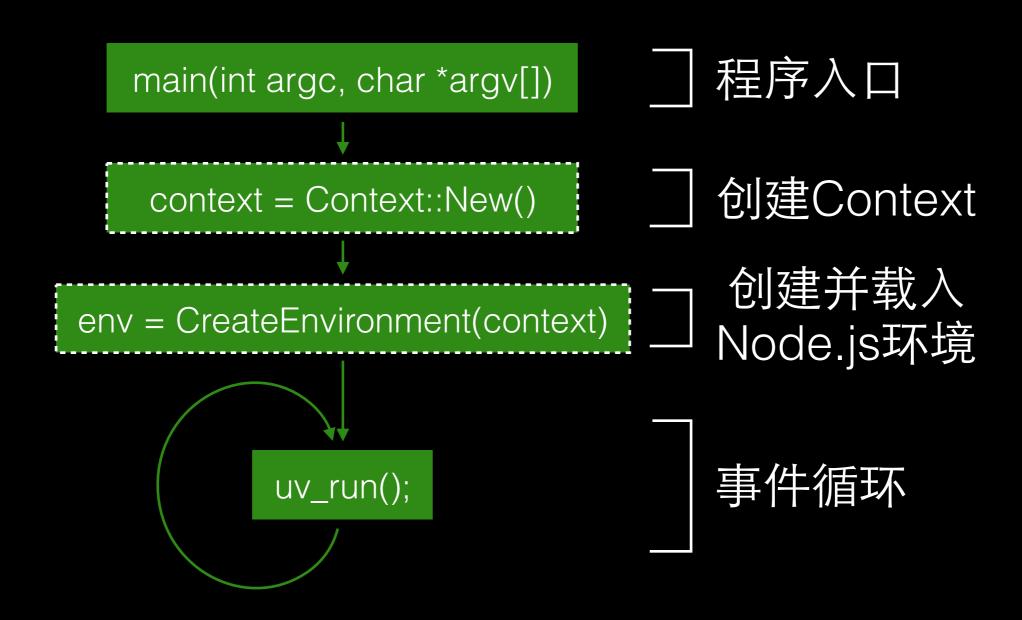
## 只允许有一个 全局context



#### multi-context patch

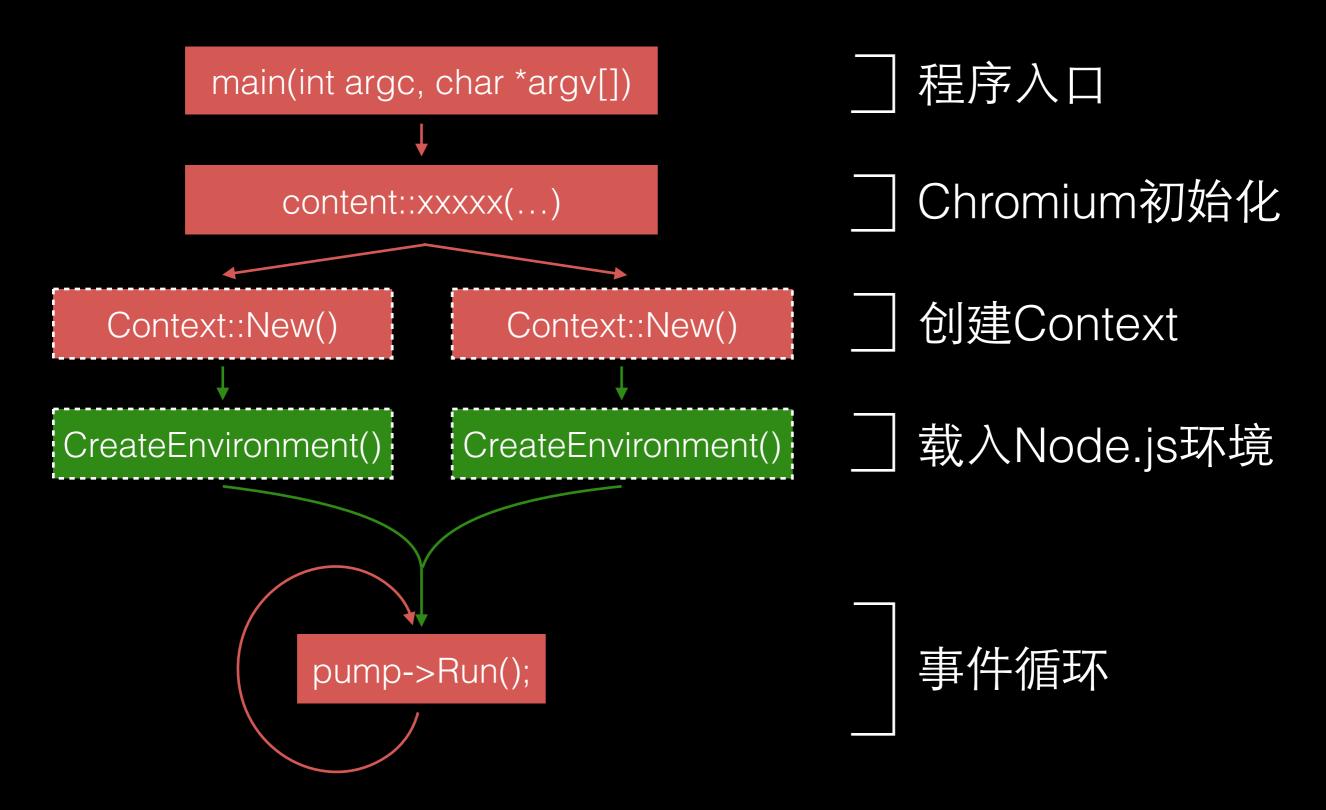
http://strongloop.com/strongblog/whats-new-node-js-v0-12-multiple-context-execution/

#### Node.js > = 0.11.x



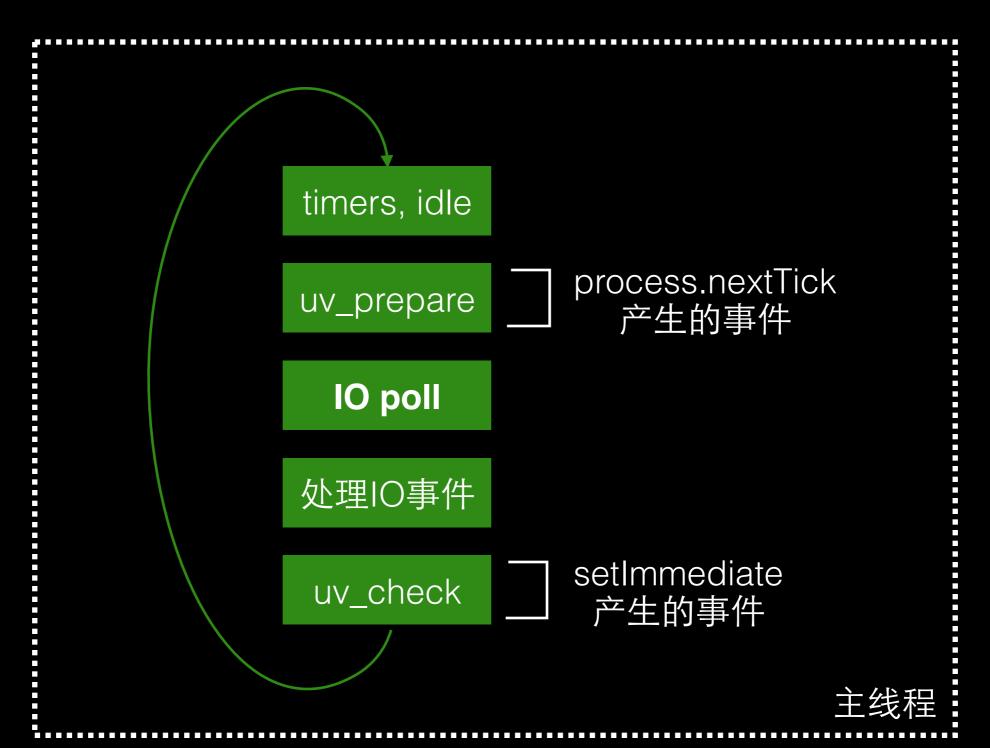
## 一个线程内允许 多个context

#### Atom Shell中载入Node.js

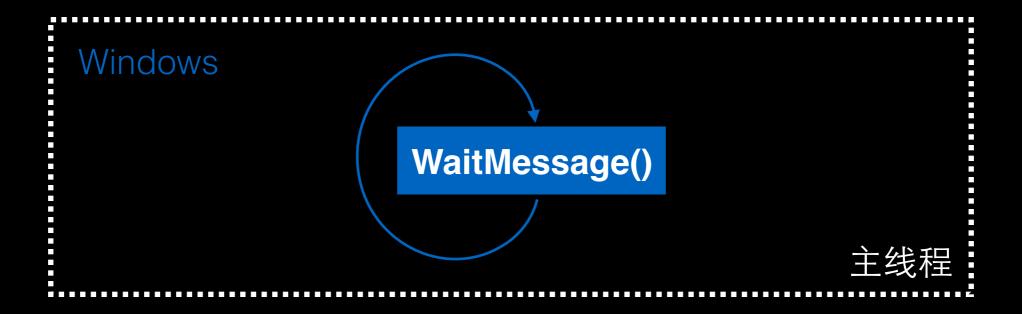


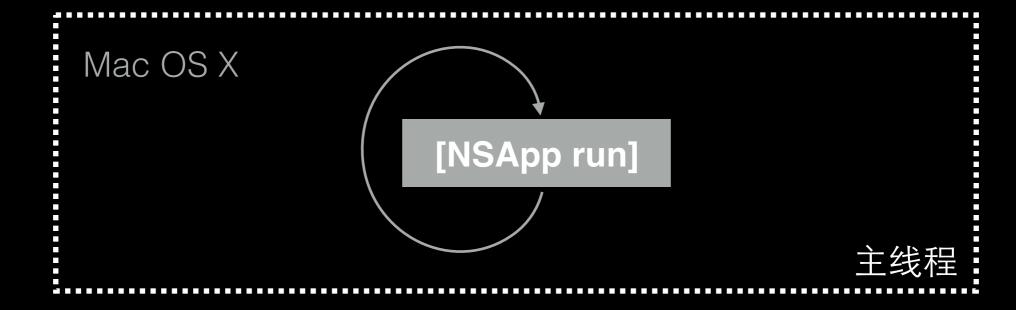
## 3. 进入事件循环

## Node.js的事件循环



#### 原生GU程序的事件循环





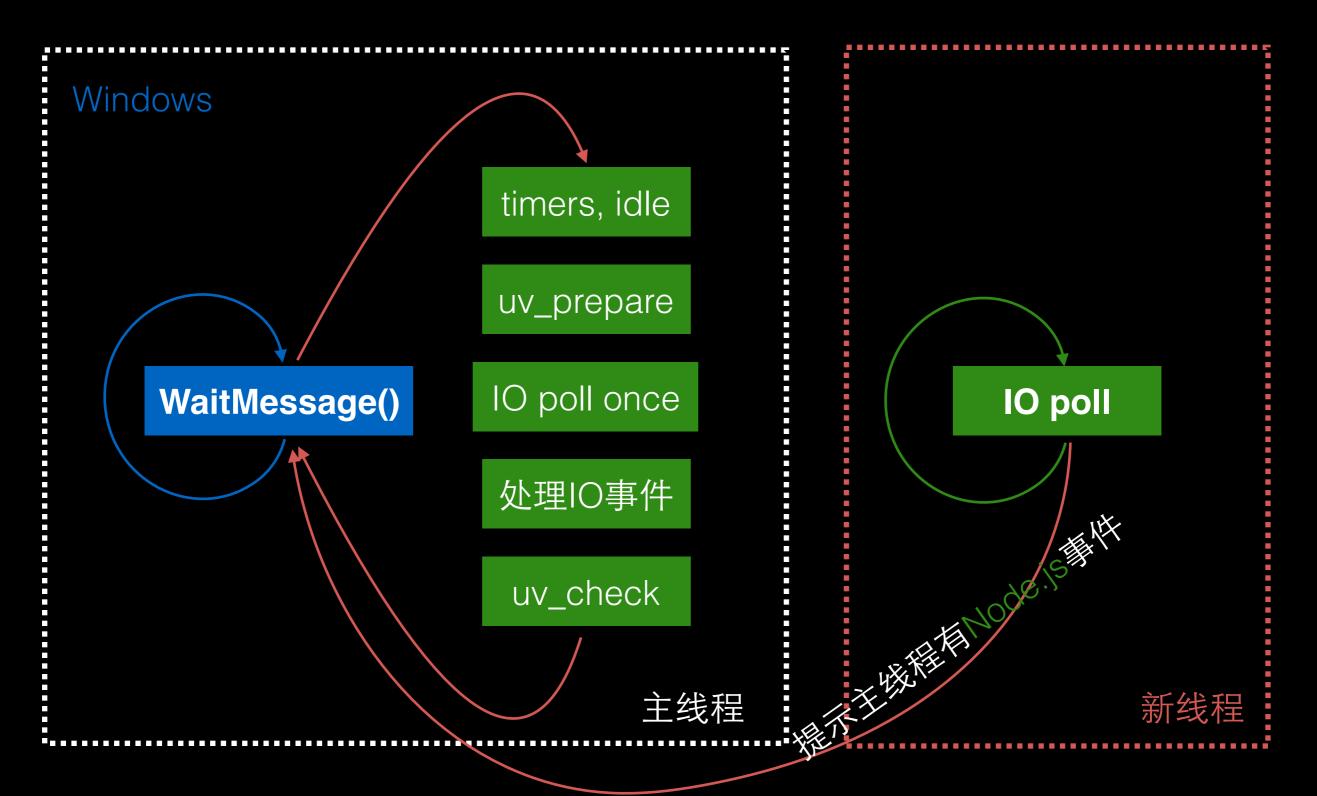
# 一个主线程,两个事件循环

main(int argc, char \*argv[]) ?????

### 事件循环的融合

https://github.com/atom/atom-shell/blob/master/atom/common/node\_bindings.cc

## Atom Shell的事件循环



# 问题?