

devfest

# Chrome 扩展更新 与 MV3 介绍

 Google Developer Groups  
Tianjin



韩国恺 GDG & GDE

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2023/12/09 天津

```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.blue[200],  
  ),  
),  
),  
s.star,  
r: Colors.blue[500],  
Text('23'),
```

# devfest



## 个人介绍

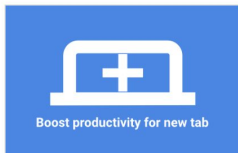
北京GDG组织者, 2013

Dart(Web) GDE, 2013

Web(Browser Extensions) GDE, 2023

技术分享近 20 场, 活动组织近 40 场

主办过 DevFest 13/14/15/16/19/21/23



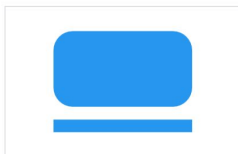
## Re-newtab

A redesigned, productive and pragmatic new tab alternative.



## Quick Look Inbox for Gmail

Get notifications and quick look your new Gmail messages.



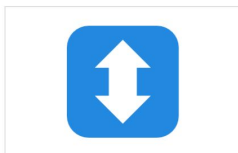
## Tab Groups Extension

Automatically group tabs, save tabs/groups, and provide shortcuts for tabs/groups.



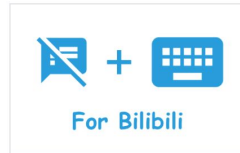
## Vertical Tabs

Display and manage tabs vertically in Chrome sidebar.



## Control for Transmission

A concise, lightweight and high-performance Transmission Manager and Web Extension.



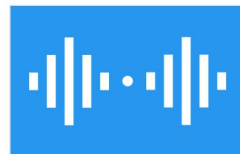
## Extension for Bilibili Player

Add useful keyboard shortcuts and default settings for bilibili player.



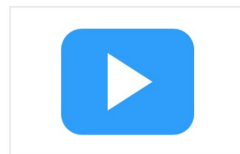
## QR Code

Generate and Scan QR Code.



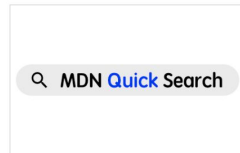
## Talking Clock

Announce the time periodically, set custom recurring reminders and display time.



## Video Player for Local Files

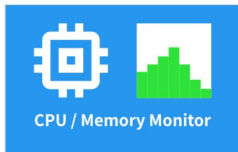
A web video player for local files.



## MDN Search

Use omnibox to search MDN Web Docs with autocomplete.





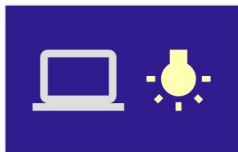
## System Monitor for CPU / Memory

A tool that display system CPU or Memory usage on the extension icon.



## Clear Site Data

Clear current or all site data (cache, storage, etc).



## Keep Computer Awake (for a While)

Keep your computer running or screen on, and return to default state by a timer.



## Color Picker

A color picker for Web pages.



## Finder Bookmarks

A bookmarks manager like macOS Finder.



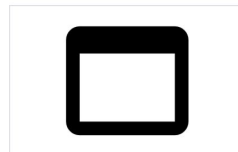
## Simple History Manager

A simple Chrome history manager.



## Battery Status

Display battery level, charging or discharging status.



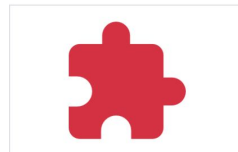
## Blank New Tab

A blank new tab page with support for light and dark themes, no JavaScript.



## Clear Site Data

Clear current or all site data (cache, storage, etc).



## Permissions With Warnings

A warning permissions checking tool for extension developers.



## Chrome Editors' spotlight

Promising up-and-coming extensions to try out




**Corgi - Learn languages...**  
Language learning is now easy




**Corgi**



**QR Code**  
Generate and Scan QR Code.



**Text Blaze: Templates and...**  
Create smart text expansions to get more done and streamline...




**Helperbird: Accessibility ...**  
Improve your reading, writing & accessibility with Helperbird...



## Editors' Picks extensions


Handpicked by Chrome Editors



**scholarcy**  
Read less. Learn more.


Reading furnishes the mind only with materials of knowledge; it is thinking that makes what we read ours.

John Locke  
English philosopher and physician


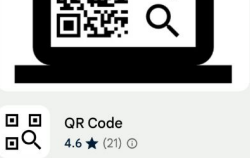


**Scholarcy Browser...**  
4.2 ★ (33) ⓘ


Summarizes research articles, creates interactive flashcards, highlights key points, links to open-access versions of each...



**QR Code**  
Generate and Scan QR Code.



**Track**  
Easily track all order statuses in one place



**eTrack - Package Tracking**  
4.8 ★ (87) ⓘ

The One Click Package Tracker That Monitors All Your Orders In One Place.



**Corgi - Learn languages...**  
Language learning is now easy



```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.green[200],  
  ),  
),  
),  
s.star,  
r: Colors.green[500],  
Text('23'),
```

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# Chrome 扩展 发展历史



```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.yellow[200],  
  ),  
),  
),  
  
s.star,  
r: Colors.yellow[500],  
Text('23'),
```

# devfest



# Manifest V3 带来的变化



# 禁止任何远程代码

Remotely Hosted Code ❌

所有代码均要打包到扩展中

例外 : sandbox iframe

# 禁止执行动态生成代码

Arbitrary Code (String as Code) ❌

代码只能是静态的 js 文件或 function

# CSP 声明与限制

```
// MV2
```

```
"content_security_policy": "default-src  
'self'"
```

```
// MV3
```

```
"content_security_policy": {  
  "extension_pages": "default-src 'self'",  
  "sandbox": "..."  
}
```

# CSP 声明与限制

浏览器通过 CSP 强制限制了远程代码与动态代码

// MV3 默认

```
"content_security_policy": {  
  "extension_pages": "script-src 'self'; object-src 'self';"  
}
```

// MV3 最大允许

```
"content_security_policy": {  
  "extension_pages": "script-src 'self' 'wasm-unsafe-eval'; object-src 'self';"  
}
```

\* http://localhost:\* http://127.0.0.1:\*

# WebAssembly in MV3

CSP 中添加 `wasm-unsafe-eval` 才能执行

Chrome 102

```
WebAssembly.instantiateStreaming(source, importObject)
```

# 网络拦截 API

MV2

`webRequestBlocking`



MV3

`declarativeNetRequest`

\* `webRequest` 非 blocking 的部分依然可用

# Background 后台

MV2

Background Page

event page

persistent page



MV3

Service Worker

# Action API

MV2

**chrome.browserAction**  
**chrome.pageAction**



MV3

**chrome.action**



# Commands API (快捷键)

API 基本不变，但是初期在 MV3 上存在很多 bug，现已修复。

MV2

`_execute_browser_action`  
`_execute_page_action`



MV3

`_execute_action`

# 向页面注入代码

MV2

```
tabs.executeScript()
```

```
tabs.insertCSS()
```



MV3

```
scripting.executeScript()
```

```
scripting.insertCSS()
```

# host permissions 分离

MV2

```
{
  "permissions": [
    "tabs",
    "https://www.blogger.com/",
  ],
  "optional_permissions": [
    "bookmarks",
    "*/**/*",
  ]
}
```



MV3

```
{
  "permissions": [
    "tabs"
  ],
  "optional_permissions": [
    "bookmarks"
  ],
  "host_permissions": [
    "https://www.blogger.com/"
  ],
  "optional_host_permissions": [
    "*/**/*",
  ]
}
```



Chrome 102

# Favicon API

Chrome 104

// MV2

'chrome://favicon/size/16@2x/' + url

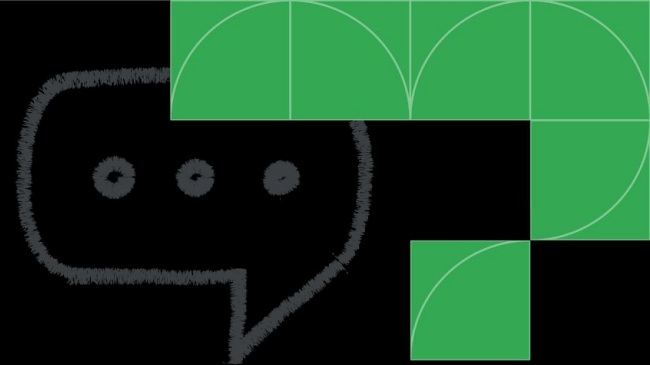


// MV3

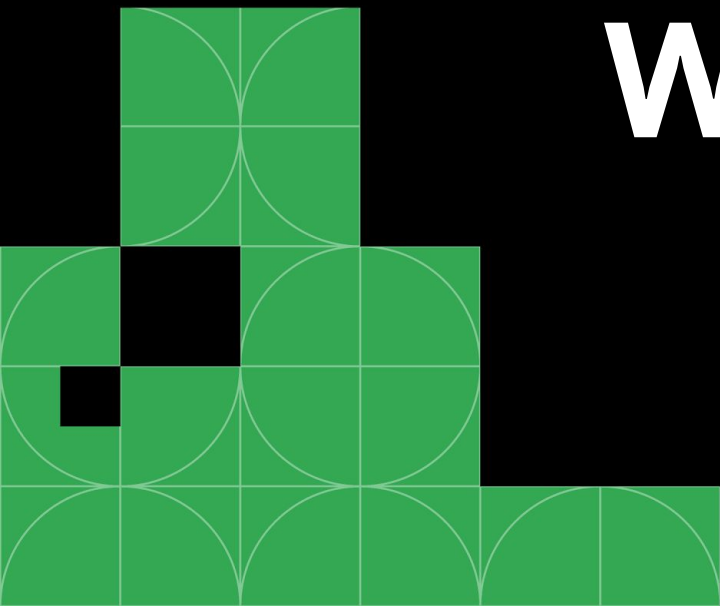
chrome-extension://<id>/\_favicon/?pageUrl=url&size=32

```
Text(  
  'Simple Statement or URL',  
  style: TextStyle(  
    color: Colors.green[200],  
  ),  
),  
),  
s.star,  
r: Colors.green[500],  
Text('23'),
```

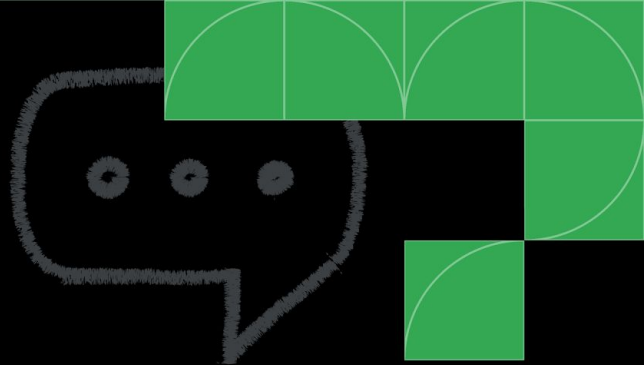
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# Why MV3?

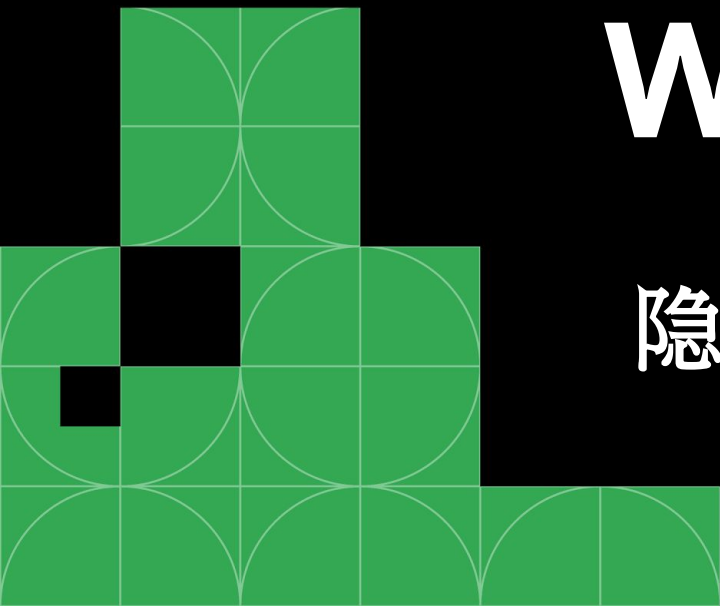


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# Why MV3?

## 隐私、安全、性能



# Why MV3?

1. 2022年初已禁止提交新的 MV2 扩展！
2. 很多新的 API 功能只支持 MV3 ！
3. 现有 MV2 扩展也将在未来停止支持！

## 最新淘汰时间表 (官方 2023/11/16 发布)

1. **2024年6月**，Chrome 127 开始。Dev, Canary, Beta 版的 Chrome 将禁用 MV2，无法从商店安装 MV2 扩展。
2. 企业安装策略可以延长一年。

建议开发者：2024年6月之前升级到 MV3



```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.blue[200],  
  ),  
),  
),  
s.star,  
r: Colors.blue[500],  
Text('23'),
```

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**新功能！**  
**New APIs**



每年一个大版本



每月一个版本

# 大量 API 开始陆续支持 Promise

`chrome.browsingData`

`chrome.commands`

`chrome.contentSettings`

`chrome.debugger`

`chrome.downloads`

`chrome.fontSettings`

`chrome.history`

.....

Chrome 88+

Chrome 96+

Chrome 100+

# two ways import in service worker

```
// in manifest.json
"background": {
  "service_worker": "sw.js"
}
```

```
// in sw.js
importScripts('a.js', 'b.js');
```

```
// in manifest.json
"background": {
  "service_worker": "sw.js",
  "type": "module"
}
```

```
// in sw.js
import * as myModule from
"module-name.js";
```



Chrome 88

Chrome 92

# Declarative Net Request API

Chrome 84

基于规则的网络请求修改：

`allow, block, redirect, modify`

静态声明 或 动态更新

# chrome.action API

```
action.getUserSettings()
```

```
action.isEnabled()
```

```
action.getBadgeTextColor()
```

```
action.setBadgeTextColor()
```

Chrome 88

Chrome 91

Chrome 110

# chrome.scripting API

`scripting.executeScript()`

`scripting.insertCSS()`

Chrome 88

`scripting.registerContentScripts()`

动态注册 content scripts

Chrome 96

# content scripts 新功能

动态注册 content scripts

Chrome 96

manifest 声明式新增：

```
"match_origin_as_fallback"
```

Chrome 99

```
"world": ISOLATED | MAIN
```

Chrome 111



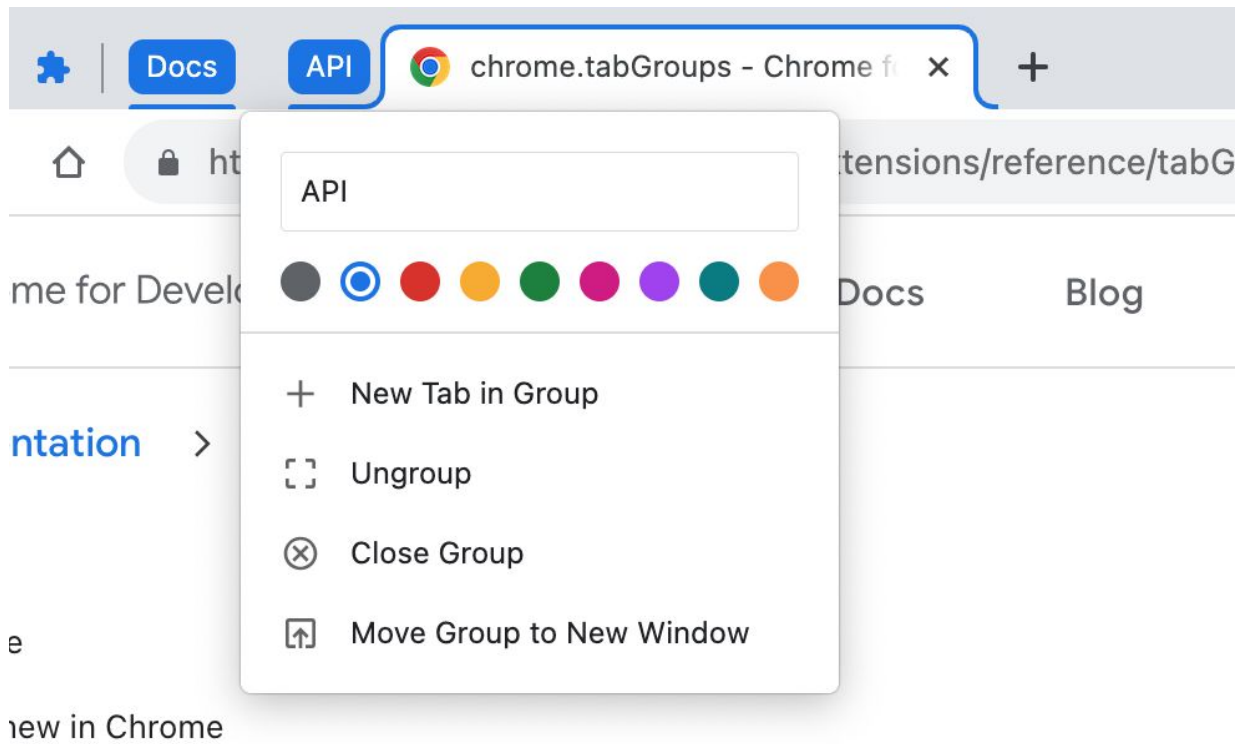
# Web Accessible Resources

新增: "use\_dynamic\_url"

```
{
  "web_accessible_resources": [
    {
      "resources": [ "test1.png", "test2.png" ],
      "matches": [ "https://resources-1.glitch.me/*" ]
    }, {
      "resources": [ "test3.png", "test4.png" ],
      "matches": [ "https://resources-2.glitch.me/*" ],
      "use_dynamic_url": true (尚未实现)
    }
  ],
}
```

# Tab Group API

Chrome 89



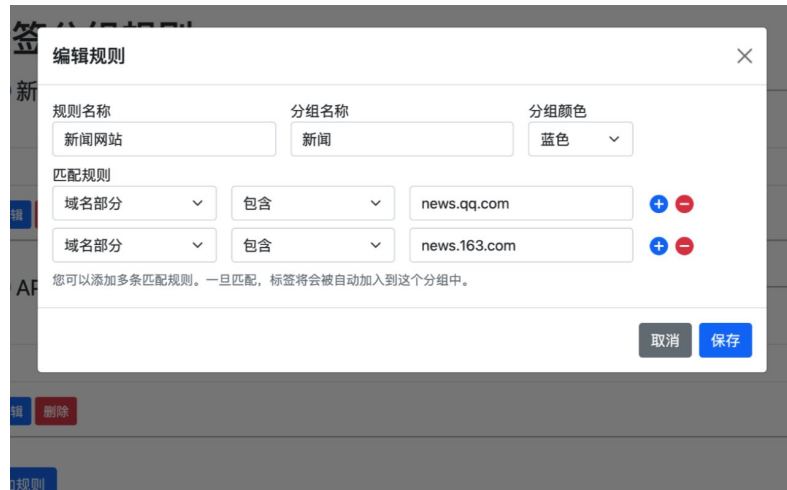
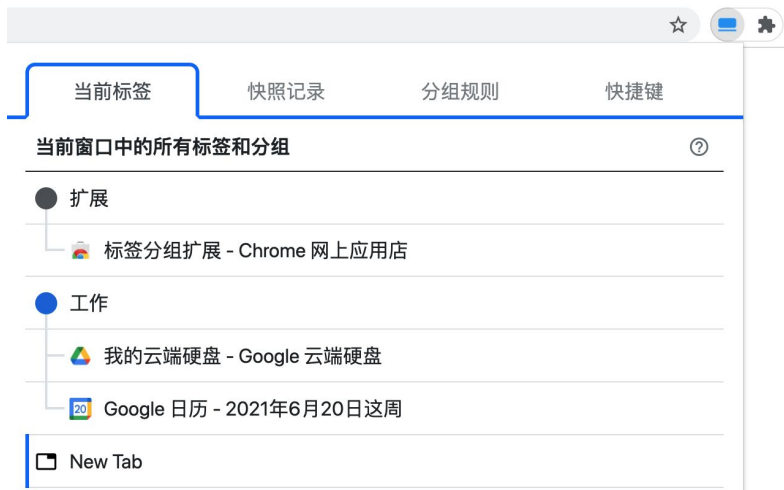
# Tab Groups Extension

guokai.dev  Featured 4.5 ★ (262 ratings)

Extension

Workflow & Planning

70,000 users



# chrome.storage API

`storage.session` 内存存储

存储大小

`storage.session` 1 MB → 10 MB

`storage.local` 5 MB → 10 MB

Chrome 102

Chrome 112

Chrome 114

# Omnibox API in MV3

Chrome 102

功能没有变化，但是 102 之前不支持

# Offscreen Document API

Chrome 109

用途: 补充 service worker 缺少的功能

功能:

- 支持 DOM
- 无时间限制 (除 AUDIO\_PLAYBACK Reason)
- 仅 chrome.runtime 扩展 API 可用

# Offscreen Document API

Chrome 109

New Reason: 'WORKERS' | 'LOCAL\_STORAGE'

Chrome 114

Multiple Reasons

Chrome 115

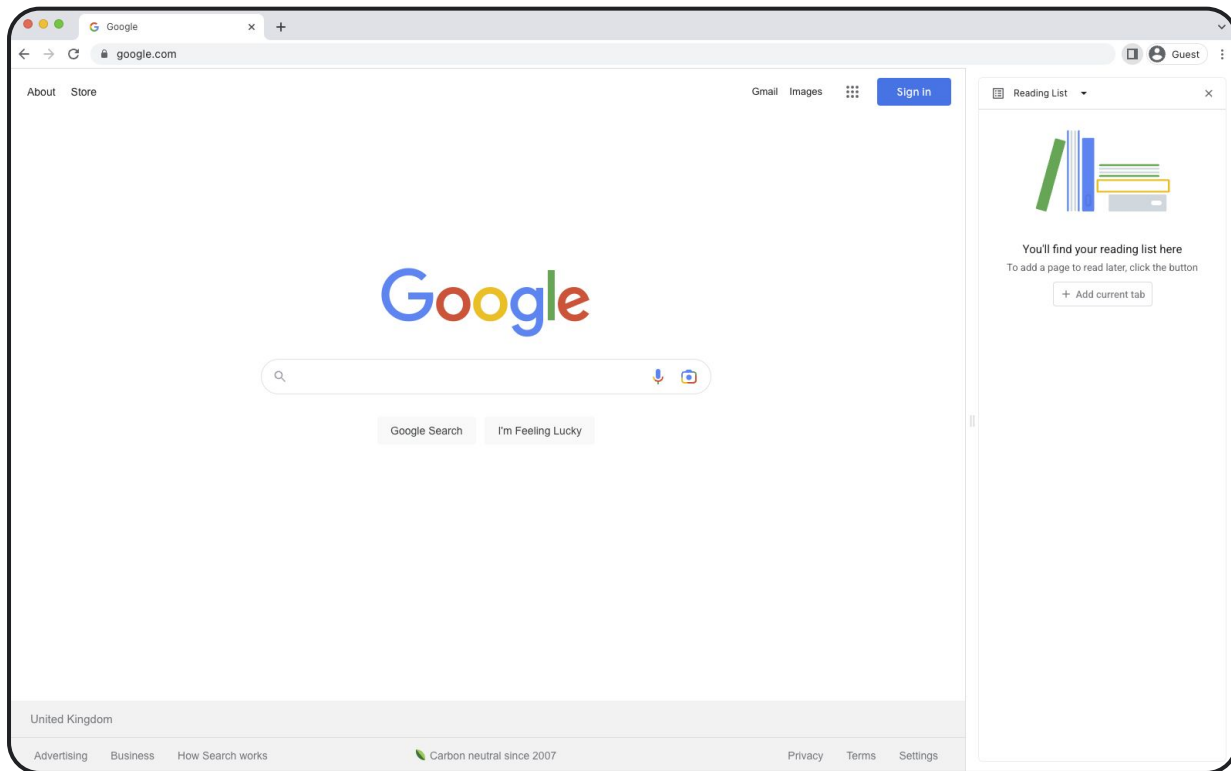
New Reason: 'GEOLOCATION'

Chrome 116

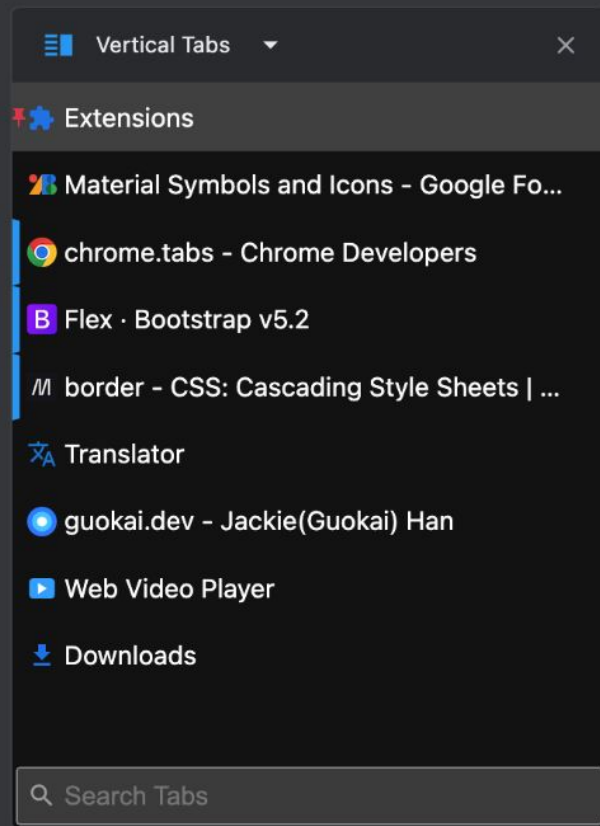
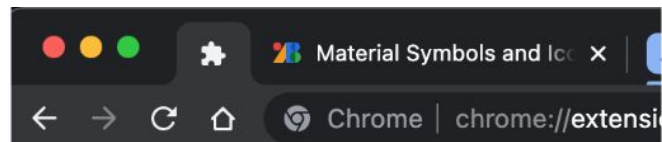
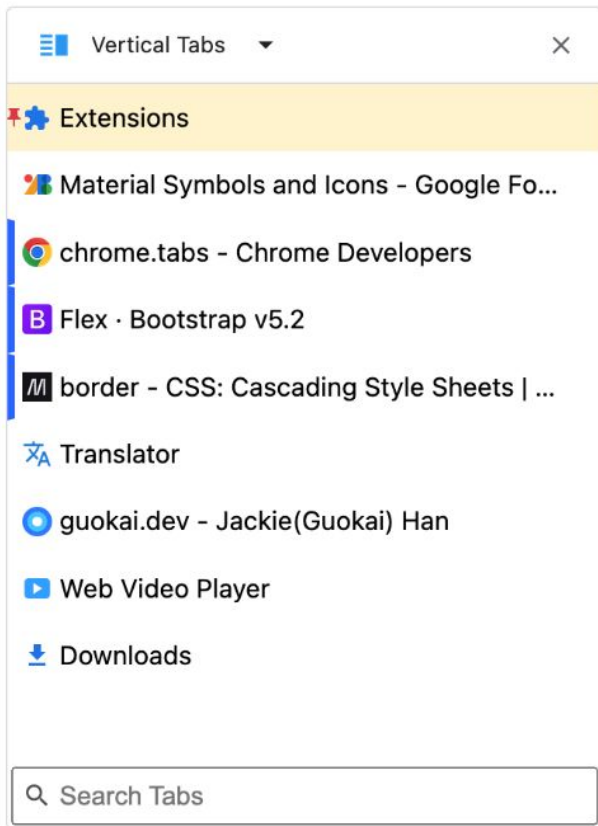
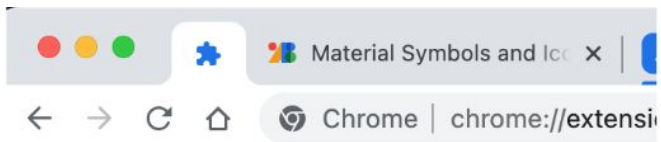
# Side Panel API

Chrome 114

## 侧边栏 API







# Side Panel API

Chrome 114

```
sidePanel.open()
```

Chrome 116

```
chrome.contextMenus.onClicked.addListener((info, tab) => {  
    chrome.sidePanel.open({ windowId: tab.windowId });  
});
```

# `runtime.getContexts()`

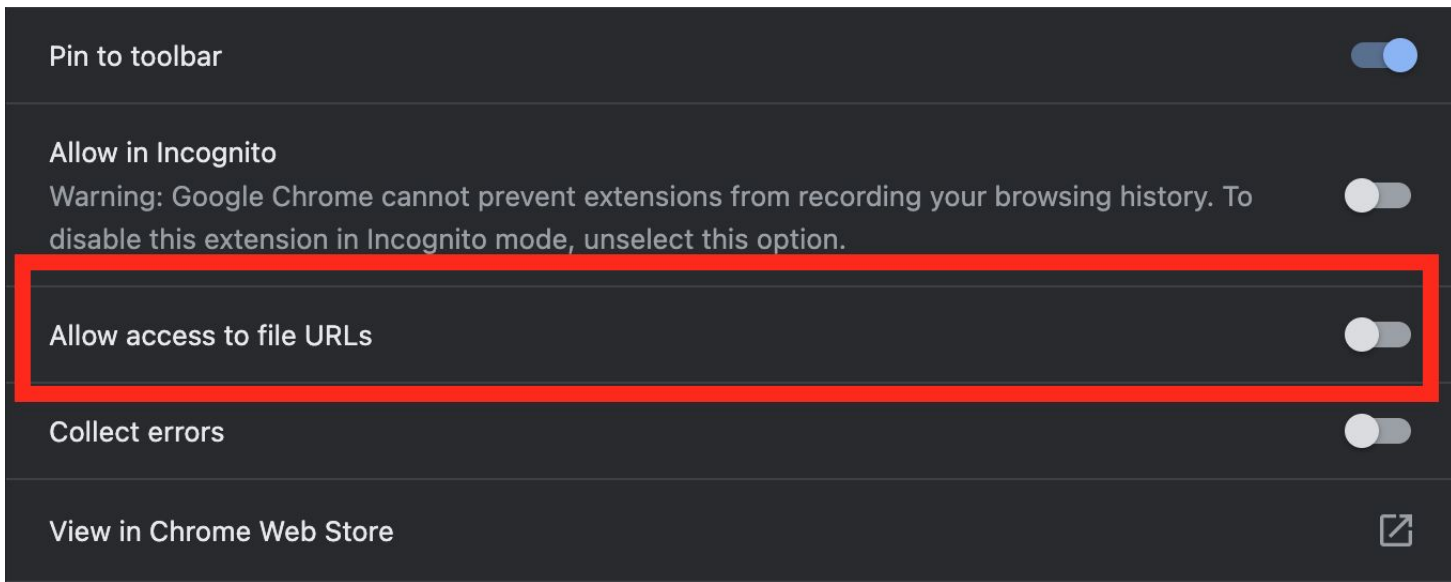
Chrome 116

`ContextType` : "TAB" | "POPUP" | "BACKGROUND" |  
"OFFSCREEN\_DOCUMENT" | "SIDE\_PANEL"

`contextId`, `documentId`,  
`documentOrigin`, `documentUrl`,  
`frameId`, `incognito`, `windowId`, `tabId`

# Open file:// URL 需要用户手工开启 "Allow access to file URLs"选项

Chrome 118



Open file:// URL 需要用户手工开启  
"Allow access to file URLs"选项

Chrome 118

注意：从 Web Store 安装的扩展中默认不显示该选项

```
"optional_host_permissions": [ "file:///*" ]
```

# Downloads API

Chrome 105

显示或隐藏 download UI

`downloads.setUiOptions()` 取代 `setShelfEnabled()`

# Reading List API

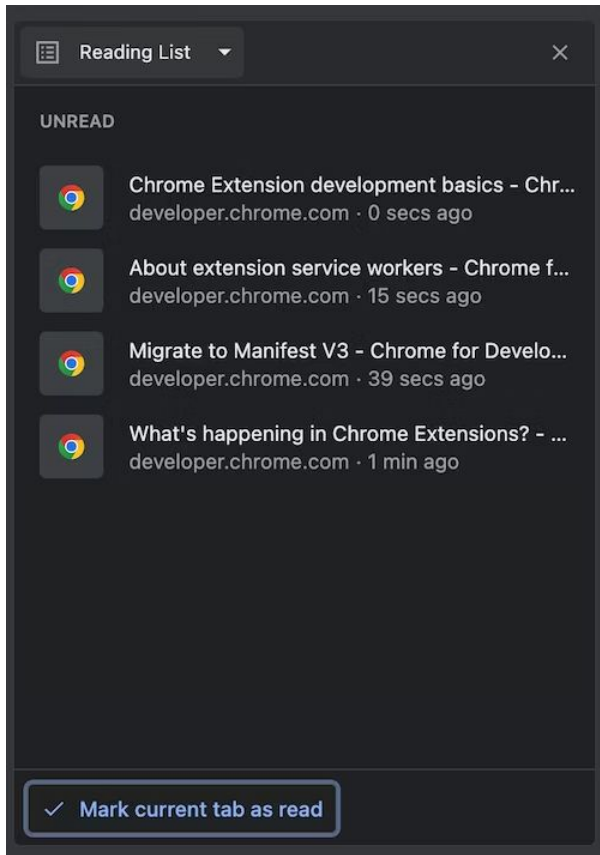
Chrome 120

浏览器侧边栏自带的一个功能

类似书签

有已读、未读状态

API 支持增删改查



# User Scripts API

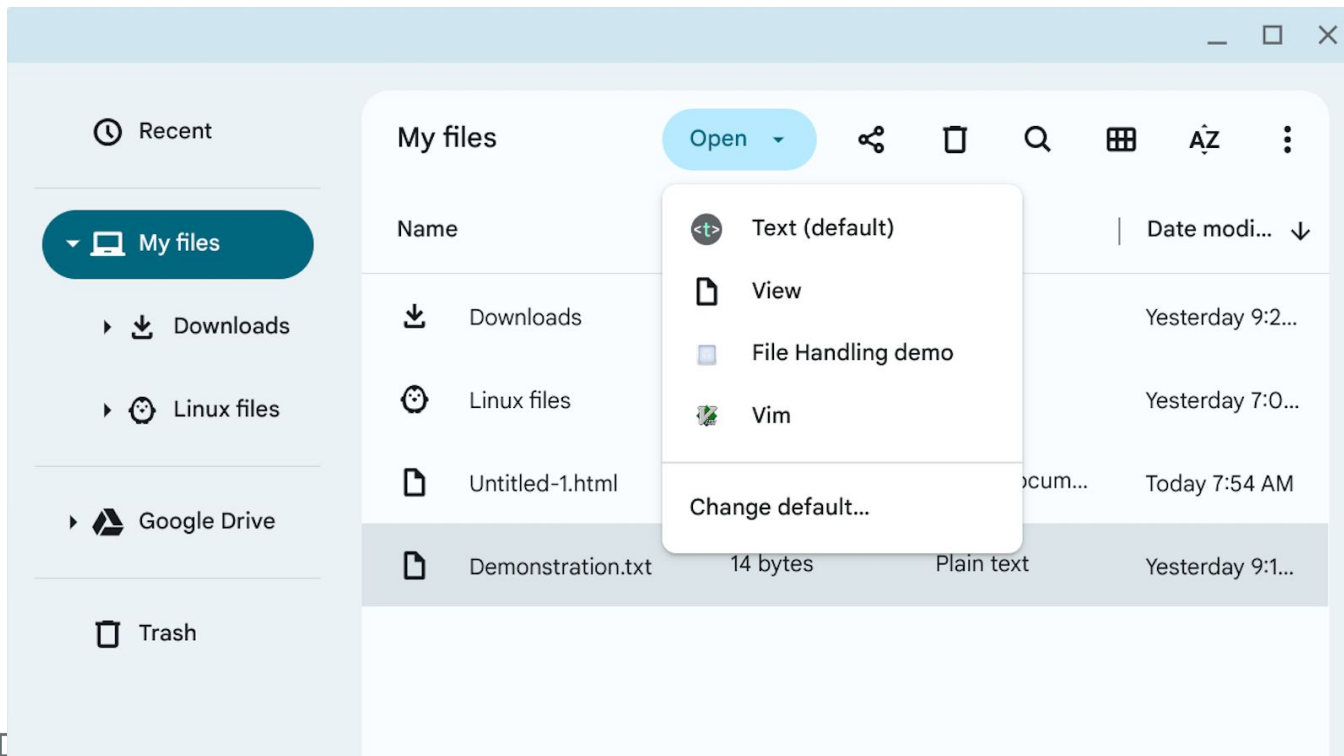
Chrome 120

```
chrome.userScripts.register([  
  id: 'test',  
  matches: ['*://*/*'],  
  js: [{code: 'alert("Hi!")'}],  
  runAt: 'document_idle',  
  world: 'USER_SCRIPT' or 'MAIN'  
]);
```



# File handling on Chrome OS

Chrome 120



# File handling on Chrome OS

Chrome 120

```
"file_handlers": [  
  {  
    "action": "/open_text.html",  
    "name": "Plain text",  
    "accept": {  
      "text/plain": [".txt"]  
    }  
    "launch_type": "single-client"  
  }  
]
```

类似 PWA

# Alarm API

最小触发时间：1分钟 → 30秒

Chrome 120

```
chrome.alarms.create('demo-alarm', {  
    periodInMinutes: 0.45  
});
```

# service worker lifetime 改进

早期生命周期方面存在一些问题，导致随机、难以复现的 bug

目前已做了一些改进，并放宽了限制

## 在 manifest 中设置最低版本

```
{  
    "minimum_chrome_version": "107.0.5304.87",  
}
```

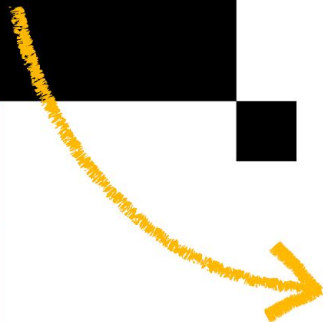
# Extension Update Testing Tool

扩展升级测试工具

<https://github.com/GoogleChromeLabs/extension-update-testing-tool>

```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.red[200],  
  ),  
),  
),  
s.star,  
r: Colors.red[500],  
Text('23'),
```

# devfest



# Chrome Web Store 更新

# 新版扩展商店上线

<https://chromewebstore.google.com/>



chrome web store



Search extensions and themes



Discover

Extensions

Themes

## Welcome to the Chrome Web Store

Supercharge your browser with extensions and themes for Chrome



See collection



1 / 5



### Top categories

Shopping



Entertainment



Tools



Art & Design





# 新版 Web Store

8月底发布预览版，11月底正式上线

整体设计做了很多改进

真正支持 1280x800 高清截图，过去只显示 640x400

扩展分类调整了

搜索提示改进

# 上架注意

开始做之前先看一遍 Policy, 否则可能无法上架。

规则很多、很严！

比如 Single Purpose、隐私策略、压缩代码(但不能混淆代码)等

```
Text(  
  'Section Title',  
  style: TextStyle(  
    color: Colors.yellow[200],  
  ),  
),  
),  
s.star,  
r: Colors.yellow[500],  
Text('23'),
```

# devfest



## 资源与社区

# 官方文档大量更新

## API reference

Learn about extension APIs and capabilities.

[See all APIs](#)[chrome.action](#)[chrome.alarms](#)[chrome.commands](#)[chrome.declarativeNetRequest](#)[chrome.offscreen](#)[chrome.runtime](#)[chrome.scripting](#)[chrome.sidePanel](#)[chrome.storage](#)[chrome.tabs](#)[chrome.userScripts](#)[chrome.webNavigation](#)[chrome.webRequest](#)[chrome.windows](#)[chrome.permissions](#)

## Manifest reference

See supported manifest keys.

[See all keys](#)[action](#)[background](#)[commands](#)[content\\_scripts](#)[declarative\\_net\\_request](#)[description](#)[externally\\_connectable](#)[host\\_permissions](#)[manifest\\_version](#)[minimum\\_chrome\\_version](#)[name](#)[permissions](#)[side\\_panel](#)[version](#)[web\\_accessible\\_resources](#)

# 资源与社区

官方文档和示例

[developer.chrome.com/docs/extensions/](https://developer.chrome.com/docs/extensions/)

Chrome 扩展邮件列表

[groups.google.com/a/chromium.org/g/chromium-extensions](https://groups.google.com/a/chromium.org/g/chromium-extensions)

WebExtensions Community Group (WECG)

[github.com/w3c/webextensions](https://github.com/w3c/webextensions)

# 反馈与支持

提交 Bug

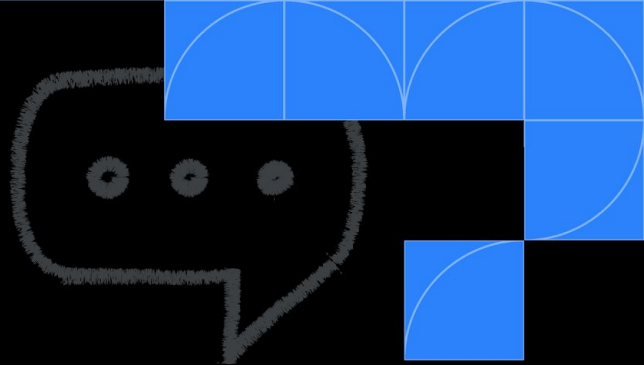
[bugs.chromium.org/p/chromium/issues/list](https://bugs.chromium.org/p/chromium/issues/list)

Web Store 支持

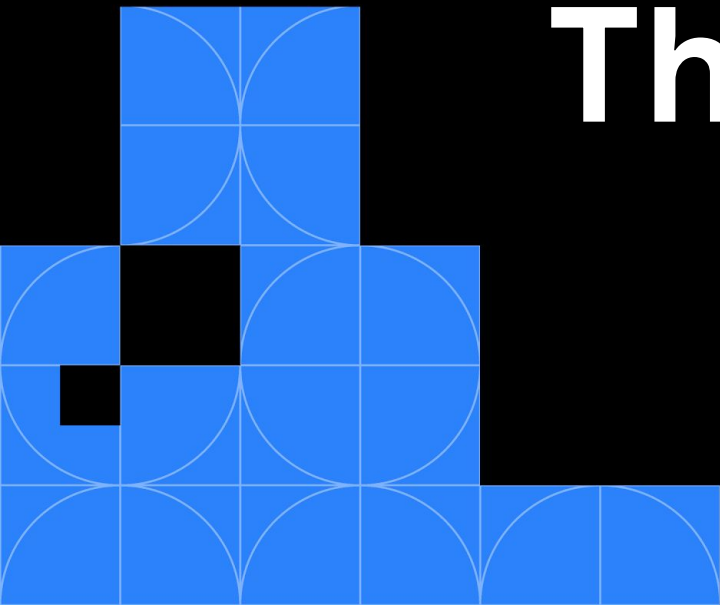
[support.google.com/chrome\\_webstore/contact/one\\_stop\\_support](https://support.google.com/chrome_webstore/contact/one_stop_support)

```
Text('Simple Statement or URL',  
  style: TextStyle(  
    color: Colors.blue[200],  
  ),  
,  
,  
),  
s.star,  
r: Colors.blue[500],  
Text('23'),
```

# devfest



# Thank You



韩国恺 GDG & GDE

<https://guokai.dev>

[han.guokai@gmail.com](mailto:han.guokai@gmail.com)

2023/12/09

