

Google Assistant

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Google Assistant

Google Assistant

人机通过双向对话完成各种工作，
功能概念而非实物，可跨设备使用，如 Home 、手机。

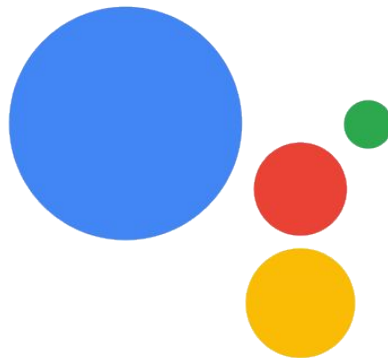
16 I/O 上提出 Google Assistant

可通过 Allo 和 Google Home 使用

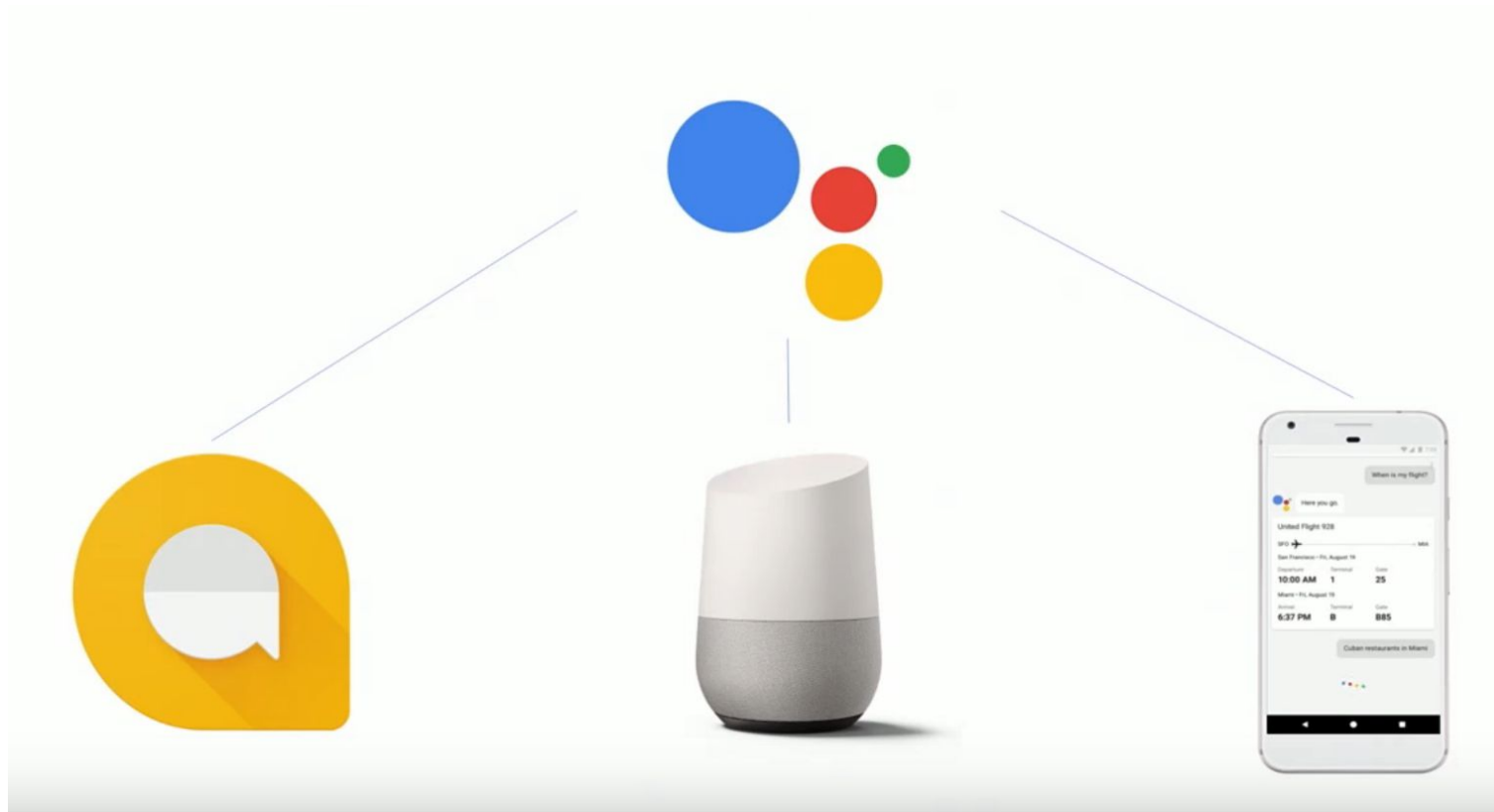
16 晚些时候发布 Home, 并成为 Pixel 手机独有功能

17 年扩展到更大范围的设备上

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



Google Assistant



Google Assistant

逐渐增强的功能：

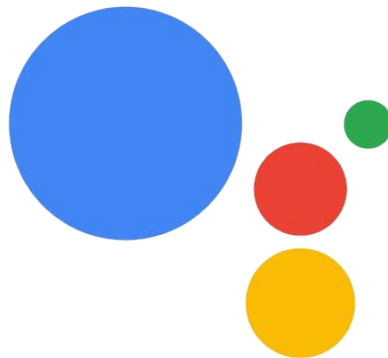
控制第三方的[智能家居设备](#)

支持 Android Wear

支持 iOS

Home 支持多用户

支持 手写输入(phone)、屏幕显示(chromecast)，所以“对话”以不限于语音



Support Devices

最初: Google Allo、Google Home、Pixel 手机

今年: Nexus 手机 (代替以前的 Now on Tap 功能)

今年: Android Wear、Android Phone (6.0 以上)、iPhone、Android TV、Android Auto

New: iOS、书写输入、视觉显示

Google Assistant SDK 任何人可以制作自己的 Google Assistant 设备, 树莓派、汽车、冰箱、路由器

Support Languages

当前支持语言: English

今年晚些时候: French, German, Brazilian Portuguese, and Japanese
Italian, Spanish, and Korean

Google Home



Google Home



有趣的示例

GDG 是什么？

美国总统是谁？(第二句)他多大了？

放音乐

鲸鱼的声音

设置 timer 、alarm

游戏:猜数字

日历:my events (I/O Redux) , 生日菜单 tell me my

Google I/O app

发送、发送邮件

Actions on Google

Actions on Google

在 Google Assistant 中实现第三方扩展功能(软件)

16年底推出

Actions on Google is the platform for developers to extend the Google Assistant.

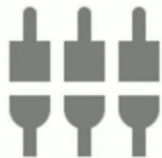
Actions on Google is the platform that allows developers to build for the Google Assistant on Google Home, eligible Android phones, iPhones, and soon everywhere else the Assistant is available.

<https://developers.google.com/actions/>



Actions on Google

How YOU can extend the Google Assistant



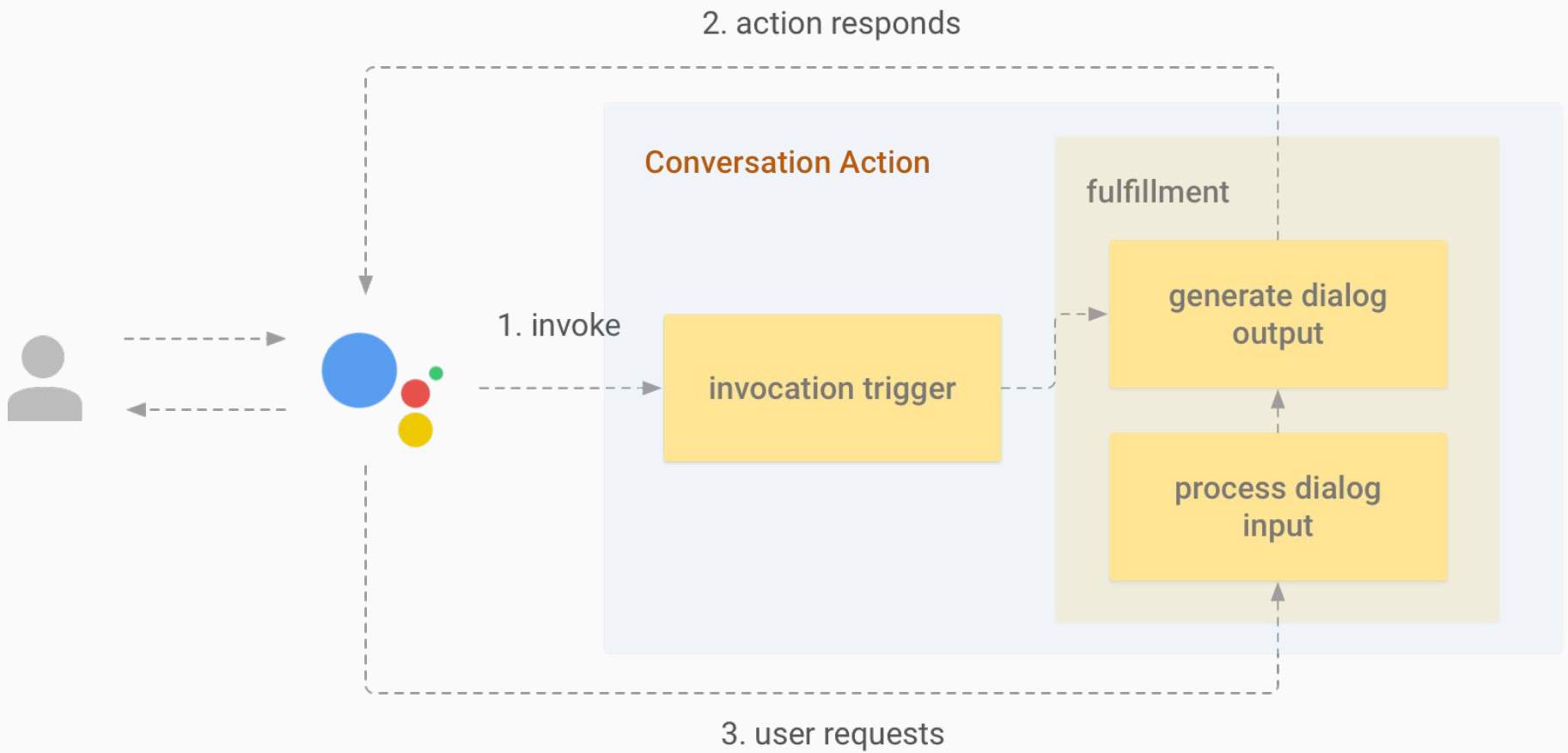
Connect with users
wherever the
Google Assistant
is available

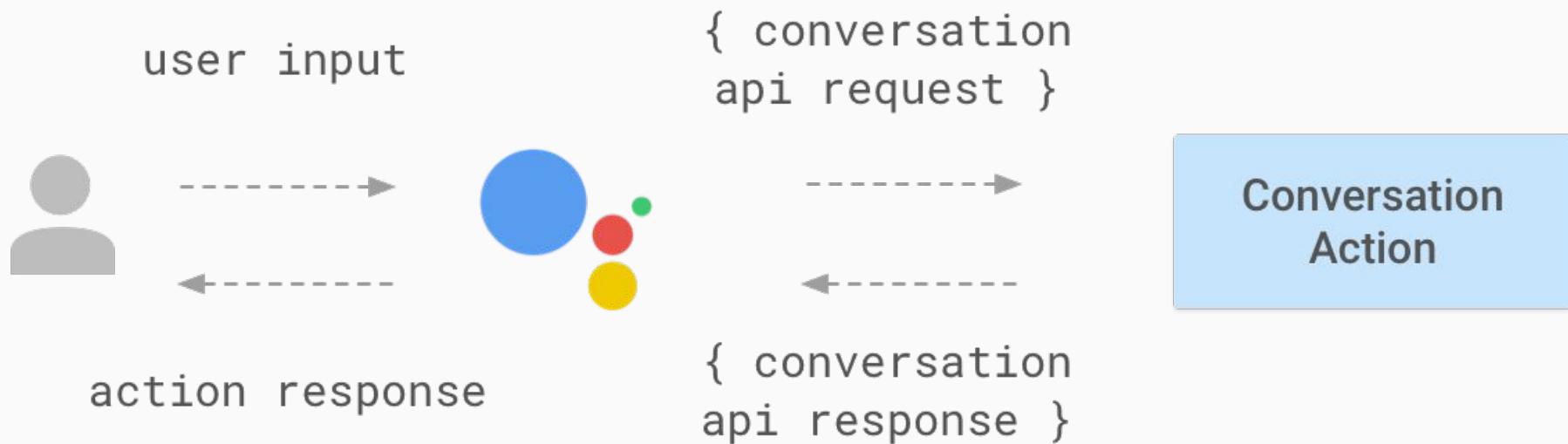


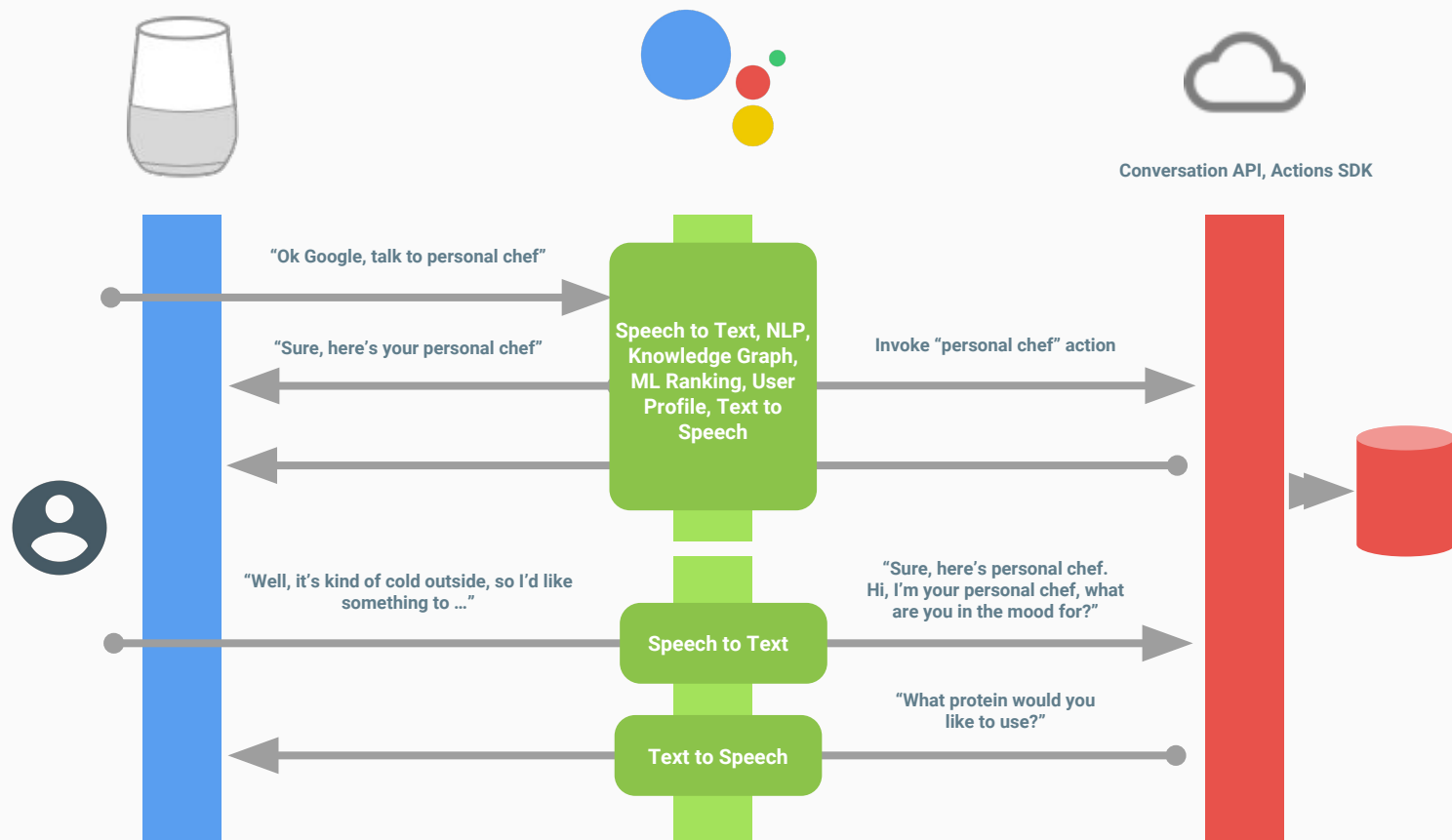
Help users **get
things done** with
your service



Innovate with
Conversational
Interface







Actions SDK , Actions Console , Transactions API

<https://developers.google.com/actions/sdk/>

<https://console.actions.google.com/>

<https://developers.google.com/actions/transactions/>

Google assistant app - Google IO 17



Ok Google, let's talk to Google IO 17



Sure! Here's Google IO 17.

Enter Earcon



Hi, I'll be your guide to Google IO 17, I can help you explore topics or pick a session to attend. What would you like to know?

When is the next Android talk?



The next session about App Engine is "Building Data Driven applications with Android" in room 4004 on Tuesday at 4. Is there another topic you're interested in?

Exit Earcon

Google assistant app - Google IO 17

Building the Google IO 17 App

- 1 Create a project on the Actions Console
- 2 Use API.AI (or other tools) to handle natural language
- 3 Connect a webhook (we like Node.js)
- 4 Test In our web simulator or on device
- 5 Enhance your app for mobile phones
- 6 Integrate your app with our Transactions API

Build Google assistant app



Design What to build

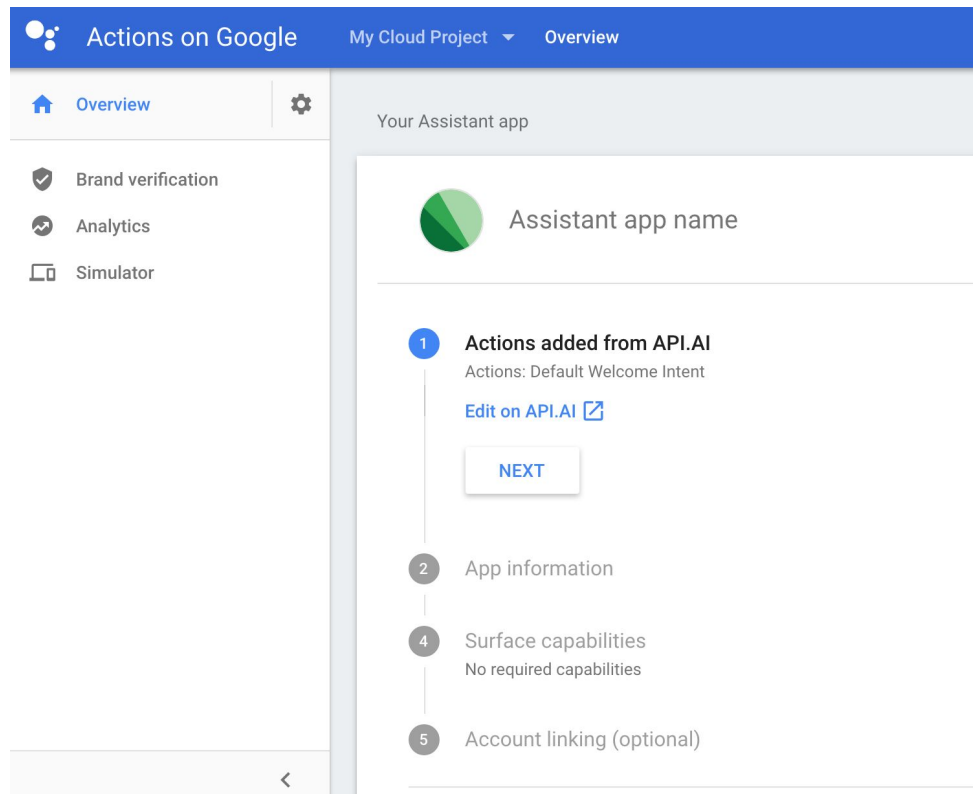


Develop How to build it



Discover How to discover it

Actions Console




Action simulator

⋮

Actions on Google

My Cloud Project ▾ Simulator

Go to docs 

🏠 Overview

⚙️

🛡️ Brand verification

📊 Analytics

📄 Simulator

Dialog

🔊 🔁

talk to my test app

Hi!

what is GDG?

Google Developer Groups (GDGs) are for developers who are interested in Google's developer technology; everything from the Android, Chrome, Drive, and Google Cloud platforms, to product APIs like the Cast API, Maps API, and YouTube API.

Input

Try typing or saying "Talk to my test app."

Surface

Location

Phone

Googleplex, Mountain V...

han.guokai@gmail.com

SIGN OUT

Request - 06/11/2017 @ 10:10AM

```
{
  "query": "what is GDG?",
  "accessToken":
    "ya29.GlxmBCs3Kx6_epLvWC7ozkcydyUGlmY2jMM2NBbhWCWvdY9-
    aahUV2V_WXqBjE_ta4mHx1SdrZ5DGaTQLtAfKB-
    nc2D2XohowWUniB6SBBGPAKNym2Fuxk8zcXUB0Q",
  "expectUserResponse": true,
  "conversationToken": "CiZDIzU5N...",
  "surface": "PHONE",
  "inputType": "KEYBOARD",
  "location": {
    "address": "Googleplex, Mountain View, CA, United
    States",
    "position": {
      "lat": 37.421980615353675,
      "lng": -122.08419799804688
    },
    "zipCode": "94043",
    "city": "Mountain View"
  },
}
```



150K+ developers



14 languages



**32 platform SDKs
and integrations**

API.AI

What is API.AI?

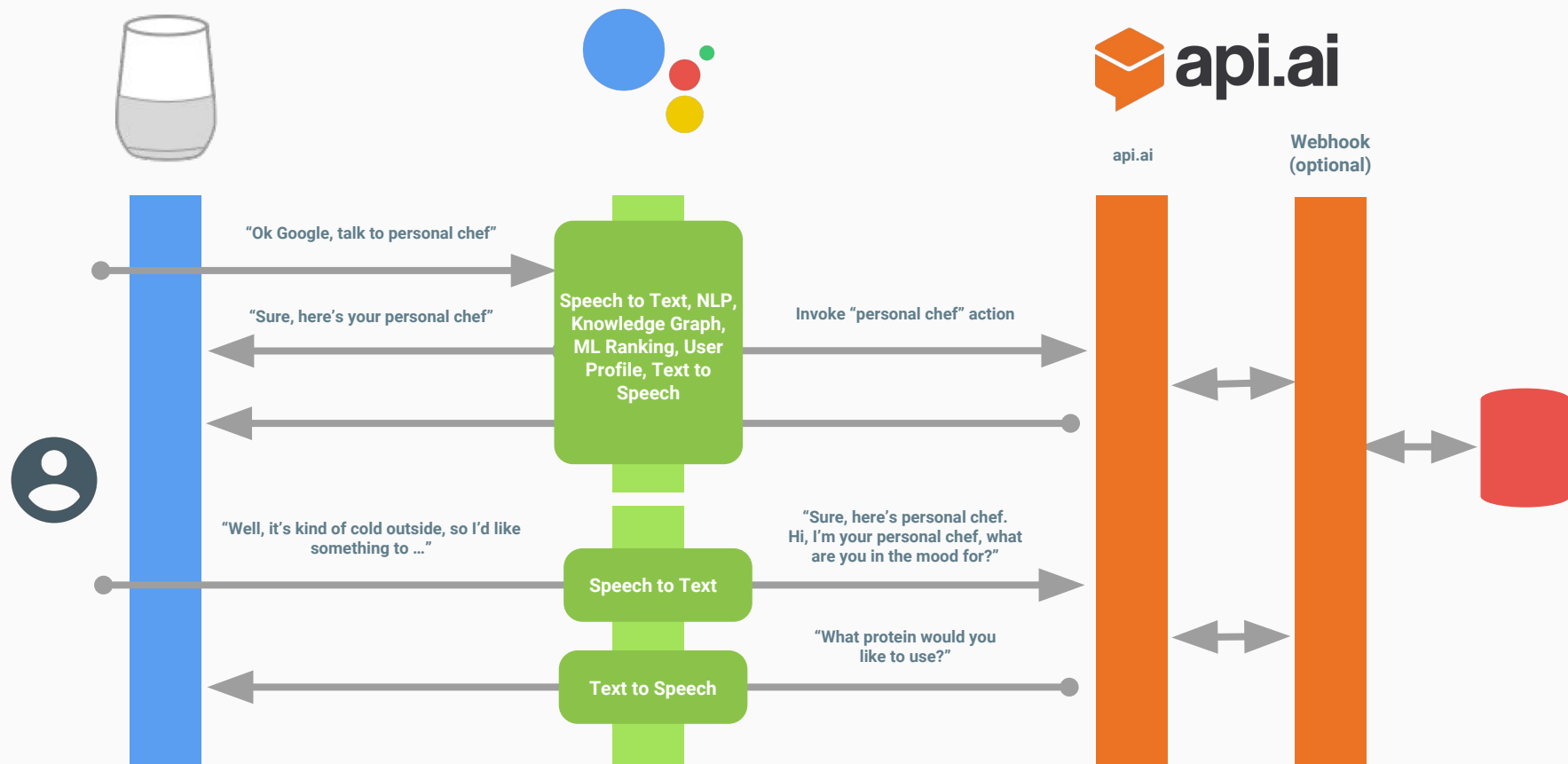
API.AI provides a server-side infrastructure to create conversational scenarios, then build advanced dialogues to manage the conversation flow with the user.

16年9月被 Google 收购, 集成 Google Assistant 开发。

API.AI 为开发者提供了会话自然语言处理的框架, 支持多种对话平台集成, 包括 Google Assistant 、Slack、Telegram 等。

一个 API.AI agent 对应一个 Google Assistant app

不用 API.AI 也可以采用其他自然语言处理解决方案, 通过 Actions SDK 集成进来





PersonalChef



Intents



Entities



Domains

Training ^[beta]

Integrations



Fulfillment



Docs



Forum



Account

Contexts



User says

Search in user says...



” Add user expression

” Chicken sounds good to me.

” I'd like a cold dessert and I want it right now.

” Do you know a recipe for a very quick meal?

” Do you have a recipe for a quick hot soup?

” It's really cold outside. What do you suggest to help me warm up?

” What can I do with potatoes and lamb?

Events ?



Action

 Please
try a sen

Intent

Triggered via a series of “user says” phrases

Share a common set of entities

- Create new Intent otherwise



Domains



Training ^[beta]



Integrations

User says

Search in user says...



Add user expression

Intent name

Name to use in API.AI console

Only used by the developer, not referenced in your code



• Intent name

SAVE



Action name

String passed to the webhook that indicates what action is being performed

Can share the same action name across different Intents

API.AI specific use of “Action” compared to Google Assistant “Conversation Action”

Integrations

⚡ Fulfillment

> Docs

> Forum

Events ?

Action

Enter action name...

Entities

Values that we are trying to capture from the user phrases

Can specify a parameter name and a type of value

Values can be optional

Values can be a list of fixed values

> Forum

REQUIRED ?	PARAMETER NAME ?	ENTITY ?	VALUE	IS LIST ?
<input type="checkbox"/>	Enter name	Enter entity	Enter value	<input type="checkbox"/>

+ New parameter

Text response

Spoken when the Intent is complete

Embed entity values if desired

- “I found a recipe for \$protein and \$vegetable!”

Webhook can dynamically adjust this response

 Account

 Logout

Response 

Text response



1 Enter a text response...

ADD MESSAGE CONTENT

PersonalChef



Intents



Entities



Domains

Training ^[beta]

Integrations



Fulfillment



Docs



Forum



Account



Define synonyms



Allow automated expansion

beef	beef
lamb	lamb
tofu	tofu
Chicken	Chicken
Click here to edit entry	

[+ Add a row](#)Plea
try a sen

Prompts

Specify follow up questions if a user doesn't specify certain values

Read out in random order to make it more natural

REQUIRED ?	PARAMETER NAME ?	ENTITY ?	VALUE	IS LIST ?	PROMPTS ?
<input checked="" type="checkbox"/>	protein	@protein	\$protein	<input checked="" type="checkbox"/>	Alright, what p...
<input checked="" type="checkbox"/>	vegetable	@vegetable	\$vegetable	<input checked="" type="checkbox"/>	What kind of ve...
<input type="checkbox"/>	temperature	@temperature	\$temperature	<input type="checkbox"/>	—
<input type="checkbox"/>	cooking-speed	@cooking-speed	\$cooking-speed	<input type="checkbox"/>	—
<input checked="" type="checkbox"/>	dish-type	@dish-type	\$dish-type	<input type="checkbox"/>	What kind of di...
<input type="checkbox"/>	Enter name	Enter entity	Enter value	<input type="checkbox"/>	—

PersonalChef



Intents



Entities



Domains

Training ^[beta]

Integrations



Fulfillment



Docs



Forum



Account

Webhook

Your web service will receive a POST request from API.AI in the [form of the response](#) to a user query matched by intents with webhook enabled. Be sure that your web service meets all the [webhook requirements](#).

[Webhook example](#)

ENABLED



URL*

BASIC AUTH

HEADERS

[Add header](#)

DOMAINS



Please
try a sen

JSON

```
1 {  
2   "id": "0616450d-44f1-4e42-8b62-cd5060aaeac0",  
3   "timestamp": "2017-03-17T01:57:11.349Z",  
4   "lang": "en",  
5   "result": {  
6     "source": "agent",  
7     "resolvedQuery": "i want to have some chicken soup",  
8     "action": "recipe.recommendation",  
9     "actionIncomplete": true,  
10    "parameters": {  
11      "cooking-speed": "",  
12      "dish-type": "",  
13      "protein": [  
14        "Chicken"  
15      ],  
16      "temperature": "",  
17      "vegetable": []  
18    },  
19    "contexts": [  
20      {  
21        "name": "recipe-recommendation_dialog_params_vegetable",  
22        "parameters": {  
23          "dish-type": "",  
24          "cooking-speed": "",  
25          "vegetable.original": "",  
26          "protein": [  
27            "Chicken"  
28          ],  
29          "temperature": "",  
30          "dish-type.original": "",
```

CLOSE

COPY



Design Tips

1. Pick the right use cases
2. Create a persona
3. Write dialogs
4. Test it out
5. Build and iterate

There are no errors, [Design Checklist](#)

新概念: VUI (Voice User Interface), 人机对话设计不同于以为的 Web、App 设计

<https://developers.google.com/actions/design/>

App Discovery

1 In Dialogue 显示和隐式

2 Assistant Directory

3 Links that you share

In Dialogue Discovery: Explicit Triggering

Ok Google, let's talk to Google I/O 17

Trigger Phrase

App Name

Developer Specified

Ok Google, ask Google I/O 17 about what was announced

Trigger Phrase

App Name

Developer Specified

Action
Preposition

Action Phrase

Developer Specified

App Discovery

In Dialogue Discovery:
Implicit Triggering



Setting up app permissions
Assistant Discovered

Hey Google, I want to work out.

Hey Google, what's the surf report

Hey Google, tell me a joke.

Hey Google, I want to play a game.

Google Assistant SDK

Google Assistant SDK

将 Google Assistant 带到你的设备中，让第三方硬件增加 Assistant 功能。

17年4月底推出

<https://developers.google.com/assistant/sdk/>



Google Assistant SDK

How YOU can embed the Google Assistant



gRPC API that
allows access the
Google Assistant
from platform



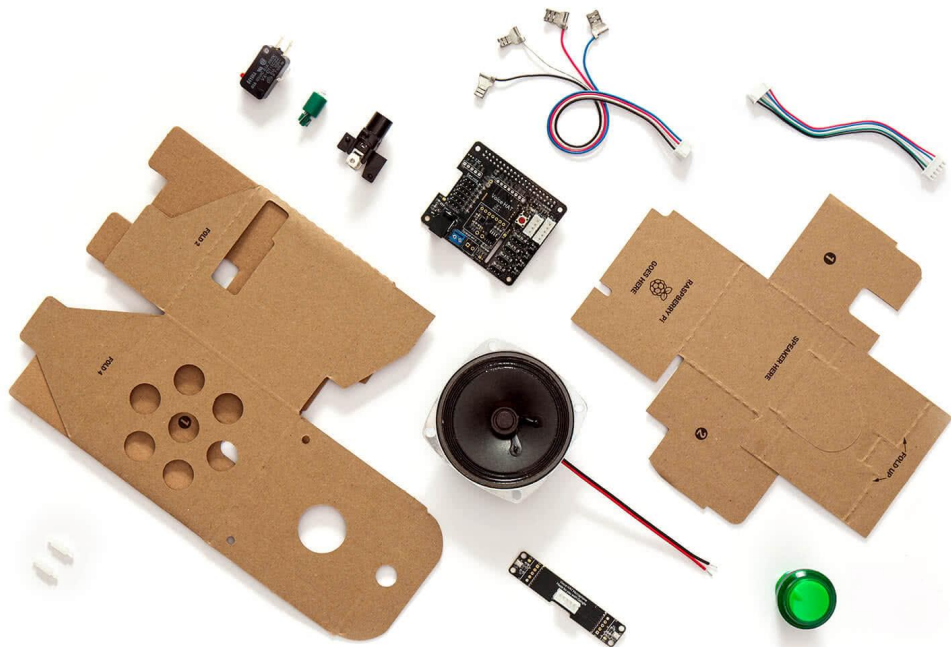
**Docs and
samples** to get
up and running
fast



Tools to help you
embed the
Google Assistant
in your device

AIYProjects Voice Kit

<https://aiyprojects.withgoogle.com/voice/>



Voice Kit

Google Assistant SDK Demo: Mocktails Mixer



A Raspberry Pi, an Arduino, and the Google Cloud

Google Assistant SDK

Actions on Google

API.AI

<http://deeplocal.com/mocktailsmixer/>

<https://github.com/Deeplocal/mocktailsmixer>

历史和当前状态

对话机器人(chat bot)有很长时间的历史(主要集中在 IM 领域, 打字为主而不是语音交流), QQ 机器人、MSN 机器人。Siri 之后自然语言查询才火起来了, 之前比较冷。

当前自然语言处理技术和人对语言的理解相差甚远, 目前的技术适合一些简单业务场景的问题, 如订票、自助机器的功能。

确定你能够解决的问题范围以及需要用户补充的信息

打磨完善: 各种问法、说法、同义词、概念延伸

对话 不等于 AI, 形式接近 AI 所以让人期望更高

看似简单事情并不简单

对话的一般开发概念

会话是连续的(而非一问一答), 面向用户的, 有 context、user profile 信息, 如用户信息、地点、前面已经通过对话获得的信息。

后端一般有通用知识库、默认处理(如未匹配的处理)等。

虽然不能像人一样理解, 但特定业务需要处理的信息比较有限。比如买车票、问天气。这种小空间的业务比较容易应付, 关键是信息提取。所以问题空间够小, 语义处理和信息提取都会比较简单。当然在自然语言处理和细粒度的业务层面想做得比较完善并不容易。

Actions on Google Developer Challenge

Trip to MTV + I/O 18 ticket
+ \$10,000

\$7,500 + a Google Home

\$5,000 + a Google Home

<https://developers.google.com/actions/challenge/>

May 17

Contest opens at
Google I/O

August 31

Deadline to have
your app approved

September

Judging

Q4 2017

Winners announced

Reference - Websites

- [Actions on Google](#)
- [Samples for Actions On Google \(Github\)](#)
- [Actions Console](#)
- [API.AI](#)
- [Google Assistant SDK](#)
- [AIYProjects Voice Kit](#)
- [Google Assistant SDK Demo: Mocktails Mixer](#)
- [Google Assistant](#) (消費者)
- [Google Home](#) (消費者)

Reference - Videos

- [Actions on Google: Building Apps for Assistant](#)
- [Building Apps for the Google Assistant](#)
- [Bringing the Google Assistant to Any Device](#)
- [Transactions with the Google Assistant](#)
- [In Conversation, There Are No Errors](#)
- [Getting Your Assistant App Discovered](#)
- [Home Automation with the Google Assistant](#)
- [Building rich cross-platform conversational UX with API.AI](#)
- [Defining Multimodal Interactions: One Size Does Not Fit All](#)
- [Finding the Right Voice Interactions for Your App](#)
- [PullString: Storytelling in the Age of Conversational Interfaces](#)
- [Applying Built-in Hacks of Conversation to Your Voice UI](#)

Reference - Codelabs

- [Crafting a Character: Design an engaging Assistant app](#)
- [Your First “Assistant App” - Animal Joker](#)
- [Your First App for Assistant With Webhook - Bitcoin Info](#)
- [Android Things Assistant](#)
- [Build an App for Assistant with Firebase and API.AI](#)