

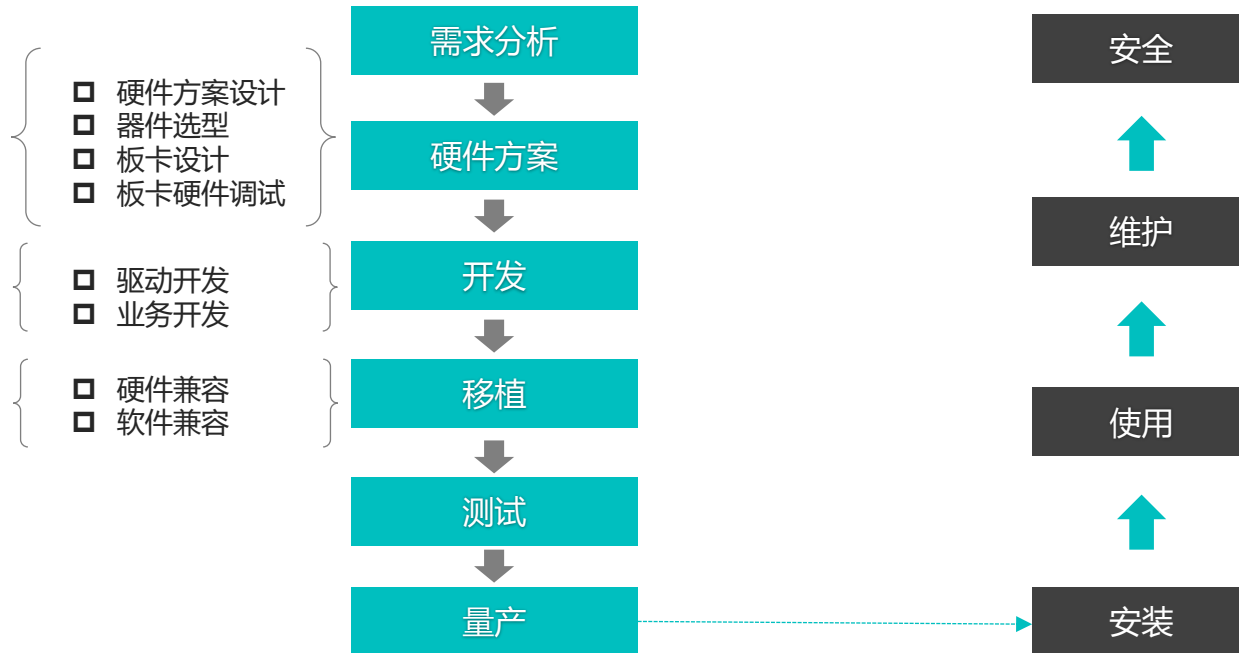


# 企业级IoT应用开发新境界

Ru#

# 既有IoT 开发生产流程

www.ruff.io



# IoT硬件开发存在的问题



- 
- 瀑布式研发，难以响应变化
  - 硬件开发不敏捷

# RuFF 介绍

www.ruff.io

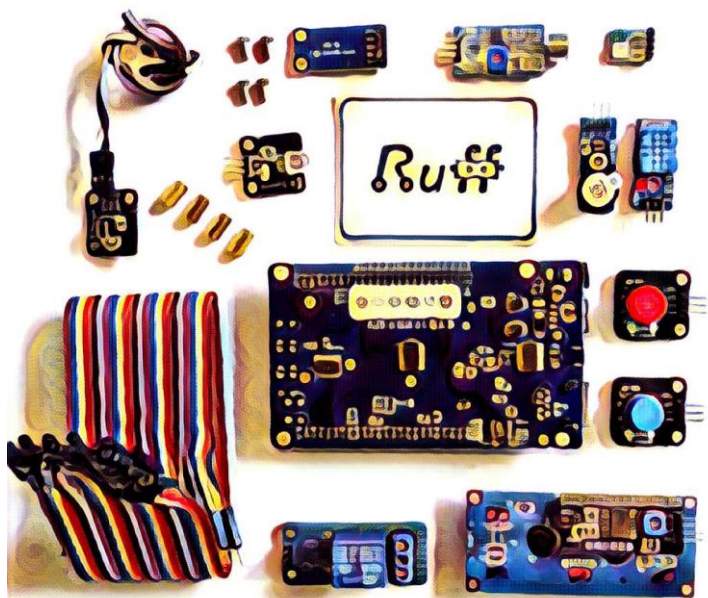


□ 软件定义硬件

□ 支持 JavaScript 开发应用的物联网操作系统

□ 面向应用开发者，让 IoT 应用开发更简单

# Ruff OS



## 操作系统 (Ruff OS)

面向软件开发者提供统一的编程接口，兼容  
各类硬件设备



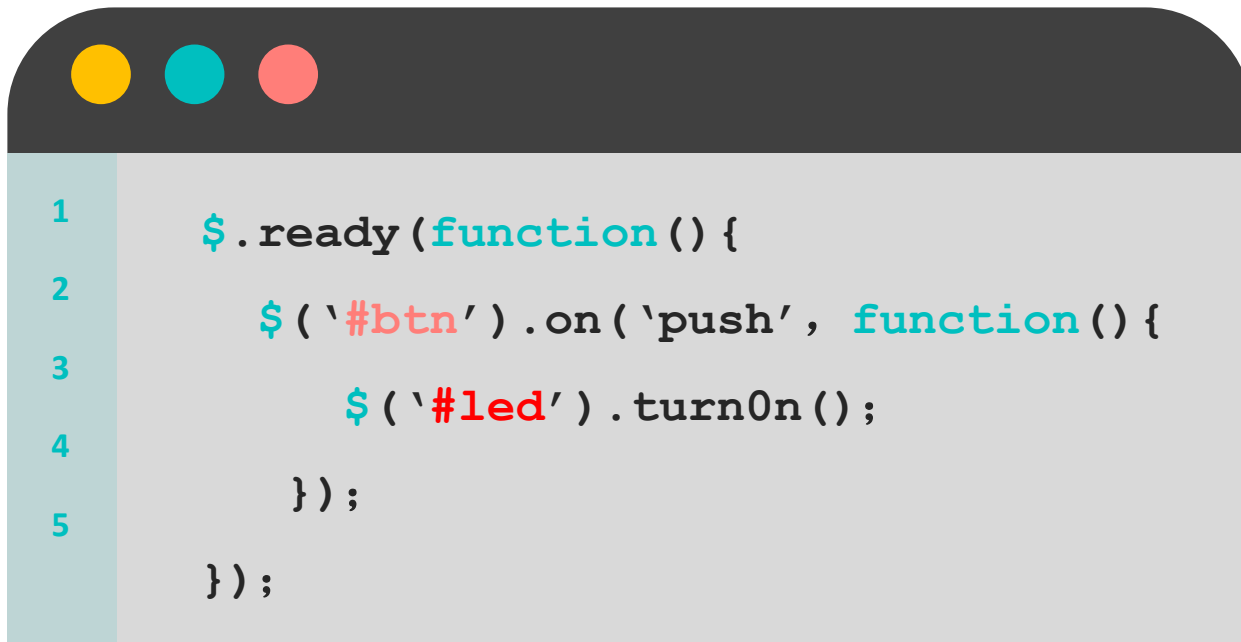
# 物联网应用商店



# 标准的基于Ruff操作系统 开发的物联网应用

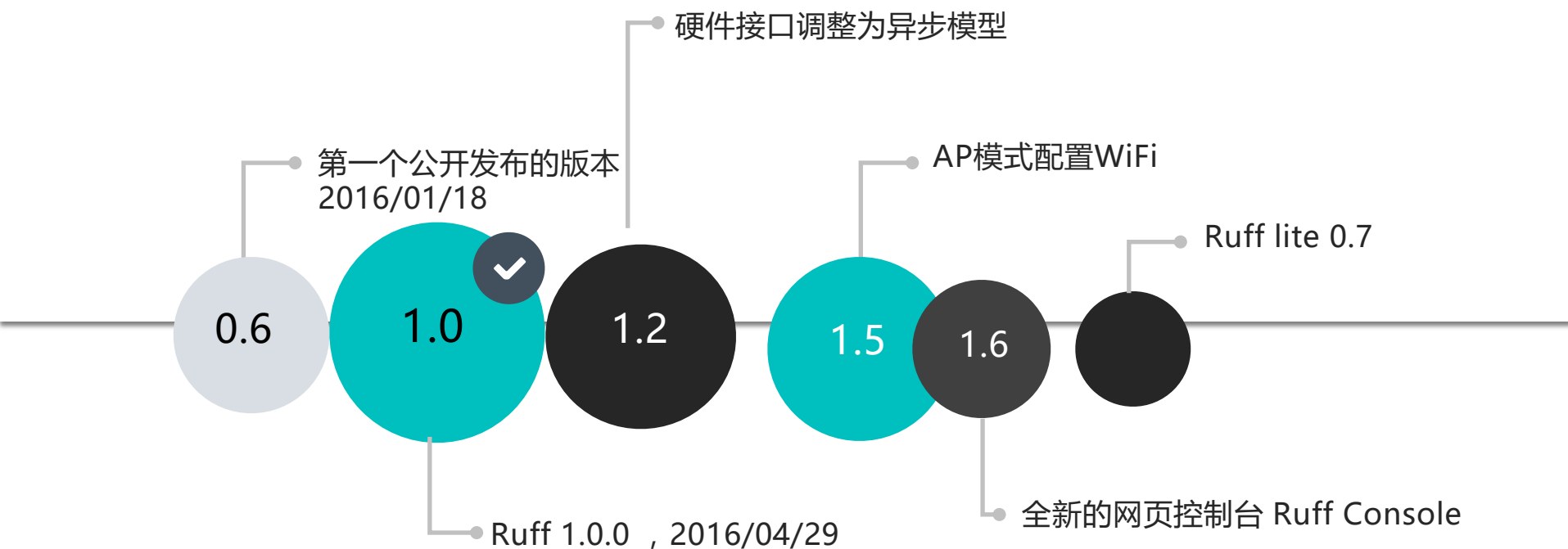
# Hello Ruff

“三分钟，点亮物联网世界的第一盏灯”



```
1    $.ready(function() {  
2        $('#btn').on('push', function() {  
3            $('#led').turnOn();  
4        });  
5    });
```

# Ruff 里程碑





# 包管理仓库

[rap.ruff.io](http://rap.ruff.io)

- ▣ **117** 软件包总量
- ▣ **110** 设备总量
- ▣ **83763** 下载总量



An aerial, high-angle view of a dense urban skyline, likely New York City, featuring numerous skyscrapers. A thick layer of white smoke or steam rises from the lower buildings, partially obscuring the sky and creating a dramatic, hazy atmosphere. The overall color palette is dark and muted, with the smoke providing a stark contrast.

# 质疑 Ruff



An aerial, high-angle view of a dense urban skyline, likely New York City, with numerous skyscrapers. A thick layer of white smoke or steam is rising from the lower levels of the buildings, partially obscuring the lower parts of the skyline. The sky is overcast and grey.

**Ruff只能做原型？**



# 真实场景的Ruff



# Ruff Cloud App

## PI (Plant Insight) :设备宝

Ruff PI 全称“Ruff Plant Insight”，中文名“设备宝”，是由上海南潮信息科技有限公司（Ruff）利用其物联网操作系统（Ruff OS）开发的一款工厂设备智能管家工业物联网应用产品，旨在通过信息化及物联网技术提高工厂设备综合效率，让传统工厂快速联网，加入工业物联网大潮之中。





# Ruff工业领域



光伏电量数据采集

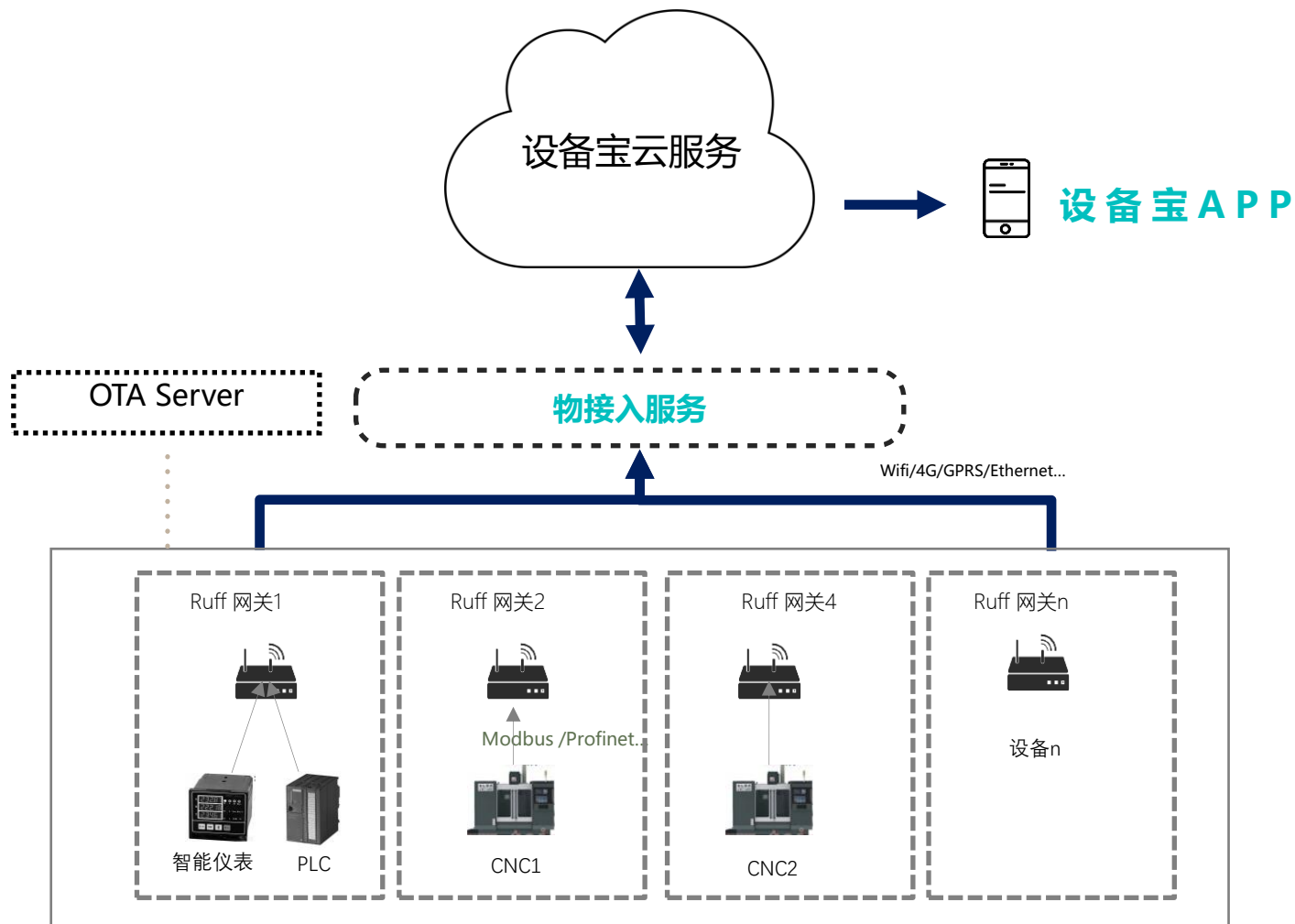


工厂设备数字化



电力监控

# Ruff 组网图



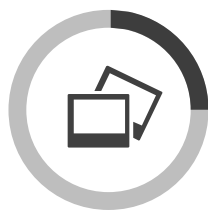


## 接口

❑ Ethernet

❑ RS485

❑ GPRS



## 协议

❑ Modbus

❑ PLC Protocol (Siemens S7)

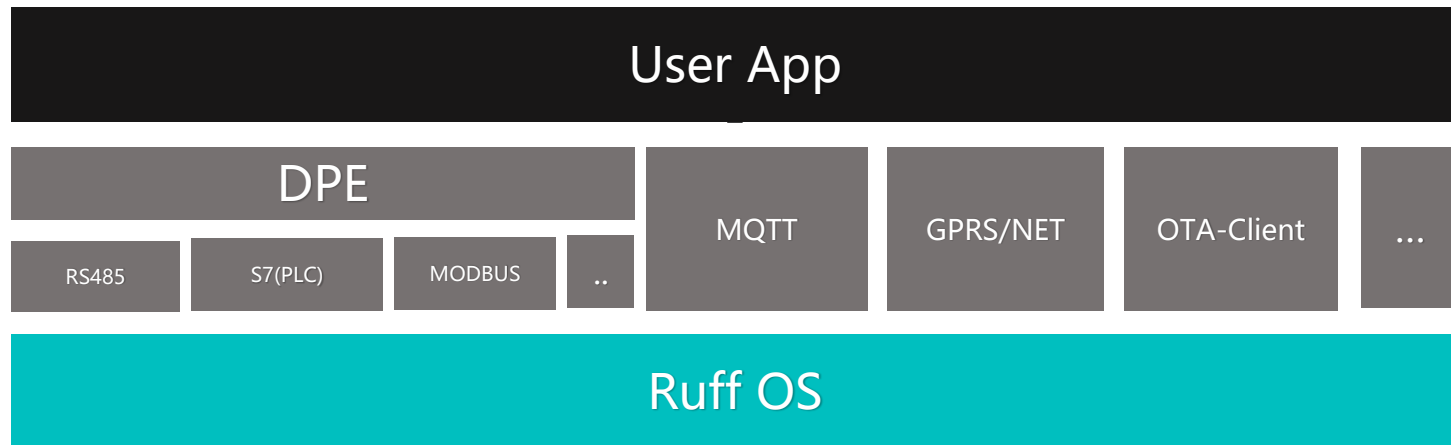
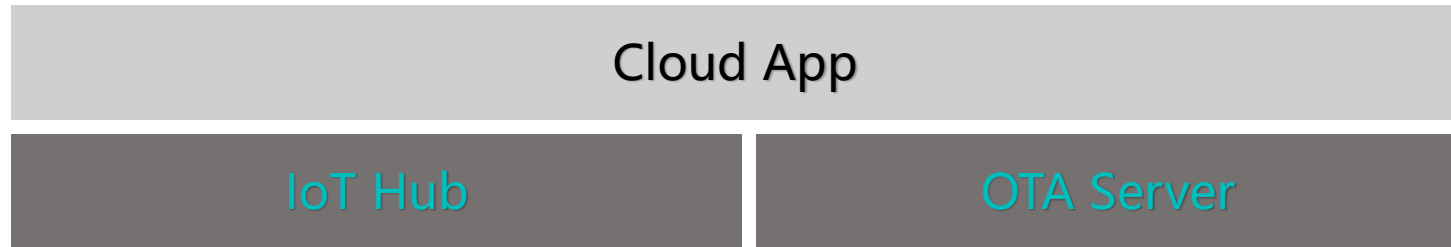


## OTA

Over-The-Air

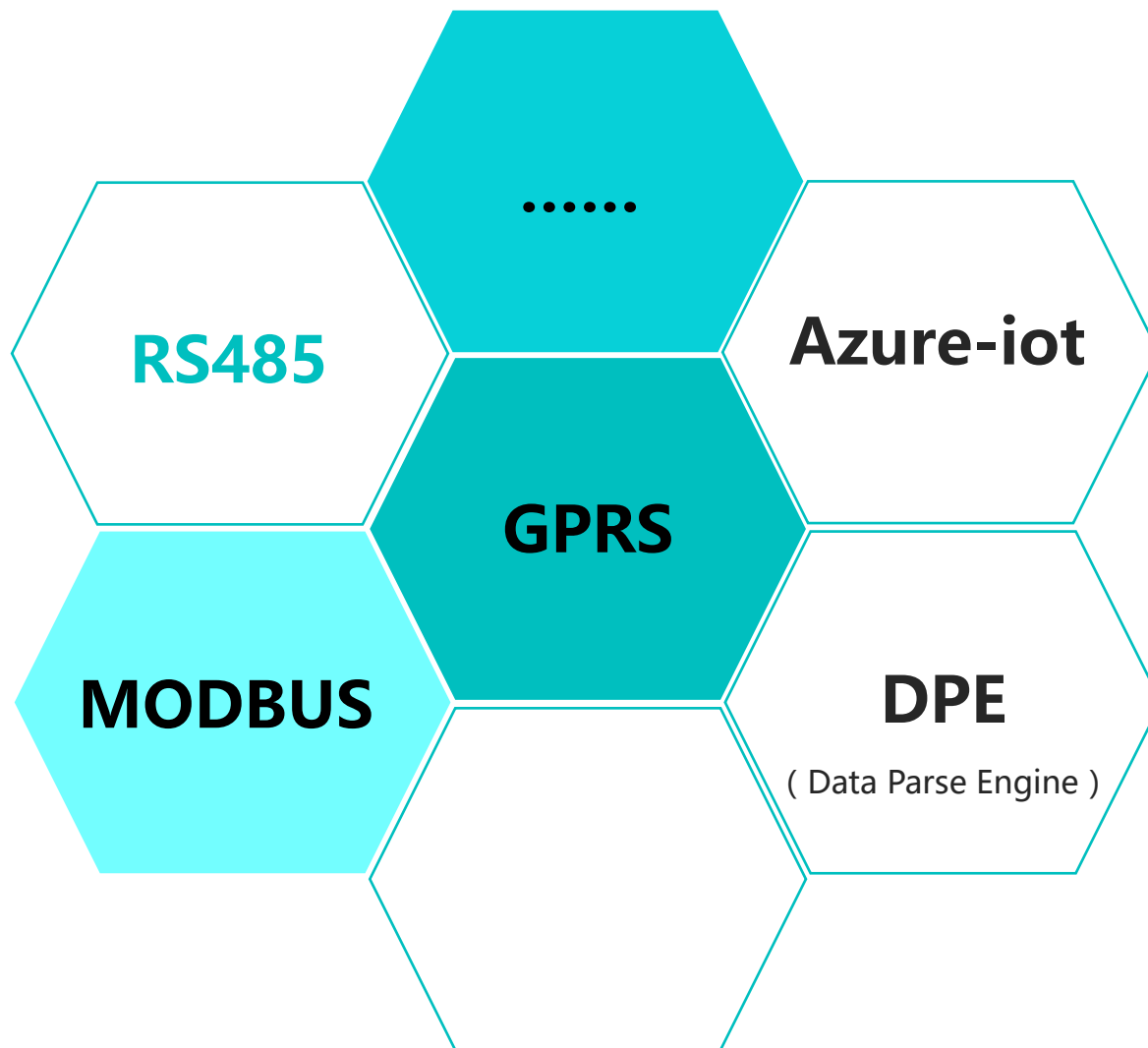
# IoT App Developer View

## IoT App on Cloud



## IoT App on Device

# 丰富的软件包支持

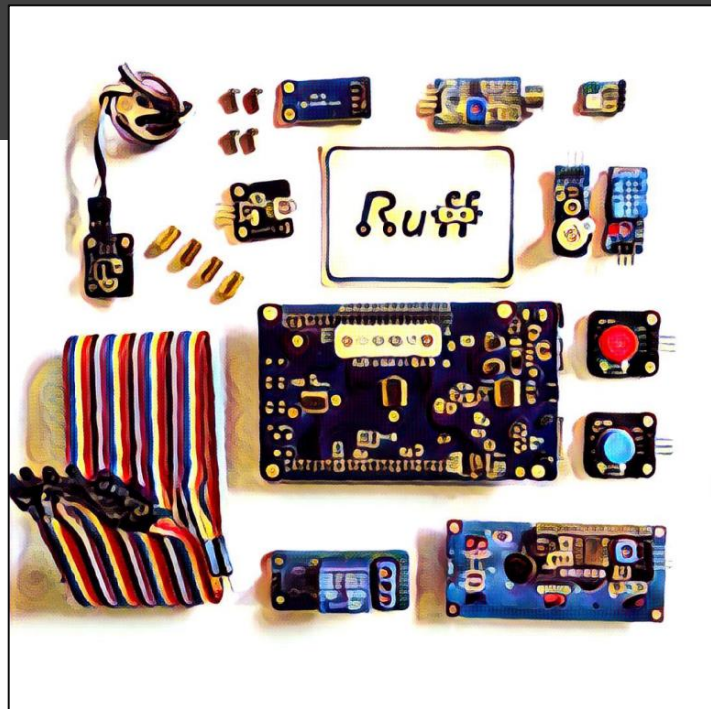




# DPE

Data Parse Engine

- 多通道，多设备同时采集
- 多协议支持（灵活的插件机制）
- 方便定制





# Ruff-OTA

- 内置OTA
- 定制化OTA

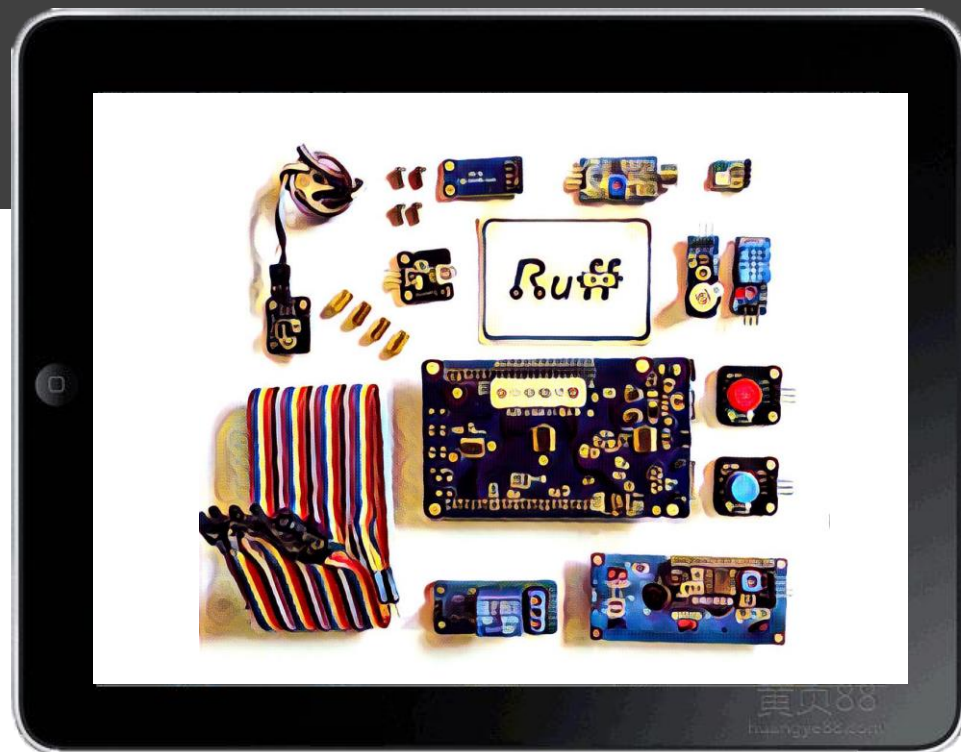
-OTA spec

-OTA API

# Ruff – OTA ( continue )

## Ruff explorer

- ❑ OTA server
- ❑ 远程管理 ruff 设备
- ❑ 提供 REST API
- ❑ 支持私有化部署



# Ruff 低功耗领域

## □ Ruff on MCU - Ruff Lite

- Ruff Lite (256K SRAM)
- Compatible API

## □ 已支持芯片

- TI TM4C1294 (ARM CORTEX-M4)
- ESP32



An aerial, high-angle photograph of a dense urban skyline, likely New York City, viewed from a high vantage point. The image is dark and moody, with a heavy, greyish-blue sky. Numerous skyscrapers and high-rise buildings are visible, many of which are emitting thick plumes of white smoke or steam that drift across the scene, partially obscuring the buildings in the background. The smoke appears to be coming from various points across the city, suggesting a widespread issue. The overall atmosphere is one of environmental concern or industrial activity.

**还有哪些痛点？**



An aerial, high-angle view of a dense urban skyline, likely New York City, featuring numerous skyscrapers. A thick layer of white smoke or steam rises from the lower part of the city, partially obscuring the buildings. The overall tone is dark and moody, with a greyish-blue color palette.

**□多种板卡**

**□不同规格硬件的适配**

A photograph of a white sailboat with red masts sailing on a deep blue sea. The sun is low on the horizon, creating a warm, golden glow. The boat is in the foreground, and the sea extends to the horizon. A dark grey semi-transparent box is overlaid on the right side of the image, containing text.

## Ruff 2.0 展望

- 系统对象
- 板卡能力描述
- .....



