
LMSP-IoT
轻量级物联网微服务 Paas平台

OUR TEAM

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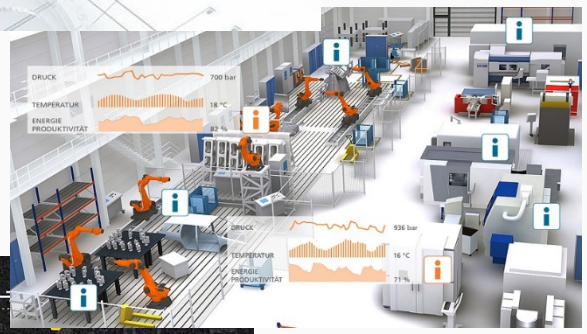
MOTIVATION

- 当今物联网支撑软件的需求
- 开发模式由垂直方向到水平方向的转变
- 让普通用户参与到业务创新



LOCATION

感知

设备

聚合平台

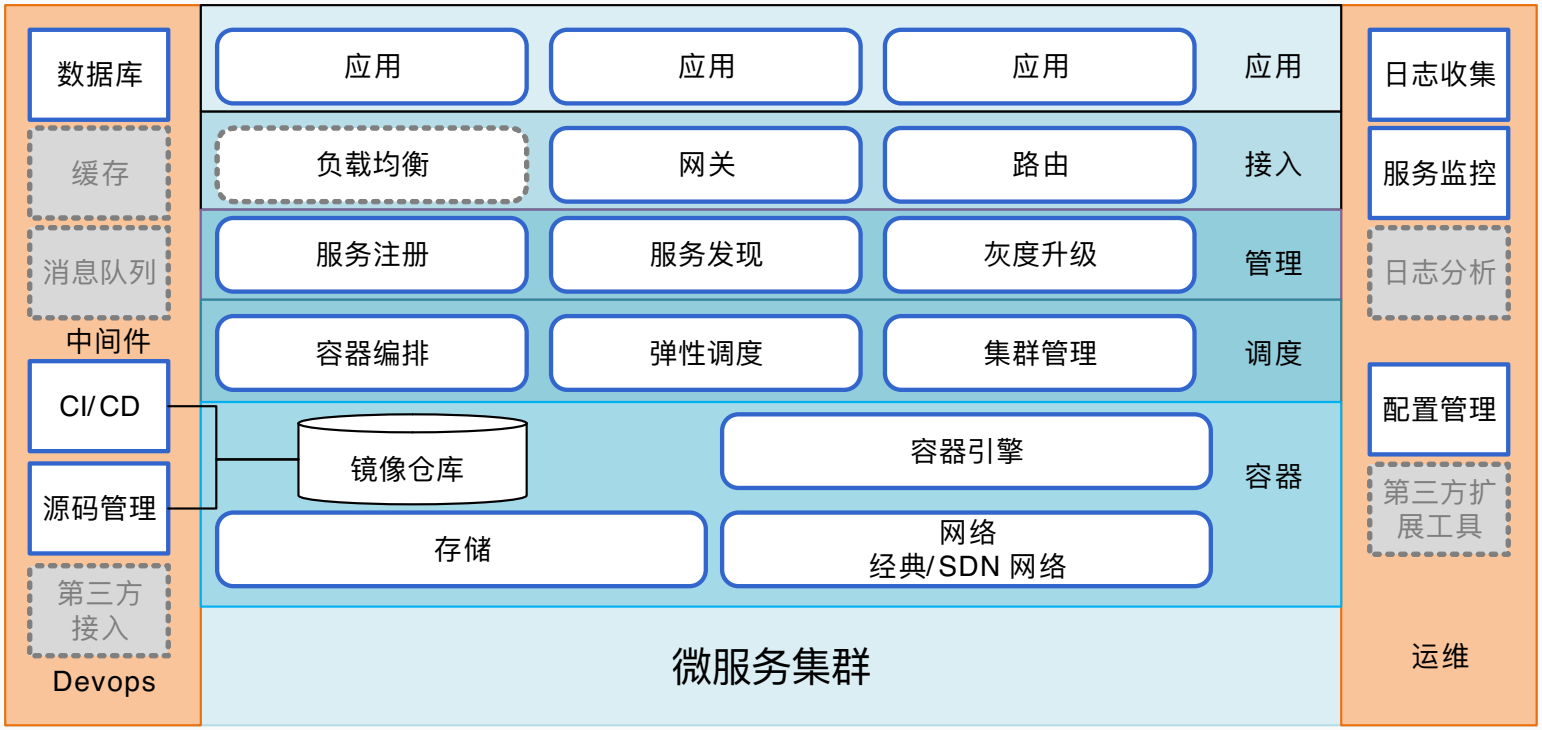
应用

创新点和优势

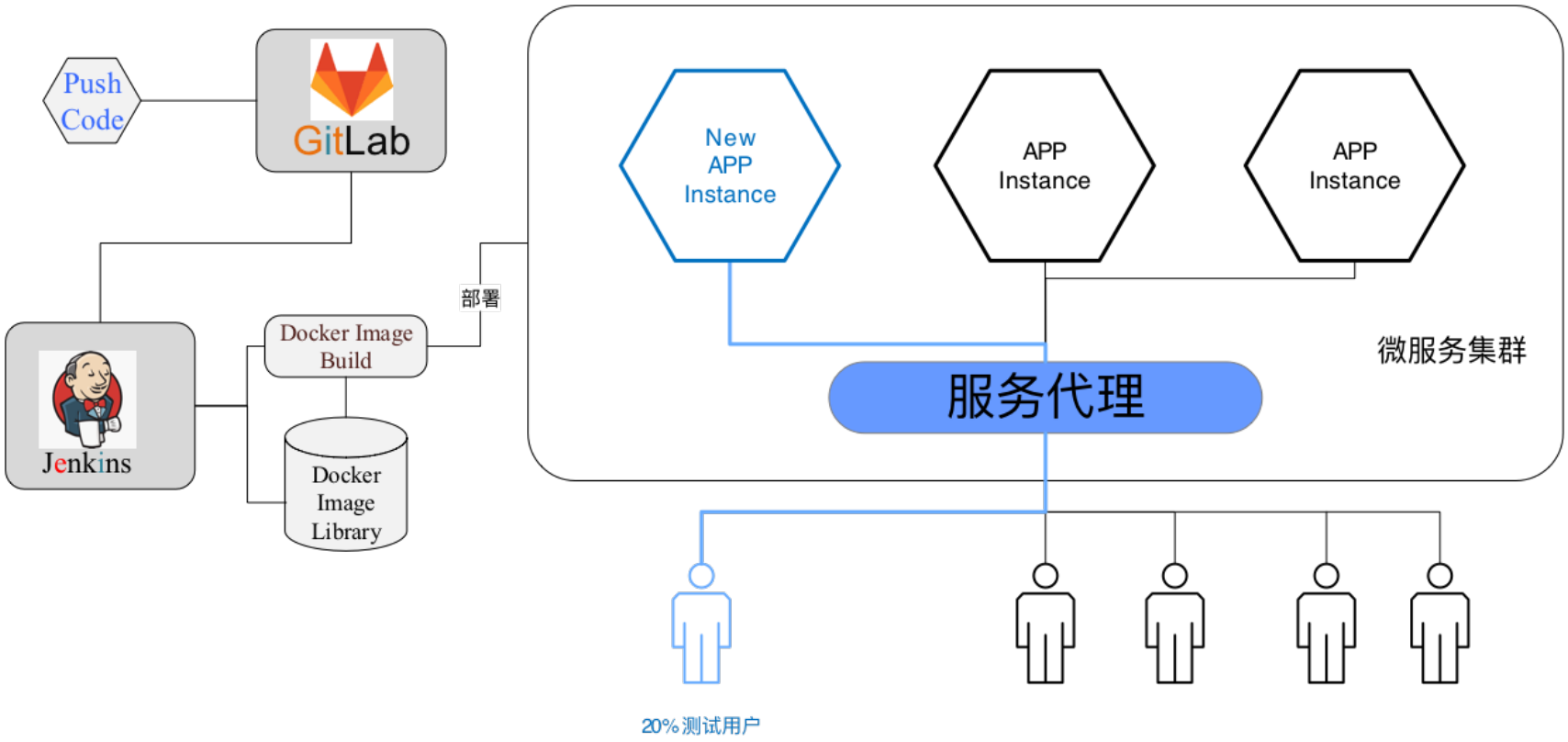
- 将微服务和物联网平台结合
- 模块化开发组件
- 便捷部署，快速迭代升级
- 分布式通信，提高安全性
- 图形界面交互，简化业务部署流程

Architecture

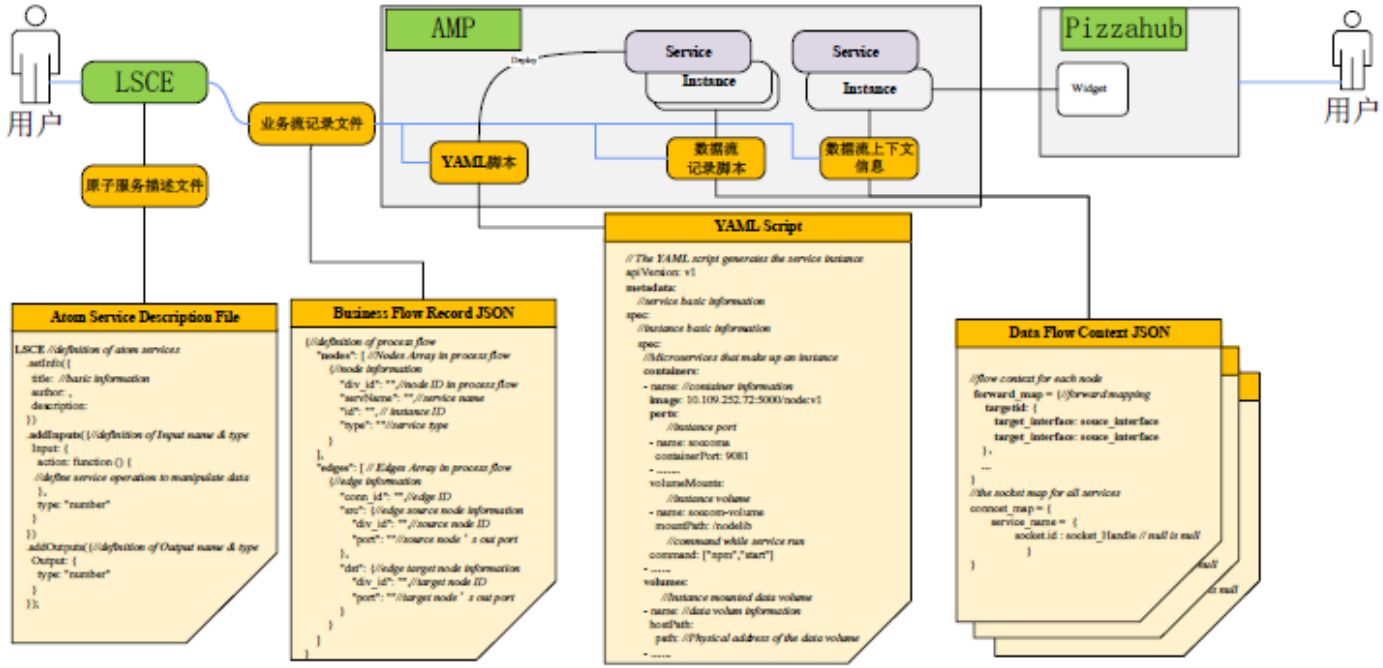
- 物联网设备的统一接入
- 设备资源的管理
- 日志收集
- 微服务的统一部署



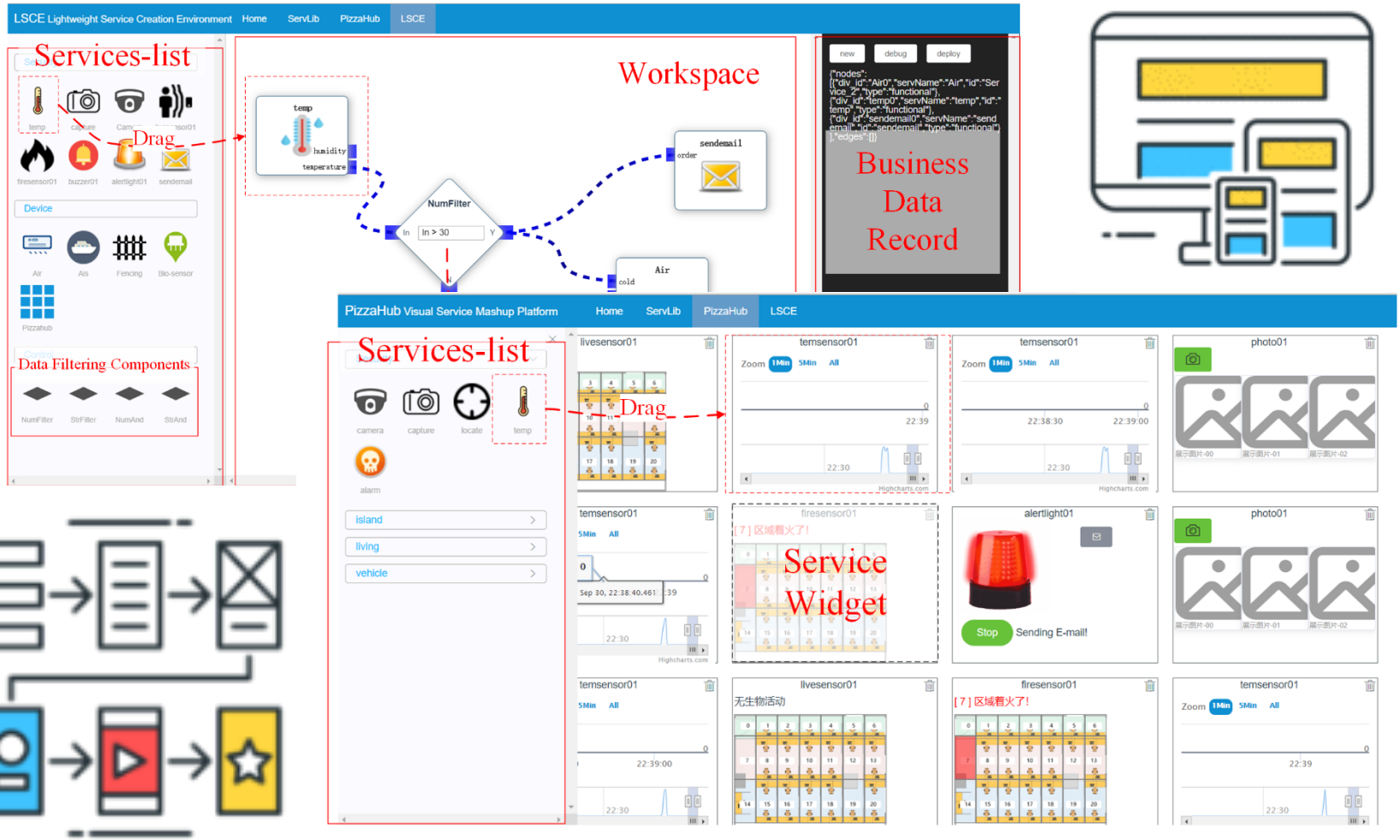
灰度升级


Push
Code
GitLab
Jenkins
Docker Image
Build
Docker
Image
Library
部署
New
APP
Instance
APP
Instance
APP
Instance
服务代理
微服务集群
20%测试用户

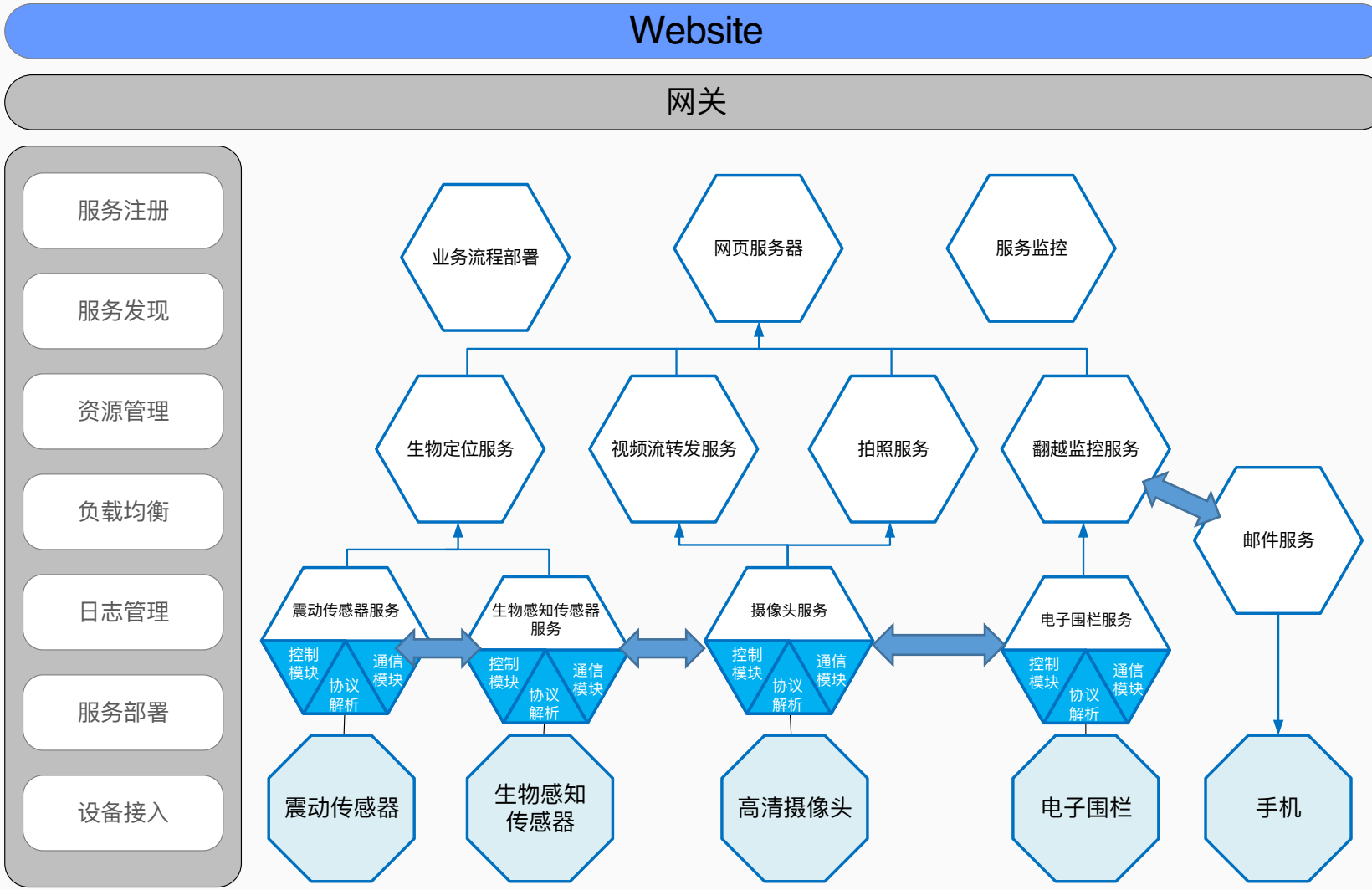
基于数据流的业务模型


用户
LSCE
原子服务描述文件
业务流记录文件
AMP
Deploy
YAML脚本
Service
Instance
Service
Instance
数据流
记录脚本
数据流上下文
信息
Pizzahub
Widget
用户
Atom Service Description File
Buziness Flow Record JSON
YAML Script
Data Flow Context JSON

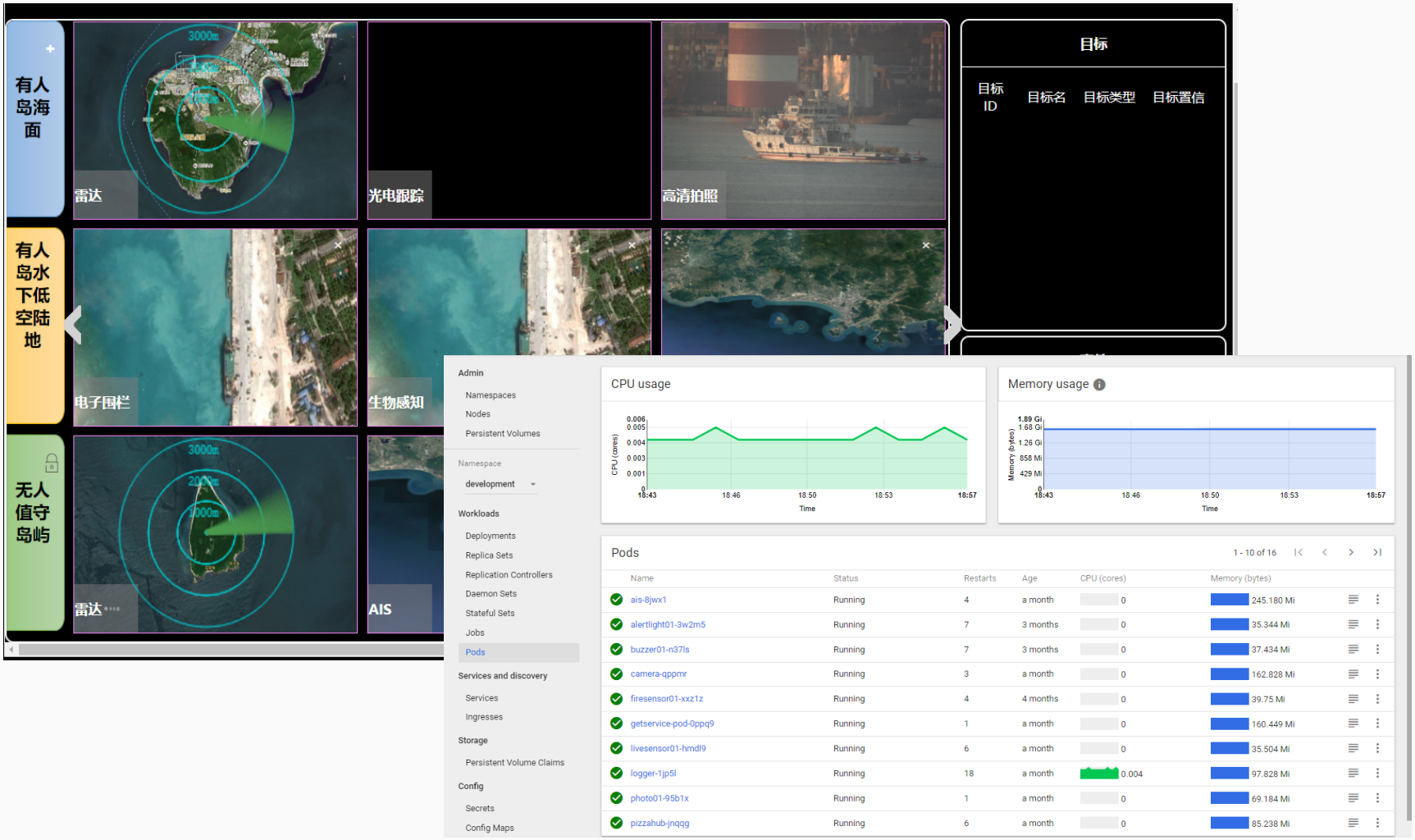
友好的图形化的界面


LSCE Lightweight Service Creation Environment
Home
ServLib
PizzaHub
LSCE
Services-list
Drag
Workspace
temp
humidity
temperature
sendemail
order
NumFilter
In
In > 30
Y
N
Air
cold
new
debug
deploy
Business
Data
Record
Device
Air
Ais
Fencing
Bio-sensor
Pizzahub
Data Filtering Components
NumFilter
StrFilter
NumAnd
StrAnd
PizzaHub Visual Service Mashup Platform
Home
ServLib
PizzaHub
LSCE
Services-list
camera
capture
locate
temp
alarm
Drag
island
living
vehicle
livesensor01
temsensor01
Zoom
1Min
5Min
All
photo01
firesensor01
[7] 区域着火了!
Service
Widget
alertlight01
Stop
Sending E-mail!
livesensor01
无生物活动

Demo架构

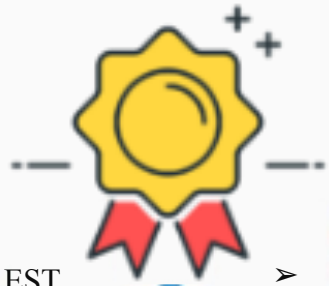

Website
网关
服务注册
服务发现
资源管理
负载均衡
日志管理
服务部署
设备接入
业务流程部署
网页服务器
服务监控
生物定位服务
视频流转发服务
拍照服务
翻越监控服务
邮件服务
震动传感器服务
生物感知传感器服务
摄像头服务
电子围栏服务
控制模块
通信模块
协议解析
震动传感器
生物感知传感器
高清摄像头
电子围栏
手机

Application–某岛礁监控系统



PUBLICATION

在CCF A类会议IEEE/ACM ASE，中科院核心期刊 IEEE Communications Magazine, TNSM和TON等发表了相关学术成果。



- B. Cheng, S. Zhao, J. Qian, Z. Zhai and J. Chen, "Lightweight Service Mashup Middleware With REST Style Architecture for IoT Applications," in **IEEE Transactions on Network and Service Management**, vol. 15, no. 3, pp. 1063-1075, Sept. 2018.
- B. Cheng, Z. Zhai, S. Zhao and J. Chen, "LSMP: A Lightweight Service Mashup Platform for Ordinary Users," in **IEEE Communications Magazine**, vol. 55, no. 4, pp. 116-123, April 2017.
- B. Cheng, M. Wang, S. Zhao, Z. Zhai, D. Zhu and J. Chen, "Situation-Aware Dynamic Service Coordination in an IoT Environment," **in IEEE/ACM Transactions on Networking**, vol. 25, no. 4, pp. 2082-2095, Aug. 2017.
- Z. Zhai, B. Cheng, M. Niu, Z. Wang, Y. Feng and J. Chen, "An end-user oriented tool suite for development of mobile applications," **2016 31st IEEE/ACM International Conference on Automated Software Engineering (ASE)**, Singapore, 2016, pp. 768-773.
- M. Niu, B. Cheng, Z. Zhai, Y. Feng, and J. Chen. 2017. Docker-Based Self-Organizing IoT Services Architecture for Smarthome. In Proceedings of the 15th Annual International Conference on Mobile Systems, Applications, and Services (**MobiSys '17**). ACM, New York, NY, USA, 153-153.


Thanks!