

SEI Robotics

Skyway-Terminal Management System

2022.6.29

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Product Achievement

Since the TMS production environment was launched in October 2019, it has served nearly 80 operators around the world. The main customers are located in the United States, the Middle East, India, Southeast Asia, Australia and other regions. There are currently 2 million activated devices in the online production environment.



Launch on
OCT 2019

Served
80
Operators

Activated Devices
2 Million
Devices

Requipment Background

When operator customer service is dealing with end user complaints, they will face the following problems as shown below. These issues lead to inefficiencies in customer service. In order to solve these problems, SEI has developed a professional equipment management platform for operators -- Skyway.

Unclear Description of Device Fault

- Misrepresentation of equipment failures by end users
- Customer service staff cannot give correct emergency instructions

Incorrect Solution from Customer Service

- Due to poor information between end users and customer service. As a result, the staff cannot give a solution that can really solve the problem.



High Cost of Door to Door Services

- When customer problems cannot be solved remotely, on-site service is required. Significant increase in cost

Product Value

Grasp the device status in a real time, alarm and respond at the first time when the fault is found.

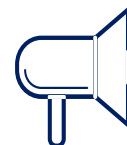
Product Goal

**Help operators
resolve customer
service issues**

Device Monitoring



- ✓ Full dimension data collection
- ✓ Comprehensive monitoring of device status



- ✓ Fault alarm
- ✓ Find and solve problems in advance

Device Management



- ✓ Diagnostic tools
- ✓ Position the problem in one step

Platform Security



- ✓ Remote assistance
- ✓ Fast position and quick solution



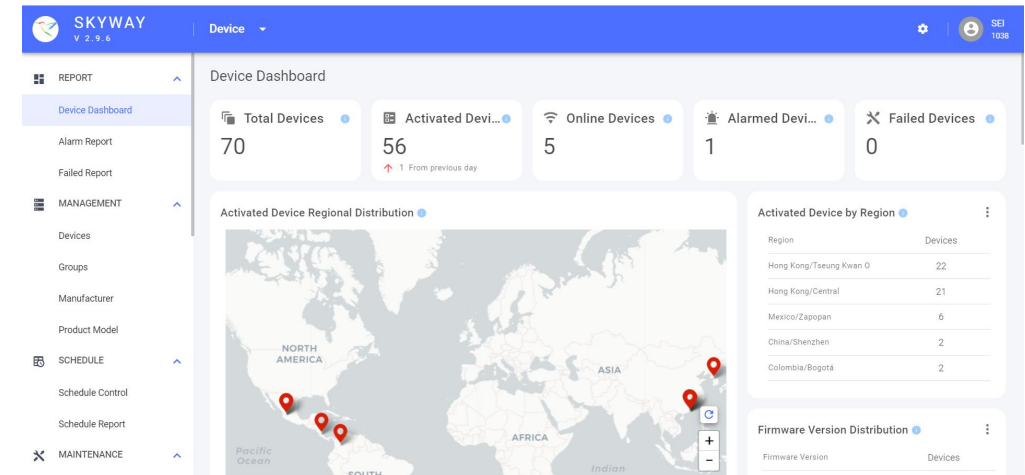
- ✓ AI screening
- ✓ Pre-screening and pre-warning

System Features

① Device Monitoring

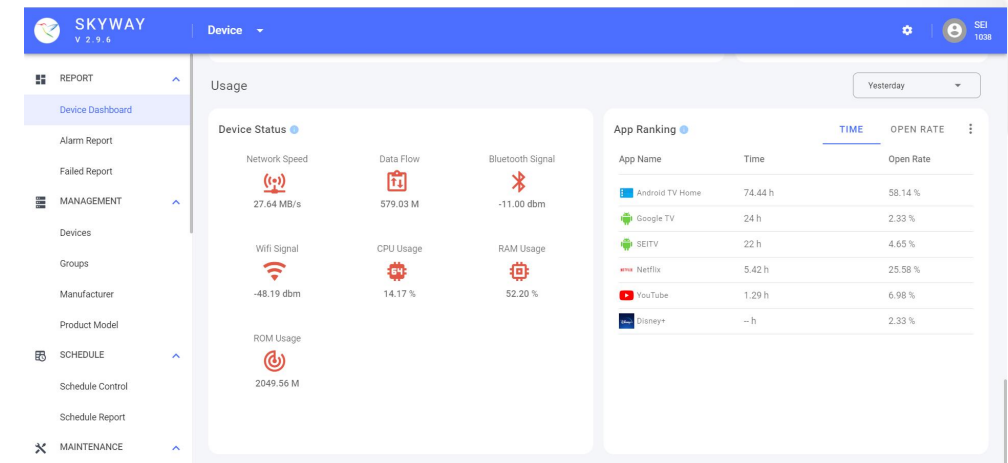
Massive Device Data analysis

- **Monitor device in different status**
(Activated devices, Online devices, Alarmed devices)
- **Geographical distribution** of the Devices
- **Devices performance data statistics**
(Network speed, Data flow, CPU usage, etc)
- **App usage** statistics
- **Firmware version** statistics



Activated Device analysis

- **Provide operators with greater visibility into overall device usage**
- **Provide data support for device sales market deployment decisions**

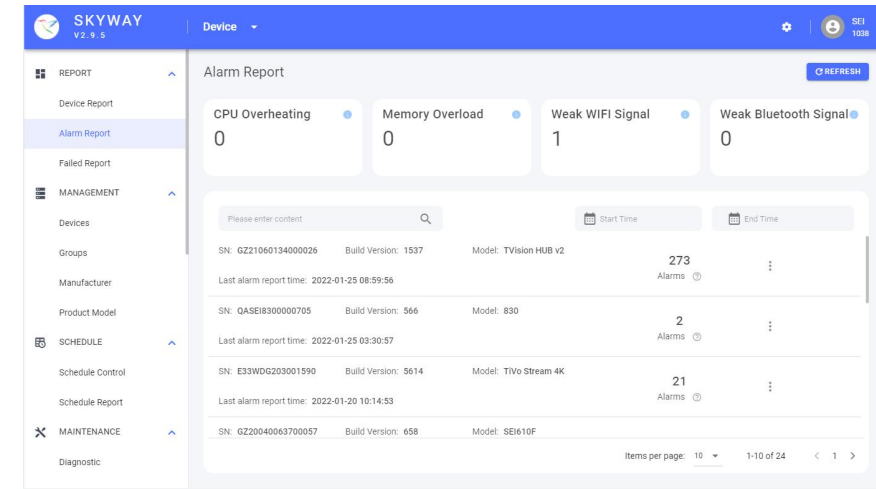


Device usage analysis

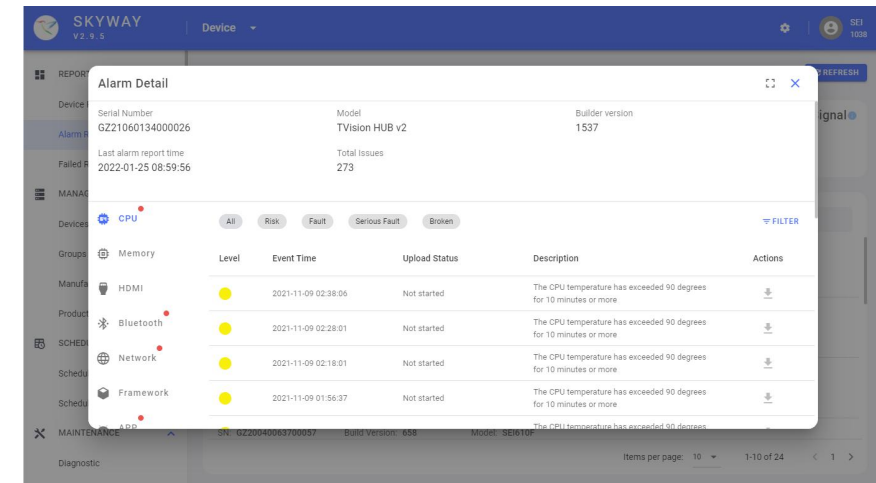
Alarmed Devices analysis

- Detailed alarmed devices report
- Error logs are automatically uploaded
- AI capabilities can intelligently analyze the device operating status, which can effectively find device that is about to fail, send notifications, and even provide suggestion or solutions

- It is convenient for operators to troubleshoot equipment problems
- Reduce the human and financial resources for operators to deal with device failures



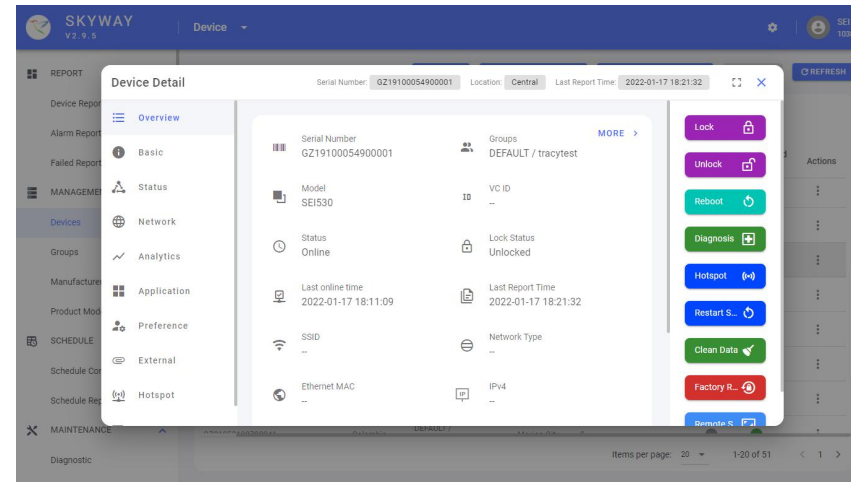
Alarmed device dashboard



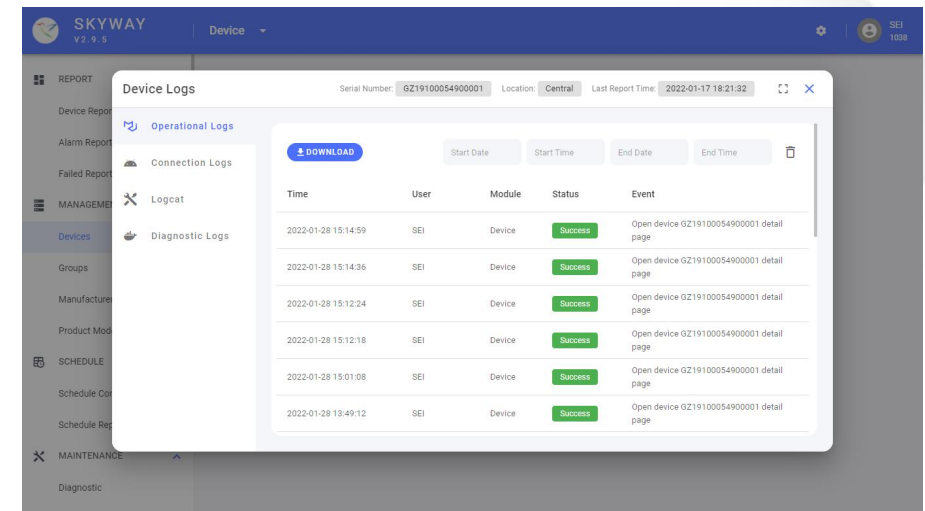
Alarm issue details

Full-dimensional data collection for Single Device

- **Full-dimensional data collection** for a single device, which includes device basic hardware, software attributes , device hardware and software usage , network usage , device accessory hardware usage, user preferences, app usage
 - **Collection of various device logs**(Optional Logs, connection logs, Logcat, Diagnostic Log)
- **Get a complete picture of how your device is being used**



Device Details



Device Logs

Logcat

Remote capture of the operation log of the device, easy to analyze the device system problems

Users can choose the type of logs to be reported according to their needs

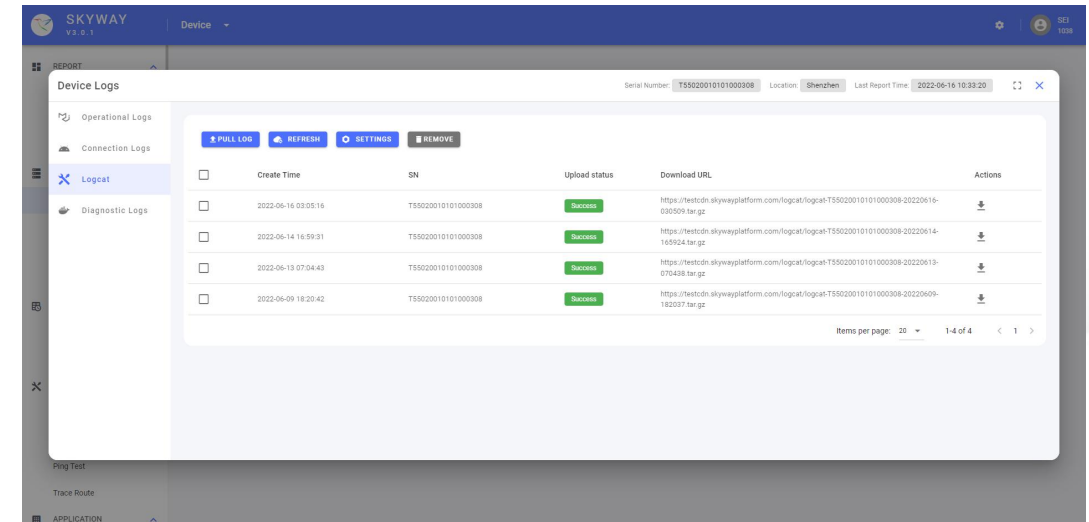
Users can choose uploading log for specific apk and different type (Verbose, debug, Info, Warn, Error)

Support log automatic reporting function

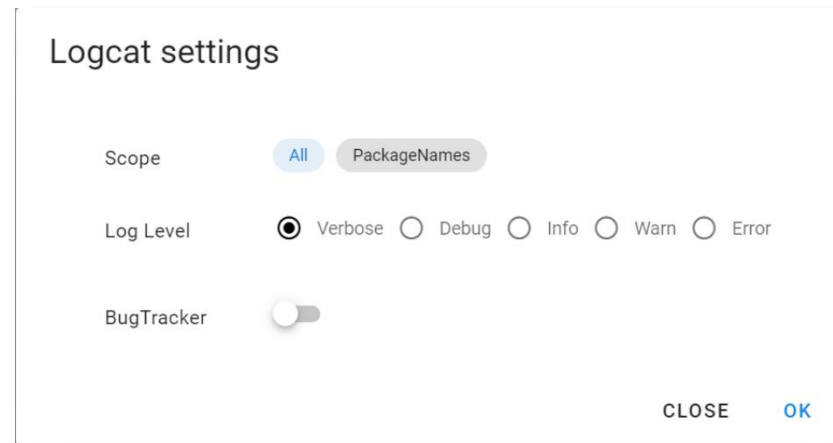
After enabling this function, the device will report all running logs regularly, and all logs can be downloaded in the Skyway background.

Users can upload problem videos to TMS independently. (App Report)

Easy to locate the problem



Logcat page



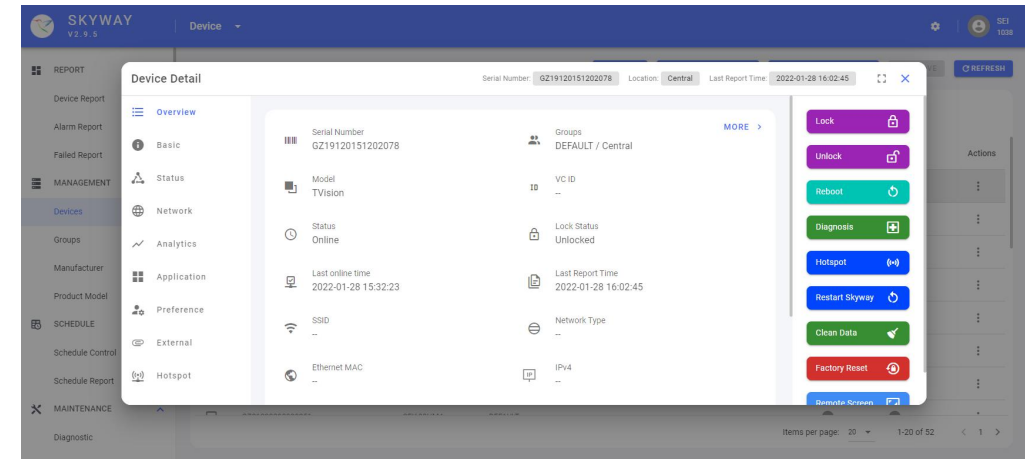
Logcat Setting

System Features

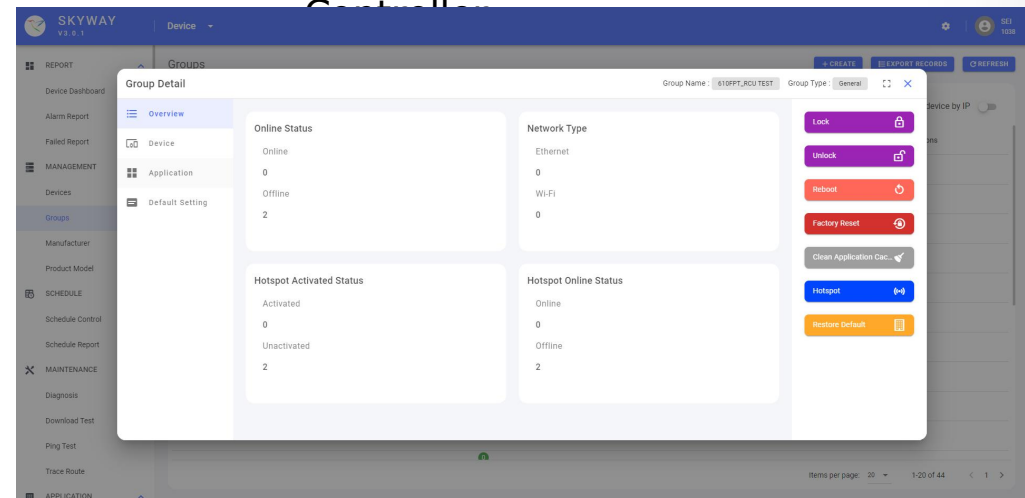
② Device Management

Device Basic Control

- **Support both SEI and third-party device import**
- **Various device control functions at the device and device group level**(lock, unlock, reboot, clean data, factory reset etc.)
- Send control commands to **device groups**
- Schedule control devices
- **Flexible command configuration** (Customized lock prompt, Restore Default for hotel scenario)
- **Reduce the difficulty of centralized management of devices**



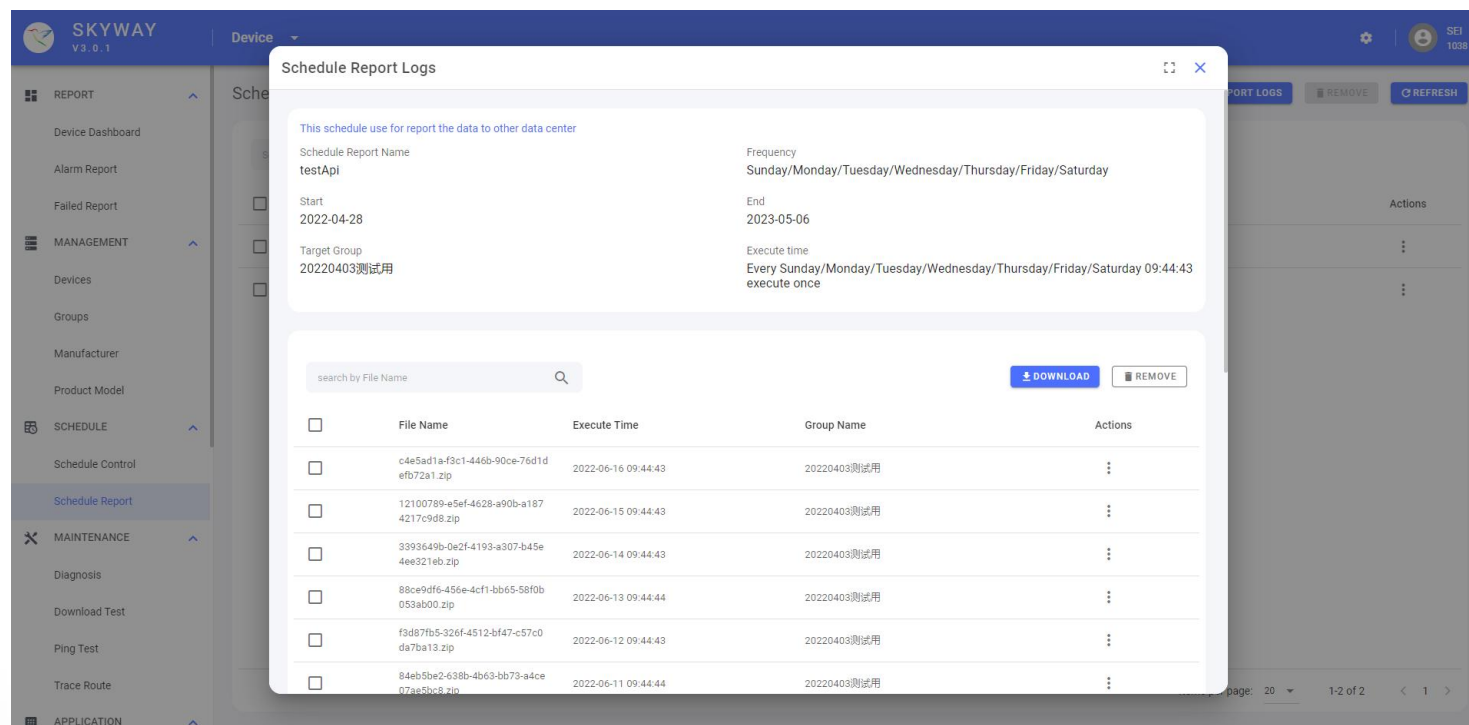
Individual Device
Controller



Group Device Controller

Device Data Export

In order to improve the utilization of Device data, tms supports data export function. The data exported from the platform can be imported into the third-party platform or the customer's CRM system. At the same time, TMS support schedule data export.



Schedule Report Logs

This schedule use for report the data to other data center

Schedule Report Name	testApi	Frequency	Sunday/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday
Start	2022-04-28	End	2023-05-06
Target Group	20220403测试用	Execute time	Every Sunday/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday 09:44:43 execute once

search by File Name

[DOWNLOAD](#) [REMOVE](#)

<input type="checkbox"/>	File Name	Execute Time	Group Name	Actions
<input type="checkbox"/>	c4e5ad1a-f3c1-446b-90ce-76d1d-efb72a1.zip	2022-06-16 09:44:43	20220403测试用	⋮
<input type="checkbox"/>	12100789-e5ef-4628-a90b-a187-4217c9d8.zip	2022-06-15 09:44:43	20220403测试用	⋮
<input type="checkbox"/>	3393649b-0e2f-4193-a307-b45e-4ee321eb.zip	2022-06-14 09:44:43	20220403测试用	⋮
<input type="checkbox"/>	88ce9df6-456e-4cf1-bb65-58f0b-053ab00.zip	2022-06-13 09:44:44	20220403测试用	⋮
<input type="checkbox"/>	f3d87fb5-326f-4512-bf47-c57c0-da7ba13.zip	2022-06-12 09:44:43	20220403测试用	⋮
<input type="checkbox"/>	84eb5be2-638b-4b63-bb73-a4ce-07aa5bc8.zip	2022-06-11 09:44:44	20220403测试用	⋮

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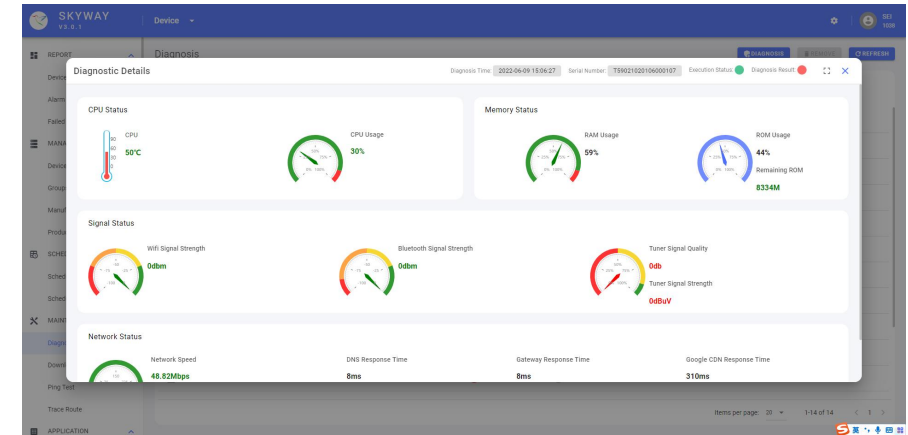
Remote Maintenance Tool

- **Multi-dimensional** diagnosis of device status
- Professional device status judgment standard to help operators locate device problems
- **Combine diagnosis with logcat and remote screen.**

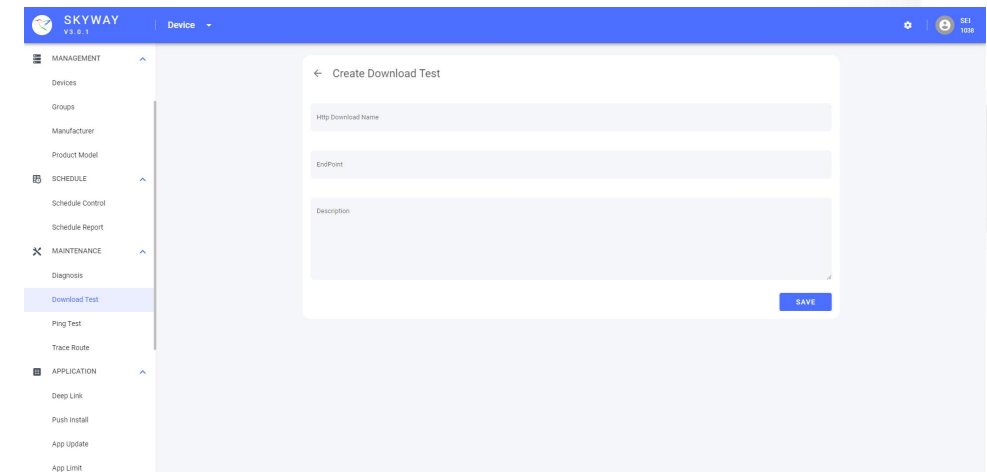
When the fault occurs, Customer service staff can get **specific fault symptoms** and **inside parameters** from the devices

- **Detailed diagnosis of network conditions**(Ping Test, Trace Route, Download Test)

➤ **Accurately locate equipment faults**



Device Status Diagnosis



The screenshot shows the 'Create Download Test' form within the SKYWAY v3.0.1 application. The form includes the following fields for configuration:

- Http Download Name
- EndPoint
- Description

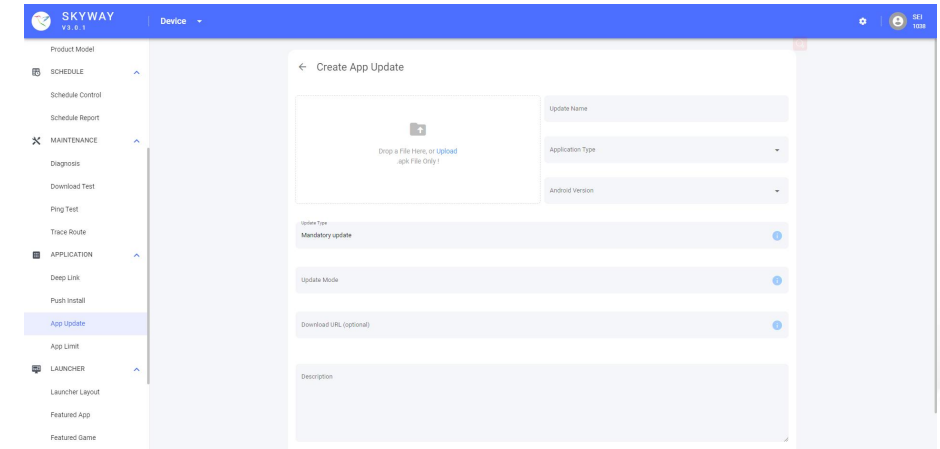
A 'SAVE' button is located at the bottom right of the form.

Download Test Configuration

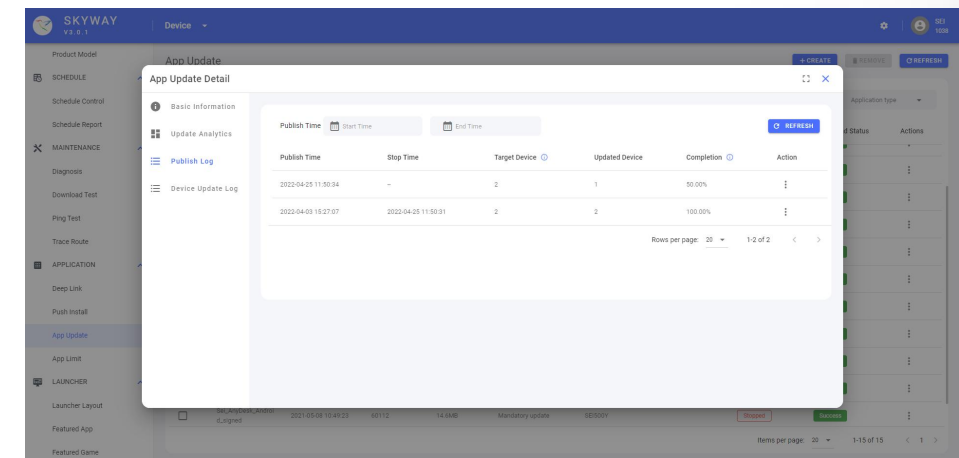
APP Upgrade

App upgrades that don't depend on Google Play

- **System apps upgrade without the Play Store**
 - Support **update app with different mode** (eg. Silent update without users' notice)
 - **Target different device for app update** (Group update and Percentage Update)
 - **Complete functional circuit** (Real-time statistics on the number of devices that have been updated and the reasons for updated failures)
- **Reduce the cost of maintaining equipment for operators**



Create App Update



Publish Time	Stop Time	Target Device	Updated Device	Completion	Action
2022-04-29 11:50:34	-	2	1	50.00%	
2022-04-03 15:27:07	2022-04-25 11:50:31	2	2	100.00%	

Rows per page: 20 1-2 of 2

Statistics for Update

Advanced App Management

Note: This function is only available with Google permission



Deep Link

- **Configure the download link of google playstore and let the device install apk through Playstore**

Push Install

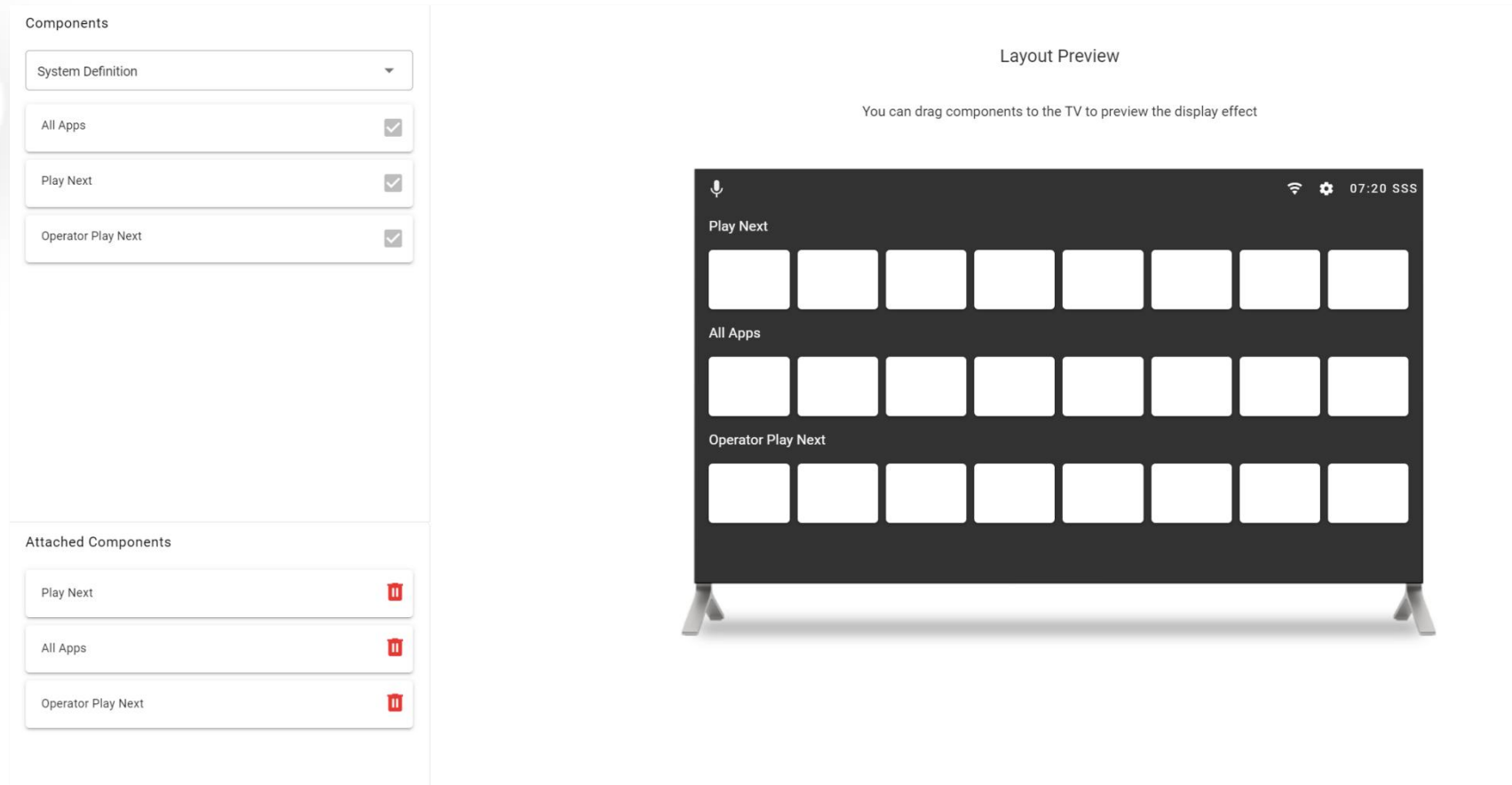
- **Push install through uploading apk file**

App Limit

- **Control whether the app is available on the device**

Customize the Launcher Layout

App upgrades that don't depend on Google Play



Different Launcher layout modes are used for different groups of devices. Modify the recommendation bit display content and controls the order and position of the recommendation bit content, so as to achieve the purpose of operating the Launcher.

Note: This function is only available in the launcher customized for the operator

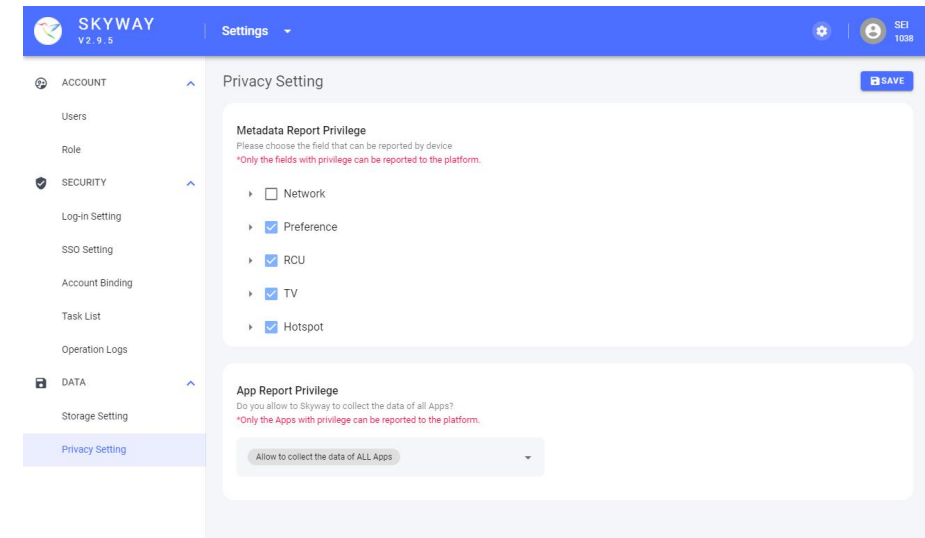
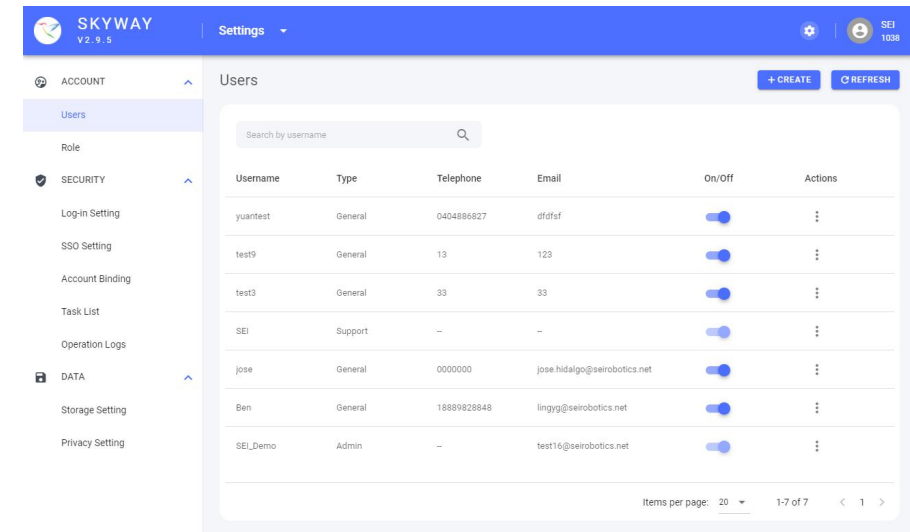
System Features

③ Platform Security

Multi-level Permission Management

- Operators assign permissions to users according to their needs. Users can only access functions within the permissions
- Flexible configuration of device reporting data
- Restrict app-related data reporting

➤ **Ensure device and platform data security**



Account and Data Security

Support third party account login, make data more secure

TMS has adopted a variety of methods to ensure operator information security.

- System requires users change their password regularly(Log-in Setting)
- Bind a third-party account (Account Binding)
- Record the actions of different users on the platform (Operational Log)



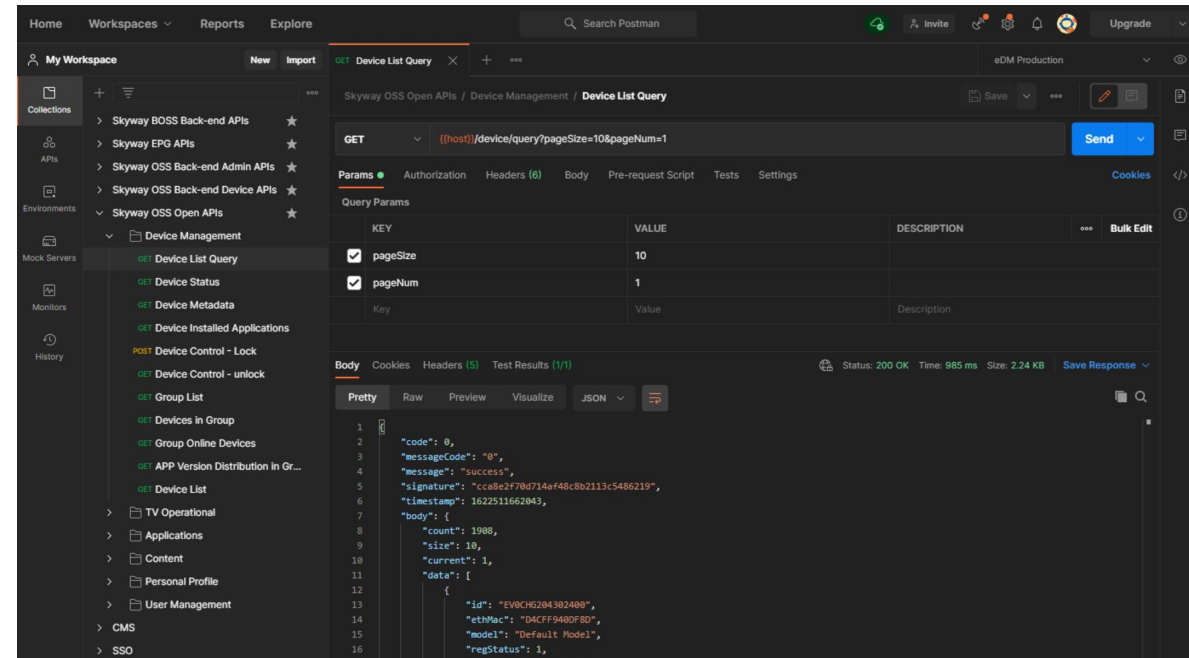
System Ability

Open API

Interconnection and integration into the existing management system



Open API

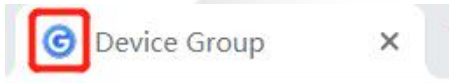


- Open API provided by customers can be integrated to better integrate into the existing management system of customers, and Skyway is taken as a sub-module to facilitate the management of operators and customers in a unified place.
- Complete and friendly API integration documentation and API SDK further reduce the API integration effort.

Customized UI Theme



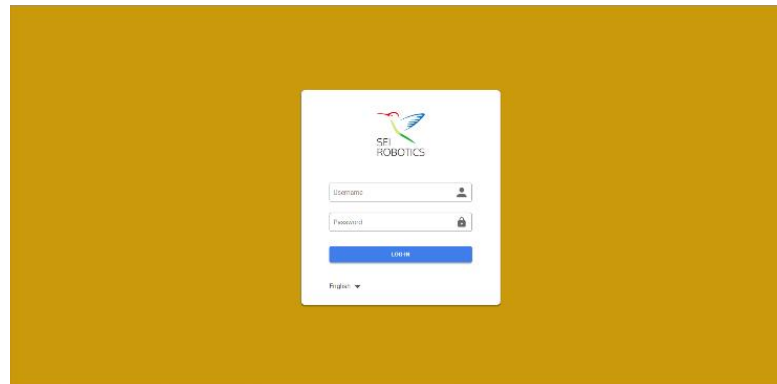
The title bar logo can be customized



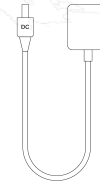
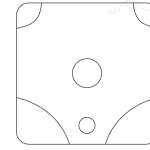
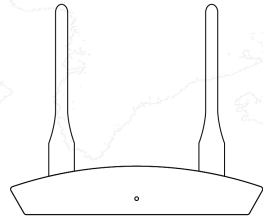
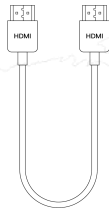
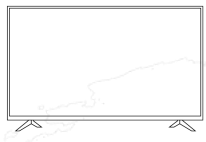
The browser icon can be customized



The theme color can be customized



The log-in page logo and background can be customized



Thanks!

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