Agent MaaS Suite (AMS)
AXView 3.0 User’s Manual
v1.3
Release Note

<table>
<thead>
<tr>
<th>Version</th>
<th>Revised Date</th>
<th>Author</th>
<th>Description</th>
</tr>
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<tr>
<td>v1.0</td>
<td>2018/12/28</td>
<td>Brandon</td>
<td>- 1st release</td>
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<td>v1.1</td>
<td>2019/01/02</td>
<td>Cynric</td>
<td>- add Modbus TCP and Modbus RTU configuration</td>
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<td>v1.2</td>
<td>2019/02/15</td>
<td>Mark</td>
<td>- add Introduction</td>
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<tr>
<td>V1.3</td>
<td>2019/03/14</td>
<td>Brandon</td>
<td>- add DO level control</td>
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<tr>
<td></td>
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<td>- add MaaS</td>
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1 Introduction

1.1 Architecture

Agent MaaS Suite (AMS) is the latest software solution product released by Axiomtek in response to the trend of the Internet of Things (IoT). It is a lightweight device and data management software platform that comes with information visualization and data clouding features. From the terminal device to the gateway equipment in the middle stage, and then to the remote management platform, AMS assists users in managing and handling the tasks that they may encounter in various classes, such as protocol communication, data collection and processing, message transmission, and information presentation. AMS also puts the IoT / IIoT spirit into action by performing device and equipment management, allowing users to reduce human resources and lower technical thresholds during project development, so that they can fully focus on application integration and creation of value-added services.
1.2 Features

To exemplify the spirit of IoT/IIoT while retaining flexibility, AMS is divided into two packages according to their operational role requirements: System Management - AXView 3.0; and Remote Management - MaaS (Management as a Service).

Besides providing basic device management and data processing functions, AXView 3.0 also includes flexible features for design change and functional expansion, with the main function blocks encompassing both Device and System Management (DSM) and Data Processing and Visualization (DPV).
1.3 Specifications

<table>
<thead>
<tr>
<th>COMMUNICATION</th>
<th>Interface</th>
<th>RS-485, RJ-45, Wi-Fi, 3G/4G</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protocol</td>
<td>Modbus RTU/TCP, MQTT, TCP/UDP, HTTP, Socket, WebSocket</td>
</tr>
<tr>
<td>MONITORING</td>
<td>System</td>
<td>Voltage, Temperature, Digital I/O, Fan speed, Status and USB insert/remove</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Connected device for Modbus device</td>
</tr>
<tr>
<td>DEVELOP TOOL</td>
<td>Node-RED integrated</td>
<td></td>
</tr>
<tr>
<td>PROGRAMMING LANGUAGE</td>
<td>JavaScript supported</td>
<td></td>
</tr>
<tr>
<td>SECURITY</td>
<td>Watchdog Timer to ensure normal operation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operating per user ID authentication</td>
<td></td>
</tr>
<tr>
<td>SYSTEM REQUIREMENTS</td>
<td>OS</td>
<td>Linux Ubuntu 16.04 or Yocto 2.5.1</td>
</tr>
<tr>
<td></td>
<td>CPU</td>
<td>Intel® Atom® processor E3815 or above</td>
</tr>
<tr>
<td></td>
<td>Storage</td>
<td>16GB or above</td>
</tr>
<tr>
<td></td>
<td>Memory</td>
<td>4GB or above</td>
</tr>
<tr>
<td>PLATFORMS</td>
<td>Please refer to [1.4 Hardware Platform Support List]</td>
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</table>
### 1.4 Hardware Platform Support List

<table>
<thead>
<tr>
<th>Hardware Platform</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fanless Embedded System</td>
<td>eBOX100-312, eBOX560-300, eBOX560-500,</td>
</tr>
<tr>
<td></td>
<td>eBOX560-512, eBOX565-312, eBOX565-500,</td>
</tr>
<tr>
<td></td>
<td>eBOX625-853, eBOX626-853, eBOX627-312,</td>
</tr>
<tr>
<td></td>
<td>eBOX625-312, eBOX670-891</td>
</tr>
<tr>
<td>IoT Gateway</td>
<td>ICO100-839, ICO120-83D, ICO300-83B, ICO310,</td>
</tr>
<tr>
<td></td>
<td>ICO320-83C</td>
</tr>
<tr>
<td>Transportation System</td>
<td>tBOX300-510, tBOX324-894, tBOX500-510</td>
</tr>
<tr>
<td></td>
<td>UST100-508, UST500-510</td>
</tr>
<tr>
<td>Fanless Touch Panel PC</td>
<td>GOT110-316</td>
</tr>
<tr>
<td>Digital Signage Player</td>
<td>DSP300</td>
</tr>
<tr>
<td>Industrial PC</td>
<td>IPC962-511, IPC962-512, IPC964-512, IPS960-511-PoE, IPS962-512-PoE</td>
</tr>
<tr>
<td>Industrial Motherboard</td>
<td>IMB520, IMB523</td>
</tr>
<tr>
<td>System Host Board</td>
<td>SHB150, SHB140</td>
</tr>
<tr>
<td>Card/Module</td>
<td>AX92320</td>
</tr>
</tbody>
</table>
2 Getting Started

2.1 Install AXView 3.0

2.1.1 Install AXView 3.0 in Ubuntu 16.04 (need to connect to Internet)
1) Open “Terminal” and navigate to .tar.gz directory.
2) Type “source InstallAXV_ubuntu.sh” to run install script.

3) System will install needed components.
4) Reboot the device.

2.1.2 Install AXView 3.0 in Yocto 2.5.1

Please contact us.
3 AXView 3.0

3.1 Login

Open your web browser recommended that you to use browser software Google Chrome, Firefox, and type in the following address to the URL bar:
http://<gatewap_ip>:8080
After the navigation, it'll show login web page. Please enter the id and password to login (Default id: admin, default password: admin).

If you enter the wrong id or password, it'll show error message as below.
3.2 System Information

3.2.1 Overview
This is the home page of AXView. The overview provides a one-stop summary on this gateway. From here you can see the gateway status like working hours, hardware information, system status, events & login history and hardware status.
Agent MaaS Suite
AXView 3.0

Software & Solution Product Division
User can use user icon to change password and log out.

### 3.2.1.1 Change Password

- Click “Password” will navigate to password change page.

  Enter the Username, old password and new password to change password
3.2.2 Event Log

- List all logs. The logs with bold text mean the logs unread.

- User can read log by click text.
- User can read all logs by click “Read All” button.
### 3.2.3 General

List the information of hardware, operating system and all storages connected to the system.

When user inserts the USB flash, the page will show the information about the USB flash.
3.2.4 I/O

- UART/USB Information:
  Show and monitor the USB device information. If any USB device is removed or inserted, the information will change.

- LAN Information and Status:
  List all information of the LAN port (e.g. IP and MAC address) and connection status on the system.

When user inserts the USB flash, the page will show the information about the USB flash.
3.3 Configuration

3.3.1 Event Selection

Select which one of the unusual event you want to know. After that, click “Save” button to save changes.
3.3.2 Event Forward

If you want Agent to inform you about the unusual event through email, you must key in the related info for SMTP server and email account.
3.3.3 MaaS

If you want to connect to MaaS server, you must key in related info to register device to MaaS server. After finished related info, click “Save” button and then click “Test” button to connect to MaaS server. If you don’t click “Test” button, the device will connect to MaaS server in 30 minutes.
3.3.3.1 Reject By MaaS Server

When MaaS server rejects the device, the device’s local web page will get a reject notification.
Agent MaaS Suite
AXView 3.0

- Log list
  - No.  Date       Message
  - 1  2019-03-11 16:06:41  Rejected device from Maxx
  - 2  2019-03-11 16:06:36  Get a signal = 909K1
  - 3  2019-03-11 16:06:37  Get a signal = 909K1
  - 4  2019-03-11 16:06:36  Get a signal = 909K1
  - 5  2019-03-11 16:06:36  Get a signal = 909K1
3.4 Monitoring

3.4.1 HWM

The Monitoring menu displays more detailed information about the following items:

- Temperature
- Voltage
- Fan Speed (If this item doesn’t show on list, it means the device is fanless system)

Each item can be monitor and list bound values.

User can set up threshold value of upper and lower bound when selected monitor item is one.
3.4.2 DIO

Monitor digital input/output signal.

- Click icon of “VALUE” column for DO level control
- Select “Opposite” tick box to set up threshold value for detecting state change of the digital output signal while it is not changed internally by user.
- Set up threshold value for detecting the state change of the digital input signal.
  - **H2L** means state is changed from high to low.
  - **L2H** means state is changed from low to high.
3.5 Data Process

3.5.1 Source
The Manage page allows you to add/configure edge device & sensors to this gateway, using available protocols. Currently only Modbus is able to configure its respective parameters with the “Configure” button. User can double click text of device name to modify the name.
3.5.1.1 Modbus Protocol

This section explains how to manage Modbus devices in the system. Once the Modbus device correctly setup, we can add the new Modbus device and system through the configuration below.

1) When you click “+” button at bottom-right corner, a popup window will appear.
2) Fill up the required parameters Device Type.
   - Modbus TCP: Enter IP Address, and Slave ID. Click the “Search” button along the identifier category.
   - Modbus RTU: Enter the Slave ID.
   Then click on “Add Device” button to complete the registration.
3) Click on “Accept” button to connect the new Modbus device with the system.
4) Once connected “Accept” button will change to “Reject” button.
Once the new Modbus is added, we can know configure the device into its required parameters. Depending on the use case, respective parameters would be filled in. Steps are as below:

1) Click on the “Configure” button.
2) New popup window would appear. Fill in the respective parameters for each use case of the Modbus. Click “Add Register” button to add the new parameters into the system.
3) Once successfully added, the respective parameters will appear in the list.
3.5.2 Flow Design

The Flow Design page allows you to visually program your unique requirement on inputs data, function programming, and desired outputs; allow you an easy way to program into your operation needs.
3.5.3 Visualization
Display the device visualization page.
Appendix A

Troubleshooting

400 ERROR – PAGE NOT FOUND
The request could not be understood by the server due to malformed syntax. The client should not repeat the request without modifications.
404 ERROR – PAGE NOT FOUND
The server has not found anything matching the request-URI. The requested resource could not be found but may be available in the future. Subsequent requests by the client are permissible.
500 ERROR – INTERNAL SERVER ERROR
The server encountered an unexpected condition which prevented it from fulfilling the request.