

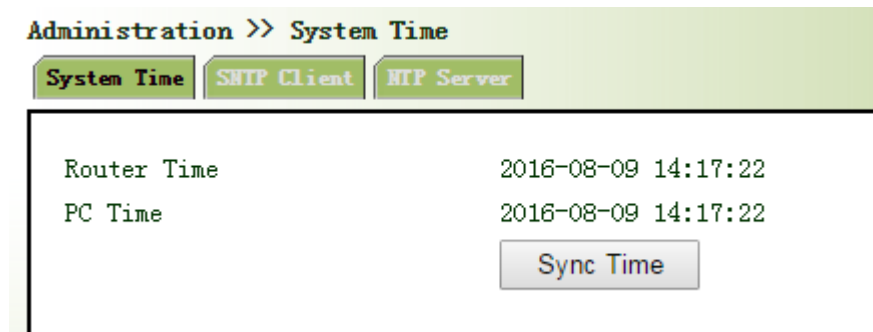
User Manual for Modbus Data Acquisition Based on Python

1. Prepare

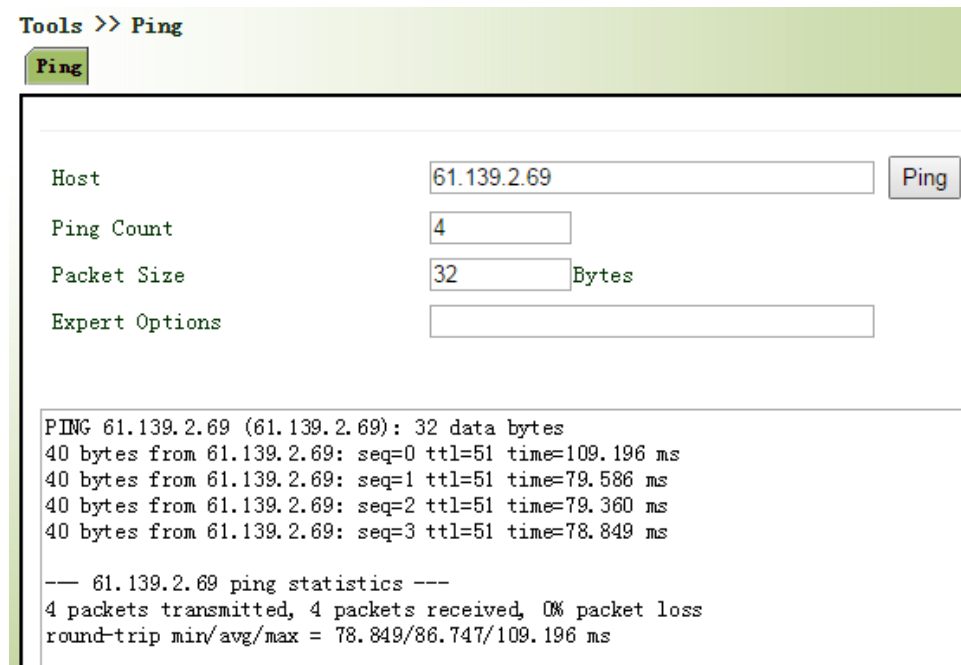
Device Model:IR915
 App Files:Core.zip, InModbus.zip
 Tools: WinSCP, putty ,telnet

2. Operations

Step 1: Make sure your device is running the firmware with this version **V1.0.0.r8330**, and synchronic time:



Step 2: Make sure your device is available to access internet



Step 3: Login the inhand DN cloud : g.inhandnetworks.com, and add the gateway, create controller and model, as the following show:

Step 4: Install Python SDK

a) Enable debug service

Administration >> python

Administration >> Python

Enable AppManager
 Enable Debug Server
 Enable Extended Flash

App Management

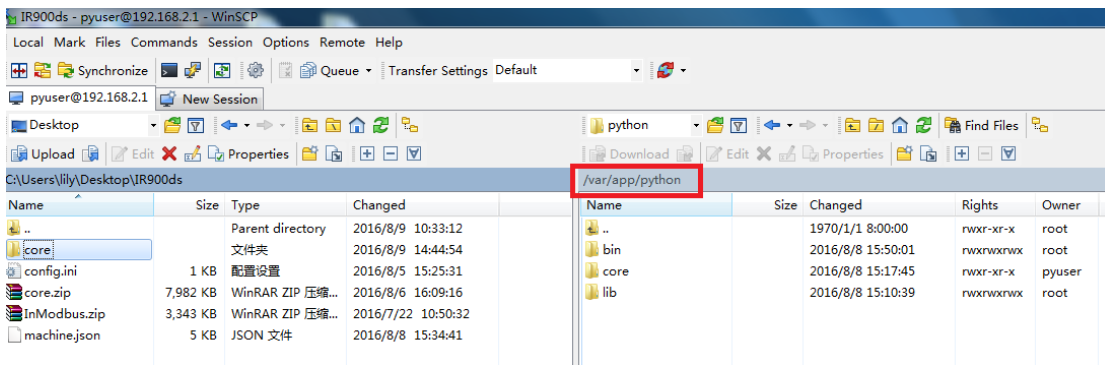
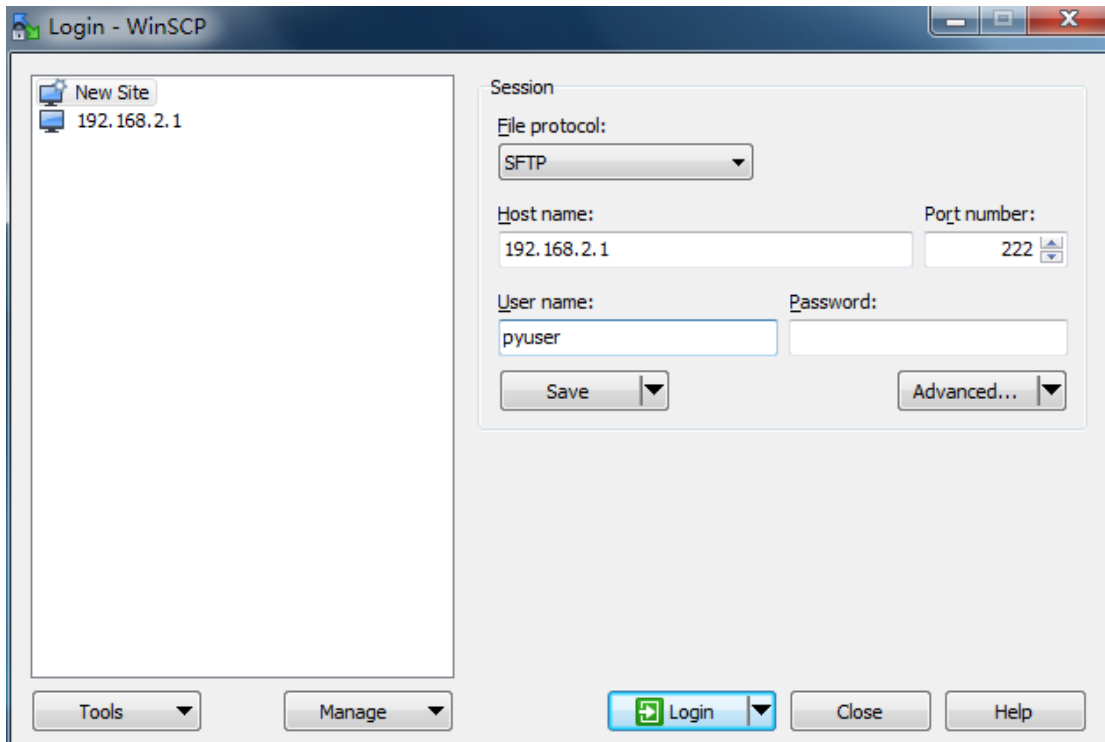
ID	App Command	Logfile Size (MB)
1	InModbus	1
<input type="text" value="2"/>	<input type="text"/>	<input type="text" value="1"/>

Check the debug server's status :

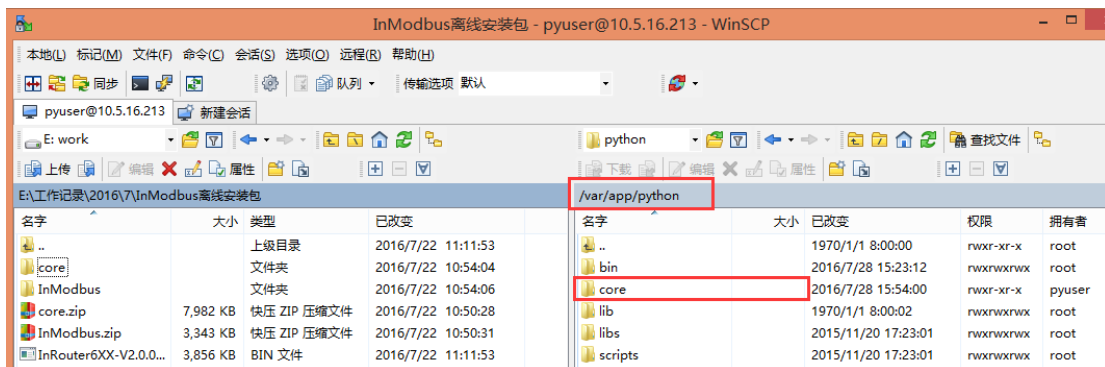
Administration >> Python

Extended Memory Card not found
 AppManager Status running
 Debug Server Status on
 App Filesystem Use% 55% of 32MB
 Data/Log Filesystem Use% 4% of 71MB

b) Upload core.zip, open WinSCP and access the devcie by SFTP



Unzip core.zip file and upload core file, the path is : /var/app/python



c) Change the access authority of file, use putty to login the device, and enter the directory: cd /var/app/python/core

chmod a+x * or chmod 777 *

```

10.5.16.213 - PuTTY
Using username "pyuser".
pyuser@10.5.16.213's password:

BusyBox v1.19.2 (2016-06-03 00:56:24 PDT) built-in shell (ash)
Enter 'help' for a list of built-in commands.

~ $ pwd
/var/app/python/bin
~ $ cd /var/app/python/core/
/var/app/python/core $ chmod a+x *
/var/app/python/core $
  
```

d) Execute the installation scrip: `./python_sdk_install.sh` , it will take around 2 minutes to install it, please keep the device is available to access internet.

```

~ $
~ $
~ $
~ $ cd ..
/var/app/python $
/var/app/python $
/var/app/python $
/var/app/python $ ls
core lib bin
/var/app/python $ cd core/
/var/app/python/core $ chmod 777 *
/var/app/python/core $ ./python_sdk_install.sh
  
```

e) : As the following show, the device has finished the python sdk installation

```

Using /var/app/python/core/lib/python2.7/site-packages/supervisor-3.3.0-py2.7.egg
Searching for meld3==0.6.5
Best match: meld3 0.6.5
Adding meld3 0.6.5 to easy-install.pth file

Using /var/app/python/core/lib/python2.7/site-packages
Finished processing dependencies for superlance==0.11
/var/app/python/core $
  
```

Step 5: Configure InModbus.zip

Under the directory InModbus.zip\InModbus\src, need to modify the following two files:

- a) **config.ini** path: InModbus.zip\InModbus\src
- b) **machine.json** path: InModbus.zip\InModbus\src

Config.ini needs to change "account" to your account on g.inhandnetworks.com and "password" is the password used for g.inhandnetworks.com

```

[API]
url=http://c.inhand.com.cn
client_id=000017953450251798098136
client_secret=08E9EC6793345759456CB8BAE52615F3
account=hanxd@inhand.com.cn
password=123456
password_type=i
grant_type=password

[AP]
protocol=tcp
host=114.215.82.171
port=21004
    
```

Modify Machine.json file, suggest to edit it by using notepad++

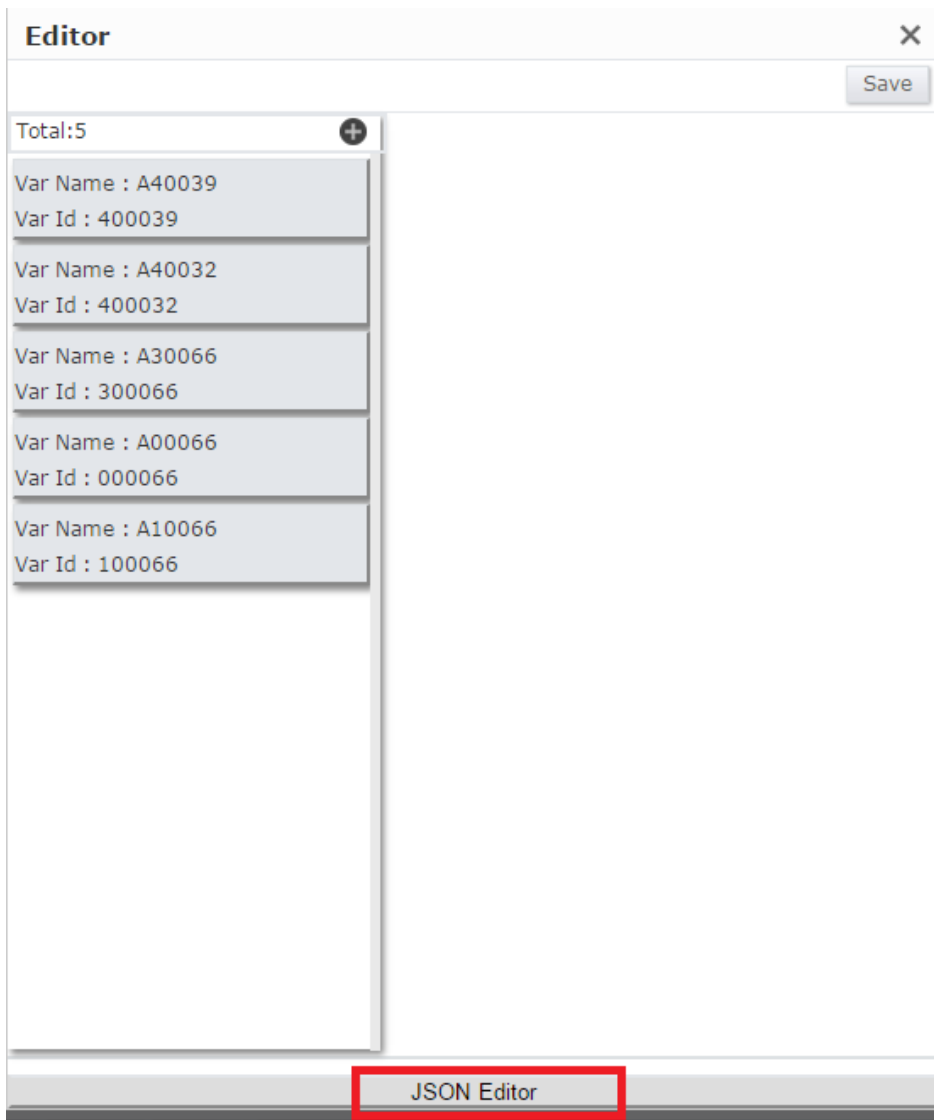
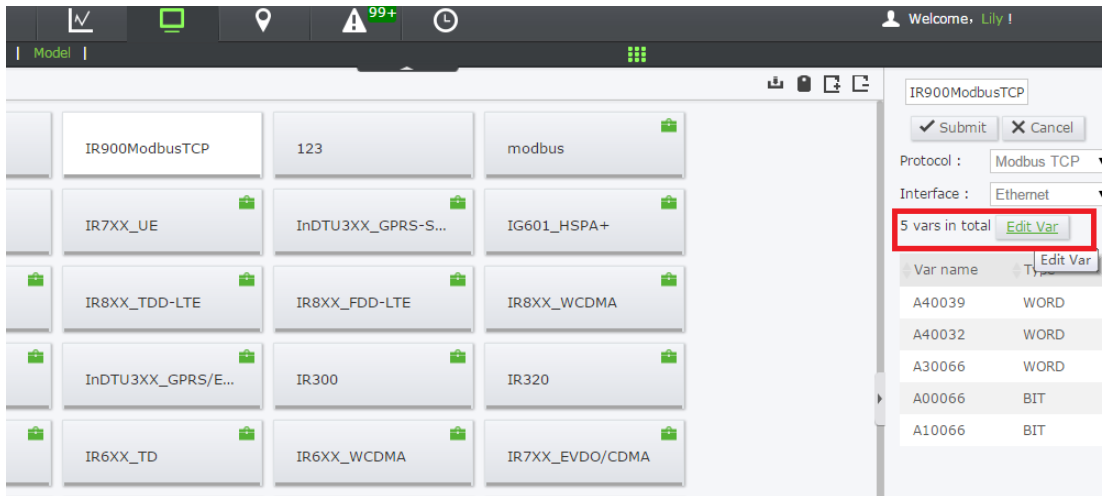
Modbus-RTU protocol, json file related parameters as following:

- "name": "liwei", same with PLCname on g server
- "plcName": "liwei", same with PLCname on g server
- "protocol": "MBRTU", protocol, MBRTU
- "address": 1, same with the PLC address on g server
- "serialport": "/dev/ttyO1", ttyO1 means serial port 232, ttyO5 means serial port 485
- "stopbits": 1, same with g server
- "baudrate": 9600, same with g server
- "bytesize": 8, same with g server
- "parity": "N", same with g server
- "xonxoff": 0,
- "polling_interval": 5,
- "upload_interval": 30,
- "reconnect_interval": 10,
- "vars": [], copy it from g server
- "nativeName": "" var group name, it can be blank

Modbus-TCP protocol, json related parameters as the following show:

- "name": "liwei", same with PLCname on g server
- "plcName": "liwei", same with PLCname on g server
- "protocol": "MBTCP", protocol MBTCP
- "host": "192.168.2.57", PLC's IP address
- "port": "502",
- "address": "2", P
- "conn_params": "9600-8-n-1",
- "polling_interval": 5,
- "upload_interval": 30,
- "reconnect_interval": 10,
- "vars": [], copy it from g server
- "nativeName": "" var group name, it can be blank

Note: Here the vars need to be same with g server, so usually we directly copy it from the g server, as the following show:



Editor
✕

☰ ☰
Save

```

[
  {
    "vars": [
      {
        "name": "A40039",
        "nativeName": "A40039",
        "nativeUnit": "",
        "_id": "400039",
        "type": 1,
        "storeType": 1,
        "vType": 1,
        "paramName": "A40039",
        "paramValue": "",
        "precision": 2,
        "level": 1,
        "version": "3.0",
        "defaultValue": 0,
        "timeLevel": 3,
        "sample": 600,
        "statType": 0,
        "storage": 5201314,
        "prio": 1,
        "limit": {
          "maxAlert": true,
          "minAlert": false,
          "maxValue": 700,
          "minValue": 0,
          "maxEqual": true,
          "minEqual": false,
          "alarmDesc": "温度过高",
          "nativeAlarmDesc": "温度过高",
          "alarmType": 1,
          "alarmLvl": 5
        }
      }
    ]
  }
]
            
```

Normal Editor

Step 6: Install InModbus service

a) Enable Python APPManager

Administration >> Python

Status
AppManager Configuration
Python Zip

Enable AppManager	<input checked="" type="checkbox"/>
Enable Debug Server	<input checked="" type="checkbox"/>
Enable Extended Flash	<input type="checkbox"/>

b) Check the AppManager running status

Administration >> Python

Status AppManager Configuration Python Zip

Extended Memory Card	not found
AppManager Status	running
Debug Server Status	on
App Filesystem Use%	55% of 32MB
Data/Log Filesystem Use%	4% of 71MB

c) Upload the InModbus.zip file to the device , it will take around 10 minutes to install this sevice

Administration >> Python

Status AppManager Configuration Python Zip

Select the file to upload:

C:\fakepath\InModbus.zip

d) Check on the web server

Administration >> Python

Status AppManager Configuration Python Zip

Extended Memory Card	not found
AppManager Status	running
Debug Server Status	on
App Filesystem Use%	55% of 32MB
Data/Log Filesystem Use%	4% of 71MB

App Name	App Version	App Command
InModbus	0.0.1	miniterm.py

e) Add InModbus APP

Administration >> Python

Enable AppManager
 Enable Debug Server
 Enable Extended Flash

App Management

ID	App Command	Logfile Size (MB)
1	InModbus	1
<input type="text" value="2"/>	<input type="text"/>	<input type="text" value="1"/>

f) check the running status on the web server

Supervisor status

State	Description	Name	Action
running	pid 3358, uptime 1 day, 2:33:54	InModbus	Restart Stop Clear Log Tail-f
running	pid 1679, uptime 1 day, 3:11:02	nanobroker	Restart Stop Clear Log Tail-f

Step 7: Monitoring history data

900	IR9XX_WCDMA	A40039	46163
TCP	TCP		
liwei	RTU	A40032	46183
		A30066	46203
		A00066	0.0