

CONFIGURING BELLOWS TO WORK WITH RASPBERRY PI &

CONFIGURING /dev/ttyAMA0 TO WORK AS UART

C. ERASTUS TOE

SYSTEMd

- RPI 3 Model B

RANDOM QUESTIONS ALONG THE WAY

- (serial1 -> ttyAMA0) how to switch /dev/ttyAMA0 to serial0
- What's the difference between bellows and bellows-homeassistant???
- Install bellows-homeassistant < pip3 install bellows-homeassistant>

KEY POINTS TO NOTE

- Elelabs Zigbee shield connection
 - Shield uses /dev/ttyAMA0
 - /dev/ttyAMA0 was used for bluetooth but if disabled, then it can be used as UART
- *** Read Zigpy/bellows & understand it
 - [zigpy/bellows: A Python 3 project to implement EZSP for EmberZNet devices](#)
 - Bellows add radio support for using elelabs zigbee shield
- Learn about configuration files in python [Configuration files - Coverage.py 4.0.3 documentation](#)

HOW TO USE BELLOWS CLI

- bellows -v DEBUG -d /dev/ttyAMA0 info

Enable /dev/ttyAMA0 as UART

- What is UART ???

- Universal asynchronous receiver-transmitter is a computer hardware device for asynchronous serial communication in which the data format and transmission speeds are configurable.

- Asynchronous serial communication is a form of serial communication in which the communication endpoints interfaces are not continuously synchronized by a common clock signal. Instead of a common synchronization signal, the data stream contains synchronization information in form of start and stop signals, before and after each unit of transmission, respectively. The start signal prepares the receiver for arrival of data and the stop signal resets its state to enable triggering of a new sequence.

- Serial communication is the process of sending data and bit at a time, sequentially, over a communication channel or computer bus.

- In computer architecture, a Bus (computing) is a communication system that transfers data between components inside a computer, or between computers

- When I run `< bellows -v DEBUG -d /dev/ttyAMA0 info >` I get this error message

```
pi@raspberrypi:~ $ bellows -v DEBUG -d /dev/ttyAMA0 info
```

```

debug: Using selector: EpollSelector
debug: Using selector: EpollSelector
debug: Connected. Resetting.
debug: Resetting EZSP
debug: Resetting ASH
debug: Sending: b'\xac038bc7e'
Traceback (most recent call last):
  File "/usr/local/bin/bellows", line 33, in <module>
    sys.exit(load_entry_point('bellows==0.19.0.dev0', 'console_scripts', 'bellows')())
  File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 829, in __call__
    return self.main(*args, **kwargs)
  File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 782, in main
    rv = self.invoke(ctx)
  File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 1259, in invoke
    return _process_result(sub_ctx.command.invoke(sub_ctx))
  File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 1066, in invoke
    return ctx.invoke(self.callback, **ctx.params)
  File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 610, in invoke
    return callback(*args, **kwargs)
  File "/usr/local/lib/python3.7/dist-packages/click/decorators.py", line 21, in new_func
    return f(get_current_context(), *args, **kwargs)
  File
"/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/cli/util.py",
line 38, in inner
    File "/usr/lib/python3.7/asyncio/base_events.py", line 584, in run_until_complete
        return future.result()
  File
"/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/cli/ncp.py",
line 68, in info
    File
"/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/cli/util.py",
line 115, in setup
    File
"/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/ezsp.py",
line 84, in reset
    File
"/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/uart.py",
line 221, in reset
    File "/usr/lib/python3.7/asyncio/tasks.py", line 423, in wait_for
        raise futures.TimeoutError()
concurrent.futures._base.TimeoutError

```

- The problem seems to be with the list line

```

File "/usr/lib/python3.7/asyncio/tasks.py", line 423, in wait_for
    raise futures.TimeoutError()
concurrent.futures._base.TimeoutError

```

***** How to fix that *****

1. Remove bellows and run `<pip3 install bellows-homeassistant>`

- THIS IS THE CAUSE OF THE MAIN PROBLEM.


- The stick does not respond on rest request. You need to specify baud rate 115200 {using elelabs rpi shield}
- What is the baud rate??
- FIXING THE PROBLEM [PC Serial Port](#)
 - Linux Serial Port Setup



stty is a command line tool for setting up the serial port.

Set baud rate to 115200 on /dev/ttyAMA0

 - stty -F /dev/ttyAMA0 115200 cstopb
 - /usr/local/lib/python3.7/dist-packages/pyserial_asyncio-0.4-py3.7.egg/serial_asyncio
 - /:;q



MY COMMUNICATIONS WITH THE DEVELOPERS OF ZIGPY/BELLOWS ON HOW TO USE THE LIBRARY AND SETUP THE SYSTEM

 **IO Error in ZHA component on HA restart #32726**
sam-ward opened this issue on Nov 10, 2019 · 58 comments



 **chukpozohnToe** commented on Aug 22 

@Nixellion can you try installing `pip3 install bellows-homeassistant` and then run `bellows -v DEBUG -d /dev/PATH_TO_YOUR_DEVICE info` ?

Is there a difference between bellows & bellows-homeassistant? Sorry I'm new to all of this.

 **Adminiuga** commented on Aug 22 Contributor 

Yes, there's difference. Remove them all and let homeassistant to install the correct one.

 **chukpozohnToe** commented on Aug 22 

Yes, there's difference. Remove them all and let homeassistant to install the correct one.

Thank you for getting back to me. I have more questions.

I'm working on a small project to familiarize myself with all of these cool stuff. My goal is to use Elelabs Zigbee Raspberry Pi Shield to control Zigbee smart plugs. But I'm looking to write the code that controls the smart plugs myself. Elelabs told me that bellows was the way to go. I have been having a lot of trouble with bellows. Could you please point me in the right direction?

I'm currently having this problem

```
tardis@raspberrypi:~ $ bellows -v DEBUG -d /dev/ttyAMA0 info
debug: Using selector: EpollSelector
debug: Using selector: EpollSelector
debug: Connected. Resetting.
debug: Resetting EZSP
debug: Resetting ASH
debug: Sending: b'1ac038bc7e'
Traceback (most recent call last):
File "/usr/local/bin/bellows", line 33, in
sys.exit(load_entry_point('bellows==0.19.0.dev0', 'console_scripts', 'bellows')())
File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 829, in call
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File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 1259, in invoke
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File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 1066, in invoke
return ctx.invoke(self.callback, **ctx.params)
File "/usr/local/lib/python3.7/dist-packages/click/core.py", line 610, in invoke
return callback(*args, **kwargs)
File "/usr/local/lib/python3.7/dist-packages/click/decorators.py", line 21, in new_func
```



IO Error in ZHA component on HA restart #32726

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```
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File "/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/cli/util.py", line 38, in inner
File "/usr/lib/python3.7/asyncio/base_events.py", line 584, in run_until_complete
return future.result()
File "/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/cli/ncp.py", line 68, in info
File "/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/cli/util.py", line 115, in setup
File "/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/ezsp.py", line 84, in reset
File "/usr/local/lib/python3.7/dist-packages/bellows-0.19.0.dev0-py3.7.egg/bellows/uart.py", line 221, in reset
File "/usr/lib/python3.7/asyncio/tasks.py", line 423, in wait_for
raise futures.TimeoutError()
concurrent.futures._base.TimeoutError
```



Adminiuga commented on Aug 22

Contributor



stick is not responding on reset request. either it is not the right port or you need to specify baudrate 115200 if using eleleabs rpi shield. see [zigpy/zigpy#452](#)



1



chukpozohnToe commented on Aug 22



stick is not responding on reset request. either it is not the right port or you need to specify baudrate 115200 if using eleleabs rpi shield. see [zigpy/zigpy#452](#)

Thank you!!!



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zigpy / bellows

<> Code

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Trying to find a way to interact with the devices on the network. #361

Closed

chukpozohnToe opened this issue 20 days ago · 2 comments

chukpozohnToe commented 20 days ago

Hi! I'm using zigpy and bellows to write my own code to interact my smart plugs. As of now I can successfully scan for the devices and see them on my network. My question is, when the devices are discovered, where are they stored? Where does zigpy/bellows store the devices?

INFO:ezsc:Setting up the Zigbee network ...
INFO:bellows.ezsp:EZSP Stack Type: 2, Stack Version: 24624
INFO:zigpy.application:Device 0x0000 (cc:cc:ff:fe:18:08:67) joined the network
INFO:ezsc:Network setup complete!
INFO:bellows.zigbee.application:ZDO Device announce: 0x6edf, 90:fd:9f:ff:fe:61:92:c5
INFO:zigpy.application:Device 0x6edf (90:fd:9f:ff:fe:61:92:c5) joined the network

Solving this problem will bring me one step closer to finishing up my project.

Thank you!

Adminiuga commented 20 days ago

Collaborator

In a sqlite database, if the controller application was instantiated with a database file name

chukpozohnToe commented 18 days ago

Author

Thanks a lot! Knowing that helped me solved other problems in my code!

chukpozohnToe closed this 18 days ago

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<> Code

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What commands control the devices #364

Closed

chukpozohnToe opened this issue 6 days ago · 3 comments

chukpozohnToe commented 6 days ago

Hi,

I'm having trouble sending the right command to the devices on my network. I'm writing my own code using zigpy/bellows library. Please help

INFO:ezsc:sending command on to device 14757395478837987431
ERROR:main:Failed to control device!
Traceback (most recent call last):
File "prof_test.py", line 24, in control_device
await ezsc_controller.send_command(device_ieee, command, "")
File "/home/pi/PROJECTS/Brain-Computer-Interface/Python-code/ezsc.py", line 75, in send_command
v = await getattr(self._get_cluster_by_command(device, command), command)(*params)
File "/home/pi/PROJECTS/Brain-Computer-Interface/Python-code/ezsc.py", line 49, in _get_cluster_by_command
raise Exception("Device does not support command '%s'" % (command,))
Exception: Device does not support command on

Adminiuga commented 6 days ago

Collaborator

Command 'on' is only supported if the device has the "on_off" (cluster_id==6) input cluster.

Adminiuga closed this 6 days ago

chukpozohnToe commented 6 days ago

Author

It Looks like my cluster id is 242. Could you please tell me the commands associated with it? Also I read somewhere in the library that the commands of each cluster id was in the log but I couldn't find it.

Also if possible, I would be interested in helping to documentations for the library on how to use it features.

INFO:ezsc:Network setup complete!
[{"ieee": "14757395478837987431", "nwk": "0x0000", "endpoints": [{"id": 1, "input_clusters": [], "output_clusters": [], "status": "initialized"}],

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Linked pull requests

Successfully merging a pull request may close this issue.

None yet

Notifications

Customize

Unsubscribe

You're receiving notifications because you authored the thread.

2 participants



What commands control the devices #364

chukpozohnToe opened this issue 6 days ago · 3 commen...

INFO:ezsc:network setup complete:

```
[{'ieee': 14757395478837987431, 'nwk': 0x0000, 'endpoints': [{'id': 1, 'input_clusters': [], 'output_clusters': [], 'status': 'initialized'}],
```

```
{'ieee': 10447682632402703045, 'nwk': 0xb3d9, 'endpoints': [{'id': 1, 'input_clusters': [0, 3, 4, 5, 6, 8, 2821, 4096, 64642], 'output_clusters': [10, 25], 'status': 'initialized'}, {'id': 242, 'input_clusters': [], 'output_clusters': [33], 'status': 'initialized'}]},
```

```
{'ieee': 10447682632402344369, 'nwk': 0x8664, 'endpoints': [{'id': 1, 'input_clusters': [0, 3, 4, 5, 6, 8, 2821, 4096, 64642], 'output_clusters': [10, 25], 'status': 'initialized'}, {'id': 242, 'input_clusters': [], 'output_clusters': [33], 'status': 'initialized'}]}}
```

Thank you!



Adminiuga commented 6 days ago

Collaborator



check [zigpy/zigpy#477](#)

There is no ZCL cluster id 242. There's endpoint_id 242 which designates Zigbee Green Power, but that currently does not work.

Both of `nwk': 0xb3d9`, `'nwk': 0x8664` devices have endpoint id 1 with "cluster_id==6" present in the list of "input_clusters". "on" command would work only for those.

I'd suggest using home-assistant version `0.77.3` as a reference implementation, as it is simpler for understanding than the current one. e.g <https://github.com/home-assistant/core/blob/4063b24ddb8aa1174527c6aa35ecc53fccad077/homeassistant/components/light/zha.py#L115> turns on the device.

in your case something like `await zigpy_device_instance.endpoint[1].on_off.on()`



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