Flukeberry

A network endpoint measurement reporting tool

Flukeberry is linux bash based networking tool, which has GUI too by gtkdialog software component.
By using this tool you can check your network endpoints to identify the network stack/switch unit number, port number, VLAN id and POE capability. On the switch side **CDP** or **LLDP** is required, so it wont work on simple switches used at home. It is possible to add additional features to this tool (some are already implemented), because it is based on linux shell scripting, that is why it could be very universal.

This is not a new method to measure endpoints like this, there are already devices on the market for the same purpose. A similar one is the Fluke LinkRunner AT1000, which costs around 1000 Euro + VAT. Flukeberry can run on any Linux system, you can use your own notebook too for endpoint checking, but a RaspberryPi could be more handy for this purpose (with a power bank + touchscreen).

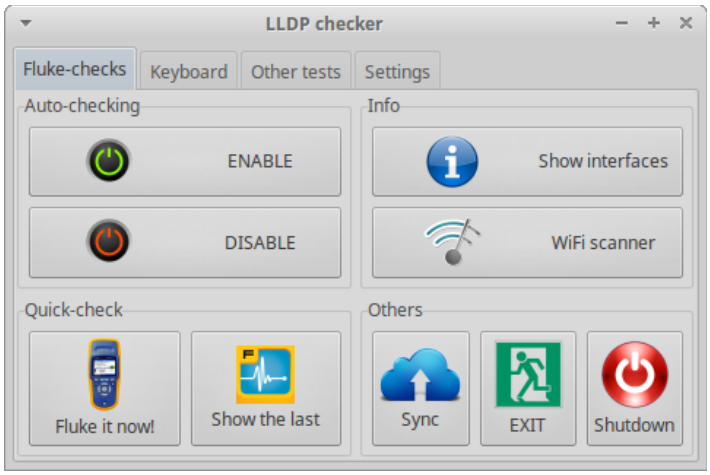
A DIY **Flukeberry** hardware **will cost you 100-200 Euro** with VAT included:

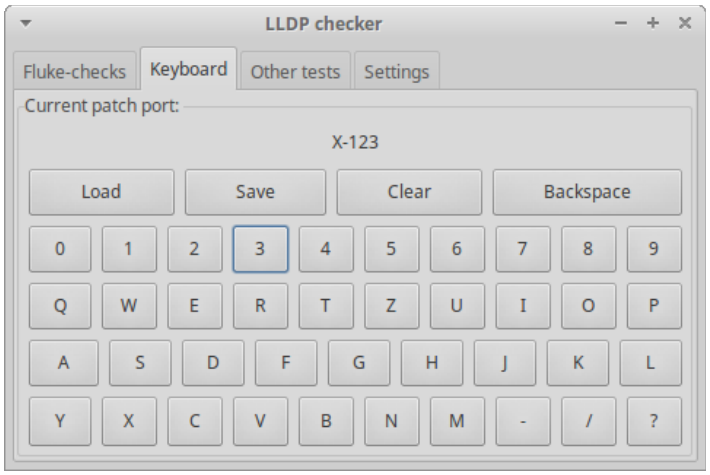
- RaspberryPi 2 / 3 board: 50-60 Euro
- 5000-10000 mAh PowerBank: 20-30 Euro
- min. 3.5 inch touchscreen: 20-80 Euro
- class10 / UHS1 SD card or better: 10-30 Euro
- case + cables: 10-30 Euro

The software is using **tcpdump** to catch the first CDP and LLDP frames after the linking. It does not need to get an IP address for that, it is working in **Layer 2**. Optionally you can sync the results to a shared directory, but for this an IP address is needed on the wireless interface.

Software dependencies:

- gtkdialog (0.8.3 or newer version from source)
- libgtk2.0-dev (only for Rasbian)
- gtk+-2.0
- pkg-config
- imagemagick
- wkhtmltopdf
- tcpdump
- cifs-utils
- ethtool
- bc
- speedtest-cli


LLDP checker
Fluke-checks
Keyboard
Other tests
Settings
Auto-checking
ENABLE
DISABLE
Info
Show interfaces
WiFi scanner
Quick-check
Fluke it now!
Show the last
Others
Sync
EXIT
Shutdown


LLDP checker
Fluke-checks
Keyboard
Other tests
Settings
Current patch port:
X-123
Load
Save
Clear
Backspace
0 1 2 3 4 5 6 7 8 9
Q W E R T Z U I O P
A S D F G H J K L
Y X C V B N M - / ?

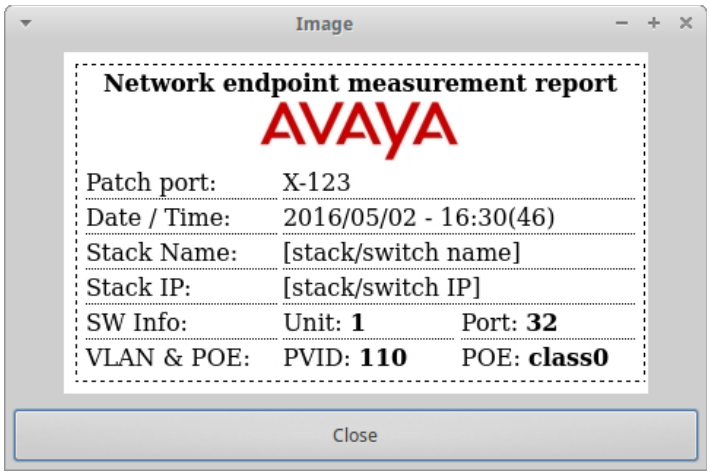


Image
Network endpoint measurement report
AVAYA
Patch port: X-123
Date / Time: 2016/05/02 - 16:30(46)
Stack Name: [stack/switch name]
Stack IP: [stack/switch IP]
SW Info: Unit: 1 Port: 32
VLAN & POE: PVID: 110 POE: class0
Close

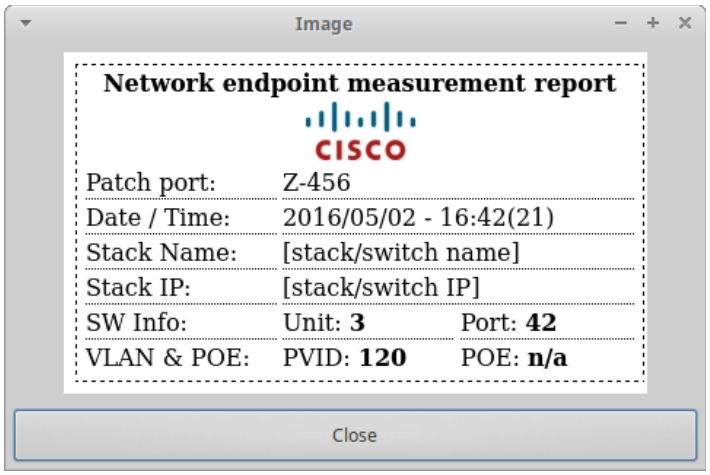
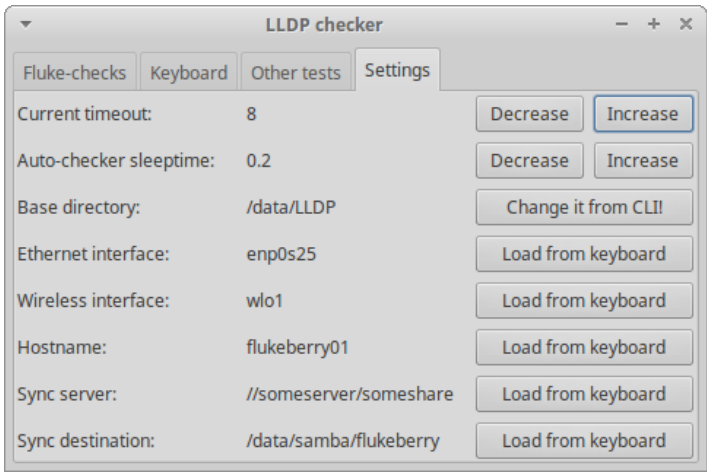
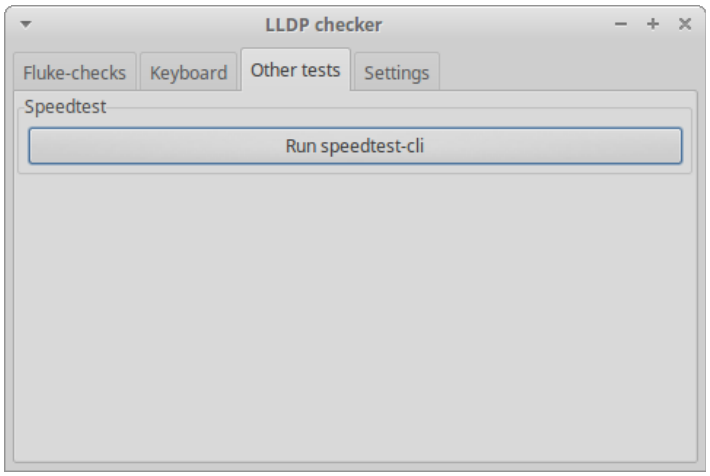


Image
Network endpoint measurement report
CISCO
Patch port: Z-456
Date / Time: 2016/05/02 - 16:42(21)
Stack Name: [stack/switch name]
Stack IP: [stack/switch IP]
SW Info: Unit: 3 Port: 42
VLAN & POE: PVID: 120 POE: n/a
Close


LLDP checker
Fluke-checks
Keyboard
Other tests
Settings
Current timeout: 8 Decrease Increase
Auto-checker sleeptime: 0.2 Decrease Increase
Base directory: /data/LLDP Change it from CLI!
Ethernet interface: enp0s25 Load from keyboard
Wireless interface: wlo1 Load from keyboard
Hostname: flukeberry01 Load from keyboard
Sync server: //someserver/someshare Load from keyboard
Sync destination: /data/samba/flukeberry Load from keyboard


LLDP checker
Fluke-checks
Keyboard
Other tests
Settings
Speedtest
Run speedtest-cli

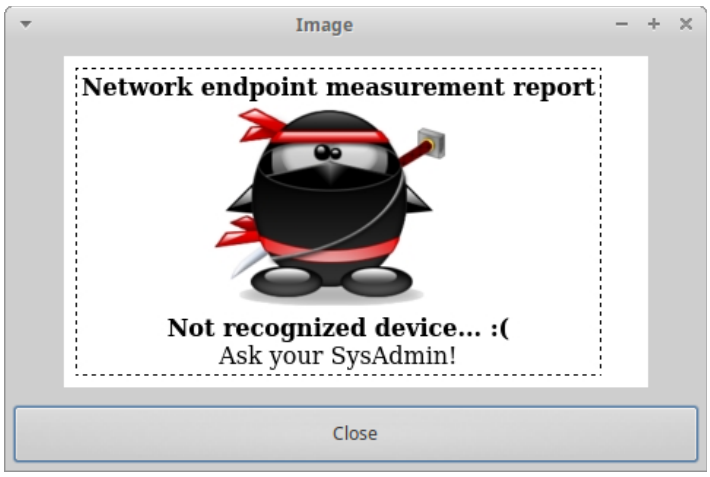


Image
Network endpoint measurement report
Not recognized device... :(
Ask your SysAdmin!
Close

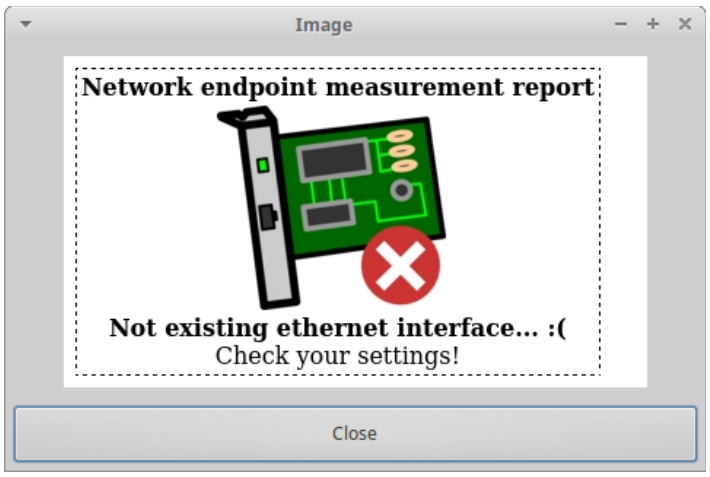


Image
Network endpoint measurement report
Not existing ethernet interface... :(
Check your settings!
Close

Current appearance:

Planned appearance with a normal case:

(+ a power bank to it's bottom)

Time and money savings

How can you spare worktime by Flukeberry?

Checking method	Follow-the-cable	Fluke Linkrunner AT1000	Flukeberry
Time / endpoint checking (without getting there)	30sec – 180 sec	10 – 20 sec	10 – 20 sec
Cost (without VAT)	A lot of time + chance for network interruption	~1000 Euro / device	100-150 Euro / device or NONE just for SW
Disadvantages	very time consuming	expensive	Can not check POE physically
Main advantage	-	It just works!	Universal

Additional advantages by Flukeberry:

- You can give 1 or more device to each department, because it is cheap. In this way the „getting there" time can be reduced significantly.
- Finding a user by MAC address could take time and he/she need to be connected. If such a device is within a short distance, he/she can check the endpoint and send the exact information to the IT guy or just sync it to the prepared network drive.

Real scenarios

Lets say every endpoint checking takes 10 minutes or sometimes more, because the endpoint could be far away (in another building, or just on the other side). In our example it will be just 10 minutes.

Every day we need to do 3 checks in average.
There are ~250 workdays / year.
Summarizing these will be 125 hours of checking / year.

Using only 1 Flukeberry will not change anything, but if we give 1 or more to every department, then others can get this device from an assigned office and do the measurements immediately, that could save some time, because this person is closer to the endpoint. Flukeberry is easy to use, you can learn it's usage in seconds.
This will not work in every scenario, but it will once or twice from 3 cases.

Of course it will cause the user 1-2 minutes more work to do, but then the connectivity issue can be resolved faster and finally this is the main goal.

At lease once a year we need to rebuild a distribution point, which has 200–500 endpoints. Using the „follow-the-cable" method makes very difficult this scenario, but still with a Fluke Linkrunner device you still need document every measurement in an Excel file and for that you need a computer or a tablet. This will make slower the whole procedure. Flukeberry saves every measurement to a CSV file by default and before the measuring you can define the particular patch port. To speed up this there are already a save prefix function on the keyboard. In this way you can save only a 1-2 hours, but usually this kind of work are done on weekends or late hours.

Using more Flukeberry can save **up to 50%** of the needed time for endpoint checking, which could be **50-60 hours / year**. Extending this to multiple locations could make big difference and help all local IT, where the networking is not outsourced to an external company. Of course this tool could be useful for them too, and any IT guy around the world.

Additionally you can save more than **850 Euro / device** if you choose Flukeberry instead of a Fluke device.

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