

N.A.P.A.L.M.

- UPDATE -

Network Automation and Programmability
Abstraction Layer with Multivendor support

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Network Automation and Programmability Abstraction Layer with
Multivendor support

- Python library
- Open source
- Unified API for multiple vendors
- Methods to manipulate configs
- Methods to retrieve data
- Ansible modules



N.A.P.A.L.M.

Introduced at NANOG64

- Check out the slides:

[https://www.nanog.org/sites/default/files//meetings/
NANOG64/1043/20150602_Jasinska_Network_Automation_And_v2.pdf](https://www.nanog.org/sites/default/files//meetings/NANOG64/1043/20150602_Jasinska_Network_Automation_And_v2.pdf)

- And the video on YouTube:

<https://www.youtube.com/watch?v=93q-dHC0u0I>

Where do I find this?

Moved to its own Github organization:

- <https://github.com/napalm-automation>

Mailing list at:

- napalm-automation@googlegroups.com



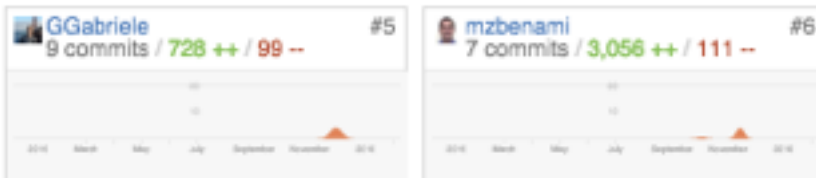
The screenshot shows the GitHub organization page for 'napalm'. At the top left is the organization's logo, a stylized flame with the word 'napalm' next to it. Below the logo is a navigation bar with tabs for 'Repositories', 'People 3', 'Teams 0', and 'Settings'. A search bar with the placeholder 'Find a repository...' and a '+ New repository' button are also visible. The main content area shows the 'napalm' repository, which is a Python project with 192 stars and 54 forks. The repository description is 'Network Automation and Programmability Abstraction Layer with Multivendor support', and it was updated 5 hours ago. On the right side, there is a 'People' section listing members: David Barroso (dbarrosop) and Eliza Jasinska (foelisa).

Github

Initial version 0.1 in March 2015
Incredible amount of contributors since!

Thanks to:

- Kirk Byers
- Gabriele Gerbino
- Jason Edelman
- Kamil Deryński
- Mircea Ulinic
- Edward Zambrano
- Piotr Pieprzycki
- Stefan Lindblom
- Oliver Garraux
- Søren Rosiak
- ... and many more!



Initially Supported Vendors

Arista EOS

Using pyEOS (you will need EOS version 4.14.6M or superior)

Juniper JunOS

Using junos-eznc

Cisco IOS-XR

Using pyIOSXR

Fortigate FortiOS

Using pyFG

Currently Supported Vendors

Arista EOS

Using pyEOS (you will need EOS version 4.14.6M or superior)

Juniper JunOS

Using junos-eznc

Cisco IOS-XR

Using pyIOSXR

Fortigate FortiOS

Using pyFG

IBM/Lenovo RackSwitch

Using bnclient

Cisco NXOS

Using pycsco

Cisco IOS

Using netmiko

Initially Supported Methods

`load_replace_config`

full configuration “override” (load override in junos terms)

`load_merge_config`

partial configuration merge

`diff_config`

return a diff of the “candidate” and the “running” config

`discard`

discard candidate

`commit`

commit changes

`rollback`

rollback last commit

Additional Methods

`get_facts`

`vendor, model, uptime, etc.`

`get_interfaces`

`speed, mac, enabled, description, etc.`

`get_interfaces_counters`

`packets, octets, errors`

`get_bgp_neighbors`

`AS, IP, received prefixes, accepted prefixes, etc.`

`get_environment`

`fan, temp, power, cpu, mem`

`get_lldp_neighbors`

`hostname, port`

Context Manager Support

```
>>> from napalm import get_network_driver
>>> driver = get_network_driver('eos')
>>> with driver('localhost', 'vagrant', 'vagrant',
    optional_args={'port': 12443}) as device:
...     print device.get_facts()
...     print device.get_interfaces_counters()
...
{'os_version': u'4.15.2.1F-2759627.41521F', 'uptime': 2010,
 'interface_list': [u'Ethernet1', u'Ethernet2',
 u'Management1'], 'vendor': u'Arista', 'serial_number': u'',
 'model': u'vEOS', 'hostname': u'NEWHOSTNAME', 'fqdn':
 u'NEWHOSTNAME'}
{u'Ethernet2': {'tx_multicast_packets': 1028, 'tx_discards': 0,
 'tx_octets': 130744, 'tx_errors': 0, 'rx_octets': 0,
 'tx_unicast_packets': 0, 'rx_errors': 0, ...
```

Ansible Modules

Module to push configurations

```
napalm_install_config
```

Module to get facts

```
napalm_get_facts
```

More to come...

Tutorial?

We are planning a Tutorial session at one of the next NANOG meetings.

Feedback welcome!

Questions?

David Barroso - dbarrosop@dravetech.com

Elisa Jasinska - elisa@bigwaveit.org

Resources

N.A.P.A.L.M. - <https://github.com/napalm-automation>

Mailing List - napalm-automation@googlegroups.com