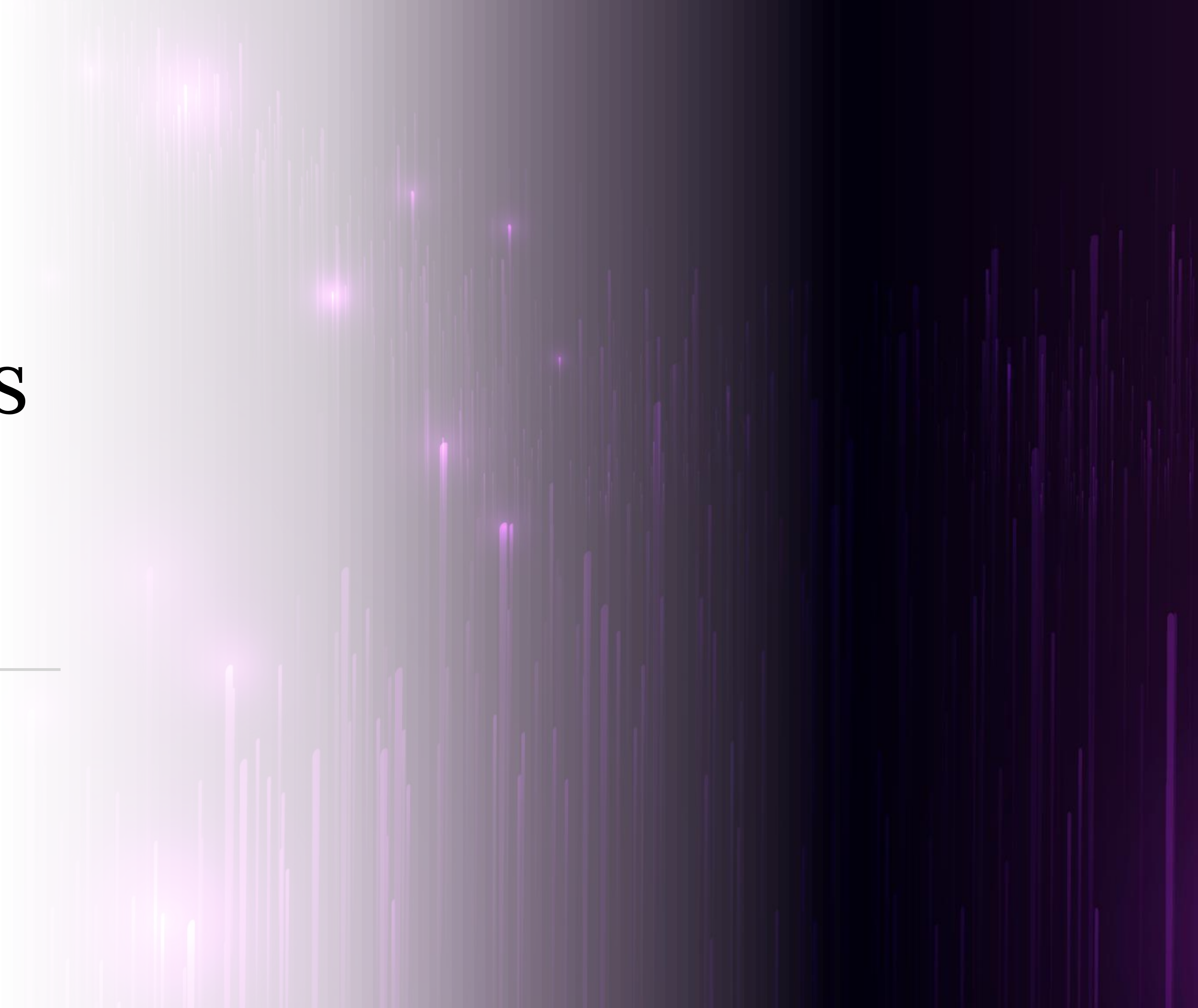
Frameworks de automação

Renato Almeida de Oliveira

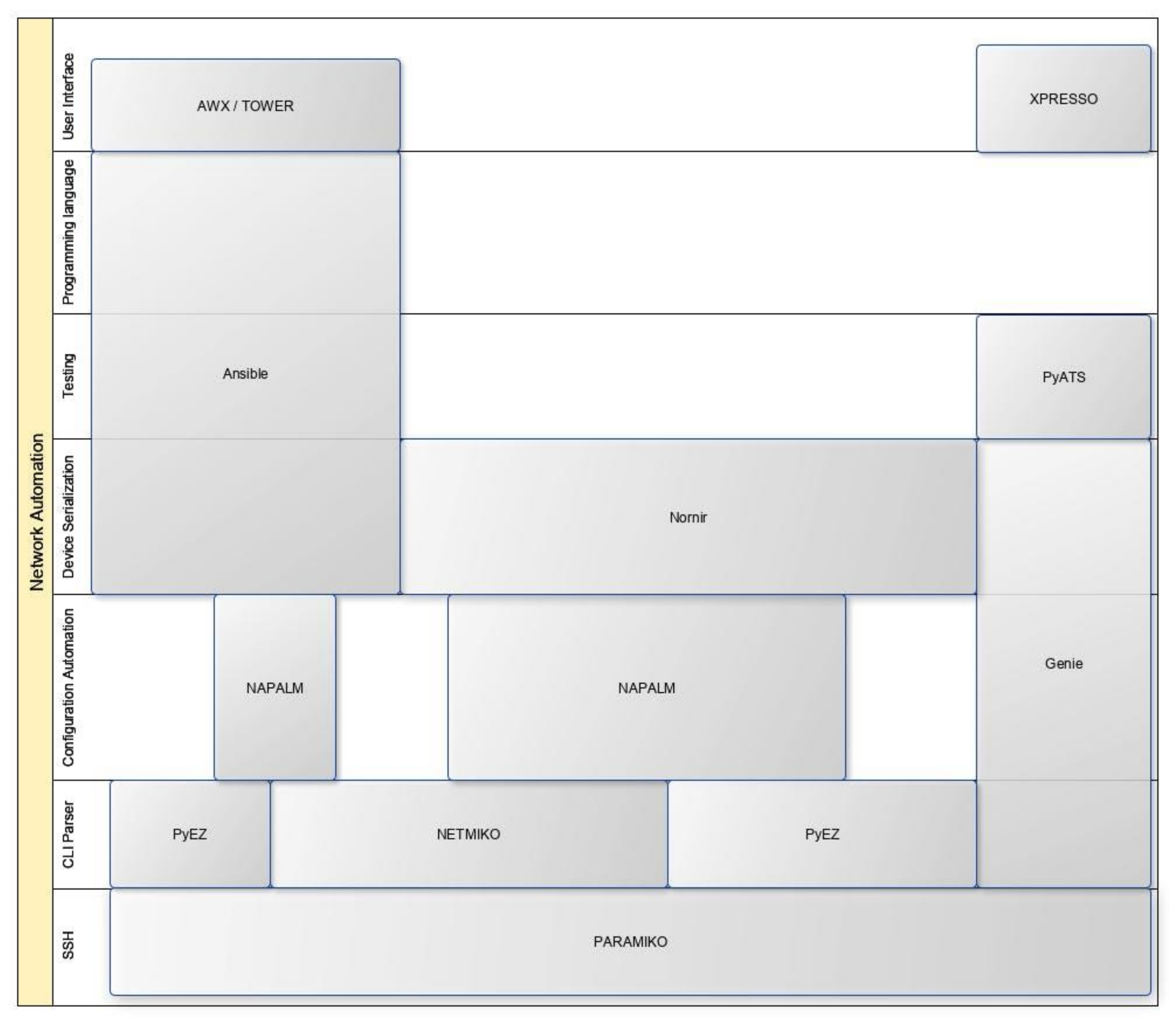


pyATS
print(network.profile)

paɪ / eɪ / tiː / es

🥧A🍵S

NETMIKO



Network Automation

User Interface

AWX / TOWER

XPRESSO

Programming language

Testing

Ansible

PyATS

Device Serialization

Nornir

Configuration Automation

NAPALM

NAPALM

Genie

CLI Parser

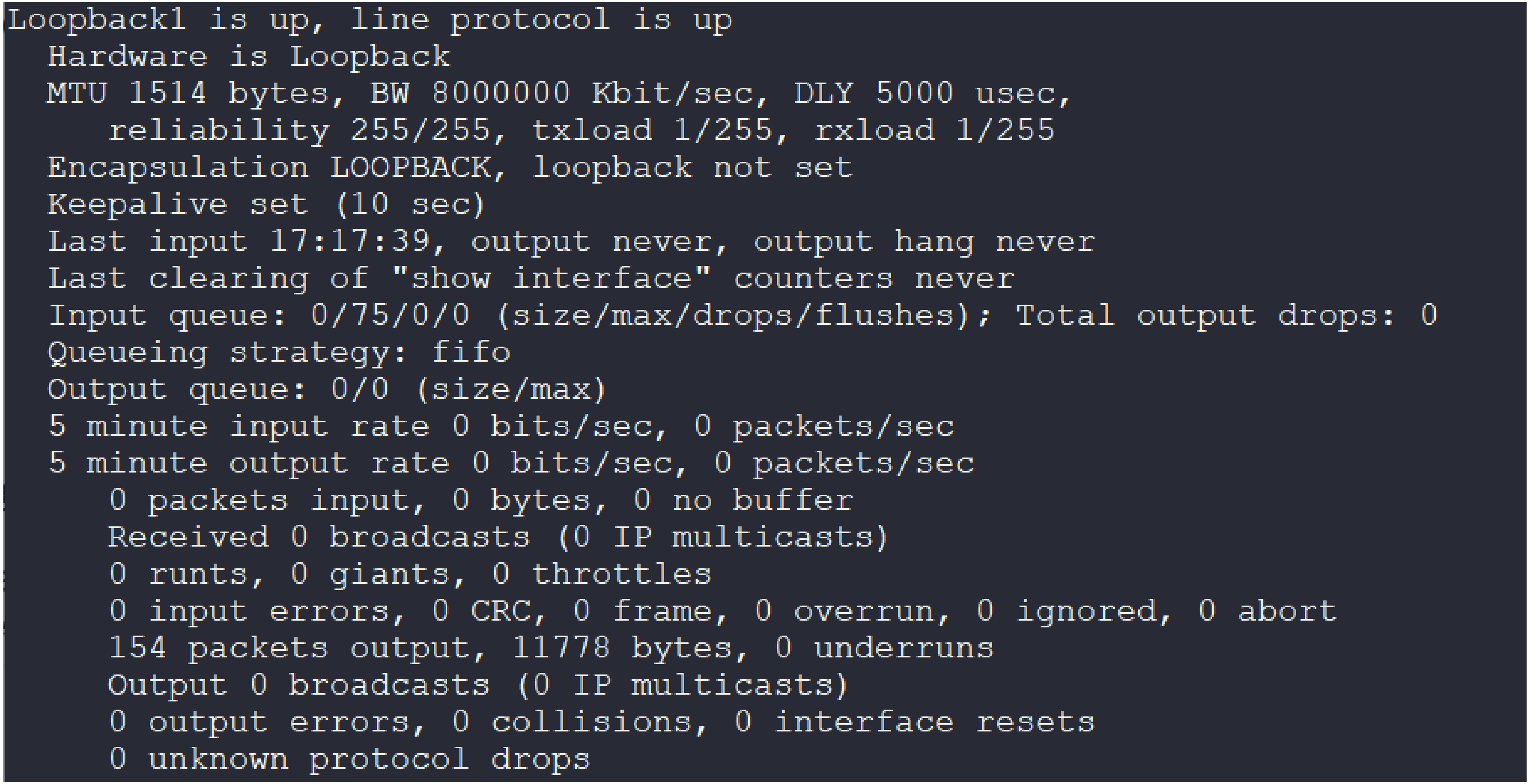
PyEZ

NETMIKO

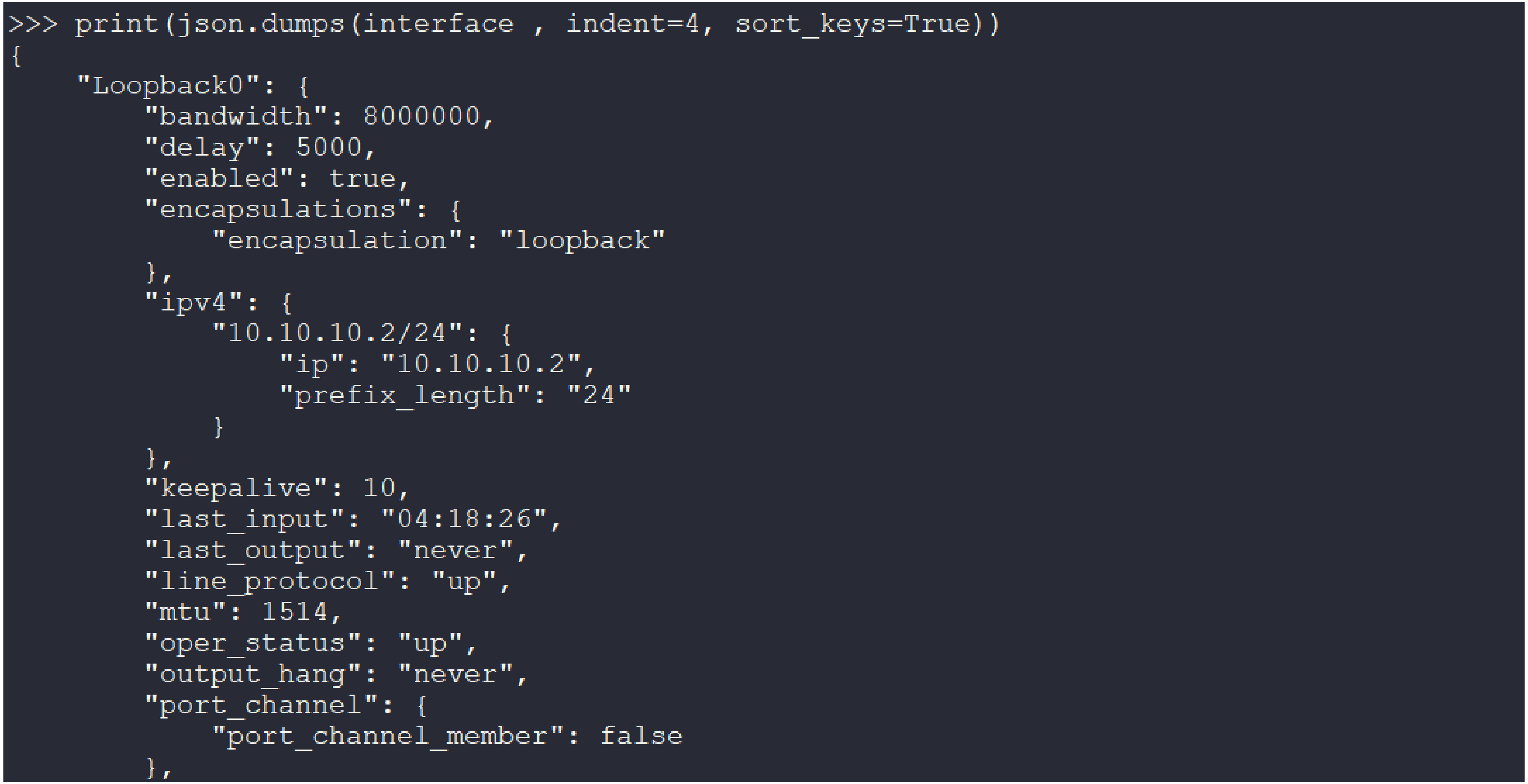
PyEZ

SSH

PARAMIKO

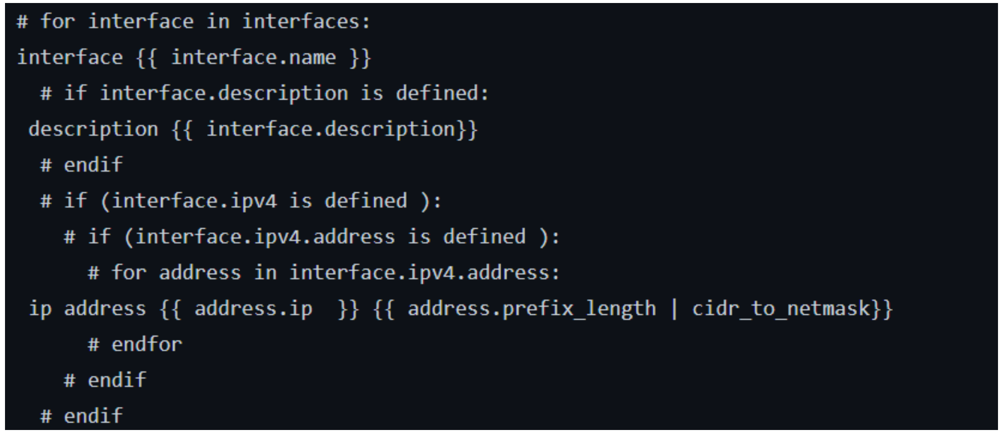


```
Loopback1 is up, line protocol is up
  Hardware is Loopback
  MTU 1514 bytes, BW 8000000 Kbit/sec, DLY 5000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation LOOPBACK, loopback not set
  Keepalive set (10 sec)
  Last input 17:17:39, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     154 packets output, 11778 bytes, 0 underruns
     Output 0 broadcasts (0 IP multicasts)
     0 output errors, 0 collisions, 0 interface resets
     0 unknown protocol drops
```



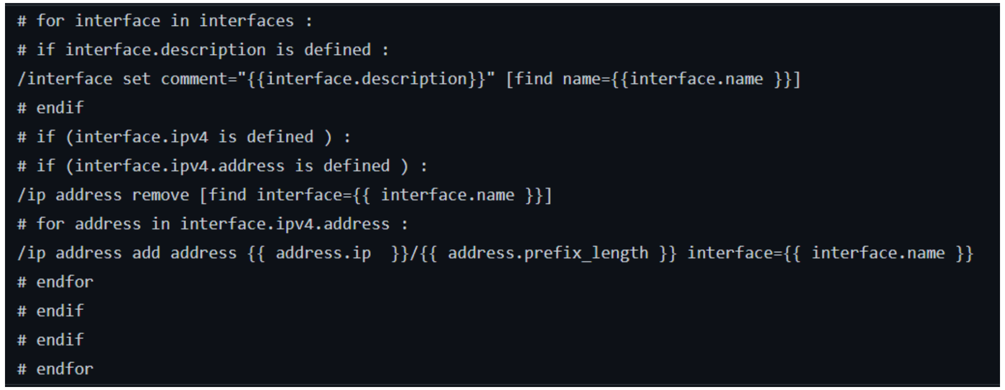
```
>>> print(json.dumps(interface , indent=4, sort_keys=True))
{
    "Loopback0": {
        "bandwidth": 8000000,
        "delay": 5000,
        "enabled": true,
        "encapsulations": {
            "encapsulation": "loopback"
        },
        "ipv4": {
            "10.10.10.2/24": {
                "ip": "10.10.10.2",
                "prefix_length": "24"
            }
        },
        "keepalive": 10,
        "last_input": "04:18:26",
        "last_output": "never",
        "line_protocol": "up",
        "mtu": 1514,
        "oper_status": "up",
        "output_hang": "never",
        "port_channel": {
            "port_channel_member": false
        },
```

Jinja



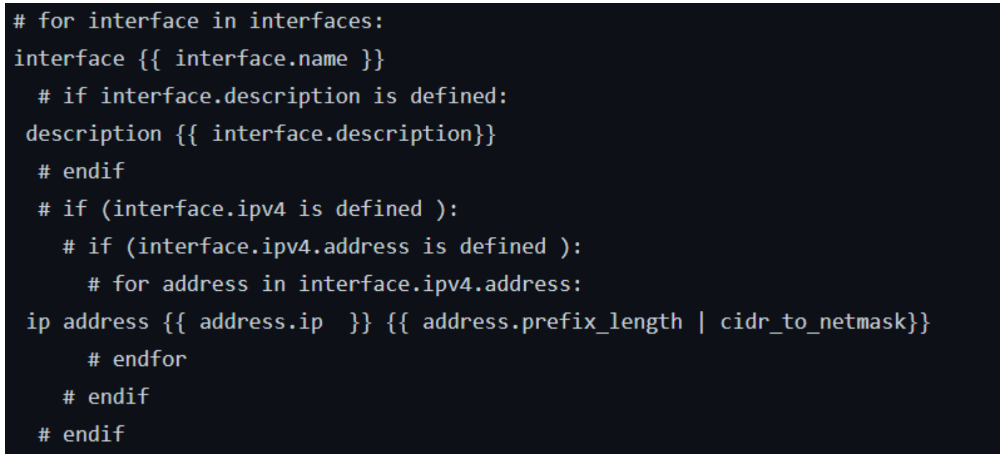
```
# for interface in interfaces:
interface {{ interface.name }}
  # if interface.description is defined:
 description {{ interface.description}}
  # endif
  # if (interface.ipv4 is defined ):
    # if (interface.ipv4.address is defined ):
      # for address in interface.ipv4.address:
 ip address {{ address.ip  }} {{ address.prefix_length | cidr_to_netmask}}
      # endfor
    # endif
  # endif
```

Comware



```
# for interface in interfaces :
# if interface.description is defined :
/interface set comment="{{interface.description}}" [find name={{interface.name }}]
# endif
# if (interface.ipv4 is defined ) :
# if (interface.ipv4.address is defined ) :
/ip address remove [find interface={{ interface.name }}]
# for address in interface.ipv4.address :
/ip address add address {{ address.ip  }}/{{ address.prefix_length }} interface={{ interface.name }}
# endfor
# endif
# endif
# endfor
```

MikroTik



```
# for interface in interfaces:
interface {{ interface.name }}
  # if interface.description is defined:
 description {{ interface.description}}
  # endif
  # if (interface.ipv4 is defined ):
    # if (interface.ipv4.address is defined ):
      # for address in interface.ipv4.address:
 ip address {{ address.ip  }} {{ address.prefix_length | cidr_to_netmask}}
      # endfor
    # endif
  # endif
```

IOS

pyATS

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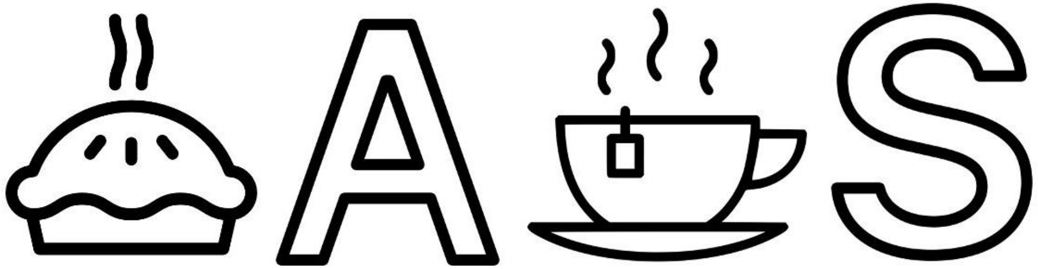

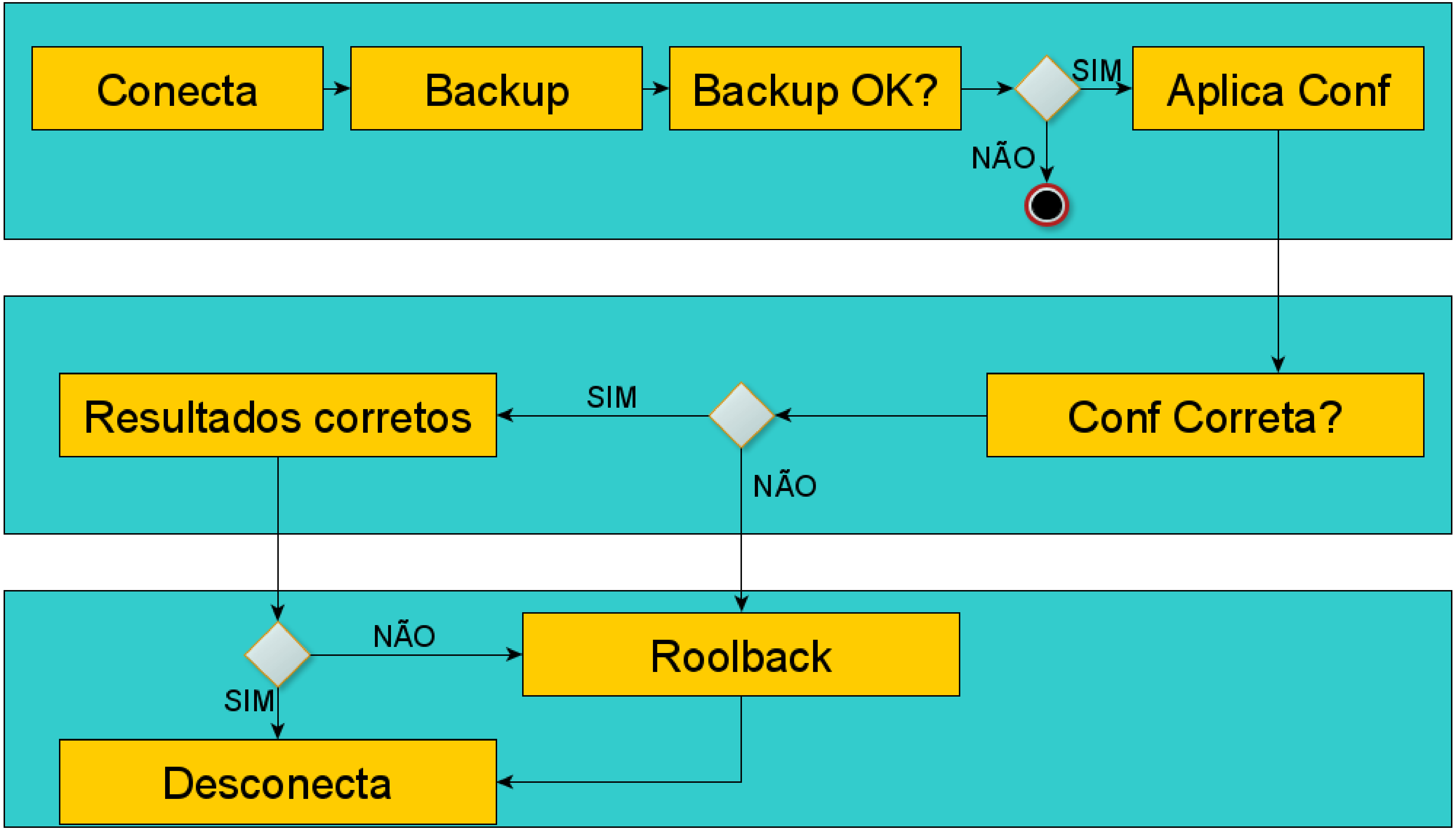

Conecta

Backup

Backup OK?

SIM

Aplica Conf

NÃO

Conf Correta?

SIM

Resultados corretos

NÃO

NÃO

Roolback

SIM

Desconecta

HashiCorp
Vault

netbox