

SONiC

- CLI
- , /etc/sonic/config_dg.json
- Linux
- Control Plane
-

CLI

SONiC' Linux shell (bash). , CLI SONiC'a, Linux . **sonic-cli** (/usr/bin/sonic-cli), . sonic-cli , .
SONiC' /. **config** , - **show . config**

```
# config vlan add 3000
# config vlan member add 3000 Ethernet40
# show vlan brief
+-----+-----+-----+-----+-----+-----+
| VLAN ID | IP Address | Ports | Port Tagging | DHCP Helper Address | Proxy ARP |
+-----+-----+-----+-----+-----+-----+
| 3000 | | Ethernet40 | tagged | | disabled |
+-----+-----+-----+-----+-----+-----+
```

root, , **sudo** .

```
admin@sonic:~$ config interface ip add Vlan3000 10.10.10.1/24
Root privileges are required for this operation
admin@sonic:~$ sudo config interface ip add Vlan3000 10.10.10.1/24
admin@sonic:~$ sudo su
root@sonic:/home/admin# config interface ip remove Vlan3000 10.10.10.1/24
```

```
# show i st
Usage: show [OPTIONS] COMMAND [ARGS]...
Try "show -h" for help.

Error: Too many matches: interfaces, ip, ipv6
# show int st
      Interface          Lanes  Speed  MTU  FEC      Alias          Vlan  Oper  Admin
Type  Asym PFC
-----
      Ethernet0         25,26,27,28  40G  9100  N/A  fortyGigE0/0  PortChannell  up    up    N
/A      N/A
      Ethernet4         29,30,31,32  40G  9100  N/A  fortyGigE0/4  PortChannell  up    up    N
/A      N/A
...

```

bash, . . Tab.

, **-h --help** .

```

# config int -h
Usage: config int [OPTIONS] COMMAND [ARGS]...

Interface-related configuration tasks

Options:
  -n, --namespace [] Namespace name
  -?, -h, --help      Show this message and exit.

Commands:
  breakout      Set interface breakout mode
  buffer        Set or clear buffer configuration
  cable-length  Set lossless PGs for the interface
  fec           Set interface fec
  ip            Add or remove IP address
  mtu           Set interface mtu
  pfc           Set PFC configuration.
  shutdown     Shut down interface
  speed        Set interface speed
  startup      Start up interface
  transceiver  SFP transceiver configuration
  vrf          Bind or unbind VRF

```

, /etc/sonic/config_dg.json

, config ... (config save) . Redis, . config save . /etc/sonic/config_db.json. , , config reload .

 config reload . /etc/sonic/config_db.json .

CLI SONIC', ().

Linux

ASIC (application-specific integrated circuit) Linux CPU. , , Linux . , , frr, ASIC', , ASIC.

Linux /.

```

# bridge vlan
port          vlan ids

docker0      1 PVID Egress Untagged

PortChannel1  10
              777

Ethernet40   3000

Bridge       10
              777
              3000

dummy        1 PVID Egress Untagged

PortChannel02 10

PortChannel03 10 PVID Egress Untagged

# ip -4 neighbour
192.168.10.2 dev Vlan777 lladdr 52:54:00:12:34:56 STALE
172.30.204.1 dev eth0 lladdr de:09:9c:1f:89:6d REACHABLE

```



Linux . ASIC.

Control Plane

SONiC `fr`. , CLI SONiC'. , . SONiC (/etc/sonic/config_db.json) `fr`, /etc/sonic/config_db.json:

- " " BGP_NEIGHBOR;
- `bgp_asn` DEVICE_METADATA;
- DEVICE_METADATA `docker_routing_config_mode` `split`.

```
{
  "//BGP_NEIGHBOR": {
    "10.0.0.1": {
      "asn": "65200",
      "holdtime": "180",
      "keepalive": "60",
      "local_addr": "10.0.0.0",
      "name": "ARISTA01T2",
      "nhopsself": 0,
      "rrclient": 0
    },
    omitted...
  },
  omitted...
  "DEVICE_METADATA": {
    "localhost": {
      "bgp_asn": "65100",
      "hostname": "sonic",
      "hwsku": "Accton-AS5835-54X",
      "mac": "80:a2:35:d2:47:b5",
      "platform": "x86_64-accton_as5835_54x-r0",
      "type": "LeafRouter",
      "docker_routing_config_mode": "split"
    }
  },
  omitted...
}
```

`- config reload -y .`

`bgp :`

Building configuration...

```
Current configuration:
!
fr version 7.2.1-sonic
fr defaults traditional
hostname sonic
service integrated-vtysh-config
!
route-map RM_SET_SRC permit 10
 set src 10.1.0.1
!
ip protocol bgp route-map RM_SET_SRC
!
line vty
!
end
```

`fr SONiC'.`

CLI `fr vtysh . fr write (vtysh).` /etc/sonic/fr.

- (, .): <https://github.com/Azure/SONiC>

- : <https://github.com/Azure/sonic-utilities/blob/master/doc/Command-Reference.md>
- FRRouting: <http://docs.frrouting.org/en/latest/>