

Linux for networking

NETQ CHEAT SHEET

Using Linux for networking completely unifies the network stack and Cumulus NetQ makes managing that network a snap. Cumulus NetQ provides real-time and historical telemetry and network state information along side deep analytics for fabric-wide validation and actionable insight. This handy cheat sheet was designed as a quick reference as you learn and leverage Cumulus Linux and Cumulus NetQ. It features the most common CLI commands used in Cumulus NetQ with explanations on how to use them.

NETQ - COMMAND LINE SYNTAX

Cumulus NetQ commands fall into one of four syntax categories: validation, monitoring, configuration, and trace.

```
nnetq check <network-protocol-or-service> [options]
netq show <network-protocol-or-service> [options]
netq config <action> <object> [options]
netq trace <destination> from <source> [options]
```

Tips

- Most commands can be run against a given network device using the hostname variable, as well as for the entire fabric.
- Most commands can be run to obtain results for a time in the past using the around keyword.
- Use Tab completion or the help keyword to view the specific syntax of any command.

NETQ - MONITOR OVERALL NETWORK HEALTH

Validate the operation of network protocols and services across the entire fabric.

```
netq check agents
Check for rotten agents
```

```
netq check bgp
Check for configuration mistakes or failed BGP peerings
```

```
netq check clag
Check for MLAG/CLAG mismatches
```

```
netq check evpn
Check for configuration mistakes or failed BGP peerings
(l2vpn evpn)
```

```
netq check interfaces
Check for auto-negotiation mismatches
```

```
netq check license
Check for valid licenses
```

```
netq check mtu
Check for MTU mismatches
```

```
netq check ntp
Check for out-of-sync devices
```

```
netq check ospf
Check for configuration mistakes or failed OSPF peerings
```

```
netq check sensors
Check for environmental sensors operating beyond
the normal thresholds
```

```
netq check vlan
Check for configuration mistakes
```

```
netq check vxlan
Check for configuration mistakes
```

NETQ - MONITOR SWITCH HARDWARE AND SOFTWARE

Monitor hardware and software information for all or individual switches and hosts.

```
netq hostname show inventory
Show system level info—ASIC, board, CPU, disk, license,
memory, OS, and ports
```

```
etq hostname show agents
Show status and version of the NetQ Agent running on
switches and hosts
```

```
netq hostname show services
Show the status of software services
(bgpd, clagd, neighmgrd, etc.)
```

```
netq hostname show events
Show events by severity and type
```

NETQ - PHYSICAL LAYER COMPONENTS

Monitor and validate physical layer components and peer connections.

```
netq hostname show interfaces physical
Show cable details and connection status, verify peer
connections
```

```
netq hostname check interfaces physical
Check for configuration mistakes
```

```
netq hostname show interfaces state <up/down>
Show list of interfaces, optionally specify linkstate
```

NETQ - MONITOR DATA LINK PROTOCOLS

Monitor and validate layer 2 protocol configurations.

```
netq hostname show lldp
Identify changes to LLDP peerings
```

```
netq hostname check mtu
Identify MTU inconsistencies on links
```

```
netq hostname show clag
Show configuration and status of devices running CLAG
```

```
netq hostname show ntp
Show whether NTP is in synchronization and source server
```

```
netq hostname show stp topology
Show STP topology on bridge or switch to ensure no
communication loops exist
```

```
netq hostname show vlan vlan-id
Show VLANs configured and whether an SVI is configured
```

```
netq hostname show macs vlan vlan-id
Show MAC addresses per VLAN
```

netq hostname show interfaces type vlan 
Show SVI interfaces and VRF membership

netq hostname show interfaces type macvlan 
Show VRR interfaces and VRF membership

netq hostname show events 
Show events by severity and type

NETQ - MONITOR NETWORK LAYER PROTOCOLS

Monitor and validate layer 3 network protocol configurations.

netq hostname show <ip|ipv6> addresses 
Show locally configured addresses for all or individual devices

netq hostname show <ip|ipv6> neighbors 
Show ARP cache for all or individual devices

netq hostname show <ip|ipv6> routes 
Show local routes for all or individual devices

netq hostname show <ip|ipv6> routes origin count 
Find duplicate IP or MAC Address

netq show bgp asn number-asn 
Show BGP summary info for all devices, optionally per ASN

netq show ospf 
Show OSPF summary info for all devices

netq hostname show events 
Show events by severity and type

NETQ - MONITOR VIRTUAL NETWORK OVERLAY

Monitor and validate virtual network protocol configurations.

netq hostname show evpn 
Show BGP EVPN info (such as VNI, remote VTEP address, Import/Export Route-Targets)

netq hostname show evpn vni vni-id 
Show BGP EVPN info for a particular VNI

netq hostname show vxlan 
Show VXLAN tunnel endpoint (VTEP) info (such as VNI, control plane protocol, remote VTEP info)

netq hostname show interfaces type vxlan 
Show interfaces associated with a VXLAN tunnel endpoint (VTEP)

netq hostname show events 
Show events by severity and type

NETQ - MONITOR LINUX HOSTS

The NetQ Agent monitors the following on Linux hosts:

- netlink
- Layer 2: LLDP and VLAN-aware bridge
- Layer 3: IPv4, IPv6
- systemctl for services
- Containers

Use the same commands used for switches to monitor these items. For example, **netq show lldp** and **netq show ip route**.

NETQ - MONITOR CONTAINERS

NetQ Agent integrates with the Kubernetes container orchestrator. For all, but the cluster command, you can optionally view status for the item (pod, node, daemon-set, etc.) for a particular namespace or label, or view a connectivity graph.

netq hostname show kubernetes cluster 
View the status of controller and scheduler in all Kubernetes clusters in the fabric

netq hostname show kubernetes pod 
View the status of pods within a cluster

netq hostname show kubernetes node 
View Kubernetes Node Information including CIDR and kublet status

netq hostname show kubernetes node components 
View version info for the nodes and kublets

netq hostname show kubernetes daemon-set 
View the status of the daemon set

netq hostname show kubernetes replica-set 
View the status of the replica set

netq hostname show kubernetes replication-controller 
View the info about the replication controller

netq hostname show kubernetes deployment 
View the info about the deployment

netq hostname show kubernetes service 
View the Kubernetes services in a cluster

netq hostname show impact kubernetes (service|replica-set|deployment) 
View the impact graph of a given service, replica-set, or deployment

NETQ - CONFIGURATION

Manage NetQ Agent and CLI server configuration, set up container monitoring, and event notification.

netq config (add|del|show) agent 
Add a NetQ Agent to or remove it from a device. Show NetQ Agent configuration.

netq config (start|stop|status|restart) agent 
Start, stop or restart a NetQ Agent. Show status of NetQ Agents.

netq config (add|del|show) cli server 
Add association with the NetQ Platform, enabling the CLI. Remove association with NetQ Platform, disabling the CLI. Show CLI server configuration.

netq config (start|restart) cli 
Start or restart the CLI instance

netq config (add|del) color 
Enable or remove color in the CLI command output

netq (add|del|show) notification channel 
Create, remove, or show the configuration of an event notification channel

netq (add|del|show) notification rule 
Create, remove, or show the configuration of an event notification rule

netq (add|del|show) notification filter 
Create, remove, or show the configuration of an event notification filter

NETQ - TRACE

View available paths between two devices operating at layer 2 or layer 3 within the network. Output can be presented in **json**, **pretty** or **detail** format. Pretty provides a pseudo graphical layout, detail provides information for each path in a separate row.

netq trace <mac-dst> vlan <1-4096> from (<src-hostname>|<ip-src>) pretty

View layer 2 trace result based on MAC lookup between two switches (EVPN setup) with pretty output



netq trace <ip-dst> from <ip-src> pretty detail

View layer 3 trace result based on IP lookup between two switches with detail output



Blue – Optional Parameter

Green – Required Parameter



– Unique to Cumulus Linux