

Cumulus NetQ and Cumulus NetQ Cloud



Holistic, real-time, visibility and troubleshooting
of your modern data center network

As web-scale networking becomes the enterprise norm, so does complexity. Network operators must manage constant change within multiple network layers, and polling-based legacy network management tools simply cannot adapt.

Any issue, such as a connection problem or simple misconfiguration, can have significant impact on operator workloads, and trying to identify what went wrong is like trying to find the proverbial needle in a haystack. Troubleshooting these issues often requires manual, box-by-box intervention that is tedious and time consuming because operators do not have a holistic view of all the activities putting demands on the network. Open networking provides the required scale and agility to reduce total cost of ownership (TCO), and integration with existing network operations tools will continue to significantly reduce operating expenses (OpEx).

That's where Cumulus NetQ and NetQ Cloud come in.

NetQ performs 3 primary functions:



DATA COLLECTION

Real-time and historical telemetry and network state information



DATA ANALYTICS

Deep processing of the data



DATA VISUALIZATION

Rich Graphical User Interface (GUI) for actionable insight



NetQ makes it easier to deploy, manage and scale your Cumulus Linux environment.

Cumulus® NetQ is a highly-scalable, modern network operations tool set that provides visibility and troubleshooting of your overlay and underlay networks in real-time. NetQ, simplifies adoption of open networking and delivers actionable insights and operational intelligence about the health of your data center — from the container, virtual machine, or host, all the way to the switch and port. In addition, NetQ greatly reduces time-to-innocence by pinpointing and isolating faults caused by network state changes.



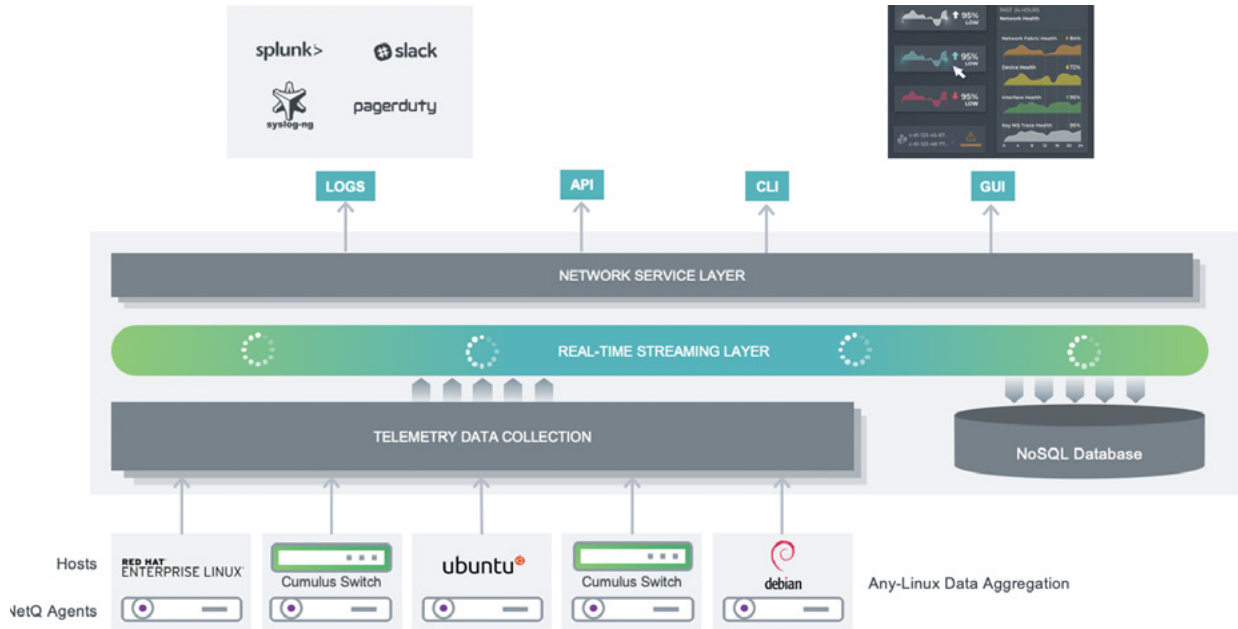


FIGURE 1: CUMULUS NETQ REAL-TIME TELEMETRY DATA COLLECTION AND DEEP ANALYTICS

NetQ correlates configuration and operational status, and instantly identifies and tracks state changes while simplifying management for the entire Linux-based data center. With NetQ, network operations change from a manual, reactive, box-by-box approach to an automated, informed and agile one.

Unlike other network operations tools, NetQ delivers significant operational improvements to your network management and maintenance processes. It simplifies the data center network by reducing the complexity through real-time visibility into hardware and software status and eliminating the guesswork associated with investigating issues through the analysis and presentation of detailed, focused data.



FIGURE 2: CUMULUS NETQ GUI



Cumulus NetQ Cloud:

Cumulus NetQ is also available as a cloud service, with 24x7 secure access, making it even easier to install, deploy and scale your network. Just like Cumulus NetQ deployed in your premises, real-time data collection and fabric-wide performance analysis are available through the cloud service.

NetQ Cloud is a cloud platform designed to speed deployment and offer unlimited scale of your modern, network operations providing visibility and troubleshooting of your overlay and underlay network in real-time. Deploying NetQ in the cloud, minimizes the infrastructure investment required on-prem and delivers all the advantages that you'd expect from a cloud service including faster deployment, unlimited scale, simplified operations including automatic software upgrades and maintenance services and overall faster-time-to-value.

NetQ is an essential tool for any network operator and includes an extensive feature set, including:

- **Web-scale networking** delivered via elastically scalable framework that parallels the largest tier-1 web-scale cloud companies.
- **Advanced telemetry** collects real-time and historical management data to reduce the time and effort required to resolve network issues.
- **Deep analytics** provides network-wide protocols, services status and individual device performance details enabling faster issue resolution and increased confidence in the network operation.
- **Microservices architecture** simplifies building and maintaining of applications through modularization, increases productivity, offers flexibility in choosing technologies, and simplifies cloud-based upgrades and bug fixes.
- **Any-Linux data aggregation** delivering more data than any other operations tool set, with a view of how the complete set of data impacts the network.
- **User interfaces:**
 - Rich GUI-based interface simplifies operations and increases operator efficiency by quickly highlighting issues through visualizations and alerts to speed their resolution
 - Seamless integration with third-party software such as Splunk, PagerDuty, Slack and others

NetQ Benefits:

- Simplified scaling of Cumulus Linux
- Open, disaggregated network
- Speed mean-time-to-innocence
- Maximize flexibility and control
- Reduce Opex
- Remove complexity
- Reduce downtime
- Increase productivity

Additional Benefits of NetQ Cloud:

- 24x7 secure access
- Ease of installation and upgrades
- Faster deployment
- Unlimited scale
- Simplified operations
- Faster-time-to-value



NetQ is built for the modern, automated cloud network and gives network operators the comfort to identify, embrace and manage the risk of the ever-changing data center networks.

Working hand-in-hand with Cumulus Linux, NetQ enables organizations to validate network state, both during regular operations and for post-mortem diagnostic analysis. Running on Cumulus Linux switches and other certified Linux systems — such as Ubuntu®, Red Hat®, and CentOS hosts — NetQ captures network data and other state information in real time, providing cloud architects and network operations teams the ability to operate with a complete understanding of the status and performance of their network. It is integrated with container orchestrators and the Netlink interface to make this happen. With NetQ, network operations change from a manual, reactive, box-by-box approach to an automated, informed and agile one.

The system uses a three-pronged approach to validating networks:

- **Preventative validation:** NetQ easily validates potential network configuration changes in a virtualized environment or lab using check, show and trace algorithms. NetQ eliminates the need to check switches or servers one by one and can reduce manual errors before they are rolled into production (one of the main causes of network downtime).
- **Proactive alerting:** NetQ detects faulty network states that can result in packet loss or connectivity issues and alerts the user with precise fault location data for faster remediation, greatly improving network agility and reducing downtime costs.
- **Diagnostic troubleshooting:** NetQ provides the ability to trace network paths, replay the network state at a time in the past, review fabric-wide event change logs, and diagnose the root cause of state deviations.

NetQ platform

NetQ platform is the central platform that receives real-time telemetry data, providing visibility, network validation and trouble-shooting. The platform can run in a Virtual Machine, on the Cumulus NetQ hardware appliance, or as a cloud service as part of NetQ Cloud.

Specifications:

NetQ Virtual Machine OS

- VMware ESX 6.5
- Red-Hat 7
- Ubuntu 16.04

And is also supported on the NetQ hardware appliance.

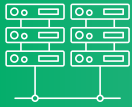
NetQ Agents

NetQ Agents are software installed and run on every monitored node in the network — including Cumulus® Linux® switches, Linux bare-metal hosts, and virtual machines. The NetQ Agents push network data regularly and event information immediately to the NetQ Platform.

Supported Operating Systems:

- Cumulus Linux 3.3.0 and later
- Ubuntu 16.04 and 18.04
- Red Hat Enterprise Linux (RHEL) 7.1
- CentOS 7





Cumulus NetQ hardware appliance is a 1RU rack mountable server installed with the latest NetQ ready for deployment.

NetQ Hardware Appliance



FIGURE 3: NETQ HARDWARE AND NETQ CLOUD APPLIANCES

Cumulus NetQ Appliance Specification:

- 1RU
- CPUs: One Intel Scalable 8 Core, 1.8GHz
- DRAM: 96 GB (Six 16 GB RDIMM)
- Storage: One 960GB Solid State Drive and One 4TB Hard Drive
- Network Interfaces: Two Ports 10Gb Ethernet NIC (SFP+) and Two Ports 1Gb Ethernet LOM (RJ-45)
- Power Supply: Dual, Hot-Plug, Redundant Power Supplies (1+1) 750W
- Power Cord: NEMA 5-15P to IEC 60320 C13, 6ft
- Dimensions (WxDxH): 17.2" x 23.5" x 1.7" (437mm x 597mm x 43mm)
- Weight: 46 lbs (20.9 kg)
- Out of Band Management: IPMI

Cumulus NetQ Cloud Appliance Specification:

- 1RU
- CPUs: One Intel Xeon D-2123IT 4 Core
- DRAM: 16GB
- Storage: One 240GB Solid State Drive
- Network Interfaces: Two Ports 10GBase-T
- Power Supply: 120W Lockable Power Adapter with US power cord
- Power Cord: NEMA 5-15P to IEC 60320 C13, 6ft
- Dimensions (WxDxH): 10" x 8.9" x 1.7" (254mm x 226mm x 43mm)
- Weight: 3.45 lbs (1.56 kg)
- Out of Band Management: IPMI



Technical Support

Please visit the Cumulus Networks support [portal](#).

Contact Your Cumulus Networks Sales Team

Ready to purchase? Please contact us [here](#) or send an email to sales@cumulusnetworks.com.

About Cumulus Networks

Cumulus Networks provides networking software to design, run, and operate modern data centers that are simple, open, agile, resilient, and scalable. Cumulus Linux is the only open networking software that allows you to affordably build and efficiently operate your network like the world's largest data center operators, unlocking vertical network stacks. Combined with Cumulus NetQ, an operational management tool, organizations can take advantage of deeper analytics and advanced telemetry to increase visibility across the network and reduce mean time to resolution. Cumulus Networks has more than 1,500 customers globally and has received venture funding from Andreessen Horowitz, Battery Ventures, Sequoia Capital, Telstra Ventures, Peter Wagner, four of the original VMware founders, among others. For more information, please visit www.cumulusnetworks.com.

