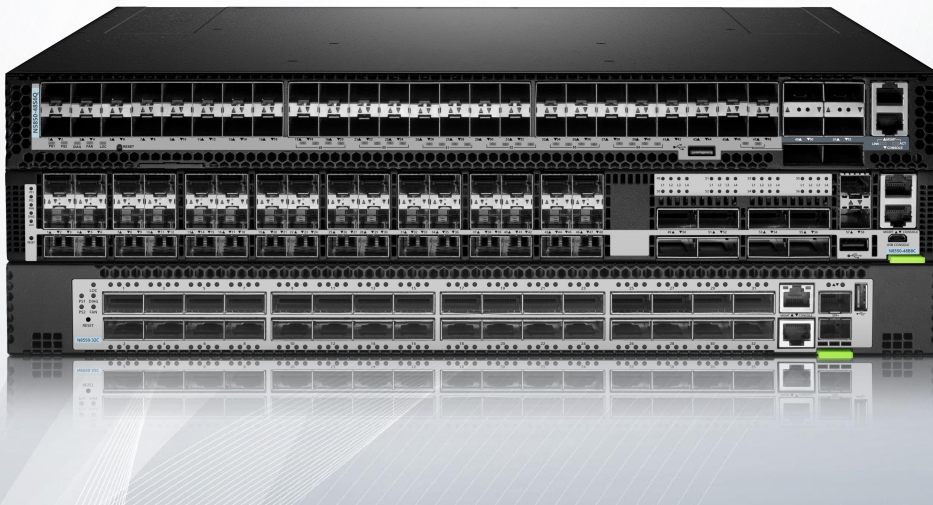


N Series Cumulus Linux Switches

IDEAL FOR DATA CENTER NETWORKS AND HIGH-END CAMPUS NETWORKS

Models: N5850-48S6Q; N8550-48B8C; N8550-32C



Overview

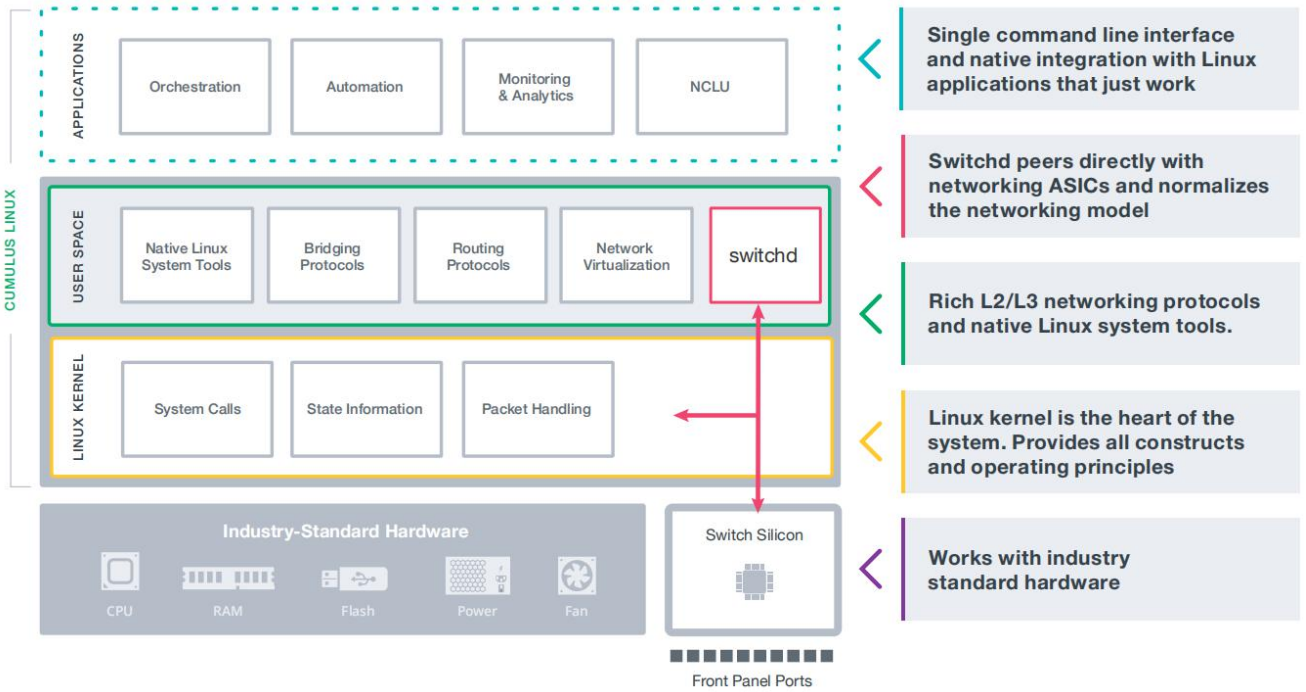
N-series switches deliver the high performance and port density with a complete chassis and fabric management solution enabling converged data centers to operate at any scale while reducing operational costs and infrastructure complexity. This family includes a broad portfolio of Top-of-Rack (TOR) switches that range from 32 to 56 ports, with wire speed of 10GbE, 25GbE, 40GbE and 100GbE per port. They have a comprehensive Cumulus Linux feature set, including MLAG, VXLAN, SFLOW, BGP and OSPF etc.

Cumulus Linux enables modern data center architectures while providing a transition path for traditional data center architectures, with support for layer 2, layer 3 and overlay architectures.

Benefits

- Broadcom Switch Chip
- Ethernet Virtual Private Networks (EVPN)
- Network Command Line Utility (NCLU)
- OSPF Unnumbered
- BGP Unnumbered
- Redistribute Neighbor
- Prescriptive Topology Manager (PTM)
- Virtual Routing and Forwarding
- Lightweight Network Virtualization (LNV)

Cumulus Linux Architecture



Key Features



ETHERNET VIRTUAL PRIVATE NETWORKS (EVPN)

Get freedom from layer 2 complexities with this modern, standards-based, interoperable technology that allows legacy layer 2 applications to operate over next-generation layer 3 networks.



REDISTRIBUTE NEIGHBOR

Get VM and host mobility by plugging your server into any redistribute neighbor-enabled switch, making it layer 3 discoverable on the fabric. If you have to move the server, there's no need to reconfigure.



NETWORK COMMAND LINE UTILITY (NCLU)

Use the rich and simple command line for easy network configuration and operation.



OSPF UNNUMBERED

Create configs faster and simplify automation by no longer depending on unique IP addresses.



PRESCRIPTIVE TOPOLOGY MANAGER (PTM)

Efficiently go from whiteboard to physical cable. With PTM, you can program your data center to verify connections and resolve issues faster.



VIRTUAL ROUTING AND FORWARDING

Run multiple network paths without the need for multiple switches, giving you traffic isolation and network segmentation for multiple devices.



BGP UNNUMBERED

Automation gets even easier with this simplified IP approach. All you need is one IP template for leaf nodes and one for the spine nodes.



LIGHTWEIGHT NETWORK VIRTUALIZATION (LNV)

Accelerate VXLAN deployments with a controllerless solution.

Technical Specification

N-series switches come with the industry-standard hardware and pre-installed Cumulus Linux operating system. Here's a look at the details.

CHARACTERISTICS

	N5850-48S6Q	N8550-48B8C	N8550-32C
Port			
Ports	48x 10G SFP+ and 6x 40G QSFP+	2x 10G, 48x 25G SFP28 and 8x 100G QSFP28	2x 10G and 32x 100G QSFP28
SFP+ Port	Each port supporting 10G or 1G	--	--
SFP28 Port	--	Each port supports 1x 10G or 25G	--
QSFP+ Port	Each port supporting 40G or 4x 10G	--	--
QSFP28 Port	--	Each port supports 1x 40/100G or 4x 25G or 4x 10G per port using breakout cables	Each port supports 1x 40/100G or 2x 50G or 4x 10/25G per port using breakout cables
RJ45 Management Port	1	1	1
Console Port	1	1	1
USB Type A Storage Port	1	1	1
Operating System			
OS	Cumulus Linux	Cumulus Linux	Cumulus Linux
Key Components			
Switch Chip	Broadcom BCM56864 Trident II+	Broadcom BCM56873 Trident III	Broadcom BCM56870 Trident III
CPU	Intel Atom C2538 2.4Ghz quad-core 2.4GHz x86 processor	Intel® Xeon® D-1518 processor quad-core 2.2 GHz	Intel® Xeon® D-1518 processor quad-core 2.2 GHz
DRAM	8GB SO-DIMM DDR3 RAM with ECC	2x 8 GB SO-DIMM DDR4	2x 8GB DDR4 SO-DIMM
SPI Flash	16MB	2x 16MB	2x 16MB
Flash	8GB NAND flash	64GB MLC M.2 SSD	61GB MLC M.2 SSD

CHARACTERISTICS

	N8550-48S6Q	N8550-48B8C	N8550-32C
Performance			
Layer Type	Layer 3	Layer 3	Layer 3
Switching Capacity	1.44 Tbps full duplex	4 Tbps full duplex	6.4 Tbps full duplex
Forwarding Rate	1 Bpps	2.9 Bpps	4.7 Bpps
MAC Addresses	32K min./288K max	32K min./288K max	32K min./288K max
Packet Buffer	16MB integrated packet buffer	32MB integrated packet buffer	32MB integrated packet buffer
VLAN IDs	4K; support 4 K ECMP group	4K	4K
Jumbo Frames	Up to 9216 Bytes	Up to 9216 Bytes	Up to 9216 Bytes
IPv4	16K min./112K max. host entries; 16K LPM entries with TCAM-only mode	16K min./168K max. host entries; 32K LPM entries with TCAM-only mode	16K min./168K max. host entries; 32K LPM entries with TCAM-only mode
IPv6	8K min./56K max. host entries; IPv6/64=8K TCAM-only mode	8K min./100K max. host entries; IPv6/128= 8K TCAM-only mode	8K min./100K max. host entries; IPv6/128= 8K TCAM-only mode
Status Indicators			
10G SFP+ Port LEDs	Link Speed, Link Status, Activity	--	--
25G SFP28 Port LEDs	--	Link Status, Activity, Rate	--
40G QSFP+ Port LEDs	Link Status, Activity	--	--
100G QSFP28 Port LEDs	--	Link Status, Activity, Rate	Link Status, Activity, Rate
40G QSFP+ Breakout LEDs	Set of 24 LEDs, 4 per QSFP+ port, show Link, Status, Activity 10G links with 4x 10G breakout	--	--
Ethernet Management Port LED	Link Status, Activity	Link Status, Activity	Link Status, Activity
Console Port LED	Link Status	--	Link Status
System LEDs	PSU1, PSU2, Diagnostic, Fans, Locator	Diagnostic, Locator, PSU and Fan Status	Diagnostic, Locator, PSU and Fan Status

CHARACTERISTICS

	N5850-48S6Q	N8550-48B8C	N8550-32C
Power			
Input Voltage	100-240VAC, 50-60Hz, 6-3A	100-240VAC, 50-60Hz, 6A	100-240VAC, 50-60Hz, 6A max.
Max. Power Consumption	282W	511W	550W
Physical and Environmental			
Dimensions (HxWxD)	1.71"x17.4"x18.62" (43.5x442x473mm)	1.71"x17.26"x21.1" (43.5x438.4x536mm)	1.72"x17.26"x20.28" (43.8x438.4x515mm)
Rack Space	1U	1U	1U
Hot-swappable Power Supplies	2 (1+1 Redundancy)	2 (1+1 Redundancy)	2 (1+1 Redundancy)
Hot-swappable Fans	5 (4+1 Redundancy)	6 (5+1 Redundancy)	6 (5+1 Redundancy)
Airflow	Back-to-Front	Back-to-Front	Back-to-Front
Operating Temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 113°F (0°C to 45°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Operating Humidity	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)
Weight	19.73 lbs (8.95 kg), with two installed PSUs	22.05 lbs (10kg), with two installed PSUs	23.96 lbs (10.87kg), with two installed PSUs
Warranty			
Warranty	5 Years	5 Years	5 Years

FEATURES

Functionality	Description
Layer 3 Features	<p>IPv4/v6 routing suite including OSPFv2, OSPFv3, BGPv4/v6.</p> <p>Virtual routing and forwarding (VRF) and VRF route leaking</p> <p>Equal-cost multi-path (ECMP) and ECMP resilient hashing for IPv4 and IPv6 traffic.</p> <p>Bidirectional forwarding detection (BFD) across all platform & interface types, IPv4 and IPv6, BGP and OSPF, VXLAN.</p> <p>Protocol-independent multicast (PIM, PIM-SM, PIM-SSM).</p> <p>Policy-based routing.</p>
Layer 2 Features	<p>Bridge management with STP (IEEE 802.1d), RSTP (IEEE 802.1w), PVRST, PVST, bridge assurance, BPDU guard, BPDU filter.</p> <p>VLANs, VLAN trunks (IEEE 802.1q), LACP (IEEE 802.3ad), LACP bypass, unicast/broadcast storm control, LLDP, CDP, IPv6 neighbor discovery, IPV6 route advertisement.</p> <p>MLAG (clagd daemon).</p> <p>IGMPv2/v3 snooping, MLDv1/v2 snooping.</p> <p>Virtual router redundancy (VRR - active-active first hop redundancy protocol)</p>
Network Virtualization	<p>VXLAN support.</p> <p>L2 gateway services integration with VMware NSX.</p> <p>VXLAN head end replication.</p> <p>VXLAN active-active bridging with MLAG.</p> <p>Controller-less Network virtualization with EVPN and lightweight network virtualization (LNV).</p>
Management	<p>Single command line tool to configure and operate the switch (NCLU).</p> <p>Native Linux management tools such as OpenSSH, SCP, FTPS.</p> <p>Automated install and provisioning: zero touch install and zero touch provisioning. Management VRF.</p> <p>DHCP, v4/v6 DHCP relays.</p> <p>Authentication with LDAP, authorization with sudo NTP.</p> <p>Interface configuration management (ifupdown2).</p> <p>Advanced management/orchestration through third party add-on packages.</p> <p>Snapshot and rollback of the entire system to eliminate the risk from system upgrades.</p>

FEATURES

Functionality	Description
Monitoring & Troubleshooting	<p>Monitor traffic patterns and preemptive capacity planning with buffer monitoring</p> <p>Traditional monitoring with SNMPv2 and network-specific MIBs, hardware monitoring via watchdog, analytics with SPAN, ERSPAN, ACL-based counters, DOM optics data, thermal sensors, real time queue-depth and buffer utilization reporting.</p> <p>Troubleshooting with dnsutils, syslog, reachability tools, hardware inventory, log files, server-style filesystem, and merchant silicon-specific commands.</p> <p>Advanced troubleshooting and ease of use with Prescriptive Topology Manager.</p>
Security	<p>Access control lists (ACLs) L2-L4 classification through IP/EPTables, CPU protection through hardware enforced ACL-based rate limiting DoS control.</p> <p>Authenticate and authorize attached devices with 802.1X</p> <p>Link PAUSE</p>
QoS	<p>Classification based on Class of Service (CoS) (IEEE 802.1p) or DSCP (queuing, scheduling (DWRR and Strict Priority), buffer allocation)*</p> <p>Ingress ACL-based classification/policing</p> <p>Priority flow control and explicit congestion notification (ECN)</p>
Extended support	<p>Extended support available for Cumulus Linux 2.5 and 3.7</p>
Cumulus VX	<p>Supported virtual appliance to test and stage production rollouts</p>

Accessories



Console Cable*1



Power Cords*2



Rack Mount Kit Bracket*1



M4 Screws*20



Ear-locking Screws*2



User Manual*1



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