

# OpenSwitch for Netberg Aurora, release 2.0.4



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# Feature Highlight

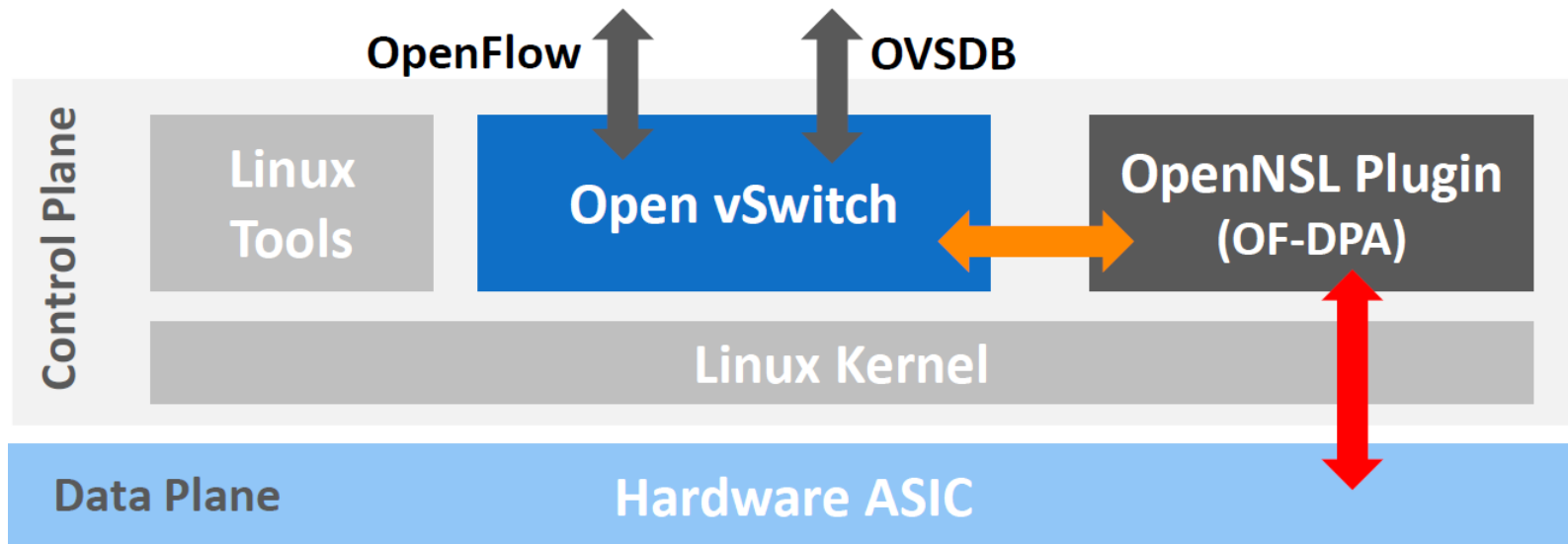
- A Layer-2 protocol stack support
- Full Layer-3 protocol support including BGP, OSPF, ...
- 64-bit ALPM routing mode
- Support OpenFlow, OVSDB for SDN application
- Support VxLAN and HW-VTEP for Network Virtualization
- OpenStack Neutron ML2 Integration
- Market-leading SDN controller Integration such as OpenDaylight and ONOS
- RESTful APIs, Python for the programming interface
- Simple device provisioning and management via ZTP, CLI, and DevOps automation tool and a Linux standard shell
- NETCONF/YANG model support for L2/L3 configuration
- Incremental software upgrade
- Fast/Warm Reboot Support
- FEC control
- CORD ready



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# Seamless SDN Integration

- Support OpenFlow v1.3.4, integrated with OF-DPA v3.0.4.0
- Support OVS 2.5 with extensions to support OF-DPA 3.0 Experimenter protocol definitions
- Support OVSDB for SDN controller management
- Support OVS tool for configuring groups/flows
- Integration with SDN controllers such as OpenDaylight, ONOS ...
- Support Hybrid Mode Operations (Both OpenFlow & L2/L3 on the same port)





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# CORD Ready

OpenFlow updates:

- Better design for Hybrid mode
- OpenFlow experimenter Match/Action support
- Weighted ECMP support
- Modify src/dst IP, UDP/TCP port
- Modify src/dst MAC address
- Bugs fixing for CORD OFTest Conformance test
- Support SSL connection to controller

# Enable ALPM Mode to Enlarge the Route Table Size

From the release 2.0.4, OPS supports Algorithmic Longest Prefix Match (ALPM). ALPM is a way to extend the Unified Forwarding Table (UFT) to store Longest Prefix Match (LPM) routes instead of Host routes. LPM routes don't have the full /32 prefix length.

- White fields – standard mode
- Gray fields – ALPM mode

Feature	Aurora 420	Aurora 620	Aurora 630	Aurora 720
MAC address table size	32768	40960	40960	40960
	32768	8192	8192	8192
ARP table size	8192	8192	8192	8192
	16384	8192	8192	8192
Route table size	16384	16384	16384	16384
	384k	128k	128k	128k

# Web Interface

OpenSwitch ×

Hostname  
Product  
Aurora 720

Overview

Interfaces

VLANs

LAGs

ECMP

Log

Quick Guides

Links

netop

Overview 32 seconds ago ↻

**System**

Part #: NBA720-F16-BMS

Serial #: 2M3AR000129

Vendor: Netberg

Version: 2.0.0 (Build: foxoss-ops-2.0.0-Poblano-20180308014408-dev)

ONIE Version: 2015.11

Base MAC: 70:B3:D5:CC:F0:47

**General**

LLDP: Enabled

ECMP: Enabled

VLANs: 1 of 4094

Interfaces: 160

MTU: 9416

Max Interface Speed: 100 Gbps

**Hardware**

Power Supplies: ⚠ Warning

Temperatures: ⚠ Warning

Fans: ✔ OK

**Top Interface Utilization**

Currently no traffic data available...

OpenSwitch ×

Hostname  
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Interfaces 3 seconds ago ↻

Total: 32 Details 🔍

ID	Configured	Admin State	Link State	Connector	Duplex	Speed	Split
1	Down	Down	Down	Absent			True
2	Down	Down	Down	Absent			True
3	Down	Down	Down	Absent			True
4	Down	Down	Down	Absent			True
5	Down	Down	Down	Absent			True
6	Down	Down	Down	Absent			True
7	Down	Down	Down	Absent			True
8	Down	Down	Down	Absent			True
9	Down	Down	Down	Absent			True



# Software Features

## Layer 2 features

- \*L2 MAC address table
- \*\* 40K(\*)
- \*\* Aging support
- \*\* Static MAC
- \* Reserved MAC pass through
- \* Link Aggregation
- \*\* 802.3ad with LACP
- \*\* Max member of group: 64
- \*\* Max member per group: 48
- \*\* Unicast/Multicast traffic balance
- \*\* LACP fallback
- \* VLAN
- \*\* IEEE 802.1Q
- \*\* Port-Based
- \*\* Q-in-Q
- \* Spanning Tree
- \*\* IEEE 802.1S
- \*\* Edge port (same as fast forwarding)
- \*\* BPDU Filter/Guard
- \*\* Loop Guard
- \* Storm Control
- \*\* Broadcast
- \*\* Unknown Multicast
- \*\* DLF (unknown unicast)
- \* Error Disable / Recovery
- \*\* MAC flapping
- \*\* Link flapping
- \*\* Storm control
- \*\* BPDU
- \*\* UDLD
- \* LLDP
- \* UDLD
- \* 802.3x Flow control
- \* Jumbo Frame
- \* FEC

## Layer 3 Features

- \* L3 LAG
- \* L3 loopback
- \* L3 sub-interface
- \* IP ARP
- \*\* Aging support
- \*\* Retry count
- \* Proxy ARP / Local proxy ARP
- \* Static route
- \* 48-way ECMP
- \* BGP v4/v6
- \* VRRP v2
- \* OSPF v2
- \* BFD
- \* Source IP Configuration
- \* Policy-based Routing (PBR)
- \* IP Prefix List
- \* IP Community List
- \* Route map
- \* 64-bit ALPM routing mode support

## Security

- \* Ingress ACL
- \* RADIUS
- \* TACACS+
- \* User authentication
- \*\* Local
- \*\* RADIUS/TACACS+
- \*\* AAA

## QoS

- \* 8 cosq per port
- \* DWRR and Strict scheduling
- \* WRED-ECN
- \* Traffic shape

## Management

- \* Industrial standard CLI
- \* CLI filtering, pagination and interface range
- \* Text-based configuration
- \* SSH
- \* SFTP/SCP
- \* Dual Image
- \* Incremental software update
- \* SNMP v2c/v3
- \* TFTP Server
- \* DHCP Client/Server/Relay
- \* Syslog
- \* Event log
- \* Audit Logs
- \* Utility: Remote ping, traceroute
- \* Diagnostic dump
- \* Supportability
- \* Core dump
- \* NTP Client
- \* sFlow
- \* SPAN / ERSPAN
- \* Zero Touch Provisioning
- \* Ansible Support
- \* Restful API
- \* Fast/Warm reboot

## Data Center & SDN

- \* PFC
- \* DCBX(\*\*)
- \* VxLAN/HW-VTEP
- \* OpenFlow 1.3.4
- \* CORD ready

\*: table size is depended on hardware platform

\*\*: It is supported in the feature firmware upgrade



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Thank you!