Netberg Aurora 720/630/620

- ONIE Pre-loaded
- Automation
- Virtualization
- SDN-ready
- X86 Linux apps

Data center networking is moving from 10G and 40G to 25G and 100G. Netberg is ready to help this transition with Aurora 720, 630, and 620 Ethernet switches. Backward compatibility with 10G and 40G smoothen the challenge of network evolution in your data center by seamless integration into the existing infrastructure. They are ideal for high-performance computing clusters and high-frequency trading applications as well as highly virtualized cloud environments and network provider companies

Built around a field-proven Broadcom Tomahawk silicon, Aurora 720 and 620 is a perfect pair for Leaf-Spine network deployments, where Aurora 720 serves as Spine and Aurora 620 is placed as Leaf. Aurora 630 has a unique port combination for many deployment scenarios. RAS features include a redundant hot-swappable power supply (1+1) and fans (N+1). x86-based control plane provides access to an ecosystem of the same Linux applications that are deployed on servers.

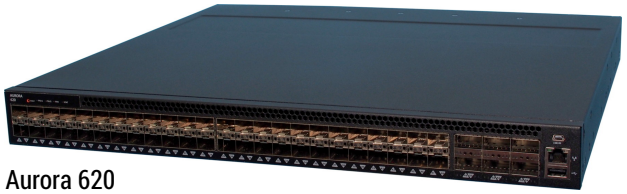
With ONIE (Open Network Installation Environment) pre-loaded, those switches are open for a multiple NOS (Network OS) options. Web-scale Broadcom ICOS running is OS-as-a-service mode; open-source OpenSwitch; and Open Network Linux (ONL) with OpenNSL/OF-DPA integration for the in-house development are already available.

About us

Netberg is founded by a seasoned team of engineers with vast expertise in hardware and software. Aimed to provide the best performance and quality, Netberg offers an impressive product line, from standard rackmount servers to complete rack solutions, based on OCP (Open Compute Project)/Scorpio specifications.

Aurora 720

Aurora 630



Aurora 620

	Aurora 720	Aurora 630	Aurora 620
Ports	**32** QSFP28 (10/40/ 25/50/100GbE)	**48** SFP28 and **16** QSFP28 (10/40 or 25/50/100GbE)	**48** SFP28 and **6** QSFP28 (10/40 or 25/50/100GbE)
ASIC	3.2 Tbps	3.2 Tbps	2.0 Tbps
CPU	Intel Atom 2558		
Storage	64GB m.2 SATA SSD		
RAM	8GB (Up to 16GB)		
Power	1+1 RPSU 80+ Platinum; HVDC support		
Size	1U		
Safety	FCC, CE, RoHS 6		
NOS	Open Network Linux (ONL) with OF-DPA 3.0 and Open Network Switch Library (OpenNSL) Broadcom ICOS OpenSwitch		
ENV	Operating temperature: 0~45°C Operating humidity: 20-95% maximum RH		

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ICOS 3.2 software stack. To be updated along with the development.

Layer 2 features

L2 MAC address table: 288K

Link aggregation:
- 802.3ad with LACP
- Cisco EtherChannel
- Max number of group: 8
- Unicast/Multicast traffic balance
- Virtual Port Channel (MLAG)

VLAN:
- IEEE 802.1Q
- Port-Based
- Private VLAN
- Voice VLAN

Spanning Tree:
- IEEE 802.1D
- IEEE 802.1w
- IEEE 802.1s
- Spanning Tree Fast Forwarding
- Edge port (same as Fast Forwarding)
- Auto Edge
- BPDU Filter/Guard
- Loop Guard
- TCN Guard
- Root Guard

Storm Control:
- Broadcast
- Unknown Multicast
- DLF (Unknown Unicast)

IGMP Snooping:
- IGMP Snooping v1/v2/v3
- IGMP v1/v2 querier support
- IGMP Immediate Leave
- MLD Snooping
- Jumbo frame
- IEEE 802.3x Flow Control
- Q-in-Q

Data center

- ONIE enabled boot loader
- FIP snooping
- Congestion Notification (CN)
- ETS
- PFC
- DCBX for PFC (CEE v1.0)
- DCBX for ETS (CEE v1.0)
- OpenFlow 1.3
- Open Ethernet Networking (OpEN) API
- Puppet/Chef support
- VXLAN
- NVGRE

Layer 3 Features

- Number of IP interfaces: 128
- Multinetting/CIDR
- /31 subnet support
- IP ARP
- Proxy ARP
- Local proxy ARP
- IRDP

- Static route
- ECMP
- OSFP v2/v3
- BGP v4/v6
  - RFC4893
- Virtual routing and forwarding (VRF) awareness in BGP:

- BGP extended communities
  - BGP route leaking
  - BGP dynamic neighbors

- Multicast:
  - Multicast groups
  - IGMP v1/v2/v3
  - MLD v1/v2
  - DVMRP
  - PIM-DM v4/v6
  - PIM-SM v4/v6
  - IGMP proxy
- VRRP
- Loopback

- Routes:
  - IPv4
  - IPv6
  - ARP entry
  - ND entries
  - IP IGMP/MLD
  - PIM-SM/DM v4/v6
  - DVMRP

- Source IP configuration
- Policy-based routing (PBR)

- IPv6 Tunneling
- IPv6 Loopback

- DHCPv6 relay
- DHCPv6 server

Security

- Static/Dynamic Port Security (MAC-based)
- 802.1x:
  - Port based
  - MAC based
  - VLAN assignment
  - Guest VLAN
  - Unauthenticated VLAN
  - QoS assignment
- ACL:
  - L2: MAC SA/DA, CoS, EtherType
  - L3: IPv4 SA/DA, subnet based
  - L3: IPv6 SA/DA, flow-label, DSCP
  - L4: TCP/UDP port
  - Time-based ACL
  - ACL counters
- RADIUS:
  - Authentication
  - Accounting
- TACACS+:
  - Authentication
- HTTPS & SSL
- SSH 1.5/2.0
- User authentication:
  - Local
  - RADIUS/TACACS+
  - AAA
- DoS control
- MAC filter
- IP Source Guard
- Dynamic ARP inspection
- DHCP snooping
- Control Plane Policy (CoPP)

IPv6

- V4/V6 dual stack
- ICMPv6
- ICMPv6 redirect
- IPv6 Path MTU Discovery
- IPv6 Neighbor Discovery
- Stateless Autoconfiguration
- Manual Configuration
- DHCPv6
- SNMP over IPv6
- HTTP over IPv6
- SSH over IPv6
- IPv6 Telnet support
- IPv6 DNS resolver
- IPv6 RADIUS support
- IPv6 TACACS+ support
- IPv6 Syslog support
- IPv6 SNTP support
- IPv6 TFTP support
- Remote IPv6 ping

Management

- Standard Linux shell tools
- Linux application integration
- Industry standard CLI
- CLI filtering
- Telnet/SSH
- Software/configuration upload/download using TFTP/XMODEM/HTTP/FTP/SCP/SFTP
- SNMP v1/v2c/v3
- RMON 1,2,3,9 groups
- BOOTP client/relay
- DHCP:
  - Client
  - Server
  - Relay
  - L2 option 82 relay
  - L3 option 82 relay
- Event log
- DNS Client
- Utility: remote ping, traceroute
- SNTP v4
- LLDP: 802.1AB, 802.MED
- CDP
- UDLD
- Port mirroring:
  - SPAN: one-to-one, many-to-one
  - SPAN with ACL filter
  - SPAN with VLAN
  - RSPAN
- sFlow v5
- Cable test
- Email alerting
- Auto install
- RESTCONF interface
- NetSNMP

QoS

- Number of priority queue: 8
- Scheduling:
  - WRR
  - Strict priority
  - Hybrid (WRR+Strict priority)
- CoS:
  - 802.1p-based CoS
  - IP TOS Precedence based CoS
  - IP DSCP based CoS
- DiffServ:
  - 32 classes
  - 13 rules per class
  - No. class in policy: 64
  - No. policy in class: 28
- Auto VoIP

For OpenSwitch capabilities, please refer to http://openswitch.net/
For OpenNSL and OF-DPA development tutorials, please refer to https://github.com/Broadcom-Switch/

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