User Guide

# AsterNOS for Data Center

# Release Note

Version 3.1 R0408P00

Asterfusion Data Technologies Co., Ltd.
www.factorgroup.ru

# Preface

The purpose of this document is to provide important information about the released software version.

## Target Audience

This manual is primarily intended for following engineers.

- Software Developers
- Software Testers
- Customer Site Implementers

# Modification of Records

| Date | Version | Modify Remarks |
|---|---|---|
| 2025-04-30 | V1.0 | AsterNOS_V3.1_R0408P00 released. |

# Applicable Hardware Models

Standard products:

- CX308P-48Y-N
- CX308P-48Y-N-V2
- CX532P-N
- CX532P-N-V2
- CX564P-N
- CX664D-N
- CX732Q-N
- CX864E-N

# Contents

# 1 Instruction

The release version is AsterNOS_V3.1_R0408P00.

**AsterNOS_V3.1_R0408P00-FL.bin** for CX308P-48Y-N-V2 and CX532P-N-V2.

md5: 907d4146763f2b52d9bf91ab84ce22c6

sha1: 75ee2342d36364ae0764999c755b81608d56e2a5

**AsterNOS_V3.1_R0408P00.bin** for other models.

md5: fb85c909a603ae4cea4a74a9d1b979a3

sha1: a9fbccab2aeb453f5de5ad2b3383677be807b337

# 2 List of Features

Table 2-1 List of Features

| Features | Level 1 | Level 2 |
|---|---|---|
| **Interfaces** | Ethernet Port | 1G[1] |
| | | 10G[2] |
| | | 25G |
| | | 40G[3] |
| | | 100G |
| | | 200G[4] |
| | | 400G[5] |
| | | 800G[6] |
| | | Breakout[7] |
| | Logical Interfaces | Ethernet port based L3 Interface |
| | | Port-Channel based L3 Interface |
| | | SVI |
| | | Sub-interface |
| | | Loopback |
| | Interface management | Port management |
| | | Statistics |
| | | MTU |
| | | Jumbo Frame |

Note:
[1] 25GE interfaces of CX308P-48Y-N-V2 support to set rate to 1G.
[2] 25GE interfaces of CX308P-48Y-N-V2 support to set rate to 10G.
[3] 100GE interfaces of all series products support to set rate to 40G.
[4] CX664D-N supports 200GE interfaces which can be set to 40G/100G.
[5] CX732Q-N supports 400GE interfaces which can be set to 100G/200G.
[6] CX864E-N supports 800GE interfaces which can be set to 100G/200G/400G.
[7] The breakout modes supported by different speed interfaces are as follows:
- 100GE interfaces support splitting into 4x25G[10G].
- 200GE interfaces support splitting into 2x100G[50G], 4x50G, or 4x25G.
- 400GE interfaces support splitting into 4x100G[50G], 2x200G[100G], or 4x25G.
- 800GE interfaces support splitting into 2x400G[200G] or 4x200G[100G]

| Features | Level 1 | Level 2 |
|---|---|---|
| | Optical module | CMIS Diagnostic |
| | | Presence |
| | | Reading info |
| L2 Switching | MAC | Static MAC configuration |
| | | Dynamic learning |
| | | MAC address move |
| | | MAC Flapping detection |
| | | MAC blackhole |
| | | MAC flushing |
| | | MAC filtering by source |
| | VLAN | VLAN management |
| | | VLAN member mode: Access/Trunk |
| | | VLAN member type |
| | | BUM forwarding control |
| | Port-Channel | Port-Channel Mode: Static/LACP |
| | | LACP Parameter |
| | | Load balance mode: Static hash/ Eligible Load Balance |
| | | Load balance hash key |
| | | Hash configuration |
| | LLDP | Working mode |
| | | LLDP Neighbour Information |
| | STP | STP mode: MSTP |
| | | STP Parameter |
| | | Edge-port |
| | | BPDU protection |
| L3 Switching | IP Address | IPv4 address |
| | | IPv6 address |
| | | Secondary IP |
| | ARP | Static ARP |
| | | Dynamic ARP |
| | | ARP aging and update |
| | | Gratuitous ARP |
| | | ARP proxy |
| | | ARP moving |
| | | ARP-to-host-routing |
| | NDP | ND |
| | | SLAAC |
| | | NDP proxy |
| | | ND-to-host-routing |
| | Basic routing | IPv4 static routing |
| | | IPv6 static routing |
| | | Default routing |

| Features | Level 1 | Level 2 |
|---|---|---|
| | | IPv4 routing with IPv6 nexthops |
| | | Loopback Packet Control |
| | PBR | IPv4 Policy Based Routing |
| | | IPv6 Policy Based Routing |
| | | Bind Port Type |
| | | Nexthop action |
| | ECMP | Group member type |
| | | Load balance hash key |
| | | Hash configuration |
| | | Load balance mode: Static hash/ Eligible Load Balance |
| | BGP | IBGP |
| | | EBGP |
| | | Peer Group |
| | | Peer Type |
| | | Route Reflection |
| | | AS-Path replace |
| | | Route redistribution |
| | | Graceful restart |
| | | MP-BGP |
| | OSPF | OSPF Version |
| | | Network type |
| | | Instance |
| | | Area |
| | | Authentication |
| | | Route redistribution |
| | | Graceful restart |
| | IS-IS | - |
| | Routing Policy | Prefix Lists |
| | | Route Map |
| | VRF | Loopback interface assignment |
| | | Inter-VRF route leaking |
| | | Management VRF |
| | | ping/ssh to VRF |
| | DHCP | DHCPv4 server |
| | | DHCPv6 server |
| | | DHCPv4 relay |
| | | DHCPv6 relay |
| | | DHCP relay over VXLAN |
| **Virtualization and tunnel** | VXLAN | VTEP[8] |
| | | VXLAN mapping |
| | | L2 forwarding |

Note:
[8] Only CX308P-48Y-N-V2 and CX532P-N-V2 support VXLAN Multi VTEP.

| Features | Level 1 | Level 2 |
|---|---|---|
| | | ARP/ND suppression |
| | | VXLAN maintenance |
| | BGP-EVPN | Route type |
| | | Tunnel auto establish/tear down |
| | | Anycast gateway |
| | | L3 Gateway type |
| | | Symmetry IRB |
| | | Routing dynamic population |
| | | VM migration |
| | | Inter-VRF Local Route Leaking |
| | | Multi-homing |
| | DCI | VLAN hand-off |
| **QoS and DCB** | Classification & Scheduling | Classification |
| | | Queue scheduling |
| | | Traffic shaping |
| | | Bandwidth limiting |
| | | WRED |
| | | Queue statistics |
| | Rewrite | Matching with ACL |
| | | Mark action |
| | DCB | ECN |
| | | PFC |
| | | PFC Watchdog |
| | | DCBX |
| | RoCE | RoCEv2 |
| | | Easy RoCE |
| | Load Balance | Adaptive Routing and Switching [9] |
| | | Packet Spray [10] |
| **Security** | CoPP | Bandwidth limit for CPU port |
| | | CoPP Configuration |
| | Storm Suppression | Suppression type |
| | | Control mode: Value-based |
| | ACL | Match field |
| | | ACL action |
| | | ACL type |
| | | Time-ranged ACL |
| | | Control-Plane ACL |
| | AAA | TACACS+ |
| | | Radius |

Note:
[9] This feature is supported only on CX864E-N.
[10] This feature is supported only on CX864E-N.

| Features | Level 1 | Level 2 |
|---|---|---|
| | Port Isolation[11] | Working mode: L2 |
| | | Interface type: Ethernet port |
| **Service Operation and Reliability** | Software Architecture | Apps in container |
| | | Configuration database |
| | | Warm restart |
| | MC-LAG | Ethernet-based MC-LAG |
| | | MC-LAG peer gateway |
| | | Consistent check |
| | | Secondary ICCP Session |
| | | L3 Forwarding |
| | | Unique IP |
| | | Routing protocol: OSPF/BGP over MC-LAG |
| | | MC-LAG with EVPN |
| | | Loopback detection |
| | BFD | BFD Mode |
| | | BFD for routing protocol |
| | | BFD acceleration[12] |
| | SLA | Echo mode |
| | | User defined |
| | | TRACK with static route |
| | Monitoring Link | Monitoring group |
| | | Monitoring configuration |
| | VRRP | VRRPv2 |
| | | VRRPv3 |
| **Visibility and Monitoring** | SNMP | SNMP v2 |
| | | SNMP v3 |
| | | SNMP Trap |
| | Network Quality Analysis | Port Mirroring |
| | | sFlow |
| | | gRPC |
| | | In-Network-Telemetry |
| | AsterNOS exporter | Visibility template |
| | | System info |
| | | Device monitoring |
| | | Interface |
| | | BGP |
| | | MC-LAG |
| | | EVPN VXLAN |
| | | RoCE |

Note:
[11  Port isolation is only supported on CX308P-48Y-N-V2 and CX532P-N-V2.
[12] Only CX308P-48Y-N-V2 and CX532P-N-V2 support hardware BFD.

| Features | Level 1 | Level 2 |
|---|---|---|
| **AIDC Intelligent Routing**[13] | Static routing | VRF assignment |
| | | Path assignment |
| | | Failure recovery |
| | | Configuration templates |
| **Multicast** | Multicast Route | IPv4 static multicast routing |
| | | multicast route counter |
| | | multicast route type |
| | IGMP | IGMP snooping |
| **Management** | Device Management | User interface |
| | | NOS Maintenance |
| | | License |
| | | Device Information |
| | System Management | Login & MOTD |
| | | User management |
| | | Feature Management |
| | | System configuration |
| | | System time |
| | | Syslog |
| | | Critical Resource Monitoring |
| | | NTP |
| | DevOps | ZTP |
| | | Ansible |
| | | FTP |
| | | TFTP |
| | | SCP |
| | | Toolkit |

# 3 Update Records

## 3.1 New Features

[AAA] Add support for RADIUS authentication with Management VRF.

[ACL] Add support for mask matching of source and destination MAC addresses, and a drop action for matched rules.

[ACL] Add support for matching DSCP, protocol type, source port, and outer VLAN in user-defined IPv6 ACLs.

[AIDC] Add support for ARS (Adaptive Routing and Switching) on CX864P-N.

[CoPP] Add support for displaying CoPP configuration and configuring trap behavior for ARP, ND, IGMP, PIM, ISIS, and VRRP protocol packets.

Note:
[13] CX308P-48Y-N-V2 and CX532P-N-V2 do not support intelligent routing.

[Hash] Add support for round-robin and random hash algorithms for LAG and ECMP on CX864P-N.
[Interface] Add support for downgrading 400G interfaces on CX732P-N to 40G and splitting them into four 25G ports.
[Interface] Add support for splitting 200G interfaces on CX664P-N into four 25G sub-interfaces.
[Multicast] Add support for IGMP Snooping.
[PTP] Add support for PTP (Precision Time Protocol) on CX308P-48Y-N-V2 and CX532P-N-V2.
[sFlow] Add support for sFlow with Management VRF.
[SNMP] Add support for retrieving interface CRC error statistics via SNMP.
[SNMP] Add support for retrieving subinterface statistics via SNMP.
[System] Add support for viewing installed software patches.
[Traffic Statistics] Add support for viewing CRC error statistics on interfaces.
[Visibility and Monitoring] Add support for configuring custom alarm rules.
[Visibility and Monitoring] Add support for visual monitoring of the OSPF module.

## 3.2 Notable Fixes and Optimizations

[CoPP] Implement default rate limiting for packets trapped to the CPU by ACL rules on CX308P-48Y-N-V2 and CX532P-N-V2 models.
[CoPP] Optimize the handling of non-local BGP, BFD, and other protocol packets trapped to the CPU on CX308P-48Y-N-V2 and CX532P-N-V2 models.
[DCB] Fix the issue where PFC cannot be triggered under default configuration on CX308P-48Y-N-V2 models.
[EVPN-MC-LAG] Fix the issue where peer-link uplink isolation fails for some multicast packets.
[IPv6] Auto-generate new MAC addresses when enabling the IPv6 link-local feature on physical interfaces.
[IPv6] Remove the address overlap check when configuring IPv6 link-local addresses.
[KLISH] Add support for viewing local and remote MAC addresses using the command show mac-address all.
[KLISH] Allow the show syslog grep command to filter multiple strings.
[MAC Flapping] Optimize the system’s handling of MAC flapping after detection.
[MC-LAG] Modify the isolation mechanism from peer-link to downstream ports when the MC-LAG protocol disconnects.
[MC-LAG] Resolve the issue where ICCP sessions intermittently fail to recover after frequent disconnections during loop storms.
[Next-hop] Fix the issue where the system repeatedly creates next-hops during aging probes for IPv6 neighbors learned with the same MAC.
[Techsupport] Expand the information collected by the techsupport tool.
[Traffic Statistics] Fix the issue where some interface counters are inaccurate during long-term snake testing on CX864E-N.
[VLAN] Fix the issue where broadcast flooding is affected after disabling unknown multicast flooding.

[VXLAN] Prevent VXLAN tunnel interfaces from trapping ARP, ND, and other protocol packets to protect the CPU.

# 4 Known Issues List

[ACL]Due to ACL resource adjustments, configuring IPv6-type ingress ACL tables on CX532P-N, CX564P-N, CX664D-N, and CX732Q-N is ineffective in this version. This issue will be fixed in the next version.