

BXOS 4.3R2 Software Release Notes

Release 4.3
August 2011

These release notes accompany Release 4.3R2 of the BXOS software. They briefly describe the new features, and identify the outstanding issues. The BXOS software runs on the BX7000 Multi-Access Gateway.

Release 4.3 Features

The following are a list of features for the BX7000 Multi-Access Gateway and the BXOS Release 4.3. Following the description is the title of the manual to consult for further information. For a complete list of manuals, see Table 2 on page 19.

Interfaces

- BXOS supports the following OAM functions (Y.1731) on the physical and logical interfaces:
 - OAM functions for fault management:
 - > Ethernet Alarm Indication Signal (ETH-AIS)
 - > Ethernet Remote Defect Indication (ETH-RDI)
 - OAM functions for performance management:
 - > Ethernet Delay Measurement (ETH-DM)
 - > Ethernet Loss measurement (ETH-LM)
- Enhancement for Layer 2 switching functionality:
 - Destination MAC address filtering — BX7000 supports selective filtering of packets based on the destination MAC address on a logical interface or a physical interface level. In the BXOS 4.2R1 release, if the destination MAC address filter is enabled, the interface can be configured to drop the packets to a specific destination.
 - > DMAC address filtering support is added only for bridging interfaces.
 - > DMAC filtering feature supports the MAC address range configuration.
 - > DMAC filter for a particular destination address at the bridge domain level needs the DMAC filter rule configuration on all bridge domain member interfaces.
 - Disable MAC learning — BX7000 supports the disable MAC learning feature on a bridged Ethernet interface. The Ethernet interface can be a physical interface or a logical interface. In the BXOS 4.2R1 release, if MAC learning is disabled on a bridged interface, the packets received on that interface will not undergo the MAC learning process. The other interfaces on the same bridge domain will continue the MAC learning based on the configuration. By default, MAC learning is enabled on both the physical and the logical interfaces. Through configuration you can disable the MAC learning feature on both the physical and logical interfaces.
 - > Disable MAC learning feature is supported at bridge domain level. In this mode of configuration all the packets received on the bridge domain member ports are flooded across all the member ports except the port which received the packet.

- > Disable MAC learning feature is supported at bridge domain member interface level. In this mode of configuration, MAC learning is disabled for the packets which are received on the configured member interface. For packets received on all other member ports MAC learning is enabled.
- Q-in-Q tunneling allows service providers on Ethernet access networks to extend a Layer 2 Ethernet connection between two customer sites. Using Q-in-Q tunneling, providers can also segregate or bundle customer traffic into fewer VLANs or different VLANs by adding another layer of 802.1Q tags. Q-in-Q tunneling is useful when customers have overlapping VLAN IDs, because the customer's 802.1Q VLAN tags are prepended by the service provider VLAN (S-VLAN) tag. In BX7000, the Q-in-Q feature is implemented with the following aspects:
 - Q-in-Q feature is added for both tagged and untagged packets.
 - The S-VLAN tag is inserted before the MAC learning process when forwarding the packets from the customer network port to the service provider network port.
 - > If the packet gets switched from one customer network port to the other customer network port of the same bridge domain, the S-TAG is removed and sent only with the C-TAG or sent untagged. S-TAG contains the service provider VLAN ID and transport ID (S-TPID). C-TAG contains the customer VLAN ID and transport ID (C-TPID).
 - The S-VLAN tag is removed when forwarding the packets from the service provider network port to the customer network port.
 - Each bridge domain is associated with at least one S-VLAN. The IRB interface associated with the bridge domain is part of the configured S-VLAN and not part of the C-VLAN ID range of the access member interface.
 - > The BX7000 gateway accepts a configured range of C-VLAN ID packets to a bridge domain from the customer network port. The packets get forwarded with the S-TAG to the service provider network port.
 - MAC learning within the bridge domain is based on the S-VLAN ID and the source MAC address.



Note: The Q-in-Q feature is supported for a bridge domain containing a combination of VLAN-aware members and VLAN-unaware members.

Quality of Service

- BX7000 supports the VLAN P bit remarking feature. The P bits of VLAN packets are remarked based on the incoming differentiated services code point (DSCP) value. You can globally define the DSCP value to a VLAN priority mapping rule. These rules can then be associated with VLAN subinterfaces during subinterface creation or modification. The packets egressing these subinterfaces are marked with the VLAN priority value as specified in the mapping rule. If you have not specified mapping for an incoming DSCP value, then the egress packet is marked with the priority specified for that particular VLAN subinterface.



Note: If any DSCP remapping BA classifier rule is associated for particular traffic, then the VLAN P bit marking will be applied based on the remapped DSCP value.

For Ethernet pseudowire, the rules can be associated to the pseudowire interface during the creation of the interface. If the ingress packet from the attachment circuit has a VLAN header, then the pseudowire MPLS tunnel header is remarked based on the VLAN header's 802.1p bit. If the attachment circuit receives a non-VLAN packet, a default user-configured priority bit is set in the MPLS tunnel header.

Physical Port Level Shaping—You can also configure a shaping rate for a physical interface to restrict the egress traffic on a per-port basis. After applying the DSCP-based shaping or scheduling profile, the port-level shaper restricts the traffic based on the physical port-level shaping rate. The non-compliance packets are dropped at the egress port level. The port-level shaper exists along with the existing DSCP-based shaper or scheduling functionality.

For more information about 802.1P bit remarking, see the *BXOS Configuration Guide*.

Routing BXOS 4.3 implements support for BGP. The Border Gateway Protocol (BGP) is an exterior gateway protocol (EGP) used primarily to establish point-to-point connections and transmit data between peer autonomous systems (ASs).

- BX7000 supports I-BGP/ E-BGP sessions.
- BGP will be running over IP interfaces (Gige or VLAN interfaces).
- BGP supports route-filter policy configurations.
- BXOS must run either OSPF (while being used subtended) or BGP (when being the only box connecting to the IP VPN cloud).

Outstanding Issues

- The gateway does not support moving a member link from one MLPPP bundle to another bundle. As a workaround, delete the member link from the source bundle and reconfigure the link as a new member link in the target bundle. [PR/275941]
- The gateway does not support tagged and untagged operations on a single Ethernet interface simultaneously. To configure an Ethernet interface to use tagged mode, you must create at least one subinterface before you associate the Ethernet interface with an IP address. If you associate an Ethernet interface with an IP address before you create a subinterface, the Ethernet interface functions in untagged mode and you cannot create subinterfaces. As a workaround, delete the IP address associated with the Ethernet interface and create VLAN subinterfaces. This interface works only in tagged mode after this operation. [PR/282223] [PR/282225]
- The BXOS software does not support IP fragmentation over PPP or MLPPP interfaces. As a workaround, specify higher maximum transmit unit (MTU) size of packets on the PPP interface so that the packets are not fragmented. [PR/282469]
- If you configure a T1 or E1 interface, issue the **show interface *interface-name*** command before sending traffic to that interface. The **rx_err_hec** error counter under traffic statistics increments and displays a non-zero value. As a workaround, note down the initial header error control (HEC) error value after configuring the interface and subtract the initial value from subsequent statistics values to obtain an actual count of cells with HEC errors. [PR/311480]
- jnxPwEnetVlanMode table does not work for Ethernet PWE through Gigabit Ethernet backhaul. The DUT does not display the proper VLAN mode when the Ethernet PWE is configured with the egress options of None, Strip, and Replace. Instead of changeVlan, removeVlan is displayed. As a workaround, IM-DPM structures are used instead of DCL. [PR/314788]
- In the absence of a time-zone command, the system time should be set to the local time. There is no workaround. [PR/314980]
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- The IPv4 fragmentation feature does not work. As a result, packets that are greater than the MTU of the outgoing Ethernet interface are dropped. There is no workaround. [PR/400112]
- The BXOS CLI does not support delete commands to clear the SNMP name and description. There is no workaround. [PR/420248]
- The **show snmp** command does not display the system name configured for SNMP. As a workaround, use the **show configuration** command to view the configured system name. [PR/421075]
- When you configure ATM pseudowires, pass traffic, and delete the MPLS protocol on an Ethernet interface, the tunnels and pseudowires came down but ATM pseudowire frames are switched. There is no workaround. [PR/423215]
- The CLI does not support deleting interfaces that have subinterfaces with the IMA link. As a workaround, delete the subinterfaces first and then delete the interface. [PR/436616]
- The gateway does not support the loopback address configuration for ATM OAM. There is no workaround. [PR/442888]
- Configuration related to new features must be removed before downgrading to older images (which do not support the new feature). When new features are implemented, new commands are introduced in the CLI. If you upgrade to a newer image, configure new features, save the configuration, and reboot with the image of the previous release, the CLI fails to apply the configurations properly. If you face any issues with the image of the new release, you must remove the new configuration before downgrading to the image of the previous release. [PR/545847]
- The **show interface** and **show config** commands do not display similar IRB- related information. [PR/408335]
- **Show database** output for CFM configuration does not contain the following details [PR/551690]:
 - Last flapped
 - Continuity
 - Admin enable duration
 - oper-down duration
- **Ping Ethernet** continues to work even when the remote MEP is down. [PR/551718]
- SNMP query on a bridge MAC table (**dot1dTpFdbTable**) does not work when there are 32,000 MAC entries. There is no workaround. [PR/551875]
- Ethernet pseudowire configuration cannot be edited without first deleting it. [PR/554492]
- The **Clear counter** command is not available for the frame delay and frame loss statistics. [PR/557022]
- Commit takes a long time if BX7000 is configured with 255 remote MEPs. As a workaround, during the initial configuration, disable snmp-trap, alarms, and syslog in the profile configuration. After the configuration of all the remote MEPs, enable the snmp-trap, alarms, and syslog. [PR/558834]
- In BX7000, BGP state changes from established to idle or active only after a long time, when admin disabled the BGP interface. [PR/559106]
- BX7000 redistributes all BGP routes learned from one peer to the other peer irrespective of the creation of the redistribution policy. As a workaround, add another route filter to reject each IBGP route from getting exported to the other peer. [PR/560287]

- Frame delay statistics are not displaying correct values when RMEP is configured in 1DM mode. [PR/561322]
- BXOS displays metric as 100 instead of 0 for EBGp route when it is injected with MED as 0. As BX displays the preference and metric in the same counter, it is not clear whether BX handles MED-0 as a valid configuration or just ignores the MED and displays the default preference as 100 for this route. BX must treat MED-0 as a valid value and this route be given higher preference than other similar routes with higher MED value. [PR/562331]
- BX7000 treats the initial configuration as one flap. [PR/564895]
- Deletion of the OAM configuration fails if two remote MEPs are configured with the same MAC address. [PR/565471]
- Sending a third-party next hop in BGP is not supported for the BXOS Release 4,2R2. [PR/565520]
- Auto-negotiation fails for a Gigabit Ethernet interface when the speed is explicitly configured and deleted. Even when auto-negotiation is enabled, Gigabit Ethernet fails to sync and the link stays down. The only way to recover is to delete and re-create the Gigabit Ethernet interface or to reboot the box. [PR/578152]
- By default IPv4 traffic routing over IRB interface for Q-in-Q enabled UNI interface happens only for packets with Ether type 0x88a8. If the user wants to route packets with Ether type 0x8100, the global S-VLAN type has to be modified in BX to 0x8100. [PR/580704]
- Wander test fails for the clock card in the CES mode. [PR/583536]
- Remarking functionality does not work for the MF classifier with a match-action policer. Remarking the DSCP value of **exceeding-action** for the ingress policer fails. [PR/577547]
- The egress packet rate varies by 6 to 7% more from the configured physical port-level shaper value for the lower-sized packets. [PR/577817]
- OSPF over PPP interface(over E1) is not active after the E1 link flaps. [PR /574988]

Limitations

- The gateway does not support configuring cell delay variance tolerance (CDVT) for ATM VCs. [PR/278451]
- BXOS does not permit Address Resolution Protocol (ARP) entries to age out, but keeps them alive. Prior to aging out, the host operating system sends out proactive ARP requests and keeps the entries alive. [PR/279807]
- The gateway does not support jumbo frames. The maximum Ethernet MTU support is 1500 bytes. [PR/287113]
- When you reboot the gateway after configuring and saving 200 pseudowires, the gateway takes approximately 45 minutes to restore the configurations. [PR/289197]
- Help usage issues in the CLI. [PR/304308]
- Irrespective of the tunnel status, IP packets are getting routed for IP-MPLS forwarding. [PR/312495]
- Traffic is not being switched for ATM AAL5 SDU/PDU PWEs when associated with a VPI interface. [PR/314789]
- Needs support for clearing the following counter statistics IP, ICMP, TCP, and UDP. [PR/395368]
- Need a provision to change the password of CLI and NETCONF users from their respective logins. [PR/398825]

- CLI does not display an error when configuring invalid values for watchdog parameters. [PR/399444]
- The traffic scheduler does not schedule traffic correctly if the configured weights are not multiples of ten. [PR/408434]
- The gateway does not support statistics for shaper and scheduler. [PR/415309]
- Tx and Rx counter values under the IMA subinterface associated with the AAL5 SDU PW is incorrect. [PR/429976]
- Parameters for an already created L2C cannot be modified. [PR/436604]
- The CLI displays an error when setting a trap in the SNMP protocol, but is configured successfully. [PR/438166]
- The fibre optic cable mechanical envelope recommendation is between 55 mm and 75 mm. [PR/440245]
- Timing solution limitations to be tracked/documented in user guides. [PR/442814]
- When a P1 CLK SRC PTP fails, clock switchover does not occur to P2 CLK SRC 10 MHz in BX7000 with revertive mode enabled. [PR/448906]
- When a Gigabit Ethernet, VLAN, MLPPP, or PPP interface that is getting tracked under VRRP is deleted, the system removes the entries associated with the interface from VRRP interface tracking list silently. This is a BX7000 limitation. [PR/452273]
- Need to document the root password recovery procedure. [PR/454731]
- Need to revisit the error message while configuring the scheduler. [PR/459306]
- User is unaware of the PWE setup failure if it is a configuration issue rather than a CLI issue. [PR/462354]
- Sending host-bound control traffic beyond 1.5 Mbps makes the DUT unstable and it starts rebooting. [PR/476217]
- The burst-length parameter in the VBR policer configuration must be an integral multiple of the **pcr** specified. Not adhering to this recommendation will still result in a working configuration, but there will be a reduced quantum of tagged cells on the ATM traffic flow on which this policer gets applied. [PR/461028]
- BX7000 does not support dynamic addition of shaping profiles to ATM virtual circuits. A shaping profile can be attached to a VC only at the time of VC creation, or before the VC is associated with a cross-connect or a pseudowire, but not after. However, policing profiles can be dynamically added. [PR/462417]
- In the PTP multicast mode, the BX operates at an optimal message rate of 1/2 second for the delay request or response mechanism. The PTP multicast (BX directly connected to GM-Semtech) passes only after 1.5 hrs from the phase locked state for both T1 and E1 modes. This is the stabilization period for multicast mode of operation. [PR/495890]
- Any SNMP query to BX7000 should have minimum of 5 seconds as timeout to get a valid response. [PR/500398]
- When a transit link transitions to a stub and the router is a default router, traffic loss up to a maximum of 0.5 seconds is observed. [PR/511582]
- **Local ID** is not displayed as part of the **show bgp neighbor** command. This is a BXOS 4.2R2 limitation. [PR/555936]

- BX7000 does not support the display of all the prefixes received from a BGP neighbor. This is a BX7000 limitation. It displays the prefixes accepted by a policy and also the active prefixes. [PR/555952]
- It takes approximately one minute for the BXOS to change the BGP status to the idle state from the established state when the Gigabit Ethernet link is disabled by the administrator. This is a BXOS 4.2R2 limitation. [PR/556748-2]
- Packet drop is observed when the packets are sent at 20% of the line rate. [PR/580627]

Resolved Issues

- The gateway does not support moving a standalone PPP link into a multilink PPP bundle. As a workaround, delete the standalone PPP link and reconfigure it as a member link in the bundle. The existing net_device of a ppp link cannot be added to a MLPPP bundle as the bundle is a separate net_device. [PR/275939]
- You cannot remove the primary link you created on the gateway when there are other links present in the bundle. As a workaround, remove all other links created in the bundle before removing the primary link. BX7000 does not support removing the first created link (also known as the primary link) while there are other links present in the bundle. [PR/275942]
- The gateway does not have a provision to clear alarms generated by the power supply unit (PSU). As a workaround, use the **delete alarms power** command at the **[edit chassis]** hierarchy level to clear the PSU related alarm. [PR/280393]
- The **show interface** command displays output only for configured interfaces. As a workaround, use the **show ports** command to display all ports in the gateway. [PR/285104: This issue has been resolved.]
- The gateway always sends IS-IS hellos packets padded to the MTU size. The BXOS software does not support disabling IS-IS hello padding. As a workaround, configure similar MTU sizes between IS-IS peers. [PR/285794]
- The gateway does not support configuring interface alarms for a specific interface. As a workaround, use the **set alarm** command at the **[edit chassis]** hierarchy level to configure alarms on T1, E1, or Ethernet interfaces. [PR/287554]
- The gateway does not support zero touch configuration from the JUNOScope application. As a workaround, use CLI to configure the zero touch mode. [PR/287964]
- The IP addresses for PPP interfaces are not dynamically negotiated with the peer. As a workaround, configure IP addresses for PPP interfaces. [PR/287982]
- After configuring the LDP protocol, if you issue the **show ldp overview** command, it does not display LDP configuration details. As a workaround, use the **show protocol ldp** command which displays LDP configuration details. [PR/293862]
- The **show route** command takes approximately 5 seconds to display the output if more than 100 routes are configured on the gateway. [PR/297833]
- In BXOS, path configuration is inside the LSPs. Therefore, you cannot use a single path configuration for multiple LSPs. As a workaround, configure a path for each LSP. [PR/301511]
- In BXOS, VLAN subinterfaces do not support per-VLAN interface statistics. Any traffic that is forwarded through VLAN interfaces is not displayed as part of the statistics. As a workaround, use the **show interface** command to display output of traffic from a host. [PR/303313]

- When traffic with packet size of 1500 bytes is sent at a speed of over 750 Mbps or traffic with packet size of 64 bytes is sent at a speed of over 137 Mbps to the gateway, the packets are dropped. The transmit-side packet scheduler does not work when the incoming unidirectional traffic rate is very high. As a workaround, keep the incoming packet rate below 750 Mbps for 1500 byte-traffic or below 137 Mbps for 64-byte traffic to view the effects of packet scheduling. [PR/310273] [PR/453094] [PR/454145]
- If a bypass tunnel is created for a peer loopback address, the backup tunnel does not come up. If the bypass tunnel is created for a peer loopback address where a primary tunnel also ends, then the backup tunnel is not created over that bypass tunnel. As a workaround, configure the bypass tunnel to the peer's physical interface address (instead of the loopback address). [PR/312644]
- When you configure a SAToP pseudowire with circuit emulation source (CES) as clock source on the T1 interface, the Valid8 test tool connected to the gateway fails to detect the T1 link when it is in UP state and the pseudowire does not send packets from TDM to PSN direction. As a workaround, use the TDM stream analyzers such as GL TDM analyzer or Advanced Network Tester (ANT-20) to perform the SAToP pseudowire testing. [PR/315003: This issue has been resolved.]
- The global BFD protocol configuration that is optional is used for modifying the default BFD parameters. Once you have configured the global BFD, you cannot delete that configuration. As a workaround, set the global BFD parameters to their default values. [PR/302179]
- Dynamic changes to a loopback address are not advertised to the peer. As a workaround, disable OSPF, change the loopback IP address, and then enable OSPF. [PR/387049]
- When more than 5 IS-IS sessions are configured on VLAN interfaces with a default hello-interval of 3 seconds and hello-multiplier of 10 seconds; ISIS sessions will flap and cause the BX7000 to crash. As a workaround, configure the ISIS hello-interval to 15 seconds and the hello-multiplier to 5 seconds. [PR/387294]
- The CLI does not support a **delete** command to delete the SNMP protocol. There is no workaround. [PR/388295: This issue has been resolved.]
- The CLI does not support deleting the OAM configured on a TDM interface. As a workaround, delete the subinterface and reconfigure the same with new OAM configuration. [PR/388452: This issue has been resolved.]
- During the BXOS image upgrade, when you issue the **request system reboot** command from the serial console of the gateway, the image upgrade process stops. As a workaround, do not reboot the gateway during the image upgrade. [PR/390219]
- When you create or delete GRE or RSVP tunnel, the operating system does not free the allocated memory completely. [PR/392833] [PR/392835; This issue has been resolved.]
- When you create and delete multiple BA or MF classifiers, the gateway fails to free the allocated memory completely. [PR/398404: This issue has been resolved.]
- For AAL5 SDU/PDU PWEs can be created with with following criteria:
 - PWE MTU must be less than 12 Bytes that of Backhaul interface MTU incase of PW over RSVP tunnel.
 - PWE MTU must be less than GRE tunnel MTU incase of PW over GRE tunnel. [PR/ 400194]
- If you configure the loopback address in a strict path in the RSVP tunnel configuration, the tunnel does not come up. As a workaround use physical ip address in strict path. [PR/402069]
- The **show arp** command displays wrong interface name for VLAN interfaces if the unit ID and VLAN ID are different. This does not have impact on traffic or system functioning. There is no workaround. [PR/402329: This issue has been resolved.]

- Packet scheduling does not work properly at full line-rate traffic on an Ethernet interface. At full 1-Gigabit traffic comprised of 1500-byte packets, the system sends out packets from low priority queues interleaved between high priority traffic. There is no workaround. [PR/403717: This issue has been resolved.]
- When the OSPF protocol is up on the PPP interface, PPP interface deletion fails. As a workaround, disable the OSPF protocol on the PPP interface and then delete the PPP interface. [PR/404259]
- If you close the current SSH session when an image upgrade is in progress, you cannot upgrade the image by re-opening a new SSH session. As a workaround, do not terminate the SSH session when an image upgrade is in progress. You can also reboot the gateway and open an SSH session to upgrade the image. [PR/405319]
- When two gateways are connected through a VLAN subinterface, traffic is passed even if the admin state of the interface is down on one of the gateways. [PR/404654]
- You cannot delete or disable an existing segment or e2e-endpoint in ATM OAM configuration over an ATM interface. As a workaround, delete and reconfigure the ATM interface with required ATM OAM configuration. [PR/407982]
- The **show ldp neighbor** command displays only one neighbor. There is no workaround. [PR/414980: This issue has been resolved.]
- While configuring an interface or protocol if the **admin-state** command is not the last command, the interface or protocol is not configured properly. As a workaround, delete and reconfigure the interface or protocol with the **admin-state** command as the last command in the command set. [PR/416045]
- After setting the OSPF interface type to point-to-point, if you disable and enable the Ethernet interface, the OSPF interface type of that interface goes back to LAN interface. As a workaround, disable the Ethernet interface and configure it to point-to-point interface. [PR/417048: This issue has been resolved.]
- Applying configuration from zero touch reboots the gateway. There is no workaround. [PR/417906: This issue has been resolved.]
- If you delete all ISO addresses configured on the gateway when IS-IS is enabled, the gateway causes inconsistent protocol behavior. As a workaround, retain at least one ISO address configured on the gateway. [PR/418230: This issue has been resolved.]
- The RMON configuration does not check for case sensitivity of the alarm name. As a workaround, enter the RMON object name in a uppercase or lowercase. [PR/419457]
- The gateway reboots if you continuously perform operations such as creating or deleting the interfaces, and enabling or disabling protocols in random. As a workaround, perform the operations in a proper sequence. [PR/419466: This issue has been resolved.]
- If you configure two alarm values for RMON in a single commit, the CLI stops responding. As a workaround, configure the RMON alarm values separately. [PR/419480: This issue has been resolved.]
- If you change the loopback IP when protocols are enabled, the gateway reboots. As a workaround, disable all protocols before changing the loopback IP. [PR/419577: This issue has been resolved.]
- When OSPF area parameters are configured with custom values, if you delete the area and reconfigure it, the OSPF area takes the old custom values, not the default values. As a workaround, delete the OSPF protocol and reconfigure it or configure the OSPF area parameters. [PR/419581]

- The BXOS software does not support a separate CLI command to delete RMON alarms and events. There is no workaround. [PR/419800: This issue has been resolved.]
- If you reconfigure the framer mode of a TDM interface from T1 mode to E1 mode in another parallel SSH session while PPP configuration is in progress, the DPM module stops responding. As a workaround, change the framer mode of the TDM interface from the same CLI session. [PR/420654: This issue has been resolved.]
- When a bypass tunnel is being used as a backup tunnel to carry the traffic, deleting the bypass tunnel priority brings down the tunnel. As a workaround, delete and configure the bypass tunnel when primary tunnel is carrying traffic. [PR/420967: This issue has been resolved.]
- When you create an ATM traffic profile with alpha-numeric naming convention and associate the profile to an ATM interface, the BXOS software considers only the numeric convention as input. As a workaround, use only the numeric convention for naming the ATM traffic profile so that the profile is associated to the ATM interface. [PR/421097] [PR/421239]
- When two E1 interfaces are associated with an MLPPP bundle, if a secondary link comes to operational state before the primary link, the primary link is not operationally up. There is no workaround. [PR/421496: This issue has been resolved.]
- While configuring a TDM link to be part of an IMA group, if you supply an existing link-id parameter, the interface configuration fails. However, internally it creates the interface with default trans encapsulation. When you attempt to reconfigure the interface with a correct link-id, the command still fails. As a workaround, delete and reconfigure the existing TDM interface, and then configure the link-id. [PR/421939]
- When you select a MAC address as the engine ID, save the configuration, and then reboot the gateway, the system configuration does not persist. As a workaround, configure the engine ID using the BXOS CLI. [PR/423295: This issue has been resolved.]
- If you configure more than 43 MF classifiers on the gateway, the configuration fails. As a workaround, configure fewer than 43 MF classifiers on the gateway. [PR/424024: This issue has been resolved.]
- The SNMP Get, GetNext, and walk queries do not return values for the MPLS PWE3 MIB table. There is no workaround. [PR/424210: This issue has been resolved.]
- When you delete an SNMPv3 view with more than 30 characters, the view is not deleted, and the CLI terminates. As a workaround, configure the SNMPv3 view name with less than 30 characters. [PR/424489: This issue has been resolved.]
- When you configure SNMPv3 with username, security name, and group name greater than 30 characters, the configuration does not exist after reboot. As a workaround, configure SNMPv3 with a username, security name, and group name less than or equal to 30 characters. [PR/424529: This issue has been resolved.]
- If you perform both operations such as enabling and disabling a Gigabit Ethernet interface in a single commit followed by deleting that interface, the deletion fails. As a workaround, either enable or disable the Gigabit Ethernet interface in a single commit. [PR/425264: This issue has been resolved.]
- In an IS-IS configuration, if you delete the passive mode, the IS-IS adjacency does not come up. As a workaround, delete the IS-IS configuration and reconfigure it. [PR/425995: This issue has been resolved.]
- When OSPF BFD is up, if the gateway loopback IP is deleted and configured again the OSPF sessions do not come up. As a workaround, do not delete the loopback IP when OSPF BFD is running. [PR/426770]

- During physical link up state and admin down state, the Ethernet traffic passes over an admin-disabled Gigabit Ethernet interface. There is no workaround. [PR/426816: This issue has been resolved.]
- The CLI supports modifying the SNMPv3 trap and inform configurations, but does not support commands to delete the configurations. As a workaround, create a new target address for the SNMPv3 trap and inform. [PR/428706]
- If you delete the ATM-IMA traffic profile after deleting the associated logical interface, the ATM-IMA traffic profile deletion fails. As a workaround, delete the associated traffic profile before deleting the logical interface. [PR/428918]
- While configuring the label-switched path, if the **from-address** value exceeds 35 characters in length, the CLI terminates. This does not cause traffic loss or reboot the gateway. You can open another CLI session and work. As a workaround, enter a valid IP address. [PR/429530: This issue has been resolved.]
- After configuring SNMPv3 inform, the snmpv3 walk/get/getnext requests fail. As a workaround, use SNMPv1 and SNMPv2c queries. [PR/429537: This issue has been resolved.]
- If you configure the subinterface before you associate E1 interfaces with an IMA group, the gateway stops. As a workaround, associate E1 interfaces with the IMA group and then configure subinterfaces. [PR/430456]
- When RSVP protected tunnels are up, if you disable the RSVP protocol and then delete the MPLS protocol, the CLI stops responding. As a workaround, do not disable the RSVP protocol when the RSVP protected tunnels are up. [PR/430643: This issue has been resolved.]
- When traffic is passed, the gateway does not support changing the VPI and VCI values for an ATM subinterface. As a workaround, delete all the associated ATM cross-connects or ATM pseudowires before changing the VPI and VCI for the ATM subinterface. [PR/430649]
- If you reboot the gateway after configuring more than 100 protected tunnels, the configuration fails. As a workaround, configure less than 100 protected tunnels. [PR/430785]
- When you perform the SNMP walk for 300 MIB objects with timeout value set to less than 2 minutes in the MIB browser, the query times out. As a workaround, increase the timeout value for MIB objects in the MIB browser. [PR/432292: This issue has been resolved.]
- When LDP targeted session is up, if you change the **hold-time** and **keepalive-timeout** values, the LDP targeted session goes down and comes back up with newly configured values. As a workaround, do not change the **hold-time** and **keepalive-timeout** values when the LDP targeted session is up. [PR/432939]
- Ping over an MLPPP interface works even if the primary link alone is operational. The status of other member links does not have any impact when the primary link is operational. There is no workaround. [PR/432994: This issue has been resolved.]
- If you delete all SNMP community names configured on the gateway, you cannot access the gateway through an SNMP MIB browser. The workaround is not to delete all community names configuration from the box. The user can add community name and then delete the existing community name. [PR/436684]
- If the primary link, which is the first associated link to the MLPPP bundle, goes down, the entire MLPPP bundle goes down. This affects the traffic flow. [PR/436890]
- If you create a VLAN interface and associate a static route to that interface, traffic passes through the VLAN interface. However, when you delete the VLAN subinterface and recreate it, the traffic passing over that interface is dropped. [PR/437752: This issue has been resolved.]

- The gateway does not support ATM OAM continuity check functionality. [PR/439695: This issue has been resolved.]
- This release includes support for root, CLI, and NETCONF users. All user commands on the system can be executed through one or more of these user IDs. [PR/441036: This issue has been resolved.]
- When ARP or ICMP messages are passed over the Gigabit Ethernet interface at a speed over 30 Mbps, the gateway reboots. There is no workaround. [PR/438944: This issue has been resolved.]
- If you configure a SAToP pseudowire with a payload size not in multiples of 32, the pseudowire configuration fails. As a workaround, configure the SAToP pseudowire over the T1 or E1 interface with a payload size in multiples of 32. [PR/446128: This issue has been resolved.]
- If the system is in a continuous loop state, you can recover the system but you will lose the existing configuration. [PR/446191]

To recover the system from a continuous loop:

1. Reboot the system.
The prompt displays:
Applying configuration. Press Ctrl+C to exit....
2. Press Ctrl+C to interrupt the startup process.
The prompt displays:
BX7000 login:
3. Enter the login username and password as root.
BX7000 login: **root**
Password:
The prompt displays:
root@BX7000#
4. Delete the `startup.cfg` file using the `rm` command:
root@BX7000# **rm /config/startup.cfg**
5. Reboot the system using the following command:
root@BX7000# **reboot**
The system reboots after several seconds and the existing configuration is lost.
6. After the system reboot, access the gateway using the root account or CLI user privileges.
To log in as a root user, type the login username and password as root.
BX7000 login: **root**
Password:
The prompt displays:
root@BX7000
or
To log in as a CLI user, type the login username and password as cli.
BX7000 login: **cli**
Password:
The prompt displays:
cli@BX7000>
7. Enter configuration mode using the following command:
cli@BX7000> **con**
8. Configure the gateway from the following prompt:
cli@BX7000#

To set the system to the factory default:

1. Reboot the system.
The prompt displays:
Press ESC Key to enter into Field diagnostics message.
 2. Press the Esc key.
The prompt displays:
Enter the password:
 3. Enter the password as GetmeIn@7.
Enter the password:
The system displays the following Boot Menu options:
 1. Diagnostics Mode
 2. Setup Mode
 3. Exit and Continue
 Enter the menu option number and press Enter key:
 4. Enter the menu option number as 2 for the Setup Mode:
Enter the menu option number and press Enter key: **2**
The system enters into the SIDX setup mode.
SIDX>
 5. Set the system to the factory default using the `factorydefault` command:
SIDX> **factorydefault**
The system requires a password to execute the command.
 6. Enter the password as `syrah` to set the system to the factory default:
Enter the password:
 7. The system reboots with the default factory configuration.
 8. After system reboot, access the gateway using the root account or CLI user privileges.
 9. Enter configuration mode using the following command:
cli@BX7000> **con**
 10. Configure the gateway from the following prompt:
cli@BX7000#
For information about restoring the configuration file, see the *BXOS Configuration Guide*.
- The BXOS software does not support a separate command to view the static route configuration. As a workaround, use the **show configuration** command to view all the static routes configured on the gateway. [PR/446239]
 - In FRR set up with SAToP pseudowire, the primary and bypass tunnel statistics are not updated after the traffic switches back to the bypass tunnel interface. [PR/446941]
 - BXOS OAM implementation does not support oam event stats for individual events. It does provide the xmit/recv stats for collective events using the **show oam-ethernet link-fault-management detail** command. [PR447141]
- ```
OAM receive statistics:
Information 2754, Event: 0,Variable request: 0,Variable response: 0
Loopback control: 0,Organization specific:0
OAM transmit statistics:
Information 2754, Event: 0,Variable request: 0,Variable response: 0
Loopback control: 0, Organization specific: 0
```
- When the DCL process crashes, the DCL process logs are not copied to the flash. There is no workaround. [PR/447922: This issue has been resolved.]

- If both OAM and data cells are sent on the same ATM cross-connection, the data cells are passed but the OAM cells are dropped. There is no workaround. [PR/449028: This issue has been resolved.]
- When you remove the policer profile from an ATM interface, the policer action still persists on that interface. The traffic flowing on that interface is still being policed. [PR/450403]
- BXOS supports an Ethernet shape rate from 256 kbps to 6250 kbps. When applying shaper with the shape rate below 256 kbps to an Ethernet scheduler, an error message "Error: Failed to configure scheduler for interface 'ge-1/0/2' - PQ block Channel modify failed" displays. As a workaround, apply a shape rate greater than 256 kbps to the Ethernet scheduler. [PR/452415]
- When an ATM or ATM IMA interface is attached to a pseudowire, the ATM traffic profile cannot be associated to that interface and an error message **Error: Configuration failed for 'im-ima1.0' - (null)** displays. As a workaround, delete the pseudowire before associating the ATM traffic profile to the ATM interface. [PR/454835]
- While configuring the ML-PPP interface with the given sequence, the family inet address is not being updated or configured.

**Issue sequence:**

```
edit interface ml-ppp
edit unit 0 set admin-state en
set family inet address 10.10.10.10/24
set admin-state en
to
commit
```

Either of the below sequences can be used to avoid the issue

```
edit interface ml-ppp edit unit 0
set family inet address 10.10.10.10/24
set admin-state en
to
commit
```

```
edit interface ml-ppp
edit unit 0 set admin-state en
set family inet address 10.10.10.10/24
to
commit
```

As a workaround, do not use the given sequence of commands for configuring the ML-PPP interface. Use the above sequences.[PR/461300]

- ifXtable in RFC 2863 MIB (IF-MIB) is not working in BX7000. IfXTable handler is updated to handle counters for all the existing interface types. VLAN statistics are updated to send zeros instead of junk value. [PR/463519]
- When changing the Syslog priority, the message "BITS Interrupt Notified" will appear frequently on the console. [PR/465055: This issue is resolved.]
- The old log messages are not saved in static storage if the gateway is active for more than 48 hours. As a workaround, log in to the shell prompt as a root user and copy the required files to a remote FTP server using the FTP client application from the gateway. [PR/436390]
- In the ATM traffic profile configuration, the default value for the cell discard mode is disabled. The CLI output does not display the value if you did not configure the cell discard mode explicitly. As a workaround, configure the cell discard mode value manually. [PR/444711]

- In a BX1 to BX2 setup, the T1 interface does not come up when the clock source is configured as line without any clock card configurations. [PR/451538]
- BX7000 does not support the concept of minimum-active-links in MLPPP bundle, though it accepts a parameter for this as part of configuration. [PR/468101: This issue is resolved.]
- When the **show rsvp session** command is executed, the CLI hangs and does not return to the CLI prompt. As a workaround, press CTRL+C and wait for the CLI prompt. [PR/468851]
- In a BX-BX-M10 VRRP setup, traffic loss is seen for approximately 25 seconds when the BX7000 acting as VRRP MASTER(DUT) comes back into service after reboot. When BX1 configured as VRRP master goes down, BX2 becomes the master. After the BX1 comes up again, it takes approximately 25 seconds for OSPF convergence and hence the upstream traffic loss is observed. As a workaround, deny VRRP preempt by configuring no-preempt command in the VRRP master. As a result, BX1 will not take back the master role after reboot. You can enable preempt once OSPF gets converged. [PR/511539]
- You cannot configure the Ethernet OAM and Y1731 options over the attachment circuit. [PR/542316]
- Modifying an interface IP address fails when a new IP address is set and the old IP address is deleted in the same commit. As a workaround, set only the new IP address. Do not explicitly delete the old IP address. [PR/551665]
- BX7000 crashes after 4000 iterations of a command sequence. [PR/559344: This issue is resolved.]
- When you create and delete 10 BGP groups for long hours, approximately 24 hrs, BXOS runs out of disk space. [PR/560156]
- **Term** action is not supported if **term** does not have any route filter or prefix list. As a workaround, use **policy** action. [PR/560585]
- After the upgrade of the peer to a new image, BX7000 crashes and reboots when the upgraded peer BX7000 router is connected over the PPP link. [PR/561622]
- **No space left on device** error message is displayed when a 10-prefix list is created and deleted for long hours, for example approximately 20 hours. [PR/563320: This issue is resolved.]
- There is no support to obtain a nonconformance packet counter at the BA classifier level. [PR/583240; This issue is resolved.]
- Clock card messages [**lock\_mutex**] are observed even when there is no clock-card module inserted. [PR/584273; This issue is resolved.]
- **jnxPwAtmTable** and **jnxPwTDMTable** do not return any statistics for static PWEs. [PR 474070: This issue is resolved.]
- **SNMPwalk for jnxPwEntry table** returns operational status of a few PWEs as DOWN even though the PWE status is actually UP. [PR/ 475686: This issue is resolved.]
- **SNMP walk for dsx1IntervalTable and dsx1TotalTable** does not return any statistics. [PR /481464 : This issue is resolved.]
- **nxPwMplsLocalLdpID** and **jnxPwMplsPeerLdpID** MIBS do not return proper values. [PR /482225; This issue is resolved.]
- When a VLAN interface is created in any sequence other the one mentioned below, the VLAN is not created in the BX7000 Gateway. Create the VLAN interface in the following sequence:

```
edit interface ge-1/0/1
set vlan-tagging en
edit unit 0
```

```

set vlan-id 100
set family inet address 1.1.1.1/8
set admin-state en
up
set admin-state en
top
commit

```

[PR/529491: This issue is resolved.]

- Packet forwarding is restricted to 64 Kbps for the packets matching the default route. [PR/535453: This issue is resolved.]
- BXOS with two RMEPS sessions crashes when the **delete protocol oam-ethernet** command is executed . [PR/563574: This issue is resolved.]
- SNMP logs are not updated properly. [PR/588963: This issue is resolved.]
- SNMP walk on **dot1dBridge MIB** does not return any value when the **Bridge MAC table** has 4000 entries. [PR /588967: This issue is resolved.]
- Multifield classifier to support a 0/0 catch-all match for IP address: Multifield classifier allows you to configure 0.0.0.0/0 as the IP address for the source or destination field. You can configure the default multifield classifier using any or all of the following values:
  - **source ip as 0.0.0.0/0**
  - **destination ip as 0.0.0.0/0**
  - **source-port as 0-65535**
  - **destination-port as 0-65535**

When the default multifield classifier is created, DPM modifies the default MFC rule in Wavelength Distributed Data Interface (wddi) to the match action configured in the classifier. [PR/598191: This issue is resolved.]

- Multifield classifier support for multiple IP subnets per filter rule: Support is added to configure up to a maximum of 32 IP addresses in the source IP address and destination IP address fields in multifield classifier. [PR/598192: This issue is resolved.]
- Support for **show log messages | last xxx**. [PR /598694: This issue is resolved.]
- Configuration is lost after BX is rebooted with UNI interface containing VLAN range 2-4079. [PR /598696: This issue is resolved.]
- Support for Layer 2 protocol tunneling is implemented. [PR/ 598697: This issue is resolved.]
- FTP protocol must be disabled in BXOS if it is not used. [PR /598703: This issue is resolved.]
- BXOS runs out of space when executing VRRP add or delete sequence for two days. [PR/ 599094: This issue is resolved.]
- SNMPwalk does not happen for a pseudowire object. [PR/ 599714: This issue is resolved.]
- GRE tunnel configuration with the DSCP value 1 throws an error. [PR/604046: This issue is resolved.]
- Memory leak in LSC when the static tunnel is created and deleted on a down interface. [PR /614396: This issue is resolved.]
- C-VLAN ID with the same value does not get deleted more than once as the CLI does not check for the duplicate values. [PR/ 660910: This issue is resolved.]

- Interface statistics is null in a VLAN-unaware UNI while sending traffic. In a bridge domain configured with two UNIs (ge-1/0/0.0 and ge-1/0/1) and one NNI (ge-1/0/2.0), ge-1/0/0 is a VLAN-aware UNI and ge-1/0/1 is VLAN-unaware UNI. When bidirectional traffic is sent across all the interfaces, traffic flows across all the interfaces but the interface statistics for VLAN-unaware UNI is always null. [PR /661397: This issue is resolved.]
- Glibc error occurs and the CLI session exits when executing **file show** commands. When a **show version** or **show system uptime** command is executed after the execution of the **file show** command with match filters, CLI exits with glibc error. [PR /668387: This issue is resolved.]
- In multihop scenarios, BX7000 receives PTP packets through multiple hops. Those PTP packets use both unicast and multicast IP addresses.
- To receive the PTP multipackets from its peer, BX7000 has to send the IGMP packets to join that multicast group. Because BXOS does not support IGMP, the user has to configure a static multicast group on the interface of the peer router where BX7000 was connected. An example is as follows:  

```
[edit]
root@cli# show logical-routers r1 protocols igmp interface fe-1/2/0.0 {
 static {
 group 224.0.1.129;
 }
}
```

 [PR /448797: This issue is resolved.]
- **Apply config** fails while configuring 200 combinational PWEs while passing bidirectional traffic for all PWEs. [PR/491163: This issue is resolved.]

## Operational Notes



**Note:** Whenever you update the gateway configuration, save the latest configuration file to an external memory. You can use this file if you have any issues with the system that corrupts the configuration file.



**Note:** When you install the cable management bracket, ensure that the mounting flanges are pointed outward.



**Note:** The output of the **show chassis hardware** command is as follows:

```
cli@BX7000> show chassis hardware
Hw name: BX-7000
revision: 02
serial: D0000 - H9999
description: BX7000 Multi-Access Gateway
```

## Changes in the CLI Commands

Table 1 on page 18 lists the commands added in the 4.3 release.

**Table 1: The CLI Commands Added in the 4.3 Release**

| Command                                                                                                                                                                                                                                                                                                                                                                                                    | PR Number |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <ul style="list-style-type: none"> <li>• <b>The commands for BGP configurataion:</b><br/> set peer-as &lt;autonomous-system&gt;<br/> set type &lt;type&gt;<br/> set neighbor &lt;address&gt;</li> </ul>                                                                                                                                                                                                    | NA        |
| <ul style="list-style-type: none"> <li>• Show commands for BGP:<br/> show BGP group detail<br/> Show BGP neighbor<br/> Show BGP summary</li> </ul>                                                                                                                                                                                                                                                         |           |
| <ul style="list-style-type: none"> <li>• The commands for route policy configuration:<br/> set export &lt;policy-name&gt;<br/> set import &lt;policy-name&gt;</li> </ul>                                                                                                                                                                                                                                   | NA        |
| <ul style="list-style-type: none"> <li>• The commands for route filter configuration:<br/> set route-filter &lt;destination-prefix&gt;upto<br/> [prefix] exact</li> </ul>                                                                                                                                                                                                                                  | NA        |
| <ul style="list-style-type: none"> <li>• The commands for prefix list creation:<br/> set prefix [destination-prefix]</li> </ul>                                                                                                                                                                                                                                                                            |           |
| <ul style="list-style-type: none"> <li>• <b>The commands for profile configurations for Y1731:</b><br/> set frame-loss-interval [100ms, 1s, 10s, 1m, 10m]<br/> set frame-delay-interval [100ms, 1s, 10s, 1m, 10m]<br/> set frame-loss-threshold [5-10000]<br/> set frame-delay-threshold [10-3600000]<br/> set threshold-timer [ 100ms, 1s, 10s, 1m, 10m]<br/> set action snmptrap alarm syslog</li> </ul> | NA        |
| <ul style="list-style-type: none"> <li>• The commands for attaching PM profile to a remote MEP:<br/> set rmep-mac [rmep-mac]<br/> set pm-profile [profile-name]<br/> set frame-delay-status [enable/disable]<br/> set frame-loss-status [enable/disable]<br/> set frame-loss-priority [0-7]<br/> set frame-delay-priority [0-7]<br/> set DM-mode [1DM 2DM];</li> </ul>                                     | NA        |
| <ul style="list-style-type: none"> <li>• The commands for enabling q-in-q:<br/> set vlan-tagging enable<br/> set qinq enable<br/> set interface-mode UNI NNI<br/> set default-cvlan-id cvlan id</li> </ul>                                                                                                                                                                                                 |           |
| <ul style="list-style-type: none"> <li>• The commands for setting ingress and egress vlan priority<br/> vlan priority<br/> set ingress-vlan-priority [0-7]<br/> egress-vlan-priority [0-7];<br/> set ingress-vlan-priority value-range<br/> egress-vlan-priority [0-7];</li> </ul>                                                                                                                         |           |

## List of Technical Publications

Table 2 on page 19 lists the software and hardware guides for the gateway and describes the content of each document.

**Table 2: BX7000 Multi-Access Gateway Supported Documentation**

| Book                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BX7000 Multi-Access Gateway Hardware Guide        | Provides a detailed hardware description of the gateway. This guide: <ul style="list-style-type: none"> <li>• Explains how to unpack, install, mount, access, and maintain the gateway.</li> <li>• Explains the various hardware components such as power supply, chassis, and ports.</li> <li>• Provides troubleshooting of the hardware-related issues.</li> </ul>                                                          |
| BXOS Configuration Guide                          | Provides a detailed software description of the BXOS software. This guide: <ul style="list-style-type: none"> <li>• Explains the configuration statements used to configure various properties of the gateway.</li> <li>• Describes how to configure the basic system properties, protocols, interfaces, pseudowires, and tunnels.</li> <li>• Explains statement hierarchies and parameters used in configuration.</li> </ul> |
| BXOS CLI Users Guide and Command Reference        | Provides a detailed description of all the configuration mode and operational mode commands. This guide: <ul style="list-style-type: none"> <li>• Explains how to start the CLI and the components of the CLI.</li> <li>• Contains information about the commands used to set the gateway properties (set commands) and the commands used to view the outputs (show commands).</li> </ul>                                     |
| BX7000 Multi-Access Gateway Getting Started Guide | Provides an overview on installing the gateway. This guide: <ul style="list-style-type: none"> <li>• Explains how to quickly set up the gateway.</li> <li>• Contains the basic steps to install the gateway and establish the basic gateway connectivity.</li> </ul>                                                                                                                                                          |

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