NetIron OS 6.3.00a1 for ExtremeRouting MLX Series Devices

Release Notes 1.0

9036123-01 Rev AA

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Contents

Document history

Version	Summary of changes	Publication date
1.0	Initial release	August 2019

Preface

Contacting Extreme Technical Support

As an Extreme customer, you can contact Extreme Technical Support using one of the following methods: 24x7 online or by telephone. OEM customers should contact their OEM/solution provider. If you require assistance, contact Extreme Networks using one of the following methods:

- GTAC (Global Technical Assistance Center) for immediate support
- Phone: 1-800-998-2408 (toll-free in U.S. and Canada) or +1 408-579-2826. For the support phone number in your country, visit: www.extremenetworks.com/support/contact.
- Email: support@extremenetworks.com. To expedite your message, enter the product name or model number in the subject line.
- GTAC Knowledge - Get on-demand and tested resolutions from the GTAC Knowledgebase, or create a help case if you need more guidance.
- The Hub - A forum for Extreme customers to connect with one another, get questions answered, share ideas and feedback, and get problems solved. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.
- Support Portal - Manage cases, downloads, service contracts, product licensing, and training and certifications.

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number and/or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any action(s) already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

Extreme resources

Visit the Extreme website to locate related documentation for your product and additional Extreme resources.

White papers, data sheets, and the most recent versions of Extreme software and hardware manuals are available at www.extremenetworks.com. Product documentation for all supported releases is available to registered users at https://www.extremenetworks.com/support/documentation/ .

Document feedback

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- Use our short online feedback form at https://www.extremenetworks.com/documentation-feedback/
- Email us at documentation@extremenetworks.com

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.

Overview

NetIron OS Release 6.3.00 enhances the capabilities of ExtremeRouting MLX Series, and ExtremeRouting CER 2000 Series in the following areas:

* BGP services,

* Network Packet Broker functionality

In addition, this release also has further enhancements to manageability and troubleshooting functions to enable efficient network operations.

With these features, the MLX Series Router continues as the leading platform for converged data center and service provider network services.

Behavior changes

Behavior changes in release NetIron 6.3.00a1

There are no behavior changes in release NetIron 6.3.00a1.

Software Features

NOTE: The NetIron 6.3.00 release (the image files and the documentation) is no longer available from the Extreme Portal. New software features introduced in release 6.3.00 are included in release 6.3.00a1.

New software features introduced in R6.3.00

The following software features are introduced in NetIron 6.3.00 release.

Management features and enhancements

- **SSH server management**: This feature configures the SSH server to allow incoming SSH connection requests from ports that belong to any VRF and from the out-of-band management port when the management VRF is configured.
- **Increase maximum telnet session number from 5 to 10:** The maximum telnet session is increased from 5 to 10.

Security

- **Regular expression support in RADIUS command authorization**: The Extreme-specific RADIUS attribute `foundry-command-string` now supports specifying a range of data for a CLI command.

IP Routing

- **BGP Large Communities:** RFC8092 BGP Large Communities attribute is supported. All routes with this attribute belong to the communities specified in the attribute.
- **Increase number of loopback interfaces in NetIron to 1024:** The number of supported loopback interfaces is increased to 1024.

Monitoring

- Beginning with Extreme NetIron Release 6.3.00a, the Network Processor (NP) error monitoring and recovery feature is supported on Extreme NetIron 8x10G, 2x100G, 20x10G, 2x100G-CFP2 and 4x10G-IPSEC line card modules for ExtremeRouting XMR/MLX Series.

Network Packet Broker

- The maximum TVF LAG FID group size (system-max tvf-lag-lb-fid-group) is increased to 32.

CLI commands

New CLI commands NetIron R6.3.00

- ip large-community-list extended
- ip large-community-list standard
- ip ssh include-all-vrf
- match large-community-list
- set large-community
- set large-community-list
- system-max loopback-interface
- show default values
- show ip bgp routes large-community
- show ip bgp routes large-community-access-list
- show ip bgp routes large-community-regex
- show ip bgp routes detail large-community
- show ip bgp routes detail large-community-access-list
- show ip bgp routes detail large-community-regex

Modified commands

- ip ssh strict-management-vrf
- neighbor send-community
- show ip ssh config
- show who
- system-max tvf-lag-lb-fid-group

Deprecated commands

There are no deprecated commands in this release.

MIBs and messages

MIBs

New MIB Objects

No MIB objects were introduced in release NetIron 6.3.00a1 .

Modified MIBs

The following MIBs have been modified for this release:

Not Applicable

Deprecated MIBs

The following MIBs have been deprecated beginning with this release:

Not Applicable

Messages

New Messages

The following messages are new in this release:

Not Applicable

Modified Messages

The following messages have been modified for this release:

Not Applicable

Deprecated Messages

The following messages have been deprecated beginning with this release:

- Not Applicable

RFCs and standards

The following new RFC is supported in this release.

- RFC8092 -- BGP Large Communities Attribute

Hardware support

Supported devices

The following devices are supported in this release:

NOTE: Beginning with NetIron OS 6.3.00a and later, the ExtremeSwitching CES 2000 Series devices are not supported. Refer to the End of Sale and End of Support page for additional information.

ExtremeRouting XMR Series	ExtremeRouting MLX Series	ExtremeRouting CER 2000 Series
XMR 4000	MLX-4	CER-RT 2024C-4X
XMR 8000	MLX-8	CER-RT 2024F-4X
XMR 16000	MLX-16	CER 2024C
XMR 32000	MLX-32	CER-RT 2024C
	MLXe-4	CER 2024F
	MLXe-8	CER-RT 2024F
	MLXe-16	CER 2048C
	MLXe-32	CER-RT 2048C
		CER 2048CX
		CER-RT 2048CX
		CER 2048F
		CER-RT 2048F
		CER 2048FX
		CER-RT 2048FX

Supported devices for Network Packet Broker R6.3.00a

XMR Series	MLX Series
XMR 4000	MLX-4
XMR 8000	MLX-8
XMR 16000	MLX-16
XMR 32000	MLX-32
	MLXe-4
	MLXe-8
	MLXe-16
	MLXe-32

Supported modules

The following interface modules are supported in this release:

Module	Description	Compatible devices		Generation
		MLXe with MLX or MR2-M mgmt. module	MLXe with XMR or MR2-X mgmt. module	
BR-MLX-10GX4-IPSEC-M	MLX 4-port 10 GbE/1 GbE combo and 4-port 1 GbE (-M) IPsec module with 512,000 IPv4 routes or 240,000 IPv6 routes in hardware	Yes	Yes	3
BR-MLX-10GX20-X2	MLX 20-port 10 GbE/1 GbE (X2) SFP+ and SFP combo module with extended route table support for up to 2.4 million IPv4 or 1.8 million IPv6 routes in hardware. Integrated hardware-enabled MACsec.	Yes	Yes	3
BR-MLX-10GX20-M	MLX 20-port 10 GbE/1 GbE (M) combo module. Supports SFP+ and SFP with up to 512,000 IPv4 routes or 240,000 IPv6 routes in FIB. Integrated hardware-enabled MACsec.	Yes	Yes	3
BR-MLX-1GCX24-X-ML	MLX 24-port (X) 10/100/1,000 copper (RJ-45) module with IPv4/IPv6/MPLS hardware support. Supports 512,000 IPv4 routes in FIB. License upgradable to “X” scalability (1 million IPv4 routes in hardware).	Yes	No	1.1

Module	Description	Compatible devices		Generation
		MLXe with MLX or MR2-M mgmt. module	MLXe with XMR or MR2-X mgmt. module	
BR-MLX-100GX2-CFP2-M	MLX 2-port 100 GbE (M) CFP2 module. Supports 512,000 IPv4 routes in FIB.	Yes	Yes	3
BR-MLX-100GX2-CFP2-X2	MLX 2-port 100 GbE (X2) CFP2 module with extended route table support for up to 2.4 million IPv4 or 1.8 million IPv6 routes in hardware.	Yes	Yes	3
BR-MLX-10GX8-X	MLX Series 8-port 10 GbE (X) module with IPv4/IPv6/MPLS hardware support—requires SFP optics. Supports up to 1 million IPv4 routes in FIB. Requires high-speed switch fabric modules.	Yes	Yes	2
BR-MLX-1GCX24-X	MLX 24-port (X) 10/100/1,000 copper (RJ-45) module with IPv4/IPv6/MPLS hardware support. Supports 1 million IPv4 routes in hardware.	Yes	Yes	1.1

Module	Description	Compatible devices		Generation
		MLXe with MLX or MR2-M mgmt. module	MLXe with XMR or MR2-X mgmt. module	
BR-MLX-40GX4-M	MLX Series 4-port 40 GbE (M) module with IPv4/IPv6/MPLS hardware support and support for QSFP+ optics, including both LR and SR versions. Supports up to 512,000 IPv4 routes or 128,000 IPv6 routes. Requires high-speed switch fabric modules.	Yes	Yes	3
BR-MLX-10GX4-X	MLX Series 4-port 10 GbE (X) module with IPv4/IPv6/MPLS hardware support—requires XFP optics. Supports 1 million IPv4 routes in hardware.	Yes	Yes	1.1
BR-MLX-10GX4-X-ML	MLX/MLXe 4-port 10 GbE (ML) module with IPv4/IPv6/MPLS hardware support—requires XFP optics. Supports 512,000 IPv4 routes in FIB. License upgradable to "X" scalability (1 million IPv4 routes in hardware).	Yes	No	1.1
NI-MLX-10GX8-M	MLX Series 8-port 10 GbE (M) module with IPv4/IPv6/MPLS hardware support and up to 512,000 IPv4 routes—requires SFP+ optics and high-speed switch fabric modules.	Yes	No	2

Module	Description	Compatible devices		Generation
		MLXe with MLX or MR2-M mgmt. module	MLXe with XMR or MR2-X mgmt. module	
BR-MLX-1GFX24-X	MLX Series 24-port FE/GbE (SFP) module, with IPv4/IPv6/MPLS hardware support. Supports 1 million IPv4 routes in hardware.	Yes	Yes	1.1
BR-MLX-1GFX24-X-ML	MLX Series 24-port FE/GbE (SFP) module, with IPv4/IPv6/MPLS hardware support. Supports 512,000 IPv4 routes in FIB. License upgradable to "X" scalability (1 million IPv4 routes in hardware).	Yes	No	1.1
BR-MLX-10GX24-DM	MLXe 24-port 10 GbE module with IPv4/IPv6/MPLS hardware support—requires SFP optics. Supports 256,000 IPv4 routes in FIB.	Yes	No	3a
NI-MLX-10GX8-D	MLX Series 8-port 10-GbE (D) module with IPv4/IPv6 hardware support - requires SFPP optics. Supports 256K IPv4 routes in FIB. Does not support MPLS. Requires high speed switch fabric modules.	Yes	No	2

Module	Description	Compatible devices		Generation
		MLXe with MLX or MR2-M mgmt. module	MLXe with XMR or MR2-X mgmt. module	
BR-MLX-10GX10-X2	MLX 10-port 10-Gbe/1Gbe (X2) SFP+ and SFP combo module with extended route table support up to 2M IPv4 and 800K IPv6 routes in hardware. MACsec enabled. Upgradeable to 20X10G-X2 using additional software license.	Yes	Yes	3
BR-MLX-1GX20-U10G-M	MLXe twenty (20)-port 1-GBE/1-GBE (M) module with IPv4/IPv6/MPLS hardware support. Requires SFP optics. Supports 512K IPv4 routes in FIB. Requires high speed switch fabric modules. Upgradeable to 10G, with BR-MLX-1GX20-U10G-MUPG license.	Yes	Yes	3

Module	Description	Compatible devices		Generation
		MLXe with MLX or MR2-M mgmt. module	MLXe with XMR or MR2-X mgmt. module	
BR-MLX-1GX20-U10G-X2	MLXe twenty (20)-port 1-GBE (X2) module with IPv4/IPv6/MPLS hardware support. Requires SFP optics. Supports simultaneous 2M IPv4 and 0.8M IPv6, or 1.5M IPv4 and 1M IPv6 routes in FIB. Requires hSFM. Upgradeable to 10G with extra license.	Yes	Yes	3

- Depending on your router model, you can install up to 32 single-slot interface modules, or 16 double-slot interface modules.
- Interface modules are hot-swappable. Interface modules can be removed and replaced without powering down the system.
- Gen 3 - X2 modules with an MR2-M module will only support 512M routes.

Supported power supplies

The following table lists the power supplies that are available for the devices supported in this release:

Part number	Description	Compatible devices
BR-MLXE-ACPWR-1800	1800W power supply.	16-, 8- and 4-slot MLXe and 16 and 8-Slot XMR/MLX AC
BR-MLXE-DCPWR-1800	1800W power supply.	16-, 8- and 4-slot MLXe and 16 and 8-Slot XMR/MLX DC
NI-X-ACPWR	1200W power supply.	16-, 8- and 4-slot MLXe and 16 and 8-Slot XMR/MLX AC
NI-X-DCPWR	1200W power supply.	16-, 8- and 4-slot MLXe and 16 and 8-Slot XMR/MLX DC
NI-X-ACPWR-A	1200W power supply.	4-Slot XMR/MLX AC
NI-X-DCPWR-A	1200W power supply.	4-Slot XMR/MLX DC
BR-MLXE-32-ACPWR-3000	AC 3000W power supply.	32-slot MLXe/XMR/MLX
BR-MLXE-32-DCPWR-3000	DC 3000W power supply.	32-slot MLXe/XMR/MLX
NIBI-32-ACPWR-A	AC 2400W power supply.	32-Slot MLXe/XMR/MLX
NIBI-32-DCPWR	2400W power supply.	32-Slot MLXe/XMR/MLX DC

Supported optics

For a list of supported fiber-optic transceivers that are available from Extreme, refer to the latest version of the Extreme Optics Family Data Sheet available online at https://cloud.kapostcontent.net/pub/a070d154-d6f1-400b-b2f0-3d039ae2f604/data-center-ethernet-optics-data-sheet?kui=Cc1YBpmqyfb2mDfw2vlq2g.

Software upgrade and downgrade

Image file names

Download the following images from www.extremenetworks.com.

NOTE: Beginning with NetIron OS 6.3.00a and later, the ExtremeSwitching CES 2000 Series devices are not supported. Refer to the End of Sale and End of Support page for additional information.

MLX Series and NetIron XMR devices

NOTE: When upgrading MLX Series and XMR Series devices, follow the manifest upgrade to ensure all required files are upgraded. Boot upgrade is not part of the manifest upgrade. If the boot image is R05.6.00 or older, upgrade the boot image.

Required images for R6.3.00a1 MLX Series/XMR software upgrade

```
# Manifest File for XMR/MLX Release 06.3.00
-NETIRON_IRONWARE_VER XMR-MLXV6.3.00a1

#====================================================================

-DIRECTORY /Boot/InterfaceModule
xmlprm05900.bin

-DIRECTORY /Boot/ManagementModule
xmprm05900.bin

#  Application Images

-DIRECTORY /Combined/FPGA
lpfpga06300a1.bin

-DIRECTORY /Combined/Application
xm06300a1.bin
```

```
-DIRECTORY /Monitor/InterfaceModule
xmlb06200.bin

-DIRECTORY /Monitor/ManagementModule
xmb06200.bin

-DIRECTORY /Application/ManagementModule
xmr06300a1.bin

-DIRECTORY /Application/InterfaceModule
xmlp06300a1.bin

-DIRECTORY /FPGA/InterfaceModule
pbif4x40_06300a1.bin 2.11
pbif8x10_06300a1.bin 2.24
pbifmrj_06300a1.bin 4.04
pbifsp2_06300a1.bin 4.02
statsmrj_06300a1.bin 0.09
xgmacsp2_06300a1.bin 0.17
xpp2x100_06300a1.bin 1.06
xpp4x40_06300a1.bin 6.20
xpp4x10g3_06300a1.bin 0.00
xpp8x10_06300a1.bin 1.10
xppmrj_06300a1.bin 1.03
xppsp2_06300a1.bin 1.01
xppxsp2_06300a1.bin 1.01
pbif-ber-g3_06300a1.bin 2.11
xpp20x10g3_06300a1.bin 0.00
xpp2x100g3_06300a1.bin 0.00
```

```
-DIRECTORY /FPGA/ManagementModule
mbridge32_06300a1.xsvf 36
mbridge_06300a1.xsvf 37
sbridge_06300a1.mcs 6
hsbridge_06300a1.mcs 17

-END_OF_IMAGES

-DIRECTORY /Signatures
xmlprm05900.sig
xmprm05900.sig
xmlb06200.sig
xmb06200.sig
xmr06300a1.sig
xmlp06300a1.sig
lpfpga06300a1.sig
hsbridge_06300a1.sig
mbridge_06300a1.sig
mbridge32_06300a1.sig
sbridge_06300a1.sig
pbif4x40_06300a1.sig
pbif8x10_06300a1.sig
pbifmrj_06300a1.sig
pbifsp2_06300a1.sig
pbif-ber-g3_06300a1.sig
statsmrj_06300a1.sig
xgmacsp2_06300a1.sig
xpp2x100_06300a1.sig
xpp20x10g3_06300a1.sig
xpp2x100g3_06300a1.sig
xpp4x40_06300a1.sig
```

xpp4x10g3_06300a1.sig

xpp8x10_06300a1.sig

xppmrj_06300a1.sig

xppsp2_06300a1.sig

xppxsp2_06300a1.sig

xmlprm05900.sha256

xmprm05900.sha256

xmlb06200.sha256

xmb06200.sha256

xmr06300a1.sha256

xmlp06300a1.sha256

lpfpga06300a1.sha256

hsbridge_06300a1.sha256

mbridge_06300a1.sha256

mbridge32_06300a1.sha256

sbridge_06300a1.sha256

pbif4x40_06300a1.sha256

pbif8x10_06300a1.sha256

pbifmrj_06300a1.sha256

pbifsp2_06300a1.sha256

pbif-ber-g3_06300a1.sha256

statsmrj_06300a1.sha256

xgmacsp2_06300a1.sha256

xpp2x100_06300a1.sha256

xpp20x10g3_06300a1.sha256

xpp2x100g3_06300a1.sha256

xpp4x40_06300a1.sha256

xpp4x10g3_06300a1.sha256

xpp8x10_06300a1.sha256

xppmrj_06300a1.sha256

xppsp2_06300a1.sha256

```
xppxsp2_06300a1.sha256

#  MIBS:

-DIRECTORY /MIBS
xmr06300a1.mib
xmr06300a1_std.mib

-DIRECTORY /Yang
ExampleXML.txt
common-defs.yang
interface-config.yang
interface-statedata.yang
mpls-config.yang
mpls-statedata.yang
netiron-config.yang
netiron-statedata.yang
version-statedata.yang
vlan-config.yang
vlan-statedata.yang

-DIRECTORY /Tools
sbsupgrd.zip

-DIRECTORY
MLX06300a1_mnf.txt
MLX06300a1_mnf.sig
MLX06300a1_mnf.sha256

-DIRECTORY /Manuals
```

File Name	Supported Modules
pbif4x40_06300a1.bin	4x40G modules
pbif8x10_06300a1.bin	8x10G modules
pbifmrj_06300a1.bin	24x1G and 48x1G modules
pbifsp2_06300a1.bin	2x10G, 4x10G, 4x10G-x and 20x1G modules
statsmrj_06300a1.bin	24x1G and 48x1G modules
xgmacsp2_06300a1.bin	2x10G, 4x10G-x and 4x10G modules
xpp2x100_06300a1.bin	2x100G modules (double-wide CFP-based module)
xpp4x40_06300a1.bin	4x40G modules
xpp4x10g3_06300a1.bin	4x10G modules
xpp8x10_06300a1.bin	8x10G modules
xppmrj_06300a1.bin	24x1G and 48x1G modules
xppsp2_06300a1.bin	2x10G, 4x10G, and 20x1G modules
xppxsp2_06300a1.bin	4x10G-x

pbif-ber-g3_06300a1.bin	20x10G and 2x100G modules (-M and –X2)
xpp20x10g3_06300a1.bin	20x10G modules
xpp2x100g3_06300a1.bin	2x100G modules (half-slot CFP2-based module)
mbridge32_06300a1.xsvf	MBRIDGE32
mbridge_06300a1.xsvf	MBRIDGE
sbridge_06300a1.mcs	Switch fabric modules
hsbridge_06300a1.mcs	High speed switch fabric modules

CER 2000 Series devices

When upgrading CER 2000 Series devices, follow the manifest upgrade to ensure all required files are upgraded. Boot upgrade is not part of the manifest upgrade. If the boot image is R05.5.00 or older, upgrade the boot image.

Required images for R6.3.00a1 CER 2000 software upgrade

```
# Manifest File for XMR/MLX Release 06.3.00

-NETIRON_IRONWARE_VER CES-CERV6.3.00a1

#=================================================================

-DIRECTORY /Boot
ceb06000.bin

-DIRECTORY /Application
ce06300a1.bin

-DIRECTORY /FPGA
pbifmetro_06300a1.bin

-END_OF_IMAGES

-DIRECTORY /Signatures
ceb06000.sig
ce06300a1.sig
pbifmetro_06300a1.sig
```

```
 ceb06000.sha256
 ce06300a1.sha256
 pbifmetro_06300a1.sha256

 -DIRECTORY /MIBS
 ce06300a1.mib
 ce06300a1_std.mib

 -DIRECTORY /Yang
 ExampleXML.txt
 common-defs.yang
 interface-config.yang
 interface-statedata.yang
 mpls-config.yang
 mpls-statedata.yang
 netiron-config.yang
 netiron-statedata.yang
 version-statedata.yang
 vlan-config.yang
 vlan-statedata.yang

 -DIRECTORY
 CES-CER06300a1_mnf.txt
 CES-CER06300a1_mnf.sig
 CES-CER06300a1_mnf.sha256

-DIRECTORY /Manuals
```

Manifest for Network Packet Broker devices

NOTE: When upgrading MLX Series and XMR Series devices, follow the manifest upgrade to ensure all required files are upgraded. Boot upgrade is not part of the manifest upgrade. If the boot image is R05.6.00 or older, upgrade the boot image.

Required images for Network Packet Broker R6.3.00a1 software upgrade

```
# Manifest File for XMR/MLX Release 06.3.00

-NETIRON_IRONWARE_VER XMR-MLXV6.3.00a1

#====================================================================

-DIRECTORY /Boot/InterfaceModule
xmlprm05900.bin

-DIRECTORY /Boot/ManagementModule
xmprm05900.bin

#  Application Images

-DIRECTORY /Combined/FPGA
lpfpga_npb_06300a1.bin

-DIRECTORY /Combined/Application
xm06300a1.bin

-DIRECTORY /Monitor/InterfaceModule
xmlb06200.bin

-DIRECTORY /Monitor/ManagementModule
xmb06200.bin

-DIRECTORY /Application/ManagementModule
xmr06300a1.bin
```

```
-DIRECTORY /Application/InterfaceModule
xmlp06300a1.bin

-DIRECTORY /FPGA/InterfaceModule
pbif4x40_06300a1.bin 2.11
pbif8x10_06300a1.bin 2.24
pbifmrj_06300a1.bin 4.04
pbifsp2_06300a1.bin 4.02
statsmrj_06300a1.bin 0.09
xgmacsp2_06300a1.bin 0.17
xpp2x100_06300a1.bin 1.06
xpp4x40_06300a1.bin 6.20
xpp4x10g3_06300a1.bin 0.00
xpp8x10_06300a1.bin 1.10
xppmrj_06300a1.bin 1.03
xppsp2_06300a1.bin 1.01
xppxsp2_06300a1.bin 1.01
pbif-ber-g3_06300a1.bin 2.11
xpp20x10g3_npb_06300a1.bin 0.10
xpp2x100g3_npb_06300a1.bin 0.10

-DIRECTORY /FPGA/ManagementModule
mbridge32_06300a1.xsvf 36
mbridge_06300a1.xsvf 37
sbridge_06300a1.mcs 6
hsbridge_06300a1.mcs 17

-END_OF_IMAGES

-DIRECTORY /Signatures
xmlprm05900.sig
```

xmprm05900.sig

xmlb06200.sig

xmb06200.sig

xmr06300a1.sig

xmlp06300a1.sig

lpfpga_npb_06300a1.sig

hsbridge_06300a1.sig

mbridge_06300a1.sig

mbridge32_06300a1.sig

sbridge_06300a1.sig

pbif4x40_06300a1.sig

pbif8x10_06300a1.sig

pbifmrj_06300a1.sig

pbifsp2_06300a1.sig

pbif-ber-g3_06300a1.sig

statsmrj_06300a1.sig

xgmacsp2_06300a1.sig

xpp2x100_06300a1.sig

xpp20x10g3_npb_06300a1.sig

xpp2x100g3_npb_06300a1.sig

xpp4x40_06300a1.sig

xpp4x10g3_06300a1.sig

xpp8x10_06300a1.sig

xppmrj_06300a1.sig

xppsp2_06300a1.sig

xppxsp2_06300a1.sig

xmlprm05900.sha256

xmprm05900.sha256

xmlb06200.sha256

xmb06200.sha256

xmr06300a1.sha256

xmlp06300a1.sha256

```
lpfpga_npb_06300a1.sha256
hsbridge_06300a1.sha256
mbridge_06300a1.sha256
mbridge32_06300a1.sha256
sbridge_06300a1.sha256
pbif4x40_06300a1.sha256
pbif8x10_06300a1.sha256
pbifmrj_06300a1.sha256
pbifsp2_06300a1.sha256
pbif-ber-g3_06300a1.sha256
statsmrj_06300a1.sha256
xgmacsp2_06300a1.sha256
xpp2x100_06300a1.sha256
xpp20x10g3_npb_06300a1.sha256
xpp2x100g3_npb_06300a1.sha256
xpp4x40_06300a1.sha256
xpp4x10g3_06300a1.sha256
xpp8x10_06300a1.sha256
xppmrj_06300a1.sha256
xppsp2_06300a1.sha256
xppxsp2_06300a1.sha256

#  MIBS:

-DIRECTORY /MIBS
xmr06300a1.mib
xmr06300a1_std.mib

-DIRECTORY /Yang
ExampleXML.txt
common-defs.yang
interface-config.yang
```

```
interface-statedata.yang
mpls-config.yang
mpls-statedata.yang
netiron-config.yang
netiron-statedata.yang
version-statedata.yang
vlan-config.yang
vlan-statedata.yang

-DIRECTORY /Tools
sbsupgrd.zip

-DIRECTORY
MLX_npb_06300a1_mnf.txt
MLX_npb_06300a1_mnf.sig
MLX_npb_06300a1_mnf.sha256

-DIRECTORY /Manuals
```

FPGA file names for NPB and supported modules

File Name	Supported Modules
xpp20x10g3_npb_06300a1.bin	20x10G modules FPGA for NPB
xpp2x100g3_npb_06300a1.bin	2x100G modules (half-slot CFP2-based module) FPGA to NPB

Migration path

To establish an appropriate migration path from your current release of Extreme NetIron, consult your Extreme TAC representative (see the Preface of this document).

Upgrade and downgrade considerations

To upgrade to NetIron 6.3.00a1 and later releases, a multiple step upgrade process is required. The multiple step upgrade process is not required for CER or CES.

Scenario 1

Customers running releases 05.9.00a, 05.6.00ga, 05.6.00h, 05.8.00e, 05.7.00e or subsequent releases can directly upgrade to NetIron 6.3.00a1 and later releases.

NOTE: If you are not running one of the releases listed above, you CANNOT directly upgrade to 6.3.00a1 or later releases.

Scenario 2

To upgrade from 05.6.00c or any later release (other than the images mentioned in Scenario 1), a two-step approach is required.

1. Upgrade to 05.9.00a or any of the following releases: 05.6.00ga, 05.6.00h, 05.8.00e, 05.7.00e or subsequent patch releases and reload the device.

2. Upgrade to NetIron 6.3.00a1 (and later releases). Reload the device.

Scenario 3

To upgrade to NetIron 6.3.00a1 and later releases from releases prior to R05.6.00c, a multiple step approach is required.

1. Upgrade to 5.9.00a or any of the following releases: 05.6.00ga, 05.6.00h, 05.8.00e or 05.7.00e and reload the device.

2. Upgrade again to the same image which was used in step 1 and reload the device again. This ensures that the device will have the SHA256 signatures on the device if they are needed, for example for LP Auto-upgrade.

3. Upgrade to NetIron 6.3.00a1 or later releases and reload the device.

Scenario 4

Use Scenario 4 if you want to use the following features specific to the NPB FPGA.

- VxLAN header stripping
- GTP de-encapsulation
- Packet Timestamping

- Source port labeling
- NVGRE stripping
    - NetIron 6.3.00a1 UDA Enhancements

1. Upgrade to NetIron 6.3.00a1 and later releases using any of above scenarios based on the image from which the upgrade is being performed.
2. Reload the device again and verify that the system is up with NetIron 6.3.00a1 or later releases.
3. Configure the **fpga-mode-npb** command and save the configuration.
4. Upgrade to the NetIron 6.3.00a1 or later NPB image using MLX_npb_06300a1_mnf.txt and reload the device.
5. Make sure BR-MLX-10Gx20 and BR-MLX-100Gx2-CFP2 have NPB XPP images.
6. Verify the system. Check the output of the **show version** command and the **show flash** command to make sure the image versions are correct. Check the output of the **show module** command to make sure the line cards are not in Interactive state due to FPGA mismatch. Interactive state is an error state due to FPGA mismatch.

Show output examples

The following examples provide excerpts of the command output.

Output example for the show version command

```
NetIron XMR-4000 Router#show version
System Mode: XMR
Chassis: MLXe 4-slot (Serial #: BGD2547F02N,  Part #: 40-1000363-03)
NI-X-HSF Switch Fabric Module 1 (Serial #: BEW0338F01Z,  Part #: 60-1001512-09)
FE 1: Type fe600,  Version 1
Switch Fabric Module 1 Up Time is 3 minutes 17 seconds
NI-X-HSF Switch Fabric Module 2 (Serial #: BEW0338F00M,  Part #: 60-1001512-09)
FE 1: Type fe600,  Version 1
Switch Fabric Module 2 Up Time is 3 minutes 17 seconds
NI-X-HSF Switch Fabric Module 3 (Serial #: BEW0335F04M,  Part #: 60-1001512-10)
FE 1: Type fe600,  Version 1
Switch Fabric Module 3 Up Time is 3 minutes 17 seconds
======================================================================
SL M1: BR-MLX-MR2-X Management Module Active (Serial #: BVR2505J02G, Part #: 60-
1002375-06):
Boot     : Version 5.9.0T165 Copyright (c) 2017-2019 Extreme Networks, Inc.
Compiled on Mar 19 2015 at 03:16:46 labeled as xmprm05900
 (521771 bytes) from boot flash
Monitor  : Version 6.2.0T165 Copyright (c) 2017-2019 Extreme Networks, Inc.
Compiled on Aug 17 2017 at 11:22:12 labeled as xmb06200
 (546965 bytes) from code flash
IronWare : Version 6.3.0aT163 Copyright (c) 2017-2019 Extreme Networks, Inc.
Compiled on Aug 12 2019 at 18:29:16 labeled as xmr06300a1
 (10807321 bytes) from Primary
Board ID : 00 MBRIDGE Revision : 37
1666 MHz Power PC processor 7448 (version 8004/0202) 166 MHz bus
512 KB Boot Flash (MX29LV040C), 128 MB Code Flash (MT28F256J3)
4096 MB DRAM INSTALLED
```

```
4096 MB DRAM ADDRESSABLE
Active Management uptime is 3 minutes 17 seconds
================================================================================
SL 3: BR-MLX-10Gx4-M-IPSEC 4-port 1/10GbE and 4-port 1GbE Module (Serial #:
CWH0451K00F, Part #: 60-1002974-12)
Boot     : Version 5.9.0T175 Copyright (c) 2017-2019 Extreme Networks, Inc.
Compiled on Mar 19 2015 at 03:17:00 labeled as xmlprm05900
 (449576 bytes) from boot flash
Monitor  : Version 6.2.0T175 Copyright (c) 2017-2019 Extreme Networks, Inc.
Compiled on Aug 17 2017 at 11:22:42 labeled as xmlb06200
 (573366 bytes) from code flash
IronWare : Version 6.3.0aT177 Copyright (c) 2017-2019 Extreme Networks, Inc.
Compiled on Aug 12 2019 at 18:58:22 labeled as xmlp06300a1
 (9536730 bytes) from Primary
FPGA versions:
Valid PBIF Version = 2.11, Build Time = 8/19/2016 14:54:00

 Valid XPP Version = 0.00, Build Time = 4/13/2017 16:22:00
```

Output example for the show flash command

```
 NetIron XMR-4000 Router#show flash

 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

 Active Management Module (Left Slot)

 Code Flash - Type MT28F256J3, Size 128 MB

   o IronWare Image (Primary)

     Version 6.3.0aT163, Size 10807321 bytes, Check Sum e5f2

     Compiled on Aug 12 2019 at 18:29:16 labeled as xmr06300a1

   o LP Kernel Image (Monitor for LP Image Type 0)

     Version 6.2.0T175, Size 573366 bytes, Check Sum faad

     Compiled on Aug 17 2017 at 11:22:42 labeled as xmlb06200

   o LP IronWare Image (Primary for LP Image Type 0)

     Version 6.3.0aT177, Size 9536730 bytes, Check Sum 901d

     Compiled on Aug 12 2019 at 18:58:22 labeled as xmlp06300a1

   o Monitor Image

     Version 6.2.0T165, Size 546965 bytes, Check Sum b926

     Compiled on Aug 17 2017 at 11:22:12 labeled as xmb06200

   o Startup Configuration

     Size 2838 bytes, Check Sum 78a8

     Modified on 08:40:55 GMT+00 Wed Aug 14 2019
```

```
Boot Flash - Type MX29LV040C, Size 512 KB
  o Boot Image
    Version 5.9.0T165, Size 521771 bytes, Check Sum 4fb8
    Compiled on Mar 19 2015 at 03:16:46 labeled as xmprm05900
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Line Card Slot 1
Code Flash: Type MT28F256J3, Size 66846720 Bytes (~64 MB)
  o IronWare Image (Primary)
    Version 6.3.0aT177, Size 9536730 bytes, Check Sum 901d
    Compiled on Aug 12 2019 at 18:58:22 labeled as xmlp06300a1
  o IronWare Image (Secondary)
    Version 5.7.0bT177, Size 7800332 bytes, Check Sum 5d75
    Compiled on Oct 22 2014 at 20:08:46 labeled as xmlp05700b
  o Monitor Image
    Version 6.2.0T175, Size 573366 bytes, Check Sum faad
    Compiled on Aug 17 2017 at 11:22:42 labeled as xmlb06200
Boot Flash: Type MX29LV040C, Size 512 KB
  o Boot Image
    Version 5.9.0T175, Size 449576 bytes, Check Sum 3bc9
    Compiled on Mar 19 2015 at 03:17:00 labeled as xmlprm05900
FPGA Version (Stored In Flash):
 PBIF Version = 2.11, Build Time = 8/19/2016 14:54:00

 XPP Version = 0.00, Build Time = 9/22/2017 11:27:00

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Line Card Slot 2
Code Flash: Type MT28F256J3, Size 66846720 Bytes (~64 MB)
  o IronWare Image (Primary)
    Version 6.3.0aT177, Size 9536730 bytes, Check Sum 901d
    Compiled on Aug 12 2019 at 18:58:22 labeled as xmlp06300a1
  o IronWare Image (Secondary)
```

```
    Version 5.7.0bT177, Size 7800332 bytes, Check Sum 5d75
    Compiled on Oct 22 2014 at 20:08:46 labeled as xmlp05700b
  o Monitor Image
    Version 6.2.0T175, Size 573366 bytes, Check Sum faad
    Compiled on Aug 17 2017 at 11:22:42 labeled as xmlb06200
Boot Flash: Type MX29LV040C, Size 512 KB
  o Boot Image
    Version 5.9.0T175, Size 449576 bytes, Check Sum 3bc9
    Compiled on Mar 19 2015 at 03:17:00 labeled as xmlprm05900
FPGA Version (Stored In Flash):
 PBIF Version = 2.11, Build Time = 8/19/2016 14:54:00

 XPP Version = 0.00, Build Time = 9/22/2017 11:27:00

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Line Card Slot 3
Code Flash: Type MT28F256J3, Size 66846720 Bytes (~64 MB)
  o IronWare Image (Primary)
    Version 6.3.0aT177, Size 9536730 bytes, Check Sum 901d
    Compiled on Aug 12 2019 at 18:58:22 labeled as xmlp06300a1
  o IronWare Image (Secondary)
    Version 5.8.0T177, Size 9128949 bytes, Check Sum 6c57
    Compiled on Dec 17 2014 at 17:24:32 labeled as xmlp05800
  o Monitor Image
    Version 6.2.0T175, Size 573366 bytes, Check Sum faad
    Compiled on Aug 17 2017 at 11:22:42 labeled as xmlb06200
Boot Flash: Type MX29LV040C, Size 512 KB
  o Boot Image
    Version 5.9.0T175, Size 449576 bytes, Check Sum 3bc9
    Compiled on Mar 19 2015 at 03:17:00 labeled as xmlprm05900
FPGA Version (Stored In Flash):
 PBIF Version = 2.11, Build Time = 8/19/2016 14:54:00
```

```
 XPP Version = 0.00, Build Time = 4/13/2017 16:22:00
```

Output example for the show module command

```
NetIron XMR-4000 Router#show module
Module                                                          Status
Ports    Starting MAC
M1 (left ):BR-MLX-MR2-X Management Module                       Active
M2 (right):
F1: NI-X-HSF Switch Fabric Module                               Active
F2: NI-X-HSF Switch Fabric Module                               Active
F3: NI-X-HSF Switch Fabric Module                               Active
S1: BR-MLX-10Gx20 20-port 1/10GbE Module                        CARD_STATE_UP
20       0024.3880.5d00
S2: BR-MLX-10Gx20 20-port 1/10GbE Module                        CARD_STATE_UP
20       0024.3880.5d30
S3: BR-MLX-10Gx4-M-IPSEC 4-port 1/10GbE and 4-port 1GbE Module  CARD_STATE_UP
8        0024.3880.5d60
S4:
```

OpenFlow upgrade and downgrade

When downgrading the system from NetIron 6.3.00a1 (and later releases) to NetIron 05.8.00, if there are any VRF interfaces which are enabled with OpenFlow, some unexpected IFL entries will be seen after moving to R05.8.00. These unexpected IFL entries may affect the L3VPN/6VPE traffic.

Extreme recommends removing OpenFlow from the VRF interfaces before downgrading the router to R05.8.00. For upgrade and migration considerations, refer to the latest version of the Extreme NetIron Software Upgrade Guide.

Hitless upgrade support

Hitless Upgrade from any release to NetIron 6.3.00a1 is NOT supported.

Limitations and restrictions

Important notes

Saving system information to flash

- This feature is not supported on Gen1 LPs.

Support for Management IP as snmp trap-source

- IPV6 support is not present currently for trap source addresses.

ACL/PBR co-existence with Openflow on same port

- PBR/ACL is not supported on L23 openflow hybrid port.
- L2 PBR/ACL is not supported on L3 openflow hybrid port.
- L3 PBR/ACL is not supported on L2 openflow hybrid port.
- L2 ACL Deny logging is not supported openflow hybrid port.

RADIUS Over Transport Layer Security (TLS)

- Dot1x accounting is not supported over RADSEC/TLS.

IPv6 ACL based rate limit for CES/CER

- ACL based rate limit is supported only on physical interface.

SCP based simplified upgrade

- This is not supported on CES/CER devices.
- This feature is supported on MR2 management modules.
- Feature is supported from 5.7 and above version.
- The signature verification is performed when the firmware version is 6.1.
- Verification supported only when pre-upgrade version on device is NetIron 6.1 and above.

OpenFlow group table

- The only action allowed in action bucket is output port.
- Each action bucket can have only one output port.
- Maximum of 8 buckets are allowed in an OpenFlow group with logical ports.
- Group types All, Indirect and Fast-Failover are not supported for logical port groups. Only SELECT group type will be supported.
- Bucket statistics is not supported.
- Group cannot have physical port and logical port in the buckets. Either physical ports or logical ports should be present.
- Modification of a group with all physical ports to all logical ports in the buckets and vice versa are not supported.
- Generic OpenFlow rule with action logical port group is not supported.
- This feature is not supported in CES/R.

- Logical port group along with actions other than L2VPN/L3VPN label in flow action are not supported.

VLAN modification in MPLS egress

- Pop VLAN action is limited to OpenFlow hybrid ports as output in action.
- In a dual tagged packet, only modification of outer VLAN is supported and addition/deletion of outer VLAN he inner VLAN modification/addition/deletion are not supported.

SCP checksum, firmware integrity

- The signature verification is not performed for copying LP application, monitor to specific slot using TFTP , Slot1/Slot2 and LP boot using from Slot1/Slot2

IPv6 ACL Scaling 4k Enhancement is supported only on XMR /MLX Series·

LDP interface transport address

- LDP interface transport address should not be enabled when there are multiple parallel adjacencies (interfaces) present between the LDP routers. If user wishes to enable this feature then they should remove the additional adjacencies. If a user enables this feature with multiple adjacencies to a peer then it is possible that the interface transport address may not be used and/or the session would be torn down due to role conflict.
- Pre-requisites: Enabling LDP interface transport address feature on the interface (adjacency) will cause any existing session to flap and come back up with interface IP address as transport address (only in cases where there is a single adjacency between the peers). This can be service impacting and something the user should be well aware of before executing the command.

Defects

TSBs—Critical issues to consider prior to installing this release

Technical Support Bulletins (TSBs) provide detailed information about high priority defects or issues present in a release. The following sections specify all current TSBs that have been identified as being a risk to or resolved with this specific release. Please review carefully and refer to the complete TSB for relevant issues prior to migrating to this version of code. TSBs can be found at https://extremeportal.force.com/ (note that TSBs are generated for all Extreme platforms and products, so not all TSBs apply to this release).

TSB issues resolved in NI 6.3.00a1

TSB	Summary
None	

TSB issues outstanding in NI 6.3.00a1

TSB	Summary
None	

Closed with code changes NI6.3.00a1

This section lists software defects with Critical, High, and Medium Technical Severity closed with a code change as of August 2019 in NetIron OS 6.3.00a1.

Parent Defect ID:	NI-21342	**Issue ID:**	NI-21342
Severity:	S2 - High		
Product:	NetIron OS	**Technology Group:**	Security
Reported in Release:	NI 06.3.00a1	**Technology:**	IPsec - IP Security
Symptom:	The certficate signing request (CSR) generated by MLXe has digest calculated using SHA1 instead of using SHA256 or SHA384.		
Condition:	When user issue pki enroll command to enroll for X509v3 certficate.		

Parent Defect ID:	NI-21405	**Issue ID:**	NI-21405
Severity:	S3 - Medium		
Product:	NetIron OS	**Technology Group:**	Security
Reported in Release:	NI 06.3.00a1	**Technology:**	IPsec - IP Security
Symptom:	Sometime when MLXe is configured as a Responder only for IKEv2, IPsec tunnel will not be established when X509v3 certificates are used for peer authentication.		
Condition:	MLXe configured as a Responder Only for IKEv2 and X509v3 certficates are used for peer authentication.		
Workaround:	Stop and restart IPsec tunnel establishment from the remote peer who is initiator or make MLXe as a initiator.		

Parent Defect ID:	NI-21424	**Issue ID:**	NI-21424
Severity:	S3 - Medium		
Product:	NetIron OS	**Technology Group:**	Security
Reported in Release:	NI 06.3.00a1	**Technology:**	IPsec - IP Security
Symptom:	Sometime IPsec Tunnel can be established with a remote peer that has sent invalid X509v3 certificate in case where the remote client has in last 10 minutes sent a valid X509v3 certficate.		
Condition:	Establishment of IPsec tunnel by remote peer with a valid X509v3 certificate followed by teardown of the IPsec tunnel and then re-establishment of same IPsec tunnel by same remote peer with an invalid X509v3 certficate within 10 minutes of previous successfull IPsec tunnel setup with the valid X509v3 certficate.		
Workaround:	Issue " clear ikev2 sa" before IPsec tunnel is re-established.		

Parent Defect ID:	NI-21426	**Issue ID:**	NI-21426
Severity:	S2 - High		
Product:	NetIron OS	**Technology Group:**	Layer 3 Routing/Network Layer
Reported in Release:	NI 06.3.00a1	**Technology:**	ARP - Address Resolution Protocol
Symptom:	IPv6 Traffic is dropped when a lag which is member of a VE interface goes down due to IPv6 Neighbor Discovery Table entries are not updated to point to an alternative outgoing physical port which is up and member of same VE interface.		
Condition:	Lag which is member of VE and currently selected outgoing physical port of a IPv6 neighbor discovery entries must go down and another physical port of VE which is up is selected as a the new outgoing physical port for the ND6 entries.		
Workaround:	Issue " clear ipv6 neighbor ve <ve interface number>"		