Ruckus FastIron Features and Standards Support Matrix, 08.0.90

Supporting FastIron Software Release 08.0.90

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Contents

Contact Information, Resources, and Conventions **7**
Contacting RUCKUS Customer Services and Support 7
What Support Do I Need? 7
Open a Case 7
Self-Service Resources 8
Document Feedback 8
RUCKUS Product Documentation Resources 8
Online Training Resources 8
Document Conventions 9
Notes, Cautions, and Safety Warnings 9
Command Syntax Conventions 9

Management **11**
Configuration Fundamentals 11
CDP - Cisco Discovery Protocol 13
FDP - Foundry Discovery Protocol 13
Licensing 13
LLDP - Link Layer Discovery Protocol 13
NTP - Network Time Protocol 14
PoE/PoE+ - Power over Ethernet 14
SNMP - Simple Network Management Protocol 15
Software Upgrade 15

Monitoring **17**
Hardware Monitoring 17
OAM - Operations, Administration, and Maintenance 17
Port Mirroring 18
RMON - Remote Networking Monitoring 18
Syslog 18
sFlow 19

IP Multicast **21**
IPv4 Multicast Routing 21
IPv6 Multicast Routing 21
IPv4 Multicast VLAN Traffic Reduction 22
IPv6 Multicast VLAN Traffic Reduction 22
MLD - Multicast Listener Discovery 22
MSDP - Multicast Source Discovery Protocol 22
PIM - Protocol-Independent Multicast 23
PIM6 - IPv6 Protocol-Independent Multicast 23

Layer 2 Switching **25**
Campus Fabric 25
LAG - Link Aggregation Group 26
MCT - Multi-Chassis Trunking 26
MRP - Metro Ring Protocol 26
Q-in-Q - 802.1q tunneling 27
RFN - Remote Fault Notification 27

RPF - Reverse Path Forwarding 27
UDLD - Uni-Directional Link Detection 27
VLAN - Virtual LAN 27
VXLAN - Virtual Extensible LAN 28
VRP - VLAN Registration Protocol (includes MVRP) 28
VSRP - Virtual Switch Redundancy Protocol 28
Protected Ports 28
xSTP - Spanning Tree Protocols 28

Layer 3 Routing/Network Layer 31
ARP - Address Resolution Protocol 31
BFD - Bidirectional Forwarding Detection 31
BGP4 - IPV4 Border Gateway Protocol 32
BGP4+ - IPv6 Border Gateway Protocol 32
DHCP - Dynamic Host Configuration Protocol 33
DNS - Domain Name System 33
GRE - Generic Routing Encapsulation 33
ICMP - Internet Control Message Protocol 34
IP Addressing 34
IPv6 Addressing 34
Multi-VRF 35
OSPF - IPv4 Open Shortest Path First 35
OSPFv3 - IPv6 Open Shortest Path First 36
RIP - IPv4 Routing Information Protocol 37
RIPng - IPv6 Routing Information Protocol 37
VRRPv2 - Virtual Router Redundancy Protocol Version 2 37
VRRPv3 - Virtual Router Redundancy Protocol Version 3 37

Security 39
Authentication, Authorization, and Accounting 39
ACLs - Access Control Lists 39
DoS (Denial of Service) protection 40
Flexible Authentication (802.1x Authentication and MAC Authentication) 40
HTTP/HTTPS 42
IP Source Guard 42
IPsec - IP security 42
MACsec - Media Access Control Security 43
PBR - Policy-Based Routing 43
Port MAC Security 43
RADIUS 43
RA Guard - Router Advertisement Guard 44
SSH - Secure Shell 44
TACACS & TACACS+ 44
User Accounts and Passwords 45

SDN 47
OpenFlow 47

Stacking 49
Stack Failover/Switchover 49
Stacking 49

Traffic Management 51

QoS - Quality of Service 51
Rate Limiting and Shaping 51

Standards compliance 53
RFC Compliance 53
IEEE Compliance 61

Contact Information, Resources, and Conventions

- Contacting RUCKUS Customer Services and Support 7
- Document Feedback 8
- RUCKUS Product Documentation Resources 8
- Online Training Resources 8
- Document Conventions 9
- Command Syntax Conventions 9

Contacting RUCKUS Customer Services and Support

The Customer Services and Support (CSS) organization is available to provide assistance to customers with active warranties on their RUCKUS products, and customers and partners with active support contracts.

For product support information and details on contacting the Support Team, go directly to the RUCKUS Support Portal using https://support.ruckuswireless.com, or go to https://www.commscope.com/ruckus and select **Support**.

What Support Do I Need?

Technical issues are usually described in terms of priority (or severity). To determine if you need to call and open a case or access the self-service resources, use the following criteria:

- Priority 1 (P1)—Critical. Network or service is down and business is impacted. No known workaround. Go to the **Open a Case** section.
- Priority 2 (P2)—High. Network or service is impacted, but not down. Business impact may be high. Workaround may be available. Go to the **Open a Case** section.
- Priority 3 (P3)—Medium. Network or service is moderately impacted, but most business remains functional. Go to the **Self-Service Resources** section.
- Priority 4 (P4)—Low. Requests for information, product documentation, or product enhancements. Go to the **Self-Service Resources** section.

Open a Case

When your entire network is down (P1), or severely impacted (P2), call the appropriate telephone number listed below to get help:

- Continental United States: 1-855-782-5871
- Canada: 1-855-782-5871
- Europe, Middle East, Africa, Central and South America, and Asia Pacific, toll-free numbers are available at https://support.ruckuswireless.com/contact-us and Live Chat is also available.
- Worldwide toll number for our support organization. Phone charges will apply: +1-650-265-0903

We suggest that you keep a physical note of the appropriate support number in case you have an entire network outage.

Self-Service Resources

The RUCKUS Support Portal at https://support.ruckuswireless.com offers a number of tools to help you to research and resolve problems with your RUCKUS products, including:

- Technical Documentation—https://support.ruckuswireless.com/documents
- Community Forums—https://community.ruckuswireless.com
- Knowledge Base Articles—https://support.ruckuswireless.com/answers
- Software Downloads and Release Notes—https://support.ruckuswireless.com/#products_grid
- Security Bulletins—https://support.ruckuswireless.com/security

Using these resources will help you to resolve some issues, and will provide TAC with additional data from your troubleshooting analysis if you still require assistance through a support case or RMA. If you still require help, open and manage your case at https://support.ruckuswireless.com/case_management.

Document Feedback

RUCKUS is interested in improving its documentation and welcomes your comments and suggestions.

You can email your comments to RUCKUS at #Ruckus-Docs@commscope.com.

When contacting us, include the following information:

- Document title and release number
- Document part number (on the cover page)
- Page number (if appropriate)

For example:

- RUCKUS SmartZone Upgrade Guide, Release 5.0
- Part number: 800-71850-001 Rev A
- Page 7

RUCKUS Product Documentation Resources

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

Release Notes and other user documentation are available at https://support.ruckuswireless.com/documents. You can locate the documentation by product or perform a text search. Access to Release Notes requires an active support contract and a RUCKUS Support Portal user account. Other technical documentation content is available without logging in to the RUCKUS Support Portal.

White papers, data sheets, and other product documentation are available at https://www.commscope.com/ruckus .

Online Training Resources

To access a variety of online RUCKUS training modules, including free introductory courses to wireless networking essentials, site surveys, and products, visit the RUCKUS Training Portal at https://commscopeuniversity.myabsorb.com/. The registration is a two-step process described in this video. You create a CommScope account and then register for, and request access for, CommScope University.

Document Conventions

The following table lists the text conventions that are used throughout this guide.

TABLE 1 Text Conventions

Convention	Description	Example
`monospace`	Identifies command syntax examples	`device(config)# interface ethernet 1/1/6`
bold	User interface (UI) components such as screen or page names, keyboard keys, software buttons, and field names	On the **Start** menu, click **All Programs**.
italics	Publication titles	Refer to the *RUCKUS Small Cell Release Notes* for more information.

Notes, Cautions, and Safety Warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE
A NOTE provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

ATTENTION
An ATTENTION statement indicates some information that you must read before continuing with the current action or task.



CAUTION
A CAUTION statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.



DANGER
A DANGER statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Command Syntax Conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
bold text	Identifies command names, keywords, and command options.
italic text	Identifies a variable.
[ ]	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
{**x**| **y**| **z**}	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
x|**y**	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*[*member*...].
\	Indicates a “soft” line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Management

- Configuration Fundamentals..... 11
- CDP - Cisco Discovery Protocol..... 13
- FDP - Foundry Discovery Protocol..... 13
- Licensing..... 13
- LLDP - Link Layer Discovery Protocol..... 13
- NTP - Network Time Protocol..... 14
- PoE/PoE+ - Power over Ethernet..... 14
- SNMP - Simple Network Management Protocol..... 15
- Software Upgrade..... 15

Configuration Fundamentals

For considerations related to configuration fundamentals in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Terminal logging	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
Reset button to factory default settings	8.0.70	No	No	8.0.70	No	8.0.90
10G LRM adapter	8.0.61	8.0.61	No	NA	8.0.61	8.0.90[1]
System name, contact, and location	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Cancelling an outbound Telnet session	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Byte-based broadcast, multicast, and unknown-unicast limits	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Packet-based broadcast, multicast, and unknown-unicast limits	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
CLI banners	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Port name	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
10 Mbps port speed	8.0.60	8.0.30	8.0.20	8.0.70	No	No
100 Mbps port speed	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	No
1000 Mbps port speed	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
40 Gbps port speed	No	No	8.0.20	8.0.70	8.0.10	8.0.90
100 Gbps port speed	No	No	No	8.0.70	No	8.0.90
Auto-negotiation	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Auto-negotiation maximum port speed advertisement	8.0.60[2]	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Full-duplex mode	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Auto MDI/MDIX detection	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Port status (enable or disable)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Support for 100BaseTX	No	8.0.30	8.0.20	No	No	8.0.90
Support for 100BaseFX	No	8.0.30	8.0.20	8.0.70	No	8.0.90

[1] LRM is not supported for ICX 7850-48F, instead use the 10G LRM adapter. The ICX 7850-48FS does not require the 10G LRM adapter.
[2] Only for copper ports. Fiber ports are not supported.

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Gbps fiber negotiate mode	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VoIP auto-configuration and CDP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Broadcast, multicast, and unknown-unicast suppression port dampening	8.0.60	8.0.30h	8.0.30h	8.0.70	8.0.30h	8.0.90
Port flap dampening	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Shutdown prevention for loop-detect	8.0.60	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
Elapsed timestamp for port statistics reset	8.0.60	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
Traffic counters for outbound traffic	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Egress queue counters	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Flash and boot code verification	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Flash image verification	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Changing flash timeout value	8.0.60	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
Software reboot	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Show boot preference	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Loading and saving configuration files	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
System reload scheduling	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Management port	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Telnet	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
TFTP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Multi-port static MAC address	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Static MAC entries with option to set traffic priority	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
MAC address learning	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
MAC address filtering on source and destination MAC addresses	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
MAC address move notification	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Ability to disable MAC learning	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Layer 2 jumbo frames	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Ethernet loopback	8.0.60	8.0.30[3]	8.0.30[3]	8.0.70	8.0.30[3]	8.0.90
Macros (batch and execute)	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
CLI history	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
Fanless mode	8.0.60[4]	No	No	No	No	8.0.90
Status button support	8.0.70	No	No	No	No	8.0.90
IEEE 802.3bz	No	No	No	8.0.70[5]	No	8.0.90
Default username and password **NOTE** Applicable to new ICX switches that are initially deployed using the 08.0.90 release.	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90
Forwarding profiles	No	No	No	No	No	8.0.90

[3] No support for flow-unaware mode.
[4] Supported only on the ICX 7150-24P and the ICX 7150-48P.
[5] Supported on the ICX 7650-48ZP only

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Ruckus SmartZone management of ICX 7xxx switches (monitoring, customized thresholds, remote ping, traceroute)	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90
Ruckus SmartZone management of ICX 7xxx switches (ICX configuration from SmartZone)	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

CDP - Cisco Discovery Protocol

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Cisco Discovery Protocol (CDP) for IPv4 and IPV6 traffic	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90

FDP - Foundry Discovery Protocol

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Foundry Discovery Protocol (FDP) for IPv4 and IPv6 traffic	8.0.60	8.0.30[6]	8.0.20[6]	8.0.70	8.0.10[6]	8.0.90

Licensing

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Software-based licensing	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
License generation, License query, Deleting a license	8.0.60	8.0.30	8.0.20	8.0.70	8.0.80	8.0.90
MACsec licensing	No	No	8.0.30	8.0.70	No	8.0.90
PoD license management	8.0.60	8.0.30	No	No	No	No
Self-authenticated upgrade (SAU) licensing	8.0.60	8.0.80	8.0.80	8.0.70	8.0.80	8.0.90

LLDP - Link Layer Discovery Protocol

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
LLDP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LLDP-MED	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Support for tagged LLDP packets	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 management address advertisement	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 management address advertisement	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LLDP operating mode setting per port	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LLDP processing on 802.1x blocked port	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

[6] In an 802.1BR (SPX) configuration, FDP is not supported on PE ports.

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Setting the maximum number of LLDP neighbors	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LLDP transmission intervals	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Hold-time multiplier for transmit TTL	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Configuring the minimum time between port reinitializations	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Fast start repeat count for LLDP-MED	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Location ID for LLDP-MED	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LLDP-MED network policy	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LLDP 802.3 Power-via-MDI	8.0.60	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
LLDP statistics and configuration details	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LLDP port ID subtype configuration for E-911	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
LLDP on by default (not supported with Campus Fabric)	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

NTP - Network Time Protocol

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Network Time Protocol Version 4 (NTP)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
System clock	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
NTP over Management VRF	No	8.0.40a	8.0.40a	8.0.70	8.0.40a	8.0.90
Global time zone support	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
Ability to set summer-time start and end dates for non-US time zones	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90

PoE/PoE+ - Power over Ethernet

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750[7]	ICX 7850
Auto PoE firmware upgrade	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	No
PoE enabled by default	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	No
Power over HDBaseT (PoH)	8.0.61[8]	No	8.0.20	8.0.70	No	No
uPoE	8.0.61[8]	No	8.0.20	8.0.70	No	No
PoE+ (802.3at)	8.0.60	8.0.30	8.0.20	8.0.70	No	No
PoE (802.3af)	8.0.60	8.0.30	8.0.20	8.0.70	No	No
Detection of PoE power requirements advertised through CDP	8.0.60	8.0.30	8.0.20	8.0.70	No	No
Maximum power level for a PoE power-consuming device for LLDP-MED or CDP	8.0.60	8.0.30	8.0.20	8.0.70	No	No
Power class for PoE power-consuming device	8.0.60	8.0.30	8.0.20	8.0.70	No	No
Power limit per port	8.0.60	8.0.30	8.0.20	8.0.70	No	No
Maximum power budget per PoE interface module	8.0.60	8.0.30	No	8.0.70	No	No

[7] In 08.0.50, when the ICX 7750 is a control bridge (CB) in a campus fabric configuration, it supports PoE to the control plane
[8] Supported on the ICX 7150 Z Series only

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750[7]	ICX 7850
In-line power priority for a PoE port	8.0.60	8.0.30	8.0.20	8.0.70	No	No
PoE firmware upgrade via CLI	8.0.60	8.0.30	8.0.20	8.0.70	No	No
PoE firmware download over SCP	8.0.60	8.0.30	8.0.20	8.0.70	No	No
PoE de-couple datalink support on LAGs	8.0.60	8.0.30	8.0.20	8.0.70	No	No
PoE overdrive	8.0.61[8]	No	No	8.0.70	No	No

SNMP - Simple Network Management Protocol

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
SNMP v1, v2, and v3	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Community strings	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
User-based security model for SNMPv3	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SNMP traps	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SNMPv3 traps	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SNMP MAC notification trap support	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Defining the UDP port for SNMPv3 traps	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SNMPv3 over IPv6	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
AES encryption for SNMPv3	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SNMP trap receiver and trap source address	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Mapping SYSLOG messages to SNMP notifications	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90

Software Upgrade

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
System backup to USB	8.0.70	No	No	No	8.0.70	8.0.90
Boot from USB	8.0.70	No	No	8.0.70	No	8.0.90
Software upgrade via CLI	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Software upgrade via SNMP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Stack image autocopy	8.0.61	8.0.50	8.0.40	8.0.70	8.0.40	8.0.90
Manifest file download support for a stack	8.0.60	8.0.50	8.0.40	8.0.70	8.0.40	8.0.90
In-Service Software Upgrade (ISSU) for stacking	8.0.61	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
In-Service Software Upgrade (ISSU) for Campus Fabric	8.0.70	8.0.70	8.0.70	No	8.0.70	No
Unified Forwarding Image (UFI) support	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90

[7] In 08.0.50, when the ICX 7750 is a control bridge (CB) in a campus fabric configuration, it supports PoE to the control plane
[8] Supported on the ICX 7150 Z Series only

Monitoring

- Hardware Monitoring..... 17
- OAM - Operations, Administration, and Maintenance..... 17
- Port Mirroring..... 18
- RMON - Remote Networking Monitoring..... 18
- Syslog..... 18
- sFlow..... 19

Hardware Monitoring

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Virtual cable testing (VCT)	8.0.61	8.0.40	8.0.40	8.0.70	8.0.40	No
Digital optical monitoring	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

OAM - Operations, Administration, and Maintenance

For considerations related to configuration fundamentals in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Diagnostic error codes	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 and IPv6 ping	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 traceroute	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
RAS Histogram	8.0.61	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
Energy Efficient Ethernet (EEE)	No	8.0.30	8.0.30	8.0.70	No	No
External USB storage	8.0.60	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
USB Type-C console	8.0.60	No	No	8.0.70	No	8.0.90
Serial console in RJ45 format	8.0.60	No	No	8.0.70	No	8.0.90
Serial console in Mini-USB format	No	8.0.30	8.0.20	No	No	No
Link Fault Signaling (LFS) for 10 Gbps	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Ethernet in the First Mile for OAM (IEEE 802.3ah standard)[9]	8.0.60	8.0.30	8.0.30	8.0.70	No	No
Ignore shutdown temperature (battle short mode)	8.0.60	No	8.0.50[10]	8.0.70	8.0.50[10]	8.0.90
CPU packet statistics	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

[9] In an 802.1BR (SPX) configuration, Ethernet in the First Mile for OAM is supported on SPX CB ports but not on PE ports.
[10] Also supported in 8.0.30j.

Port Mirroring

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Port mirroring and monitoring (mirroring of both inbound and outbound traffic on individual ports)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL-based mirroring[11]	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
MAC address filter-based mirroring[11]	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VLAN-based mirroring[11]	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ERSPAN[11]	No	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
RSPAN	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90

RMON - Remote Networking Monitoring

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Remote monitoring (RMON 2)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Specifying the maximum number of entries allowed in the RMON Control Table	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

Syslog

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Syslog messages (RFC 3164)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Enhanced Syslog headers specific to RFC 5424	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
Real-time display of Syslog messages	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Real-time display for Telnet or SSH sessions	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Show log on all terminals	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Syslog time stamps	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Multiple Syslog server logging	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Disabling logging of a message level	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Changing the number of entries the local buffer can hold	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Changing the log facility	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Displaying Interface names in Syslog messages	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Displaying TCP and UDP port numbers in Syslog messages	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Retaining Syslog messages after a soft reboot	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Clearing Syslog messages from the local buffer	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Disabling Syslog messages and traps for CLI access	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Broadcast, unknown unicast, and multicast (BUM) suppression Syslog and SNMP notification	8.0.60	8.0.40a	8.0.40a	8.0.70	8.0.40a	8.0.90

[11] Not supported in an 802.1BR (SPX) configuration.

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
PKI authentication for Syslog	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
Syslog messages for xSTP	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

sFlow

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
sFlow version 2	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
sFlow version 5 (default)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
sFlow support for IPv6 packets	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
sFlow source IP address	8.0.60	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90

IP Multicast

- IPv4 Multicast Routing....21
- IPv6 Multicast Routing....21
- IPv4 Multicast VLAN Traffic Reduction....22
- IPv6 Multicast VLAN Traffic Reduction....22
- MLD - Multicast Listener Discovery....22
- MSDP - Multicast Source Discovery Protocol....22
- PIM - Protocol-Independent Multicast....23
- PIM6 - IPv6 Protocol-Independent Multicast....23

For considerations related to IP Multicast in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

IPv4 Multicast Routing

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Passive multicast route insertion (PMRI)	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IP Multicast Boundaries	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Concurrent support for multicast routing and snooping	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Modifying the Prune Wait Timer	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF support	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Hardware replication resource sharing	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 ACLs for rendezvous points (RPs)	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 Multicast Non-stop routing (NSR) support for PIM-SM, SSM, and Anycast RP	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 static mroute	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 Multicast forwarding	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Disable replication sharing	8.0.61	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
IGMP Proxy	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
PIM neighbor filter	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90

IPv6 Multicast Routing

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv6 multicast boundaries	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Embedded RPv6	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF support	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Hardware replication resource sharing	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Concurrent support for multicast routing and snooping	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Static mroute	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10a	8.0.90
IPv6 multicast forwarding	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90

IPv4 Multicast VLAN Traffic Reduction

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IGMP (v1, v2, and v3)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IGMP v1/v2/v3 snooping (global and local)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IGMP fast leave for v2	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IGMP membership tracking and fast leave for v3	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
PIM-SM v2 snooping	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Static IGMP groups with support for proxy	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IGMP static group traffic filtering	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Disabling the flooding of unregistered IPv4 multicast frames in an IGMP-snooping-enabled VLAN	8.0.60	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
Layer 2 mode querier configurable source IP address for multicast snooping	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90

IPv6 Multicast VLAN Traffic Reduction

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv6 multicast traffic reduction v1/v2 snooping per VLAN (global and local)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 multicast traffic reduction fast leave for v1	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 multicast traffic reduction tracking and fast leave for v2	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Static IPv6 multicast traffic reduction groups with support for proxy	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Disabling the flooding of unregistered IPv6 multicast frames in an MLD-snooping-enabled VLAN	No	No	No	8.0.70	8.0.30	8.0.90
Layer 2 mode querier configurable source IP address for multicast snooping	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
PIM6-SM snooping	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

MLD - Multicast Listener Discovery

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
MLD (v1 and v2)	8.0.60	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
MLD membership tracking and fast leave for v2	8.0.60	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90

MSDP - Multicast Source Discovery Protocol

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Multicast Source Discovery Protocol (MSDP)	No	No	8.0.20	8.0.70	8.0.10	8.0.90
MSDP Mesh Groups	No	No	8.0.20	8.0.70	8.0.10	8.0.90
MSDP Anycast RP	No	No	8.0.20	8.0.70	8.0.10	8.0.90

PIM - Protocol-Independent Multicast

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
PIM-SSM	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF support	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
PIM Dense	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
PIM Sparse	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
PIM Anycast RP	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 Multicast Non-stop routing (NSR) support for PIM-SM, SSM, and Anycast RP	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 PIM convergence on MAC movement	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	8.0.90
PIM Passive	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90

PIM6 - IPv6 Protocol-Independent Multicast

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv6 PIM-SSM	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 PIM Sparse	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 PIM Anycast RP	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF support	No	No	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 PIM convergence on MAC movement	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90

Layer 2 Switching

- Campus Fabric 25
- LAG - Link Aggregation Group 26
- MCT - Multi-Chassis Trunking 26
- MRP - Metro Ring Protocol 26
- Q-in-Q - 802.1q tunneling 27
- RFN - Remote Fault Notification 27
- RPF - Reverse Path Forwarding 27
- UDLD - Uni-Directional Link Detection 27
- VLAN - Virtual LAN 27
- VXLAN - Virtual Extensible LAN 28
- VRP - VLAN Registration Protocol (includes MVRP) 28
- VSRP - Virtual Switch Redundancy Protocol 28
- Protected Ports 28
- xSTP - Spanning Tree Protocols 28

For considerations related to Layer 2 switching in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Campus Fabric

Campus Fabric is also referred to as Switch Port Extender (SPX).

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
802.1BR control bridge	No	No	No	8.0.80	8.0.40	No
802.1BR port extender	8.0.70	8.0.50	8.0.40[12]	No	No	No
ACL- and VLAN-based mirroring	No	8.0.50	8.0.50	No	8.0.50	No
ARP rate limiting	No	8.0.50	8.0.50	No	8.0.50	No
DHCPv4 and DHCPv6 snooping	No	8.0.50	8.0.50	No	8.0.50	No
Dynamic ARP inspection	No	8.0.50	8.0.50	No	8.0.50	No
Ingress port rate limiting and egress port rate shaping	No	8.0.50	8.0.50	No	8.0.50	No
IP Source Guard (IPSG)	No	8.0.50	8.0.50	No	8.0.50	No
ND inspection	No	8.0.50	8.0.50	No	8.0.50	No
Ring topology with load balancing across uplinks	No	8.0.50	8.0.50	No	8.0.50	No
uRPF on PE ports	No	8.0.50	8.0.50	No	No	No
Zero touch SPX deployment	No	8.0.50	8.0.50	No	8.0.50	No
SPX ECID ping/trace	No	8.0.61	8.0.61	No	8.0.61	No
Auto image upgrade for PE (major release version)	8.0.70	8.0.70	8.0.70	No	N/A	No
Staggered upgrade for Campus Fabric	8.0.70	8.0.70	8.0.70	No	8.0.70	No
1G link between CB and PE	8.0.80	8.0.80	8.0.80	No	8.0.80	No
Increase VLANs on PE port	8.0.80	8.0.80	8.0.80	No	8.0.80	No

[12] Supported on ICX 7450-32ZP starting in 8.0.50.

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
PE console authentication	8.0.80	8.0.80	8.0.80	No	8.0.80	No

LAG - Link Aggregation Group

For considerations related to LAGs in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
LAG virtual interface	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
Dynamic insertion and removal of ports	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Dynamic lag name update	8.0.60	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
Static LAG	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LAG threshold for static LAG	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
802.3ad Link Aggregation Control Protocol (dynamic LAG)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Keepalive LAG	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
LAG symmetric load balancing	No	8.0.30b	8.0.30b	8.0.70	8.0.30b	8.0.90
LAG hardware failover	No	No	No	8.0.70	8.0.10	8.0.90
Resilient hashing	No	No	No	8.0.70	8.0.50	No
Support for LAG between different default port speeds	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

MCT - Multi-Chassis Trunking

For considerations related to MCT in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

NOTE
MCT is not supported in stacking mode.

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
MCT	No	No	No	8.0.90	8.0.10	8.0.90
Cluster client automatic configuration	No	No	No	8.0.90	8.0.10	8.0.90
xSTP BPDU forwarding	No	No	No	8.0.90	8.0.10	8.0.90
IPv4/IPv6 Multicast traffic reduction features with MCT	No	No	No	8.0.90	8.0.10	8.0.90
Layer 3 multicast routing over MCT (IPv4 only)	No	No	No	8.0.90	8.0.30	8.0.90
Layer 3 unicast routing over MCT (IPv4 only)	No	No	No	8.0.90	8.0.30	8.0.90
VRF over MCT	No	No	No	8.0.90	8.0.70	8.0.90

MRP - Metro Ring Protocol

For considerations related to MRP in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Metro Ring Protocol 1 (MRP 1)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Metro Ring Protocol 2 (MRP 2)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Extended MRP ring IDs from 1 through 1023	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

Q-in-Q - 802.1q tunneling

For considerations related to Q-in-Q in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
802.1ad (Q-in-Q) tagging	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Q-in-Q BPDU tunneling	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
Selective Q-in-Q	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90

RFN - Remote Fault Notification

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Remote Fault Notification (RFN) for 1 Gbps fiber	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

RPF - Reverse Path Forwarding

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
uRPF	No	8.0.40	8.0.40	8.0.70	8.0.30	8.0.90

UDLD - Uni-Directional Link Detection

For considerations related to UDLD in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Unidirectional Link Detection (UDLD) (Link keepalive)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
UDLD on tagged ports	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

VLAN - Virtual LAN

For considerations related to VLANs in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
VLAN	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Port-based VLANs	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VLAN groups	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Private VLANs (PVLANs)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
PVLANs with dual mode support	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
PVLAN with LAG	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
Super Aggregated VLANs	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Topology groups	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VLAN membership for out-of-band (OOB) management interface	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
Wrapper for adding/removing selective VLANS	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
Simultaneous tagged and untagged VLAN on a port	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90
VLAN mapping	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90

VXLAN - Virtual Extensible LAN

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
VXLAN support	N/A	N/A	N/A	No	8.0.70	No

VRP - VLAN Registration Protocol (includes MVRP)

For considerations related to MVRP in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
MVRP - Multiple VLAN Registration Protocol	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

VSRP - Virtual Switch Redundancy Protocol

For considerations related to VSRP in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Virtual Switch Redundancy Protocol (VSRP)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VSRP-Aware security features	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VSRP and MRP signaling	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VSRP Fast Start	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VSRP timer scaling	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

Protected Ports

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Protected Ports	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90

xSTP - Spanning Tree Protocols

For considerations related to xSTP in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
802.1s Multiple Spanning Tree	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
802.1s Multiple Spanning Tree enhancement (MSTP+)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
802.1W Rapid Spanning Tree Protocol (RSTP)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
802.1D Spanning Tree	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Fast Port Span, Fast Uplink Span, and Single-instance Span	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
PVST/PVST+ compatibility	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
PVRST+ compatibility	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
PVST+ Protect	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
Spanning Tree Protocol (STP) protection	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Root Guard	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Root Guard for MSTP	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
BPDU Guard	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Error disable recovery	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Port loop detection[13]	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Spanning Tree path cost method changes	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
MSTP path-cost configuration	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

[13] In an 802.1br (SPX) configuration, strict mode loop detection is not supported on explicitly tagged PE ports, but it is supported on untagged and dual-mode PE ports.

Layer 3 Routing/Network Layer

- ARP - Address Resolution Protocol 31
- BFD - Bidirectional Forwarding Detection 31
- BGP4 - IPV4 Border Gateway Protocol 32
- BGP4+ - IPv6 Border Gateway Protocol 32
- DHCP - Dynamic Host Configuration Protocol 33
- DNS - Domain Name System 33
- GRE - Generic Routing Encapsulation 33
- ICMP - Internet Control Message Protocol 34
- IP Addressing 34
- IPv6 Addressing 34
- Multi-VRF 35
- OSPF - IPv4 Open Shortest Path First 35
- OSPFv3 - IPv6 Open Shortest Path First 36
- RIP - IPv4 Routing Information Protocol 37
- RIPng - IPv6 Routing Information Protocol 37
- VRRPv2 - Virtual Router Redundancy Protocol Version 2 37
- VRRPv3 - Virtual Router Redundancy Protocol Version 3 37

For considerations related to Layer 3 Routing in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

ARP - Address Resolution Protocol

For considerations related to ARP in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Static ARP entries	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Configurable ARP priority	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ARP Packet Validation	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10a	8.0.90
Reverse Address Resolution Protocol (RARP)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Proxy ARP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Local proxy ARP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Learning Gratuitous ARP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Dynamic ARP inspection	8.0.60	8.0.30[14]	8.0.20[14]	8.0.70	8.0.10[14]	8.0.90

BFD - Bidirectional Forwarding Detection

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
BFD	No	No	No	No	8.0.90	No

[14] Not supported in an 802.1br (SPX) configuration.

BGP4 - IPV4 Border Gateway Protocol

For considerations related to BGP4 in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
BGP4	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 Graceful Restart	No	No	8.0.20	8.0.70	8.0.20	8.0.90
BGP4 Graceful Restart helper mode	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Redistributing IBGP routes	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Client-to-Client Route Reflection	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Route Flap Dampening	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Originating the Default Route	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Multipath Load Sharing	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Using the IP Default Route as a Valid Next Hop for a BGP4 Route	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Next-Hop Recursion	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Next-Hop Update Timer	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Generalized TTL Security Mechanism Support	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Enhanced per-neighbor debug statements and per-neighbor BGP4 debug filters	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 Peer Notification during a Management Module Switchover	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Encryption code for passwords, authentication keys, and community strings	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 MD5 Authentication	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Route redistribution to other protocols	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 Peer Group	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 Route Reflectors	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 Neighbor Local-AS	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 Local-AS for VRF	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 Processing Optimization for Administratively Down Peers	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 Outbound Policy Processing Optimization	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Requiring the First AS to be the Neighbor's AS	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Four-byte AS Numbers (AS4)	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4 AS4 Confederation Error Checking	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Static BGP4 Networks	No	No	8.0.20	8.0.70	8.0.10	8.0.90

BGP4+ - IPv6 Border Gateway Protocol

For considerations related to BGP4+ in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
BGP4+	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Configuring BGP4+ Neighbors Using Global or Link-Local IPv6 Addresses	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Importing Routes into BGP4+	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Advertising the Default BGP4+ Route	No	No	8.0.20	8.0.70	8.0.10	8.0.90

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Using the IP default route as a valid next-hop for a BGP4+ route	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Enabling next-hop recursion	No	No	8.0.20	8.0.70	8.0.10	8.0.90
BGP4+ Graceful Restart	No	No	8.0.20	8.0.70	8.0.10	8.0.90

DHCP - Dynamic Host Configuration Protocol

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
BootP/DHCP relay	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Specifying which IP address will be included in a DHCP/BootP reply packet	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DHCP address acquisition	8.0.60	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
DHCP Server	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DHCP Auto-Configuration	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DHCP assist	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IP helper	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DHCPv6 relay agent	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DHCPv6 prefix delegation notification	8.0.60	8.0.40	8.0.30	8.0.70	8.0.30	8.0.90
DHCP snooping	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DHCPv6 snooping	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DHCP relay agent information (DHCP Option 82) RFC 3046	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DHCPv6 link-layer option	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
DHCPv6 server	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90
ASCII support for DHCP option 82	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
DHCP Static MAC address to IP address mapping	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
DHCP Option 43	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
DHCP Option 60	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
DHCP Generic Options	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
DHCP Snooping - enable Option 82 at the global level	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90
DHCP snooping, ARP Inspection and IPSG scale improvements	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90
Discovery of SmartZone based on DHCP Option 43	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90
VLAN range command for DHCP snooping, DAI, and IPSG	8.0.80	8.0.80	8.0.80	8.0.80	8.0.80	8.0.90

DNS - Domain Name System

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Domain Name Server (DNS) resolver	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

GRE - Generic Routing Encapsulation

For considerations related to GRE in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv4 point-to-point GRE IP tunnels	No	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
GRE tunnel counters (CLI and SNMP)	No	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90

ICMP - Internet Control Message Protocol

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv4/IPv6 ICMP	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ICMP redirect messages	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ICMP Router Discovery Protocol (IRDP)	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

IP Addressing

For considerations related to IP addressing in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Bandwidth for IP interfaces	8.0.61	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
Equal Cost Multi-Path (ECMP) load sharing	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Single source address for the following packet types: Telnet, TFTP, Syslog, NTP, TACACS, TACACS+, RADIUS, SSH, SNMP	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Virtual Interfaces	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
31-bit subnet mask on point-to-point networks	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IP follow	8.0.61	8.0.30	8.0.30	8.0.70	8.0.30	8.0.90
Jumbo frames: Up to 10,000 bytes	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IP MTU (individual port setting)	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Path MTU discovery	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Static route for IPv4	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Unicast reverse path forwarding (uRPF)	No	8.0.40	8.0.40	8.0.70	8.0.30	8.0.90
User-configurable MAC address per IP interface	8.0.61	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
Change IP address using replace keyword	8.0.61	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90

IPv6 Addressing

For considerations related to IPv6 addressing in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Global IPv6 address	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Link-local IPv6 address	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv4 and IPv6 host stacks	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 neighbor discovery	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 neighbor discovery Inspection	8.0.61	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
IPv6 neighbor discovery proxy	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv6 router advertisement (RA) and solicitation	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 router advertisement (RA) preference support	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 over IPv4 tunnels	No	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ECMP load sharing	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 Layer 3 forwarding	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 redistribution	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 MTU	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Static route for IPv6	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Static neighbor entries	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Hop limit for IPv6 packets	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Clear IPv6 global information	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Route-only support	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 prefix delegation	8.0.61	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
IPv6 default gateway support	8.0.61	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90

Multi-VRF

For considerations related to Multi-VRF in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Multi-VRF IPv4 forwarding	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF IPv6 forwarding	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF for IPv4 and IPv6 unicast- static routing	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF for IPv4 Unicast-RIP	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF for IPv4 and IPv6 Unicast - OSPF	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF for IPv4 Unicast-BGP4	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF for BGP4+	No	No	8.0.30	8.0.70	8.0.30	8.0.90
Multi-VRF VRRP and VRRP-E for IPv4 and IPv6	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF MSDP for IPv4	No	No	8.0.20	8.0.70	8.0.10	8.0.90
Multi-VRF Multicast over GRE for IPv4	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
DAI support for Multi-VRF	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
IPSG support for Multi-VRF	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
DHCP snooping support for Multi-VRF	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
sFlow on Multi-VRF	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
Management VRF support	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
VRF membership in out-of-band (OOB) management interface	No	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90

OSPF - IPv4 Open Shortest Path First

For considerations related to OSPF in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
OSPF v2	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Graceful restart [15]	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Graceful restart helper-mode	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Block outbound LSA flooding	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
OSPF route redistribution filters	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Filter OSPF routes into IP Route table	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
OSPF group LSA pacing	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
OSPF traps	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Encryption code for passwords, authentication keys and community strings	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VRF-lite for CE routers	No	8.0.50	8.0.20	8.0.70	8.0.10	8.0.90
OSPF NSR[15]	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
OSPF distribution lists	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Passive mode for OSPF	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
MD5 authentication for OSPF	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Keychain for OSPF	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
OSPF cryptographic authentication using HMAC-SHA algorithms	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90

OSPFv3 - IPv6 Open Shortest Path First

For considerations related to OSPFv3 in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
OSPFv3	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Route redistribution into OSPFv3	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
OSPFv3 route filtering	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Shortest Path First (SPF) Timers	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
OSPFv3 LSA Pacing	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Modify exit overflow intervals	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Modify External LSA Database Limit	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
OSPFv3 Event Logging	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPsec for OSPFv3	No	No	8.0.70	No	No	8.0.90
Encryption code for passwords, authentication keys and community strings	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
OSPFv3 Graceful Restart Helper	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
OSPFv3 NSR[16]	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
OSPFv3 authentication trailer	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90

[15] In a stack configuration only.
[16] Supported only in a stacking configuration.

RIP - IPv4 Routing Information Protocol

For considerations related to RIP in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RIP V1 and V2[17]	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Redistribution from other protocols into RIP	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
RIP default route learning	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
RIP route filters	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

RIPng - IPv6 Routing Information Protocol

For considerations related to RIPng in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RIPng	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
RIPng Timers	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
Route redistribution into RIPng	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90

VRRPv2 - Virtual Router Redundancy Protocol Version 2

For considerations related to VRRPv2 in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Virtual Router Redundancy Protocol (VRRP)	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VRRP timer scaling	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VRRP Extended (VRRP-E)	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VRRP-E slow start timer	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VRRP-E timer scale	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
VRRP-E Extension for Shortest Path Forwarding	8.0.61	8.0.50	8.0.50	8.0.70	8.0.10	8.0.90
VRRP and VRRP-E statistics enhancement	8.0.61	8.0.30 [18]	8.0.20	8.0.70	8.0.10	8.0.90
VRRP-E hitless upgrade	8.0.61	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90

VRRPv3 - Virtual Router Redundancy Protocol Version 3

For considerations related to VRRPv3 in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

[17] RIP is included with the PREM license.
[18] VRRP only.

Layer 3 Routing/Network Layer

VRRPv3 - Virtual Router Redundancy Protocol Version 3

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv6 VRRP-E	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 VRRP v3	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
VRRPv3 Enhancement: v2-checksum support	8.0.61	8.0.40	8.0.20	8.0.70	8.0.10	8.0.90
VRRPv3 Enhancement: IPv6 Link-Local Auto-generation	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

Security

- Authentication, Authorization, and Accounting..... 39
- ACLs - Access Control Lists..... 39
- DoS (Denial of Service) protection..... 40
- Flexible Authentication (802.1x Authentication and MAC Authentication)..... 40
- HTTP/HTTPS..... 42
- IP Source Guard..... 42
- IPsec - IP security..... 42
- MACsec - Media Access Control Security..... 43
- PBR - Policy-Based Routing..... 43
- Port MAC Security..... 43
- RADIUS..... 43
- RA Guard - Router Advertisement Guard..... 44
- SSH - Secure Shell..... 44
- TACACS & TACACS+..... 44
- User Accounts and Passwords..... 45

For considerations related to security in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Authentication, Authorization, and Accounting

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Authentication, Authorization, and Accounting	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Specifying the authentication-failure action	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Configurable password for MAC authentication	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
AAA support for console commands	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Restricting remote access to management functions	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Disabling TFTP access	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Using ACLs to restrict remote access	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
AAA authentication-method lists	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Packet filtering on TCP flags	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
MAC accounting	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10a	8.0.90

ACLs - Access Control Lists

For considerations related to ACLs in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv4/IPv6 ACLs	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 access list (management ACLs)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 ACL comment text	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv6 ACL logging of denied packets for ingress traffic	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPv4/IPv6 ACL logging for Permit traffic	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
ACL accounting	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10a	8.0.90
Standard named and numbered ACLs	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Extended named and numbered ACLs	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
User input preservation for ACL TCP/UDP port numbers	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL comment text	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL logging of denied packets for ingress traffic	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL logging with traffic rate limiting (to prevent CPU overload)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Strict control of ACL filtering of fragmented packets	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL support for switched traffic in the router image	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL filtering based on VLAN membership or VE port membership	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACLs to filter ARP packets	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Filtering on IP precedence and ToS value	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
MAC address filtering (filtering on source and destination MAC addresses)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
QoS options for IP ACLs[19]	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Priority mapping using ACLs (Inbound traffic)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Priority mapping using ACLs (Outbound traffic)	No[20]	No[20]	No[20]	8.0.70	8.0.10	8.0.90
Hardware usage statistics	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
No TTL decrement	8.0.61	No	8.0.30	8.0.70	8.0.30	8.0.90
Sequence numbering in ACLs	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
Accounting for outbound ACLs	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90

DoS (Denial of Service) protection

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Smurf attack (ICMP attack) protection	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
TCP SYN attack protection	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
TCP MSS	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

Flexible Authentication (802.1x Authentication and MAC Authentication)

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
802.1x Authentication	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
EAP pass-through support	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

[19] DSCP QoS mapping is not supported for outgoing traffic.
[20] Internal priority marking is not supported for outgoing traffic.

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
802.1x accounting	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
802.1x with dynamic ACL assignment	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
802.1x with dynamic VLAN assignment	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
RADIUS timeout action	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
802.1x and MAC authentication on the same port	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
802.1x and sFlow: 802.1x user name export support for encrypted and non-encrypted EAP types	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Flexible Authentication (FlexAuth)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
Support for Flexible authentication together with Dynamic ARP inspection (IPv4 and IPv6) with dynamic ACLs	8.0.60	8.0.40a	8.0.40a	8.0.70	8.0.40a	8.0.90
Support for Flexible authentication together with DHCPv4 and DHCPv6 snooping with dynamic ACLs	8.0.60	8.0.40a	8.0.40a	8.0.70	8.0.40a	8.0.90
Flexible authentication enhancements: • Critical Voice VLAN • Reauthentication with dead RADIUS server • Multiple IPv6 addresses with dynamic ACLs • Additional RADIUS attributes (including idle timeout, accounting terminate cause) • Colon-separated MAC address format for MAC authentication	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
Support for 802.1x authentication together with IP Source guard protection	8.0.60	8.0.40a	8.0.40a	8.0.70	8.0.40a	8.0.90
Support for MAC Authentication together with IP Source guard protection	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Support for MAC Authentication together with Dynamic VLAN assignment	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Support for MAC Authentication together with Dynamic ACLs	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Support for MAC Authentication together with 802.1x	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Support for 802.1x together with Denial of Service (DoS) attack protection	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Periodic reauthentication for MAC Authentication	8.0.60	8.0.40a	8.0.40a	8.0.70	8.0.40a	8.0.90
Periodic reauthentication for 802.1x	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Automatic removal of Dynamic VLAN for MAC authenticated ports	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Authenticating multiple MAC addresses on an interface	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Specifying the format of the MAC addresses sent to the RADIUS server	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SNMP Traps for MAC authentication	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
MAC address filter override of 802.1x	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Aging time for blocked MAC Addresses	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Interim RADIUS accounting updates for 802.1x authentication and MAC authentication	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
Accounting for 802.1x and MAC authentication	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
Outbound dynamic IPv4 ACLs and IPv6 ACLs	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
Support for Ruckus CloudPath policy server	8.0.60	8.0.60	8.0.60	8.0.70	8.0.60	8.0.90
Aruba ClearPass support	8.0.50	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
Ruckus Cloudpath support	8.0.60	8.0.60	8.0.60	8.0.70	8.0.60	8.0.90
Cisco ISE support	8.0.60	8.0.60	8.0.60	8.0.70	8.0.60	8.0.90

HTTP/HTTPS

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Enabling and disabling Web Authentication	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Configuring the Web Authentication mode	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Web Authentication options	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
External Captive Portal with Aruba ClearPass	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
External Captive Portal with Cloudpath	8.0.60	8.0.60	8.0.60	8.0.70	8.0.60	8.0.90
External Captive Portal with Cisco ISE	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
Configurable URL for External Web Authentication	8.0.60	8.0.50	8.0.50[21]	8.0.70	8.0.50	8.0.90
Dynamic ACLs in WebAuth	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
SSL security	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SSL security for the Web Management Interface	8.0.60	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90

IP Source Guard

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IP source guard	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
IPSG support in an 802.1br (SPX) configuration	8.0.70	8.0.50	8.0.50	No	8.0.50	8.0.90
IPSG at VLAN level	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90

IPsec - IP security

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPsec service module support	No	No	8.0.50	No	No	No
IPv6 support for IPsec	No	No	8.0.70	No	No	No
NAT Traversal for IPsec	No	No	8.0.70	No	No	No
Backup IPSec module for HA	No	No	8.0.70	No	No	No
BGP over IPsec	No	No	8.0.70	No	No	No
Support for 100 IPsec tunnels	No	No	8.0.70	No	No	No
PKI Support for IKE	No	No	8.0.70	No	No	No

[21] Also supported in 8.0.30j.

MACsec - Media Access Control Security

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Media Access Control Security (MACsec)	No	No	8.0.30	8.0.70[22]	No	No

PBR - Policy-Based Routing

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Policy-based routing (PBR) for IPv4	8.0.61	8.0.40a[23]	8.0.20[23]	8.0.70	8.0.10[23]	8.0.90
PBR on VRF-enabled interface	No	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
IPv6 PBR support	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90

Port MAC Security

For considerations related to Port MAC Security in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
MAC port security	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Setting the maximum number of secure MAC addresses on an interface	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Setting the port security age timer	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Specifying secure MAC addresses	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Autosaving secure MAC addresses to the startup-config file	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Specifying the action taken when a security violation occurs	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Port security statistics	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Clearing port security statistics	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
No port shutdown for “restrict” option	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90

RADIUS

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RADIUS	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
RADIUS Change of Authorization (CoA)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
CoA extended options: Vendor-specific Foundry-COA-Command attribute for RADIUS server[24]	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
RADIUS over TLS	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90

[22] Beta quality
[23] Not supported in an 802.1BR (SPX) configuration.
[24] Also supported in 8.0.30j.

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
LLDP and CDP parameters for IP phones using RADIUS attributes	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
RADIUS dead server detection	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
Classification of RADIUS servers	8.0.60	8.0.50	8.0.50	8.0.70	8.0.50	8.0.90
PKI authenication for RADIUS	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90

RA Guard - Router Advertisement Guard

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IPv6 RA Guard	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

SSH - Secure Shell

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
SCP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SSH	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Secure Shell (SSH) version 2	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
AES encryption for SSHv2	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Optional parameters for SSHv2	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Using secure copy (SCP) with SSHv2	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Filtering SSHv2 access using ACLs	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Terminating an active SSHv2 connection	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SSH client	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Boot image download over SCP	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
SCP client support	8.0.60	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
supportSave for SCP	8.0.61	8.0.61	8.0.61	8.0.70	8.0.61	8.0.90
SSH rekey	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
DH-Group-14 key exchange method	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
SSH enabled (and Telnet disabled) on switches that do not have a statrtup-config file (i.e. factory default configuration).	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90
Default username and password **NOTE** Applies only to new ICX switches that are initially deployed using the 08.0.90.	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90

TACACS & TACACS+

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
TACACS & TACACS+	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Two-factor authentication with TACACS+ server	8.0.60	8.0.50[25]	8.0.50[25]	8.0.70	8.0.50[25]	8.0.90

User Accounts and Passwords

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Local user accounts	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Local user passwords	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Automatic re-enabling of locked-out user accounts	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90
Local user accounts with encrypted passwords	8.0.60	8.0.40	8.0.40	8.0.70	8.0.40	8.0.90

[25] Also supported in 8.0.30j.

SDN

- OpenFlow..... 47

OpenFlow

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
OpenFlow 1.0[26]	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
OpenFlow 1.3[26]	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
OpenFlow enabled on per-port basis (Hybrid switch mode)	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
OpenFlow Layer 3 Hybrid Port Mode	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
OpenFlow Layer 2 Hybrid Port Mode	8.0.61	8.0.50	8.0.50	8.0.70	8.0.50	No
OpenFlow Layer 23 Hybrid Port Mode	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
OpenFlow Layer 2 and Layer 3 match fields simultaneously	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
Layer 2 OpenFlow match rules	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
Layer 3 OpenFlow match rules	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
Support for passive mode on the device	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
OpenFlow actions	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
OpenFlow Flood action	8.0.61	8.0.40a	8.0.40a	8.0.70	8.0.40a	No
Multiple controller support	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
Group table support	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
Meter table support	8.0.61	8.0.40	8.0.30	8.0.70	8.0.30	No
OpenFlow for ICX 7xxx stack	8.0.61	8.0.40	8.0.40	8.0.70	8.0.40	No

[26] Not supported in an 802.1BR (SPX) configuration.

Stacking

- Stack Failover/Switchover..... 49
- Stacking..... 49

Stack Failover/Switchover

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Hitless failover	8.0.61	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
Hitless switchover	8.0.61	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90

Stacking

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Building stacking: Secure-setup[27], Automatic configuration, Manual configuration	8.0.61	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
Building stacking: Interactive-setup, Zero-touch provisioning	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90
Persistent MAC address	8.0.61	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
Stacking software upgrade	8.0.61	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
Trunking of stacked ports	8.0.61	8.0.30	8.0.30[28]	8.0.70[29]	8.0.20	8.0.90
Auto Image Copy for stack units	8.0.61	8.0.30	8.0.20	8.0.70	8.0.20	8.0.90
User-configurable buffer profiles	8.0.61	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Elimination of required default-ports configuration	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90
Two-unit linear topology stacking trunks	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90
Long-distance stacking on 10G ports	8.0.61	8.0.30	8.0.30	8.0.70	No	8.0.90
Long-distance stacking on 40G ports	No	No	No	8.0.70	8.0.30	8.0.90
100G stacking	No	No	No	8.0.70	No	8.0.90

[27] Secure-setup is replaced by Stack interactive-setup on all platforms beginning with release 8.0.90.
[28] Supported on 10G ports only.
[29] Supported on 40G links only.

Traffic Management

- QoS - Quality of Service..... 51
- Rate Limiting and Shaping..... 51

For considerations related to traffic management in an 802.1BR (SPX) configuration, refer to the *RUCKUS FastIron Campus Fabric Configuration Guide*

QoS - Quality of Service

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Scheduling and queuing: Strict Priority (SP), Weighted Round Robin (WRR), Combined SP and WRR, 8 priority queues	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
802.1p classification and marking	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DiffServ support	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DSCP-based QoS (IPv4 and IPv6)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
DSCP and PCP global remarking	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
QoS mappings (DSCP to CoS and vice versa)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
User-configurable scheduler profiles	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Ingress buffer management	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Per-port PFC	No	8.0.40	8.0.40	No	8.0.20	No
Port Flow Control: Responds to flow control packets, but does not generate them	No	8.0.30	8.0.20	No	8.0.10	No
Symmetric flow control: Can transmit and receive 802.3x PAUSE frames	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Auto-negotiation and advertisement of flow control	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
QoS priority	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Dynamic buffer allocation for QoS priorities (egress)	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Egress queue counters	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Separate QoS queuing for unicast and multicast	No	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

Rate Limiting and Shaping

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Inbound rate limiting (port-based rate limiting on inbound ports)[30]	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	No
Outbound port and queue-based rate shaping[30]	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10b	No
ACL-based rate limiting	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Byte-based broadcast, multicast, and unknown-unicast limits	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
Packet-based broadcast, multicast, and unknown-unicast limits	8.0.60	No	No	8.0.70	8.0.10	8.0.90

[30] Not supported in an 802.1br (SPX) configuration.

Feature	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
Traffic policies[30]	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL-based fixed rate limiting	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL-based adaptive rate limiting	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
ACL statistics	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90
CPU rate limiting	8.0.60	8.0.30	8.0.20	8.0.70	8.0.10	8.0.90

[30] Not supported in an 802.1br (SPX) configuration.

Standards compliance

- RFC Compliance..... 53
- IEEE Compliance..... 61

RFC Compliance

The following table lists the RFCs that are supported on the RUCKUS ICX platforms. Footnotes indicate exceptions.

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 768	User Datagram Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 783	Trivial File Transfer Protocol (TFTP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 791	Internet Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 792	Internet Control Message Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 793	Transmission Control Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 826	Ethernet Address Resolution Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 854	Telnet Protocol Specification	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 855	Telnet Option Specifications	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 894	IP over Ethernet Frames	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 896	Congestion Control in IP/TCP Internetworks	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 903	A Reverse Address Resolution Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 906	Bootstrap Loading using TFTP	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 919	Broadcast Internet Datagrams	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 920	Domain Requirements	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 922	Broadcast Internet Datagrams in the Presence of Subnets	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 925	Multi-LAN Address Resolution	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 950	Internet Standard Subnetting Procedure	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 951	Bootstrap Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1027	Using ARP to Implement Transparent Subnet Gateways	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1042	IP Datagrams over IEEE 802 Networks (for Ethernet)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1057 (ANSI-TIA)	LLDP-MED	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1058	Route Information Protocol (RIP) Version 1	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1112	Host Extensions for IP Multicasting	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1122 & RFC 1123	Requirements for Internet Hosts - Communication Layers	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1155	Structure and Identification of Management Information (SMI)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1156	Management Information Base for Network Management of TCP/IP-based Internets	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1157	Simple Network Management Protocol (SNMP) Version 1	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1191	Path MTU Discovery	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 1212	Concise MIB Definitions	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1213	Management Information Base for Network Management of TCP/IP-based Internets: MIB-II	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1215	SNMP Generic Traps	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1269	Definitions of Managed Objects for the Border Gateway Protocol (Version 3)	8.0.61	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1256	ICMP Router Discovery Messages	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1305	Network Time Protocol (Version 3)[31]	8.0.60	N/A	N/A	08.0.70	N/A	8.0.90
RFC 1321	The MD5 Message-Digest Algorithm	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1340	Assigned Numbers	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1350	The TFTP Protocol (Revision 2)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1354	IP Forwarding Table MIB	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1398	Definitions of Managed Objects for the Ethernet-like Interface Types	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1403	BGP OSPF Interaction	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1492	An Access Control Protocol, Sometimes Called TACACS	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1493	Definition of Managed Objects for Bridges[32]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1516	Definitions of Managed Objects for IEEE 802.3 Repeater Devices	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1519	Classless Inter-Domain Routing (CIDR): an Address Assignment and Aggregation Strategy	No	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1541	Dynamic Host Configuration Protocol (DHCP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1542	Clarifications and Extensions for the Bootstrap Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1573	SNMP MIB II	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1583	Open Shortest Path First (OSPF)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1591	Domain Name Structure and Delegation (Client)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1587	The OSPF Not-So-Stubby Areas (NSSAs) Option	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1643	Definitions of Managed Objects for the Ethernet-like Interface Types	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1657	Definitions of Managed Objects for the Fourth Version of the Border Gateway Protocol (BGP4) using SMIv2	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1723	RIP Version 2 Carrying Additional Information	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1724	RIP Version 2 MIB Extension	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1745	BGP4/IDRP for IP-OSPF Interaction	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1757	Remote Network Monitoring (RMON) Management Information Base[33]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1765	OSPF Database Overflow	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1771	Border Gateway Protocol 4 (BGP4)	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1772	Application of BGP in the Internet (BGP4)	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90

[31] All platforms are compliant with RFC 5905 NTPv4, which obsoletes RFC 1305 and RFC 4330.
[32] Excludes filtering of objects.
[33] Groups 1, 2, 3, and 9.

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 1812	Requirements for IP Version 4 Routers	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1850	OSPF Version 2 MIB	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1886	DNS Extensions to Support IPv6	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1887	An Architecture for IPv6 Unicast Address Allocation	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1901	Introduction to Community-based SNMPv2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1905	Protocol Operations for Version 2 of the Simple Network Management Protocol (SNMPv2)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1906	Transport Mappings for Version 2 of the Simple Network Management Protocol (SNMPv2)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1918	Address Allocation for Private Internets (Private Address Space)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1965	Autonomous System Confederations for BGP4	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1966	BGP Route Reflection	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1981	Path MTU Discovery for IPv6	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 1997	BGP Communities Attribute	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2011	SNMPv2 Management Information Base for the Internet Protocol using SMIv2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2012	SNMPv2 Management Information Base for the Transmission Control Protocol using SMIv2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2013	SNMPv2 Management Information Base for the User Datagram Protocol using SMIv2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2021	Remote Network Monitoring Management Information Base Version 2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2068	Hypertext Transfer Protocol (HTTP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2080	RIPng for IPv6	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2096	IP Forwarding Table MIB (Obsoleted by RFC 4292)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2131	Dynamic Host Configuration Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2132	DHCP Options and BOOTP Vendor Extensions	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2138	Remote Authentication Dial In User Server (RADIUS) (Obsoleted by RFC 2865)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2139	RADIUS Accounting (Obsoleted by RFC 2866)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2154	OSPF with Digital Signatures	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2178	Open Shortest Path First (OSPF) Version 2 (Obsoleted by RFC 2328)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2233	The Interfaces Group MIB using SMIv2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2236	Internet Group Management Protocol (IGMP) Version 2	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2239	Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs) using SMIv2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2283	Multiprotocol Extensions for BGP-4	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2328	OSPF Version 2[34]	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90

[34] AS External LSA reduction is supported.

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 2330	Framework for IP Performance Metrics (Port Interface Rates)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2338	Virtual Router Redundancy Protocol (VRRP)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2362	Protocol Independent Multicast-Sparse Mode (PIM-SM): Protocol Specification	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2370	The OSPF Opaque LSA Option	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2373	IPv6 Addressing Architecture	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2374	IPv6 Aggregatable Global Unicast Address Format (Obsoleted by RFC 3587)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2375	IPv6 Multicast Address Assignments	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2385	Protection of BGP Sessions via the TCP MD5 Signature Option[35]	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2404	HMAC-SHA 1-96	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2439	BGP Route Flap Dampening	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2453	RIP Version 2	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2460	Internet Protocol, Version 6 (IPv6) Specification	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2461	Neighbor Discovery for IP Version 6 (IPv6)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2462	IPv6 Stateless Address Auto-configuration (Obsoleted by RFC 4862)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2463	ICMPv6	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2464	Transmission of IPv6 Packets over Ethernet Networks	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2473	Generic Packet Tunneling in IPv6	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2474	Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2475	An Architecture for Differentiated Services	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2526	Reserved IPv6 Subnet Anycast Addresses	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2545	BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing	N/A	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2560	X.509 Internet Public Key Infrastructure Online Certificate Status Protocol - OCSP (PKI)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2570	Introduction to Version 3 of the Internet-standard Network Management Framework	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2571	An Architecture for Describing SNMP Management Frameworks	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2572	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2573	SNMP Applications	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2574	User-based Security (USM) for Version 3 of the Simple Network Management Protocol (SNMPv3)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2575	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90

[35] For BGP 4.

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 2576	Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2578	Structure of Management Information Version 2 (SMIv2)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2579	Textual Conventions for SMIv2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2580	Conformance Statements for SMIv2	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2597	Assured Forwarding PHB Group	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2665	Definitions of Managed Objects for the Ethernet-like Interface Types	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2674	Bridge MIB Extensions	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2698	A Two Rate, Three Color Marker	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2710	Multicast Listener Discovery (MLD) for IPv6	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2740	OSPF for IPv6	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2784	Generic Routing Encapsulation	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2787	Definitions of Managed Objects for the Virtual Router Redundancy Protocol	8.0.61	8.0.30f	8.0.30f	08.0.70	8.0.30f	8.0.90
RFC 2796	BGP Route Reflection	N/A	No	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2818	HTTP over TLS	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2819	Remote Network Monitoring Management Information Base	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2842	Capabilities Advertisement with BGP-4	N/A	No	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2865	Remote Authentication Dial In User Service (RADIUS) [June 2000]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2866	RADIUS Accounting [June 2000]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2868	RADIUS Attributes for Tunnel Protocol Support [June 2000]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2869	RADIUS Extensions [June 2000]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2918	Route Refresh Capability for BGP-4	N/A	No	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2932	IPv4 Multicast Routing MIB	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2933	Internet Group Management Protocol MIB	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 2934	Protocol Independent Multicast MIB for IPv4	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3101	The OSPF Not-So-Stubby Area (NSSA) Option	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3137	OSPF Stub Router Advertisement	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3162	RADIUS and IPv6	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3164	The BSD Syslog Protocol (This RFC is obsoleted by RFC 5424)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3176	InMon Corporation's sFlow: A Method for Monitoring Traffic in Switched and Routed Networks	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3246	An Expedited Forwarding PHB (Per-Hop Behavior) [2]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3315	Dynamic Host Configuration Protocol for IPv6 (DHCPv6)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3376	Internet Group Management Protocol, Version 3	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3392	Capabilities Advertisement with BGP-4	N/A	No	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3410	Introduction and Applicability Statements for Internet Standard Management Framework	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 3411	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3412	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3413	Simple Network Management Protocol (SNMP) Applications	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3414	User-based Security Model (USM) for Version 3 of the Simple Network Management Protocol (SNMPv3)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3415	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3416	Version 2 of the Protocol Operations for SNMP	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3417	Transport Mappings for the Simple Network Management Protocol (SNMPv3)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3418	Management Information Base (MIB) for SNMP [December 2002]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3442	The Classless Static Route Option for DHCPv4 Version 4	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3446	Anycast Rendezvous Point (RP) Mechanism using Protocol Independent Multicast (PIM) and Multicast Source Discovery Protocol (MSDP)	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3484	Default Address Selection for IPv6	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3513	IPv6 Addressing Architecture	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3579	RADIUS (Remote Authentication Dial In User Service) Support For Extensible Authentication Protocol (EAP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3587	An IPv6 Aggregatable Global Unicast Address Format	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3596	DNS Extensions to Support IPv6	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3618	Multicast Source Discovery Protocol (MSDP)	8.0.61	No	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3623	Graceful OSPF Restart	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3704	Ingress Filtering for Multihomed Networks (Reverse Path Forwarding)	8.0.61	No	No	08.0.70	8.0.30	8.0.90
RFC 3748	Extensible Authentication Protocol (EAP)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3768	Virtual Router Redundancy Protocol (VRRP) Version 3 for IPv4 and IPv6	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3810	Multicast Listener Discovery Version 2 (MLDv2) for IPv6	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3879	Deprecating Site Local Addresses (IPv6)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3942	Reclassifying Dynamic Host Configuration Protocol v4 Options[36]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3973	Protocol Independent Multicast - Dense Mode (PIM-DM)	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90
RFC 3986	Uniform Resource Identifier (URI): Generic Syntax (with IPv6)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4007	IPv6 Scoped Address Architecture	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4022	Management Information Base for the Transmission Control Protocol (TCP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90

[36] Partial Support. Options 66, 67, 82, and 150 are supported.

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 4087	IP Tunnel MIB	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90
RFC 4113	Management Information Base for the User Datagram Protocol (UDP)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4133	Entity MIB (Version 3)	8.0.60	8.0.50	8.0.50	08.0.70	8.0.50	8.0.90
RFC 4193	Unique Local IPv6 Unicast Addresses	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4188	Definitions of Managed Objects for Bridges [September 2005]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4213	Basic Transition Mechanisms for IPv6 Hosts and Routers	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4222	Prioritized Treatment of Specific OSPF Version 2 Packets and Congestion Avoidance	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4250	The Secure Shell (SSH) Protocol Assigned Numbers	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4251	The Secure Shell (SSH) Protocol Architecture	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4252	The Secure Shell (SSH) Authentication Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4253	The Secure Shell (SSH) Transport Layer Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4254	The Secure Shell (SSH) Connection Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4271	A Border Gateway Protocol 4 (BGP-4) [January 2006]	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4291	IP Version 6 Addressing Architecture [February 2006]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4292	IP Forwarding Table MIB [April 2006]	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4293	Management Information Base for the Internet Protocol (IP) [April 2006]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4330	Simple Network Time Protocol (SNTP) Version 4[37]	N/A	N/A	N/A	08.0.70	N/A	8.0.90
RFC 4419	Diffie-Hellman Group Exchange for the Secure Shell (SSH) Transport Layer Protocol [March 2006]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4432	RSA Key Exchange for the Secure Shell (SSH) Transport Layer Protocol [March 2006]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4443	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) [March 2006]	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4459	MTU and Fragmentation Issues with In-the-Network Tunneling	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4541	IGMP and MLD Snooping Switches Considerations	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4552	Authentication/Confidentiality for OSPVv3	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4560	Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (only Ping and Traceroute MIBs are supported)	8.0.80a	8.0.80a	8.0.80a	8.0.80a	8.0.80a	8.0.90
RFC 4601	Protocol Independent Multicast - Sparse Mode (PIM-SM) [August 2006]	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4604	Using Internet Group Management Protocol Version 3 (IGMPv3) and Multicast Listener Discovery Protocol Version 2 (MLDv2) for Source-Specific Multicast	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4607	Source-Specific Multicast for IP	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4610	Anycast-RP using PIM	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90

[37] All platforms are compliant with RFC 5905 NTPv4, which obsoletes RFC 1305 and RFC 4330.

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 4632	Classless Inter-domain Routing (CIDR): The Internet Address Assignment and Aggregation Plan	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4724	Graceful Restart Mechanism for BGP	N/A	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4760	Multiprotocol Extensions for BGP-4[38]	N/A	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4807	IPsec Security Policy Database Configuration MIB	N/A	N/A	08.0.70	N/A	N/A	8.0.90
RFC 4836	MAU-MIB module support	8.0.60	8.0.40	8.0.40	08.0.70	8.0.40	8.0.90
RFC 4861	Neighbor Discovery for IP Version 6 (IPv6)	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4862	IPv6 Stateless Address Auto-configuration	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 4893	BGP Support for Four-octet AS Number Space	N/A	N/A	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5059	Bootstrap Router (BSR) Mechanism for Protocol Independent Multicast (PIM)	8.0.61	8.0.40	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5095	Deprecation of Type 0 Routing Headers in IPv6	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5136	Defining Network Capacity (Port Interface Rates)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5176	Dynamic Authorization Extensions to Remote Authentication Dial In User Service (RADIUS)	8.0.60	8.0.50	8.0.50	08.0.70	8.0.50	8.0.90
RFC 5280	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile (PKI Certification)	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5340	OSPF for IPv6 [July 2008]	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5424	Layered architecture for SYSLOG	8.0.60	8.0.40	8.0.40	08.0.70	8.0.40	8.0.90
RFC 5494	IANA Allocation Guidelines for the Address Resolution Protocol (ARP)[39]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5590	Transport Subsystem for the Simple Network Management Protocol (SNMP)[40]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5676	Managed Objects for mapping SYSLOG messages to SNMP notifications	8.0.60	8.0.40	8.0.40	08.0.70	8.0.40	8.0.90
RFC 5709	OSPFv2 HMAC-SHA Cryptographic Authentication	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5798	Virtual Router Redundancy Protocol (VRRP) Version 3 for IPv4 and IPv6	8.0.61	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 5880	Bi-Directional Forwarding Detection (BFD) Supports asynchronous mode only.	No	No	No	No	8.0.90	No
RFC 5881	BFD for IPv4 and IPv6 (Single Hop)	No	No	No	No	8.0.90	No
RFC 5883	BFD for Multihop Paths	No	No	No	No	8.0.90	No
RFC 5905	Network Time Protocol Version 4[41]	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 6085	Address Mapping of IPv6 Multicast Packets on Ethernet	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90
RFC 6506	Supporting Authentication Trailer for OSPFv3	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
RFC 6613	RADIUS over TCP	8.0.60	8.0.40	8.0.40	08.0.70	8.0.40	8.0.90
RFC 6614	Transport Layer Security (TLS) Encryption for RADIUS	8.0.60	8.0.40	8.0.40	08.0.70	8.0.40	8.0.90
RFC 6668	SHA-2 Data Integrity Verification for the Secure Shell (SSH) Transport Layer Protocol	8.0.60	8.0.30	8.0.20	08.0.70	8.0.10	8.0.90

[38] Partial support.
[39] Partial support
[40] All platforms follow the USM model. Transport security model with TLS is not supported for SNMP.
[41] All platforms are compliant with RFC 5905 NTPv4, which obsoletes RFC 1305 and RFC 4330.

RFC Number	RFC Name	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
RFC 6939	Client Link-Layer Address Option in DHCPv6	8.0.60	8.0.40	8.0.40	08.0.70	8.0.40	8.0.90
RFC 7130	BFD on Link Aggregation Group (LAG) Interfaces	No	No	No	No	8.0.90	No
RFC 7166	Supporting Authentication Trailer for OSPFv3	8.0.70	8.0.70	8.0.70	8.0.70	8.0.70	8.0.90
RFC 7348	Virtual eXtensible Local Area Network (VXLAN): A Framework for Overlaying Virtualized Layer 2 Networks over Layer 3 Networks	No	No	No	No	8.0.70	No

IEEE Compliance

The following table lists the IEEE standards that are supported on the RUCKUS ICX platforms. Footnotes indicate exceptions.

IEEE Number	IEEE Standard Description	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IEEE 802.1AB	Station and Media Access Control Connectivity Discovery (Link Layer Discovery Protocol, LLDP)	08.0.60	008.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.1AE	Media Access Control (MAC) Security	No	No	08.0.30	08.0.80	No	08.0.90
IEEE 802.1BR	Bridge Port Extension	No	No	08.0.40	No	08.0.40	08.0.90
IEEE 802.1ak	Multiple Registration Protocol Multiple MAC Registration Protocol (MMRP) is not supported. Multiple VLAN Registration Protocol (MVRP) is supported in environments without spanning tree and environments with single spanning tree ONLY. MVRP is not supported in environments with Per-VLAN spanning tree or multiple spanning tree.	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90	8.0.90
IEEE 802.1D-1998	Spanning Tree Protocol (STP)	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.1Q-2011	Local and metropolitan area networks--Media Access Control (MAC) Bridges and Virtual Bridged LANs	08.0.60	08.0.30	08.0.30	08.0.70	08.0.30	08.0.90
IEEE 802.1Qbb	Priority-based Flow Control	No	08.0.40	08.0.40	No	08.0.20	No
IEEE 802.1S-2002	Multiple Spanning Tree (MST)	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.1W-2001	Rapid Reconfiguration of Spanning Tree	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.1X	Port-based Network Access Control (PNAC)[42]	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.1 AX-2008	Link Aggregation	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3	Carrier Sense Multiple Access/Collision Detection (CSMA/CD)	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3ab	1000BASE-T	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3ae	1BASE5	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3af	Power over Ethernet (15.4 W)	08.0.60	08.0.30	08.0.20	08.0.70	No	08.0.90

[42] Partial support.

Standards compliance
IEEE Compliance

IEEE Number	IEEE Standard Description	ICX 7150	ICX 7250	ICX 7450	ICX 7650	ICX 7750	ICX 7850
IEEE 802.3at	Power over Ethernet enhancements (25.5 W); PoE+	08.0.60	08.0.30	08.0.20	08.0.70	No	08.0.90
IEEE 802.3az	Energy Efficient Ethernet	No	08.0.30	08.0.30	No	No	08.0.90
IEEE 802.3bz	2.5GBASE-T	8.0.61[43]	No	8.0.61[44]	8.0.70[43]	No	08.0.90
	5GBASE-T	No	No	No	08.0.70	No	08.0.90
IEEE 802.3i	10BASE-T	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3q	Guidelines for the Development of Managed Objects	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3u	100BASE-TX, 100BASE-T4, 100BASE-FX Fast Ethernet at 100 Mbit/s (12.5 MB/s) with auto-negotiation	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3x	Full duplex and flow control	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3z	1000BASE-X Gbit/s Ethernet over Fiber-Optic at 1 Gbps (125 MB/s)	08.0.60	08.0.30	08.0.20	08.0.70	08.0.10	08.0.90
IEEE 802.3ba	40 Gbit/s and 100 Gbps Ethernet	No	No	08.0.20[46]	No	08.0.10[46]	08.0.90

[43] ICX 7150 Z-Series only
[44] ICX 7450 Z-Series only
[46] Supported on 40G ports only.



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