RIVI ICX7150-x
Firmware version: Fastiron 09.00.10k_T211

Release notes:

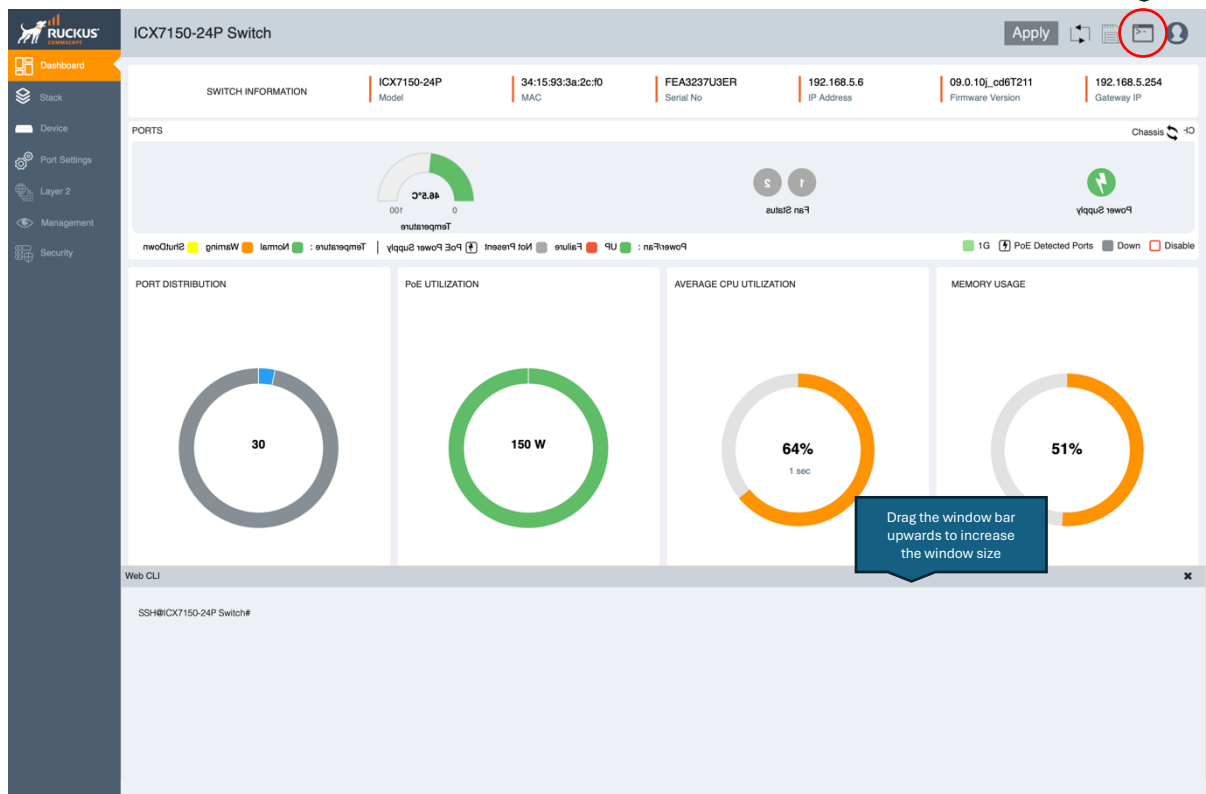https://support.ruckuswireless.com/documents/5699-ruckus-icx-fastiron-09-0-10k-ga-release-notes/download

Configuration guide:

https://docs.commscope.com/bundle/fastiron-09010-managementguide/page/GUID-0DBCF493-4324-45AB-9A1F-429D34D470BC-homepage.html

Username: **super**
Password: **riririvi**

Accessing CLI from Web Interface:

Understanding Port Numbering Conventions

Like many enterprise-class switches, the RIVI/Ruckus ICX series use a port naming convention in the format:

switch number / slot (or module) / port

In most typical setups, the switch number is 1, unless the device is part of a stacked system (up to 12 switches can be stacked and managed through a single interface). The second and third values denote the slot (sometimes referred to as a bank) and the physical port number, respectively, as outlined in the diagrams below.

These diagrams illustrate how ports are labelled across single-unit and stacked configurations, helping clarify how to identify and reference specific ports during setup or troubleshooting.

On most PoE-capable switches, only Bank 1 typically supports Power-over-Ethernet; Banks 2 and 3 usually do not provide PoE output.
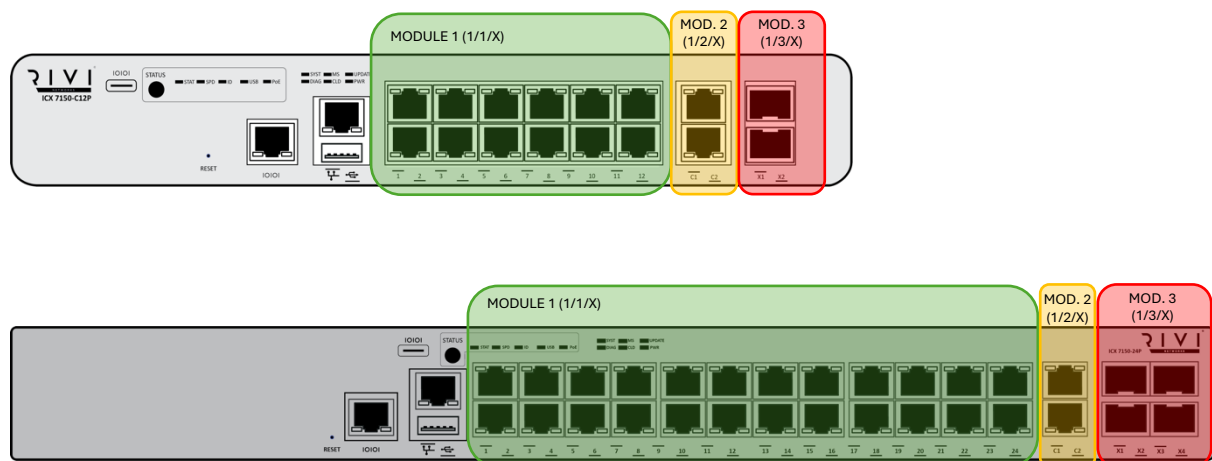
Useful CLI commands:

Shortened command structure

The commands below are shortened versions of full commands, allowing quicker configuration.

Short Command	Long Command	Description/example
ena	enable	Switch to privileged exec level
conf t	configure terminal	Enable global configuration
sh	show	Display information on an interface or VLAN, e.g.: *sh conf*
wr mem	write memory	Commit the running config to memory (save config)
int	interface	sh int, e.g: sh int eth 1/1/1
eth	ethernet	- " -
brief	brief	Get concise information, e.g: sh int brief eth 1/1/1

Enabling configuration and writing to the memory

Short Command	Long Command	Description
ena	enable	
conf t	configure terminal	Enable global configuration mode
sh conf	show config	Show configuration in memory
sh run	show running config	Show current running config (not necessarily committed to memory)
wr mem	write memory	Write configuration to memory
Global Configuration Mode		
console timeout 0		Disable console timeout
console timeout [0-240]		Console timeout time in minutes
no console timeout		Reverts to factory-set console timeout

Other useful commands

IP Address, Gateway and DNS	
By default RIVI Switches are shipped in DHCP Client mode	
ip dhcp-client enable	Enable DHCP client service in the switch
no ip dhcp-client enable	Disable IP DHCP client service in the switch
ip address [ipv4 address/CIDR]	Sets IP Address of switch with CIDR subnet (e.g.: 192.168.1.2/24)
ip default-gateway [gateway IPv4]	Sets the default Gateway of the switch/VLAN (e.g.: 192.168.1.1)
You can configure up to five default gateways per VLAN on a Ruckus ICX switch, specifying a metric for each (e.g., 192.168.1.1 1).	
no ip default-gateway [gateway IPv4]	Removes that IPV4 Gateway instance
ip dns server-address [DNS Addresses]	Sets the DNS Server addresses (up to 4 may be set) (e.g.: 8.8.8.8 8.8.4.4)

SNMP Communities	
snmp-server community private ro	Create an SNMP community "private", read only, **unencrypted**
snmp-server community public rw	Create an SNMP community "public", read/write, **unencrypted**
no snmp-server community public rw	Removes the SNMP community "public"
Note that the SNMP communities are stored encrypted within the switch config, but are unencrypted when accessed, unless explicitly set to SNMP v3.	

VLANs	
vlan 10	Create, or configure VLAN10 and switch to VLAN 10 config
vlan 10 20 30 40	Create or configure VLANs 10, 20, 30 and 40
vlan 1 to 10	Create or configure VLANs 1-10
Note that the following commands require you to be within a VLAN config mode (e.g.: after typing VLAN 10)	
tag eth 1/1/1 to 1/1/10	Tag ports 1-10 in Bank 1
tag eth 1/1/1 1/1/3 1/2/1	Tag ports 1 and 3 in Bank 1 and port 1 in Bank 2
untag eth 1/1/1 to 1/1/10	Untag ports 1-10 in Bank 1
untag eth 1/1/1 1/1/3 1/2/1	Untag ports 1 and 3 in Bank 1 and port 1 in Bank 2
no vlan 10	Removes VLAN 10
no vlan 10 20 30 40	Removes VLAN 10, 20, 30 and 40

Chassis, Fans, Interfaces, MAC Addresses		
show chassis	sh chassis	Reports current chassis temperature and fan status
chassis fanless all		Switches off chassis fans, reduces PoE Budget to 150W
sh int brief		List Ports, VLANs, Speeds and MAC Addresses
sh mac-address		Show MAC Addresses, per port

Network Time Protocol Settings	
ntp	Enters NTP menu on switch
server pool.ntp.org	Sets NTP server to pool.ntp.org
server 0.pool.ntp.org	Sets NTP server to 0.pool.ntp.org
Exit	Exits NTP menu

Clock Settings	
clock timezone gmt gmt+00	Sets clock timezone to gmt (+01 adds UK Winter time)

Example: Set timezone and clock in config

```
!
! Set NTP Server(s) and clock timezone
!
ntp
 server pool.ntp.org
 server 0.pool.ntp.org
exit
!
clock timezone gmt gmt+00
```

Show Interface Details	
show interface brief ethernet 1/1/1	Displays port information for 1/1/1
show vlan brief ethernet 1/1/1	Displays port VLAN information for 1/1/1
show lldp neighbor	Displays LLDP System Names and ports connected
show fdb ethernet 1/1/1	Displays the MAC Address of the device attached to port 1/1/1

Show Installed Media Information / Optical Monitoring	
show media	Displays information about the media devices installed in a device
show media ethernet 1/3/2	Displays information about the media device installed in a port 1/3/2
show media validation	Displays whether the connected optic modules are supported or not in the switch
optical-monitor [optional minutes]	Enables digital optical monitoring (DOM) on the switch, allowing you to monitor the health of the optical connections, either globally or for a group of ports
show optic 1/3/2	Shows optical statistics for any enabled port
show optic thresholds 1/3/2	Verify the optic warning and alarm thresholds for port 1/3/2

Multicast	
*IGMP functions in either **active** or **passive** mode.* ***Active*** *mode is used in the core switch so that it acts as a querier* ***Passive*** *mode is used for single switch instances or switches below the core* **Multicast functions may be created per VLAN (from within the VLAN in. the CLI) or globally (when not within the VLAN in the CLI).** ****NOTE** Prefix the *multicast* command with ip when setting globally (e.g.: ip multicast)**	
multicast	Sets IGMP mode for the current VLAN to passive
multicast active	Sets IGMP mode for the current VLAN to active
multicast version 3	Sets IGMP to version 3 (version 2 is used by default)
multicast querier-address [*ip*]	Sets the Querier address for IGMP in active mode (usually the core switch)
multicast flood-unregistered	Flood unregistered IPv4 multicast frames (not recommended)
multicast static group	Creates a static group of ports in a specified multicast address range
multicast sdvoe	Enables SDVoE multicast mode (e.g.: for NHD600 series)
no multicast	Remove Multicast function
jumbo	Enable jumbo frames on the switch (e.g.: for NHD400 series)
no jumbo	Disable jumbo frames on the switch

Example: Configuring all ports on a switch for AV Multicast traffic (IGMP v2)

The following example configures a core switch for AVoIP across all ports. (Comments in ! lines are ignored by the switch and do not need to be entered):

```
configure terminal
!
! Set Multicast IGMP Snooping across all switch ports
!
ip multicast active
! Set the following line to the IP Address of the switch
ip multicast querier-address 192.168.1.11
ip multicast fast-leave-v2
wr mem
```

In some cases it may be necessary to use the **jumbo** command if devices require it (e.g.: Wyrestorm NHD400 series (not NHD500).

A more comprehensive web guide is available here:
https://support.ruckuswireless.com/documents/4035-fastiron-09-0-10-ga-ip-multicast-configuration-guide/download

Example: Configuring a VLAN and assigning it to some ports on a switch for AV Multicast traffic (IGMP v2)

The following example configures a core switch for AVoIP in VLAN10 on ports 1-10 (Comments in ! lines are ignored by the switch and do not need to be entered):

```
configure terminal
!
! Select the VLAN you wish to use
!
vlan 10
untagged ethernet 1/1/1 to 1/1/10
multicast active
multicast querier-address 192.168.1.11
multicast fast-leave-v2
wr mem
```

Note that multicasting within VLANs blocks unregistered multicasts, which can interfere with the broadcasting processes of Dante and AES67 (devices won't show up in Dante Controller). See our "Ninja" guide for how to handle multiple traffic types within a switch efficiently.

AES67/AoIP Applications (Dante, QSYS, AES67)

In many AES67/AoIP (Audio over IP) applications, DSCP (Differentiated Services Code Point) is used to prioritize audio traffic. By tagging audio packets with specific DSCP values, network devices can recognize and prioritize these packets, ensuring low latency and consistent delivery - critical factors for maintaining audio quality and synchronization in AoIP systems.

RIVI ICX switches support DSCP-based Quality of Service (QoS), but it's not enabled by default. These switches use 8 PCP (Priority Code Point) values, ranging from 0 (Best Effort) to 7 (Highest Priority), to manage traffic prioritization internally.

When DSCP "trust" is enabled on a port, the switch examines the DSCP value in incoming packets and maps them to a corresponding PCP value for internal prioritization. This effectively translates the DSCP markings from AoIP devices into the switch's internal priority scheme. The table below illustrates how common AoIP DSCP values are mapped to PCP values within the switch when DSCP trust is enabled.

PCP Priority	DCSP Value	QoS Queue	PCP Priority	DCSP Value	QoS Queue
0	0 – 7	qosp0 (lowest priority queue)	4	32 – 39	qosp4
1	8 – 15	qosp1	5	40 – 47	qosp5
2	16 – 23	qosp2	6	48 – 55	qosp6
3	24 – 31	qosp3	7	56 – 63	qosp7 (highest priority queue)

Example: Configuring a switch for Dante, QSYS or AES67

This example configures the switch to recognize and prioritize audio traffic from AoIP devices (using protocols like AES67, Dante, and Q-SYS) by enabling DSCP-based Quality of Service (QoS) on ports 1 through 10 of switch bank 1..

```
!
! Trust DSCP on ports 1-10 in Bank 1
!
qos mechanism strict
interface ethernet 1/1/1 to 1/1/24
trust dscp
wr mem
```

RIVI ICX switches support PTP (Precision Time Protocol), enabling precise time synchronization across the network. They can be configured to operate as transparent clocks, which can further enhance timing accuracy by compensating for switch latency. However, in most common network deployments, the default boundary clock functionality of these switches provides adequate synchronization, making transparent mode generally unnecessary.

The following command enables/disables transparent mode:

```
!
! Set PTP Clock Transparent mode
!
ptp-clock transparent pkt-type ethernet option e2e step-type onestep
wr mem
```

```
!
! Disable PTP Clock Transparent mode
!
no ptp-clock transparent pkt-type ethernet option e2e step-type onestep
wr mem
```

When PTP Clock Transparent mode is enabled, the switch **measures and adds** its own packet delay to the PTP messages. This is described here:

https://docs.commscope.com/bundle/fastiron-08095-managementguide/page/GUID-21F8832F-18F1-4627-93C1-EFFEC4F4DF7A.html

Example: Recommended complete config file for switch

This example is the recommended default config file for an ICX switch in the majority of applications. Note that lines prefixed with ! are for comment only and are ignored by the switch. You can copy and paste this text straight in to the switch after login:

```
! Recommended config file for ICX7150 switches
!
! Enter privileged (administrative) mode
!
ena
!
! Enter global configuration mode
!
conf t
!
! Set IP Address as DHCP and Disable spanning Tree Protocol
!
ip dhcp-client enable
no spanning-tree
!
! Set DNS Servers
!
ip dns server-address 1.1.1.1 1.0.0.1
!
! Set NTP Time Servers and clock
!
ntp
 server pool.ntp.org
 server 0.pool.ntp.org
exit
!
clock timezone gmt gmt+00
!
! Set SNMP Communities (default for OVrC)
!
snmp-server community public ro
snmp-server community private rw
!
Display the system clock (Diagnostic only)
!
sh clock
!
! Commit changes to memory
!
wr mem
!
exit
!
! Reboot the switch (not necessary, so commented out)
!
!reload
```