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Brocade ICX 7450, Brocade ICX 7750, and Brocade ICX 7250 Stacking

Deployment Guide

Supporting FastIron Software Release 08.0.30

BROCADE 

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Contents

- Brocade ICX 7450, Brocade ICX 7750, and Brocade ICX 7250 Stacking..... 4**
- Preface..... 4
- Overview..... 5
- Chapter 1: ICX7450..... 6
 - Technical Architecture..... 6
 - Supported Topologies..... 10
 - Brocade ICX 7450 Stack Construction Methods with 1x40G
 - Stacking Ports..... 12
 - Brocade ICX 7450 Stack Construction Methods with 4x10G
 - Stacking Ports..... 20
 - Debugging and verification using show commands..... 30
 - Use cases..... 34
- Chapter 2: ICX7750 Stack..... 37
 - Technical Architecture..... 37
 - Supported Topologies..... 38
 - Brocade ICX7750 stack construction methods..... 43
 - Debugging and verification using show commands..... 51
 - Use cases..... 55
- Chapter 3: ICX7250 Stack..... 57
 - Technical Architecture..... 57
 - Supported Topologies..... 60
 - Brocade ICX 7250 Stack Construction Methods..... 65
 - Debugging and verification using show commands..... 77
 - Use Cases..... 81

Brocade ICX 7450, Brocade ICX 7750, and Brocade ICX 7250 Stacking

- Preface..... 4
- Overview..... 5
- Chapter 1: ICX7450..... 6
- Chapter 2: ICX7750 Stack..... 37
- Chapter 3: ICX7250 Stack..... 57

Preface

Today's campus networks are critical for business connectivity to customers, vendors, and partners and to support the latest enterprise applications, cloud-based services, and mobile users' access to the network. The campus networks of today and tomorrow should be flexible, easy to manage, and cost-effective. The Effortless Network™ is the Brocade vision to meet these objectives; the Brocade HyperEdge Architecture is the cornerstone for delivering on that vision.

Three key design principles drive the development of the **Brocade HyperEdge Architecture** for modernizing and simplifying the network:

1. **Consolidated management:** Reduces unnecessary network layers to create large HyperEdge management domains that eliminate individual switch touch points to ease maintenance time and costs.
2. **Shared network services:** Allows premium and entry-level switches that share a common HyperEdge management domain to share advanced L2/L3 services to achieve lower price per-port functionality.
3. **Scale-out networking:**
Integrates high-performance fixed form factor switches to create a single logical device independent of physical location by scaling ports when and where needed across the campus.

HyperEdge architecture implementation options: Brocade offers multiple implementation options to achieve the benefits of the HyperEdge Architecture design principles

- The **Mixed Stack** design integrates premium and entry-level Brocade ICX switches that collapse the network access and aggregation layers into a single HyperEdge domain that shares services while reducing management touch points and network hops.
- The **Distributed Chassis** design integrates high-performance 10 GbE/40 GbE Brocade ICX stackable switches that collapse the network aggregation and core layers into a single HyperEdge domain with the density and reliability of large chassis switches at a fraction of the cost, while putting ports where needed on the campus.

HyperEdge Distributed Chassis Design: The Distributed Chassis feature leverages the capability to combine up to 12 Brocade ICX 7750 Switch units in a single logical switch spread across the campus. This distributed chassis offers a level of flexibility, ease of deployment, and total cost of ownership unmatched by traditional aggregation and small-core chassis solutions. Due to rapid technology evolution and innovative development, Brocade is able to offer the first 10 GbE/40 GbE stackable solution for the campus aggregation and core layers that delivers higher performance and port density than a traditional mid-size chassis, while offering the same level of reliability and availability. Brocade offers a truly distributed architecture, where all the components can be spread across the entire

campus-due to the use of long-distance optical links-yet, the whole system can be managed as a single entity.

Overview

The Brocade ICX 7450, Brocade ICX 7250, and Brocade ICX 7750 are high density 1RU switches that can run switch or router code to provide full L2 and L3 functionality. They come in five different hardware SKUs .

The Brocade ICX 7450 switch delivers the performance, flexibility, and scalability required for enterprise Gigabit Ethernet (GbE) edge deployment. It offers market-leading stacking density with up to 12 switches (576 1 GbE and 48 10 GbE ports) per stack and combines chassis-level performance and reliability with the flexibility, cost-effectiveness, and "pay as you grow" scalability of a stackable solution .

The Brocade ICX 7750 is a 1U fixed form factor 10/40 GbE Ethernet switch delivering a chassis experience for campus LAN aggregation and core. It offers market-leading port density and chassis-level performance, availability, and scalability. The Brocade ICX 7750 Distributed Chassis stacking technology enables scale-out networking.

The Brocade ICX 7250 switch delivers the performance, flexibility, and scalability required for enterprise Gigabit Ethernet (GbE) edge deployment. It offers market leading stacking density with up to 12 switches (576 1GbE and 96 10GbE ports) per stack and combines chassis level performance and reliability with the flexibility, cost-effectiveness, and "pay as you grow" scalability of a stackable solution.

Purpose of this document

This document provides technical architecture, configuration and deployment scenarios and use cases for the Brocade ICX 7450 stacking, Brocade ICX 7250 stacking, and the Brocade ICX 7750 Distributed Chassis stacking.

Audience

This document will be useful for network designers, engineers, network administrators, and support personnel.

Document history

Date	Version	Description
11/03/2014	1.0	Initial version
03/20/2015	2.0	ICX 7450 4x10G stacking support for Release 08.0.30 was added
04/07/2015	3.0	Support for the ICX 7250 was added

Chapter 1: ICX7450

Technical Architecture

The Brocade ICX 7450 has five different models based on Port Density, PoE capability and Port type; in addition each of the SKU supports four different flex modules. The SKU types are as follows:

1. ICX7450-24
2. ICX7450-24P
3. ICX7450-48
4. ICX7450-48P
5. ICX7450-48F

The different flexible modules are as follows:

1. 4x10F SFP+
2. 4x10T Copper
3. 1x40Q Fiber
4. 4X1F Fiber

FIGURE 1 Brocade ICX 7450 front and back panel showing Module 1 through 4

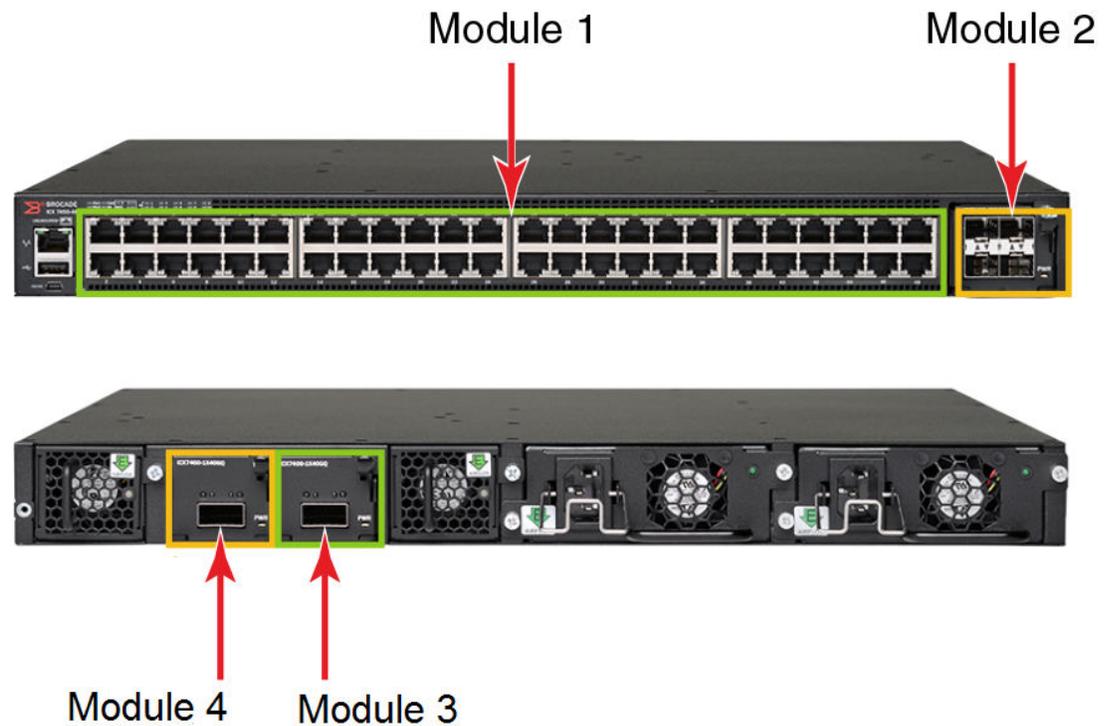


TABLE 1 Flex module support in different slots

Part Number	Ports	ICX7450-24			ICX7450-48		
		ICX7450-24 P			ICX7450-48P		
		Module 2 Front	Module 3 Rear	Module 4 Rear	Module 2 Front	Module 3 Rear	Module 3 Rear
ICX7400-4X 1GF	4-port 100M/1G SFP	Uplink	No	No	Uplink	No	No
ICX7400-4X 10GF	4-port 1/10G SFP +	Uplink	Uplink	Uplink	Uplink	Uplink	Uplink
ICX7400-4X 10GC	4-port 1/10G 10GBaseT Copper	Uplink	Uplink	Uplink	Uplink	Uplink	Uplink
ICX7400-1X 40GQ	1-port 40G QSFP+	Uplink	Uplink or stacking	Uplink or stacking	No	Uplink or stacking	Uplink or stacking

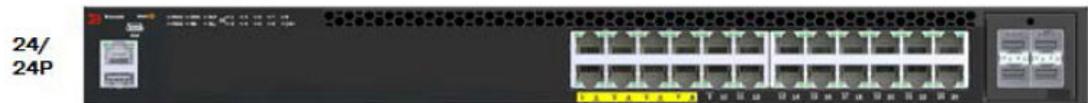
ICX7450-24

This is a fixed 24-Port RJ45 10/100/1000Mbps Ethernet port platform and it is EEE hardware ready. It has a full wide hot-plug module slot in the front and two full wide hot-plug module slots in the back.

ICX7450-24P

This is a fixed 24-Port RJ45 10/100/1000Mbps Ethernet port platform with EEE hardware ready and PoE support. The SKU supports PoE (15.4 W) and PoE+ (25.5 W) on all the ports while Cisco's proprietary uPoE (60W) and HDBase-T alliance's PoH (up to 95W) support is provided in the first eight ports. It has full wide hot-plug module slot in the front and two full wide hot-plug module slots in the back.

FIGURE 2 ICX 7450-24P Front Panel



ICX7450-48

This is a fixed 48-Port RJ45 10/100/1000Mbps Ethernet port platform that is EEE hardware ready. It has a full wide hot-plug module slot in the front and two full wide hot-plug module slots in the back.

ICX7450-48P

This is a fixed 48-Port RJ45 10/100/1000Mbps Ethernet port platform with EEE hardware ready and PoE support. The SKU supports PoE (15.4 W) and PoE+ (25.5 W) on all the ports, while Cisco's proprietary uPoE (60 W) and HDBase-T alliance's PoH (up to 95W) support is provided in the first eight ports. It has full wide hot-plug module slot in the front and two full wide hot-plug module slots in the back.

FIGURE 3 ICX 7450-48P Front Panel



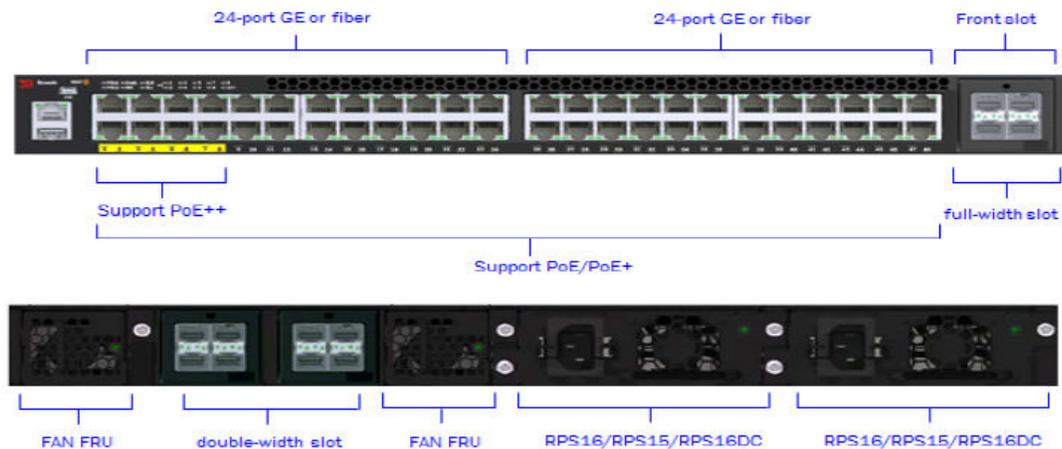
ICX7450-48F

This is a fixed 48-Port 1GB Ethernet SFP. It has a full wide hot-plug module slot in the front and two full wide hot-plug module slots in the back.

FIGURE 4 ICX 7450-48P Front Panel



FIGURE 5 ICX 7450-48P Front Panel



ICX 7450 Stacking

With Release 08.0.20, the Brocade ICX 7450 supported stacking only on 1x40G modules. With Release 08.0.30, the Brocade ICX 7450 supports stacking on 4x10G modules as well.

NOTE

The ICX 7450 can support 4X10 GF stacking from slot 2 or 1x40GQ stacking from rear ports; however, it cannot support both in the same stack.

ICX Stacking with 1x40G Ports

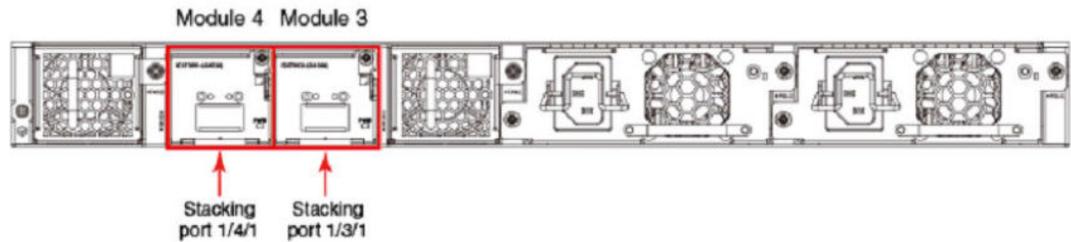
Stacking is supported only on 1x40Q module when placed in rear modules 3 and 4 for 24 ports and 48 port SKUs. For 24 port units, 1x40Q module is supported in all three flexible module slots which are Modules 2, 3 and 4; but it will not support stacking when present in slot 1. For 48 port units, 1x40Q module is supported only on slots 2 and 3. Please refer to [Table 1](#) for more details.

When stacking enabled, the two stack ports configured by default are 1/3/1 and 1/4/1. The following figure shows default stacking ports for ICX7450.

NOTE

When stacking is not enabled, ports x/3/1 and x/4/1 can be used as data/uplink ports.

FIGURE 6 ICX 7450 Showing 1x40G Stacking Ports



ICX Stacking with 4x10G Ports

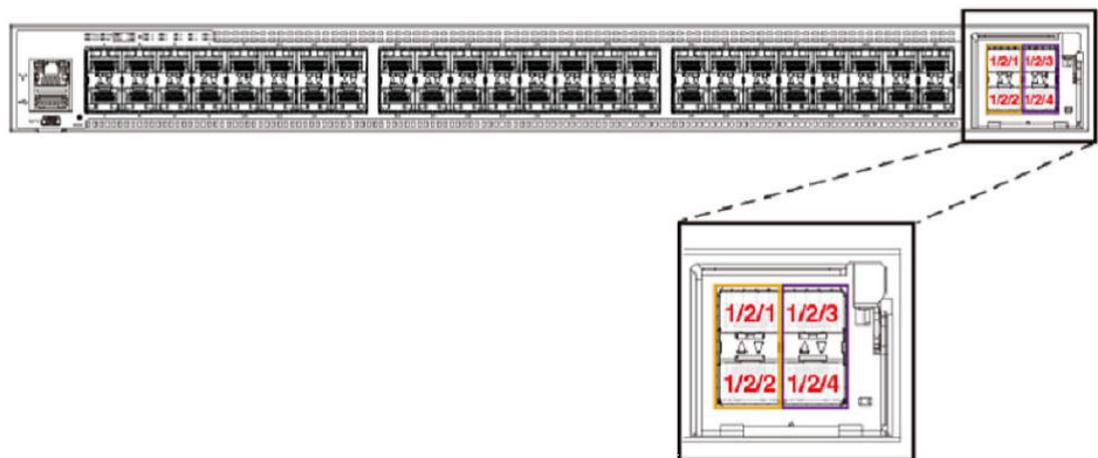
Stacking is supported on 4x10GF modules when placed in front module 2 for 24 ports and 48 port SKUs. 4x10GF module can be supported in slot 3 and 4 of all SKUs but stacking on 4x10GF module is supported only when present in module 2. Please refer to [Table 1](#) for more details.

Since default stacking ports are 1/3/1 and 1/4/1, user has to use "default-ports 1/2/1 1/2/3" command to change default stacking ports to 4x10GF ports. With 4x10GF ports, comes support for stack trunks. Trunk can be x/2/1 to x/2/2 and x/2/3 to x/2/4. Each trunk must have a default stacking port configured as first trunk port. The figure below shows 4x10GF ports available for stacking.

NOTE

When stacking is not enabled, ports x/2/1 and x/2/3 can be used as data/uplink ports.

FIGURE 7 ICX 7450 Showing 4x10G Stacking Ports



Stack can be formed using up to 12 units of any ICX 7450 model type as a liner topology or a ring topology.

Supported Topologies

The Brocade ICX 7450 can operate as a standalone device as well as a stackable device. When used as a stack, ICX 7450 supports linear and ring stack topologies. All different SKUs of ICX 7450 can be mixed in the same stack. The stack can be formed with two units and up to twelve units. Following are examples of some of the ICX 7450 stacks connected in linear and ring topologies using 1x40G stacking ports.

NOTE

The Brocade ICX 7450 cannot be combined in a stack with other Brocade stackable devices.

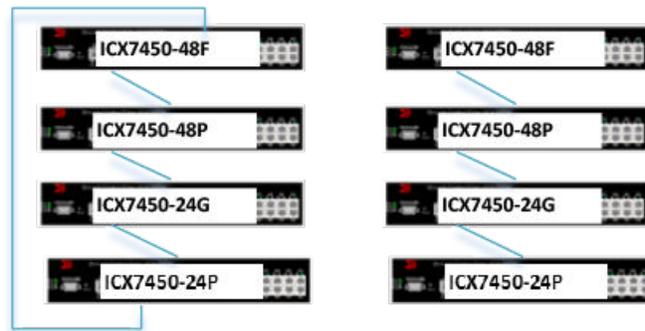
2 unit stack linear and ring topology



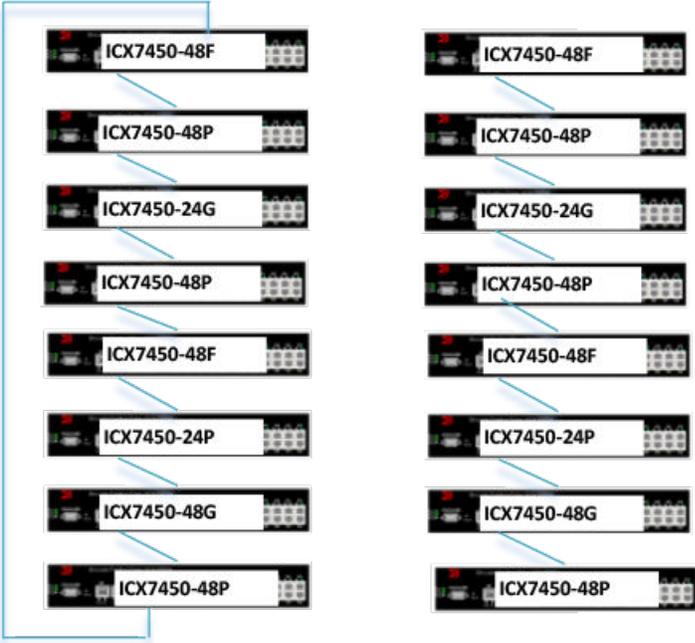
NOTE

The Brocade ICX 7450 does not support trunking on 1x40G stack ports. For the two unit ring topology shown above, the stack ports x/3/1 and x/4/1 on each unit cannot be used to form one trunk; they should be individual stacking ports.

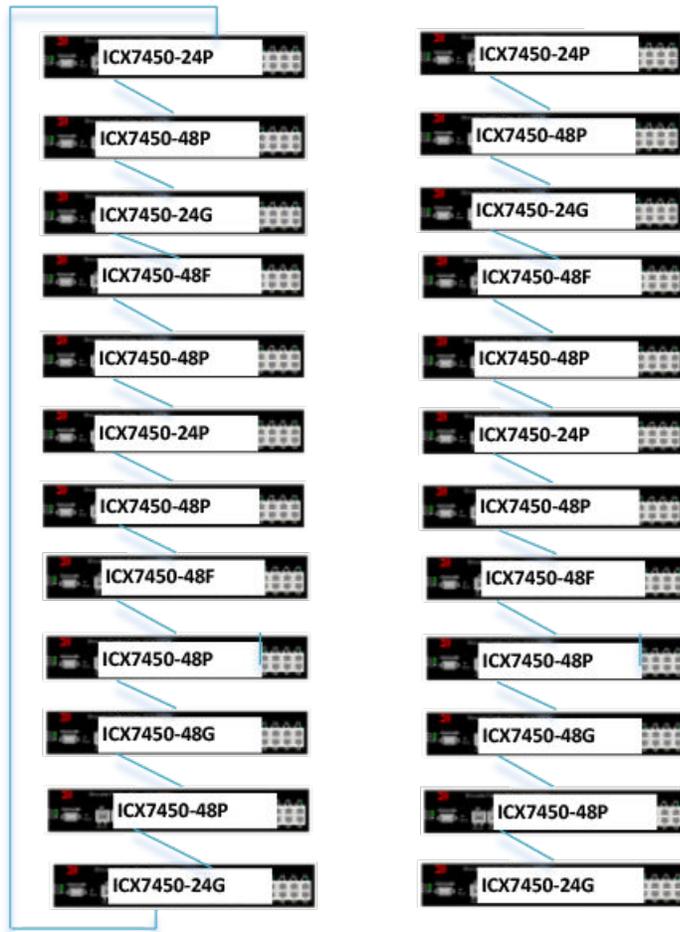
4 unit stack linear and ring topology



8 unit stack linear and ring topology



12 unit stack linear and ring topology



Brocade ICX 7450 Stack Construction Methods with 1x40G Stacking Ports

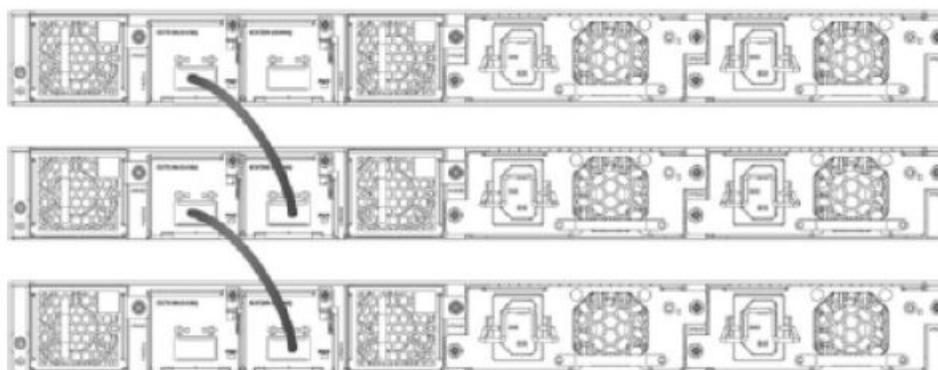
Two ways of constructing a stack are as follows:

1. Use the 'secure setup' utility to form the stack.
2. Manual stack formation where each unit is configured individually.

Topology

The figure below shows the rear view of the three units connected in a linear topology. Similarly a stack of up to 12 units can be connected. The example presented here for configuration is for 12 unit stack. Please refer to the Bill of Materials section later in this document for the software image, optics, and vendor information

FIGURE 8 Brocade ICX 7450: Three unit stack connected in linear topology



Prerequisites

1. All 12 units have 1x40G module present in slots 3 and 4 each.
2. Connect 12 units in a linear topology using port 1/3/1 and 1/4/1 on each unit.
3. All units should be booted up with same software image.

Bill of Materials

The products listed in the tables below are used in this deployment.

TABLE 2 Products used in the Brocade ICX7450 stacking

Identifier	Vendor	Model	Notes
Switch/Units	Brocade	ICX7450-24G, ICX7450-24P, ICX7450-48G, ICX7450-48P, ICX7450-48F	Stack can be formed with mix and match of all 5 different SKUs listed
Stacking cable: Copper option	Refer to Table 3	<ul style="list-style-type: none"> • (1) 0.5, 1-meter QSFP-QSFP passive copper • 1,3, 5-meter QSFP-QSFP active copper 	NA
Stacking optics: Fiber-optic options	Refer to Table 3	<ul style="list-style-type: none"> • 40G-QSFP-SR4 • 40G-QSFP-LR4 	Fiber optic maximum distance is 100 M
Application Image	F108.0.20 or later release	NA	All units should have same software image
License needed for stacking	NA	NA	License is not needed for 1x40G ports to configure stacking

TABLE 3 Optics information for the Brocade ICX7450 stacking

QSFP Hardware	Description	BRCD Part Number
40G-QSFP-SR4	40GE SR	57-1000128-01
40G-QSFP-SR4	40GE SR	57-1000128-01

TABLE 3 Optics information for the Brocade ICX7450 stacking (Continued)

QSFP Hardware	Description	BRCD Part Number
40G-QSFP-LR4	40GE LR	57-1000263-01
40G-QSFP-LR4	40GE LR	57-1000263-01
40G-QSFP-C-00501	40GE QSFP to QSFP 0.5M Cable(Passive)	58-0000056-01
40G-QSFP-C-00501	40GE QSFP to QSFP 0.5M Cable(Passive)	58-0000056-01
40G-QSFP-C-00501	40GE QSFP to QSFP 0.5M Cable(Passive)	58-0000056-01
40G-QSFP-C-0101	40GE QSFP to QSFP 1M Cable(Passive)	58-0000033-01
40G-QSFP-C-0101	40GE QSFP to QSFP 1M Cable(Passive)	58-0000033-01
40G-QSFP-QSFP-C-0101	40GE QSFP Active Copper 1m	58-0000041-01
40G-QSFP-QSFP-C-0101	40GE QSFP Active Copper 1m	58-0000041-01
40G-QSFP-QSFP-C-0301	40GE QSFP Active Copper 3m	58-0000042-01
40G-QSFP-QSFP-C-0301	40GE QSFP Active Copper 3m	58-0000042-01
40G-QSFP-QSFP-C-0501	40GE QSFP Active Copper 5m	58-0000043-01
40G-QSFP-QSFP-C-0501	40GE QSFP Active Copper 5m	58-0000043-01

Stack construction method 1: Stack secure setup

Description

'Stack secure setup' utility is the most convenient of all methods to form a stack. This utility uses a Brocade proprietary discovery protocol that discovers units that are connected upstream and downstream from the switch where this command is entered, the intended Active controller.

Steps

Stack formation with secure setup utility:

- Configure 'stack enable' on the intended active controller unit at configuration level.
- Enter 'stack secure setup' on the intended active controller unit at device level.

Detailed steps:

1. Select a unit that you want to become an active controller. Configure 'stack enable' at configuration level as seen in the following logs.

```
ICX7450-24 Router#configure terminal
ICX7450-24 Router(config)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-24 Router(config)#
```

2. Once stack enable is configured, this command will configure two default stack ports, 1/3/1 and 1/4/1 as seen in the message displayed. This can be confirmed using 'show run' command.

```
ICX7450-24 Switch(config)#show running
Current configuration:
!
ver 08.0.20T213
```

```

!
stack unit 1
  module 1 icx7450-24-port-management-module
  module 2 icx7400-xgf-4port-40g-module
  module 3 icx7400-qsfp-1port-40g-module
  module 4 icx7400-qsfp-1port-40g-module
  stack-port 1/3/1 1/4/1
stack enable
stack mac cc4e.246c.e100
!
!!

```

3. Enter 'stack secure setup' at device level, this command triggers a Brocade proprietary discovery protocol that begins the discovery process in both upstream and downstream directions. The discovery process produces a list of upstream and downstream devices that are available to join the stack. This process will assign switch IDs to the units. During stack formation user will be prompted to enter desired number of units either upstream or downstream depending on the connections. In the following example 11 units are discovered downstream.

NOTE

During the secure-setup process, after one minute of inactivity, authentication for stack members expires, forcing you to restart the process .

NOTE

To exit the secure-setup, enter Control-C (^C) at any time.

```

ICX7450-24 Router(config)#exit
ICX7450-24 Router#
ICX7450-24 Router# stack secure-setup
ICX7450-24 Router# Discovering the stack topology...
TFTP session timed out
Available DOWNSTREAM units
Hop(s)  Id      Type      Mac Address
1       new  ICX7450-48G  cc4e.246d.1c78
2       new  ICX7450-48G  cc4e.246d.1b78
3       new  ICX7450-48G  cc4e.246d.1df8
4       new  ICX7450-48P  cc4e.2489.8640
5       new  ICX7450-48GF cc4e.246d.1478
6       new  ICX7450-48P  cc4e.2489.b388
7       new  ICX7450-48P  cc4e.2489.b188
8       new  ICX7450-48P  cc4e.246d.2938
9       new  ICX7450-48G  cc4e.246d.1838
10      new  ICX7450-48P  cc4e.246d.23b8
11      new  ICX7450-24P  cc4e.246d.0520

```

Enter the number of the desired DOWNSTREAM units (0-11)[0]: 11

```

Selected Topology:
Active Id      Type      Mac Address
      1      ICX7450-24G  cc4e.246c.ffd0

```

```

Selected DOWNSTREAM units
Hop(s)  Id      Type      Mac Address
1       2      ICX7450-48G  cc4e.246d.1c78
2       3      ICX7450-48G  cc4e.246d.1b78
3       4      ICX7450-48G  cc4e.246d.1df8
4       5      ICX7450-48P  cc4e.2489.8640
5       6      ICX7450-48GF cc4e.246d.1478
6       7      ICX7450-48P  cc4e.2489.b388
7       8      ICX7450-48P  cc4e.2489.b188
8       9      ICX7450-48P  cc4e.246d.2938
9       10     ICX7450-48G  cc4e.246d.1838
10      11     ICX7450-48P  cc4e.246d.23b8
11      12     ICX7450-24P  cc4e.246d.0520

```

4. The user is prompted to enter 'y' to confirm unit IDs. If the user wants to enter different unit IDs, the user should enter 'n' instead of 'y.' This example log shows 'y' because acceptance was entered.

Once stack switch IDs are accepted, the stack units, except the active controller, reset so that the assigned IDs become effective. By default active unit is assigned priority 128 with secure setup utility.

```
Do you accept the unit id's (y/n)? : y
ICX7450-24 Router# TFTP session timed out
T=1m50.1: Election, was alone --> active, ID=1, pri=128, 12U(1-12), A=u1, nbr#=0
11, reason: u12: port-up, ,
T=1m53.2: reset unit 2: u2 bo-id=1
T=1m53.2: reset unit 3: u3 bo-id=1
T=1m53.2: reset unit 4: u4 bo-id=1
T=1m53.2: reset unit 5: u5 bo-id=1
T=1m53.2: reset unit 6: u6 bo-id=1
T=1m53.2: reset unit 7: u7 bo-id=1
T=1m53.2: reset unit 8: u8 bo-id=1
T=1m53.2: reset unit 9: u9 bo-id=1
T=1m53.2: reset unit 10: u10 bo-id=1
T=1m53.2: reset unit 11: u11 bo-id=1
T=1m53.2: reset unit 12: u12 bo-id=1
```

```
Config changed due to add/del units. Do write mem if you want to keep it
T=1m56.3: Unit 1 loses all neighbors.
T=1m56.7: Active U1 deletes U2 and its config because it is learned.
T=1m57.1: Active U1 deletes U3 and its config because it is learned.
T=1m57.5: Active U1 deletes U4 and its config because it is learned.
T=1m57.8: Active U1 deletes U5 and its config because it is learned.
T=1m57.8: Active U1 deletes U6 and its config because it is learned.
T=1m57.9: Active U1 deletes U7 and its config because it is learned.
T=1m57.9: Active U1 deletes U8 and its config because it is learned.
T=1m57.9: Active U1 deletes U9 and its config because it is learned.
T=1m57.9: Active U1 deletes U10 and its config because it is learned.
T=1m58.0: Active U1 deletes U11 and its config because it is learned.
T=1m58.0: Active U1 deletes U12 and its config because it is learned.
T=4m17.7: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1, nbr#=0
11,
reason: u12: port-up, ,
```

5. Various settings and files are synced from the master to the newly joined units.

```
T=4m19.1: Synchronize webauth files to u7
T=4m19.1: Synchronize webauth files to u8
T=4m19.1: Synchronize webauth files to u9
Detect stack member 7 POE capable
Detect stack member 8 POE capable
Detect stack member 9 POE capable
T=4m19.4: Synchronize webauth files to u2
T=4m19.4: Synchronize webauth files to u3
T=4m19.5: Synchronize webauth files to u4
T=4m19.5: Synchronize webauth files to u5
Detect stack member 5 POE capable
T=4m19.6: Synchronize webauth files to u6
T=4m20.3: Synchronize webauth files to u10
T=4m20.3: Synchronize webauth files to u11
T=4m20.3: Synchronize webauth files to u12
```

6. While stack formation, units go through various stages when they joins the stack. Once units become part of the stack and the master syncs relevant information and files to all the units and then they are set in "READY" state. During the process the user is prompted to 'write memory' to save changes.

```
Detect stack member 11 POE capable
Detect stack member 12 POE capable
T:4m20.6: Done hot swap: active controller u1 sets u7 to Ready.
T:4m20.7: Done hot swap: active controller u1 sets u8 to Ready.
T:4m20.9: Done hot swap: active controller u1 sets u9 to Ready.
T:4m21.1: Done hot swap: active controller u1 sets u2 to Ready.
T:4m21.4: Done hot swap: active controller u1 sets u3 to Ready.
T:4m21.6: Done hot swap: active controller u1 sets u4 to Ready.
T:4m21.8: Done hot swap: active controller u1 sets u5 to Ready.
T:4m22.3: Done hot swap: active controller u1 sets u6 to Ready.
Stack unit 4 Power supply 1 is up
Stack unit 4 Power supply 2 is down
Stack unit 8 Power supply 1 is down
PoE: Stack unit 8 Power supply 2 with 748000 mwatts capacity is up
```

```
Config changed due to add/del units. Do write mem if you want to keep it
Stack unit 7 Power supply 1 is down
PoE: Stack unit 7 Power supply 2 with 748000 mwatts capacity is up
T:4m24.0: Done hot swap: active controller u1 sets u10 to Ready.
T:4m25.5: Done hot swap: active controller u1 sets u11 to Ready.
```

```

T=4m25.5: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1, nbr##=0
11, reason: u1: stk-po-chg, ,
T:4m26.5: Done hot swap: active controller u1 sets u12 to Ready.
Stack unit 3 Power supply 1 is up
Stack unit 3 Power supply 2 is down
Stack unit 10 Power supply 1 is up
Stack unit 10 Power supply 2 is down
Stack unit 2 Power supply 1 is up
Stack unit 2 Power supply 2 is down
PoE: Stack unit 12 Power supply 1 with 258000 mwatts capacity is up
PoE: Stack unit 12 Power supply 2 with 258000 mwatts capacity is up
PoE: Stack unit 5 Power supply 1 with 748000 mwatts capacity is up
Stack unit 5 Power supply 2 is down
PoE: Stack unit 9 Power supply 1 with 748000 mwatts capacity is up
Stack unit 9 Power supply 2 is down
Stack unit 6 Power supply 1 is up
Stack unit 6 Power supply 2 is down
PoE: Stack unit 11 Power supply 1 with 748000 mwatts capacity is up
Stack unit 11 Power supply 2 is down

```

```

Config changed due to add/del units. Do write mem if you want to keep it
T=5m27.4: Assigned unit 2 to be standby
T=5m29.4: start running config sync to standby u2
T=5m30.1: Running config sync to standby u2 is complete

```

7. Upon booting up of the stack units is complete, stack formation is complete as units are set 'Ready'. Stack status can be verified using 'show stack' command. In this output, D indicates a dynamic configuration. After user enters a write memory, this display will change to S, for static configuration.

```

ICX7450-24 Router#show stack
T=8m39.6: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID  Type          Role  Mac Address  Pri State Comment
1   S ICX7450-24G    active  cc4e.246c.ffd0 128 local  Ready
2   D ICX7450-48G    standby cc4e.246d.1c78  0 remote Ready
3   D ICX7450-48G    member  cc4e.246d.1b78  0 remote Ready
4   D ICX7450-48G    member  cc4e.246d.1df8  0 remote Ready
5   D ICX7450-48P    member  cc4e.2489.8640  0 remote Ready
6   D ICX7450-48GF   member  cc4e.246d.1478  0 remote Ready
7   D ICX7450-48P    member  cc4e.2489.b388  0 remote Ready
8   D ICX7450-48P    member  cc4e.2489.b188  0 remote Ready
9   D ICX7450-48P    member  cc4e.246d.2938  0 remote Ready
10  D ICX7450-48G    member  cc4e.246d.1838  0 remote Ready
11  D ICX7450-48P    member  cc4e.246d.23b8  0 remote Ready
12  D ICX7450-24P    member  cc4e.246d.0520  0 remote Ready

      active          standby
+----+          +----+          +----+          +----+          +----+          +----+
3/1| 1 |4/1--3/1| 2 |4/1--3/1| 3 |4/1--3/1| 4 |4/1--3/1| 5 |4/1--3/1| 6 |4/1-
+----+          +----+          +----+          +----+          +----+          +----+
      |
      +----+          +----+          +----+          +----+          +----+          +----+
      | C |3/1--4/1| B |3/1--4/1| A |3/1--4/1| 9 |3/1--4/1| 8 |3/1--4/1| 7 |3/1-
      +----+          +----+          +----+          +----+          +----+          +----+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.246c.ffd0
ICX7450-24 Router#

```

Stack construction method 2: Manual configuration

Description

With this method, user should configure every unit individually and enable stacking on each unit. Once the units are connected together, they automatically form a stack. With this method, the unit with the highest priority becomes the active controller, and ID assignment is determined by the sequence in which user physically connects the units. The example used below is 12 units to form a linear stack.

Steps

Manual stack formation:

- Configure the highest priority on an intended active controller.
- Configure second highest priority on an intended standby controller.

- Configure 'stack suggested-id' on the units that will have a desired ID.
- Configure 'stack enable' on all the units and connect the units using stack ports.

Detailed steps

1. Units should boot up using the same software image.
2. On the unit that is intended to be the active controller, configure priority 255. On the unit intended to be on standby, configure priority 240. User can choose to have the same priority for active and standby, which is useful in case of failover.
3. Since each unit is a clean unit, its unit id is 1. Enter 'configure terminal', enter 'stack unit 1' and configure 'stack suggested-id' on all the units that will have the desired ID.
4. Configure 'stack enable' on all the units.

UNIT 1:

```
ICX7450-24 Router(config)#stack unit 1
ICX7450-24 Router(config-unit-1)#priority 255
ICX7450-24 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-24 Router(config-unit-1)#
```

UNIT 2:

```
ICX7450-48 Router(config)#stack unit 1
ICX7450-48 Router(config-unit-1)#priority 240
ICX7450-48 Router(config-unit-1)#stack suggested-id 2
ICX7450-48 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48 Router(config-unit-1)#
```

UNIT 3:

```
ICX7450-48 Router(config-unit-1)#stack suggested-id 3
ICX7450-48 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48 Router(config-unit-1)#
```

UNIT 4:

```
ICX7450-48 Router(config)#stack unit 1
ICX7450-48 Router(config-unit-1)#stack suggested-id 4
ICX7450-48 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48 Router(config-unit-1)#
```

UNIT 5

```
ICX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack suggested-id 5
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48P Router(config-unit-1)#
```

UNIT 6:

```
ICX7450-48F Router(config)#stack unit 1
ICX7450-48F Router(config-unit-1)#stack suggested-id 6
ICX7450-48F Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48F Router(config-unit-1)#
```

UNIT 7:

```
ICX7450-48P Router(config)#stack unit 1
```

```
ICX7450-48P Router(config-unit-1)#stack suggested-id 7
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48P Router(config-unit-1)#
```

UNIT 8:

```
ICX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack suggested-id 8
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48P Router(config-unit-1)#
```

UNIT 9:

```
ICX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack suggested-id 9
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48P Router(config-unit-1)#
```

UNIT 10:

```
ICX7450-48 Router(config)#stack unit 1
ICX7450-48 Router(config-unit-1)#stack suggested-id 10
ICX7450-48 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48 Router(config-unit-1)#
```

UNIT 11:

```
ICX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack suggested-id 11
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-48P Router(config-unit-1)#
```

UNIT 12:

```
ICX7450-24P Router(config)#stack unit 1
ICX7450-24P Router(config-unit-1)# stack suggested-id 12
ICX7450-24P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/3/1, 1/4/1 is not
available.
ICX7450-24P Router(config-unit-1)#
```

5. After configuration, connect the devices in a stack topology. The active controller retains its ID. The rest of the units are assigned unique ID numbers depending on the sequence in which they are connected or depending on the stack suggest-ID configured. With the exception of the active controller, the rest of the units reset; upon boot up, the stack is formed.

```
ICX7450-24 Router#show stack
T=8m39.6: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
```

ID	Type	Role	Mac Address	Pri	State	Comment
1	S	ICX7450-24G	active	cc4e.246c.ffd0	128	local Ready
2	D	ICX7450-48G	standby	cc4e.246d.1c78	0	remote Ready
3	D	ICX7450-48G	member	cc4e.246d.1b78	0	remote Ready
4	D	ICX7450-48G	member	cc4e.246d.1df8	0	remote Ready
5	D	ICX7450-48P	member	cc4e.2489.8640	0	remote Ready
6	D	ICX7450-48GF	member	cc4e.246d.1478	0	remote Ready
7	D	ICX7450-48P	member	cc4e.2489.b388	0	remote Ready
8	D	ICX7450-48P	member	cc4e.2489.b188	0	remote Ready
9	D	ICX7450-48P	member	cc4e.246d.2938	0	remote Ready
10	D	ICX7450-48G	member	cc4e.246d.1838	0	remote Ready
11	D	ICX7450-48P	member	cc4e.246d.23b8	0	remote Ready
12	D	ICX7450-24P	member	cc4e.246d.0520	0	remote Ready

active standby

```

+---+      +---+      +---+      +---+      +---+      +---+
3/1| 1 |4/1--3/1| 2 |4/1--3/1| 3 |4/1--3/1| 4 |4/1--3/1| 5 |4/1--3/1| 6 |4/1-
+---+      +---+      +---+      +---+      +---+      +---+
+---+      +---+      +---+      +---+      +---+      +---+
4/1| C |3/1--4/1| B |3/1--4/1| A |3/1--4/1| 9 |3/1--4/1| 8 |3/1--4/1| 7 |3/1-
+---+      +---+      +---+      +---+      +---+      +---+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.246c.ffd0
ICX7450-24 Router#
    
```

Brocade ICX 7450 Stack Construction Methods with 4x10G Stacking Ports

Two ways of constructing a stack are as follows:

1. Use the 'secure setup' utility to form the stack.
2. Manual stack formation where each unit is configured individually.

Topology

The figure below shows the rear of three units connected in a linear topology using stack trunks. Similarly, a stack of up to 12 units can be connected. The example presented here for configuration is for a 12-unit stack. Please refer to Bill of Materials, table 2 and table 3 for the software image, optics and vendor information.

FIGURE 9 Brocade ICX 7450 three unit stack connected in linear topology using 4x10G stacking ports



TABLE 4 Stacking connections in Brocade ICX 7450 three unit stack

Units	Links/Trunks
Unit1 to Unit2	1/2/3 to 2/2/3
	1/2/4 to 2/2/4
Unit2 to Unit3	2/2/1 to 3/2/1
	2/2/2 to 3/2/2

Prerequisites

1. All 12 units have 4x10GF module present in slot 2.
2. Connect 12 units in a linear topology using stack trunks 1/2/1 to 1/2/2 and 1/2/3 to 1/2/4 on each unit. Please connect as seen in [Figure 9](#).
3. All units should be booted up with same software image.

Bill of Materials**TABLE 5** Products used in Brocade ICX 7450 4x10G Stacking

Identifier	Vendor	Model	Notes
Switch/Units	Brocade	ICX7450-24G, ICX7450-24P, ICX7450-48G, ICX7450-48P, ICX7450-48F	Stack can be formed with mix and match of all five different SKUs listed.
Stacking optics: Fiber-optic options	Refer to Table 6	1. 100M USR OM3 2. 300M SR MM OM3 LC 3. 10KM 10G SFPP LR	Fiber optic maximum distance is 10KM
Application image	FI08.0.30 or later release	NA	All units should have the same software image
License needed for stacking	NA	NA	License is not needed for 1x40G ports to configure stacking

TABLE 6 Optics information for Brocade ICX 7450 Stacking

SFP+ Hardware	Description	BRCD Part Number
10GE LR 10km (SFP +)	10GE LR 10km (SFP +)	57-0000076-01
10GE SR 300m (SFP +)	10GE SR 300m (SFP +)	57-0000075-01
10GE USR 100m (SFP +)	10GE USR 10km (SFP +)	57-1000130-01

Stack construction method 1: Stack secure setup**Description**

'Stack secure setup' utility is the most convenient of all methods to form a stack. This utility uses a Brocade proprietary discovery protocol that discovers units that are connected upstream and downstream from the switch where this command is entered, the intended Active controller.

Steps

Stack formation with secure setup utility:

- Configure 'default-ports 1/2/1 1/2/3' on all the units, write memory and reload. This step is needed because mac-sec and stacking cannot exist at the same time on a port.
- When units boot up, configure 'stack enable' on the intended active controller unit at configuration level.
- Enter 'stack secure setup' on the intended active controller unit at device level.

Detailed Steps

1. Select a unit that you want to become an active controller. Configure 'default-ports 1/2/1 1/2/3' on all the units, write memory and reload

```
ICX7450-24 Router>enable
No password has been assigned yet...
ICX7450-24 Router#con t
ICX7450-24 Router(config)#stack unit 1
ICX7450-24 Router(config-unit-1)#default-ports 1/2/1 1/2/3
Reload required. Please write memory and then reload or power cycle.
ICX7450-24 Router(config-unit-1)#
ICX7450-24 Router(config-unit-1)#end
ICX7450-24 Router#
ICX7450-24 Router#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-24 Router#
ICX7450-24 Router#
ICX7450-24 Router#rel
Sent SIGTERM to all processesn'):
Sent SIGKILL to all processes
Requesting system reboot
Restarting system.
```

2. When units boot up, show run will show default ports configured as 1/2/1 1/3/1. Configure 'stack enable' on the intended active unit.

```
ICX7450-24 Router#show run
Current configuration:
!
ver 08.0.30q101T213
!
stack unit 1
  module 1 icx7450-24-port-management-module
  module 2 icx7400-xgf-4port-40g-module
  module 3 icx7400-xgf-4port-40g-module
  module 4 icx7400-qsfp-1port-40g-module
  default-ports 1/2/1 1/2/3
!
!
!
--More--, next page: Space, next line: Return key, quit: Control-c^C
ICX7450-24 Router#configure terminal
ICX7450-24 Router(config)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
ICX7450-24 Router(config)#
```

3. Run the 'stack secure setup' utility on the intended active unit. Since ports are connected to form trunks, user is prompted to make a selection for desired links, enter 2 for trunks. In the following example 11 units are discovered during stack secure setup.

```
ICX7450-24 Router(config)#show run
Current configuration:
!
ver 08.0.30q101T213
!
stack unit 1
  module 1 icx7450-24-port-management-module
  module 2 icx7400-xgf-4port-40g-module
  module 3 icx7400-xgf-4port-40g-module
  module 4 icx7400-qsfp-1port-40g-module
  default-ports 1/2/1 1/2/3
!
!
!
--More--, next page: Space, next line: Return key, quit: Control-c^C
ICX7450-24 Router(config)#exit
ICX7450-24 Router#stack secure-setup
ICX7450-24 Router#Discovering the stack topology...
```

```

Available UPSTREAM units
Hop(s) Id      Type      Mac Address
1       new    ICX7450-48G  cc4e.246d.1c78
2       new    ICX7450-48G  cc4e.246d.1b78
3       new    ICX7450-48G  cc4e.246d.1ff8
4       new    ICX7450-48P  cc4e.2489.8640
5       new    ICX7450-48GF cc4e.246d.1478
6       new    ICX7450-48P  cc4e.2489.b388
7       new    ICX7450-48P  cc4e.2489.b188
8       new    ICX7450-48P  cc4e.246d.2938
9       new    ICX7450-48G  cc4e.246d.1838
10      new    ICX7450-48P  cc4e.246d.23b8
11      new    ICX7450-24P  cc4e.246d.0520

Enter the number of the desired UPSTREAM units (0-11) [0]: 11

Confirm Stacking Links...

UPSTREAM Unit: Id new at 1 hop(s) ICX7450-48G  cc4e.246d.1c78
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 2 hop(s) ICX7450-48G  cc4e.246d.1b78
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 3 hop(s) ICX7450-48G  cc4e.246d.1ff8
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 4 hop(s) ICX7450-48P  cc4e.2489.8640
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 5 hop(s) ICX7450-48GF cc4e.246d.1478
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 6 hop(s) ICX7450-48P  cc4e.2489.b388
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 7 hop(s) ICX7450-48P  cc4e.2489.b188
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 8 hop(s) ICX7450-48P  cc4e.246d.2938
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 9 hop(s) ICX7450-48G  cc4e.246d.1838
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 10 hop(s) ICX7450-48P  cc4e.246d.23b8
Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 11 hop(s) ICX7450-24P  cc4e.246d.0520
Enter the desired links(1-2) [1]: 2

Selected Topology:
Active Id      Type      Mac Address
      1      ICX7450-24G  cc4e.246c.fffd0

Selected UPSTREAM units
Hop(s) Id      Type      Mac Address
1       2      ICX7450-48G  cc4e.246d.1c78
2       3      ICX7450-48G  cc4e.246d.1b78
3       4      ICX7450-48G  cc4e.246d.1ff8
4       5      ICX7450-48P  cc4e.2489.8640
5       6      ICX7450-48GF cc4e.246d.1478
6       7      ICX7450-48P  cc4e.2489.b388
7       8      ICX7450-48P  cc4e.2489.b188
8       9      ICX7450-48P  cc4e.246d.2938
9       10     ICX7450-48G  cc4e.246d.1838

```

```

10      11      ICX7450-48P      cc4e.246d.23b8
11      12      ICX7450-24P      cc4e.246d.0520

Do you accept the unit id's (y/n)?: y
ICX7450-24 Router#T=5m2.9: Election, was alone --> active, ID=1, pri=128,
12U(1-12), A=u1, nbr#=11 0, reason:
u12: port-up, ,
The period is 25
T=5m6.9: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1, nbr#=11
0, reason:
u1: stk-po-chg, ,
T=5m10.0: reset unit 2: u2 bo-id=1
T=5m10.0: reset unit 3: u3 bo-id=1
T=5m10.0: reset unit 4: u4 bo-id=1
T=5m10.0: reset unit 5: u5 bo-id=1
T=5m10.0: reset unit 6: u6 bo-id=1
T=5m10.0: reset unit 7: u7 bo-id=1
T=5m10.0: reset unit 8: u8 bo-id=1
T=5m10.0: reset unit 9: u9 bo-id=1
T=5m10.0: reset unit 10: u10 bo-id=1
T=5m10.0: reset unit 11: u11 bo-id=1
T=5m10.0: reset unit 12: u12 bo-id=1

Config changed due to add/del units. Do write mem if you want to keep it
T=5m15.0: Unit 1 loses all neighbors.

T=5m18.0: Active U1 deletes U2 and its config because it is learned.
T=5m21.0: Active U1 deletes U3 and its config because it is learned.
T=5m23.8: Active U1 deletes U4 and its config because it is learned.
T=5m26.6: Active U1 deletes U5 and its config because it is learned.
T=5m29.5: Active U1 deletes U6 and its config because it is learned.
T=5m30.5: Active U1 deletes U7 and its config because it is learned.
T=5m31.5: Active U1 deletes U8 and its config because it is learned.
T=5m32.5: Active U1 deletes U9 and its config because it is learned.
T=5m33.5: Active U1 deletes U10 and its config because it is learned.
T=5m34.5: Active U1 deletes U11 and its config because it is learned.
T=5m35.0: Active U1 deletes U12 and its config because it is learned.
T=7m5.1: Election, was active, no change, ID=1, pri=128, 3U(1-3), A=u1, nbr#=2 0,
reason: u3:
port-up, ,

```

NOTE

During the secure-setup process, after one minute of inactivity, authentication for stack members expires, forcing you to restart the process.

NOTE

To exit the secure-setup, enter Control-C (^C) at any time.

4. Various settings and files are synced from the master to the newly joined units.

```

Detect stack unit 2 has different startup config flash, will synchronize it
T=7m5.5: Synchronize webauth files to u2
Detect stack unit 3 has different startup config flash, will synchronize it
T=7m5.5: Synchronize webauth files to u3
T:7m6.7: Done hot swap: active controller u1 sets u2 to Ready.
T:7m6.8: Done hot swap: active controller u1 sets u3 to Ready.
T=7m7.5: Synchronize startup config to u2
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
T=7m8.5: Synchronize startup config to u3
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Stack unit 3 Power supply 1 is up
Stack unit 3 Power supply 2 is down
Stack unit 2 Power supply 1 is up
Stack unit 2 Power supply 2 is down

Config changed due to add/del units. Do write mem if you want to keep it
T=7m10.7: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1,
nbr#=11 0,
reason: u12: port-up, ,
Detect stack unit 9 has different startup config flash, will synchronize it
T=7m11.6: Synchronize webauth files to u9

```

```

Detect stack unit 12 has different startup config flash, will synchronize it
T=7m11.6: Synchronize webauth files to u12
Detect stack member 9 POE capable
Detect stack member 12 POE capable
Detect stack unit 10 has different startup config flash, will synchronize it
T=7m11.6: Synchronize webauth files to u10
Detect stack unit 11 has different startup config flash, will synchronize it
T=7m11.6: Synchronize webauth files to u11
Detect stack unit 4 has different startup config flash, will synchronize it
T=7m11.7: Synchronize webauth files to u4
Detect stack member 11 POE capable
Detect stack unit 6 has different startup config flash, will synchronize it
T=7m11.7: Synchronize webauth files to u6
Detect stack unit 5 has different startup config flash, will synchronize it
T=7m11.7: Synchronize webauth files to u5
Detect stack unit 7 has different startup config flash, will synchronize it
T=7m11.7: Synchronize webauth files to u7
Detect stack unit 8 has different startup config flash, will synchronize it
T=7m11.7: Synchronize webauth files to u8
Detect stack member 5 POE capable
Detect stack member 7 POE capable
Detect stack member 8 POE capable

```

5. While stack formation, units go through various stages when they joins the stack. Once units become part of the stack and the master syncs relevant information and files to all the units and then they are set in "READY" state. During the process the user is prompted to 'write memory' to save changes.

```

T:7m12.9: Done hot swap: active controller u1 sets u9 to Ready.
T:7m13.1: Done hot swap: active controller u1 sets u10 to Ready.
T:7m13.3: Done hot swap: active controller u1 sets u11 to Ready.
T:7m13.5: Done hot swap: active controller u1 sets u12 to Ready.
T=7m13.7: Synchronize startup config to u9
T:7m13.9: Done hot swap: active controller u1 sets u4 to Ready.
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
T:7m14.0: Done hot swap: active controller u1 sets u5 to Ready.
T:7m14.2: Done hot swap: active controller u1 sets u6 to Ready.
T:7m14.7: Done hot swap: active controller u1 sets u7 to Ready.
T:7m15.2: Done hot swap: active controller u1 sets u8 to Ready.
PoE: Stack unit 9 Power supply 1 with 748000 mwatts capacity is up
Stack unit 9 Power supply 2 is down
T=7m15.7: Synchronize startup config to u4
PoE: Stack unit 5 Power supply 1 with 748000 mwatts capacity is up
Stack unit 5 Power supply 2 is down
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.

```

```

Config changed due to add/del units. Do write mem if you want to keep it
PoE: Stack unit 12 Power supply 1 with 258000 mwatts capacity is up
PoE: Stack unit 12 Power supply 2 with 258000 mwatts capacity is up
Stack unit 8 Power supply 1 is down
PoE: Stack unit 8 Power supply 2 with 748000 mwatts capacity is up
T=7m16.7: Synchronize startup config to u5
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
T=7m16.8: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1, nbr#=11
0, reason: u1: stk-po-chg, ,
T=7m17.7: Synchronize startup config to u6
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Stack unit 10 Power supply 1 is up
Stack unit 10 Power supply 2 is down
Stack unit 7 Power supply 1 is down
PoE: Stack unit 7 Power supply 2 with 748000 mwatts capacity is up
Stack unit 11 Power supply 1 is down
PoE: Stack unit 11 Power supply 2 with 748000 mwatts capacity is up
T=7m18.7: Synchronize startup config to u7
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
T=7m19.7: Synchronize startup config to u8
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Stack unit 6 Power supply 1 is up
Stack unit 6 Power supply 2 is down
Stack unit 4 Power supply 1 is up
Stack unit 4 Power supply 2 is down
T=7m20.7: Synchronize startup config to u10
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.

```

Stack construction method 2: Manual configuration

```
T=7m21.7: Synchronize startup config to u11
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.

Config changed due to add/del units. Do write mem if you want to keep it
T=7m22.7: Synchronize startup config to u12
Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
T=8m18.1: Assigned unit 2 to be standby
T=8m20.1: start running config sync to standby u2
T=8m21.0: Running config sync to standby u2 is complete
```

```
ICX7450-24 Router#
```

6. a. Upon booting up of the stack units is complete, stack formation is complete as units are set 'Ready'. Stack status can be verified using 'show stack' command. In this output, D indicates a dynamic configuration. After user enters a write memory, this display will change to S, for static configuration.

```
ICX7450-24 Router#show stack
T=10m34.8: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID   Type   Role   Mac Address   Pri State   Comment
1   S ICX7450-24G   active   cc4e.246c.ffd0 128 local   Ready
2   D ICX7450-48G   standby  cc4e.246d.1c78 0 remote Ready
3   D ICX7450-48G   member   cc4e.246d.1b78 0 remote Ready
4   D ICX7450-48G   member   cc4e.246d.1ff8 0 remote Ready
5   D ICX7450-48P   member   cc4e.2489.8640 0 remote Ready
6   D ICX7450-48GF  member   cc4e.246d.1478 0 remote Ready
7   D ICX7450-48P   member   cc4e.2489.b388 0 remote Ready
8   D ICX7450-48P   member   cc4e.2489.b188 0 remote Ready
9   D ICX7450-48P   member   cc4e.246d.2938 0 remote Ready
10  D ICX7450-48G   member   cc4e.246d.1838 0 remote Ready
11  D ICX7450-48P   member   cc4e.246d.23b8 0 remote Ready
12  D ICX7450-24P   member   cc4e.246d.0520 0 remote Ready

      +----+      +----+      +----+      +----+      +----+      +----+
      | C |2/1==2/1| B |2/3==2/3| A |2/1==2/1| 9 |2/3==2/3| 8 |2/1==2/1| 7 |2/3=
      +----+      +----+      +----+      +----+      +----+      +----+
      active      standby
      +----+      +----+      +----+      +----+      +----+      +----+
-2/3| 1 |2/1==2/1| 2 |2/3==2/3| 3 |2/1==2/1| 4 |2/3==2/3| 5 |2/1==2/1| 6 |2/3=
      +----+      +----+      +----+      +----+      +----+      +----+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.246c.ffd0
ICX7450-24 Router#
```

Stack construction method 2: Manual configuration

Description

With this method, users should configure every unit individually and enable stacking on each unit. Once the units are connected together, they automatically form a stack. With this method, the unit with the highest priority becomes the active controller, and ID assignment is determined by the sequence in which user physically connects the units. The example used below is 12 units to form a linear stack using stack trunks.

Steps

Manual stack formation:

- Configure default-ports 1/2/1 1/2/3, stack trunks, on all the units.
- Configure highest priority on an intended active controller.
- Configure second highest priority on an intended standby controller.
- Configure 'stack suggested-id' on the intended member units.
- Configure 'stack enable' on all the units and connect the units using stack ports.

Detailed Steps

1. Units should boot up using the same software image.
2. Configure 'default-ports 1/2/1 1/2/3' on all the units. Write memory and reload.

```

24 Router>enable
No password has been assigned yet...
ICX7450-24 Router#con t
ICX7450-24 Router(config)#stack unit 1
ICX7450-24 Router(config-unit-1)#default-ports 1/2/1 1/2/3
Reload required. Please write memory and then reload or power cycle.
ICX7450-24 Router(config-unit-1)#
ICX7450-24 Router(config-unit-1)#
ICX7450-24 Router(config-unit-1)#end
ICX7450-24 Router#
ICX7450-24 Router#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-24 Router#
ICX7450-24 Router#
ICX7450-24 Router#rel
Sent SIGTERM to all processesn'):
Sent SIGKILL to all processes
Requesting system reboot
Restarting system.
    
```

3. Upon boot up configure stack trunks on all the units. On a unit intended to be active controller, configure priority 255 and intended to be standby configure priority 240. User can choose to have same priority for active and standby which is useful in case of failover.
4. Configure stack suggested-id on the intended member units. In the following example, unit 1 is intended active and unit 12 is intended stby and rest of the units are intended member units.
5. Configure 'stack enable' on all the units.

```

UNIT 1:

ICX7450-24 Router#configure terminal
ICX7450-24 Router(config)#stack unit 1
ICX7450-24 Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-24 Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-24 Router(config-unit-1)#priority 255
ICX7450-24 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
ICX7450-24 Router(config-unit-1)#
    
```

```

UNIT 2:

ICX7450-48 Router#configure terminal
ICX7450-48 Router(config)#stack unit 1
ICX7450-48 Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48 Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48 Router(config-unit-1)#stack suggested-id 2
ICX7450-48 Router(config-unit-1)#write memory

ICX7450-48 Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
    
```

```

UNIT 3:

ICX7450-48 Router(config)#stack unit 1
ICX7450-48 Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48 Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48 Router(config-unit-1)#stack suggested-id 2
ICX7450-48 Router(config-unit-1)#stack suggested-id 3
ICX7450-48 Router(config-unit-1)#write memory

ICX7450-48 Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
    
```

stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not available.

UNIT 4:

```
ICX7450-48 Router(config)#stack unit 1
ICX7450-48 Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48 Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48 Router(config-unit-1)#stack suggested-id 4
ICX7450-48 Router(config-unit-1)#write memory
```

```
ICX7450-48 Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 5

```
ICX7450-48P Router#configure terminal
ICX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48P Router(config-unit-1)#stack suggested-id 5
ICX7450-48P Router(config-unit-1)#write memory
```

```
ICX7450-48P Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 6:

```
ICX7450-48F Router#configure terminal
ICX7450-48F Router(config)#stack unit 1
ICX7450-48F Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48F Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48F Router(config-unit-1)#stack suggested-id 6
ICX7450-48F Router(config-unit-1)#write memory
```

```
ICX7450-48F Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48F Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 7:

```
ICX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48P Router(config-unit-1)#stack suggested-id 7
ICX7450-48P Router(config-unit-1)#write memory
```

```
ICX7450-48P Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 8:

```
ICX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48P Router(config-unit-1)#stack suggested-id 8
ICX7450-48P Router(config-unit-1)#write memory
```

```
ICX7450-48P Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48P Router(config-unit-1)#
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 9:

```
ICX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48P Router(config-unit-1)#stack suggested-id 9
ICX7450-48P Router(config-unit-1)#write memory

ICX7450-48P Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 10:

```
ICX7450-48 Router(config)#stack unit 1
ICX7450-48 Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48 Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48 Router(config-unit-1)#stack suggested-id 10
ICX7450-48 Router(config-unit-1)#write memory

ICX7450-48 Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48 Router(config-unit-1)#
ICX7450-48 Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 11:

```
CX7450-48P Router(config)#stack unit 1
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-48P Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-48P Router(config-unit-1)#stack suggested-id 11
ICX7450-48P Router(config-unit-1)#
ICX7450-48P Router(config-unit-1)#
ICX7450-48P Router(config-unit-1)#write memory

ICX7450-48P Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-48P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 12:

```
ICX7450-24P Router(config)#stack unit 1
ICX7450-24P Router(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7450-24P Router(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7450-24P Router(config-unit-1)#priority 240
ICX7450-24P Router(config-unit-1)#write memory

ICX7450-24P Router(config-unit-1)#Flash Memory Write (8192 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7450-24P Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

6. After configuration connect the devices in a stack topology. The active controller retains its ID. The rest of the units are assigned unique ID numbers depending on the sequence in which they are

connected or depending on the stack suggest-ID configured. Except the active controller rest of the units reset and upon boot up, stack is formed.

```
ICX7450-24 Router#show stack
T=1h45m15.5: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID  Type      Role      Mac Address  Pri State  Comment
1   S ICX7450-24G active    cc4e.246c.ffd0 255 local  Ready
2   D ICX7450-48G member    cc4e.246d.1c78  0 remote Ready
3   D ICX7450-48G member    cc4e.246d.1b78  0 remote Ready
4   D ICX7450-48G member    cc4e.246d.1ff8  0 remote Ready
5   D ICX7450-48P member    cc4e.2489.8640  0 remote Ready
6   D ICX7450-48GF member    cc4e.246d.1478  0 remote Ready
7   D ICX7450-48P member    cc4e.2489.b388  0 remote Ready
8   D ICX7450-48P member    cc4e.2489.b188  0 remote Ready
9   D ICX7450-48P member    cc4e.246d.2938  0 remote Ready
10  D ICX7450-48G member    cc4e.246d.1838  0 remote Ready
11  D ICX7450-48P member    cc4e.246d.23b8  0 remote Ready
12  D ICX7450-24P standby   cc4e.246d.0520  240 remote Ready

standby
+----+ +----+ +----+ +----+ +----+ +----+
2/3| C |2/1==2/1| B |2/3==2/3| A |2/1==2/1| 9 |2/3==2/3| 8 |2/1==2/1| 7 |2/3=
+----+ +----+ +----+ +----+ +----+ +----+
active
+----+ +----+ +----+ +----+ +----+ +----+
=2/3| 1 |2/1==2/1| 2 |2/3==2/3| 3 |2/1==2/1| 4 |2/3==2/3| 5 |2/1==2/1| 6 |2/3=
+----+ +----+ +----+ +----+ +----+ +----+
Standby u12 - protocols ready, can failover
Current stack management MAC is cc4e.246c.ffd0
ICX7450-24 Router#
```

Debugging and verification using show commands

show stack

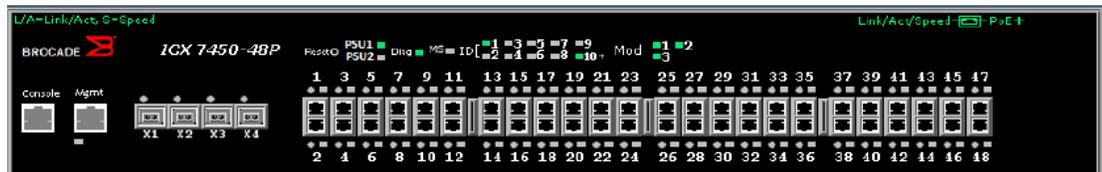
Enter 'show stack' command at device level. In the following output user can verify that all five different SKUs of ICX7450 have been used in the stack.

```
ICX7450-24 Router#show stack
T=20m19.2: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID  Type      Role      Mac Address  Pri State  Comment
1   S ICX7450-24G active    cc4e.246c.ffd0 128 local  Ready
2   D ICX7450-48G standby   cc4e.246d.1c78  0 remote Ready
3   D ICX7450-48G member    cc4e.246d.1b78  0 remote Ready
4   D ICX7450-48G member    cc4e.246d.1df8  0 remote Ready
5   D ICX7450-48P member    cc4e.2489.8640  0 remote Ready
6   D ICX7450-48GF member    cc4e.246d.1478  0 remote Ready
7   D ICX7450-48P member    cc4e.2489.b388  0 remote Ready
8   D ICX7450-48P member    cc4e.2489.b188  0 remote Ready
9   D ICX7450-48P member    cc4e.246d.2938  0 remote Ready
10  D ICX7450-48G member    cc4e.246d.1838  0 remote Ready
11  D ICX7450-48P member    cc4e.246d.23b8  0 remote Ready
12  D ICX7450-24P member    cc4e.246d.0520  0 remote Ready

active      standby
+----+ +----+ +----+ +----+ +----+ +----+
3/1| 1 |4/1--3/1| 2 |4/1--3/1| 3 |4/1--3/1| 4 |4/1--3/1| 5 |4/1--3/1| 6 |4/1-
+----+ +----+ +----+ +----+ +----+ +----+
+----+ +----+ +----+ +----+ +----+ +----+
| C |3/1--4/1| B |3/1--4/1| A |3/1--4/1| 9 |3/1--4/1| 8 |3/1--4/1| 7 |3/1-
+----+ +----+ +----+ +----+ +----+ +----+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.246c.ffd0
ICX7450-24 Router#
```

NOTE

For a 12 unit stack, the CLI command **show stack** output displays units 10, 11 and 12 as A, B and C respectively. The front panel for the stack units displays LED status as green/on in the following manner: Up to unit 10, UNIT ID -LEDs are green/on to match the stack ID. For unit 11, UNIT ID-LEDs 10 and 1 are green/on. For unit 12, UNIT ID-LEDs 10 and 2 are green/on. Front panel pictures from the web session are shown below for unit 11 and unit 12 .

**TABLE 7** Stack ID, LEDs and unit ID representation in graphical review

Unit ID	LEDs at front panel are green (on)	Unit ID in the show stack output diagram
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	A
11	10 and 1	B
12	10 and 2	C

show stack detail

Enter the **show stack details** at the device level. This command will display image auto copy status, stack ports, link status, neighboring stack ports and system uptime for each unit of the stack.

```
ICX7450-24 Router#show stack detail
T=59m43.4: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID   Type      Role      Mac Address    Pri State  Comment
1   S ICX7450-24G active    cc4e.246c.ffd0 128 local  Ready
2   D ICX7450-48G standby   cc4e.246d.1c78 0 remote Ready
3   D ICX7450-48G member    cc4e.246d.1b78 0 remote Ready
4   D ICX7450-48G member    cc4e.246d.1df8 0 remote Ready
```

show stack stack-ports

```
5 D ICX7450-48P member cc4e.2489.8640 0 remote Ready
6 D ICX7450-48GF member cc4e.246d.1478 0 remote Ready
7 D ICX7450-48P member cc4e.2489.b388 0 remote Ready
8 D ICX7450-48P member cc4e.2489.b188 0 remote Ready
9 D ICX7450-48P member cc4e.246d.2938 0 remote Ready
10 D ICX7450-48G member cc4e.246d.1838 0 remote Ready
11 D ICX7450-48P member cc4e.246d.23b8 0 remote Ready
12 D ICX7450-24P member cc4e.246d.0520 0 remote Ready

      active      standby
      +----+      +----+      +----+      +----+      +----+      +----+
3/1| 1 |4/1--3/1| 2 |4/1--3/1| 3 |4/1--3/1| 4 |4/1--3/1| 5 |4/1--3/1| 6 |4/1-
      +----+      +----+      +----+      +----+      +----+      +----+

      +----+      +----+      +----+      +----+      +----+      +----+
      | C |3/1--4/1| B |3/1--4/1| A |3/1--4/1| 9 |3/1--4/1| 8 |3/1--4/1| 7 |3/1-
      +----+      +----+      +----+      +----+      +----+      +----+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.246c.ffd0
```

Image-Auto-Copy is Enabled.

Unit#	Stack Port Status	Neighbors		
Stack-port1	Stack-port2	Stack-port1	Stack-port2	
1	dn (1/3/1)	up (1/4/1)	none	U2 (2/3/1)
2	up (2/3/1)	up (2/4/1)	U1 (1/4/1)	U3 (3/3/1)
3	up (3/3/1)	up (3/4/1)	U2 (2/4/1)	U4 (4/3/1)
4	up (4/3/1)	up (4/4/1)	U3 (3/4/1)	U5 (5/3/1)
5	up (5/3/1)	up (5/4/1)	U4 (4/4/1)	U6 (6/3/1)
6	up (6/3/1)	up (6/4/1)	U5 (5/4/1)	U7 (7/3/1)
7	up (7/3/1)	up (7/4/1)	U6 (6/4/1)	U8 (8/3/1)
8	up (8/3/1)	up (8/4/1)	U7 (7/4/1)	U9 (9/3/1)
9	up (9/3/1)	up (9/4/1)	U8 (8/4/1)	U10 (10/3/1)
10	up (10/3/1)	up (10/4/1)	U9 (9/4/1)	U11 (11/3/1)
11	up (11/3/1)	up (11/4/1)	U10 (10/4/1)	U12 (12/3/1)
12	up (12/3/1)	none	U11 (11/4/1)	none

```
Unit# System uptime
1 59 minutes 43 seconds
2 56 minutes 48 seconds
3 56 minutes 47 seconds
4 56 minutes 48 seconds
5 56 minutes 47 seconds
6 56 minutes 46 seconds
7 56 minutes 47 seconds
8 56 minutes 47 seconds
9 56 minutes 47 seconds
10 56 minutes 47 seconds
11 56 minutes 48 seconds
12 56 minutes 49 seconds
ICX7450-24 Router#
```

NOTE
Starting with FI08.0.20, hitless-failover is enabled by default.

show stack stack-ports

Enter the **show stack stack-ports** command at device level. This command displays stack ports and link status for all the stack ports. In case of the stack port link is down, this output is useful for debugging if the other side of the link is up or down.

```
ICX7450-24 Router# show stack stack-ports
      active      standby
      +----+      +----+      +----+      +----+      +----+      +----+
3/1| 1 |4/1--3/1| 2 |4/1--3/1| 3 |4/1--3/1| 4 |4/1--3/1| 5 |4/1--3/1| 6 |4/1-
      +----+      +----+      +----+      +----+      +----+      +----+

      +----+      +----+      +----+      +----+      +----+      +----+
      | C |3/1--4/1| B |3/1--4/1| A |3/1--4/1| 9 |3/1--4/1| 8 |3/1--4/1| 7 |3/1-
      +----+      +----+      +----+      +----+      +----+      +----+
```

```

U#   Stack-port1                               Stack-port2
1   dn (1/3/1)                                 up (1/4/1)
2   up (2/3/1)                                 up (2/4/1)
3   up (3/3/1)                                 up (3/4/1)
4   up (4/3/1)                                 up (4/4/1)
5   up (5/3/1)                                 up (5/4/1)
6   up (6/3/1)                                 up (6/4/1)
7   up (7/3/1)                                 up (7/4/1)
8   up (8/3/1)                                 up (8/4/1)
9   up (9/3/1)                                 up (9/4/1)
10  up (10/3/1)                                up (10/4/1)
11  up (11/3/1)                                up (11/4/1)
12  up (12/3/1)                                none
ICX7450-24 Router#

```

show stack neighbors

Enter the **show stack neighbors** command at device level. This command displays neighboring units for each stack port. This is very useful in locating and troubleshooting failed switches in the stack.

```

ICX7450-24 Router# show stack neighbors
U#   Stack-port1                               Stack-port2
1   (1/3/1) to none                            (1/4/1) to U2 (2/3/1)
2   (2/3/1) to U1 (1/4/1)                      (2/4/1) to U3 (3/3/1)
3   (3/3/1) to U2 (2/4/1)                      (3/4/1) to U4 (4/3/1)
4   (4/3/1) to U3 (3/4/1)                      (4/4/1) to U5 (5/3/1)
5   (5/3/1) to U4 (4/4/1)                      (5/4/1) to U6 (6/3/1)
6   (6/3/1) to U5 (5/4/1)                      (6/4/1) to U7 (7/3/1)
7   (7/3/1) to U6 (6/4/1)                      (7/4/1) to U8 (8/3/1)
8   (8/3/1) to U7 (7/4/1)                      (8/4/1) to U9 (9/3/1)
9   (9/3/1) to U8 (8/4/1)                      (9/4/1) to U10 (10/3/1)
10  (10/3/1) to U9 (9/4/1)                     (10/4/1) to U11 (11/3/1)
11  (11/3/1) to U10 (10/4/1)                   (11/4/1) to U12 (12/3/1)
12  (12/3/1) to U11 (11/4/1)                   none to none
ICX7450-24 Router#

```

show stack connections

Enter the **show stack connection** command at device level. This command displays total stacking links on the topology along with stack port 1(P0) and stack port 2(P1) for each stacking link. It also displays CPU to CPU packets are fine between the units. This output helps debug whether or not the neighboring links when the stack ports link goes down.

```

ICX7450-24 Router# show stack connection
Probing the topology. Please wait ...
ICX7450-24 Router#
      active          standby
      +----+         +----+
3/1| 1 |4/1--3/1| 2 |4/1--3/1| 3 |4/1--3/1| 4 |4/1--3/1| 5 |4/1--3/1| 6 |4/1-
      +----+         +----+         +----+         +----+         +----+         +----+
                                     |
      +----+         +----+         +----+         +----+         +----+         +----+
      | C |3/1--4/1| B |3/1--4/1| A |3/1--4/1| 9 |3/1--4/1| 8 |3/1--4/1| 7 |3/1-
      +----+         +----+         +----+         +----+         +----+         +----+

trunk probe results: 11 links
Link 1: u1 -- u2, num=1
      1: 1/4/1 (P1) <----> 2/3/1 (P0)
Link 2: u2 -- u3, num=1
      1: 2/4/1 (P1) <----> 3/3/1 (P0)
Link 3: u3 -- u4, num=1

```

```

1: 3/4/1 (P1) <---> 4/3/1 (P0)
Link 4: u4 -- u5, num=1
1: 4/4/1 (P1) <---> 5/3/1 (P0)
Link 5: u5 -- u6, num=1
1: 5/4/1 (P1) <---> 6/3/1 (P0)
Link 6: u6 -- u7, num=1
1: 6/4/1 (P1) <---> 7/3/1 (P0)
Link 7: u7 -- u8, num=1
1: 7/4/1 (P1) <---> 8/3/1 (P0)
Link 8: u8 -- u9, num=1
1: 8/4/1 (P1) <---> 9/3/1 (P0)
Link 9: u9 -- u10, num=1
1: 9/4/1 (P1) <---> 10/3/1 (P0)
Link 10: u10 -- u11, num=1
1: 10/4/1 (P1) <---> 11/3/1 (P0)
Link 11: u11 -- u12, num=1
1: 11/4/1 (P1) <---> 12/3/1 (P0)
CPU to CPU packets are fine between 12 units.

ICX7450-24 Router#

```

Use cases

Adding a new unit to the stack

Adding a new unit to an already existing operational stack can be done in three ways:

- Secure setup
- Stack enable
- With reserved configuration (pre-provisioning)

Assumptions

- This process assumes that a stack is already formed and operational.
- To add a new unit to the stack, number of units in the stack should be less than 12.

Description

A new unit can be connected to one of the end units of the stack using stack ports. Following section describes these processes.

Steps

Using the Secure Setup Method

1. A new unit can be connected to one of the end units of the stack using stack ports.
2. Once link is up, enter 'stack secure setup' on the active unit. The CLI display comes up with a 'new' unit discovered and prompts the user to enter the number of units desired upstream/downstream depending on where the new unit is connected.
3. The newly added unit receives a new ID which is next available ID, and resets itself. Upon boot up it joins with newly assigned ID. Do 'write memory.'

Using the Manual Configuration Method

1. A new unit can be connected to one of the end units using stack ports.
2. When link come up, enter 'stack enable' on the new unit at configuration level.
3. The newly added unit receives a new ID, which is next available stack ID, and resets itself. Upon boot up it joins with newly assigned ID. Do 'write memory'.

Using the Reserved Configuration Method

1. Module configuration of the new unit should be pre-provisioned on the active unit.
2. This new unit can then be connected to one of the end units using stack ports.
3. Active controller resets the new unit and upon boot up, the new unit is part of the stack. Do 'write memory'.

Removing a unit from the stack

Description

This is the process to remove a unit from the stack.

Steps

1. User can manually disconnect the unit by removing stacking cables. Unit can be disconnected while it's powered on or off.
2. When unit is disconnected, it will have stacking enabled. To recover to a clean unit user can use 'stack unconfigure clean' or 'stack unconfigure me' commands on this unit.
3. If the removed unit was dynamically learned, the active unit will remove this unit from configuration. If the removed unit was static, the configuration can be removed by issuing 'no stack unit <unit id>' command.
4. To temporarily disable a unit from stack, on the active unit enter stack disable command for the particular unit.

NOTE

'Stack unconfigure me' will recover the unit to its startup configuration before it joined the stack. 'Stack unconfigure clean' will remove unit's startup configuration. These commands will reload the unit and boot up as standalone unit.

Replacing a unit from the stack

Assumptions

- This is a 1x40G stack
- All the units have sequential switch IDs.
- Replacing a failed switch with a clean unit.

NOTE

For a 4x10G stack, automatic stack configuration and unit replacement features do not work with ICX 7450 4X10GF stacking. For a unit replacement to work, a user must use the same model as the one being replaced, and the new unit must be a clean unit. For example, the stack is using a 4X10GF module installed in slot 2, and the user wants to replace a unit. To configure the new unit with the same configuration, the user must configure the default ports, write memory, and reload. As a result, the new unit is no longer a clean unit because it has a startup configuration flash, and the unit replacement feature will not automatically integrate this unit into a stack. The user must use secure-setup or the manual stack construction to add the new unit to the stack. If the user uses the manual stack construction method, the user must configure the stack suggested-id with the same ID in the replacement unit before enabling the stack.

Description

If user wants to replace an old unit from the stack, there can be two scenarios in this case

- Replacing a stack unit with a clean stack unit
- Replacing multiple stack units with multiple clean traditional stack units

Steps

Replacing one stack unit with a clean stack unit

1. After removing the old unit from the stack, connect the new unit to the stack using the same stacking ports used by the old unit.
2. If the module configuration of the replacement unit matches the configuration on the Active Controller, the Active Controller resets the new unit and upon boot up new unit joins the stack with the same ID was the unit that was removed, and the stack retains its original topology.
3. If the configuration of the new unit does not match the old unit, the new unit is added with a new ID based on the next available ID.
4. When stack has 12 units, and new unit has different hardware configuration than the old unit, the unit will be placed in configuration-mismatch state.

Replacing multiple stack units with multiple clean stack units

1. After removing the old stack units, connect the new units to the existing stack using the stacking ports as the old unit.
2. The active controller replaces the unit with the lowest ID first. For example, if you remove units 4 and 5, the active controller assigns ID 4 to the first new device you install.
3. If you wanted this particular unit to replace unit 5, instead of unit 4, you must use secure-setup to select the ID of the old unit for the new unit. The active controller resets the unit, and upon boot up it joins the stack.

Creating a stack trunk on a live stack

Assumption

1. This configuration can be done on a 4x10G stack where stack is formed using default ports and stack trunks are not yet configured.
2. Trunk ports are connected to form trunk ie x/2/1 to x/2/2 and x/2/3 to x/2/4.

Steps

Use the multi-stack trunk command to add or remove a stack trunk on a live ICX 7450 stack.

```
ICX7450-24 Router# configure terminal
ICX7450-24 Router# stack unit 1
ICX7450-24 Router(config-unit-1)# multi-stack-trunk 1/2/1 to 1/2/2 and 2/2/1 to 2/2/2
ICX7450-24 Router(config-unit-1)#
```

Brocade ICX 7450 stacking recommendations and restrictions

1. FastIron Release 08.0.20 supports only 1x40G module supports stacking.
2. FastIron Release 08.0.30 and later releases support stacking when a 4X10GF module is present in slot 2. Each unit must be individually configured with default stacking ports as 1/2/1 and 1/2/3 and reloaded to join a stack, or to use secure setup.
3. The 4X10GF ports can also support MACsec but not at the same time when these ports are configured as stack ports. By default, if a 4X10GF module is present in slot 2, it is enabled for MACsec. However, to use the slot 2 ports for stacking, the default ports must be changed; using default-ports command and the unit must be reloaded after saving the configuration for default ports to be effective for stacking.
4. 1x40G module supports stacking only when it is installed in rear panel slot 3 and 4 of 24 and 48 port SKUs.
5. 1x40G module when present in slot 2 of 24 ports SKU does not support stacking.
6. Stack ports can be configured using 'stack-port stack/slot/port' command.
7. Stack trunks are not supported on ICX 7450 devices with 1x40G stacking. But stack-trunks are supported with 4x10G stacking ports.
8. When the stack secure-setup utility is used to configure an ICX 7450 stack, end points or ports of the end units that are not used for stacking and that are link down are left as data ports except on

the active unit, where both 1/3/1 and 1/4/1 (or 1/2/1 1/2/3 for 4x10G stack) become stack ports as a result of 'stack enable'.

9. Stack port can be converted to a data port using 'stack-port stack/slot/port' command. If only one port is entered, the other port will be converted to a data port.
10. Boot up time for a 12 unit stack is approximately less than 3 minutes. For the stack to boot up, assign a standby and get protocols ready so it can be ready for failover, it takes about less than 6 minutes.
11. In case of any image mismatch on member units, active unit will trigger Autocopy. Autocopy is supported only between minor and patch releases and not between major releases.
12. When an uplink port is being converted to stacking port, the uplink configuration should be removed before it can be configured as a stack port.
13. 10G and 40G stack links cannot be mixed within a single stack. All stack connections must be the same speed.

Chapter 2: ICX7750 Stack

Technical Architecture

The Sidewinder is expected to meet various customer deployment needs so there will be three SKU for this hardware. These three SKU have similar hardware design with difference in the external interfaces.

The SKU types are as follows:

- ICX7750-48F
- ICX7750-48C
- ICX7750-32Q

ICX7750-48F

This hardware unit has 48 of 10G SFP+ ports on the front. There are also 6 of 40G QSFP+ ports on the front. There are 6 of 40G QSFP+ ports on the rear panel, which is on the pluggable module. The SFP+ ports can work in 10G mode and 1G mode.

FIGURE 10 ICX 7750-48F Front and Rear panel



ICX7750-48C

This hardware unit has 48 of 10G-BASE-T Copper ports on the front panel. These ports can work in 10G mode and use 10G-BASE-T auto negotiation with link partner. This can also work in 1G mode

when the link partner goes in 1G mode by doing auto negotiation. This is the first Brocade switch that had 10GBASE-T copper port capability. This solution reduces the deployment cost significantly because it does not require any optics for 10G ports. In addition, there are 6 of 40G QSFP+ ports on the front. There are 6 of 40G QSFP+ ports on the rear panel, which is on the pluggable module.

FIGURE 11 ICX 7750-48C Front and Rear panel



ICX7750-32Q

This hardware unit has 32 of 40G QSFP+ ports. There are 26 ports on front panel; 6 of these ports are on the rear panel. The front ports are fixed where QSFP+ connectors can be attached. The rear panel has 6 QSFP+ ports, which are on a pluggable module. The module can be plugged out based on deployment needs.

FIGURE 12 ICX 7750-32Q Front and Rear Panel



Supported Topologies

The Brocade ICX7750 can operate as a standalone device and a stackable device. When used as a stack, ICX7750 supports linear and ring stack topologies.

All different SKUs of ICX7750 can be mixed in the same stack. The stack can be formed with 2 units and can scale up to 12 units.

Only the ports on second and third modules are common in all three SKU of Sidewinder (26Q, 48C and 48F), so making them as stack-ports works for all of them. Both module 2 and module 3 have 6 * 40G ports, and each stack unit can have up to two stacking directions. Thus, dividing the modules into 3 each for each direction is recommended.

By default the stacking ports are 1/2/1 and 1/2/4. The user can change the default ports to 1/3/1 and 1/3/4 respectively. The stack ports for the uplink and downlink connections must be on the same module (front or rear) for the same switch and the same stack, we cannot mix the front and rear ports for the connection on the same switch or the same stack.

ICX 7750 can support stacking with stack trunks. The trunks can be in a set of two or three.

A default port, either port 1/2/1 or 1/2/4 in module 2 or port 1/3/1 or 1/3/4 in module 3 of a stacking module, is always the first sequential port in a trunk. The following are the possible three port and two port trunks.

Each switch can support up to 480 G of stacking bandwidth (40 X 3(trunk) X 2(uplink and downlink) X 2 (bi-directional)). Unused stacking ports can be used as data ports. For example, you can elect to use only one default port as a stacking port and use the other default port as a data port. When an ICX 7750 stacking module is not configured for stacking, its stacking ports can be used as data ports.

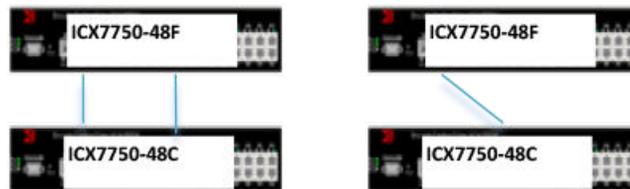
TABLE 8 Stack trunks

Possible 3-port trunks	Possible 2-port trunks
1/2/1 to 1/2/3	1/2/1 to 1/2/2
1/2/4 to 1/2/6	1/2/4 to 1/2/5
1/3/1 to 1/3/3	1/3/1 to 1/3/2
1/3/4 to 1/3/6	1/3/4 to 1/3/5

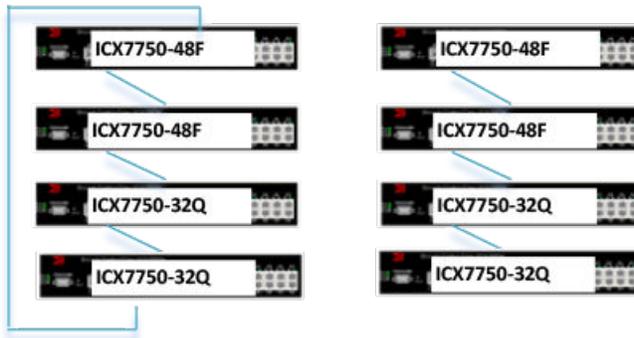
NOTE

The Brocade ICX7750 cannot be combined in a stack with other Brocade stackable devices. Only homogenous stack is supported.

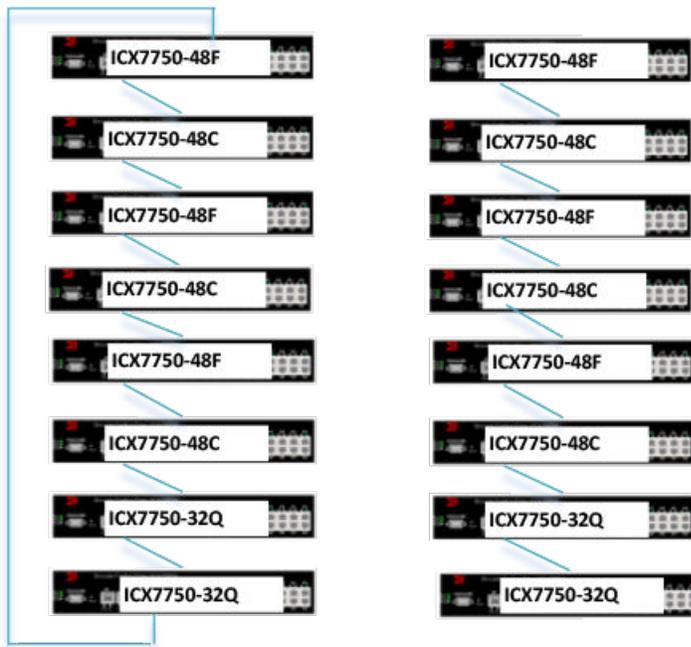
2 unit stack linear and ring topology



4 unit stack linear and ring topology



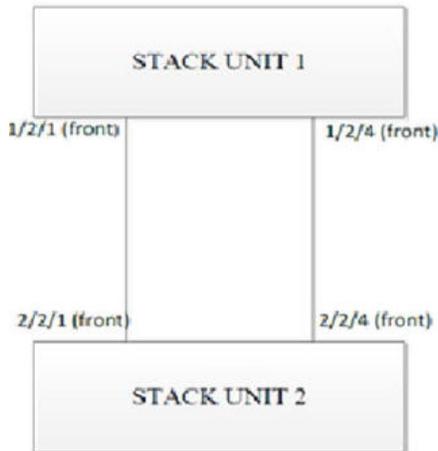
8 unit stack linear and ring topology



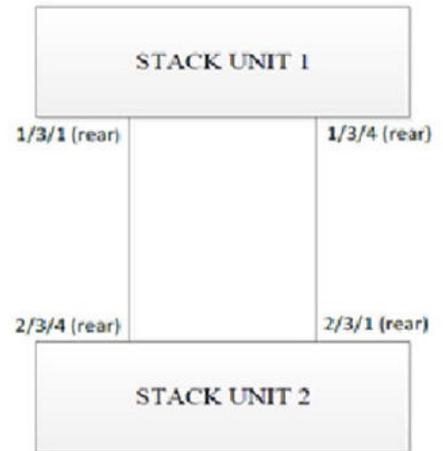
12 unit stack linear and ring topology



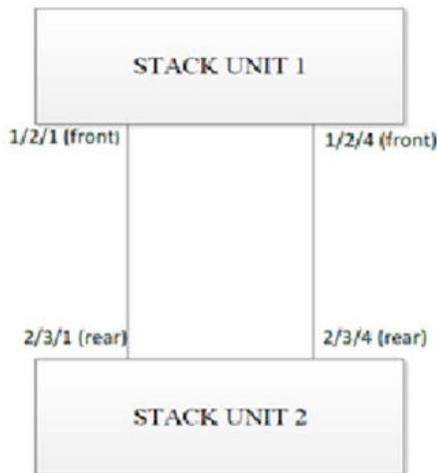
Supported stacking combinations and trunking



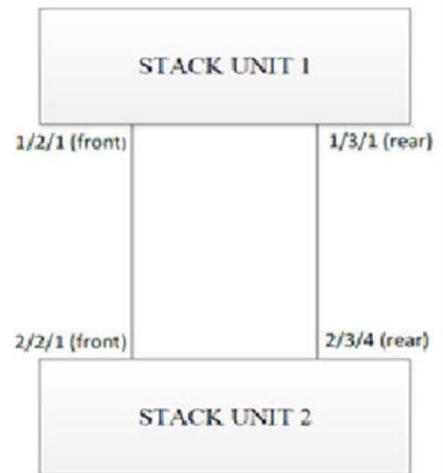
Case 1: Supported



Case 2: Supported



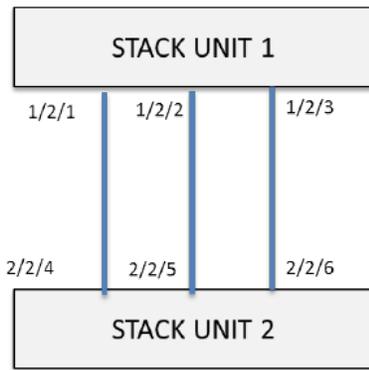
Case 3: Not Supported



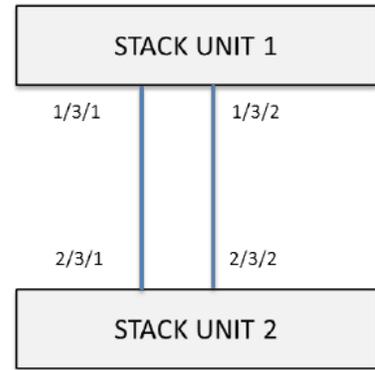
Case 4: Not Supported

NOTE

Users can use all front modules or all rear modules on all stack units for stacking. A mixed combination is not allowed.



3 Port trunk using module 2 ports in a linear 2 unit stack



2 Port trunk using module 3 ports in a linear 2 unit stack

NOTE

The Brocade ICX7750 Stacking trunks should use consecutive ports. For example, 1/2/1, 1/2/2 and 1/2/3 can be connected to 2/2/4, 2/2/5, and 2/2/6 respectively.

Brocade ICX7750 stack construction methods

A stack can be built in the following ways:

- Automatic stack formation: Use the 'secure setup' utility to form the stack.
- Manual stack formation: where each unit is configured individually.

Topology

The figure below shows stacking ports and three units connected in a linear topology. Similarly, a stack of up to 12 units can be connected. The example configuration is for a 12 unit stack.

Refer to the tables in the Bill of Materials section for the software image, optics, and vendor information.

FIGURE 13 Front panel stacking ports

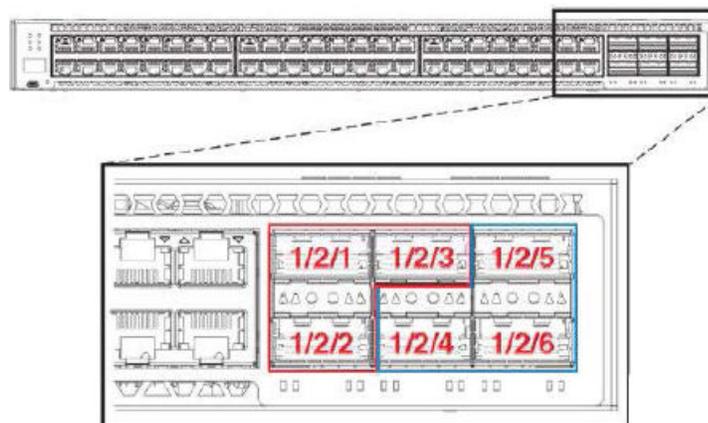


FIGURE 14 Rear panel stacking ports

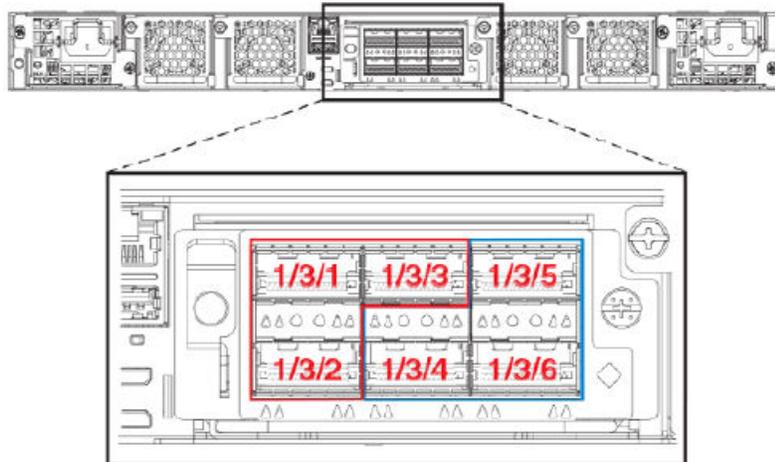


FIGURE 15 Stacking using front panel stacking ports - Ring

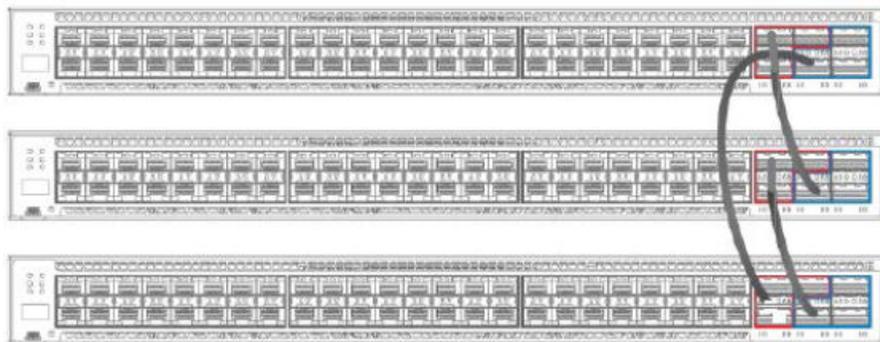
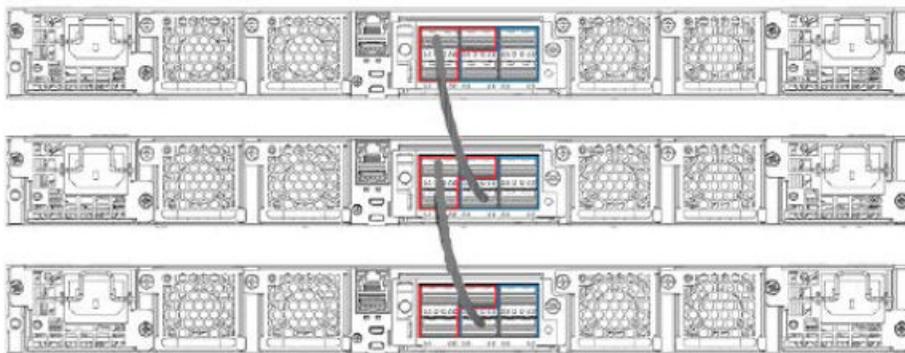


FIGURE 16 Stacking using rear panel stacking ports - Linear



Prerequisites

1. All 12 units have 6x40Gports present in module 2 or 3 each.
2. Connect 12 units in a linear/ ring topology.
3. Connect the using port default stacking port 1/2/1 and 1/2/4 on change to or 1/3/1 and 1/3/4 on each unit.

4. It is optional to have stack trunks which needs to be consecutive.
5. All units should be booted up with same software image.

Bill of Materials

The following products are used in this deployment.

Identifier	Vendor	Model	Notes
Switch/Units	Brocade	ICX7750-48C, ICX 7750-48F and ICX 7750 -32Q	Stack can be formed with mix and match of all 3 different SKUs listed
Stacking cable: Copper option	Refer to Table 9	1,3, 5-meter QSFP-QSFP active copper	For each uplink and downlink 1 cables each. The numbers vary if two port or three port stack trunks are used
Stacking cable: Fiber-optic options	Refer to Table 9	40G-QSFP-SR4 40G-QSFP-LR4	Fiber optic maximum distance is 100 M
Application Image	FI08.0.20 or later release	NA	All units should have same software image
License needed for stacking	NA	NA	License is not needed for 1x40G ports to configure stacking

NOTE

Passive cables are not supported for stacking with the Brocade ICX 7750.

TABLE 9 Optics information for Brocade ICX7750 stacking

QSFP Hardware	Description	Brocade Part Number
40G-QSFP-SR4	40GE SR	57-1000128-01
40G-QSFP-SR4	40GE SR	57-1000128-01
40G-QSFP-LR4	40GE LR	57-1000263-01
40G-QSFP-LR4	40GE LR	57-1000263-01
40G-QSFP-QSFP-C-0101	40GE QSFP Active Copper 1m	58-0000041-01
40G-QSFP-QSFP-C-0101	40GE QSFP Active Copper 1m	58-0000041-01
40G-QSFP-QSFP-C-0301	40GE QSFP Active Copper 3m	58-0000042-01
40G-QSFP-QSFP-C-0301	40GE QSFP Active Copper 3m	58-0000042-01
40G-QSFP-QSFP-C-0501	40GE QSFP Active Copper 5m	58-0000043-01
40G-QSFP-QSFP-C-0501	40GE QSFP Active Copper 5m	58-0000043-01

Per the manual LR4 optics are only supported on the following ports.

TABLE 10 Optics information for the Brocade ICX7750 stacking

Model	Front Panel Ports LR4	Optional 40G Module Ports LR4
ICX 7750-26Q	1/2/1, 2, 3,4,5,6	1/3/5 and 1/3/6
ICX 7750-48F	1/2/5 and 1/2/6	1/3/5 and 1/3/6
ICX 7750-48C	1/2/5 and 1/2/6	1/3/5 and 1/3/6

Stack formation method 1: Using Stack Secure setup

Description

The stack secure setup utility is the most convenient of all methods to form a stack. This utility uses a Brocade proprietary discovery protocol that discovers units that are connected upstream and downstream of the unit where this command is entered.

Steps

Summarized steps:

- Configure 'stack enable' on the intended active controller unit at configuration level.
- Enter 'stack secure setup' on the intended active controller unit at device level.

Detailed steps:

1. Connect the units in a stack based on the connection guidelines. Select a unit that you want to become an active controller. Configure 'stack enable' at configuration level as seen in the following logs.

```
ICX7750-48F Router# configure terminal
ICX7750-48F Router(config)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

2. Once stack enable configured, this command will configure two default stack ports 1/2/1 and 1/2/4 as seen in the message displayed. And this can be confirmed using 'show run' command. If user wants to stack using rear ports, default-ports command can be configured for 1/3/1 and 1/3/4 manually by the user.

```
When module 3 on the rear of ICX 7750 devices is used for stacking, before
performing secure setup, change the default ports on the respective units as
shown in the following example.
Otherwise, the secure-setup utility will not be able to discover the stacking
ports in module 3, and
invalid stack trunk messages will be displayed.
ICX7750-48F Router# configure terminal
ICX7750-48F Router(config)# stack unit 1
ICX7750-48F Router(config-unit-1)# default-ports 1/3/1 1/3/4
```

3. Enter 'stack secure setup' at device level. As shown in the following example, this command triggers a Brocade proprietary discovery protocol that begins the discovery process in both upstream and downstream directions. The discovery process produces a list of upstream and downstream devices that are available to join the stack. This process will assign IDs to the units.
4. During stack formation user will be prompted to enter desired number of units either upstream or downstream depending on the connections.

NOTE

During the secure-setup process, after one minute of inactivity, authentication for stack members expires, forcing you to restart the process.

To exit the secure-setup, enter **^C** at any time.

```
ICX7750-48F Switch# stack secure
ICX7750-48F Switch# Discovering the stack topology...
```

```
Current Discovered Topology - RING
```

```
Available UPSTREAM units
Hop(s) Id      Type      Mac Address
1      new  ICX7750-48XGF  cc4e.246d.8d80
2      new  ICX7750-48XGF  cc4e.246d.9b00
3      new  ICX7750-48XGF  cc4e.246d.9c80
4      new  ICX7750-20QXG  cc4e.2439.2a80
5      new  ICX7750-20QXG  cc4e.2439.3700
6      new  ICX7750-20QXG  cc4e.2439.3880
7      new  ICX7750-20QXG  cc4e.2439.2d00
8      new  ICX7750-48XGC  cc4e.2439.1a00
9      new  ICX7750-48XGC  cc4e.2439.1680
10     new  ICX7750-48XGC  cc4e.2439.1d80
11     new  ICX7750-48XGC  cc4e.2439.1280
```

```
Available DOWNSTREAM units
Hop(s) Id      Type      Mac Address
1      new  ICX7750-48XGC  cc4e.2439.1280
2      new  ICX7750-48XGC  cc4e.2439.1d80
3      new  ICX7750-48XGC  cc4e.2439.1680
4      new  ICX7750-48XGC  cc4e.2439.1a00
5      new  ICX7750-20QXG  cc4e.2439.2d00
6      new  ICX7750-20QXG  cc4e.2439.3880
7      new  ICX7750-20QXG  cc4e.2439.3700
8      new  ICX7750-20QXG  cc4e.2439.2a80
9      new  ICX7750-48XGF  cc4e.246d.9c80
10     new  ICX7750-48XGF  cc4e.246d.9b00
11     new  ICX7750-48XGF  cc4e.246d.8d80
```

5. Stack trunks are discovered using secure setup. Secure setup automatically detects the stack trunks if connected. User is prompted to confirm the number of links to select the number of ports in the stack trunks. Please refer the configuration guide for more details.

Confirm Stacking Links...

UPSTREAM Unit: Id new at 4 hop(s) ICX7750-20QXG cc4e.2439.2a80

Enter the desired links(1-3) [1]: 3

UPSTREAM Unit: Id new at 6 hop(s) ICX7750-20QXG cc4e.2439.3880

Enter the desired links(1-3) [1]: 3

UPSTREAM Unit: Id new at 10 hop(s) ICX7750-48XGC cc4e.2439.1d80

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 11 hop(s) ICX7750-48XGC cc4e.2439.1280

Enter the desired links(1-2) [1]: 2

6. User is prompted to enter 'y' to confirm that he accepts unit IDs. Here if enter 'n' user could choose to enter different unit IDs. In this particular example log shows 'y' as acceptance was entered.

Selected Topology:

```
Active Id      Type      Mac Address
1      1      ICX7750-48XGF  cc4e.246d.9e00
```

Selected UPSTREAM units

```
Hop(s) Id      Type      Mac Address
1      2      ICX7750-48XGF  cc4e.246d.8d80
2      3      ICX7750-48XGF  cc4e.246d.9b00
3      4      ICX7750-48XGF  cc4e.246d.9c80
4      5      ICX7750-20QXG  cc4e.2439.2a80
5      6      ICX7750-20QXG  cc4e.2439.3700
6      7      ICX7750-20QXG  cc4e.2439.3880
7      8      ICX7750-20QXG  cc4e.2439.2d00
8      9      ICX7750-48XGC  cc4e.2439.1a00
9      10     ICX7750-48XGC  cc4e.2439.1680
10     11     ICX7750-48XGC  cc4e.2439.1d80
11     12     ICX7750-48XGC  cc4e.2439.1280
```

Selected DOWNSTREAM units

```
Hop(s) Id      Type      Mac Address
1      12     ICX7750-48XGC  cc4e.2439.1280
2      11     ICX7750-48XGC  cc4e.2439.1d80
3      10     ICX7750-48XGC  cc4e.2439.1680
4      9      ICX7750-48XGC  cc4e.2439.1a00
5      8      ICX7750-20QXG  cc4e.2439.2d00
6      7      ICX7750-20QXG  cc4e.2439.3880
```

```

7      6      ICX7750-20QXG      cc4e.2439.3700
8      5      ICX7750-20QXG      cc4e.2439.2a80
9      4      ICX7750-48XGF      cc4e.246d.9c80
10     3      ICX7750-48XGF      cc4e.246d.9b00
11     2      ICX7750-48XGF      cc4e.246d.8d80
Do you accept the unit id's (y/n)? : y

```

7. Once stack IDs are accepted, the stack units, except the active controller, reset so that the assigned switch IDs become effective. By default, stack secure assigns 128 as active units' priority.

```

T=1m47.5: Election, was alone --> active, ID=1, pri=128, 12U(1-12), A=u1, nbr#=11
11, reason: u5: port-up, ,
T=1m50.1: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1,
nbr#=11 11, reason: u1: stk-po-chg, ,

```

```

T=1m53.1: reset unit 2: u2 bo-id=1
T=1m53.1: reset unit 3: u3 bo-id=1
T=1m53.1: reset unit 4: u4 bo-id=1
T=1m53.1: reset unit 5: u5 bo-id=1
T=1m53.1: reset unit 6: u6 bo-id=1
T=1m53.1: reset unit 7: u7 bo-id=1
T=1m53.1: reset unit 8: u8 bo-id=1
T=1m53.1: reset unit 9: u9 bo-id=1
T=1m53.1: reset unit 10: u10 bo-id=1
T=1m53.1: reset unit 11: u11 bo-id=1
T=1m53.1: reset unit 12: u12 bo-id=1

```

Config changed due to add/del units. Do write mem if you want to keep it

```

T=1m56.1: Unit 1 loses all neighbors.
T=1m56.1: Active U1 deletes U2 and its config because it is learned.
T=1m56.1: Active U1 deletes U3 and its config because it is learned.
T=1m56.1: Active U1 deletes U4 and its config because it is learned.
T=1m56.1: Active U1 deletes U5 and its config because it is learned.
T=1m56.1: Active U1 deletes U6 and its config because it is learned.
T=1m56.1: Active U1 deletes U7 and its config because it is learned.
T=1m56.1: Active U1 deletes U8 and its config because it is learned.
T=1m56.2: Active U1 deletes U9 and its config because it is learned.
T=1m56.2: Active U1 deletes U10 and its config because it is learned.
T=1m56.2: Active U1 deletes U11 and its config because it is learned.
T=1m56.2: Active U1 deletes U12 and its config because it is learned.

```

8. Various settings and files are synced from the master to the newly joined units. During stack formation, units go through various stages when they join the stack. Once units become part of the stack and the master syncs relevant information and files to all the units, the units are set in "READY" state.

```

T=2m51.8: Election, was active, no change, ID=1, pri=128, 3U(1-3), A=u1, nbr#=2
0, reason: u3: port-up, ,
T=2m52.0: Synchronize webauth files to u3
T=2m52.1: Synchronize webauth files to u2
T=2m53.2: Done hot swap: active controller u1 sets u3 to Ready.
T=2m53.3: Done hot swap: active controller u1 sets u2 to Ready.
T=2m53.8: Election, was active, no change, ID=1, pri=128, 3U(1-3), A=u1, nbr#=2
0, reason: u1: stk-po-chg, ,
Stack unit 2 Power supply 1 is up
Stack unit 2 Power supply 2 is down
Stack unit 3 Power supply 1 is up
Stack unit 3 Power supply 2 is down

```

Config changed due to add/del units. Do write mem if you want to keep it

```

T=3m1.6: Election, was active, no change, ID=1, pri=128, 3U(1-3), A=u1, nbr#=2 0,
reason: u3: port-up, ,

```

Config changed due to add/del units. Do write mem if you want to keep it

```

T=3m7.0: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1, nbr#=11
11, reason: u12: port-up, ,
T=3m7.3: Synchronize webauth files to u5
T=3m7.4: Synchronize webauth files to u10
T=3m7.4: Synchronize webauth files to u11
T=3m7.4: Synchronize webauth files to u12
T=3m7.4: Synchronize webauth files to u4
T=3m7.6: Synchronize webauth files to u8
T=3m7.7: Synchronize webauth files to u9
T=3m7.9: Synchronize webauth files to u6
T=3m7.9: Synchronize webauth files to u7
T=3m8.7: Done hot swap: active controller u1 sets u5 to Ready.
T=3m8.8: Done hot swap: active controller u1 sets u10 to Ready.
T=3m8.9: Done hot swap: active controller u1 sets u11 to Ready.
T=3m9.0: Done hot swap: active controller u1 sets u12 to Ready.
T=3m9.1: Done hot swap: active controller u1 sets u4 to Ready.
T=3m9.2: Done hot swap: active controller u1 sets u8 to Ready.

```

```
T:3m9.2: Done hot swap: active controller u1 sets u9 to Ready.
T:3m9.5: Done hot swap: active controller u1 sets u6 to Ready.
T:3m9.5: Done hot swap: active controller u1 sets u7 to Ready.
Stack unit 5 Power supply 1 is up
Stack unit 5 Power supply 2 is down
```

```
Config changed due to add/del units. Do write mem if you want to keep it
T=3m13.6: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1, nbr#=11
11, reason: u1: stk-po-chg, ,
```

```
Config changed due to add/del units. Do write mem if you want to keep it
```

```
T=4m14.5: Assigned unit 2 to be standby
T=4m16.5: start running config sync to standby u2
T=4m16.6: Running config sync to standby u2 is complete
```

9. After the stack units have booted up, the stack formation is complete. Stack status can be verified using 'show stack' command. In this output, D indicates a dynamic configuration. After you perform a write memory, this display will change to S, for static configuration.

```
ICX7750-48F Switch# show stack
T=9m57.1: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID  Type          Role      Mac Address      Pri State Comment
1   S ICX7750-48XGF  active  cc4e.246d.9e00  128 local  Ready
2   D ICX7750-48XGF  standby cc4e.246d.8d80   0 remote Ready
3   D ICX7750-48XGF  member  cc4e.246d.9b00   0 remote Ready
4   D ICX7750-48XGF  member  cc4e.246d.9c80   0 remote Ready
5   D ICX7750-20QXG member  cc4e.2439.2a80   0 remote Ready
6   D ICX7750-20QXG member  cc4e.2439.3700   0 remote Ready
7   D ICX7750-20QXG member  cc4e.2439.3880   0 remote Ready
8   D ICX7750-20QXG member  cc4e.2439.2d00   0 remote Ready
9   D ICX7750-48XGC member  cc4e.2439.1a00   0 remote Ready
10  D ICX7750-48XGC member  cc4e.2439.1680   0 remote Ready
11  D ICX7750-48XGC member  cc4e.2439.1d80   0 remote Ready
12  D ICX7750-48XGC member  cc4e.2439.1280   0 remote Ready

      active
+----+
-2/1| 1 |2/4--2/1| C |2/4==2/1| B |2/4==2/1| A |2/4--2/1| 9 |2/4--2/1| 8 |2/4-
| +----+ +----+ +----+ +----+ +----+ +----+
| |
| standby
| +----+ +----+ +----+ +----+ +----+ +----+
-2/4| 2 |2/1--2/4| 3 |2/1--2/4| 4 |2/1==2/4| 5 |2/1--2/4| 6 |2/1==2/4| 7 |2/1-
| +----+ +----+ +----+ +----+ +----+ +----+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.246d.9e0
```

Stack construction method 2: Manual configuration

Description

With this method, user should configure every unit individually and enable stacking on each unit. Once the units are connected together, they automatically form a stack. With this method, the unit with the highest priority becomes the active controller, and ID assignment is determined by the sequence in which user physically connects the units. The example used below is 12 units to form a linear stack.

Steps

Summarized steps:

- Configure highest priority on an intended active controller.
- Configure second highest priority on an intended standby controller.
- Configure 'stack suggest-id' on the units you chose to have a desired ID.
- Configure 'stack enable' on all the units and connect the units using stack ports.

Detailed steps:

1. Units should boot up using same software image.
2. On a unit intended to be the active controller, configure the priority unit at 255. Configure the standby unit to be less than the priority (active) unit, for example, 240.

3. To configure a stack trunk manually on a stack unit, use the stack-trunk command on every single unit. However, in a live production environment, use the multi-stack-trunk command and use multi stack port command to remove change a stack trunk to stack.

UNIT 1:

```
ICX7750-48F Router(config)#stack u 1
ICX7750-48F Router(config-unit-1)#priority 255
ICX7750-48F Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 2:

```
ICX7750-48F Router(config)#stack unit 1
ICX7750-48F Router(config-unit-1)#priority 240
ICX7750-48F Router(config-unit-1)#stack suggested-id 2
ICX7750-48F Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 3:

```
ICX7750-48F Router(config-unit-1)#stack suggested-id 3
ICX7750-48F Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 4:

```
ICX7750-48F Router(config)#stack unit 1
ICX7750-48F Router(config-unit-1)#stack suggested-id 4
ICX7750-48F Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 5

```
ICX7750-48C Router(config)#stack unit 1
ICX7750-48C Router(config-unit-1)#stack suggested-id 5
ICX7750-48C Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 6:

```
ICX7750-48C Router(config)#stack unit 1
ICX7750-48C Router(config-unit-1)#stack suggested-id 6
ICX7470-48C Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 7:

```
ICX7750-48C Router(config)#stack unit 1
ICX7750-48C Router(config-unit-1)#stack suggested-id 7
ICX7750-48C Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 8:

```
ICX7750-48C Router(config)#stack unit 1
ICX7750-48C Router(config-unit-1)#stack suggested-id 8
ICX7750-48C Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 9:

```
ICX7750-32Q Router(config)#stack unit 1
ICX7750-32Q Router(config-unit-1)#stack suggested-id 9
ICX7750-32Q Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 10:

```
ICX7750-32Q Router(config)#stack unit 1
ICX7750-32Q Router(config-unit-1)#stack suggested-id 10
ICX7750-32Q Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
ICX7450- 32Q Router(config-unit-1)#
```

UNIT 11:

```
ICX7750-32Q Router(config)#stack unit 1
ICX7750-32Q Router(config-unit-1)#stack suggested-id 11
ICX7750-32Q Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

UNIT 12:

```
ICX7750-32Q Router(config)#stack u 1
ICX7750-32Q Router(config-unit-1)# stack suggested-id 12
ICX7750-32Q Router(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/4 is not
available.
```

4. After configuration connect the devices in a stack topology. The active controller retains its ID. The rest of the units are assigned unique ID numbers depending on the sequence in which they are connected or depending on the stack suggest-ID configured. Except the active controller rest of the units reset and upon boot up, stack is formed.

NOTE

Since all the units are clean unit, enter "stack unit 1" on the respective device to configure stack suggested id or priority.

Debugging and verification using show commands

show stack

Enter the **show stack** command at the device level. In the following output, the user can verify the units in the Brocade ICX7750 stack.

```
ICX7750-48F Switch#show stack
T=9m57.1: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID  Type      Role      Mac Address  Pri State  Comment
1  S ICX7750-48XGF active    cc4e.246d.9e00 128 local  Ready
2  D ICX7750-48XGF standby  cc4e.246d.8d80  0 remote Ready
3  D ICX7750-48XGF member   cc4e.246d.9b00  0 remote Ready
4  D ICX7750-48XGF member   cc4e.246d.9c80  0 remote Ready
5  D ICX7750-20QXG member   cc4e.2439.2a80  0 remote Ready
6  D ICX7750-20QXG member   cc4e.2439.3700  0 remote Ready
7  D ICX7750-20QXG member   cc4e.2439.3880  0 remote Ready
8  D ICX7750-20QXG member   cc4e.2439.2d00  0 remote Ready
9  D ICX7750-48XGC member   cc4e.2439.1a00  0 remote Ready
10 D ICX7750-48XGC member   cc4e.2439.1680  0 remote Ready
11 D ICX7750-48XGC member   cc4e.2439.1d80  0 remote Ready
```

show stack detail

```

12 D ICX7750-48XGC member cc4e.2439.1280 0 remote Ready

  active
  +----+
-2/1| 1 |2/4--2/1| C |2/4==2/1| B |2/4==2/1| A |2/4--2/1| 9 |2/4--2/1| 8 |2/4-
  | +----+ +----+ +----+ +----+ +----+ +----+
  | |
  | standby
  | +----+ +----+ +----+ +----+ +----+ +----+
-2/4| 2 |2/1--2/4| 3 |2/1--2/4| 4 |2/1==2/4| 5 |2/1--2/4| 6 |2/1==2/4| 7 |2/1-
  | +----+ +----+ +----+ +----+ +----+ +----+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.246d.9e00

```

NOTE

For a 12 unit stack, the CLI command 'show stack' output displays units 10, 11 and 12 as A, B and C respectively and the LEDs on the Switch front panel will have a digital display as 10, 11,12.

show stack detail

Enter the **show stack details** command at the device level. This command will display image auto copy status, stack ports, link status, neighboring stack ports and system uptime for each unit of the stack.

```

ICX7750-48F Switch# show stack detail
T=4m35.2: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID  Type      Role      Mac Address  Pri State  Comment
1   S ICX7750-48XGF active  cc4e.246d.9e00 128 local  Ready
2   D ICX7750-48XGF standby cc4e.246d.8d80 0 remote Ready
3   D ICX7750-48XGF member  cc4e.246d.9b00 0 remote Ready
4   D ICX7750-48XGF member  cc4e.246d.9c80 0 remote Ready
5   D ICX7750-20QXG member  cc4e.2439.2a80 0 remote Ready
6   D ICX7750-20QXG member  cc4e.2439.3700 0 remote Ready
7   D ICX7750-20QXG member  cc4e.2439.3880 0 remote Ready
8   D ICX7750-20QXG member  cc4e.2439.2d00 0 remote Ready
9   D ICX7750-48XGC member  cc4e.2439.1a00 0 remote Ready
10  D ICX7750-48XGC member  cc4e.2439.1680 0 remote Ready
11  D ICX7750-48XGC member  cc4e.2439.1d80 0 remote Ready
12  D ICX7750-48XGC member  cc4e.2439.1280 0 remote Ready

  active
  +----+
-2/1| 1 |2/4--2/1| C |2/4==2/1| B |2/4==2/1| A |2/4--2/1| 9 |2/4--2/1| 8 |2/4-
  | +----+ +----+ +----+ +----+ +----+ +----+
  | |
  | standby
  | +----+ +----+ +----+ +----+ +----+ +----+
-2/4| 2 |2/1--2/4| 3 |2/1--2/4| 4 |2/1==2/4| 5 |2/1--2/4| 6 |2/1==2/4| 7 |2/1-
  | +----+ +----+ +----+ +----+ +----+ +----+
Standby u2 - Learn other units for 15 sec, protocols may not be ready in 55 s.
Current stack management MAC is cc4e.246d.9e00

```

Image-Auto-Copy is Enabled.

Unit#	Stack Port Status	Neighbors
Stack-port1	Stack-port2	Stack-port1 Stack-port2
1	up (1/2/1)	U2 (2/2/4) U12 (12/2/1)
2	up (2/2/1)	U3 (3/2/4) U1 (1/2/1)
3	up (3/2/1)	U4 (4/2/4) U2 (2/2/1)
4	up (4/2/1-4/2/3)	U5 (5/2/4-5/2/6) U3 (3/2/1)
5	up (5/2/1)	U6 (6/2/4) U4 (4/2/1-4/2/3)
6	up (6/2/1-6/2/3)	U7 (7/2/4-7/2/6) U5 (5/2/1)
7	up (7/2/1)	U8 (8/2/4) U6 (6/2/1-6/2/3)
8	up (8/2/1)	U9 (9/2/4) U7 (7/2/1)
9	up (9/2/1)	U10 (10/2/4) U8 (8/2/1)
10	up (10/2/1-10/2/2)	U11 (11/2/4-11/2/5) U9 (9/2/1)
11	up (11/2/1-11/2/2)	U12 (12/2/4-12/2/5) U10 (10/2/1-10/2/2)
12	up (12/2/1)	U1 (1/2/4) U11 (11/2/1-11/2/2)

Unit#	System uptime
1	4 minutes 35 seconds
2	2 minutes 7 seconds

```

3      2 minutes 8 seconds
4      2 minutes 3 seconds
5      2 minutes 7 seconds
6      2 minutes 8 seconds
7      2 minutes 7 seconds
8      2 minutes 5 seconds
9      2 minutes 8 seconds
10     2 minutes 8 seconds
11     2 minutes 7 seconds
12     2 minutes 6 seconds

```

NOTE

Starting with FI08.20.20 hitless-failover is enabled by default.

show stack stack-ports

Enter the **show stack stack-ports** command at the device level. This command displays stack ports and link status for all the stack ports. If the stack port link is down, this output is useful for debugging if the other side of the link is up or down.

```
ICX7750-48F Switch#show stack stack-ports
```

```

active
+----+ +----+ +----+ +----+ +----+ +----+
-2/1| 1 |2/4--2/1| C |2/4==2/1| B |2/4==2/1| A |2/4--2/1| 9 |2/4--2/1| 8 |2/4-
| +----+ +----+ +----+ +----+ +----+ +----+
| |
| standby
| +----+ +----+ +----+ +----+ +----+ +----+
-2/4| 2 |2/1--2/4| 3 |2/1--2/4| 4 |2/1==2/4| 5 |2/1--2/4| 6 |2/1==2/4| 7 |2/1-
| +----+ +----+ +----+ +----+ +----+ +----+

```

U#	Stack-port1	Stack-port2
1	up (1/2/1)	up (1/2/4)
2	up (2/2/1)	up (2/2/4)
3	up (3/2/1)	up (3/2/4)
4	up (4/2/1-4/2/3) up ports: 4/2/1, 4/2/2, 4/2/3	up (4/2/4)
5	up (5/2/1) up ports: 5/2/4, 5/2/5, 5/2/6	up (5/2/4-5/2/6)
6	up (6/2/1-6/2/3) up ports: 6/2/1, 6/2/2, 6/2/3	up (6/2/4)
7	up (7/2/1) up ports: 7/2/4, 7/2/5, 7/2/6	up (7/2/4-7/2/6)
8	up (8/2/1)	up (8/2/4)
9	up (9/2/1)	up (9/2/4)
10	up (10/2/1-10/2/2) up ports: 10/2/1, 10/2/2	up (10/2/4)
11	up (11/2/1-11/2/2) up ports: 11/2/1, 11/2/2 up ports: 11/2/4, 11/2/5	up (11/2/4-11/2/5)
12	up (12/2/1) up ports: 12/2/4, 12/2/5	up (12/2/4-12/2/5)

show stack neighbors

Enter the **show stack neighbors** command at the device level. This command displays neighboring units for each stack port. . In case when a unit turns bad this output is useful to debug the neighboring units are detected or not.

```
ICX7750-48F Router# show stack neighbors
U#   Stack-port1                               Stack-port2
1    (1/2/1)                                   (1/2/4)
2    (2/2/1)                                   (2/2/4)
3    (3/2/1)                                   (3/2/4)
4    (4/2/1-4/2/3)                             (4/2/4)
5    (5/2/1)                                   (5/2/4-5/2/6)
6    (6/2/1-6/2/3)                             (6/2/4)
7    (7/2/1)                                   (7/2/4-7/2/6)
8    (8/2/1)                                   (8/2/4)
9    (9/2/1)                                   (9/2/4)
10   (10/2/1-10/2/2)                           (10/2/4)
11   11/2/1-11/2/2)                           (11/2/4-11/2/5)
12   (12/2/1)                                   (12/2/4-12/2/5)
```

show stack connections

Enter the **show stack connection** command at the device level. This command displays total stacking links on the topology along with stack port 1(P0) and stack port 2(P1) for each stacking link. It also displays CPU to CPU packets are fine between the units. If the stack ports link goes down, this output helps debug if the neighboring links are detected or not.

```
ICX7750-48F Switch# show stack connection
Probing the topology. Please wait ...
ICX7750-48F Switch#
active
+----+      +----+      +----+      +----+      +----+      +----+
-2/1| 1 |2/4--2/1| C |2/4==2/1| B |2/4==2/1| A |2/4--2/1| 9 |2/4--2/1| 8 |2/4-
| +----+      +----+      +----+      +----+      +----+      +----+
|
| standby
| +----+      +----+      +----+      +----+      +----+      +----+
-2/4| 2 |2/1--2/4| 3 |2/1--2/4| 4 |2/1==2/4| 5 |2/1--2/4| 6 |2/1==2/4| 7 |2/1-
| +----+      +----+      +----+      +----+      +----+      +----+
|
```

```
trunk probe results: 12 links
Link 1: u1 -- u2, num=1
1: 1/2/1 (P0) <----> 2/2/4 (P1)
Link 2: u1 -- u12, num=1
1: 1/2/4 (P1) <----> 12/2/1 (P0)
Link 3: u2 -- u3, num=1
1: 2/2/1 (P0) <----> 3/2/4 (P1)
Link 4: u3 -- u4, num=1
1: 3/2/1 (P0) <----> 4/2/4 (P1)
Link 5: u4 -- u5, num=3
1: 4/2/1 (T0) <----> 5/2/4 (T1)
2: 4/2/2 (T0) <----> 5/2/5 (T1)
3: 4/2/3 (T0) <----> 5/2/6 (T1)
Link 6: u5 -- u6, num=1
1: 5/2/1 (P0) <----> 6/2/4 (P1)
Link 7: u6 -- u7, num=3
1: 6/2/1 (T0) <----> 7/2/4 (T1)
2: 6/2/2 (T0) <----> 7/2/5 (T1)
3: 6/2/3 (T0) <----> 7/2/6 (T1)
Link 8: u7 -- u8, num=1
1: 7/2/1 (P0) <----> 8/2/4 (P1)
Link 9: u8 -- u9, num=1
```

```

1: 8/2/1 (P0) <----> 9/2/4 (P1)
Link 10: u9 -- u10, num=1
1: 9/2/1 (P0) <----> 10/2/4 (P1)
Link 11: u10 -- u11, num=2
1: 10/2/1 (T0) <----> 11/2/4 (T1)
2: 10/2/2 (T0) <----> 11/2/5 (T1)
Link 12: u11 -- u12, num=2
1: 11/2/1 (T0) <----> 12/2/4 (T1)
2: 11/2/2 (T0) <----> 12/2/5 (T1)
CPU to CPU packets are fine between 12 units.

```

Note: User should look for platform level issues like bad cable or wrong cable based on the errors from the above debugging commands.

Use cases

Adding a new unit to the stack

Adding a new unit to an already existing operational stack can be done in three ways

- Secure setup
- Stack enable
- With reserved configuration

Assumptions

- This process assumes that a stack is already formed and operational.
- To add a new unit to the stack, number of units in the stack should be less than 12.

Description

A new unit can be connected to one of the end units of the stack using stack ports. Following section describes these processes.

Steps

Using Secure Setup Method

1. A new unit can be connected to one of the end units of the stack using stack ports.
2. Once link is up, enter 'stack secure setup' on the active unit. The CLI display comes up with a 'new' unit discovered and prompts the user to enter the number of units desired upstream/downstream depending on where the new unit is connected.
3. The newly added unit receives a new ID which is next available ID, and resets itself. Upon boot up it joins with newly assigned ID. Do 'write memory'.

Using Manual Configuration Method

1. A new unit can be connected to one of the end units using stack ports.
2. When link come up, enter 'stack enable' on the new unit at configuration level.
3. The newly added unit receives a new ID, which is next available stack ID, and resets itself. Upon boot up it joins with newly assigned ID. Do 'write memory'.

Using Reserved Configuration Method

1. Module configuration of the new unit should be configured on the active unit.
2. This new unit then can be connected to one of the end units using stack ports.
3. Active controller resets the new unit and upon boot up, the new unit is part of the stack. Do 'write memory'.

Removing a unit from the stack

Description

This is the process to remove a unit from the stack.

Steps

1. User can manually disconnect the unit by removing stacking cables. Unit can be disconnected while it's powered on or off.
2. When unit is disconnected, it will have stacking enabled. To recover to a clean unit user can use 'stack unconfigure clean' or 'stack unconfigure me' commands on this unit.
3. If the removed unit was dynamically learned, the active unit will remove this unit from configuration. If the removed unit was static, the configuration can be removed by issuing 'no stack unit <unit id>' command.
4. To temporarily disable a unit from stack, on the active unit enter stack disable command for the particular unit.
5. Please note that 'Stack unconfigure me' will recover the unit to its startup configuration before it joined the stack. 'Stack unconfigure clean' will remove unit's startup configuration. These commands will reload the unit and boot up as standalone unit.

Replacing a unit from the stack

Assumption

- All the units have sequential IDs
- Replacing with a clean unit

Description

If the user wants to replace an old unit from the stack, the two options are as follows:

1. Replacing an old stack unit with a clean stack unit
2. Replacing multiple stack units with multiple clean stack units

Steps

Replacing one stack unit with a clean stack unit

1. After removing the old unit from the stack, connect the new unit to the stack using the same stacking ports used by the old unit.
2. If the module configuration of the replacement unit matches the configuration on the Active Controller, the Active Controller resets the new unit and upon boot up new unit joins the stack with the same ID was the unit that was removed, and the stack retains its original topology.
3. If the configuration of the new unit does not match the old unit, the new unit is added with a new ID based on the next available ID.

Replacing multiple stack units with multiple clean stack units

1. After removing the old stack units, connect the new units to the existing stack using the stacking ports as the old unit.
2. The active controller replaces the unit with the lowest ID first. For example, if you remove units 4 and 5, the active controller assigns ID 4 to the first new device you install.
3. If you wanted this particular unit to replace unit 5, instead of unit 4, you must use secure-setup to select the ID of the old unit for the new unit. The active controller resets the unit, and upon boot up it joins the stack.

Brocade ICX7750 recommendations and restrictions

1. Only ports recognized as default ports can be used as stacking ports. Before a unit can use no default stacking ports, the **default-ports** command must be configured on the local console for the unit so the unit can be discovered by the secure-setup utility used to form a stack.
2. Default ports cannot be changed on a live stack. The following example shows the error message displayed if you attempt to do so


```
ICX7750-48F Router# configure terminal
ICX7750-48F Router#(config)# stack unit 8
ICX7750-48F Router# (config-unit-8)# default-ports 8/3/1 8/3/4
New default-ports 8/3/1 8/3/4 result in removing both old stack ports. Abort
```
3. Combining module 2 and module 3 connections in the same stack is not allowed. The following error message is displayed when modules have been incorrectly combined. Refer to Supported Topologies.


```
*** Warning! Some units in the stack have module 2 to module 3 connections. The
stack
may not work. Please refer to documentation for more details. Ref: table.
```
4. In case of any wrong stack trunk connections, secure setup will not be performed. An invalid stack trunk message or no new units discovered messages will be displayed.
5. Secure setup will not be performed if the setup as loops.


```
ICX7750-48F Router# stack secure
CPU utilization too high: 81 percent. Check loops in the network and try again...
```
6. The Boot up time for a 12 unit Sidewinder Stack is less than 90 seconds approximately. For the stack to boot up, assign a standby and get protocols ready so it can be ready for failover, which takes less than 3 minutes.
7. In case of any image mismatch on member units, active unit will trigger Autocopy. Autocopy is supported only between minor and patch releases and not between major releases.
8. When a 40G uplink port is being converted to stacking ports, the uplink configuration should be removed before it can be configured as a stack port.

Chapter 3: ICX7250 Stack

Technical Architecture

The Brocade ICX 7250 is expected to meet various customer deployment needs so there will be five SKUs based on port density, PoE capability and port type.

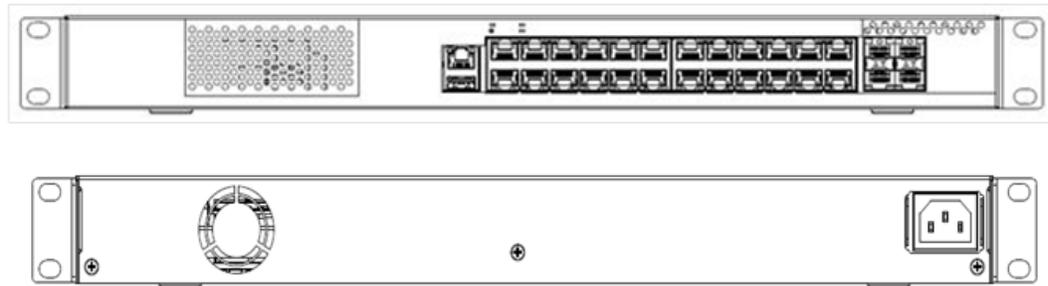
The SKU types are as follows:

- ICX7250-24G
- ICX7250-24
- ICX7250-24P
- ICX7250-48
- ICX7250-48P

ICX 7250-24G

This hardware unit has 24-Port RJ45 10/100/1000Mbps Ethernet port platform with EEE. In addition it has one fixed module providing 4x1F SFP uplink ports. The ICX7250-24G is not stackable.

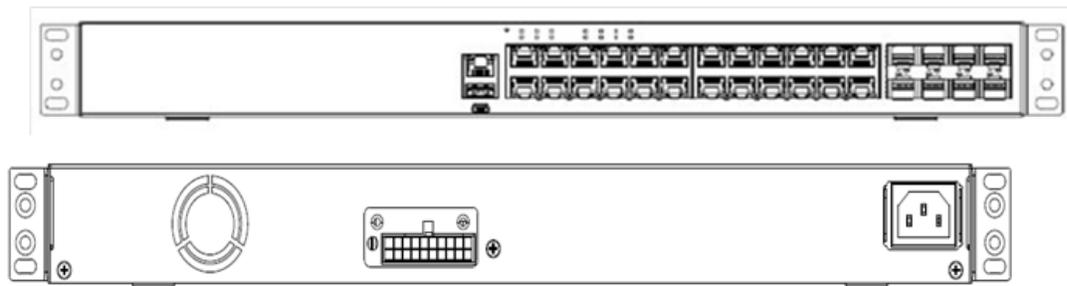
FIGURE 17 ICX 7250-24G Front and Rear panel



ICX 7250-24

This is a fixed 24-Port RJ45 10/100/1000Mbps Ethernet port platform with EEE. It also has fixed 8x10G SFP+ ports, out of which 4x10F SFP+ can be configured as uplink ports and 4x10F SFP+ can be configured as stacking ports.

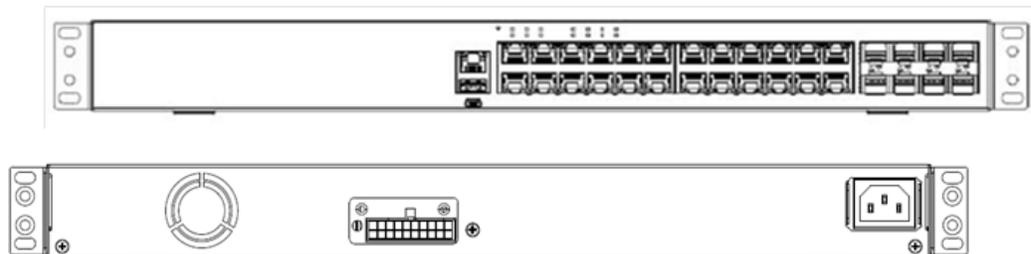
FIGURE 18 ICX 7250-24 Front and Rear panel



ICX 7250-24P

This is a fixed 24-Port RJ45 10/100/1000Mbps Ethernet port platform with EEE. It also has fixed 8x10G SFP+ ports, out of which 4x10F SFP+ can be configured as uplink ports and 4x10F SFP+ can be configured as stacking ports.

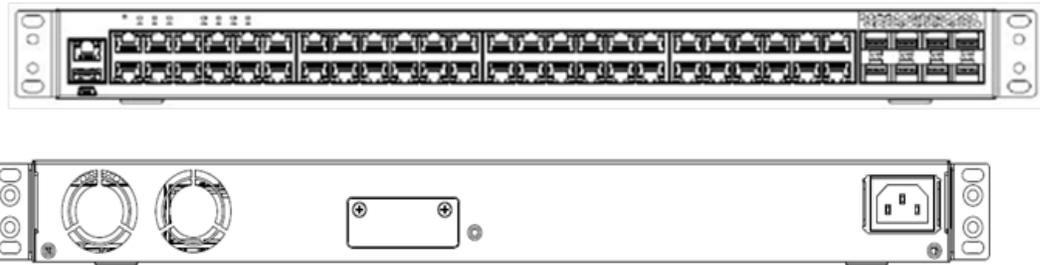
FIGURE 19 ICX 7250-24P Front and Rear panel



ICX 7250-48

This is a fixed 48-Port RJ45 10/100/1000Mbps Ethernet port platform with EEE. It also has fixed 8x10G SFP+ ports, out of which 4x10F SFP+ can be configured as uplink ports and 4x10F SFP+ can be configured as stacking ports.

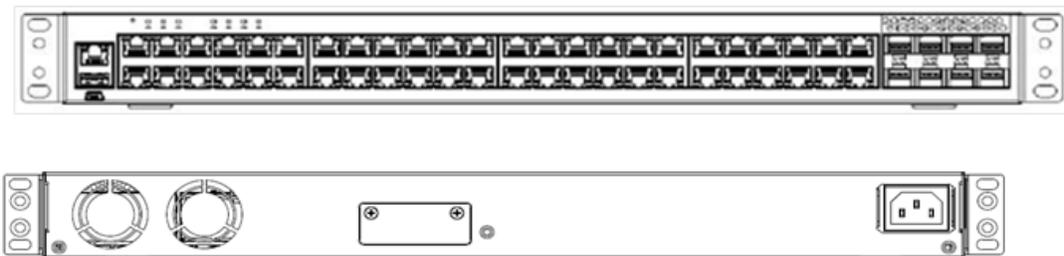
FIGURE 20 ICX 7250-48 Front and Rear panel



ICX 7250-48P

This is a fixed 48-Port RJ45 10/100/1000Mbps Ethernet port platform with EEE. It also has fixed 8x10G SFP+ ports, out of which 4x10F SFP+ can be configured as uplink ports and 4x10F SFP+ can be configured as stacking ports.

FIGURE 21 ICX 7250-48P Front and Rear panel



By default ICX7250 slot 2 ports are 1Gbps. Stacking is not supported on 1Gbps. User should install POD license to convert ports from 1Gbps to 10Gbps to be used for stacking. Once POD license is installed following command can be used to configure 10Gbps speed.

```
ICX7250-48P Router# configure terminal
ICX7250-48P Router(config)# interface ethernet 1/2/1
ICX7250-48P Router(config-if-e10000-1/2/1)# speed-duplex 10g-full
```

NOTE

Trunks cannot be formed with a two-port license. If a ICX 7250 stack is formed on licensed ports and the license is later removed, the stack breaks after reload because the stack ports return to 1-Gbps mode. To form the stack again, the license must be downloaded to each device.

Supported Topologies

The Brocade ICX 7250 can operate as a standalone device as well as a stackable device - except for the ICX 7250-24G). When used as a stack, the ICX 7250 supports linear and ring stack topologies.

All four stackable SKUs () of ICX 7250 can be mixed in the same stack. The stack can be formed with a minimum of two units and can scale up to 12 units.

Only the ports on slot 2 can be used as stacking ports. There are two sets of ports in slot 2 as shown in below table.

TABLE 11 Stacking port sets in ICX 7250

Set #	Ports	Default port	Trunk ports
Set-1	1/2/1 to 1/2/4	1/2/1, 1/2/3	1/2/1 to 1/2/2 and 1/2/3 to 1/2/4
Set-2	1/2/5 to 1/2/8	1/2/5, 1/2/7	1/2/5 to 1/2/6 and 1/2/7 to 1/2/8

Only one of the above sets of ports can be used for stacking on the same unit. By default the stacking ports are 1/2/1 and 1/2/3. The user can change the default ports to 1/2/5 and 1/2/7. The stack ports for the uplink and downlink connections must be on same set of ports either 1/2/1 to 1/2/4 (set-1) or 1/2/5 to 1/2/8 (set-2); however, stacking ports cannot be mixed between the two sets of ports on the same unit because of operational constraints. ICX 7250 can support stack trunks. The trunks can be formed with two consecutive ports within a set as shown in above table.

Unused stacking ports can be used as data ports. For example, user can select to use only one default port as a stacking port and use the other default port as a data port. Furthermore, when an ICX7250 stacking module is not configured for stacking, its stacking ports can be used as data ports.

TABLE 12 Supported cables in ICX7250 port Set-1 and Set-2

Cable type	Set-1	Set-2
Passive Twinax cable (1,3,5m)	Not supported	Supported
Active Twinax cable (1,3,5m)	Supported	Supported
10G USR, MM fiber, 100M/OM3	Supported	Supported
10G SR, MM fiber, 300M/OM3	Supported	Supported
10G LR, SM fiber, 10KM	Supported	Supported

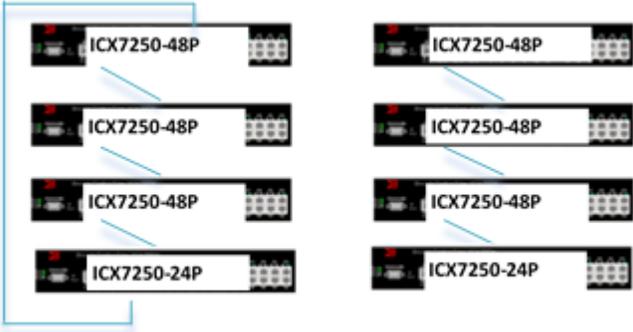
When stacking is configured, all stack ports and trunks must be either in the port set-1 or set-2. Ports in set-1 require active cables. Ports in set-2 have re-timers that support both active and passive cables. Any of these ports can be used for long-distance stacking if appropriate long-distance cables are used.

Following are examples of some of the ICX7250 stack connected in linear and ring topologies.

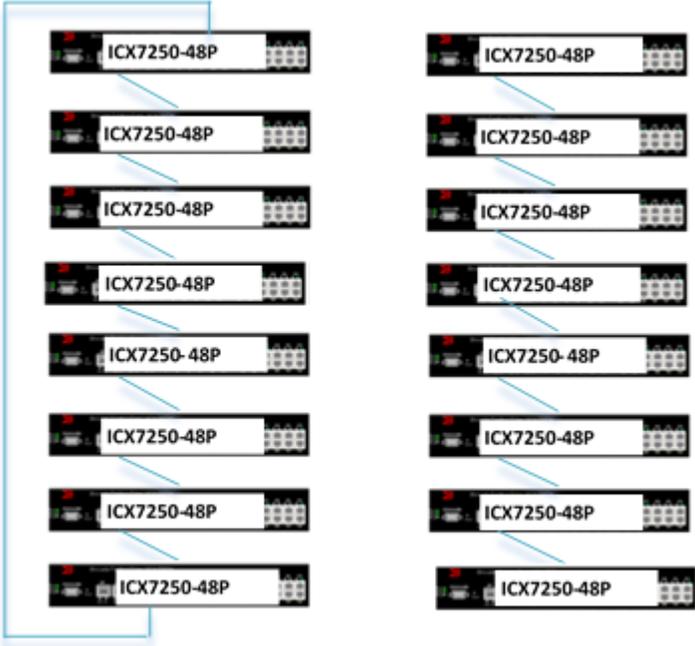
Two unit stack linear and ring topology



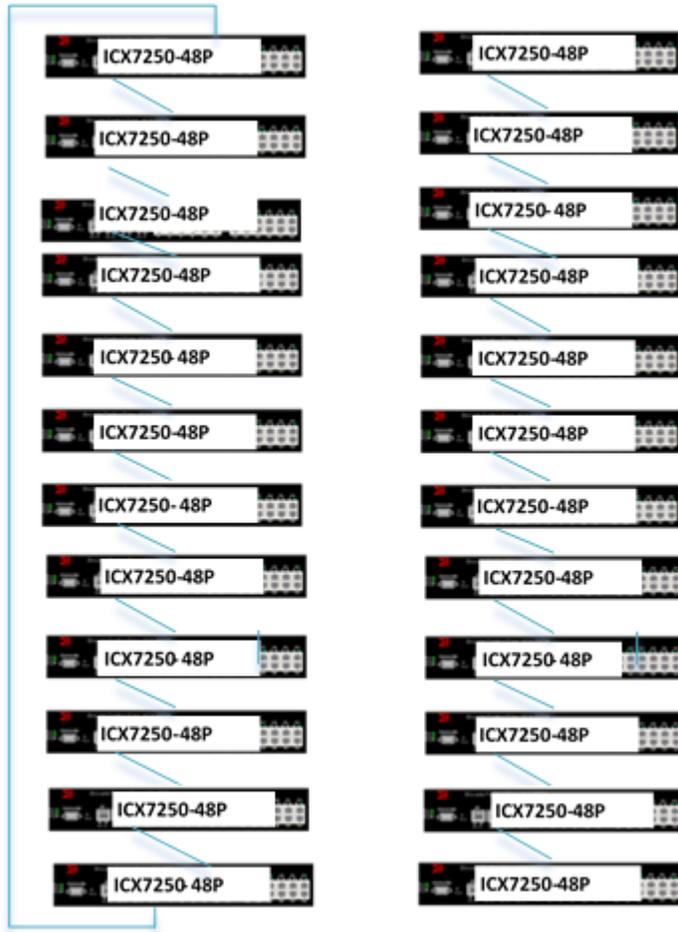
Four unit stack linear and ring topology

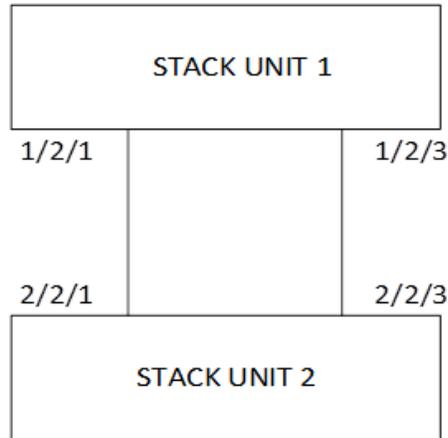


Eight unit stack linear and ring topology

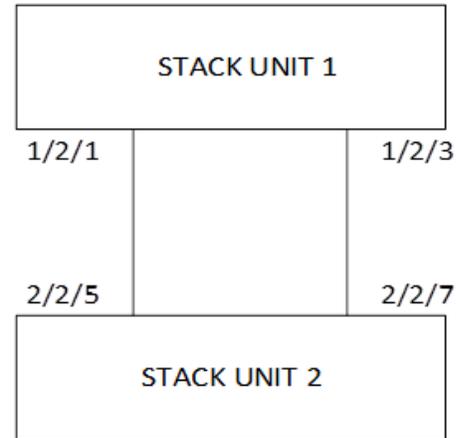


Twelve unit stack linear and ring topology

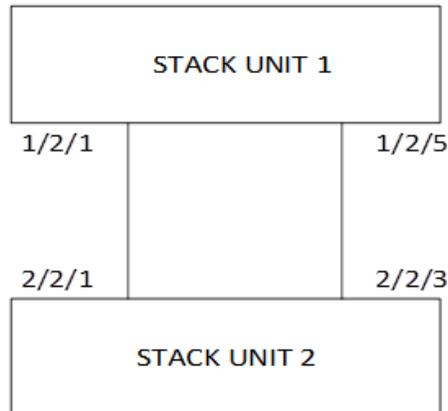


Supported stacking combinations and trunking**FIGURE 22** Supported cases

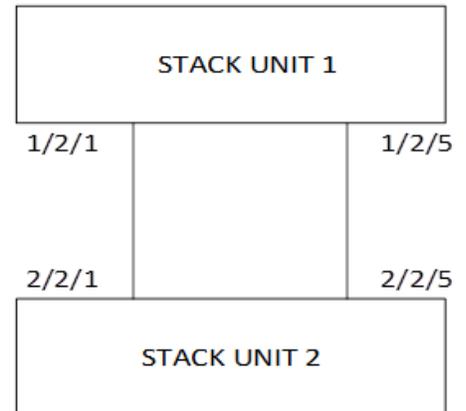
Case 1: Supported



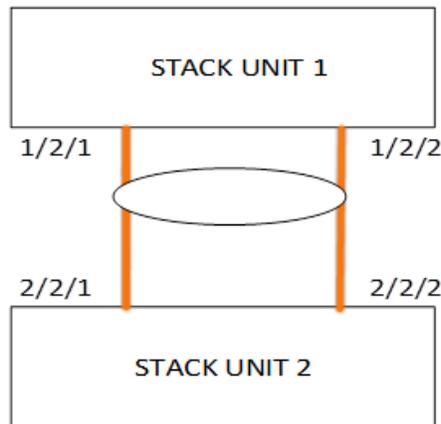
Case 2: Supported

FIGURE 23 Not supported cases

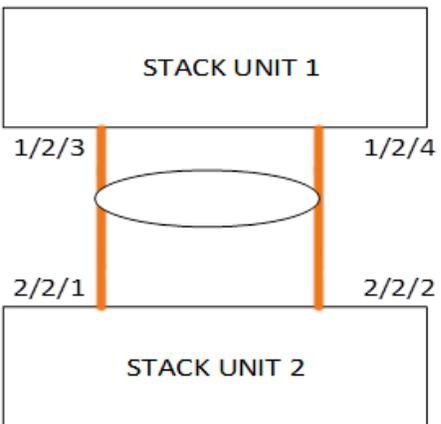
Case 3: Not Supported



Case 4: Not Supported

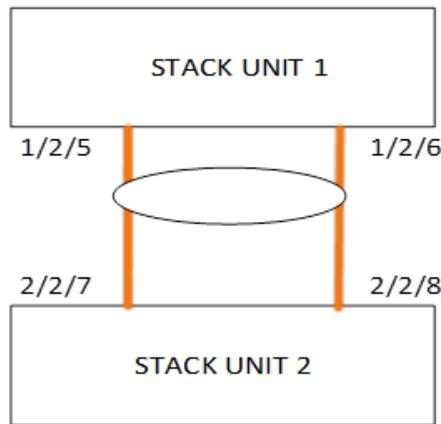


Case 5: Supported

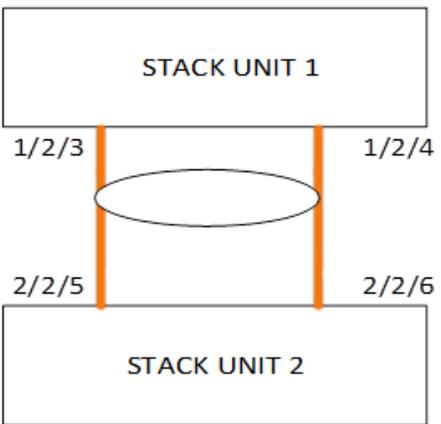


Case 6: Supported

FIGURE 24 Supported trunking cases

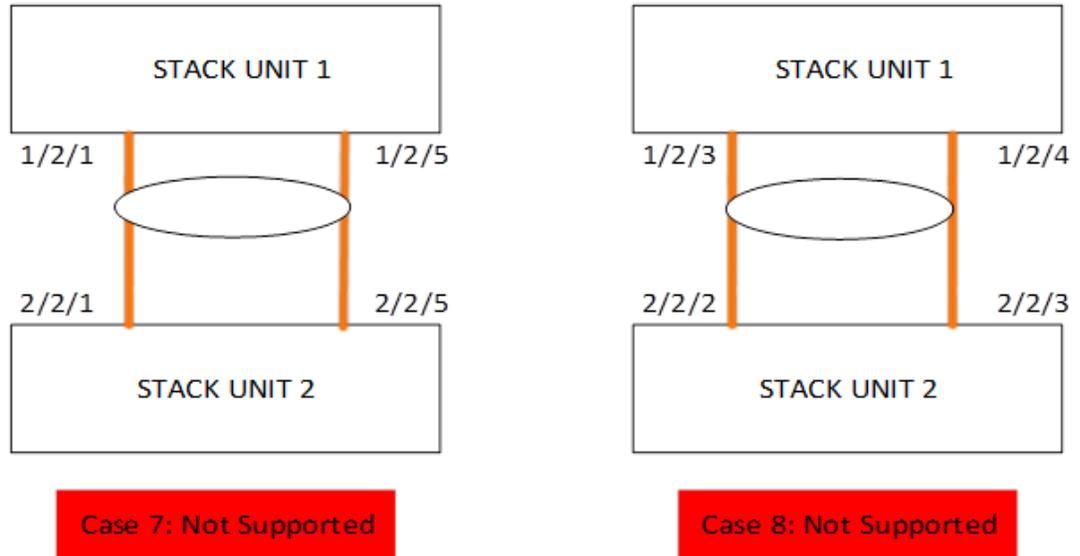


Case 7: Supported



Case 8: Supported

FIGURE 25 Not supported stack trunk cases



NOTE

ICX 7250 stacking trunks should use consecutive ports. For example, 1/2/1, 1/2/2 and 1/2/3, 1/2/4 and for re-timer ports it is 1/2/5, 1/2/6 and 1/2/7, 1/2/8.

Brocade ICX 7250 Stack Construction Methods

A stack can be built in one of the following two way:

1. Use the 'secure setup' utility to form the stack.
2. Manual stack formation where each unit is configured individually.

Topology

The figure below shows stacking ports and illustrates three units connected in linear and linear topology. Similarly a stack of up to 12 units can be connected. The example presented here for configuration is for 12 unit stack.

Please refer to Bill of Materials and the tables below for the software image, optics, and vendor information.

FIGURE 26 Front panel stacking ports

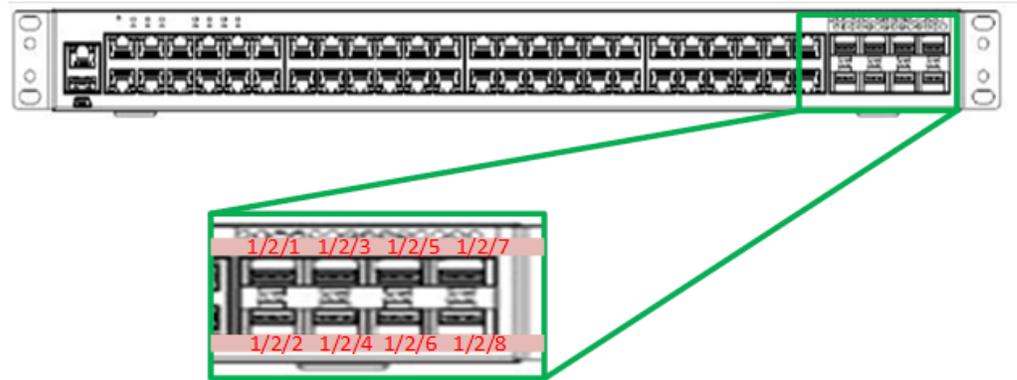
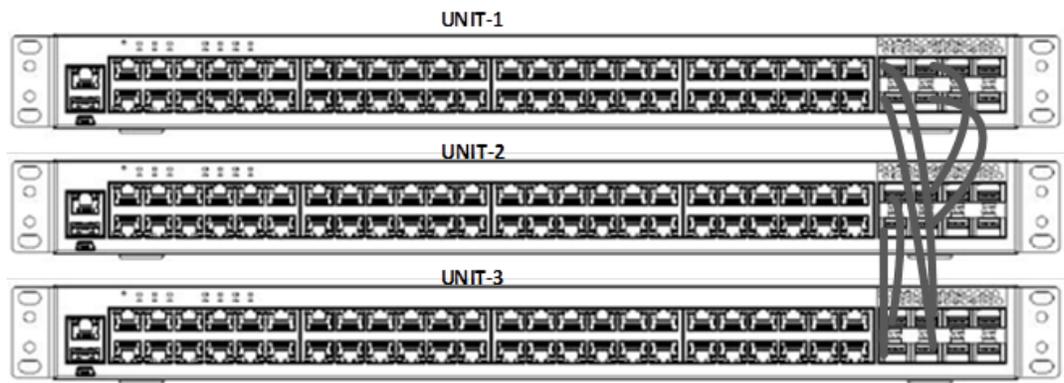


FIGURE 27 Stacking using first set of ports 1/2/1 to 1/2/4 - Ring



The table below list the stacking connections of the stack in [Figure 27](#) .

Unit # to Unit #	Link
Figure 27 Unit1 to Unit2	1/2/3 to 2/2/3
	1/2/4 to 2/2/4
Unit2 to Unit3	2/2/1 to 3/2/1
	2/2/2 to 3/2/2
Unit1 to Unit3	1/2/1 to 3/2/3
	1/2/2 to 3/2/2

FIGURE 28 Stacking using second set of ports 1/2/5 to 1/2/8 - Linear

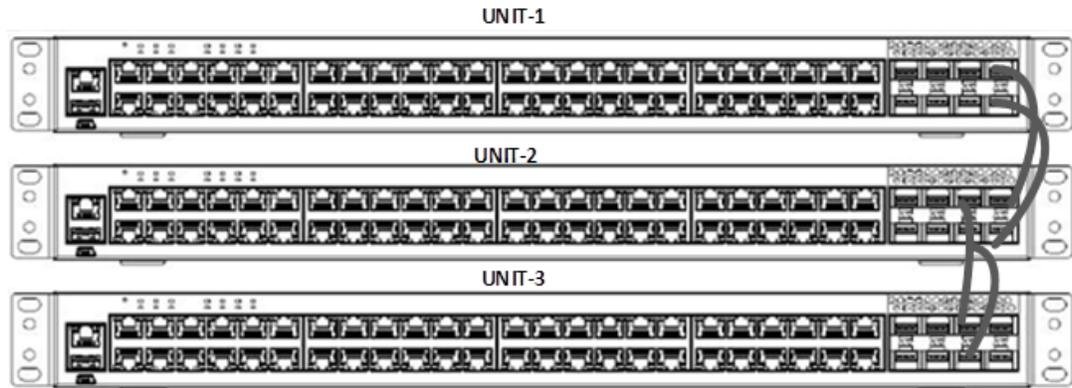
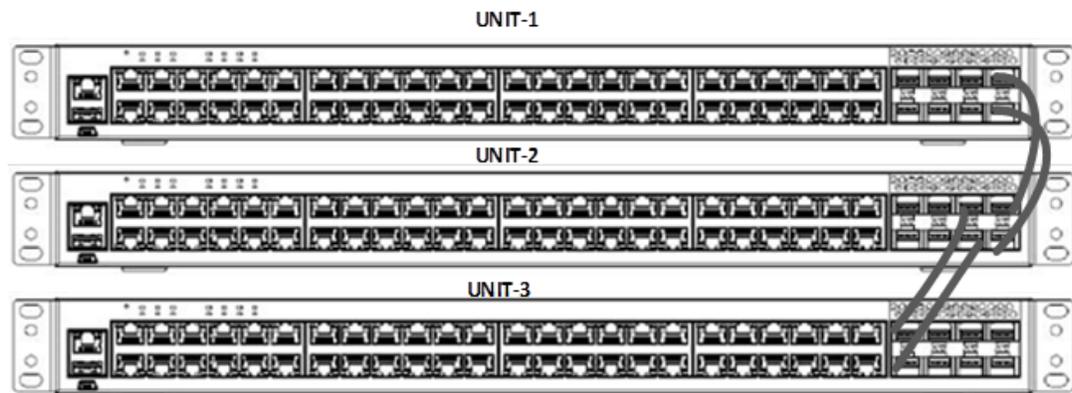


Figure 28

The table below list the stacking connections of the stack in [Figure 28](#) .

Unit # to Unit #	Link
Unit1 to Unit2	1/2/7 to 2/2/7
	1/2/8 to 2/2/8
Unit 2 to Unit 3	2/2/5 to 3/2/5
	2/2/6 to 3/2/6

FIGURE 29 Stacking using first and second set of ports across different units - Linear



The table below list the stacking connections of the stack in [Figure 29](#) .

Unit # to Unit #	Link
Unit1 to Unit2	1/2/7 to 2/2/7
	1/2/8 to 2/2/8

Unit # to Unit #	Link
Unit2 to Unit3	2/2/5 to 3/2/1 2/2/6 to 3/2/2

Bill of Materials

TABLE 13 Products used in ICX 7250 stacking

Identifier	Vendor	Model	Notes
Switch/Units	Brocade	ICX7250-48P, ICX7250-48, ICX7250 -24P and ICX7250-24	Stack can be formed with mix and match of all 4 different SKUs listed
Stacking cable: Copper option	Refer to Table 14	1,3, 5 active and passive twinax	For each uplink and downlink 1 cable each. The numbers vary if two port or three port stack trunks are used.
Stacking cable: Fiber-optic options	Refer to Table 14	10G-USR, 10G-SR, 10G-LR	Fiber optic maximum distance is 10 KM
Applicable Image	FastIron Release 08.0.30 or a later release	NA	All units should have same software image
License needed for stacking	Brocade	All	2 port or 8 port License

TABLE 14 Optics information for ICX 7250 stacking

SFP+ Hardware	Description	BRCD Part Number
10G Active Twinax 1m (SFP +)	10G Active Twinax 1m	58-1000026-01
10G Active Twinax 3m (SFP +)	10G Active Twinax 3m	58-1000027-01
10G Active Twinax 5m (SFP +)	10G Active Twinax 5m	58-1000023-01
10GE LR 10km (SFP +)	10GE LR 10km (SFP +)	57-0000076-01
10GE LSR 300m (SFP +)	10GE SR 300m (SFP +)	57-0000075-01
10GE USR 100m (SFP +)	10GE LR 10km (SFP +)	57-1000130-01

NOTE

7M active cables are not supported for stacking with ICX 7250.

Stack formation method 1: Using stack secure setup

Description

'Stack secure setup' utility is the most convenient of all methods to form a stack. This utility uses a Brocade proprietary discovery protocol that discovers units that are connected upstream and downstream of the unit where this command is entered.

Steps

Summarized steps:

- Configure 'stack enable' on the intended active controller unit at configuration level.
- Enter 'stack secure setup' on the intended active controller unit at device level.

Detailed Steps

1. Connect the units in a stack based on the connection guidelines. Select a unit that you want to become an active controller. Configure 'stack enable' at configuration level as seen in the following log.

```
ICX7250-24P Switch(config)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
ICX7250-24P Switch(config)#
```

2. Once stack enable configured, this command will configure two default stack ports 1/2/1 and 1/2/3 as seen in the message displayed. This can be confirmed using 'show run' command. If you want to connect stack units using the retimer ports (1/2/5 to 1/2/8), 'default-ports' command can be used to change the default ports manually on the devices.

```
ICX7250-24P Switch(config)#stack unit 1
ICX7250-24P Switch(config-unit-1)#default-ports 1/2/5 1/2/7
```

3. Verify with show running-config that the default ports are set to 1/2/5 and 1/2/7.

```
ICX7250-24P Switch(config-unit-1)#show run
Current configuration:
!
ver 08.0.30T211
!
stack unit 1
  module 1 icx7250-24p-poe-port-management-module
  module 2 icx7250-sfp-plus-8port-80g-module
  default-ports 1/2/5 1/2/7
```

4. Enter 'stack secure setup' at device level. As shown in the following example, this command triggers a Brocade proprietary discovery protocol that begins the discovery process in both upstream and downstream directions. The discovery process produces a list of upstream and downstream devices that are available to join the stack. This process will assign IDs to the units.
5. During stack formation you will be prompted to use the RING topology. If 'n' is selected, it prompts you to enter the desired number of units either upstream or downstream depending on the connections.

NOTE

During the secure-setup process, after one minute of inactivity, authentication for stack members expires, forcing you to restart the process.

To exit the secure-setup, enter ^C at any time.

```
ICX7250-24P Switch#stack secure
ICX7250-24P Switch#Discovering the stack topology...
```

Current Discovered Topology - RING

Available UPSTREAM units

Hop(s)	Id	Type	Mac Address
1	new	ICX7250-48P	cc4e.24b4.2eb0
2	new	ICX7250-48P	cc4e.24b4.2f28
3	new	ICX7250-24	cc4e.24b4.8988
4	new	ICX7250-48	cc4e.24b4.2820
5	new	ICX7250-48	cc4e.24b4.2514
6	new	ICX7250-24	cc4e.24b4.83a0
7	new	ICX7250-24	cc4e.24b4.8064
8	new	ICX7250-24	cc4e.24b4.84c0
9	new	ICX7250-24	cc4e.24b4.8670
10	new	ICX7250-24P	cc4e.24b4.7efc
11	new	ICX7250-24P	cc4e.24b4.7bc0

Available DOWNSTREAM units

Hop(s)	Id	Type	Mac Address
1	new	ICX7250-24P	cc4e.24b4.7bc0
2	new	ICX7250-24P	cc4e.24b4.7efc
3	new	ICX7250-24	cc4e.24b4.8670
4	new	ICX7250-24	cc4e.24b4.84c0
5	new	ICX7250-24	cc4e.24b4.8064
6	new	ICX7250-24	cc4e.24b4.83a0
7	new	ICX7250-48	cc4e.24b4.2514
8	new	ICX7250-48	cc4e.24b4.2820
9	new	ICX7250-24	cc4e.24b4.8988
10	new	ICX7250-48P	cc4e.24b4.2f28
11	new	ICX7250-48P	cc4e.24b4.2eb0

Do you accept the topology (RING) (y/n)? : y

6. Stack trunks are discovered using secure setup. Secure setup automatically detects the stack trunks if connected. You are prompted to confirm the number of links to select the number of ports in the stack trunks. Refer to the configuration guide for more details.

Confirm Stacking Links...

UPSTREAM Unit: Id new at 2 hop(s) ICX7250-48P cc4e.24b4.2f28

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 3 hop(s) ICX7250-24 cc4e.24b4.8988

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 4 hop(s) ICX7250-48 cc4e.24b4.2820

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 5 hop(s) ICX7250-48 cc4e.24b4.2514

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 6 hop(s) ICX7250-24 cc4e.24b4.83a0

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 7 hop(s) ICX7250-24 cc4e.24b4.8064

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 8 hop(s) ICX7250-24 cc4e.24b4.84c0

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 9 hop(s) ICX7250-24 cc4e.24b4.8670

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 10 hop(s) ICX7250-24P cc4e.24b4.7efc

Enter the desired links(1-2) [1]: 2

UPSTREAM Unit: Id new at 11 hop(s) ICX7250-24P cc4e.24b4.7bc0

Enter the desired links(1-2) [1]: 2

DOWNSTREAM Unit: Id new at 1 hop(s) ICX7250-24P cc4e.24b4.7bc0

Enter the desired links(1-2) [1]: 2

7. You are prompted to enter 'y' to confirm that you accept unit IDs. If you enter 'n', you can choose to enter different unit IDs. In this particular example log shows 'y' as acceptance was entered.

Selected Topology:

Active	Id	Type	Mac Address
	1	ICX7250-24P	cc4e.24b4.7c50

Selected UPSTREAM units

Hop(s)	Id	Type	Mac Address
1	2	ICX7250-48P	cc4e.24b4.2eb0
2	3	ICX7250-48P	cc4e.24b4.2f28
3	4	ICX7250-24	cc4e.24b4.8988
4	5	ICX7250-48	cc4e.24b4.2820
5	6	ICX7250-48	cc4e.24b4.2514

```

6       7       ICX7250-24       cc4e.24b4.83a0
7       8       ICX7250-24       cc4e.24b4.8064
8       9       ICX7250-24       cc4e.24b4.84c0
9       10      ICX7250-24       cc4e.24b4.8670
10      11      ICX7250-24P      cc4e.24b4.7efc
11      12      ICX7250-24P      cc4e.24b4.7bc0

```

```

Selected DOWNSTREAM units
Hop(s) Id      Type      Mac Address
1       12      ICX7250-24P  cc4e.24b4.7bc0
2       11      ICX7250-24P  cc4e.24b4.7efc
3       10      ICX7250-24   cc4e.24b4.8670
4       9       ICX7250-24   cc4e.24b4.84c0
5       8       ICX7250-24   cc4e.24b4.8064
6       7       ICX7250-24   cc4e.24b4.83a0
7       6       ICX7250-48   cc4e.24b4.2514
8       5       ICX7250-48   cc4e.24b4.2820
9       4       ICX7250-24   cc4e.24b4.8988
10      3       ICX7250-48P  cc4e.24b4.2f28
11      2       ICX7250-48P  cc4e.24b4.2eb0

```

```

Do you accept the unit id's (y/n)? : y
ICX7250-24P Switch#

```

8. Once stack IDs are accepted, the stack units, except the active controller, reset so that the assigned switch IDs become effective. By default, stack secure assigns 128 as active units' priority.

```

ICX7250-24P Switch#T=14m17.8: Election, was alone --> active, ID=1, pri=128,
12U(1-12), A=u1, nbr#=11 11, reason: u12: port-up, ,
The period is 25
T=14m20.4: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1,
nbr#=11 11, reason: u10: SecureS, ,
T=14m23.4: reset unit 2: u2 bo-id=1
T=14m23.4: reset unit 3: u3 bo-id=1
T=14m23.4: reset unit 4: u4 bo-id=1
T=14m23.4: reset unit 5: u5 bo-id=1
T=14m23.4: reset unit 6: u6 bo-id=1
T=14m23.4: reset unit 7: u7 bo-id=1
T=14m23.4: reset unit 8: u8 bo-id=1
T=14m23.4: reset unit 9: u9 bo-id=1
T=14m23.4: reset unit 10: u10 bo-id=1 SS or UR
T=14m23.4: reset unit 11: u11 bo-id=1
T=14m23.4: reset unit 12: u12 bo-id=1

```

```

Config changed due to add/del units. Do write mem if you want to keep it
T=14m26.4: Unit 1 loses all neighbors.
T=14m26.4: Active U1 deletes U2 and its config because it is learned.
T=14m26.4: Active U1 deletes U3 and its config because it is learned.
T=14m26.5: Active U1 deletes U4 and its config because it is learned.
T=14m26.5: Active U1 deletes U5 and its config because it is learned.
T=14m26.5: Active U1 deletes U6 and its config because it is learned.
T=14m26.5: Active U1 deletes U7 and its config because it is learned.
T=14m26.5: Active U1 deletes U8 and its config because it is learned.
T=14m26.5: Active U1 deletes U9 and its config because it is learned.
T=14m26.5: Active U1 deletes U10 and its config because it is learned.
T=14m26.5: Active U1 deletes U11 and its config because it is learned.
T=14m26.5: Active U1 deletes U12 and its config because it is learned.

```

9. Various settings and files are synced from the master to the newly joined units. During stack formation, units go through various stages when they join the stack. Once units become part of the stack and the master syncs relevant information and files to all the units, they are set in "READY" state.

```

T=16m8.5: Election, was active, no change, ID=1, pri=128, 12U(1-12),
A=u1, nbr#=11 11, reason: u5: port-up, ,
The period is 25
T=16m9.7: Synchronize webauth files to u2
Detect stack member 2 POE capable
T=16m9.8: Synchronize webauth files to u3
Detect stack member 3 POE capable
T=16m9.9: Synchronize webauth files to u4
T=16m10.1: Synchronize webauth files to u5
T=16m10.1: Synchronize webauth files to u6
T=16m10.1: Synchronize webauth files to u7
T=16m10.2: Synchronize webauth files to u8
T=16m10.3: Synchronize webauth files to u9
T=16m10.4: Synchronize webauth files to u10
T=16m10.4: Synchronize webauth files to u11
Detect stack member 11 POE capable
T=16m10.5: Synchronize webauth files to u12

```

```

Detect stack member 12 POE capable
T:16m11.8: Done hot swap: active controller u1 sets u2 to Ready.
T:16m11.8: Done hot swap: active controller u1 sets u3 to Ready.
T:16m11.8: Done hot swap: active controller u1 sets u4 to Ready.
T:16m11.9: Done hot swap: active controller u1 sets u5 to Ready.
T:16m12.0: Done hot swap: active controller u1 sets u6 to Ready.
T:16m12.1: Done hot swap: active controller u1 sets u7 to Ready.
T:16m12.3: Done hot swap: active controller u1 sets u8 to Ready.
T:16m12.4: Done hot swap: active controller u1 sets u9 to Ready.
T:16m12.6: Done hot swap: active controller u1 sets u10 to Ready.
T:16m12.8: Done hot swap: active controller u1 sets u11 to Ready.
T:16m13.1: Done hot swap: active controller u1 sets u12 to Ready.
Stack unit 7 Power supply 1 is up
Stack unit 7 Power supply 2 is down
Stack unit 8 Power supply 1 is up
Stack unit 8 Power supply 2 is down
T=16m13.4: Election, was active, no change, ID=1, pri=128, 12U(1-12), A=u1,
nbr#=11 11, reason: u1: stk-po-chg, ,
Stack unit 6 Power supply 1 is up
Stack unit 6 Power supply 2 is down
PoE: Stack unit 2 Power supply 1 with 720000 mwatts capacity is up
Stack unit 2 Power supply 2 is down
Stack unit 2 Power supply 3 is down
PoE: Stack unit 3 Power supply 1 with 720000 mwatts capacity is up
Stack unit 3 Power supply 2 is down
Stack unit 3 Power supply 3 is down
Stack unit 4 Power supply 1 is up
Stack unit 4 Power supply 2 is down
Stack unit 5 Power supply 1 is up
Stack unit 5 Power supply 2 is down
PoE: Stack unit 11 Power supply 1 with 360000 mwatts capacity is up
Stack unit 11 Power supply 2 is down
PoE: Stack unit 12 Power supply 1 with 360000 mwatts capacity is up
Stack unit 12 Power supply 2 is down
Stack unit 10 Power supply 1 is up
Stack unit 10 Power supply 2 is down
Stack unit 9 Power supply 1 is up
Stack unit 9 Power supply 2 is down

Config changed due to add/del units. Do write mem if you want to keep it
T=17m14.8: Assigned unit 2 to be standby
T=17m16.8: start running config sync to standby u2
T=17m17.2: Running config sync to standby u2 is complete
    
```

10. Once booting up of the stack units is complete, stack formation is complete. Stack status can be verified using 'show stack' command. In this output, D indicates a dynamic configuration. After you perform a write memory, this display will change to S, for static configuration.

```

ICX7250-24P Switch#show stack
T=20m1.7: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID  Type      Role      Mac Address      Pri  State      Comment
1   S  ICX7250-24P  active  cc4e.24b4.7c50  128  local      Ready
2   D  ICX7250-48P  standby cc4e.24b4.2eb0   0  remote    Ready
3   D  ICX7250-48P  member  cc4e.24b4.2f28   0  remote    Ready
4   D  ICX7250-24  member  cc4e.24b4.8988   0  remote    Ready
5   D  ICX7250-48  member  cc4e.24b4.2820   0  remote    Ready
6   D  ICX7250-48  member  cc4e.24b4.2514   0  remote    Ready
7   D  ICX7250-24  member  cc4e.24b4.83a0   0  remote    Ready
8   D  ICX7250-24  member  cc4e.24b4.8064   0  remote    Ready
9   D  ICX7250-24  member  cc4e.24b4.84c0   0  remote    Ready
10  D  ICX7250-24  member  cc4e.24b4.8670   0  remote    Ready
11  D  ICX7250-24P  member  cc4e.24b4.7efc   0  remote    Ready
12  D  ICX7250-24P  member  cc4e.24b4.7bc0   0  remote    Ready

      active
      +---+
-2/5| 1 |2/7==2/7| C |2/5==2/1| B |2/3==2/3| A |2/1==2/1| 9 |2/3==2/3| 8 |2/1=
|   +---+   +---+   +---+   +---+   +---+   +---+
|   standby
|   +---+   +---+   +---+   +---+   +---+   +---+
-2/3| 2 |2/1==2/1| 3 |2/3==2/1| 4 |2/3==2/1| 5 |2/3==2/3| 6 |2/1==2/1| 7 |2/3=
+---+   +---+   +---+   +---+   +---+   +---+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.24b4.7c50
    
```

```
ICX7250-24P Switch#write memory
```

```

There is no startup config file, unable to save legacy config

Automatic copy to member units: 2 3 4 5 6 7 8 9 10 11 12
ICX7250-24P Switch#Flash Memory Write (1048576 bytes per dot) .
Write startup-config done.
Copy Done.
ICX7250-24P Switch#show stack
T=20m51.2: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID   Type           Role   Mac Address      Pri State   Comment
1   S ICX7250-24P    active cc4e.24b4.7c50  128 local   Ready
2   S ICX7250-48P    standby cc4e.24b4.2eb0  0 remote Ready
3   S ICX7250-48P    member cc4e.24b4.2f28  0 remote Ready
4   S ICX7250-24    member cc4e.24b4.8988  0 remote Ready
5   S ICX7250-48    member cc4e.24b4.2820  0 remote Ready
6   S ICX7250-48    member cc4e.24b4.2514  0 remote Ready
7   S ICX7250-24    member cc4e.24b4.83a0  0 remote Ready
8   S ICX7250-24    member cc4e.24b4.8064  0 remote Ready
9   S ICX7250-24    member cc4e.24b4.84c0  0 remote Ready
10  S ICX7250-24    member cc4e.24b4.8670  0 remote Ready
11  S ICX7250-24P   member cc4e.24b4.7efc   0 remote Ready
12  S ICX7250-24P   member cc4e.24b4.7bc0  0 remote Ready

      active
      +----+
-2/5| 1 |2/7==2/7| C |2/5==2/1| B |2/3==2/3| A |2/1==2/1| 9 |2/3==2/3| 8 |2/1=
|   +----+   +----+   +----+   +----+   +----+   +----+
|   |   |   |   |   |   |   |   |   |   |   |   |
|   | standby
|   +----+   +----+   +----+   +----+   +----+   +----+
-2/3| 2 |2/1==2/1| 3 |2/3==2/1| 4 |2/3==2/1| 5 |2/3==2/3| 6 |2/1==2/1| 7 |2/3=
|   +----+   +----+   +----+   +----+   +----+   +----+
Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.24b4.7c50
ICX7250-24P Switch#

```

Stack construction method 2: Manual configuration

Description

With this method, user should configure every unit individually and enable stacking on each unit. Once the units are connected together, they automatically form a stack. With this method, the unit with the highest priority becomes the active controller, and ID assignment is determined by the sequence in which user physically connects the units. The example used below is 12 units to form a ring stack.

Steps

Summarized steps:

- Configure highest priority on an intended active controller.
- Configure second highest priority on an intended standby controller.
- Configure 'stack suggest-id' on the units you chose to have a desired ID.
- Configure 'stack enable' on all the units and connect the units using stack ports.

Detailed steps

1. Units should boot up using same software image.
2. On a unit is intended to be the active controller, configure priority 255. If a unit is intended to be on standby, configure a priority less than the active unit; for example, 240.
3. To configure a stack trunk manually on a stack unit, use the stack-trunk command on every single unit. In a live production environment, use the multi-stack-trunk command and use multi stack port command to remove change a stack trunk to stack.

UNIT 1:

```

ICX7250-24P Switch(config)#stack unit 1
ICX7250-24P Switch(config-unit-1)#priority 255

```

```
ICX7250-24P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/5, 1/2/7 is not
available.
ICX7250-24P Switch(config-unit-1)#
```

UNIT 2:

```
ICX7250-24P Switch(config)#stack unit 1
ICX7250-24P Switch(config-unit-1)#priority 240
ICX7250-24P Switch(config-unit-1)#stack suggested-id 2
ICX7250-24P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/5, 1/2/7 is not
available.
```

UNIT 3:

```
ICX7250-24P Switch(config)#stack unit 1
ICX7250-24P Switch(config-unit-1)#stack suggested-id 3
ICX7250-24P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
ICX7250-24P Switch(config-unit-1)#
```

UNIT 4:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack suggested-id 4
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 5

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack suggested-id 5
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 6:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack suggested-id 6
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 7:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack suggested-id 7
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 8:

```
ICX7250-48 Switch(config)#stack unit 1
ICX7250-48 Switch(config-unit-1)#stack suggested-id 8
ICX7250-48 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 9:

```
ICX7250-48 Switch(config)#stack unit 1
ICX7250-48 Switch(config-unit-1)#stack suggested-id 9
ICX7250-48 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 10:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack suggested-id 10
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 11:

```
ICX7250-48P Switch(config)#stack uni 1
ICX7250-48P Switch(config-unit-1)#stack suggested-id 11
ICX7250-48P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
ICX7250-48P Switch(config-unit-1)#
```

UNIT 12:

```
ICX7250-48P Switch(config)#stack unit 1
ICX7250-48P Switch(config-unit-1)#stack suggested-id 12
ICX7250-48P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

4. To manually add stack trunk, configure stack-trunk manually as shown below, before enabling stacking on the device.

UNIT 1:

```
ICX7250-48P Switch(config)#stack unit 1
ICX7250-48P Switch(config-unit-1)#stack suggested-id 12
ICX7250-24P Switch(config-unit-1)#default-ports 1/2/5 1/2/7
ICX7250-24P Switch(config-unit-1)#stack-trunk 1/2/7 to 1/2/8
ICX7250-48P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 2:

```
ICX7250-24P Switch(config)#stack unit 1
ICX7250-24P Switch(config-unit-1)#default-ports 1/2/5 1/2/7
ICX7250-24P Switch(config-unit-1)#stack-trunk 1/2/5 to 1/2/6
ICX7250-24P Switch(config-unit-1)#stack-trunk 1/2/7 to 1/2/8
ICX7250-24P Switch(config-unit-1)#pri 240
ICX7250-24P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/5, 1/2/7 is not
available.
```

UNIT 3:

```
ICX7250-24P Switch(config)#stack unit 1
ICX7250-24P Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-24P Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7250-24P Switch(config-unit-1)#stack suggested-id 3
ICX7250-24P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 4:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
```

```
ICX7250-24 Switch(config-unit-1)#stack suggested-id 4
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 5:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7250-24 Switch(config-unit-1)#stack suggested-id 5
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 6:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7250-24 Switch(config-unit-1)#stack suggested-id 6
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 7:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7250-24 Switch(config-unit-1)#stack suggested-id 7
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 8:

```
ICX7250-48 Switch(config)#stack unit 1
ICX7250-48 Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-48 Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7250-48 Switch(config-unit-1)#stack suggested-id 8
ICX7250-48 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 9:

```
ICX7250-48 Switch(config)#stack unit 1
ICX7250-48 Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-48 Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7250-48 Switch(config-unit-1)#stack suggested-id 9
ICX7250-48 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 10:

```
ICX7250-24 Switch(config)#stack unit 1
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-24 Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7250-24 Switch(config-unit-1)#stack suggested-id 10
ICX7250-24 Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 11:

```
ICX7250-48P Switch(config)#stack unit 1
ICX7250-48P Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
```

```
ICX7250-48P Switch(config-unit-1)#stack-trunk 1/2/3 to 1/2/4
ICX7250-48P Switch(config-unit-1)#stack suggested-id 11
ICX7250-48P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

UNIT 12:

```
ICX7250-48P Switch(config)#stack unit 1
ICX7250-48P Switch(config-unit-1)#stack-trunk 1/2/1 to 1/2/2
ICX7250-48P Switch(config-unit-1)#stack suggested-id 12
ICX7250-48P Switch(config-unit-1)#stack enable
Enable stacking. This unit actively participates in stacking
stacking is enable. optical monitoring for stacking ports 1/2/1, 1/2/3 is not
available.
```

5. After configuration, connect the devices in a stack topology. The active controller retains its ID. The rest of the units are assigned unique ID numbers depending on the sequence in which they are connected or depending on the stack suggest-ID configured. Except for the active controller, the rest of the units reset and upon boot up, a stack is formed.
6. Save the configuration with "write memory".

NOTE

Since all the units are clean unit, enter "stack unit 1" on the respective device to configure stack suggested ID or priority.

Debugging and verification using show commands

show stack

Enter 'show stack' command at device level. In the following output user can verify the units in the ICX7250 stack.

```
ICX7250-24P Switch#show stack
T=38m0.9: alone: standalone, D: dynamic cfg, S: static, A=10, B=11, C=12
ID  Type      Role      Mac Address  Pri  State  Comment
1   S  ICX7250-24P  active      cc4e.24b4.7c50 255 local  Ready
2   S  ICX7250-24P  standby     cc4e.24b4.7bc0 240 remote Ready
3   S  ICX7250-24P  member      cc4e.24b4.7efc  0 remote Ready
4   S  ICX7250-24  member      cc4e.24b4.8670  0 remote Ready
5   S  ICX7250-24  member      cc4e.24b4.84c0  0 remote Ready
6   S  ICX7250-24  member      cc4e.24b4.8064  0 remote Ready
7   S  ICX7250-24  member      cc4e.24b4.83a0  0 remote Ready
8   S  ICX7250-48  member      cc4e.24b4.2514  0 remote Ready
9   S  ICX7250-48  member      cc4e.24b4.2820  0 remote Ready
10  S  ICX7250-24  member      cc4e.24b4.8988  0 remote Ready
11  S  ICX7250-48P  member      cc4e.24b4.2f28  0 remote Ready
12  S  ICX7250-48P  member      cc4e.24b4.2eb0  0 remote Ready

      active      standby
      +----+      +----+
-2/5| 1 |2/7==2/7| 2 |2/5==2/1| 3 |2/3==2/3| 4 |2/1==2/1| 5 |2/3==2/3| 6 |2/1=
|   +----+      +----+      +----+      +----+      +----+      +----+
|   |           |           |           |           |           |           |
|   +----+      +----+      +----+      +----+      +----+      +----+
-2/3| C |2/1==2/1| B |2/3==2/1| A |2/3==2/1| 9 |2/3==2/3| 8 |2/1==2/1| 7 |2/3=
      +----+      +----+      +----+      +----+      +----+      +----+

Standby u2 - protocols ready, can failover
Current stack management MAC is cc4e.24b4.7c50
ICX7250-24P Switch#
```



```

2: 10/2/2 (T0) <---> 11/2/4 (T1)
Link 12: u11 -- u12, num=2
1: 11/2/1 (T0) <---> 12/2/1 (T0)
2: 11/2/2 (T0) <---> 12/2/2 (T0)
CPU to CPU packets are fine between 12 units.

```

NOTE

You should look for platform-level issues such as a bad cable or a wrong cable based on the errors from the above debugging commands.

Use Cases

Adding a new unit to the stack

Adding a new unit to an already existing operational stack can be done in three ways.

- Secure setup
- Stack enable
- With reserved configuration

Assumptions

- This process assumes that a stack is already formed an operational.
- To add a new unit to the stack, the number of units in the stack should be less than 12.

Description

A new unit can be connected to one of the end units of the stack using the stack ports. The following section describes these processes.

Steps

Using secure setup method:

1. A new unit can be connected to one of the end units of the stack using stack ports.
2. If the unit is connected with set of re-timer ports 1/2/5 to 1/2/8, manually configure the default ports to 1/2/5 and 1/2/7.
3. Once link is up, enter 'stack secure setup' on the active unit. The CLI display comes up with a 'new' unit discovered and prompts the user to enter the number of units desired upstream/downstream depending on where the new unit is connected.
4. The newly added unit receives a new ID which is next available ID, and resets itself. Upon boot up it joins with newly assigned ID. Do 'write memory'.

Using manual configuration method:

1. A new unit can be connected to one of the end units using stack ports.
2. If the unit is connected with set of re-timer ports 1/2/5 to 1/2/8, manually configure the default ports to 1/2/5 and 1/2/7.
3. Configure stack-trunk if required.
4. When link come up, enter 'stack enable' on the new unit at configuration level.
5. The newly added unit receives a new ID, which is next available stack ID, and resets itself. Upon boot up it joins with newly assigned ID. Do 'write memory'.

Using reserved configuration method:

1. Module configuration of the new unit should be configured on the active unit.
2. This new unit then can be connected to one of the end units using stack ports.
3. Active controller resets the new unit and upon boot up, the new unit is part of the stack. Do 'write memory'.

Removing a unit from the stack

Description

This is the process to remove a unit from the stack.

Steps

1. User can manually disconnect the unit by removing stacking cables. Unit can be disconnected while it is powered on or off.
2. When unit is disconnected, it will have stacking enabled. To recover to a clean unit user can use 'stack unconfigure clean' or 'stack unconfigure me' commands on this unit.
3. If the removed unit was dynamically learned, the active unit will remove this unit from configuration. If the removed unit was static, the configuration can be removed by issuing 'no stack unit <unit id>' command.
4. To temporarily disable a unit from stack, on the active unit enter stack disable command for the particular unit.

NOTE

'Stack unconfigure me' will recover the unit to its startup configuration before it joined the stack. 'Stack unconfigure clean' will remove the startup configuration from the unit. These commands will reload the unit and boot up as standalone unit

Replacing a unit from the stack

Assumption

- All the units have sequential IDs
- Replacing with a clean unit

Description

If you want to replace an old unit from the stack, there can be two scenarios in this case,

1. Replacing an old stack unit with a clean stack unit
2. Replacing multiple stack units with multiple clean stack unit

Steps

Replacing one stack unit with a clean stack unit

1. After removing the old unit from the stack, connect the new unit to the stack using the same stacking ports used by the old unit.
2. If the module configuration of the replacement unit matches the configuration on the Active Controller, the Active Controller resets the new unit and upon boot up the new unit joins the stack with the same ID was the unit that was removed, and the stack retains its original topology.
3. If the configuration of the new unit does not match the old unit, the new unit is added with a new ID based on the next available ID.

Replacing multiple stack units with multiple clean stack units

1. After removing the old stack units, connect the new units to the existing stack using the stacking ports as the old unit.
2. The active controller replaces the unit with the lowest ID first. For example, if you remove units 4 and 5, the active controller assigns ID 4 to the first new device you install.
3. If you wanted this particular unit to replace unit 5, instead of unit 4, you must use secure-setup to select the ID of the old unit for the new unit. The active controller resets the unit, and upon boot up it joins the stack.

Brocade ICX 7250 Recommendations and Restrictions

1. A two port or eight port POD license is required for ICX 7250 stacking.
2. Only ports recognized as default ports can be used as stacking ports. Before a unit can use no default stacking ports, the **default-ports** command must be configured on the local console for the unit so the unit can be discovered by the secure-setup utility used to form a stack.
3. Default ports cannot be changed on a live stack. The following example shows the error message displayed if you attempt to do so.


```
ICX7250-24P Switch(config-unit-1)#stack unit 3
ICX7250-24P Switch(config-unit-3)#default-ports 3/2/5 3/2/7
New default-ports 3/2/5 3/2/7 result in removing both old stack ports. Abort
```
4. If there are any wrong stack trunk connections, secure setup will not be performed. An invalid stack trunk message or no new units discovered messages will be displayed.
5. Secure setup will not be performed if the setup has loops.


```
ICX7250-24P Switch# stack secure
CPU utilization too high: 92 percent. Check loops in the network and try again...
```
6. In case of any image mismatch on member units, active unit will trigger Autocopy. Autocopy is supported only between minor and patch releases and not between major releases.
7. When a uplink port is being converted to stacking ports, the uplink configuration should be removed before it can be configured as a stack port.

Related documents

Stacking Management Guide: <http://my.brocade.com/wps/myportal/downloads>