RUCKUS ICX SWITCHES TAKE STACKING TO THE NEXT LEVEL

Ruckus Technology Leadership

AT-A-GLANCE

A FLEXIBLE, COST EFFECTIVE ALTERNATIVE TO TRADITIONAL MODULAR CHASSIS

Network architects are often confronted with competing objectives when designing new campus networks: maximize scalability, and upgradability while keeping management simple. A stack of fixed form factor switches, offers the ease of management of a chassis with vastly superior flexibility and cost effectiveness. Stacking has become the de-facto standard architecture at the campus edge, replacing modular chassis switches. Ruckus ICX fixed form factor switches go beyond traditional stacking to offer capabilities that take flexibility, ease of management and cost effectiveness to the next level.

ICX SWITCHES UNIQUE FEATURES TAKE STACKING TO THE NEXT LEVEL

STACKING ON STANDARD ETHERNET PORTS:

Unlike traditional stackable switches, ICX switches do not rely on proprietary stacking ports and stacking cables. Stacking is supported over standard 10Gbps SFP+ or 40Gbps QSFP+ Ethernet ports. The same ports can be configured for stacking or to forward uplink traffic. This provides a level of flexibility unavailable on other stackable switches. Additionally, multiple stacking ports can be aggregated together to increase the stacking bandwidth and boost performance when needed.

LONG-DISTANCE STACKING ACROSS WIRING CLOSETS:

In addition to standard short SFP+ to SFP+ and QSFP+ to QSFP+ copper stacking cables, ICX switches can also use standard SFP+ and QSFP+ optical transceivers and fiber for stacking with distance up to 10KM between switches. This enables long distance stacking between wiring closets in a building or even between buildings.

NO HARDWARE MODULE REQUIRED FOR STACKING:

Many traditional stackable switches require the purchase of additional hardware stacking modules to be able to stack. All Ruckus ICX 7000 series switches come with the hardware necessary for stacking thanks to the use of standard stacking ports.

IN SERVICE SOFTWARE UPGRADE (ISSU):

ICX stacking technology supports ISSU across stacked switches, a unique capability that enables a stack of ICX switches to go through a software upgrade without taking down the stack. Stack members are upgraded sequentially one after the other while the other members are in service. The process is completely automated for the network administrator.

SUPERIOR SCALABILITY WITH UP TO 12 SWITCHES PER STACK:

Most network vendors limit the maximum number of switches per stack to 8 units. ICX switching technology supports up to 12 switches per stack offering 50% more ports per stack than traditional stackable switches.

Figure 1: Stacking on standard Ethernet ports

A stack of ICX 7150 showcasing the use of standard SFP+ 10Gbps dual-purpose ports and standard SFP+ short copper cables. The same ports can be used as 10GbE uplinks when not used for stacking.

STACKING AT THE AGGREGATION AND CORE

Thanks to ICX switches advanced stacking technology, Ruckus is the only vendor to offer a stack based solution for the campus aggregation/core, as well as at the network edge. ICX switches deliver 1U high-performance, high-availability, and market-leading-density 1/10/40 GbE solutions. With industry leading price/performance and a low latency, cut-through, non-blocking architecture, these ICX aggregation switches provide unprecedented stacking density and performance with up to 12 switches per stack and up to 5.76 Tbps of aggregated stacking bandwidth, limiting inter-switch bottlenecks and offering cost-effective large-scale chassis replacement at the campus aggregation/core. Additionally, support for ISSU at the stack level enables ICX switches to deliver chassis level high-availability and reliability to maximize network uptime.

BENEFITS OF ICX ADVANCED STACKING TECHNOLOGY

SIMPLIFIED OPERATIONS:

Stacking aggregates multiple fixed-port switches in a wiring closet into a single logical device, reducing deployment complexity. Long distance stacking and superior scalability with up to 12 switches per stack further reduces the number of touch points required to manage a campus network. Network administrators can manage an entire building from a single point of management and save time, eliminating the need to deploy and manage loop avoidance protocols, such as Spanning Tree Protocol (STP) or introduce complex network segmentation between floors with L3 routing.

LOWER COSTS OF ACQUISITION AND OPERATION:

A stack of fixed form factor switches enables cost-effective "pay as you grow" network design. Add new switches to the stack when more ports are needed at the edge. Unlike traditional chassis switches, no excess idle capacity is deployed, and no "fork-lift" upgrade is needed to advance to the next capacity level. Stacking on standard Ethernet SFP+/QSFP+ ports takes cost saving even further by eliminating the need to purchase additional stacking modules and proprietary cables.

IMPROVED SCALABILITY AND PERFORMANCE:

ICX stacking technology enables multiple stacking ports can be aggregated together to increase stacking bandwidth and boost performance. Depending on ICX models, up to 8x 10Gbps SFP+ or 12x 40Gbps QSFP+ ports can be aggregated for stacking offering an unprecedented amount of stacking bandwidth and boosting network performance.

EASY UPGRADE PATH TO CAMPUS FABRIC WHEN STACKING IS NOT ENOUGH

In addition to superior stacking, all ICX 7000 series switches also support campus fabric, a unique technology that collapses multiple network layers into a single logical switch, flattening the network and eliminating deployment complexity while simplifying network management and reducing operating costs even further.

A single campus fabric can scale up to 36 edge devices and 4 core/aggregation devices and enable mixing and matching any of the ICX 7000 Switches within the same fabric.
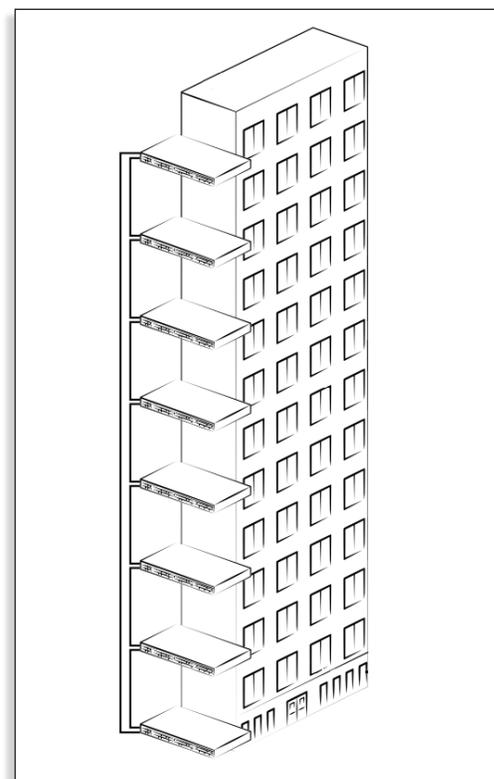
Figure 2: Long distance stacking

A stack of ICX switches deployed in a tall building making use of standard SFP+ or QSFP+ optical transceivers and fiber as stacking links. A single stack can cover the entire building simplifying network deployment and management significantly

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