Nokia 800GE Routing

Sustainable growth for the digital world

Nokia 800GE Routing

Sustainable growth for the digital world

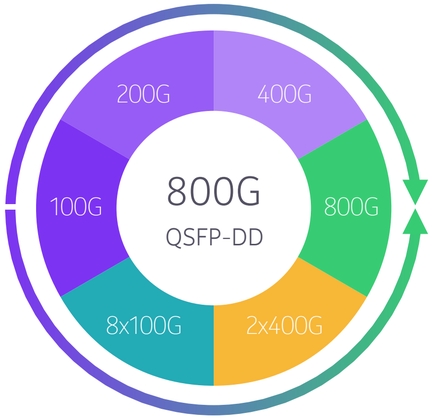
With internet traffic growing by 30% year over year and greenhouse gas (GHG) emissions to be cut in half by 2030 to meet current targets, network operators are finding it challenging to scale network capacity to meet growing demand within their existing space, energy and thermal footprint. By deploying Nokia 800 Gigabit Ethernet (GE) routing, operators can triple IP network capacity in the same space and energy footprint. Built with faster optics and more efficient silicon, 800GE routing leads the way to a more sustainable future.

What is 800GE routing?

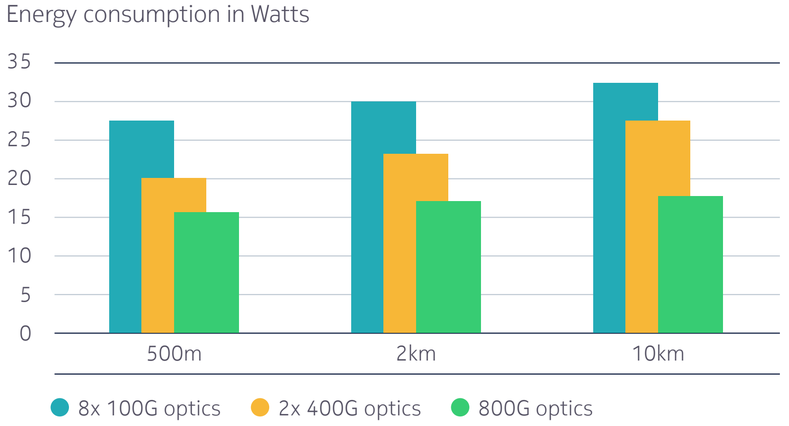
800GE routing is the next-generation in IP networking technology, enabling operators to seamlessly upgrade router interface speeds up to 800 Gigabits per second, simply by equipping faster optics. It leverages the most recent QSFP-DD interface module specifications to support high-density 800GE pluggable optics and is backwards compatible with existing 400GE, 200GE and 100GE transceivers.

Large communications service providers (CSPs), internet exchange providers, colocation providers, cloud providers, and enterprises that are already starting to deploy 400 Gb/s links at any scale should consider deploying 800GE routing to scale network capacity in a more sustainable manner.

Scale capacity and connectvity



Save energy and rack space



Nokia 800GE Routing

Meet bandwidth demand, scale operations, and reduce carbon emissions

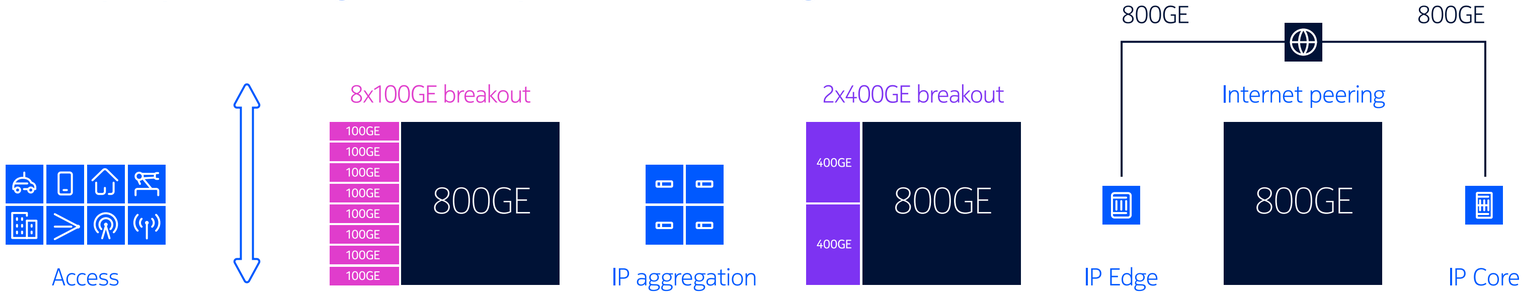
The Nokia 800 Gigabit Ethernet (800GE) routing solution enables operators to rise to the challenge of scaling their networks sustainably to meet the relentless demand for more bandwidth, while also improving operational efficiency and reducing carbon emissions.

Powered by our ground-breaking FP5 routing silicon, the 800GE routing solution provides:

- IP network speeds up to 800 Gb/s
- Energy use down by 75% compared to FP4
- Over 3x more capacity in the same rack space

Nokia has already concluded extensive public tests and customer trials of 800GE routing solutions. These trials are an industry first and validate readiness of our new 7750 SR-s routers to support 800GE optics.

Grow capacity in the existing resource footprint with 800GE routing



Key Benefits

Nokia 800GE routing provides network operators with several key benefits that help them succeed in the face of rapidly escalating demand for more bandwidth and meet their targets for reducing GHG emissions.

More traffic capacity

800GE routing offers a two to eight fold increase in link capacity over current 400GE and 100GE networks. Besides more headroom for traffic peaks and demand growth, managing faster and fewer links operators reduce network complexity and cost.

More space efficient

800GE routing effectively doubles interface capacity and connectivity in the same rack space. A single line card can support up to 36 QSFP-DD ports with 800GE, 400GE or 100GE pluggable optics, or connect to two 400GE or up to eight 100GE ports with an optical breakout panel.

More energy efficient

Using faster 800GE optics is 20 to 40% more energy efficient than transporting an equivalent volume of traffic using multiple 400GE or 100GE links.

Grow capacity in the existing resource footprint with 800GE routing

Nokia 7750 SR and SR-s platforms

The Nokia 800GE routing solution supports four fixed-chassis variants in a highly compact 2 RU form factor to address a broad range of IP aggregation and edge connectivity and service requirements.

Our modular 7750 SR-s platforms offer granular scaling of 100, 400 and 800GE applications from 19 Tb/s full duplex in a single slot 3 RU chassis to 216 Tb/s full duplex capacity in a 12-slot SR-14 chassis at the high end of the spectrum.

The solution provides high-density QSFP-DD 800G connectors with flexible breakout for 800 Gigabit Ethernet (GE), 400GE, 100GE, 50GE and 10GE optics.

Nokia 7750 SR-1
Fixed 2RU routers

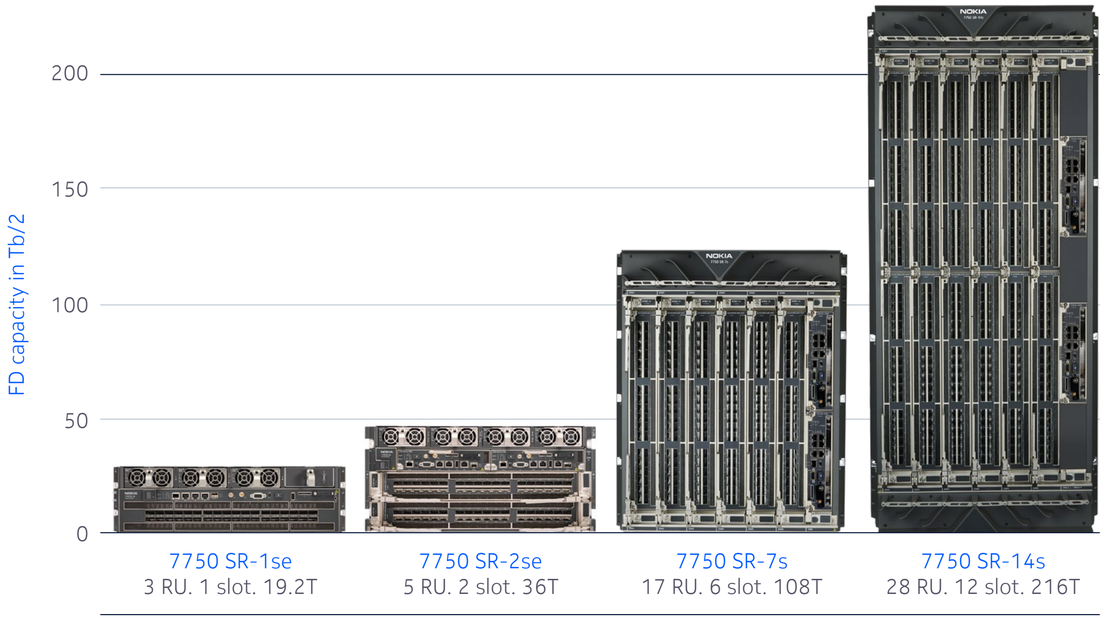
48p 800G QSFP-DD

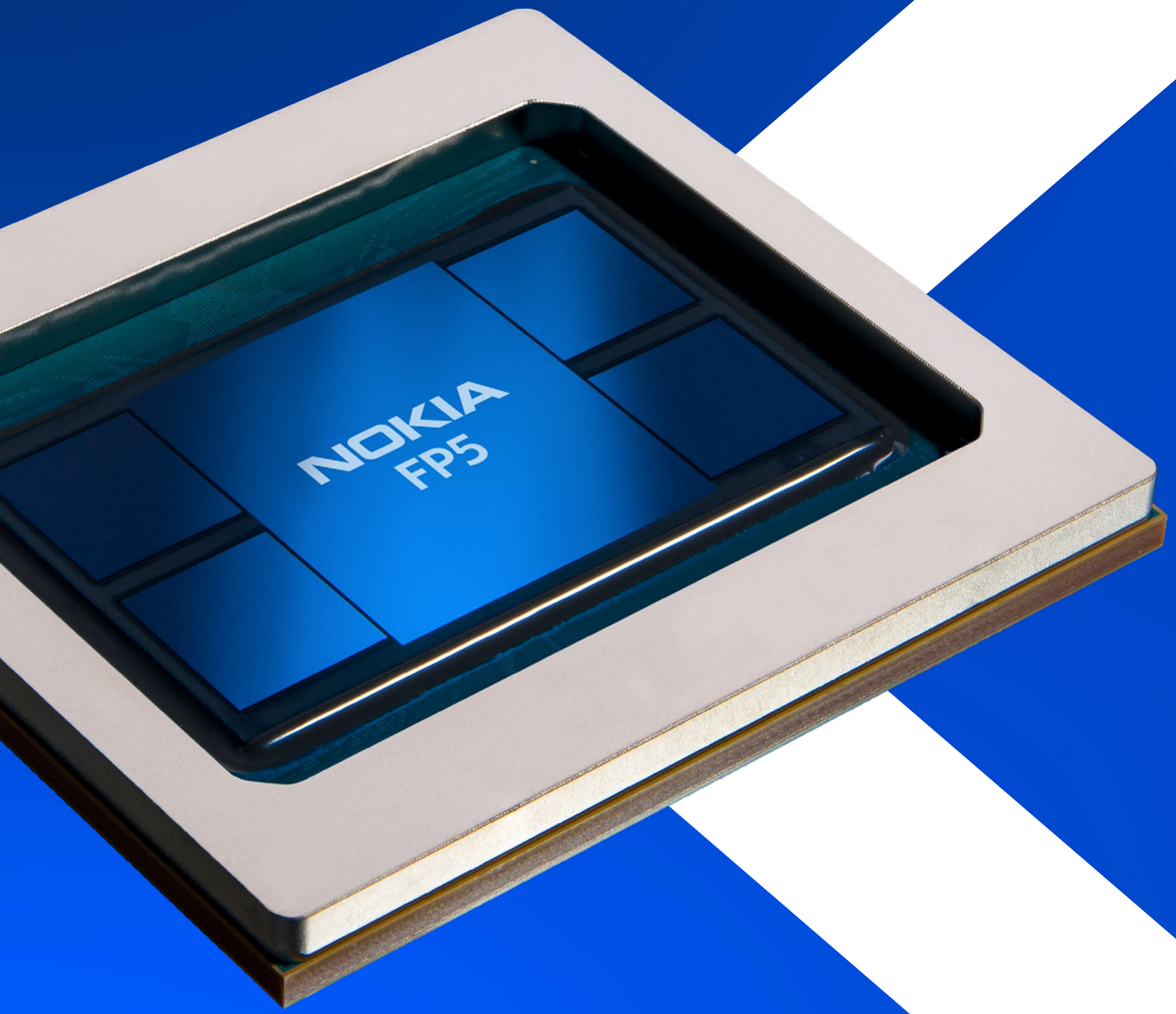
80p 200G SFP-DD
12p 800G QSFP-DD

40p 200G SFP-DD
6p 800G QSFP-DD

24p 800G QSFP-DD

Nokia 7750 SR-s modular service routers





Nokia FP5 Network Processor

Power efficiency and sustainability

The Nokia 800GE routing solution leverages Nokia's new, ground-breaking network processor silicon, FP5. FP5 builds on FP4's flexible capability and no-compromise approach to IP silicon design, providing deterministic packet forwarding performance at scale, even when processing-intensive operations are required.

The higher capacity, density, and power efficiency of FP5 silicon makes it possible to support 36 400GE ports per line card at full line rate, or up to 24 800GE ports with intelligent aggregation.

Customers of Nokia 7750 SR-7s and 14s routers can upgrade to the new FP5 hardware to take advantage of the many benefits of the 800GE routing solution. The FP5 hardware delivers three times more capacity than FP4 in the same chassis and requires no changes to power supply or cooling fan units. In addition, the FP5 chipset is backwards compatible with the Nokia FP4 chipset and supports the full Nokia Service Router Operating System (SR OS) feature set on day one.

Make the transition to sustainable growth today

While many operators are still moving from 100G to 400G speeds in their networks, traffic growth is only increasing. The need for 800G speeds is just a matter of time – the sooner is better.

Nokia is uniquely qualified to support operators in the transition to 800GE routing. Our best-in-class service routing platforms are 800GE ready today, with full support on day one for all 100GE and 400GE routing features our customers depend on in their networks. We are the sole vendor with proven 800GE routing solutions on the market today.

Nokia 800GE routing offers a smooth upgrade path from 100 or 400 to 800 Gb/s link speeds, with immediate and recurring operational savings on energy costs and rack space. With 800GE capabilities, operators can quickly experience the recurring operational cost savings that aid in lowering the network total cost of ownership.

Visit our web page to learn more about our depth of experience in optical networking and find out how we can help you make the transition to 800GE routing, so you can increase network capacity with greater space and energy efficiency.

800GE routing | Nokia

Nokia OYJ
Karakaari 7
02610 Espoo
Finland

Tel. +358 (0) 10 44 88 000

CID: 212896

nokia.com

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering the future where networks meet cloud to realize the full potential of digital in every industry.

Through networks that sense, think and act, we work with our customers and partners to create the digital services and applications of the future.