# IP Routing Portfolio

With the Nokia IP routing portfolio, connect users, things and clouds while securely delivering capacity, reliability and performance.

## 7730 Service Interconnect Router (SXR)

- Scalable, right-sized platforms designed for the access, aggregation and edge applications in CSP and mission-critical networks
- Powered by Nokia FPcx 5.0 Tb/s (FD) routing silicon
- Flexible native and breakout options with support for 400GE, 100GE, 50GE, 40GE, 25GE, 10GE and1GE interfaces
- Silicon-based IP network security with DDoS mitigation and enhanced quantum-safe MACsec (ANYsec) line-rate cryptography on select platforms/MDAs - without performance impact
- Enabled by Nokia's open, resilient, and extensible SR Linux network operating system (NOS)



**7730 SXR-1x-44S**
- 5.6 Tb/s (FD); 1RU; ETR
- 4 x 400G QSFP-DD
- 40 x 100G SFP-DD



**7730 SXR-1-32D**
- 4.4 Tb/s (FD); 1RU; ETR
- 4 x 400G QSFP-DD
- 28 x 100G QSFP28

**7730 SXR-1d-32D**
- 4.4 Tb/s (FD); 2RU; ETR
- 4 x 400G QSFP-DD
- 28 x 100G QSFP28

**7730 SXR-R1**
- 4.4 Tb/s (FD); 2RU; ETR
- 4 x 400G QSFP-DD
- 28 x 100G SFP-DD

**7730 SXR-R6d**
- 3.6 Tb/s (FD); 4RU; ETR
- 6 compact slots, 600 Gb/s (FD)
- 6 x 400G QSFP-DD
- 36 x 100G QSFP28
- 60 x 50G SFP56
- 144 x 25G SFP28
- 120 x 10G SFP+
- 192 x 1G cSFP

**7730 SXR-R6dl**
- 3.6 Tb/s (FD); 7RU; ETR
- 6 slots, 600 Gb/s (FD)
- 6 x 400G QSFP-DD
- 36 x 100G QSFP28
- 60 x 50G SFP56
- 144 x 25G SFP28
- 276 x 10G SFP+
- 480 x 1G cSFP

## 7250 Interconnect Router (IXR)

- Terabit-scale, fixed and modular interconnect router for CSP and webscale networks
- Optimized for next generation IP mobile transport (anyhaul) and fixed-mobile convergence, residential and business access, aggregation, edge compute and data center applications
- Flexible native and breakout options with support for 800GE, 400GE, 100GE, 50GE, 40GE, 25GE, 10GE and 1GE interfaces
- 7250 IXR-e big, 7250 IXR-Xs, 7250 IXR-s, and 7250 IXR-X1 modes: 7750 SR ethernet satellite port extender or stand-alone router
- Running SR OS or SR Linux network operating systems delivers a rich set of use cases

**7250 IXR-e big**
- Fixed; 1RU; ETR
- 300 Gb/s (FD)
- 2 x 100G QSFP28
- 8 x 25G/10G/1G SFP28
- 24 x 10G SFP+

**7250 IXR-e small**
- Fixed; 1RU; ETR
- 120 Gb/s (FD)
- 14 x 10G SFP+
- 4 x RJ45 (GE)

**7250 IXR-ec**
- Fixed; 1RU; ETR
- 64 Gb/s (FD)
- 6 x 10G SFP+
- 20 x 1G SFP
- 4 x RJ45 (GE)

**7250 IXR-e2**
- Fixed; 1RU; ETR
- 800 Gb/s (FD)
- 2 x 400G QSFP-DD
- 2 x 100G QSFP28
- 24 x 25G/10G/1G SFP28

**7250 IXR-e2c**
- Fixed; 1RU; ETR
- 100 Gb/s (FD)
- 2 x 100G QSFP28
- 12 x 25G/10G/1G SFP28

**7250 IXR-e2n**
- Fixed; 1RU; ETR
- 44 Gb/s (FD); fanless
- 4 x 10G/1G SFP+
- 4 x 1G SFP

**7250 IXR-e3x**
- Fixed; 2RU; ETR
- 2.4 Tb/s (FD)
- 6 x 400G QSFP-DD
- 16 x 100G SFP-DD
- 15 x 50G/25G/10G/1G SFP56

**7250 IXR-e3**
- Fixed; 1RU; ETR
- 1.2 Tb/s (FD)
- 2 x 400G QSFP-DD
- 8 x 100G SFP-DD
- 18 x 25G/10G/1G SFP28

**7250 IXR-e3c**
- Fixed; 1RU; ETR
- 400 Gb/s (FD)
- 4 x 100G QSFP28
- 8 x 50G/25G/10G/1G SFP56
- 16 x 25G/10G/1G SFP28

**7250 IXR-X3**
- Fixed; 1RU
- 14.4 Tb/s (FD)
- 36 x 400G QSFP-DD

**7250 IXR-X1**
- Fixed; 1RU
- 4.8 Tb/s (FD)
- 4 x 400G QSFP-DD
- 32 x 100G QSFP28

**7250 IXR-Xs**
- Fixed; 1RU
- 4.8 Tb/s (FD)
- 6 x 400G QSFP-DD
- 48 x 50G/25G/10G SFP56

**7250 IXR-s**
- Fixed; 1RU
- 800 Gb/s (FD)
- 6 x 100G QSFP28
- 48 x 10G/1G SFP+

**7250 IXR-R4**
- 300 Gb/s (FD); 2RU, ETR
- 4 slots, 160 Gb/s (FD) each
- 4 x 100G/40G QSFP28
- 16 x 25G/10G/1G SFP28
- 42 x 10G SFP+
- 80 x 1G cSFP

**7250 IXR-R6**
- 800 Gb/s (FD); 3RU, ETR
- 6 slots, 160 Gb/s (FD) each
- 6 x 100G/40G QSFP28
- 24 x 25G/10G/1G SFP28
- 60 x 10G SFP+
- 80 x 1G cSFP
- 32 x T1/E1

**7250 IXR-R6d**
- 2.4 Tb/s (FD); 4RU, ETR
- 6 compact slots, 500/300 Gb/s (FD)
- 4 x 400G QSFP-DD
- 26 x 100G QSFP28
- 52 x 50G/25G/10G/1G SFP56
- 80 x 25G/10G/1G SFP28
- 120 x 10G SFP+
- 192 x 1G cSFP

**7250 IXR-R6dl**
- 2.4 Tb/s (FD); 7RU, ETR
- 6 slots, 500/300 Gb/s (FD)
- 4 x 400G QSFP-DD
- 26 x 100G QSFP28
- 52 x 50G/25G/10G/1G SFP56
- 80 x 25G/10G/1G SFP28
- 210 x 10G SFP+
- 480 x 1G cSFP

**7250 IXR-10e**
- 230.4 Tb/s (FD); 16RU
- 8 slots, 28.8 Tb/s (FD) each
- 288 x 800G QSFP-DD
- 288 x 800G OSFP
- 576 x 400G QSFP-DD
- 576 x 400G OSFP
- 2304 x 100G QSFP28



**7250 IXR-18e**
- 460.8 Tb/s (FD); 35RU
- 16 slots, 28.8 Tb/s (FD) each
- 576 x 800G QSFP-DD
- 576 x 800G OSFP
- 1152 x 400G QSFP-DD
- 1152 x 400G OSFP
- 4608 x 100G QSFP28

**7250 IXR-X1b**
- 7.2 Tb/s (FD); fixed; 1RU
- 24 x 100G QSFP28
- 12 x 400G QSFP-DD

**7250 IXR-X3b**
- 14.4 Tb/s (FD); fixed; 1RU
- 36 x 400G QSFP-DD

**7250 IXR-X4 (QSFP-DD)**
- 25.6 Tb/s (FD); fixed; 1RU
- 32 x 800G QSFP-DD

**7250 IXR-X4 (OSFP)**
- 25.6 Tb/s (FD); fixed; 1RU
- 32 x 800G OSFP

**7250 IXR-X6e**
- 115.2 Tb/s (FD); 10RU
- 4 slots, 28.8 Tb/s (FD) each
- 144 x 800G QSFP-DD
- 144 x 800G OSFP
- 288 x 400G QSFP-DD
- 288 x 400G OSFP
- 1152 x 100G QSFP28

**7250 IXR-10e**
- 230.4 Tb/s (FD); 16RU
- 8 slots, 28.8 Tb/s (FD) each
- 288 x 800G QSFP-DD
- 288 x 800G OSFP
- 576 x 400G QSFP-DD
- 576 x 400G OSFP
- 2304 x 100G QSFP28



**7250 IXR-18e**
- 460.8 Tb/s (FD); 35RU
- 16 slots, 28.8 Tb/s (FD) each
- 576 x 800G QSFP-DD
- 576 x 800G OSFP
- 1152 x 400G QSFP-DD
- 1152 x 400G OSFP
- 4608 x 100G QSFP28

## 7750 Service Router (SR)

- Scalable, comprehensive and deterministic routing for edge and core applications in CSP, webscale and mission-critical networks
- Powered by Nokia FP5 6.0 Tb/s (HD) and FP4 3.0 Tb/s (HD) routing silicon
- Flexible native and breakout options with support for 800GE, 400GE, 100GE, 50GE, 40GE, 25GE, 10GE and 1GE and up to 1.6T clear channel interfaces
- Silicon-based IP network security includes DDoS mitigation and enhanced quantum-safe MACsec (ANYsec) line-rate cryptography - without performance impact
- Proven and highly resilient SR OS software delivers a rich set of IP routing capabilities

**7750 SR-1s**
- Fixed: 4.8 Tb/s (FD), 2.4 Tb/s (FD); 3RU
  Modular: 3 Tb/s (FD); 3RU
- Up to 4.8 Tb/s (FD)/12 Tb/s intelligent aggregation (IA)
- 2 x 800G QSFP-DD
- 24 x 400G QSFP-DD
- 120 x 100G QSFP28
- 360 x 10G QSFP28
- 40 x 100G SFP-DD

**7750 SR-1se**
- 19.2 Tb/s (FD); 3RU
- Fixed, up to 19.2 Tb/s (FD), all ports are line rate
- 24 x 800G QSFP-DD
- 48 x 400G QSFP-DD
- 192 x 100G QSFP28
- 360 x 10G QSFP28

**7750 SR-2s**
- 9.6 Tb/s (FD); 5RU
- 2 slots of 4.8 Tb/s (FD)/12 Tb/s IA
- 4 x 800G QSFP-DD
- 48 x 400G QSFP-DD
- 240 x 100G QSFP28
- 720 x 10G QSFP28
- 80 x 100G SFP-DD

**7750 SR-2se**
- 36 Tb/s (FD); 5RU
- 2 slots of 18 Tb/s (FD)/19.2 Tb/s IA
- 48 x 800G QSFP-DD
- 96 x 400G QSFP-DD
- 384 x 100G QSFP28
- 720 x 10G QSFP28
- 96 x 100G SFP-DD

**7750 SR-7s**
- 108 Tb/s (FD); 16RU or 17RU
- 6 slots of 18 Tb/s (FD)/19.2 Tb/s IA
- 144 x 800G QSFP-DD
- 288 x 400G QSFP-DD
- 1152 x 100G QSFP28
- 2160 x 10G QSFP28
- 288 x 100G SFP-DD

**7750 SR-14s**
- 216 Tb/s (FD); 27RU or 28RU
- 12 slots of 18 Tb/s (FD)/19.2 Tb/s IA
- 288 x 800G QSFP-DD
- 576 x 400G QSFP-DD
- 2304 x 100G QSFP28
- 4320 x 10G QSFP28
- 576 x 100G SFP-DD

**7750 SR-1**
- 1.5 Tb/s (FD); 2RU
- Modular, 1.5 Tb/s (FD)/4.0 Tb/s IA
- 2 x 800G QSFP-DD
- 6 x 400G QSFP-DD
- 40 x 100G QSFP28
- 240 x 10G QSFP28
- 20 x 100G SFP112
- 32 x 25G/10G SFP28

**7750 SR-1x-48D, SR-1-48D, SR-1-24D**
- 6 Tb/s or 2.8 Tb/s (FD); 2RU
- Fixed, up to 6 Tb/s (FD)/19.2 Tb/s IA
- 24 x 800G QSFP-DD
- 48 x 400G QSFP-DD
- 192 x 100G QSFP28
- 480 x 10G QSFP28

**7750 SR-1x-92S, SR-1-92S, SR-1-46S**
- 6 Tb/s or 2.8 Tb/s (FD); 2RU
- Fixed, up to 6 Tb/s (FD)/12.8 Tb/s IA
- 4 x 800G QSFP-DD
- 12 x 400G QSFP-DD
- 128 x 100G QSFP28
- 200 x 10G QSFP28
- 80 x 100G SFP-DD

**7750 SR-7**
- 4 Tb/s (FD); 8RU
- 5 slots of 800 Gb/s (FD)/1.2 Tb/s IA
- 5 x 400G QSFP-DD
- 60 x 100G QSFP28
- 600 x 10G QSFP28
- 160 x 25G/10G SFP28
- 400 x 1G CSFP

**7750 SR-12**
- 8 Tb/s (FD); 14RU
- 10 slots of 800 Gb/s (FD)/1.2 Tb/s IA
- 10 x 400G QSFP-DD
- 120 x 100G QSFP28
- 1200 x 10G QSFP28
- 320 x 25G/10G SFP28
- 800 x 1G CSFP

**7750 SR-12e**
- 13.5 Tb/s (FD); 22RU
- 9 slots of 1.5 Tb/s (FD)/4 Tb/s IA
- 18 x 800G QSFP-DD
- 36 x 400G QSFP-DD
- 360 x 100G QSFP28
- 2160 x 10G QSFP28
- 180 x 100G SFP112
- 288 x 25G/10G SFP28
- 720 x 1G CSFP

## 7705 Service Aggregation Router (SAR)

- Access and aggregation routers supporting datapath encryption including MACsec, ANYsec, IPsec and NGE (on select platforms)
- Well-suited for CSP mobile backhaul and mission-critical and industrial applications, particularly for legacy-to-packet adaptation
- Multiservice interfaces delivering Ethernet, packet microwave, TDM, RS232, C37.94, E&M and other legacy interfaces
- Proven and highly resilient SR OS software delivers a rich set of IP routing capabilities

**7705 SAR-Wx (2 variants)**
- 5 Gb/s (FD); outdoor mountable
- 3 x SFP, 2 x RJ45 (optional PoE+), GPS

**7705 SAR-Hc**
- 2.5 Gb/s (FD), DIN rail-mountable
- 6 x 1GE (2 with PoE/PoE+); 2 x RS-232 serial ports

**7705 SAR-Hm, SAR-Hmc**
- 5G Red Cap, LTE, 3G; GNSS receiver
- SAR-Hm: 6 x 10/100 Mb/s; 2 x async RS-232 serial ports, WI-FI
- SAR-Hmc: 3 x 10/100 Mb/s; 2 x async RS-232 serial ports

**7705 SAR-X**
- 27 Gb/s (FD); 1RU
- 2 x SFP+, 12 x SFP, 8 x T1/E1

**7705 SAR-Ax**
- 5 Gb/s (FD); fanless; 1RU; GNSS receiver
- 12 x SFP

**7705 SAR-8**
- 30 Gb/s (FD); 2RU; modular; multiservice interface ports
- 48 x 1GE
- 12 x 10GE



**7705 SAR-1**
- 50 Gb/s (FD); fixed; 1RU
- 10 x SFP+/SFP
- 6 x SFP (GE/FE)

**7705 SAR-Hx**
- 50 Gb/s (FD); modular; 1RU; fanless; GNSS receiver; multiservice interface ports
- 2 x SFP+/SFP
- 6 x SFP+/SFP
- 4 x GE/FE RJ45 10/100/1000 Mb/s

**7705 SAR-Mx**
- 50 Gb/s (FD); modular; 1RU; GNSS receiver; multiservice interface ports
- 2 x SFP28/SFP+
- 6 x SFP+/SFP
- 4 x GE/FE RJ45 10/100/1000 Mb/s

**7705 SAR-10x**
- 50 Gb/s (FD); 100% redundant; modular; 4RU; fanless with optional fan tray; GNSS receiver; multiservice interface ports
- 2 x SFP+ + 2 x SFP Eth
- 1 x SFP+
- 8 x SFP Eth
- 8 x RJ45 Eth
- 4 x RS232 + 4 x c.37.94
- 8 x T1/E1 RJ48

## 7210 Service Access System (SAS)

- Access, demarcation and cost-effective GE aggregation routers
- High-density and line-rate throughput
- 7210 SAS-S, 7210 SAS-Sx and 7210 SAS-Mxp series modes: 7750 SR ethernet satellite port extender and stand-alone router
- Proven and highly resilient SR OS software delivers a rich set of IP routing capabilities

**7210 SAS-K12 (ETR option)**
- 9 Gb/s (FD); 1RU; fanless, IP50
- 12 x 1GE, MACsec

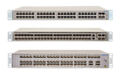
**7210 SAS-K5 (ETR option)**
- 5 Gb/s (FD); 1RU; fanless, IP50
- 5 x 1GE

**7210 SAS-K30 ETR**
- 30 Gb/s (FD); 2RU; fanless
- 3 x 10GE, 8 x 1GE, MACsec



**7210 SAS-Dxp (ETR option)**
- 30 Gb/s (FD); 1RU; fanless
- 2 x 10GE, 10 x 1GE

**7210 SAS-Dxp-16p and Dxp-24p (DIN rail and ETR)**
- Dxp-16p: 34 Gb/s (FD); 2 x 1/10GE, 4 x 1GE, 10 x 1GE with PoE/+/++/HPoE
- Dxp-24p: 42 Gb/s (FD); 2 x 1/10GE, 6 x 1GE, 16 x 1GE with PoE/+/++/HPoE; MACsec on 4 x 1GE



**7210 SAS-Sx and SAS-S 1/10GE**
- 64 or 88 Gb/s (FD); 1RU
- 24 or 48 1GE, 4 x 10GE, PoE/PoE+ option

**7210 SAS-Sx 10/100GE**
- 1.04 Tb/s (FD); 1.5RU
- 64 x 1GE or 10GE, 4 x 100GE

**7210 SAS-Mxp (ETR option)**
- 64 Gb/s (FD); 1.5RU
- 4 x 10GE, 24 x 1GE (2 with PoE/PoE+)

# Portfolio Building Blocks

## Nokia FP routing silicon

**FP5**
- 6 Tb/s half duplex (HD), fully programmable network processor brings high-performance, scale and feature richness for the most demanding IP edge and core applications
- Deterministic, ensures performance certainty at full scale for predictable,consistent performance under all network loads, capacities and services without compromise
- Silicon-based IP network security without performance impact: all platforms support DDoS mitigation and enhanced quantum-safe MACsec (ANYsec) line-rate cryptography

**FPcx**
- 5 Tb/s full duplex (FD), fully programmable network processor brings performance and feature-richness, optimized for IP access, aggregation and edge applications
- Deterministic, ensures performance certainty to deliver secure and assured services with granular SLA enforcement for a wide range of routing applications
- Silicon-based IP network security without performance impact: All platforms support DDoS mitigation, and enhanced quantum-safe MACsec (ANYsec) line-rate cryptography is offered on select platforms/MDAs

## Network operating systems

**SR OS**
- Proven, robust and highly reliable, supports the industry's most comprehensive suite of IP, MPLS and segment routing features
- Carrier-level scale and performance across all VPN and subscriber management services
- Advanced model-driven architecture and telemetry sensors at a high level of granularity
- Industry-leading non-stop services, routing and in-service software upgrade support

**SR Linux**
- Embraces cloud-native design principles with a Linux®-based, modular, microservices, state-sharing architecture
- Leverages proven SR OS protocol stacks and networking applications for a feature-rich, hardened, interoperable, and secure solution
- Advanced model-driven architecture and telemetry sensors at a high level of granularity
- Built for openness and raises the bar on customizability, offering a true app development platform

## Virtualized Service Router (VSR)

**VSR**
- Flexible, high-performance, virtualized IP router designed and optimized for cloud scaling in x86-based server environment
- Enables agile delivery of a wide range of SR OS IP routing and network applications, deployable as a virtual network function or container network function
- Allows simplified life-cycle management, operations and maintenance, ensuring uniform operational practices in hybrid network scenarios (i.e., when deployed along with physical network elements)

## Network Services Platform (NSP)

- A programmable, multivendor network automation platform across IP/MPLS, Ethernet, optical and microwave networks
- Abstracts network complexity by using intent-based networking following agile and DevOps best practices
- Powerful assurance and analytics capabilities using machine learning algorithms and automatic corrective actions
- Scalable network path control and optimization using real-time telemetry from network and closed-loop automation
- Automated cross-domain IP-optical coordination

## Deepfield Network Analytics and DDoS Security

- Petabyte-scale, AI/ML-driven big data applications for real-time, multidimensional network, service and subscriber insights
- Deepfield Cloud Genome® and Deepfield Secure Genome® data feeds for up-to-date internet content/applications/services and security context
- Deepfield Defender for fast and accurate DDoS detection, agile mitigation and managed security
- 7750 Defender Mitigation System: FP5-based, 2.8 Tb/s (FD) compact (3 RU) system with advanced countermeasures against all DDoS (volumetric, botnet, application layer)

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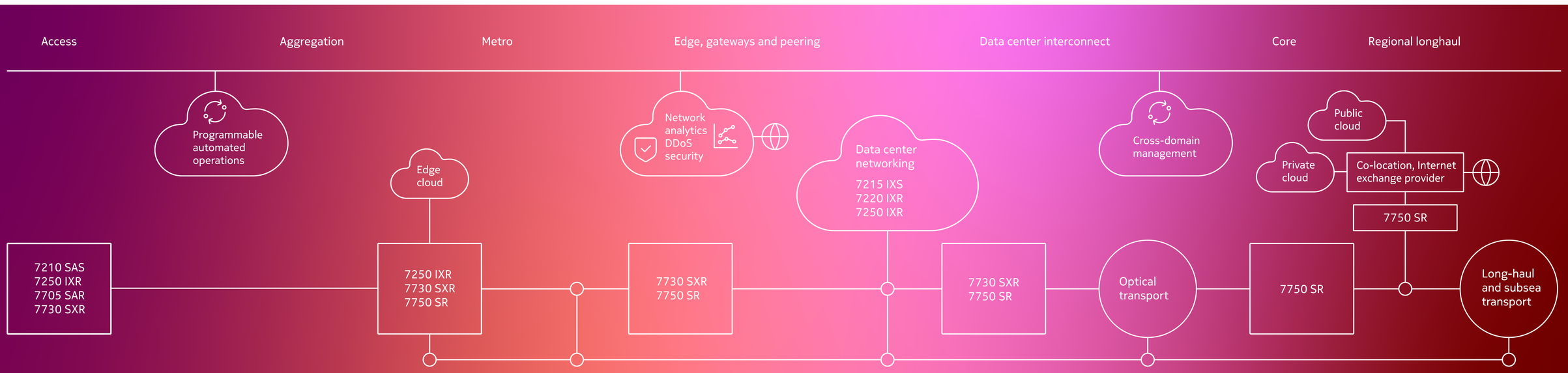
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