

A large, abstract graphic on the left side of the image consists of numerous thin, yellowish-gold lines that curve and overlap, creating a sense of depth and motion. These lines form a shape that tapers towards the bottom right.

# Open. Together.

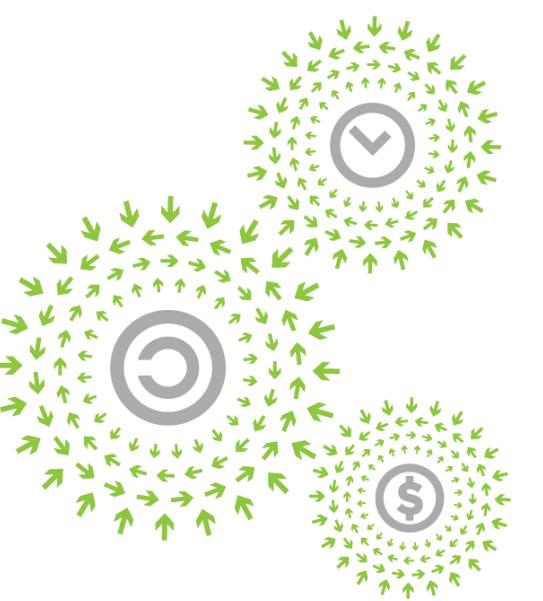


**OCP**  
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TELCO/Open edge

# Open edge server

Tomi Männikkö, HW architect, Nokia



**OPEN**  
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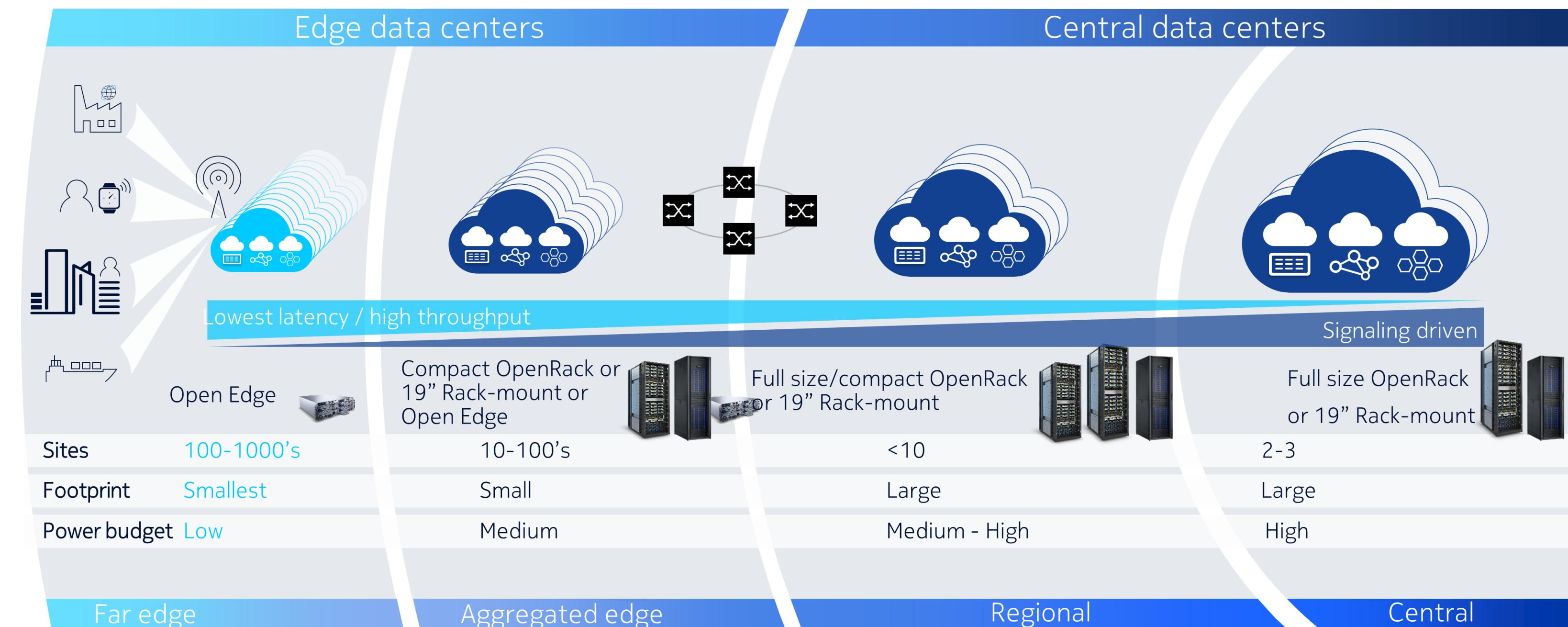


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# Open edge server key objectives

- Edge site requirements
  - Limited floor space -> small form factor
  - Varying thermal conditions -> extended temperature range
  - Varying types of power feed -> DC, AC, 3-phase, 1-phase with PDUs
  - Limited power feed capacity -> system scalability from one chassis to multiple racks

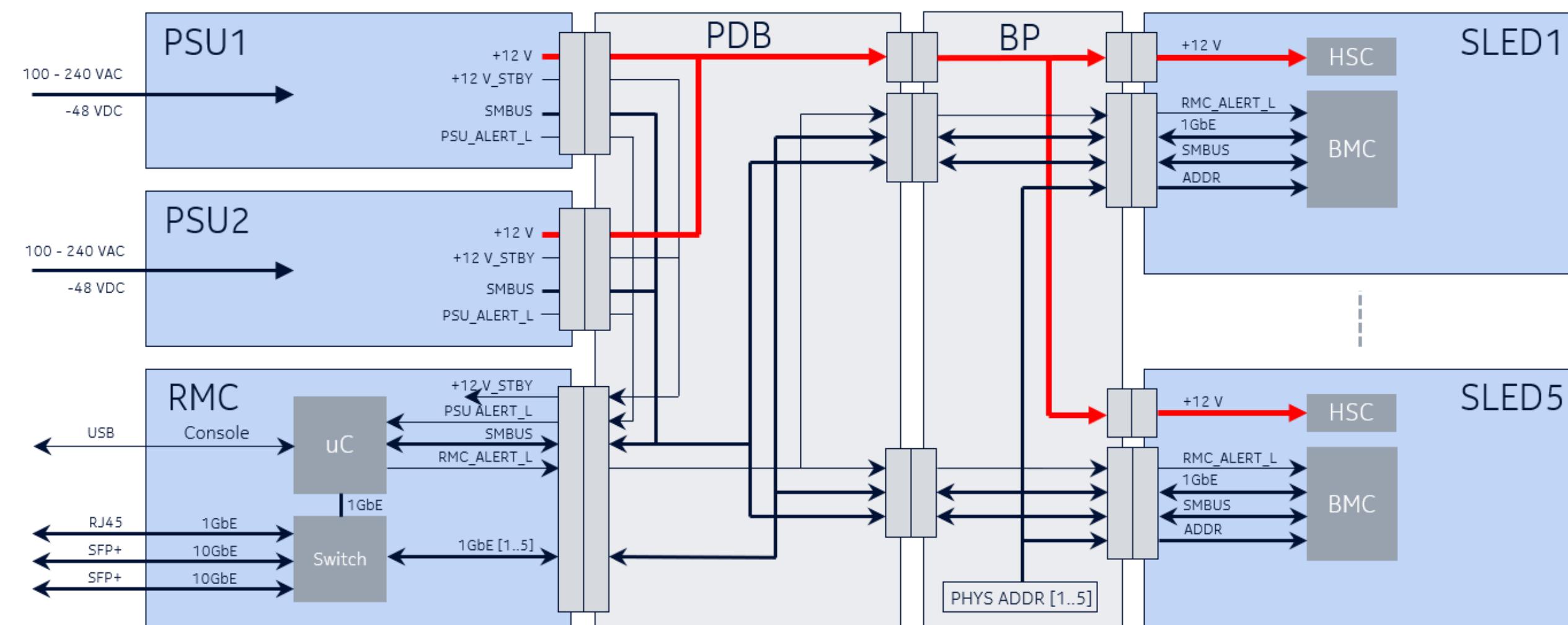
- Accelerator support (e.g. cRAN/ MEC)
- OCP design principles
  - Centralized power feed
  - Front access
  - Tool-less maintenance
  - Vanity free design



# Open edge chassis overview

## Key specifications

- 3U, 19" (EIA-310 compatible)
- 130.6 x 440 x 430 mm (H x W x D)
- 1U and 2U, half width sleds are supported
- Redundant, centralized power supply
  - 2000 W, AC and DC inputs supported
  - Sled power feed capacity 400 W (1U sled), 700 W (2U sled), 12 VDC
- Chassis management controller (RMC)
  - PSU management (control, sensors, ..)
  - Management Ethernet interface to sleds
    - 1 GE to all sleds via backplane
    - 1x 1 GE (RJ45) + 2x 10 GE (SFP+) front panel interface for external connectivity and chaining of multiple chassis
- Power distribution board and chassis backplane provide connectivity between RMC, sleds and PDUs



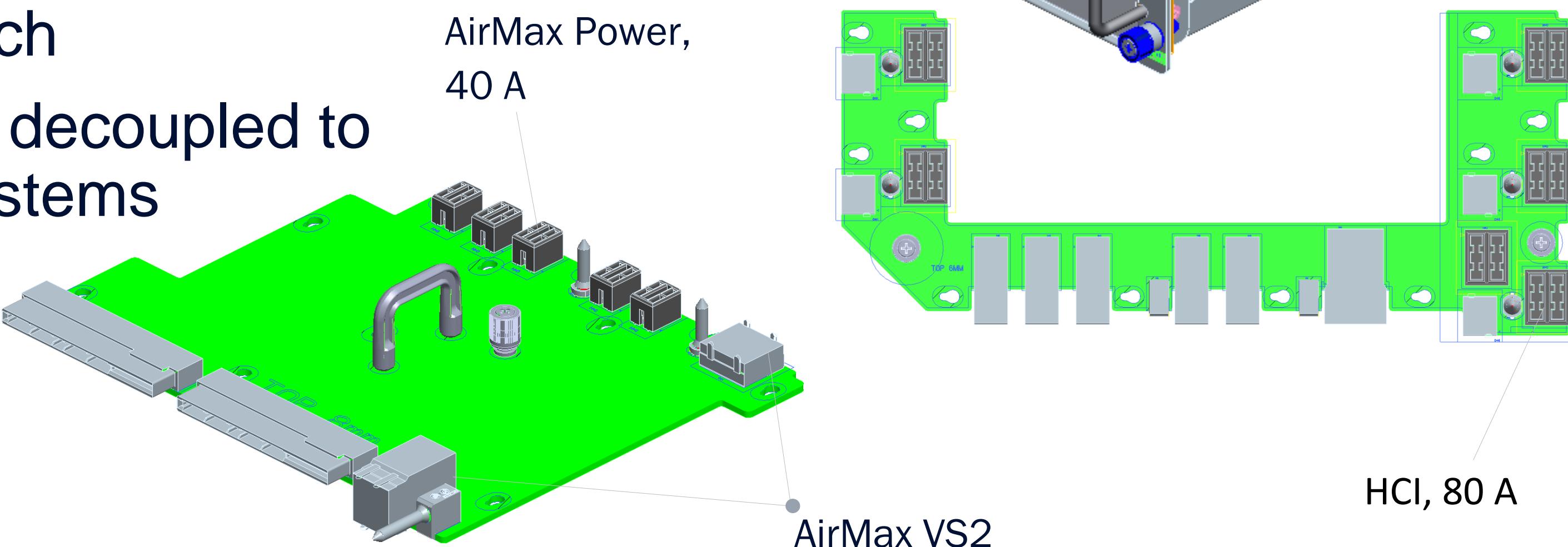
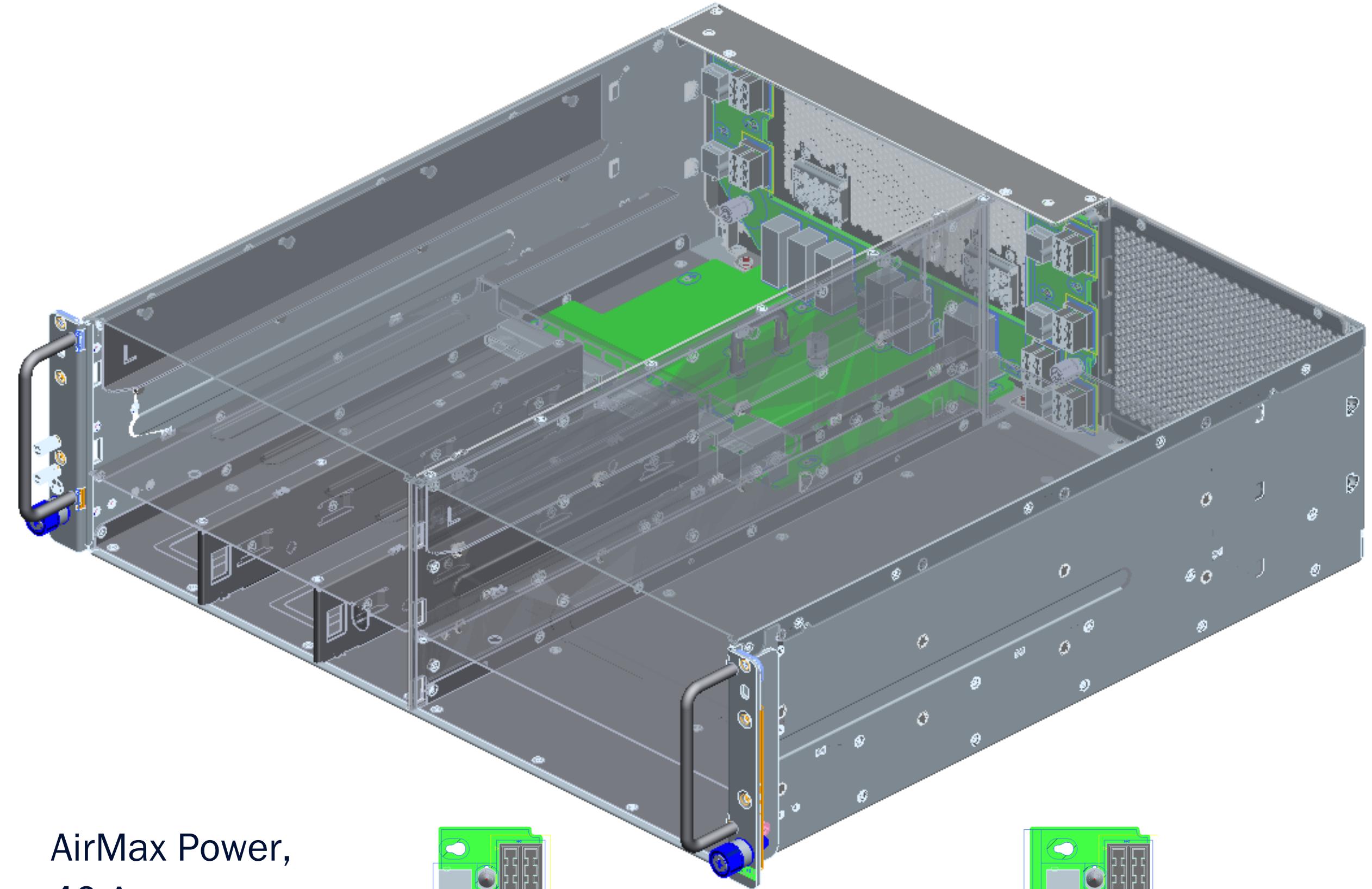
# Open edge chassis construction

Simple construction, few parts

- Steel enclosure
- Mounting brackets
- Backplane assembly
- Power distribution board
- Support brackets for 1U sleds, tool-less

No integrated user plane switch

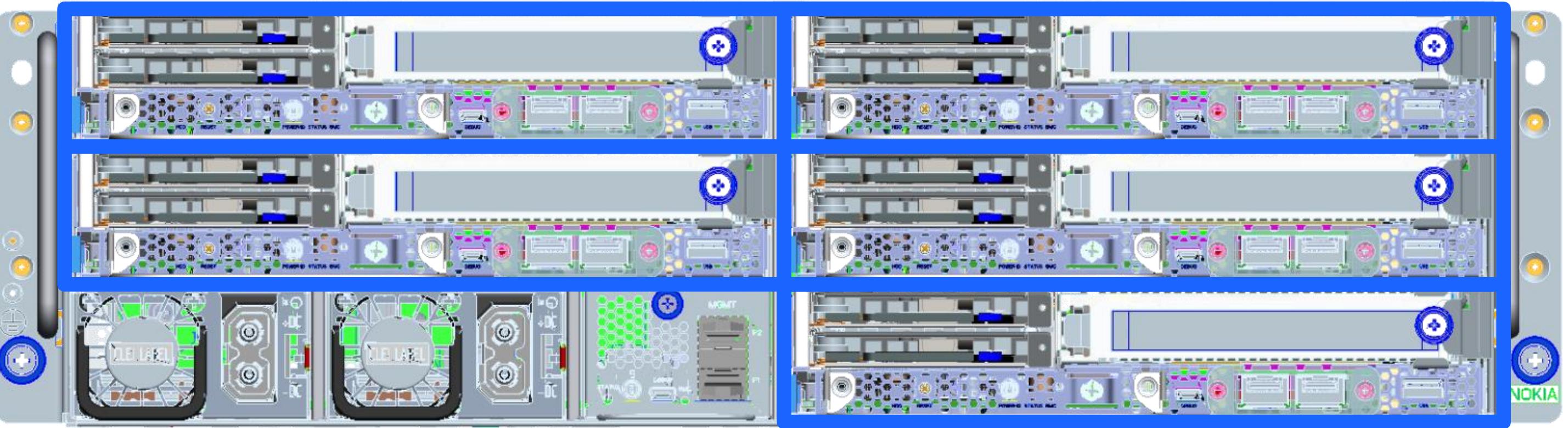
- Computing and networking decoupled to allow optimization of subsystems



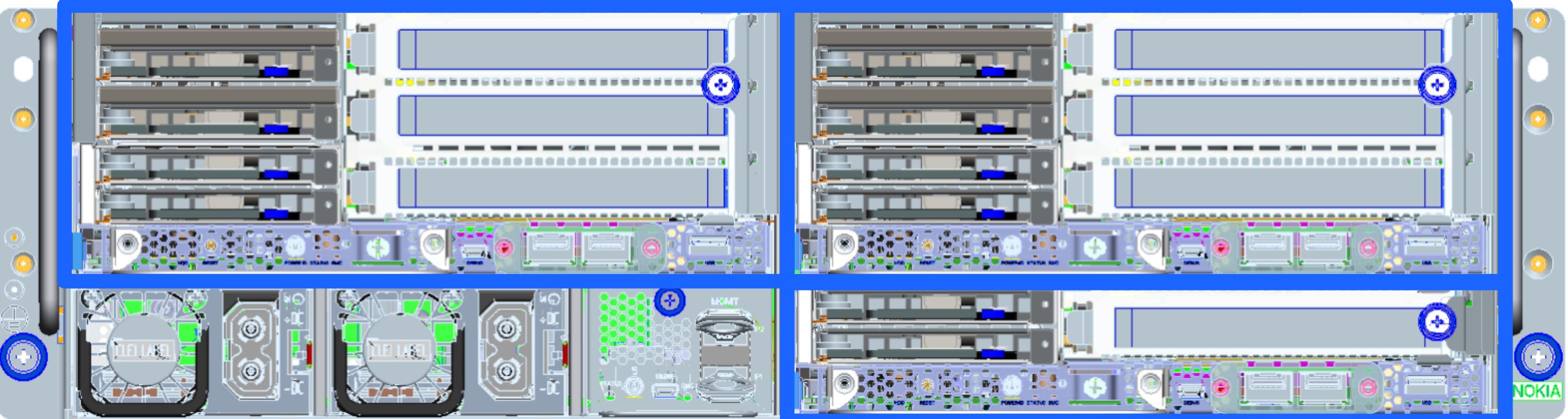
# 1U and 2U sleds are supported

- Open edge chassis allows flexible installation of both 1U and 2U sleds
- Supported configurations are
  - 5x 1U
  - 3x 1U + 1x 2U
  - 1x 1U + 2x 2U
- A support bracket for 1U sled is removed when installing a 2U sled (tool-less)

5x 1U



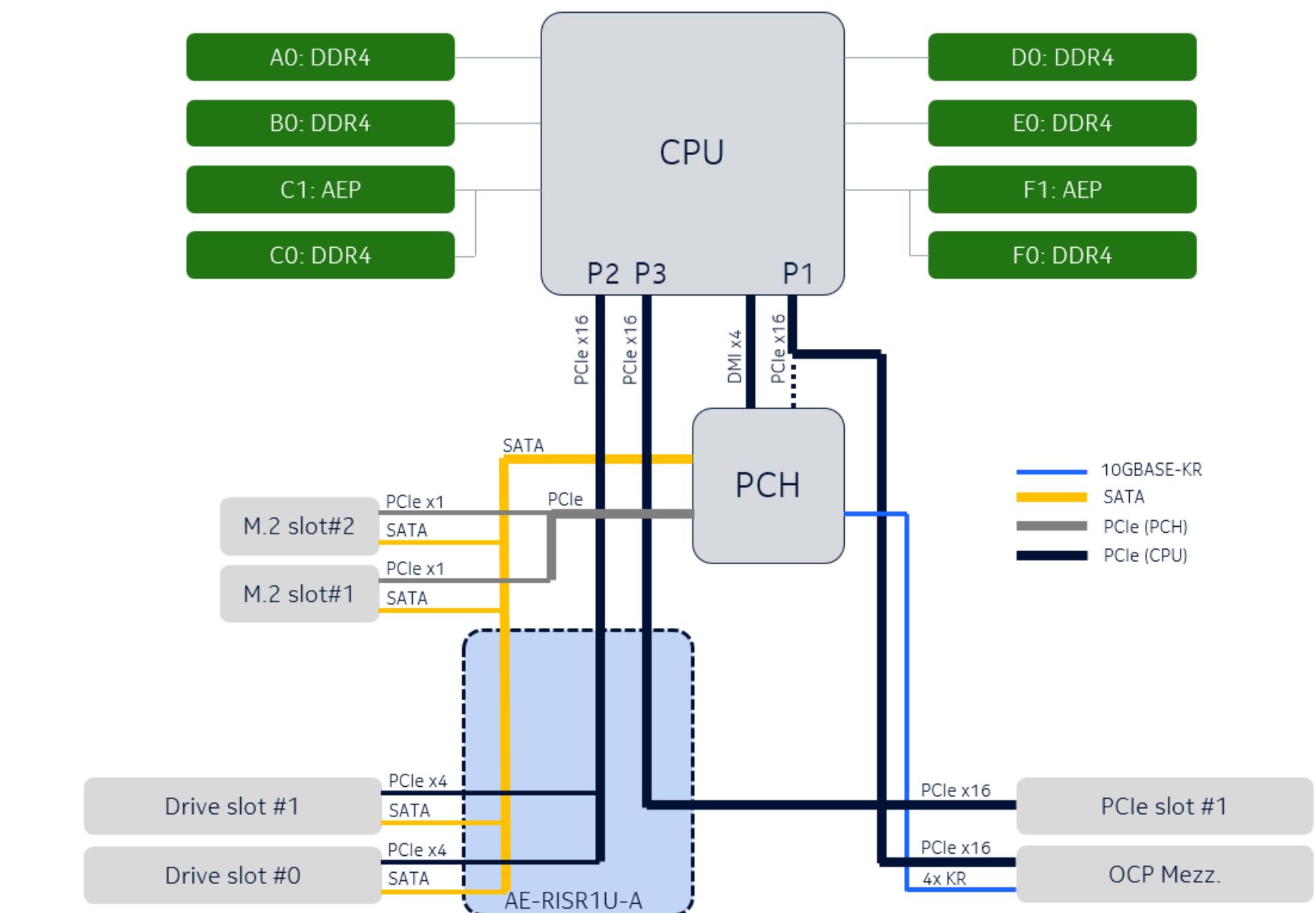
1x 1U + 2x 2U



# Server sled, 1U

## Key specifications

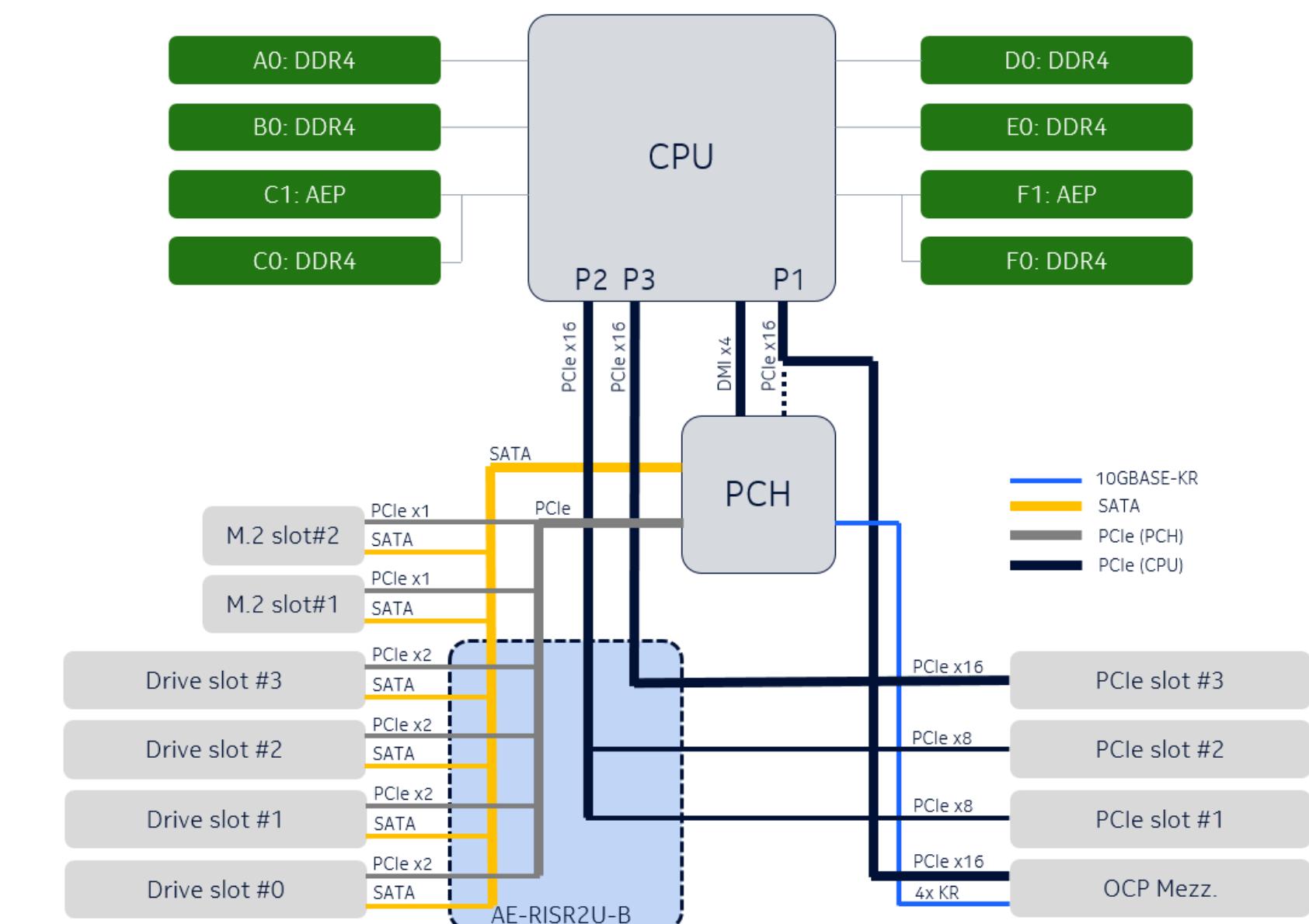
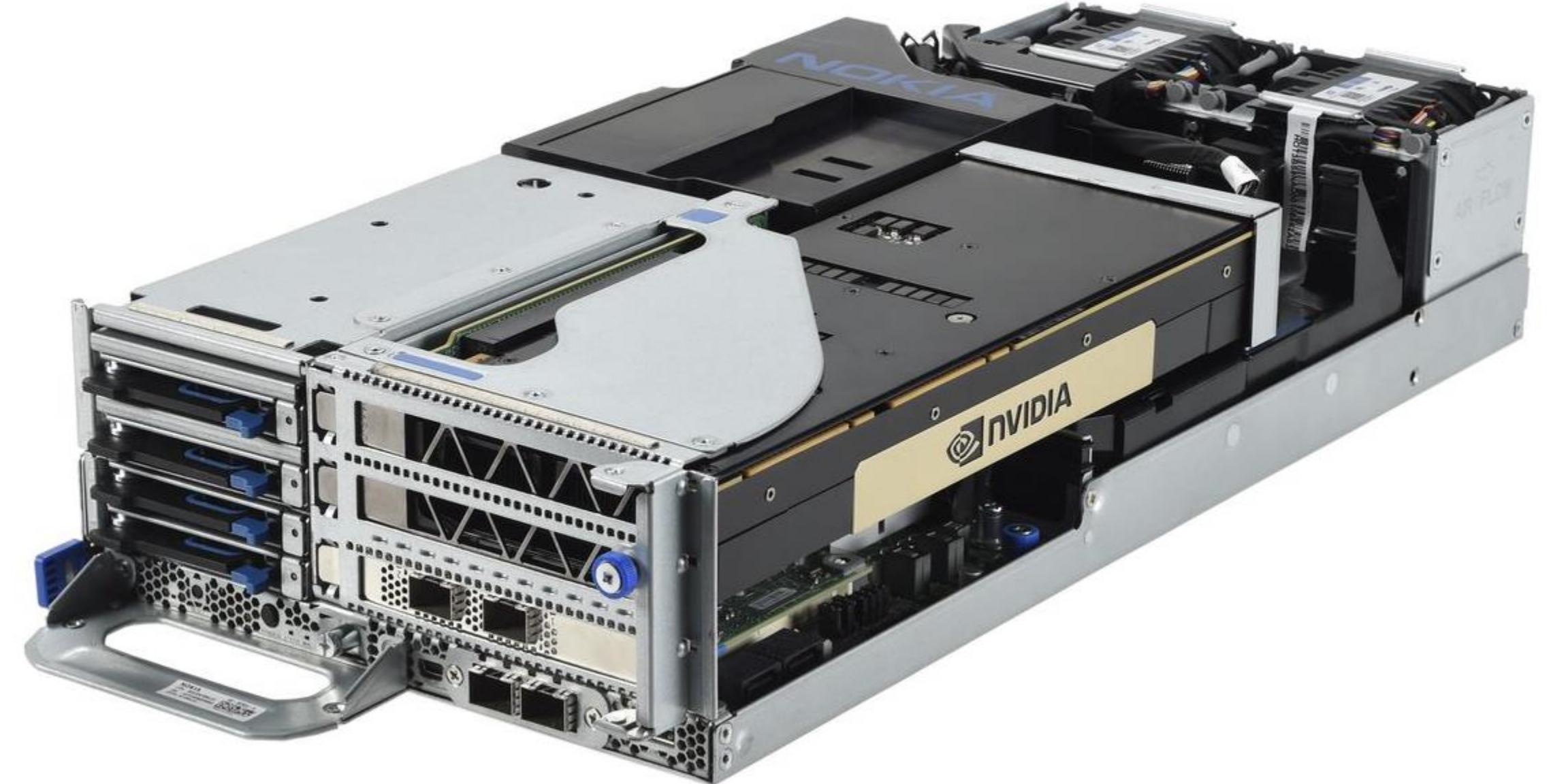
- 1U, half width
- 215 mm x 41 mm x 423 mm (W x H x D)
- Power consumption 400 W, max
- Single-socket CPU, Intel® Xeon® Scalable Family, Thermal Design Power (TDP): max. 205 W
- PCH options: Intel C621, C627 (with QAT)
- Memory: 6 x DDR4-2933 + 2 x Intel Optane
- Single riser for disks and add-in cards
- Extension slots
  - PCIe x16, FHHL, 75 W
  - OCP Mezzanine 2.0, PCIe x16
- Storage
  - 2 x hot-plug SSD, SATA/NVMe, 2.5 ", 7/9.5 mm
  - 2 x M.2 SSD, SATA/NVMe, 2280/22110



# Server sled, 2U

## Key specifications

- 2U, half width
- 215 mm x 83.6 mm x 423 mm (W x H x D)
- Power consumption 700 W, max
- Single-socket CPU, Intel® Xeon® Scalable Family, Thermal Design Power (TDP): max. 250 W
- PCH options: Intel C621, C627 (with QAT)
- Memory: 6 x DDR4-2933 + 2 x Intel Optane
- Single riser for disks and add-in cards
- Extension slots
  - 1 x PCIe x16, FHFL, dual-wide, 300 W max
  - 1-2 x PCIe x8, FHHL, 75 W max
  - OCP Mezzanine 2.0, PCIe x16
- Storage
  - 2 x hot-plug SSD, SATA/NVMe, 2.5 ", 7/9.5 mm
  - 2 x hot-plug SSD, SATA/NVMe, 2.5 ", 7/9.5/15 mm
  - 2 x M.2 SSD, SATA/NVMe, 2280/22110



# Key environmental and regulatory compliancy

## Operating conditions

- Operating temperature range: -5 C ...+45 C [ETSI EN300 019-1-3 Class 3.2]
- Short term operating temperature: -5 C to +55 C [GR-63-CORE]
- Operating humidity: 5 % to 95 %

## EMC

- EN300386 (v1.6.1)
- FCC CFR47 15 (class A), CISPR 22/32 (class A) CISPR 24
- TEC/EMI/TEL-001/01/FEB-09 and TEC/IR/SWN-2MB/07/MAR-10
- GR-1089-CORE, and more

## Safety

- IEC 62368-1:2014
- GR-1089-CORE (electrical safety, grounding and bonding)

## Seismic tolerance

- GR-63-CORE (Zone 4)

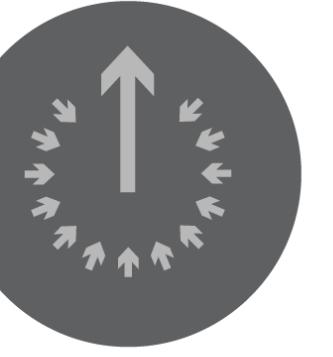
## Acoustic noise

- GR-63-CORE (equipment room criteria)

## Fire resistance

- GR-63-CORE (shelf level criteria)

# Product Info



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<https://www.nokia.com/networks/products/airframe-open-edge-server/>



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# Call to Action

- Please join regular Open edge calls (under Telco project)
- Specification available now



TELCO

Project Wiki with latest specification : <https://www.opencompute.org/wiki/Telcos/openEDGE>

Latest Open edge server specification :

<http://files.opencompute.org/oc/public.php?service=files&t=ada3b7aabae6f81ae73c00a30ea6fa5a&download>

Latest Open edge chassis specification:

<http://files.opencompute.org/oc/public.php?service=files&t=abb5eabb618abaa2f194aab9a1ebe922&download>

Mailing list: <https://ocp-all.groups.io/g/OCP-Open-Edge>



Specifications



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OCP Regional Summit  
26–27, September, 2019

