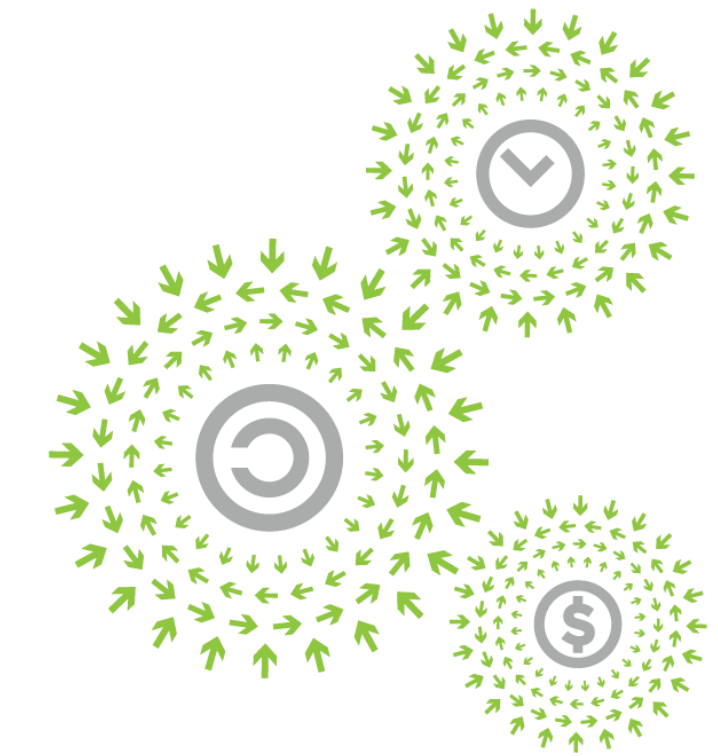Open. Together.

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Flex Helsinki,
2OU OpenRACK built for high-density,
high-reliability Telco cloud

Srini Gadgil,
Systems Architect
Flex Ltd

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Flex Helsinki Platform

Overview

The CT0245J is a 2OU rack-mount 45-drive JBOD designed for high-density, high-reliability Telco cloud applications
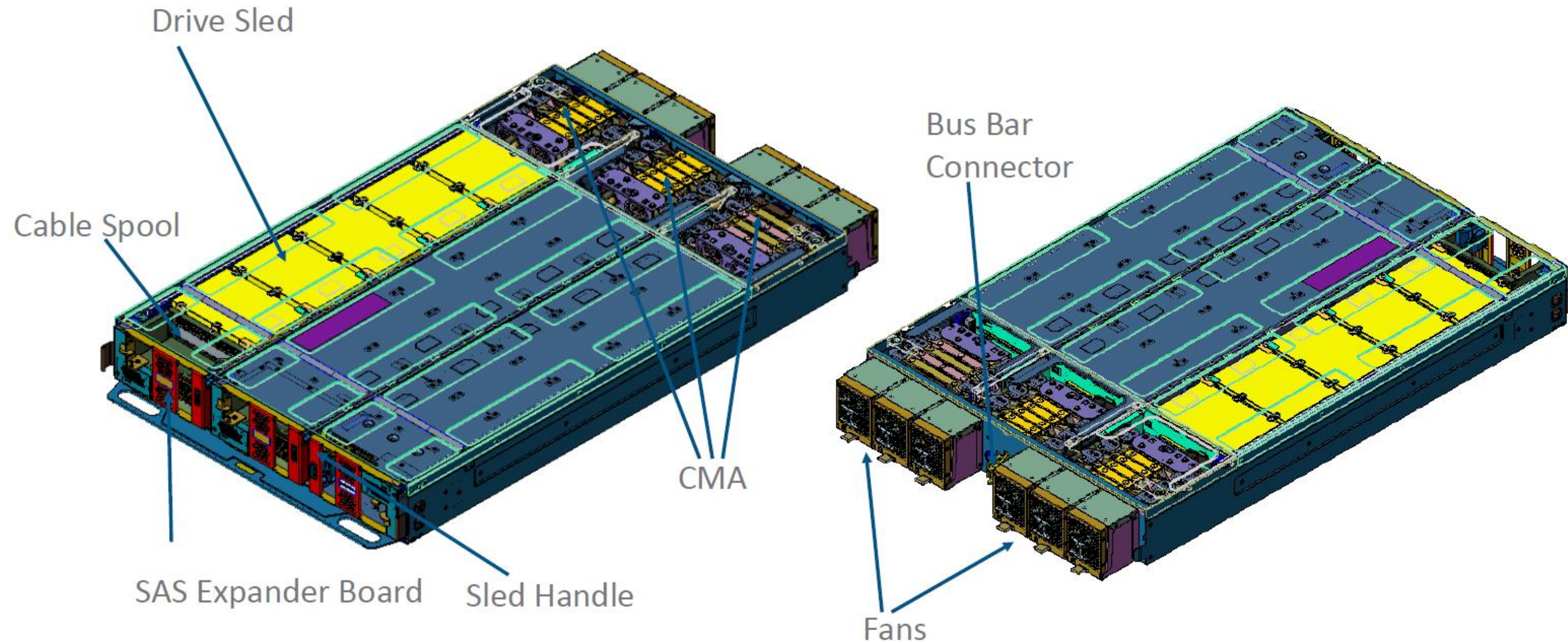
- 12Gb SAS drive mid-plane
- Supports both 3.5" and 2.5" drives, SAS/SATA HDDs and SSDs
- Supports hot-plugging of drives
- Compliance with key GR-63-CORE chapters
- Each of the three drive sleds contains its own cable management arm (CMA)
- Removable fans at the rear of the chassis
- Chassis powered from a shared 12 VDC bus bar at the rear
- All data cables are accessible from the front of the chassis

Benefits

- Highest storage density compared to shipping systems – fewer JBODs needed
- Ease of maintenance and servicing – Hot Plug drives, Hot-plug fans, embedded CMA, tool-less sled detach
- Deployable in Telco cloud data centers and not just typical data centers

Storage

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Helsinki 20U Components

Drive Sled

Cable Spool

Bus Bar
Connector

CMA

SAS Expander Board

Sled Handle

Fans

Helsinki Platform Features

Form Factor	2 OU (Open Rack) – Compatible with ORv2 Cubby sub-chassis
Drives	(45) 3.5" and 2.5" SAS/SATA hot-pluggable HDDs/SSDs in three sleds with 15 drives/sled
Dimensions (D x W x G)	801 mm (excluding fans) x 537 mm x 93.2mm
Fans	(6) Single of Dual rotor 60 mm hot –swappable
Cascade Mode	Supported
Expander Module	(3) 12Gb SAS based modules
External Ports	(2) Mini-SAS HD per Expander module
Manageability	Via SES-2
LED Indicators/Expanded Module	System Power, System Fault
Buttons/Expander Module	Power, Reset, UID with LED
Mid-plane	Drive mid-planes in each sled connected to dedicated Expander module
Power	Single 12V DC bus-bar connection
Operating Temperature	Up to 40 degrees Celsius
Weight	Wo/ HDD – 77 Lbs, w/ HDD – 141.5 Lbs (10TB)
Mounting Rails	Fixed

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Helsinki 2OU Components

OCP Principles

- **Efficiency** – Highest storage density 2OU JBOD amongst systems. 45 LFF drives versus 28/30. Results in fewer JBODs needed due to 33% more in the same rack space.

- **Scale** – Supports cascading of drive sleds within the chassis as well as cascading of multiple chassis to closely match performance and capacity requirements of workload/application.

- **Openness** – Design specification submitted.

- **Impact** – Very first Telco compliant 2OU 21" JBOD. Standards like ANSI T1.307-2007 and the requirements specified in GR-63-CORE chapter 4.2.3, fire spread criteria specified in GR-63-CORE chapter 4.2.2.2 among others. EMI shielding in front.

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Agency Certifications

Region/Country	Type	Certification
Europe	EMC	EN300386, V1.6.1
Europe	Safety	EN60950-1: 2006 + A2:2013
International	Safety	IEC 60950-1 with deviations for Australia, Denmark, Germany, Great Britain (BSI), Finland, Japan, Sweden, Norway, USA and Canada
USA	EMC	CFR 47, FCC 15, class A
International	EMC	CISPR 22 Class A and CISPR 24
India	EMC	TEC/EMI/TEL-001/01/FEB-09 and TEC/IR/SWN- 2MB/07/MAR-10

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Call to Action

Ordering Information:

Model	SKU	Comment
L6 w/ (45) 3.5" Carriers	CT0245J-3	Blanks in drive slots. Expanders populated
L6 w/ (45) 2.5" Carriers	CT0245J-2	Blanks in drive slots. Expanders populated

Where to buy:

https://flex.com/expertise/cloud-solutions/data-center-compute-and-storage

Project Wiki with latest specification :

https://www.opencompute.org/contributions?refinementList%5Bcontributor%5D%5B0%5D=Flex&page=1&configure%5BfacetFilters%5D%5B0%5D=archived%3Afalse

FRUs		Flex Part Number
3.5 – Inch Drive Carrier	Bulk Pack	MP-00032677-000
	Single Pack	MP-00032677-001
2.5 0 Inch Drive Carrier	Bulk Pack	MP-00032678-000
	Single Pack	MP-00032678-001
FAN	Single Pack	MP-00032914-000
SAS Expander	Single Pack	MP-00032915-000

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