Common Europe Congress 2026

IBM Power11 Servers

June 2026

IBM Power servers

Scalable and flexible

Up to 256 cores

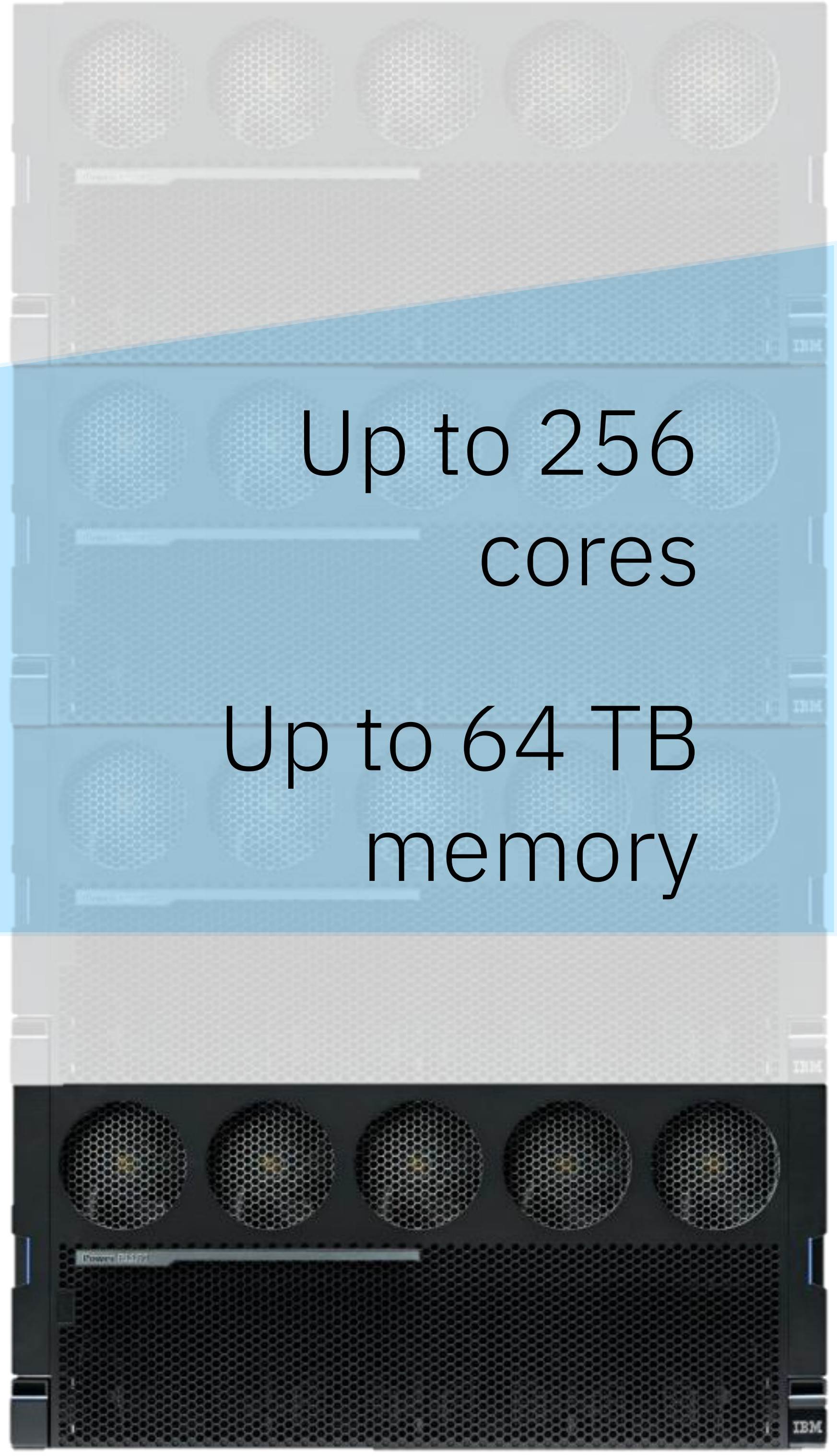
Up to 64 TB memory

S1012

S1122/L1122

S1124/L1124

E1150



E1180

Virtualisation built in to every system (PowerVM)

IBM Power servers

Enterprise servers

Scalable and flexible

Up to 256 cores

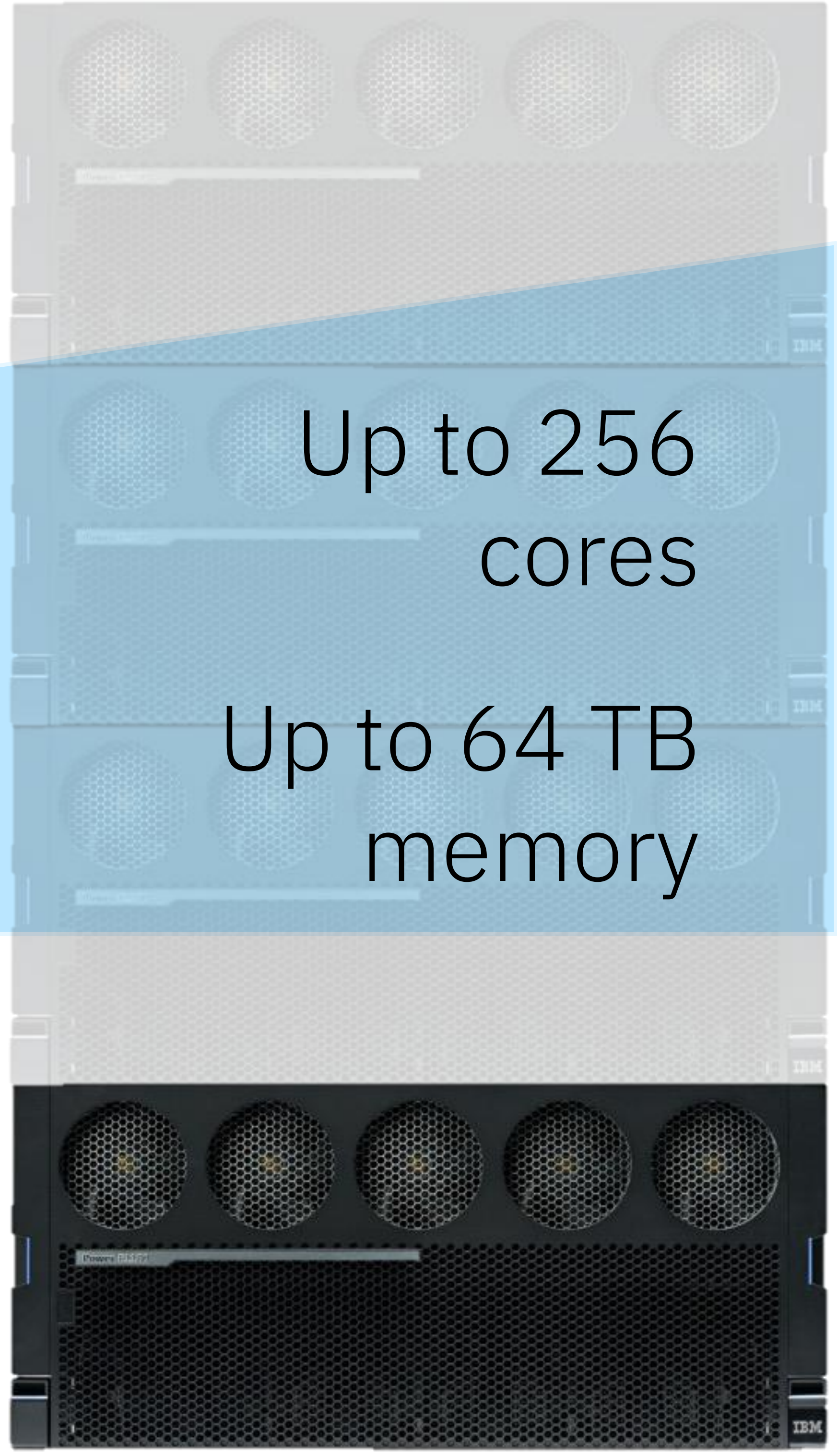
Up to 64 TB memory

S1012

S1122/L1122

S1124/L1124

E1150



E1180

Virtualisation built in to every system (PowerVM)

IBM Power servers

Scale out servers

Scalable and flexible

Up to 256 cores

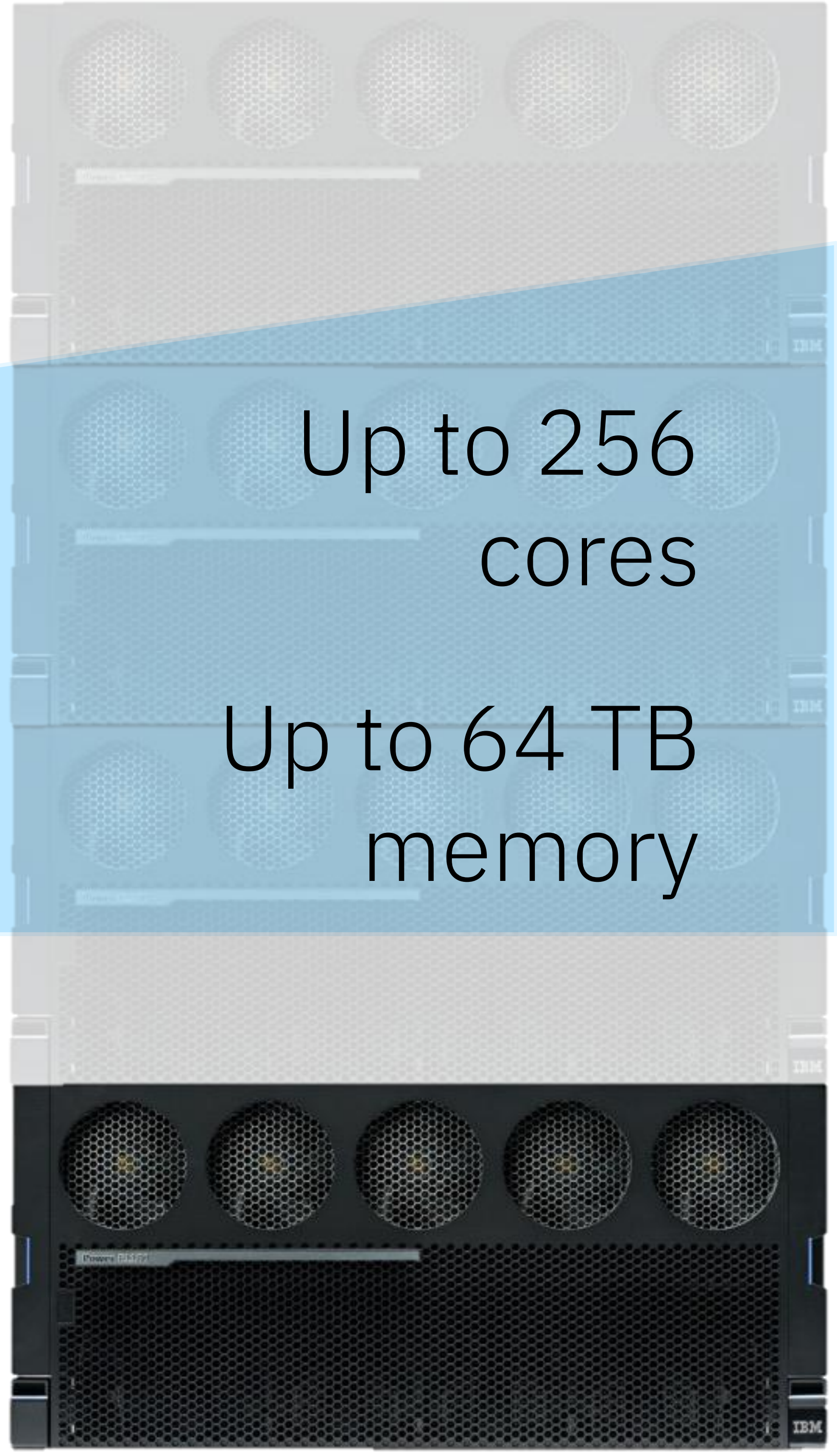
Up to 64 TB memory

S1012

S1122/L1122

S1124/L1124

E1150



E1180

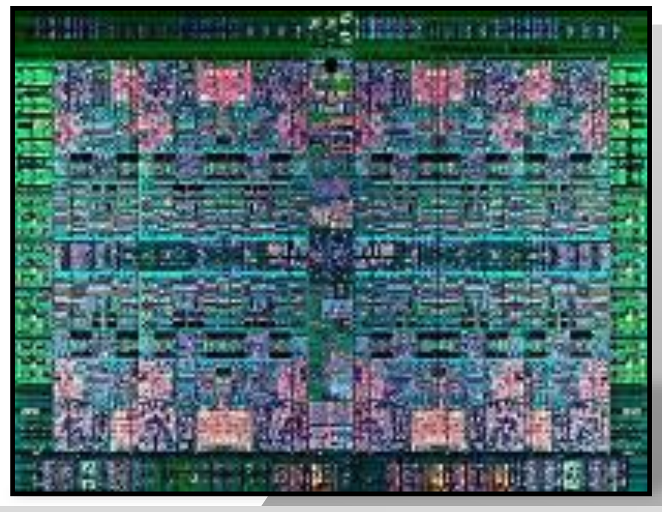
Virtualisation built in to every system (PowerVM)

Power11 Processor

IBM Power Processor Roadmap

Continuous platform innovation and leadership

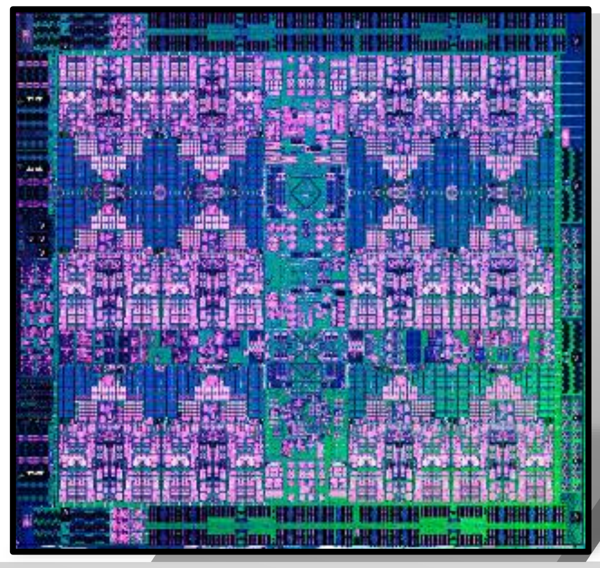
POWER8®



Powerful SMT8 Core
Enterprise Scaling

Big Data Optimized
Agnostic Memory

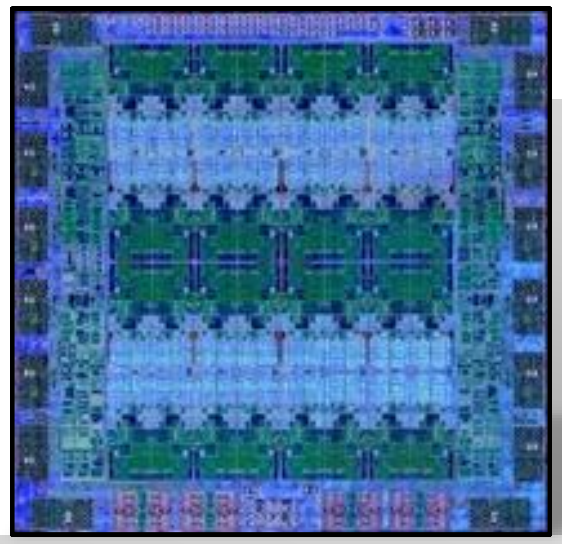
POWER9



Modular Core Design
Accelerator Attach
(NVlink, OpenCAPI)

Data Plane Bandwidth
DDR & CDIMM Memory

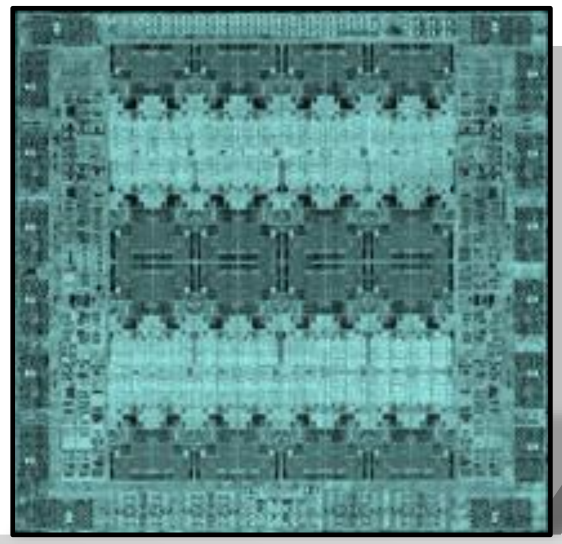
Power10



Core / Thread Strength
Socket Performance
In-Core AI Acceleration

Efficiency / Sustainability
HW Accelerated Security

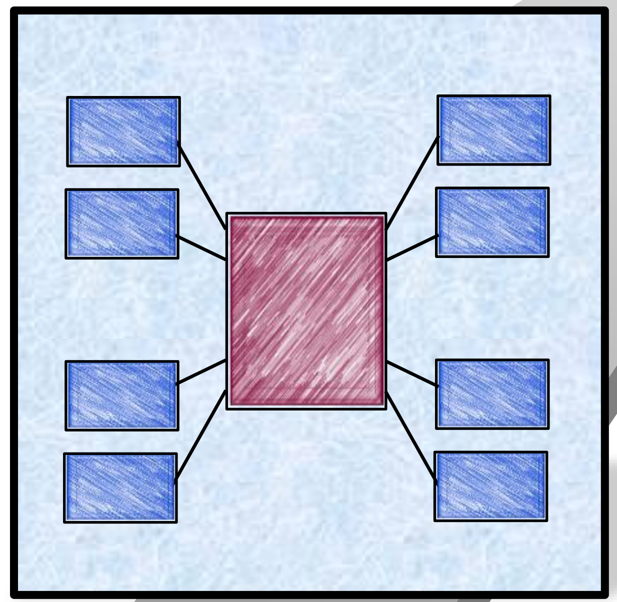
Power11



Core / Thread Strength
Socket Performance
Enterprise Scaling

Energy Optimization
Improved up-time
Full Breadth AI

Power Future



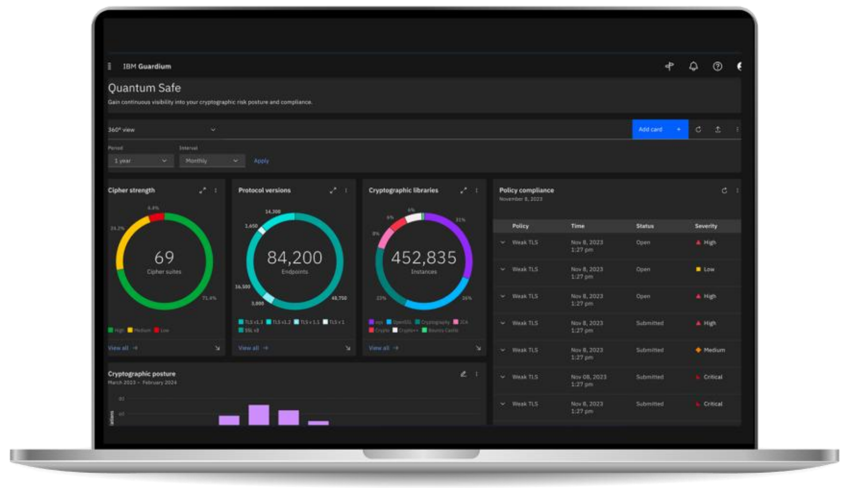
(Under development)

IBM Power11: Full stack innovation and optimization

AI Acceleration

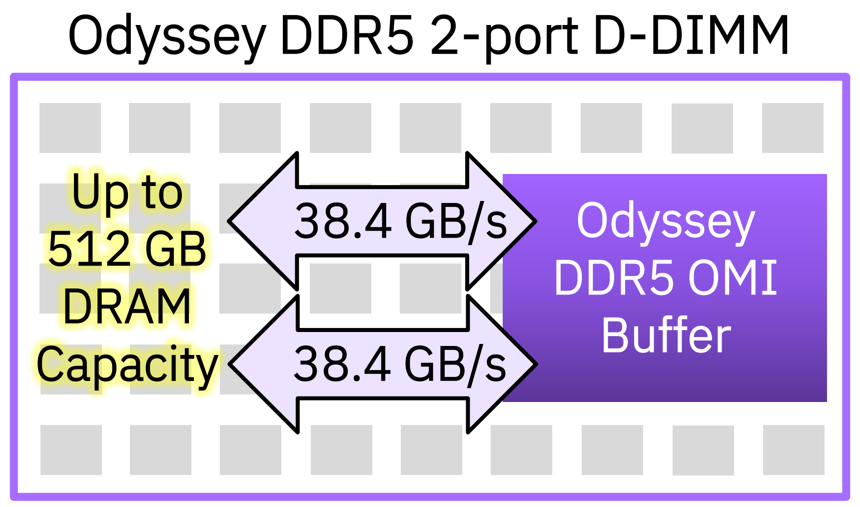
MMA
IBM Spyre Accelerator
Optimized for Inference

Platform Capabilities



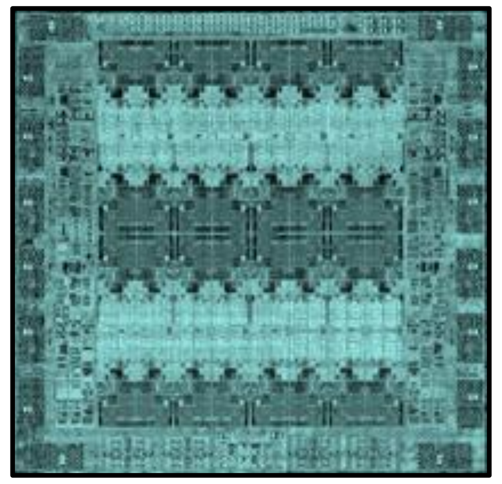
Uptime, Energy Management,
Quantum-safe security

Memory Architecture
Energy / Thermal Infrastructure


Odyssey DDR5 2-port D-DIMM

Agnostic, 3x Pipes, 2x Capacity
Advanced Cooling Technology

Processor Architecture
Socket-level Packaging
Semiconductor Technology



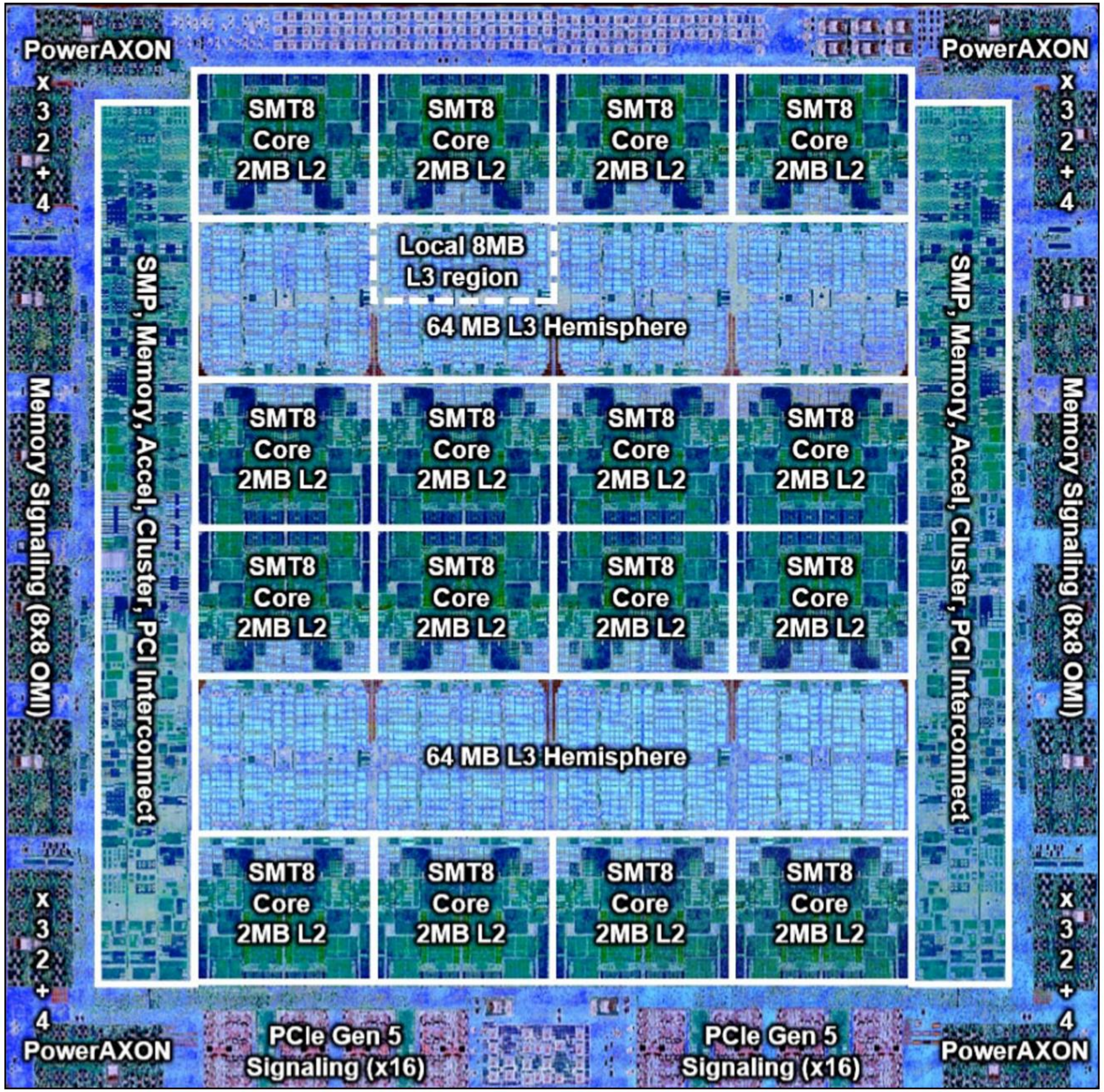
Improved Thread, Core, Capacity

2.5D Stacking: Energy Optimization
Samsung Foundries Enhanced 7nm

Power11 processor

Per chip:

- Up to 16 SMT8 cores
- Spare cores available for added resilience
- 128 MB shared L3 cache
  (two 64 MB hemispheres)
- Open Memory Interface (OMI) connections
- 8 x 8-channel connections to memory
- Flexible support for DDR4 / DDR5 and other
- Native PCIe Gen5 connectivity

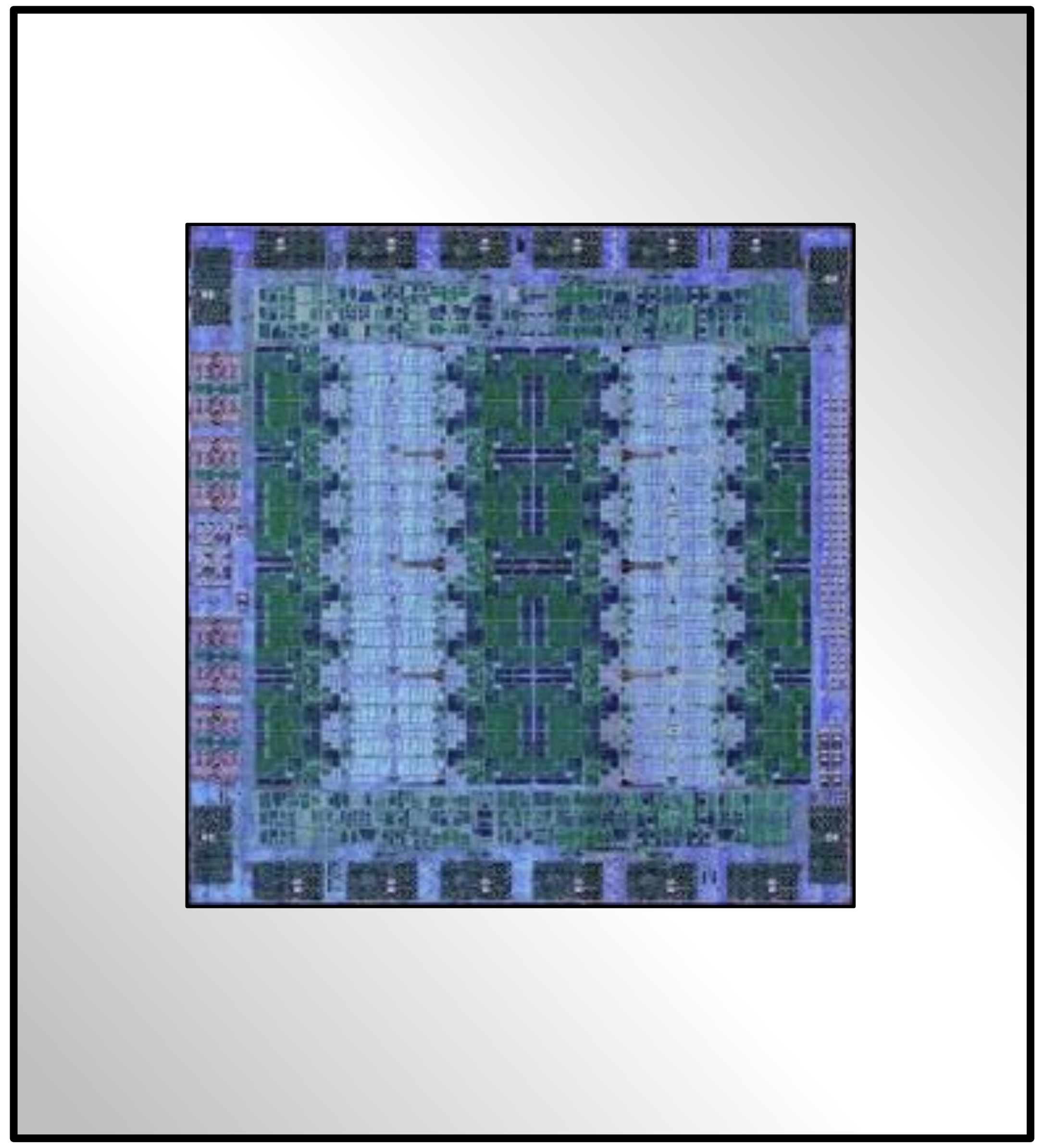


Power11 processor

Single Chip Modules (SCM)

- Greater core performance (clock speed)
- Maximises connectivity to other modules
- Delivers native PCIe bandwidth
- Focus on Enterprise grade performance and scalability within a system

Used in the E1180 server to maximise core performance and scalability

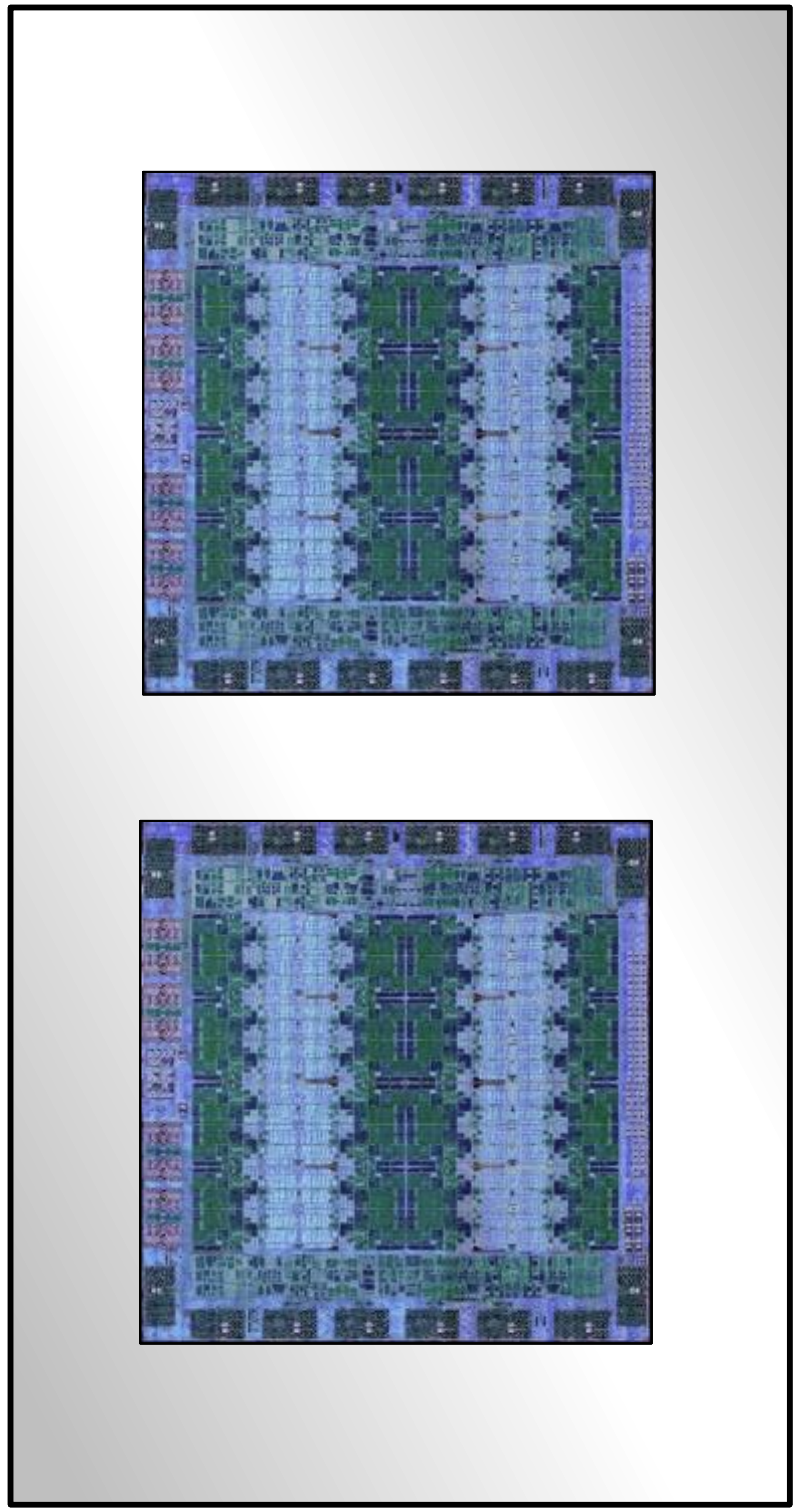


Power11 processor

Dual-Chip Modules (DCM)

- Greater core density and throughput
- Doubles the available memory bandwidth
- Doubles the PCIe Gen 5 bandwidth
- Doubles the SMP bandwidth between sockets in a server

Used in the E1150, S1122, L1122, S1124, and L1124 servers to maximise throughput

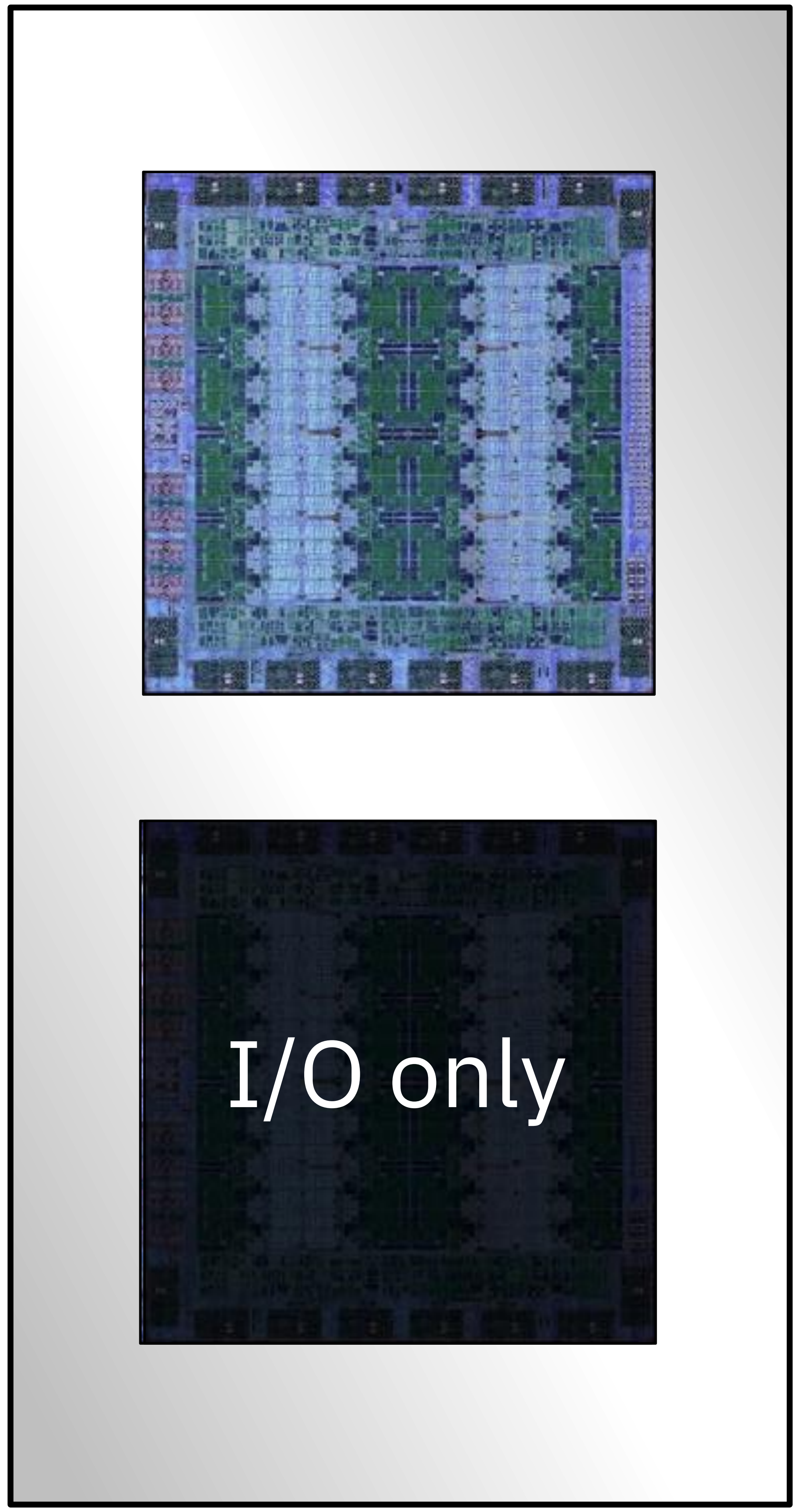


Power11 processor

Entry Single-Chip Modules (eSCM)

- ‘Special’ Power11 chip included with:
  - zero active cores
  - zero memory access
  - all PCIe connectivity

Used only in the S1122 server to deliver a cost effective option for small scale workloads



Memory

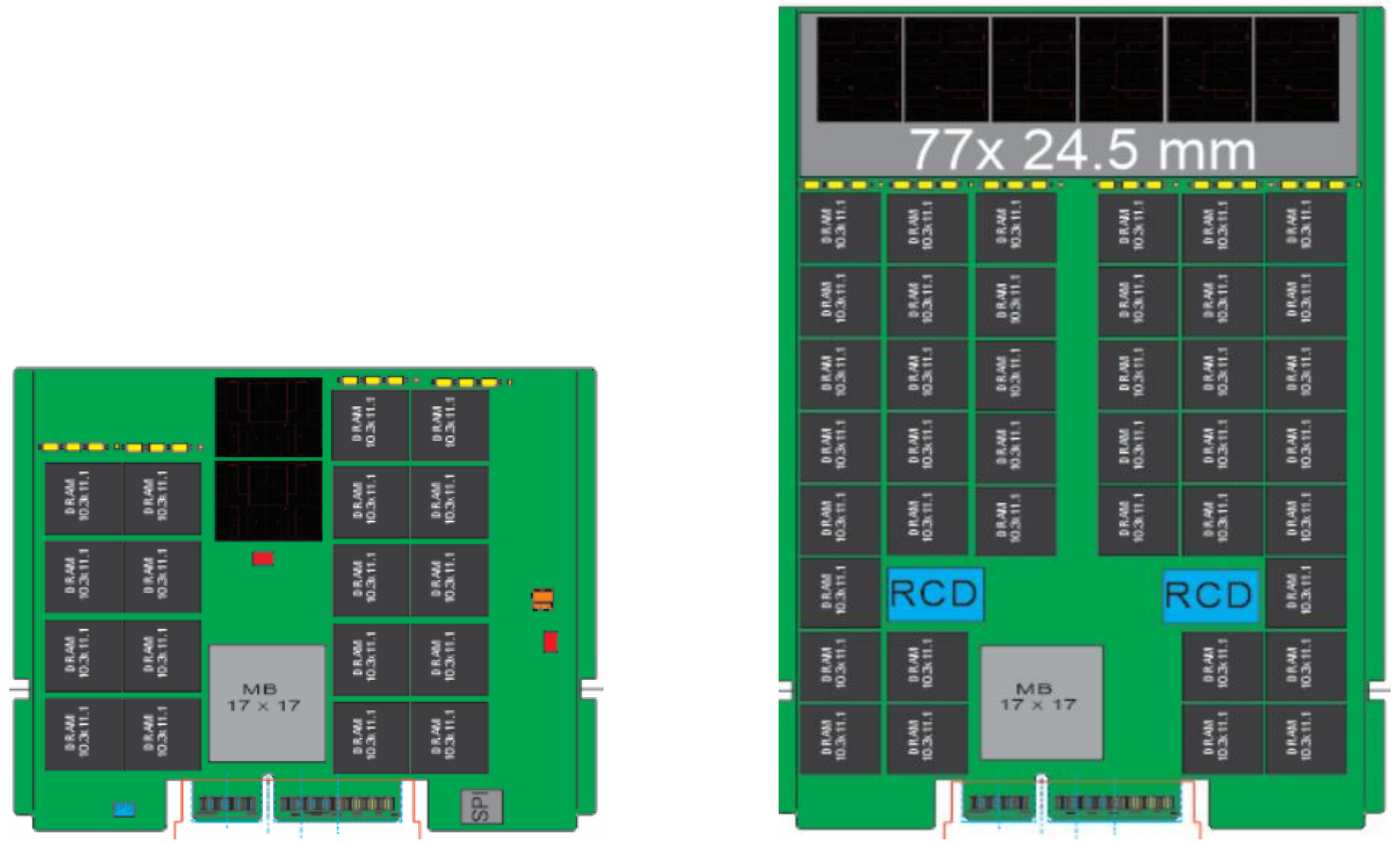
New Power11 memory technologies

Enhanced Differential DIMM (DDIMM) technology with DDR5 memory

Compatible with previous generation Power10 systems too, but Power11 delivers greater performance

Faster Open Memory Interface (OMI)

Provides greater bandwidth and flexibility for future memory technologies



New DDR5 Buffer Chip

Adds 2nd DRAM port to provide up to 1.5x higher mixed read/write bandwidth than DDR4 design.

Faster memory support on E1080 - up to 1.36x memory speed, provides up to 2x mixed read/write bandwidth

15% Improvement in load latency (workload stability under extreme load)

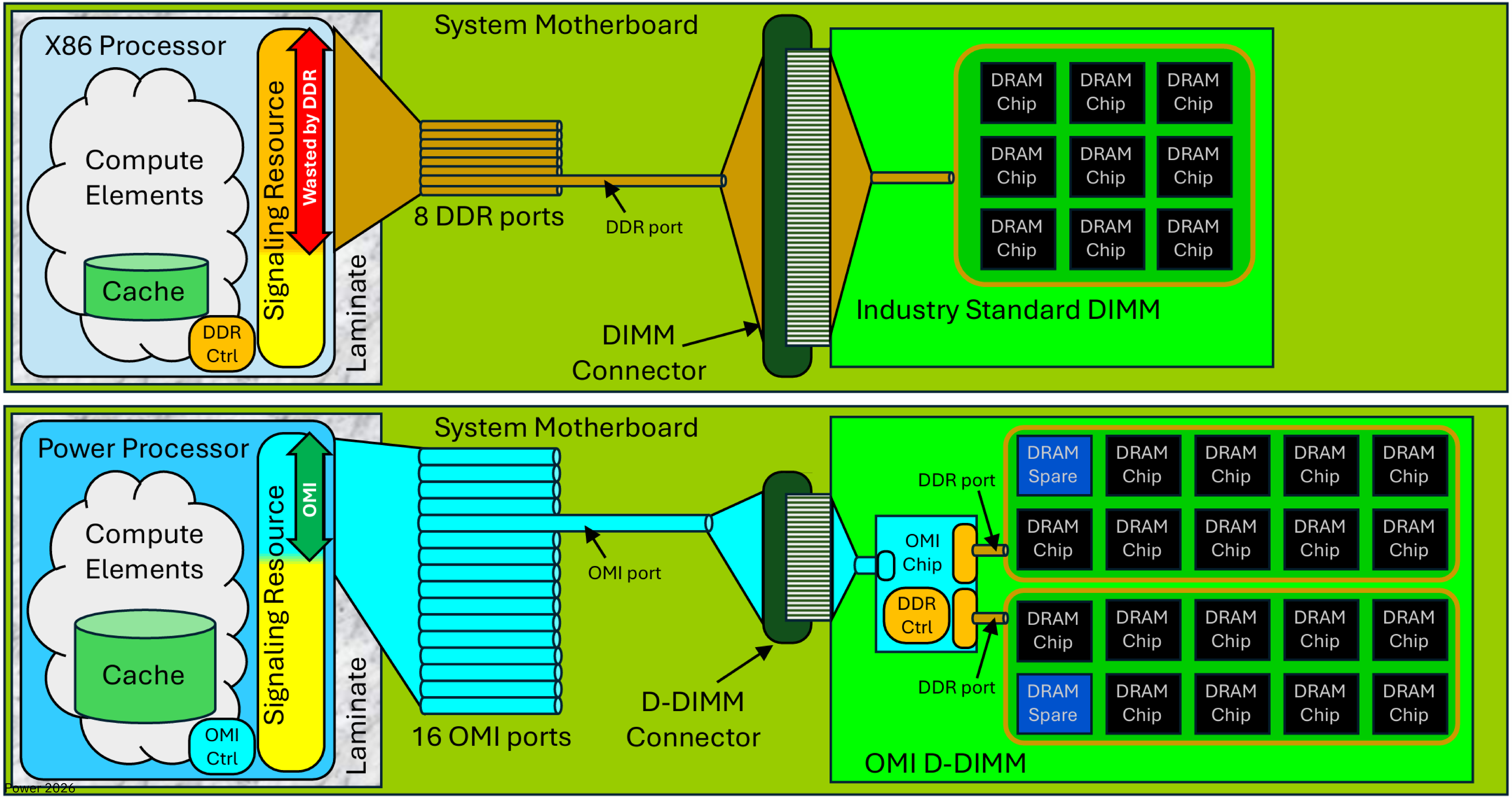
The new cost-effective DDIMM design reduces reliance on expensive DRAM stacking technologies for memory-rich configurations.

32 DRAM ports per socket, compared to 8 to 12 for x86 - Better memory capacity for demanding workloads such as in-memory databases and analytics.

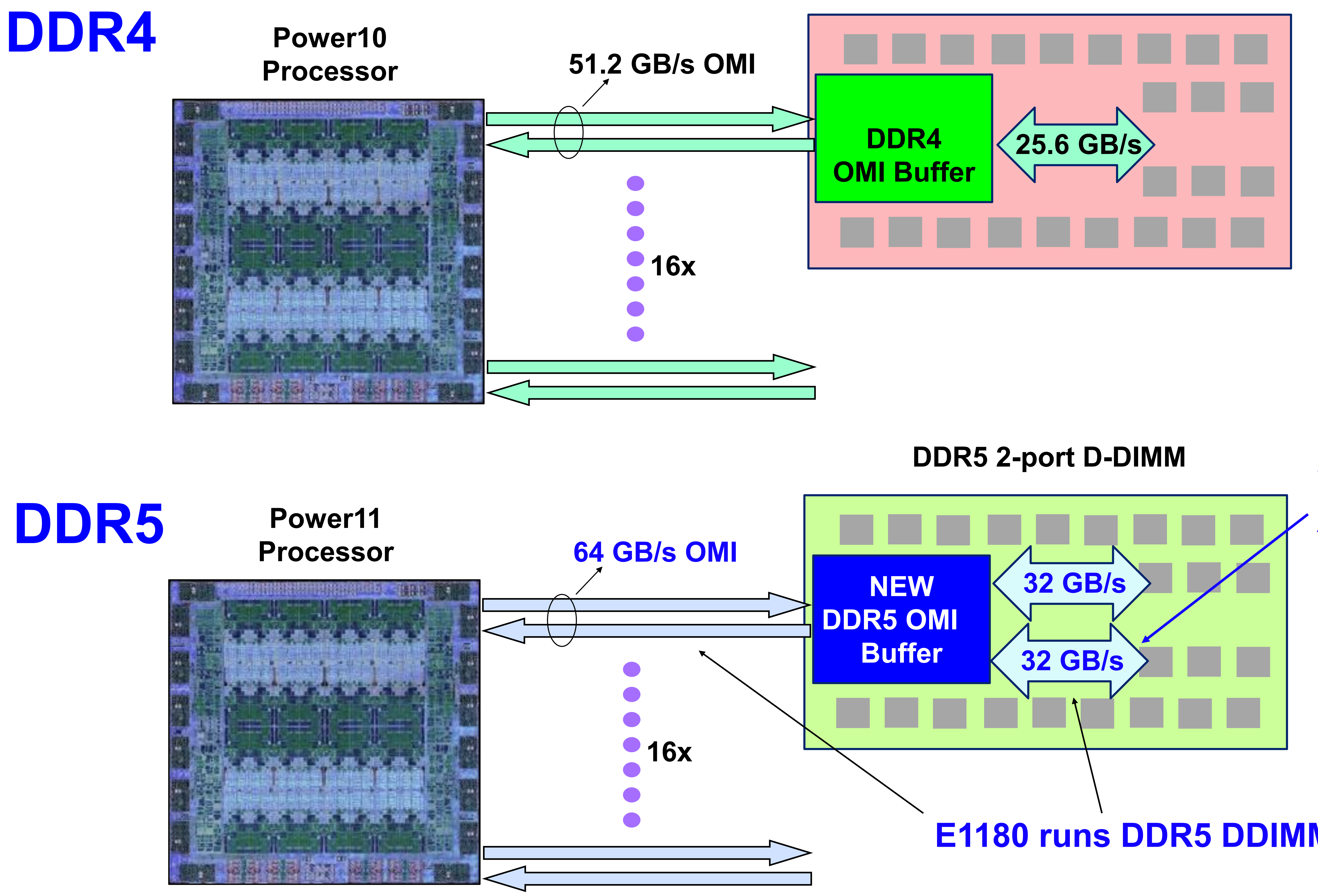
2x better memory RAS than standard DIMMs thanks to Chipkill technology and advanced ECC protection - plus spare DRAM

Automatic memory encryption without additional configuration management and without performance impact

Advantages of Power's OMI Memory Architecture



Power11 - New OMI DDR5 memory buffer



2nd DRAM port added to the buffer chip

Allows simultaneous reads/writes

50% increase in total bandwidth for mixed read and write traffic

Reduce loading latency by up to 15%

E1180 runs DDR5 DDIMMs 25-36% faster.

Enhanced Memory Speeds for Power11

E1080

DDR4 @ 3200 / 2933 MHz
DDR5 @ 4000MHz

Up to 50% Increase for DDR5 Memory
Up to 80% Increase from DDR4 Memory

E1050

DDR4 @ 3200 / 2933 MHz
DDR5 @ 3200 MHz

E1150: DDR5 @ 4000 MHz

S1024

DDR4 @ 3200 / 2933 MHz
DDR5 @ 3200 MHz

S1124: DDR5 @ 4800 / 4000 MHz

S1022

DDR4 @ 3200 / 2666 MHz
DDR5 @ 3200 MHz

S1122: DDR5 @ 4800 MHz

Enhanced Memory Speeds for Power11

E1080

DDR4 @ 3200 / 2933 MHz
DDR5 @ 4000MHz

Up to 50% Increase for DDR5 Memory
Up to 80% Increase from DDR4 Memory

E1050

DDR4 @ 3200 / 2933 MHz
DDR5 @ 3200 MHz

E1150: DDR5 @ 4000 MHz

Enhanced Memory Speeds for Power11

S1024

DDR4 @ 3200 / 2933 MHz
DDR5 @ 3200 MHz

S1124: DDR5 @ 4800 / 4000 MHz

S1022

DDR4 @ 3200 / 2666 MHz
DDR5 @ 3200 MHz

S1122: DDR5 @ 4800 MHz

Commercial options

Traditional purchase

Up-front Capex spend
On-premises deployment
Customer / Partner managed

Usage based model

Blended Capex / Opex spend
On-premises deployment
Customer / Partner managed

Public Cloud As-a-Service

Fully Opex cost model
Off-premises deployment
IBM managed to the OS level

Private Cloud As-a-Service

Fully Opex cost model
On-premises deployment
IBM managed to the OS level

Traditional purchase

Up-front Capex spend
On-premises deployment
Customer / Partner managed

Usage

Blende
On-pre
Custom

Power Enterprise Pools (PEP1)

Power Private Cloud with Shared Utility Capacity (Pools2.0)

Public Cloud As-a-Service

Fully Opex cost model
Off-premises deployment
IBM managed to the OS level

Private Cloud As-a-Service

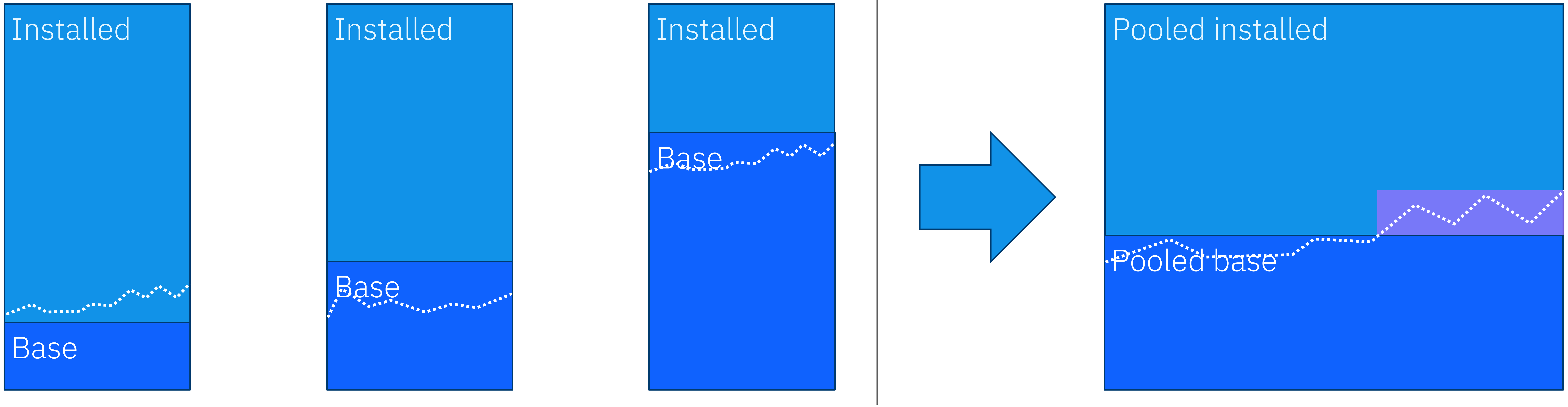
Fully Opex cost model
On-premises deployment
IBM managed to the OS level

Power Private Cloud with shared utility capacity

Resources aggregated across the pool of systems

Usage is monitored and metered per minute

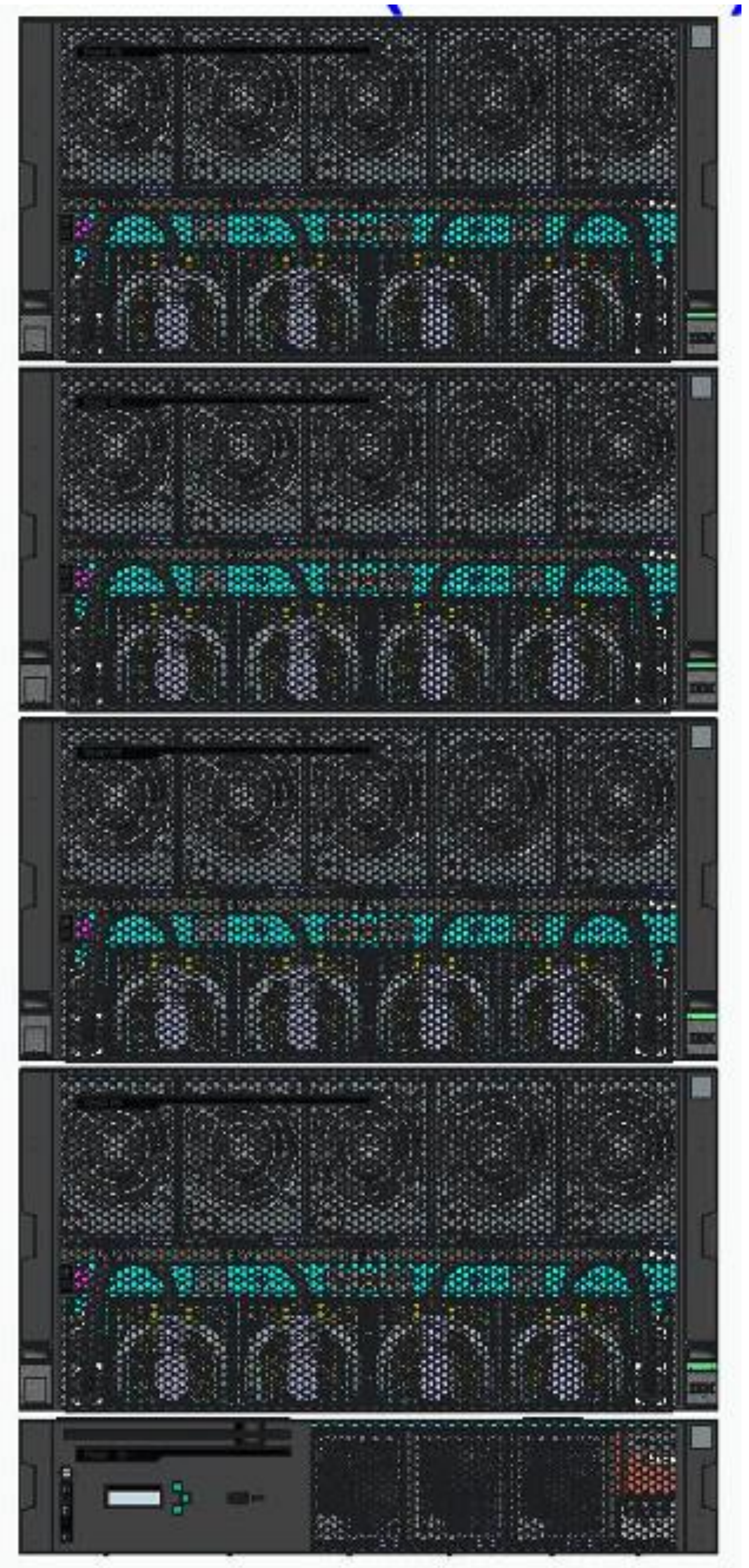
Capacity credits are used for any utilisation above the pooled base capacity: processors, memory*, OS



Power E1180

E1180 - The strong points

- Modular Scalable Design – Up to four 5U CEC drawers + 2U System Control Unit
- New! Six 9’s availability
- New! Max of 256 POWER11 SMT8 cores (10, 12, 16 core offerings, SCM package)
- New! Energy efficient mode with enhanced reporting and scheduling capabilities
- New! Spare Cores for increased availability (4 spare cores per drawer)
- Up to 64TB total memory (16TB per drawer)
- New! DDR5 DDIMMs that provide increased memory bandwidth over DDR4 DDIMMs
- Main Memory Encryption for added Security
- Flexible consumption with Capacity on Demand and Enterprise Pools 2.0
- Eight PCIe slots per drawer that are Blindswap with GEN5 support
- Non-Active SMP Cables with concurrent repair and improved fault isolation
- Internal Storage - 4 NVMe Flash 7mm U.2 Bays or 2 15mm U.2 Bays per drawer
- New! Quantum safe encryption for secure boot and LPM (Logical Partition Migration)
- Up to 16 I/O and NVMe Expansion Drawers (4 Drawers per CEC Drawer)
- New! Serial Number preserving upgrade support from Power11 systems (both DDR4 and DDR5 supported)



E1180 modular architecture

4th compute drawer

3rd compute drawer

2nd compute drawer

1st compute drawer

System control node

E1180 processor options

4 sockets populated in each compute drawer
Up to 4 compute drawers in a single system

3 models of SCM available to choose from
- **10 cores** (+ 1 spare) @ 3.90 to 4.2 GHz
- **12 cores** (+ 1 spare) @ 3.90 to 4.4 GHz
- **16 cores** (no spare) @ 3.80 to 4.3 GHz

Core activations are purchased separately
- Permanent activations
- Temporary activations (PEP1)
- Base activations (PEP2.0)

Linux only activations are available

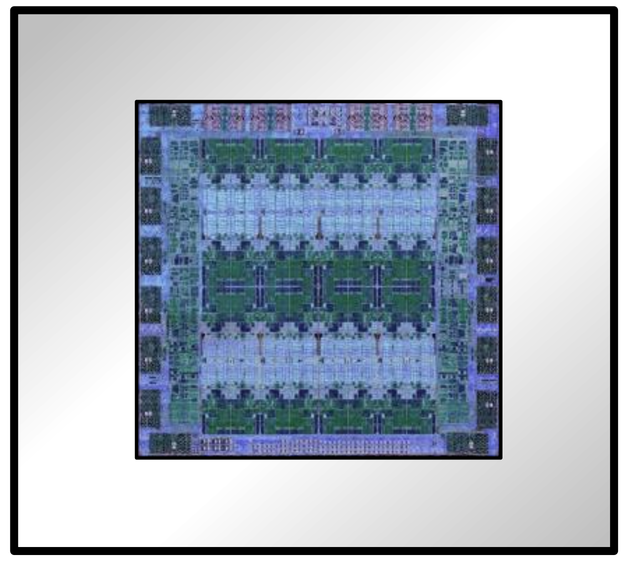
More drawers = more memory + more PCIe slots

All processor sockets are identical (same feature) within and across drawers

Cores are aggregated across drawers
- 40, 80, 120, 160 core systems (10c socket)
- 48, 96, 144, 192 core systems (12c socket)
- 64, 128, 192, 256 core systems (16c socket)

Minimum 16 core activations required per server

PEP1 and PEP2.0 enablement is at system level with a subscription for enablement



E1180 modular architecture

4 x 48 core system = 192 core system

3 x 48 core system = 144 core system

2 x 48 core drawer = 96 core system

48 core drawer = 48 core system

System control node

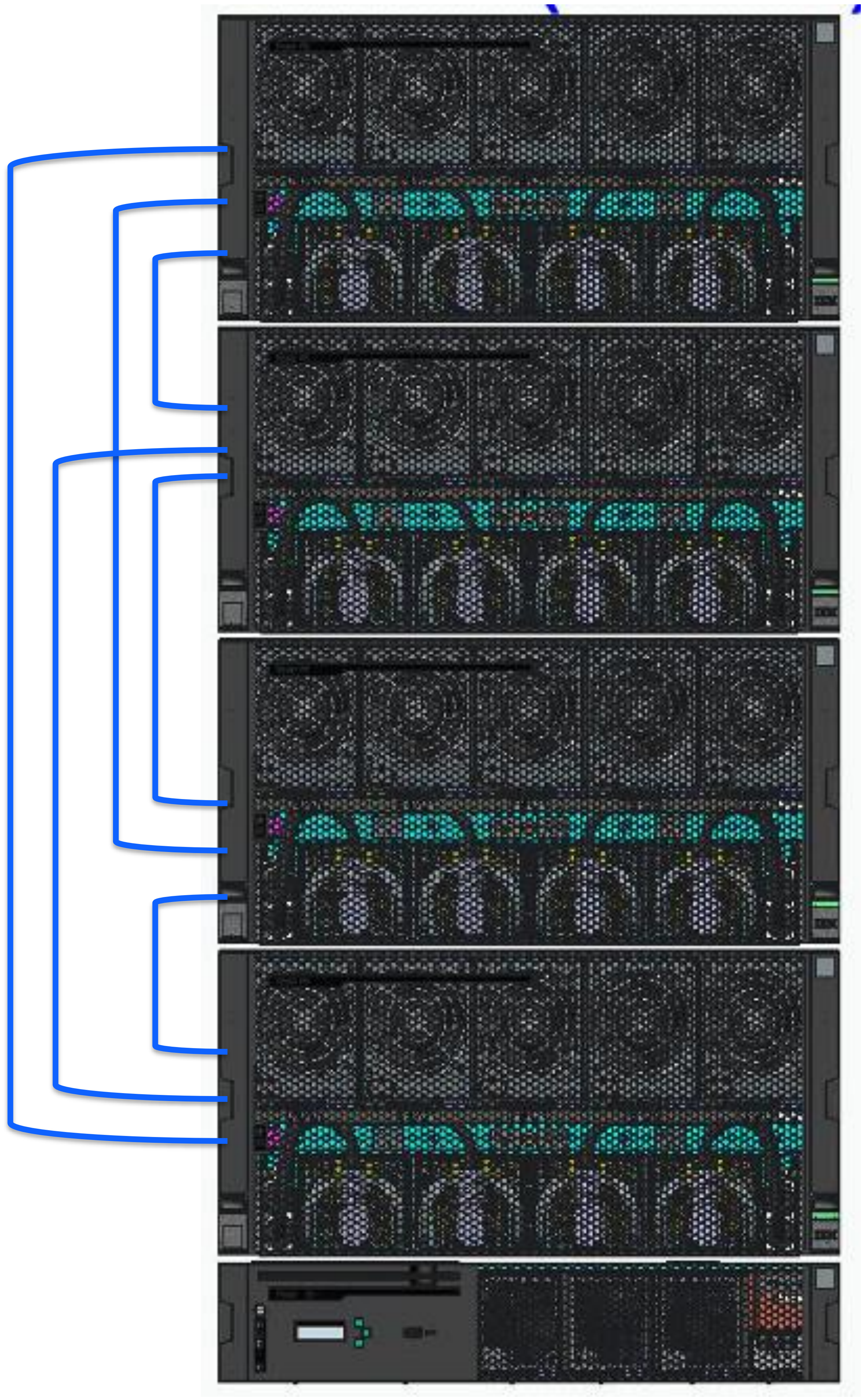
E1180 modular architecture

Simultaneous Multi-Processing (SMP)

All processors are directly connected to every other processor within the same compute drawer

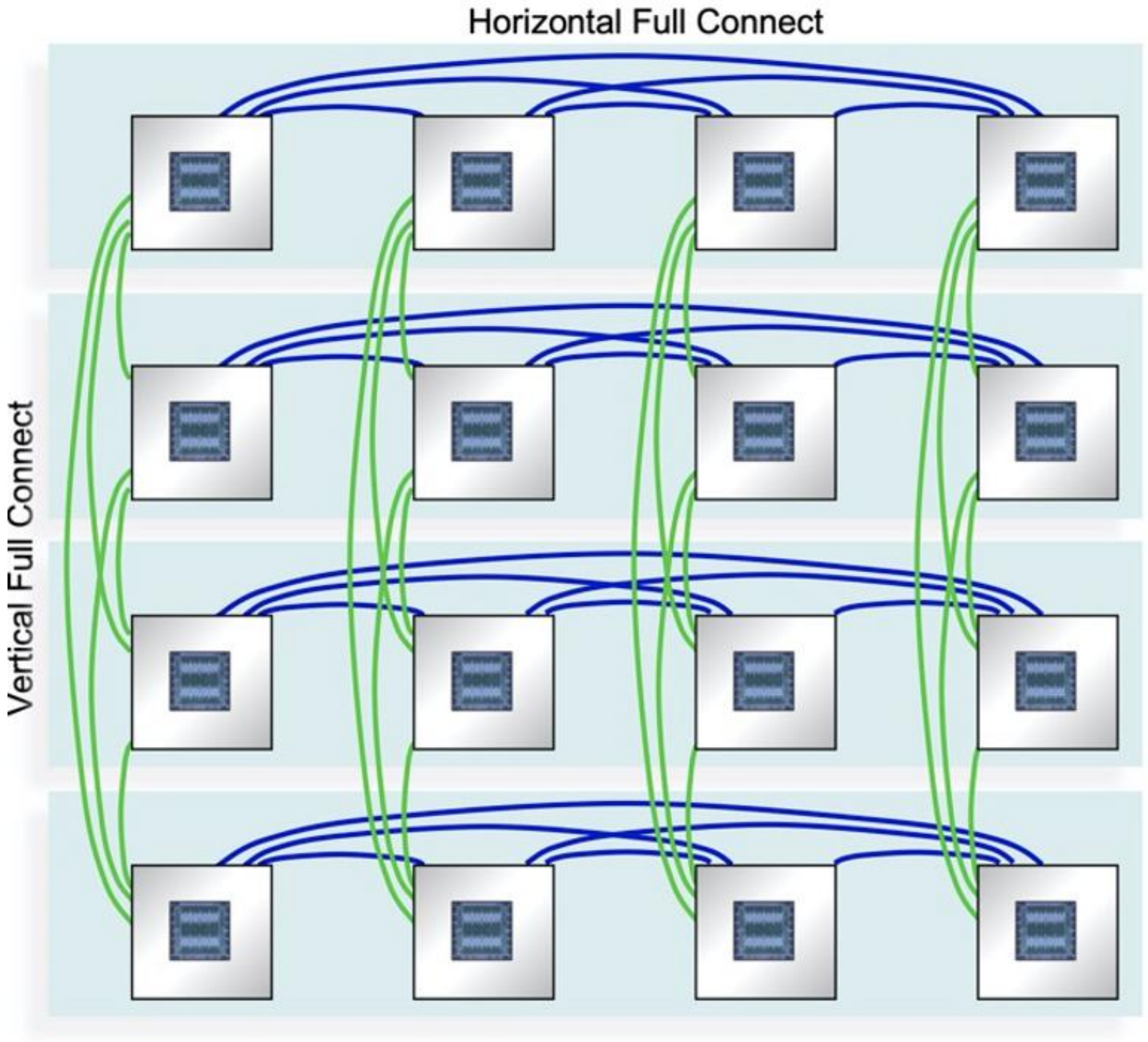
Each drawer is connected to each other drawer using resilient and redundant SMP cables

There is a maximum of two 'hops' between any two processor sockets in a system



POWER E1180 SMP Interconnect

- ✓ 16-socket 2-hop topology
- ✓ Maximum connectivity, minimal latency
- ✓ Four processor sockets per drawer
- ✓ Up to four compute drawers



E1180 - Processor options

- Single Chip Module (SCM) design, 2-hop topology, 32Gbs SMP fabric interconnect bus

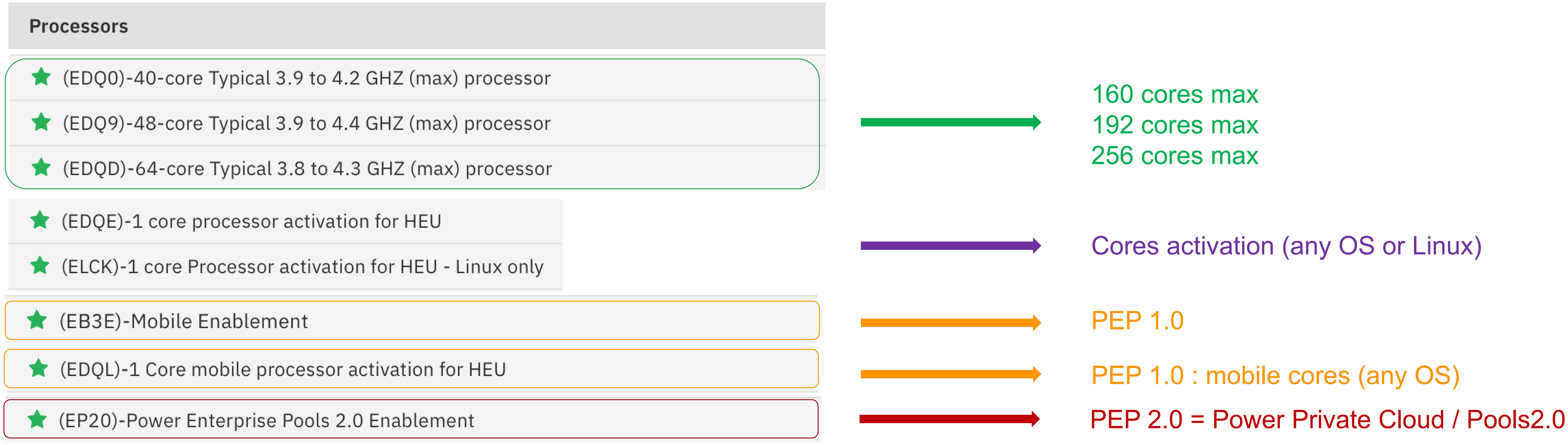
- 3 processors options available (SMT8 cores) 10,12,16 cores /socket
  All options include 4 sockets per drawer populated

- Default dynamic CPU frequencies: Set to Max Performance Mode
- Improved Workload Optimized Frequency (WOF) for optimal performance
  - Maximum achievable frequency without core reduction
  - Increased frequency for ambient temperatures below 27°C/81°F

- Improved processor-to-processor interconnect
  - Doubled data signaling rate
  - Increase in the number of interconnection buses

	Feature Code	Feature Name	SCM Processor Type	Max System Config	Frequency Range	
E1180	EDQD	64W Drawer	16 cores	256 cores	3.80 to 4.3 Ghz	Max throughput & density
	EDQ9	48W Drawer	12 cores + 1 spare	192 cores	3.90 to 4.4 Ghz	Max core/thread perf
	EDQ0	40W Drawer	10 cores + 1 spare	160 cores	3.90 to 4.2 Ghz	Entry price/performance

E1180 - Cores



Processors

- ★ (EDQ0)-40-core Typical 3.9 to 4.2 GHZ (max) processor
- ★ (EDQ9)-48-core Typical 3.9 to 4.4 GHZ (max) processor
- ★ (EDQD)-64-core Typical 3.8 to 4.3 GHZ (max) processor
- ★ (EDQE)-1 core processor activation for HEU
- ★ (ELCK)-1 core Processor activation for HEU - Linux only
- ★ (EB3E)-Mobile Enablement
- ★ (EDQL)-1 Core mobile processor activation for HEU
- ★ (EP20)-Power Enterprise Pools 2.0 Enablement

160 cores max
192 cores max
256 cores max

Cores activation (any OS or Linux)

PEP 1.0

PEP 1.0 : mobile cores (any OS)

PEP 2.0 = Power Private Cloud / Pools2.0

Power11 offers a simplified Processor and Memory Activation structure to streamline configuration, deployment and use

- One Processor Activation price per model
- Reduced prices per-core & per-GB on Power11 vs. Base/Mobile Activations on Power10
- Minimum 16 core activations required per server (1 in a Pools2.0 environment)

E1180 memory options

Memory quantities vary by number of drawers
- 1 compute drawer = 64 DDIMM slots
- 2 compute drawers = 128 DDIMM slots
- 3 compute drawers = 192 DDIMM slots
- 4 compute drawers = 256 DDIMM slots

Memory bandwidth is linear based on number of DDIMMs installed

Minimum memory requires 4 DDIMMs per socket
- 1 drawer = 4 sockets = 16 DDIMMs populated
- 4 drawers = 16 sockets = 64 DDIMMs

All memory DDIMMs are sold and installed in quads (1 feature code = 4 x DDIMMs)

	Feature Code	Feature Name	DDIMM Size	Max System Config	Frequency	Peak Bandwidth / socket
E1180	EMFM	128GB DDR5	4x 32GB DDIMM	8TB	4000 MHz	512 GB/s
	EMFN	256GB DDR5	4x 64GB DDIMM	16TB	4000 MHz	1024 GB/s
	EMFP	512GB DDR5	4x 128GB DDIMM	32TB	4000 MHz	1024 GB/s
	EM5T	1024GB DDR5	4x 256GB DDIMM	64TB	4000 MHz	1024 GB/s

E1180 memory options

Memory activations are purchased separately

A minimum of 50% of installed memory needs to be activated
25% of installed memory needs to be statically activated
[In a PEP2.0 environment, a minimum of 256 GB memory must be activated on a system]

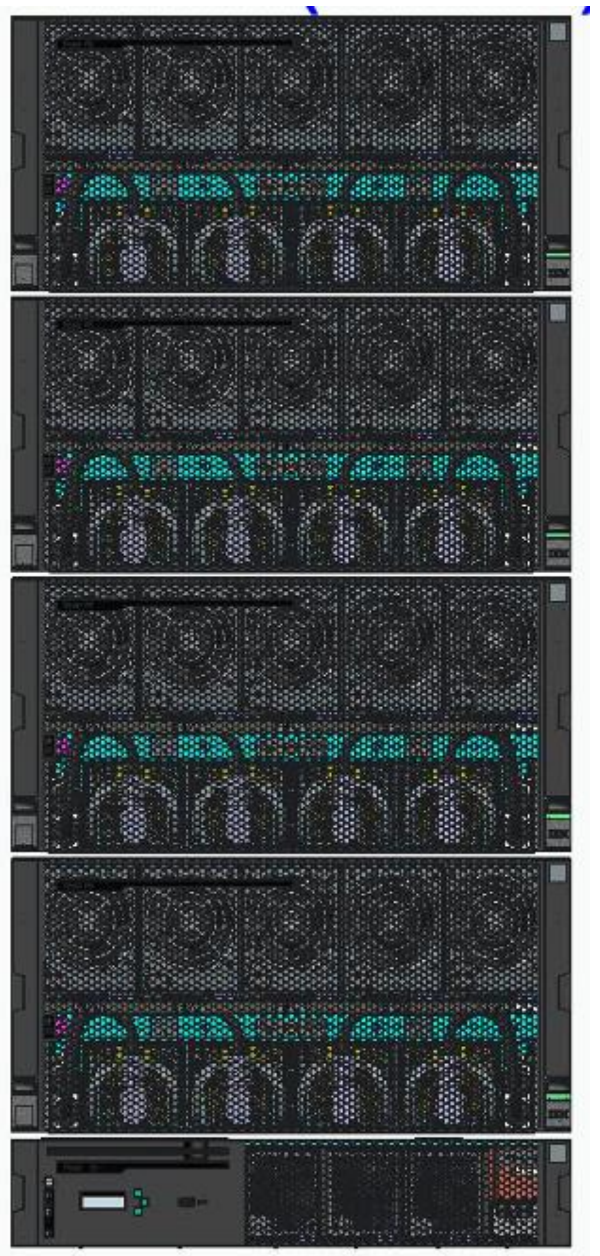
Activations can be:
- Permanent activations
- Temporary activations (PEP1)
- Base activations (PEP2.0)

All new memory feature options are DDR5 based DDIMMs

Customers may reuse existing DDR4 based DDIMMs if upgrading from a Power10 based E1080 server model

DDR5 memory will deliver the highest bandwidth and lower latency

All memory in the system is addressable by ever processor socket / core

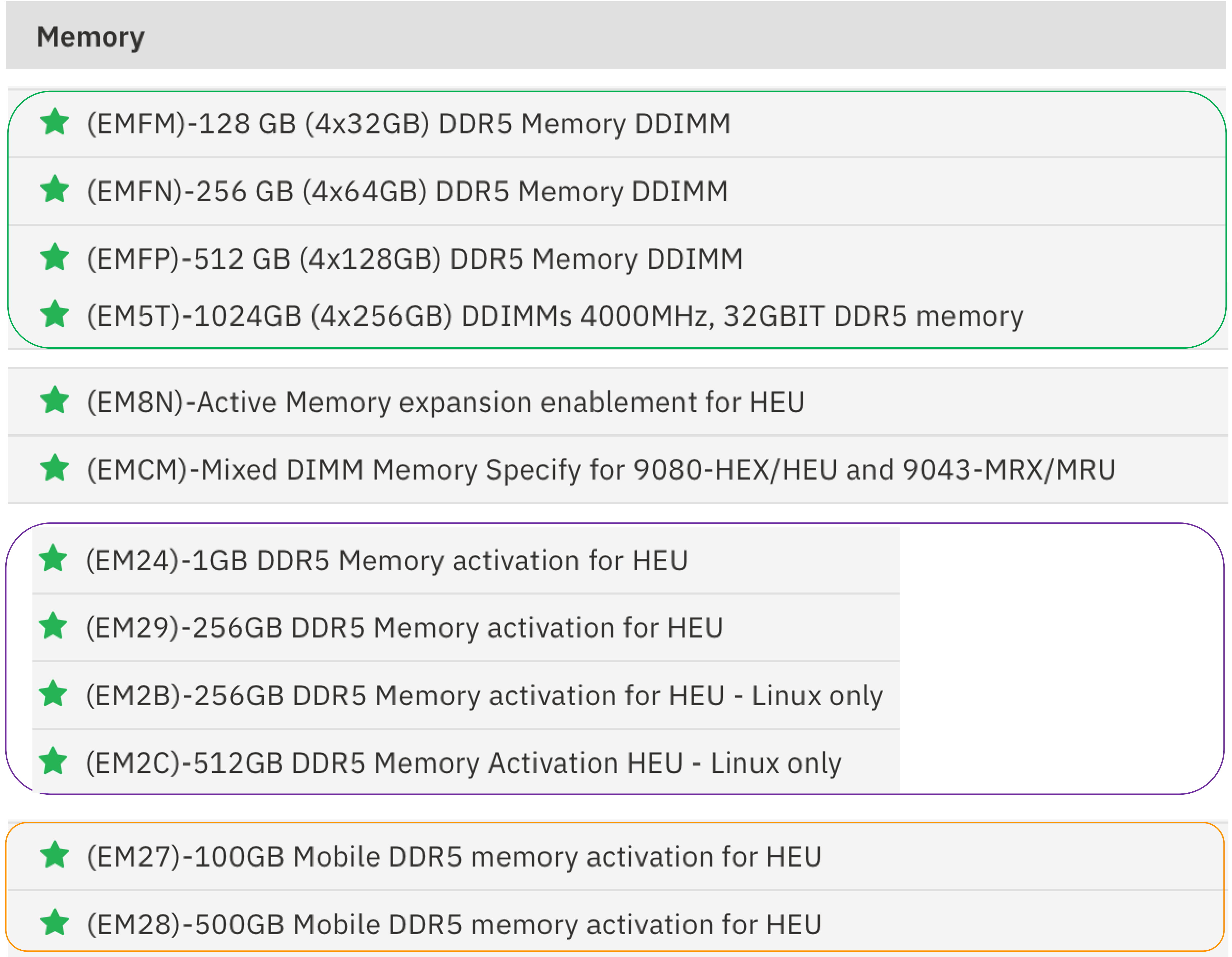


E1180 - DDR5 memory options

- Enterprise-class 4U DDIMM with maximum reliability, availability, and security (RAS)
- High-bandwidth, dual-port buffer architecture
- DDR5-based DDIMMs, operating 25% to 36% faster than DDR4
- 16 DDIMM slots per socket, 64 total DDIMM slots per node
- Maximum memory capacity of 16 TB per node >> 64 TB per system
- DDIMM Socket Plugging Rules
    - The minimum configuration is 8x DDIMM per socket. A minimum of 256GB (with Pool 2.0) or 50% of installed memory must be enabled.
    - All DDIMMs behind a module socket must be the same size and speed (unless FC EMCM is ordered).
- Active Memory Mirroring Support - Hypervisor memory mirroring to provide resilience against uncorrectable memory errors.

	Feature Code	Feature Name	DDIMM Size	Max System Config	Frequency	Peak Bandwidth / socket
E1180	EMFM	128GB DDR5	4x 32GB DDIMM	8TB	4000 Mhz	512 GB/s
	EMFN	256GB DDR5	4x 64GB DDIMM	16TB	4000 Mhz	1024 GB/s
	EMFP	512GB DDR5	4x 128GB DDIMM	32TB	4000 Mhz	1024 GB/s
	EM5T	1024GB DDR5	4x 256GB DDIMM	64TB	4000 Mhz	1024 GB/s

E1180 - Memory and activations



Memory

- ★ (EMFM)-128 GB (4x32GB) DDR5 Memory DDIMM
- ★ (EMFN)-256 GB (4x64GB) DDR5 Memory DDIMM
- ★ (EMFP)-512 GB (4x128GB) DDR5 Memory DDIMM
- ★ (EM5T)-1024GB (4x256GB) DDIMMs 4000MHz, 32GBIT DDR5 memory
- ★ (EM8N)-Active Memory expansion enablement for HEU
- ★ (EMCM)-Mixed DIMM Memory Specify for 9080-HEX/HEU and 9043-MRX/MRU
- ★ (EM24)-1GB DDR5 Memory activation for HEU
- ★ (EM29)-256GB DDR5 Memory activation for HEU
- ★ (EM2B)-256GB DDR5 Memory activation for HEU - Linux only
- ★ (EM2C)-512GB DDR5 Memory Activation HEU - Linux only
- ★ (EM27)-100GB Mobile DDR5 memory activation for HEU
- ★ (EM28)-500GB Mobile DDR5 memory activation for HEU

8 TB max
16 TB max
32 TB max
64 TB max

Memory activation
- 50% activated minimum
- 256 GB minimum in PEP2 / Pools2.0

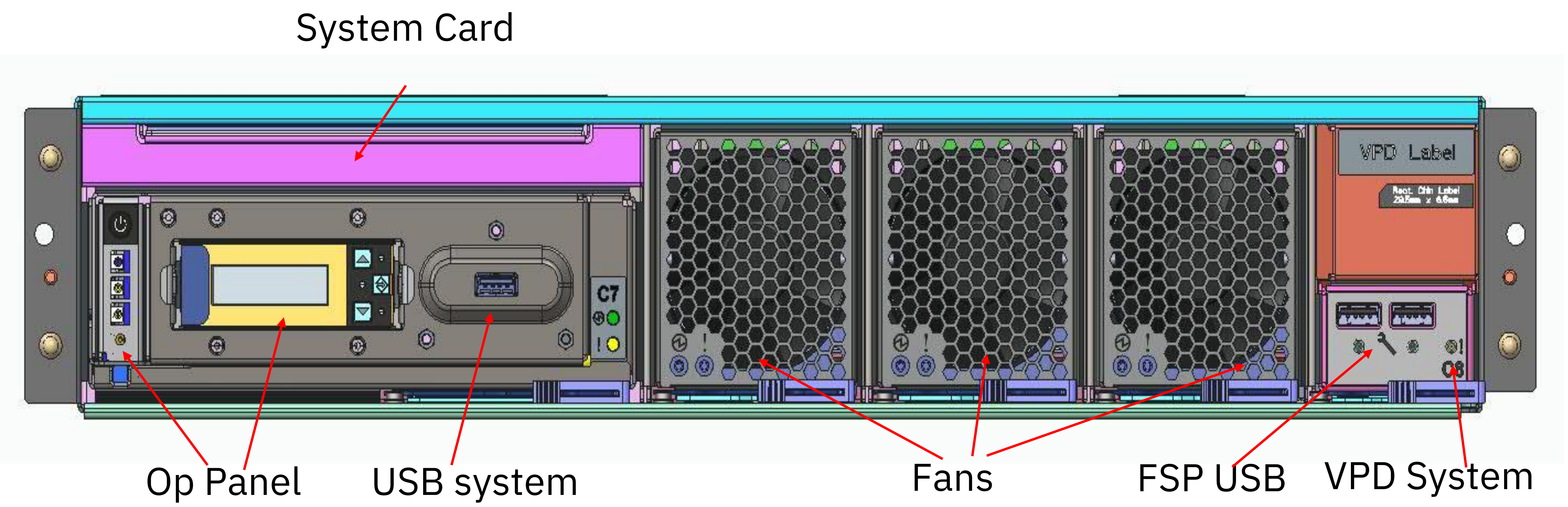
PEP 1.0 : Mobile memory

Power11 offers a **simplified Processor and Memory Activation structure** to streamline configuration, deployment and use

- One Memory Activation price per model
- Reduced prices per-core & per-GB on Power11 vs. Base/Mobile Activations on Power11

E1180 – System Control Unit Drawer

- ✓ Redundant FSP (Service Processor) cards
- ✓ Front-accessible USB port
- ✓ Reduction of electrical wiring
- ✓ External DVD drive can be attached to USB port



System Card

Op Panel

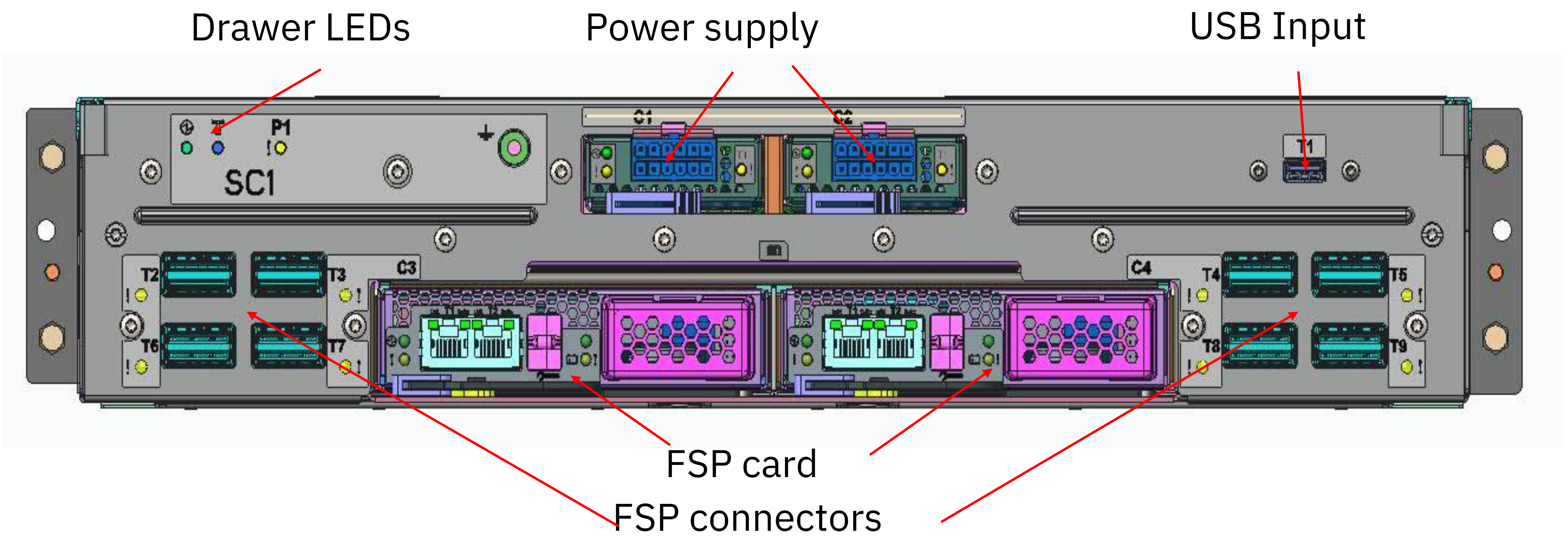
USB system

Fans

FSP USB

VPD System

Front view



Drawer LEDs

Power supply

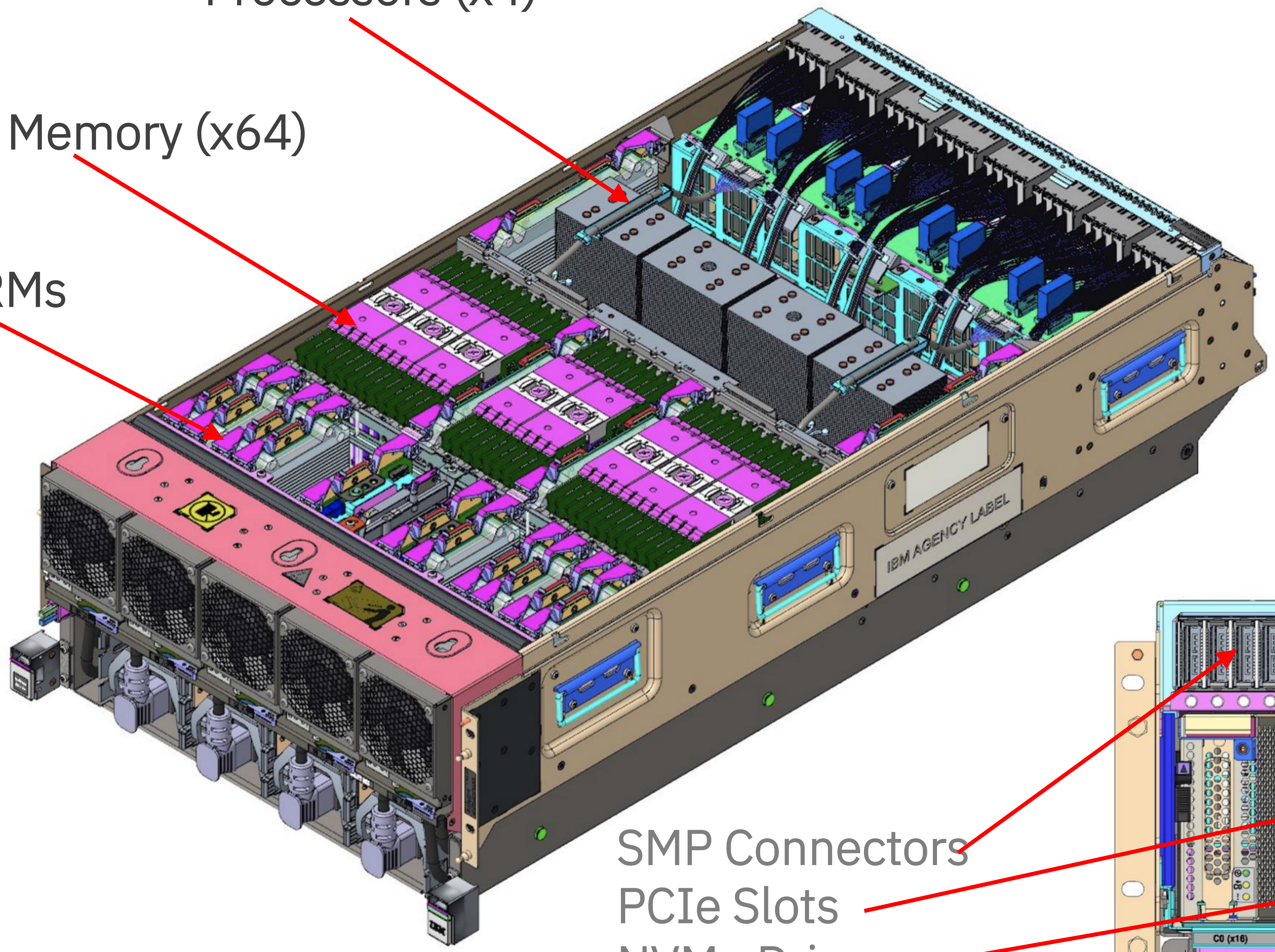
USB Input

FSP card

FSP connectors

Rear view

POWER E1180 Views

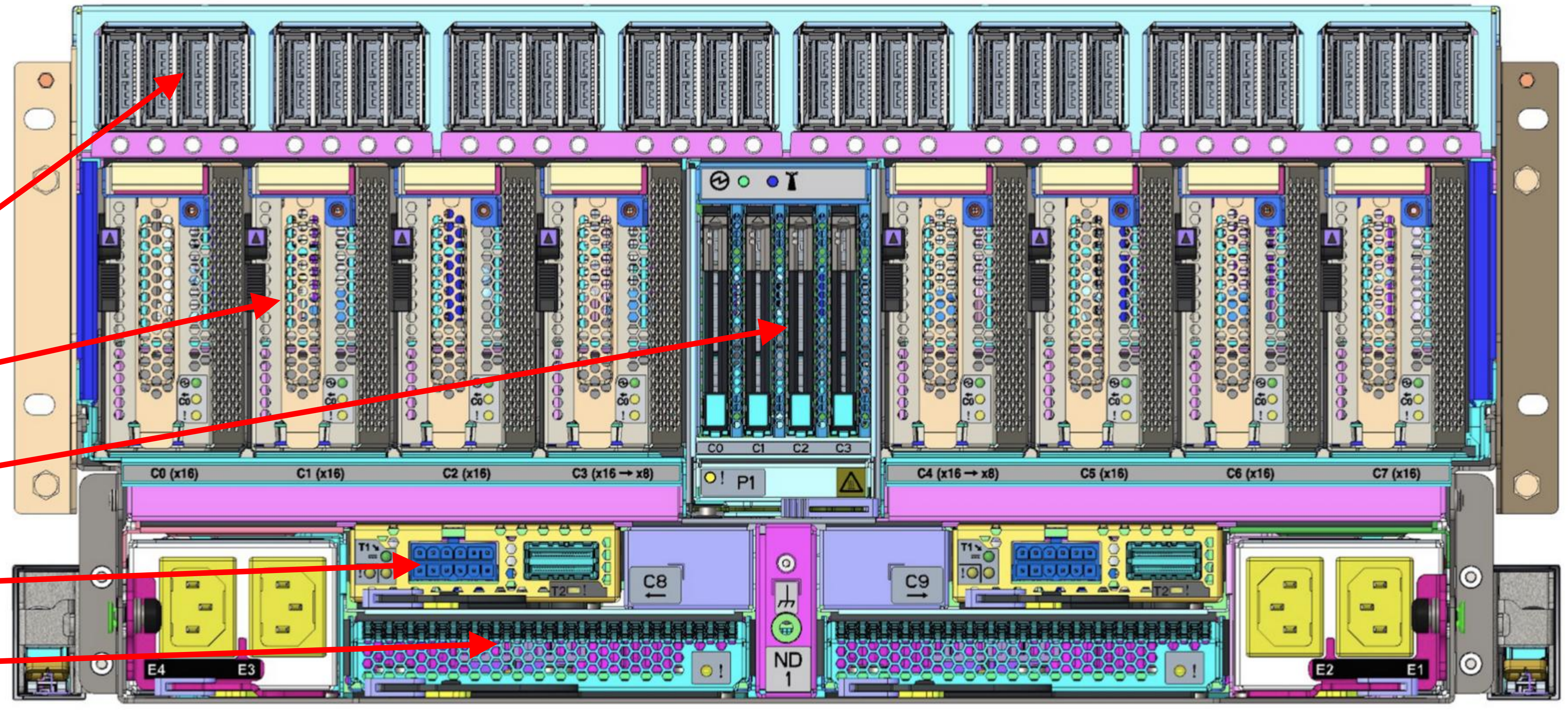


Processors (x4)

Memory (x64)

VRMs

Rear View



SMP Connectors

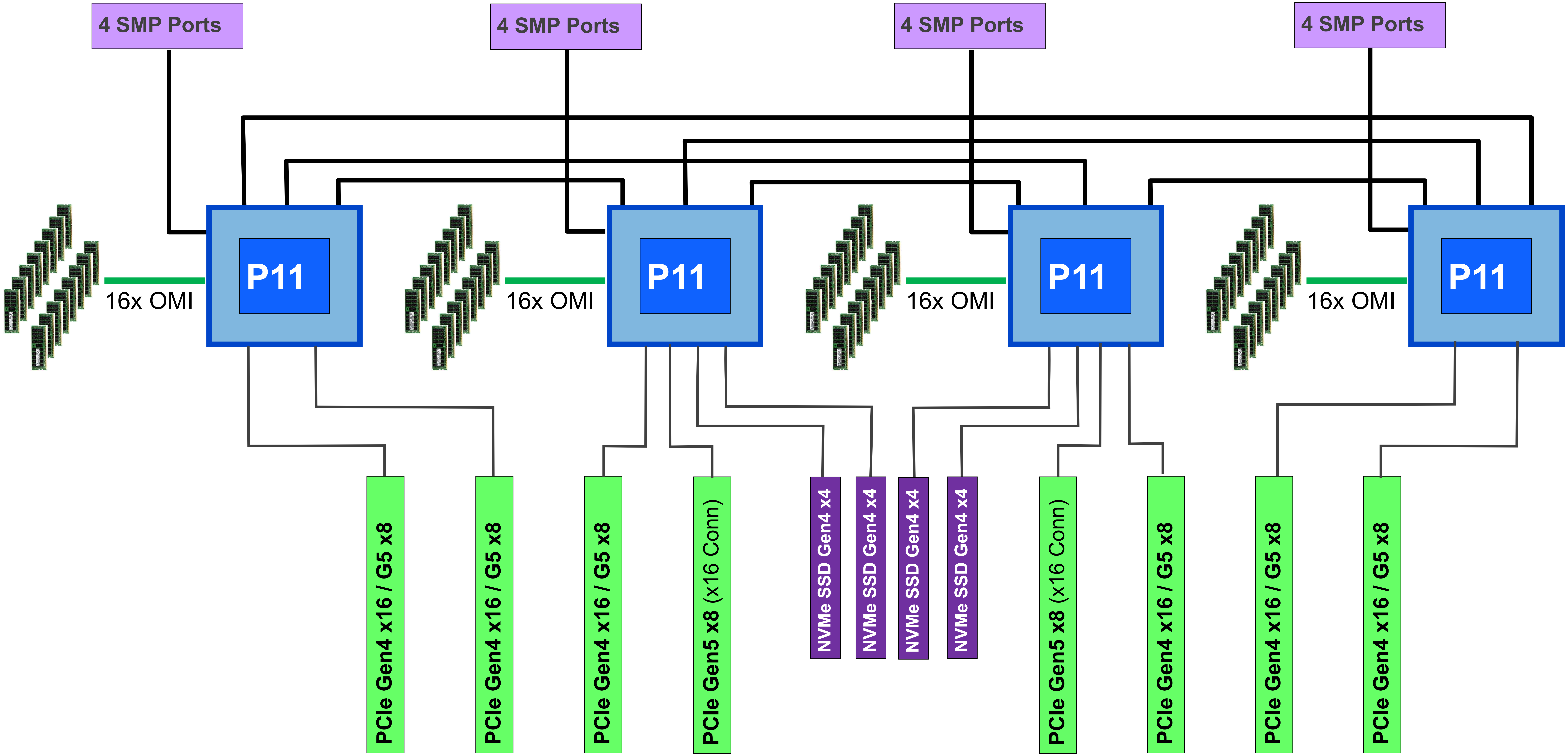
PCIe Slots

NVMe Drives

FSP Connect

Clock Cards

E1180 - I/O Subsystem



4 SMP Ports

4 SMP Ports

4 SMP Ports

4 SMP Ports

16x OMI

P11

16x OMI

P11

16x OMI

P11

16x OMI

P11

PCIe Gen4 x16 / G5 x8

PCIe Gen4 x16 / G5 x8

PCIe Gen4 x16 / G5 x8

PCIe Gen5 x8 (x16 Conn)

NVMe SSD Gen4 x4

NVMe SSD Gen4 x4

NVMe SSD Gen4 x4

NVMe SSD Gen4 x4

PCIe Gen5 x8 (x16 Conn)

PCIe Gen4 x16 / G5 x8

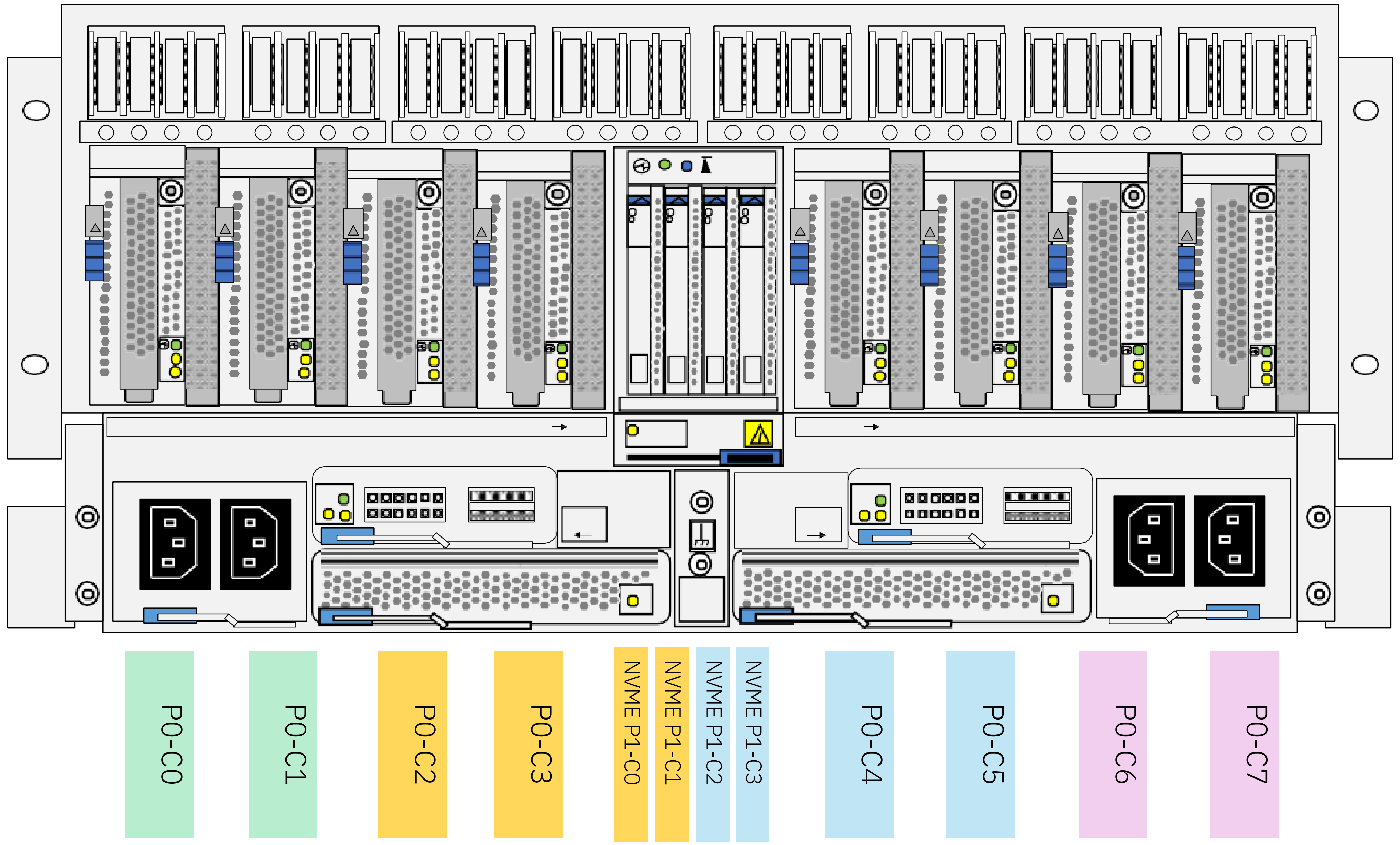
PCIe Gen4 x16 / G5 x8

PCIe Gen4 x16 / G5 x8

E1180 - PCIe slots

Internal PCIe Slots Summary

Location	Attributes	SLOT	SRIOV	Noticed
P0-C0	PCIe Gen 4 x16 gold PCIe Gen 5 x8	1	YES	1st Power11 SCM Socket 0
P0-C1	PCIe Gen 4 x16 gold PCIe Gen 5 x8	2	YES	
P0-C2	PCIe Gen 4 x16 gold PCIe Gen 5 x8	3	YES	2nd Power11 Socket SCM 2
P0-C3	PCIe Gen 5 x8	4	YES	
P1-C0	PCIe Gen 4 x4	NVME SLOT P1-C0	N / A	
P1-C1	PCIe Gen 4 x4	NVME SLOT P1-C1	N / A	
P1-C2	PCIe Gen 4 x4	NVME SLOT P1-C2	N / A	3rd Power11 SCM Socket 3
P1-C3	PCIe Gen 4 x4	NVME SLOT P1-C3	N / A	
P0-C4	PCIe Gen 5 x8	5	YES	
P0-C5	PCIe Gen 4 x16 gold PCIe Gen 5 x8	6	YES	
P0-C6	PCIe Gen 4 x16 gold PCIe Gen 5 x8	7	YES	4th Power11 SCM Socket 1
P0-C7	PCIe Gen 4 x16 gold PCIe Gen 5 x8	8	YES	



- All PCIe slots are rear-swappable and can be held simultaneously in the I/O cassette
- Half-height, full-length PCIe form factor
- All slots are x16 or x8 physical connectors
- Feature Code EJ2A - I/O expansion adapter to connect to the Gen 4 I/O drawer

Power E1150

E1150 - Highlights (MTM 9043-MRU)

- 4U Server – 19” Rack Enclosure
- New! Power11 DCM processor w/ 16, 24, or 30 cores/socket
- New! Spare cores for increased availability (2 spare cores per socket)
- New! Energy efficient mode with enhanced scheduling capabilities
- 1-Hop flat CPU interconnect for maximum scalability and efficiency
- New! Up to 64 DDR5 DDIMM slots with 25% higher bandwidth that provides up to 16TB max memory
- Main Memory Encryption for added security
- Active Memory Mirroring support to reduce unplanned outages
- Up to eleven PCIe slots (8 are GEN5 capable), all slots are concurrently maintainable
- Up to 10 NVMe U.2 Flash Bays provides up to 153 TB of internal storage
- New! Quantum safe encryption for secure boot and LPM (Logical Partition Migration)
- Supports external PCIe I/O and NVMe storage Expansion Drawers
- Titanium power supplies to meet EU Efficiency Directives
- Flexible Consumption with Capacity on Demand and Power Enterprise Pools 2.0
- New! Serial Number preserving upgrade support from Power11 systems (4Q 2025 Availability)

E1150 processor options

2, 3, or 4 sockets populated in each drawer

3 models of DCM available to choose from
- **16 cores** (+ 2 spare) @ 3.50 to 4.2 GHz
- **24 cores** (+ 2 spare) @ 3.25 to 4.2 GHz
- **30 cores** (+ 2 spare) @ 3.00 to 4.1 GHz

Core activations are purchased separately
- Permanent activations
- Temporary activations (PEP1)
- Base activations (PEP2.0)

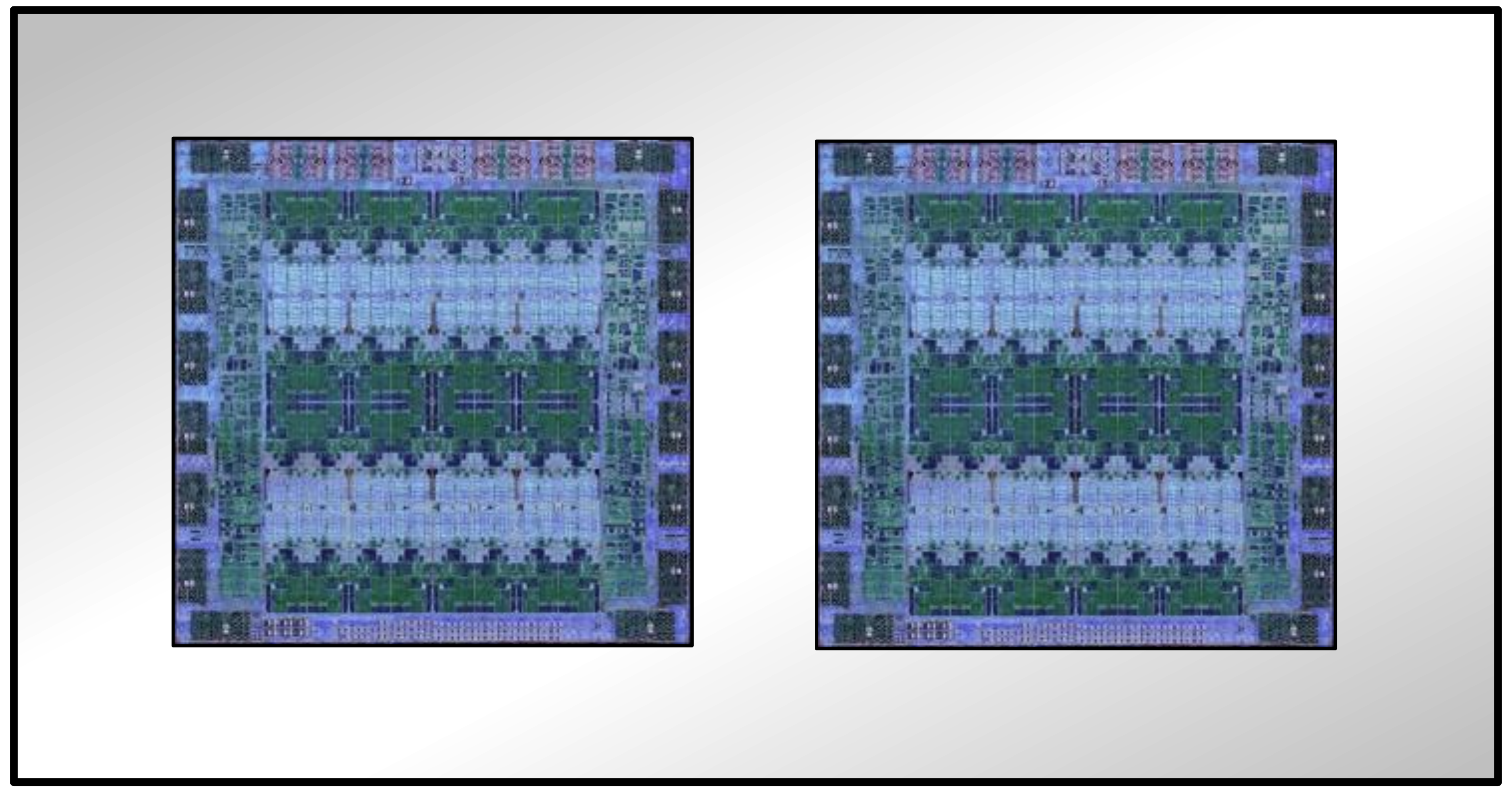
Linux only activations are available

More sockets = more memory + more PCIe slots

All processor sockets are identical (same feature)

Minimum of 1 socket of activations required
- 16+ cores active on 32,48,64 core models
- 24+ cores active on 48,72,96 core models
- 30+ cores active on 60,90,120 core models

PEP1 and PEP2.0 enablement is at system level with a subscription for enablement

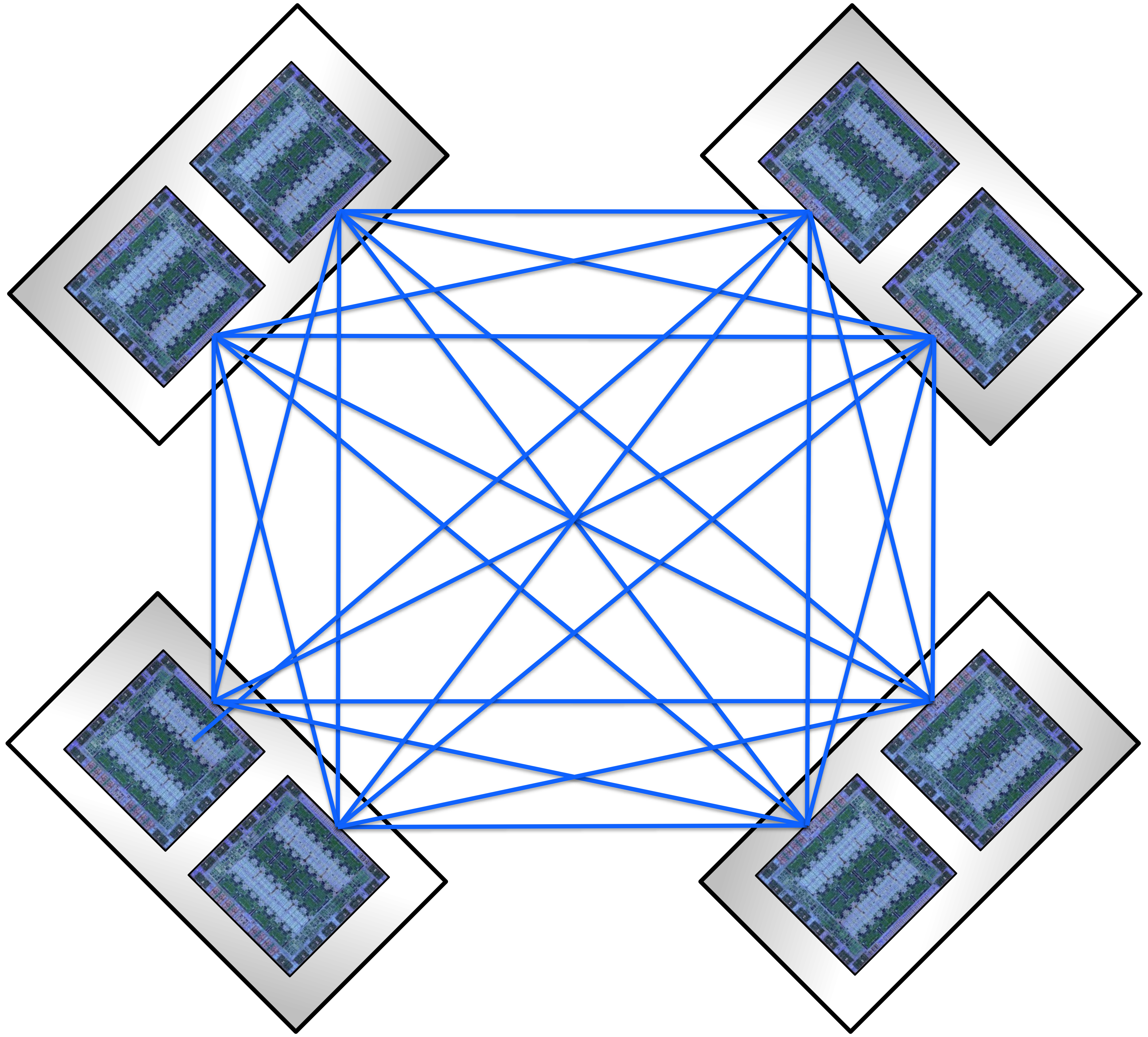


E1150 processor options

Simultaneous Multi-Processing (SMP)

All chips in all processors are directly connected to every other chip in every other processor within the system

This maximises connectivity and minimises latency for communication with memory or I/O



E1150 - Processors

- The Power E1150 supports 32 to 120 processor cores:
  - A minimum of two and a maximum of four sockets are required for each system.
  - Modules can be added to a system later through an MES order, but their installation requires planned downtime.
  - All sockets on a server must have the same gigahertz (same feature code). They cannot be mixed.

- Permanent CoD CPU core activations are required for the first CPU module in the configuration and are optional for the second, third, and fourth modules. More precisely :
  - Two, three, or four 16-core sockets, typical 3.50 to 4.2 GHz (max) (#EPEX) require at least 16 CPU core activations (#EPUT) any OS.
  - Two, three, or four 24-core sockets, typical 3.20 - 4.0 GHz (max) (#EPEY) require at least 24 CPU core activations ((#EPUT) any OS.
  - Two, three, or four 30-core sockets, typical 2.95 - 3.90 GHz (max) (#EPEZ) require at least 30 CPU core activations ((#EPUT) any OS.
  - For linux Only , the activation code for any CPU is #ELEW
- Temporary CoD capabilities are used optionally for CPU cores that are not permanently enabled:
- An HMC is required for the temporary CoD.

E1150 Device code	Feature Name	Maximum number of cores per system	Processor Type	Standard Frequency range	Socket options	Supported Configurations
EPEZ	30W P11 DCM	120 cores	30 cores + 2 spare	3.00 to 4.1 GHz	2, 3, 4	60, 90, 120 cores
EPEY	24W P11 DCM	96 cores	24 cores + 2 spare	3.25 to 4.2 GHz	2, 3, 4	48, 72, 96 cores
EPEX	16W P11 DCM	64 cores	16 cores + 2 spare	3.50 to 4.2 GHz	2, 3, 4	32, 48, 64 cores

E1150 - Cores

Processors

★ (EPEX)-16-core Typical 3.5 to 4.2 GHz (max) processor
★ (EPEY)-24-core Typical 3.3 to 4.2 GHz (max) processor
★ (EPEZ)-30-core Typical 3.0 to 4.1 GHz (max) processor

→ 64 cores max
96 cores max
120 cores max

★ (EPUT)-1 core Static processor activation for MRU
★ (ELEW)-1 core Static processor activation for MRU (Linux only)

→ Cores activation (any OS or Linux)

★ (EDP5)-Mobile Enablement specify → PEP 1.0

★ (EP20)-Power Enterprise Pools 2.0 Enablement → PEP 2.0 = Power Private Cloud / Pools2.0

★ (EDP0)-1 core Mobile processor activation for MRU → PEP 1.0 : mobile cores (any OS)

Power11 offers a **simplified Processor and Memory Activation structure** to streamline configuration, deployment and use

- One Processor Activation price per model
- Reduced prices per-core & per-GB on Power11 vs. Base/Mobile Activations on Power10

E1150 memory options

Memory options vary by processor sockets
- 2 sockets populated = 32 DDIMM slots
- 3 sockets populated = 48 DDIMM slots
- 4 sockets populated = 64 DDIMM slots

Memory bandwidth is linear based on number of DDIMMs installed

Minimum memory requires 4 DDIMMs per socket
- 2 socket minimum = 8 DDIMMs = 256 GB
- 3 socket minimum = 12 DDIMMs = 384 GB
- 4 socket minimum = 16 DDIMMs = 512 GB

All memory DDIMMs are sold and installed in pairs (1 feature code = 2 x DDIMMs)

Feature code	DIMM strip	DRAM Speed	Memory bandwidth	Max System Config
EM5P	64GB (2X32GB) 4U DDIMM	4000 MHz	512 GB/s	2TB
EM5Q	128GB (2X64GB) 4U DDIMM	4000 MHz	1024 GB/s	4TB
EM5R	256GB (2X128GB) 4U DDIMM	4000 MHz	1024 GB/s	8TB
EM5S	512GB (2X256GB) 4U DDIMM	4000 MHz	1024 GB/s	16TB
EM81	Active Memory Mirroring (AMM)			Optional function

E1150 memory options

Memory activations are purchased separately

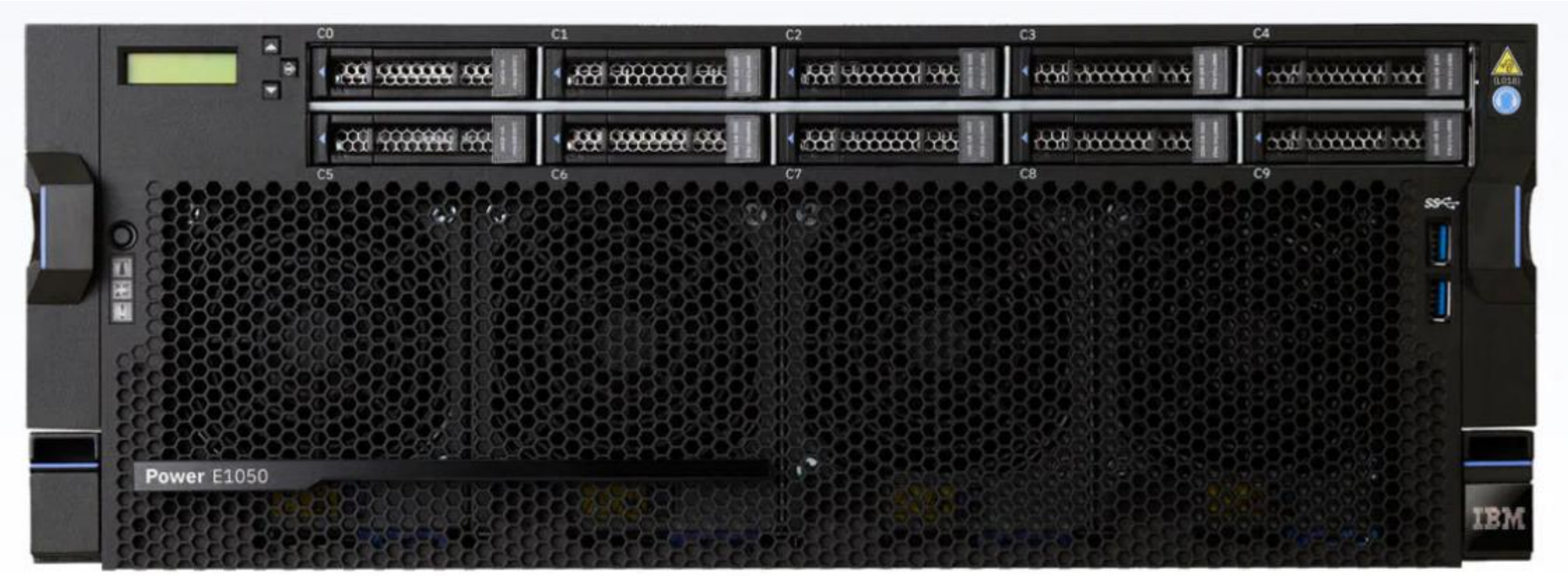
A minimum of 50% of installed memory needs to be activated or 256 GB whichever is higher

Activations can be:
- Permanent activations
- Temporary activations (PEP1)
- Base activations (PEP2.0)

All new memory feature options are DDR5 based DDIMMs

Customers may reuse existing DDR4 based DDIMMs if upgrading from a Power10 based E1050 server model

DDR5 memory will deliver the highest bandwidth and lower latency



E1150 – DDR5 memory

- As your memory needs increase, the system's capabilities increase as follows:
  - With two sockets installed, 32 DDIMM slots are available; the minimum memory is 256 GB.
  - With three sockets installed, 48 DDIMM slots are available; the minimum memory is 384 GB.
  - With four sockets installed, 64 DDIMM slots are available; the minimum memory is 512 GB. Sixteen DDIMMs are available per socket.
- More sockets populated = more DDIMM slots active = more memory bandwidth.

- Permanent CoD memory activations are required for at least 50% of physically installed memory or 256GB of activations, whichever is greater.
- Use the 1GB (#EMCP) and 100GB (#EMCQ) activation functions to order permanent memory activations.

- A temporary CoD for memory is available for memory capacity that is not permanently activated:
  - Delivery via Virtual Capacity (4586-COD) Machine Type/Model (MTM) using the Entitled Systems Support (ESS) process.
  - An HMC is required for the temporary CoD

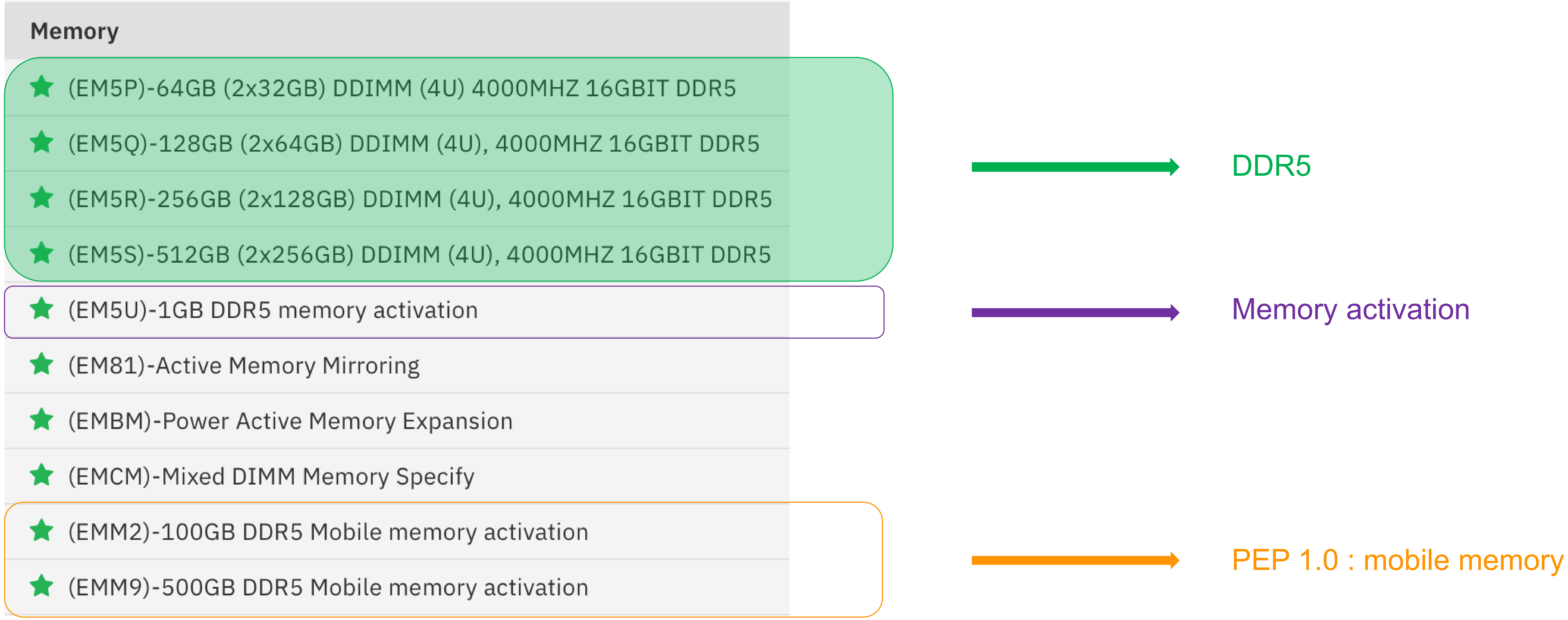
E1150 Device code	DIMM strip	DRAM Speed	Memory bandwidth	Max System Config
EM5P	64GB (2X32GB) 4U DDIMM	4000 MHz	512 GB/s	2TB
EM5Q	128GB (2X64GB) 4U DDIMM	4000 MHz	1024 GB/s	4TB
EM5R	256GB (2X128GB) 4U DDIMM	4000 MHz	1024 GB/s	8TB
EM5S	512GB (2X256GB) 4U DDIMM	4000 MHz	1024 GB/s	16TB
EM81	Active Memory Mirroring (AMM)			Optional function

E1150 - Memory rules

- This information describes the rules for memory modules in the system. The system supports DDR5 32 GB, 64 GB, 128 GB, and 256 GB 4U memory modules.
- **Memory modules are installed in pairs. A minimum of two pairs per system processor is required**.
- **All four memory modules must be the same size, rank, and memory density.**
- Memory locations are assigned to groups of four memory modules.
    - Each group of four memory modules is plugged sequentially.
    - Each group of four memory modules must be the same size, rank, and memory density.
    - Different groups of memory modules can be of different sizes, ranks, and memory densities than other groups.
- **All memory modules must be the same capacity and speed for each processor socket, except for 128 GB and 256 GB memory modules**. A mixture of 128 GB and 256 GB memory modules is supported if there is an equal number of memory modules of each capacity and all of the memory module slots are populated.
- **Best practice is to have the same total memory capacity for all processor sockets but is not a requirement.**
    - When installing multiple memory module feature codes, best practice is to install the largest capacity memory modules in slots assigned to processor socket 0 (P0-C61), followed by the next largest capacity memory modules in slots assigned to processor socket 1 (P0-C14). The next largest capacity memory modules would be installed in slots assigned to processor socket 2 (P0-C19), and the smallest capacity memory modules would be installed in slots assigned to processor socket 3 (P0-C56).
- **A minimum number of memory modules are required for the system.**
    - Systems with **two processors** require a **minimum of 8 memory modules**.
    - Systems with **three processors** require a **minimum of 12 memory modules**.
    - Systems with **four processors** require a **minimum of 16 memory modules**.
- Unused memory module slots must have a memory module filler.

- See documentation

E1150 - Memory



Memory

- ★ (EM5P)-64GB (2x32GB) DDIMM (4U) 4000MHZ 16GBIT DDR5
- ★ (EM5Q)-128GB (2x64GB) DDIMM (4U), 4000MHZ 16GBIT DDR5
- ★ (EM5R)-256GB (2x128GB) DDIMM (4U), 4000MHZ 16GBIT DDR5
- ★ (EM5S)-512GB (2x256GB) DDIMM (4U), 4000MHZ 16GBIT DDR5
- ★ (EM5U)-1GB DDR5 memory activation
- ★ (EM81)-Active Memory Mirroring
- ★ (EMBM)-Power Active Memory Expansion
- ★ (EMCM)-Mixed DIMM Memory Specify
- ★ (EMM2)-100GB DDR5 Mobile memory activation
- ★ (EMM9)-500GB DDR5 Mobile memory activation

DDR5

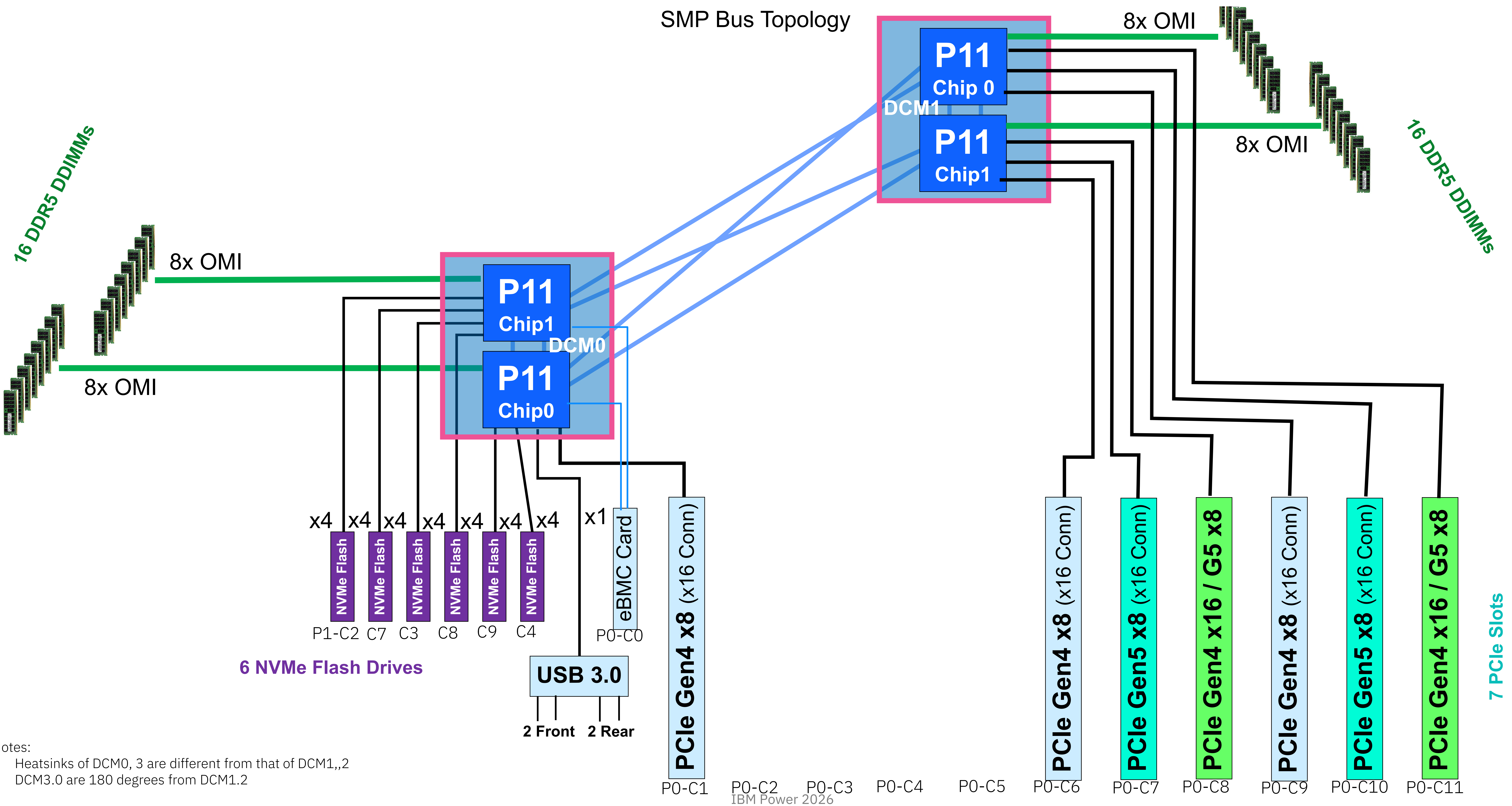
Memory activation

PEP 1.0 : mobile memory

Power11 offers a **simplified Processor and Memory Activation structure** to streamline configuration, deployment and use

- One Memory Activation price per model
- Reduced prices per-core & per-GB on Power11 vs. Base/Mobile Activations on Power11

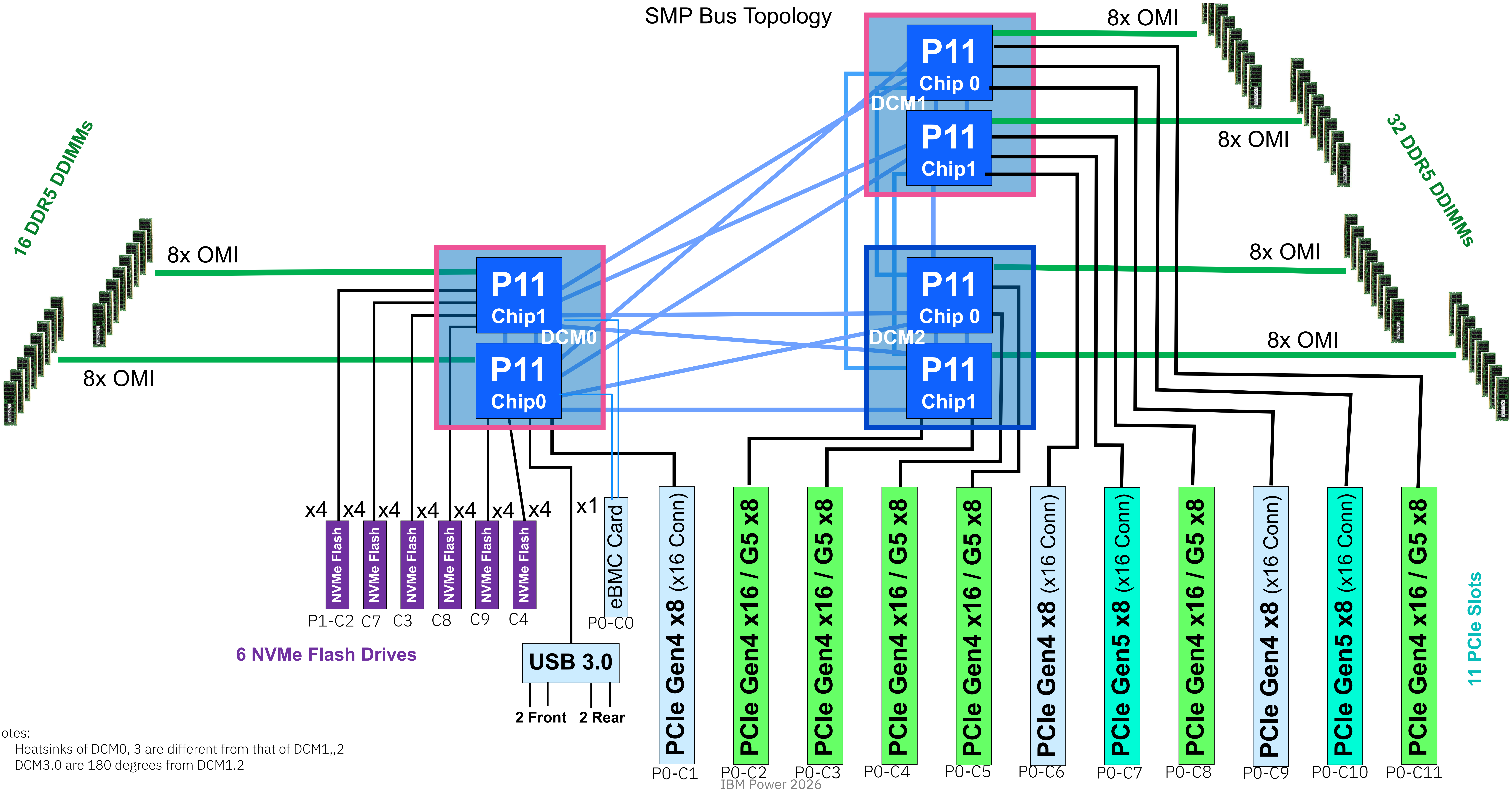
E1150 - Server Architecture – 2 Sockets



Notes:

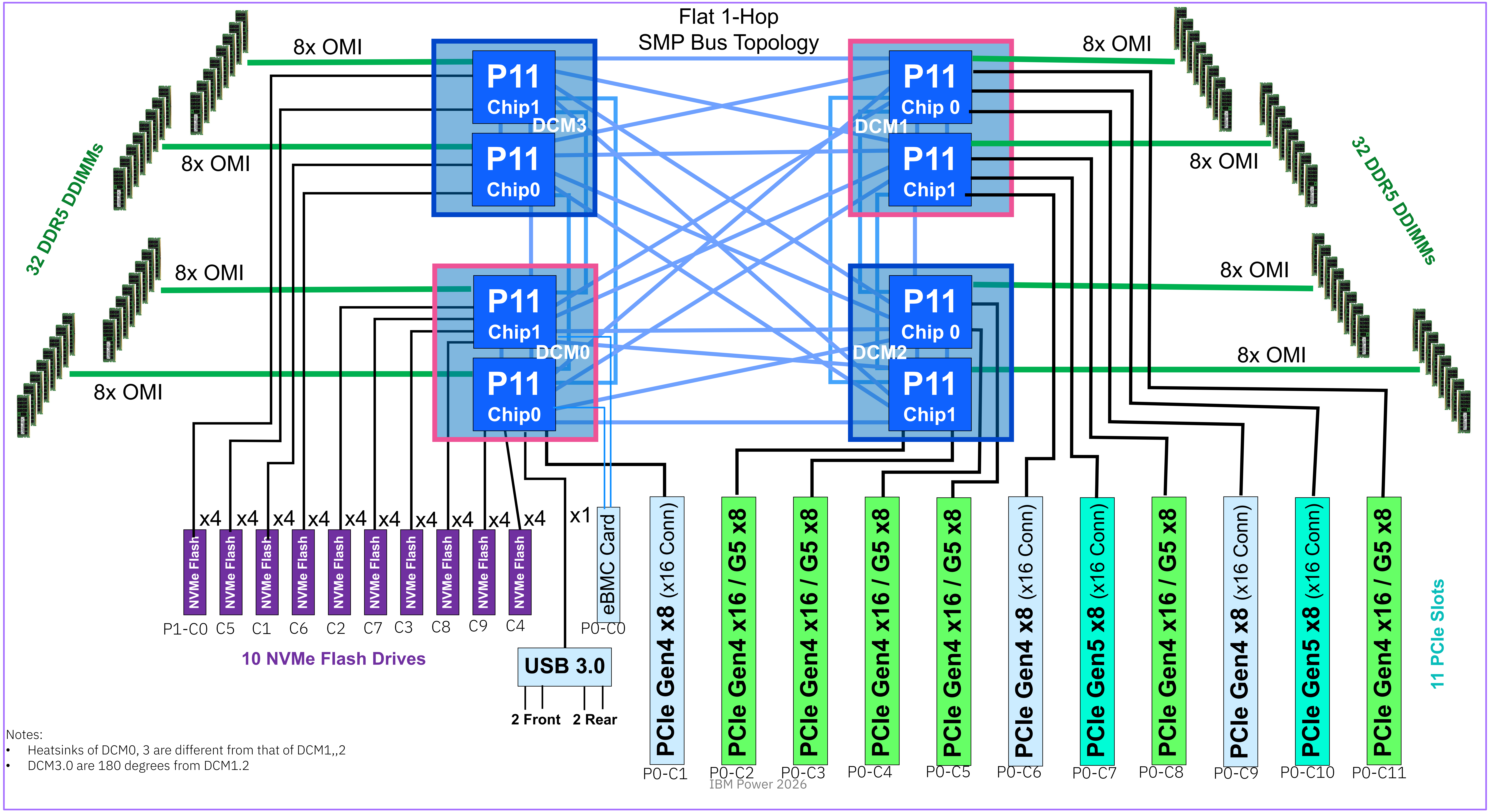
- Heatsinks of DCM0, 3 are different from that of DCM1,,2
- DCM3.0 are 180 degrees from DCM1.2

E1150 - Server Architecture – 3 Sockets



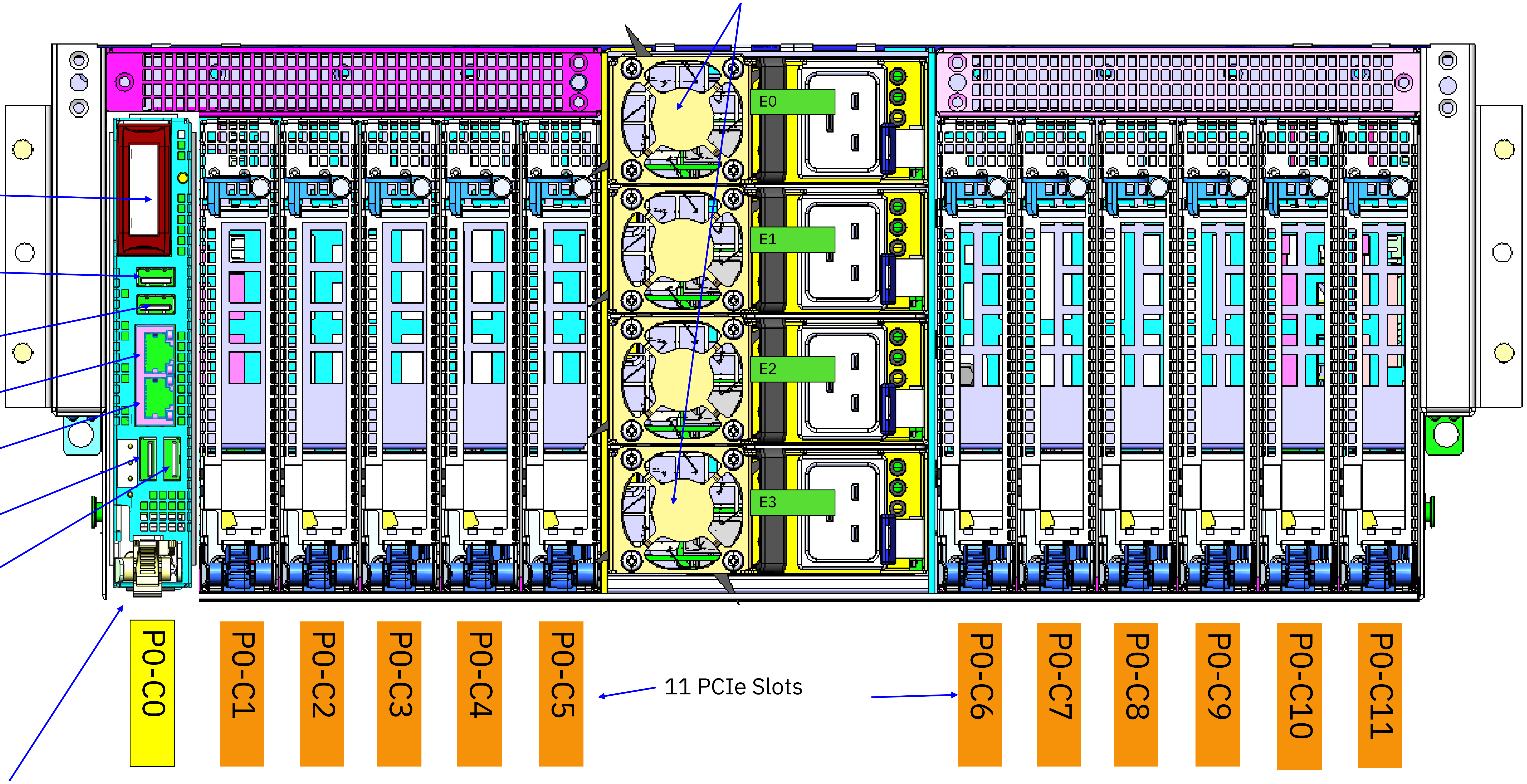
Notes:
- Heatsinks of DCM0, 3 are different from that of DCM1,,2
- DCM3.0 are 180 degrees from DCM1.2

E1150 - Server Architecture – 4 Sockets



Notes:
- Heatsinks of DCM0, 3 are different from that of DCM1,,2
- DCM3.0 are 180 degrees from DCM1.2

E1150 - Rear View



4 Power Supplies

TOD Battery
P0-C0-E0

System USB 3.0 #3
P0-C0-T0

System USB 3.0 #4
P0-C0-T1

eBMC Enet #1
P0-C0-T2

eBMC Enet #2
P0-C0-T3

eBMC USB 2.0 #1
P0-C0-T4

eBMC USB 2.0 #2
P0-C0-T5

11 PCIe Slots

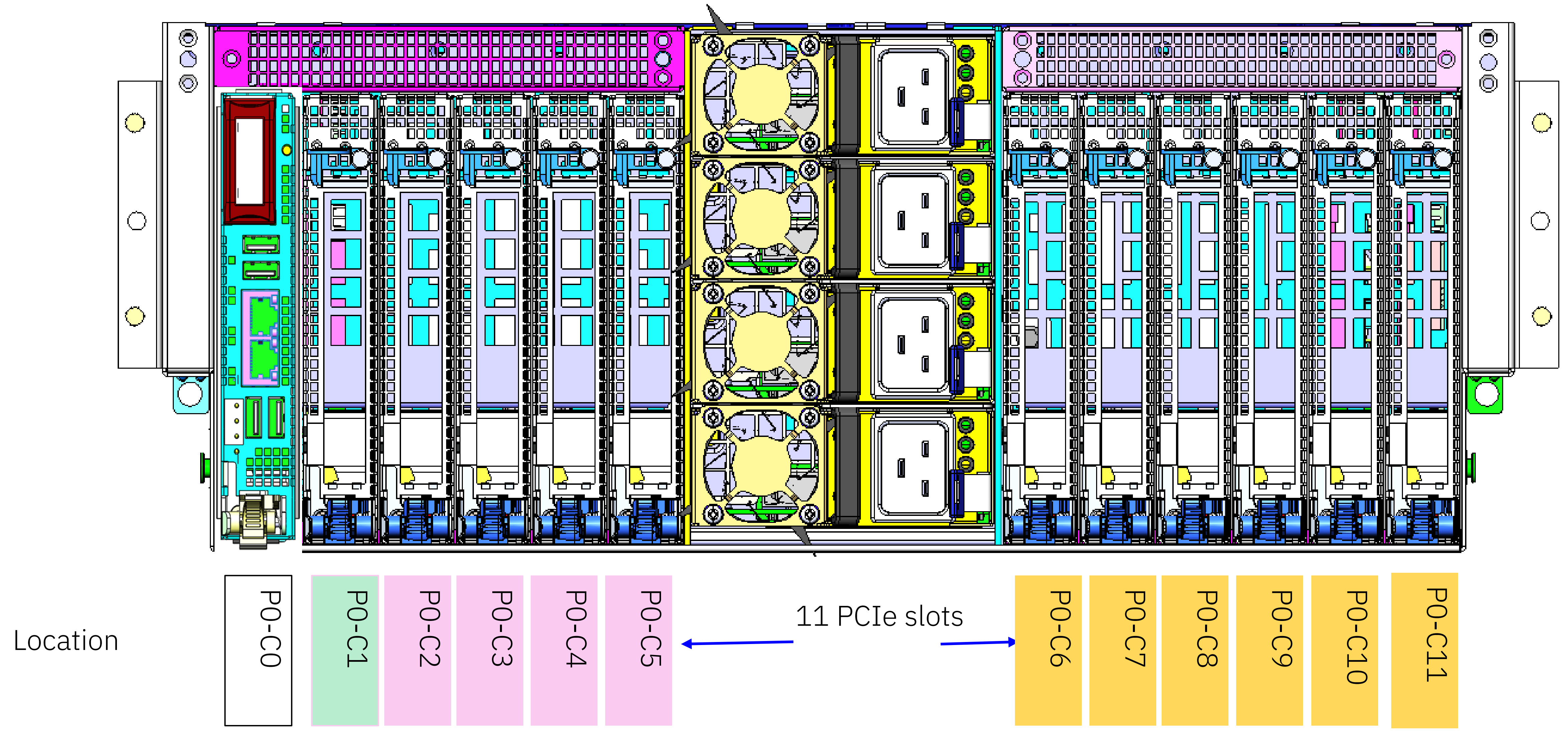
eBMC Service
Processor Card

IBM Power E1150 Rear View

E1150 - PCIe slots

Internal PCIe Slots Summary

Location	Attributes	Noticed
C1	PCIe Gen4 x8	1st Power11 Socket DCM0
C6	PCIe Gen4 x8	2nd Power11 Socket DCM1
C7	PCIe Gen5 x8	
C8	PCIe Gen4 x16 or Gen5 x8	
C9	PCIe Gen4 x8	
C10	PCIe Gen5 x8	
C11	PCIe Gen4 x16 or Gen5 x8	
C2	PCIe Gen4 x16 or Gen5 x8	3rd Power11 Socket DCM2
C3	PCIe Gen4 x16 or Gen5 x8	
C4	PCIe Gen4 x16 or Gen5 x8	
C5	PCIe Gen4 x16 or Gen5 x8	



- All PCIe slots are rear-swappable and can be held simultaneously in the I/O cassette
- Full-height, half-length PCIe form factor
- All slots are x16 physical connectors
- Feature Code EJ2A - I/O expansion adapter to connect to the Gen 4 I/O drawer

Power11 scale out servers
S1122 / S1124 / L1122 / L1124

S1124 - Highlights (MTM 9824-42A, 9856-42H)

- New! Power11 DCM processor with 16, 24, 30 cores per socket
- 1-Hop flat CPU interconnect for maximum scalability
- New! Spare cores for increased availability (2 spare cores per socket)
- New! Energy efficient mode with enhanced scheduling capabilities
- New! 32 DDR5 DDIMM slots with 50% more bandwidth that provide up to 8TB max memory capacity
- New! Increased DDR5 memory bandwidth
- Main memory encryption for added security
- Active memory mirroring support to reduce unplanned outages
- Flexible consumption with Shared Capacity Utility (for processors)
- Ten PCIe FHHL slots (8 are GEN5 capable), all slots are concurrently maintainable
- Up to 16 NVMe U.2 Flash Bays provides up to 244.8 TB of storage
- New! Quantum safe encryption for secure boot and LPM (Logical Partition Migration)
- Supports external PCIe I/O and NVMe Storage Expansion Drawers
- Titanium power supplies to meet EU Efficiency Directives
- Enterprise BMC managed

S1122 - Highlights (MTM 9824-22A, 9856-22H)

- New! Power11 DCM processor with 16, 24, 30 cores per socket
- New! Power11 eSCM processor with 4, 10 cores per socket
- 1-Hop flat CPU interconnect for maximum scalability
- New! Spare cores for increased availability (2 spare cores per socket) on DCMs
- New! Energy efficient mode with enhanced scheduling capabilities
- New! 32 DDR5 DDIMM slots with 50% higher bandwidth provides up to 4TB max memory
- Main memory encryption for added security
- Active memory mirroring support to reduce unplanned outages
- Flexible consumption with Shared Capacity Utility (for processors)
- Ten PCIe HHHL slots (8 are GEN5 capable with DCM), all slots are concurrently maintainable
- Up to 8 NVMe U.2 Flash Bays provide up to 122.4 TB of storage
- New! Quantum safe encryption for secure boot and LPM (Logical Partition Migration)
- Supports external PCIe I/O and NVMe Storage Expansion Drawers
- Titanium power supplies to meet EU Efficiency Directives
- Enterprise BMC managed

S1124 / L1124 processor options

2 sockets populated in each system
Except single socket 16 core model

3 models of DCM available to choose from

- **16 cores** (+ 2 spare) @ 2.8 to 3.95 GHz
- **24 cores** (+ 2 spare) @ 3.05 to 4.15 GHz
- **30 cores** (+ 2 spare) @ 2.8 to 3.95 GHz

Core activations are purchased separately

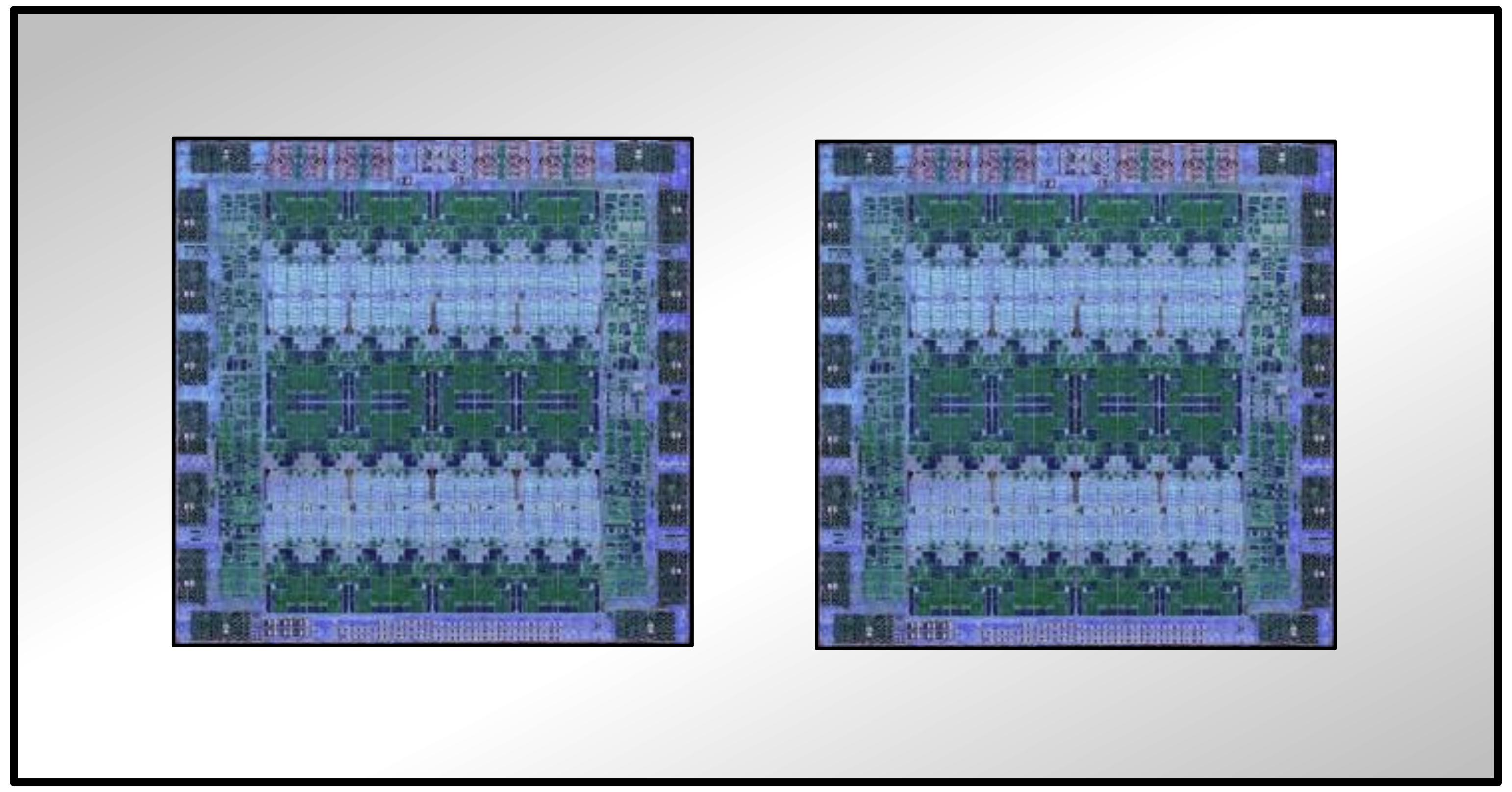
- Permanent activations
- Temporary activations (PEP1)
- Base activations (PEP2.0)

Linux only activations are available

Both processor sockets are identical (same feature) when installed

Minimum of 50% of all installed cores must have activations against them
[Systems in a PEP2.0 pool only require 1 base activation]

PEP1 and PEP2.0 enablement is at system level with a subscription for enablement



S1122 / L1122 processor options

2 sockets populated in each system
Except single socket 16 core model

3 models of DCM available to choose from
- **16 cores** (+ 2 spare) @ 2.8 to 3.95 GHz
- **24 cores** (+ 2 spare) @ 3.05 to 4.15 GHz
- **30 cores** (+ 2 spare) @ 2.8 to 3.95 GHz

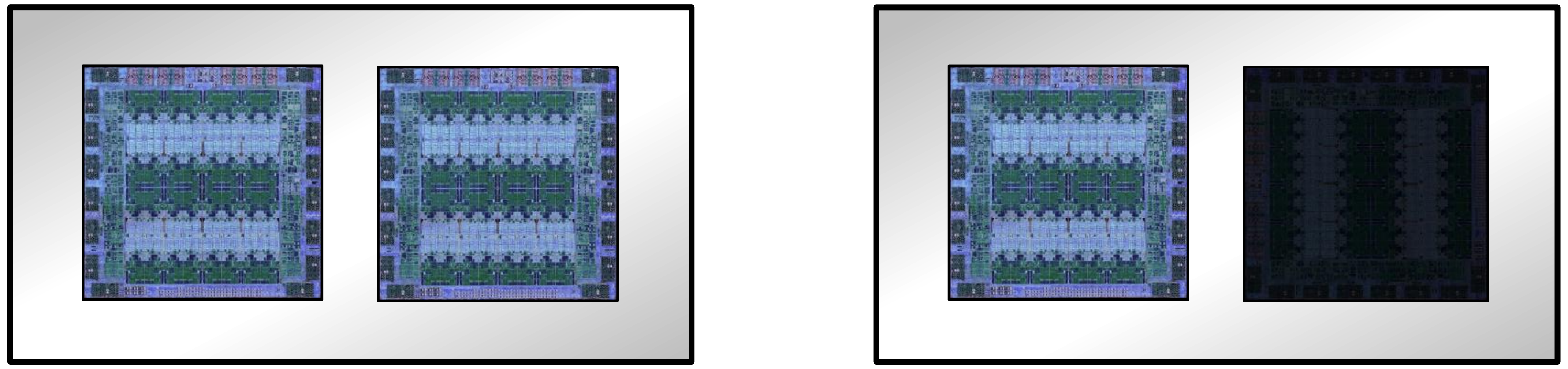
Also 2 models of eSCM available
- **10 cores** (no spare) @ 3.05 to 4.00 GHz
- **4 cores** (no spare) @ 3.60 to 4.00 GHz

Core activations for DCM are purchased separately (eSCM includes all cores active)

Both processor sockets are identical (same feature) when installed

Minimum of 50% of all installed DCM cores must have activations against them
[Systems in a PEP2.0 pool only require 1 base activation]

PEP1 and PEP2.0 enablement is at system level with a subscription for enablement



S1024 / L1024 processor options

	Feature Code 42A / 42H	Feature Name	Processor Type	Frequency Range	IBM i SW Tier	Supported Configurations
S1124	EP3Y / EP4J	30W DCM	30 cores + 2 spare	2.8 to 3.95 GHz	P30	60 cores
	EP3H / EP4B	24W DCM	24 cores + 2 spare	3.05 to 4.15 GHz	P30	48 cores
	EP3X / EP4C	16W DCM	16 cores + 2 spare	3.40 to 4.2 GHz	P20	16 or 32 cores

	Feature Code 22A / 22H	Feature Name	Processor Type	Frequency Range	IBM i SW Tier	Supported Configurations
S1122	EBGA / ERGH	30W DCM	30 cores + 2 spare	2.4 to 3.95 GHz	P10, 4C max LPAR	60 cores
	EBG9 / ERGG	24W DCM	24 cores + 2 spare	2.65 to 4.15 GHz	P10, 4C max LPAR	48 cores
	EBG8 / ERGF	16W DCM	16 cores + 2 spare	3.00 to 4.2 GHz	P10, 4C max LPAR	32 cores
	ERGQ / ____	10W eSCM	10 cores	3.05 to 4.00 GHz	P10, 4C max LPAR	20 cores
	ERGR / ____	4W eSCM	4 cores	3.60 to 4.00GHz	P10, Native support	8 cores

Scale out server memory options

Each DCM populated enables 16 DDIMM slots

Each eSCM populated enables 8 DDIMM slots

Memory bandwidth is linear based on number of DDIMMs installed

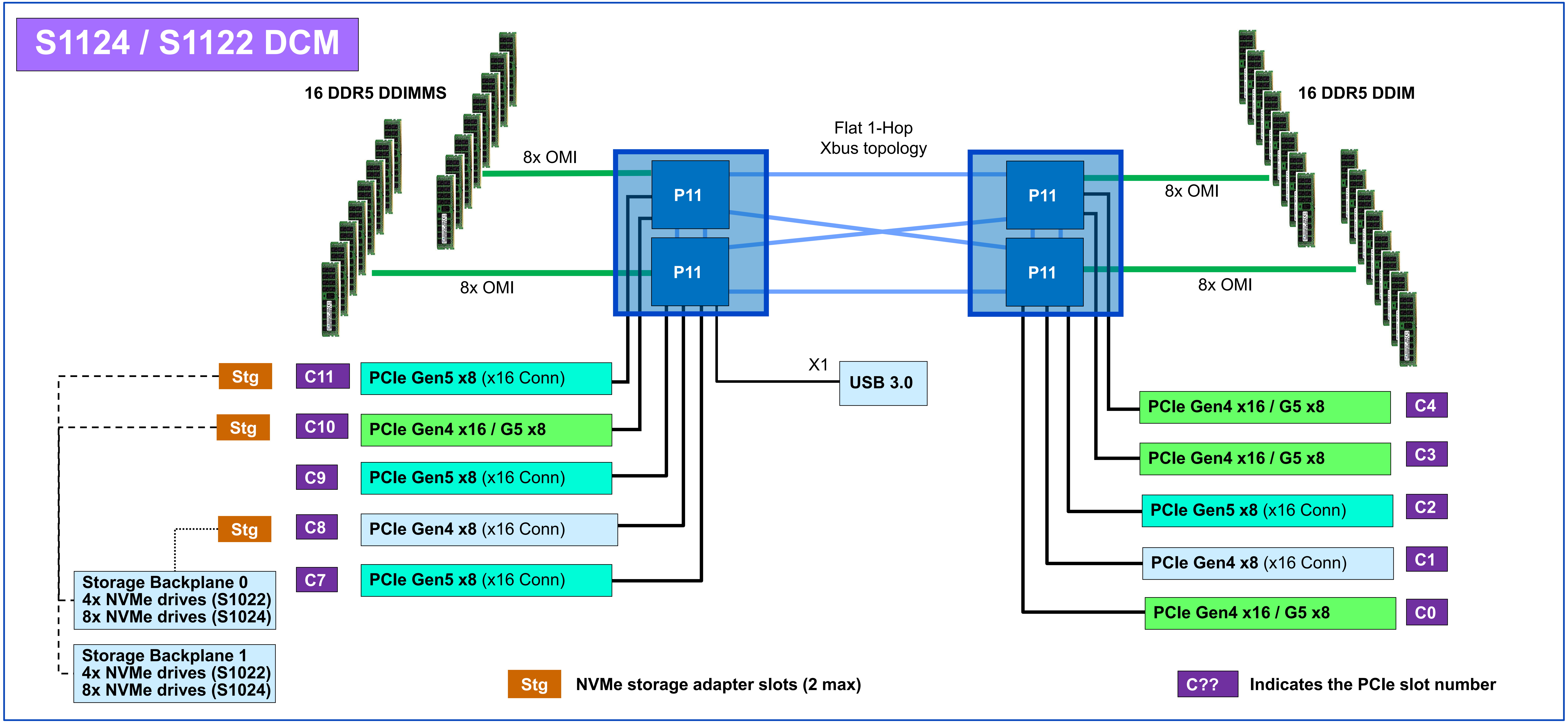
All memory in scale out servers is fully activated

All memory DDIMMs are sold and installed in pairs (1 feature code = 2 x DDIMMs)

Peak frequency and bandwidth is only available for partially populated memory systems

	Feature Code 22A-42A / 22H-42H	Feature Name	DDIMM Size	Max Config	Frequency Partial* / Full	Peak Bandwidth / socket
S1122 or S1124	EM54 / EM59	64GB DDR5	2x 32GB 2U DDIMM	1TB	4800 MHz 16Gbit	614 GB/s
	EM5B / EM5F	128GB DDR5	2x 64GB 2U DDIMM	2TB	4800 MHz 16 Gbit	1228 GB/s
	EM5G/EM5H	256GB DDR5	2x 128GB 2U DDIMM	4TB	4800 / 4000 MHz 32 Gbit	1228 GB/s
S1124	EM4M/EM4G	256GB DDR5	2x 128GB 4U DDIMM	8TB	4800 / 4000 MHz 16 Gbit	1228 GB/s
	EM5J / EM4H	512GB DDR5	2x 256GB 4U DDIMM	8TB	4800 / 4000 MHz 32 Gbit	1228 GB/s
	#EM8G	ACTIVE MEMORY MIRRORING				

Architecture of 2-socket 2U DCM servers



S1124 / S1122 DCM

16 DDR5 DDIMMS

16 DDR5 DDIM

8x OMI

8x OMI

8x OMI

8x OMI

Flat 1-Hop
Xbus topology

P11

P11

P11

P11

X1

USB 3.0

Stg **C11** **PCIe Gen5 x8** (x16 Conn)

Stg **C10** **PCIe Gen4 x16 / G5 x8**

C9 **PCIe Gen5 x8** (x16 Conn)

Stg **C8** **PCIe Gen4 x8** (x16 Conn)

C7 **PCIe Gen5 x8** (x16 Conn)

PCIe Gen4 x16 / G5 x8 **C4**

PCIe Gen4 x16 / G5 x8 **C3**

PCIe Gen5 x8 (x16 Conn) **C2**

PCIe Gen4 x8 (x16 Conn) **C1**

PCIe Gen4 x16 / G5 x8 **C0**

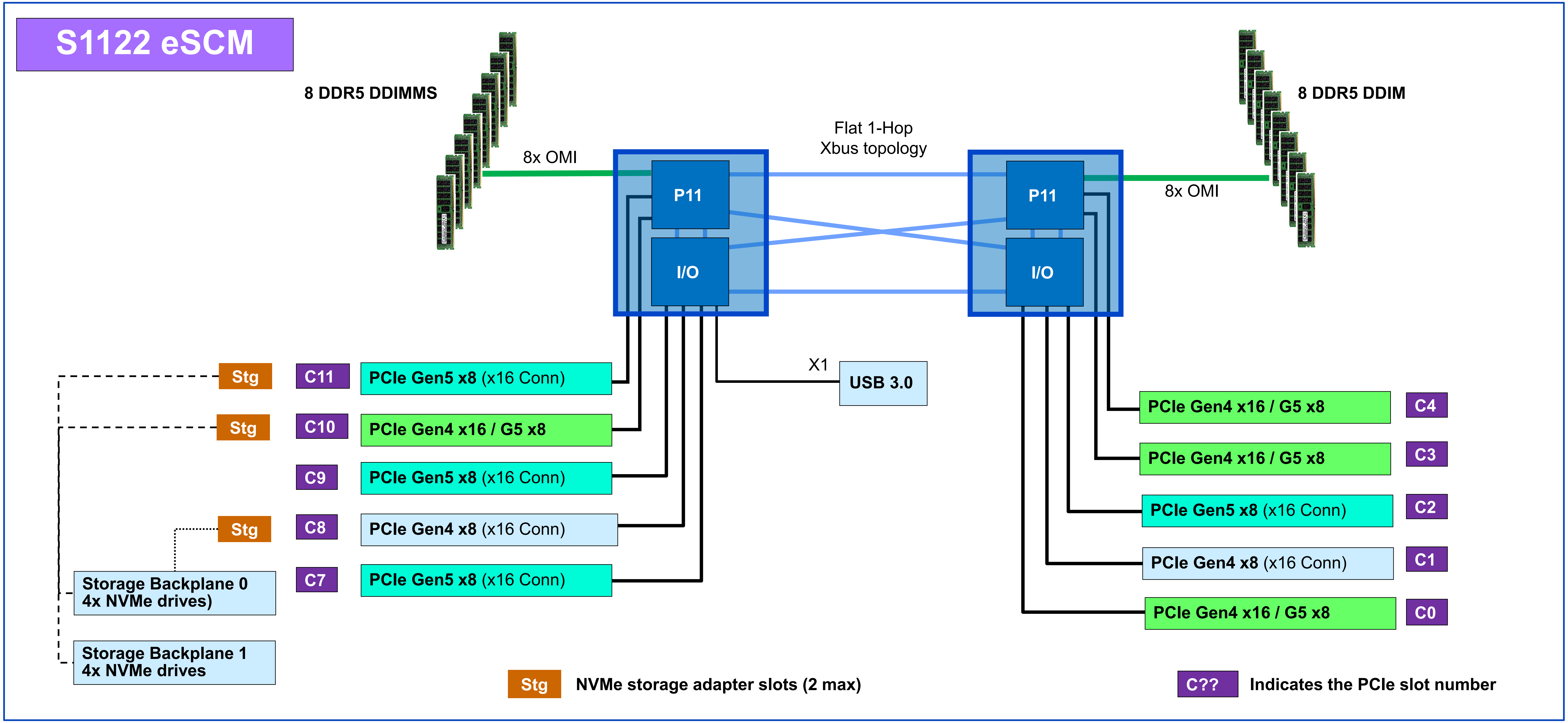
Storage Backplane 0
4x NVMe drives (S1022)
8x NVMe drives (S1024)

Storage Backplane 1
4x NVMe drives (S1022)
8x NVMe drives (S1024)

Stg **NVMe storage adapter slots (2 max)**

C?? **Indicates the PCIe slot number**

Architecture of 2-socket eSCM servers



S1122 eSCM

8 DDR5 DDIMMS

8x OMI

P11

I/O

Flat 1-Hop
Xbus topology

P11

I/O

8x OMI

8 DDR5 DDIM

X1

USB 3.0

Stg **C11** **PCIe Gen5 x8** (x16 Conn)

Stg **C10** **PCIe Gen4 x16 / G5 x8**

C9 **PCIe Gen5 x8** (x16 Conn)

Stg **C8** **PCIe Gen4 x8** (x16 Conn)

C7 **PCIe Gen5 x8** (x16 Conn)

Storage Backplane 0
4x NVMe drives)

Storage Backplane 1
4x NVMe drives

PCIe Gen4 x16 / G5 x8 **C4**

PCIe Gen4 x16 / G5 x8 **C3**

PCIe Gen5 x8 (x16 Conn) **C2**

PCIe Gen4 x8 (x16 Conn) **C1**

PCIe Gen4 x16 / G5 x8 **C0**

Stg **NVMe storage adapter slots (2 max)**

C?? **Indicates the PCIe slot number**

S1124 & L1124 PCIe slots

Internal PCIe Slots Summary

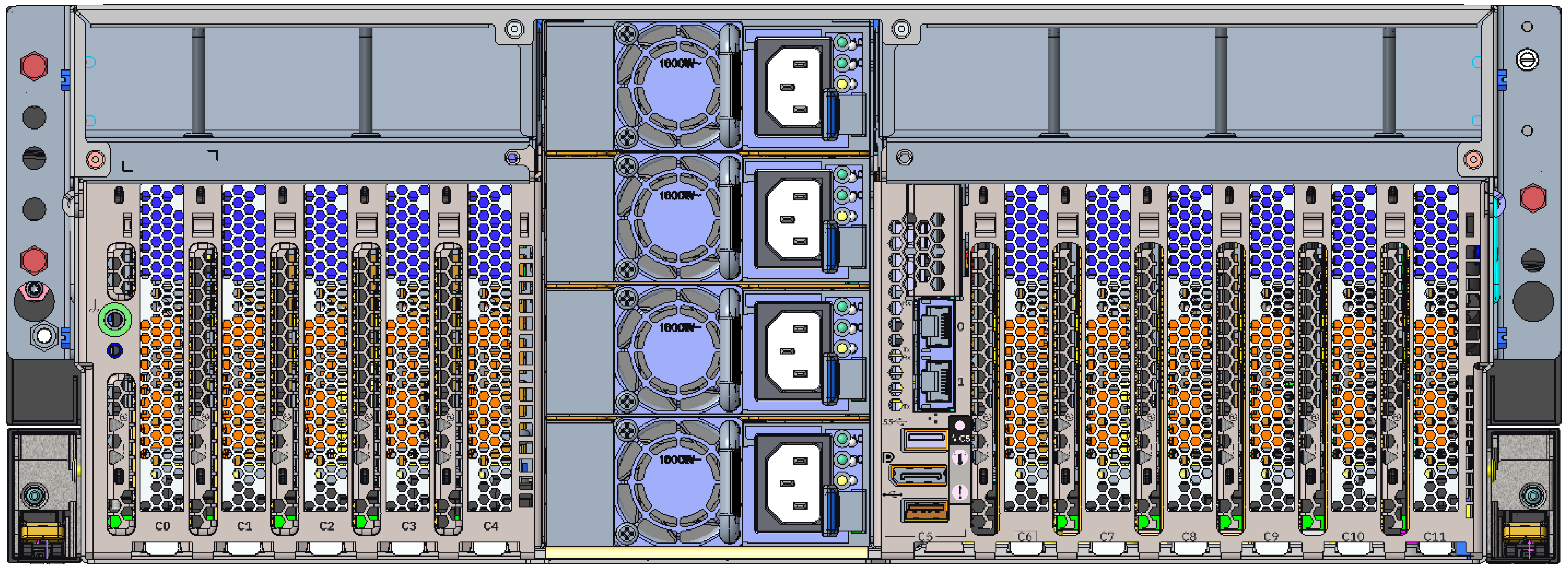
slot	Attributes	Noticed
C0	PCIe Gen4 x16 or Gen5 x8 (EJ2A slot*)	2 Port Power11
C1	PCIe Gen4 x8 (x16 Conn)	
C2	PCIe Gen5 x8 (x16 Conn)	
C3	PCIe Gen4 x16 or Gen5 x8 (EJ2A slot*)	
C4	PCIe Gen4 x16 or Gen5 x8 (EJ2A slot*)	
C5	eBMC card	
C6	OpenCAPI only	1 Power11 port
C7	PCIe Gen5 x8 (x16 Conn)	
C8	PCIe Gen4 x8 (x16 Conn) **	
C9	PCIe Gen5 x8 (x16 Conn)	
C10	PCIe Gen4 x16 or Gen5 x8 (EJ2A slot*) **	
C11	PCIe Gen5 x8 (x16 Conn) **	

*EJ2A-I/O Expansion Adapter

** JBOF NVMe card support

- All PCIe slots are simultaneous.
- Full-height, half-length PCIe form factor

Default FC Ethernet: EC2U 2x1GbE BaseT SFP



S1122 & L1122 - PCIe slots

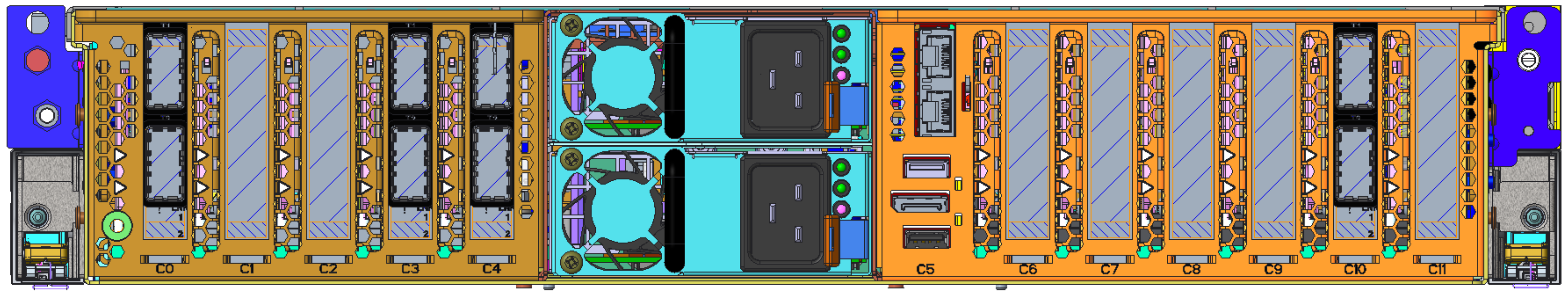
Internal PCIe Slots Summary

SLOT	Attributes	Noticed
C0	PCIe Gen4 x16 or Gen5 x8 (EJ24 slot*)	2 Port Power11
C1	PCIe Gen4 x8 (x16 Conn)	
C2	PCIe Gen5 x8 (x16 Conn)	
C3	PCIe Gen4 x16 or Gen5 x8 (slot EJ24 *)	
C4	PCIe Gen4 x16 or Gen5 x8 (slot EJ24 *)	
C5	eBMC card	
C6	OpenCAPI only	1 Power11 port
C7	PCIe Gen5 x8 (x16 Conn)	
C8	PCIe Gen4 x8 (x16 Conn) **	
C9	PCIe Gen5 x8 (x16 Conn)	
C10	PCIe Gen4 x16 or Gen5 x8 (EJ24 slot*) **	
C11	PCIe Gen5 x8 (x16 Conn) **	

*EJ24-I/O Expansion Adapter
** JBOF NVMe card support

- All PCIe slots are simultaneous.
- Half-height, half-length PCIe form factor

Default FC Ethernet: EC2T 2x1GbE BaseT SFP



C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11
HMC ports

USB 2.0 port (BMC)
USB 3.0 port (host)

Storage options

S112x / L112x storage options

Internal storage options :

All internal storage drives are PCIe NVMe
General PCIe slots (C10/C8, C11) support JBOF NVMe card and are wired to the NVMe backplane

Maximum number of 16 NVMe U.2 drives (4U)
Maximum number of 8 NVMe U.2 drives (2U)

FC	Model	Description
EJ1Y	S1124	NVMe JBOF Card with U.2 8-Pak Backplane
EJ1X	S1122	NVMe JBOF Card with U.2 Backplane 4-Pak

Power11 storage options

All direct connected storage is NVMe only

- Connected into u.2 NVMe slots in system
- Connected directly as PCIe adapter
- Installed in NVMe expansion drawer

E1180 server has 4 U.2 NVMe slots per compute drawer (up to 16 total)

E1150 server has up to 10 U.2 NVMe slots

#ESR0 expansion drawer (aka NED24) includes up to 24 U.2 NVMe devices

Feature Code	Description
EC7Q	800GB NVMe U.2 7mm Carrier SSD PCIe4 (AIX/Linux only – not in expansion drawer)
ES5A, ES5B	800GB 4K NVME U.2 15MM SSD PCIe4
ES5C, ES5D	1.6TB 4K NVME U.2 15MM SSD PCIe4
ES5E, ES5F	3.2TB 4K NVME U.2 15MM SSD PCIe4
ES5G, ES5H	6.4TB 4K NVME U.2 15MM SSD PCIe4
ES4B, ES4C	1.6TB 4K NVME U.2 15MM SSD PCIe4
ES4D, ES4E	3.2TB 4K NVME U.2 15MM SSD PCIe4
ES4F, ES4G	6.4TB 4K NVME U.2 15MM SSD PCIe4
ECT9, ECTB	15.3TB 4K NVME U.2 15MM SSD PCIe4 MAINSTREAM

Power11 storage options

All direct connected storage is NVMe only
- Connected into u.2 NVMe slots in system
- Connected directly as PCIe adapter
- Installed in NVMe expansion drawer

S1124 server has up to 16 U.2 NVMe slots
(8 slots with one JBOF adapter)

S1122 server has up to 8 U.2 NVMe slots
(4 slots with one JBOF adapter)

#ESR0 expansion drawer (aka NED24) includes up to 24 U.2 NVMe devices

Feature Code	Description
EC7Q	800GB NVMe U.2 7mm Carrier SSD PCIe4 (AIX/Linux only – not in expansion drawer)
ES5A, ES5B	800GB 4K NVME U.2 15MM SSD PCIe4
ES5C, ES5D	1.6TB 4K NVME U.2 15MM SSD PCIe4
ES5E, ES5F	3.2TB 4K NVME U.2 15MM SSD PCIe4
ES5G, ES5H	6.4TB 4K NVME U.2 15MM SSD PCIe4
ES4B, ES4C	1.6TB 4K NVME U.2 15MM SSD PCIe4
ES4D, ES4E	3.2TB 4K NVME U.2 15MM SSD PCIe4
ES4F, ES4G	6.4TB 4K NVME U.2 15MM SSD PCIe4
ECT9, ECTB	15.3TB 4K NVME U.2 15MM SSD PCIe4 MAINSTREAM

NED24 storage expansion drawer

The NED24 NVMe expansion drawer is connected to a Power server via two CXP Converter adapters (#EJ24 or #EJ2A)

Both CXP Converter adapters require a connecting cable (sold in pairs)
[This is the same connectivity as the PCIe expansion drawer]

- #ECLR - 2.0 M Active Optical Cable x16 Pair
- #ECLS - 3.0 M CXP x16 Copper Cable Pair
- #ECLX - 3.0M x16 Pair Active Optical Cable
- #ECLY - 10M x16 Pair Active Optical Cable
- #ECLZ - 20M x16 Pair Active Optical Cable

Each drawer provide an additional 24 U.2 NVMe slots with individual connectivity to LPARs

Power11 NVMe

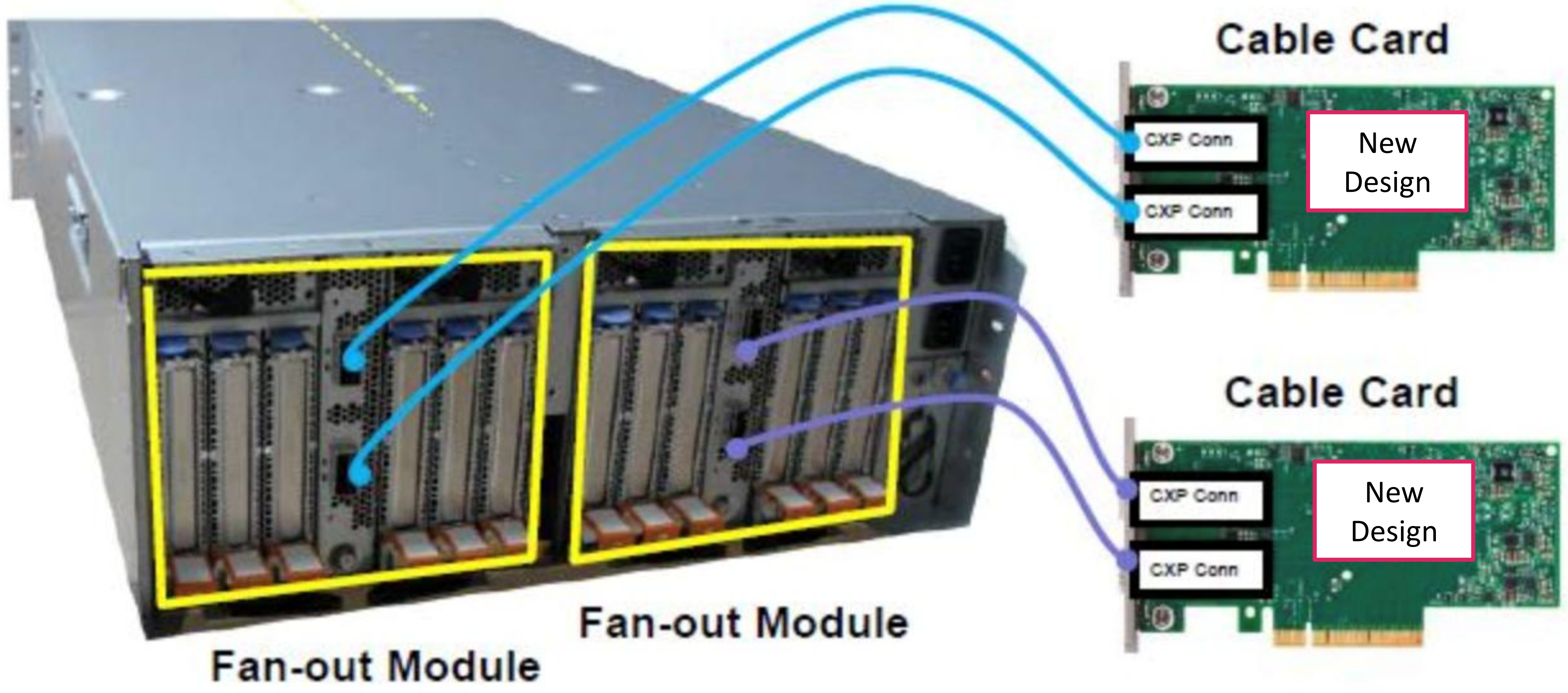
FC (A/L), (i)	Category	Description	S1122	S1124	E1150	E1180	ESR0	Orderable / Supported	Replacement
EC5J	NVMe	800GB NVMe U.2 7mm Carrier SSD PCIe3 (AIX/Linux)				A/L		S	EC7Q
EC5X	NVMe	800GB NVMe U.2 7mm SSD PCIe3 (AIX/Linux), 15mm Carrier			A/L			S	ES5A
EC7Q	NVMe	800GB NVMe U.2 7mm Carrier SSD PCIe4 (AIX/Linux)				A/L		O	
EC7T	NVMe	800GB NVMe U.2 7mm SSD PCIe4 (AIX/Linux), 15mm Carrier	A/L	A/L	A/L			S	ES5A
ES1K	NVMe	800G 4K NVMe U.2 15mm SSD PCIe4 (IBMi)	i *	i				S	ES5B
ES1E, ES1F	NVMe	1.6TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L			S	ES5C, ES5D
ES1G, ES1H	NVMe	3.2TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L			S	ES5E, ES5F
EC5V, EC5W	NVMe	6.4TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L			S	ES5G, ES5H
ES3H, ES3A	NVMe	800GB 4K NVMe U.2 15mm SSD PCIe4 (IBMi)	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	S	ES5A, ES5B
ES3B, ES3C	NVMe	1.6TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	S	ES5C, ES5D
ES3D, ES3E	NVMe	3.2TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	S	ES5E, ES5F
ES3F, ES3G	NVMe	6.4TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	S	ES5G, ES5H
EKF9, EKF2	NVMe	800GB 4K NVMe U.2 15mm SSD PCIe4 (IBMi)	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	S	ES5A, ES5B
EKF3, EKF4	NVMe	1.6TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	S	ES5C, ES5D
EKF5, EKF6	NVMe	3.2TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	S	ES5E, ES5F
EKF7, EKF8	NVMe	6.4TB 4K NVMe U.2 15mm SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	S	ES5G, ES5H
ES5A, ES5B	NVMe	800GB 4K NVME U.2 15MM SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	O	
ES5C, ES5D	NVMe	1.6TB 4K NVME U.2 15MM SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	O	
ES5E, ES5F	NVMe	3.2TB 4K NVME U.2 15MM SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	O	
ES5G, ES5H	NVMe	6.4TB 4K NVME U.2 15MM SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	O	
ES4B, ES4C	NVMe	1.6TB 4K NVME U.2 15MM SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	O	
ES4D, ES4E	NVMe	3.2TB 4K NVME U.2 15MM SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	O	
ES4F, ES4G	NVMe	6.4TB 4K NVME U.2 15MM SSD PCIe4	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	O	
ECT9, ECTB	NVMe	15.3TB 4K NVME U.2 15MM SSD PCIe4 MAINSTREAM	A/L, i *	A/L, i	A/L	A/L, i	A/L, i	O	

BOLD indicates Standard Part

* 9824-22A 2 Socket 4 Core Processor Configuration only.

PCIe connectivity options

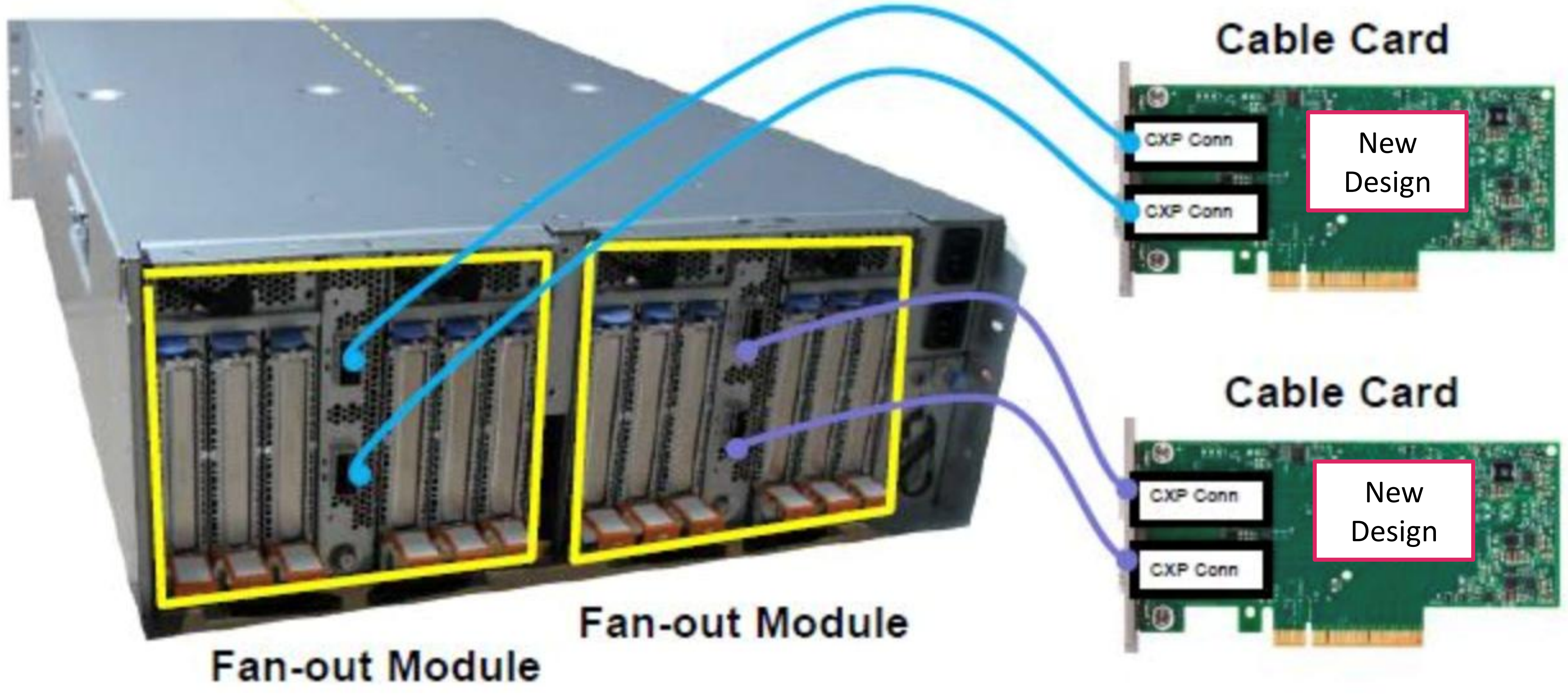
PCIe Gen4 Expansion Drawer (ENZ0)



- ENZ0 I/O Expansion Drawer that supports 2 Fanout Modules - Device Code ENZF
- ENZF PCIe Gen4 Fanout Module Supports 6 PCIe Gen4 (4 x16, 2 x 8) Full High, Full Length Slots
- New cable board to connect E1150 to the EJ2A I/O Function expansion drawer
  - #ECLS - 3.0 M CXP x16 Copper Cable Pair for PCIe4 Expansion Drawer
  - #ECLX - 3.0M x16 Pair Active Optical Cable for PCIe4 Expansion Drawer
  - #ECLY - 10M x16 Pair Active Optical Cable for PCIe4 Expansion Drawer

E1180 = max 4 I/O expansion per compute drawer (16 total)
E1150 = max 4 I/O expansion (2 when only 2 sockets populated)

PCIe Gen4 Expansion Drawer (ENZ0)



- ENZ0 I/O Expansion Drawer that supports 2 Fanout Modules - Device Code ENZF
- ENZF PCIe Gen4 Fanout Module Supports 6 PCIe Gen4 (4 x16, 2 x 8) Full High, Full Length Slots
- New cable board to connect E1150 to the EJ2A I/O Function expansion drawer
  - #ECLS - 3.0 M CXP x16 Copper Cable Pair for PCIe4 Expansion Drawer
  - #ECLX - 3.0M x16 Pair Active Optical Cable for PCIe4 Expansion Drawer
  - #ECLY - 10M x16 Pair Active Optical Cable for PCIe4 Expansion Drawer

S1124 = max 2 I/O expansion drawers (1/2 drawer only if single socket) – maximum 30 PCIe slots
S1122 = max 1 I/O expansion drawer – maximum 20 PCIe slots

Power11 IO Expansion Support

MTM	Max IO Drawers	Max ESR0	Max ENZ0	Comments
9080-HEU node/frame	4 / 16	2 / 8	4 / 16	See system adapter placement rules and slot priorities
9043-MRU (3 or 4 Socket)	4	2	4	See system adapter placement rules and slot priorities
9043-MRU (2 Socket)	2	1	2	See system adapter placement rules and slot priorities
9824-42A	2	1	2	See system adapter placement rules and slot priorities
9824-22A	1	1	1	See system adapter placement rules and slot priorities, AOC cables not supported

Power11 NIC & RoCE

FC	Category	Marketing Name	Conn	Ports x Speed	SRIOV	S1122	S1124	E1150	E1180	ENZ0	Orderable / Supported	Replacement
EC2T	ROCE	2-Port 25/10 Gb NIC&ROCE SR/Cu PCIe 3.0 LP Adapter	SFP28	2 x 25G	X	X			X		S	EC71
EC2U	ROCE	2-Port 25/10 Gb NIC&ROCE SR/Cu PCIe 3.0 LP Capable Adapter	SFP28	2 x 25G	X		X	X		X	S	EC72
EC71	ROCE	2-PORT 25Gb EN CONNECTX-6 Lx SFP28 NO CRYPTO PCIe4 x8 LP ADAPTER	SFP28	2 x 25G	X	X			X		O	
EC72	ROCE	2-PORT 25Gb EN CONNECTX-6 Lx SFP28 NO CRYPTO PCIe4 x8 LP CAPABLE ADAPTER	SFP28	2 x 25G	X		X	X		X	O	
EC73	ROCE	2-PORT 25Gb EN CONNECTX-6 Lx SFP28 CRYPTO PCIe4 x8 LP ADAPTER for IBM i	SFP28	2 x 25G	X	X			X		O	
EC74	ROCE	2-PORT 25Gb EN CONNECTX-6 Lx SFP28 CRYPTO PCIe4 x8 LP CAPABLE ADAPTER for IBM i	SFP28	2 x 25G	X		X			X	O	
EN24	ROCE	4-PORT 25/10/1 GbE NIC&RoCE SR/Cu PCIe4 x16 LPX ADAPTER	SFP28	4 x 25G	X				X		O	
EN26	ROCE	4-PORT 25/10/1 GbE NIC&RoCE SR/Cu PCIe4 x16 LP CAPABLE ADAPTER	SFP28	4 x 25G	X		X	X		X	O	
EC75	ROCE	2-PORT 100Gb EN CONNECTX-6 DX QFSP56 PCIe4 x16 LP ADAPTER	QSFP28	2 x 100G	X	X			X		S	EC85
EC76	ROCE	2-PORT 100Gb EN CONNECTX-6 DX QFSP56 PCIe4 x16 LP CAPABLE ADAPTER	QSFP28	2 x 100G	X		X	X			S	EC86
EC85	ROCE	2-PORT 200GbE Capable NIC&RoCE SR/Cu LP ADAPTER	QSFP56	2 x 100G	X	X			X		O	
EC86	ROCE	2-PORT 200GbE Capable NIC&RoCE SR/Cu LP CAPABLE ADAPTER	QSFP56	2 x 100G	X		X	X			O	

BOLD indicates Standard Part

Power11 NIC & RoCE Transceivers and Cables

FC	Category	Marketing Name	Conn	Speed	EC2T/U EC71/2/3/4	EN24/6	EC75/6 EC85/6	Orderable / Supported	Comments
EB48	XCVR	1Gb RJ45 TRANSCEIVER	SFP/RJ45	1Gb	X	X		O	
EB46	XCVR	10GbE OPTICAL TRANSCEIVER SR	SFP+/LC MMF	10Gb	X	X		O	
EB47	XCVR	25GbE OPTICAL TRANSCEIVER	SFP28/LC MMF	25Gb	X	X		O	
EB57	XCVR	40GbE BASE-SR4 TRANSCEIVER	QSFP+/MPO MMF	40Gb			X	O	
EB59	XCVR	100GbE BASE-SR4 TRANSCEIVER	QSFP28/MPO MMF	100Gb			X	O	
EB49	Conv	QSFP28 TO SFP28 CONNECTOR	QSFP28	25Gb			X	S	
EB4J	CABLE	0.5M 25GbE PASSIVE CU CABLE SFP+	SFP+	25Gb	X	X		S	
EB4K	CABLE	1M 25GbE PASSIVE CU CABLE SFP+	SFP+	25Gb	X	X		S	
EB4M	CABLE	2M 25GbE PASSIVE CU CABLE SFP+	SFP+	25Gb	X	X		S	
EB4P	CABLE	QSFP28 PASSIVE COPPER 100GbE TO SFP28 4X25GbE SPLIT CABLE	QSFP28->SFP28	25Gb	X	X		S	
EN01	CABLE	1M 10GbE CU ACTIVE TWINAX CABLE SFP+	SFP+	10Gb	X	X		S	
EN02	CABLE	3M 10GbE CU ACTIVE TWINAX CABLE SFP+	SFP+	10Gb	X	X		O	
EN03	CABLE	5M 10GbE CU ACTIVE TWINAX CABLE SFP+	SFP+	10Gb	X	X		O	
EB5K	CABLE	1.0M 100GbE Passive CU CABLE QSFP28	QSFP28	100Gb			X	O	
EB5L	CABLE	1.5M 100GbE Passive CU CABLE QSFP28	QSFP28	100Gb			X	S	
EB5M	CABLE	2.0M 100GbE Passive CU CABLE QSFP28	QSFP28	100Gb			X	O	
EB5R	CABLE	3M 100GbE ACTIVE OPTICE CABLE QSFP28	QSFP28	100Gb			X	S	
EB5S	CABLE	5M 100GbE ACTIVE OPTICE CABLE QSFP28	QSFP28	100Gb			X	S	
EB5T	CABLE	10M 100GbE ACTIVE OPTICE CABLE QSFP28	QSFP28	100Gb			X	S	
EB5U	CABLE	15M 100GbE ACTIVE OPTICE CABLE QSFP28	QSFP28	100Gb			X	S	
EB5V	CABLE	20M 100GbE ACTIVE OPTICE CABLE QSFP28	QSFP28	100Gb			X	S	
EB5W	CABLE	30M 100GbE ACTIVE OPTICE CABLE QSFP28	QSFP28	100Gb			X	S	
EB5X	CABLE	50M 100GbE ACTIVE OPTICE CABLE QSFP28	QSFP28	100Gb			X	S	

BOLD indicates Standard Part

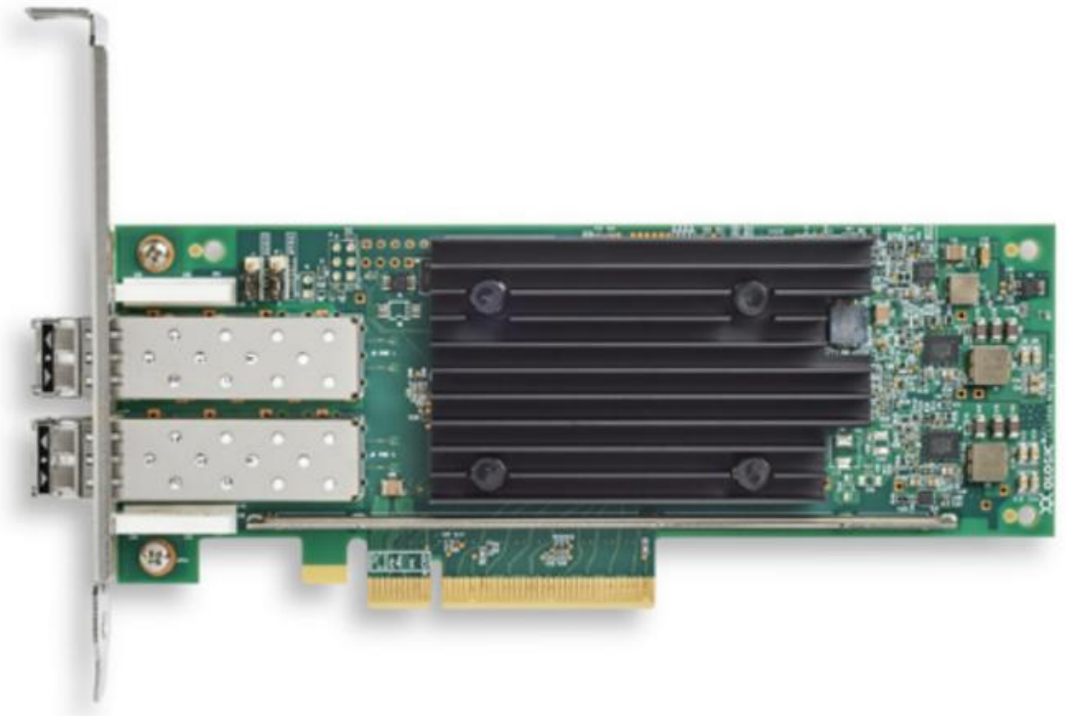
Power11 Ethernet

FC	Category	Marketing Name	Conn	Ports x Speed	S1122	S1124	E1150	E1180	ENZ0	Orderable / Supported	Replacement
EN2Z	LAN	PCIe2 4-port 1GbE Adapter	RJ45	4 x 1G		X				O	
EN2Y	LAN	PCIe2 LP 4-port 1GbE Adapter	RJ45	4 x 1G	X					O	
EN2W	LAN	PCIe2 4-port 10GbE Adapter	RJ45	4 x 10G		X	X		X	O	
EN2X	LAN	PCIe2 LP 4-port 10GbE Adapter	RJ45	4 x 10G	X			X		O	

BOLD indicates Standard Part

Power11 Fibre Channel

FC	Category	Marketing Name	Ports x Speed	S1122	S1124	E1150	E1180	ENZ0	Orderable / Supported	Replacement
EN1J	SAN	PCIe4 32Gb 2-port Fibre Channel Adapter	2 x 32G		X	X		X	O	
EN1K	SAN	PCIe4 32Gb 2-port Fibre Channel Adapter, LP	2 x 32G	X			X		O	
EN2L	SAN	PCIe4 32Gb 4-port Fibre Channel Adapter	4 x 32G		X	X		X	O	
EN2M	SAN	PCIe4 32Gb 4-port Fibre Channel Adapter, LPX	4 x 32G				X		O	
EN2N	SAN	PCIe4 64Gb 2-port Fibre Channel Adapter	2 x 64G		X	X		X	O	
EN2P	SAN	PCIe4 64Gb 2-port Fibre Channel Adapter, LP	2 x 64G	X			X		O	
EN2A	SAN	PCIe3 16Gb 2-port Fibre Channel Adapter	2 x 16G		X				S	EN1A
EN2B	SAN	PCIe3 16Gb 2-port Fibre Channel Adapter, LP	2 x 16G	X					S	EN1B
EN1A	SAN	PCIe3 32Gb 2-port Fibre Channel Adapter	2 x 32G		X	X		X	O	
EN1B	SAN	PCIe3 32Gb 2-port Fibre Channel Adapter, LP	2 x 32G	X			X		O	
EN1L	SAN	PCIe4 32Gb 4-port Fibre Channel Adapter	4 x 32G		X	X		X	O	
EN1M	SAN	PCIe4 32Gb 4-port Fibre Channel Adapter, LPX	4 x 32G				X		O	
EN1N	SAN	PCIe4 64Gb 2-port Fibre Channel Adapter	2 x 64G		X	X		X	O	
EN1P	SAN	PCIe4 64Gb 2-port Fibre Channel Adapter, LP	2 x 64G	X			X		O	

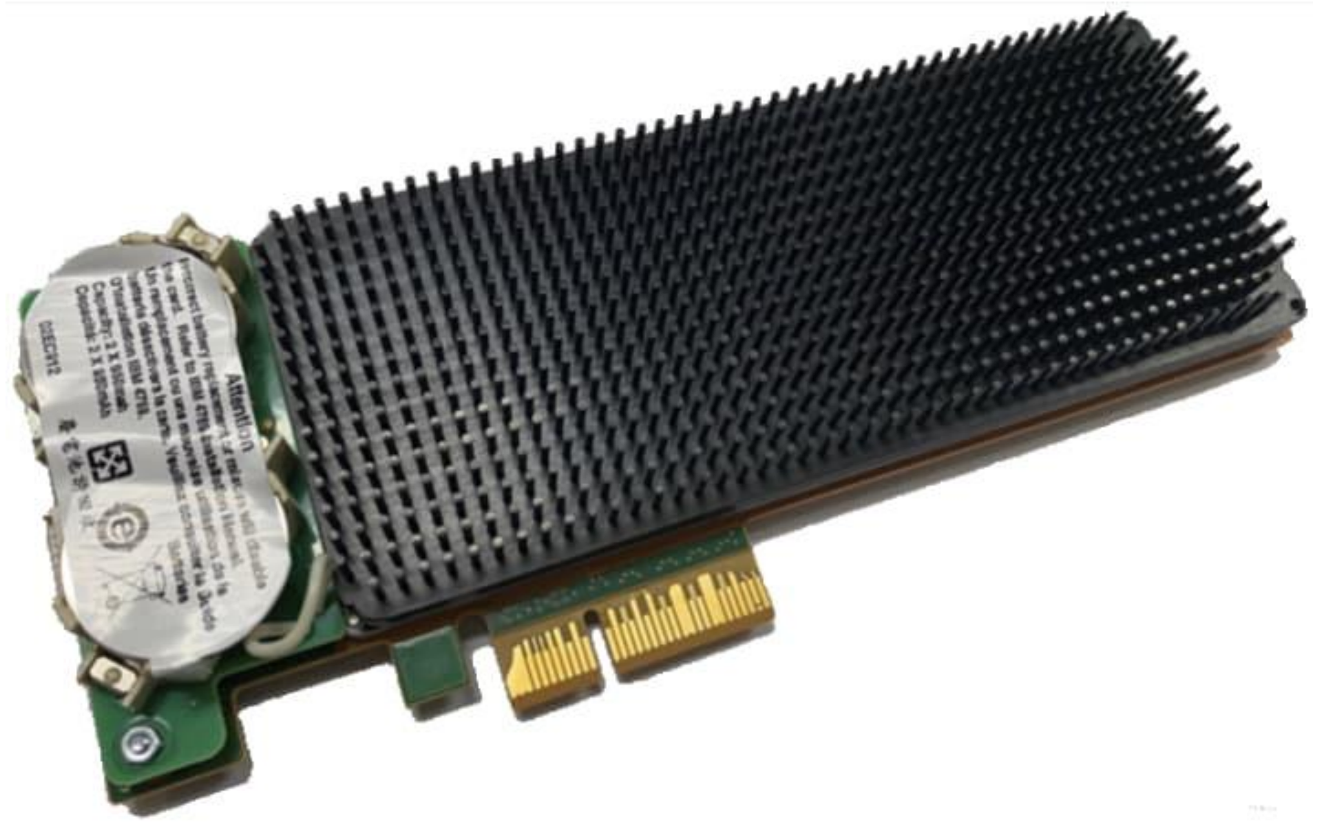


BOLD indicates Standard Part

Power11 Additional Adapters

FC	Category	Marketing Name	Conn	Ports x Speed	S1122	S1124	E1150	E1180	ENZ0	Orderable / Supported	Replacement
EC6J	USB	2-PORT USB 3.0 ADPTR, PCIe2 x1/SHORT LP	Type A	2 x 3.0	X			X		O	
EC6K	USB	2-PORT USB 3.0 ADPTR, PCIe2 x1/SHORT LP CAPABLE	Type A	2 x 3.0		X	X		X	O	
EJ35	Encryption	4769-001 CRYPTO COPROC PCI3 x4 LP CAPABLE	N/A	N/A		X	X			S	
EJ37	Encryption	4769-001 CRYPTO COPROC PCI3 x4 LP CAPABLE IN GEN3' BLIND SWAP CASSETTE	N/A	N/A					X	S	
EPG4	Encryption	4770 CRYPTO COPROC PCI3 x4 LP	N/A	N/A	X			X		O	
EPG5	Encryption	4770 CRYPTO COPROC PCI3 x4 LP CAPABLE	N/A	N/A		X	X			O	
EPG6	Encryption	4770 CRYPTO COPROC PCI3 x4 LP CAPABLE IN GEN3 CASSETTE FOR I/O DRAWER	N/A	N/A					X	O	

Bold indicates Standard Parts



Power11 SAS Tape Adapter & DVD Drive

FC	Category	Marketing Name	Conn	Ports x Speed	S1122	S1124	E1150	E1180	ENZ0	Orderable / Supported	Replacement
EJ2B	SAS	SAS TAPE HBA W/4X HD MINISAS, LOW PROFILE CAPABLE PCIe3 12Gb x8	HD Mini-SAS	4 x 12G		X			X	O	
EJ2C	SAS	SAS TAPE HBA W/4X HD MINISAS, LOW PROFILE PCIe3 12Gb x8	HD Mini-SAS	4 x 12G	X			X		O	
	Drawer	Media Drawer 7226-1U3	SAS/FC		X	X	X	X	X	O	
EUA5	DVD	STANDALONE USB DVD DRIVE WITH CABLE	USB		X	X	X	X		O	

Bold indicates Standard Parts

Software requirements

Power11 Software Requirements (OS)

Linux

- SUSE Linux Enterprise Server for SAP with SUSE Linux Enterprise Server 15, Service Pack 6, or later
- SUSE Linux Enterprise Server 15, Service Pack 6, or later
- Red Hat Enterprise Linux for SAP with Red Hat Enterprise Linux 9 for Power LE version 9.6, or later
- Red Hat Enterprise Linux 8 for Power LE, version 8.10, or later
- Red Hat Enterprise Linux 9 for Power LE, version 9.4, or later
- Red Hat Enterprise Linux 10 for Power LE, version 10.0, or later
- Red Hat OpenShift Container Platform 4.19, or later
- Please review the Linux alert page for any known Linux issues or limitations Linux on IBM - Readme first issues website.

IBM i

- IBM i 7.6 with Power11 GA PTF Group, or later
- IBM i 7.5 Technology Refresh Level 6 (TR6), or later
- IBM i 7.4 Technology Refresh Level 12 (TR12), or later

AIX

If installing the AIX operating system LPAR with any I/O configuration (one of these)

- AIX Version 7.3 with the 7300-03 Technology Level and Service Pack 7300-03-01-2520, or later
- AIX Version 7.3 with the 7300-02 Technology Level and Service Pack 7300-02-04-2520 or later (planned availability August 8, 2025)
- AIX Version 7.2 with the 7200-05 Technology Level and Service Pack 7200-05-10-2520, or later

If installing the AIX operating system Virtual I/O only LPAR (one of these):

- AIX Version 7.3 with the 7300-03 Technology Level and Service Pack 7300-03-00-2446 or later
- AIX Version 7.3 with the 7300-02 Technology Level and Service Pack 7300-02-02-2420 or later
- AIX Version 7.2 with the 7200-05 Technology Level and Service Pack 7200-05-08-2420, or later

Power11 Software Requirements (Other)

IBM Virtual I/O Server (VIOS)

- VIOS 4.1.1.10, or later
- VIOS 4.1.0.40, or later
- VIOS 3.1.4.60, or later

IBM PowerVC

- 2.3.1, or later

IBM NovaLink

- 2.3.1, or later

IBM Cloud Management Console (CMC)

- 1.23, or later

HMC

- HMC V11.1.1110 or later
- vHMC V11.1.1110 or later

HMC Note:

- Power11 servers require v11 HMC, which is supported on the HMC CR2 (7063-CR2) HW appliance and the vHMC software appliance.
- HMC product options include the HMC hardware appliance and the vHMC software appliance.
- **IBM HMC CR1 (7063-CR1) HW** appliance is not supported for Power11 server management and does not support HMC v11 or management of Power11 servers.

IBM Power servers

Scalable and flexible

Up to 256 cores

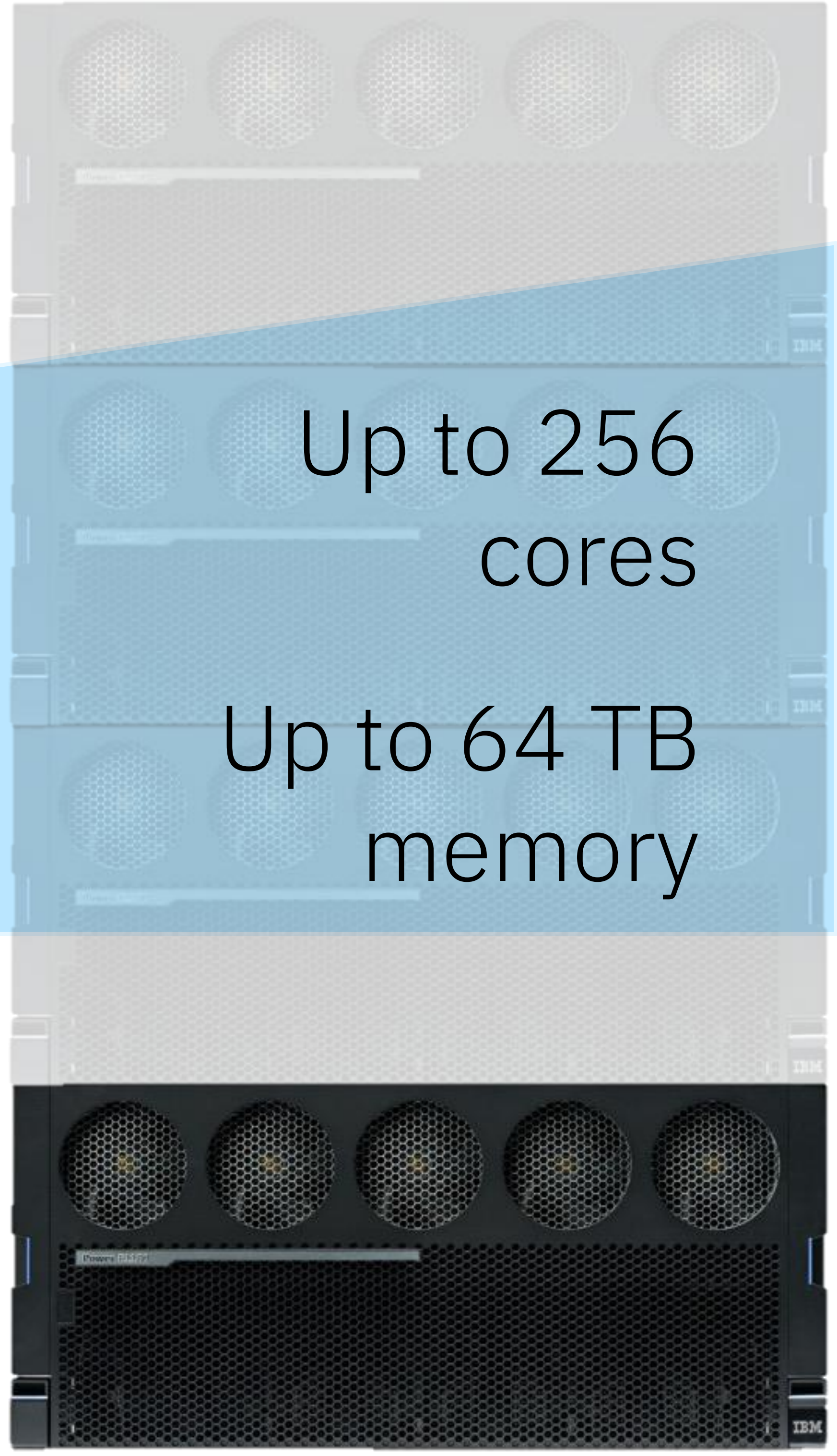
Up to 64 TB memory

S1012

S1122/L1122

S1124/L1124

E1150



E1180

Virtualisation built in to every system (PowerVM)

Power11 themes

Resilience

Zero planned downtime

IBM Concert for Power

Automated data capture

Power cyber vault

Security

Power cyber vault

Quantum safe cryptography

PowerSC enhancements

Hybrid Cloud

Day1 availability in PowerVS

Resource Groups

New energy mode

Sustainability reporting

AI

MMA acceleration on-chip

Spyre acceleration off-chip (Q4)

OpenShift AI

Simplified deployment

IBM Power

Thank you

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