

IBM Power Announcement Update

René Akeret
Senior Power Technical Specialist

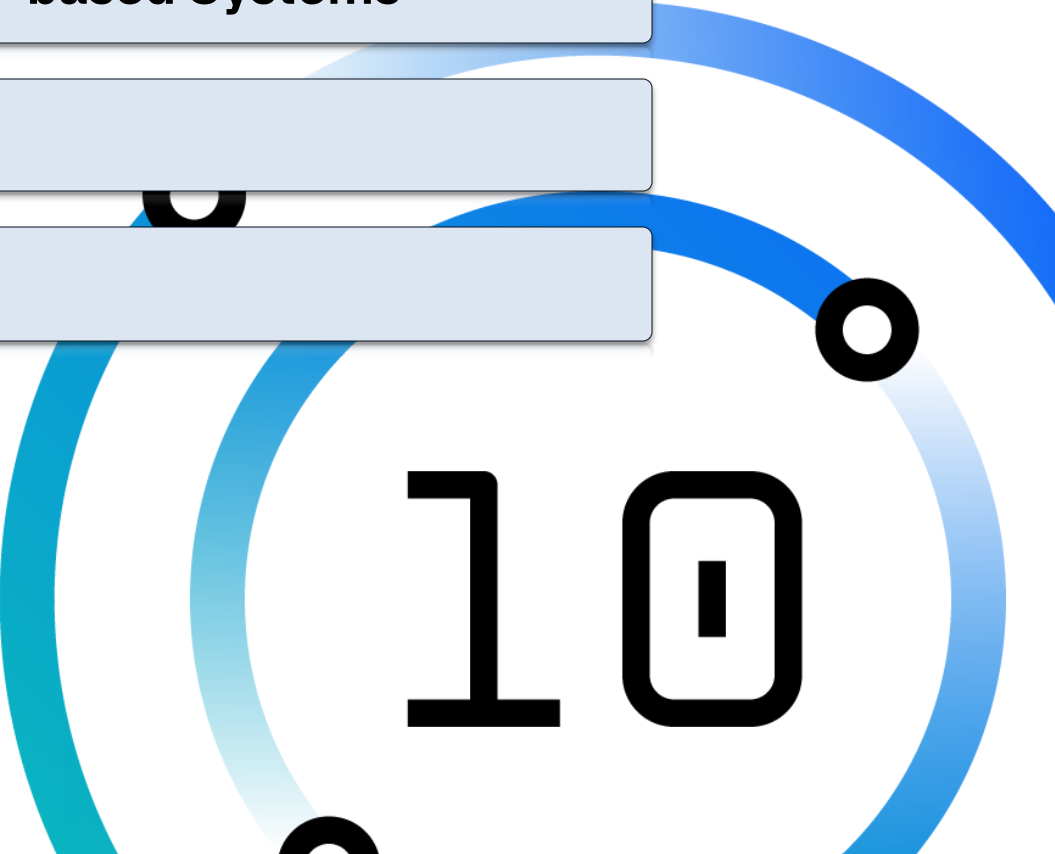
akeret@ch.ibm.com

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Agenda

- **IBM Power S1012**
- **New DDR5 Memory for Power10 processor-based Systems**
- **Open-Source News**
- **Planned Q4/2024 Announcements**



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IBM Power S1012



Power10 Processor-Based Scale Out Family

				
S1012 9028-21B	S1014 9105-41B	S1022s 9105-22B	S1022 / L1022 9105-22A / 9786-22H	S1024 / L1024 9105-42A / 9786-42H
• 1-socket, 2U, half-wide • Up to 8 cores per system • 1, 4, 8 SMT8 cores/socket • 4 ISDIMM slots • 256 GB memory • 4 PCIe HHHL slots (All Gen5) • 4 NVMe U.2 bays • Max of 6.4 TB of internal storage • Optional Internal RDX Media Bay • Rack and Tower form factors	• 1-socket, 4U • Up to 8 or 24 cores per system • 4, 8 SMT8 cores/socket • 8 DDIMM slots • 1 TB memory • 5 PCIe FHHL slots (4 Gen5 capable) • 16 NVMe U.2 bays • Max of 102.4 TB of internal storage • Optional Internal RDX Media Bay • Rack and Tower form factors	• 1,2-socket, 2U • Up to 16 cores per system • 4, 8 SMT8 cores/socket (eSCM) • 16 DDIMM slots • 2 TB memory • 10 PCIe HHHL slots (8 Gen5 capable) • 8 NVMe U.2 bays • Max of 51.2 TB of internal storage	• 1, 2-socket, 2U • Up to 40 cores per system • 12, 16, 20 SMT8 cores/socket (DCM) • 32 DDIMM slots • 4 TB memory • 10 PCIe HHHL slots (8 Gen5 capable) • 8 NVMe U.2 bays • Max of 51.2 TB of internal storage • L1022: max 25% of cores with other OS	• 1, 2-socket, 4U • Up to 48 cores per system • 12, 16, 24 SMT8 cores/socket (DCM) • 32 DDIMM slots • 8 TB memory • 10 PCIe FHHL slots (8 Gen5 capable) • 16 U.2 NVMe bays • Max of 102.4 TB of internal storage • Optional Internal RDX Media Bay • L1024: max 25% of cores with other OS
AIX IBM i Linux		Red Hat OpenShift Container Platform	CoD & Enterprise Pool 2.0	
PowerVM Hypervisor				

IBM Power S1012



AIX IBMi Linux

 **Red Hat**
OpenShift
Container Platform

S1012 MTM: 9028-21B	
Power10 Processors (eSCM)	One 1-core 3.00 to 3.90 GHz (P05) One 4-core 3.00 to 3.90 GHz (P05) One 8-core 3.00 to 3.90 GHz (P10)
Memory Channels per System	4 OMI Channels
Memory Bandwidth per System (peak)	102 GB/s
DIMMs per System	4 DDR4 ISDIMMs, Memory buffers down on planar
Memory Capacity per System (max)	256 GB
PCIe Lanes per System (max)	64 PCIe G4 lanes @ 16 Gbps
PCIe Slots per System	4 slots • 2x PCIe G5 x8 or G4 x16 • 2x PCIe G5 x8 direct
Internal Storage	4 NVMe U.2
RDX	Optional
Security	Main Memory Encryption
Service Processor	Enterprise BMC (eBMC)
Non-Supported Functions	LPM*, vPMEM, HNV, vNIC, AMM

* Planned for later availability

IBM Power S1012 More Details

- No support for PCIe expansion drawer or NVMe drawer
- Reliability, Availability, and Serviceability
 - Concurrent maintenance on NVMe
 - No concurrent maintenance on PCIe adapters
 - Redundant cooling and power, concurrent maintenance supported
- Enterprise BMC
 - Operator panel (Base), LCD Operator panel (Featured)
 - 1x 1GbE, 1x USB/UPS 2.0 (all rear)
 - HMC/vHMC (not redundant), Novalink, PowerVC (rack only)
- 3-year warranty systems with available value-added support services through Power Expert Care offerings
- Customer setup, install & repair
- OS support
 - VIOS 4.1.0.20 and VIOS 3.1.4.40 (P9 mode)
 - AIX 7.3 TL1 SP2 and AIX 7.2 TL5 SP8 (P9 mode)
 - IBM i 7.4 TR10 and IBM i 7.5 TR4
 - Red Hat Enterprise Linux 9.2

Filler + S1012



S1012 + S1012



RDX + S1012

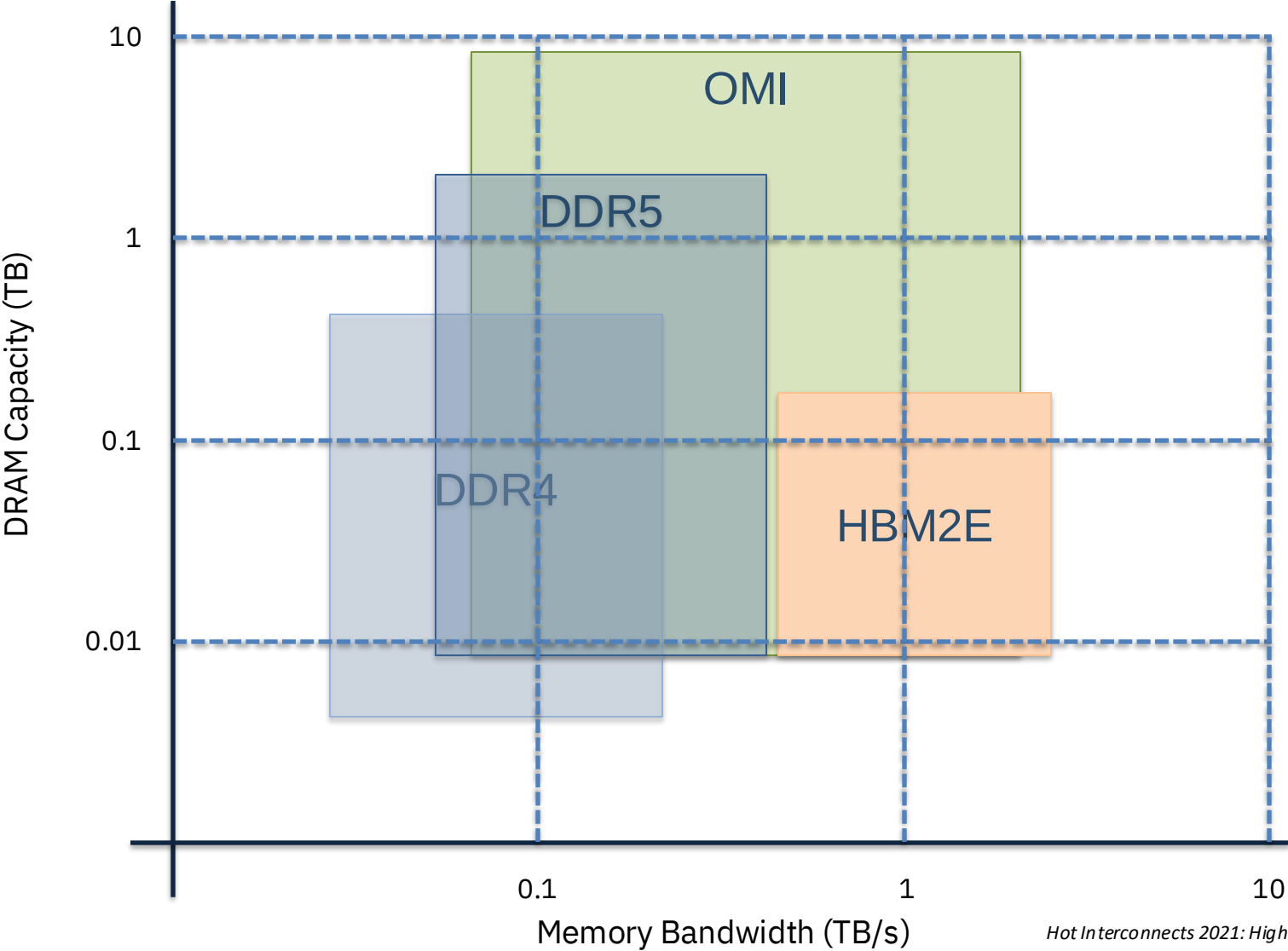


New DDR5 Memory for Power10 processor-based Systems





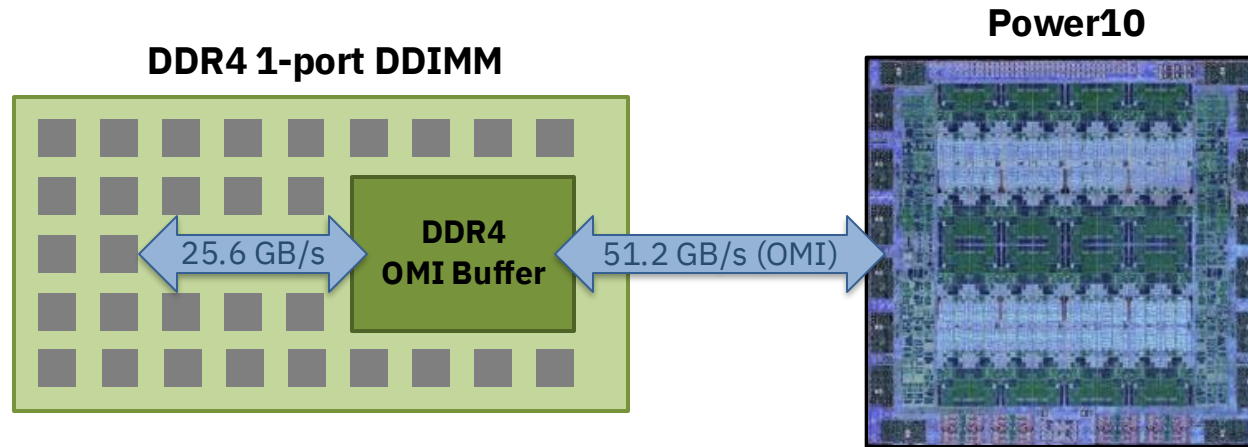
Near Memory Comparison Chart



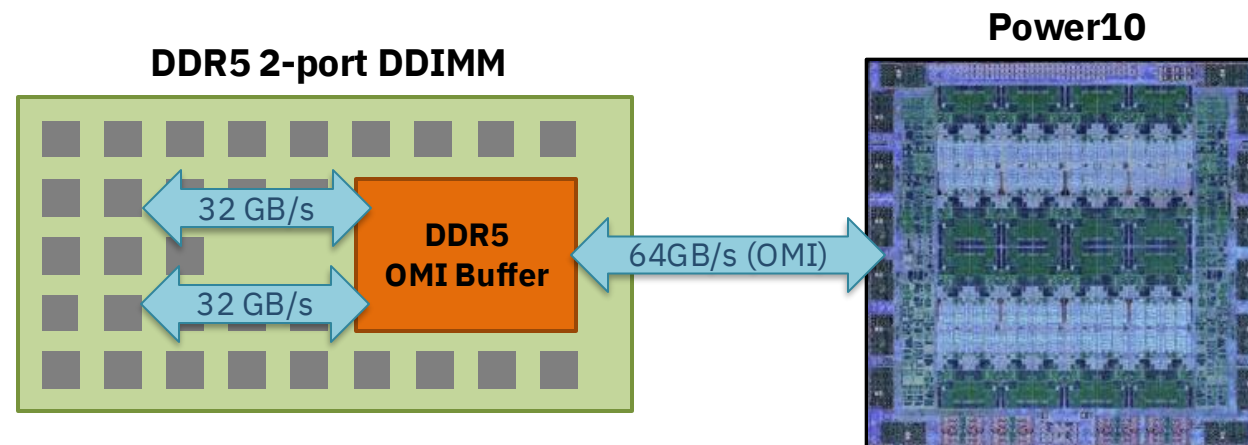
Hot Interconnects 2021: Higher Performance and Capacity with OMI Near Memory

Enhanced Differential DIMM Technology with DDR5 Memory

2021



2024



- 2nd DRAM Port added to Buffer Chip
- Enables **concurrent Reads/Writes**
- Up to **1.5x mixed read/write bandwidth**
- **Reduces loaded latency up to 15%**
- IBM Power E1080 will run DDR5 DDIMMs **25-36% faster.**

DDR5 Memory Options

- Compatible with existing Power10 system designs (firmware level FW1060.10 or higher required).
- Mixed DIMM sizes within a socket supported for E1080 and E1050 with DDR5 memory.
- **IBM Power E1080**
 - No mixing of DDR4 and DDR5 memory in a node. Each CEC node must be homogenous.
 - DDR5 nodes will be operate at 3200 MHz if in a system with DDR4 nodes.
- **IBM Power E1050 and Scale-out**
 - No mixing of DDR5 and DDR4 memory.

System	DIMM Size		DDR4	DDR5	Buffer Ports	
E1080	4U	32 & 64GB DDIMM	3200 MHz	4000 MHz	1, 2	+25%
		128 & 256GB DDIMM	2933 MHz	4000 MHz	2	+36%
E1050 S10xx	4U	32 & 64GB DDIMM	3200 MHz	3200 MHz	1, 2	
		128 & 256GB DDIMM	2933 MHz	3200 MHz	2	+9%
	2U	16GB 2U DDIMM	3200 MHz			
		32 & 64GB DDIMM	3200 MHz	3200 MHz	1, 2	
		128GB DDIMM	2666 MHz	3200 MHz	2	+20%

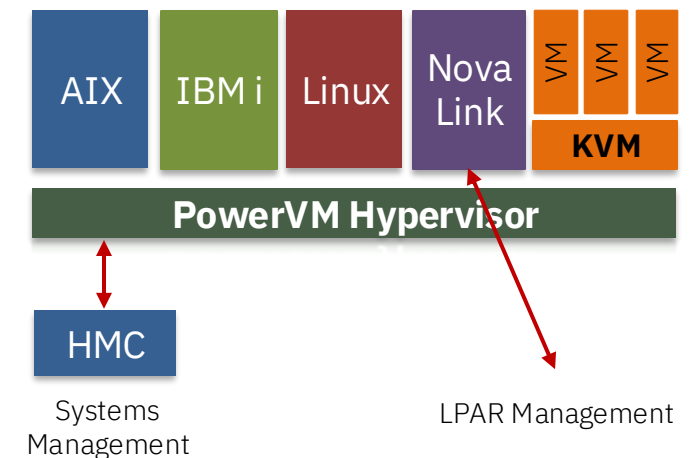
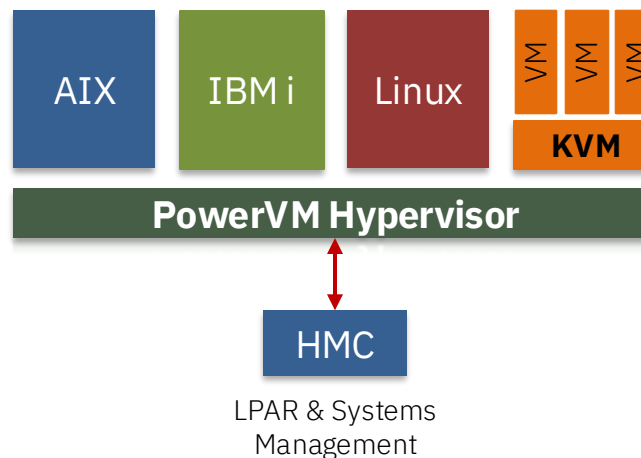
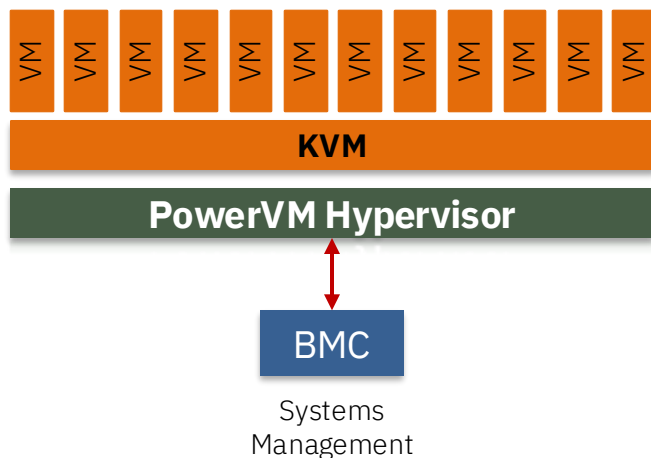
*2 buffer ports: +50% bandwidth depending on workload

Open-Source News



KVM in a PowerVM LPAR

- New PowerVM Hypervisor services are made available to the LPAR that facilitate KVM functionality.
- A KVM Linux LPAR uses dedicated cores which enables Linux to have full control of when Linux VMs are scheduled to run, just like KVM on other platforms.
- Requirements
 - Power10 processor-based systems with firmware FW1060.10 or later
 - LPAR is specified as a Linux KVM LPAR type
 - Fedora 40 (community support) or Ubuntu 24.04 (support from Canonical)





MariaDB Enterprise Server on IBM Power

Benefits Of Maria DB Enterprise Server on IBM Power

Control And Security

Meet strict needs with more resource control and data isolation.

Speed And Scalability

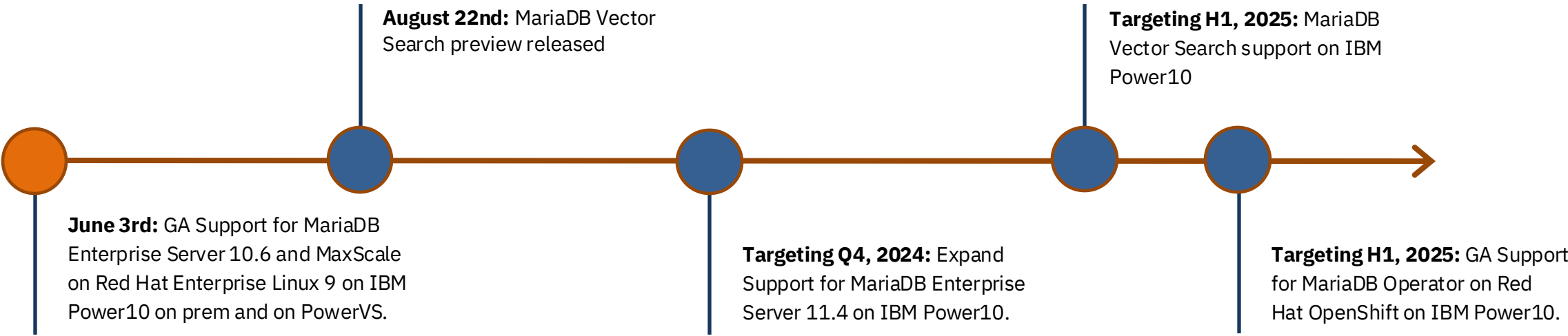
Quickly deploy and scale resources to meet fluctuating demands.

Data Center Simplification

Run Open-Source side-by-side with legacy databases on less server footprints.

Economics

Reduce license costs and build more affordable infrastructure with lower solution costs.



Disclaimer: Dates are tentative and subject to change

Open-Source Database Types

SQL

SQL Alternatives

Inspired by Oracle licensing & support costs



NoSQL

Document

Inspired by Lotus Notes



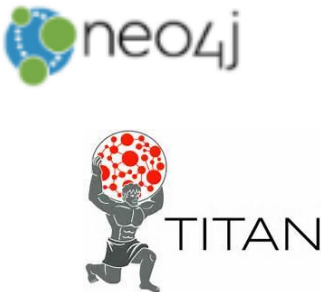
Key Value

Inspired by Amazon Dynamo Paper



Graph

Inspired by Euler & Graph Theory



Wide Column

Inspired by Google BigTable



Planned Q4/2024 Announcements





Hardware withdrawal - IBM POWER9 Activation features

Effective 31 December 2024, IBM® will withdraw from marketing the following features:

- **Processor Activation**
- **Memory Activation**

On or after the effective date of withdrawal, you can no longer order these products directly from IBM.

Published: 9 July 2024.



Planned System Software Announcements

AIX 7.3 TL3

- ...

PowerVM 4.1.2

- **VIOS 4.1.1**
 - vNIC failover and failback time improvement
 - NFS file backed virtual optical device (vSCSI)
 - Enhanced storage device level validation (LPM)
- **NovaLink 2.3.0**

PowerHA SystemMirror 7.2.9

- Encryption for non-AIX Logical Volume Manager (LVM) physical volumes such as Oracle ASM disk

PowerVC 2.3

- Based on OpenStack's Caracal release
- vPMEM Mobility
- Security: sudo-less access
- Remote Restart to auto create Shared Processor Pool

PowerSC 2.2

- IBM PowerSC is now available for Linux on x86

Planned GA: 12 December 2024.



Planned HMC and CMC Announcements

HMC 10.3.1061

- Support for multiple system code updates in parallel (CLI).
- LPM Storage Validation new default behaviour is Port + disk.
- Several GUI panels transformed to Carbon React.

Cloud Management Console 1.22

- PowerHA LPP Metering auto-detect.
- Support warning notifications for expiring Enterprise Pool 2.0 software subscriptions.
- Support export of per minute data metrics for larger time period.

Planned GA: 12 December 2024.

IBM Power

Engineered for Agility

**Protect data
from core
to cloud**

**Respond faster
to business
demands**

**Streamline
insights and
automation**

**Maximize
reliability and
availability**

**Improve
sustainability**

Thank You

René Akeret
akeret@ch.ibm.com



Backup

