SAP HANA and POWER9: Architected for Performance

Kostiantyn Punda
IBM
SAP HANA drives business outcomes

SAP HANA is SAP’s strategic platform for unifying and combining data to modernize and build innovative applications

- Reduce IT workloads
- Enhance data modeling
- Simplify administration
- Save money

SAP clients are:

Moving from traditional Database to SAP HANA before 2025

Modernizing and moving to SAP S4/HANA

Looking for better ways to deploy SAP HANA
SAP HANA on POWER
Simplify and accelerate SAP HANA deployments

Provision Faster

Scale Affordably

Maximize Uptime

‘Using Power Systems the cost for HANA landscape just drops by 50%’
Helge Tautorat, Director Global Infrastructure, Richemont

Innovation and Leadership with IBM Power Systems

1st to allow multiple production VMs (December 2015)

Largest HANA BS & S4 Scale Up: 24TB

Advanced System and Memory Resiliency
HANA on Power fastest adoption of new technology after SAP Ramp-Up Program

>2000 total HANA on IBM Power clients

Estimated SAP HANA clients hosted by MSP/CSP using IBM Power

Customers with HANA on Power – majority started with HANA on x86 initially and replaced x86 with Power

SAP Global Infrastructure Partner of Year 2018
Running SAP HANA on POWER is the best choice for our Customers

### Business Needs

#### Availability of the Environment
- Delivered more than 99.999% uptime
- Redundancy built in for all critical components
- Advanced system and memory RAS features

#### Reduce complexity to manage
- Easier and faster to deploy
- Support greater workload density
- Require fewer servers with virtualization

#### Controlling costs
- Run more HANA production environments on a single server
- Reduce number of physical systems, energy & floor space
- Deploy HANA using Shared Processor Pools

#### Flexibility to meet changing customer demands
- Greater virtualization capability
- Run applications more flexibly and grow capacity as needed
- More flexible granularity and easy to scale

#### Ability to Scale large environments
- SAP certified HANA Prod OLTP – 24TB Scale-up
- SAP certified HANA Prod OLAP – 16TB Scale-up
- POWER9 E980 server can scale up to 64TB of Memory

#### Time to Market
- Easier and faster to deploy SAP HANA Environments
- Accelerate Go-Live by 60%
- Dynamically change allocation of system resources

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Provision faster with **SAP HANA** on IBM Power Systems

**Provision faster with low overhead firmware based virtualization**

- Easily provision new VMs
- Increase or decrease capacity
- Live partition mobility
- Capacity on demand

With IBM Power Systems and PowerVM virtualization, we can provision resources much more efficiently

“...”

– CHRISTOPHER KALT
Lead IT Architect, Coop Group

**Reduce over sizing with granular capacity allocations**

- 128 GB VM
  - 1 GB
  - 4 Cores
- 192 Cores

**Simplify management consolidating production workloads in a single server**

2. SAP Tech Note #2188482 and #8 VMs: SAP Tech Note #2230704 (link resides outside ibm.com)

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SAP HANA and POWER9 systems portfolio

S922/S924/L922/H924/H922
- Up to 24 Cores
- Up to 4TB of Memory

E950
- Up to 48 Cores
- Up to 16TB of Memory

E980
- Up to 192 Cores
- Up to 64TB of Memory
Out of all SAP HANA certified vendors, POWER is a clear leader

<table>
<thead>
<tr>
<th># of sockets (CPU's)</th>
<th>Memory</th>
<th>IBM Power Systems</th>
<th>Bull SAS</th>
<th>Cisco</th>
<th>Dell</th>
<th>Fujitsu</th>
<th>Hitachi</th>
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Power supports 2X more on servers up to 16 sockets

Source: https://www.sap.com/dmc/exp/2014-09-02-hana-hardware/enEN/appliances.html#categories=certified%23Silicon%20Graphics%20International%23Intel%20Broadwell%20EX%20E7%23Scale-up%3A%20SoH%2FS4H

- OLTP - S4H Scale-up
- Skylake
- Virtualization or Baremetal
POWER9 SAP SD – 2Tier Benchmark

- SAPS based TDI5 Sizing for HANA and Application layer
- POWER9 scalability - 2X
- Benefits:
  - Optimized POWER based sizing of HANA workload
  - Able to support large SAP HANA environment
  - Help build Scale-up solution and improve systems management

Provide Value:
Simplify and Accelerate SAP HANA Deployments with IBM POWER Systems
• Provision Faster
• Scale Affordably
• Maximize Uptime

Recognition:
SAP have recognized POWER systems with Pinnacle award for 2018
Fastest adoption rate and gaining marketshare at a rapid pace

POWER9 portfolio:
Complete portfolio of POWER9 systems from scale out to Enterprise systems available and supported for SAP HANA

Momentum:
Existing HANA customers are migrating to POWER
New customers to SAP are adopting Power Systems
Risk free migration to HANA using Power systems