

The Value of Red Hat for customers & partners

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IBM Power Systems with RHEL for SAP

- Understand which benefits a customer will achieve by running SAP on IBM Power Systems
- IBM Power Systems value proposition for SAP and SAP HANA
- How did customers successfully implement SAP HANA on IBM Power Systems



Red Hat



Your speaker

IBM Power Systems with RHEL for SAP



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Red Hat



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:

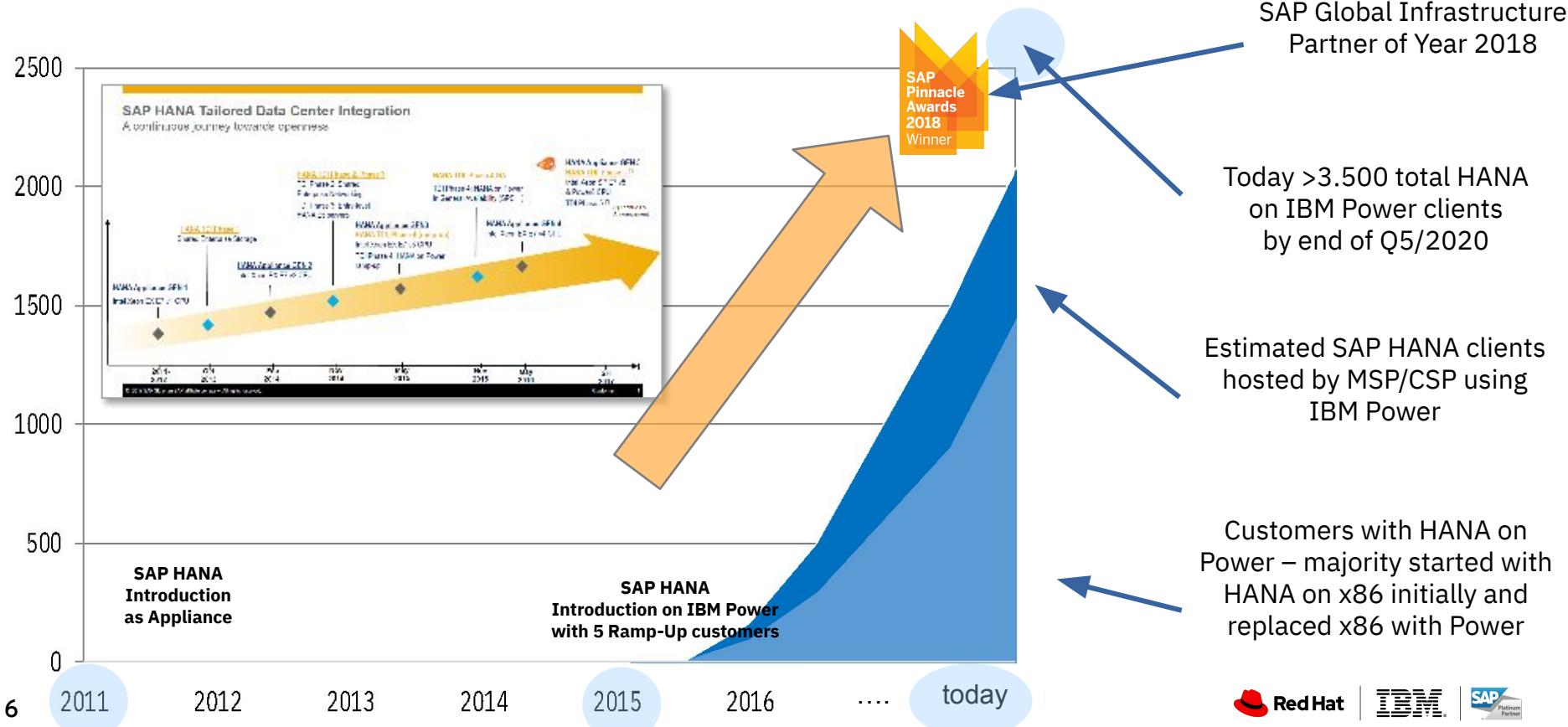
Moving from traditional Database to SAP HANA before 2025

Modernizing and moving to SAP S4/HANA

Looking for better ways to deploy SAP HANA



SAP HANA on Power fastest adoption of new technology after SAP Ramp-Up Program



IBM POWER9 Family – for SAP HANA on IBM POWER Systems



Scale-out server
2 sockets

Power
S922



Power
L922



Power
H922



Number of cores & memory

Power
S924



Power
H924



Enterprise server
2 - 16 sockets

Power
E950



E950: up to 4 Sockets
Up to 48 Cores
up to 16 TB

Power
E980



E980: 4-16 Sockets
32-192 Cores
up to 64 TB

S-models: 2 Sockets
up to 24 Cores, up to 4TB

IBM and RH are your trusted partner for SAP HANA

IBM Power Systems technology leadership drives business success:

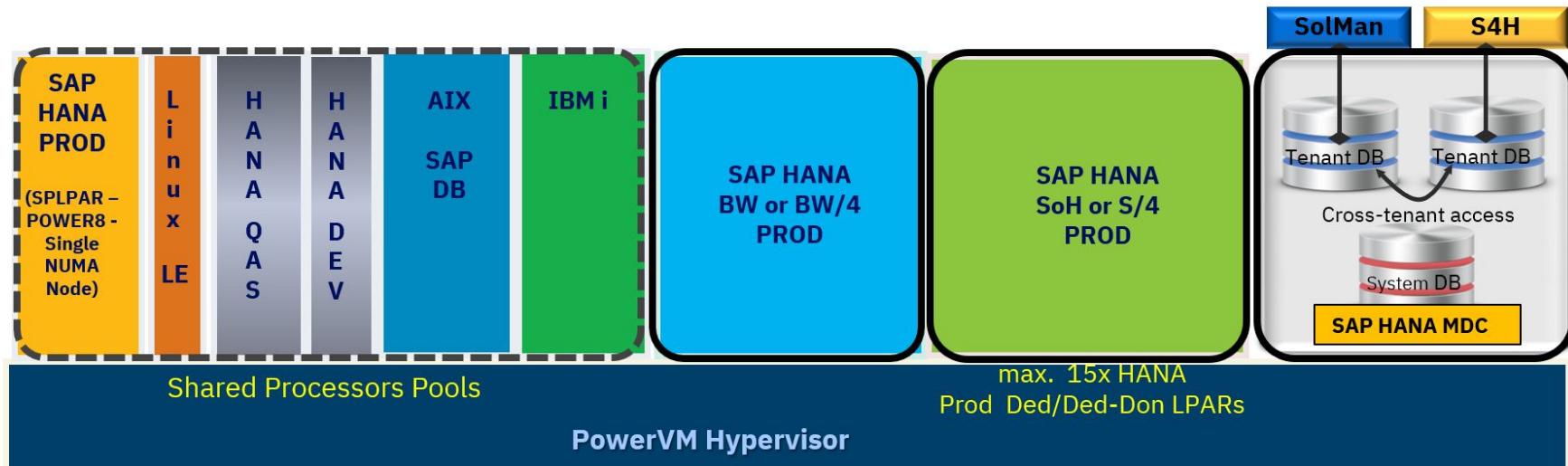
- 1st to allow multiple production VMs
- **Up to 16 Production VMs/LPARs on a server**
- **Largest HANA BW ScaleUp: 24 TB,**
BW ScaleOut: $16 \times 24 \text{ TB} = 384 \text{ TB}$
- **Largest HANA BS & S4H ScaleUp: 24 TB,**
S/4HANA ScaleOut up to $4 \times 24 \text{ TB} = 96 \text{ TB}$
- 1st to be SAP certified for 4TB S4H on 2-socket server
- RHEL8 on Power9 certified since 01/2020

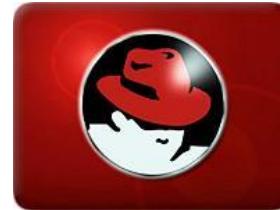
“ Using Power Systems the cost for HANA landscape just drops by 50% ”

– HELGE TAUTORAT
Director Global Infrastructure, Richemont



PowerVM Virtualization on IBM POWER Systems





SAP strongly recommends to use "RHEL for SAP Solutions" due to their features and extended support cycles

Operating System for SAP HANA 2.0 on IBM Power Servers

RHEL for SAP Solutions / RHEL for SAP HANA

- 7.7 (HANA 2.0 SPS04 revision 48 and newer, HANA 2.0 SPS05 and newer)
- 7.6 (HANA 2.0 SPS03 revision 36 and newer)
- 7.5 (HANA 2.0 SPS03 only, starting with revision 32)
- 7.4 (HANA 2.0 SPS02 revision 23 and newer)
- 7.3 (HANA 2.0 SPS02 revision 21 and newer, up to HANA 2 SPS03)

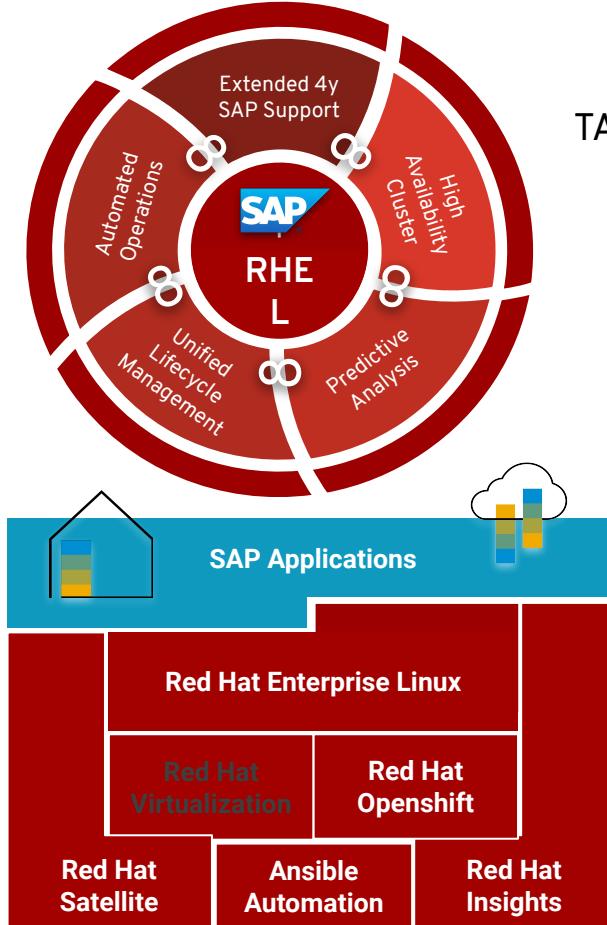


RHEL for SAP Solutions / RHEL for SAP HANA

- 8.1 (HANA 2.0 SPS04 revision 45 and newer)
- 8.0 (HANA 2.0 SPS04 only, starting with revision 45)



RHEL for SAP Solutions



TAILORED FOR THE NEEDS OF BUSINESS CRITICAL APPLICATIONS

Enabled for **continuous availability** of SAP applications, through integration with **SAP HANA** and **SAP NetWeaver High Availability options** (**RHEL HA add-on and Red Hat SAP HA solution incl.**)

Focus on **SAP application lifecycle**, providing a stable foundation with **full support for RHEL minor releases up to 4 years from GA** (**RHEL Extended Update Support for SAP incl.**)

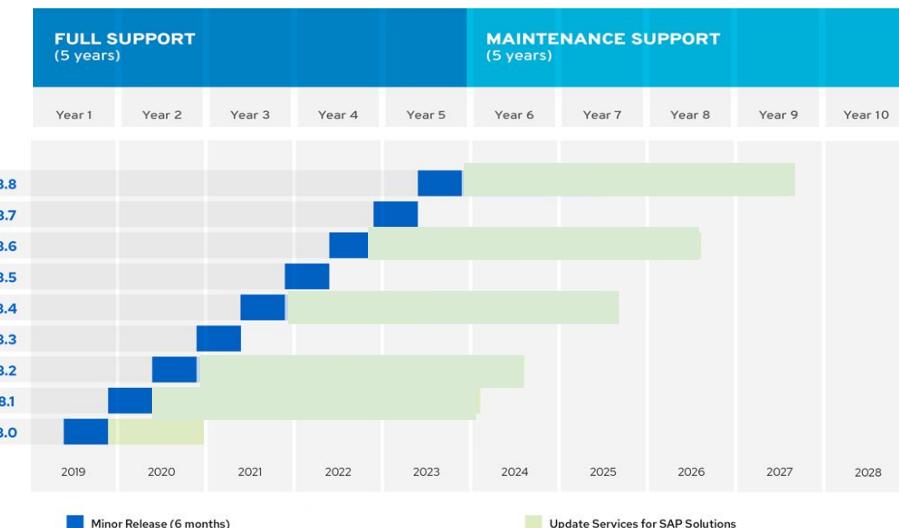
Proactive monitoring and remote management of SAP landscapes, with **real-time assessment for risks related to performance, availability, stability, and security** (**Red hat Insights and Smart Management add-on incl.**)

Ready to run, delivering **high-performance profiles, runtime libraries and file system add-ons**, turning SAP into a first class citizen on RHEL for SAP (**RHEL for SAP solutions specific software components incl.**)

Red Hat Enterprise Linux for SAP Solutions

Deliver the life cycle and support for SAP deployments

- **10-year** product lifecycle
 - Minor releases every **6 months**
- Extended Update Service for SAP that ensures a smooth, continuous consumption of key features with long-term stability
- **NEW:** RHEL 8.1 certified for SAP HANA on Intel and Power 9 (31.03.2020)



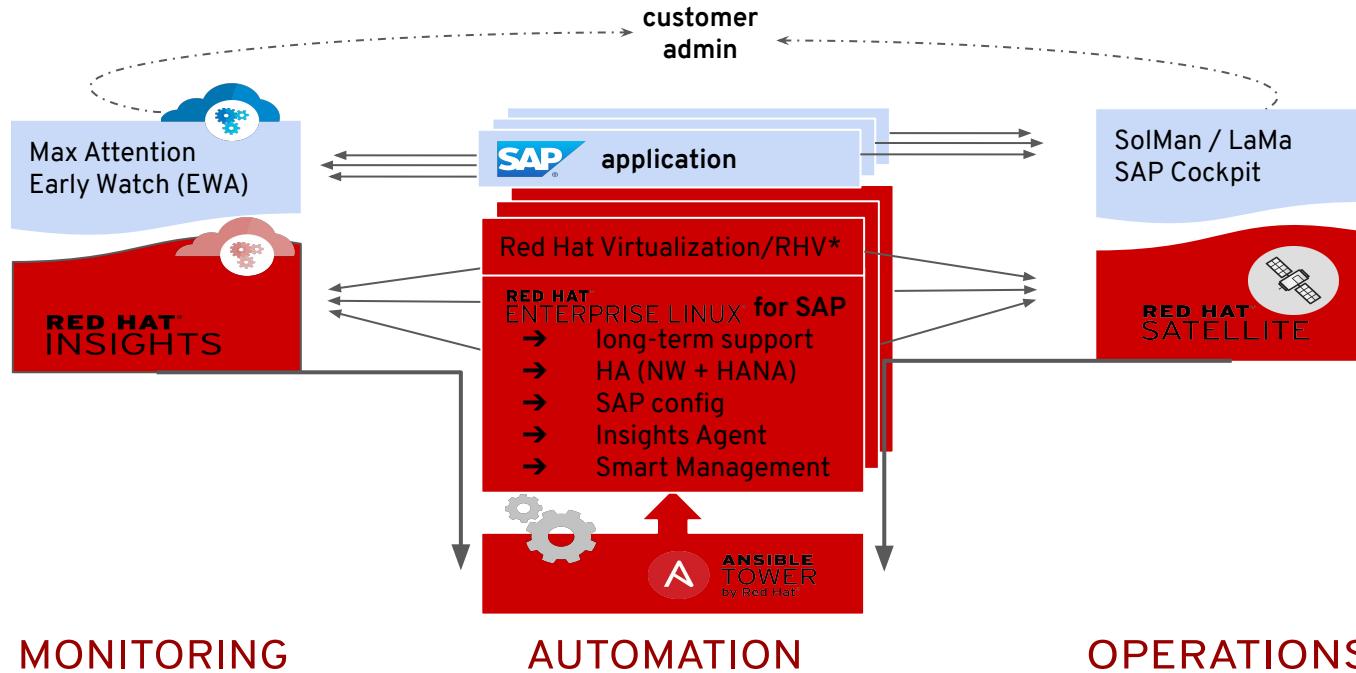
Source: <https://access.redhat.com/support/policy/updates/errata>

RHEL_8.0.320

**** slide shows current planning. Timelines subject to change, and depending on SAP's certification policy and schedule ****



A unified platform for SAP workloads



** Red Hat Virtualization and Red Hat Ansible Tower are separate SKUs, not included in RHEL for SAP Solutions. **

RED HAT's E2E PLATFORM for SAP

Lowest TCO - all Open Source - with all its benefits!

SAP SERVICE PARTNERS

S/4HANA

Analysis

Architecture

Migration

Deployment

INTEGRATION

RED HAT
INTEGRATION

API Management
Messaging & Integration
Side-by-Side Extensibility

INTELLIGENCE

SAP HANA
powered by RHEL

SAP Data Hub
powered by OpenShift

AUTOMATION

RED HAT
ANSIBLE
Automation

Development
Deployment
Maintenance

INTEROPERABILITY

RED HAT
OPENSHIFT

kubernetes
CLOUD FOUNDRY
Gardener
Istio
Kyma

On-Premise
Multi-Cloud
Hybrid

PHYSICAL

VIRTUAL

PRIVATE CLOUD

Google

amazon
aws

Microsoft Azure

OTHER CLOUDS

INFRASTRUCTURE

RED HAT
ENTERPRISE LINUX

RED HAT
VIRTUALIZATION

RED HAT
INSIGHTS

RED HAT
SATELLITE

SAP NetWeaver
SAP HANA
SAP S/4HANA

#1 Leading Linux OS
#1 SAP Performance
#1 SAP Support

Advanced Built-In Security
High Availability
Persistent Memory



What makes
IBM Power
Systems the
best platform
for your
mission critical
SAP HANA
deployments?

What makes IBM Power Systems the best platform for clients' mission critical SAP HANA deployments?



Flexibility

Superior virtualization and management features to afford flexibility and maximum utilization



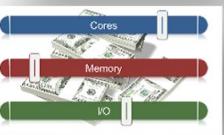
Resiliency

Unsurpassed RAS (reliability, availability, serviceability) characteristics to support mission critical SAP applications



Performance

Highest throughput per core and core/memory bandwidth to deliver faster business results, up to 2x Intel-based alternatives



Competitive Cost

Risk-free sizing and implementation

- Dynamically adjust sizing to changing requirements
- Grow number of systems and sizes on demand while project advances

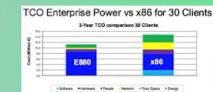
Reliable infrastructure for enterprise applications

Best infrastructure to achieve scalability, response time and throughput requirements

- Additional headroom for peak workload due to virtualization capabilities

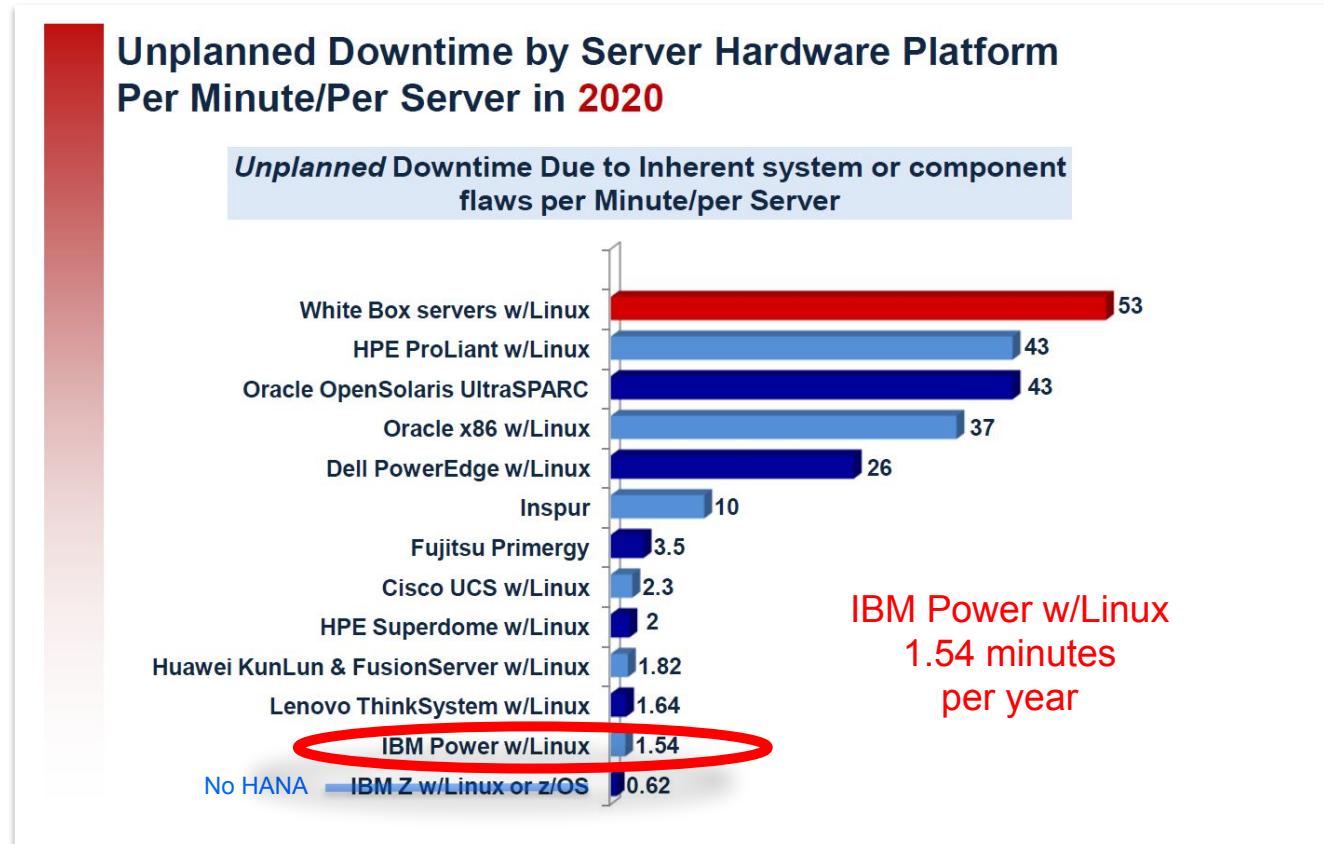
TCA: competitive to x86

TCO: better than x86



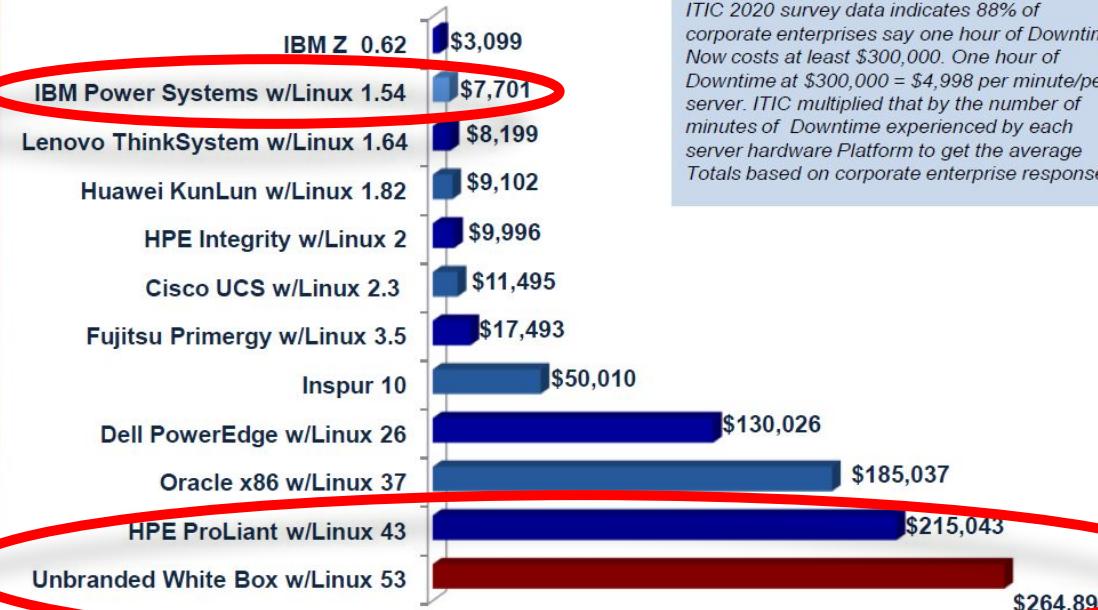
IBM Power Systems the Most Reliable Servers after IBM Z

How much **Unplanned Downtime** have you experienced, per server/per annum in **minutes**?



Cost of One Minute of Unplanned Hourly Downtime of \$300,000 for a Single Server

Cost of One Minute of Unplanned Hourly Downtime of \$300,000 for a Single Server by Vendor Platform in 2020



POWER9 designed for data

POWER9 vs x86 Xeon SP

2X¹

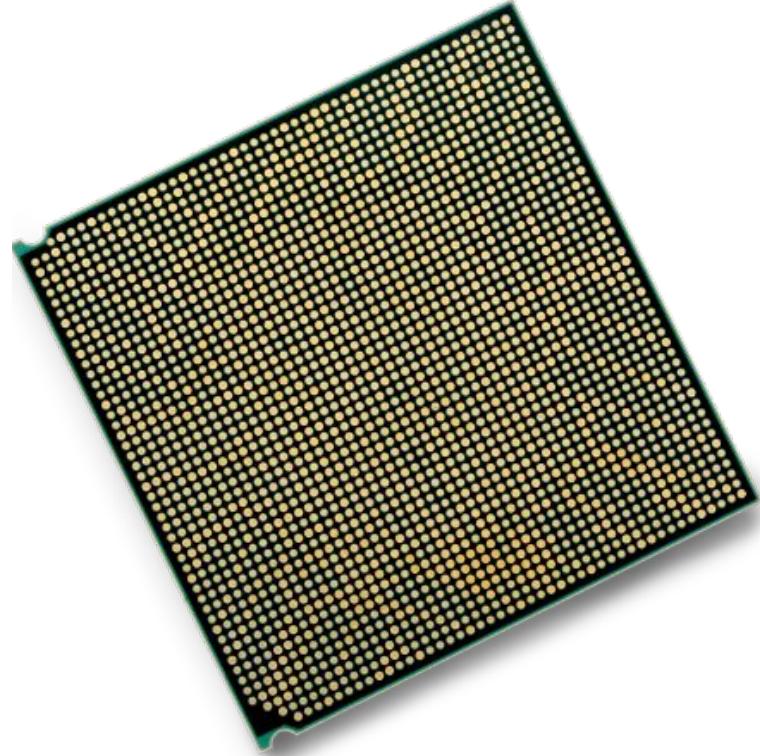
Performance per core
or more

2.6X²

Memory per socket

1.8X³

Memory bandwidth
per socket



(1) 2X performance per core is based on IBM Internal measurements as of 2/28/18 on various system configuration and workload environments including (1) Enterprise Database (2.22X per core); 20c L922 (2x10-core/2.9 GHz/256 GB memory); 1,039,365 Ops/sec versus 2-socket Intel Xeon Skylake Gold 6148 (2x20-core/2.4 GHz/256 GB memory); 932,273 Ops/sec. (2) DB2 Warehouse (2.43X per core); 20c S922 (2x10-core/2.9 GHz/512 GB memory); 3242 Qph versus 2-socket Intel Xeon Skylake Platinum 8168 (2x24-core/2.7 GHz/512 GB memory); 3203 Qph. (3) Day Trader / (3.19X per core); 24c S924 (2x12-core/3.4 GHz/512 GB memory); 32221.4 tps versus 2-socket Intel Xeon Skylake Platinum 8180 (2x28-core/2.5 GHz/512 GB memory); 23497.4 tps.

(2) 2.6X memory capacity is based on 4TB per socket for POWER9 and 1.5TB per socket for x86 Scalable Platform Intel product brief: <https://www.intel.com/content/dam/www/public/us/en/documents/product-briefs/xeon-scalable-platform-brief.pdf?asset=14606>

(3) 1.8X bandwidth is based on 230 GB/sec per socket for POWER9 and 128GB/sec per socket for x86 Scalable Platform Intel product brief: <https://www.intel.com/content/dam/www/public/us/en/documents/product-briefs/xeon-scalable-platform-brief.pdf?asset=14606>

SAP HANA on IBM POWER Roadmap 2018 – 2020+

All roadmaps subject to change without notice, forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations.

| 2018 – Achievements | 1H 2019 | 2H 2019 | 2020 |
|---------------------------------------|--|---|---|
| P8 16TB HANA BW | 3-CEC and 4-CEC E980 Support, up to 16 Prod VMs | <ul style="list-style-type: none">ScaleUp up to 24 TB for BW and BW/4 on E980 | <ul style="list-style-type: none">Additional Scalability of Production VM – OLTP&OLAP 24 -> 32 TB |
| P8 24TB HANA S4H | Additional Linux Distribution Support on Power9 Systems | <ul style="list-style-type: none">Shared Processor Pool Support – GA (1st Version Power8, 1 NUMA node) | <ul style="list-style-type: none">Additional Linux Distri Support on Power9 systems (RHEL and SLES): 8.1, 8.2 (vPMEM support) |
| P9 922/924 Certification | RHEL 7.5/7.6 certification | <ul style="list-style-type: none">Shared Processor Pool Support – GA (1st Version Power9, 1 NUMA node) | <ul style="list-style-type: none">SAP IaaS Certification for Power Systems Virtual Server in IBM Cloud - AIX & Linux incl. NetWeaver, HANA on Power |
| P9 - 950 Certification | Support of HANA SPS04 | <ul style="list-style-type: none">Fast Restart Option on POWER9 systems during Linux reboot (Virtual PMEM) | <ul style="list-style-type: none">Additional Linux Tools (Performance Counter Daemon, SPLPAR etc.) |
| P9 - 980 Certification (2 CECs) | | <ul style="list-style-type: none">Linux OS: RHEL 8.0, SLES15SP1 | <ul style="list-style-type: none">HMS testing.... |
| Shared Processor Pool for HANA - Beta | Warm store (tmpfs) support on POWER9 systems during HANA restart | | |
| SAP Data Hub Beta Open | E950 and E980 each model up to 16 Prod VMs | | |
| RHEL 7.3 / 7.4 | Scale Out support from SAP on Power9 systems | | |

IBM Systems Lab Services

Infrastructure expertise for smart enterprise

IBM Systems Lab Services offers infrastructure services to help you build the foundation of a smart enterprise. From servers and mainframes to storage systems and software, Lab Services helps you deploy the building blocks of a next-generation IT infrastructure that empowers your business.

Servers

Deploy the high-performance engines that form the architectural backbone for multicloud, AI, blockchain, data analytics and your other

Storage

Secure your enterprise with physical and software-defined storage solutions for on-premises, cloud, converged and virtualized environments

Software

Maximize the value of your infrastructure with multi-platform software and operating systems that accelerate your workloads and simplify administration

IBM Systems Lab Services – SAP HANA on Power Services Offering



SAP HANA : Install

Configure LPAR and install Linux and all required Linux updates. Create HANA file systems based on client's specifications and then test with SAP's KPI tool (HWCCT). Verify connectivity and completion by connecting from SAP's HANA Studio. Optional services may include setup of the VIO server and installation of a HANA Replication Server.

SAP HANA: Health Check

Assess the health of client's HANA problems before they can impact critical operations—including hardware, software and setup—to quickly identify areas of exposure. Client will gain access to best practices and the latest technology to maximize their HANA investment and reduce risks.

SAP HANA: Performance Assessment

Analyze client's HANA system for areas of performance bottlenecks and tuning optimizations. Review I/O performance (using SAP HWCCT tool), CPU utilization and memory performance. PowerVP may also be used to graphically measure CPU and memory affinity.

SAP HANA: Migration Workshop

A workshop to help clients understand the practical aspects of planning and executing a migration from any database or HANA on x86 to HANA on Power. The workshop will discuss planning, sizing, and executing the migration; SAP migration tools, methodologies and best practices; and lessons learned from previous HANA migrations.

SAP HANA: Power Advanced Features Deployment

Services to deploy additional HANA products and features, including High Availability and HANA Scale-out or cluster landscapes.

SAP HANA: Linux Security Assessment

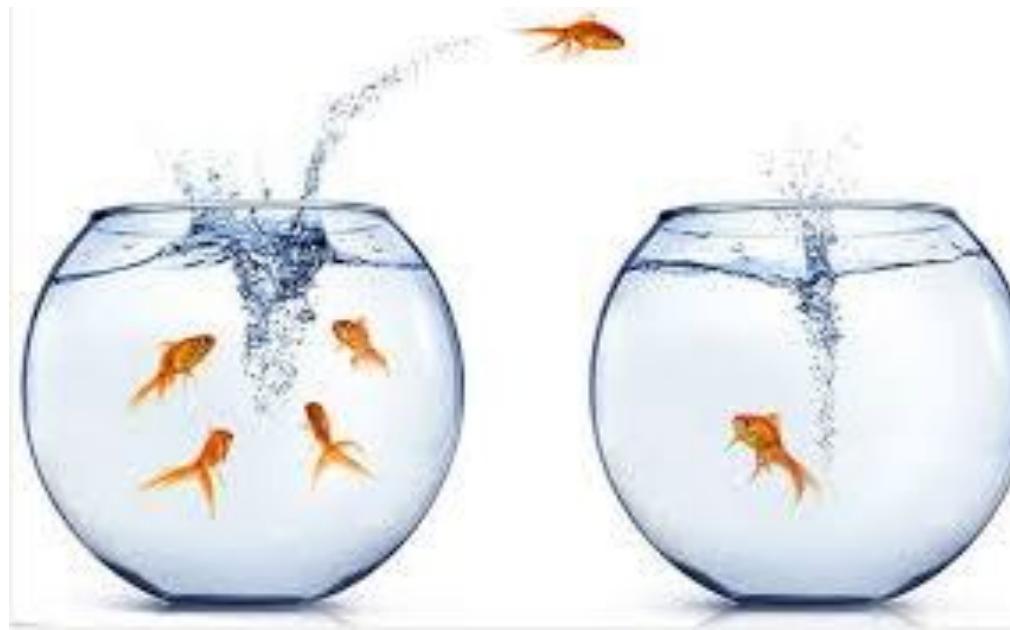
Database systems are by nature very popular targets for hackers and must therefore be protected. SAP HANA systems typically store business related information and are considered as being business critical. The security of the underlying operating system is at least as important as the security of the SAP HANA database. Many hackers target the operating system in order to gain access to attack the running database application. This assessment is a comprehensive analysis of client's Linux security settings for the specific purpose of protecting their SAP HANA database.



SAP HANA Migration

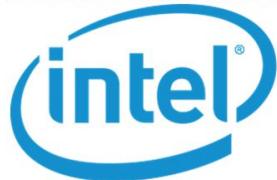
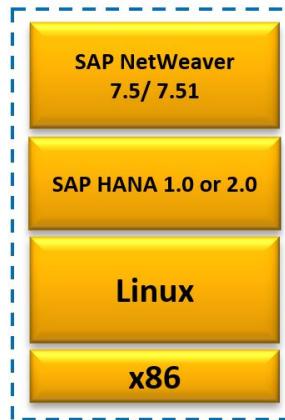
Same code stream and versioning for x86 and POWER

NO differences in data structure between both platforms



Easy Migration from Intel x86 (HANA 1/2) to IBM Power

Existing Installation with
SAP HANA 1.0 OR 2.0

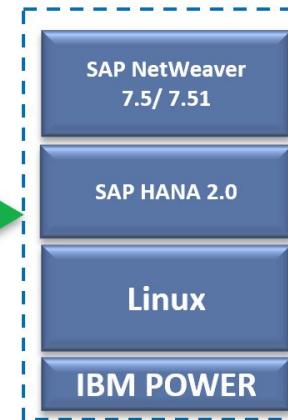


Backup / Restore

Or

SAP HANA System Replication

New Installation with
SAP HANA 2.0



IBM Power Systems availability in SAP HEC

"SAP HANA Enterprise Cloud on IBM Power Systems will help clients unlock the full value of SAP HANA in the cloud, with the possibility of enhancing the scalability and availability of mission critical SAP applications while moving workloads to SAP HANA and lowering TCO," said Christoph Herman, SVP and Head of SAP HANA Enterprise Cloud Delivery

Press Release - <https://newsroom.ibm.com/2020-02-19-IBM-Power-Systems-Certified-for-SAP-HANA-R-Enterprise-Cloud-as-a-provider-for-large-SAP-HANA-systems>

External Blog - <https://www.ibm.com/blogs/systems/why-ibm-power-systems-means-business-for-sap/>

Internal Blog - https://w3-connections.ibm.com/blogs/8f30cccf-9794-4c8e-aaf9-ccebeec100c2/entry/SAP_HEC_and_IBM_POWER9?lang=en_us

First Reference for SAP HANA on IBM POWER9 with RHEL 8

BLANC &
FISCHER

Familienholding



BLANC & FISCHER Family Holding
SHAPING KITCHEN
LIVING SPACES WORLDWIDE



Industry: Industrial

Country: Germany

Winning Solution:

Hardware:

2 x E980 POWER9 servers
(120 cores, 16 TB)

Power MES in Q1/ 2020

2 x Spectrum Virtualize Nodes with V7000
Storage

Software: Spectrum Virtualize, Spectrum
Protect

Db2 V11 + SAP BW, SAP ERP SAP HANA on
IBM Power Systems for SAP BW, SLES
11/12, RedHat 8.0

Services: IBM and BP services
Competition: x86 from HP

Blanc & Fischer (<https://www.blanc-fischer.com/en>) is a **loyal IBM Power Systems customer** and needs more memory capacity and compute resources to fulfill the demanding SAP HANA requirements of B&F's business departments. In addition, the client needed a redesign of the storage architecture. IBM and BP designed a high available, high performance solution based on IBM Spectrum Virtualize and V7000 storage.

After the Hardware renewal from Power8 to **POWER9 E980** servers, they migrated all AIX and Linux LPAR's via LPM to the new infrastructure and executed a PoC with RHEL4SAP and SAP HANA for a new S/4 HANA landscape. In October 2019, no RHEL release was certified for SAP HANA on IBM Power Systems as we installed a RHEL 7.6 and a **RHEL 8.0** LPAR to gather experiences with SAP HANA on Power and RHEL. After the official certification in January 2020, we customized the installation with the required parameter and integrated an automated installation via RH Ansible runbooks. We installed RH Insight as a monitoring solution, but more important was the integration from **RH Satellite** for smooth operations and to achieve compliance with changing SAP HANA requirements. With this new SAP landscape the customer has the possibility to harmonize his OS strategy, simplify the installation tasks for further systems and reduce operational costs.

The customer has since the early 2000's a strong RedHat strategy and was using Suse Linux only for the SAP HANA deployments in his organization. SAP HANA on Power was at the beginning only available with SLES, as he was an early adapter of SAP HANA on Power, he started in 2016 with HOP. In 2018 he migrated the big endian SLES11 SAP HANA 1.0 SAP BW landscapes to SLES 12 and SAP HANA 2.0 (LE). After this migration and the availability of RHEL 8.0 on Power 9 for SAP HANA, IBM proposed the customer a smooth migration to RHEL with SAP HANA system replication which was successfully tested in Q1/2020.

Jointed teamwork between IBM and BP and the RedHat team

IBM team has a great relationship with the client and B&F was open for a PoC

With the new Power 9 technology the customer is able to use new technology features available for SAP HANA like shared processor pools and persistent memory capabilities. In addition the customer generates cost savings, much more efficient and easy management and operations, homogenous OS environment and better automation with RH tools. Next steps are already planned with the integration of **RH Openshift** as container platform and migration of remaining SUSE SAP HANA LPAR's to **RHEL 8.1** when RHEL 8.1 is finally certified. RHEL 8.1 is a long term supported release and fits in the clients release strategy.

82 External Reference Assets for SAP HANA on Power across 6 GEOs

AsahiKASEI



[Asahi Kasei Group](#), Japan

Promos, Germany

[CTAC & AG Real Estate](#), Netherlands

[TUM Proteomics Project](#), Germany, Education

[Itelligence](#), Poland, Computer Services

[Latin American Insurer](#) (anonym.), Brazil, Insurance

[I-D Foods](#), Canada, Consumer Products

[Construction Materials Supplier](#) (anonym.), France

[Granules](#), [India](#), Pharmaceuticals

[Itambé](#), Brazil, Consumer Products

[WMF Group](#), Germany, Retail

[UOL Group](#), [Singapore](#), Real Estate

[Aryzta](#), Switzerland

[Itelligence Denmark](#), Denmark

[Ryerson](#), United States

[Link to selected Reference Customers - IBM Systems Power Marketing](#)

RYERSON

centria



[Centria](#), Peru, Computer Services

[Freudenberg IT FIT](#), USA, Computer Services

[International Textile Limited](#), Pakistan, Fabrication &

CenturyLink



Assembly

[CenturyLink](#), USA, Telecommunications

WURTH GROUP



[Danish Defence](#), Denmark, Defence

Boydak



[Würth Group](#), Germany, Retail

VISHAL MEGA MART



[Química Amparo](#), Brazil, Consumer Products

Papel San Francisco



[Boydak Holding](#), Turkey, Industrial Products

itelligence

[D.FI](#), France, Computer Services

[Vishal Mega Mart](#), [India](#), Retail

[Papel San Francisco](#), Mexico

[Colgate Palmolive](#) Pakistan, Pakistan

[Itelligence Malaysia](#), [Malaysia](#)

[Sensor Manufacturer](#), Germany



82 External Reference Assets for SAP HANA on Power across 6 GEOs



[Coop Group](#), Switzerland, Retail



[Happynarae, Korea](#), Procurement



[Mondi](#), Austria, Industrial Products



[BOSCH](#), Germany, Automotive Supplier



[Charmacy](#), China, Pharmaceutical



[United Breweries](#), India, Consumer Products



[Indus Motor Company](#), Pakistan, Automotive



[South Shore Furniture](#), Canada, Manufacturing



[VEKA AG](#), Germany, Industrial Products



[Groupe Bastide](#), France



[Vivo Energy](#), United Kingdom



[Aceros Arequipa](#), Peru



[Porrua](#), Mexico



[Tapal Tea](#), Pakistan

28

[India Glycols Ltd, India](#) Reference Customers - IBM Systems Power Marketing



[SEIDOR](#), Spain, Computer Services



[Dedagroup](#), Italy, Computer Services



[PT. Diamond Cold Storage](#), Indonesia, Consumer



Products



[SAP University Competence Center at TU Muenchen](#),



[Germany](#), Education



[Ecogas](#), Argentina, Energy & Utilities



[Kennametal](#), USA, Industrial Products



[Ctac](#), Netherlands, Computer Services



[Hayleys PLC](#), Sri Lanka



[BRF](#), Brazil

[Electricity Company](#), Brazil

[Sona BLW](#), India

[CVale](#), Brazil



82 External Reference Assets for SAP HANA on Power across 6 GEOs



Hellenic Glass Industry, Greece



Hyundai Nishat Motors, Pakistan



UMB, Switzerland



Familiprix, Canada, Retail



Grupo Zapata, Mexico



Bestway Cement, Pakistan

ABM Investama Indonesia

Regional health agency (Anonym), Norway



Pharmaoverseas, Egypt



Foodstuffs South Island, **New Zealand**



Bulutistan, Turkey



System Design Analysis, Canada



salling group



Hoffmann Neopac, Switzerland

Salling Group, Denmark

Kuantum Papers. **India**

More information for HANA on POWER - Whitepaper on IBM Techdocs WP102502

SAP HANA Fast-Restart-Solutions

- Plan and Configure PowerVM. Virtual Persistent Memory for SAP HANA
[vPMEM-SAPHANA-Whitepaper-V1.0.pdf](#)

- How to configure internal PCIe NVMe cards and expected performance benefit to SAP HANA startup.
[Overview on available read acceleration components on Power V1.0.pdf](#)

- Rapid Cold Start Implementation Guide
[Rapid-Cold-Start-on-Power-with-NVMe V1.0.pdf](#)

- Comparison of available Fast-Restart-Solutions on IBM Power for SAP HANA
[Fast-Start-Options-for-SAP-HANA-on-Power V1.0.pdf](#)

IBM Power Systems Infrastructure I/O for SAP Applications
[http://www.redbooks.ibm.com/redbooks.nsf/redbookabstracts/redp5581.html?Open](#)

SAP HANA on IBM Power Systems Architectural Summary
[http://www.redbooks.ibm.com/redpapers/pdfs/redp559.pdf](#)

Converged Infrastructure Solutions

SAP HANA and ESS: A Winning Combination
[https://www.redbooks.ibm.com/abstracts/redp5436.html?Open](#)

SAP HANA on IBM Power Systems and NetApp AFF Systems with NFS
[https://www.netapp.com/us/media/tr-4821.pdf](#)



SAP HANA on IBM Power Planning Guide:
[SAP_HANA_on_Power-Planning_4.6.pdf](#)

SAP HANA on Power Advanced Operation Guide:
[SAP_HANA_on_Power_Advanced_Operation_Guide_V1.0.pdf](#)

Configuring your Network for SAP HANA (vNIC not covered, purely traditional SEA configurations):
[Network_Configuration_for_HANA_Workloads_on_IBM_Power_Servers_V6.pdf](#)

SAP Landscape Management 3.0 and IBM Power Servers:
[http://www.redbooks.ibm.com/abstracts/redp5568.html?Open](#)

IBM Storage Solutions for SAP Applications Version 1.3:
[http://www.redbooks.ibm.com/abstracts/redp5541.html?Open](#)

Using IBM Geographically Dispersed Resiliency (GDR) in SAP HANA Landscapes for Disaster Recovery:
[http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/redp5488.html?Open](#)

Implementing High Availability and Disaster Recovery Solutions with SAP HANA on IBM Power Systems:
[http://www.redbooks.ibm.com/abstracts/sq248432.html](#) (2019 edition)

Practical Guide: Protecting SAP HANA with IBM Spectrum Protect and IBM Spectrum Copy Data Management:
[http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/WP102813](#)

IBM Storage Solutions for SAP Applications Version 1.3
[https://www.redbooks.ibm.com/abstracts/redp5541.html?Open](#)

SAP HANA on IBM Power Systems: High Availability and Disaster Recovery Implementation Updates
[https://www.redbooks.ibm.com/abstracts/sq248432.html?Open](#)

IBM Power Systems Security for SAP Applications
[https://www.redbooks.ibm.com/abstracts/redp5578.html?Open](#)

IBM Power Systems Virtualization Operation Management for SAP Applications
[https://www.redbooks.ibm.com/redpieces/abstracts/redp5579.html?Open](#)

IBM Power Systems H922 and H924 Technical Overview and Introduction
[https://www.redbooks.ibm.com/abstracts/redp5498.html?Open](#)

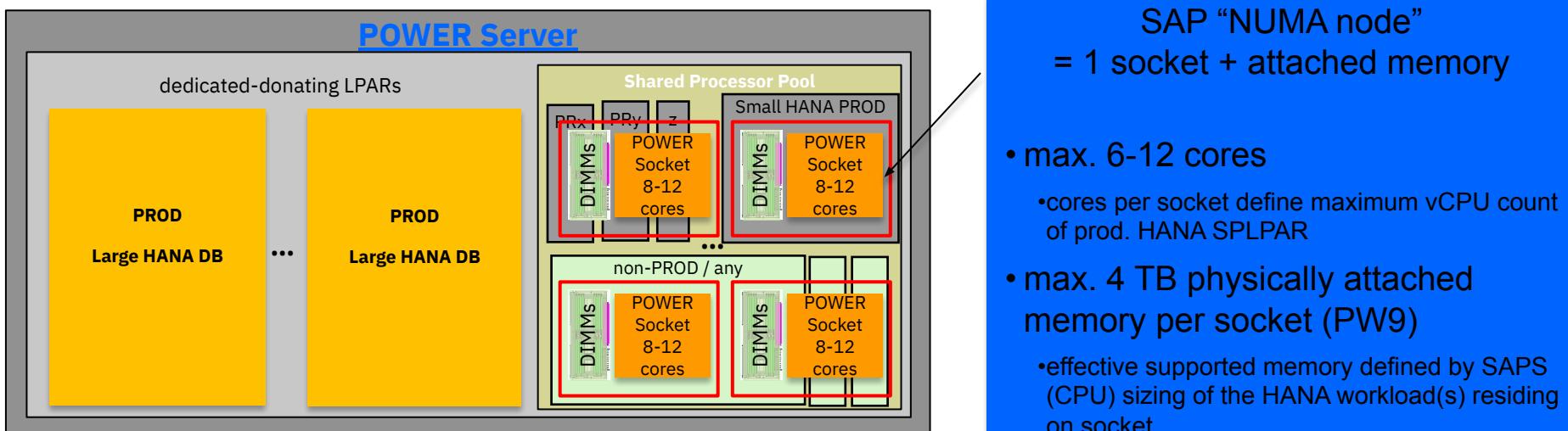


SAP HANA Production Systems in Shared Processor Pool LPARs

2055470 - HANA on POWER Planning and Installation Specifics - Central

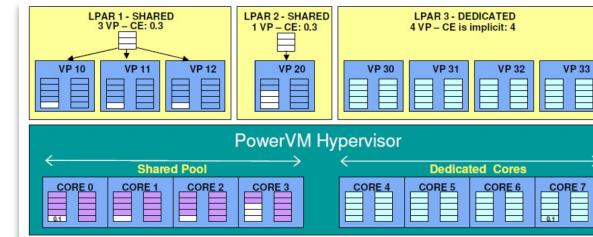
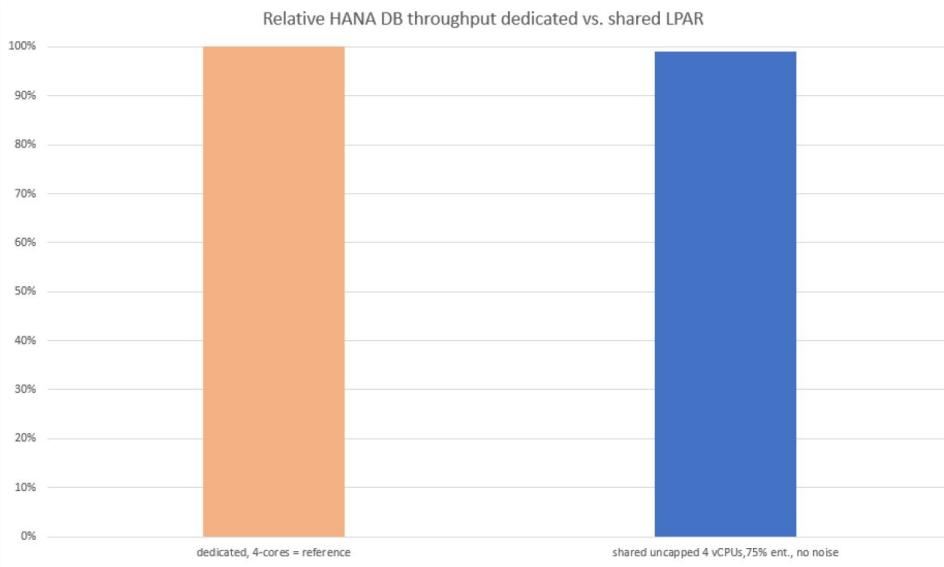
Note

- Supported on POWER8 and POWER9 Systems
- Initially maximum production LPAR size must fit onto a single NUMA-node
 - Increase of upper limits in plan according to customer experiences & feedback
 - For larger SAP HANA instances DEDICATED(-DONATING) LPARs should be used.
- No defined limit of shared LPARs. Instead sizing KPIs need be met for each LPAR



Shared Processor Pool with SAP HANA DB

no impact on the HANA throughput

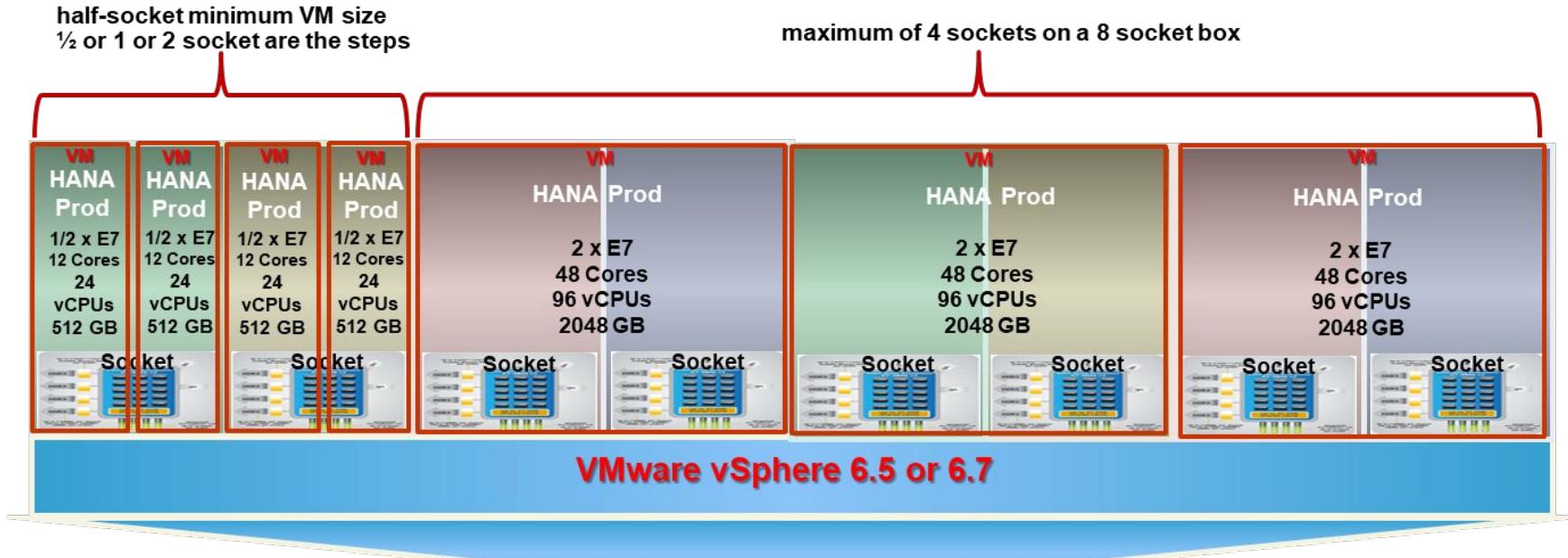


The first graph compares the throughput of the identical HANA workload mix which was moved from a dedicated 4-core LPAR to a shared pool LPAR with 4 vCPUs and 75% entitlement. In the remaining shared LPARs no concurring workload was executed. All 4 vCPUs could be fully exploited, but on the other hand no more than 4 physical cores could be utilized in parallel by the 4 vCPU specification. With these conditions we see very minimal impact (-1%) on the HANA throughput, which is a key criterion for SPLPAR support.

In the 2nd graph we compare throughput for an identical uncapped shared HANA LPAR with 4 vCPUs and a 75% entitlement, which equates the guaranteed compute capacity of 3 cores (red line). Its throughput is competing against varying workloads characteristics ("noise") executed in a LPAR of double capacity, i.e. 8 vCPUs, 75% entitlement in the shared pool.

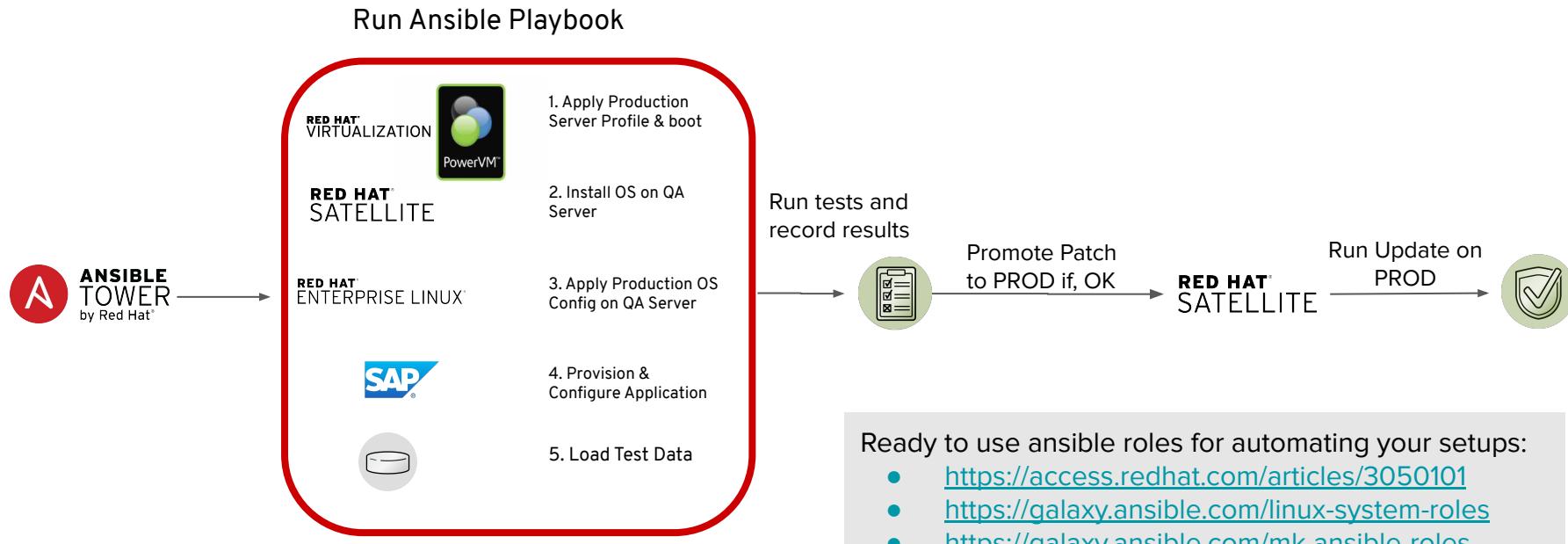
Source: Whitepaper SAP HANA in SPLPARs <https://ibm.box.com/v/H4PHoPSPLPARsV1-0-201909>

VMware vSphere 6.7 limits: VMs for PROD HANA DBs on Intel x86 8 sockets



2,4 or 8 socket Intel x86
Example HPE Integrity
Intel Ex E7 V4 24 Core - 8 sockets - 8 TB memory

Use Case: fast and secure patching of SAP landscapes



Ready to use ansible roles for automating your setups:

- <https://access.redhat.com/articles/3050101>
 - <https://galaxy.ansible.com/linux-system-roles>
 - <https://galaxy.ansible.com/mk-ansible-roles>

The Value of Red Hat for customers & partners

Steve Gaines
EMEA Partner Sales Enablement
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Agenda

- Business Context
- Red Hat & SAP
 - It's not just RHEL
- Summary & Close
 - Next steps

The three pillars of our portfolio

Open hybrid cloud

Red Hat's strategy and vision for its portfolio of software, tools, and services built in the open source development model and designed for future architectures that are open, secure, and agile across hybrid, multicloud.



Hybrid cloud infrastructure

Secure, scale, & manage foundations for traditional & cloud workloads across all environments



Cloud-native development

Develop, deploy, & manage any application, on any environment & give developers what they need to innovate



Management & automation

Easily & seamlessly manage Red Hat platforms and automate across hybrid environments

Red Hat & SAP - Business Context

444,000

Customers

\$27.5b

2019 Revenue

47+

Years Industry Expertise

100,330

2019 Employees

2027

Deadline

SYNERGIES between Red Hat | SAP



- INTEGRATION
- INTELLIGENCE
- AUTOMATION
- INTEROPERABILITY
- INFRASTRUCTURE



Complementary Technologies

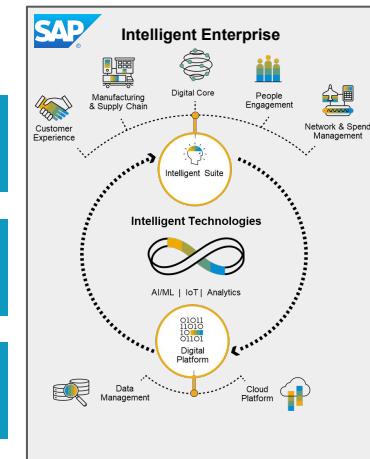
Red Hat Infrastructure, Application Platform | SAP ERP, HANA , Business Applications

Customer Base

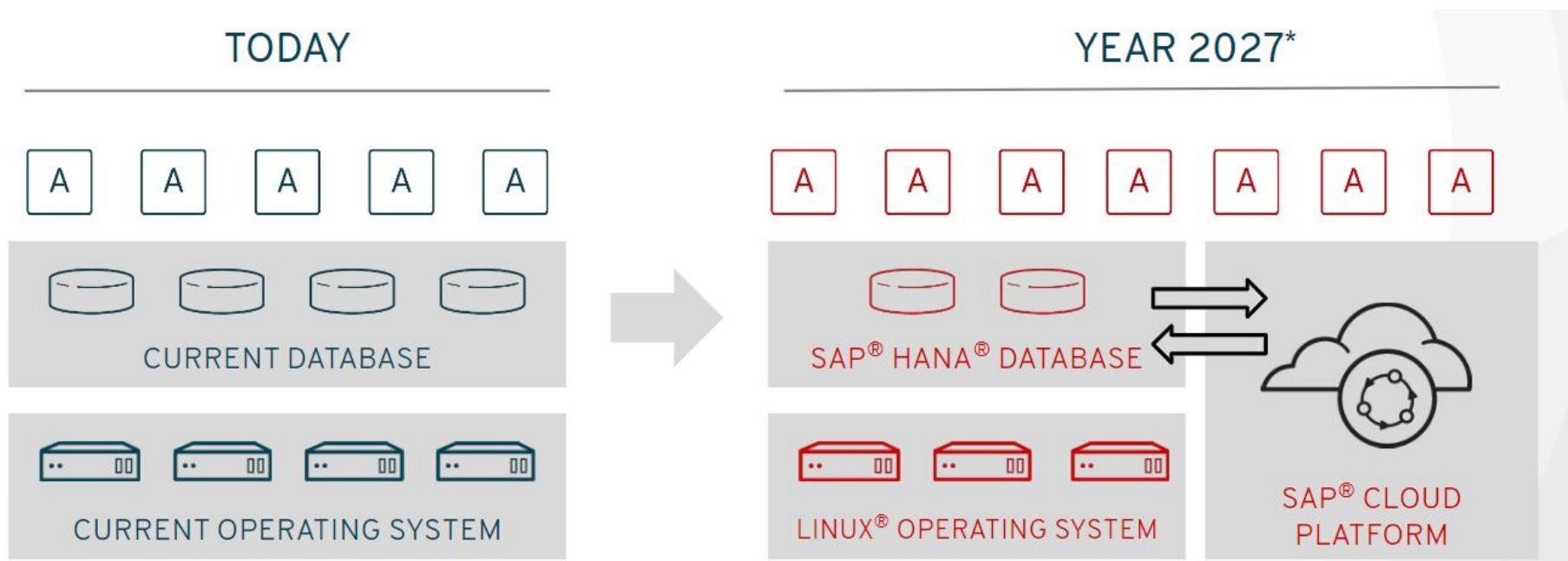
Deep presence and common customers within Fortune 2000 companies

Industry Focus

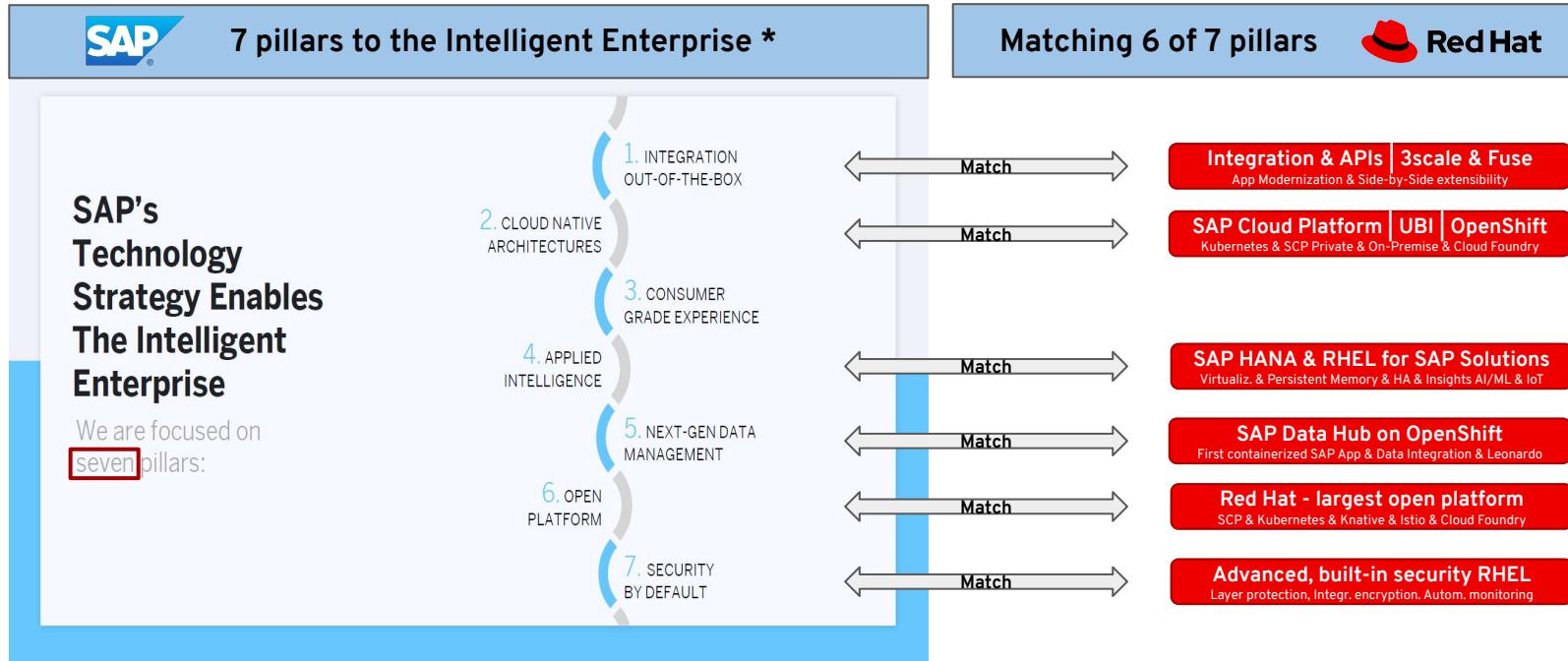
Finance, TelCo, Healthcare, Government | Automotive, Retail, Energy, Industrial



The 2027 Deadline



SAP Strategy



* Source: SAP Technology Strategy, June 2018 - Office of the CTO - <https://www.sap-sbn.no/no/download/595>



Red Hat & SAP - it's not just RHEL

SERVICES

INTEGRATION

INTELLIGENCE

AUTOMATION

INTEROPERABILITY

INFRASTRUCTURE

Red Hat & SAP

SERVICES

INTEGRATION

INTELLIGENCE

AUTOMATION

INTEROPERABILITY

INFRASTRUCTURE

RED HAT
ENTERPRISE LINUX®

RED HAT®
VIRTUALIZATION

RED HAT®
INSIGHTS

RED HAT®
SATELLITE

SAP NetWeaver
SAP HANA
SAP S/4HANA



Red Hat & SAP

SERVICES

INTEGRATION

INTELLIGENCE

AUTOMATION

INTEROPERABILITY



PHYSICAL



VIRTUAL



PRIVATE CLOUD



Google



Amazon
Web Services



Microsoft Azure



OTHER CLOUDS

INFRASTRUCTURE

Red Hat & SAP

SERVICES

INTEGRATION

RED HAT[®]
INTEGRATION

INTELLIGENCE



powered by RHEL



SAP Data Hub
powered by OpenShift

AUTOMATION



INTEROPERABILITY

INFRASTRUCTURE

Red Hat & SAP

SERVICES

INTEGRATION

RED HAT[®]
INTEGRATION

INTELLIGENCE



AUTOMATION



INTEROPERABILITY



PHYSICAL



VIRTUAL



PRIVATE CLOUD



Google



Amazon
Web Services



Microsoft Azure



OTHER CLOUDS

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ENTERPRISE LINUX[®]

RED HAT[®]
VIRTUALIZATION

RED HAT[®]
INSIGHTS

RED HAT[®]
SATELLITE

SAP NetWeaver
SAP HANA
SAP S/4HANA

Red Hat + SAP Joint customers



RHEL for SAP + Satellite



RHEL for SAP + Satellite



SAP Hana - EAP, RHEL, Satellite



RHEL for SAP + Satellite



Moved to SAP S/4 HANA



SAP HANA: Went from 128 CPUs to 24-30 CPUs,



RHEL for SAP Hana
Reduced infrastructure by 30%



The Value of Red Hat for customers & partners

Summary & Close

Call to Action

Register and invite yourself and your co-workers to the next enablement sessions:

- **Virtual Red Hat SAP Sales bootcamp for IBM Power partners**
9 a.m. CEST on Tuesday October 20 2020.
This half-day virtual bootcamp has been created for IBM Power partners' pre-sales and services architects* to learn the value of Red Hat in SAP environments. [Register now](#)
- **Red Hat and SAP four-day virtual workshop for IBM Power partners**
Join this four-day virtual workshop, created to provide IBM Power partner pre-sales and consultants with a technical overview of all Red Hat solutions for SAP. [Register now for:](#)
 - Red Hat overview and Ansible® - 9 a.m. to 4.15 p.m. CET October 29, 2020.
 - Advanced Ansible - 9 a.m. to 4.15 p.m. CET November 5, 2020.
 - OpenShift® architecture - 9 a.m. to 4.15 p.m. CET November 12, 2020.
 - OpenShift operations - 9 a.m. to 4.15 p.m. CET November 19, 2020.