

# Choose the Right Platform for Your SAP HANA Strategy

BOV22039 - Tuesday, Nov 3, 2:00 PM - 3:00 PM  
7-Rode Kamer

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SAP HANA

## Choose the Right Platform for Your SAP HANA Strategy

SAP TechEd Las Vegas  
October 22<sup>nd</sup>, 2015

### Speakers:

- **Thomas Fingerhuth**, IBM SAP Alliance Lead for IBM Systems
- **Erich Schneider**, Senior Director SAP HANA Product Strategy
- **Mike Friesenegger**, SUSE Technology Strategist



Thomas



Erich



Mike

# Choose the Right Platform for Your SAP HANA Strategy from SAP, SUSE & IBM

## Agenda:

- SAP, SUSE & IBM - Collaboration Milestones
- Why SAP HANA?
- Why SAP HANA on IBM Power Systems?
- Why SUSE Linux Enterprise for SAP HANA on IBM Power?
- How are clients succeeding with our solution?
- How can we help you?

# SUSE, SAP and IBM working together to deliver customer solutions

## - Milestones

**1999**  
First Linux certified by SAP

**2001**  
SUSE Linux Enterprise Server 7 on p-, i- and zSeries, 31- & 64-Bit

**2005**  
SAP Business Suite on SLES 9 on IBM pSeries

**2011**  
SUSE Linux Enterprise Server for SAP Applications



**2000**  
SUSE Linux Enterprise Server R1 IBM S/390

**2002**  
mySAP on SLES 7 for IBM zSeries 64-Bit

**2010**  
SUSE Linux is Only OS recommended for SAP HANA

**2015**  
SAP HANA on SLES for SAP on IBM Power Systems

Time



**1999**  
IBM DB2 becomes available for SAP

**2005**  
Dynamic Infrastructure for SAP Adaptive Computing

**2011**  
IBM GBS rated by SAP as Leader in Customer Satisfaction

**2014**  
IBM becomes SAP's Premier Cloud Partner

**2015**  
SAP HANA on IBM Power Systems announced and generally available

**1972**  
IBM becomes Logo and Development Partner of SAP

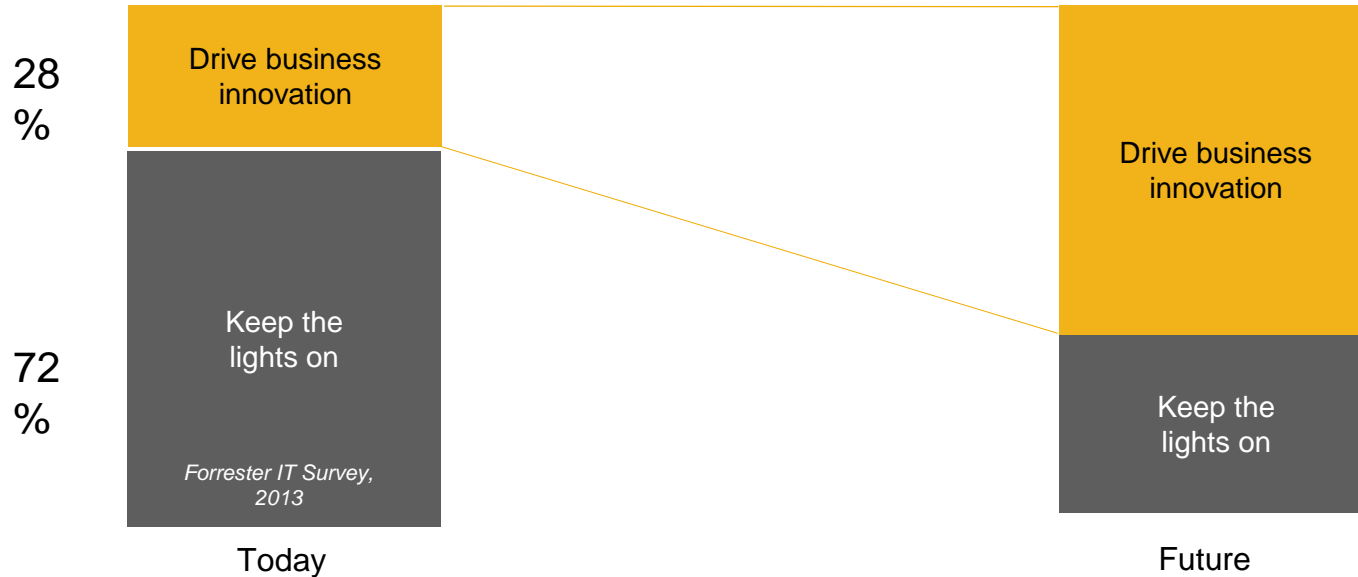
**2001**  
IBM and SAP form Strategic Alliance

**2010**  
IBM Announcement of POWER7 and EX5 Server Architecture for SAP

**2012**  
Introduction of IBM pureSystems for SAP



# A radically new approach is required to unlock potential

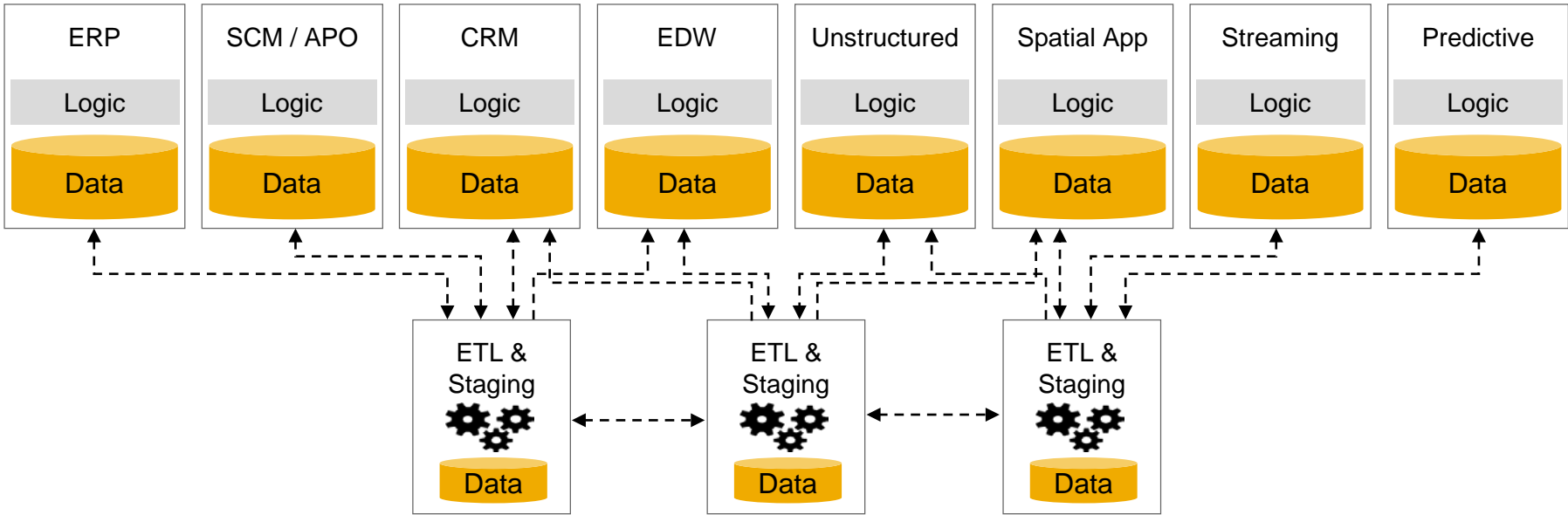


“40% executives worry that their organizations will not keep pace with technology change and lose their competitive edge.”

McKinsey study, 2013

# The problem with current IT Landscape

Silos, delay and complexity hinder business agility and innovation



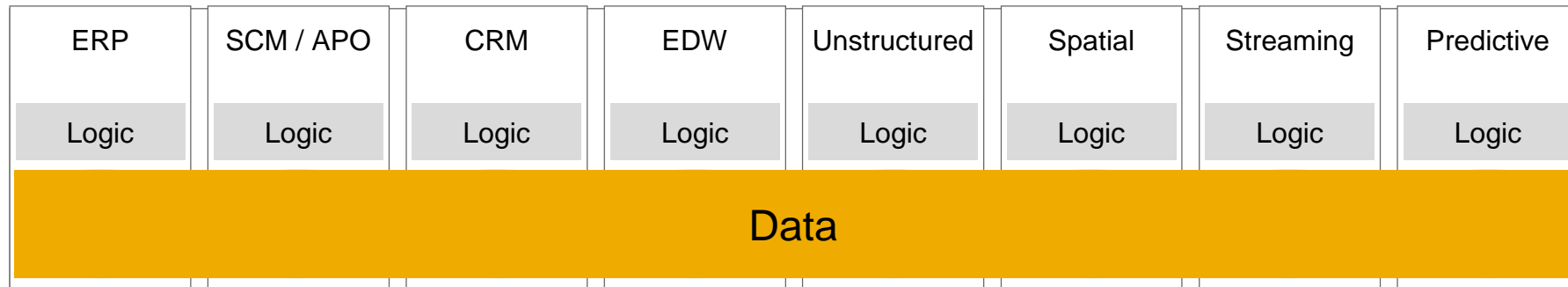
Application silos  
Multiple data copies  
Batch processing



Partial business view  
No real-time insights  
Limited ability to innovate

# The solution: Make all data readily available to all applications

Reduce data movement and data latency – improve business agility & innovation



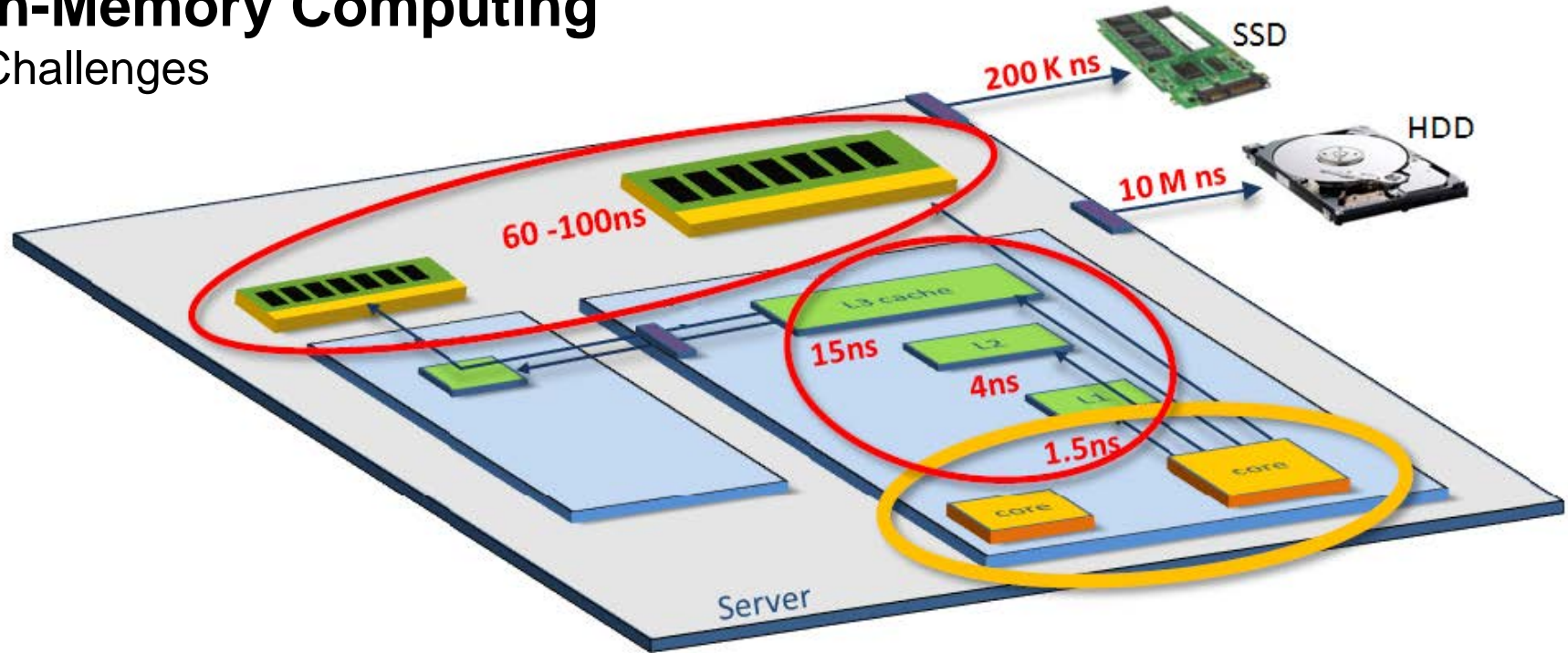
Unified application workloads  
Unified data – single copy  
Real-time processes



Complete business view  
Ability to react in real-time  
Ability to innovate

# In-Memory Computing

## Challenges



- No disk access during read
- Tens or hundreds of cores
- Cache-aware memory organization

- All data structures in memory
- Multi-threading in cores  
(Simultaneous Multithreading)



# Run Fast

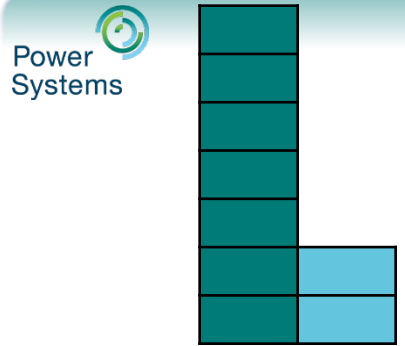
## IBM Power Systems – designed for Big Data



# 4X

threads per core vs competition  
(up to 1536 threads per system)

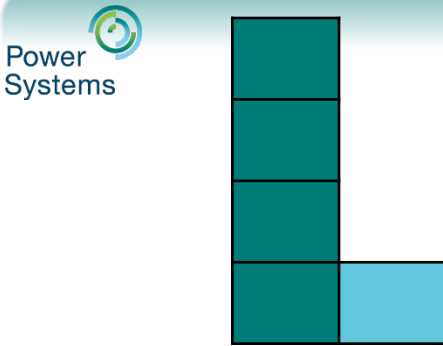
**Processors**  
flexible, fast execution of  
analytics algorithms



# 4X

memory bandwidth vs competition  
(up to 16TB of memory)

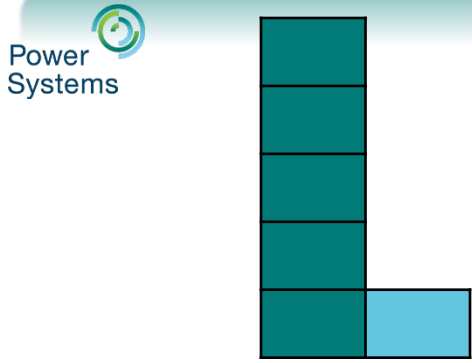
**Memory**  
large, fast workspace to  
maximize business insight



# 5X

more cache vs competition  
(up to 224MB cache per socket)

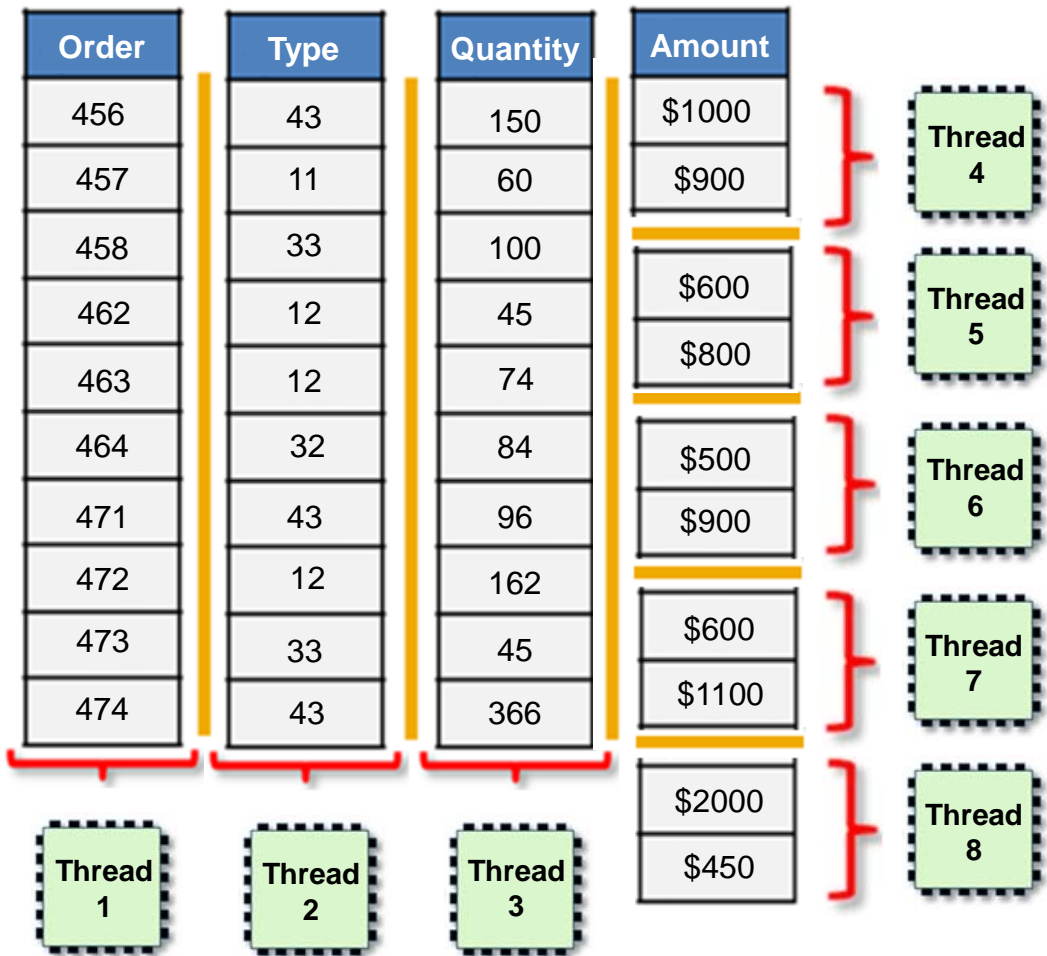
**Cache**  
ensure continuous data load for  
fast responses



# Parallel processing

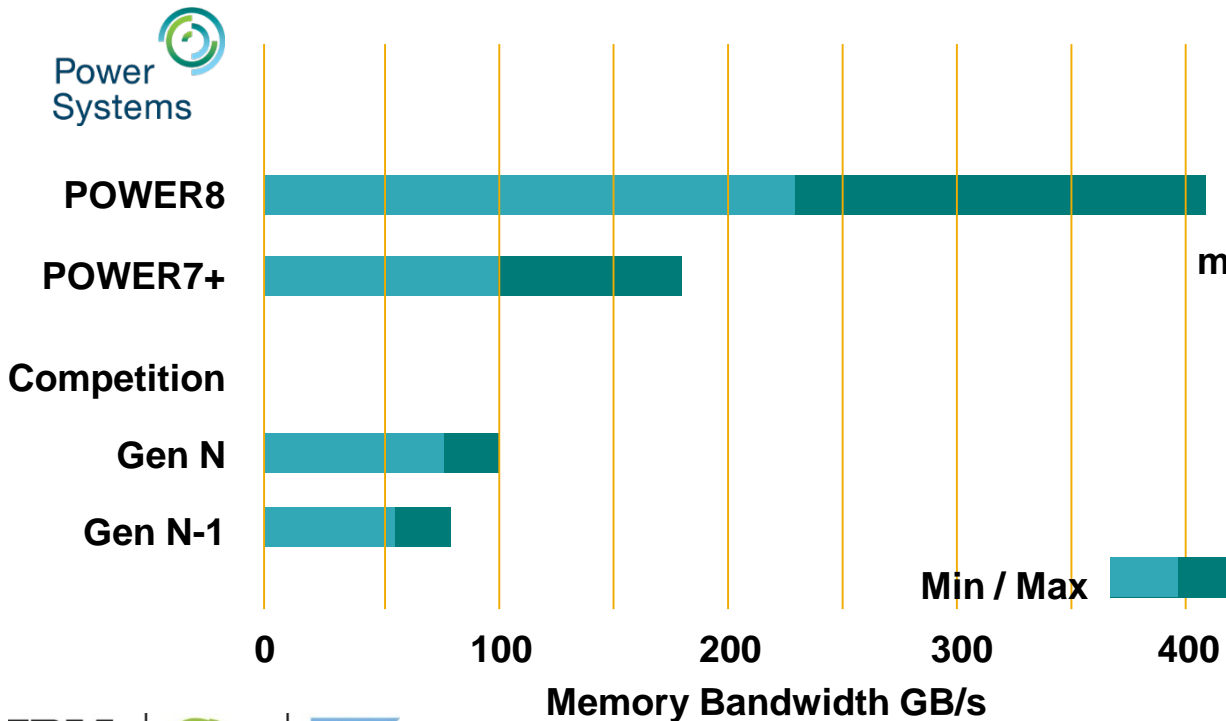
Faster data processing

- IBM POWER8 threads (SMT) are utilized by vertical and horizontal parallelization of each query
- Each thread can scan a column or a portion of a column in parallel



# Run Fast

## POWER8's faster memory bandwidth is ideal for in-memory applications like SAP HANA



# 4X

memory bandwidth vs competition  
(up to 16TB of memory)

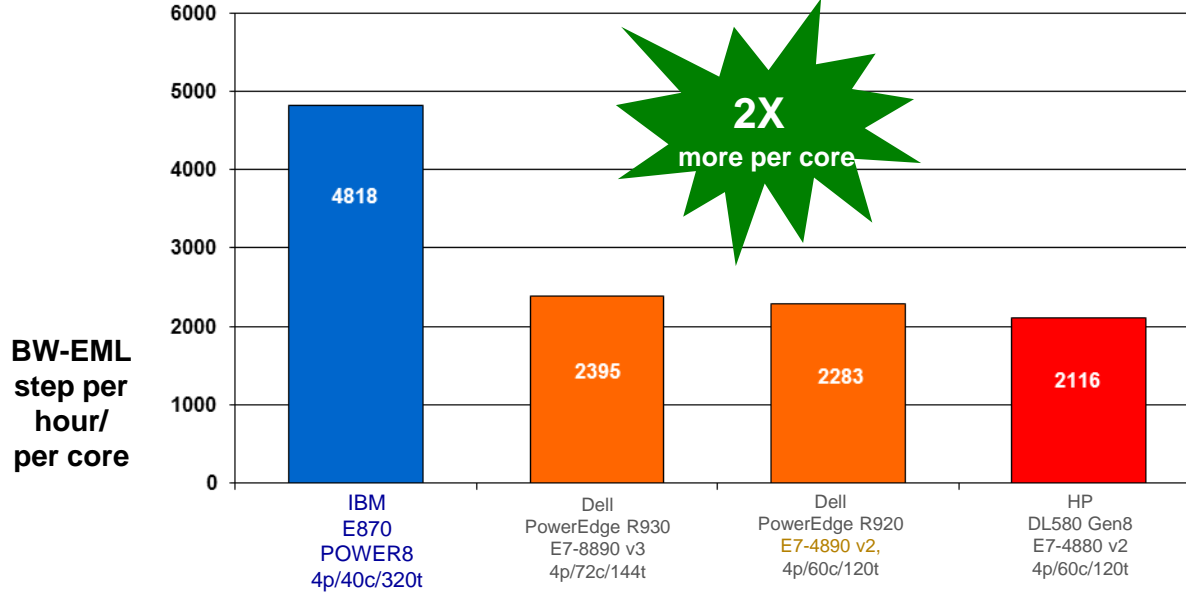
**Memory**  
large, fast workspace to  
maximize business  
insight



# New World Record set by IBM Power E870 on SAP BW Enhanced Mixed Load Standard Application Benchmark with 2 Billion records

SAP BW Enhanced Mixed Load (BW-EML) Standard Application Benchmark Results, 2 billion initial record load on SAP Hana 1.0: Ad-hoc navigation step per hour/per core

Source: <http://www.sap.com/benchmark>



***“IBM set a world record in the industry leading SAP BW-EML Standard Application Benchmark at 2 billion records ... twice the performance per core over previous benchmarks.” >>***

**Kyle Garman**  
SVP & Managing Director, Global Strategic Partners, SAP

(1) IBM Power Enterprise System E870 on the SAP BW Extended mixed load standard application benchmark running SAP Netweaver 7.31 application: 4 processors / 40 cores / 320 threads, POWER8: 4.19GHz, 1024 GB memory, 192,750 adhoc navigation steps per hours on SuSE Linux Enterprise Server 11 and SAP Hana 1.0, Certification #: 2015024 Result valid as of June 1, 2015. Source: <http://www.sap.com/benchmark>  
 (2) Dell PowerEdge R930, on the SAP BW Extended mixed load standard application benchmark running SAP Netweaver 7.31 application: 4 processors / 72 cores / 144 threads, Intel Xeon Processor E-7 8890 v3, 2.5 GHz: 1536 GB memory, 172,450 adhoc navigation steps per hours on SuSE Linux Enterprise Server 11 and SAP Hana 1.0, Certification #: 2015014  
 (3) Dell PowerEdge R920, on the SAP BW Extended mixed load standard application benchmark running SAP Netweaver 7.31 application: 4 processors / 60 cores / 120 threads, Intel Xeon Processor E-7 4890 v2, 2.8 GHz: 1024 GB memory, 137,010 adhoc navigation steps per hours on SuSE Linux Enterprise Server 11 and SAP Hana 1.0, Certification #: 2014044  
 (4) HP DL580 Gen8, on the SAP BW Extended mixed load standard application benchmark running SAP Netweaver 7.30 application: 4 processors / 60 cores / 120 threads, Intel Xeon Processor E-7 4880 v2, 2.5 GHz: 1024 GB memory, 126,980 adhoc navigation steps per hours on SuSE Linux Enterprise Server 11 and SAP Hana 1.0, Certification #: 2014009

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# Drive waitless insights with the most scalable in-memory analytics platform in the industry



The Next Chapter in IBM and SAP Innovation: Doug Balog announces SAP HANA on POWER8 [Link to video:](#)



**Power S814 / S824**



**Power S812 / S822**

- 1 or 2 sockets
- Up to 12 cores/socket
- Up to 2 TB of Memory



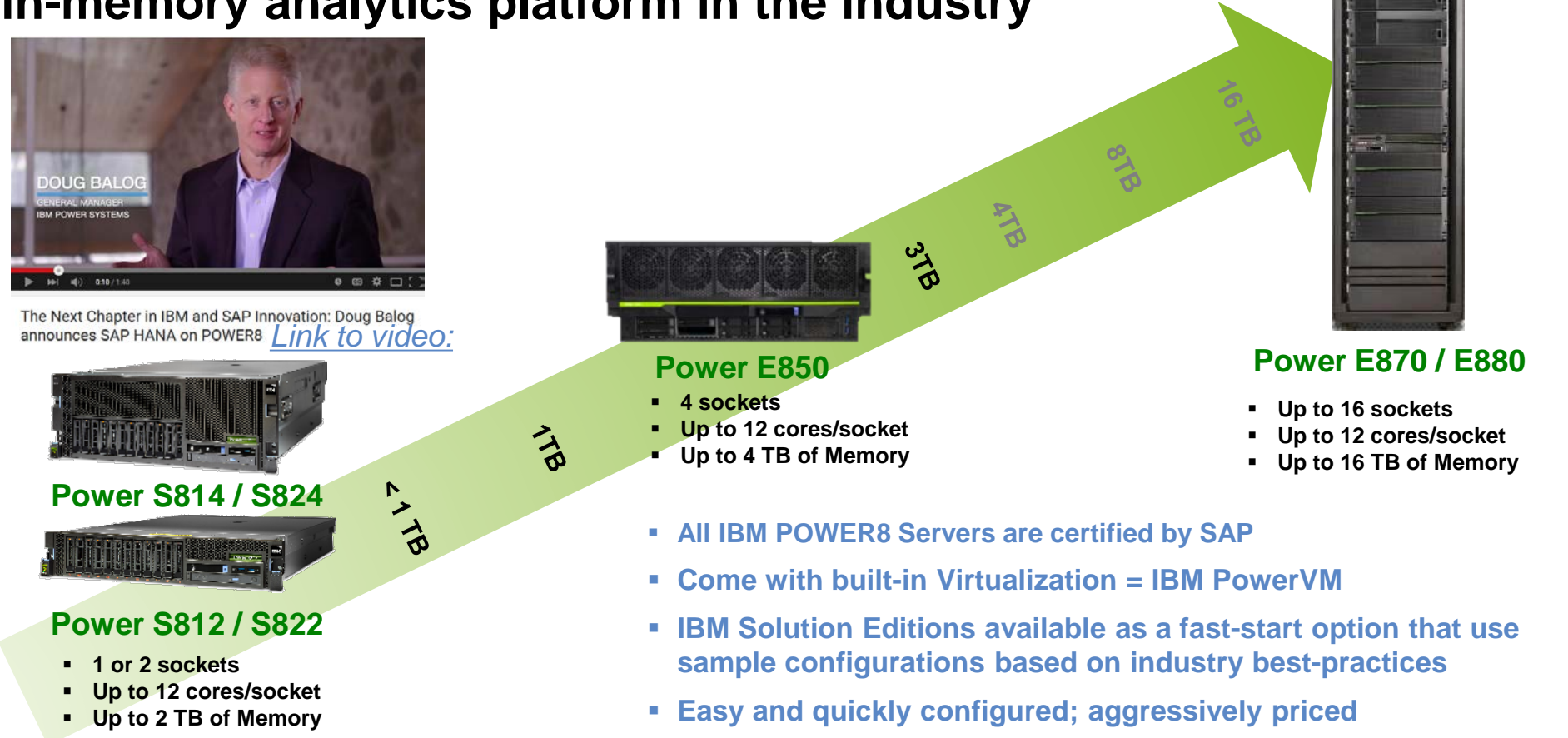
**Power E850**

- 4 sockets
- Up to 12 cores/socket
- Up to 4 TB of Memory



**Power E870 / E880**

- Up to 16 sockets
- Up to 12 cores/socket
- Up to 16 TB of Memory



# SAP HANA Platform Services

Comprehensive services to make information available to any application

SQL JSON ADO.NET J/ODBC OData HTML5 MDX XML/A



## SAP HANA Platform

### Application Services

Web Server | Java Script | Fiori UX | Application Lifecycle Management

### Database Services

In-Memory Columnar | Parallelization | Compression | Multitenant Database Containers | Dynamic Tiering  
Spatial | Predictive | Search | Text Analytics | Text Mining | Graph\* | Planning  
Smart Data Quality | Functional Libraries

### Integration Services

Smart Data Access | Smart Data Integration | Smart Data Streaming | Remote Data Sync | Hadoop Integration

On-Premise | Cloud | Hybrid

\* Graph is in controlled availability

# SUSE Linux Enterprise Server for SAP Applications for Power

## Tailored for SAP HANA:

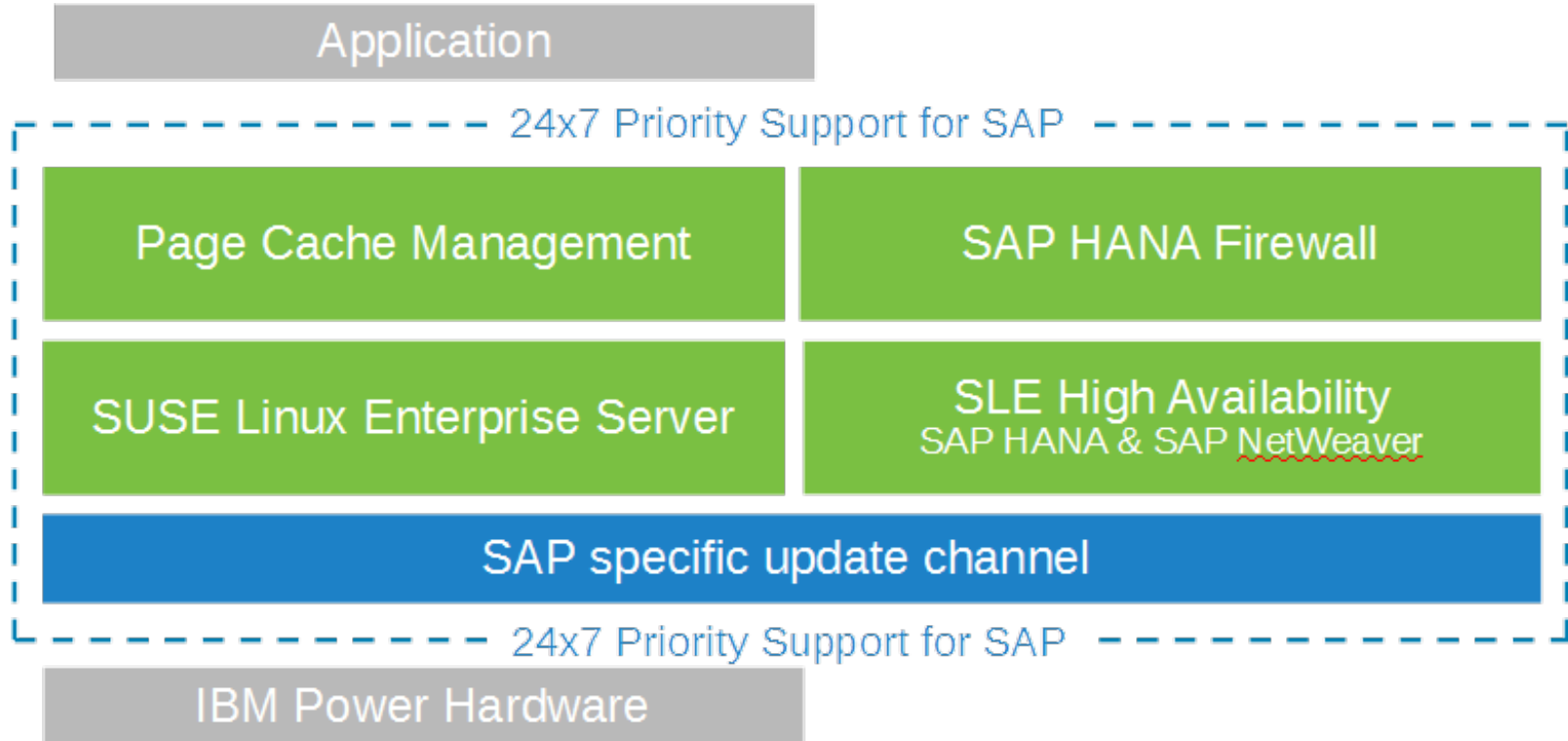
- SLES 11 SP4 on IBM Power
- HA Extension
- HA Resource Agents for SAP HANA
- SAP HANA Firewall
- Page cache limit
- Priority support

## Optimized for IBM POWER8:

- All Simultaneous Multi-Threading (SMT) modes (SMT1, SMT2, SMT4, SMT8)
- Data Stream Control Register improvements
- Enhanced performance sampling
- Supported as IBM PowerVM and PowerKVM guests

# Tailored for SAP HANA

*Included Features (in green) and Services (in blue)*



Current feature set of SLES for SAP Applications 11 SP4 for IBM Power. Changes possible in the future.



# Disaster Recovery for your SAP HANA for IBM Power Systems

Your SLA commitments for SAP HANA

## Service Level Agreement

### SAP HANA System Replication

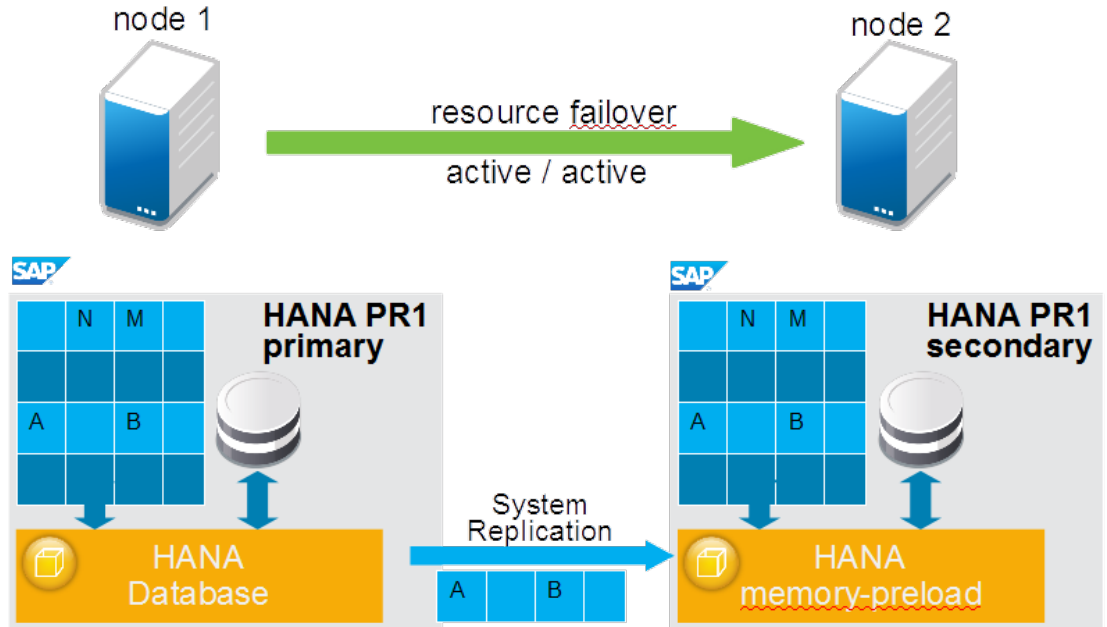
SAP HANA System Replication  
to protect your data

### SLE High Availability

SLES for SAP HA automates  
SAP HANA System Replication  
failover

# SUSE Supported SAP HANA Scale-up Disaster Recovery Scenarios

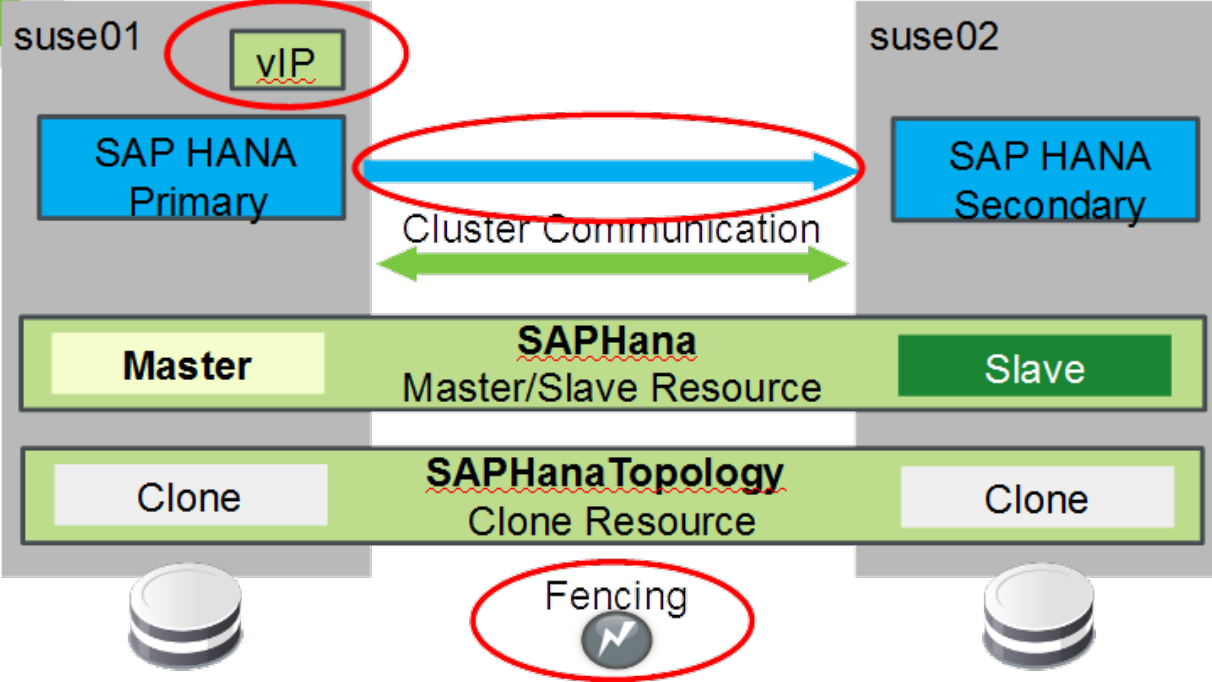
- ✓ Performance-optimized
- ✓ Cost-optimized
- ✓ Multi-tier
- ✓ Multi-tenant
- ✓ SAP HANA and NetWeaver in one cluster



SAP HANA Performance-Optimized System Replication  
Powered by SUSE High Availability Solution

# From Concept to Implementation

## SUSE High Availability Solution for SAP HANA



# Centralized Management of SAP HANA systems with SUSE Manager



**Reduce complexity of managing SAP HANA environments**



**Effectively manage SUSE Linux Enterprise Server patching**



**Simplify patching and security compliance**



**Slash operating system management and compliance costs**

# SUSE Offer as part of “Simpler Choice”

[www.suse.com/sap-simplerchoice](http://www.suse.com/sap-simplerchoice)

The **SAP Simpler Choice program** from SAP provides compelling tools and offers to make it easy for you to adopt SAP in-memory data management solutions. Here is a complementary offering from SUSE where you are invited for:



## Try Simple

60 days free trial of  
SUSE Manager,  
SUSE Enterprise Storage,  
SUSE OpenStack Cloud



## Buy Simple

30% discount towards any  
spend on  
SUSE Manager,  
SUSE Enterprise Storage,  
SUSE OpenStack Cloud\*



## Run Simple

Up to 15% discount  
towards  
SUSE Consulting,  
Training Services, and  
Premium Support

## *Delivers on the promise of real-time business*

### **Cuts total cost of ownership**

(TCO) and shortens innovation cycles with a rapidly deployed solution supporting infrastructure standardization

### **Dramatically reduces**

query execution times, in some instances to just a few seconds

### **Delivers significantly faster**

load and activation performance, helping support next-generation analytics apps

#### **Solution components**

- SAP HANA on IBM® Power Systems™
- running SUSE Linux Enterprise Server
- IBM Business Partner: SAP AG



[Link to video:](#)

The transformation: To help businesses become more real-time, data-driven enterprises, IBM Premier Business Partner NTT DATA, Inc. sought to simplify adoption of the SAP HANA in-memory database management system. It teamed with IBM to successfully test and evaluate the SAP HANA on IBM® Power Systems™ offering, available in the cloud or on premises.

***“We believe the platform can fundamentally transform the HANA adoption journey for our customers.”***

*-Vipin Singh, Global Vice President, SAP Technology Practice*

# Technische Universitaet Muenchen

## Offering fast, simple and smart hosting and educational services

**Addresses the skills crisis**  
by training academic staff and students to use state-of-the-art technology

**Inexpensive services**  
enabled by low-management, energy-efficient solutions

**Enhances the reputation**  
of the university, attracting new students and funding

### Solution components

- IBM® Power® S822
- IBM XIV® Storage System
- SAP HANA
- SUSE Linux Enterprise Server

The transformation: To support its latest hosting services offering based on SAP HANA, the SAP University Competence Center (UCC) at TUM needed a cost-effective platform that is agile enough to meet changing customer demands at low cost. By selecting efficient, low-management IBM solutions, the university is able to run fast, simple and smart – protecting its reputation as a leader in putting research into action.



Technische Universität München meet customer expectations with SAP HANA on IBM POWER8

[Link to video:](#)

***“We chose to test IBM Power Systems for SAP HANA because we feel that it gives us enough performance, power and flexibility to fulfill our customer needs, and is also very cost-effective.”***

*- Helmut Krcmar, Professor of Information Systems at TUM and Academic Director of the SAP University Competence Center*

# Hamm Reno Group, Germany

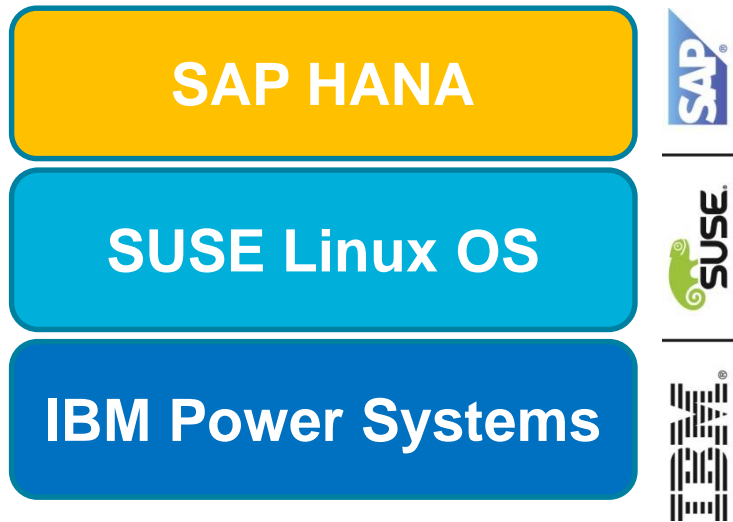


- Largest footwear system wholesaler in Europe
- More than 750 chain stores in 20 countries
- HR-Group prefers **IBM PowerVM** as platform for virtualization – built in
- No need for VMWare®
- SAP HANA on Intel® - x86 Appliance is considered as “foreign object“
- IBM Proof-of-Concept on IBM POWER in 2012 was successful
- Customer demanded permission for “on Premise“ in 2012
- SAP started Development Program on August 1<sup>st</sup>, 2013
- Test- and Evaluation Program since November 1<sup>st</sup>, 2014
- Ramp-Up started on April 1<sup>st</sup>, 2015
- General Availability (GA) since August 21<sup>st</sup>, 2015
- Go-live with productive system as #4 worldwide on Sept. 12<sup>th</sup>
- SLES 11.3 (SUSE LINUX\_PPC64), POWER8, ≤ 3TB Memory, BW 7.31.12ff



**With SAP HANA on IBM Power Systems, all the latest SAP HANA innovations, accelerations and simplifications are now also available for IBM Power System customers.**

**The choice is yours!**



# Where to learn more about Big Data & Analytics and SAP HANA on IBM Power Systems

Open innovation  
to put data to work  
across the enterprise



POWER8

**Start the conversation with your IBM Representative.**  
Call: 1-866-872-3902 or send e-mail to: [hop@us.ibm.com](mailto:hop@us.ibm.com)

**Special Financing for IBM Systems**  
<http://www.ibm.com/financing>

**Free 60 day evaluation of SUSE Linux Enterprise Server  
for IBM Power Systems with SAP HANA**  
<https://www.suse.com/products/sles-for-sap/download/power-v11.html>

# Check out some of the other SAP sessions (1/2)

At SUSECon 2015

- **TUT20056 - SAP HANA Disaster Recovery with SUSE High Availability**
  - Wednesday, Nov 4, 3:30 PM - 4:30 PM – 8-Berlage Zaal
- **CAS20030 - Fast SAP HANA Fail Over Architecture with a SUSE High Availability Cluster in the AWS Cloud**
  - Tuesday, Nov 3, 4:45 PM - 5:45 PM – 5-Roland Holst kamer
  - Thursday, Nov 5, 9:00 AM - 10:00 AM – 13-Groot Secretariaat
- **TUT19921 - Conducting a HANA Symphony - SAP HANA Scale-Out Automation**
  - Wednesday, Nov 4, 2:15 PM - 3:15 PM – 7-Rode Kamer

# Check out some of the other SAP sessions (2/2)

At SUSECon 2015

- SPO34571 - Simplify your IT Landscape with SUSE and SAP HANA
  - Thursday, Nov 5, 11:45 AM - 12:35 PM – 9-Ontvangkamer
- SPO34572 - Data Center Readiness SAP HANA with SUSE Linux Enterprise Server for SAP Applications
  - Thursday, Nov 5, 11:45 AM - 12:35 PM – 7-Rode Kamer
- CAS19256 - Running SAP HANA One on SoftLayer Bare Metal with SUSE Linux Enterprise Server
  - Tuesday, Nov 3, 3:15 PM - 4:15 PM – 7-Rode Kamer



Thank You!  
Your Questions Please!

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