



# Why SAP HANA on IBM Power Systems ?



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# 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 characteristics to support mission critical SAP applications



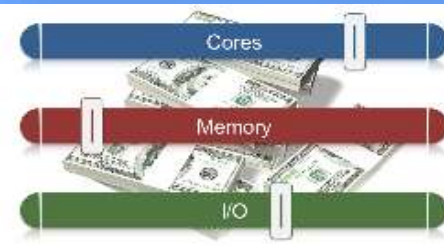
## Performance

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



## Competitive Cost

TCA competitive to x86 and TCO better than x86



# The POWER Portfolio has the flexibility to Scale-Up and Scale-Out

## SAP HANA Scale-Up

- Minimal data center footprint
- One server, one operating system to update, patch, upgrade
- One host to operate, manage, and provide power supply



## SAP HANA Scale-Out

- Provides more HW flexibility and requires less initial investment
- Need more space and power in data center
- Operational and management costs will be much higher
- Requires more upfront knowledge about data, applications, and hardware



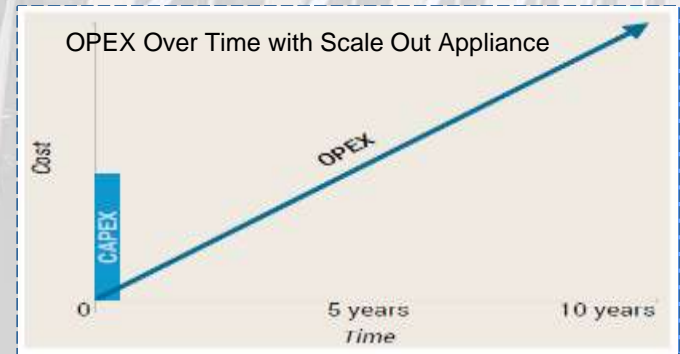
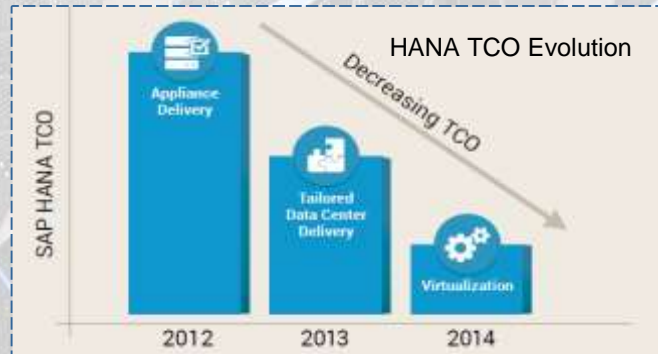
Provide more flexibility, easier to manage & scale, lower TCO, Utilize existing investment

**H**igher Density Virtualized Memory Configurations (Scale-Up)

**S**maller Datacenter Footprint (Reduce Sprawl /Complexity)

**L**ower OPEX Over Time (Easier to Manage)

**S**uperior Reliability and Availability (Lower Risk)



# Resiliency

## IBM POWER Systems delivers

- **Reliability** required by mission critical environments
- Highly resilient and secure system with **99.999% uptime**
- PowerVM has **full resource isolation**
- Designed with built in memory failure prevention (**Chipkill memory**)
- **Dynamic component de-allocation**, on the fly repair and fault isolation
- **Zero** documented **security risk** for the past 3 years
- Enterprise Resource Pools for **workload relocation** and balancing beyond server boundaries



# Systems Architecture

SMT enables higher throughput and reduces core count. Particularly suited to support HANA features such as the HANA indexing server, which is known to spawn many hundred threads. SMT technologies have been built to handle this type of behaviour

**4x**

threads per core vs. Intel

Large memory footprints enable larger single node HANA in-memory database systems and provide more flexibility to consolidate workloads

**24TB\***

larger memory space vs. Intel

POWER systems feature superior CPU and Memory bandwidth to handle HANA in-memory data operations faster

**1.8x**

system bandwidth vs. Intel

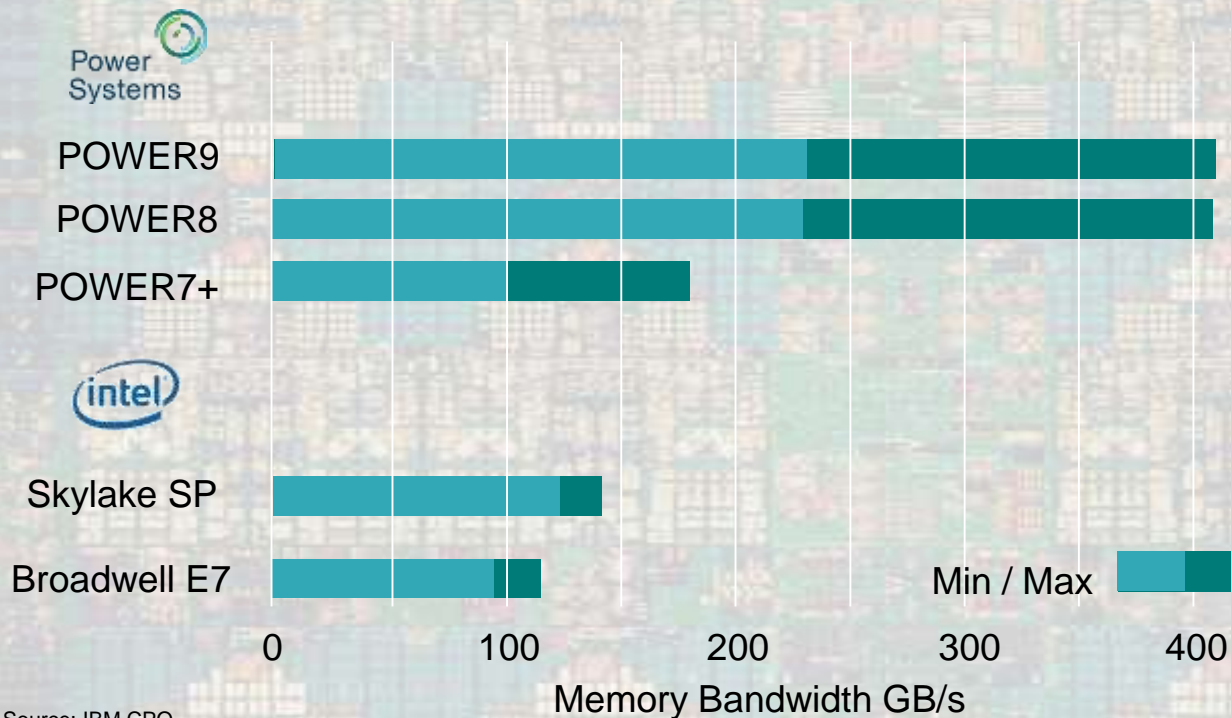
Higher CPU clock speeds and overall processing capabilities leading to HANA record benchmarks

**2x**

core performance vs. Intel

\* Virtualized scale-up environment

# POWER faster memory bandwidth is ideal for in-memory applications like SAP HANA



# 1.8x

memory bandwidth vs Intel  
(up to 32TB of memory E880C  
and 64TB of memory on E980)

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

# Enterprise Level Virtualization

- Consolidate multiple HANA workloads onto fewer systems, increasing server utilization.
- Live Partition Mobility (LPM) avoids service impact due to systems maintenance
- HANA benefits from Enterprise Resource Pool (EP) and Cores on Demand (COD) by accessing capacity and resources in unexpected situations.
- PowerVC improve administrator productivity and simplifies the management of HANA VMs and LPARs on POWER Systems servers.

PowerVC

PowerVM





# Better Total Cost of Ownership

As business grows, the HANA database size increases, and larger server memory is required

POWER9 systems can support 33% larger HANA databases than x86 servers (4TB vs. 3TB)

AND

With less than half the cores

Which results in

- ✓ Lower purchase and maintenance cost for smaller servers
- ✓ Lower power consumption
- ✓ Lower complexity



**Don't get trapped by hardware restrictions**

# Total Cost of Ownership (TCO) is much more than Total Cost of Acquisition (TCA)!

	Components	Environments					Time
		Prod	Dev	Test	QA	DR	
TCA	Hardware	\$	\$	\$	\$	\$	Planning
	Software	\$	\$	\$	\$	\$	Upgrades
TCO	People	\$	\$	\$	\$	\$	Migration
	Network	\$	\$	\$	\$	\$	Growth
	Storage	\$	\$	\$	\$	\$	Parallel Costs
	Facilities	\$	\$	\$	\$	\$	Net Present Value
	QoS – Availability, Reliability, Security and Scalability						

## SAP HANA clients are rapidly adopting IBM Power Systems



**2500+** clients in **< 48**  
**months**



**SAP Pinnacle award Winner**  
**IBM Power Systems - Global**  
**Partner of Year – Infrastructure**



**Ranked # 1** in reliability  
for last 11 years<sup>1</sup>



**'137% ROI and 7 months**  
**payback'** - Forrester TEI study<sup>2</sup>



**50+ CSP/MSP** using IBM  
**POWER** Systems for **SAP**  
**HANA Clouds**



**Largest scale up capacity** for S/4  
**HANA and BWH: 24TB<sup>3</sup>**

# Next Generation HANA on POWER IBM POWER9 Family



Optimized for SAP HANA in-memory database workloads



## H922

- 1,2-socket, 2U
- 4, 8, and 10 cores per socket
- 4TB memory

Ideal for Scale-Out configurations

## H924

- 2-socket, 4U
- 8, 10, and 12 cores per socket
- 4TB memory

## E950

- 2,4-socket, 4U
- 8, 10, 11, and 12 cores per socket
- 16TB memory

Ideal for Scale-Up configurations

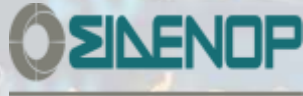
## E980

- 5U CEC + 2U Control Unit
- Max of 192 SMT8 processor cores
- 8, 10, 11, and 12 cores per socket
- 64TB memory

# IBM - SAP HANA Customer References in Greece



*IBM Power is the platform of choice for SAP HANA from the major Greek Companies*



*More than **70 TB** memory installed on Power servers exclusively for SAP HANA*



*The majority of the installations are migrations from x86 servers*



# InTTrust SA facts

In the last three years our engineers have .....

delivered **189** SAP Application servers.

deployed **166** SAP HANA LPARs.



## Expert

DevOps  
Digital Business Automation  
Power Systems  
Storage Systems  
Private Cloud

## Specialist

Cloud Integration and Development  
Cloud Platform  
Spectrum Software Defined  
Infrastructure  
Unified Governance and Integration





# Thank you

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