Dell Engineered Solutions for SAP HANA

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The intersection of traditional & new IT
„In light of industry uncertainty, Dell has never been more certain.“ M. Dell
The ONLY ONE END TO END
Dell Future-Ready END 2 END IT infrastructure
Dell unique position

Networking & SDN

Servers

Storage & SDS

PowerEdge FX
SAP HANA
Dell solutions for SAP – platforms, software, services

**SAP platform enablement**
- Optimized platforms for SAP
- Tested with Dell servers, networking and storage
- World-class performance benchmarks
- Supports SAP applications, middleware and databases

**SAP HANA solutions**
- SAP certified appliance configurations
  - Full integrated, single source including HANA
  - Multi-node scale out clusters
  - Modular scalability without disruption
  - SAP certified Business Suite on HANA

**Dell software and support for SAP**
- SAP application performance monitoring with Foglight
- Database Management with Toad
- Database replication with Shareplex
- Data Protection with Netvault Backup

**Dell Services for SAP**
- Broad SAP practice expertise
- SAP HANA implementation
- Managed services for SAP apps and HANA
- SAP environment modernization assessment
- Application system design, installation and migration services

Strong relationship built over 18 years covering system design and delivery and extensive services expertise at every level
Proven value for running SAP on Dell

#1 performance

on SAP BW-EML 1B & 2B benchmarks and 4S SD benchmark, 26% & 22% better with new PowerEdge R930 with Intel Xeon E7v3

40% Increase

in automation of sales reports, allowing Dell sales people to pull their own insights

“It takes just 5 seconds to activate data with SAP HANA – with BW, that used to take 330 seconds. And data modelling and design is 30% quicker too”

Karl Schindler Koehler
Koehler Paper Group

“Key monthly analysis reports are delivered 70x faster”

Vince Kellen,
Senior Vice Provost
Academic Planning,
Analytics and Technologies,
University of Kentucky

70x faster
Dell’s Enterprise Server Leadership for SAP
Leads SAP SD performance benchmarks (w/ SAP Sybase) for 2 & 4 socket servers

The PowerEdge R730 server with the Intel Xeon Processor E5-2699 v3 holds the world record for 2 CPU E5 servers on the SAP Sales and Distribution 2 tier benchmark.

PE R730

PE R820

PE R920

22% performance increase with new PowerEdge R930 - Continuing performance leadership!

Which path to HANA is right for you?

Appliance model:
- **Pre-configured**, optimized, pre-certified solution with **delivery service**
- All specified **components** are **required** to maintain certification
- **SAP** or **Dell (with Managed Services)** is first point of contact for solution
- **Installed** by Dell or validated partner

Tailored Datacenter Integration (TDI):
- **Customer** owns engineering, certification, and delivery
- **Customer** may choose any **certified** server, storage, and network **components**
- **Customer** owns solution **support**. SAP & Dell provide **component level** support
- Installation by **certified** SAP HANA installer
The SAP HANA solution family from Dell

A complete range of SAP certified configurations

**Scale-out configurations:**
- Multi-node
- Scalable and highly available
- SUSE or RedHat Linux for SAP support
- Easy, non-disruptive expandability
- Compellent fibre channel SAN for enterprise class features
- Built to be mission critical

**Single server configurations:**
- Self contained: pre-configured sizes
- SUSE or RedHat Linux for SAP support
- Optional VMware vSphere virtualization
- SGI partnership for scale-up

**TDI Intel 2S configurations:**
- 2S Tower / Rack / Blade options
- Ideal entry point for dev/test/PoC
- Certified for TDI deployment

**TDI Intel 2S configurations:**

- **T630**
  - Intel E5-v3
  - Tower design
  - Drive density

- **R630 / M630**
  - Intel E5-v3
  - 1U Rack or ½ slot blade

- **R730 / R730xd**
  - Intel E5-v3
  - Rack mount
  - 2U form factor

**Grow from 2TB to 24TB - without disruption - in 1 or 1.5TB increments**

**Scalable Highy Available**

**Coming soon – powered by Intel E7v3!**

**Ready for SPS10 multi-tenancy and dynamic tiering**

**BW & ERP**

128GB / 256GB / 512GB

2x Intel E7v3

1 / 1.5TB

4x Intel E7v3

2TB Business Suite

4x Intel E7v3

3TB Business Suite

8-20x Intel E7v3

3-15TB Business Suite

8-20x Intel E7v3

The SAP HANA solution family from Dell

A complete range of SAP certified configurations
Appliance Model – Dell Solutions for SAP HANA

**SAP HANA Software**
- SUSE or RedHat Linux Enterprise for HANA
- VMware vSphere (optional – for virtualized HANA)

**Dell Hardware**
- Multiple sizes of SAP-Certified configurations

**Installation and Configuration Service**
- Complete end to end implementation, standard

Preconfigured, Preloaded solutions optimized by Dell and certified by SAP

**Consulting Services & Software**
- Roadmap Consulting, Implementation

* Purchase from SAP or SAP reseller
Dell Engineered Solutions for SAP HANA

Quickly and easily **accelerate decisions** with in-memory data processing

- Rapidly deliver a high performance data processing and/or analysis platform
- Seamlessly grow your system as needed, without disruption
- High availability for enterprise class resiliency
- Large scale solutions in-memory business applications
- Flexible sizing for entry level and virtualized solutions
Modular Building Block Approach for BW
Choose what you need to grow...

Module 1
Infrastructure Rack
- 2 x Force 10 S4820T
- 1 x Force 10 S60
- 2 x Brocade 6510
- 1 x PE R630 (management node)
- 1 x KMM console
- 2 x PDUs (All regions except JPN)

Module 2
R930
- 1.5TB RAM each
- 4 x Intel Xeon18 core E7-4880/90
- Intel Ethernet X540 DP 10Gb BT + i350 1Gb BT DP Network Daughter Card
- 2 x Intel10GbE dual port RJ45 (X540-T2)
- 2 x Qlogic 2660 Single Port 16Gb Optical Fiber Channel HBA

Module 3
Compellent Array
- 2 x SAS, 6Gb, 4 Wide-Port, PCI-e backend/per controller (dual chain)
- 2 x FC16, 2-Port QLE2662, PCI-e front end/per controller
- 2 x 24 bay 2.5" 1.2TB 10K RPM SAS with 7-24 spindles/per array
- 1 x 24 bay 2.5" 400G SAS SSD with 7-24 disks/per array

Module 4
Empty Rack
- 2 x PDUs (All regions except JPN. Japan has 4 PDUs)
SAP HANA on Dell Entry Level Platforms

Intel Xeon E5v3 2-socket based entry level platforms supported for SAP HANA Tailored Data Center

- **Cost-Effective** Entry Level Platforms for SAP HANA
- **Suitable for Smaller HANA Production Environments**, Test/Dev, Sandbox
- **Single Node** support only
- **Optional VMware vSphere** virtualization

PE R630

PE T630

PE FC630 in FX2 enclosure

PE R730 / R730xd

PE M630

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SAP HANA Virtualized on Dell

- SAP HANA Virtualized with VMware vSphere offers customers:
  - Reduced TCO for non-production environments
  - Virtual provisioning on demand
  - Faster time to value for development and QA projects
  - Manage HANA in Data Center w/ VMware vSphere
    - vMotion, Distributed Resource Scheduler, High Availability
  - Available on single server configurations only
  - Support for Production & Non-production environments
    - **Production limited to 1 VM only!!**
    - Multi-production support in controlled availability
  - HW Configurations -
    - R930 w/ 16* 1.2 TB SAS drives on all configs
    - VM sizes from 128 GB (10 vCPUs) to 1.5TB (72 vCPUs)
    - 1.5TB RAM max for analytics, 2TB RAM for Suite on HANA

SAP HANA VMs

- VMware vSphere
- Up to 2TB RAM
SAP HANA Multi-Tenant Deployment Models
Addressing the SAP HANA datacenter ecosystem

Building a complete managed infrastructure

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**Toad for SAP**
Database management, development, tuning, & analysis

**SAP HANA Solution Manager**
System monitoring, business process monitoring, central system administration, SAP early watch alert

**Shareplex for SAP**
Migration production data replication

**SAP HANA System replication**
Server based SW replication

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**Foglight**
Service management, storage performance, resource planning & optimization, change management

**SAP HANA System Replication**
Synchronous / Asynchronous

Duplicate appliance resources at DR site and use SAP HANA replication services to synch processes and data.

DR system can also be used for test/dev by deploying additional DASD or SAN disk resources. Data synch continues on main DR SAN, but server operate as test/dev using secondary disk resource – until failover is required.

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**Dell Engineered Solutions for SAP HANA**

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**Service Management**

- Application
- Database
- OS
- Virtualization
- Servers
- Network
- Storage

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**Backup & Recovery**

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**Disaster Recovery Process**

**DR 4100/6000 Disk Backup Appliance**
Purpose-built backup-to-disk appliance, scalable, w/source-side ingest protocol accelerators
HA with Scale-out and with OS Automated Availability

SAP HANA
HA Scale-out Cluster
BW Only

SAP HANA
HA Single-node Cluster
BW and Suite

N+1

100%

1:1

0%

100%

OS based Automated Cluster Fail-Over

BW

BW & ERP
Disaster Recovery HANA based
Database controlled transfer to mirror across data centers

Data Center 1
- Primary SAP HANA instance (Active)
- Data transfer solely controlled by database software
  (Name and Index on each node)
- Data Files continuously updated
- Log Files continuously updated

Data Center 2
- Secondary SAP HANA instance (Active, data pre-loaded)

Geo Cluster appears as single system instance to user and applications
(Requires identical hardware at each data center site to enable system mirror)
Disaster Recovery Hardware based
Data transfer managed by shared storage system

Data Center 1

Primary SAP HANA instance (Active)

Data transfer controlled by storage system

Data Center 2

Secondary SAP HANA instance w/Inactive Standby System

Option 1 – Inactive standby

Option 2 – Standby & QA/Dev

Additional storage to support QA/Dev load

Still appears as one system to user and applications
(Allows use of secondary systems as QA/Dev when not in failover mode)
Manage your HANA environment with Toad
- the #1 tool for database professionals

Supports all your platforms

#1 Tool for Database Pros

Innovative Database Solutions

One product for ASE, IQ, SQL Anywhere, and HANA

#1 tool for database pros | DBAs, Developers, Analysts | 3M users on ToadWorld.com

Administration | Development | Data preparation | SQL optimization | Change management | Data modeling | Performance management
Dell Services for SAP
25+ years of experiences

CZ Partner focus

- Application Management Support
- SAP HANA Managed Services
- Hosting / Cloud Services
- RunSAP
- Shared Services

DIGITIZE
Value Realization

- SAP HANA Value Identification
- SAP HANA Implementation
- Business Apps on SAP HANA
- Shop floor solutions
- Industry solutions
- Mobility solutions
- Business Analytics
- Cloud solutions

TRANSFORM
Value Creation

- Process Optimization
- Platform Migration Dell ZeroIMPACT
- Release Upgrades
- Instance Consolidation
- User experience

MANAGE
Value Creation

- Eliminated 2.4 Mio. sheet of paper used in the factory floor through digitization and integration of manufacturing processes
- +2% improvement in student retention results $+2 Mio. on bottom line through implementing a SAP Hana Predictive Analytical Platform
- Rapid Suite on HANA migration in 7 days by provisioning HANA Cloud environment

APPLICATIONS

- Mobile sales app enhances customer experience
  SAP Mobile Platform / Mobile App Development

- 150% faster in data loading times through database migration to SAP HANA

ANALYTICS

- Rapid Suite on HANA migration in 7 days by provisioning HANA Cloud environment

MOBILITY

- Rapid Suite on HANA migration in 7 days by provisioning HANA Cloud environment

CLOUD

- Rapid Suite on HANA migration in 7 days by provisioning HANA Cloud environment

DB & TECHNOLOGY

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Lokální úspěšná instalace

1TB SAP HANA for BW

- Předinstalováno OS/SAP
- Stačí pouze dokonfigurovat
- Dokoupena remote instalace
- Stačilo pouze připojit k internetu a kolega z Dell SAP Teamu dokonfiguroval
- Vše ostatní zařizoval Mibcon&SAP
Why Dell for SAP HANA

What makes the Dell solution better?

• Solutions designed and engineered for maximum performance - Dell has **#1 performance benchmark** for SAP HANA

• **Designed for growth** with Modular Scalability allowing system expansion without rip & replace

• Single Source for Solution Design, Delivery & Support results in **high customer satisfaction**

• Quicker Time to Productivity: From the **box to productivity in hours**, not days
Thank You