Novinky v SAP HANA (SP09 a SP10)

Martin Zikmund, Presales – Innovative solutions & Utilities industry
SAP HANA Platform – SP08
# SAP HANA: The Platform for All Applications

## SAP HANA PLATFORM

**ON-PREMISE | CLOUD | HYBRID**

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Rozdělení novinek do kategorií

- Hardware
- Architektura
- Integrace
- Engines
- Ostatní
Datacenter Support

Extend support for hardware infrastructure, provide more options and relax non-production requirements for faster time-to-value, lower TCO, and lower TCM

Hardware Support

- **Intel Haswell (E7 v3 Xeon)**
  - Supports up to 12 TB of memory (NUMA architecture optimization).
  - Performance improved by 6x with TSX
  - 250+ server configurations on Intel Haswell

- **IBM Power**
  - Support for IBM Power on SUSE Linux for BWoH scenarios

Virtualization Scenarios

- **Hitachi** – Virtualized LPAR for on-premise and cloud deployment (certified)
- **IBM** – Power LPAR (certified)
- **VMware** – VMware 5.5 for scale-out BW (Control Availability)

Operating System

- **SUSE Linux Enterprise Server 12** – Release for partner certification

Tailored Data Center Integration (TDI)

- **TDI Phase 4** – SAP HANA on IBM Power 8 (Ramp-up)

Lower Cost Infrastructure for Non-Production

- **CPU** – Lower cost IBM Power 7

SAP HANA Hardware Partners

17 partners with ~900 server configurations
Architektura
SAP HANA Multitenant Database Containers

Provide simplicity & flexibility and reduce TCO for SAP HANA cloud and on-premise deployments

New Features & Capabilities
- Run multiple tenant databases & apps/solutions on one SID
- Strong separation and isolation of data, users, and system resources (CPU & memory)
- Simpler administration by managing all databases together as a unit
- Integration with data center operations

Benefits
- Replaces most MCOS scenarios
- Lower capital expenditure with better utilization of hardware resources (configurable)
- Support for heterogeneous uses in one platform (Suite, BW, Data Marts, Sandbox/Dev/QA/Prod)

Use Cases & Scenarios (SPS09)
- Cloud – SAP Cloud
- On-Premise – Primarily MCOS type scenarios
SAP HANA Dynamic Tiering

Provide cost effective data management capabilities with a scalable, deeply integrated, and high performance solution in a single system

Capabilities
- Identify entire tables as in-memory (Hot) or on disk (Warm)
- Utilizes disk backed column store technology
- Supports petabyte scale deployment
- Provides integrated security and back-up & recovery

Benefits
- Cost effective price performance
- Single SAP HANA instance with no data duplication
- Expand SAP HANA capacity and remove objections
- Big Data scale

Scenarios & Use Cases
- SAP BW on HANA – Supported with BW 7.4 SPS08; migrates persistent staging area and corporate memory tables to the disk backed store
- Custom Application – manually load, maintain, and query data between in-memory and disk tables
- **Does NOT support SoH or replace BW NLS and SoH ILM**

This is the current state of planning and may be changed by SAP at any time.
New and enhanced datacenter readiness, technical integration, administration, and lifecycle management capabilities for cost effective multi-temperature data management

**Datacenter Readiness, Integration, and Management**
- SAP HANA Data Warehousing Foundation Option, Data Lifecycle Manager (DLM) module UI5 tool for rules based data aging strategies* and dynamic view generation
- HA/DR support for SAP HANA Dynamic Tiering
- 3rd party backup tools integration
- Extended monitoring, administration, & security
- SAP HANA MDC support - one DT installation per tenant DB
- Query optimizer improvements for performance

**Benefits**
- Expanded SAP HANA capacity with lower TCO
- Big Data scale
- Performance improvements for efficient reporting

* Based on SPS10  This is the current state of planning and may be changed by SAP at any time.
New and enhanced HA/DR capabilities to ensure business continuity, availability, and the most demanding SLAs

Features & Capabilities
- Reduce re-start and downtime window
- Support for SAP HANA Dynamic Tiering
- SAP HANA Cockpit support for SAP HANA System Replication
- Backup & Recovery support for MDC
- Incremental and differential backups

Benefits
- Further reduce planned and unplanned downtime
Integrace
SAP HANA smart data integration

Landscape simplification, lower TCO, reduce data latency, common modeling environment and open & extensible framework

Option for Data Provisioning for SAP HANA
- Supports real-time replication, physical bulk/batch movement, and federation in a unified framework
- Integrates ETL-type transformations natively
- Supports both on-premise and cloud sources
- Built-in adapters for common sources
- Open and extensible SDK with custom adapters
- Integrated modeling environment with SAP HANA studio and SAP HANA WebIDE
- Integrated IM-specific monitoring within monitoring infrastructure

Benefits
- Simplified – One common modelling environment to provision and consume
- Real-time – lower latency due to real time replication and in-memory performance
- Open & Extensible – supports data of any shape and size; open framework for new data sources
SAP HANA smart data integration – SP10

Landscape simplification, lower TCO, reduce data latency, common modeling environment and open & extensible framework

Smart Data Integration enhancements
- New adapters for Teradata, SAP ASE, SAP HANA
  - Distribute data from SAP HANA to 3rd party targets
- Schema change replication
- High performing initial load and data compression
- Changed data capture for SAP BW and SAP Data Services

Benefits
- **Simplified**: Common modelling environment to provision and consume
- **Real-time**: Lower latency due to real time replication and in-memory performance
- **Open & extensible**: Support data of any shape and size; open framework for new data sources
SAP HANA smart data quality

Simplify the landscape with enhanced data cleansing, enrichment, and modeling capabilities with real-time performance natively in SAP HANA

Integrating data quality natively into platform
- Cleanse person and address data
- Geocoding to enrich address data with latitude and longitude information

Simple user interface for data quality
- Parse, standardize, validate, correct and enhance person, firm, address in ONE transformation in SAP HANA
SAP HANA smart data quality – SP10

Simplify the landscape with enhanced data cleansing, enrichment, and modeling capabilities with real-time performance natively in SAP HANA

**Smart Data Quality enhancements**
- Matching to identify duplicates
- Better data quality with distribution, metadata and semantic profiling
- Improved insight from side-effect data
- Web-based workbench for development and management tasks

**Benefits**
- Improved data quality capabilities
- Simplified development
SAP HANA smart data streaming

Extract insight from real-time information streams and respond immediately

Cloud Ready:
- New streaming web server to handle large event volumes

Internet of Things:
- New “Streaming Lite” designed for devices and IoT gateways

Integrated configuration & monitoring
- SAP HANA Cockpit integration for configuration and management
- Automated configuration for SAP HANA data service

**Internet of Things:** collect and monitor data from smart devices; immediately respond to new opportunities or imminent problems.
SAP HANA Remote Data Sync

Create System of Innovation opportunities with enhanced IoT capability at enterprise scale

New Features

- **RDSync Synchronizes** (two-way) data between SAP HANA and thousands of remote databases (SAP SQL Anywhere, UltraLite)
- **Occasionally connected** network: Handle intermittent and slow networks
- **End-to-end encryption**
- **Integrated** management using SAP HANA Cockpit

Use Cases

- **Internet of Things** – two-way exchange of structured data with large numbers of devices
- **Offline Mobile** – enable employees to be productive whether network is available or not
- **Remote Server** – enable continuous operation at remote workplaces over unreliable networks
Enhanced Hadoop Integration

Further embracing the Hadoop ecosystem & community with deeper and broader integration with SAP HANA for higher performing and simplified processing of big data

Spark Integration
- High performing Spark integration for big data processing
- Query optimization

Easier Administration
- Unified admin and monitoring tool through SAP HANA Cockpit for SAP HANA and Hadoop cluster

Use Case & Benefits
- **Tighter Integration** with Apache Spark means less disruption in customer data mart landscape
- **Faster adoption** - Unified Administration for SAP HANA & Hadoop

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Engines
Predictive Analytics

New and enhanced powerful native predictive analytic capabilities to empower and support the modern day applications and tools

**Predictive Analysis Library algorithms**

- **New Algorithms Supported**
  - **Classification Analysis** – Confusion Matrix and Parameter Selection & Model Evaluation
  - **Clustering** – Gaussian Mixture Model and Latent Dirichlet Allocation (LDA)
  - **Time Series Analysis** – Seasonal ARIMA and Test for White Noise, Trend, and Seasonality
  - **Outlier Detection** – Grubbs Outlier Test
- Enhancements to existing algorithms including parameter selection & model evaluation
- PAL integration with SAP HANA Data Series
- **Now over 65 AFL based predictive algorithms available** to be accessed via SQLScript, application function modeler, and SAP predictive tools and to be consumed with analytic/BI tools as well as SAP, partner, and custom applications
- In-database custom AFL algorithms – certification open to all
Text Analysis and Mining

New and enhanced powerful native text analysis and mining features to support more languages and improved performance for unstructured data analysis and simpler access & processing

**Text Analysis Enhancements**

- Improved fact extraction accuracy for the enterprise domain in **English**
- Full linguistic analysis support for **Polish**
- Consolidated **Chinese** module for processing mixed Chinese languages – simplified and traditional – in a single document.
- Improved predefined core extraction for PERSON and PRODUCTS entity types in most languages
- Up to 25% greater throughput performance for pre-processing steps
- Available on-demand processing with SAP HANA XS for faster processing and reduced memory consumption
- Capture metadata from documents and emails

**Text Mining Enhancements**

- Simpler access to text mining functions via SQL for faster development and deployment
- New standard measures to determine the similarity of documents
- Improved text mining XS API for better manageability and security
SAP HANA Spatial Processing

Create, upsell, and accelerate opportunities with enhanced spatial capabilities, features, and ecosystem integration

New Features & Capabilities
- Multi-dimensional support including 3D and measurement dimension for use in key geospatial industries and linear asset management
- Additional functions & methods for native high-performing location intelligence scenarios
- CDS support for spatial datatypes and functions for simpler and faster development and deployment

Third-Party Integration
- Luciad for high-performing 3D visualization
- Esri Feature Services for web service editing & symbology (Esri ArcGIS 10.3.1)
- Safe FME for spatial ETL (FME 2015)
Series Data Storage and Services

New and enhanced native series data processing capabilities to support use cases in utilities, retail, banking, and financial services

Features & Capabilities

- Handle variation in timestamp data
  - Jittered data
  - Timezone adjustment
- Query enhancement for more precise rounding for series data
- Enhanced analytics with new functions

Benefits

- Strong foundation for IoT use cases
- Enable analysis of real time operational intelligence from various devices
Ostatní
Administration & Monitoring

Simplify administration and monitoring for multi-tenancy and cloud use

**SAP HANA Cockpit**
- Advanced performance analysis & monitoring
- System Replication monitoring

**SAP HANA Database Control Center**
- SAP HANA Multitenant Database Containers support
- Simplified configuration optimized for cloud usage
- Better custom reporting for system health history

**Benefits**
- Easier maintenance of multi-tenancy DBs
- Simplification of Cloud Maintenance
Enhanced Security

New and enhanced security features for enterprise ready deployment

Features and Capabilities:
- Simplified security administration and management with SAP HANA Cockpit
- Flexible access control
- Improved lifecycle management for analytic privileges
- Supports for FIPS 140-2 Certified encryption library
- Extended audit logging coverage
- Enhanced security for multitenant database container isolation
Simple and effective way for the application developer to add advanced capabilities to applications and to manage the resulting data-flow models

- **New web-based flowgraph editor**
  - Support for R, SDI & SDQ
  - Limited support for AFL
  - Create procedures or task runtime operations
  - Interoperability with SAP HANA Studio AFM

- **SAP HANA Studio Based AFM**
  - New PAL function support including time series, clustering, classification, and statistics
  - General usability enhancements for an easier, simpler, and more functional experience
Shrnutí
SAP HANA Platform
SAP HANA SPS10 Summary

- **Multitenant database containers**
  - Complete support for all HA/DR/backup
  - Focus on cross-tenant access

- **Data temperature management**
  - Enhance enterprise readiness in dynamic tiering

- **Core database**
  - More powerful workload management

- **Enhanced openness & platform support**
  - Additional cloud deployment capabilities & options
  - Extend virtualization support

- **Move tooling to the web**
  - Enhanced developer, administration, operations, and modeling capabilities

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SAP HANA Platform

- Application Services
- Database Services
- Integration Services
A jedna novinka na závěr...
SAP HANA Vora is an in-memory query engine which leverages and extends the Apache Spark execution framework to provide enriched interactive analytics on Hadoop.
Děkuji za pozornost