HUAWEI

Achieving Real-Time Business Operation

— Huawei Solutions for SAP HANA

LEADING NEW ICT

Huawei-SAP Joint Innovation Center for Industry Leading Solutions

July, the China SAPPHIRE conference SAP announced Huawei as its first global technical partner in China.

2012

February, Huawei and SAP together released the first certified SAP HANA@ appliance solution

2013

July, Huawei Day was held at Walldorf, Germany, the SAP headquarter, meanwhile celebrating the official opening ceremony of Huawei Partner Port Office.

2014

June, Huawei and SAP announced the official opening of the Huawei & SAP Co-Innovation Center in Shenzhen.

2015

June, SAP Greater China and Huawei Enterprise China jointly held SAP | Huawei Forum Shenzhen.

2016

September, as top-class sponsor, SAP attended Huawei Connect 2017 in China, announced big data, cloud business

2017

September, Mr. Ren Zhengfei and Mr. Jim Snabe, met each other and agreed on setting up strategic partnership.

March, Huawei and SAP announced extending the SAP & Huawei collaboration into a strategic alliance.

March, Huawei and SAP signed a MOU at CeBIT 2015 to deepen collaboration in Industry 4.0 and the IoT, which marked the two partners have advanced into the Industry 4.0 era.

May, as a top-class sponsor, Huawei attended the SAPPHIRE NOW 2016 global flagship conference held by SAP in Orlando, USA.

March, release KunLun Engineered System for SAP HANA based on SAP and Huawei joint innovation and optimization.

Optimized SAP HANA infrastructure

Agile

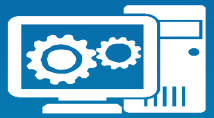
Real-time Decision

Top1
HANA
Benchmark

*Top1 SAP BW edition for SAP HANA Benchmark (B4H)

Reliable

Non-Stop Services



Trustworthy

Best Practice

Huawei Solutions for
SAP HANA

SAP® Certified
Hardware for SAP HANA®

SAP HANA Solution Overview

Single-Node

Business Warehouse on HANA , Business Suite & S/4HANA , B1 on HANA

8100 V5 (8S)

2488H V5 (4S)

2288H V5 (2S)

KunLun (32S)

Scale out

Business Warehouse on HANA

FusionServer

OceanStor

Tailored Data Center

Business Warehouse on HANA, Business Suite & S/4 on HANA

FusionServer KunLun

OceanStor

* 16 TB: certified; 20 TB: planning for certification; 20 TB and above: certified case by case

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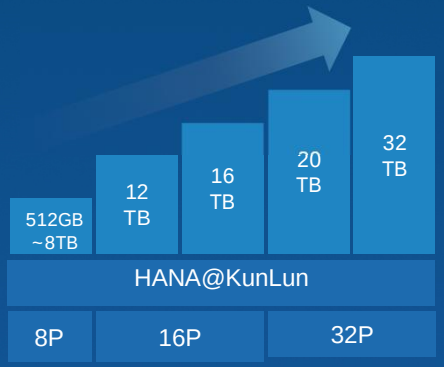
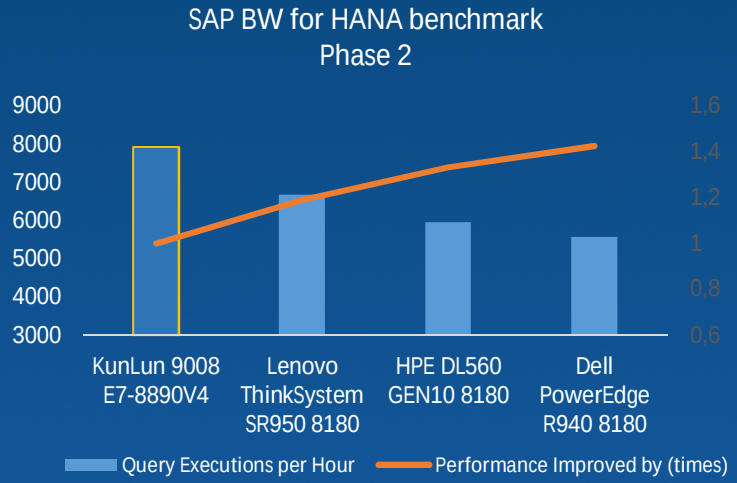
Optimal Performance, Reliability and Scalability

Smoothly Expandability



*16 TB: certified; 20 TB: planning for certification; 20 TB and above: certified case by case.

Top1 HANA Benchmark



Extreme Reliability

RAS 2.0

8 Hours Downtime for a 6TB HANA maintenance

0 Hour MEM hot maintenance

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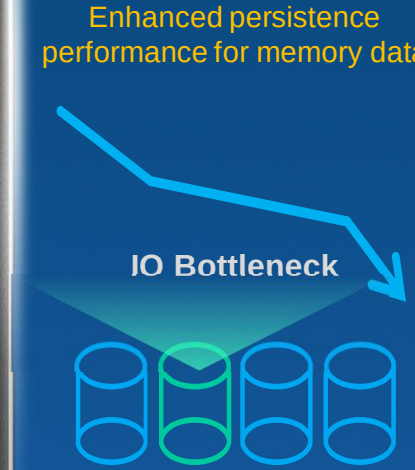
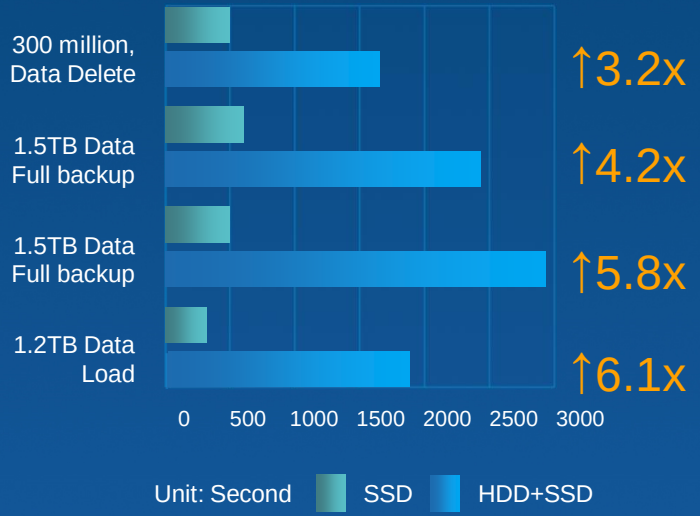
All Flash HANA Appliance Improve 3~6X Performance ——Save 0.5~4 Hours M&O Time

Enhanced persistence performance for memory data





All SSD SAP HANA

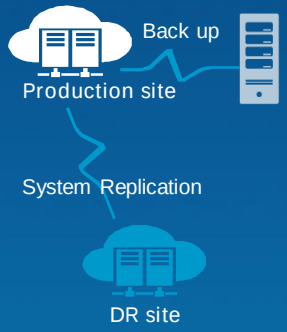
6.1 x

Performance

VS. SAS HDD + SSD SAP HANA Appliance

Enterprise-level Reliability

Solution-level reliability



Proactive Failure Analysis Engine

RAS 2.0

Fully redundant hardware design and hot swappable components

Modular Design

Patented wear-leveling algorithm extending SSD lifespan

Without wear leveling

With wear leveling

SAP Cloud Solution

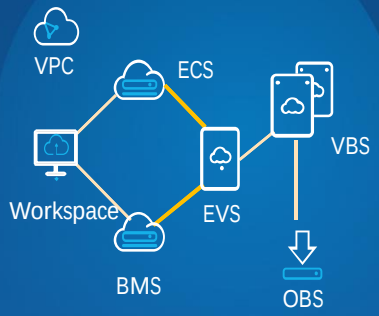
SAP

Business Suite | S/4HANA | Business One | BW/4HANA | HANA Express | Vora | Hybris

HUAWEI

Enterprise

Direct Connect



openstack. POWERED

- OpenStack architecture
- Optimized for SAP workload
- SAP IaaS certification

Cloud infrastructure providing competitive performance

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Reference Cases

High Tech	Manufacturing	Energy	Public Sector	Retail
SAP Labs	LACTOGAL	CEPSA	Newcastle University	Turkey Carrefour
Spanish ISP	Germany Helipark	SINOPEC	Telefonica	El Corte Ingles
T-Systems	UK Hillarys	CNPC	Standard Bank	CHIA TAI GROUP
birchman	WEST FLEISCH	China Huaneng Group	Deutsche Telekom	RedBull

Energy: Sinopec Builds an Efficient 87 TB Enterprise Data Warehouse System with Huawei FusionCube

Sino Petroleum Corp (Sinopec for short) is a super large petroleum and petrochemical enterprise group in China. Its main businesses include oil, natural gas, coal mining, transportation, and retail. Sinopec is now China's largest oil and petrochemical product supplier and second largest oil and gas producer. It is the world's largest oil refining company and second largest chemical company. Its total number of gas stations ranks second in the world. Sinopec ranks fourth in Fortune Global 500.

Challenges

- Rapid data increase: The business warehouse (BW) data volume on live network is now 30 TB and will rapidly grow to 100 TB.
- The existing IOE architecture of core BW services cannot meet performance, I/O bandwidth, and scalability requirements.
- Daily sales reports of a previous day cannot be viewed until 15:00 the next day. Therefore, the master data warehouse is under great pressure during a monthly settlement period because a large number of processes are piled up.

Huawei Solution

- Sinopec adopts Huawei's FusionCube to serve as an SAP HANA® appliance (nine 2 TB nodes for production, four 1 TB nodes for development) and uses the x86 server and in-memory database solution to replace Sinopec's original IOE solution. The project has now been expanded to 87 TB in Phase 2.
- FusionCube employs a high-performance and high-reliability design, meeting the requirements of Sinopec's core services.
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Customer Benefits

- The BW system is successfully downsized. System capabilities can be expanded based on service requirements. The I/O bandwidth, scalability, and database warehouse performance are significantly higher than those of the IOE architecture, which effectively and stably supports Sinopec's production and operation.
- More universal and open x86 platform rather than Sinopec's closed IOE architecture.
- Improves performance by 4–6 times over UNIX servers, and the data upload time is reduced from 4 hours to 30 minutes.

Retailing: ECI Efficiently Processes Retail Data with Huawei KunLun HANA

El Corte Inglés (ECI)

- **Europe's largest, the world's fourth largest** department store
- Established in Madrid, Spain in 1940, with **over 90,000 employees**
- **Multi-business operation:** department store, convenience store, supermarket, fashion, household products, and travel agency, etc.
- SAP MaxAttention user (highest-level SAP customer)

Challenges

- ECI's existing system needs to process sales data of hundreds of online and offline sales channel, inventory data of 38 logistics centers, and member data. Sales data processing has become a bottleneck.
- It is a great challenge for ECI to quickly extract the results of business value from massive data and quickly make decisions for customer service.
- The original scale-out architecture involves several issues, such as complicated O&M of various servers and the impact of inter-HANA node data exchange on performance, leading to poor O&M experience.

Huawei Solution

- First 8 TB scale-up OLAP solution in the industry
- Huawei and SAP team up to perform 8 TB OLAP service certification on a single node. Huawei's solution meets the requirements for future capacity expansion to 16 TB.

Customer Benefits

- **High performance:** Completes goods shortage analysis in 5 minutes, increases the inventory turnover rate by 20%, and realizes automatic goods replenishment based on the sales situation.
- **Easy maintenance:** Compared with common solutions provided by other vendors, the KunLun HANA solution provides the simplest management architecture.
- **Smooth capacity expansion:** Eliminates the current business growth bottlenecks and supports future business growth.
- **High reliability:** system-level 24/7 high availability, maximizing service uptime

Government: Huawei Helps T-Systems Provide Customers with Industry-Leading One-Stop SAP System Solutions and Services

Deutsche Telecom is the largest carrier in Europe and among the top five worldwide. As a branch of Deutsche Telecom, T-Systems specializes in enterprise customers and is a leading global ICT solution and service provider. It offers one-stop solutions and services to meet every requirement of enterprise customers.

Challenges

- A regional government in Spain consults T-Systems and decides to adopt the SAP ERP system to improve its daily operation efficiency. T-Systems is responsible for providing the ERP on HANA infrastructure as well as related consulting and implementation services.
- T-Systems requires the SAP HANA appliance to provide high performance and reliability, and easy O&M.

Huawei Solution

- T-Systems carries out strict comparison tests and proves that Huawei SAP HANA appliance based on Huawei RH5885H V3 servers delivers higher performance and support smoother upgrades.
- RH5885H V3 deliver 53 industry-leading RAS features and can operate stable even at 40ºC.
- The modular design of RH5885H V3 supports tool-free maintenance and streamlines O&M for faster deployment and lower TCO.

Customer Benefits

- The **high performance and reliability** of RH5885H V3 helps T-Systems to provide more competitive SAP system solutions.
- The easy O&M, one-stop hardware service, and tool-free maintenance of RH5885H V3 **reduce O&M costs** for T-Systems.

Huawei KunLun Accelerates the Financial Report System of Russian Railways

Russian Railways

Russian Railways is the largest transportation enterprise in Russia. It operates a large network in the world with 86,000 km of railway track across 11 time zones and hundreds of kilometers of extensions for industrial enterprises. It has 60+ organizations, including 17 railway bureaus and 50 subsidiary companies, and branches in 11 countries in Eastern Europe and Asia. Russia is also one of the largest companies in the world, with more than 950,000 employees.

Challenges

- The customer's Financial & Margin Planning fiscal report system involves a large amount of data and a large number of users. It takes more than two weeks to generate a complete report. The existing HANA platform needs to be upgraded.
- The customer has a long-term development strategy (2020–2030) to improve risk control capabilities, especially for financial risks. To cope with risks and foreign pressures, the customer needs to build a more efficient financial report system to enhance its competitiveness.

Huawei Solution

- IT architecture of the customer's existing FMP platform: HDS server+HDS storage
- Huawei and the local SI Glosav team up to provide the 12 TB KunLlun HANA appliance solution with Dorado 6000 V3 storage.
- The performance of the KunLun 9016 exceeds that of IBM Power HANA.

Customer Benefits

- **Ultimate performance**: The new system can generate a report in less than 2 days, much faster than the previous 2 weeks. The excellent performance helps the customer to effectively prevent risks and improve competitiveness.
- **Smooth capacity expansion**: Eliminates the current business growth bottlenecks and supports future business growth.
- **High reliability**: system-level 24/7 high availability, maximizing service uptime

Manufacturing: Huawei Supply Chain Management System Implements Real-Time Order Visualization with Huawei SAP HANA Appliance

"In the information era, a BI platform must deliver large capacity, high computing capabilities, and flexible applications. Our system with traditional servers and storage devices is facing performance bottlenecks. Huawei SAP HANA appliance converges storage, networking, and computing resources and ideally meets our BI service development requirements."

— Luo Zhiyong, ERP Chief Technical Expert

Challenges

- **Rapid data volume increase**: Huawei's supply chain management system is a company-level data warehouse and business intelligence(DW&BI) platform. It consolidates all the company's transaction data, has at least 10 TB data increase monthly, and serves more than 9,000 active users.
- **Complex system**: The system needs to support management decision making for 3 business groups, 14 regional divisions, and all business entities. It involves various types of report applications, and all the applications must deliver both flexibility and real-time performance.
- **Expensive capacity expansion**: The system's existing midrange computers cannot meet performance requirements. Database appliance expansion is expensive.

Huawei Solution

- Huawei provides the SAP HANA appliance solution to replace its existing "Oracle database + midrange computer + high-end storage" hardware platform.
- The solution adopts distributed storage software, Huawei ES3000 PCIe SSD cards, and 56 Gbit/s InfiniBand networks to build a high-performance distributed storage system whose network latency is 50% to 75% lower than the industry average, improving the HANA loading performance by 60%.

Customer Benefits

- The query time of the supply chain management system is **reduced from nearly 2 hours to 5 seconds, implementing real-time order visualization**.
- The performance of certain complex queries is **improved by 100x to 1,000x**.
- Existing midrange computers and storage devices are replaced by x86 infrastructure.

THANK YOU