

SAP HANA appliance

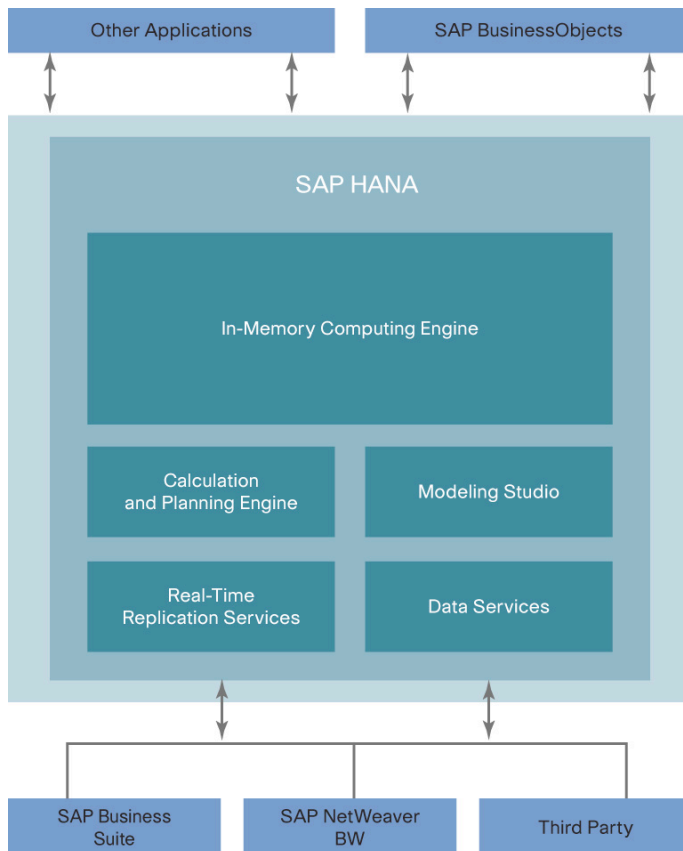
Q. What is the SAP HANA appliance?

A. SAP HANA is a flexible, multipurpose, data-source-agnostic, in-memory appliance built on Intel(r), Xeon(r) processor 7500 series that combines SAP software components optimized on hardware provided, and delivered, by SAP's leading hardware partners, including Cisco. It includes a number of integrated SAP software components such as the SAP HANA engine (Figure 1), real-time replication service, and data modeling and data services.

SAP HANA enables organizations to analyze business operations based on large volumes of detailed information in real time. Individuals can create flexible analytic models based on real-time data without affecting back-end enterprise applications or databases.

In addition, SAP HANA allows accelerated business intelligence scenarios from any data source; better operational planning, simulation, and forecasting; fast analysis and better decision making using accelerated SAP Enterprise Resource Planning (ERP) transactional data; and better storage, search, and impromptu analysis using very large data volumes.

Figure 1. SAP HANA Landscape



Q. I thought Cisco was a networking company. Why is Cisco teaming with SAP on SAP HANA?

A. As the worldwide leader in networking, transforming the way that people connect, communicate, and collaborate, Cisco introduced the Cisco Unified Computing System™ (UCS) server platform in 2009, a new model in data center efficiency and agility. The Cisco® UCS platform is designed with the performance and reliability needed to power memory-intensive, mission-critical applications and virtualized workloads.

SAP and Cisco have optimized SAP HANA on the next-generation Cisco UCS server platform, with the Intel Xeon 7500 series processors, giving SAP HANA customers a true competitive edge on a server platform designed from the start for today's challenging requirements.

Q. What is the unique value proposition of SAP working with Cisco? Why are the two companies working together?

A. SAP HANA is a flexible, multipurpose, data-source-agnostic, in-memory appliance that combines SAP software components optimized on hardware provided, and delivered, by Cisco. It includes a number of integrated SAP software components such as the SAP HANA engine, real-time replication service, and data modeling and data services.

The Cisco Unified Computing System serves as an ideal server platform for SAP HANA since it provides a unique Intel Xeon processor-based industry-standard infrastructure for enterprise-critical applications. The Cisco UCS platform offers stateless computing capabilities with dynamic server provisioning, unified fabric, and comprehensive management across both physical and virtual environments for reduced total cost of ownership (TCO).

For the systems that are part of the architecture that supports the SAP HANA installation, the Cisco UCS platform offers hardware-state abstraction that transparently integrates server, storage, and networking resources used for any application, virtualized or not, thus eliminating the waste that can be caused by dedicating pools of resources to a specific purpose. In addition, Cisco UCS Manager makes controlling and reassigning resources fast and easy.

Q. What are the benefits to Cisco and SAP joint customers?

A. Cisco and SAP are uniquely positioned as global leaders in technology, providing innovations for many shared customers. Together, Cisco and SAP provide differentiated, scalable, and secure end-to-end solutions, at the same time reducing deployment risks, complexity, and TCO. As the worldwide leader in networking, transforming the way that people connect, communicate, and collaborate, Cisco introduced the Cisco Unified Computing System server platform in 2009, a new model in data center efficiency and agility. The Cisco UCS platform is designed with the performance and reliability needed to power memory-intensive, mission-critical applications and virtualized workloads.

SAP's In-Memory Computing technology provides the speed to power analytics at exceptional performance levels, and the Cisco Unified Computing System provides an agile, scalable, highly available, and cost-effective industry-standard infrastructure platform. SAP HANA enables customers to get information immediately - without the delay of typical enterprise data warehouses - by building on the benefits of the Cisco UCS platform.

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- Q.** Is SAP HANA of equal interest to SAP and Cisco?
- A.** SAP HANA is delivered as an appliance. Customers purchase the software licenses from SAP and purchase the infrastructure platform preloaded with the SAP software from Cisco. Cisco is noncompetitive with SAP in every way. Both companies provide software, hardware, and services unique to each company. The integration of Cisco Tidal Software with the Cisco Unified Computing System and SAP is also of interest to joint customers, providing automation and scheduling to the solution. The Cisco UCS platform in conjunction with the SAP software and Cisco Tidal Software will be certified by SAP as a Whole Offer Solution and will gain industry recognition as unique to both Cisco and SAP.
- Q.** Is the Cisco Unified Computing System certified for SAP HANA?
- A.** The Cisco Unified Computing System received certification for SAP HANA in February 2011.
- Q.** What is Cisco's timeline for SAP HANA?
- A.** Cisco achieved SAP HANA certification in February 2011. Ramp-up and proof-of-concept (PoC) customer engagements are underway and were announced at SAP Sapphire 2011.. General availability of SAP HANA from Cisco was announced as June 20, 2011.
- Q.** Where can I go for up-to-date information about SAP HANA and the Cisco UCS platform?
- A.** See <http://www.cisco.com/go/sap> and <http://www.sap.com>.
- Q.** How does SAP HANA compare to what currently exists in the marketplace?
- A.** SAP HANA is a market-disrupting technology, providing cost-effective management of large volumes of data, simultaneously allowing analysis of current and complete information to provide immediate answers to any question in "real real-time."
- Q.** I'm an existing SAP NetWeaver Business Warehouse (BW) and BW Accelerator customer. How can I use SAP HANA?
- A.** The high-performance SAP HANA engine of SAP HANA is the next generation of in-memory computing. It complements today's SAP NetWeaver BW Accelerator, with enhancements and additional functions, including the replication and acceleration of transactional data for "real real-time" analytics. Customers can use SAP HANA as the software platform for delivering accelerated analytical solutions.
- Q.** Who will be qualified to install the SAP HANA solution? What will the qualification process be?
- A.** Cisco will use its highly skilled channel and system integrator partners to implement and install the SAP HANA solution. A list of these partners can be found at Cisco.com or by contacting your account manager.
- Q.** What are the rationale and history leading up to SAP HANA?
- A.** SAP was an early pioneer in the use of in-memory technology for improving performance and columnar databases for gaining high data-compression rates. TREX and SAP Enterprise Search were the first solutions to use these concepts. Building on the strength of these early products, SAP then released the very successful SAP NetWeaver BW Accelerator.

With SAP NetWeaver BW Accelerator firmly established in the market, SAP expanded its vision to other purposeful ways to use this in-memory technology to benefit its customers. SAP's focus on business intelligence led to the decision to combine the business intelligence functions from SAP BusinessObjects with the in-memory analytical engine of SAP NetWeaver BW Accelerator, creating an accelerated business intelligence solution called SAP BusinessObjects Explorer. With a focus on openness and heterogeneity, SAP then evolved SAP BusinessObjects Explorer by including data integration. This addition allows the solution to access and accelerate any data, and all information beyond structured data, in SAP NetWeaver BW. The latest SAP BusinessObjects Explorer, accelerated version, was released to market in the second quarter of 2010.

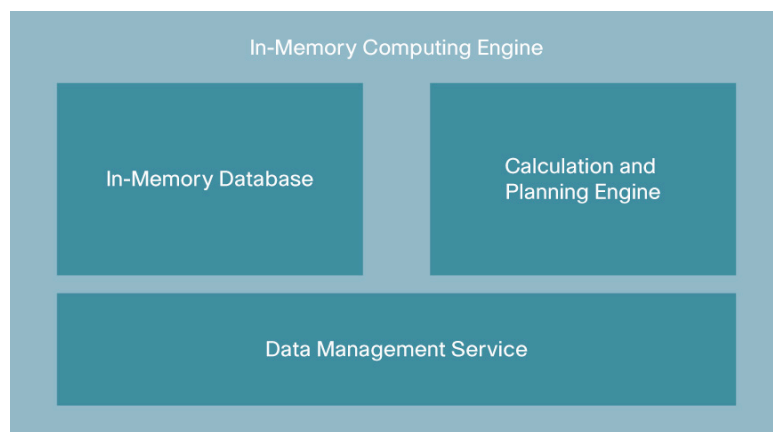
Building on the success of this accelerated business intelligence solution, SAP is now embarking on the delivery of the multipurpose SAP HANA, an appliance that will eventually underpin many of SAP's applications.

The first release of SAP HANA will focus on providing "real real-time" analytical capabilities for SAP Business Suite applications. It will directly replicate transactional data through a real-time replication service and expose it to business intelligence tools, including SAP BusinessObjects and Microsoft Excel, for real-time analysis and data exploration.

Q. What is the SAP HANA Engine?

A. The SAP HANA Engine (formerly the business analytic engine [BAE]) is the core engine for SAP's next-generation high-performance in-memory solutions (Figure 2). It uses technologies such as in-memory computing, columnar databases, massively parallel processing (MPP), and data compression to allow organizations to instantly explore and analyze large volumes of transactional and analytical data from across the enterprise in "real real-time."

Figure 2. SAP HANA Engine



The SAP HANA Engine delivers the following capabilities:

- Single database with native support for row and columnar data stores, providing full atomicity, consistency, isolation, and durability (ACID) transactional capabilities
- Powerful and flexible data calculation engine
- SQL and Multidimensional Expressions (MDX) interfaces
- Unified information modeling design environment

- Data repository to persist views of business information
- Data integration capabilities for accessing SAP (SAP NetWeaver BW, ERP, etc.) and non-SAP data sources
- Integrated lifecycle management capabilities

Combined, these capabilities allow the SAP HANA engine to support massive amounts of data from across the enterprise and apply complex calculations that allow decision makers to explore and analyze vast amounts of information with very fast response times and with a high degree of flexibility, without the need for IT involvement.

Q. What is the relationship between SAP NetWeaver BW Accelerator and SAP HANA?

A. The high-performance SAP HANA Engine of SAP HANA is the next generation of in-memory computing. It complements today's SAP NetWeaver BW Accelerator with enhancements and additional functions, including the replication and acceleration of transactional data for real-time analytics. Customers can use SAP HANA as the platform for delivering accelerated analytical solutions.

Q. What is the relationship between the SAP BusinessObjects Explorer, accelerated version and SAP HANA?

A. SAP BusinessObjects Explorer, accelerated version, currently uses a data-source-agnostic version of SAP NetWeaver BW Accelerator to provide in-memory acceleration of analytic data. The high-performance SAP HANA Engine of SAP HANA is the next generation of in-memory computing and complements today's SAP BusinessObjects Explorer, accelerated edition, with enhancements and additional functions, including a more complete suite of business intelligence tools and the replication and acceleration of transactional data for real-time analytics. By substituting SAP HANA for the data-source-agnostic version of SAP NetWeaver BW Accelerator, customers can gain substantial acceleration, along with additional calculation capabilities. Customers can thus use SAP HANA as the platform for delivering accelerated analytical solutions.

Q. How does Sybase IQ fit into SAP's overall in-memory strategy, especially the strategy for SAP HANA?

A. SAP HANA and Sybase IQ are intended for different uses and will continue as independent products for the foreseeable future. SAP HANA is the main foundational component for SAP's next-generation application platform for delivering analytics, planning, and transactional applications. Sybase IQ is a foundational component of SAP's data management platform. Over time, Sybase IQ will be powered by in-memory computing technology from SAP and be used to provide very high-performance data management solutions.

Sybase IQ is the preferred solution for customers who are building a data warehouse or data mart solution, and who are not already running SAP Business Suite or SAP NetWeaver BW. SAP HANA is the preferred solution for customers with SAP Business Suite and SAP NetWeaver BW.

Q. What is the benefit of SAP HANA for organizations today?

A. Information is an asset companies can use to make better decisions. The capability to capitalize on this asset remains one of the highest priorities for organizations of all types. However, delivering on this capability for everyone in the organization remains elusive. In-memory computing is a disruptive force that provides the speed and agility to power analytics at exceptional performance levels while remaining cost effective. In summary, SAP HANA built on Intel(r), Xeon(r) processor 7500 series delivers:

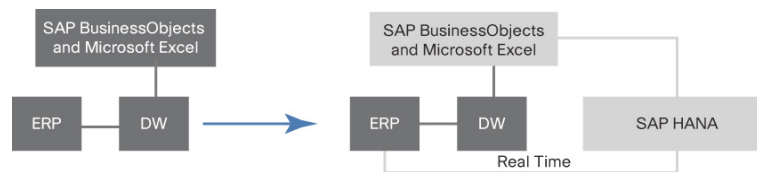
- **Speed and agility:** The business imperative for rapid change is creating new demands for business and technology. The need to get all the right information to business users, without the delay of typical enterprise data warehouses, is critical to the use of data as a competitive differentiator.

- Performance and cost: New hardware technologies and advances in software have dramatically improved performance, with similar reductions in costs, making new computing models possible.
- Alignment of business and IT: Business requirements demand that business analysts have the flexibility to define their views of the information and the application. Efficient IT departments strive for low redundancy and high reuse of system, information, and human resources.
- More efficient data processing: Traditional disk-based data warehouses have limited capability to benefit from major technology trends such as multicore CPUs, in-memory processing, and columnar storage. The move to SAP HANA engine is a move to a foundation that can truly fulfill the promise of real-time business now and in the future.
- Technology to power business analytic applications: All industry-specific solutions and functional areas of business share common information needs. At the same time, every organization is unique in the way it can use data to enhance business in new ways. Customers need the capabilities of powerful technology to use all their data with ease, so they can flexibly model their business in a rapidly changing, competitive environment.

Q. I am an ERP and non-SAP data warehouse customer. How can I use SAP HANA?

A. For customers who do not want to disrupt their existing landscape, SAP HANA can be deployed as a high-performance data-mart appliance that resides side by side with their ERP or non-SAP data warehouse. Large volumes of transactional data from the ERP system can be directly replicated into SAP HANA through the real-time replication service within SAP HANA. In addition, data from other data sources can be loaded into SAP HANA through the SAP HANA data services component. Customers can use the SAP HANA modeling environment to create the required calculation models and objects and expose them to business intelligence tools such as SAP BusinessObjects Analysis, SAP BusinessObjects Dashboards (formerly Xcelsius), SAP BusinessObjects Explorer, and Microsoft Excel, for reporting and analysis in real time (Figure 3).

Figure 3. SAP HANA Deployed as a Data Mart Side by Side Data with ERP and Data Warehouse



Alternatively customers can deploy SAP HANA as a high-performance data-mart appliance to provide real-time reporting and analytics on the large volumes of transactions in their ERP systems. Selected data from the back-end applications (for example, an ERP system) can be replicated in real time to SAP HANA through the real-time replication services. Customers can use the SAP HANA modeling environment to extend pre-delivered data models or build new data models to suit their needs. After these data models are built and populated, they can be exposed to the SAP BusinessObjects business intelligence tools.

This setup allows customers to bypass the traditional data warehouse and directly use SAP HANA for all reporting purposes. Since the ERP data is replicated to SAP HANA in real time, all standard ERP reporting can now be done at high speed, and in real time, by using the capabilities of SAP HANA (Figure 4).

Figure 4. SAP HANA Deployed as a Data Mart Side by Side with ERP



Q. What non-SAP front-end tools can I use with SAP HANA?

A. SAP HANA provides MDX and SQL interfaces. These interfaces, for example, enable customers to use Microsoft Excel as a client tool directly from SAP HANA, as well as to employ other third-party tools that use MDX and SQL. However, there currently are no plans to offer third-party client tool certification for integration with SAP HANA, other than for Microsoft Excel.

Q. When will SAP HANA be delivered to the market?

A. General availability for SAP HANA is planned for the first half of 2011.

Q. How will SAP HANA be delivered to the market?

A. SAP HANA will be delivered as an appliance in a manner similar to the way SAP NetWeaver BW Accelerator and SAP BusinessObjects Explorer, accelerated version, are delivered. Customers will purchase the software licenses from SAP and the hardware from Cisco. Cisco will preload the SAP HANA software on the appliances before shipping them to customers.

In addition to hardware delivery, SAP is constantly evaluating opportunities for other deployment options, including virtualized and cloud deployments.

Q. How do I decide whether SAP HANA or Sybase IQ is better suited for a project?

A. SAP HANA is a high-performance analytic appliance powered by SAP in-memory computing technology, with industry-standard data-access interfaces (SQL and MDX) and will be delivered with integrated SAP content. SAP HANA is designed to provide real-time analytics, integrated data management, and calculation and simulation capabilities. It is designed to act as the platform for next-generation analytical business applications involving simulation and write-back capabilities.

Sybase IQ is an analytics server that uses a disk-based columnar data store that is highly optimized for analytics and runs on any standard hardware and operating system.

Sybase IQ provides the best price-to-performance ratio in data-warehousing and data-mart solutions that involve:

- Real-world reporting and analytics: for example, banks and financial institutions
- Analytical platform for data aggregators: for example, information providers
- Optimized process streaming and time-series data: for example, financial services and telco industries

Sybase IQ is therefore the choice for customers who need:

- An operational decision-support system using an enterprise data warehouse or data mart focused on data from non-SAP applications
- Capability to identify trends and anomalies immediately
- Better predictions about future business

- Q.** What is the roadmap for SAP HANA and Sybase IQ? Will these products converge?
- A.** SAP HANA and Sybase IQ are intended for different uses and will continue as independent products for the foreseeable future. SAP HANA is the main foundational component for SAP's next-generation application platform for delivering analytics, planning, and transactional applications. Sybase IQ is a crucial foundational component of SAP's data management solutions.
- Q.** What is SAP's recommendation for customers for new projects?
- A.** Sybase IQ is the preferred solution for customers who are building a data warehouse or data mart solution and do not already have SAP Business Suite or SAP NetWeaver BW. SAP HANA is the preferred solution for customers with SAP Business Suite and SAP NetWeaver BW. For those customers who have a mixed environment of data marts or data warehouses with SAP BusinessObjects, in addition to SAP ERP and SAP NetWeaver BW, SAP HANA is a good fit to accelerate the SAP and SAP NetWeaver BW environment, and Sybase IQ is a good fit as a data mart or data warehouse solution (Table 1).

Table 1. Choosing Between SAP HANA and Sybase IQ

Analytics Environment		
	SAP ERP and SAP NetWeaver BW	Non-SAP Applications or Data
Product Fit	SAP HANA	Sybase IQ

- Q.** Sybase also uses in-memory technology in Sybase Adaptive Server Enterprise (ASE). How does that fit with SAP's in-memory computing efforts and specifically SAP HANA?
- A.** SAP believes in-memory computing will revolutionize data processing. Therefore, Sybase ASE in-memory capabilities are in line with SAP's vision. Sybase ASE in-memory technology is row-store based. In addition, SAP will carefully consider using its column-store based in-memory technology in Sybase ASE.
- Q.** Can I upgrade my SAP NetWeaver BW Accelerator licenses to SAP HANA?
- A.** SAP currently markets and licenses SAP NetWeaver BW Accelerator and SAP HANA as separate products. If and when SAP adopts a generally available standard migration policy for SAP NetWeaver BW Accelerator, SAP will extend such migration policy to SAP HANA to qualified SAP NetWeaver BW Accelerator customers.
- Q.** Can I upgrade my existing SAP BusinessObjects Explorer, accelerated version, license to SAP HANA -powered SAP BusinessObjects Explorer, accelerated version, licenses?
- A.** SAP currently markets and licenses SAP BusinessObjects Explorer, accelerated version, and SAP HANA as separate products. If and when SAP adopts a generally available standard migration policy for the accelerated version, SAP will extend such migration policy to SAP HANA to qualified customers.
- Q.** How can I get started with SAP HANA?
- A.** SAP, with the help of its hardware partners, is currently signing up selected customers for the ramp-up program. Customers that plan to use SAP BusinessObjects 4.0 and data services with SAP HANA also need to enroll in the SAP BusinessObjects 4.0 ramp-up program. Please contact your SAP or Cisco account manager for more information about how to participate in these programs.
- Q.** Where can I find up-to-date information about SAP HANA and the Cisco UCS platform?
- A.** See <http://www.cisco.com/go/sap> and <http://www.sap.com>.



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