

SAP NetWeaver Business Intelligence Accelerator on Sun



Highlights

- Pre-tested, optimized, and certified by SAP
- Minimizes or eliminates the cost of designing, building, and maintaining aggregates
- Open, standards-based solution easily integrates into existing SAP NetWeaver technology platform environment without changing the data model
- Designed to accelerate query response
- Fully transparent to users
- Easy installation and reduced administration for lower total cost of ownership (TCO)
- On-the-fly data aggregation eliminates the need for query tuning
- Ten to 100 times ad hoc analysis performance
- Better, timelier insights and decisions can result in productivity gains



As companies around the world strive to increase profitability and control costs, executives increasingly rely on business intelligence such as SAP NetWeaver Business Intelligence to search for new opportunities from within enormous data stores. However, the volume of data and number of business intelligence (BI) users are growing exponentially, more sophisticated reporting tools are increasing response times, and users expect to execute both contextual and ad hoc analysis. All of these factors make it difficult for IT to help the business realize the full potential of BI and data analytics.

SAP NetWeaver Business Intelligence Accelerator

To meet these challenges, SAP offers SAP NetWeaver Business Intelligence Accelerator (SAP NetWeaver BI Accelerator) software, an appliance-like solution co-developed by Intel® and SAP engineers to leverage the advanced hardware design of Intel Xeon® processors. Sun offers the solution for the SAP NetWeaver BI Accelerator on the Sun Blade™ 6000 family with Intel Xeon server modules.

SAP NetWeaver BI Accelerator offers performance improvements and query flexibility with the price/performance of Intel platforms.

It also reduces IT support time by performing on-the-fly data aggregation and eliminating the need for query tuning.

The SAP NetWeaver BI Accelerator combines high-performance software from SAP NetWeaver with Intel processors to provide a Web search engine-like capability for structured data — delivering a 10 to 100 times average speed increase for query performance and as much as 80 percent faster load times. Completely transparent, it lets users browse detailed cube data without waiting for IT staff to fine-tune databases, providing the ability to ask any question any time.

Built with open hardware and OS, business process management functionalities, and BI, the SAP NetWeaver BI Accelerator integrates easily into existing SAP software environments without changing the data model.

SAP NetWeaver BI Accelerator software

SAP NetWeaver BI Accelerator indexes selected information cubes (IT selects which information cubes to supercharge) to create a highly compressed index structure that loads into memory whenever users request the data. The accelerator uses high-performance aggregation techniques to process queries entirely in memory, then delivers results back to the SAP NetWeaver BI analytic engine for output to users. This minimizes or eliminates the need to pre-aggregate data for storage in the information cubes and enables users to browse detailed cube data without IT intervention.

The SAP NetWeaver BI Accelerator is specifically designed for high performance. The accelerator is divided into partitions, one per CPU, to spread the work across the blade system. At load time, the BI server copies data to the accelerator where it is stored in partition files in the accelerators shared file system. At query time, the software caches the information cube data and indexes each partition into the memory of every blade, creating a powerful in-memory database.

SAP NetWeaver determines if new queries involve the information cubes that are indexed in the SAP NetWeaver BI Accelerator, and if so, sends the requests to SAP NetWeaver BI Accelerator to process. Querying and loading are divided into multiple steps, which run concurrently as separate processes. Each step executes independently, working on a separate piece of the data that is pre-loaded into memory.

SAP NetWeaver BI Accelerator software



Sun Blade 6000 system powered by Intel Xeon processors

Sun StorageTek 6140 array with Oracle Cluster File System

QLogic SANbox 5600 Series 4 Gb Fibre Channel Stackable Switch

SAP NetWeaver BI Accelerator on Sun

These multistep, parallel processes enable queries to complete in a fraction of the time it would take to complete on a single system. In addition, SAP NetWeaver BI Accelerator stores data by column, rather than by row, which increases query performance and data compression for highly compact data storage.

SAP NetWeaver BI Accelerator on Sun

Sun and SAP worked together to create a Sun and Intel solution for SAP NetWeaver BI Accelerator using the Sun Blade 6000 system, Sun Blade 6250 server modules with 16 GB of memory running SUSE Linux Enterprise Server 10 SP1, a Sun StorageTek™ 6140 array with a Oracle Cluster File System, and Fibre Channel (FC) and Gigabit Ethernet switches. The solution is integrated, tested, and ready to deploy to existing SAP NetWeaver Business Intelligence component environments.

Sun Blade™ 6000 system

The 10-blade, 10 RU Sun Blade 6000 system chassis supports up to double the memory and I/O capacity of competing blades — up to 80 Intel Xeon cores, 640 GB of memory, and 1.10 TB/sec. of I/O throughput per chassis.

The Sun Blade 6000 modular system helps protect investments for a long lifecycle with a design that assumes ongoing improvements in technology. The chassis integrates AC power supplies and cooling fans for all of the server and I/O modules. The chassis provides power and cooling infrastructure to support current and future CPU and memory configurations, helping to ensure that the chassis lifecycle spans multiple generations of processor upgrades. This approach also keeps these components off of the server modules, making them efficient and extremely reliable to enable increased application availability. Power supplies and fans in the chassis are designed for ease-of-service, hot-swappability, and redundancy.

All modular components are hot-plug capable. In addition, I/O paths can be configured in a redundant fashion for higher availability to data.

Optimized for performance and efficiency, the Sun Blade 6000 modular system takes an open systems approach, employing the latest processors, operating systems, industry-standard I/O modules, and transparent networking and management.

Shared power and cooling save 5 to 15 percent more energy than competing blades. Intelligent fan speed control uses less power, and is designed for optimal use of cooling air. Better airflow can translate directly into better reliability, reduced downtime, and improved serviceability. Finally, the system reduces CPU and memory power when possible during idle or low workload periods.

Sun Blade X6250 server modules

The blade server modules deliver the memory-intensive, highly parallel processing to the SAP NetWeaver BI Accelerator. The Sun Blade X6250 server module includes two sockets for Dual-or Quad-Core Intel Xeon Processor 5000 series 64-bit CPUs with up to 64 GB of memory per server module, enabling the system to cache very large information data cubes. Currently 16 GB is certified for SAP NetWeaver BI Accelerator. The server module is a two-socket Intel Xeon processor-based blade server offering 64 GB of memory, fully accessible even in a single CPU configuration.

Each server module provides significant I/O capacity as well, with up to 32 lanes of PCI Express bandwidth delivered from each server module to the multiple available I/O expansion modules (a total of up to 110 Gb/s per supported per server module).

To enhance availability, server modules have no power supply or fans and feature four hot-swap disks with hardware RAID built in to help protect the operating system and accelerator software. Each server module includes two 1 Gigabit Ethernet ports to provide high network throughput and redundancy.

Sun StorageTek™ 6140 array

A shared storage system with a shared file system provides all of the blade server modules with access to accelerator indexes. The Sun StorageTek 6140 array is a perfect blend of performance, high availability, and reliability all in one economical package. In fact, it tested as the best performance and price/performance array in its class, making it well-suited for business intelligence requirements in a growing enterprise.

The array supports dual FC RAID controllers, up to 56 TB of raw capacity, up to eight switched 4 Gb/sec. host interfaces, up to 15 global hot spares, snapshot, and storage domains, all designed to provide both the performance and data protection necessary for business-critical information cube data.

All components in the array's data path are redundant to eliminate any single point of failure. If one component fails, the Sun StorageTek 6140 array automatically fails-over to the alternate component, to help ensure continuous uptime and uninterrupted data availability.

Shared File System

The Sun solution for SAP NetWeaver BI Accelerator employs the next generation Oracle Cluster File System for Linux (OCFS2), which is an extent-based, POSIX compliant file system.

Switches

The capacity of the I/O connections to the SAP NetWeaver BI Accelerator greatly affects performance when loading information cubes into the accelerator and loading the partitions into memory. To provide optimal performance, the Sun solution for SAP NetWeaver BI Accelerator uses the QLogic SANbox 5600 Series 4 Gb Fibre Channel Stackable Switch to connect the blade server modules to the Sun StorageTek 6140 array.

Optimized for performance and scalability

Sun engineers worked with SAP to test and optimize the SAP NetWeaver BI Accelerator for Sun solution to provide optimal performance, scalability, and reliability.

The Sun Blade 6000 system scales up to 10 blades inside one chassis. For larger SAP NetWeaver BI Accelerator projects, more than one chassis can be utilized for even greater scalability.

Open, standards-based solution

The SAP NetWeaver Business Intelligence Accelerator on Sun solution is based on industry-standard hardware and open source software and technology to make it easier to implement into current environments without changing the infrastructure.

The Sun Blade 6000 modular system is a wire-once architecture that features complete hardware isolation of compute and I/O modules. Sun supports true industry standard I/O on its modular systems platforms with a design that completely separates CPU and I/O modules. Sun Blade modular systems utilize standard PCI Express I/O architecture and adapters, the same technology that dominates the rackmount server industry.

A truly modular design, based on industry standard hot-pluggable I/O, means that systems are easier to install and service — enabling simpler administration, higher reliability, and better compatibility with existing network and storage environments. For instance, replacing an I/O module in a Sun Blade modular system typically requires less than a minute.

Services

The SAP NetWeaver BI Accelerator on Sun includes a 24/7 Premium Linux support contract. Sun hardware support services are offered separately. The Platinum Service Plan provides service coverage with two-hour response, 24/7 telephone and online technical support, and access to self-help tools and Sun notifications. The Gold 24/7 Service Plan is also available, or the solution can be included in an existing Sun service contract.

To help IT plan, implement, and maintain the SAP NetWeaver BI Accelerator on Sun, a number of workshops and services are available. These services can be customized to meet specific requirements.

SunSM Solutions Centers for SAP Solutions

Sun Solutions consultants and architects offer a full range of services tailored to specific SAP needs — including capacity planning, solution design, architecture, deployment, migration, consolidation, and integration of other applications, all leveraging Sun's world-class products, technologies, and experience.

Sun and SAP

Today, the IT infrastructure does not just support the business — it's an integral part of the business that must be adaptable to provide high performance BI tools, availability, and cost-effectiveness. To deliver the flexibility required to be competitive, enterprises look for partners that intimately understand their challenges and collaborate to provide solutions to address them. Sun and SAP have been partnering for years to do exactly that, offering innovative, cost effective solutions to help companies drive growth.

Learn More

To learn more about Sun and SAP see:
www.sun.com/sap

To learn more about the Sun Blade 6000 system see:
www.sun.com/servers/blades/6000

