

Modernize Your SAP Environment



Are Your Business-Intelligence Tools Holding Back Your Company?

More than a quarter-million organizations rely on SAP software to run their businesses and to extract valuable insights from their data. If workers can't access that information when and where they need it, they can lose productivity and—potentially—critical business for their company. Unfortunately, many SAP shops are built on costly, proprietary, twentieth-century technology that can inhibit growth and limit options for fast reporting from modern devices. To keep their companies competitive, analysts need reports in seconds, not hours, and field representatives need to query databases from mobile devices in remote locations.

IT teams have valiantly tweaked and tuned systems to extract greater performance from their existing environments, but they are constrained by their technology and limited resources. Those same limitations make it impractical to create apps optimized for mobile devices, because the required time and expertise would be cost prohibitive. These are exactly the challenges that audio-equipment manufacturer Peavey Electronics recently faced. Peavey set out to improve the performance of its SAP® Business Warehouse platform and to provide easier access to reporting

tools for mobile workers. The company also wanted to reduce total costs, while adding flexibility to respond as needed to changing business needs. However, none of these gains could come at the expense of reliability and availability.

Challenges

With Peavey's legacy system, each report typically took at least 15 minutes to run, assuming that the user had access to a laptop or desktop computer (Android™ and iOS® mobile devices were not supported). Slow reporting times created a major drain on productivity, as users spent hours each day generating reports. Eventually, poor reporting performance forced administrators to ration access and deny some potentially useful requests. The company needed to move beyond a business model based on starting a report, going to lunch, and then retrieving results in the afternoon.

NEC appliances powered by the Intel® Xeon® processor E7 family and running SAP HANA® on Red Hat® Enterprise Linux® offer fast reporting of real-time data, high availability, and lower operating costs than legacy systems.

The answer for Peavey, and for dozens of other organizations facing similar challenges, was to move from disk-based database software running on proprietary hardware and operating systems to a modern, in-memory database platform consisting of:

- NEC purpose-built appliances, powered by the Intel® Xeon® processor E7 family
- The SAP HANA® in-memory platform, designed for transactional and analytical processing against a single copy of data
- The Red Hat® Enterprise Linux® operating system environment, optimized for SAP HANA

How Peavey Electronics Amped Up Its Reporting

Peavey Electronics is a privately held sound-reinforcement and musical-equipment company with 2,400 employees, about \$300 million in sales, and distribution in over 130 countries. Peavey Electronics uses SAP® Business Warehouse (SAP BW) reporting tools for finance, inventory, and sales.

Peavey Electronics deployed SAP BW and SAP HANA® platform running on Red Hat® Enterprise Linux for SAP HANA® and NEC servers powered by the Intel® Xeon® processor E7 family. Peavey chose the NEC server-based SAP HANA platform to shrink reporting time, modernize its technology, provide reporting tools to mobile users, and lower operating costs.

The new solution gives companies like Peavey much greater flexibility to grow the infrastructure with the business. For example, IT departments can easily augment or replace NEC servers as updated models ship with

newer Intel Xeon processors, which can offer greater speed, efficiency, and security features. Companies can also easily roll out updates to Red Hat Enterprise Linux and SAP HANA as they become available, without causing a major disruption for users.

It's a Team Effort

Thanks to cross-collaboration among NEC, Intel, SAP, and Red Hat, Peavey Electronics could affordably deploy an in-memory database system with an optimized operating system and hardware. The combined features and optimizations produced significant performance increases and cost savings, in addition to mobile reporting options and enterprise-class reliability.

Generate Reports at Light Speed

Because Peavey's legacy system relied on slower disk-based operations, Peavey database administrators (DBAs) had to employ indexes, aggregates, and materialized views to speed up report generation. With SAP HANA, data is kept and processed in memory, which enables users to generate reports in near-real-time and frees up DBAs from unnecessary performance work. Thanks to a 300-times improvement in processing, reports that took 15 minutes or more on the legacy system can now run in just a few seconds. With performance like that, Peavey can build required, critical reports in record time, and then use the extra hours to generate new reports with advanced analytics. Complex analysis wasn't even an option with the slower legacy system. And because the SAP HANA platform provides real-time data, Peavey can now produce reports with more reliable, up-to-date information for procurement, finance, sales management, and channels.



Figure 1. Collaboration between industry leaders helps ensure optimized performance, compatibility, and reliability.



SAP® Business Warehouse (SAP® BW) and IBM® DB2® on IBM® AIX® legacy systems

- Higher operating costs
- Legacy architecture
- Slower reporting
- Larger footprint in the data center
- Limited support for apps to generate reports on mobile devices



Data-Center Footprint

NEC servers powered by the Intel® Xeon® processor E7 family, the SAP HANA® platform, and Red Hat® Enterprise Linux®

- Open-standards
- Lower operating costs
- Modern architecture
- Faster reporting
- Smaller, consolidated footprint in the data center
- Richer support for apps to generate reports on mobile devices

Figure 2. Peavey Electronics migrated from a slower, legacy system to a faster, more flexible, and more affordable open-standards platform powered by NEC servers, the Intel® Xeon® processor E7 family, the SAP HANA® platform, and Red Hat® Enterprise Linux®

Get Faster, More Useful Data from Any Device

The Red Hat® Enterprise Linux® open-source platform makes it easier to create HTML5, mobile-ready apps so that users can generate reports from Android tablets or Apple® iPad® devices. Remote employees can be more productive in the field and can access up-to-date information on inventory or other data.

Help Ensure Reliability and Availability

The custom-built NEC appliance provides several enterprise server features to keep the system running through memory failures. The combined NEC and Red Hat platform-infrastructure technologies offer high availability (HA) machine check architecture (MCA). In addition, NEC custom firmware includes the ability to execute preventive failure analysis (PFA) and de-allocation of faulty physical memory or a faulty CPU core. The NEC appliance also includes Intel® Run Sure Technology, which is designed for “five nines” solutions essential for business-critical data. Together, these NEC and Intel features help reduce the frequency and cost of planned and unplanned downtime.

Do More, Spend Less

With the combined high-availability features of the NEC appliance designed for use with the SAP HANA platform, you can deploy a single-node server platform instead of a two-node failover cluster. That can reduce your capital expenditure, operating costs, and data-center footprint. For Peavey, the hardware savings reduced capital costs by about \$100,000.2 Keep in mind that those cost savings can be doubled when you take into account the need for separate production and development/quality-assurance (QA) environments.

Accelerate Your Business

By moving their business analytics to the SAP HANA in-memory platform optimized for NEC servers powered by the Intel Xeon processor E7 family, Peavey Electronics was able to:

- Generate reports from real-time data so that they can react quickly to changing business needs
- Lower their operating costs with more affordable, consolidated infrastructure
- Improve employee productivity by spending less time building and generating reports
- Improve employee morale by reducing frustrating wait times for queries and by enabling reporting from mobile devices

Learn how you can bring speed, productivity, and lower costs to your business. Visit <URL> for more information.

Cross-collaboration Boosts Performance and Lowers Costs

NEC and Intel

NEC and Intel provide the backbone of reliability, efficiency, and raw processing power needed for real-time analytics and reporting with SAP software. NEC® Express5800 Server Series is paired with the Intel® Xeon® processor E7 family to create a purpose-built, enterprise-class appliance designed to meet the reliability, availability, and serviceability (RAS) requirements of the SAP HANA® environment. The appliance features a massive resource pool, powered by up to four processors from the Intel Xeon processor E7 family, with up to 60 cores and up to 4 TB of memory to support compute- and memory-intensive applications.

The system is built for performance and reliability. If sectors on a memory chip start to fail, NEC systems work with Red Hat® Enterprise Linux® to de-allocate that memory location without interrupting the operating system. Similarly, if one of the many CPU transistors has an issue, NEC can de-allocate one of the cores and keep the operating system running without a failure.

SAP HANA Platform

The SAP HANA platform is the key to accessing and analyzing massive volumes of data. With the SAP HANA platform, all data is kept in main memory, which eliminates performance bottlenecks found on traditional disk-based database environments. Intel Xeon processors are tuned for SAP workloads, which helps the SAP HANA platform excel at handling both high transaction rates and complex query processing.

The SAP HANA platform also compresses your data, so there's less overhead up front. Larger, traditional databases are converted into smaller, in-memory footprints, which can translate into less hardware required in the data center.

Red Hat Enterprise Linux

Red Hat and SAP have collaborated to combine the reliability, scalability, and performance of the Red Hat Enterprise Linux platform with technologies optimized to meet the specific requirements of the SAP HANA platform. These include a series of high-availability features that take advantage of machine check architecture to mitigate hardware-level errors in application performance and stability. Two of these features, predictive failure analysis and resource de-allocation for both CPU and memory, are unique to Red Hat Enterprise Linux for the SAP HANA platform.



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