



První novinová společnost a.s.

PNS, the leading distributor of print media in the Czech Republic, has increased the performance of its business-critical SAP ERP applications by approximately 30 percent while simultaneously cutting the total cost of running them by two-thirds. The company achieved these benefits by migrating from UNIX on proprietary SMP hardware to SUSE® Linux Enterprise Server for SAP Applications running on standard x86-architecture servers from Dell.

Overview

As the leading press wholesaler in the Czech Republic, První novinová společnost (PNS) distributes more than 100 print titles daily, six days a week, to almost 17,000 points of sale—the densest such network in Europe from nine branch offices in the Czech Republic. PNS works on behalf of more than 450 publishers.

Challenge

It probably goes without saying that delivering different combinations of hundreds of print titles each day to many thousands of retail locations is extremely challenging. What’s more, when the items you are delivering potentially have value only for a matter of hours (who wants to buy yesterday’s newspaper?), it is essential to make the right deliveries at exactly the right times.

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To handle its distribution challenges, PNS has relied on SAP ERP software for a number of years. For practically every major business process—from signing up new publisher clients to managing stock, and from scheduling deliveries to receiving payments—PNS uses its tailored SAP IS-U solution to ensure speed and accuracy at all times.

As a single retail outlet may carry dozens of different daily, weekly and monthly titles, and may require anything from one to several hundred copies of each, it is easy to see how the complexity and volume of data rapidly become very significant. The combination of enormous data volumes, high turnover of stock and to-the-minute distribution schedules had historically put huge pressure on PNS’s SAP solutions, requiring the company to make large ongoing investments in IT equipment, software licenses and maintenance.

Jan Patera, SAP BC Administrator at PNS, said: “The SAP system is really the heart of our company, enabling us to manage this highly complex, geographically dispersed and time-sensitive distribution network efficiently. Because of the large data volumes and heavy CPU load involved in computing the distribution schedules, we had invested in so-called ‘enterprise’ platforms based on proprietary SMP chipsets

Case Study

Server



První novinová společnost at a Glance:

První novinová společnost (PNS) is the largest wholesale distributor of printed media in the Czech Republic, supplying nearly 17,000 retail locations across the country.

■ Industry and Location

Wholesale distribution, Czech Republic

■ Product and Services

SUSE Linux Enterprise Server
SUSE Linux Enterprise Server for SAP Applications

■ Results

- + Cuts the total cost of the SAP ERP landscape by 64 percent over five years
- + Increases SAP ERP performance by approximately 30 percent
- + Reduces OS administration workload by 50 percent
- + Delivers increased flexibility and manageability

and commercial UNIX operating systems, together with costly high-end storage.

“As a business, we are always looking to make savings wherever possible. When it became clear that advances in computing could make it feasible to run an enterprise-class SAP system on the x86 architecture, we began to experiment with running SAP ERP on Linux on Intel servers. The opportunity was clear: to reduce costs both by moving to a ubiquitous processor architecture that would not lock us into working with a single hardware vendor and its proprietary operating system, and by reducing our hardware and software and maintenance costs through the adoption of more open solutions. Another area in which we recognized an opportunity to make savings was disk storage—we had a costly enterprise disk storage and we knew that we could get better performance at a lower price by using SSDs in midrange storage.

“Finally, we could also see that SAP itself was moving more and more towards Linux and x86—particularly for its HANA in-memory technology—and it made sense to align ourselves with what is an important strategic supplier for PNS.”

Solution

Jan Patera began testing different distributions of Linux on small Intel-processor-based servers, spending around a year building internal confidence in the technology as a viable platform even for a large and complex SAP ERP solution.

“What was clear right from the outset was that if you buy lower-cost hardware, you really need a well-supported and tested operating system,” said Jan Patera. “I also felt that there was no point in considering Windows for an environment with this volume of data, and because we use Oracle for our SAP application databases, not

Microsoft SQL Server. This narrowed my investigations down to two potential platforms: Red Hat Enterprise Linux or SUSE Linux Enterprise Server.”

Several factors led PNS to select SUSE Linux Enterprise Server as its strategic platform for SAP solutions. Jan Patera said: “Our first reason for choosing SUSE Linux Enterprise Server was the fact that SAP develops its software on this platform, so you are always first to get new features. Second, there is a strong joint support offering from SAP and SUSE, and there is also a close relationship, including installation support, between SUSE and VMware. Third, SUSE offers a special solution—SUSE Linux Enterprise Server for SAP Applications—that is designed to offer the best performance and support for SAP right out of the box.”

SUSE Linux Enterprise Server for SAP Applications is a customized distribution of Linux designed to accommodate the specific demands of SAP software. SUSE runs a completely separate update channel for this distribution, pre-testing new and updated packages to ensure that they will work without any hitches in production SAP landscapes.

PNS replaced its existing landscape of 16 virtual servers on five Dell PowerEdge low-cost servers equipped with Intel Xeon E5-2699 processors. Three servers host the whole SAP R/3 landscape, including production, test and quality assurance and development servers. These three servers also host a content repository, SAP Business Warehouse and SAP Portal production and development environments, SAP BusinessObjects Business Intelligence, SAP Solution Manager, and an external portal, all running on SUSE Linux Enterprise Server for SAP Applications and virtualized with VMware ESXi Server in a high-availability configuration. The

fourth server is designed to act as a warm stand-by in a disaster scenario, and is also employed for running larger testing workloads. The fifth server acts as a backup software-defined storage solution on the Veeam platform.

“We performed significant amounts of testing to get the right balance of memory, CPU and disk for our virtualized SAP ERP environment,” said Jan Patera. “On the storage side, we replaced two enterprise disk arrays with two SSD-based midrange arrays. Ensuring OS support for the storage was very important: we have large amounts of data and large numbers of users, and the time-sensitive nature of our business requires us to recover very rapidly and with zero loss of data in the event of an unexpected outage. Modern techniques such as snapshots help us to provide these capabilities, and they depend on good communication with the OS. We found that SUSE Linux Enterprise Server supports more hardware and disk functionalities than its direct competitor.”

PNS is taking advantage of the Page Cache Management options in SUSE Linux Enterprise Server for SAP Applications to optimize performance. In normal operation, the Linux kernel releases application memory pages stored in cache that are infrequently accessed and uses them as a general-purpose cache to improve overall filesystem performance. In the case of an SAP environment, this can be detrimental to the performance and the user experience: SAP applications require rapid access to data, potentially including data that is accessed relatively infrequently. In a conventional setup, reloading the cached-out memory pages from disk can cause unacceptable delays. With the SUSE Page Cache Management option activated, application memory is prioritized and the Linux kernel is limited in the amount of cache memory it can use. This helps to

keep response times as fast as possible for SAP users and applications.

“For highly experienced SAP administrators, the key benefit of choosing SUSE Linux Enterprise Server for SAP Applications is the access to single-source support from SAP and SUSE,” said Jan Patera. “The base OS works well with SAP, and we can therefore reduce our overall costs by using that for our non-production environments. The SUSE subscription policy is very open and flexible, so we can freely combine different releases according to our needs. That’s also very helpful in the context of VMware, where we can install and delete new virtual machines without incurring the extra licensing fees this would have required in our previous UNIX landscape.”

Results

PNS has achieved its key goal in migrating its SAP ERP environment from UNIX on proprietary hardware to Linux on the conventional x86 architecture, and to achieve cost savings without reducing performance or reliability.

Over a period of five years, the total annual cost of the previous environment—taking into account hardware amortization, hardware and software maintenance and servicing, hosting, electricity, and licensing for the operating system, database, applications and backup solution—was approximately 31 million Czech korunas (1,100,000 Euros). Over the next five years, the cost of the new environment will be approximately 11 million Czech korunas (390,000 Euros)—a cost reduction of about 4 million Czech korunas (150,000 Euros) a year, or around 64 percent.

“In addition to achieving significant cost savings, we have also seen an average 30 percent improvement in performance for our SAP applications, partly due to the new processors and the switch from

conventional disks to SSDs,” said Jan Patera. “Our entire SAP environment now fits in a single rack, instead of the four racks previously, so we are also making savings on our hosting and electricity costs. In our experience, running SAP on SUSE Linux Enterprise Server for SAP Applications on x86 hardware can out-perform UNIX on proprietary hardware, while releasing large amounts of budget for investment in other areas.”

With its previous environment, PNS was required to sign up to costly hardware servicing packages with the vendor and to use only vendor-approved replacement components. Switching to standard x86 hardware has opened up a greater choice of more economical servicing options and released PNS from this vendor lock-in. The company is also seeing benefits in the openness and ease of administration offered by SUSE Linux Enterprise Server.

“I have a long history of working with Linux, but even so, I was surprised at just how easy it is to administer SUSE Linux Enterprise Server,” said Jan Patera. “In general, everything just works without any problems, and we can quickly access direct support from the developers if we need to. Right now, we’re on day 65 since going live, and we have had no downtime.

“We are looking forward to using SUSE Linux Enterprise Live Patching in the near future, which would enable us to apply kernel fixes for up to one year without rebooting at all. In a heavily virtualized environment like we have, that would be an additional benefit, because it means we would not need to plan to take down all the guest operating systems every time we needed to apply a patch to the host. So, Live Patching could be an absolutely perfect solution from my perspective.”

Migrating from UNIX to SUSE Linux Enterprise Server also gives PNS more

flexibility in server administration. “Our previous UNIX distribution had no real GUI for management, which made remote administration difficult,” said Jan Patera. “I used to have to take a laptop with a terminal emulator everywhere in case of emergencies, but now I can do everything I need to using just a small tablet computer.

“Configuration is quick and easy with SUSE Linux Enterprise Server, and that’s great because I don’t want to waste time setting everything up each time I create a new server—I want to get on with installing the application. Overall, we have gone from about eight person-days per month of OS administration down to just four person-days per month with SUSE Linux Enterprise Server, because everything is so much simpler than before. And the time that we save can be spent on developing and supporting the front-end SAP applications, which offers more benefits to the business. We also appreciate that we can manage the SUSE solution by ourselves, which helps us to avoid the high cost of outsourcing those tasks to an enterprise UNIX system administrator.”

By giving business users more responsive SAP applications at much lower ongoing cost, PNS has improved its ability to provide an accurate, efficient and competitively priced distribution service to its clients in the publishing and retail industries. Backed by the combined support resources of SAP and SUSE, the new ERP landscape based on SUSE Linux Enterprise Server for SAP Applications also offers reliability and availability that PNS and its clients can depend on. “Our SAP systems are now faster and we have more time in the IT team to implement new functionality to make the business run even more smoothly,” said Jan Patera. “And thanks to our move to standard hardware and the SUSE Linux Enterprise platform, we have also achieved very significant cost savings.”

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