The Trend from UNIX to Linux in SAP® Data Centers:

Large. Critical.
Beyond Limits.

[SUMMARY]

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Whitepaper Summary

The new REALTECH whitepaper on the trend from UNIX to Linux in SAP data centers is a sequel to two earlier investigations on the same topic in 2008 and 2009. The earlier whitepapers showed that there is a strong tendency for SAP customers to move their SAP-correlated server infrastructures from all major UNIX flavors towards Linux and from all major UNIX processor architectures towards 64-bit x86. The earlier whitepaper showed that this OS migration trend is connected with three major facts: First of all, important technical features are available both for Linux and the x86_64 CPU architecture. Second, the x86_64 processor architecture has a superior price/performance ratio which was shown to be up to sixty times better compared to UNIX CPU architectures in 2009. And third, although the price/performance ratio is connected to the processor architecture much more than to the operating system, our customers' tendency is also clearly towards Linux rather than Windows because operational procedures, interfaces and administrative know-how are much easier to carry over from UNIX to Linux than to Windows.

Our new whitepaper will check if the observations and predictions of 2008 and 2009 were correct. We will look at migration statistics and show that, on a global scale, 56% of all REALTECH migration customers now move to Linux and almost 80% move to x86_64. On the other hand, UNIX loses its customer base at exactly this speed, with HP-UX being the major single source. The main reason for this development is that the gap in the price/performance ratio has even increased. The best x86_64-based server systems in our ranking now offer an up to a factor hundred better price/performance ratio than the worst UNIX systems, and even if you just compare identical server classes (e.g. four-socket-servers), servers running CPUs from Intel and AMD offer up to a twenty times better value than comparable UNIX ones. REALTECH will demonstrate that just by moving to Linux and x86_64, one of our migration customers lowered their SAP server costs by over 80%, while at the same time at least tripling their available SAP computing power. We will also explore that and why very large server systems have become an outdated approach in the SAP data center, and show that REALTECH customers replacing this kind of architecture have saved or are about to save six or seven digit EURO or US-$ amounts per year.

Also in review of the 2008 and 2009 whitepapers, REALTECH will discuss recent developments regarding virtualization and Green IT. We will show that virtualization has become a commonplace solution in the x86_64 world. In regard to Green IT aspects, our evaluation demonstrates that x86_64 CPUs as well as IBM's Power processor have very acceptable ranges.
of energy consumption in relation to the performance delivered, each with specific advantages and distinct qualities for certain use cases. All in all, we regard the 64-bit X86 XEON processor from Intel to have the best mix of optimum environmental and performance qualities in regard to SAP applications, and we will explain why. To do so, REALTECH evaluates more than just the price/performance ratio, but also looks into technical qualities of the processors on a performance per socket, per core and per thread basis. XEON processors from Intel are the only architecture that ranges in the best top 10 of every aspect of our evaluation.

Beyond the review of topics discussed in the earlier analysis, we also extensively discuss the maximum size of single SAP systems and overall system landscapes that can run on Linux, as well as the maximum size of migration project that can be done. We will demonstrate that there is no attestable limit for the size of an SAP system or database on Linux, as well as if approached in the right way there is no size or criticality of customer, project or landscape that cannot be transformed from UNIX to Linux. To be successful in a migration project, you need to avoid frequent and typical mistakes. Our whitepaper explains the keys for success in detail.

In an extended discussion of how to run critical environments on Linux, we will investigate the available High Availability solutions for SAP on Linux, and explain why we consider SUSE Linux Enterprise Server High Availability Extension to be the one most closely and best integrated into SAP applications. Furthermore, we will explain why we regard High Availability in SAP environments as a process rather than a question of tools, and why this is decisive for running highly critical SAP environments on Linux or any other operating system platform.

Altogether, our investigation clearly shows that Linux and the x86_64 CPU architecture have arrived in SAP data centers as the mainstream solutions with the by far best price/performance ratio, and that they are excellently suited to deliver system landscapes of both high performance requirements and high criticality. We will explain why customers waiting too long with the replacement of doomed UNIX architectures might get into trouble, and that it is time to act now.

If you are interested in the full contents of our newest UNIX to Linux whitepaper you can download it from www.realtech.com/linux.