



Peter Wüst, Director Cloud & Alliances, CEEMA, NetApp



Ralph Dehner, Founder and CEO, B1 Systems



Michael Jores, Regional Director Central Europe, Suse

Linux, OpenStack, Hadoop, Apache etc.

Open society

In many ways the SAP community is undergoing a constant transformation process. The meta level is Digital Change Management. In practice, the SAP customer is observing a transition from a black box R/3 to S/4 based on Open Source. Terms, such as Linux, OpenStack, Apache, Hadoop are ever-present. E-3 journalists have written this feature story with the help of representatives from Suse Linux, Fujitsu, NetApp, Real-tech and B1 Systems. An initial view of the future open ERP platform S/4 Hana.

The digital transformation process is the motor for important and long-term changes in the SAP eco system. This evolution is increasingly driven by Open Source ideas and projects. „Everyone is talking about OpenStack and it is slowly appearing more and more in the IT infrastructures of German companies“, wrote René Büst, an analyst from Crisp Research, in a blog. „58% of German CIOs regard OpenStack to be a real alternative to existing cloud management solutions. However, we should look more closely at what is currently in the hands of IT decision-takers. After all, OpenStack is basically just an infrastructure management solution and does not generate a direct value towards the success of your company.“

Hadoop & OpenStack

From the SAP community viewpoint Linux, OpenStack, Hadoop, Apache, etc. are almost a revolution. Access to R/3 data was restricted for a long time and was only possible at best via NetWeaver, RFC (Re-

mote Function Calls) and SAP Business Connector. A long-serving CIO must regard Linux, Hadoop, OpenStack and the rest as a real „liberating step“. „Suse Linux provides open standards and an optimal Euro/SAPS ratio. In other words, Suse Linux and Intel provide optimal cost structures for SAP infrastructures“, explained Michael Jores to E-3 senior editor Peter Färbinger. He adds: „The combination of Hana and Linux paves the way towards a future-oriented state-of-the-art SAP infrastructure regarding open standards and cloud readiness. Infrastructures with Linux and Hana can thus be optimally prepared for future big data and cloud operations in the SAP data center.“

OpenStack as infrastructure management is already the de-facto standard for an Open Source based platform solution (see the interview with Fujitsu CTO Joseph Reger). The willingness of SAP last year to support OpenStack has resulted in an increasing number of existing customers relying on the module Open Source IaaS cloud platform as part of their cloud in-

itiatives, stated Ralph Dehner from B1 Systems. Suse also recognized this development at an early stage and provided OpenStack Cloud as the world's first Enterprise product for OpenStack. Suse, as a member of the OpenStack Foundation, also provides Alan Clark as the chairman of this important group, which coordinates and ensures the further development of OpenStack. SAP itself is also an official member. „We have already established best practices for deploying SAP on the Suse OpenStack Cloud“, explained Jores. Hadoop and Hana can be used to implement a comprehensive big data strategy in order to link up the best of the structured and non-structured data worlds. „And Linux showed the way for OpenStack and Hadoop“, said Michael Jores. „Since 1999 Linux has quietly evolved into the strategic SAP platform so that Linux today is already the exclusive technology platform for Hana; SAP has also already become a member of the OpenStack community and uses OpenStack productively in its data center. This means that Open Source is



Prof. Heiner Diefenbach, Vice President
Services Central Europe, Fujitsu



Dr. Bernd Kappesser,
CEO, Realtech

systematically moving into the SAP data center.“ Professor Heiner Diefenbach from Fujitsu added in an E-3 interview: „Open Source enables you to move away from proprietary Unix systems and to introduce standardized architectures. This topic has been of great significance for quite a while in the SAP environment. And this will definitely not lessen.“

Big data & cloud

Heiner Diefenbach is optimistic with regard to Open Source: „The SAP community is very open towards this topic; many SAP customers already use Linux and the amount of know-how available is thus really high – and we believe it will improve even more.“ SAP can cover its two core strategies with Linux, Hadoop and OpenStack, on the one hand big data where Hana and Hadoop are a couple and, on the other hand, OpenStack which underpins the SAP cloud strategy and is to be the basis for further cloud adaptations within the market. „Suse has closely followed the Linux topic over the last fifteen years and helped with its progress“, emphasized Michael Jores. „Suse as a development platform has laid the basis for many innovations, such as providing the first Open Source based Hypervisor XEN, the one-stop support infrastructure created by integrating Suse support in SolMan, the development of the HA cluster reference architecture and the provision of Suse high availability for the automation of the Hana system replication.“

Jürgen Hamm from NetApp is more cautious when talking to E-3 about the general role of Open Source: „A trend can be seen where proprietary applications will continue to play a large role; the questions

arising relate to support, maintenance and liability.“ It works, but the challenges and dangers have to be defined and analyzed. Crisp Research analyst René Büst wrote a warning in his blog: „CIOs must thus clarify the basic question of how OpenStack can offer them strategic benefits. This will only be the case if they use OpenStack in a different way to their competitors and do not just rely on operational excellence. On the contrary, you have to see OpenStack technology as part of the IT strategy in order to generate real benefits for the company.“

Heiner Diefenbach sees the Open Source trend in the SAP community directly: „OpenStack enables the standardization of architectures to operate data centers and is thus extremely suitable to develop hybrid cloud scenarios but also to establish a standardized basis during mergers and acquisitions.“ The Fujitsu manager believes that the user has – with OpenStack – a simple option when migrating its cloud scenarios from one provider to the other. „We believe that OpenStack will become more significant and we will thus integrate our operations concept for SAP, Flexframe Orchestrator, via API into this architecture“, explained Diefenbach. And he has seen another aspect in the community: Hadoop supplements the Hana portfolio in a complementary manner in order to analyze above all non-structured mass data. „The demand for Hadoop solutions, such as Appliance Primeflex for Hadoop, is growing“, said Heiner Diefenbach happily.

Cloud computing strategy

„The significance of OpenStack cannot be valued highly enough“, emphasized Bernd Kappesser, Managing Director of

Realtech in Walldorf. „SAP's commitment includes the strategic aim of reducing the license costs for managing a private cloud and to simultaneously establish independence towards the infrastructure providers of hardware, storage, network and even virtualization. As a customer I remain flexible and can swap my cloud providers as required. Another long-term objective is to be able to decide regarding each application as to whether it runs on premise within my company or at a cloud provider's.“ Experts agree that OpenStack can become for the cloud what the x86 processor is when it comes hardware procurement: comparable and exchangeable. The aim is also wide-ranging management. And with regard to Hadoop, the Realtech manager Hinrich Mielke believes that the big data approach of the high-end, high performance solution Hana will be extended towards big data in petabytes and a low-price infrastructure. „This combination will provide interesting new use cases“, said Bernd Kappesser, „which will seamlessly link high performance data access with access to non-structured mass data – without having to switch media.“

Linux and OpenStack provide a stable basis for cloud computing. The journey to the cloud means a number of individual steps for existing SAP customers and alignment with ERP and Hana. „Cloud Computing covers a wide range – from the pure offer of server resources with operating system to the software-as-a-service portfolio“, explained Michael Jores. It is above all the quality, performance, security and flexibility which will show which type of cloud offers is the strongest in future. Jores is convinced „If a cloud offering results in a vendor



Jürgen Hamm, Solution Architect SAP, NetApp



Hinrich Mielke, Consulting Manager, Realtech

lock-in, then we are back to where we were before the Unix/Linux migration wave“. Where could cloud computing be at home as far as SAP customers are concerned – with SAP.

(Hana Enterprise Cloud), with Amazon (AWS), Google, Microsoft (Azure) or with SAP partners and local providers? Jürgen Hamm from NetApp: „SAP, AWS and Azure are making considerable investments, but I also see local hosting companies which have very interesting cloud offerings.“

Hinrich Mielke also refers to the vendor lock-in topic: „My recommendation is always independent of the customer – I have no magical objects, potions or lucky charms. It is always important to remain flexible and independent, i.e. not to succumb to a vendor lock-in. This should always be verified before deciding in favor of a solution. OpenStack a very good option here, but when setting it up you should ensure you do not get a make-solution instead of a buy-solution. OpenStack is highly adaptable and in this case, it is possible to stumble into the same pitfall that results from a major SAP ERP system change. The solution's application lifecycle management can then become too complex.“ CIOs with an SAP history are aware of this danger and are therefore well equipped, says Mielke with a smile and adds: „In any case, there is always the basic principle that problems cannot be outsourced! If the general conditions are not clearly defined, resorting to the cloud or to the outsourcer will not be crowned with success. For this reason, accurate preparation, ideally with an external consultant, is the foundation for successful and productive sourcing.“

Public, hybrid or private cloud?

„This differs from one customer to the next,“ says Heiner Diefenbach. „We provide our customers with support for all three models. However, in the case of business-critical data there is a clear trend towards private cloud among customers or for operations in our highly secure data centers in Germany, which are governed by German law.“ Consensus has not quite been achieved as far as Hana and cloud computing are concerned. According to Peter Wüst, NetApp, on premise is still in demand for the core application for ERP and Hana, „although on-demand concepts for companies are increasingly worth considering in individual cases and can also come from the cloud.“ However, he observes that security and data sovereignty are of great importance here. Likewise Heiner Diefenbach says: „There is still no sign of a clear trend, because personal preferences are predominant. The concerns regarding data protection and the competence for in-house operations are very different.“ Friedrich Krey from Suse Linux clearly sees the private cloud as the choice for productive SAP operations. „In order to cover outsourced SAP test, training or development areas the customer can accordingly access public cloud solution offerings,“ is how he explains options such as the S/4 Hana trial version on AWS. „This then results in the construct of a hybrid cloud, which we also underpin correspondingly with Suse technology, namely with the Linux Enterprise Server for SAP Applications and the Suse OpenStack Cloud.“

S/4 Hana is disruptive, isn't it?

Hana is the new platform in the SAP ecosystem, to which the mentioned technologies and procedures such as Linux and OpenStack are by nature connected. Open Source and cloud computing are the cornerstones of the open society. The S/4 roadmap – on demand and on premise – is outlined by SAP. Linux and OpenStack as well as other Open Source products play a decisive role. And so the question as to whether they are on a disruptive or non-disruptive journey will arise in the coming years for existing SAP customers. „SAP Hana is a disruptive technology and if it ultimately succeeds in consolidating OLAP and OLTP transactions in a database-specific manner and making them consumable for business via S/4 applications“, says Michael Jores, „then I believe we can speak of disruptive technology. Since it is an innovation that is designed for long-term further development, SAP has logically relied on Linux, thus ensuring that the infrastructure also keeps pace as far as its rate of innovation is concerned, and does not encounter any impasses, because Linux guarantees that this innovation will also remain mainstream.“

Jürgen Hamm from NetApp logically notes that the new SAP data center operation may not become more complex than SAP Classic. „As soon as there are also operational concepts for Hana, I no longer see anything to prevent referring to Hana as data-center-ready. NetApp and Fujitsu have with Flexframe an excellent solution on the market“, says Hamm on the basis of his professional experience. Heiner Diefenbach differentiates this by saying: „Purely



Friedrich Krey, Head of SAP Alliances and Partners EMEA Central, Suse



Dr. Joseph Reger, Chief Technology Officer, Fujitsu

from a technical perspective SAP Hana is undoubtedly a disruptive database-technology. However, the way in which SAP has in the meantime integrated the solution into the portfolio and the solutions that we provide enable companies to implement them without having to switch media. Our experience from numerous consulting projects shows that each individual case can be disruptive or even non-disruptive for the customer.“ And Diefenbach knows from countless discussions with users that „IT and business processes are inseparably connected with each other here. And we are in demand as the mediator between these two poles.“

To conclude, Michael Jores defines the status of the open society in the SAP community: „For years now SAP has also been working directly in the corresponding Open Source projects and is supported by Open Source technology partners, which – like Suse – have also reliably been continuously working on such disruptive technologies over the years. No other Enterprise-Linux manufacturer has demonstrated the same reliability in a partnership with SAP in the almost 16 years since the existence of the SAP Linux laboratory. SAP has implemented the data-center-readiness topics for Hana at top speed: for example backup and restore, high availability and disaster recovery, security, virtualization and multi-tenant capabilities. As an SAP technology partner Suse has resolutely supported this data center readiness. The S/4 Hana strategy is the logical consequence for transforming the added value of in-memory technology for customers into disruptive technology and thus also creating the business cases and added values of and for Hana at application level.“

What's on the CTO's Mind

Fujitsu's Chief Technology Officer Joseph Reger is known for his holistic view of the concerns of the IT industry. In an exclusive E-3 interview he positions OpenStack in the SAP community.

E-3: Dear Dr. Reger, how would you explain the OpenStack concept to an existing SAP customer with a traditional R/3 data center?

Joseph Reger: OpenStack is an Open Source based operational environment for cloud data centers – whether they are self-operated on premise, but are also of interest for operators of public clouds. OpenStack is the preferred operational environment, particularly with regard to the SAP cloud strategy and the resulting extended options of also being able to set up hybrid SAP scenarios. Thus, if an existing SAP customer's goal is to have a cloud operating platform, which is something such a customer should do, then OpenStack is the way to go.

E-3: Is OpenStack only something for innovative cloud users or does this free IT architecture also have a more far-reaching significance?

Reger: In addition to low-cost and reliable operations, data centers always call for more agility. A vendor lock-in – be it for middleware or even hardware – should also be avoided. All this is promised by using OpenStack and that is why it is highly interesting for CIOs. It goes without saying that the activities of SAP also play an important role in the SAP environment. However, new

applications have to communicate with the classic applications and this calls for hybrid scenarios. Experience has shown that this of course works more efficiently if similar operating models are taken as a basis – in this case OpenStack can be the better answer than an integration platform.

E-3: What significance does OpenStack have for Fujitsu itself?

Reger: Fujitsu strategically uses OpenStack – there have been official press releases to this end. For us this also means that Fujitsu will in future use OpenStack as the operational environment for its own cloud offerings from more than 100 data centers worldwide. Furthermore, Fujitsu is a member of the OpenStack Community and also the OpenStack Consortium, where it also makes active contributions towards further development.

E-3: And what significance could OpenStack have for Fujitsu/SAP customers? What do you recommend to an existing SAP customer?

Reger: For many years Fujitsu's Primeflex for SAP Landscapes based on Flexframe Orchestrator has provided a standardized operational environment for classic and Hana based SAP landscapes. This means that Fujitsu already provides an operating platform today, which ensures highly reliable and low-cost SAP operations. We are already working on gradually integrating Flexframe-Orchestrator functionality with OpenStack. In other words, our customers will use the quasi-standard OpenStack with special, very convenient additional features for fully integrated, largely automated SAP operations.

E-3: Thank you for the interview.



From SAP Classic to Hana and S/4

Transformation security

When using Hana and S/4 data center managers must align their IT infrastructures in such a way that specialist departments can implement new business cases as quickly as possible. Fujitsu provides a future-proof and future-compatible platform with Primeflex for SAP Landscapes, including Flexframe Orchestrator.

By Norbert Thomas and Volker Sommer, Fujitsu

Applicable scenarios and business cases with S/4 Hana are pending for numerous companies from different branches – once initial steps have been taken with Hana; for instance after successful introduction and longer use of SAP BW or ERP powered by Hana: for example in the retail sector in order to profitably use SAP customer activity repository applications, with the option of obtaining data and analyses about customer behavior almost in real time, thus enabling quotes or actions to be implemented more quickly and in a more customer-specific way. Or in the production industry to enable you to work live with Hana – so that specialist departments and end users can themselves perform data analyses when using ERP, either directly or ad hoc from e.g. an SAP logistics application. And so on. Some existing SAP customers deal with a complete migration and the use of S/4 Hana at an early stage, and some do so later. Others may intend using SAP Classic and S/4 Hana in parallel – at least for a certain amount of time.

Intelligence data center as a standard feature

How should data center managers react and deal with the following: How can infrastructure resources be provided much faster and more efficiently than before for specialist departments or users for Hana and S/4 Hana applications? What must this type of IT and SAP infrastructure environment have for focused and cost-effective manageability that takes Enterprise requirements into account and supports modified operating processes? And how can SAP Classic and Hana as well as S/4 Hana be operated side by side happily or for a specific amount of time?

Methods of achieving fast and effective provision of infrastructure resources for new applications or the implementation of profit-making business cases lead to a so-called intelligence data center - a term that has been influenced by Gartner. It is therefore possible for data center managers in particular not to be seen as a kind of constraint to companies and responsible for the



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fact that new applications – for example S/4 Hana applications – cannot be used in the time required by specialist departments. The order of the day is speed and agility instead of long-term action. Intelligence data center guidelines are reflected in the Fujitsu solution offering Primeflex for SAP Landscapes including Flexframe Orchestrator and are underpinned with specific and tangible means. For good measure, security is ensured for the transformation and at the same time proven cost optimization potential is provided during the transformation process from a data center to Hana – also allowing for mixed SAP Classic and Hana usage (SAP Business Suite and S/4 Hana) as well as the involvement of an OpenStack based IaaS cloud in future.

Fujitsu Primeflex for SAP Landscapes including Flexframe Orchestrator offers a platform solution with decades of experience and know-how paired with innovative technologies for demand-oriented and profitable SAP deployment both today and tomorrow. A large number of all SAP deployments worldwide is based on infrastructure solutions and components from Fujitsu as a global SAP partner and full-range provider (also in conjunction with Fujitsu TDS) with

numerous awards from SAP. Fujitsu offers a wide range of solutions especially in the Hana environment – from a Discovery Hana Appliance for test purposes (for example also for testing S/4 Hana, see the box) and for getting acquainted with Hana, right through to large-scale Hana environments (scale-out/scale-up), including services, whereby numerous close partnerships are maintained, for example with Suse or NetApp. More than 1000 Hana projects have been handled to date by Fujitsu worldwide.

Primeflex for SAP Landscapes harmonizes in particular the coupling of SAP IT infrastructure and business requirements. And the guiding idea here is to provide IT and business-oriented services. Namely in an integrated manner, but always with the aim of simplifying and achieving user benefit – whether through cost optimization, as optimal as possible operating processes, or enforced support for specialist departments through IT. Flexframe Orchestrator, which is an IT management software and an integral part of Primeflex for SAP, focuses on managing SAP applications, SAP database(s) and the Hana platform more simply, faster and more efficiently. The highlight in this case is the opportunity to use standardized

management in classic SAP environments and SAP Hana infrastructures in a single system. And then, the comprehensive automation of administration and maintenance as well as end-to-end administration of all physical and virtual resources. Furthermore, integrated, automatic high availability is ensured – also for SAP Hana. And in so doing, third-party products can be integrated.

Flexframe and OpenStack

In future it will be possible to operate e.g. SAP Classic and S/4 (incl. Hadoop) as well as non-SAP applications in an OpenStack based cloud IT infrastructure environment. In such a case, Flexframe Orchestrator also takes on management functions and works in an integrated manner together with OpenStack or OpenStack components (or modules). Flexframe Orchestrator assumes the management of the SAP landscape and interacts with the OpenStack components Heat (orchestration) and Horizon (dashboard). In other words, heterogeneous SAP landscapes can be profitably managed today with Flexframe Orchestrator and also in future together with an OpenStack architecture. (See figure: Manage heterogeneous landscapes with Flexframe Orchest-

ator in an OpenStack architecture) Fujitsu supports existing SAP customers that do not want to change from SAP Classic to S/4 Hana in a kind of „big bang“ scenario with a profit-making solution offering. Similar to Suse and NetApp, Fujitsu is one of the major drivers and innovators when it comes to OpenStack and Open Source and itself operates one of the largest OpenStack environments worldwide. Fujitsu, Suse and NetApp cooperate closely with each other in OpenStack projects. For example, Flexframe Orchestrator will be so interlocked with Suse OpenStack Cloud in hybrid cloud scenarios in future that it will be possible to provide and manage SAP applications in a Suse OpenStack Cloud. The Fujitsu server and NetApp storage components, which are still directly connected today, will in future be connected via OpenStack Nova and OpenStack Manila/Cinder/Swift. All the aforementioned partners use their profound OpenStack know-how as well as e.g. integration tests and lifecycle management to ensure that customers do not have to compile or configure an OpenStack based IT infrastructure landscape with all its elements themselves and under the circumstances in a painstakingly, time-consuming and costly way – an IT infrastructure

landscape which also has to meet Enterprise requirements. And does so in many respects. As far as the use of Hana and S/4 Hana is concerned for example, it is entirely possible that high availability and disaster recovery requirements are somewhat higher than when using SAP Classic, simply because of the required constant (and persistent) use of analytics.

To sum up, the configuration of an IT infrastructure according to intelligence data center guidelines for the use of SAP Hana and S/4 on the basis of Fujitsu with Primeflex for SAP Landscapes and Flexframe Orchestrator is already a given today. In future, there will also be OpenStack integration as a standard feature for both cloud usage and hybrid scenarios. In this way, specialist departments will be able to implement and use targeted new functionalities or business cases in a transformation-proof and quick manner.



Please also see the Community Info entry as of page 115

Simplify SAP operations

FUJITSU Integrated System
PRIMEFLEX for SAP Landscapes