

INDEPENDENT SAP TRENDS, ANALYSES, STRATEGIES AND IN-DEPTH REPORTS FROM BUSINESS AND IT

Hybrid Cloud Community



In May 2019 at the NetApp Summit 2019 in Amsterdam, Gert van Teylingen (standing f. l.), Microsoft, Roland Wartenberg, NetApp, Lenard Buday, LNW-Soft, Alexander Wallner, NetApp, Michael Scherf, All4One Group, as well as (sitting f. l.) Juergen Sommer, Suse, und Danny Hanson, Cisco, showcased a unique hybrid cloud concept for SAP customers. Highlight was the announcement of Azure NetApp Files: The solution provides efficient cloud file storage and data management services for hybrid cloud deployments and SAP applications.

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Hybrid Cloud base	Experienced support	Beneficial multiple use	Superior bridging
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Where and how corporate data is stored and the structure of the data itself are decisive factors in IT. They are also key to the success of companies in the digital age.

However, this requires a consortium that can cover all aspects conscientiously. The Hybrid Cloud Community met at the beginning of May this year in Amsterdam and discussed the current Cloud and data trends. The following members were present (standing, from the left):

Geert van Teylingen, Microsoft, Roland Wartenberg, NetApp, Lenard Buday, LNW-Soft, Alexander Wallner, NetApp, Michael Scherf, All4One Group and (sitting, from the left) Jürgen Sommer, Suse, and Danny Hanson, Cisco.

The Hybrid Cloud is the best location for saving corporate data. NetApp has created an architecture in collaboration with Microsoft, Suse and Cisco. This architecture is flexible, open, transparent and secure for existing SAP customers. The customizing is done

in collaboration with the NetApp partners All4-One Group, LNW-Soft and Accenture. This holistic architecture concept and implementation was presented to the SAP community for the first time in May of this year.

„Companies are increasingly introducing new, data-driven business models that give data a central role as a strategic resource. The requirements for data availability are also increasing,“ says, Eric Burgener, Research Vice President, Infrastructure Systems, Platforms and Technologies Group at IDC. „NetApp Cloud Connected Flash solutions combined with a Data Fabric strategy offer users easy operation, availability, agility and performance, which companies require during their digital transformation. New and innovative business models can be further derived or developed from the Hybrid Cloud infrastructure“.

Corporate data is available in different formats and classifications. In a Hybrid Cloud architecture, an organizational model must be assigned to this data structure, which ensures transparent and secure storage of data and processing based on process logic. NetApp introduced the „Data Fabric“ concept a few years ago, and this concept has been elevated this year as The

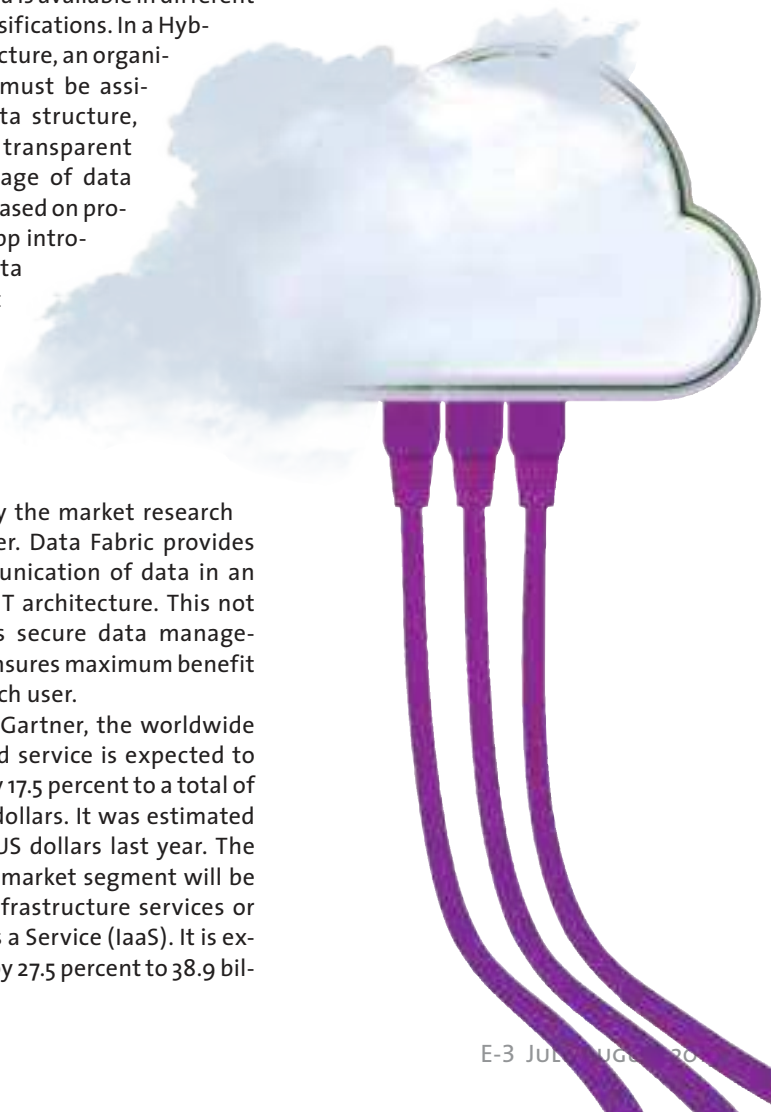
Technology Trend of 2019 by the market research company Gartner. Data Fabric provides seamless communication of data in an heterogeneous IT architecture. This not only guarantees secure data management, but also ensures maximum benefit from data for each user.

According to Gartner, the worldwide market for Cloud service is expected to grow this year by 17,5 percent to a total of 214.3 billion US dollars. It was estimated at 182.4 billion US dollars last year. The fastest growing market segment will be Cloud system infrastructure services or Infrastructure as a Service (IaaS). It is expected to grow by 27,5 percent to 38.9 bil-

lion dollars in 2019. „Cloud services are shaking the industry,“ says Sid Nag, Research Vice President at Gartner. „In our company we only know providers or service providers whose business models and revenue growth are being influenced by the increasing application of Cloud First strategies in companies. This is only the beginning. Gartner is of the opinion that the market size and growth of the Cloud services segment will be three times the growth of all IT services by 2022“.

The „Data Fabric“ concept goes far beyond a simple product offering. NetApp understands this comprehensive and holistic requirement and has initiated a partner landscape especially for the SAP community. This community covers all functions and knowledge concerning customizing the Data Fabric based on the Hybrid Cloud.

The NetApp portfolio offers all the tools required for a heterogeneous IT landscape. Thus existing SAP customers always receive the required performance, without having to change their own hardware or software platforms. With intuitive solutions from NetApp, users can quickly make all the required adjustments to achieve faster Cloud success.



Hybrid Cloud and Data Fabric





The data center is often the core of an IT infrastructure. But only modern hybrid IT helps companies to provide the required resources and business platforms to its departments in a flexible, agile and scalable manner. The efficiency of Private Clouds, Hybrid Clouds and Multiclouds depends on whether technical innovations such as virtualization solutions, software-defined infrastructures, and orchestration solutions – as well as convergent or hyperconvergent systems – are implemented. Innovations in the data center are short-lived. Therefore, organizations must check the maturity level of their data centers regularly to adjust their strategy and keep up with the requirements of the market.

Forrest Consulting conducted a study (on behalf of Virtustream) based on a global survey among more than 700 decision makers for Cloud technology in companies with 500 or more employees. The study analyzes the current status of IT strategies of organizations in the case of Cloud-based workloads and provides information about the growing interest of IT decision makers in multi-use Cloud architectures as well as the associated requirements. The IT leaders surveyed mentioned a variety of use cases for their Hybrid Cloud strategies. At the same time, they also believe that such an approach creates significant benefits for their companies – from increased performance and agility to improved efficiency

Developed from the practice for the practice

The consulting approach of LNW-Soft is based on orchestration right from the beginning: to combine supplementary, interesting but less profitable infrastructure product features. And all this with the objective of achieving optimal data center efficiency with the existing infrastructure products and solutions. Specific recommendations for combining and integrating existing or even required infrastructure elements results in a specific

infrastructure solution. Based on these integrated solutions, the LNW-Soft solution PMS orchestrates consistent data center operation with the help of complex workflows. PMS will be maintained long-term and continue to be developed. In general, customers use PMS on a long-term basis, resulting in stronger customer relationships.

and lower costs. In particular, the performance and cost savings are considered as the most important success factors and companies use these for evaluating their strategies. The study participants rank the ability to react quickly and efficiently to changes and challenges within the company as the third most important advantage.

Hybrid Cloud Roadmap

Hybrid Cloud deployments are highly complex. Almost all companies surveyed had difficulties when it comes to the provisioning and use of different Cloud environments. Even though 61 percent of the study participants think that their cloud strategy is well-aligned to their business goals, the challenges in terms of security and management are always the biggest pitfalls when using, migrating and provisioning Cloud services. As a reaction to these challenges, many companies try to collaborate with Cloud service providers who have profound knowledge in this area and provide managed services.

The SAP community is on its way to a Hybrid Cloud architecture. The objective is clear for existing SAP customers and the roadmap has to be discussed with all stakeholders. „Even if the global market for Cloud infrastructure and Platform as a Service will be around 83 billion USD in 2019 (according to an estimate by Crisp Research), this is not enough for the leading hyperscalers. These companies have understood that a different wind is blowing in the Enterprise IT segment and CIOs have very clear requirements with regard to their Cloud transformation as well as hybrid IT operations. The world is not just black or white,“ writes Carlo Velten, CEO of the IT research and consulting company Crisp Research, in a blog article.

The fundamental requirement for this development is the increased use of the Hybrid Cloud. It is already the standard for many companies and the perspective on Cloud usage has changed drastically: from a paradigm that the Public Cloud is the best location for everything to a strategy of placing applications exactly where they fit best. And anyone having a choice of a Hybrid Cloud can make a deci-

sion on a case-by-case basis. FabricPool from NetApp now supports Google Cloud Platform and Alibaba Cloud, in addition to Microsoft Azure, Amazon Web Services and IBM Cloud Storage. This reduces the costs of primary storage: organizations can lower the cost of primary storage by automatically tiering cold data to any major Public Cloud or to a NetApp Private Cloud.

The data management specialist NetApp wants to provide Hybrid Cloud data services based on its proven ONTAP software in Microsoft Azure. This offer relates to tracing, notifications, access, control, protection and security of data for customers who move to Azure. Many organizations are using the Hybrid Cloud to benefit from greater flexibility and simultaneously to keep the benefits of classic on-premises methods with regard to data efficiency, protection and knowledge.

Microsoft and NetApp

„Companies need the Cloud developments from Microsoft and the broad Azure services portfolio to remain competitive in the age of digitalization,“ said Alexander Wallner, NetApp managing





The hyperscalers have understood in the meantime that a different wind is blowing in the Enterprise IT segment and CIOs have very clear requirements with regard to their Cloud transformation as well as hybrid IT operations," writes Carlo Velten, CEO of IT research and consulting company Crisp Research, in his newsletter.

director EMEA, during the event in Amsterdam. „With this new level of our strategic alliance, we are expanding our data services to Azure. We help customers to modernize their business and to pursue new growth opportunities“.

Microsoft and NetApp have a deep understanding of the requirements of global enterprises. Both companies offer a variety of solutions, with which customers can use data to secure their competitive advantage. Their collaboration has contributed to protecting and expanding the availability of Microsoft application data inventory. Together they provide a flexible infrastructure, which supports virtualization and Hybrid Cloud implementations.

Hybrid Cloud and FabricPool

The collaboration between Microsoft and NetApp also covers the integration of the latest NetApp FabricPool functionality, which reduces the costs for cold data. FabricPool can automatically push data from the data center to the Cloud and use Azure Blob Storage. And Azure will be available in the future as a back-up destination for the NetApp Cloud Control SaaS offering. Scott Guthrie, Executive Vice President, Cloud and Enterprise Group at Microsoft, explained: „NetApp is a strategic partner for Hybrid Cloud data services in Microsoft Azure. Global enterprise customers are using NetApp data solutions. Our collaboration will introduce new services. Customers, who use NetApp and Azure, receive more free-

dom to develop and deploy applications as required“.

„Data centers are facing major challenges today to meet the growing requirements from departments and also to provide new offerings through innovative methods. Modern IT is always striving to convert added value inherent to data into a financial advantage for companies. Technologies such as the Cloud supplement their own data centers, serve as extended workbench and lead to ‚make or buy‘ decisions with regard to the services offered,“ explained Roland Wartenberg, NetApp Senior Director Global Strategic Alliances SAP, in Amsterdam.

The Hybrid Cloud provides the option of placing data and workloads where they work the best – even in in-house data centers. Challenges in case of data center failures, high costs, latency problems and issues of control, security and compliance lead to a new trend: the return of workloads and data from Public Clouds to Private and Hybrid Clouds. The problem of data gravity is the major driver here. In the future, this problem will prevent the transfer of large data volumes due to increased costs for network transfers.

Above all, companies are looking for flexibility when it comes to setting up solutions and services that are flexible enough that they can grow along with the company. These companies do not prefer one side over the other. When companies evaluate the best IT infrastructure for their workloads, a hybrid IT with a mix of Public Cloud, Private Cloud and local solutions

will become the norm. Since Cloud-ready applications are distributed over Hybrid Cloud environments, future IT teams will have to use technologies such as a Service Mesh, which connects the applications with the required services – wherever they are located.

NetApp delivers from one single source all components companies require for developing their customized Data Fabric architecture consisting of Hybrid Cloud and on-premises environments. Applications in the SAP environment, which address the individual requirements of existing customers and decisive analysis data, are possible with these Data Fabric and NetApp solutions. „New technologies show that companies will soon be in a position to generate, record and process huge data volumes. Anyone who is not equipped to face this challenge will be quickly overwhelmed,“ says Joel Reich, Executive Vice President, Storage Systems and Software at NetApp. „With NetApp ONTAP companies can master and overcome the challenges which accompany these data-intensive technology innovations. It is a smart, powerful and proven solution that is designed to extract the maximum benefit from data“. (pmf)

Software-defined approach

Version 15 of Suse SLES for SAP supports deployments/transitions from business-critical, on-premises as well as off-premises workloads and applications on Public Cloud environments. It also represents a so-called multimodal operating system platform, in which traditional infrastructures, software-defined infrastructures (SDI) and application-oriented architectures can be operated or used in co-existence. And all this is on a uniform code base. In addition, SLES 15 for SAP Applications connects containerized and traditional development environments, including the combination of legacy applications and micro services. This version also provides improvements in the following areas: minimization of downtime, optimization of system performance and simplified deployment/management of SAP HANA systems. SAP itself uses multiple Suse SDI solutions, for example in SAP Hana Enterprise Cloud (HEC), in SAP S/4 Hana on-premises or in the provision of SAP S/4 Hana in the Public Cloud.

Data and Storage Management: Cornerstones for on-premises and Cloud SAP deployment

Hybrid Cloud base

Cloud file storage and data management services are fundamental cornerstones to implement a SAP Hybrid Cloud computing product in digitalization.

SAP customers benefit from a holistic NetApp data management architecture.

By Thomas Herrmann, NetApp

We can certainly describe it as a milestone: namely the announcement of general availability (GA) of Azure NetApp files at the Amsterdam NetApp summit at the end of May. Globally, the new offering is the first Bare Metal Cloud file storage and data management service – an exclusive Microsoft IaaS and PaaS Cloud offering, Azure-native and based on NetApp technologies and physical NetApp hardware or based on the NetApp ONTAP data management software. Companies can migrate their enterprise workloads into Azure Cloud and operate them there. This is also applicable to databases, SAP applications or high-performance computing applications. And this is without any changes. This is made possible thanks to intensive development work and investments from Microsoft and NetApp, who have been working closely together for more than 20 years.

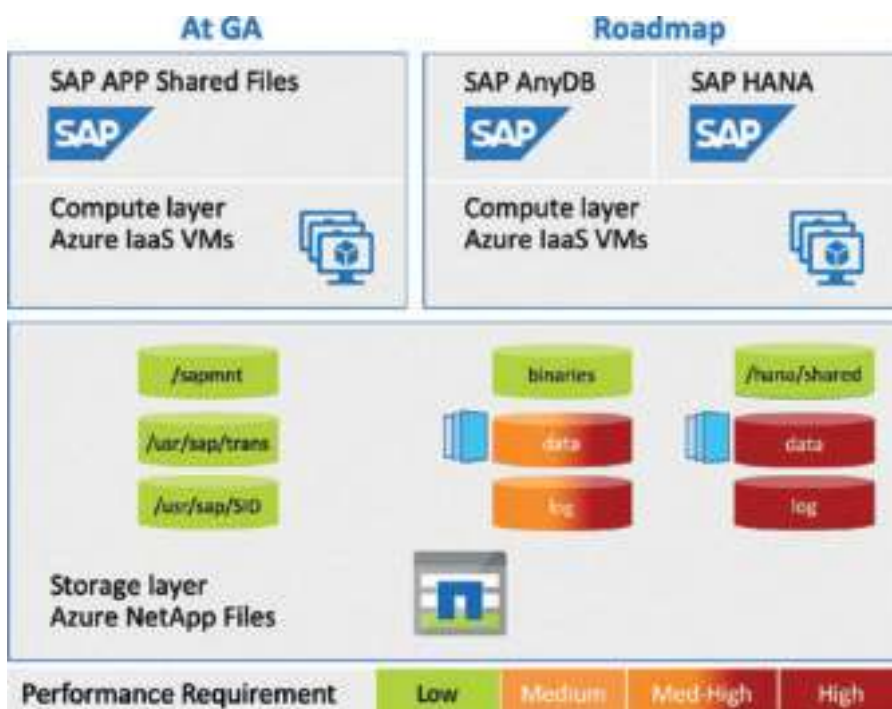
Preview Mode customers, some of them from Fortune 100 companies, say the following about the Cloud usage of Azure NetApp files: expectations have been exceeded because we see five times better performance compared to on-premises deployment. Similarly, many early adopters are impressed with options for massive capacity scale-up and scale-down and variable capacity performance usage options in Public Cloud-only deployment.

Azure NetApp Files will certainly be a trigger for many companies from the SAP community to shift more SAP workloads into the Public Cloud or to promote Hybrid Multicloud use cases – including the migration of complete SAP infrastructure or SAP data centers into the Cloud, Microsoft Azure in this case.

By using Azure NetApp Files, file system sizes of up to 100 TB can be deployed in an Azure-NetApp file share. Hana-SAP



Thomas Herrmann is Business Development Manager, NetApp.



ONTAP-based solutions with a uniform code base for integrated data and storage management for Cloud deployment or in Microsoft Azure. Hana support for deployment in the production environment (Hana certification) will follow soon.

certification of Azure NetApp Files is underway. Certification of AnyDB is already available.

Proven functional advantages

NetApp aligned itself many years ago to supplement gold standard solutions for the on-premises world with solutions for the Cloud and to provide mixed operating models or concepts of Hybrid Multicloud computing. And to act as Hybrid Cloud leader.

Starting point: proven NetApp functional advantages from which companies extract financial benefits globally. For example, this includes compression, data deduplication, cloning or integrated data back-up with continuous availability/high availability, including storage-based back-up, high-end performance as well as

maximum scaling with the storage operating system Clustered Data ONTAP and SaaS variant Cloud Volumes ONTAP, which is also part of the Azure portfolio and can also be used.

The technical basis for this is the Data Fabric platform as well as the bundling of data services, which ensure an end-to-end connection in on-premises as well as Cloud environments with comprehensive functions.

Data management in the connected environments is significantly simplified and makes the process completely transparent. With an effect that is crucial in the digital age: transformation projects – the stringent use of digital Core SAP S/4 Hana or even C/4 Hana or the pushing of DevOps models – can be implemented quickly, easily or within a short implementation cycle.

Uniform code base

Practically identical ONTAP with the same code base is used for NetApp Cloud solutions, Cloud Volumes ONTAP as well as Azure NetApp Files and this code base can also be used on-prem as a core element for integrated data management. There is also a modified version for Cloud consumers. Thus customers are in a position to access „hardened“ NFS that is specially designed for SAP and to use ONTAP features such as Snapshot and Cloning. Backups for restore/recovery as well as SAP clone systems can be created with the touch of a button. Or users have the option of shifting data into object stores for long-term archiving.

NetApp has used recent developments to ensure that copies of data are implemented as well as secure and efficient data migration and required data synchronization in combination with hybrid Multi-SAP Cloud computing.

SAP customers, who are using data management/storage systems from other providers in their SAP on-premises environment and prefer NetApp Cloud Volumes ONTAP on Azure or Azure NetApp Files, are supported with proven NetApp transfer solutions/migration services. With NetApp Cloud Sync.

cloud.netapp.com

Also have a look at the community info on page 74

NetApp
Data Driven



SAP users are increasingly using SAP on Microsoft Azure

Powerful

Azure usage is increasing in general and in particular among SAP users. There is a requirement-based IaaS offering of Public Cloud services for SAP deployment.

By Markus Kruse, Microsoft

Festo is doing it. The GEA Group and Daimler are also on board. More and more companies from different industries of the SAP community in German-speaking countries and worldwide are using Infrastructure as a Service (IaaS) offered by Microsoft in Azure for SAP Hana. These companies are also using other Azure services that can be integrated in SAP.

This was highlighted by the result of an investment survey that was conducted for German-speaking SAP user group DSAG at the beginning of this year. The participants were asked about their preferred choice of service providers for Cloud computing. The majority of the survey participants mentioned Microsoft Azure as the preferred solution. Or these numbers were published during the customer event Sapphire Now 2019 at the beginning of May: more than 90 percent of Fortune 500 companies are now using Microsoft Azure and SAP.

The objective or even the guiding principle of Microsoft is nothing more and nothing less than to provide the best available infrastructure for SAP Hana or SAP Hana-based applications and to provide the best possible support to companies for their digital transformation projects or ERP modernization attempts.

Customer-oriented community of values

SAP and Microsoft are working closely for Azure with proven methodology to achieve this objective and provide a best-of-class solution portfolio. SAP and Microsoft have more than 25 years of close collaboration in this regard.

The customer-oriented community of values by Microsoft and SAP expresses itself in multiple ways. For example, Microsoft has the most Hana-certified IaaS service offerings, namely 25 VM configurations as well as special Bare Metal instances, from 192 GB to 24 TB in scale-up and up to 60 TB in scale-out. In this context, Microsoft provides different types of Azure virtual machines as well as dedicated Hana Large Instances, optimized for different requirements

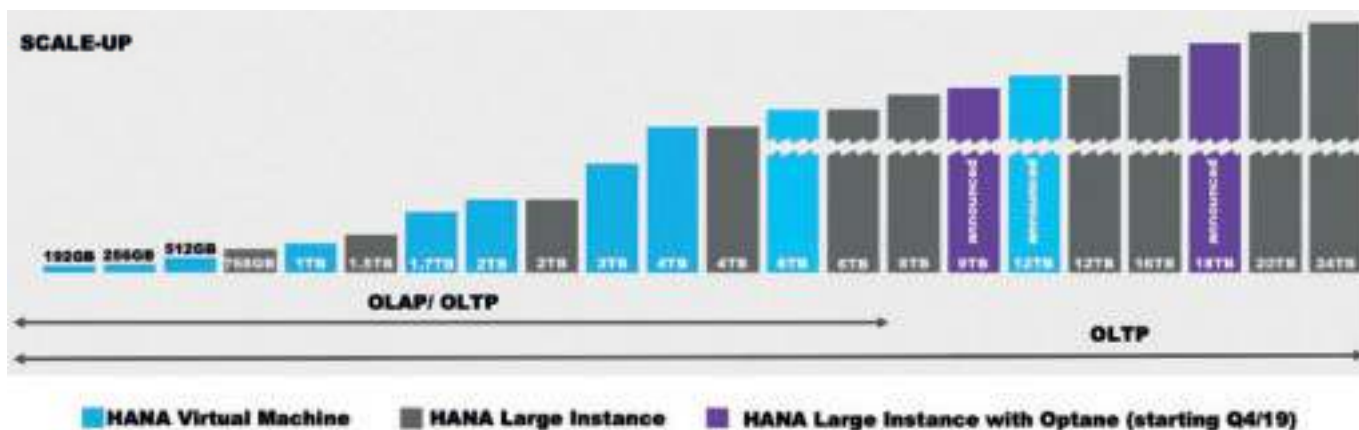


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(use cases) for SAP deployment. Microsoft supports customers and partners with reference architectures to optimally fulfill customer specifications of SLAs and requirements with reference to high-availability and disaster recovery.

In addition to the certification of Hana-based SAP systems in conjunction with Linux operating systems, numerous combinations with traditional databases (AnyDB) are also provided in combination with Windows Server SLES and other Linux derivatives.

New addition: Azure NetApp Files (ANF), globally the first Bare Metal Cloud file storage and data management service – an exclusive Microsoft IaaS and PaaS Cloud offering, Azure-native and based on NetApp technologies and physical NetApp hardware or based on the data NetApp ONTAP data management software. Overall, Microsoft has the most comprehensive and globally-distributed regional network with SAP-certified infrastructure. It covered 54 regions as of May. This also includes 26 Hana-certified systems. 8 additional regions are being planned by the end of this year.



Virtual Machines: From 192GB to 6TB memory (12TB announced), 32TB scale-out

Dedicated HANA Large Instances: From 768GB to 24TB memory, 60TB scale-out

Hana on Azure: the largest portfolio available on the market. Azure offers Hana-certified systems with different storage capacities.

Building on achievements

Microsoft and SAP are constantly striving to improve SAP-on-Azure deployments and to optimize them further. The fact of the matter is that Microsoft has invested more than a billion US dollars in a few months to expand Azure and uses approximately the same amount for (Cloud) Security. These huge investments can benefit each SAP-on-Azure customer. A new innovation: simplifying the integration of Azure Active Directory and SAP Cloud Platform (SCP). This provides secure and

comfortable access to SAP services and applications. This was recently announced at the Sapphire Conference in Orlando along with a series of additional innovations for SAP on Azure. These innovations include extending the Azure portfolio with larger virtual machines, the availability of SAP Data Custodian in Microsoft Azure or even supporting Azure Backup for Hana.

The momentum to implement business-critical SAP Workloads in Azure for SAP on Azure is huge and is constantly increasing. With Azure services, SAP users

now have a tool to implement their digital transformation with SAP in a quick, secure, efficient, and cost-effective way. Microsoft also offers value add to SAP customers by integrating additional Azure services and Microsoft solutions such as Office365, SharePoint or Power BI. SAP customers are supported either directly by Microsoft or by certified Microsoft Cloud Service Providers (CSPs) when it comes to the planning and implementation of their Azure deployments.

www.azure.com/sap

Managed Service SAP on Azure: from planning, design and set-up to orchestration and operation

Experienced support

There is a tradition when it comes to the outsourcing of IT work processes in SAP infrastructure operation. Anyone can access Managed Service SAP on Azure as an external service and practically keep their back free in the Hybrid Cloud era so they can concentrate on core activities.

By Michael Scherf, All for One Group

The potential uses of Cloud services for SAP customers are already numerous and they are constantly increasing. SAP customers are faced with one important question when it comes to SAP Hana and S/4, even when shifting from SAP to a Cloud service provider: How can I use Cloud services in a meaningful or appropriate way for my requirements?

In this context, the trend is shifting towards Hybrid Multicloud environments and specifically to infrastructure, with Infrastructure as a Service, in short: IaaS. Another area of focus is Platform as a Service: PaaS, also as SAP offerings via the SAP Cloud plat-

form. The fact of the matter is: the service offerings of Public Cloud providers are increasing or improving for the SAP environment and practically permanently with reference to IaaS, especially from a financial perspective. On the other hand, the use cases for appropriate and beneficial IaaS application are increasingly options for Hana and S/4 deployment. The enhanced benefits for customers from the increased collaboration of SAP between Microsoft are evident.

Public Cloud offerings from Microsoft Azure are especially popular among SAP customers. Even the investment survey of the SAP user group DSAG in German-speak-

ing countries (which was conducted at the beginning of this year) has proven this. It is important to note that topics and specific questions related to Cloud usage in SAP infrastructure increasingly matter to customers. This was evident during the recent NetApp Summit 2019 and the „Modernize SAP infrastructure“ roadshow organized by the All for One Group, which also addressed SAP-on-Azure scenarios.

How to plan and implement?

How to use Cloud for each SAP infrastructure? How to plan and implement such a

project? What are potential pitfalls to avoid? Or: what will be the required cost and efforts and what are the benefits that can be achieved through Cloud IaaS? Many SAP users are faced with these and similar questions when it comes to Cloud usage.

Overall there is an increased need to expand Cloud knowledge. Some customers would like to explore the Cloud path on their own. Other customers just want to concentrate on core activities. For example, they might want to bundle the existing resources to cover application and process ideas in combination with SAP S/4 Hana and to outsource SAP infrastructure operations to an experienced managed service provider. This also includes complete outsourcing. All for One Group acts as an SAP total solution provider and provides a bundled service for Cloud deployment to SAP customers with the service package called „Managed Service SAP on Azure.“ This can also be a partial package. All for One Group is also a Microsoft Cloud Solution Provider (CSP). The service offering is oriented towards the customers of All for One Group and to other customers of the SAP community. It covers all aspects of „plan, build and run,“ including

Application Management or Service Management based on SLAs defined in Azure Cloud. In addition: intelligent integration of SAP and Microsoft applications (for example Fiori/M365, IoT and more), which is implemented with the help of Azure as a platform, has strategically relevant value adds as its core, which are in turn based on the digitalization strategies of the customer.

Bundled SAP and Microsoft Know-How

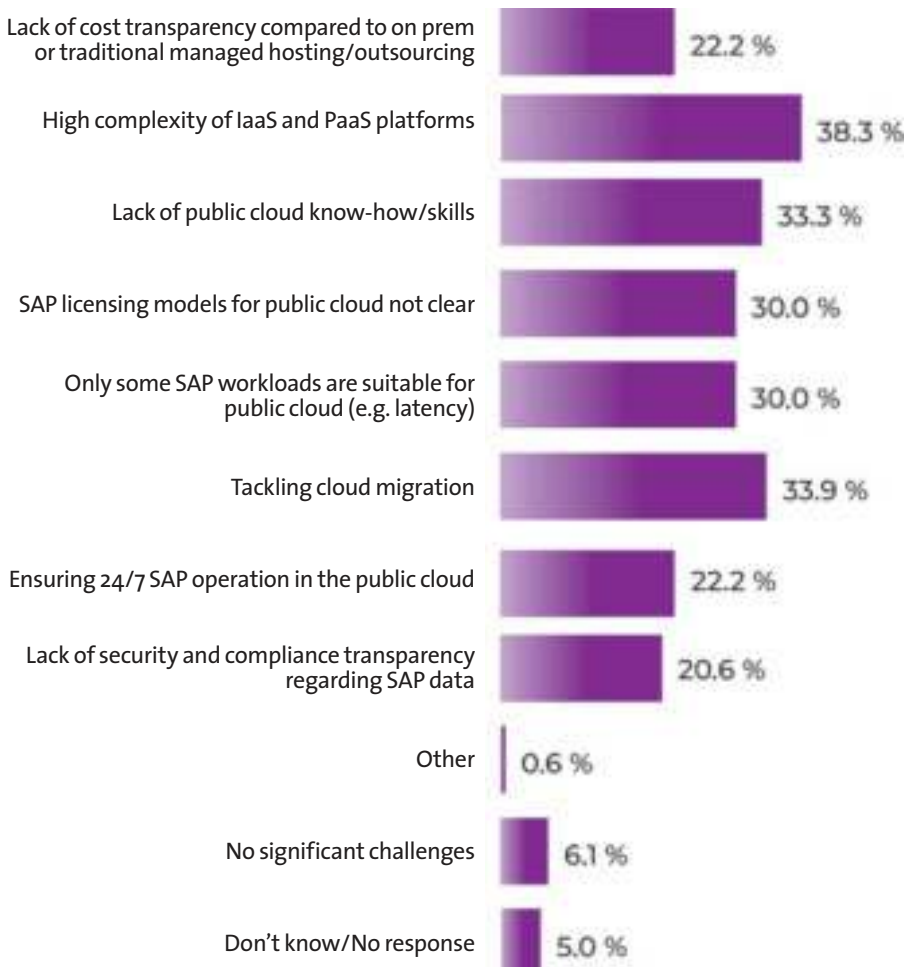
The solution is strengthened by long-term experience and knowledge as a hosting and outsourcing provider and as a Managed Services specialist with more than 2500 system environments (on Cisco/NetApp and in Azure). These are supported by the All for One Group for domestic and international SAP customers in major data centers at Germany's biggest Cloud data center in Frankfurt.

Likewise, it also supports Managed Service SAP on Azure based on profound knowledge and comprehensive practical experience. It takes application and infrastructure requirements for SAP into consideration and provides support for Microsoft in



Michael Scherf is Managing Director of All for One Group.

conjunction with Azure Cloud. Managed Service SAP on Azure covers consulting services and architecture consulting as well as design/set-up, orchestration and operations services for SAP IaaS and PaaS Cloud usage. And all this is from an organizational, technical and operational and application-specific perspective.



Results from the report „SAP operations in the Public Cloud“ by Crisp Research in cooperation with All for One Group for the question: „What are the challenges you face when it comes to the operation of SAP solutions on IaaS/PaaS platforms in the Public Cloud?“ n = 180

Cloud Usage in Practice

According to the knowledge and experiences of the All for One Group, Cloud usage scenarios are increasing almost constantly. Customers and even Managed Service providers are using Azure today as part of SAP backup and restore or for disaster recovery as cost-effective infrastructure. Or to operate SAP development, training and test systems in the Public Cloud. But the fact of the matter is: some customers are already productive globally on Azure. And more and more companies are thinking about using Cloud for productive operations. For example: there are active international roll-outs of SAP systems, regardless of where a branch or a subsidiary company is located. One can say: Azure is marching ahead and is already there. It is applicable everywhere SAP S/4 Hana is in focus. Many IT managers are faced with an expiration date for their conventional infrastructure and see an opportunity to shift to Azure.



Cloud Bridge for setting up and using SAP Hybrid Cloud system environments

Effective tool support

With IT tools it is now possible to provision SAP on-premises systems completely as digital twins and to transfer these into a Public Cloud and operate them there. And you can transfer them back to an on-premises environment if needed. Everything is highly automated.

By Jörg Engelhardt, LNW-Soft

Numerous SAP basic tools/additional solutions provided by SAP partners have been created either as part of projects for SAP customers, due to the expansion of in-house solution offerings for the SAP environment, or from experience in consulting and operational projects. This has also been augmented due to requirements to supplement SAP basic tools as well as partner solutions from the hardware sector. LNW-Soft aimed at a mix of both requirements few years ago. The motto of LNW-Soft is: „From the practice for the practice“.

Hybrid Cloud deployment requires SAP basic tools

Naturally the SAP Hybrid Cloud era is not connected with a complete paradigm shift for SAP basic tools. It is more about linking or expanding the requirements of Hana on-premises operation with Public Cloud or Multicloud use. With the objective of being able to exploit the potential of Hybrid Cloud deployment in the most optimal way. Spe-

cifically, LNW-Soft has expanded its Proactive Management Suite, used by SAP users with a module called Cloud Bridge, which is provided for Microsoft Azure Cloud.

The Cloud Bridge can be used to do the following with just the press of a button (and offers much more than what is conveyed by the term bridge): With this PMS module it is possible to provision a clone of an existing on-prem SAP system environment/infrastructure with all the resources required for operation (compute, storage, operations environment such as DNS, LDAP etc.) and SAP-specific content (SAP Hana Database, SAP application instances and much more) and to transfer these into Azure Cloud („Lift and Shift“). The subsequent SAP operation is also implemented in the Public Cloud infrastructure through the SAP operating concept integrated in PMS: for example essential operational areas such as Backup/Restore, Monitoring, HA or Hana HA are guaranteed.

Users also have the option to create a replica of the original based on the requirements (use cases) and to operate these replicas completely in Azure Cloud. For example, as a Disaster Recovery System (DR) for supporting and ensuring Business Continuity processes and to minimize in-house data center capacities.

If additional SAP environments are required and if on-prem capacities are already exhausted, PMS can be used to provision the SAP system environment/infrastructure into Azure Cloud in the shortest possible time and to operate it from there. This is not all. If required and if on-premises capacities allow, this SAP environment can be quickly transferred back to the on-premises environment and reused. Thus users of the PMS suite benefit from the scope of Cloud Bridge architecture because they are already familiar with PMS logic



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and features (like Backup and Restore or Hana-HA). For example, NetApp for SAP users with Cloud Volumes ONTAP, who already use PMS as the solution for generating added value. But it is equally beneficial to PMS users, who use Cloud Volumes Services/Azure NetApp Files.

Cloud or On-premises is not the issue here

Use cases (PMS Content) already used by PMS customers in an on-premises environment are also available for the Public Cloud. In other words: PMS users do not have to miss out on known and proven functions. In addition, Cloud Bridge also enables relocation among and beyond Cloud providers with the same functional scope. Furthermore, Cloud advantages propagated by Cloud Bridge can be verified in real-time. That is, by comparing the Cloud service provider's services (for example performance or pricing) with customer-specific criteria. Naturally, users have the option of using Cloud Bridge as a separate and stand-alone PMS solution, also without Cloud provider/vendor lock-in.



PMS automates and controls various complex work processes and reacts automatically to critical and expected events. Cloud Bridge is integrated.

www.lnwsoft.com

Open Source and Suse for SAP technologies on Azure as well as in on-prem environments

Beneficial multiple use

Linux as an operating system platform as well as other Open Source technologies as core elements are used in SAP infrastructures. This is applicable for Cloud as well as on-premises deployment. Thus, they are equipped for the Hybrid Multicloud age.

By Jens-Gero Boehm, Suse

Open Source arrived in the SAP world a long time ago. The Walldorf-based software company contributed to this development when it made the decision to only use the Linux operating system platform along with SAP Hana and Hana-based application solutions such as S/4.

And the trend towards Linux with Net-Weaver-based infrastructures with Any-DB has already provided the impetus for the deep penetration of Linux. The Hana figures quoted by SAP recently (during this year's Sapphire conference) speak to this significance. The company now has 50,000 Hana licenses. In addition to Linux, other Open Source solutions are used in SAP environments in conjunction with Data Science and the use of Kubernetes. Kubernetes is used for the orchestration of containers as part of SAP Data Hub environments.

From a technical perspective, the latter plays an important role in the SAP Data Hub. And that is in the form of the Suse solution Container-as-a-Service Platform, in short: CaaSP. It ensures flexible, simplified and automated options for delivering small services (micro services) with the help of containers, including the use of Kubernetes.

Two worlds, one operating system

Suse, as an Open Source innovator and exclusive Hana development partner, never questioned (even during the early days of Hana) providing Suse Linux Enterprise Server (SLES) for Applications not only for the SAP on-premises world, but also for the Public Cloud.

SAP customers are already implementing Hybrid Multicloud computing intensively with a uniform operating system platform or Operating System (OS) and are benefiting from this type of IT consistency based on a uniform code base. Especially in the IaaS environment. All far-reaching and partially unique functions of SLES for SAP Applications for mission-critical SAP deployment, which are

used in an on-premises environment, are also available for the Public Cloud. For example, the Live Patching feature. Security patches can be installed in the Linux kernel using this feature and without restarting the system. This basically means that optimal availability is guaranteed. SLES for SAP Applications can be used in all known or relevant Public Cloud environments. Even in Microsoft Azure. Here is where the ten-year-old strategic partnership between Suse and Microsoft is an advantage. Against this background, it is not really surprising that Suse as the leading SAP Linux provider that announced support availability of SLES for SAP Applications for SAP Hana Large Instances on Microsoft Azure.

The provision of SLES for SAP Applications for SAP Hana Large Instances on Microsoft Azure was preceded by complex development work. Therefore, it is possible for SAP customers to use Hana configuration along with SLES for SAP Application via Microsoft Azure for sizes greater than 0.5 TB. It is planned to operate or support SAP Workloads/Hana environments via Azure with capacities of up to 60 TB (in scale-out).

Close cooperation with Microsoft

Suse and Microsoft face increased requirements from SAP customers to use Hana or Hana-based applications as part of their Hybrid Cloud deployment or in combination with IaaS. For example in projects to consolidate multiple SAP ERP/ECC systems in an S/4 system or in data center modernization projects. Suse, as the leading Linux distributor and SAP Open Source pioneer with its operating system platform SLES for SAP Applications, has supported Intel Optane DC Persistent Memory in conjunction with Hana since mid-January and even Microsoft has agreed to provide support. Compared to traditional technology (with the use of SSDs), the Persistent Memory Technology provides new or optimized applications for data access and data storage to



Jens-Gero Boehm,
Director Partner
Sales Central Europe, Suse.

SAP customers. Linux and Hana systems can be managed with Suse Manager, which can be used in Azure. It is possible to administer, monitor and control Hana environments with a high level of automation using Suse manager, including automation of infrastructure patches and updates.

Other Suse solutions such as Suse SLES for HPC deployment or Cloud Application platform are also available on the Azure marketplace. Different and flexible pricing models are available for Suse solutions in Azure – including Azure Reservations for Suse – for a period of one or three years.

Also have a look at the community info on page 76





Cisco pushes multiple Hybrid Cloud use – primarily Security, Multicloud and Automation solutions

Superior bridging

Three pillars – security, multicloud and automation (including provided solutions) - play the most important role in the Cisco data center architecture stack for supporting multiple Hybrid Cloud deployment. They are not isolated but are connected to each other or build bridges.

By Joy Aboim, Cisco

Digitalization means there is increased need to work with massive data volumes. Companies have to adapt to this situation. And not only that. As an example, experiments by Gartner predict that infrastructures and IT operation must not only be optimized on a continuous basis, but efforts should be made to keep costs under control.

Optimum between on-premises and Cloud

This is also applicable for multiple Hybrid Cloud computing where it is important to find an optimal solution between on-premises and Cloud use – between core on-prem workloads and Cloud services.

It has to be assumed that companies will increasingly use multiple Cloud services, whether it is IaaS,

SaaS, PaaS or DBaaS solutions. It is very clear that off-prem workloads, like AI, analytics or IoT, will show an increasing trend. As a result, data centers no longer represent fixed sites or locations where data is generated, processed or used. Cisco addresses this paradigm change and has developed a strategic perspective: solutions for a holistic IT infrastructure based on modern technologies; support of IT infrastructures through automation solutions

to use IT as a strategic business enabler; and the provision of integrated security solutions to protect enterprise applications and data in an effective manner.

Support for SAP modernization

Cisco is one of the preferred partners for SAP and its customers – for NetWeaver and in the Hana-based SAP world - with multiple SAP certifications. Cisco's objective is to provide support to the user companies for accelerated modernization of their SAP deployment. In this regard, Cisco focuses on providing an integrated approach for operating concepts in the digitalization age to customers along with new business models, data sources or analytics tools.

Data Center Stack

The Cisco data center stack is based on the three strategic pillars mentioned above: Security, Multicloud and multiple infrastructure automation layers (see the adjacent figure). From a solutions perspective, AppDynamics (AppD), CloudCenter, Cisco Container Platform and Cisco Workload Optimization Manager (WOM) provide a bridge across the Public Cloud and on-premises environments. ACI, NAE and Inter-



Cisco-Data-Center-Architecture-Stack is based on the three pillars of Security, Multicloud and Automation.



Joy Aboim, Data Centre Solutions Business Development Manager, Cisco.

sight support policy-supported automation and consistency. Cisco Nexus, UCS-Server, HyperFlex HCI and convergent infrastructure solutions are also part of the data center stack. Just like FlexPod All-Flash Solutions for SAP with integrated NetApp systems. And Cisco solutions, such as Tetration, Stealthwatch, Umbrella and Next Generation Firewall, ensure security across on-premises and Public Cloud environments.

www.cisco.com

Accenture is driving SAP-on-Azure Hybrid Cloud deployment forward

Large SAP Enterprise Workloads

Changed business requirements are the triggers for companies to outsource SAP application use or operation in the Cloud. SAP on Microsoft Azure and Accenture provides infrastructure services for SAP Hybrid Cloud deployment, even for large SAP Enterprise workloads.

Accenture focuses on the fact that companies require an efficient and effective way to transform and modernize their SAP landscape. The background from the perspective of the long-term strategic SAP partner: changed business requirements in the digitalization era with the need to operate SAP solutions in the Cloud. And to exploit the advantages offered by the Cloud. Namely cost reductions, increased flexibility and practically limitless scaling options, but also optimized and improved analytics options as well as access to Internet of Things resources/capacities. Furthermore, there is the potential to optimize the agility and flexibility of SAP systems.

And here the preference is a Cloud platform that offers superior security standards and compliance guidelines. It must be ensured from the beginning that large and very large SAP Hana workloads can be handled in a Cloud so that even large enterprises with their special requirements such as SAP/S4 operation can benefit from Hybrid Cloud use and meet their business requirements.

Comprehensive SAP and Microsoft Expertise

The experienced and leading SAP and Microsoft solution provider feels it is well equipped to support companies with digitalization, including Hybrid Cloud transformation. This is also confirmed by the fact that multitenant Hybrid Cloud environments were certified by SAP and Cloud experience from a Private Cloud has been integrated into Accenture services and solutions.

For example, integrated into S/4 Hana Cloud Solution, with short „Infrastructure-Plan-Build-and-Implementation Time“ by using Microsoft Azure, designed for Large Enterprise Workloads and the use of Azure offering Hana Large Instances (up to 24 TB in scale-up and up to 60 TB in scale-out).

They enable Public Cloud deployment or management of high-volume SAP workloads on dedicated Bare Metal hardware (Compute and NetApp Storage, Azure NetApp Files), including operating

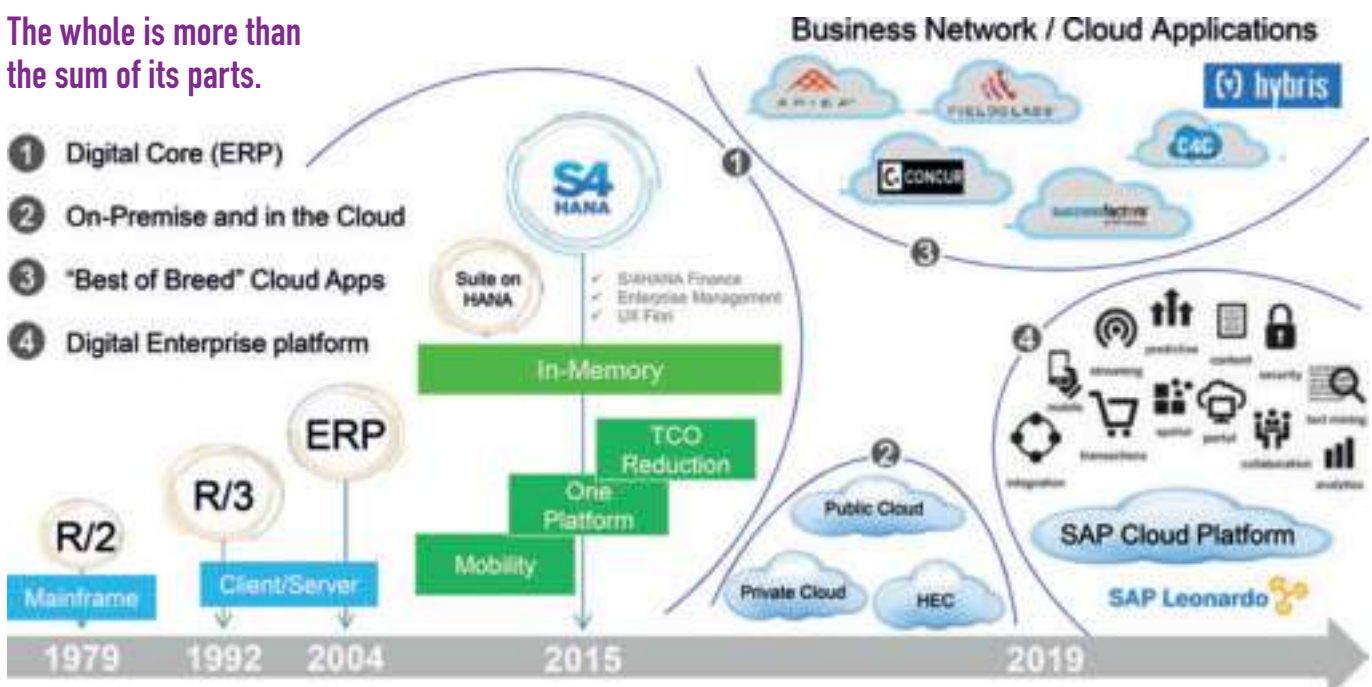
system platform and SAP Application Layer, hosted in native Azure VMs. 18 different SAP topologies are supported here.

In this context, it is possible to provide convergent infrastructures for SAP workloads with high performance in Azure and the help of deployments (configurations) automated with the one-touch principle. And this is based on gold standard infrastructures for Hana and Hana-based application solutions.

Accenture has identified the following as business advantages due to Infrastructure-SAP-On-Microsoft-Azure deployment (and Hana Cloud Solution): a speed-to-market, increased RPO/RTO performance, a reduction of backup times including optimization in terms of disaster recovery and business continuity, capex and opex minimization, comprehensive data provisions according to industry compliance and improved SLAs through proactive maintenance. (pmf)

www.accenture.com

The whole is more than the sum of its parts.



... as-a-Service: Accenture shows the whole picture when Digital Core, On-prem, Best of Breed and Digital Enterprise/Leonardo are added.