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Solution Brief

FlexPod for SAP Applications—Elevating the SAP Landscape to the Cloud

The Challenge

The trend toward virtualization and cloud technologies is ubiquitous and a top priority of CIOs[1]. Businesses running SAP are no exception. According to SAP internal research, 70%[2] of all SAP customers consider virtualization and cloud technologies when shaping the future of their data centers.

The decision to virtualize SAP environments and start the journey to the private cloud is driven by business and IT management pressures. Business needs and requirements change frequently and on short notice, forcing IT to become flexible enough to expand and contract IT and application services at a moment's notice. Small applications might need to grow rapidly, while others need to scale down. Waterproof service-level agreements drive IT organizations to provide high availability. Furthermore, the cost to run, adjust, and maintain SAP landscapes is growing rapidly. Therefore, companies are looking for ways to reduce their financial burden, as well as measure and charge back cost based on actual usage.

IT organizations need to evolve traditional SAP environments with "siloed" architectures into flexible and efficient service delivery environments to meet business requirements. Consolidation, virtualization, and standardization pave the way to a shared IT infrastructure, the key to greater business agility. Automation and optimization add to the bottom line and fulfill the cloud promise.

SAP applications are business or even mission critical. Any change on a production system is tested over and over to avoid errors or failures that might impact business operations. The transformation of SAP platforms into cloud-ready shared IT infrastructures requires even more—a trusted cloud reference architecture delivering:

- Secure isolation of tenants and systems
- Seamless provisioning and deprovisioning
- Granular data protection
- Unlimited data mobility
- Monitoring and automation management
- Accounting and chargeback

1. Gartner Executive Programs, "Leading in Times of Transition: The 2010 CIO Agenda," January 2010
2. http://www.cloud-practice.de/news/ausbau-der-infrastrukturen-fuer-virtualisierung-und-cloud-computing

"We turned to SAP, Accenture and NetApp to help us create a strong and flexible application platform. As a result, we were able to reduce program risk, provide infrastructure scalability, and create a lower-cost operating model."

Bert Odinet
Vice President and Chief Information Officer, Freeport-McMoRan Copper & Gold Inc.

The Solution

FlexPod for SAP Applications

FlexPod for SAP Applications brings the power of the FlexPod concept to SAP customers and enables a safe transition to the cloud. FlexPod is a unified, pretested, and validated data center solution built on a flexible and secure shared IT infrastructure using leading technology from NetApp, Cisco, and VMware.

The solution integrates with SAP Adaptive Computing and combines NetApp's unified architecture, advanced data protection, and provisioning technologies with the Cisco Unified Computing System™ server platform and Nexus switches and VMware® vSphere™ enhanced by its vendor-specific management software.

The architecture offers secure multi-tenancy capabilities that deliver the security and efficiency of a shared IT infrastructure, enabling isolated landscapes for a variety of use cases. The solution improves business agility by providing application and data mobility and by accelerating SAP lifecycle management.

FlexPod for SAP Applications is built on virtualization, standardization, and automation to reduce risk and lower the total cost of ownership (TCO). Virtualization encompasses applications, compute, network, and storage components to achieve almost boundless flexibility. Data protection and disaster recovery are integrated across the entire stack to increase the availability of SAP landscapes in the cloud. The solution design is completely modular, providing SAP customers with the flexibility to transform their infrastructures at their own pace and needs.

FlexPod for SAP Applications differs from other virtualized data center offerings by providing:

- An SAP-aware infrastructure offering a variety of use cases from secure multi-tenancy to automated and fenced SAP system copies
- The ability to switch securely between physical and virtual servers
- Data mobility across the entire stack
- A unified, pretested, and validated infrastructure, including compute, networking, and storage technologies
- Integrated data protection and disaster recovery for nonstop services
- An open design management framework that integrates with third-party infrastructure management solutions

Secure multi-tenancy

Secure multi-tenancy is highly valuable for a shared IT infrastructure. It allows you to securely partition a single system to support multiple tenants, such as departments, work groups, or security zones. Secure multi-tenancy applies very well to SAP landscapes. It allows you to:

- Securely isolate different business units, subsidiaries, and sensitive systems such as HR
- Fence systems for repair, test, rollout, or upgrades
- Benefit from the cost efficiency of shared resources across the entire stack

FlexPod for SAP Applications is highly flexible: It allows you to begin with a single tenant and add more tenants over time. Or you can start right away with multiple tenants for your SAP landscapes. Whatever your initial business needs, the solution dynamically scales up and down.

NetApp, Cisco, and VMware created the industry's first secure multi-tenancy capability that includes all the server, storage, and networking hardware and software necessary to facilitate sharing, reuse, and dynamic resource allocation in a multi-tenant cloud environment. This purpose-built capability has been tested, integrated, and documented via a Cisco® Validated Design.

Application and data mobility

Virtualization of the entire stack is the key to application and data mobility, providing nonstop operations. It allows
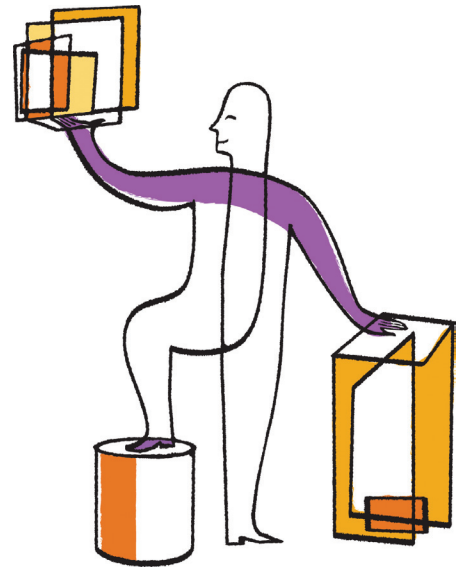
you to increase higher performance requirements by reallocating data or virtual machines (VMs) and to minimize downtime when moving data, applications, or even complete tenants to new hardware. A unique feature of FlexPod for SAP Applications is the option to securely shift SAP databases from VMs to physical servers to achieve specific performance requirements.

Provisioning of infrastructure components
The solution enables you to build SAP tenants and services according to your specific needs or to just use standardized networking and storage components. You can define storage volumes, add a backup service, choose from Linux® services, or select a specific networking configuration. Preconfigured templates, including server OS, SAP host agents, and data protection, enable the provisioning of an SAP service-ready image. To speed up delivery times, you can automate the process through rapid cloning of the templates, including all of their tenant-specific attributes.

Integrated data protection
FlexPod integrates data protection at the storage level, releasing the server layer from the backup load. NetApp® Snapshot® technology delivers granular, incremental data protection, is highly space efficient, and provides backup

and restore within minutes, boosting SAP data availability and saving time. It seamlessly integrates with VMware and SAP for backup automation and enables data replication to secondary storage sites.

Automated SAP system copies
A NetApp Snapshot copy from any primary or secondary storage can be used to accelerate the process of delivering SAP system copies for QA, development, or test. Refreshing an SAP system takes just minutes, including SID change. SAP postprocessing is fully automated, releasing administrative resources.

Provisioning of fenced SAP systems
You can nearly instantaneously copy SAP systems or landscapes for a variety of purposes and provision them within minutes, with:

- Fenced clones of production systems for test and repair
- Preconfigured SAP templates for training, development, sandbox, rollouts

The secure multi-tenancy of the FlexPod solution and its isolation capabilities eliminate the need to change the SID. Deploying rapid provisioning, FlexPod for SAP Applications leverages the concept of factory automation so you can reduce your time to market and minimize risk for your production systems.

End-to-End Cloud Management
As a cloud reference architecture, FlexPod for SAP Applications provides an end-to-end open design management framework that integrates with existing third-party infrastructure management solutions. Open APIs facilitate integration with management applications such as BMC Cloud Lifecycle Management.

BMC Cloud Lifecycle Management provides a service-provisioning and configuration-management layer for this FlexPod solution that fully automates the delivery of SAP landscapes in the cloud. BMC Cloud Lifecycle Management includes all the functionality required to build a flexible, highly customizable cloud environment that meets users' needs and your business requirements. Fully automated processes orchestrate delivery of cloud services, enabling compliance with enterprise and regulatory governance. The self-service user portal along with policy-based placement of service requests provides rapid and reliable provisioning of services as well as optimized use of resources across your entire IT environment. The administrative portal provides central cloud service visibility and maintenance.

Accelerate Time to Value in SAP Environments

FlexPod for SAP Applications helps midsize and enterprise customers as well as service providers accelerate their SAP lifecycle management. You can provision complete landscapes and systems in a fraction of the time traditional copy processes take. And you can deprovision systems literally by a mouse click and without any risk. For example, the rollout of new applications or a software redesign can be done in a shorter time and add to a faster return on investment.

Through its unified, pretested, and validated design, FlexPod shortens purchase and sales cycles and simplifies deployment. Its future-proof Ethernet-based network fits right into your current infrastructure, eliminating the cost of replacing your existing technology and protecting your investments. The modular solution design allows flexible starting points. You can start small with a single tenant and add or grow tenants over time. The solution is designed to scale securely to any size. And it paves the way to transform your SAP organization into a service center for your company.

Standardization and automation reduce the risk of running SAP landscapes in a cloud and contribute to an overall lower TCO. The shared IT infrastructure at the core of FlexPod helps you to maximize efficiency and decrease costs through optimized asset utilization.

Rapid resolution to minimize disruption

Our cooperative support model provides a more streamlined response from Cisco, NetApp, and VMware to identify and rapidly resolve issues. Global 24/7 support provides expert technical support when needed.

Proven partnership

As industry leaders in storage, network, and server virtualization, respectively, NetApp, Cisco, and VMware, as well as BMC Software, have a powerful global presence and have been working together on a shared virtualized data center vision. Our collaboration has resulted in more efficient virtualization and cloud computing solutions and numerous jointly validated reference architectures. Together we've helped thousands of mutual customers improve agility and lower costs.

Open delivery ecosystem

You can choose from a broad network of world-class solution-delivery partners to implement FlexPod. These partners understand your business requirements and are certified and trained on NetApp, Cisco, VMware, and BMC Software as well as complementary technologies to deliver a complete cloud solution that fits your business needs.

About NetApp

NetApp creates innovative storage and data management solutions that deliver outstanding cost efficiency and accelerate business breakthroughs. Discover our passion for helping companies around the world go further, faster at *www.netapp.com*.

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