



White Paper

Optimizing SAP Workloads with NetApp

Accelerate projects, simplify operations,
and future-proof IT with NetApp solutions
for SAP

November 2020 | WP-7309

Abstract

In a data-driven world where everything is connected and businesses operate in real time, instant access to data and analytics is critical. Organizations striving to stay a step ahead of the competition rely on data from SAP applications for real-time insight into their business. Having a storage solution that supports SAP by providing simple, reliable access to current business-critical data—whether it resides on the premises or in the cloud—can be a game changer.

This white paper explains why NetApp is the best storage and data management solution for SAP and describes how SAP applications running on NetApp can help you accelerate projects and workloads, simplify operations, and future-proof your IT.

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Changing the Game

Data is the lifeblood of companies of all sizes and across all industries. Organizations rely on business-critical applications like SAP to power business and fuel growth. To unlock the most value from their SAP data, organizations are constantly searching for better ways to optimize and deliver that data.

But there are challenges to delivering data more efficiently. For example, how do you manage the time, expense, and risk associated with application and technology upgrades? In the near future, all enterprises that run in SAP environments will have to migrate to SAP HANA. How will you migrate to HANA without incurring downtime or losing data? As your company transforms, how can you effectively manage data across multiple on-premises and cloud resources, while meeting performance and security SLAs?

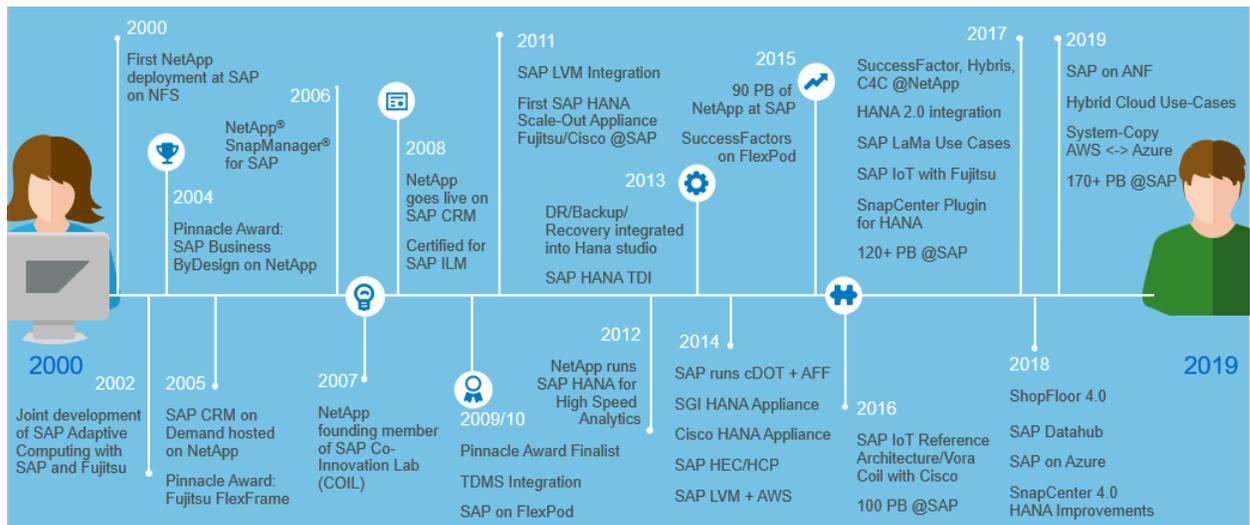
NetApp and SAP: Better Together

Whether you're considering digital transformation, exploring AI and Intelligent enterprise initiatives, modernizing your data center with SAP Data Hub, or migrating to HANA, NetApp has an SAP solution for every use case.

With nearly 20 years of co-innovation, it's no surprise that SAP runs best on NetApp (Figure 1). The NetApp® portfolio offers the broadest range of hybrid, multicloud options. A simple and consistent toolset, along with a data fabric powered by NetApp, makes it easy to manage data across your entire SAP landscape. Integrated data protection makes NetApp the only vendor to offer data backup, restore, and recovery capabilities in seconds for SAP HANA. This means that you can protect your business data with ease and efficiency, whether your data is on your premises or in the cloud, without affecting overall system performance.

Only NetApp can accelerate projects with faster provisioning and thin cloning, simplify operations with automation and near-instant backup, and future-proof your investments with the most options to leverage the cloud for better business results.

Figure 1) With almost 20 years of co-innovation, SAP runs best on NetApp.



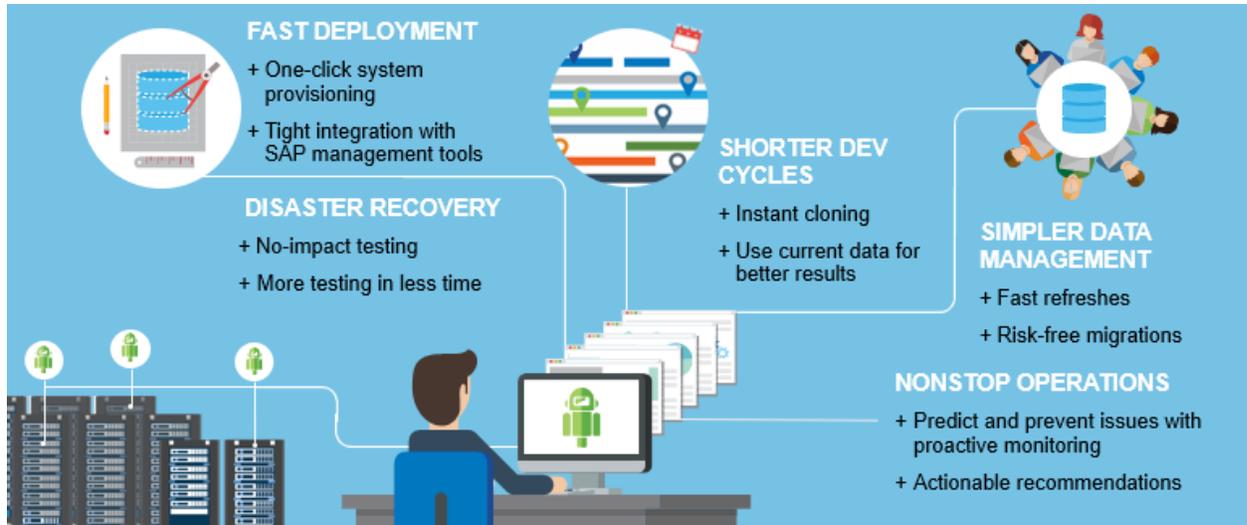
Accelerate SAP Projects and Workflows

To win the race with their competitors, enterprises need to accelerate projects and speed time to market. However, traditional approaches to SAP test and development system provisioning are based on manual

processes, which are time consuming and error prone. This results in delayed innovation and reduced ability to respond to business requirements.

Modernizing your SAP environment with all-flash systems from NetApp can help you deliver projects up to 8 times faster than disk-based solutions. NetApp AFF storage systems accelerate your SAP environment with the fastest unified scale-out all-flash array, with up to 7 million IOPS and latency of less than a millisecond. With the industry's fastest end-to-end all-flash arrays, NetApp high-performance, highly scalable AFF solutions enable you to support twice as many workloads while cutting application response times in half (Figure 2).

Figure 2) NetApp solutions offer efficiencies and automation that accelerate SAP workflows and projects.



Deploy SAP Projects in Minutes

Built-in automation enables faster deployment of your SAP projects with less risk of human error. Because NetApp AFF systems are tightly integrated with familiar tools like SAP Landscape Management (LaMa) and SAP HANA Cockpit, you can easily automate application-integrated workflows. For example, system provisioning and prototyping that typically takes days to complete is done in just minutes with one-touch, automated provisioning. Cloud volumes can be provisioned in just 8 seconds.

Shorten Development Cycles

Cloning your SAP data for test/dev can add hours (sometimes days) to the development cycle. With NetApp FlexClone® thin-cloning technology, you can clone the largest volumes in just seconds. Because FlexClone uses just a small amount of space for metadata and uses additional space only as data is changed, you don't incur the added expense of purchasing large amounts of extra storage capacity. You can create as many copies of your full production dataset as you need. If a test corrupts the data, you can start again in seconds, with nearly zero delay in development. And, because you can clone data from a primary site, an off-site backup, or a disaster recovery location, your test data is always up to date, enabling better results in less time. FlexClone technology also simplifies SAP refreshes and reduces migration risk.

Keep Your SAP Environment Up and Running

SAP applications are business critical. Any interruption to SAP workflows can bring the business to a halt. To maintain business continuity, a disaster recovery plan that meets recovery point objectives (RPOs) and recovery time objectives (RTOs) is essential. NetApp SnapMirror® replication technology is fully integrated with the SAP database to meet disaster recovery requirements.

Most organizations have a disaster recovery plan, but they may not know whether it actually works until it's too late. Halting the production environment for disaster recovery testing is not a viable option for most businesses. With NetApp, you can easily use current data to test your DR plan. Using FlexClone technology to clone the DR site, you can carry out a failover test without influencing or interrupting ongoing replication to the active DR site. Because FlexClone makes testing fast and easy, you can perform more tests in less time to maintain peace of mind that your data is protected.

In addition to keeping your environment up and running in the event of a disaster, NetApp solutions help prevent issues and downtime from happening in the first place. Predictive analytics and actionable intelligence using NetApp Active IQ® monitoring keep your NetApp systems operating at peak performance. Active IQ predicts and detects problems with performance and capacity and makes configuration recommendations to help optimize your SAP environment. By following Active IQ recommendations and mitigation plans, you can avoid bottlenecks and deal with issues proactively.

NetApp Solution in Action: Unistar LC

Unistar LC offers systems integration, fully managed IT services, and cloud computing solutions to businesses across Slovenia and beyond. Unistar is highly experienced in IT technologies and partners with all key software and hardware vendors. More than 70 experts help customers solve their IT and business challenges.

Industry: ICT solutions and services

Challenge: Facilitate cloud access for customers and innovate with new cloud services.

Solution: Deploy NetApp solutions to enable infrastructure as a service and platform as a service.

Benefits:

- Built a hybrid cloud “made in Slovenia” based on trusted brands and legal compliance
- Established SAP HANA as a service for many SAP business applications
- Reduced storage costs
- Expanded service offerings
- Improved ability to meet service-level agreements and avoided outage costs of €40,000 per day
- Simplified multisite data management with a data fabric enabled by NetApp

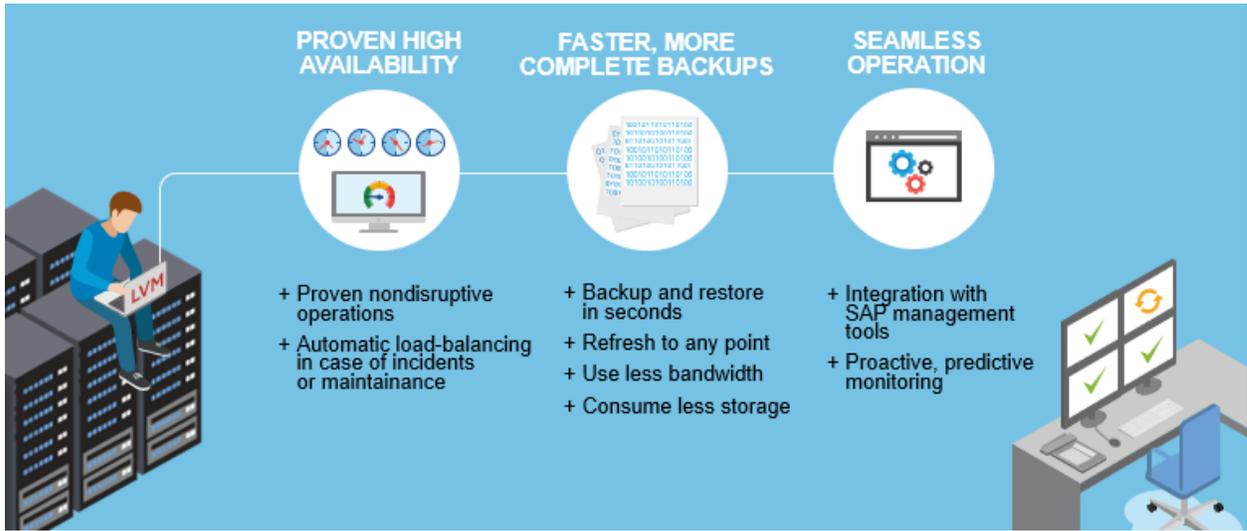
[Learn more](#)

Simplify SAP Operations

SAP environments can be complex to operate. To extract the most value from your SAP investments, you need to simplify the management and maintenance of your environment.

SAP solutions built on NetApp all-flash storage systems streamline SAP operations with up to 90% savings in time and effort compared to traditional solutions. NetApp solutions for SAP offer proven value with fewer components, greater return on investment, and lower total cost of ownership. With the most options for private, public, and hybrid cloud deployments, NetApp solutions allow you to put your SAP data wherever it makes the most sense. As business needs change, you can easily and nondisruptively move your data between cloud and on-premises environments. NetApp ONTAP® data management efficiencies simplify management and data protection across your entire SAP landscape, in the data center and in the cloud (Figure 3).

Figure 3) ONTAP delivers efficiencies that help you simplify management and data protection across your entire SAP landscape.



Maximize Availability

Availability is crucial to your SAP environment. NetApp all-flash systems can absorb multiple concurrent faults without affecting application performance. Recovering from a drive or node failure takes only minutes and is fully automatic, requiring no operator intervention and eliminating the fire drills that typically occur when a component fails. Automatic load balancing helps maintain continuous operations in the event of an incident or to perform maintenance.

NetApp Solution in Action: All for One Steeb

All for One Steeb AG is the leading SAP partner in the German-speaking SAP market. It has the largest customer base in the mid-sized business sector, with more than 2,000 companies in Germany, Austria, and Switzerland, and it provides managed cloud services to approximately 70,000 SAP users.

Industry: Information technology

Challenge: Provide a new backup model to support reliable, 24/7 access to ERP services with SAP HANA.

Solution:

- Deploy a NetApp MetroCluster™ with HA configuration
- Back up local instances using NetApp Snapshot™
- Create NetApp SnapVault® backups outside of the production environment
- Support seamless back up management with HANA Studio and NetApp Snap Creator®

Benefits:

- Enabled lightning-fast backup with no impact on performance
- Provided 24/7 availability for SAP HANA
- Standardized SAP operating model also applied to SAP HANA

[Learn more](#)

Protect Your Data Across Edge, Core, and Cloud

NetApp integrated, automated data protection helps safeguard your data no matter where it resides or moves. NetApp Snapshot copies and SnapMirror replication software send only changed blocks over the network, enabling faster, more complete backups that use less bandwidth and consume less storage

space to enable more cost-effective disaster recovery. To get more value from your backup and disaster recovery sites, you can use those secondary data copies for dev/test or analytics and reporting.

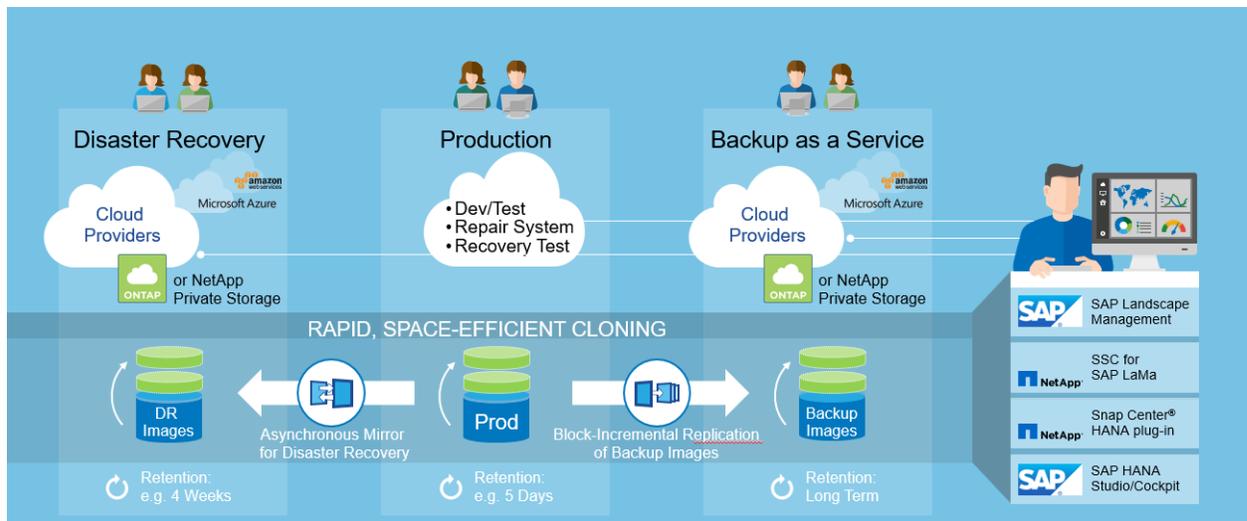
Eliminate Guesswork

NetApp solutions are SAP certified—fully tested and proven to operate seamlessly with SAP HANA and SAP Data Hub applications. Integration with SAP management tools makes deployment fast, with minimal risk. Capacity monitoring through NetApp Active IQ predicts when you will need more storage, eliminating overprovisioning and overpurchasing. Proactive monitoring from Active IQ predicts potential issues to help reduce downtime and resolve issues quickly, with minimal troubleshooting time.

Future-Proof Your SAP Environment

In the modern data center, IT is charged with driving maximum performance for business-critical workloads like SAP, scaling without disruption as the business grows, and enabling the business to take on new data-driven initiatives. Building a hybrid cloud infrastructure with NetApp HCI, NetApp flash systems, or converged systems like FlexPod® can help you create a data fabric that enables you to meet business demands and gain a competitive edge now and in the future (Figure 4).

Figure 4) A NetApp data fabric allows you to seamlessly manage your SAP data across on-premises and cloud environments with the flexibility to grow and change as your business needs dictate.



Maximize Flexibility

As the data authority in hybrid multicloud, NetApp is uniquely positioned with the most innovative portfolio and unsurpassed expertise to help you create the data architecture and hybrid cloud data services needed to unleash the full potential of your SAP data. NetApp HCI, FlexPod, and AFF solutions enable you to quickly build a data fabric that simplifies and integrates data management across cloud and on-premises environments. You put your data and resources where they run best—flash, disk, public cloud of your choice (regardless of SAN or NAS)—and seamlessly move from on premises to cloud, cloud to on premises, or cloud to cloud as requirements change. And only NetApp offers native integration with Amazon, Microsoft, and Google.

Scale Limitlessly

By leveraging a combination of on-premises and cloud resources, you have the power to seamlessly grow as business needs dictate. For example, you can instantly spin up a test/dev site in the cloud, and spin it down when the project is complete.

Because NetApp offers a truly unified storage architecture with a single operating system across all platforms (ONTAP), you can scale capacity and performance without requiring data migration or a change of operating system. You can start small and grow with your business by using high-capacity SSDs or HDDs to scale your storage environment. Storage systems that run ONTAP can handle SAN and NAS workloads that range from a few terabytes up to 176PB. You can scale by adding capacity to existing storage controllers or scale out by adding controllers to seamlessly expand your cluster up to 24 nodes. With NetApp solutions for SAP, storage no longer becomes a bottleneck for projects. Your business is free to expand without limits, across on-premises and cloud resources.

Make Better-Informed Decisions

With a data fabric powered by NetApp, data is accessible where it's needed most, helping you to realize the full potential of your data. Because the data fabric enables you to access your data across your entire IT infrastructure—on premises and in the cloud—you gain better insights into your business. These insights can help you make better-informed decisions to drive your business forward.

NetApp Solution in Action: Fraunhofer

Fraunhofer Institute of Experimental Software Engineering (IESE) is Europe's largest application-oriented research organization. Its research activities are conducted by 72 institutes and research units at locations throughout Germany. Fraunhofer IESE's research efforts are geared entirely to people's needs: health, security, communication, energy, and the environment.

Industry: Research

Challenge: Develop a solution that helps customers remove barriers to innovation by integrating manufacturing and IT.

Solution: Together with Fraunhofer IESE we created ShopFloor 4.0, a new machine-to-machine communication standard using Fraunhofer's own BaSys software and a data fabric delivered by NetApp to enable customers to access manufacturing data across their business, including SAP.

Benefits:

- Enhanced innovation and speeded time to market with the ability to clone manufacturing processes that can be used to test proposed changes, prototype new ideas, and create new solutions, without affecting the live production line.
- Provided greater business insights to enable better-informed decisions by linking manufacturing with sales and order management systems.

[Learn more](#)

Conclusion

Whether you are deploying your SAP application on your premises or in the cloud, NetApp offers the most complete portfolio of certified storage solutions to meet your needs. With ONTAP efficiencies enhanced by a data fabric delivered by NetApp, you can simplify management and data protection across your entire SAP landscape, on the premises and in the cloud. With a NetApp solution for SAP, you can:

- **Accelerate projects and workloads** with one-touch provisioning, instantaneous cloning, and continuous availability.
- **Simplify operations** with automated failover and load balancing; integrated data protection across edge, core, and cloud; and proactive monitoring with actionable intelligence.

- **Future-proof your IT** with the option to put your SAP data and resources wherever they run best (on the premises or in the cloud of your choice), the flexibility to seamlessly scale your environment up or out as needed, and the ability to access data across your entire infrastructure so that you can make better-informed business decisions.

Where to Find Additional Information

For more detailed information about NetApp solutions for SAP, see the following resources:

- Customer Success Story: [Equate](#)
- [NetApp SAP Software Solutions](#)
- [Lifecycle Management for SAP HANA](#)
- [TR-4667: Automating SAP System Copies](#)
- [TR-4018: Integrating NetApp ONTAP Systems with SAP Landscape Management](#)
- [Backup and Recovery for SAP HANA](#)
- [TR4435: SAP HANA on NetApp AFF Systems with NFS](#)
- [TR4436: SAP HANA on NetApp AFF Systems with FC Protocol](#)
- [TR-4614: SAP HANA Backup and Recovery with SnapCenter](#)
- [TR-4667: Automating SAP System Copies Using the SnapCenter SAP HANA Plug-In](#)
- [TR-4719: SAP HANA System Replication Backup and Recovery with SnapCenter](#)
- [Disaster Recovery for SAP HANA](#)
- [TR-4646: SAP HANA Disaster Recovery with Asynchronous Storage Replication](#)
- [TR-4719: SAP HANA System Replication Backup and Recovery with SnapCenter](#)
- [FlexPod All-Flash Solutions for SAP](#)
- [SAP blogs](#)

Refer to the [Interoperability Matrix Tool \(IMT\)](#) on the NetApp Support site to validate that the exact product and feature versions described in this document are supported for your specific environment. The NetApp IMT defines the product components and versions that can be used to construct configurations that are supported by NetApp. Specific results depend on each customer's installation in accordance with published specifications.

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WP-7309-1120