DELL Technologies

15-Minute Guide:

Forge Ahead with SAP in the Data Era

Abstract

Forging ahead with SAP is about adapting and changing so you're ready for what's ahead: data-driven innovation, process automation and new business models.

For IT, moving to SAP® HANA® and SAP S/4HANA® means viewing old problems with new perspectives.

In this guide we share the Dell Technologies approach to developing a cloud-smart strategy for SAP, so you're prepared to turn data insights into action — across the business.

February 2021

Table of Contents

Table of Contents

#1 priority

when making operational improvements to the business is to modernize IT

SAP HANA and S/4HANA adoption

33,000

SAP HANA customers

~15,000

with licenses for SAP S/4HANA

Forging ahead with SAP

Winning in the experience economy

The experience economy offers amazing opportunities for organizations to get to know their customers better, but it also brings new challenges. Winning requires a new mindset: a focus on interconnecting business operations through data. Enterprises want to become smarter when it comes to their operations, their cloud strategy and their approach to extracting value from an ever-increasing volume of data. Yet, this becomes difficult when the IT environment is overly complex and siloed.

For businesses running SAP, the key lies in adopting SAP HANA and S/4HANA applications along with a cloud-smart strategy. SAP S/4HANA along with SAP Intelligent Technologies address this integrative approach by bringing transactional data together with big data and the Internet of Things (IoT). By moving from classic SAP ERP and Business Suite applications to powerful in-memory and edge processing, IT can gain real-time business insights with machine learning (ML) and artificial intelligence (AI).

SAP HANA and a cloud-smart strategy pave the way for an entirely new approach to building solutions. Since the 2010 release of the SAP HANA in-memory database, adoption has grown to 33,000 customers.[1] Nearly 15,000 customers have purchased licenses for SAP S/4HANA.[2]

To build that cloud strategy, customers are laying the groundwork now. And according to SAP Insights, "More than half (52%) of respondents report that their number one priority when making operational improvements to their businesses is to modernize their IT systems to improve information flow. In doing so, they're building the foundation they need to capitalize on the intelligent technologies they expect to deploy."[3]
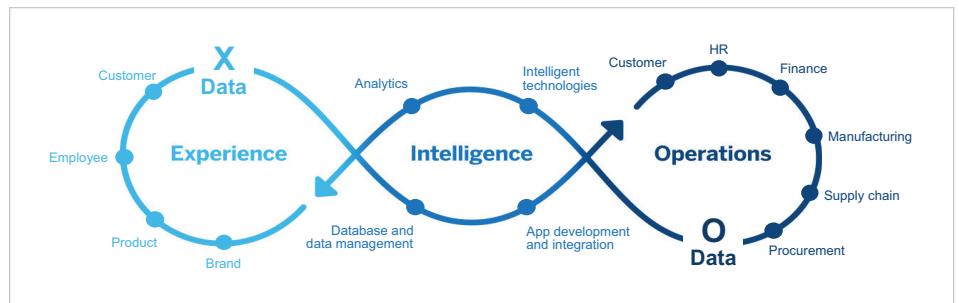
Data is the key to innovating.

[1] SAP Corporate Fact Sheet, February 2020.

[2] SAPinsider, "SAP Announces Q3 Financial Results," October 2020.

[3] SAP Insights Research Report, "4 Traits of Experience Economy Masters," June 2020. (requires registration)

Adopt SAP HANA: The time is now

To give customers more flexibility to plan and execute SAP S/4HANA migrations, SAP announced that it will extend mainstream maintenance on core applications of SAP Business Suite 7 from 2025 to 2027. The SAP HANA database is a strategic foundation for data-driven applications — SAP S/4HANA will run only with SAP HANA. SAP acknowledges that these are complex, resource-intensive projects. So, the time to begin adopting SAP HANA is now.

To run this digital core from SAP, modern IT infrastructure is required. But moving to SAP S/4HANA and SAP Intelligent Technologies is easier said than done. Many times, IT must reduce the resources required to maintain traditional SAP ERP and SAP Business Warehouse (SAP BW) while safeguarding investments for eventual adoption of SAP S/4HANA. More than ever, CxOs need to rethink how to run, grow and transform businesses. New efficiencies are needed.
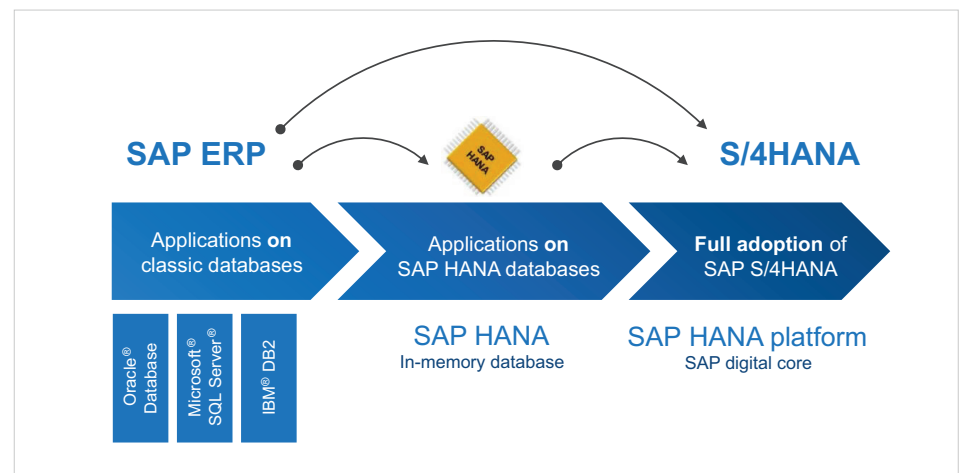
The move to SAP HANA and S/4HANA is a journey.

Plan a path to SAP S/4HANA and cloud

While every journey is different, the path to IT modernization and cloud includes three essential elements.

- **Reimagine business operations** by automating delivery and lifecycle of IT resources so the infrastructure is ready for SAP HANA when you are.
- **Embrace a cloud-smart strategy** by providing consistent cloud solutions for placing and protecting landscapes where it makes the most sense.
- **Become a data-smart enterprise** by building a data fabric universe that connects information silos and increases visibility into global data assets.

RETHINK

how to get maximum efficiency from IT

Reimagine business operations

Dell Technologies understands the imperatives CIOs face in the data era as they forge ahead with SAP. The business is counting on IT to support these critical SAP initiatives. As a result, IT must be able to reimagine how their operations should work. That means getting the maximum efficiency from IT workflows and better productivity from staff. Only then can the organization significantly boost enterprise value.

We automate IT processes — from initial deployment to expansion of system resources and lifecycle management — while maintaining control and reducing complexity and risk. Dell Technologies also brings cloud economics to the data center. We provide a series of financial consumption models — from traditional CAPEX to on-demand "pay as you go" — so you can consume infrastructure as you would in the public cloud. We help IT become operations smart.

Run mixed workloads: Deliver performance at scale

Eliminating complexity starts by deploying the right mix of infrastructure while using the financial consumption model that's right for you. We help simplify highly virtualized SAP landscapes as you adopt SAP HANA and SAP S/4HANA. With our dynamic infrastructure, you can deliver performance at scale for mixed workloads — from online transaction processing (OLTP) and analytical processing (OLAP) to analytics and big data.

Consolidate SAP landscapes: Reduce cost and complexity

Historically, IT has run SAP production and non-production systems on siloed infrastructure, whether by design — to protect production performance — or ad hoc as new projects are added.

As a result, IT must manage sprawling, complex system landscapes with limited budget and resources.
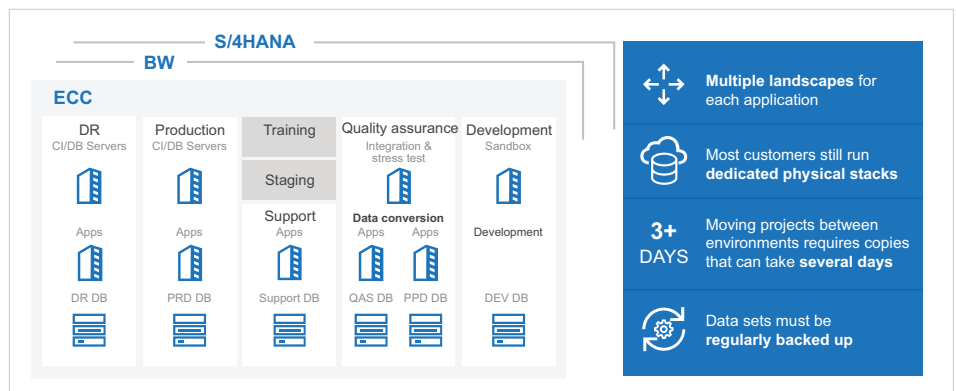
SAP landscapes are complicated.

Meet SLOs for mission-critical SAP

Delivering performance for mission-critical SAP is crucial with the need to:

- Reduce time to execute SAP ERP month-end batch jobs
- Accelerate data loads to BW and/or SAP HANA
- Meet SAP key performance indicators (KPIs)
- Accelerate data loads for cold restarts of SAP HANA

Increasingly, to support new processes, SAP must be "always on." Dell EMC has deep experience providing high-performance data protection solutions for SAP — ensuring availability — no matter where your data resides, both in the data center and the cloud.

Production SAP ERP systems can quickly grow to many terabytes, and customers often run multiple SAP applications along with those for development, test and quality assurance (QA). This leads to data footprints that are costly to protect and difficult for SAP and database admins to manage.

The Dell EMC Data Protection portfolio offers backup and restore solutions that are certified for SAP and SAP HANA and that provide centralized visibility and control along with industry-leading deduplication to reduce storage requirements by 65 to 1.[4] As a result, IT can deliver faster performance for SAP and SAP HANA workloads, while meeting stringent protection SLOs.

For more information, check out Dell EMC solution: Designed for SAP landscape consolidation.

"In a high-pressure manufacturing environment, saving time and delivering application uptime are key assets."

— Administrator at Johnsonville

Johnsonville Sausage: Advanced data protection for SAP HANA

Johnsonville® is the nation's number-one sausage brand. At the heart of its operations is an SAP HANA ERP system that coordinates manufacturing, accounting, distribution and sales across 40 countries worldwide. With Dell EMC Data Protection, Johnsonville executes frequent backups with confidence. With 30:1 data deduplication enabled by PowerProtect DD, Johnsonville can back up more frequently, so backups are even more up to date. This case study shows how Johnsonville saves time and delivers SAP application uptime with Dell EMC PowerProtect DD.

[4] Based on Dell EMC internal testing with DDOS 7.0 August 2019. Actual results may vary.

Simplify SAP landscape management

Simplify SAP system copy/refresh cycles

SAP system clone, copy and refresh processes are prime targets for simplification. SAP admins spend a great deal of time creating and managing copies of SAP production systems to support development, test, QA and training environments. The process can be time-consuming with SAP system copy/refresh taking several business days to complete.

The most common challenges include:

- Coordination among storage, server and virtualization teams
- Manual, time-consuming, complex post-processing steps
- Risk of manual errors and quality of copy/refresh
- Large data footprints leading to increased storage costs

These circumstances slow innovation and increase the risk of data inconsistencies and corruption — major reasons organizations are looking for new ways to improve the process.

During upgrades, migrations and/or deployment of new functionality, developer cycles are at a premium. With Dell EMC storage snaps and integrated copy management, IT can accelerate SAP development, testing and deployment by instantly creating on-demand, space-saving, high-performance copies without impacting production performance.

Typical SAP landscapes include dozens of non-production systems, like development, training and sandbox. Automating the management of SAP system copies with trusted storage-based cloning, reduces the TCO of an SAP landscape, resulting in:

- More productive SAP admins, focused on higher-value work versus time-consuming, error-prone manual tasks
- Faster delivery of high-performance copies with minimal or no impact on production
- Lower costs by reducing the size of storage footprints for SAP copies via highly efficient data-reduction intelligence

For more information, review Dell EMC solution: Designed for SAP landscape management (SAP LaMa).
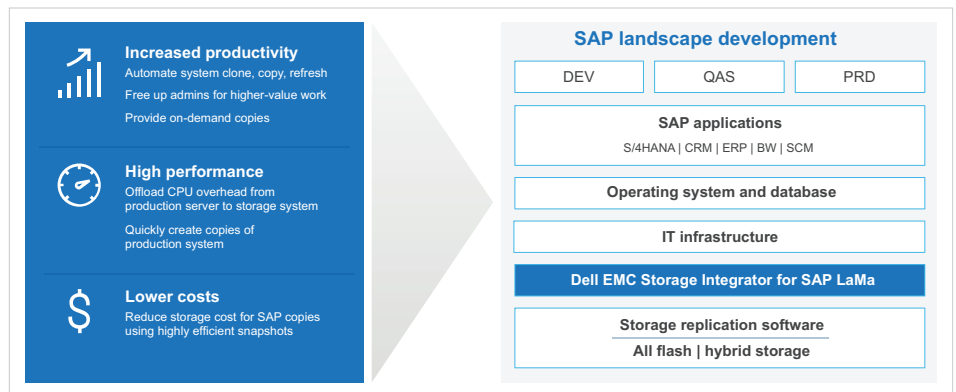
Simplify SAP system provisioning.

Get flexibility with certified infrastructure choice

Dell Technologies invests in the SAP HANA Certification Program for hardware, designed to fast-track implementation with reduced risk.

Dell Technologies has partnered with SAP since the release of SAP HANA in 2011, when SAP announced the HANA appliance delivery model. Since then, the Dell EMC portfolio has expanded to include SAP Tailored Datacenter Integration (TDI) so that IT can run SAP HANA like any other database on a shared infrastructure.
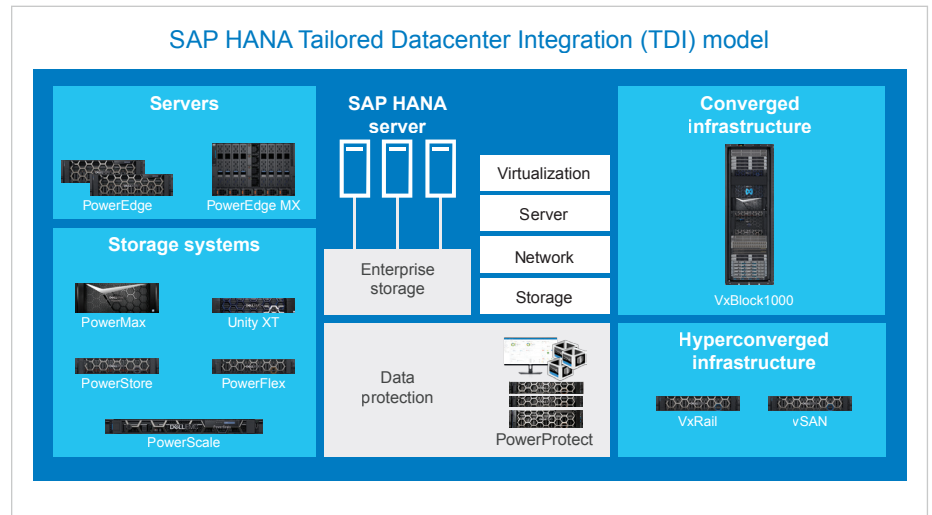
Use your preferred Dell EMC SAP HANA TDI infrastructure.

While Dell Technologies supports all SAP paths to deploying SAP HANA infrastructure on-premises, running SAP HANA on shared infrastructure has become the preferred model — it provides more flexibility with lower TCO as you scale deployments.

Dell Technologies offers comprehensive choice in infrastructure options that are certified for SAP HANA, data protection and availability, and professional services for SAP HANA deployment, migration and replatforming projects.

For more information, review Dell EMC solution: Designed for SAP HANA.

Manage TCO and SAP licensing costs

### Reduce TCO for SAP and SAP HANA applications

As organizations scale the adoption of SAP HANA for data-driven applications, IT needs a strategy for managing TCO and SAP HANA licensing costs. By reducing the amount of data that must be maintained in expensive DRAM, IT can safeguard maximum data value at the minimum cost.

SAP HANA data tiering gives IT a framework for managing data placement based on the data value and SLA over time.

• Hot store is used to store mission-critical data for real-time processing and real-time analytics. Persistent memory (PMEM) extends the in-memory storage capacity for hot data in SAP HANA.
• Warm store is for less critical data with reduced performance and SLAs that can be stored on lower cost storage but still managed as part of the SAP HANA database.
• Cold store provides persistence capabilities for HANA cold data in external data stores, like Hadoop® Distributed File System (HDFS), Azure® Data Lake and SAP Big Data Services.

With Dell EMC solutions for SAP data tiering, IT can deploy an infrastructure foundation that is certified for SAP HANA TDI and ready to support a "holistic" data management model for SAP HANA landscapes.

For more information, review: Dell EMC solutions for SAP HANA data tiering.
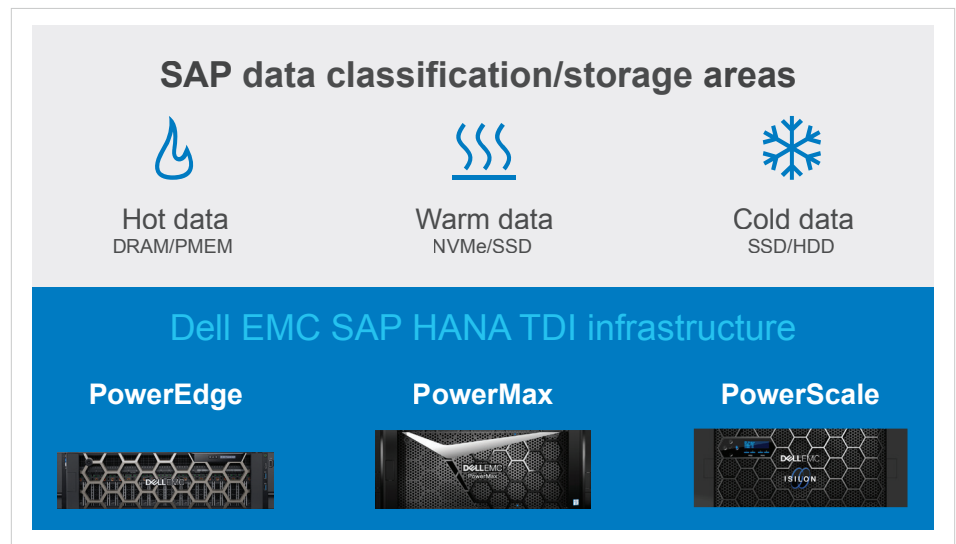
SAP Data Tiering with Dell EMC SAP HANA TDI infrastructure

TAKE
control of
your cloud

Embrace a cloud-smart strategy

Deliver "Everything-as-a-Service" across clouds

Increasingly, organizations running SAP are modernizing their IT systems to improve information flows while applying much more of a multi-cloud approach. The goal is to invest in IT technology that can support the entire business. Connecting operations through data is critical.

The fact is that workloads have various operating profiles and SLA requirements. This is especially true in massive, dynamic IT environments that consist of multiple mission-critical applications that use the same underlying infrastructure.

By adopting a cloud-operating model to run SAP, IT gets the flexibility to meet a variety of workload needs, placing and protecting landscapes where it makes the most sense. Whether at the edge, on-premises or in public loud, IT needs the ease of management that a multi-cloud environment demands.

Begin with a cloud-enabling infrastructure

Many customers run (and will continue to run) "core" SAP applications on-premises. As these businesses modernize their IT infrastructures for mission-critical SAP, they are looking for a future-proof foundation designed to run traditional SAP ERP and BW as well as intelligent applications powered by SAP HANA and SAP S/4HANA.

According to an ESG survey, organizations find that, by modernizing IT using converged and hyperconverged infrastructure (CI/HCI), they can fulfill the requirements.

As an on-premises infrastructure foundation for a cloud-operating model, Dell EMC CI (VxBlock) and HCI (VxRail) offer IT organizations flexibility in meeting the delivery model that best fits their requirements — including hybrid cloud deployments.[5]

Running SAP in a cloud operating model begins with this cloud-enabling infrastructure. By automating delivery and lifecycle of IT resources, organizations can maintain control while eliminating complexity and risk.

[5] ESG Solution Showcase: Embracing a Cloud Operating Model to Support SAP with Dell EMC CI and HCI. July 2019.

Transform to a cloud operating model

It's a multi-cloud world. Organizations want to take control of their cloud environments — private cloud, public cloud and edge locations. A better cloud experience means a consistent operating model, starting with on-premises deployment.

By simplifying control of multi-cloud environments and delivering "everything as a service," we help you support SAP across clouds — private, public and the edge — while placing landscapes where they make the most sense.

Data services are architected so you get the most value, including "protection as a service," and workflow integration — key priorities for cloud deployments.

With Dell Technologies Cloud as the operational hub for your cloud ecosystem, you can choose the best environment for individual landscapes. Our free online Live Optics software lets you calculate the cost of moving landscapes between on-premises and public cloud, including AWS, Azure and Google Cloud.
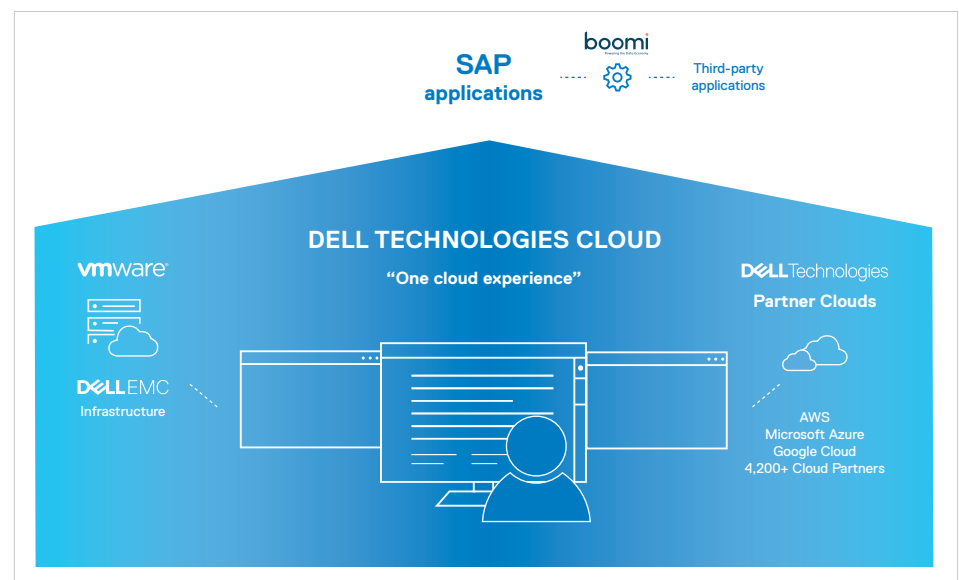
Dell Technologies Cloud: one cloud experience

The Dell Technologies Cloud helps organizations gain cloud momentum by providing a consistent infrastructure and operational experience across the cloud ecosystem.

- The on-premises Dell Technologies Cloud is built on Dell Technologies VxRail and VMware® Cloud Foundation™, so you can run applications in both private and public environments.
- With Dell Technologies validated designs, you can build Dell Technologies Cloud using traditional servers, networking and storage including Dell EMC PowerEdge MX, PowerStore, PowerMax, PowerFlex and Unity XT.
- Data protection for Dell Technologies Cloud accelerates your hybrid cloud journey, helping you to reduce business risk and meet regulatory compliance.
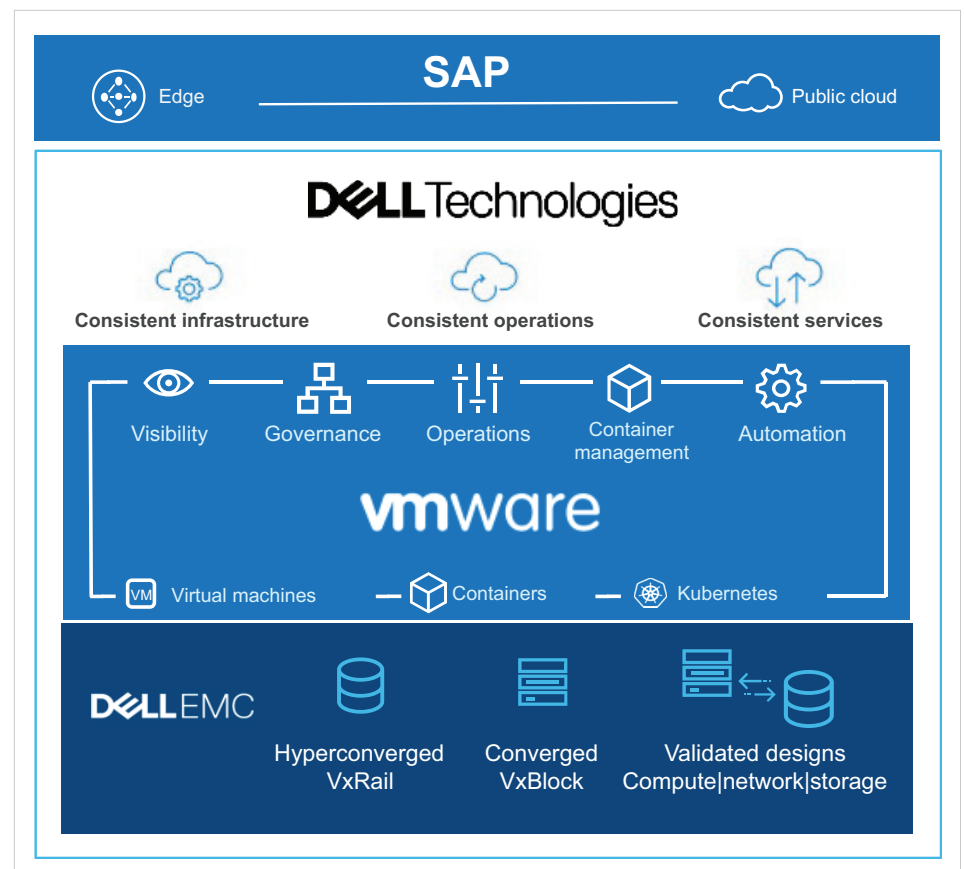
Dell EMC cloud-enabling infrastructure

REALIZE

**new business
value from
your data**

Get flexible cloud services and consumption

Based on their experience with public clouds, organizations want more choice, flexibility and predictability in how they consume IT infrastructure for their own data centers. Dell Technologies offers three flexible payment solutions:
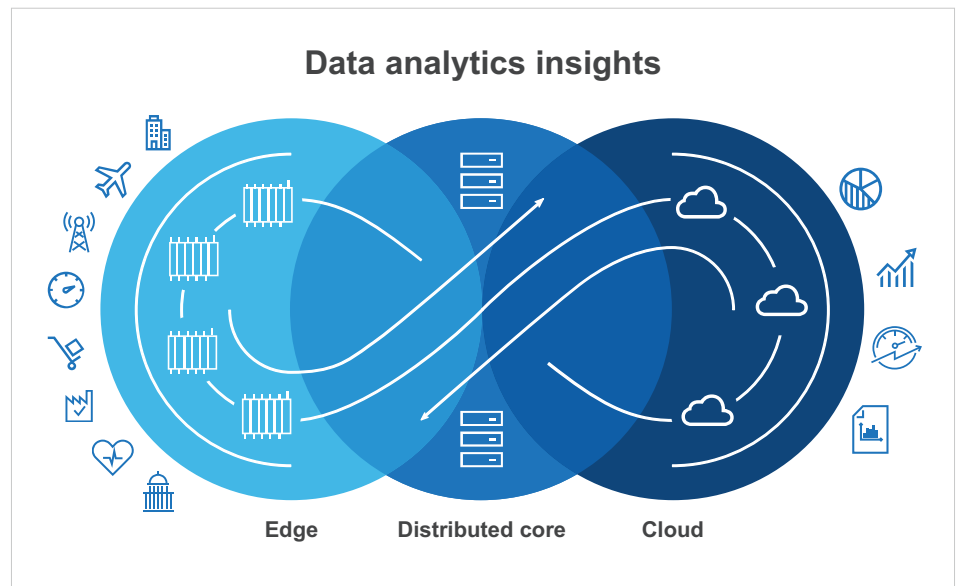
- **Pay-as-you-grow** — Make predictable payments over an agreed-upon term and grow over time at a predetermined rate.
- **Pay-as-you-use** — Meter variable usage, pay only for technology as it's consumed, and scale up or down with elastic capacity.
- **Pay-as-a-Service** — Let us manage and maintain the technology, aligned to SLAs, and bill as resources are consumed.

Become a data-smart enterprise

Achieve positive business outcomes

Organizations understand that in order to thrive in the digital economy, they must derive better insights from the data they own — and do it in a more automated, reliable way. The faster this process, the faster the time to insights.

That means fueling business processes with insights from data across all information sources — at the edge, in core SAP environments, from IoT, data lakes and Hadoop repositories, or in the cloud.

Data analytics insights

Edge   Distributed core   Cloud

Become a data-smart enterprise.

SIMPLIFY
data management for IT

No matter where you are in your journey, the challenges are all too common: aligning business owners and IT on next steps and engaging resources to fully operationalize the value of next-gen intelligence, with SAP Intelligent Technologies.

But creating data-driven applications is not a linear process — it's a continuous, iterative loop that requires five main things:

1. Architects to wrangle data
2. Data scientists to create, train and take models to production
3. Application developers to integrate the output of analytics for meaningful action
4. IT architects to build a flexible foundation that's agile and automated enough to handle the new workloads
5. DevOps capabilities to tie it all together into one seamless machine

Without better data management, organizations find the road to achieving data-driven insights is longer and more difficult. The single biggest problem we hear about from customers is that business and IT are not aligned on a data-driven strategy. That problem is highlighted by research that says more than half of all business users aren't clear what to expect from AI/ML projects.[6]

IT needs a simpler way to deploy, integrate and manage these new data-driven applications. Dell Technologies allows businesses to more easily support this continuous data analytics process at each step along the way.

By building a data fabric universe that connects information silos and increases visibility into global assets, we help IT simplify data management. When IT brings structured data from SAP HANA together with unstructured IoT and big data sources, you accelerate AI adoption and achieve positive outcomes with data insights — from edge to core to cloud — to become a data-smart enterprise.

By offering a choice of scalable AI and data analytics solutions along with a team of experts, we help you develop use-cases and arrive at a solution that meets business needs. As SAP continues to spur innovation through Intelligent Technologies, we empower you to realize new business value from your data — no matter where it's generated or stored.

Manage diverse data sources — from edge to core to cloud
We know that the SAP HANA in-memory database is foundational for data-driven applications, but there are other non-HANA data sources.

First, IoT data at the edge. IoT edge computing is designed to support business decisions that need to be made locally. Organizations can prioritize data to process locally with subsets of aggregated data being transferred to the core

Since intellectual property (IP) must be protected, data placement is key. IT organizations are finding an increasing need to manage IoT data on-premises. SAP Edge gateway works together with SAP-certified Dell Edge gateways — tested and validated to run SAP IoT applications at the edge. This edge-to-core approach is advantageous because it uses existing investments in SAP ERP analytics and in-house teams while securing intellectual property on-premises.

[6] TechRepublic Premium, "Managing AI and ML in the enterprise 2019: Tech leaders expect more difficulty than previous IT projects," March 2019.

At the core, IT can store S/4HANA data on Dell EMC infrastructure that is certified for SAP, and unstructured big data with massive scalability on Dell EMC PowerScale, scaling from tens of terabytes to tens of petabytes.
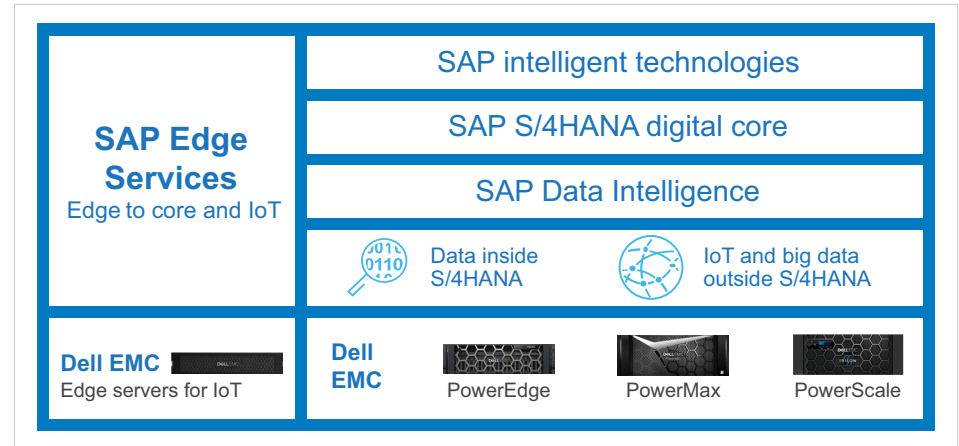
Become data-driven, edge to core.

AI and ML data

With SAP Data Intelligence, it's easy to manage the data for AI and ML with data orchestration and ML services. IT can discover and connect to any data source, then refine and transform data connections into usable data across landscapes. That means accessing structured, unstructured, streaming, cloud, on-premises, IoT, SAP and non-SAP data sources.

- When it comes to deploying SAP Data Intelligence on-premises, IT can run Red Hat® and SUSE® containers on Dell EMC infrastructure. SAP Data Intelligence is a containerized application and uses Kubernetes®. IT can orchestrate and execute data pipelines using containers to access and share data smoothly.
- Operations like blockchain also enable data-driven innovation and may take place in the cloud. This case study shows how to drastically speed up the information flow of regulated substances in a production supply chain while still fully protecting the intellectual properties of all involved parties. This is accomplished with the combination of SAP HANA, SAP Cloud Platform Blockchain Services and Camelot Trusted Computing Appliances running on Dell EMC PowerEdge servers.

With Dell Technologies you can gain better control of your data and achieve faster insights with SAP Intelligent Technologies.

Gerolsteiner: edge computing and SAP S/4HANA

Gerolsteiner supplies one of the best-selling ranges of mineral water in Germany. In line with its aim to provide water sustainably, the company wanted to develop an edge computing application to improve demand forecasting. It also planned to upgrade plant-wide operational systems to SAP S/4HANA and needed to ensure its IT infrastructure could support the enhancement. This case study shows how Gerolsteiner made the move to edge computing and SAP S/4HANA with a Dell Technologies infrastructure.

"Dell Technologies plays a big part in our SAP transformation strategy."

— CIO at Gerolsteiner

Together we'll shape what comes next

Dell Technologies stands ready to work with IT organizations on the journey to great business outcomes — developing solutions that let you innovate for the experience economy while powering data-driven processes and SAP Intelligent applications.

Modern SAP platforms are central to improving customer experience and driving differentiation, but they require infrastructure that delivers resources with superior performance and automation while also preparing you for cloud.

With Dell Technologies solutions for SAP, you can automate delivery and lifecycle of IT resources, maintaining control while eliminating complexity and risk. By beginning with a Dell EMC cloud-enabling infrastructure, organizations can more easily adopt a cloud operating model across private cloud, public cloud and edge locations. We help you build a data fabric universe that connects information silos and increases visibility into global assets to achieve positive business outcomes with data insights — from edge to core to cloud.

Partner with us

For more than two decades, Dell Technologies and SAP have collaborated to implement hundreds of customer solutions. The Dell Technologies SAP Innovation Lab, located at the PartnerPort in Walldorf, is where we develop innovative infrastructure for SAP and best practices for customers' SAP solutions — from edge to core to cloud. Our joint customers learn from demos, proofs-of-concept in the data center, technical briefings and events on-site in the center or remotely.

We invite you to partner with us on your SAP deployment — whether it be a simple HANA deployment, migration to SAP S/4HANA or system refresh. With Dell Technologies, you can accelerate innovation and your move to cloud so you can forge ahead with SAP.

DellTechnologies.com/SAP

DELLTechnologies