

Navigating the migration to SAP HANA

Keeping your current SAP applications running smoothly with an eye towards the future



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Executive summary

Thirty years ago, SAP® released SAP® R/3® and it changed the landscape of enterprise resource planning (ERP) software. It quickly became the industry standard for business software for small and large companies worldwide. However, with SAP communicating the end of support for this software is set to end in 2027 and a requiring a transition to the new generation ERP software, SAP S/4HANA®, SAP customers are now making decisions about how to move forward.

The challenge for customers is to keep their current generation of SAP software running well while they make this transition. Fortunately, Hewlett Packard Enterprise has the people, products, expertise, and tools to make the move to SAP S/4HANA. This paper examines some of the challenges and offers solutions that [HPE GreenLake data services and storage products](#) provide to help customers on their journey.

Intended audience:

Hewlett Packard Enterprise, its partners, and customers who are running SAP ERP or other software currently and need to migrate to applications supported on SAP HANA® can use this document to understand and evaluate HPE storage solutions for their current and future needs.

The reader is assumed to have a working knowledge of the following products and technologies:

- HPE storage products
- Fibre Channel Protocol (FCP) and Network File System (NFS)
- SAP R/3, ECC, and other products running on a database other than SAP HANA
- Database architecture and maintenance

The challenge ahead

SAP has announced that support for multiple SAP products using databases other than HANA will end in 2027. This includes Business Suite on HANA applications. For many customers, this represents a significant change to many different areas of their IT infrastructure. Furthermore, they will have to decide how to maintain their current systems because of compliance and regulatory requirements.

While they are making these changes, their legacy SAP systems and data need to be available and performing well to keep the business running.

Assessing your current environment

Most companies have hardware refresh schedules in the three-to-five-year range. With the migration to S/4HANA only four years away, customers will have to decide how to proceed. For some, everything may be fine, and they can continue to address their requirements for S/4HANA. However, increasingly we see customers who need to perform one last refresh of their current SAP infrastructure before they make the transition. This introduces some new challenges.

Legacy SAP software had few or no requirements for hardware certification to run SAP software. Which servers, storage, networking, and protocol used depended on the needs of their environment. However, SAP HANA has specific requirements for these components and requires certified hardware, specific operating systems, and protocols.

Another important factor for customers is the amount of customization they have done to their current SAP systems. Over the years, SAP has made it easier to create customer workflows for business processing in their software. This helps SAP users perform upgrades and patching. However, these customizations make the move to SAP HANA more difficult. Those workflows must be migrated or changed to match SAP updated workflows during the migration. For some customers, it might not be possible to make this change quickly or easily.

Scenario 1 — Refresh the current infrastructure to prolong the life of current infrastructure

If you need an infrastructure refresh for your current SAP systems, there are several things to consider. The first question to answer is if any of the new hardware will or can be used for SAP HANA in the future. If the current servers have been validated by SAP for SAP HANA and the validation was active at the time of purchase, you could migrate the current data from those servers. If the servers are not validated, this means a completely new server environment must be purchased and deployed specifically for SAP HANA. Validated servers are listed on the [Certified and Supported SAP HANA Hardware](#) webpage.



Storage for their current environment is more likely to be utilized for current SAP systems now and for SAP HANA in the future. Storage certified for SAP HANA can easily be used with legacy SAP systems and other software or applications. Current storage solutions certified for SAP HANA have a wide range of performance and capacity available. This enables customers to start their migration to SAP HANA as well as meet their current needs. Customers can check to see if their current storage system is certified by searching the [Certified and Supported SAP HANA Hardware](#) webpage. Per SAP, the storage array needs to be listed with an active HANA certification at the time of purchase. In addition, there are specific rules that apply to sizing storage for HANA, both in capacity and performance; therefore, even if the array can potentially be reused, reconfiguration or capacity upgrades might be required.

If you already use SAP HANA supported protocols for your legacy SAP systems, you will have to decide if you need to refresh your infrastructure to meet the performance requirements for SAP HANA. If not, you will need to decide which solution best fits your environment. In many cases, your current infrastructure is perfectly adequate, although potential upgrades might be needed to align with HANA requirements.

Scenario 2 — Build a new environment for SAP HANA

Because SAP requires certification for hardware to run SAP HANA, some customers will find that their environment has the capacity and performance required for their current workloads but does not meet the requirements for HANA. Whether it is the servers, storage, or connectivity that does not meet SAP HANA requirements, it might be necessary to purchase and deploy infrastructure to meet the needs of only SAP HANA.

Servers are a significant challenge because of the processor and memory requirements for SAP HANA. It could also be more difficult for customers who do not currently deploy Linux® in their environments. Buying new servers for SAP HANA can be an easier solution to this problem. SAP also has limitations on which storage protocols can be used for SAP HANA. Customers using iSCSI will have to move to FCP, NFS, or another supported storage solution.

If your current storage solution does not meet the capacity or performance requirements to support SAP HANA, you will need to purchase another storage solution. However, buying new storage just to support SAP HANA can also bring additional costs, especially related to connectivity. It is possible that new switches will need to be purchased, especially if FCP or NFS are not the standards in your data centers.

Migration and maintenance

Now that the infrastructure is chosen and you are on your path to implement SAP HANA, the question becomes: What about the legacy SAP systems?

Because of the deadline for moving to S/4HANA to maintain support, the migration of business processes to S/4HANA has become the focus. Making sure you have the correct infrastructure and skills to make the transition is the main issue. But there are important questions still to be answered.

How much data do we migrate to SAP HANA?

Data to support businesses has grown exponentially since SAP R/3 was introduced. The idea of a 100 GB database being extremely large 30 years ago has been replaced by SAP systems with multiple terabytes. Much of that data is older and retained for compliance and regulatory reasons. Some data can be obsolete because of changes to products and processes over the years. Some of it might be duplicate data because it is used in multiple products in the SAP Business Suite of software.

Certainly, migrating all your data to SAP HANA is an option, but there are some downsides. This “big bang” approach will require larger servers and more storage capacity for SAP HANA systems. Data transformation between legacy SAP applications and SAP HANA takes time, effort, and expertise. For some customers, this is an opportunity to update their business processes to be in line with SAP HANA to make upgrades and other maintenance simpler. Additionally, as data ages and is no longer required, processes must be put in place to remove the data from the SAP HANA systems. Customers can use native data tiering options from SAP, like Native Storage Extension (NSE), Extension nodes, or Nearline Storage on IQ.

Your decision to implement S/4HANA can have a lasting effect. For most customers, legacy SAP systems will not simply disappear after the cutover is made. In fact, without migrating all their data to SAP HANA, they will be maintaining those systems and data for about five to ten years.

Business process transformation and cutover

One of the key arguments for not simply migrating all your legacy SAP data to SAP HANA is the opportunity for business process transformation. For many customers, upgrades and maintenance have been a challenge because of customizations to SAP standard code and workflows. These changes require careful analysis any time SAP releases new software or patches. Simplifying this work can make a huge impact on the business.



In the short term, this means additional work as part of the cutover process. You could identify and migrate only the data required at the beginning of the cutover and allow data in the SAP HANA environment to grow naturally through ongoing transactions. Eventually, there will be no active data in the legacy systems. This process could take some time, depending on your company's requirements for data retention. It does not eliminate the need to maintain those old systems, but it does keep the new system "cleaner."

As mentioned, SAP does offer different data tiering options to allow you to offload your data from the HANA database. However, that does not change the challenge of deciding when or if that data can be removed.

Legacy system maintenance

If customers choose to do a transformation and leave the bulk of their legacy data in place, they will need to decide how much they want to maintain those environments. For regulatory compliance reasons, they could need access to them at some point, but most likely they will not be doing regular patches and upgrades.

The industry-specific challenge

Over the years SAP has developed dozens of industry-specific solutions that address the specialized needs of different businesses like automotive manufacturing and healthcare. These add-on modules provide configuration and code to support processes unique to different industries. Many of these have been migrated to S/4HANA already, but there might be key differences between what is available with S/4HANA and what legacy SAP software provided, which creates major complexity on the transition. In addition, some customers might have customized these solutions further to meet their own business needs. As a result, it could be incredibly challenging and expensive for these customers to migrate to SAP HANA completely. This means that these customers will need to continue to use their legacy SAP systems and their data longer and find ways to integrate and slowly transition to SAP HANA in the future.

HPE solutions for legacy SAP and beyond

When addressing the needs of legacy SAP and SAP HANA, you need to look at servers, storage, and networking. These three primary components make up the core of SAP infrastructure and Hewlett Packard Enterprise has the right products to meet any customer's needs.

Understanding the licensing aspects of this migration is something else to consider. SAP professionals at Hewlett Packard Enterprise can help you understand the differences and choose the right solution for you.

Servers

Whether you need the extreme scalability of the [HPE Superdome Flex](#), the flexibility of composable infrastructure like [HPE Synergy](#) for the application layer, or you prefer smaller scale tried-and-true [HPE ProLiant Compute servers](#), we have the compute to meet your needs. Of course, all these products work well with legacy SAP products and are also certified for SAP HANA. These are also available through [HPE GreenLake](#) to give customers the flexibility to scale up or down on demand and allows options for how to pay for the compute being purchased.

Storage

If there is anything that has changed about SAP in the last 30 years it is the fact that the amount of data in SAP systems, in both legacy SAP and SAP HANA, data has grown at an incredible rate. The demand for performance and capacity to meet SAP continues to be a challenge for customers. Fortunately, HPE innovation has kept pace with those demands and we offer a complete portfolio of storage solutions to meet any requirements.

Because of these advances, especially in performance, HPE allows customers to consolidate their storage infrastructure for both their SAP legacy and SAP HANA systems on one storage product, saving cost and complexity. Customers can choose any storage product from HPE and be confident that it supports both their current and future SAP software requirements.

All HPE storage products are also available through HPE GreenLake. This means customers only pay for what they use and gives them flexibility with how to pay for the new storage. This is especially important for those legacy SAP environments. As data ages and systems are retired, customers do not have to pay for capacity that is no longer needed. This is a significant saving over three to five years.

Networking

For some customers, the migration to Fibre Channel infrastructure could be a significant challenge. HPE has Aruba networking products as well as multiple partners to keep the data moving. Just like servers and storage, networking solutions are also available through HPE GreenLake.

Services

Often the biggest challenge for customers is understanding what needs to be changed and what can stay the same. [HPE Services](#) is available to assist customers from the very beginning of the project through completion. HPE can even provide advanced maintenance and professional services for customers to run their environments for them.



HPE GreenLake for SAP workloads

For customers who want to start a migration to a consumption-based managed offering, [HPE GreenLake for SAP](#) workloads gives them that option. This solution provides all the hardware and software to run SAP applications in a cloud-like on-premises model. This solution can also then be transitioned to any of the HPE GreenLake for SAP HANA configurations, including RISE with SAP. This gives them all the advantages of RISE with SAP in an on-premises cloud implementation.

Summary

Although implementing S/4HANA will be an important focus for customers in the next four years, the support and maintenance of their current legacy SAP systems cannot be overlooked. For many of them, there will be a need to refresh their current infrastructure, and for most of them, continued operation will last for some time.

Hewlett Packard Enterprise has been an SAP partner for over 30 years and has the experience and products to help guide customers through these challenges. HPE has been an industry leader in server and storage for SAP software and will continue that leadership for SAP HANA. In addition to the products required for SAP software, HPE also has services to help customers make sense of all the options.



Resources

HPE GreenLake for Storage

hpe.com/us/en/greenlake/storage.html

HPE GreenLake for Block Storage

hpe.com/us/en/greenlake/block-storage-service.html

SAP Solutions — SAP applications, SAP HANA, S/4, C/4, BW/4

hpe.com/us/en/solutions/sap-hana.html

HPE Storage for SAP HANA: Disaster recovery, backup, and data archiving

hpe.com/us/en/storage/sap.html


HPE and SAP Alliance

hpe.com/us/en/alliance/sap.html

Learn more at

hpe.com/us/en/greenlake/sap-hana.html

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