



White Paper

SAP HANA Enterprise Cloud: A Managed Approach to Deploying SAP S/4HANA

Sponsored by: SAP

Robert P. Mahowald
November 2016

Henry D. Morris

EXECUTIVE SUMMARY

SAP S/4HANA is SAP's next-generation ERP suite, designed to be the digital core for today's enterprises, applying intelligence across the range of strategic business processes. The new suite is built on the high-performance, in-memory HANA platform and leverages SAP Fiori for a personalized user experience. Therefore, the near-term plans of most SAP ERP customers involve evaluating and likely moving to SAP S/4HANA and the SAP HANA platform in the not too distant future. With that move come important choices on how to deploy the new suite.

SAP customers looking to move to SAP S/4HANA face a *double switch*. Implementing SAP S/4HANA requires changing the database (from another database to HANA) along with changing the application (from another ERP system to S/4HANA). For customers experienced with older versions of SAP software, it is a challenge to take full responsibility for managing the new platform and the new application when the necessary HANA expertise is not present in the IT organization.

To address the challenges of migrating to the new application suite and platform, SAP provides three options to customers. There are two dedicated environments (traditional on-premise implementation and SAP HANA Enterprise Cloud [HEC]) as well as a shared environment (the public cloud option). For customers that seek an implementation that is dedicated to their organization's exclusive use, prefer a subscription mode of payment, and seek to transfer the risk of implementation to SAP, the SAP HANA Enterprise Cloud is the sensible choice.

SITUATION OVERVIEW

The business environment is changing in today's digital environment, with new business models based on leveraging data assets. As a result of these changes, a new generation of enterprise software is emerging that is designed to support a business' digital transformation. For SAP's customers, the road to digital transformation runs through SAP S/4HANA.

But implementing S/4HANA is not uncharted territory. Hundreds of organizations are live on the new suite today. And that means there is an opportunity to take advantage of lessons learned from these implementations. SAP has packaged these best practices in its private managed cloud service offering – HANA Enterprise Cloud – to help its customers better address the risks and complexity of initial deployment and ongoing application management.

SAP HANA Deployment Options

The options for deploying SAP S/4HANA are as follows:

- **Option (1) – SAP S/4HANA on-premise:** SAP S/4HANA runs out of a corporate datacenter on existing infrastructure or on a purpose-built HANA appliance. This requires purchasing a license from SAP, managing the necessary database operations, and applying updates and patches from the software supplier (i.e., SAP) when they are made available. No subscription form of payment for the software is available.
- **Option (2) – SAP S/4HANA running in an SAP managed private cloud – SAP HANA Enterprise Cloud:** SAP provides a managed service, SAP HANA Enterprise Cloud, in which SAP takes on responsibility for running SAP S/4HANA for buyers of the service at an off-premise datacenter. The infrastructure (compute and storage) is provided and managed by either SAP or one of its premium suppliers. SAP is responsible for the management of the layered software (SAP S/4HANA) and keeping it up to date in an instance dedicated to the client. The client can bring its own SAP S/4HANA license (BYOL) and make recurring payments for the service. Alternatively, there is an option to pay a subscription fee that covers both the SAP S/4HANA software license and the management service.
- **Option (3) – SAP S/4HANA public cloud editions:** SAP offers the new business suite SAP S/4HANA in several public cloud editions. Each edition is a shared environment at all levels – infrastructure, database, and application – as is the nature of public cloud deployments, realizing economies of scale. The buyer pays for the cloud service (which includes access to the software and the management of the whole environment) in a recurring subscription fee.

Consider the following parameters to select the most appropriate environment:

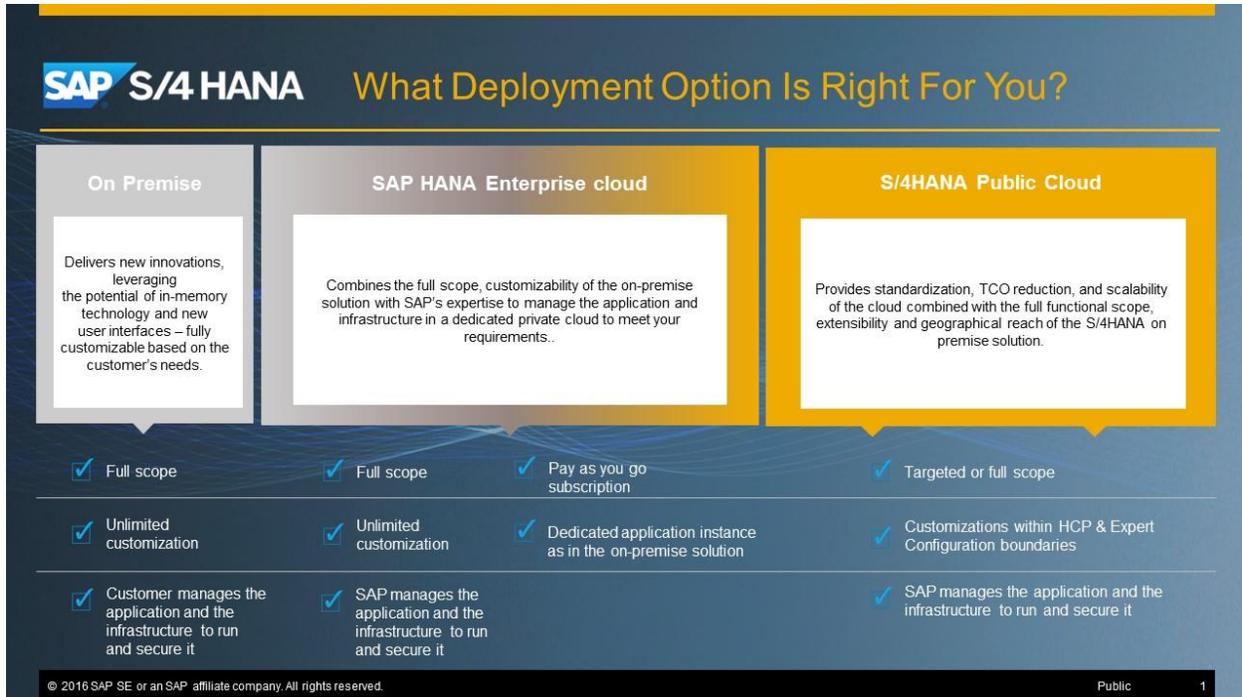
- **Dedicated or shared:** The choice here is a deployment dedicated to one organization or shared among many organizations in a common IT environment. There may be corporate policies that apply and/or legal requirements on where an off-premise IT environment is being run and where the data is being stored. Options (1) and (2) are dedicated, while option (3) is shared. Option (1) is on-premise, and options (2) and (3) are off-premise.
- **Degree of customization:** In a dedicated environment (on-premise or private managed cloud), you have the maximum possibility for customization to adapt the system to align with the way you run your business. These may be new customizations or the bringing forward of existing customizations you have made to your current SAP ERP implementation. This capability is more limited in the standardized environment of the public cloud.
- **Subscription or purchase:** One of the characteristics of the cloud software model is the ability to finance the software on a recurring subscription basis out of your operational budget. Ongoing support and maintenance are usually bundled into the subscription. The traditional model is to purchase a software license (and the infrastructure to run the software) that often requires tapping into your operational budget. In this scenario, support and maintenance are purchased under a separate contract on a recurring fee basis. Options (2) and (3) are subscription models, while option (1) is a purchase model.
- **Buyer managed or service provider managed:** In a traditional on-premise scenario, the buyer is responsible for managing the IT environment (compute and storage) in its own datacenter to run the database or application. That means the buyer is responsible for ensuring that the IT environment can scale to meet all types of loads from low to high. The buyer must apply the necessary operational procedures to maintain the IT environment and also apply the patches and updates to the software. In contrast, with a service provider-managed service, the buyer contracts with the service provider to deliver regular access to the software at a level of

service as specified in the service-level agreement. That means the service provider is responsible for keeping the software up to date, ensuring security of access, and providing sufficient infrastructure resources (compute and storage) to meet varying load demands. Option (1) is buyer managed, and options (2) and (3) are service provider managed.

Figure 1 shows the 3 deployment options for SAP S/4HANA and summarizes the key differences.

FIGURE 1

SAP HANA Deployment Options



Source: SAP, 2016

SAP HEC, the private managed cloud option, combines the benefits of on-premise and cloud. With a dedicated implementation like on-premise, you can customize the application to fit your organization's requirements. But similar to public cloud, you can transfer responsibility for ongoing management of the application and its infrastructure to the company that wrote the software and understands it best.

An SAP study that compared customer opinions on public cloud versus private managed cloud found that the private managed cloud (including SAP HEC) was deemed a better or comparable choice to public cloud across the attributes that were perceived as most important: security, availability, and ecosystem support. Large firms called out the challenge to deal with the complexity of offers and negotiations – addressed by the subscription model in the private managed cloud. Small firms noted the challenge of dealing with multiple clouds and integrating application data across the clouds. SAP HEC addresses these priority areas with its hosting and managed services model up and down the solution stack.

In an evaluation of deployment options, it might appear that the choice can be reduced to whether the customer does the management or turns over this responsibility to a service provider. But that's not an

accurate way to capture the difference among offerings because it does not describe *what is being managed* or *the level of services provided*. The section that follows looks at what is being managed as part of a service.

What Is Being Managed: Infrastructure as a Service, Application Management, and Software as a Service

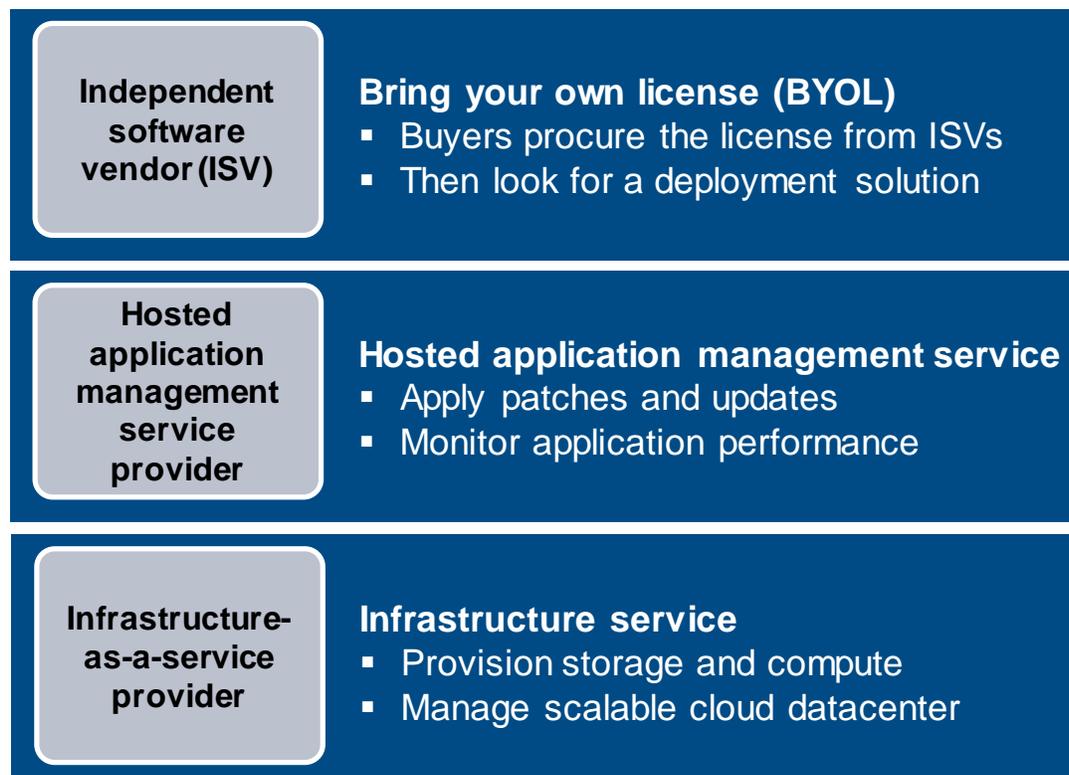
Figure 2 shows the difference between the scope of various types of deployment services and the scope of what is provided for infrastructure as a service (IaaS).

Note that the scope of the service provided as "infrastructure as a service" makes up the bottom third of the stack (see Figure 2). The IaaS provider runs a scalable cloud datacenter and rents out access to flexibly scalable infrastructure (compute and storage) resources on a subscription basis. There may be an additional service (not part of IaaS) provided by the same provider or partner to manage layered software (e.g., applications or databases) on top of the shared infrastructure. The acquisition of this software is the responsibility of the buyer, so the model is "bring your own license." In some cases, IaaS providers are offering a subscription option to gain rights to use the software, but this is limited and does not apply to SAP HANA or SAP S/4HANA software.

Before there was a cloud option (IaaS), hosters running a datacenter would rent out infrastructure capacity to clients buying such a service. But in such a case, like the IaaS case, the infrastructure service does not cover the management of the application or the acquisition of rights to use the software.

FIGURE 2

Infrastructure as a Service and Related Services

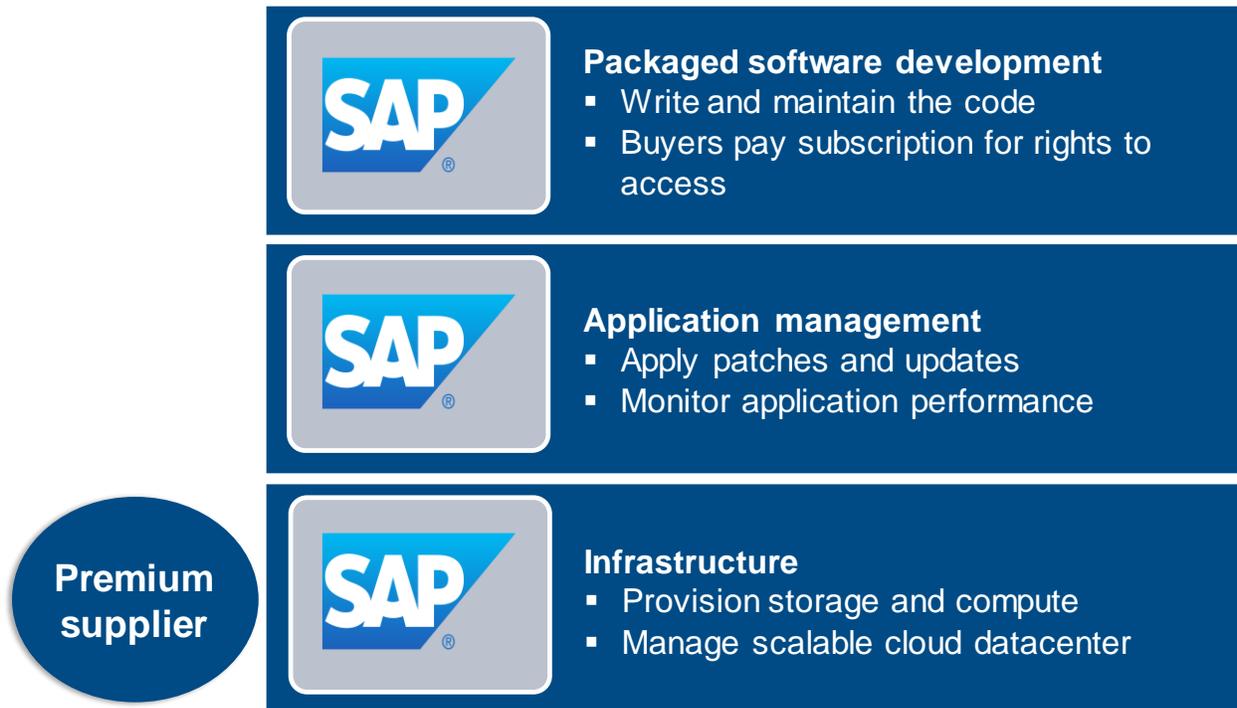


Source: IDC, 2016

Figure 3 shows a service model that aligns with SAP's HANA Enterprise Cloud. Here, the vendor that supplies the software also provides the application management and the infrastructure services.

FIGURE 3

SAP HANA Enterprise Cloud Service Model



Source: IDC, 2016

In this model, the writer of the software (SAP) takes responsibility for the management of the software on behalf of the client (application management service) as per a service-level agreement. To ensure the availability of the software on behalf of the deployment instance dedicated to the client, SAP also takes responsibility for the scalability of the infrastructure sufficient to ensure that it can meet its service-level agreement with the client. SAP does this by either running a datacenter or working with a premium supplier that provides such a service to SAP in support of SAP's HANA Enterprise Cloud managed service.

Note that this model, which SAP describes as "private cloud," resembles the public cloud software-as-a-service (SaaS) model, in which the same (SaaS) provider is responsible for developing/maintaining the code, managing a deployment on behalf of its client, and ensuring that there is sufficient infrastructure available to meet the terms of the service-level agreement. In both cases, access to the software is via a subscription (although there is also a BYOL option for SAP HANA Enterprise Cloud where the client buys a software license in the traditional manner). The main difference is that the public cloud is a shared environment, while SAP HEC comprises a dedicated service and infrastructure for a specific client. This one-to-one model allows more flexibility on client-specific customizations of the software than would be possible in a shared, more uniform public cloud situation.

Level of Services Provided Under SAP HEC

The section that follows itemizes the SAP HEC core service portfolio, providing the full hardware, operating system (OS), and DB infrastructure; DB management; and customer engagement management services.

Core SAP HEC Services

The SAP HEC service is designed to provide a one-stop method to request a larger scope of managed services via an easy, on-demand ordering approach that eliminates the need for individual change requests at the time of service. Core services under the monthly SAP HEC contract include:

- Unique reference architecture
- SAP HANA database management
- Infrastructure and operating system management and monitoring
- Customer engagement services
- Software available by subscription

Enhanced Managed Services – Optional for Customers

SAP also provides Enhanced Managed Services (EMS) as an option to extend the SAP HEC core services. With the introduction of Enhanced Managed Services – EMS for SAP HEC – customers are now able to better manage their own unique transition to SAP HEC. EMS enables customers to request SAP to perform important basic-level support and related tasks that customers either can no longer perform on their own or no longer want the responsibility of performing. EMS also offers an on-demand approach for customers to obtain services based on a bucket of prepaid monthly service hours. In addition, the EMS contract covers:

- Additional Basis Services (nonfunctional) that may be performed only by SAP or that a customer may wish to delegate to SAP
- A "bucket" of prepaid EMS hours, applied based on customer choice
- Services requested and delivered without the need for any change request
- Service Hour Block choices that are standardized for all SAP HEC accounts to streamline routine service delivery

Application Management Services – Optional Addition to Core SAP HEC Production Contracts

Application Management Services (AMS) offers services for production-level accounts focused solely on the *functional application layer* of customers' software solutions. With AMS, SAP fills the gap left in the middle and expands its coverage of services to provide one-stop shopping for customers to request support for a larger array of managed services. AMS is at the customer's control and via on-demand service requests and provides support and monitoring for the functional application layer of the software solution. AMS offers delivery based on the service-level agreement and a monthly subscription fee.

CHALLENGES/OPPORTUNITIES

SAP HANA Enterprise Cloud meets a real need in the marketplace for SAP customers looking to reduce their implementation risk by subscribing to a managed service. With SAP HANA Enterprise Cloud, SAP leverages its unparalleled expertise from HANA database operations management to S/4HANA application architecture and implementation. Contracting with SAP for a managed service reduces customer risk as SAP agrees to take responsibility for setting up and managing a dedicated HANA deployment. And because it is a dedicated environment, SAP can deliver a customized experience to each customer via an array of managed services: SAP HEC Core Services, Application Management Services, and Enhanced Managed Services. Each customer can decide on the pace and scope of its implementation with guidance from SAP on the product road map and timing. The SAP HEC managed service, at the customer's option, can be deployed in an SAP datacenter or a datacenter run by a premium supplier under contract to SAP that meets SAP's specifications.

Choice in modes of deployment for SAP S/4HANA is a good thing. But SAP faces a challenge here in meeting the needs of all of its customers seeking such a managed service. There will be some companies that desire such a service from SAP but will be unable to buy into SAP HEC. This situation occurs if the organization has already made a decision to standardize on an infrastructure provider other than SAP or one of its premium infrastructure suppliers for SAP HEC. In such a case, the organization will have to either manage the implementation itself or go to another service provider for a managed HANA service that utilizes its infrastructure supplier of choice.

There is a potential resolution to this issue. Over time, SAP is likely to expand the infrastructure supplier options in this program. That will expand the opportunity for SAP to reach more customers with the SAP HEC managed service – expanding the addressable market for SAP HEC services. That would be a win-win for both SAP and its customers.

SUMMARY AND CONCLUSION

For SAP customers, the move to HANA is likely to be either already under way or in their near-term plans. This important step represents a double switch: a change of the platform (to HANA) and a change of the application (for an SAP application or suite built on HANA).

Deciding on migrating to HANA is an important step. But having made the choice for HANA, an SAP customer has other decisions to make on how to deploy HANA:

- **Deployment environment:** Consider whether a dedicated or shared deployment environment is appropriate to meet organizational and IT requirements.
- **Customization:** Take account of your need now and in the future to customize the application to adapt to your needs.
- **Mode of payment:** For the HANA license, consider whether up-front payment or ongoing subscription is desired.
- **Management responsibility:** The choice is buyer management of the deployment (including architecture and ongoing operations) or service provider management under the terms of a service-level agreement.

For customers that seek a dedicated environment (a deployment dedicated to their use), prefer a subscription mode of payment, and want to rely on SAP to take on implementation risk, the SAP HEC managed service represents an attractive option.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-community.com
www.idc.com

Copyright Notice

External Publication of IDC Information and Data – Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2016 IDC. Reproduction without written permission is completely forbidden.

