

Migrating SAP® to Public Cloud

What You Need to Know



IT modernization and agility are critical for enterprises around the world. According to Gartner, enterprise IT spending on public cloud will increase to US\$474 billion in 2022. World-wide public cloud spending grew 16% in 2021. As enterprises increase investments in mobility, collaboration and other remote-working technology technologies, Gartner estimates that by 2025, over 95% of new digital workloads will be deployed on cloud-native platforms, up from 30% in 2021.

Enterprise migration to public cloud is still in its early stages, but statistics show that the pace of migration is accelerating. According to IDC, worldwide spending on public cloud services and infrastructure will more than double over the 2019-2023 forecast period.

The logical argument for public cloud migration has always been strong. The business model alone is compelling – moving from a capital-expense to a “pay-as-you-go” model is simpler and more efficient.

However, it's taken some time for public cloud providers to evolve their infrastructures and management tools to a level where medium- and large-sized enterprises could gain confidence in their ability to achieve the required levels of performance, availability, security and transparency for mission-critical business applications. This left many SAP customers wondering: **which public cloud option is right for me?**

What are my options?

Most organizations are familiar with the costs, overheads and challenges associated with building and maintaining an on-premises data center, not to mention the order-of-magnitude costs and challenges associated with acquiring and certifying an on-premises HANA environment. If this traditional approach doesn't fit the organization's forward-thinking strategy, two primary outsourced models exist: hosted private cloud and public cloud.

A hosted private cloud with a managed service provider can provide a similar operational model to an on-premises deployment, except for the capital investment. The right managed service provider offers a full range of infrastructure hosting, security and application managed services to ensure high availability and optimal performance. If this model is not a good fit, or there is a desire to consolidate IT workload processing in the public cloud, then it is worth considering public cloud for mission-critical enterprise workloads (such as SAP) as well.

Why public cloud?

Let's assume you're upgrading to SAP S/4HANA. In the on-premises world, an extensive hardware refresh to properly support the system would be required. For the typical mid-market enterprise, this type of refresh can cost up to US\$250,000 and for large enterprises the cost could be significantly higher.

In a public cloud environment however, these concerns don't exist since the infrastructure is provided as a service, and you only pay for what you consume. In other words, by moving to public cloud, a large potential capital expense (CapEx) becomes a much more manageable operating expense (OpEx).

The ability to upgrade software without a commensurate hardware investment is welcome news to enterprises. It can greatly speed up an SAP upgrade, since there is no need to await approvals on a large capital expense. There are ancillary benefits as well. For example, if organizations no longer need to procure and manage server and storage resources in-house, they no longer need specialized skills to manage those resources - enabling a re-allocation of IT personnel from "keeping the lights on" activities to more strategic projects.

Additionally, with its massively distributed and redundant infrastructure, public cloud typically provides greater performance, reliability and scalability than is possible with on-premises implementations.

SAP public cloud considerations

While the benefits of public cloud are compelling, there are a few important considerations for a successful implementation.

Choose your path to Hybrid

Everyone has a different use case for how they are leveraging hybrid cloud. Traditional wisdom may direct you to consider optimizing your current SAP landscape by first moving non-production infrastructures. Many choose this as a starting point. This is the lowest risk approach and often helps to assimilate your teams to cloud. But, with the lowest risk, typically comes the least reward. SAP is no exception.

The issue with this approach is it doesn't allow you to truly embrace cloud. This main disadvantage is that you have now created another silo in your IT strategy. As an alternative, consider starting with a 'proof of concept' and running technical validations. The truer path to hybrid SAP is planning a unique strategy that encompasses individual business and technology needs. It understands the impact of your third-party applications, connectivity, data transfer, code promotion, log sharing and swapping. Executing a migration with these impacts clearly understood can greatly reduce if not eliminate impact to your SAP users.

No matter your definition of hybrid, a unique strategy with a specific focus on connectivity can get you there.

Plan resiliency and disaster recovery first

SAP in public cloud allows you to rethink your approach to data and business continuity. Disaster recovery (DR) is all too often an afterthought and must be integrated into your public cloud strategy early in the process. Even enterprises with complex systems and petabytes of sensitive data can be guilty of having outdated and untested DR plans, or no DR plan at all.

Resiliency strategies in the cloud differ vastly than traditional brick and mortar strategies especially when it comes to in memory databases where you are replicating between entire copies of SAP landscapes. To achieve 80% or greater cost efficiencies in the cloud and have reasonable recovery times, SAP deployment automation must also be thoughtfully planned and cannot be an afterthought. Further, how your data strategy ties into your disaster recovery strategy, including pruning databases and old resident data, is a critical component.

Well thought out plans will not only deal with database synchronization and log shipments timing across availability zones, but the ability to spin up environments quickly and in the correct order. To do this effectively, look for cloud native tools that integrate with SAP. The hyper-scalers have worked very hard to integrate with SAP in recent years. Many underestimate the amount of automation, planning and testing it takes to achieve resiliency.

Many organizations choose to leverage the experience of a managed DR solution for SAP. This is one area where working with a provider who has a tailored solution to meet your needs may save you time and money. Ask them detailed questions about their expertise in optimizing recovery procedures, maintaining runbooks, performing validation routines, networking and testing.

Focus on responsibility as much as security

By adding more robust security measures, the perception of public cloud security has changed. Once an area of concern, it is now an area of maturity. Public cloud security may expose your internal IT organization to different types of challenges and best practices.

Security is a shared responsibility between the public cloud provider and those using public cloud services, and even shared between different SAP teams internally, adding to, rather than reducing complexity. While public cloud providers are responsible for the security of the cloud, their customers are responsible for the security in the cloud. The public cloud provider ensures that their services are secure, their data center is secure; but the consumer of the public cloud services is responsible for the secure configuration of everything running in the cloud account.

This is not a trivial task. There are countless examples in media reports where hacks and data breaches occurred due to unintentionally misconfigured cloud resources. The reality is that the security of public cloud infrastructures is hard and a specialist's job. Each public cloud provider does things differently, so the skills acquired in one provider don't immediately translate to another.

To avoid common security pitfalls in public cloud, organizations must understand how to assess and manage the security of a cloud service and their hosted applications. In addition, you should know how to identify and close the security gaps between applications and cloud platforms.

Re-think cost and performance optimization

Public cloud provides the opportunity to rethink cost and performance optimization capabilities. This puts continuous “right” and “tight” sizing procedures in place to achieve high performance and successful business outcomes. It dynamically changes to continually meet an organization’s ever-changing needs. This is achieved by architecting around a continual process of refinement and improvement of your SAP system over its entire lifecycle - from the initial design of your first proof of concept, to the ongoing operation of production landscapes.

One factor we have seen widely in helping hundreds of clients migrate to cloud is the large amount of sprawl. We have seen this with SAP workloads especially. Landscape resources are over-provisioned largely due to demand spikes or inaccurate troubleshooting performance issues within the SAP application. With large complex systems such as SAP, just a few percent over-deployment can quickly lead to thousands extra in your monthly cloud spend.

Choosing the right infrastructure at the right time and building cost-aware systems allow you to achieve business outcomes while minimizing costs. To realize cost optimization over time, you need to identify data, infrastructure resources or analytics jobs that can be deleted or downsized. Further, enterprises need to implement performance-management strategies that dynamically provide a balance between resiliency and cost. Then, and only then, can you put billing models in place to optimize costs through Reserved or On Demand instances.

The fit of these strategies not only varies by client, but by the type of SAP application. Establish performance benchmarks for public-cloud-based applications and resolve issues as they arise before they become disruptive. This kind of performance monitoring will require tools and expertise to provide the granular diagnostics required to identify the root cause of performance issues while assuring appropriate utilization.

Compliance and continuous control monitoring

Public cloud enables organizations to implement and run applications with unbounded scalability. With rapidly changing, evolving and intensifying regulations, embracing any IT change including the cloud, can be challenging. Governance, Risk and Compliance (GRC) activities such as stress testing, inspections and audits increase the computing needs and archiving of business records. There has been a shift away from periodic audits and a move to Continuous Control Monitoring (CCM) in recent years to make the compliance process less burdensome. Organizations can no longer afford to manually or yearly deal with new regulations, as new rules can increase and change quickly. The key to sustainable governance, risk and compliance (GRC) management is repeatable process controls.

SAP is likely at the heart of many of your business processes, which will expedite your need to plan your GRC and CCM strategy. CCM provides an automated, optimized and modernized framework for financial and regulatory control monitoring. Having a process for managing the alarms, communicating, investigating and correcting the control weaknesses needs to be considered, along with the prioritization of key controls for continuous monitoring and control objectives or goals. Automated tests or metrics also must be specified and built. Determine process frequencies to conduct each test and when the transactions or processes occur. Altogether, the above are known as the “three lines” of defense.

By simplifying and automating your risk and control frameworks and data, it helps you ensure your GRC information is up to date. It achieves a more efficient and integrated controls environment at a significantly lower cost.

What about SaaS and RISE?

Cloud SaaS offerings have traditionally offered the following benefits:

Faster innovation cycles.

In the case of SAP, users can count on the availability of new innovations every three months.

Reduced total cost of ownership.

A fit to standard approach drives optimal utilization of cloud and resources.

Reduced overheads.

IT does not have to manage the software instance in terms of backups, OS upgrades and patching, etc. RISE with SAP is a streamlined SaaS model available on subscription that includes the S/4HANA ERP, infrastructure, as well as many additional tools and services required for cloud adoption. There are few considerations specific to RISE with SAP beyond just the typical SaaS model:

Entitlements

Understand the value of your entitlements. With RISE you are translating your entitlements for “Full User Equivalents”, which then drive your system sizing.

User Growth

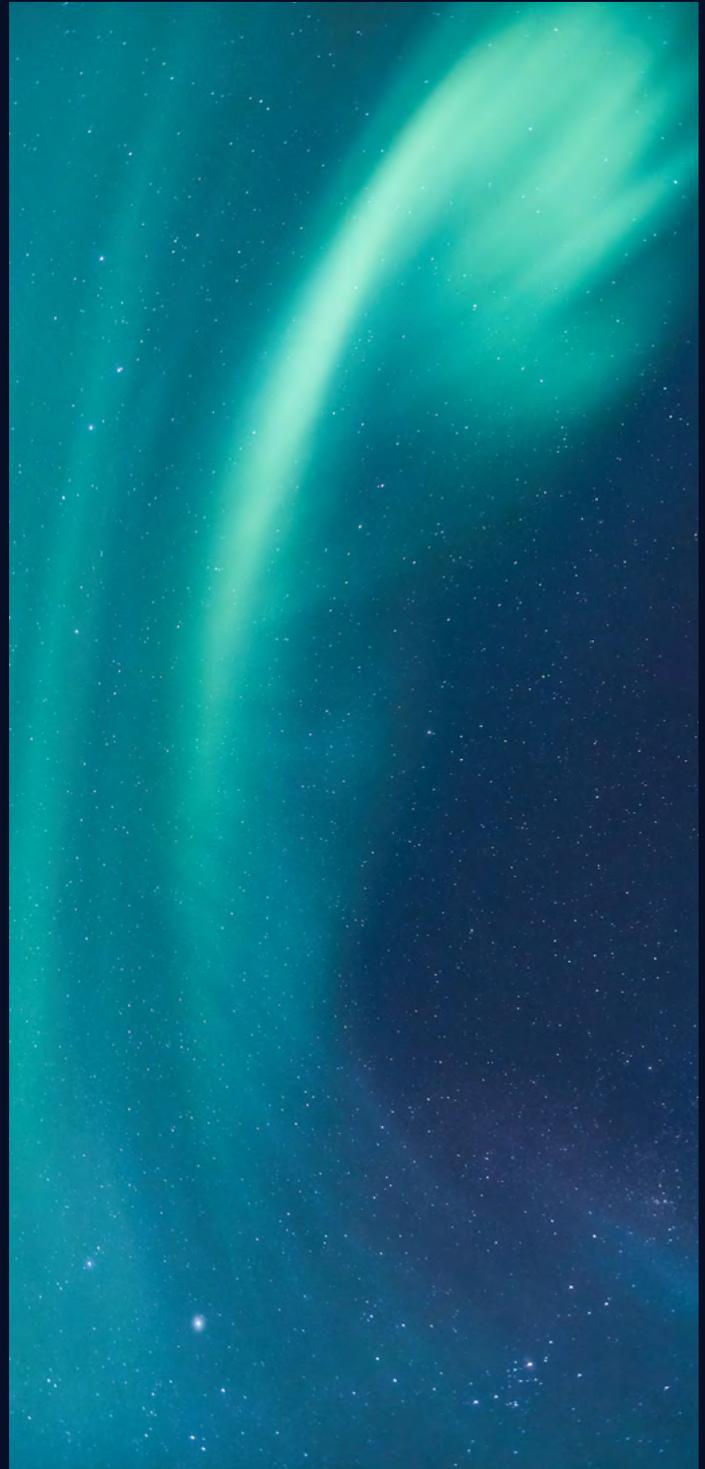
RISE requires you to purchase into tiers depending on the number of SAP users.

Contracts

With RISE, there is one simple process to get to public cloud with one set of agreements. However, there is still complexity around the agreements, especially when it comes to support. It is important to understand this in the context of your existing agreements.

Licensing

Since you are foregoing perpetual licenses, understand your options if you decide RISE is no longer a fit.



Getting started with public cloud

The first step toward moving to public cloud is to build your business case. As with any other major IT initiative, it is important to understand the full range of costs, risks and benefits before moving forward.

Key elements to consider include:

OpEx and CapEx

Understand the long-term financial impact of moving to the public cloud. CapEx is relatively easy to calculate. OpEx can be a bit trickier, because it's important to fully understand which skill sets can transfer from an on-premises world to a public-cloud world; and which new skill sets will be required, either from employees or partners, to ensure a smooth transition and ongoing operation.

Security and Compliance

For enterprises in regulated industries, it's important to seek out a public cloud provider that can provide the transparency and control over data required to ensure appropriate levels of security and compliance. In situations where this may be questionable, a hybrid-cloud approach could be appropriate.

Timing

There may be natural inflexion points where it makes sense to migrate to the public cloud. For example, upgrading enterprise software often requires a commensurate upgrade of server and storage hardware. Obviating that capital

expense makes migration to the public cloud extremely attractive. Many SAP customers are encountering this exact situation with the upgrade to S/4HANA.

How much cloud?

Public cloud migration is not an “all or nothing” proposition. For enterprises that want to take a phased approach to public cloud adoption, a hybrid cloud implementation can be a sensible first step.

As part of the public cloud cost to benefit equation, it is wise to include considerations for a third-party partner who can assist with public cloud migration and management. Partnering with professionals who have “been there, done that” can help organizations avoid potential landmines associated with public cloud. They can also help to ensure long-term cost and performance optimization by managing critical functions such as database tuning, application and security patches, software upgrades and application performance monitoring.

Ideally, such a partner will combine deep expertise managing SAP implementations, with demonstrated public cloud expertise. They will help you evaluate all your cloud options, including SaaS options such as RISE with SAP. One of the best ways to test the latter qualification is to seek out partners that hold certifications from the large public cloud platforms. Access to an experienced, certified partner can help ensure that your journey to public cloud meets or exceeds projected benefits for your business.

Public cloud adoption: the time is now

Moving SAP and other mission-critical applications into the public cloud can seem daunting, but much of the perceived risk in the process can be mitigated by working with partners that have certified expertise in public cloud migration and management. Many organizations are taking a phased approach toward migration, first starting with a hybrid cloud migration and gradually moving to all cloud. This can be a way for organizations to begin realizing the benefits of the public cloud, while maintaining the most sensitive data and other assets in house.