

SAP on AWS Overview

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Abstract

Companies of all sizes can take advantage of the many benefits provided by Amazon Web Services (AWS) to achieve business agility, cost savings, and high availability by running their SAP environments on the AWS Cloud.

This guide is intended for SAP customers and partners who want to learn about the benefits and options for running SAP solutions on AWS, or who want to know how to implement and operate their SAP environment effectively on AWS.

AWS Overview

Amazon Web Services (AWS) provides on-demand computing resources and services in the cloud, with pay-as-you-go pricing. You can run a server on AWS and log in, configure, secure, and operate it just as you would operate a server in your own data center.

Using AWS resources for your compute needs is like purchasing electricity from a power company instead of running your own generator, and it provides many of the same benefits:

- The capacity you get exactly matches your needs.
- You pay only for what you use.
- Economies of scale result in lower costs.
- The service is provided by a vendor who is experienced in running large-scale compute and network systems.

Global Infrastructure

The AWS Cloud infrastructure is built around Regions and Availability Zones. An *AWS Region* is a physical location in the world that has multiple Availability Zones. Availability Zones consist of one or more discrete data centers, each with redundant power, networking, and connectivity, and housed in separate facilities. These Availability Zones offer you the ability to operate production applications and databases that are more highly available, fault-tolerant, and scalable than would be possible from a single data center.

For additional information about AWS Regions and Availability Zones, see the [AWS Global Infrastructure](#) webpage.¹

AWS Security and Compliance

The AWS Cloud security infrastructure has been architected to be one of the most flexible and secure cloud computing environments available today. Security on AWS is very similar to security in your on-premises data center—but without the costs and complexities involved in protecting facilities and hardware. AWS provides a secure global infrastructure, plus a range of features that you can use to help secure your systems and data in the cloud. To learn more about AWS Security, visit the [AWS Security Center](#).²

AWS Compliance enables customers to understand the robust controls in place at AWS to maintain security and data protection in the cloud. AWS engages with external certifying bodies and independent auditors to provide customers with extensive information regarding the policies, processes, and controls established and operated by AWS. To learn more about AWS Compliance, visit the [AWS Compliance Center](#).³

AWS Products and Services

AWS provides an extensive set of computing resources and services. The following sections provide an overview of the core AWS services that are most relevant for the implementation and operation of SAP solutions.

Compute

[Amazon Elastic Compute Cloud \(Amazon EC2\)](#) provides scalable computing capacity in the AWS Cloud.⁴ Amazon EC2 offers a wide selection of virtual machine configurations that support different CPU, memory, network, and I/O capabilities. For running SAP systems, Amazon EC2 provides virtual machine instances for the Microsoft Windows Server, SUSE Linux Enterprise Server, and Red Hat Enterprise Linux operating systems.

Storage

[Amazon Elastic Block Store \(Amazon EBS\)](#) provides persistent block-level storage volumes for use with EC2 instances.⁵ EBS volumes are highly available and reliable storage volumes that can be attached to any running instance. EBS

volumes that are attached to an EC2 instance are exposed as storage volumes that persist independently from the lifetime of the instance. EBS volumes are designed for 99.999% availability.

[Amazon Simple Storage Service \(Amazon S3\)](#) provides access to reliable, fast, and inexpensive data storage infrastructure.⁶ Amazon S3 stores data objects redundantly on multiple devices across multiple facilities. This service provides highly available and highly durable backup storage for your SAP systems on AWS.

Networking

[Amazon Virtual Private Cloud \(Amazon VPC\)](#) enables you to define a virtual network in your own logically isolated area within the AWS Cloud.⁷ Your VPC closely resembles a traditional network that you might operate in your own data center, but it includes the benefits of using the AWS scalable infrastructure. You can connect your VPC to your own corporate data center to provide seamless integration between on-premises users and systems, and SAP systems in your VPC.

Deployment and Management

The [AWS Management Console](#) provides a simple and intuitive web-based interface for provisioning and managing AWS resources.⁸

[AWS CloudFormation](#) gives you an easy way to create and manage a collection of related AWS resources, and provision and update them in an orderly and predictable fashion.⁹

SAP on AWS

AWS and SAP Alliance

SAP has been an AWS customer since 2008 and uses the AWS infrastructure for a variety of use cases and scenarios. In early 2011, AWS became an SAP Global Technology Partner. Since then, AWS has worked closely with SAP to test and certify the AWS Cloud for SAP solutions.

Benefits of Running SAP on AWS

Lower TCO – Benefit from the economies of scale and efficiencies provided by AWS. Pay for only the compute, storage, and other resources you use. [Read about](#) savings of up to 71% compared to running SAP systems on premises.¹⁰

Replace CapEx with OpEx – Start an SAP implementation or project on AWS without any upfront cost or commitment for compute, storage, or network infrastructure.

Agility and speed – Provision new infrastructure and SAP systems in minutes compared to waiting weeks or months to procure and deploy traditional infrastructure.

Flexibility – The AWS Cloud supports standard Windows Server, SUSE Linux Enterprise Server, and Red Hat Enterprise Linux, providing many options for installing SAP solutions.

Stop guessing capacity – Eliminate guesswork on your SAP infrastructure capacity needs. With AWS you can access as much or as little capacity as you need, and scale up and down as required in only a few minutes.

SAP Support on AWS

Supported Solutions

AWS and SAP have worked together to test and certify the following SAP solutions to be fully supported for production deployment on AWS.

- ✓ SAP Business Suite
- ✓ SAP HANA
- ✓ SAP Business All-in-One
- ✓ SAP NetWeaver
- ✓ SAP ASE
- ✓ SAP IQ
- ✓ SAP BusinessObjects
- ✓ SAP Afaria
- ✓ SAP Mobile Platform
- ✓ SAP Business One
- ✓ SAP Hybris Commerce
- ✓ SAP Replication Server

For additional information about SAP solutions supported on AWS, see [SAP Note 1656099](#) (SAP Support Portal login required).¹¹

SAP Support

SAP provides the same level of product support for SAP systems running on AWS that it does on any other infrastructure. Full support of SAP production systems running on AWS requires AWS Business-level or Enterprise-level support.

For additional information about AWS Support, see <http://aws.amazon.com/premiumsupport/>.

For additional information about SAP support on AWS, see [SAP Note 1656250](#) (SAP Support Portal login required).¹²

SAP on AWS Use Cases

SAP customers and partners are using AWS for a wide range of use cases, including the following:

- Migration of existing SAP production environments to AWS
- Implementation of new SAP production environments on AWS
- Migration of existing SAP DEV and QAS landscapes to AWS
- Running SAP test, training, demo, and POC systems on AWS
- Evaluation and testing of new SAP solutions
- SAP document and data archiving on AWS
- SAP data replication to AWS Cloud services like Amazon S3 and Amazon Redshift
- Disaster recovery for on-premises SAP environments
- Temporary infrastructure for SAP upgrades and OS/DB migrations
- Archival of complete SAP legacy systems

SAP on AWS Case Studies

SAP customers of all sizes are taking advantage of the benefits provided by AWS.



To read about SAP customers who have achieved business agility, cost savings, and high availability by running their SAP environments on the AWS Cloud, see [SAP on AWS Case Studies](#).¹³

SAP Licensing on AWS

Bring Your Own License

Most SAP solutions use a Bring Your Own License (BYOL) model on AWS for the SAP software components and underlying databases. SAP customers and partners can use new or existing SAP licenses for systems running on Amazon EC2.

On-Demand, Trial, and Developer Licenses

Some SAP solutions are available on Amazon EC2 with on-demand, trial, or developer licenses. For a list of the SAP solutions that are currently available with one of these license types, see the [SAP on AWS website](#).¹⁴

Operating System Licenses

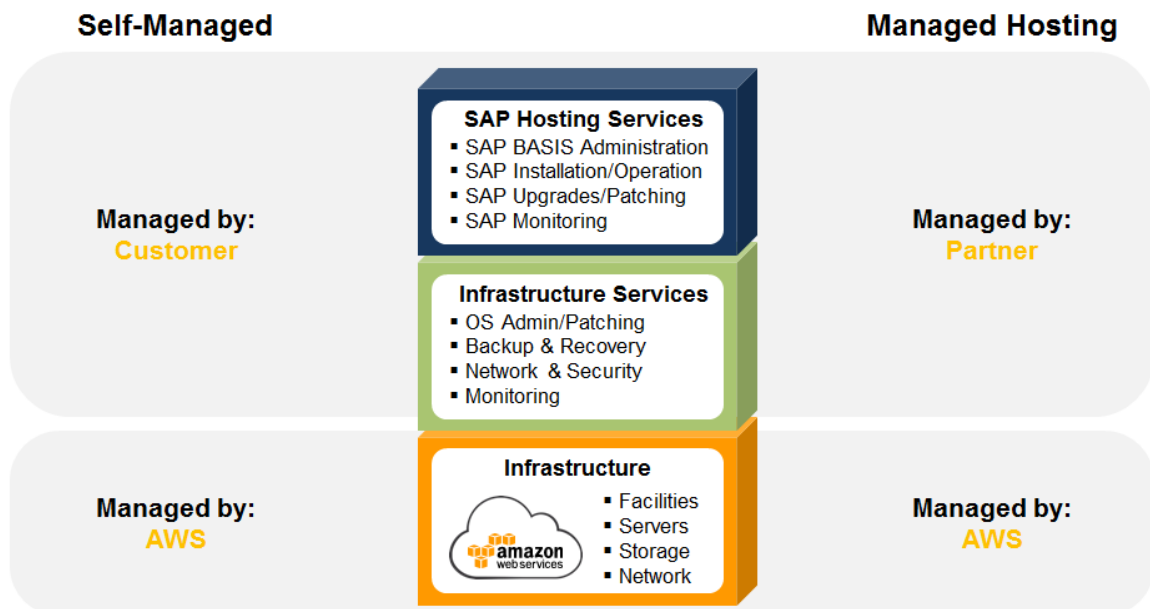
Operating system licenses are included in the hourly fee of EC2 instances.

Managed Services for SAP on AWS

The provisioning and management of AWS resources are completely self-service. AWS manages the underlying hardware, software, networking, and facilities that run AWS services up to the virtualization layer. Maintenance and administration of the operating system and any applications and databases running above the operating system are managed by the customer or by an AWS partner.

If a managed service is required, AWS has a network of partners that can provide a fully managed hosting service for SAP solutions on top of AWS. To learn more about services for SAP on AWS and to find an SAP partner within the AWS Partner Network, see <http://aws.amazon.com/sap/find-partners/>.

The following diagram depicts the two most common scenarios for managing SAP on AWS:



SAP System Deployment

Deployment of an SAP system on AWS is very similar to the deployment process on traditional infrastructure. AWS also offers innovative deployment options that greatly reduce the effort and time to deploy a new SAP environment.

SAP standard installation – The primary deployment method for most SAP solutions on AWS uses a Bring Your Own Software model using the standard SAP installation processes and tools. Installation of an SAP solution on AWS is very similar to the process of installing SAP on any other physical or virtual server.

AWS Quick Start reference deployment – AWS Quick Start reference deployments help you rapidly deploy fully functional enterprise software on the AWS Cloud. With each Quick Start you can easily launch, configure, and run AWS compute, networking, storage, and other services to deploy that workload on AWS, often in an hour or less. The two Quick Starts available for SAP are:

- [SAP HANA](#)¹⁵
- [SAP Business One](#)¹⁶

Prebuilt SAP system image – Some SAP solutions are available on AWS as a prebuilt system image that contains a preinstalled and preconfigured SAP system. A prebuilt SAP system image enables you to rapidly provision a new SAP system without spending the time and effort required by a traditional manual SAP installation. Pre-built SAP system images are available from the following sources:

- [AWS Marketplace](#)¹⁷
- [SAP trial systems](#)¹⁸
- [SAP developer images](#)¹⁹
- [SAP Cloud Appliance Library](#)²⁰

For additional information about the available options for deploying SAP on AWS, see the [SAP on AWS Implementation and Operations Guide](#).²¹

SAP HANA on AWS

AWS has worked closely with SAP to certify the AWS platform so that companies of all sizes can fully realize all the benefits of the SAP HANA in-memory database management system on the AWS Cloud. The following offerings of SAP HANA are currently available on AWS:

SAP HANA Bring-your-own-License – SAP-certified on-demand cloud infrastructure to run SAP HANA. With AWS, SAP HANA infrastructure can be rapidly provisioned without needing to make any capital investments or required

long-term commitments. Certain SAP HANA scenarios are supported on a multi-node cluster, providing up to 14 TB of total memory. The AWS Quick Start reference deployment for SAP HANA ([HTML](#) | [PDF](#)) provides an automated process for deploying SAP HANA on AWS. With this Quick Start, you can deploy single-node and multi-node SAP HANA systems on AWS in less than one hour.

SAP HANA One – A fully featured SAP HANA system, which is sold by SAP via the AWS Marketplace with an on-demand or hourly SAP HANA license. SAP HANA One is supported for production and non-production use cases.

SAP HANA Developer Edition – Free SAP HANA image with a perpetual SAP HANA license for individual developers to build, test, and demo SAP HANA applications.

SAP HANA Trials – Free trials of various SAP solutions running on SAP HANA that can be rapidly provisioned on the AWS Cloud.

For additional information about SAP HANA on AWS, see <http://aws.amazon.com/sap/solutions/saphana/>.

Pricing SAP on AWS

With AWS you pay only for what you use—no upfront cost or long-term commitment is required. To understand how to estimate the cost of running your SAP environment on AWS, see the [SAP on AWS Pricing Guide](#).²²

Additional Information

For the latest information about SAP on AWS and to learn more about running your SAP environment on AWS, see <http://aws.amazon.com/sap>.

If you have any questions about SAP on AWS, please contact us at <http://aws.amazon.com/sap/contact-us/>.

Contributors

The following individuals and organizations contributed to this document:

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Notes

- ¹ <https://aws.amazon.com/about-aws/global-infrastructure/>
- ² <http://aws.amazon.com/security/>
- ³ <http://aws.amazon.com/compliance/>
- ⁴ <http://aws.amazon.com/ec2/>
- ⁵ <http://aws.amazon.com/ebs/>
- ⁶ <http://aws.amazon.com/s3/>
- ⁷ <http://aws.amazon.com/vpc/>
- ⁸ <http://aws.amazon.com/console/>
- ⁹ <http://aws.amazon.com/cloudformation/>
- ¹⁰ <http://aws.amazon.com/whitepapers/vms-sap-tco/>
- ¹¹ <http://service.sap.com/sap/support/notes/1656099>
- ¹² <http://service.sap.com/sap/support/notes/1656250>
- ¹³ <http://aws.amazon.com/sap/case-studies/>
- ¹⁴ <http://aws.amazon.com/sap/getting-started/>
- ¹⁵ <https://aws.amazon.com/quickstart/architecture/sap-hana/>
- ¹⁶ <https://aws.amazon.com/quickstart/architecture/sap-b1-hana/>
- ¹⁷ https://aws.amazon.com/marketplace/search/results/ref=gtw_navgno_search_box?searchTerms=sap
- ¹⁸ <http://scn.sap.com/docs/DOC-47930>
- ¹⁹ <http://scn.sap.com/docs/DOC-47930>
- ²⁰ <http://www.sap.com/pc/tech/cloud/software/appliance-library/index.html>
- ²¹ http://do.awsstatic.com/enterprise-marketing/SAP/SAP_on_AWS_Implementation_Guide.pdf
- ²² <http://do.awsstatic.com/enterprise-marketing/SAP/sap-on-aws-pricing-guide.pdf>