

# SAP on AWS

## Overview and Planning

August 2018

Amazon Web Services (AWS)

### Contents

Overview .....	3
AWS Overview .....	4
AWS Services.....	4
Compute .....	4
Storage .....	4
Networking .....	4
Management tools .....	4
Security, identity, and compliance .....	4
AWS Global Infrastructure .....	5
AWS Security and Compliance .....	5
Security .....	5
Compliance .....	6
AWS Resource Provisioning and Management.....	6
SAP on AWS Overview.....	7
SAP Software and Licenses on AWS.....	7
Bring Your Own Software and License .....	7
AWS Marketplace .....	8
SAP Trial and Developer Licenses .....	8
SAP Support on AWS.....	8

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SAP Solutions Supported on AWS .....	8
SAP Support on AWS .....	9
Deploying SAP Systems on AWS .....	9
Manual Installation Using SAP Standard Installation Process .....	9
Automated Deployment Using AWS Quick Starts.....	10
Rapid Provisioning Using Prebuilt SAP Images .....	10
Getting Assistance from AWS Partners .....	10
Partner Services for SAP on AWS.....	10
Types of Partner Services and Solutions for SAP on AWS .....	10
How to Find Partner Services and Solutions for SAP on AWS.....	11
SAP on AWS Planning .....	12
SAP Notes.....	12
Choosing an Architecture .....	12
All-on-AWS Architecture .....	13
Hybrid AWS Architecture .....	14
Choosing an AWS Region and Availability Zone.....	15
Choosing a Region.....	15
Choosing an Availability Zone.....	15
Configuring Network and Connectivity.....	15
Amazon VPC.....	15
Network Connectivity Options.....	16
Following Security Best Practices.....	16
Shared Responsibility Environment.....	17
Amazon VPC.....	17
Choosing Instance Types .....	17
General Information.....	18
For SAP NetWeaver-based Solutions.....	18
For SAP HANA .....	18

For SAP Business One, Edition for SAP HANA .....	18
Supported Operating Systems .....	18
Operating Systems.....	18
Operating System Licenses .....	19
Supported Databases .....	19
Database Installation and Administration .....	19
Database Licenses .....	20
SAP Installation Media .....	20
Setting up SAProuter and SAP Solution Manager .....	21
For SAP All-on-AWS Architecture .....	21
For SAP Hybrid AWS Architecture .....	21
Document Revisions .....	21

## Overview

This guide provides overview and planning information for SAP customers and partners who are considering implementing or migrating SAP environments or systems to the Amazon Web Services (AWS) Cloud.

This guide is intended for users who have previous experience installing, migrating, and operating SAP environments and systems on traditional on-premises infrastructure. It consists of three main sections:

- An overview of the AWS Cloud and AWS services, for readers who are new to the cloud.
- An overview of SAP on AWS, including software and licenses, support options, and partner services.
- Technical considerations that will help you plan and get the most out of your SAP environment on AWS.

**Note** To access the SAP notes referenced in this guide, you must have an SAP One Support Launchpad user account.

# AWS Overview

AWS offers a broad set of global, cloud-based services, including compute, storage, databases, analytics, networking, mobile, developer tools, management tools, Internet of Things (IoT), security, and management tools. These services help organizations move faster, lower IT costs, and support scalability. AWS is trusted by the largest enterprises and popular start-ups to power a wide variety of workloads, including web and mobile applications, game development, data processing and warehousing, storage, and archiving.

## AWS Services

AWS provides over 120 cloud services that you can use in combinations tailored to your business or organizational needs. This section introduces the AWS services that are most relevant for the installation and operation of SAP solutions. For an overview of each service and to learn about its features, pricing, and documentation, follow the link in this list.

### Compute

- [Amazon Elastic Compute Cloud \(Amazon EC2\)](#)

### Storage

- [Amazon Elastic Block Store \(Amazon EBS\)](#)
- [Amazon Simple Storage Service \(Amazon S3\)](#)
- [Amazon Elastic File System \(Amazon EFS\)](#)

### Networking

- [Amazon Virtual Private Cloud \(Amazon VPC\)](#)
- [Amazon Route 53](#)
- [AWS Direct Connect](#)

### Management tools

- [AWS Management Console](#)
- [AWS Command Line Interface](#)
- [AWS CloudFormation](#)
- [Amazon CloudWatch](#)

### Security, identity, and compliance

- [AWS Identity and Access Management](#)

For information about all AWS services, see the [Overview of Amazon Web Services](#) whitepaper.

## AWS Global Infrastructure

The AWS Cloud infrastructure is built around Regions and Availability Zones. An AWS Region is a physical location that provides multiple, physically separated and isolated Availability Zones. Each Availability Zone consists of one or more data centers that are connected with low-latency, high-throughput, and highly redundant networking. These Availability Zones offer an easier and more effective way to design and operate your applications and databases, making them more highly available, fault tolerant, and scalable than traditional single or multiple data center infrastructures.

For a list of the available AWS Regions and to learn more about the AWS global infrastructure, see [Global Infrastructure](#) on the AWS website.

## AWS Security and Compliance

### Security

Cloud security at AWS is the highest priority. As an AWS customer, you will benefit from a data center and network architecture built to meet the requirements of the most security-sensitive organizations. Security in the cloud is much like security in your on-premises data centers—only without the costs of maintaining facilities and hardware. In the cloud, you don't have to manage physical servers or storage devices. Instead, you use software-based security tools to monitor and protect the flow of information into and out of your cloud resources.

As an AWS customer you inherit all the best practices of AWS policies, architecture, and operational processes built to satisfy the requirements of our most security-sensitive customers, and get the flexibility and agility you need in security controls.

The AWS Cloud enables a shared responsibility model. While AWS manages security **of** the cloud, you are responsible for security **in** the cloud. This means that you retain control of the security you choose to implement to protect your own content, platform, applications, systems, and networks no differently than you would in an on-site data center.

To learn more about AWS security, see [AWS Cloud Security](#) on the AWS website.

## Compliance

AWS provides robust controls to help maintain security and data protection in the cloud. As systems are built on top of AWS Cloud infrastructure, compliance responsibilities will be shared. By tying together governance-focused, audit-friendly service features with applicable compliance or audit standards, AWS Compliance enablers build on traditional programs and help you operate in an AWS security control environment.

The IT infrastructure that AWS provides to its customers is designed and managed in alignment with best security practices and a variety of IT security standards. The following is a partial list of assurance programs with which AWS complies:

- SOC 1/ISAE 3402, SOC 2, SOC 3
- FISMA, DIACAP, and FedRAMP
- PCI DSS Level 1
- ISO 9001, ISO 27001, ISO 27018

To learn more about AWS compliance, visit [AWS Cloud Compliance](#) on the AWS website.

## AWS Resource Provisioning and Management

The provisioning and management of AWS services and resources use a self-service model managed by the customer or a partner. For an overview of the tools available for provisioning and management, see *Management Tools* in the [AWS Services](#) section.

Figure 1 shows the services managed by AWS and the services managed by the customer or partner for SAP.

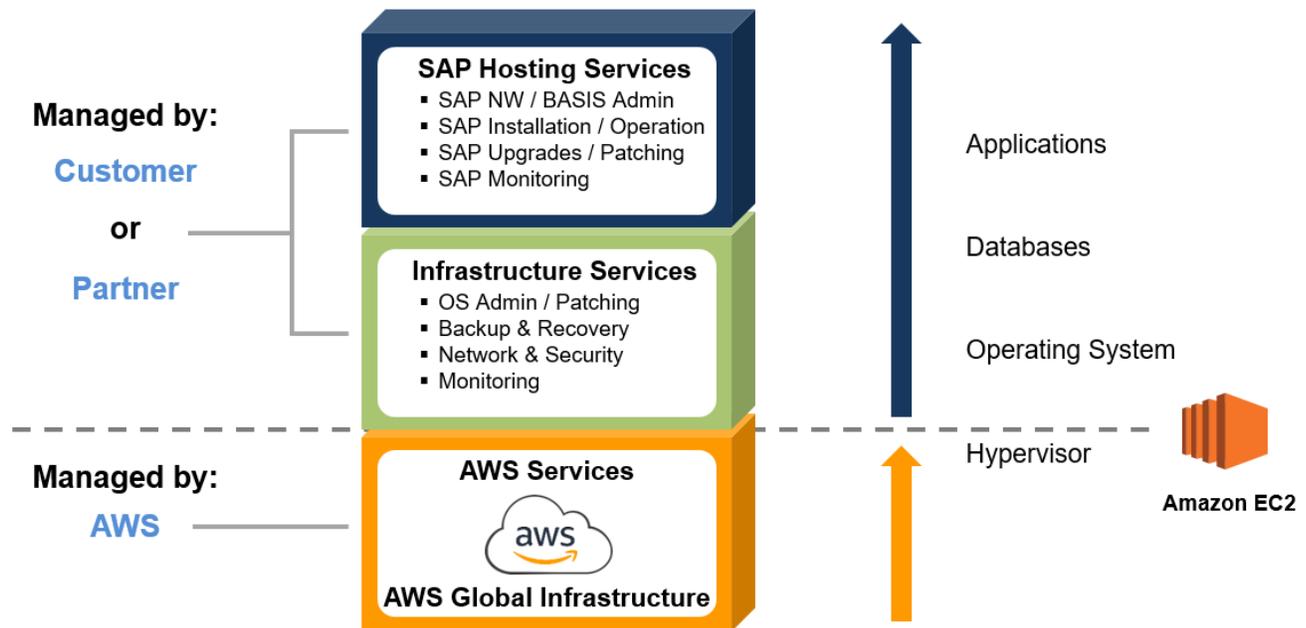


Figure 1: Managed services for SAP on AWS

## SAP on AWS Overview

AWS has been working with SAP since 2011 to enable customers to deploy and migrate their SAP applications to AWS, and SAP has certified AWS for the vast majority of SAP applications available to customers today. In addition, AWS is working with SAP to power multiple SaaS services and offerings, including SAP Concur, SAP SuccessFactors, SAP Cloud Platform, and SAP HANA Enterprise Cloud.

### SAP Software and Licenses on AWS

This section describes the options available for SAP software and licenses on AWS.

#### Bring Your Own Software and License

The majority of SAP solutions that can be run on AWS use a bring-your-own-software and bring-your-own-license (BYOL) model. Running SAP systems on AWS doesn't require special or new SAP licenses. If you're an existing SAP customer, you can use your existing SAP licenses when running SAP on AWS. You are responsible for obtaining a valid SAP license, and you must ensure that you are in compliance with the SAP licensing policies. AWS does not provide or sell SAP licenses.

## AWS Marketplace

[AWS Marketplace](#) is a digital catalog with thousands of software listings from independent software vendors that makes it easy to find, test, buy, and deploy software that runs on AWS. To view SAP-related offerings available in AWS Marketplace, follow this link: [SAP in AWS Marketplace](#).

## SAP Trial and Developer Licenses

The [SAP Cloud Appliance Library](#) provides access to an online repository of the latest preconfigured SAP solutions. You can instantly install these solutions on AWS by using a launch wizard that automates deployment. Some of the solutions available in the SAP Cloud Appliance Library are provided with free trial or developer edition licenses.

### **SAP Hardware Key Generation**

SAP hardware key generation on EC2 instances uses a specific process that is dependent on the SAP kernel patch level. If a hardware key is generated before patching the SAP kernel to the proper level, and the kernel is updated at a later time, the hardware key may change, making the installed license invalid. For details on how the SAP hardware ID is generated on EC2 instances and the required SAP kernel patch levels see the following SAP notes (SAP One Support Launchpad access required):

- [SAP Note 1178686](#) - Linux: Alternative method to generate a SAP hardware key
- [SAP Note 2327159](#) - SAP NW License Behavior in Virtual and Cloud Environments
- [SAP Note 1697114](#) - Determination of hardware ID In Amazon clouds
- [SAP Note 2113263](#) - Additional public key for AWS Hardware ID
- [SAP Note 2319387](#) - Adjustment of the license check for AWS China

## SAP Support on AWS

AWS and SAP have worked together closely to ensure that you will receive the same level of support and can use the same support channels, whether you're running your SAP systems on AWS or on premises.

## SAP Solutions Supported on AWS

The majority of SAP solutions that can run on traditional on-premises infrastructure are fully supported by SAP to run in production on AWS. For the complete list of SAP solutions supported on AWS, see [SAP Note 1656099](#) and the other notes referenced within that note.

## SAP Support on AWS

To obtain support for SAP environments and systems running on AWS, you can follow SAP's standard support process.

To receive full support, see [SAP Note 1656250](#) for a few requirements for running SAP systems on AWS. One of the primary requirements is to enable the built-in SAP monitors to retrieve information about configuration and resource utilization from the underlying AWS infrastructure. There are two steps to enable SAP monitoring on AWS:

- Enable detailed monitoring for **Amazon CloudWatch** on each EC2 instance to ensure that the required AWS metrics are provided in one-minute intervals. For additional information on Amazon CloudWatch, see <http://aws.amazon.com/cloudwatch>.
- Install, configure, and run the **AWS Data Provider for SAP** on each EC2 instance. The AWS Data Provider collects the required performance and configuration data from a variety of sources, including the Amazon EC2 API, Amazon EC2 instance metadata, and Amazon CloudWatch. For detailed installation instructions, see the [AWS Data Provider Installation and Operations Guide](#) and [SAP Note 1656250](#).

## Deploying SAP Systems on AWS

The section describes the different options available for provisioning AWS infrastructure and installing SAP systems on AWS.

### Manual Installation Using SAP Standard Installation Process

The majority of SAP solutions supported on AWS can be installed by manually provisioning the required AWS infrastructure resources and then following the relevant, standard [SAP installation documentation](#) to install the SAP system on AWS.

The following SAP solutions use a manual SAP installation process on AWS:

- SAP Business Suite and NetWeaver-based solutions
- SAP HANA
- SAP BusinessObjects Business Intelligence (BI)
- SAP Hybris Commerce
- SAP Business One

## Automated Deployment Using AWS Quick Starts

AWS Quick Starts are built by AWS solutions architects and partners to help you deploy popular solutions on AWS, based on AWS best practices for security and high availability. These reference deployments implement key technologies automatically on the AWS Cloud, and eliminate many of the manual steps required for deployment. You can build your test or production environment in a few steps, and start using it immediately.

The following AWS Quick Starts for SAP are currently available:

- [SAP HANA](#)
- [SAP NetWeaver](#)
- [SAP Business One, version for SAP HANA](#)

## Rapid Provisioning Using Prebuilt SAP Images

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.

Prebuilt SAP system images are available from the following sources:

- [AWS Marketplace](#)
- [SAP Cloud Appliance Library](#)

## Getting Assistance from AWS Partners

AWS has experienced SAP partners who can build a complete SAP environment or a single SAP system for you. For additional information see the following section.

## Partner Services for SAP on AWS

The [AWS Partner Network \(APN\)](#) is a community of companies that offer a wide range of services and products on AWS. APN SAP partners can provide SAP-specific services to help you fully maximize the benefits of running SAP solutions on AWS.

## Types of Partner Services and Solutions for SAP on AWS

### ***Cloud assessment services***

Advisory services to help you develop an efficient and effective plan for your cloud adoption journey. Typical services include financial/TCO (total cost of ownership), technical, security and compliance, and licensing.

***Proof-of-concept services***

Services to help you test SAP on AWS; for example: SAP ERP/ECC migration to SAP HANA or S/4HANA, SAP Business Warehouse (BW) migration to SAP HANA or BW/4HANA, SAP OS/DB migrations, new SAP solution implementation.

***Migration services***

Services to migrate existing SAP environments or systems to AWS; for example: all-on-AWS SAP migrations (PRD/QAS/DEV), hybrid SAP migrations (QAS/DEV), single SAP system (e.g., SAP BW) migrations.

***Managed services***

Managed services for SAP environments on AWS, including: AWS account and resource administration, OS administration/patching, backup and recovery, SAP Basis and NetWeaver.

***Packaged solutions***

Bundled software and service offerings from SAP Partners that combine SAP software, licenses, implementation, and managed services on AWS, such as SAP S/4HANA, SAP BusinessObjects BI, and many others.

***Software solutions***

Partner software solutions for the migration, integration, and operation of SAP solutions on AWS; for example: system migration, high availability, backup and recovery, data replication, automatic scaling, disaster recovery.

## How to Find Partner Services and Solutions for SAP on AWS

The ***AWS SAP Partner Services and Solutions Directory*** provides a centralized place to search, discover, and connect with trusted APN partners who offer solutions and services to help your business achieve faster time to value and maximize the benefits of running SAP solutions on AWS. The AWS SAP Partner Services and Solutions Directory can be found on the AWS website at the following path:

<https://aws.amazon.com/sap> -> Partners -> [Find a Partner](#)

The screenshot shows the AWS SAP Partner Services and Solutions Directory. The page is titled "SAP and Amazon Web Services" and features a prominent "Contact us" button. Below the header, there is a section titled "Amazon Web Services (AWS) can help ease and accelerate your digital transformation." This is followed by a list of services and a search form. The search form includes a dropdown menu for "Service / Solution Type" with the following options: Cloud Assessment, Proof-of-Concept, Migration Services, Managed Services, Packaged Solutions, and Partner Solutions. The search button is labeled "Search".

**Figure 2: Accessing the AWS SAP Partner Services and Solutions Directory**

## SAP on AWS Planning

If you are an experienced SAP Basis or NetWeaver administrator, there are a number of AWS-specific considerations relating to compute configurations, storage, security, management, and monitoring that will help you get the most out of your SAP environment on AWS. This section provides guidelines for achieving optimal performance, availability, and reliability, and lower total cost of ownership (TCO) while running SAP solutions on AWS.

### SAP Notes

Before migrating or implementing an SAP environment or system on AWS, you should read and follow the relevant SAP on AWS SAP Notes. Start from [SAP Note 1656099](#) for general information and follow the links to other relevant SAP notes. Access to SAP notes requires an SAP One Support Launchpad user account.

### Choosing an Architecture

This section describes the two primary architectural patterns for SAP on AWS: all systems on AWS and hybrid.

## All-on-AWS Architecture

With the SAP All-on-AWS architecture, all systems and components of your SAP environment are hosted on AWS. Example scenarios of this architecture include:

- Implementation of a complete, new SAP environment on AWS
- Migration of a complete, existing SAP environment to AWS

Figure 3 depicts an SAP all-on-AWS architecture. The SAP environment running on AWS is integrated with on-premises systems and users via a VPN connection or a dedicated network connection via AWS Direct Connect. SAProuter is deployed in a public subnet and assigned a public IP address that is reachable from the internet to enable integration with the SAP OSS network via a virtual network computing (VNC) connection. A [network address translation \(NAT\) gateway](#) enables instances in the private subnet to connect to the internet or other AWS services, but prevents instances from receiving inbound traffic that is initiated by someone on the internet. For additional information, see the [Configuring Network and Connectivity](#) section.

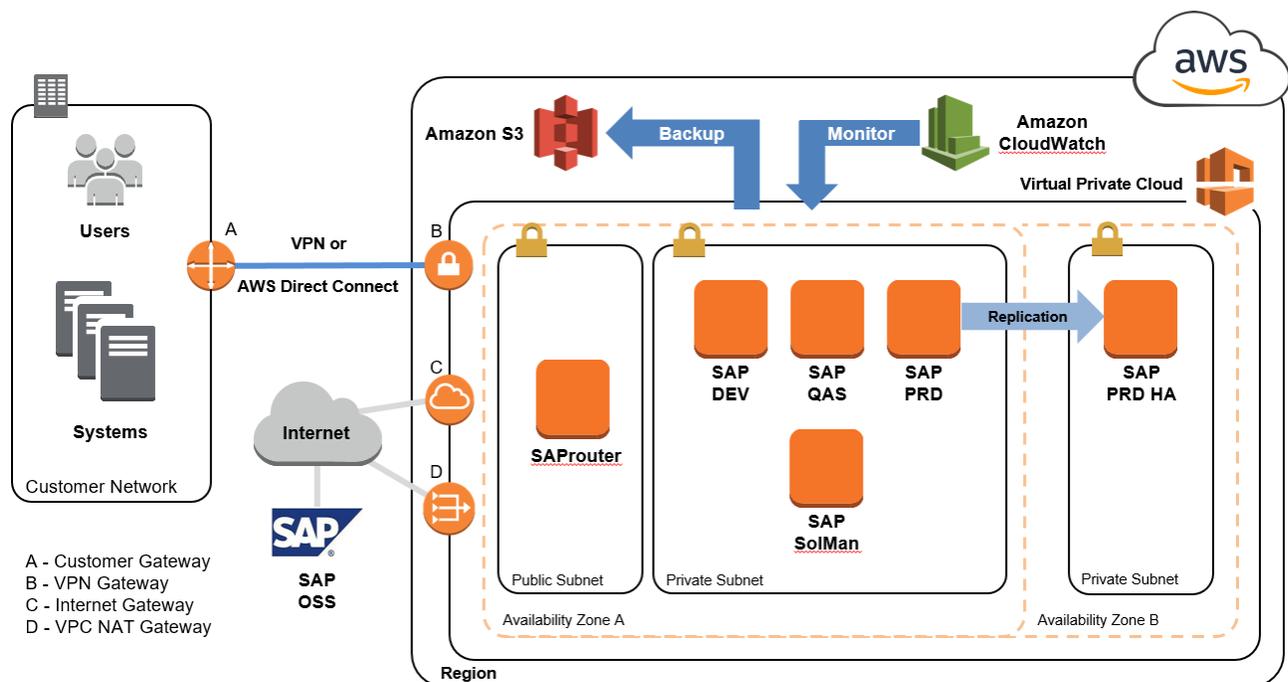


Figure 3: SAP all-on-AWS architecture

## Hybrid AWS Architecture

With an SAP hybrid AWS architecture, some SAP systems and components are hosted on your own, on-premises infrastructure and others are hosted on the AWS infrastructure. Example scenarios of this architecture include:

- Running SAP test, trial, training, PoC, and similar systems on AWS
- Running non-production SAP landscapes (for example, DEV and QAS) on AWS, integrated with an SAP production landscape running on premises
- Implementing a new SAP application on AWS and integrating it with an existing SAP on-premises environment

Figure 4 depicts an SAP hybrid AWS architecture with SAP DEV and QAS landscapes and SAP test, training, and PoC systems running on AWS. These systems are integrated with SAP systems and users on the corporate network. Connectivity between the VPC and the corporate network is provided with either a VPN connection or an AWS Direct Connect connection. The existing SAProuter and SAP Solution Manager running on the corporate network are used to manage the SAP systems running within the VPC.

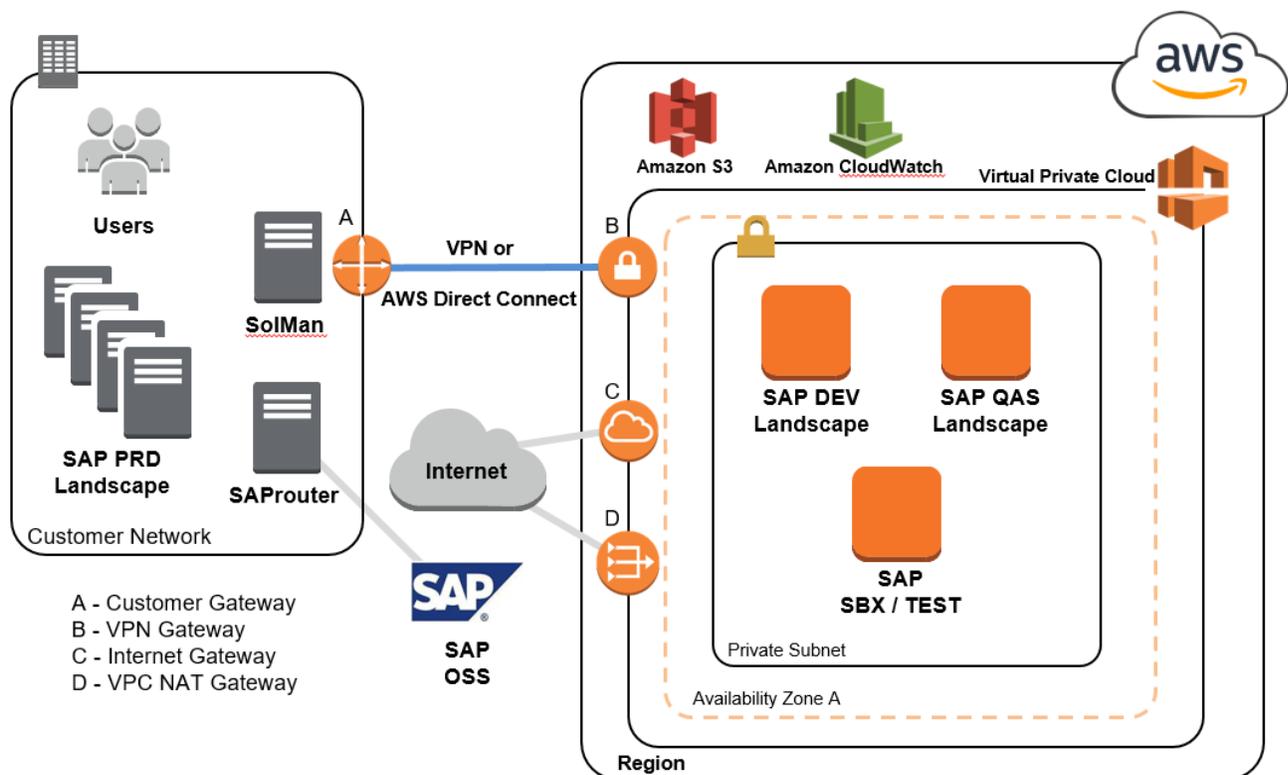


Figure 4: SAP hybrid AWS architecture

## Choosing an AWS Region and Availability Zone

See the [AWS Global Infrastructure](#) section of this guide for information about AWS Regions and Availability Zones.

### Choosing a Region

Consider the following factors when deciding which AWS Region to deploy your SAP environment in:

- Choose a region that is close to your data center or corporate network. This will reduce network latency between systems running on AWS and systems and users on your corporate network.
- Make sure that the AWS services and instance types you require are available in the region. For a detailed list of AWS products and services by region, see the [region tables](#) in the AWS documentation.

### Choosing an Availability Zone

No special considerations are required when choosing an Availability Zone for your SAP deployment on AWS. All SAP applications (SAP ERP, CRM, SRM, and so on) and systems (SAP DB, SAP CI, application servers) should be deployed in the same Availability Zone. If high availability (HA) is a requirement, use multiple Availability Zones. For more information about high availability, see the [SAP on AWS High Availability Guide](#).

## Configuring Network and Connectivity

### Amazon VPC

Amazon VPC enables you to define a virtual network in your own, logically isolated area within the AWS Cloud. You can launch your AWS resources, such as instances, into your VPC. Your VPC closely resembles a traditional network that you might operate in your own data center, with the benefits of using the AWS scalable infrastructure. You can configure your VPC; you can select its IP address range, create subnets, and configure route tables, network gateways, and security settings. You can connect instances in your VPC to the internet. You can connect your VPC to your own corporate data center, and make the AWS Cloud an extension of your data center. To protect the resources in each subnet, you can use multiple layers of security, including security groups and network access control lists. For more information, see the [Amazon VPC User Guide](#).

For detailed instructions for setting up and configuring a VPC and the connection between your network and VPC, see the [Amazon VPC documentation](#).

## Network Connectivity Options

Multiple options are available to provide network connectivity between your on-premises users and systems with your SAP systems running on AWS, including a direct internet connection, hardware VPN, and private network connection.

### **Direct Internet Connection**

The quickest and simplest way to connect to your SAP systems running on AWS involves using a VPC with a single public subnet and an internet gateway to enable communication over the internet. For additional information, see [Scenario 1: VPC with a Public Subnet Only](#) in the *Amazon VPC User Guide*.

Use cases: Most suitable for SAP demo, training, and test type systems.

### **Hardware VPN**

An industry-standard, encrypted IPsec hardware site-to-site VPN connection between your network and VPC. For additional information, see [Adding a Hardware Virtual Private Gateway to your VPC](#) in the *Amazon VPC User Guide*.

Use cases: Recommended for any SAP environments on AWS that require integration with on-premises users and systems.

### **Private Network Connection**

A dedicated, private network connection between your network and one of the AWS Direct Connect locations, using industry standard 802.1Q VLANs. For additional information, see the [AWS Direct Connect User Guide](#).

Use cases: Recommended for customers who require greater bandwidth and lower latency than possible with a hardware VPN.

For additional information about the different Amazon VPC connectivity options, see the [Amazon Virtual Private Cloud Connectivity Options](#) whitepaper.

## Following Security Best Practices

In order to provide end-to-end security and end-to-end privacy, AWS builds services in accordance with security best practices, provides appropriate security features in those services, and documents how to use those features. In addition, AWS customers must use those features and best practices to architect an appropriately secure application environment. Enabling customers to ensure the confidentiality, integrity, and availability of their data is of the utmost importance to AWS, as is maintaining trust and confidence.

## Shared Responsibility Environment

There is a shared responsibility model between you as the customer and AWS. AWS operates, manages, and controls the components from the host operating system and virtualization layer down to the physical security of the facilities in which the services operate. In turn, you assume responsibility and management of the guest operating system (including updates and security patches), other associated application software, Amazon VPC setup and configuration, as well as the configuration of the AWS-provided security group firewall. For additional information on AWS security, visit the [AWS Cloud Security](#) page and review the various [Security Resources](#) available there.

## Amazon VPC

The foundation for security of an SAP environment on AWS is the use of Amazon VPC for providing the overall isolation. Amazon VPC includes security details that you must set up to enable proper access and restrictions for your resources. Amazon VPC provides features that you can use to help increase and monitor the security for your VPC:

- **Security groups** act as a firewall for associated EC2 instances, controlling both inbound and outbound traffic at the instance level.
- **Network access control lists (ACLs)** act as a firewall for associated subnets, controlling both inbound and outbound traffic at the subnet level.
- **Flow logs** capture information about the IP traffic going to and from network interfaces in your VPC.

For detailed documentation about how to set up and managed security within a VPC, see the [Security](#) section of the *Amazon VPC User Guide*.

## Choosing Instance Types

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instance types comprise varying combinations of CPU, memory, storage, and networking capacity and give you the flexibility to choose the appropriate mix of resources for your applications. Each instance type includes one or more instance sizes, allowing you to scale your resources to the requirements of your target workload.

SAP systems deployed on AWS that will require support from SAP Support must be run on an EC2 instance type that has been certified with SAP. This section describes where you can find details about the EC2 instances types that have been certified with SAP and additional information for specific SAP solutions.

## General Information

- [Amazon EC2 Types for SAP](#)

## For SAP NetWeaver-based Solutions

SAP solutions based on the SAP NetWeaver platform and that use [SAP Application Performance Standard \(SAPS\)](#) for sizing must be run on a specific subset of EC2 instance types in order to receive support from SAP Support. For details, see:

- [SAP Note 1656099](#)

## For SAP HANA

The SAP HANA platform and SAP solutions that run on top of an SAP HANA database—for example, SAP Suite on HANA, S/4HANA, Business Warehouse (BW) on HANA, BW/4HANA—require specific EC2 instance types that have been certified for SAP HANA. For details, see:

- [SAP Note 1964437](#)
- [SAP HANA on AWS](#)

## For SAP Business One, Edition for SAP HANA

For information about the EC2 instance types that are certified for SAP Business One, edition for SAP HANA, see:

- [SAP Note 2058870](#)
- [SAP Business One on AWS](#)

## Supported Operating Systems

### Operating Systems

Amazon EC2 instances run on 64-bit Intel processors based on the Intel x86 instruction set. The following 64-bit, x86 based operating systems are available and supported for SAP solutions on AWS.

- SUSE Linux Enterprise Server (SLES)
- Red Hat Enterprise Linux (RHEL)
- Microsoft Windows Server
- Oracle Enterprise Linux

For additional information regarding SAP-supported operating systems on AWS, see [SAP Note 1656250](#).

## Operating System Licenses

Operating system licenses are available from AWS bundled with Amazon EC2 instances. You can also obtain a license or subscription from the operating system vendor. For details, see:

- [SUSE on AWS](#)
- [Red Hat on AWS](#)
- [Microsoft Licensing on AWS](#)
- [Oracle and Amazon Web Services](#)

## Supported Databases

For details about the databases supported with specific SAP solutions on AWS, see [SAP Note 1656099](#).

## Database Installation and Administration

### ***Self-Managed Database on Amazon EC2***

The majority of SAP solutions use a self-managed model on Amazon EC2. Installation, configuration, administration, and backup and recovery of the database are done by either the customer or a partner.

The following SAP solutions use a self-managed database model on Amazon EC2:

- SAP Business Suite and SAP NetWeaver-based applications
- SAP HANA
- SAP S/4HANA
- SAP BW/4HANA
- SAP BusinessObjects Business Intelligence
- SAP Business One

### ***Amazon RDS and Aurora***

The [Amazon Relational Database Service \(Amazon RDS\)](#) is a managed service that makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable capacity, while managing time-consuming database administration tasks, freeing you up to focus on your applications and business. Currently, Amazon RDS supports the MySQL, MariaDB, Oracle, Microsoft SQL Server, PostgreSQL, and [Amazon Aurora](#)

database engines. Here are the SAP solutions currently supported with Amazon RDS or Aurora:

- Hybris Commerce – Supports Amazon RDS and Aurora

## Database Licenses

The following table lists the database licensing options for SAP on AWS. For additional information, follow the links in the *Licensing Options* columns.

Database	SAP applications	Licensing options	
		BYOL	On demand
SAP HANA	Native applications / datamarts	<a href="#">Yes</a>	<a href="#">Yes</a>
SAP HANA	SAP Suite and BW on HANA, S/4HANA, BW/4HANA, and others	<a href="#">Yes</a>	—
SAP ASE	All	<a href="#">Yes</a>	<a href="#">Yes</a>
Microsoft SQL Server	All	<a href="#">Yes</a>	<a href="#">Yes</a>
IBM DB2	All	<a href="#">Yes</a>	—
Oracle	All	<a href="#">Yes</a>	—
Amazon Aurora	Hybris Commerce	—	<a href="#">Yes</a>

## SAP Installation Media

The majority of SAP solutions on AWS use a bring-your-own-software model. There are two primary options for copying SAP installation media to AWS:

- **Download from the SAP Software Download Center to Amazon EC2.** From your EC2 instance, connect to the [SAP Software Download Center](#) and download the required installation media. This option will most likely be the fastest method for getting SAP installation media to AWS, because EC2 instances have very fast connections to the internet. You can create a dedicated Amazon EBS volume to store installation media, and then attach the volume to different instances as needed. You can also create a snapshot of the Amazon EBS volume and create multiple volumes that you can attach to multiple instances in parallel.
- **Copy from your network to Amazon EC2.** If you already have the required SAP installation media downloaded to a location on your network, you can copy the media from your network directly to an EC2 instance.

## Setting up SAProuter and SAP Solution Manager

The following sections describe options for SAProuter and SAP Solution Manager when running SAP solutions on AWS.

### For SAP All-on-AWS Architecture

When setting up an SAP environment on AWS, you will need to set up an SAP Solution Manager system and SAProuter with a connection to the SAP support network, as you would with any infrastructure. See the all-on-AWS architecture diagram (Figure 3) for an illustration.

When setting up the SAProuter and SAP support network connection, follow these guidelines:

- Launch the instance that the SAProuter software is installed on into a public subnet of the VPC and assign it an Elastic IP address.
- Create a specific security group for the SAProuter instance with the necessary rules to allow the required inbound and outbound access to the SAP support network.
- Use the Secure Network Communications (SNC) type of internet connection. For more information, see <https://service.sap.com/internetconnection>.

### For SAP Hybrid AWS Architecture

When using AWS as an extension of your IT infrastructure, you can use your existing SAP Solution Manager system and SAProuter that are running in your data center to manage SAP systems running on AWS within a VPC. See the hybrid architecture diagram (Figure 4) for additional information.

## Document Revisions

Date	Change	In sections
August 2018	Initial publication	—

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