



Differences between AWS and Microsoft Azure

Amazon Web Services (AWS) and Microsoft Azure are two of the biggest names in public cloud computing. Let's talk about what each provider brings to the public cloud table, and key differences between them.

1. Compute power:

AWS: AWS EC2 users can configure their own VMs or choose pre-configured machine, images or customize MIs. Users choose size, power, memory capacity and number of VMs, and choose from different regions and availability zones with which to launch from. <https://aws.amazon.com/ec2/>

Azure: Azure users choose Virtual Hard Disk (VHD), which is equivalent to a Machine Instance, to create a VM. VHD can be pre-configured by Microsoft, the user or a third party. The user must specify the number of cores and memory. <https://azure.microsoft.com/en-us/services/virtual-machines/>

2. Storage:

AWS: AWS has temporary storage that is allocated once an instance is started and destroyed when the instance is terminated. They also provide block storage that can be separate or attached to an instance. Object storage is offered with S3; and data archiving services with Glacier. Fully supports RDS, NoSQL & Big Data. <https://aws.amazon.com/products/storage/>

Azure: Azure offers temporary storage through D drive, block storage through Page Blobs for VMs. Block Blobs and Files also serve as object storage. Supports relational databases; NoSQL and Big Data through Azure Table and HDInsight. Azure also offers site recovery, Import Export and Azure Backup for additional archiving and recovery options.

<https://azure.microsoft.com/en-us/services/storage/>

3. Network:

AWS: Amazon offers Virtual Private Cloud (VPC) so users can create isolated networks within the cloud. Within a VPC, a user can create subnets, route tables, private IP address ranges, and network gateways. You can also connect to AWS via Direct Connect.

<https://aws.amazon.com/products/networking/>

Azure: Microsoft offers Virtual Network (VNET) that offers users ability to create isolated networks as well as subnets, route tables, private IP address ranges and network gateways. Both companies offer solutions to extend the on-premise data center into the cloud and firewall option. Azure offers Express route to connect directly from your Data Center.

<https://azure.microsoft.com/en-us/services/virtual-network/>

4. Integrations and Open Source:

AWS: Amazon has had a better relationship with the open source community, so there are more open source integrations available in this platform, including Jenkins and GitHub. It's also friendlier to Linux servers.

<https://aws.amazon.com/opensource/>

Azure: If you're already using Windows development tools such as VBS, SQL database, Active Directory, Azure offers native integration for these tools. For example, use the same AD accounts you currently have to sign into Office 365 or Azure SQL instances. Azure is also good for .net developers. Azure is catching up to run Red Hat Enterprise Linux and Apache Hadoop clusters in Azure.

<https://azure.microsoft.com/en-us/overview/choose-azure-opensource/>

5. User-friendliness:

AWS: Amazon offers more features and configurations— if you’re willing to learn the system. IT pros agree that AWS offers a lot of power, flexibility, customization room with support for many third-party integrations. But there is a learning curve with AWS.

Azure: If you’re a Windows admin, Azure will be easier to use out of the box because it is a Windows platform and doesn’t require learning something new. It’s simple to integrate on- premises Windows servers with cloud instances to create a hybrid environment.

6. Licensing:

AWS: Amazon offers a few different options for licensing in the cloud: Customers can purchase new licenses (bundled with EC2 or Relational Database Services instances), or bring their previously purchased licenses (BYOL), as part of their partnership with Microsoft. In this case, users can use Dedicated Hosts or Software Assurance to move their licenses to the cloud.

Azure: Microsoft offers license mobility for qualifying application servers, but users must determine if their servers fit the requirements for mobility to avoid paying for extra licensing. Windows Server itself is NOT eligible (e.g., running on-premises Windows Server with SQL server).

7. Hybrid Cloud Capabilities:

AWS: AWS unveiled Snowball Edge, a 100TB hard drive for moving workloads between its cloud and clients’ data centers. It also added a much-needed hybrid element to its portfolio when it partnered with VMware to allow their customers to burst into its cloud environments. However, Amazon has only recently taken up the hybrid cloud banner, and with its past public stances of “pure public cloud or nothing” it is still developing its hybrid story.

<https://aws.amazon.com/enterprise/hybrid/>

Azure: Microsoft has strong support for hybrid cloud services, with platforms like Azure StorSimple, Hybrid SQL Server, and Azure Stack, a new hybrid cloud platform product that allows you to bring nearly full public Azure functionality to your own on-premises data centers using the same pay-as-you-go pricing model it offers for its public cloud.

<https://azure.microsoft.com/en-us/overview/hybrid-cloud/>

8. Pricing Models:

AWS: Amazon has a pay-as-you-go model, where they charge per hour. Instances are purchasable on the following models:

<https://calculator.s3.amazonaws.com/index.html>

- On demand: Pay for what you use without upfront cost.
- Reserved: Reserve an instance for 1 or 3 years with upfront cost based on use.
- Spot: Customers bid for extra capacity available.

Azure: Microsoft's pricing is also pay-as-you-go, but they charge per minute, which provides a more exact pricing model. Azure also offers short term commitments with the option between pre-paid or monthly charges.

<https://azure.microsoft.com/en-us/pricing/calculator/>



AWS and Azure offer many similar capabilities, so it's not necessarily a matter of one provider being "better" or "worse" than the other. It all depends on what your business needs.