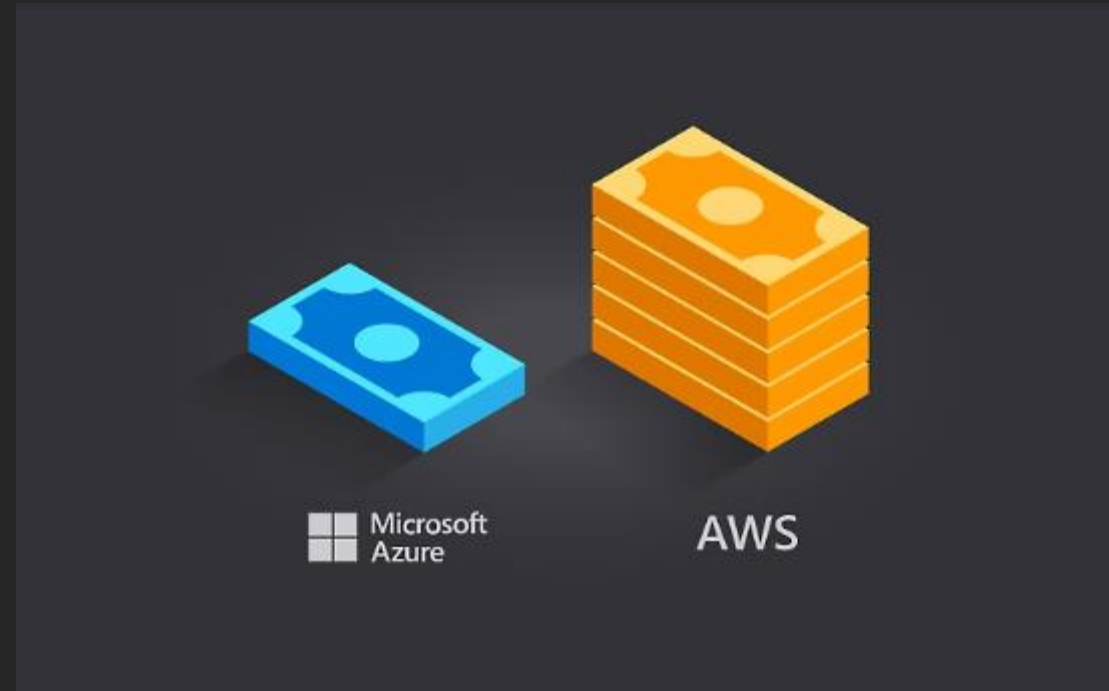


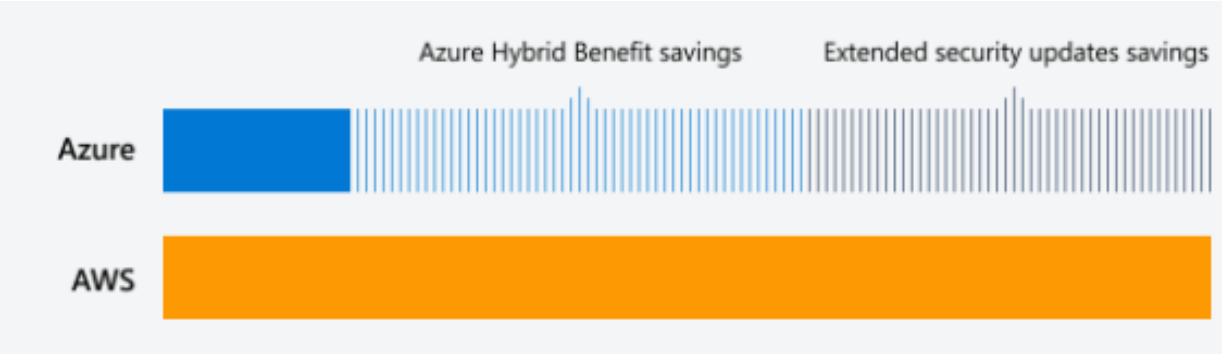
## Pay less with Azure

Achieve your business and budget goals with pricing options that help you maximize the return on your cloud investment. Learn about the advantages of choosing Azure vs. AWS.

AWS is up to 5 times more expensive than Azure for Windows Server and SQL Server. Why run them anywhere else?



## Compare the costs of running Windows Server virtual machines (VMs):



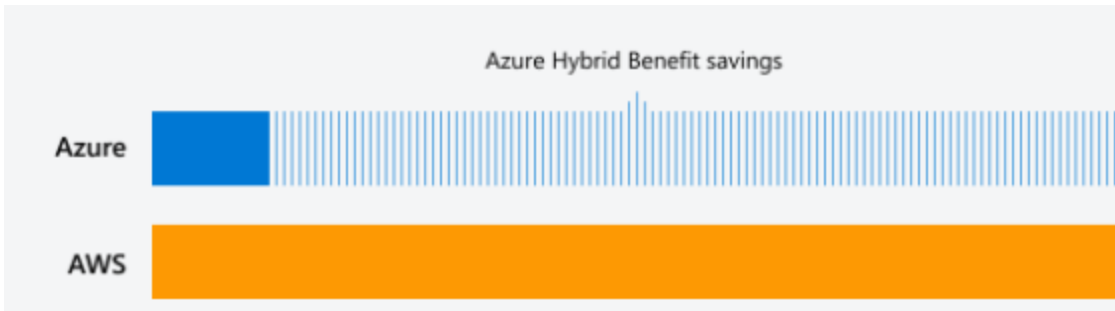
Other cloud service providers may claim to have similar savings to the Azure Hybrid Benefit, but you'll need to repurchase your Windows Server license on those clouds. And only Azure offers free extended security updates for Windows server 2012/R2.

## What's being compared? \*

Azure	AWS
One D4s v4: 4 vCPUs, 16-GB RAM Windows Server VM	One M5 xLarge: 4 vCPUs, 16-GB RAM Windows Server VM
US West 2 region	US West (Oregon) region
730 hours/month for 12 months	730 * hours/month for 12 months
Uses the Azure Hybrid Benefit to pay reduced compute rate (equivalent to running Ubuntu Linux) for 3-year Reserved Instances. Software Assurance is required.	Uses Windows Server Reserved Instances rate under standard 3-year term with monthly payments.
Free extended security updates in Azure for Windows Server 2012 and 2012 R2 VMs.	Extended security updates (ESU) cost is based on Windows Server Standard for which the annual ESU cost is averaged over 3 years.

\*Prices are as of June 4, 2022 and subject to change. Actual regional pricing and program discounts may apply. Actual savings may vary based on region, instance size, and performance tier. Savings exclude Software Assurance costs, which may vary based on Volume Licensing agreement. Contact your sales representative for more information.

## Compare SQL Server running as a PaaS service:



Only Azure offers savings across both platform as a service (PaaS) and infrastructure as a service (IaaS) for SQL Server. With the Azure Hybrid Benefit, you can use existing licenses with Software Assurance to pay a reduced rate on Azure SQL Database (PaaS). This isn't included in SQL Server license mobility rights for other clouds.

## What's being compared? \*

Azure	AWS
8 vCore Azure SQL Database managed instance business critical	RDS for SQL Server Enterprise edition for db.r5.2xlarge
US West 2 region	US West (Oregon) region in a multi-AZ deployment
730 hours/month for 12 months	730 hours/month for 12 months
Uses existing SQL Server licenses with the Azure Hybrid Benefit to pay a reduced rate on Azure SQL Database with 3-year reserved capacity. Software Assurance is required.	Uses 3-year reserved instances, a standard 3-year term, and all-upfront payment.

\*Prices are as of June 4, 2022 and subject to change. Actual regional pricing and program discounts may apply. Actual savings may vary based on region, instance size, and performance tier. Savings exclude Software Assurance costs, which may vary based on Volume Licensing agreement. Contact your sales representative for more information.

## Compare SQL Server running on a virtual machine (IaaS):



Only Azure offers savings across both platform as a service (PaaS) and infrastructure as a service (IaaS) for SQL Server. With the Azure Hybrid Benefit, there is no need to repurchase software licenses—use existing licenses with Software Assurance to save on Azure Virtual Machines (IaaS).

With the Azure Hybrid Benefit, you pay only the reduced compute rate (SUSE Linux Enterprise Basic rate) for the Windows Server VM. You'll need to repurchase Windows Server on other clouds. And only Azure offers free extended security updates for SQL Server 2012 and Windows Server 2012 and 2012 R2.

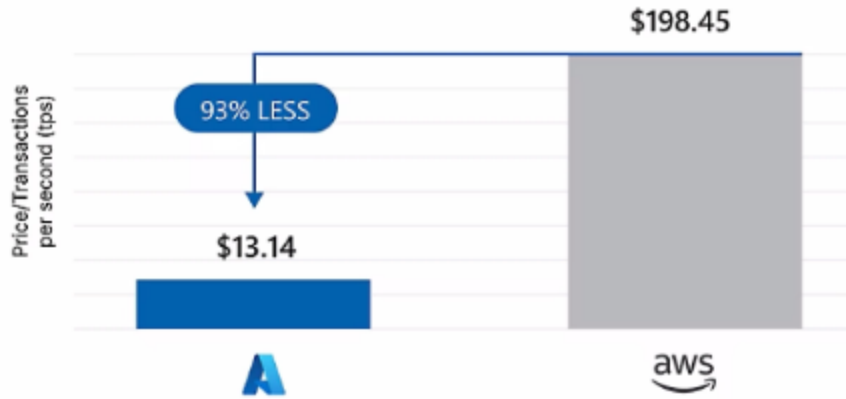
## What's being compared? \*

Azure	AWS
One D4s v4 Windows Server VM	RDS for SQL Server Enterprise edition for db.r5.2xlarge
US West 2 region	US West (Oregon) region in a multi-AZ deployment
730 hours/month for 12 months	730 hours/month for 12 months
Uses the Azure Hybrid Benefit to pay reduced compute rate (SUSE Linux Enterprise Basic rate) with 3-year reserved instances. Software Assurance is required.	Uses 3-year reserved instances, a standard 3-year term, and all-upfront payment.
Free extended security updates in Azure for SQL Server 2012 and Windows Server 2012 and 2012 R2 VMs.	Extended security updates cost is based on Windows Server Standard and SQL Server Standard Select Net pricing in USD.

\*Prices are as of June 4, 2022 and subject to change. Actual regional pricing and program discounts may apply. Actual savings may vary based on region, instance size, and performance tier. Savings exclude Software Assurance costs, which may vary based on Volume Licensing agreement. Contact your sales representative for more information.

## Azure SQL Managed Instance vs SQL Server on AWS RDS MSOLTPE Benchmark

16 vCore SQL MI vs AWS RDS db.r5b.4xlarge April 2022



Price performance comparison. Lower is better. Includes Azure Hybrid Benefit  
Source: Principled Technologies, Inc., 2022

## Get superior performance at a lower cost for modernized workloads

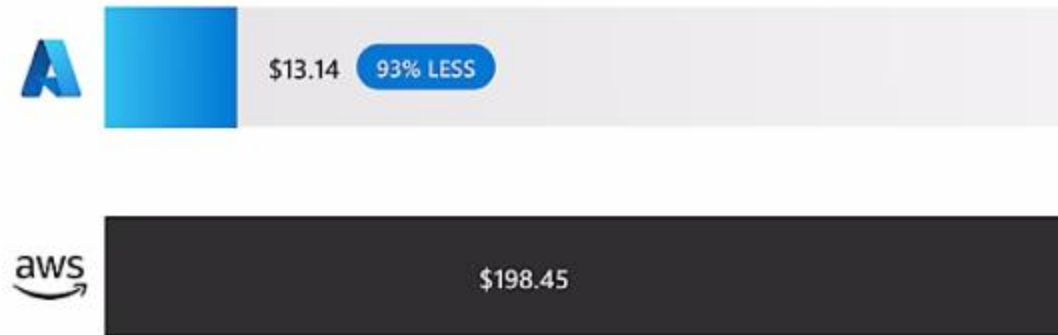
Meet your mission-critical requirements up to 5 times faster while paying up to 93 percent less than with AWS RDS.\* Learn how Azure SQL Managed Instance—an intelligent, fully managed cloud database service—outperformed across three different benchmarks, spanning transactional and analytics workloads.

## Maximize performance and value for migrated SQL Server workloads

See how migrating SQL Server workloads to Azure Virtual Machines can help lower total cost of ownership (TCO). SQL Server on Azure Virtual Machines performs up to 57 percent faster and costs up to 54 percent less than AWS EC2.

## Azure SQL Managed Instance vs SQL Server on AWS RDS MSOLTPE Benchmark

16 Core SQL MI vs AWS RDS db.r5b.4xlarge April 2022



Price/Transactions per second (tps). Price performance comparison. Lower is better. Includes Azure Hybrid Benefit  
Source: Principled Technologies, Inc., 2022

### Database performance

Transactions per minute (TPM) | TPROC-C workload | Higher is better

#### Azure SQL Managed Instance

Instance name: 80vCore Business Critical Premium-series hardware



#### Amazon RDS for SQL Server

Instance name: db.m6i.32xlarge



Figure 1: OLTP database performance, in transactions per minute, that the instances achieved on the HammerDB TPROC-C benchmark. Higher numbers are better. Source: Principled Technologies.

Figure 2: Price/performance comparison for running TPROC-C workloads using both cloud services. Lower costs are better. Source: Principled Technologies.

### Price/performance comparison

Price/transactions per minute (TPM) | TPROC-C workload | Lower cost is better

#### Azure SQL Managed Instance (pay-as-you-go pricing)

Instance name: 80vCore Business Critical Premium-series hardware



#### Azure SQL Managed Instance (Azure Hybrid Benefits pricing)

Instance name: 80vCore Business Critical Premium-series hardware



#### Amazon RDS for SQL Server

Instance name: db.m6i.32xlarge



### Database performance

Transactions per second (tps) | MSOLTPE workload | Higher is better

#### Azure SQL Managed Instance

Instance name: 16vCore Business Critical Premium Memory-Optimized-series hardware



#### Amazon RDS for SQL Server

Instance name: db.r5b.4xlarge



Figure 3: Complex OLTP database performance, in tps, that the instances achieved on the MSOLTPE benchmark. Higher numbers are better. Source: Principled Technologies.

Figure 4: Price/performance comparison for running complex OLTP workloads using both cloud services. Lower costs are better. Source: Principled Technologies.

### Price/performance comparison

Price/transactions per second (tps) | MSOLTPE workload | Lower cost is better

#### Azure SQL Managed Instance (pay-as-you-go pricing)

Instance name: 16vCore Business Critical Premium Memory-Optimized-series hardware



#### Azure SQL Managed Instance (Azure Hybrid Benefits pricing)

Instance name: 16vCore Business Critical Premium Memory-Optimized-series hardware



#### Amazon RDS for SQL Server

Instance name: db.r5b.4xlarge



**Time to complete data analysis**

Seconds | TPROC-H workload | Lower is better

1 stream

**Azure SQL Managed Instance**

Instance name: 64vCore Business Critical Premium Memory-Optimized-series hardware

669

**Amazon RDS for SQL Server**

Instance name: db.r5b.16xlarge

3,687

8 streams

**Azure SQL Managed Instance**

Instance name: 64vCore Business Critical Premium Memory-Optimized-series hardware

5,482

**Amazon RDS for SQL Server**

Instance name: db.r5b.16xlarge

23,083

Figure 6: Price/performance comparison (normalized to the lowest price/performance value for ease of reading) for running TPROC-H workloads using both cloud services. Lower costs are better. Source: Principled Technologies.

Figure 5: Data analytics completion times, in seconds, that the instances achieved on the HammerDB TPROC-H benchmark. Lower numbers are better. Source: Principled Technologies.

**Price/performance comparison (normalized)**

Price/seconds | TPROC-H workload | Lower cost is better

**Azure SQL Managed Instance (pay-as-you-go pricing)**

Instance name: 64vCore Business Critical Premium Memory-Optimized-series hardware

\$1.60

**Azure SQL Managed Instance (Azure Hybrid Benefits pricing)**

Instance name: 64vCore Business Critical Premium Memory-Optimized-series hardware

\$1.00

**Amazon RDS for SQL Server**

Instance name: db.r5b.16xlarge

\$16.53