Windows on AWS

The most popular, secure, and reliable cloud for Windows.

What are we hearing from our customers?

What do I have in my environment?

How do I get started?

Does AWS support my on-premises workloads?

Can I move my existing License?

What do we do after we migrate?

If it is a Windows workload, shouldn't I consider Azure first?

How can I lower my TCO?

How do I move these workloads?

How does Microsoft licensing work on AWS?

Is AWS more expensive than Azure?

What should I move to the cloud?

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WINDOWS ON AWS

THE MOST POPULAR, SECURE, AND RELIABLE CLOUD FOR WINDOWS

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Fear, Uncertainty, and Doubt

"Azure is better for running .NET applications"

- Not true! .NET is a first-class citizen on AWS.

"Azure is cheaper than AWS"

- Not true! Cost comparisons are rarely apples-to-apples.

"I can't bring my Microsoft licenses to AWS"

- Not true! AWS supports many BYOL scenarios.

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Why AWS for Windows Workloads?

Uptime and reliability

7

fewer downtime hours

1/1/18 to 12/31/18 from the public service health dashboards of the major cloud providers

Market sector

57.7%

of Windows Servers in the cloud

IDC Windows Server Stats August 2018

Experience

12

years running Windows workloads

Choice

50%

of SQL Server savings leveraging Availability Zones

Performance

2x

better price for performance for SQL Server

DB Best & ZK Research November 2018
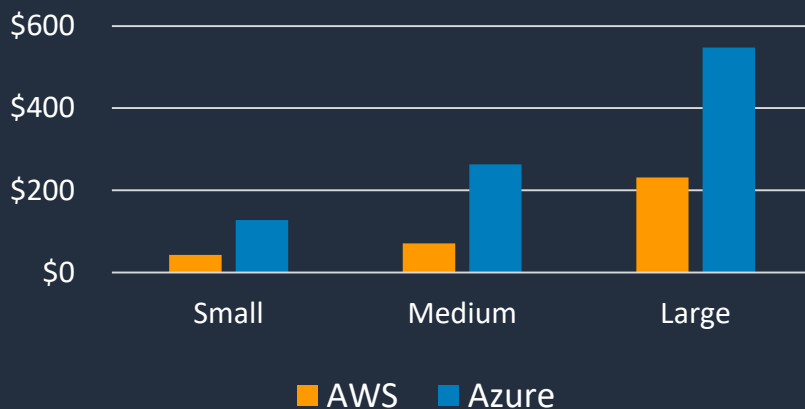
Customer focus

85

price reductions
since 2006

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Best Performance

DB Best showed how to get the best price/performance for running SQL Server in the cloud. ZK Research took these blogs and compared the results from DB Best to show an apples to apples comparison. SQL Server on Amazon EC2 consistently outperforms Azure across a variety of machine types. For SQL Failover Clusters, Amazon FSx for Windows File Server provides a highly available, high performance, multi-AZ shared storage option that does not require SQL Enterprise Licenses.
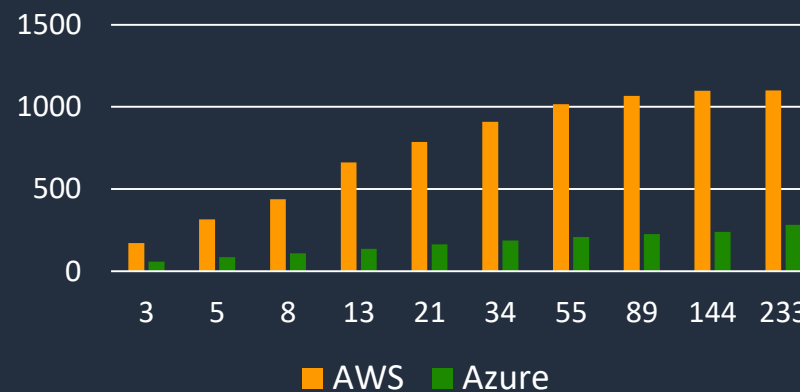
2–3x

Performance advantage over Azure running SQL Server when comparing price of a workload

Costs per 1 Billion Transactions Per Month

AWS versus Azure Large* Configuration (TPM)

https://zkresearch.com/blog/2018/11/comparing-sql-server-deployments-on-microsoft-azure-and-amazon-web-services

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Lower TCO

SAVE ON INFRASTRUCTURE

Research firm, International Data Corp. (IDC), estimates that customers will realize an average return on investment of 442% over five years, when they bring their Windows workloads to AWS.

OPTIMIZE LICENSING FOOTPRINT

The Optimization and Licensing Assessment (OLA) is intended to accelerate Windows migration opportunities by providing a business justification based on resource consumption, optimized licensing and provisioning.

FLEXIBLE PRICING OPTIONS & COST MANAGENT TOOLS

- AWS Trusted Advisor serves real-time recommendations to help you increase performance and reduce overall costs

- AWS Compute Optimizer can help you save up to 25% on EC2 by serving EC2 instance recommendation for existing workloads

- AWS Cost Explorer provides rightsizing recommendations and cost saving estimates, incorporating customers' billing, credits, RI and Savings Plans
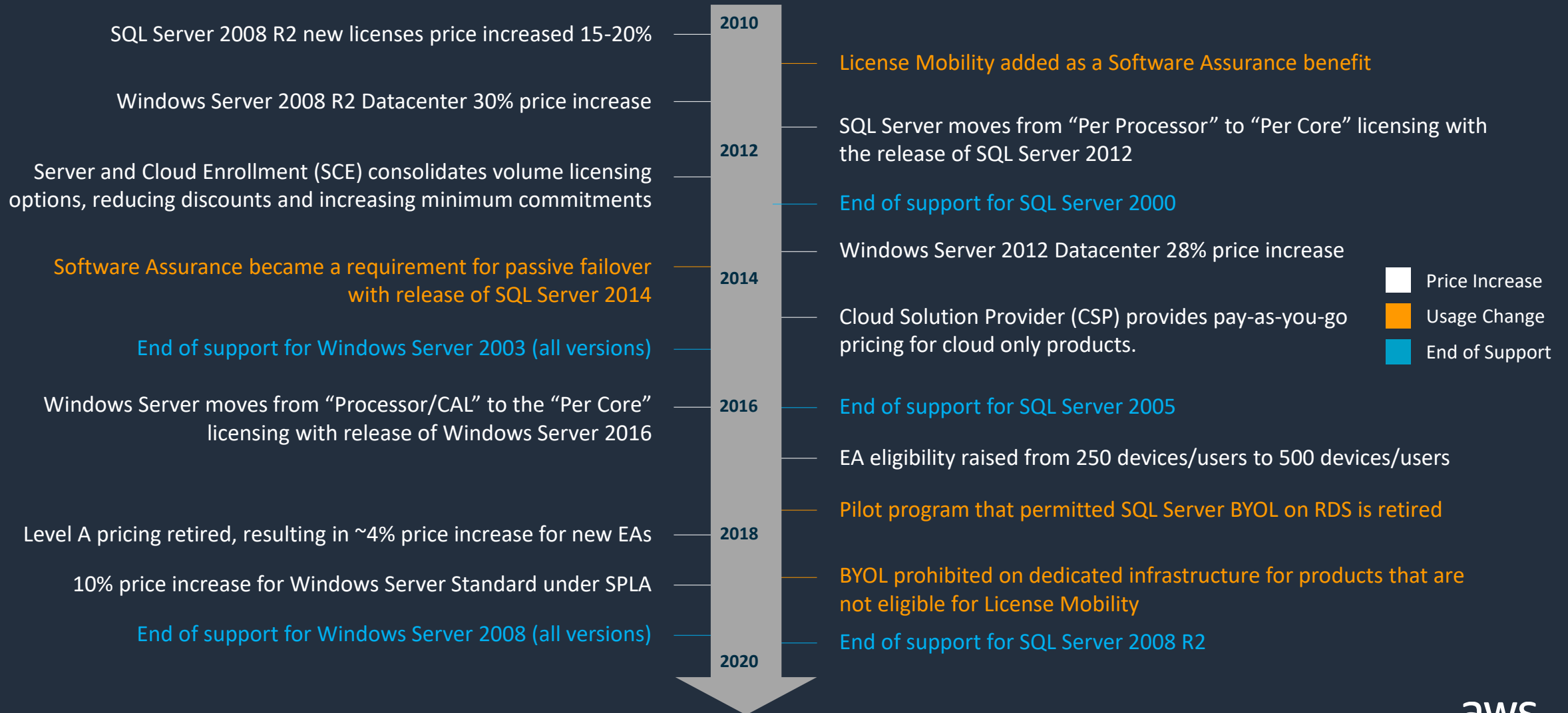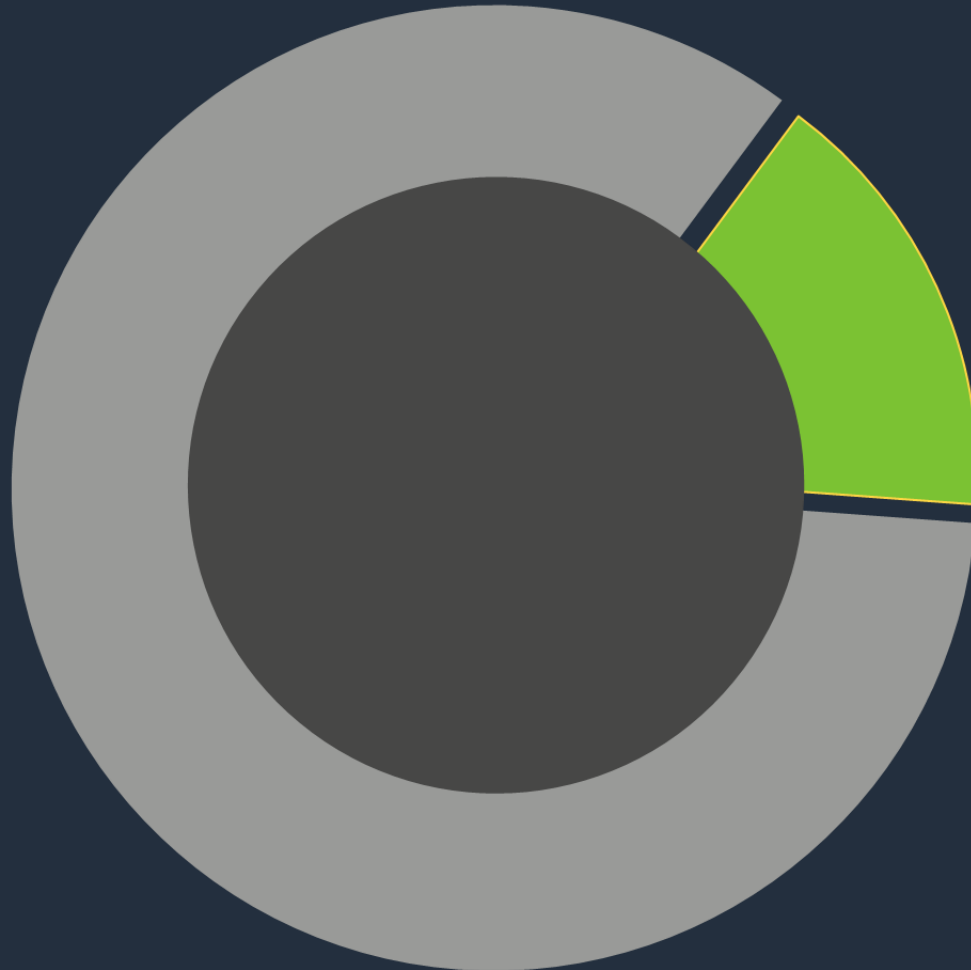
442%

5-year return on investment

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Reduce Risk with Microsoft

Frequent changes in pricing, licensing and end of support reduce options and promote lock in.

SQL Server 2008 R2 new licenses price increased 15-20%

2010

License Mobility added as a Software Assurance benefit

Windows Server 2008 R2 Datacenter 30% price increase

2012

SQL Server moves from "Per Processor" to "Per Core" licensing with the release of SQL Server 2012

Server and Cloud Enrollment (SCE) consolidates volume licensing options, reducing discounts and increasing minimum commitments

End of support for SQL Server 2000

Windows Server 2012 Datacenter 28% price increase

Software Assurance became a requirement for passive failover with release of SQL Server 2014

2014

Cloud Solution Provider (CSP) provides pay-as-you-go pricing for cloud only products.

End of support for Windows Server 2003 (all versions)

2016

End of support for SQL Server 2005

Windows Server moves from "Processor/CAL" to the "Per Core" licensing with release of Windows Server 2016

EA eligibility raised from 250 devices/users to 500 devices/users

Pilot program that permitted SQL Server BYOL on RDS is retired

Level A pricing retired, resulting in ~4% price increase for new EAs

2018

10% price increase for Windows Server Standard under SPLA

BYOL prohibited on dedicated infrastructure for products that are not eligible for License Mobility

End of support for Windows Server 2008 (all versions)

End of support for SQL Server 2008 R2

2020

■ Price Increase
■ Usage Change
■ End of Support

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84%

of on-premises workloads are **over-provisioned**

16%

of on-premises workloads are **accurately provisioned**

https://www.bain.com/insights/rightsizing-your-way-to-the-cloud/

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Optimization & Licensing Assessment

Optimize Licensing Assets when Migrating to Cloud

Customer Challenges

Know the Baseline

- What do I have deployed?
- How much is being fully utilized?

Understand Costs

- We're mid term in our Microsoft contract and can't move
- We've already invested our budget in Microsoft licenses

Build a Plan

- Which workload do I move first?
- Do we have the skill set to execute the plan?

OLA Customer Benefits

Gather Data

- Monitor utilization & collect data from on premises & 3rd party cloud providers
- We provide access to world class data collection and analytics tools

Create TCO

- Infrastructure Optimization : Recommendations built on actual utilization – "right size"
- Licensing Optimization : based on go forward infrastructure
- Average potential cost reductions ~ 30-40%

Accelerate Migrations

- Identify application dependencies
- Prioritize migrations based on results
- Qualify & secure AWS migration funding

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How Does an OLA work?

Gather data: 2 options

1. Flat file ingest (Excel file) – least preferred, yet quickest turnaround. Requirement: utilization on compute (memory/ CPU), storage, networking

2. Agent/Agentless – read only scan of your environment capturing hardware only information, no PII

Focus Areas:

1. Windows Server and SQL Server Core utilization

2. Storage Utilization

3. Application Dependency Mapping

HOW? Request an OLA - https://aws.amazon.com/windows/optimization-and-licensing-assessment/

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OLA Customer Example

- Private, Liberal Arts college in Mid-West

- New to the Cloud, hyper-sensitive to costs, and considering Azure and AWS

- Looking to reduce IT Costs and free up IT personnel to focus on higher value work

- Leveraged OLA to start the conversation and prove value of AWS products and services

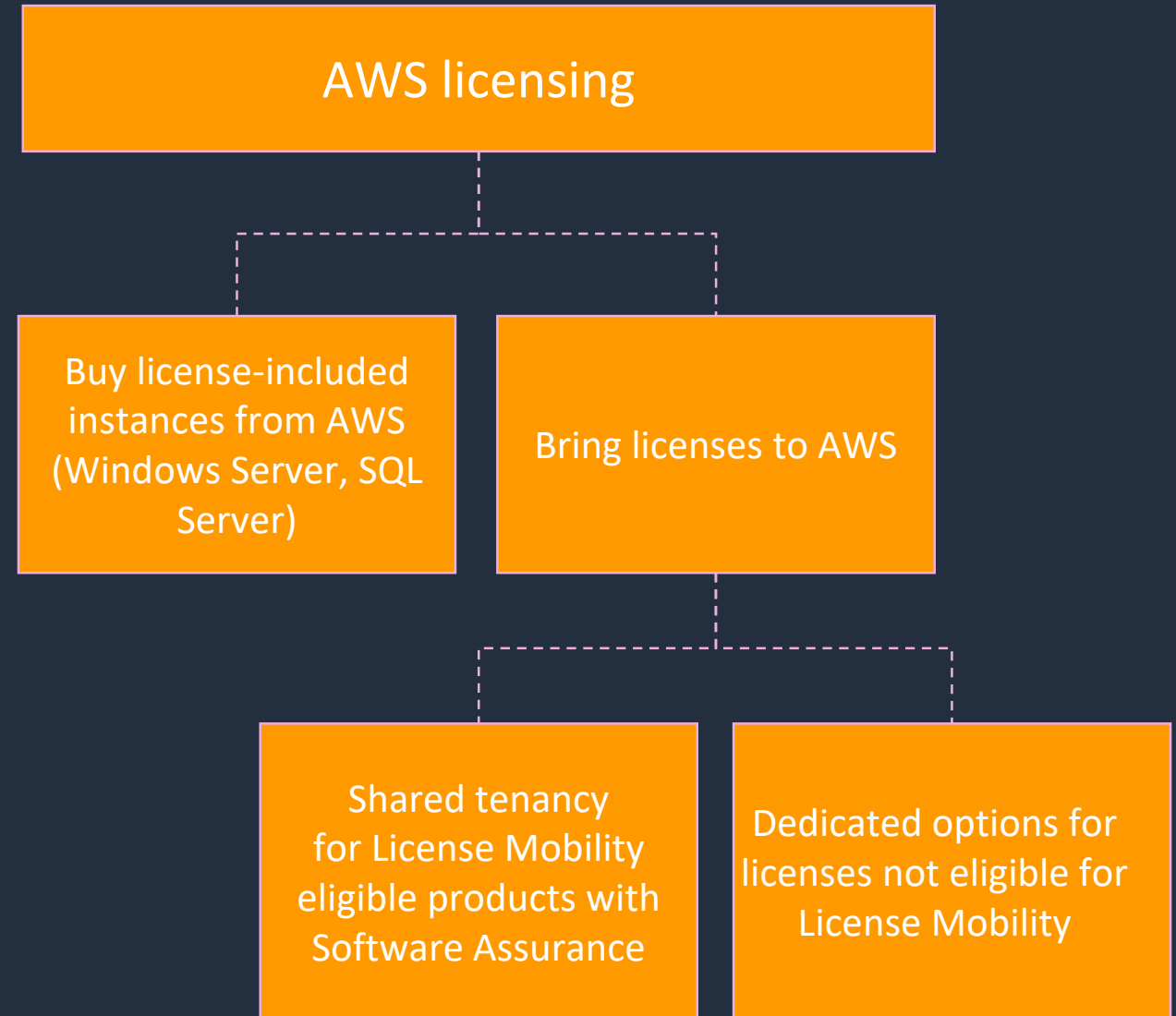- Provided opportunity to address larger IT and Cloud issues outside of Windows

HOW? Request an OLA - https://aws.amazon.com/windows/optimization-and-licensing-assessment/

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Key Point

The licenses you own will impact what and how you deploy on AWS.

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Flexible options for Microsoft licenses in the AWS Cloud

1 Flexible pay-as-you-go licensing choices

2 Bring your License Mobility benefits to AWS

3 Dedicated options for products without License Mobility

```
AWS licensing
```

```
Buy license-included
instances from AWS
(Windows Server, SQL
Server)
```

```
Bring licenses to AWS
```

```
Shared tenancy
for License Mobility
eligible products with
Software Assurance
```

```
Dedicated options for
licenses not eligible for
License Mobility
```

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Mixed Licensing Model is a Win-Win situation

- <u>License Included</u> for varying infrastructure
    - Take advantage of AWS Auto Scaling
    - Less management overhead, pay-as-you-go

- <u>BYOL</u> for stable and predictable workloads
    - Large potential savings by reusing licenses
    - Take advantage of the virtualization benefits of licensing at the physical level

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MSFT Agreements

Agreement Types

- Subscription License enrollments – Enrollment for Education Solutions (EES) & Enterprise Subscription Agreement (ESA)

- Perpetual License enrollments - Enterprise Agreement (EA), Microsoft Products and Services Agreement (MPSA), Select, Open

- License "ownership"

  - Subscription – pay for the right to use the software and must be renewed at agreement expiration or uninstalled

    - Subscription agreements often contain a buy-out clause
    - Renewal date impacts BYOL for Windows Server

  - Perpetual – license is owned for perpetuity

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Software Assurance 101

- Software Assurance – array of multiple entitlements that vary by product
  - Upgrades – right to own future product releases (future proof)
  - License Mobility - the ability to move virtual instances from host to host and between server farms, including Authorized Cloud Providers (ACP), without the constraints of Microsoft's license reassignment rule
  - More by product...

License Mobility is a Software Assurance entitlement. SA Entitlements vary by product. Windows Server & Office do not allow License Mobility; SQL, SharePoint, Exchange and others do.

Microsoft Product	License Mobility in SA
Windows Server	No
Office	No
SQL Server	Yes
SharePoint Server	Yes
Exchange Server	Yes
Biztalk Server	Yes

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Microsoft licensing changes

Product	Purchase Pre October 2019	Purchase Post October 2019 Renewal	License Included Option?
Windows Server	Only on Dedicated Hosts	No	Yes
SQL Server	Any instance type with SA, only DH without SA	Only with SA, no unlimited virtualisation	Yes
MSDN	Only on Dedicated Instances or Hosts	No	No
Office 365 Pro Plus	Only on Dedicated Instances or Hosts	No	Office Pro Plus on Workspaces, not EC2
Windows 10 Ent	Only on Dedicated Instances or Hosts	Only via VDA license	Only desktop experience on Workspaces, not EC2

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LICENSING: WHAT DO YOU <u>REALLY</u> NEED TO KNOW?

License Included

- On demand, Spot, or Reserved Instance
- Pay-as-you-go pricing
- Multi-tenant or Dedicated Instance
- AWS provides images
- Legacy versions supported
- AWS manages the licensing and compliance

License Mobility

- Requires active Software Assurance
- Includes SQL Server, Remote Desktop Services, Exchange, SharePoint
- Does not include Windows Server, Windows Desktop and Microsoft Office
- Requires a verification process
- Customers import and use their own software

EC2 Dedicated Options

- Software Assurance/License Mobility not required for licenses purchased prior to 10/1/2019 and not upgraded to versions released after 10/1/2019
- Subscription licensing is impacted at contract renewal on or after 10/1/19
- Windows Server can be deployed on a Dedicated Host
- Customer is responsible for compliance with Microsoft
- Customers import and use own their software

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Microsoft Programs

Title:	**EA Health-Check & OLA**	**MSFT Immersion Day**	**MSFT Bootcamp**	**EMP POC**
Purpose?	Educate customers on MSFT licensing on AWS and right-sizing recommendations	Educate customers on "why AWS for MSFT workloads"	Upskill customers' technical audience on MSFT tech on AWS – L400	Demonstrate AWS's capabilities to address MSFT 2008 End of Support challenge
Duration:	1 hours EA H/C, 30 days for OLA	½ day to 1 day	1 to 2 days	1 hour presales, 10-15 POC
Location:	Virtual	Customer/AWS office/Virtual	Customer/AWS office/Virtual	Virtual
Activity:	• EA H/C - Analyze licensing agreement and provide savings guidance • OLA - Analyze infra environment for 30 days, then provide right-sizing guidance	• Present in each MSFT on AWS topic customer selects to share "Why AWS" message plus demo	• 1 to 2 day hands-on-labs for specific MSFT on AWS scenarios. Pre-requisites required shared with customer prior to event	• Start with demo, then select legacy app for POC, then plan and deliver large scale packaging

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How can AWS help.....

- Microsoft licenses are the biggest bill that most IT managers get;
  AWS may be able to reduce that by 30-40% *(Optimization and Licensing Assessment)*

- Do you have a Microsoft Agreement? When is your next true up? AWS can
  help you reduce that impact *(OLA and Modernization)*

- An AWS EA Health Check is a 60-minute conversation to clarify your
  opportunity to save, and priorities of where to start *(EA Health Check)*

- Windows 2008 and SQL Sever 2008 are now end-of-support. What's your
  plan? AWS can help remove the risk *(End-of-Support Migration Program)*

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Thank you

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Resources

Microsoft Licensing on AWS:
https://aws.amazon.com/windows/faq/

Windows Server on AWS
https://aws.amazon.com/windows/

SQL Server on AWS
https://aws.amazon.com/sql/

Amazon RDS
https://aws.amazon.com/rds/

Microsoft Competency Partners
https://aws.amazon.com/windows/partner-solutions/#database

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