

AWS
re:Invent

WIN318-R

Manage your Microsoft licenses on-premises and in the cloud

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Agenda

AWS license included

License Mobility

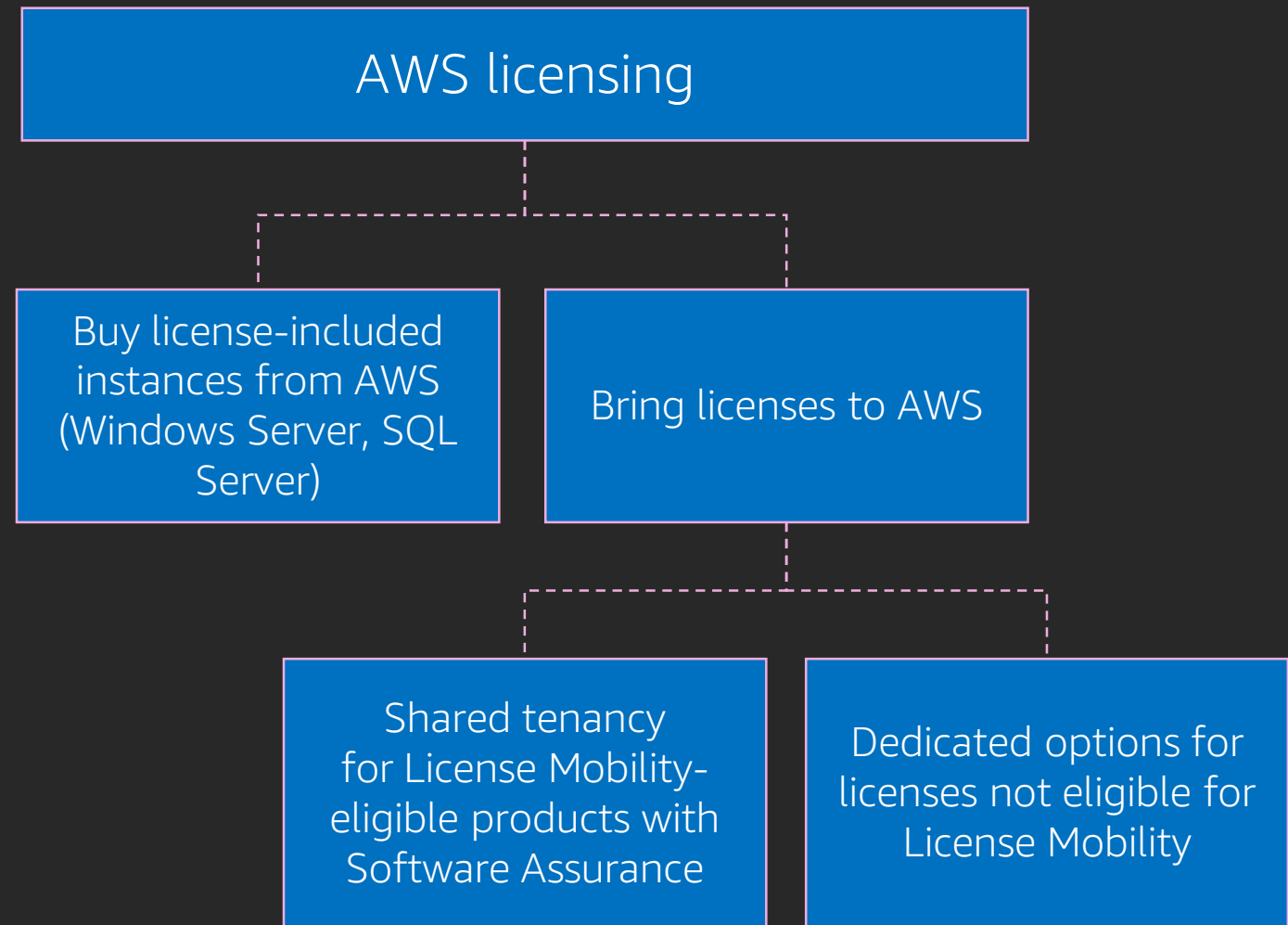
Dedicated tenant options

AWS License Manager

Optimization and licensing assessment (OLA)

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 license included

License-included instances

Advantages

- Pay as you go
- Current and legacy versions of Microsoft software available
- Reduce or eliminate enterprise agreement (EA)
- No software upgrade fees
- AWS is responsible for licensing and compliance

License Mobility

Bring licenses to default tenant Amazon EC2

Microsoft
application with
License Mobility

Amazon EC2
Windows Server
AMI

SQL Server 2017
with License
Mobility

Linux AMI

With License Mobility, you can bring specific Microsoft software with active Software Assurance to Amazon Elastic Compute Cloud (Amazon EC2) license-included instances

Includes Microsoft SQL Server, Remote Desktop Services, Exchange, SharePoint, Dynamics, Systems Center



AWS does not recommend customers bring Windows Server, Windows Desktop, Microsoft Office, or MSDN to default tenancy

SQL License Mobility

- SQL Server is licensed by vCPU rather than physical core
- Customer brings number of cores equal to core counts on table to license specific instance sizes
- Four-core minimum per instance
- SQL passive failover benefits enabled (2014+)
- This is a small subset for example purposes

Instance type	Virtual representation of hardware threads
r5.24xlarge	96
r5.12xlarge	48
r5.4xlarge	16
r5.2xlarge	8
r5.xlarge	4
r5.large	4

Optimize CPU

- **Optimize CPU allows you to:**
 - Specify max number of vCPUs per EC2 instance
 - Disable Intel Hyper-Threading Technology
- **Reduce SQL Server licensing costs when you bring your own license**
 - Optimize instance for memory and use fewer SQL license cores
 - Cores and threads can be re-enabled after stop instance; instance pricing does not change
 - Microsoft licensing requires a minimum of four cores per instance

Instance type	Min vCPUs	Max vCPUs	Available memory (GiB)
x1e.32xlarge	4	128	3904
x1e.16xlarge	2	64	1952
X1e.8xlarge	2	32	976

Dedicated tenant options

Amazon EC2 dedicated infrastructure

- Products with active Software Assurance and License Mobility benefits (example: SQL Server) can be deployed on EC2 dedicated or shared infrastructure
- Licenses that are not eligible for License Mobility (example: Windows Server, SQL Server without SA) can be deployed on EC2 dedicated infrastructure if the licenses are purchased prior to October 1, 2019, or if they are purchased as true-ups under active Enterprise agreements signed before 10/1/2019
- In these scenarios, the products cannot be upgraded to versions released after 10/1/2019

Amazon EC2 dedicated infrastructure

- Windows Desktop, which is not eligible for License Mobility, can be brought to dedicated infrastructure, but Microsoft requires that VDA E3/E5 be purchased at future SA renewal
- Subscription licenses (Server and Cloud Enrollment, MSDN, O365) are subject to updated Microsoft terms at renewal

Dedicated host benefits

Dedicated host



Customer A

Customer-provided
Windows Server AMI

Pay per host – No OS included

Bring any Microsoft application—
regardless of SA or License Mobility

Bring your own Windows Server
license

Maximize physical core licensing
benefits of Windows Datacenter and
SQL Server Enterprise Edition

MSDN eligible for dev/test, non-
production



Dedicated Host configuration options

Dedicated Host attributes			Instance capacity per host by instance size						
Instance type	Sockets	Physical cores	large	xlarge	2xlarge	4xlarge	8xlarge	9xlarge	18xlarge
c4	2	20	16	8	4	2	1		
c5	2	36	36	18	8	4		2	1

c4 and c5 hosts are being compared for example purposes. There are many additional sizing options available.

Optimized virtualization – Use maximum number of instances per configuration when all physical cores are licensed

- Windows Server Datacenter
- SQL Server Enterprise
- Software Assurance for SQL Server enables passive failover and movement between hosts

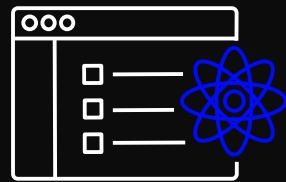
Other options:

- Windows Server Standard – Two instances per physically licensed host
- SQL Server Standard (core model) – License by vCPU
- SQL Server Standard (Server+CAL model) – One instance per server license

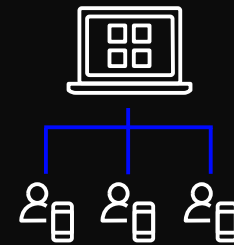
AWS License Manager

AWS License Manager

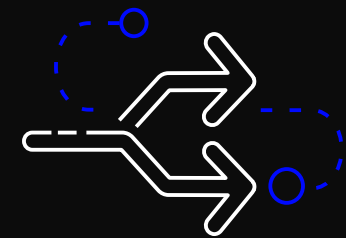
A one-stop solution for managing licenses from a variety of software vendors



Manage licenses across hybrid environments



Proactively stay compliant per your organizational structure and processes



Built-in integration with AWS services

Manage Microsoft Windows Server on AWS SQL BYOL SQL Server licenses

Windows Server on AWS
Here is how you manage

At-a-glance summary of Enterprise licenses and usage limits. Specify your licensing terms

See whether limits are enforced. Oracle database on AWS

On-premises SQL Server specify tenancy as Dedicated Host.

The screenshot displays the AWS License Manager console. The main page is 'Create license configuration' for 'SQL Server Enterprise'. It includes fields for 'License configuration name', 'Description', 'License type' (set to 'Cores'), and 'Number of Cores' (set to 60). There is an 'Enforce license limit' checkbox and a 'Rules' section with a 'Tenancy' rule set to 'Dedicated Host'. A 'Platform version' list shows 10.0.14393, 2018.03, and 2012.03. A 'Licenses consumed' bar chart shows 60 licenses used out of a 60 limit. A secondary window shows a 'Search inventory' list with resource IDs like i-0291e952a33b09339 and i-0d6a9952780efaa1e.

AWS optimization and licensing assessment

Addressing cloud assessment challenges

Challenge

- **Footprint:** Knowing what is installed across all servers, workstations, cloud instances, containers, and devices across the entire enterprise.
- **Scope of opportunity:** What to move, focus on underutilized servers, servers running at peak capacity, heavily virtualized, older server, etc.
- **Cost:** What it really costs once all the credits, discounts, rebates are used. Ability to weigh the pros and cons of BYOL and LI.
- **Timing and effort:** Concerns the process will take months and the customer may need to go through this exercise with another cloud provider.

AWS solution

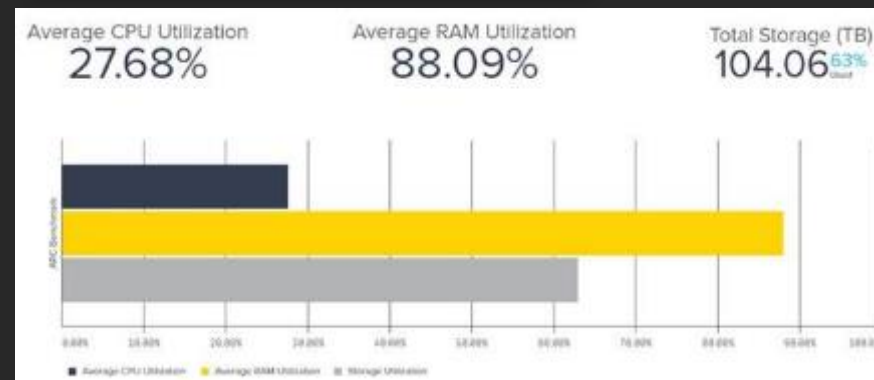
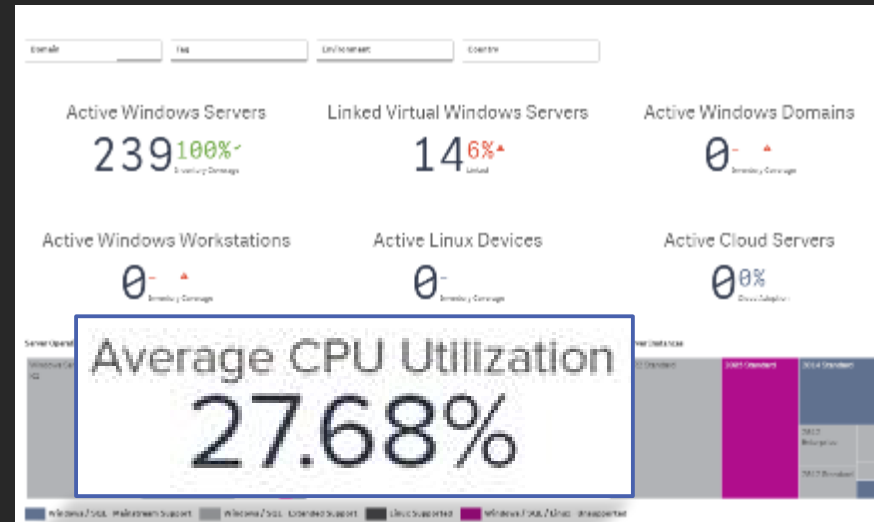
- The AWS Assessment **identifies everything** in the customer's environment regardless of platform, application, or geography.
- Analysis allows customer to **right size based on actual resource consumption** (ARC) and pivot on multiple scenarios.
- Identify **optimized licensing and provisioning** to ensure the most cost-effective cloud solution.
- Provide recommendations for **Dedicated Hosts, optimized CPU, Reserved Instances, and SPOT.**
- Customer has access to all the data, and recommendations can be available **within a week of implementation.**

AWS OLA partners

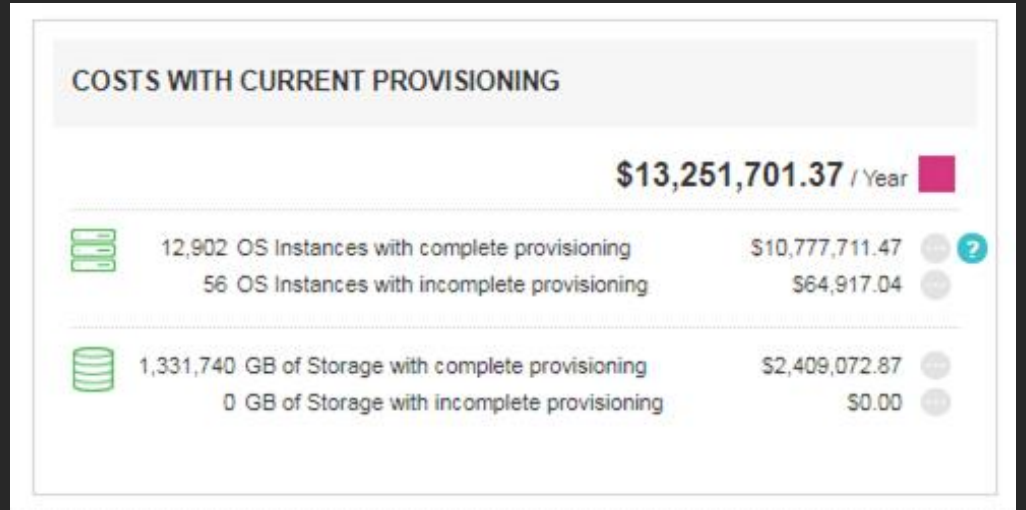
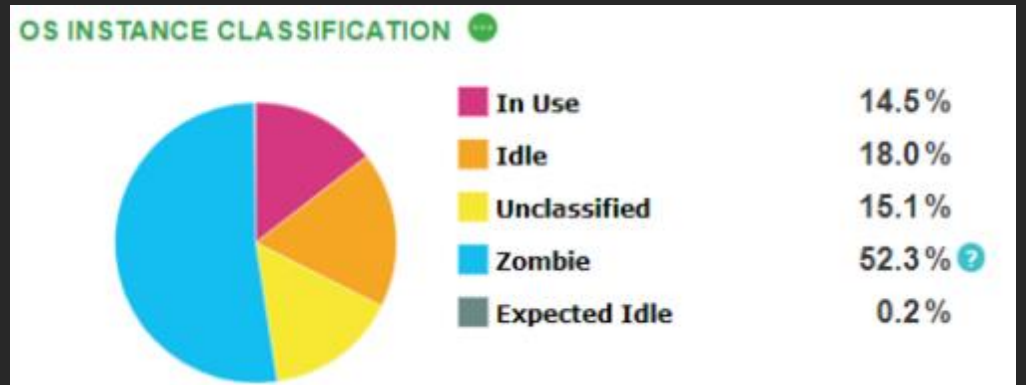
TSOLogic

 **Cloudamize**

Instance usage and optimization



OS classification and cost optimization



Example OLA results

Customer 1 – Inventory sizing, three-year RI ~\$2.52M; optimized based on ARC it is ~\$969K or ~62% cost reduction; Dedicated Hosts for a total three-year commit of \$542K. Additionally, leveraging optimized CPU, they require 372 cores of SQL, which is a 144-core reduction from what is required on-premises.

Customer 2 – Inventory sizing on demand ~\$575k per year; optimized based on ARC ~\$178K per year or ~68% cost reduction.

Customer 3 – On-premises costs were estimated at ~\$713K a month. Optimized based on ARC ~\$441K a month or 38% cost reduction.

Thank you!



Please complete the session survey in the mobile app.