



# EPI-USE WHALE: AWS SQL Migrations Done Right

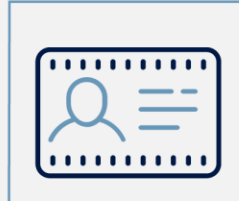
Chris Townsend, EPI-USE Sr. Solution Architect

Tom Staab, AWS Sr. Partner Solutions Architect





- Immersion Day
- Solution Provider
- SAP Services Competency
- Managed Service Provider
- Migration Services Competency
- Public Sector Solution Provider
- Well-Architected Partner Program
- Amazon EC2 for Windows Server Delivery
- AWS Microsoft Workloads Services Competency



**24**  
Cooperatives set up  
and running rural enterprises since  
1994



**7**  
Hubs and Community  
Centres set up directly  
impacting the  
local communities



**620**  
Bicycles distributed  
in Limpopo and  
Northwest Province



**3**  
Beeline fencing initiatives  
to give job opportunities and income to  
the local communities



Total lives impacted, approx.  
**500,000**  
direct and indirect beneficiaries



# Chris Townsend



Senior AWS Solutions Architect

EPI-USE Services for AWS

- AWS Certified for 7 Years
- 15+ Years in IT
- Well Architected Partner Trained
- AWS Immersion Days Certified
- AWS UserGroup Leader
- Microsoft Workloads Background



Chris.Townsend@epiuse.com



# Tom Staab



Senior Partner Solution Architect

AWS

- 34 Years in IT
- Microsoft Workloads Background
- 24+ Years with SQL Server
- Speaker at SQL Saturdays, AWS Summits, & re:Invent

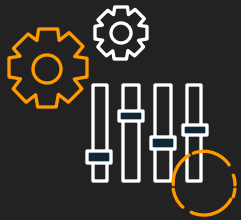


tstaab@amazon.com

EPI·USE<sup>®</sup>



# Advantages of AWS for Microsoft workloads



**BREADTH &  
DEPTH**



**RELIABLE &  
SECURE**



**BEST  
PERFORMANCE**



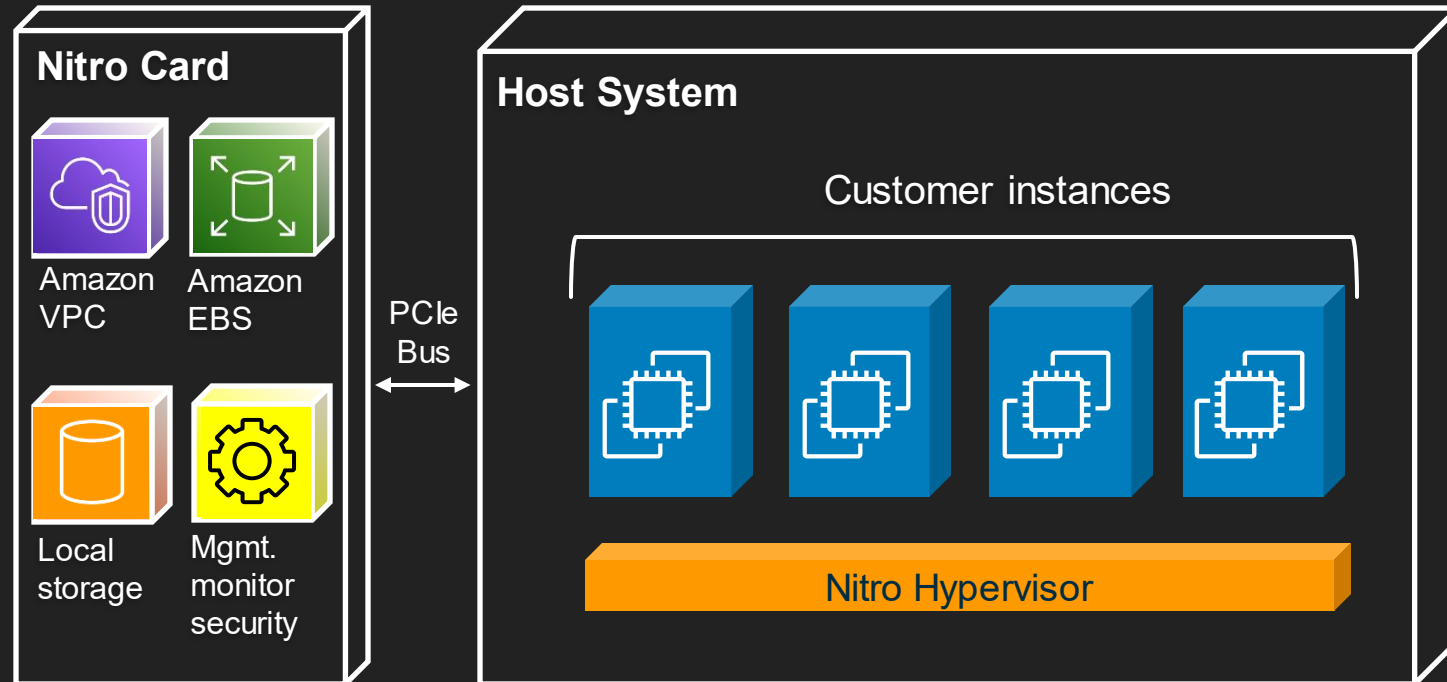
**LOWER  
TCO &  
FLEXIBLE  
LICENSING**



**INNOVATION &  
EXPERIENCE**

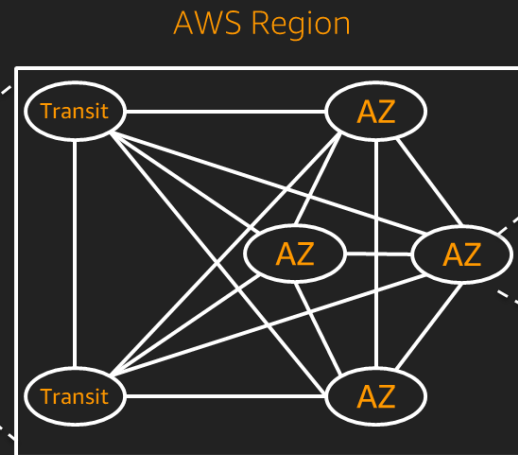


# Nitro System is the foundation of AWS



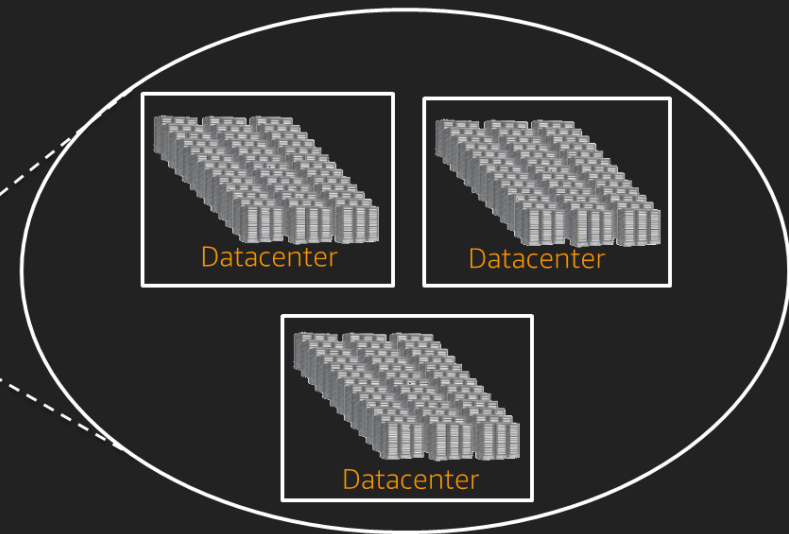
# AWS Region Design

AWS Regions are comprised of multiple AZs for high availability, high scalability, and high fault tolerance. Applications and data are replicated in real time and consistent in the different AZs



A Region is a physical location in the world where we have multiple Availability Zones.

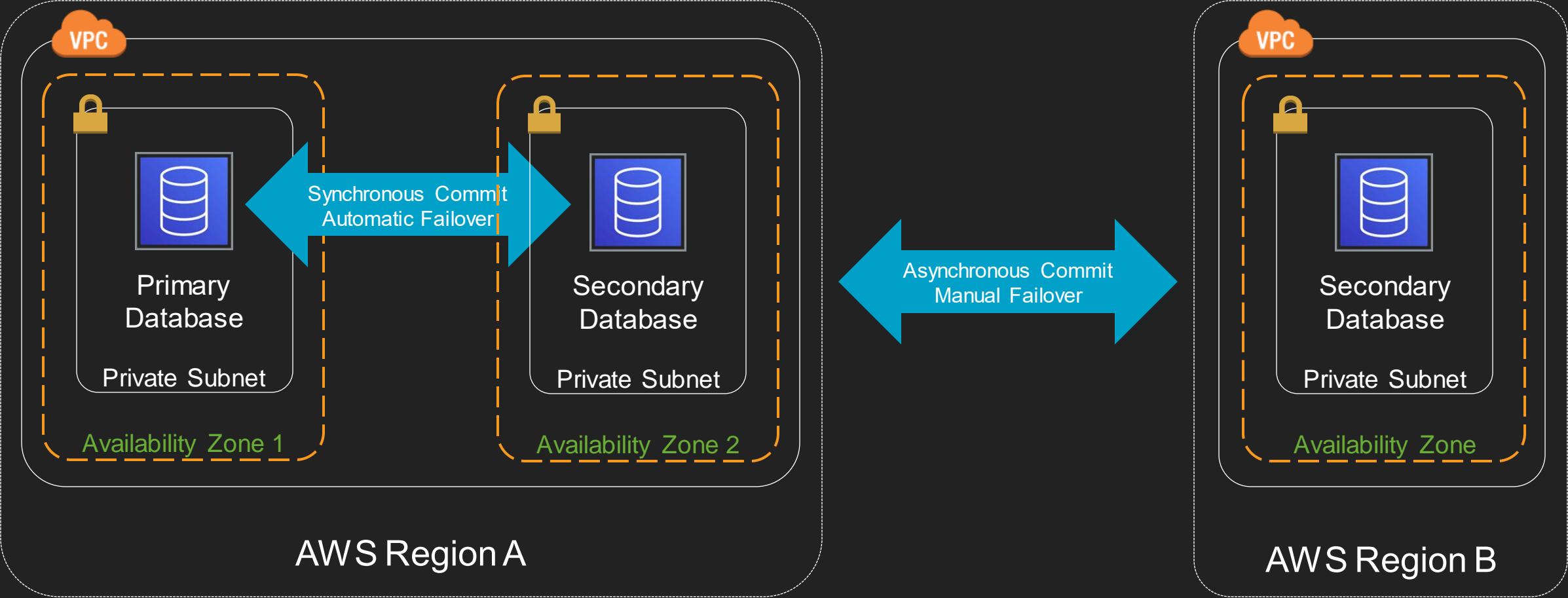
AWS Availability Zone (AZ)



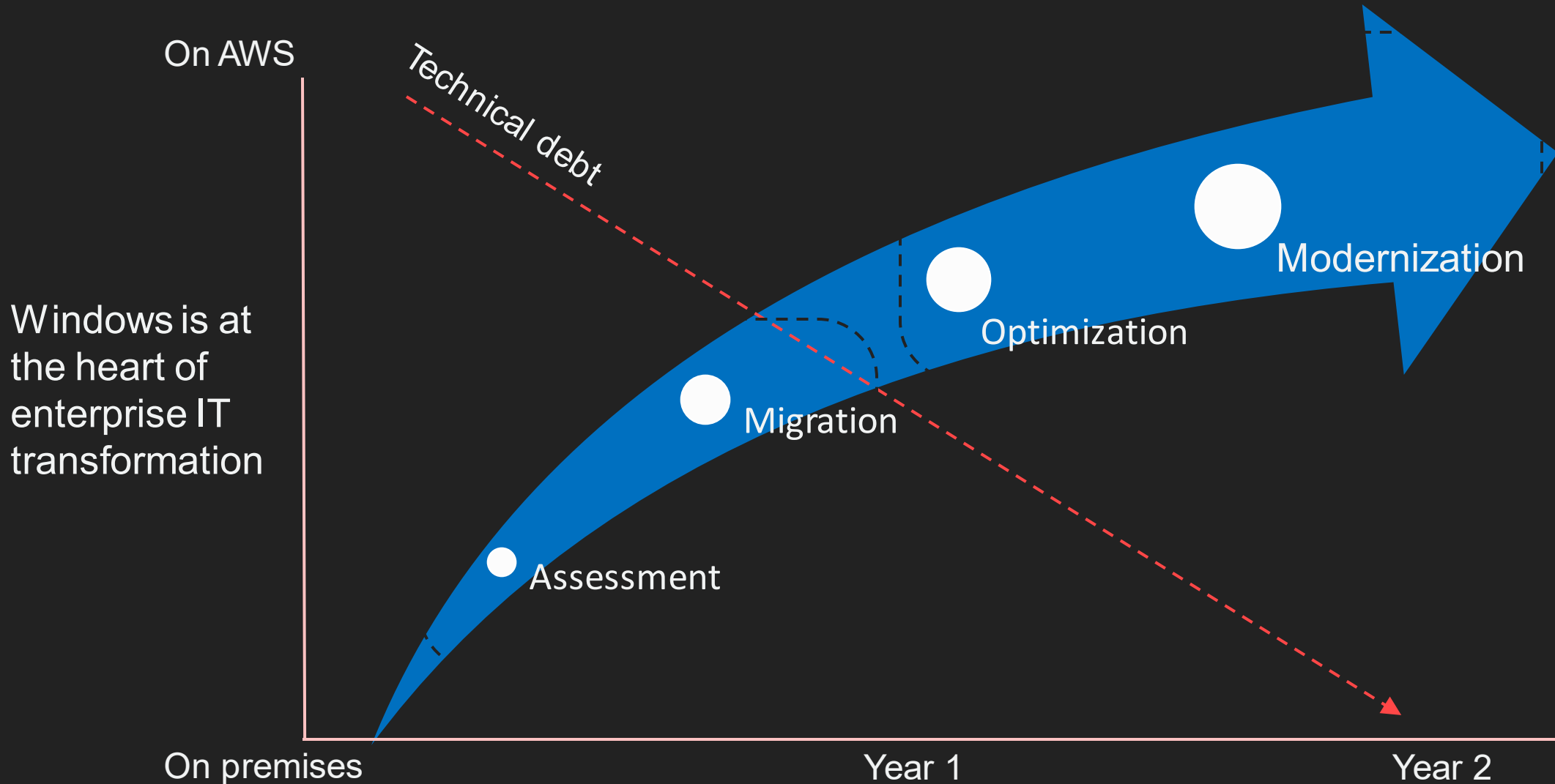
Availability Zones consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities.



# High Availability and Disaster Recovery



# Where Does the OLA Fit in a Customer Journey

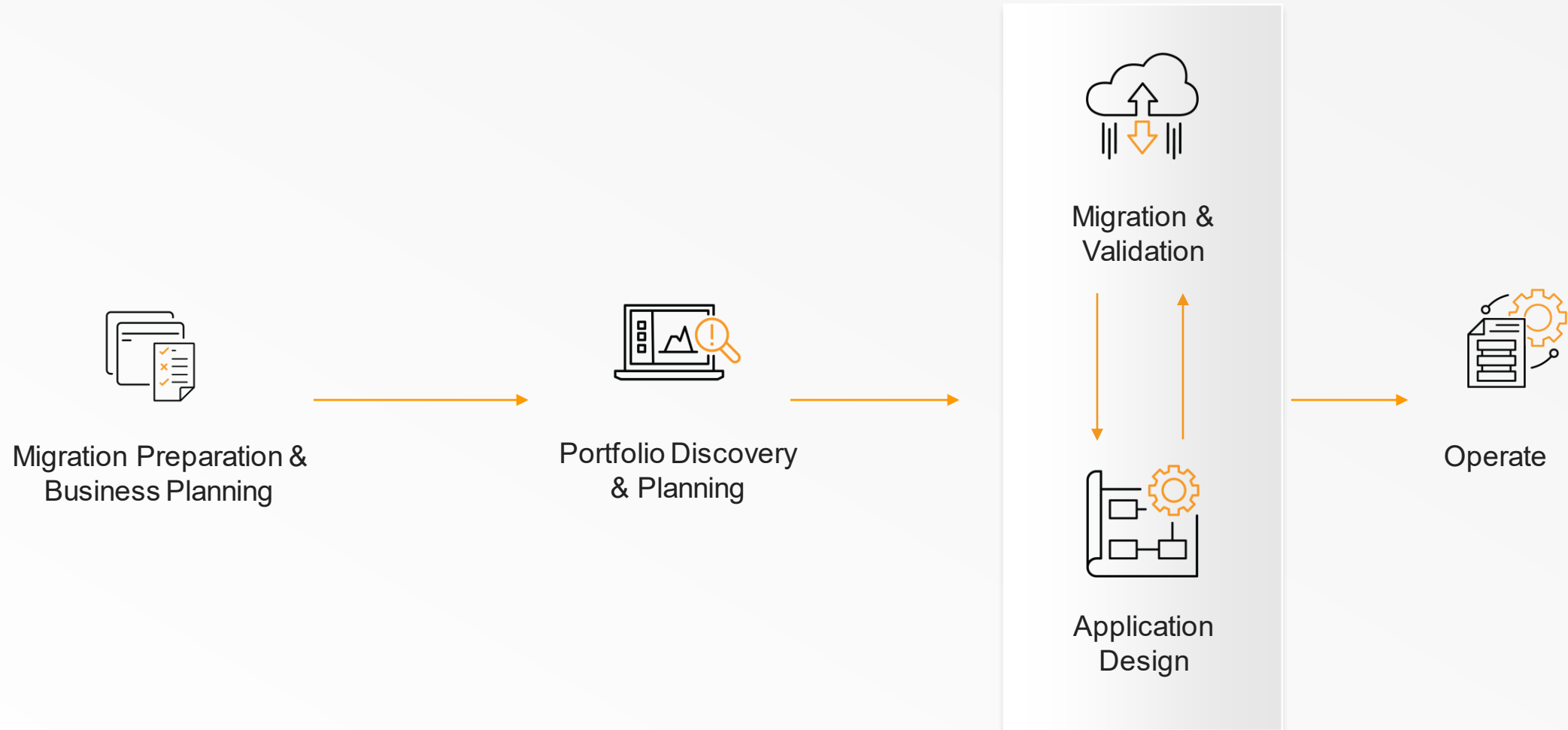


# What Makes or Breaks a Migration?

- The Process
- The Cost



# It's ALL about the Process!



# Discovery & Planning

- Locate the What and Where
- Application and Data Dependency Mapping
- Defining Application Patterns and Grouping
- Target your Easy Wins to carry Momentum



# Discovery – Portfolio Data Gathering



## Application

- Owners & Business Impact
- Technology Stack
- Infrastructure Requirements



## Server

- Physical/virtual
- OS version
- License Requirements
- CPU, RAM, Disk type, utilization



## Network

- Device type
- Firewall rules
- Network connection
- Data Compliance



## Storage

- Type
- Capacity
- Utilization
- Performance requirements



# It must be Cost Effective!



**Business Driver  
Alignment**



**Right Sized  
Workload**



**Leverage License  
Investment**



**Long Term  
Cost Benefit**

# What are we hearing from our clients?

How do I get started?

Can I move my existing License?

How can I lower my TCO?

How do I move these workloads?

How can I evacuate my Data Center?

Is AWS more expensive than Azure?

What do I have in my environment?

Does AWS support my on-premises workloads?

How do I manage and transform our workloads after migration?

How does Enterprise licensing work on AWS?

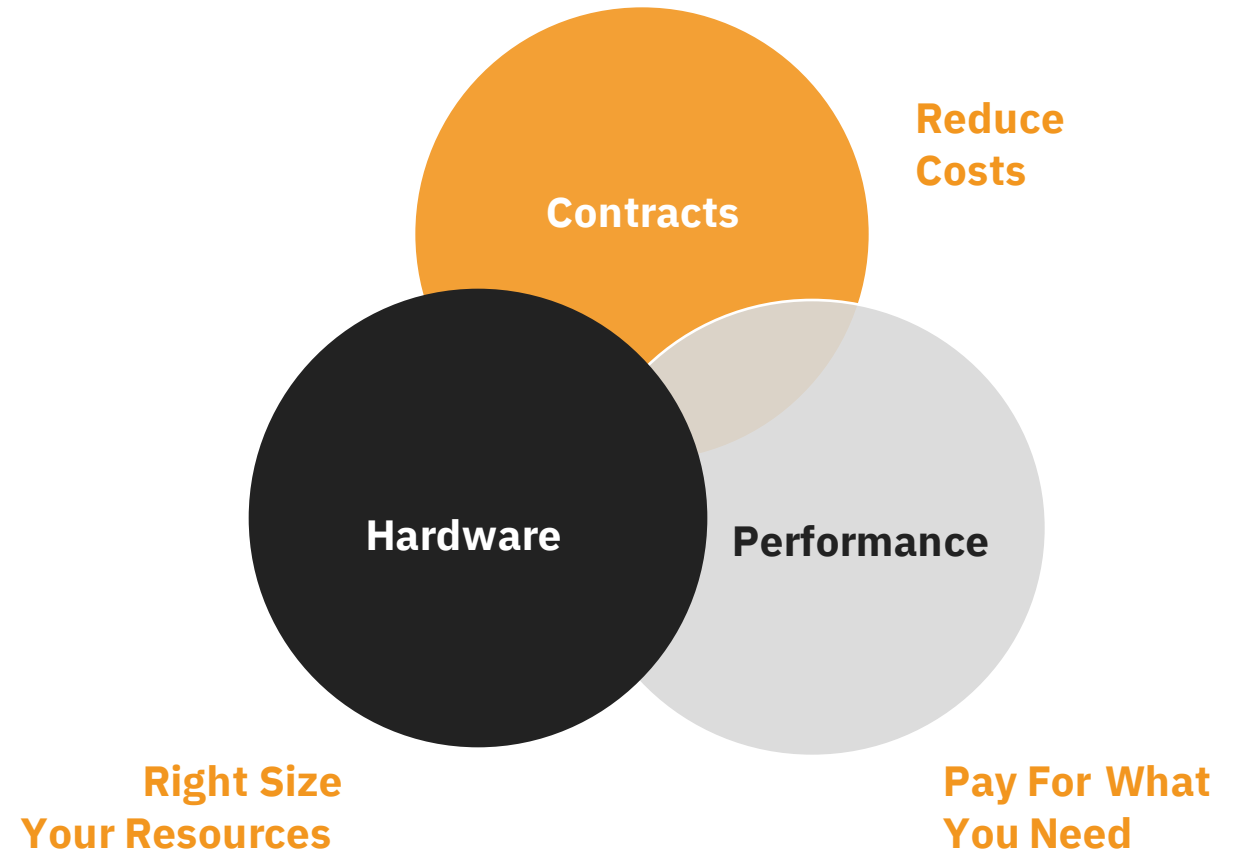
What tools and funding are available to help?

# Windows Holistic Application and Licensing Evaluation

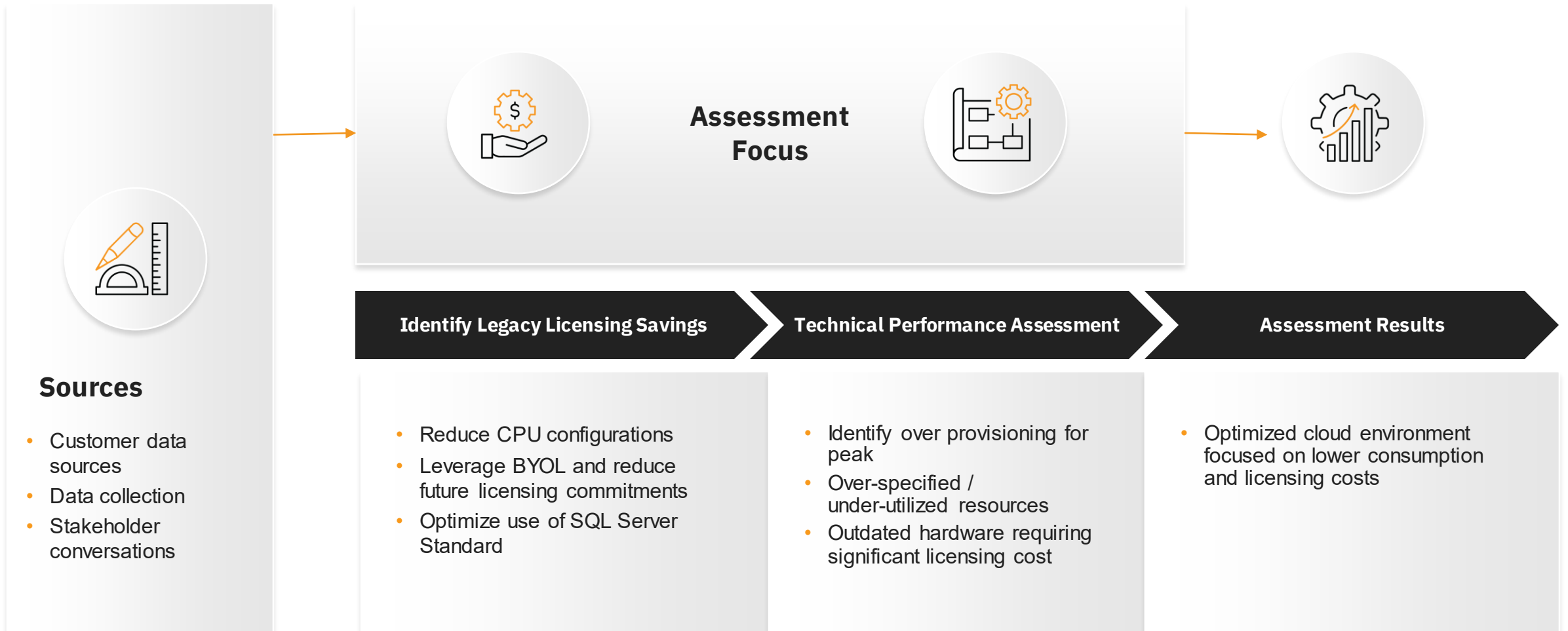


# What is an W.H.A.L.E. assessment?

*The third-party licenses cost is on average 3 times the total cost of running these workloads in the AWS cloud. **Licensing really matters!***



# W.H.A.L.E. Assessment: Key Focus Areas

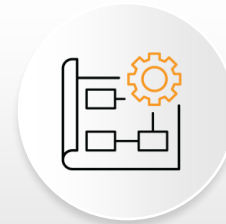


## Sources

- Customer data sources
- Data collection
- Stakeholder conversations



## Assessment Focus



### Identify Legacy Licensing Savings

- Reduce CPU configurations
- Leverage BYOL and reduce future licensing commitments
- Optimize use of SQL Server Standard

### Technical Performance Assessment

- Identify over provisioning for peak
- Over-specified / under-utilized resources
- Outdated hardware requiring significant licensing cost

### Assessment Results

- Optimized cloud environment focused on lower consumption and licensing costs

# License Costs Significant in Total TCO, Strong Driver for Savings

**45%**

Microsoft SQL Server  
licensing costs reduction

**77%**

Windows Server licensing  
cost reduction

**98%**

of customers don't have to  
invest in additional licenses - optimize  
the right size

**3x**

Savings on licensing cost equals at least 3x the total cost of running these workloads in the AWS cloud



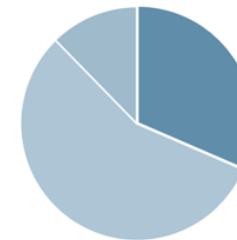
# W.H.A.L.E: Value provided from the assessment

- Server inventory and utilization
- License inventory, optimizations, and review
- Right sized workloads and AWS costs

WS Version	Servers	%of Estate OS Support Cycle	
<= WS 2008 R2:	51	14%	Unsupported (2008/R2)
- WS 2012	68	19%	Extended Support (2012/R2)
- WS 2012 R2	106	30%	Extended Support (2012/R2)
- WS 2016	88	25%	Extended Support (2016)
- WS 2019	42	12%	Mainstream Support until 01/2024
- WS 2022	0	0%	Mainstream Support until 01/2024
<b>WS Total:</b>	<b>355</b>	<b>100%</b>	
SQL Version	SQL Instances	%of Estate OS Support Cycle	
<= SQL 2008 R2:	3	23%	Unsupported (2008/R2)
- SQL 2012	3	23%	Unsupported (2012)
- SQL 2014	1	8%	Extended Support (2014)
- SQL 2016	4	31%	Extended Support (2016)
- SQL 2017	0	0%	Mainstream Support until 10/2022
- SQL 2019	2	15%	Mainstream Support until 01/2025
<b>SQL Total:</b>	<b>13</b>	<b>100%</b>	

Time In Use %	
In-Use	22.52
Idle	40.88
Zombies	8.98

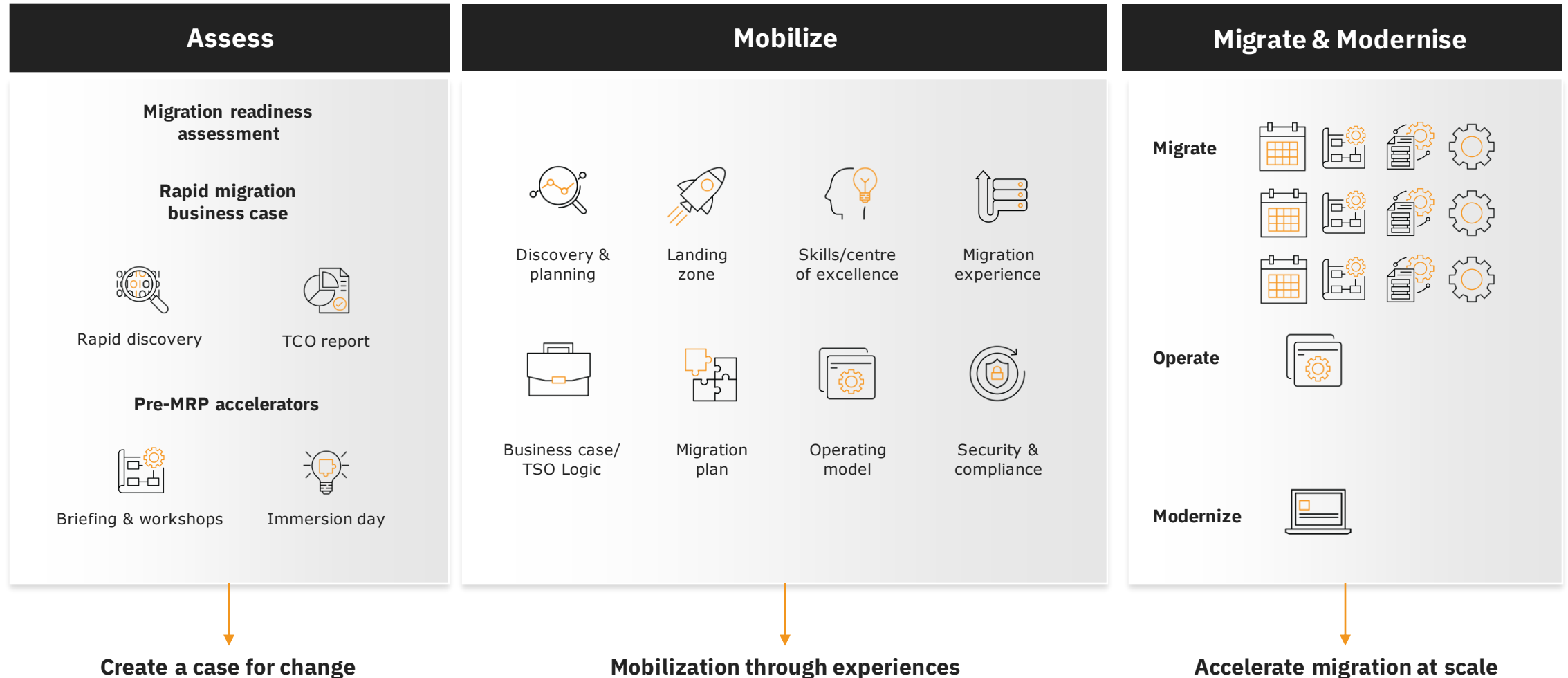
# of zombies: 47



■ In-Use ■ Idle ■ Zombies

Environment and Licensing	
Zombies	8.98 (47 zombie servers removed from future state modeling)
SQL Servers	13
SQL Edition	Enterprise (2012) Standard (2008 R2, 2012, 2014, 2016, 2019)
Windows Servers	305 (288 after right-sizing)
RHEL/Linux Servers	178 (166 after right-sizing)
Windows Desktops	16 (removed from pricing)

# W.H.A.L.E. to Migration



# Session evaluation

Your feedback is important to us



**Evaluate this session at:**

[www.PASSDataCommunitySummit.com/evaluation](http://www.PASSDataCommunitySummit.com/evaluation)



# Thank you

Lets Chat! Stop by Booth 411

