Lifting Your Data Skills to the Cloud

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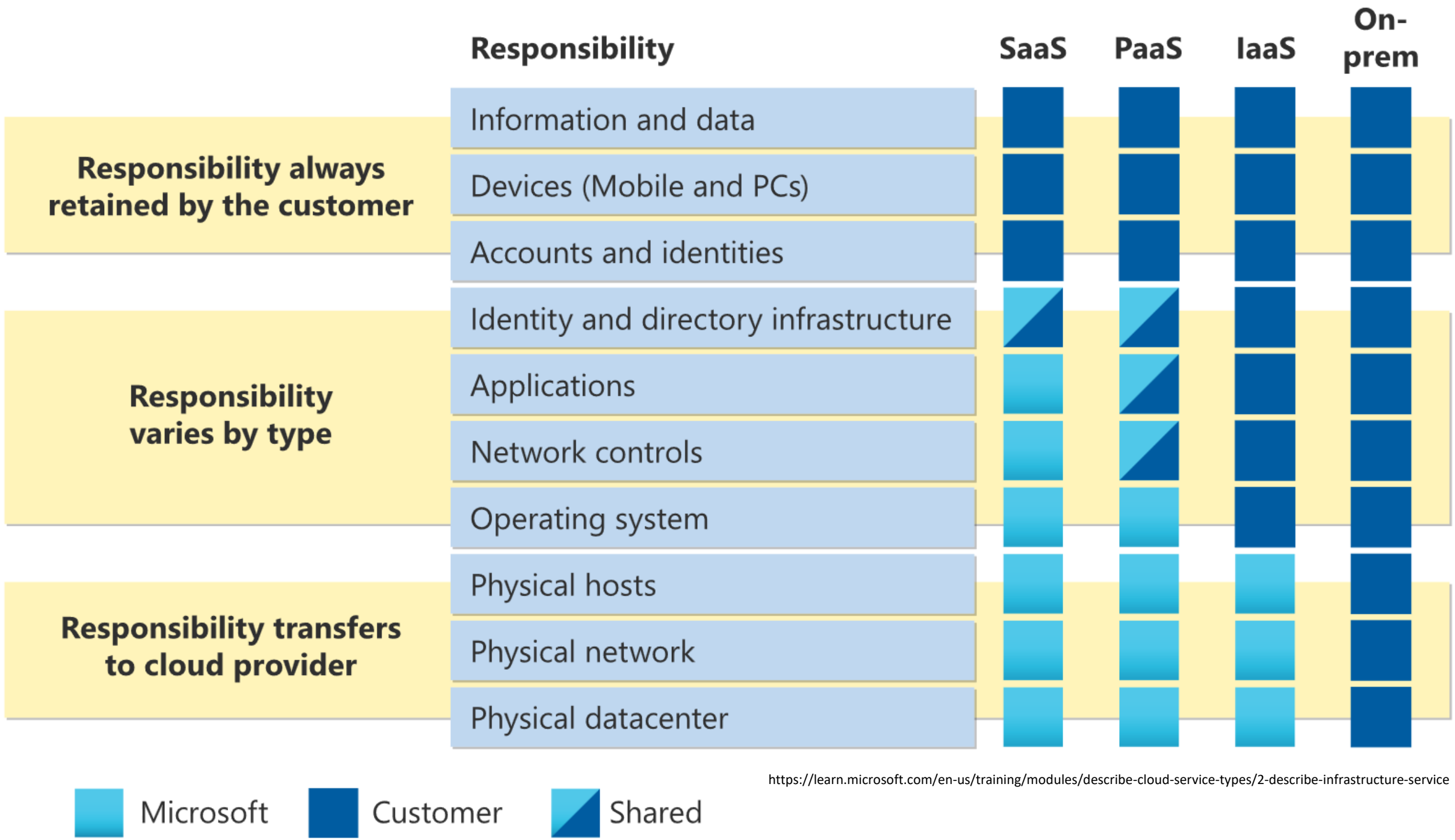
Topics Covered

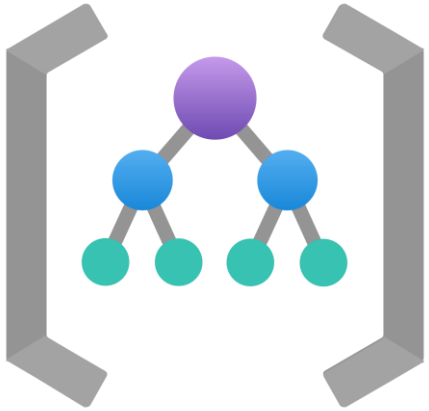
- Provisioning
- Migration
- Monitoring - Performance Tuning
- Security
- Alerting
- Network
- Cost Control



https://learn.microsoft.com/en-us/training/modules/describe-cloud-service-types/2-describe-infrastructure-service

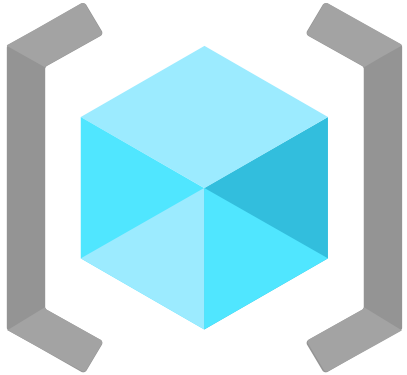
Provisioning

Region (Availability Zones)



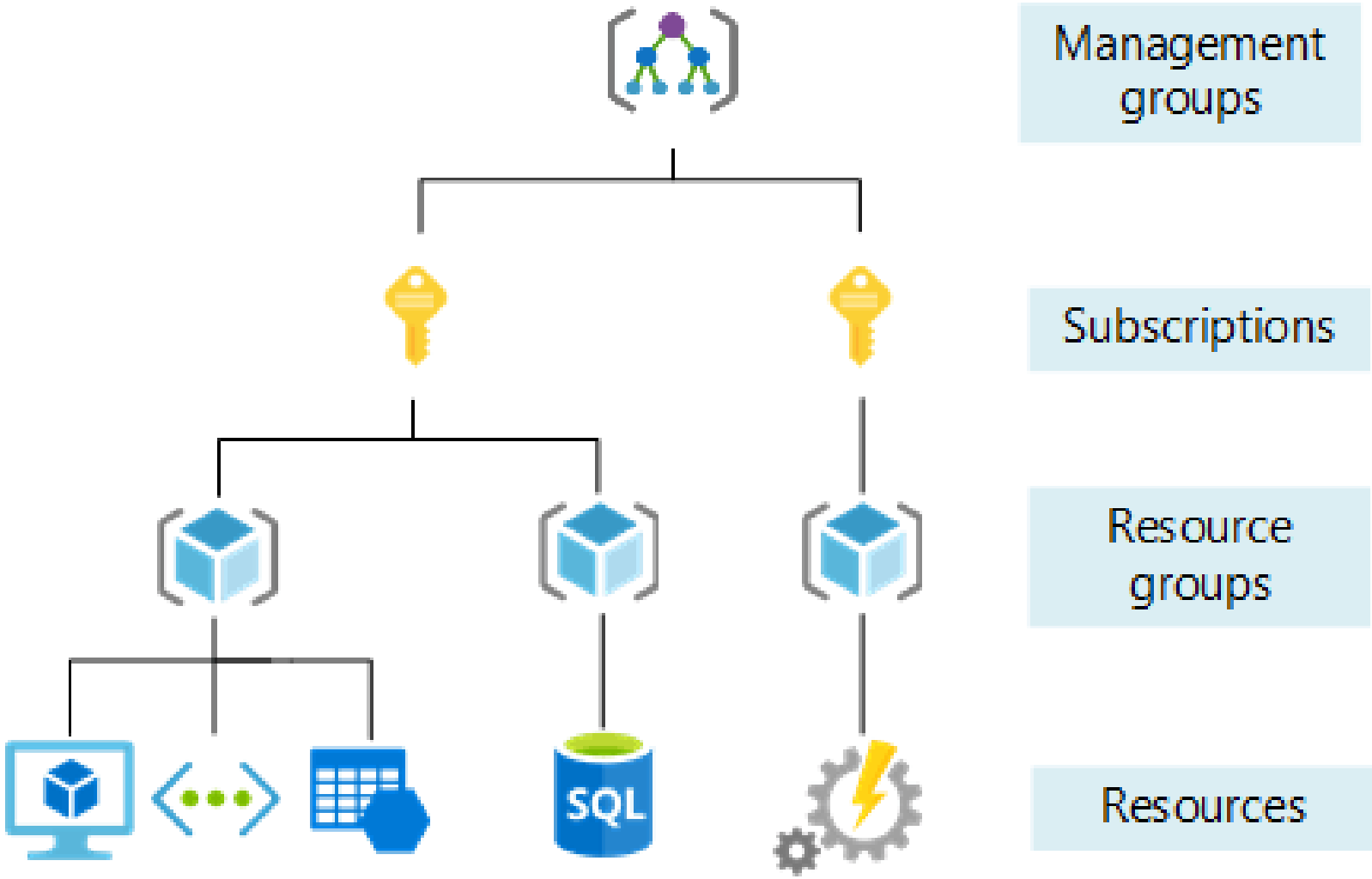
Management Group

Subscription



Resource Group

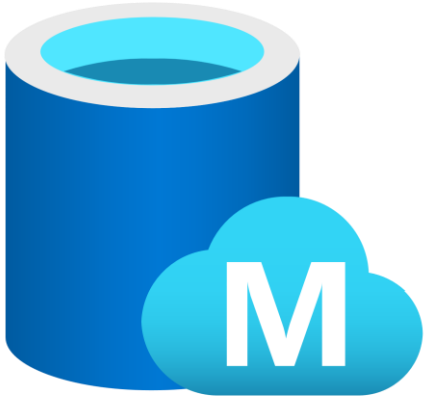
Provisioning



https://www.javatpoint.com/what-is-microsoft-azure-subscription

Provisioning

SQL on Azure VM



Azure SQL Managed Instance

Azure SQL Database

Azure SQL Edge

Provisioning

SQL on Azure VM

Deployment

- Marketplace
- Install your own
- Lift and Shift with Azure Migrate

Control over OS & SQL Version

SSAS, SSRS, SSIS availability

IaaS Extension

- Automated Backup
- Security updates

Scale up and Down, Shut down and only pay for storage

Can use all HA/DR solution as on premises

Provisioning

Azure SQL Database

Fully managed and always on the latest version of SQL

Need to know

- Purchase Model
- Compute options
- Hardware choice
- Reserved data storage

Point In Time and Long-Term backup retention

Scale up and down/Auto Pause

Built in HA/DR – Is that enough for you?

Understand log rate limits

Migration

SQL Server

SQL Server (upgrade)

Azure SQL Database

Azure SQL Managed Instance

SQL Server on Azure VMs

Azure Synapse Analytics

Migration

Azure Migrate

- Azure Migrate appliance, deploy on-premises.
- Azure Readiness
- Azure Sizing
- Azure Cost Estimation
- Dependency Analysis

Migration

Azure Database Migration Services

Azure Database Migration Service

- Azure SQL Migration Extension for Azure Data Studio
- Azure Portal
- PowerShell
- Azure CLI

Database Migration Service (classic)

- Older version of DMS (Do not use for SQL Migration)

https://learn.microsoft.com/en-us/azure/dms/dms-overview#compare-versions

Migration

Other Migration Tools

- BACPAC
- DACPAC
- Transactional Replication
- Bulk Copy
- Azure Data Factory
- SQL Data Sync

WED, APR 10, 2024, 12:00 PM EDT

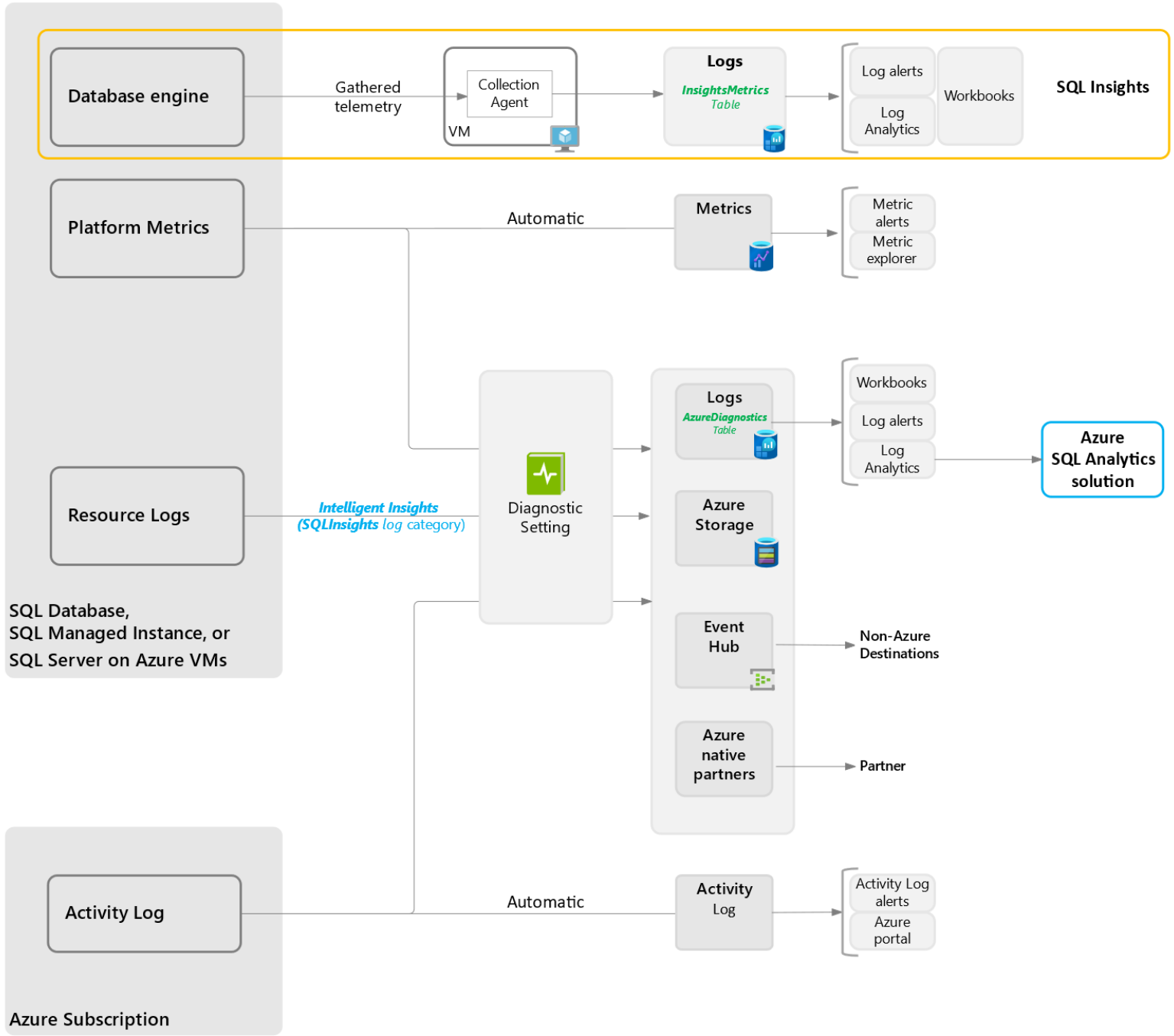
Migrating your Data to the Cloud ~ Matt Gordon

Online event

WHEN:
Wednesday, April 10, 2024, 1600 GMT

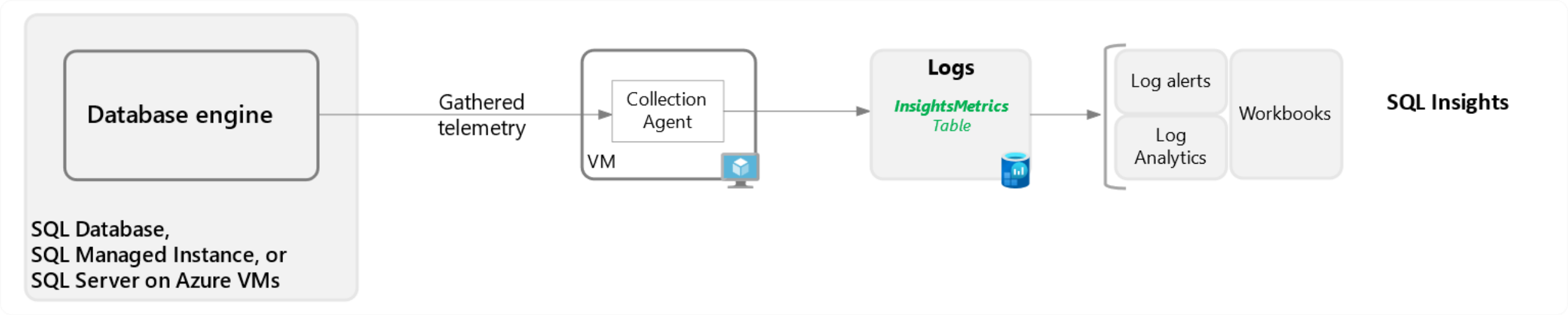
Monitoring - Performance Tuning

Monitoring and diagnostic telemetry



https://learn.microsoft.com/en-us/azure/azure-sql/database/monitor-tune-overview?view=azuresql

Monitoring – Performance Tuning



SQL Insight (preview)

https://learn.microsoft.com/en-us/azure/azure-sql/database/sql-insights-overview?view=azuresql

Monitoring – Performance Tuning

Built into Portal

- Metrics
- Performance Overview
- Performance Recommendations
- Query Performance Insight
- Automatic Tuning

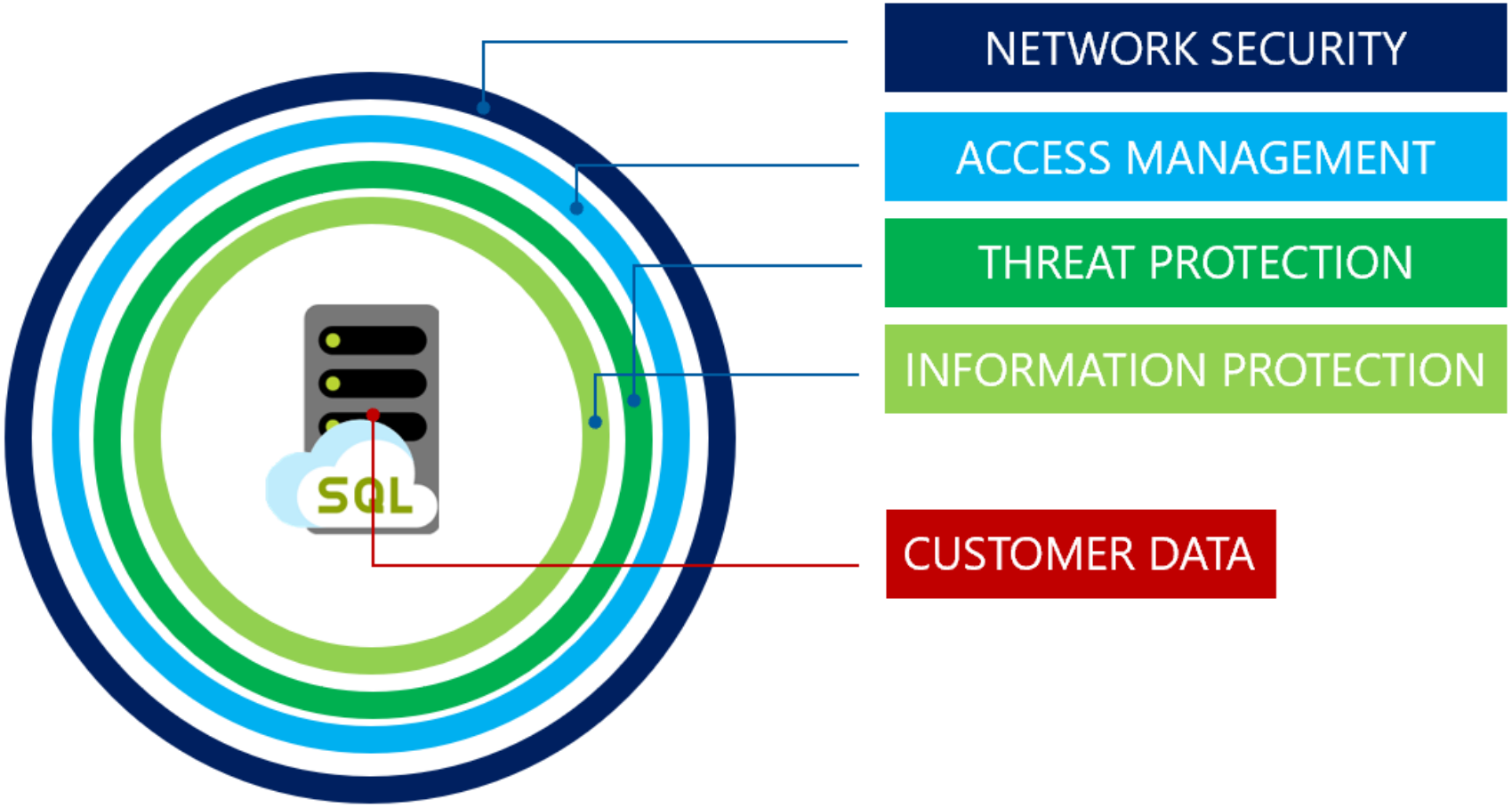
WED, APR 24, 2024, 3:00 PM EDT

Performance Tuning in Azure SQL Database ~ Monica Rathbun

Online event

WHEN:
Wednesday, April 24, 2024, 1900 GMT

Security



https://learn.microsoft.com/en-us/azure/azure-sql/database/security-overview?view=azuresql

Security

Database Security

Network Security

- Firewalls
- Private Endpoint

Access Management

- Authentication
- Authorization
- Access Control

Threat Protection

- Auditing
- Threat detection

Information Protection

- Data Encryption
- Database backup
- Physical Security

Security

Tools

- Azure SQL Auditing
- Ledger
- Data Discovery & Classification
- Defender for Cloud
  - SQL vulnerability assessment
  - SQL Advanced Threat Protection
- User-Assigned Managed Identity
- Encryption
  - TDE
  - Always Encrypted

Security

Tools

Azure role-based access control

- Azure roles
- Azure AD roles
- Database specific roles
- Custom roles
- Allow technologists access to Database management plane and not data plane.

Microsoft Entra Privileged Identity Management

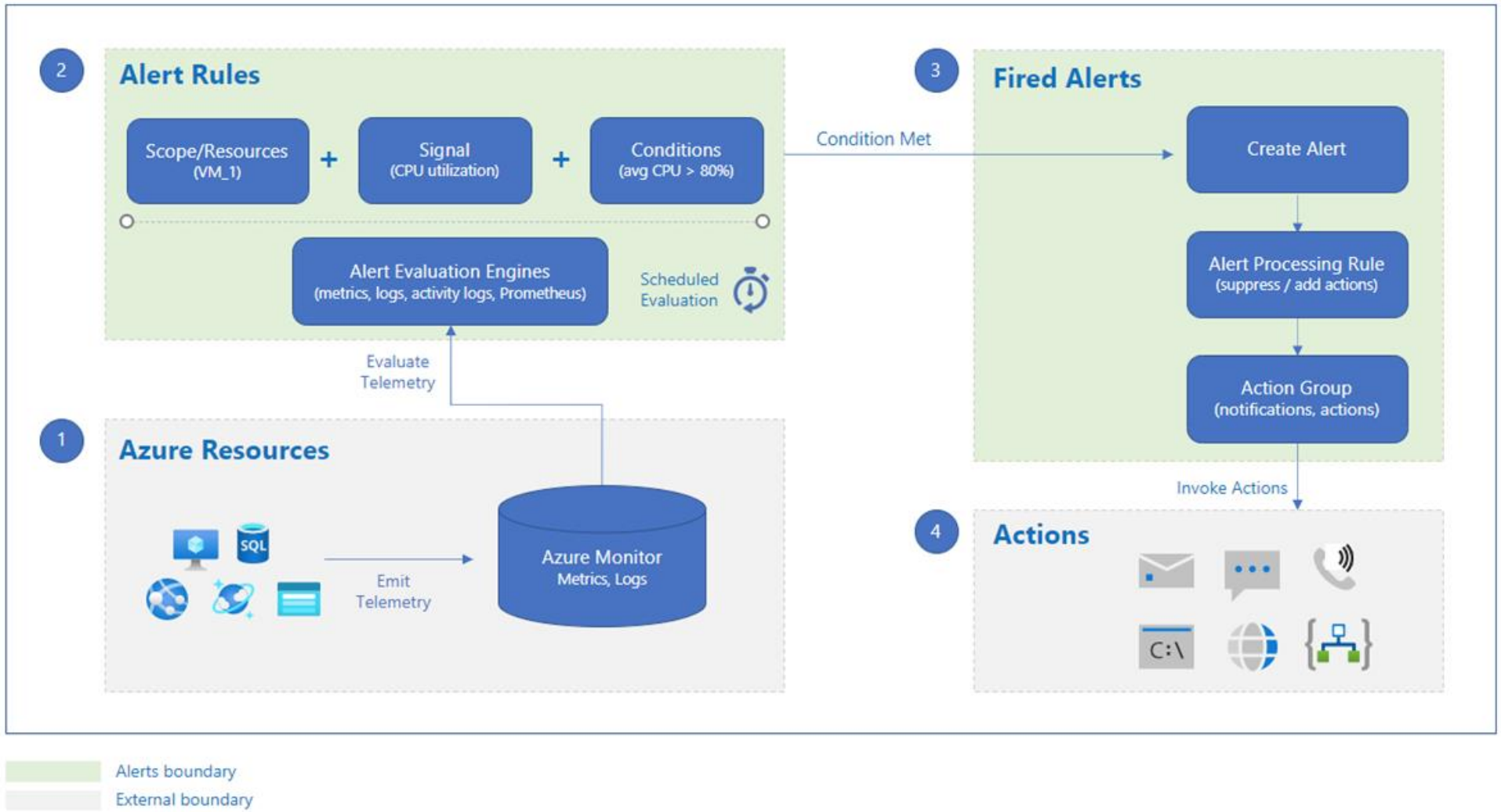
WED, MAY 8, 2024, 12:00 PM EDT

Securing your Data in the Cloud ~ Melody Zacharias

Online event

WHEN:
Wednesday, May 08, 2024, 1600 GMT

Alerting



https://learn.microsoft.com/en-us/azure/azure-monitor/alerts/alerts-overview

Alerting

Alerts and Actions

Metrics

Diagnostic Settings

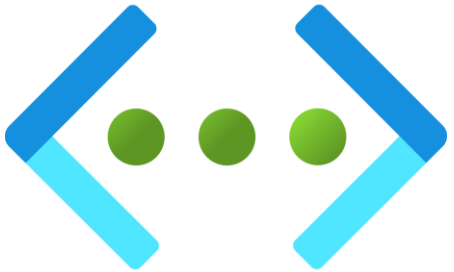
Logs

Alerting

Alerts and Actions

- Elastic Jobs
- Azure Function
- Azure Automation
- Azure Data Factory
- PowerShell with Scheduler

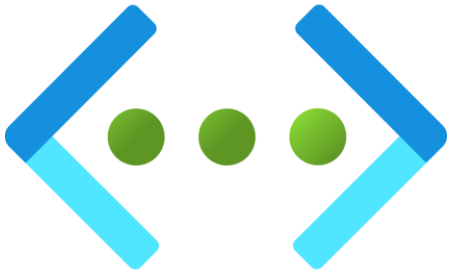
Networking



Connectivity Services

- Azure Virtual Network
- Azure Virtual Network Manager
- ExpressRoute
- VPN Gateway
- Azure Virtual WAN
- Azure DNS
- Azure Bastion
- Virtual network NAT Gateway
- Route Server
- Peering Service

Networking



Application protection services

- DDoS Protection
- Azure Private Link
- Azure Firewall
- Web Application Firewall
- Network security groups
- Service endpoints

Application delivery services

- Azure Front Door
- Traffic Manager
- Load Balancer
- Application Gateway
- Content Delivery Network

Network monitoring services

- Azure Network Watcher
- Azure Monitor
- ExpressRoute Monitor
- Network Insights

Networking

Azure SQL Database

Public Endpoint: *yourservername.database.windows.net*

Public Access

- Public network access
- Virtual networks
- Firewall rules
  - Server-level IP firewall rules
  - Database-level IP firewall rules
- Allow Azure Services and Resources to access this server

Private Access / Endpoints

Connectivity

- Outbound networking
- Outbound firewall rules
- Connection Policy (cannot change in dedicated SQL pool)
- Encryption in transit (Minimum TLS version)

WED, MAR 27, 2024, 3:00 PM EDT

Cloud Networking Basics for the DBA ~ Erin Dempster

Online event

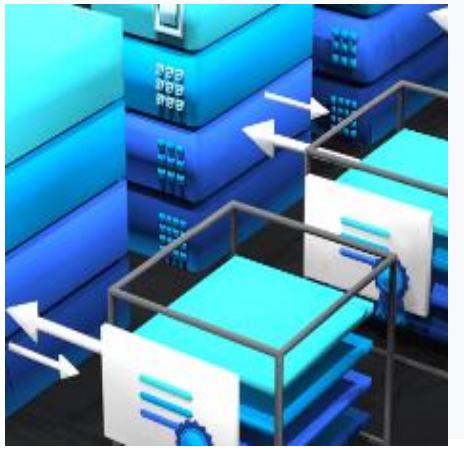
WHEN:
Wednesday, March 27, 2024, 1900 GMT

Cost Control

Cost Management And Billing

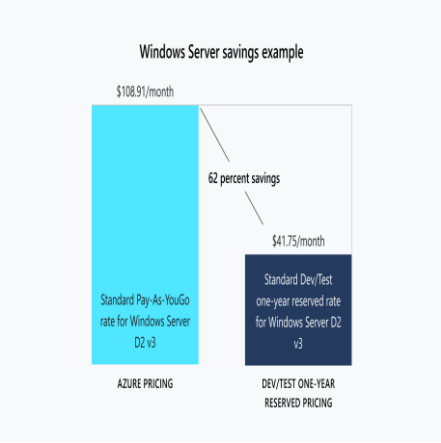
Azure Reservations

Savings Plans for Compute



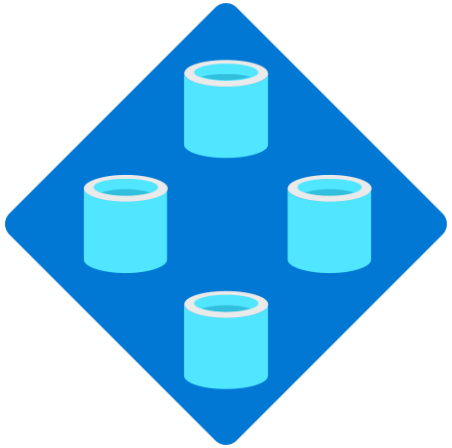
Azure Hybrid Benefit

Cost Control



Dev/Test Pricing

Auto Scale



Elastic Pools

Azure Advisor

Cost Control

Calculator

Pricing Calculator

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

Azure Hybrid Benefit Savings Calculator

- https://azure.microsoft.com/en-us/pricing/hybrid-benefit/

Total Cost of Ownership (TCO) Calculator

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

WED, MAY 22, 2024, 3:00 PM EDT

How do I Control my Cloud Costs?~Joseph Dantoni

Online event

WHEN:
Wednesday, May 22, 2024, 1900 GMT

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THANK
YOU