**Azure Fundamentals part 6: Describe Azure cost management and service level agreements**

# Compare costs by using the Total Cost of Ownership Calculator

# What's the Total Cost of Ownership (TCO) Calculator?

# Helps you estimate the cost savings of operating your solution on Azure over time

# With the TCO Calculator, you enter the details of your on-premises workloads

# Then review the suggested industry average cost

# How does the TCO Calculator work?

# Working with the TCO Calculator involves three steps:

# Define your workload: Servers, Databases, Storage and networking

# Adjust assumptions: Check on-premises licenses, try save money re-using licenses in Azure

# View the report

# View the report

# Choose a time frame between one and five years. The TCO Calculator generates a report

# Purchase Azure services

# What types of Azure subscriptions can I use?

# Azure offers both free and paid subscription:

# Free Trial: provides you with 12 months of popular free services. More than 25 services that are always free.

# Pay-as-you-go:

# Member Offers

# How do I purchase Azure services?

# Through an Enterprise agreement: For larger customers. Committed to paying a fee for 3 years.

# Directly from the web: Purchase the services from the Azure Portal. You are billed monthly.

# Through a Cloud Solutions Provider: Is a Microsoft Partner

# What factors affect cost?

# Resource Type: Depends on the type of resource or how you customize it. For example blob storage standard or premium.

# Usage Meters: When you provision a resource, Azure creates meters to track usage of that resource. User uses this to generate reports. Similar to an electricity meter. For example CPU time, Time spent on public IP Address, in-coming network and disk size.

# Resource Usage: In Azure you pay for what you use. In Azure, you can delete or deallocate a VM. If you delete a VM you save costs on compute, but still pay for the data stored.

# Azure Subscription Types:

# Azure Marketplace: You can purchase Azure based services.

# Does location or network traffic affect cost?

# Azure infrastructure is distributed globally

# You can install services closest to your customers

# Different regions can have different associated prices

# Zones for billing of network traffic

# Some inbound data transfer in Azure are free

# Outbound data transfers are based on zones

# Zones:

# Zone 1: AUZ, West US, Canada, Europe

# Zone 2: Japan, Korea

# Zone 3: SA

# DE Zone: Germany

# How can I estimate the total cost?

# The Pricing calculator displays Azure products in categories.

# Options that you can configure in the Pricing calculator:

# Region

# Tier: Free or Basic tier

# Billing Options

# Support Options: Additional support pricing

# Programs and Offers:

# Azure Dev/Test Pricing: Pricing available for development and test workloads

# Manage and minimize total cost on Azure

# Understand estimated costs before you deploy:

# To help you plan your solution on Azure, carefully consider the products, services, and resources you need

# Calculate your projected costs by using the Pricing calculator and the Total Cost of Ownership (TCO) Calculator

# Use Azure Advisor to monitor your usage:

# Azure Advisor identifies unused or underutilized resources. Then makes suggestions.

# Recommendations are sorted by impact: high, medium, or low.

# Use spending limits to restrict your spending

# Use spending limits to prevent accidental overruns.

# If you have configured a spending limit, Azure suspends your subscription until a new billing period begins

# These can be quotas or limits

# Use Azure Reservations to prepay

# Azure Reservations offers discounted prices on certain Azure services

# Azure Reservations can save you up to 72 percent

# Choose low-cost locations and regions

# Azure products and services costs vary in different locations and regions. Use them in regions that cost the least.

# Some resources are metered and billed according to how much outgoing (egress) network bandwidth they consume.

# Use Azure Cost Management + Billing to control spending

# Free service that helps you understand your Azure bill, manage your account and subscriptions, monitor and control Azure spending

# Azure Cost Management + Billing features include:

# Reporting

# Data Enrichment

# Budgets

# Alerting

# Recommendations

# Apply tags to identify cost owners

# Tags help you manage costs associated with the different groups of Azure products and resources

# Tags make it easier to identify groups

# Resize underutilized virtual machines

# A common recommendation that you'll find from Azure Cost Management + Billing and Azure Advisor is to resize or shut down VMs that are underutilized or idle

# Deallocate virtual machines during off hours

# If you have VM workloads that are only used during certain periods, but you're running them every hour of every day, you're wasting money

# Shutdown these VMs when not in use

# Excellent strategy for development and testing environments

# Delete unused resources

# If you are not using a resource you should shut it down

# For example POC

# Environments should be reviewed regularly to check for unused resources.

# Migrate from IaaS to PaaS services

# When first moving to the cloud, IaaS is the most natural.

# As time goes on, it reduces costs to move to PaaS.

# Save on licensing costs

# Choose a cost effective OS

# User Azure Hybrid Benefit to repurpose software licenses:

# Repurpose Windows Server or SQL Server for VMs on Azure.

# Knowledge Check

# https://docs.microsoft.com/en-us/learn/modules/plan-manage-azure-costs/7-knowledge-check