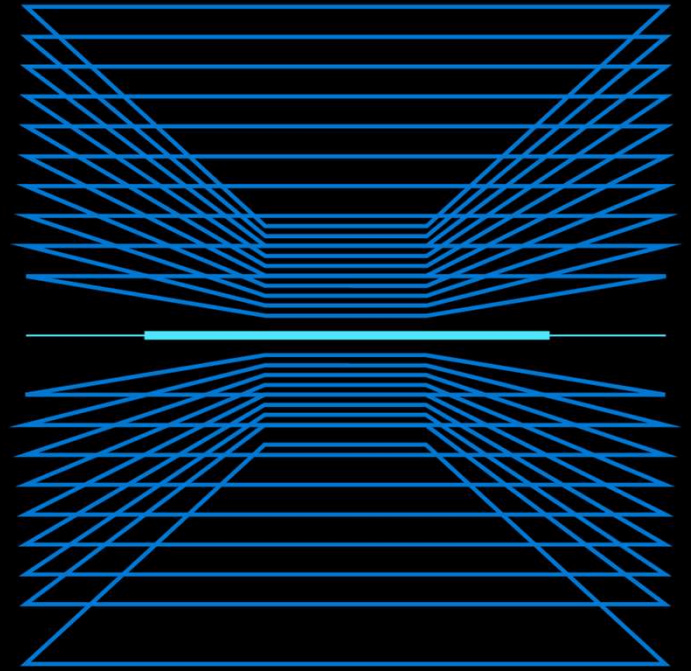


AZ-900T0x

Learning Path:

Review Microsoft Azure and Support



Adjust the cover for either AZ-900T00 or AZ-900T01.

Learning Objectives

You will learn the following concepts:

- Azure Subscriptions
 - Subscription options
- Planning and Managing Costs
 - Available products and services
 - Pricing and TCO calculators
- Support Options
 - Where to go when you have questions
- Service Level Agreements
 - What is an SLA
 - Calculating your cloud application uptime
- Service Lifecycles in Azure
 - Preview and General Availability features

©Microsoft Corporation
Azure



This slide is important. We are telling the learners... This is what I am going to tell you.

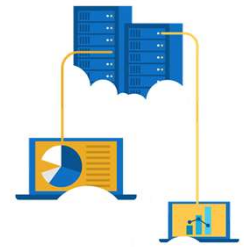
We then tell them / show them.

At the end we review what we told them.

Then we give them references for further learning.

Then we say Thanks you where we will then put our closing deck for customer feedback...

Module: Review Azure subscriptions



Review Azure Subscriptions

Introduction

Learning objectives:

- Understand and describe Microsoft Azure subscriptions and management groups.
- Explore different Azure subscription offers.
- Review the Azure free account.

Define Azure subscriptions



An Azure subscription provides you with authenticated and authorized access to Azure accounts.

Subscriptions can provide billing and access control boundaries.

An account can have one subscription or multiple subscriptions.

Azure subscription offers - <https://azure.microsoft.com/en-us/support/legal/offer-details/>

Explore Subscription offers

Free (next slide)


Pay-as-you-go

Enterprise Agreement

Student


An account can have one subscription or multiple subscriptions.

SELECT AN OFFER

**Pay-As-You-Go Dev/Test**


This offer is for teams of active Visual Studio subscribers to run dev/test workloads on Microsoft Azure, providing discounted rates on Windows virtual machines and access to exclusive images in the Azure Gallery.

[Learn more](#)

**Visual Studio Enterprise: BizSpark**

Enjoy monthly credits and lower rates.
Use MSDN software at no additional charge.

[Learn more](#)

**Visual Studio Professional**

Enjoy monthly credits and lower rates.
Use MSDN software for development and test at no additional charge.

[Learn more](#)

Azure subscription offers - <https://azure.microsoft.com/en-us/support/legal/offer-details/>

Discuss Azure free account

What do I get?

With your Azure free account, you get all of this—and you won't be charged until you choose to upgrade.

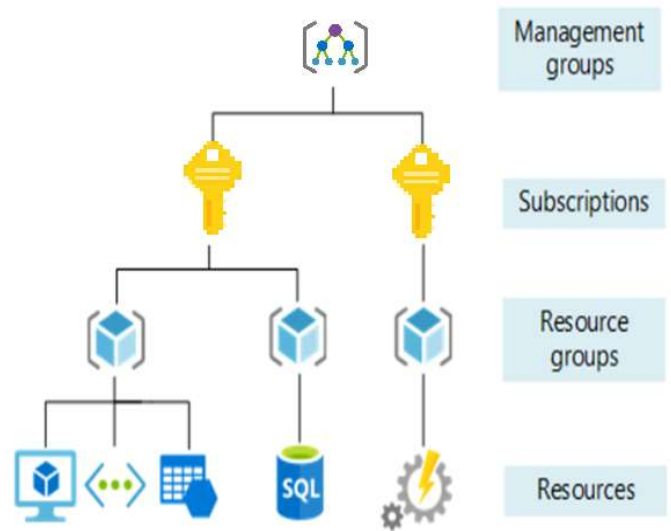
12 months + **\$200 credit** + **Always free**
of popular free services to explore any Azure 25+ services
service for 30 days

**Provides 12 months of our most popular services, a \$200 credit to explore any Azure service for 30 days, and over 25 services are free.
At the end of the trial you can upgrade to pay-as-you-go pricing.**

Azure free accounts - <https://azure.microsoft.com/en-us/free/>

Explore Management Groups

- Management groups can include multiple Azure subscriptions.
- Subscriptions inherit conditions applied to the management group.
- 10,000 management groups can be supported in a single directory.
- A management group tree can support up to six levels of depth.



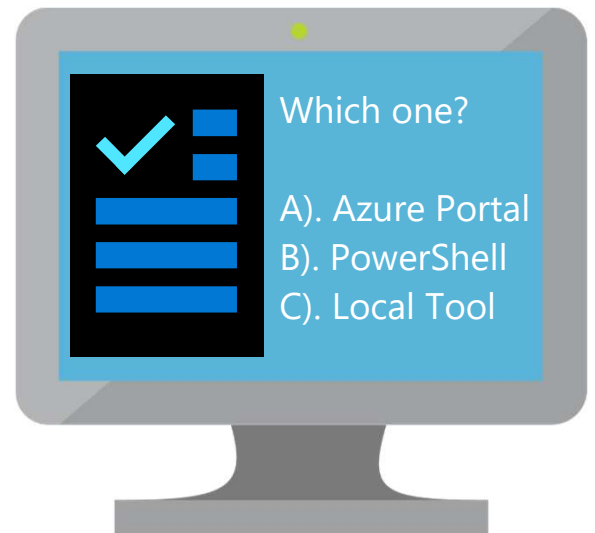
Management groups - <https://docs.microsoft.com/en-us/azure/governance/management-groups/>

Knowledge Check

Populate with instructions to use the polling tool of your choice

Module:
Azure Subscriptions

1. Use your Smartphones or Mobile Devices
2. Go to (*insert polling app link of your choice*)
Enter Code: **123-45-678**
3. Please participate in the quiz for this section



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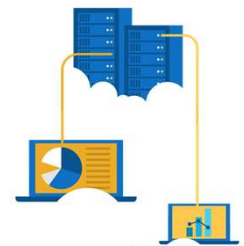
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Summary – Review Azure Subscriptions

We have covered several important topics in this module.

- What an Azure Subscription is and how you pick the one right for your business.
- You have created an Azure free account and learned how to sign in using that account.
- You have seen how billing, subscriptions, and support are managed in Azure.

Module: Planning and managing costs



Planning and Managing Costs

Introduction

Learning Objectives:

- Explore purchasing Azure products and services.
- Define the factors that affect your cost.
- Review and use the Azure Pricing Calculator and the Azure TCO Calculator.
- List ways of minimizing your costs.

Purchasing Azure products and services



Enterprise



Resellers



Partners



Personal

Three main customer types on which the available purchasing options for Azure products and services are contingent are:

Enterprise

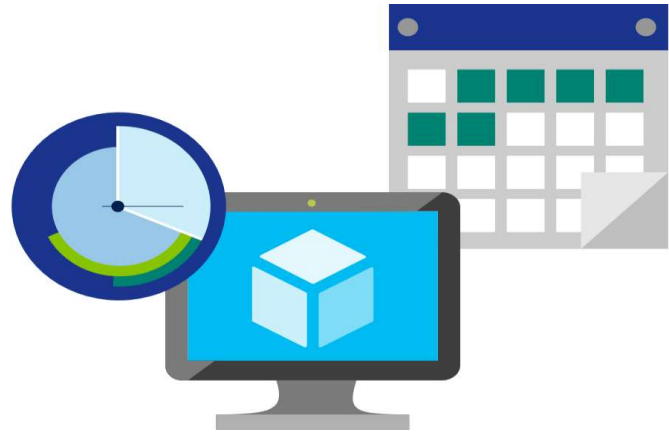
Web direct

Cloud solution providers (CSPs)

Personal accounts can also purchase Azure products and services.

Azure products and services purchasing options - <https://azure.microsoft.com/en-us/pricing/purchase-options/>

Explore Factors affecting costs



There are three primary factors affecting costs:

Resource Type	Services	Location
Costs are resource-specific, so the usage that a meter tracks and the number of meters associated with a resource depend on the resource type.	Azure usage rates and billing periods can differ between Enterprise, Web Direct, and CSP customers.	The Azure infrastructure is globally distributed, and usage costs might vary between locations that offer Azure products, services, and resources.

Azure usage charges - <https://docs.microsoft.com/en-us/azure/billing/billing-understand-your-invoice>

Identify Zones for Billing Purposes

Bandwidth - data moving in and out of Azure datacenters. Some inbound data transfers are free, such as data going into Azure datacenters. For outbound data transfers—such as data going out of Azure datacenters—pricing is based on Zones.



Zone 1	West US, East US, West Europe, and others.
Zone 2	Australia Central, Japan West, Central India, and others.
Zone 3	Brazil South only.
DE Zone 1	Includes Germany Central and Germany Northeast.

Point out that the Zone referred to here, is different from Availability Zone. Availability Zones being an Azure service providing High availability, whereas Zones in the context of billing are geographical entities, used for data transfer pricing between defined geographical areas called Zones.


Zone is a geographical grouping of Azure Regions for billing purpose. Data transfer pricing is based on the Zones.

Explore Pricing calculator

Provides a detailed *estimate* of the costs associated with your infrastructure configuration.

Your Estimate ↗ ↶ 🗑

Virtual Machines 📄 🗑 1 D2 v3 (2 vCPU(s), 8 GB RAM) x 730 Hours; \$188.57



Virtual Machines

REGION: West US OPERATING SYSTEM: Windows TYPE: (OS Only)

TIER: Standard

INSTANCE: D2 v3: 2 vCPU(s), 8 GB RAM, 50 GB Temporary storage, \$0.209/hour

+ Clone

🗑 Delete

More info

\$ Pricing details

i Product details

📄 Documentation

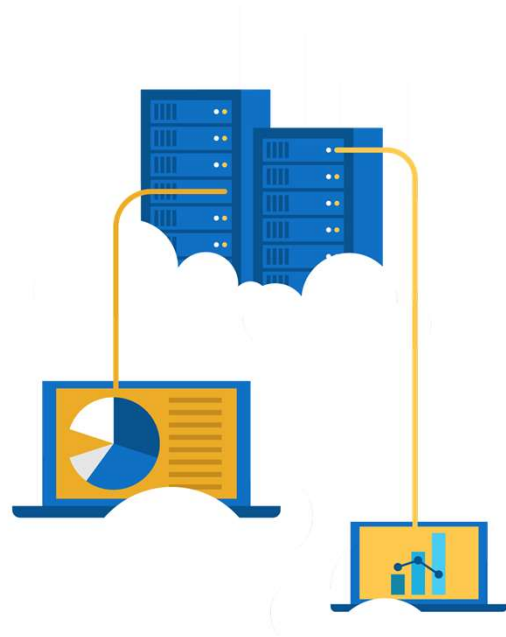
Note: The *pricing calculator* provides estimates, and not actual price quotes. Actual prices can vary depending upon the date of purchase, the payment currency, and the type of Azure customer.



Walkthrough – Use the Azure Pricing Calculator

Use the Azure Pricing Calculator to generate a cost estimate for an Azure virtual machine and related network resources.

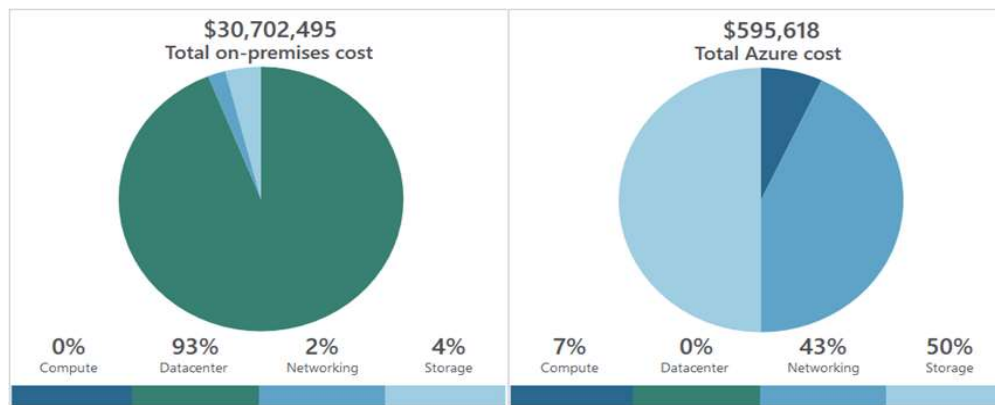
1. Configure the pricing calculator.
2. Review the pricing estimate.



Explore Total cost of ownership calculator

A tool to estimate cost savings you can realize by migrating to Azure.

A report compares the costs of on-premises infrastructures with the costs of using Azure products and services in the cloud.



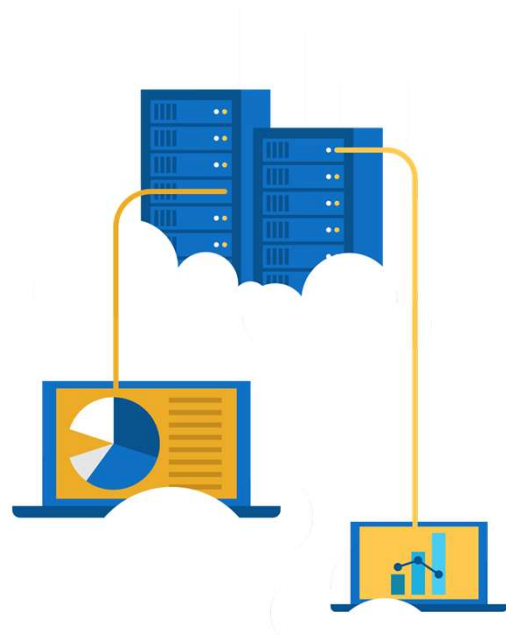
TCO calculator - <https://azure.microsoft.com/en-us/pricing/tco/calculator/>



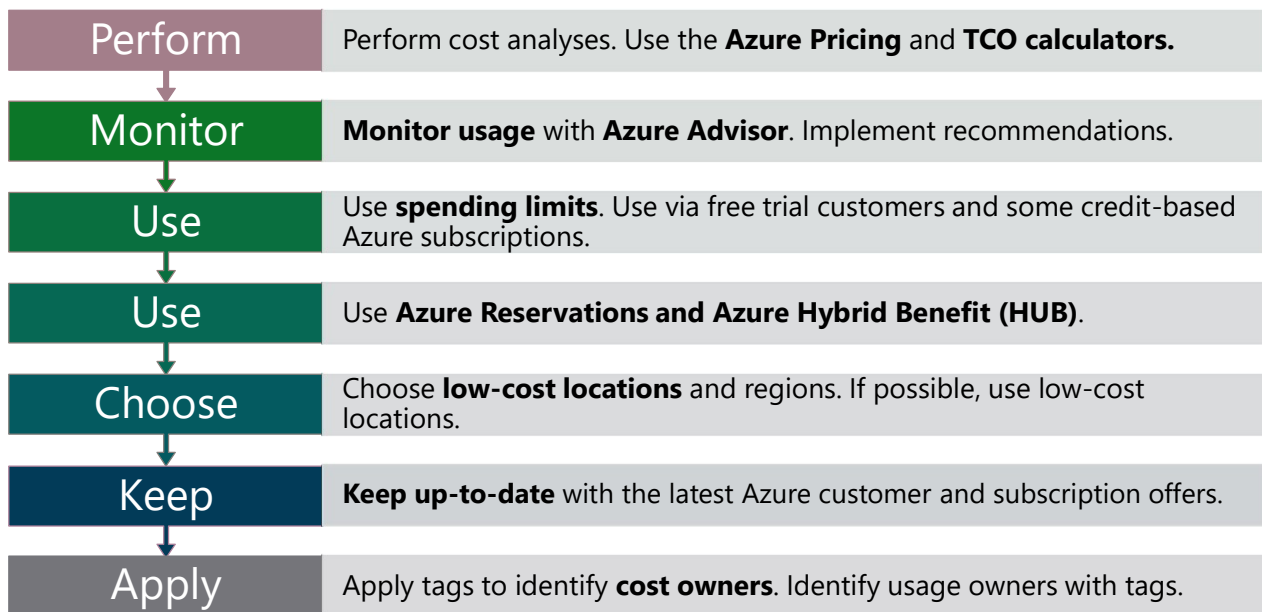
Walkthrough – Use the Azure TCO Calculator

Use the Total Cost of Ownership (TCO) Calculator to generate cost comparison report for an on-premises environment.

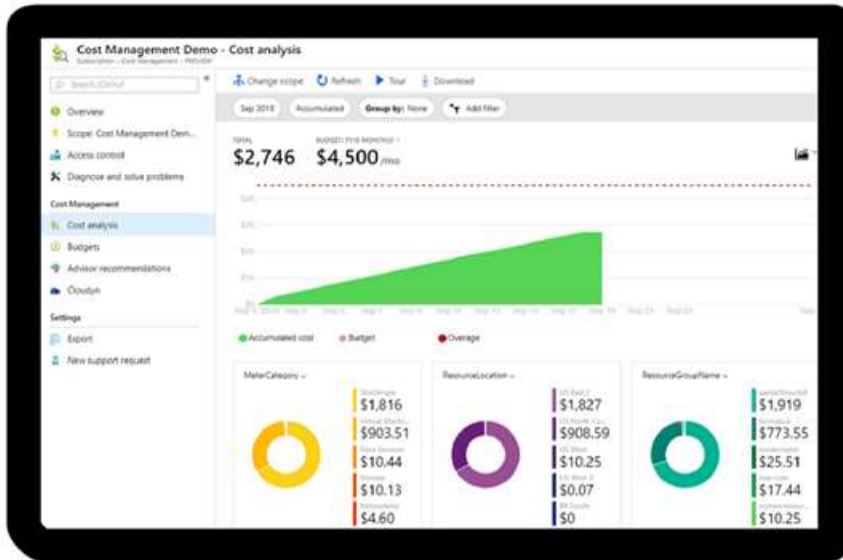
1. Configure the TCO calculator.
2. Review the results and save a copy.



Explore Minimizing costs



Define Azure Cost Management



- Reporting
- Data enrichment
- Budgets
- Alerting
- Recommendations

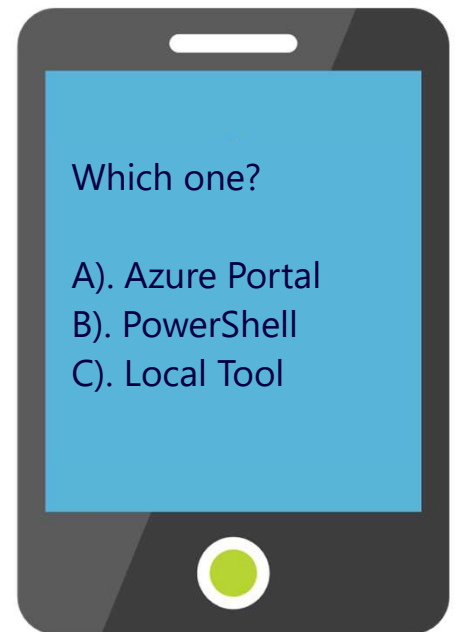
Note: For more information about Cost Management, refer to <https://azure.microsoft.com/en-us/services/cost-management/>

Knowledge Check

Populate with instructions to use the polling tool of your choice

Module:
Planning and Managing Costs

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3. Enter Code: **123-45-678**
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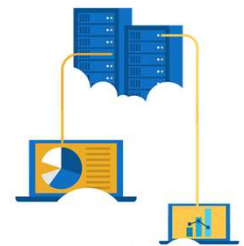
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Summary – Planning and Managing Costs

In this module you learned about topics like:

- How to purchase Azure products and services.
- Which factors affect your cost and how you might manage that cost.
- How to use the Azure Pricing Calculator and the Azure TCO Calculator to predict spend.
- And several ways to minimize your costs.

Module: Azure support options



Azure Support Options

Introduction

Learning objectives:

- Review the available support plans.
- List of other channels to get Azure support.
- Explore the capabilities of the Azure Knowledge Center.
- Create a support request.






Explore Support plan options

Every Azure subscription includes free access to billing and subscription support, Azure products and services documentation, online self-help documentation, white papers, and community support forums.

	Basic	Developer	Standard	Professional Direct
Scope	Available to all Microsoft Azure accounts	Trial and non-production environments	Production workload environments	Business-critical dependence
Technical Support		Business hours access to Support Engineers via email	24x7 access to Support Engineers via email and phone	24x7 access to Support Engineers via email and phone

For more information about Azure support options, refer to <https://azure.microsoft.com/en-us/support/plans/>

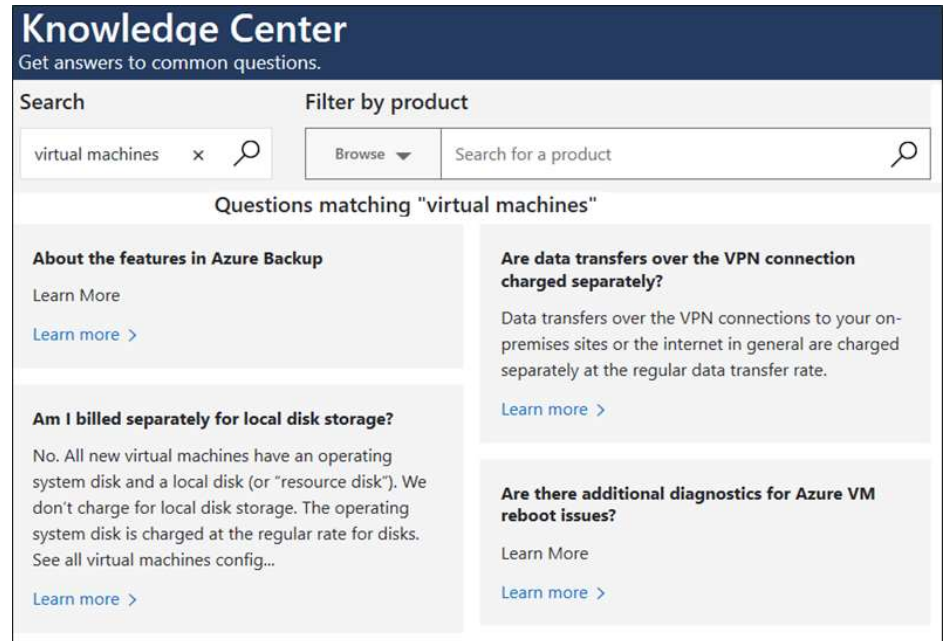
Explore Alternative support channels

	Microsoft Developer Network (MSDN) Azure Forums
	Stack Overflow
	Microsoft Azure general feedback
	Server Fault
	@AzureSupport

For more information about alternative Azure support channels, refer to <https://azure.microsoft.com/en-us/support/community/>

Explore Knowledge Center

A searchable database that contains support questions and answers from a community of Azure experts, developers, customers, and users.



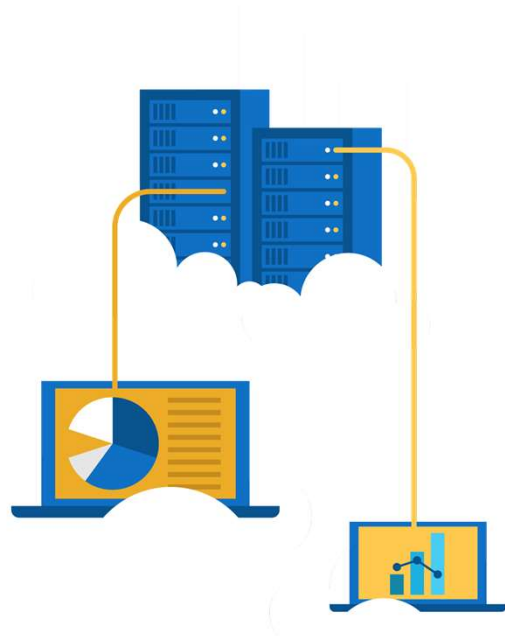
For more information about alternative Knowledge Center, refer to <https://azure.microsoft.com/en-us/resources/knowledge-center/>



Walkthrough – Open a Support Request

View available support plan options and then practice creating and monitoring a new support request.

1. View available support plan options and create a new *technical* support request.
2. Create a *billing* support request.



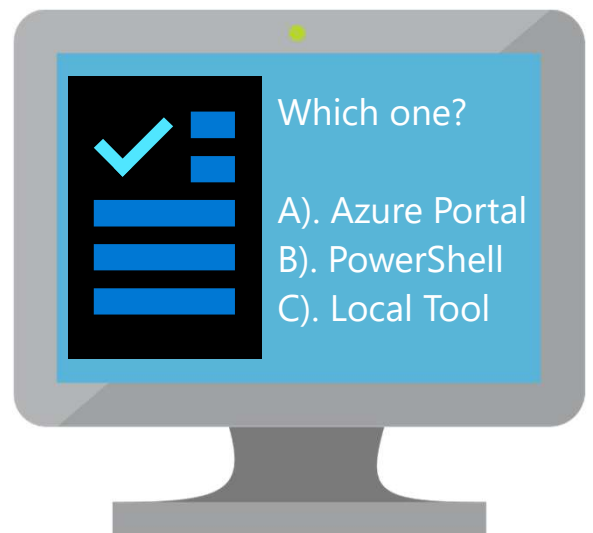
Knowledge Check

Populate with instructions to use the polling tool of your choice

Module:

Azure Support Options

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2. Go to (*insert polling app link of your choice*)
Enter Code: **123-45-678**
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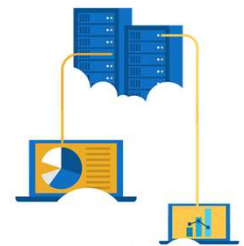
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Summary – Azure Support Options

In this module we learned about the various support options you have with Azure. We explored:

- The available support plans.
- Other channels to get Azure support.
- The capabilities of the Azure Knowledge Center.
- Created a support request.

Module: Azure Service Level Agreements (SLAs)



Azure Service Level Agreements (SLAs)

Introduction

Learning objectives:

- Define what a Service Level Agree (SLA) is.
- Review the various types and levels of SLAs.
- Explore composite SLAs
- Review how you can calculate your SLA based on components you choose.

Define Service Level Agreements (SLAs)

SLAs document the specific terms that define Azure performance standards.

- SLAs define Microsoft's commitment to an Azure service or product.
- Individual SLAs are available for each Azure product and service.
- SLAs also define what happens if a service or product fails to meet the designated availability commitments.



Explore SLAs for Azure products and services

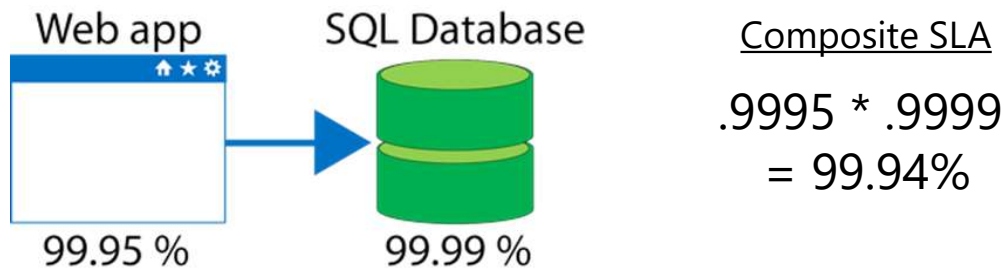
SLA	Downtime per month	Downtime per year
99.9%	43.2 minutes	8.76 hours
99.95	21.6 minutes	4.38 hours
99.99	4.32 minutes	52.56 minutes

- Performance targets are expressed as uptime and connectivity guarantees.
- Performance-targets range from 99.9% (three nines) to 99.99% (four nines).
- If a service fails to meet the guarantees, a percentage of the monthly service fees can be credited to you.

You might want to browse to some SLA's directly <https://azure.microsoft.com/en-us/support/legal/sla/summary/> and explore one or two as examples.

Define Composite SLAs

If the App Service has a 99.95% SLA, and the Azure SQL Database has a 99.99% SLA, what is the composite SLA for your application?



- Notice the composite SLA is lower than the individual SLAs.
- Improve the SLA by creating independent fallback paths.

Define Application SLAs

Customers should determine what SLA is needed for their application:

- Know your workload requirements and usage patterns.
- Design for resiliency and availability.
- Establish availability metrics — mean time to recovery (MTTR) and mean time between failures (MTBF).
- Establish recovery metrics — recovery time objective and recovery point objective (RPO).
- Implement resiliency strategies.
- Build in availability requirements.

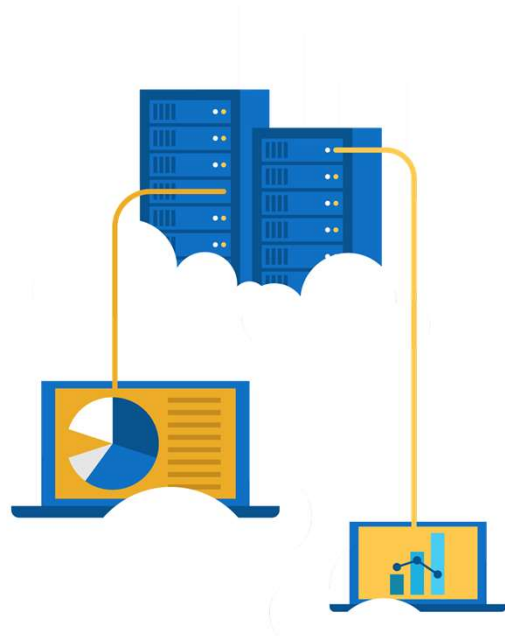
For more information about improving application SLAs, refer to <https://docs.microsoft.com/en-us/azure/architecture/resiliency/>



Walkthrough – Calculate a Composite SLA

Determine services SLA uptime percentages and then calculate the application composite SLA uptime percentage.

1. Determine the SLA uptime percentage values for an application.
2. Calculate the Application Composite SLA percentage uptime.



Walkthrough - Calculate a Composite SLA

Determine services SLA uptime percentages and then calculate the application composite SLA uptime percentage.

1. Determine the SLA uptime percentage values for an application.
2. Calculate the Application Composite SLA percentage uptime.

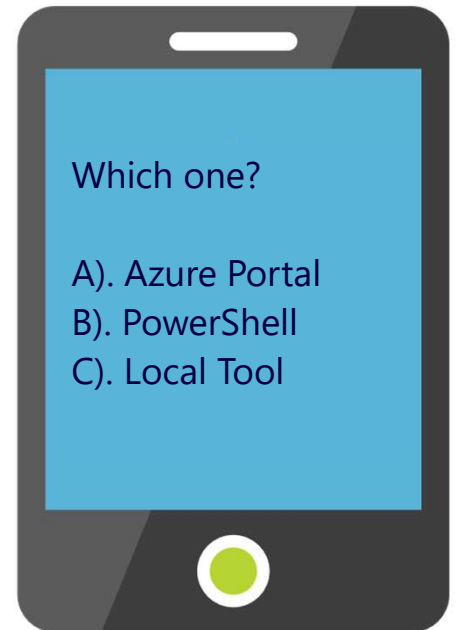
Knowledge Check

Populate with instructions to use the polling tool of your choice

Module:

Service Level Agreements (SLAs)

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2. Go to (*insert polling app link of your choice*)
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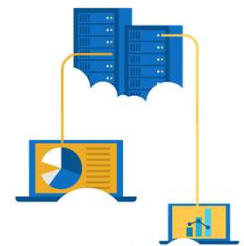
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Summary – Azure Service Level Agreements (SLAs)

Across this module we have explored the Service Level Agreements available in Azure. You should now be able to

- Define what a Service Level Agree (SLA) is.
- Review the various types and levels of SLAs.
- Explore composite SLAs.
- Calculate your SLA based on components you choose.

Module: Service lifecycle in Azure



Service Lifecycles in Azure

Introduction

Learning objectives:

- Define what public and private-preview features are.
- Explore how you can access these features.
- Review what general availability of a feature is.
- Preview a few of the upcoming features.

Public and private preview features

Microsoft offer previews of Azure features for evaluation purposes. With Azure previews, you can test beta and other pre-release features, products, services, software, and regions.

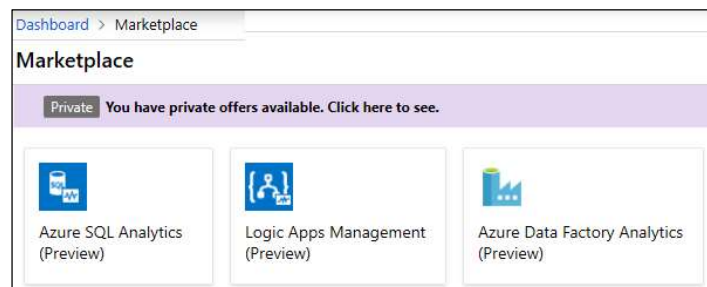
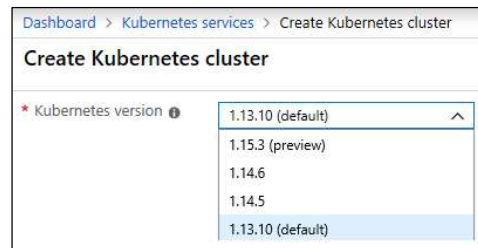
Private Preview	Public Preview
Azure feature available to certain Azure customers for evaluation purposes.	Azure feature available to all Azure customers for evaluation purposes.

Some preview features are not covered by customer support.

For more information about Azure Previews, visit <https://azure.microsoft.com/en-us/services/preview/>

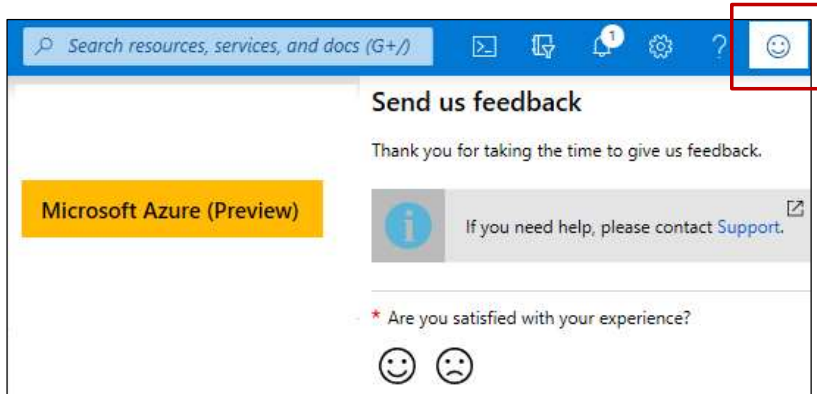
Accessing preview features

- Preview new functionality and features for an existing service.
- Preview new services.



✓ Although you may be using the Azure service in production, the preview feature or functionality may not yet be ready for production deployments. Make sure you are aware of any limitations around its use before deploying to production.

Accessing Azure Portal preview

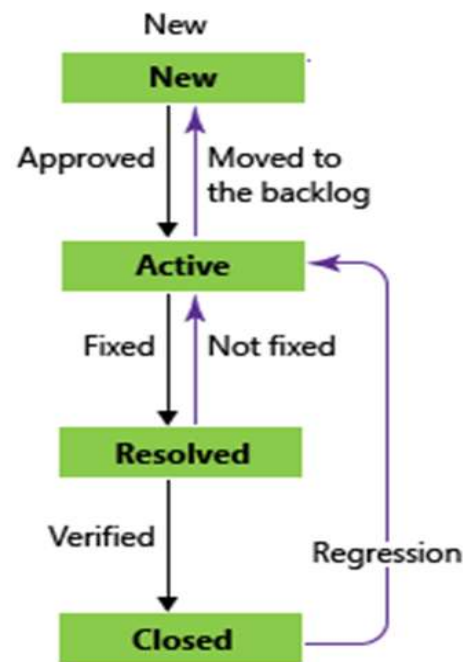


- Access the Azure Portal (Preview) - <https://preview.portal.azure.com>.
- Provide feedback on new features such as full-screen blades, performance, navigation, notifications, and accessibility improvements.
- Check out the Azure Portal feedback forum.

✓ Azure Portal feedback forum - <https://feedback.azure.com/forums/223579-azure-portal>

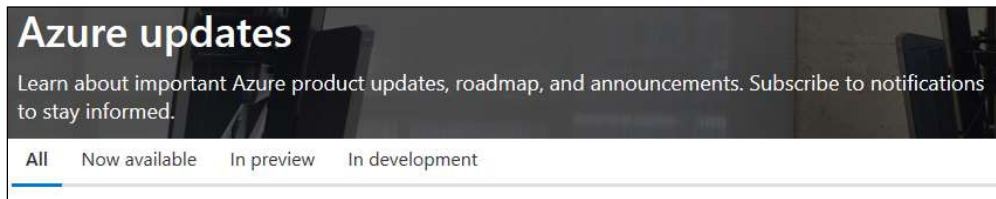
General Availability

- New features are evaluated and tested.
- Feature bugs go through a lifecycle of new, active, resolved, and fixed.
- General availability provides successfully tested features to all Azure customers.
- Azure blog announcements is a good source of information.



✓ Learn about updates and new product features on the Azure announcements blog - <https://azure.microsoft.com/en-us/blog/topics/announcements/>.

Monitoring service and feature updates



- Azure updates provides information about the Azure products, services, and features, and product roadmaps, and availability.
- View details about all Azure updates and their status.
- Browse and search for updates.
- Subscribe to Azure update notifications by RSS.

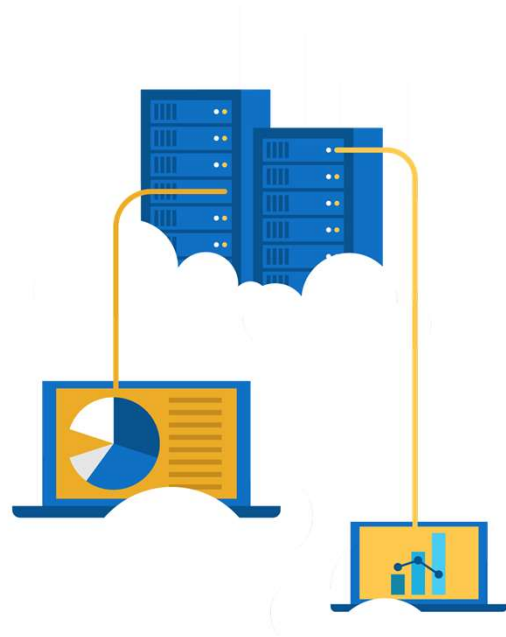
For more information about Azure updates, refer to <https://azure.microsoft.com/en-us/updates/>



Walkthrough – Access Azure Preview features

Access and identify Azure preview services and features and view the latest Azure updates information.

1. Access preview services and features.
2. Review the Azure updates page.



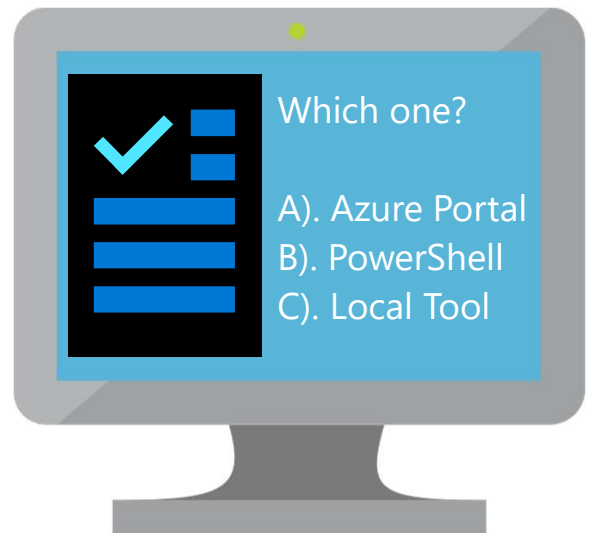
Knowledge Check

Populate with instructions to use the polling tool of your choice

Module:

Service Lifecycles in Azure

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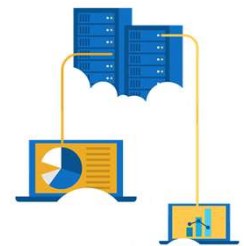
Summary – Service Lifecycle in Azure

We have covered lots of ground in this module.

- You have learned to define what public and private-preview features are.
- You explored how you can access these features.
- You reviewed what general availability of a feature is.
- You saw a preview of a few of the upcoming features.

However, this tour is just the beginning. Azure has so much to offer you, no matter what role you play in your organization.

Learning Path review



As you have time, cover the module review questions in the student materials.