



Azure Fundamental Story

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Microsoft MVP

Developer Technologies



Agenda

- A story about Dailan and Mailea
- Cloud Computing Concept
- Azure as Open Cloud and Open Source
- Azure Core Services

Dailan works in Tailspin Company

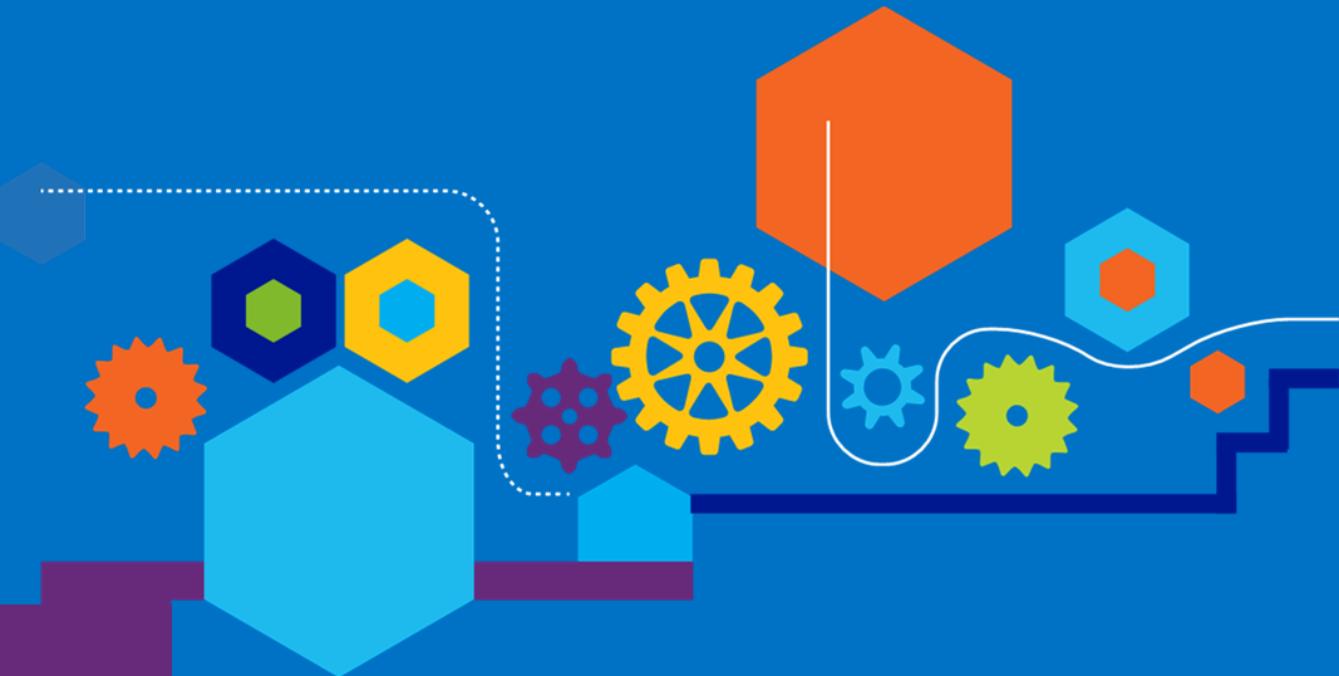




Mailea needs a solution for her flower shop

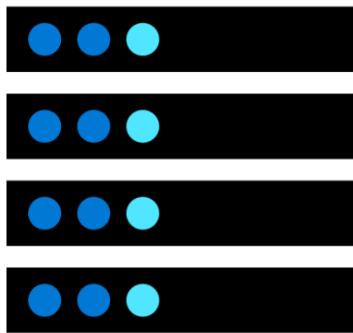


Do we really need a cloud?

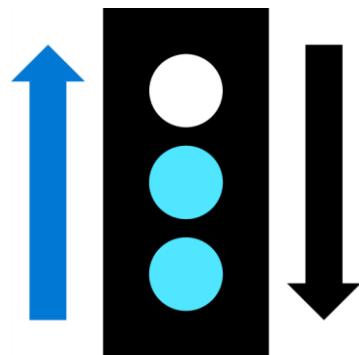


What is cloud computing?

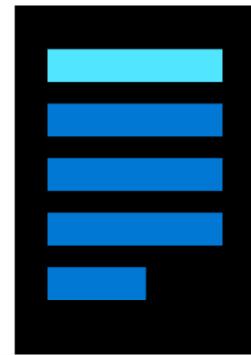
Cloud Computing is the delivery of computing services over the internet, enabling faster innovation, flexible resources, and economies of scale.



Compute



Networking



Storage



Analytics

Cloud model comparison

Public Cloud

- No capital expenditures to scale up.
- Applications can be quickly provisioned and deprovisioned.
- Organizations pay only for what they use.

Private Cloud

- Hardware must be purchased for start-up and maintenance.
- Organizations have complete control over resources and security.
- Organizations are responsible for hardware maintenance and updates.

Hybrid Cloud

- Provides the most flexibility.
- Organizations determine where to run their applications.
- Organizations control security, compliance, or legal requirements.

Cloud Benefits

- High availability

Scalability

Global reach

Agility

Disaster recovery

- Fault tolerance

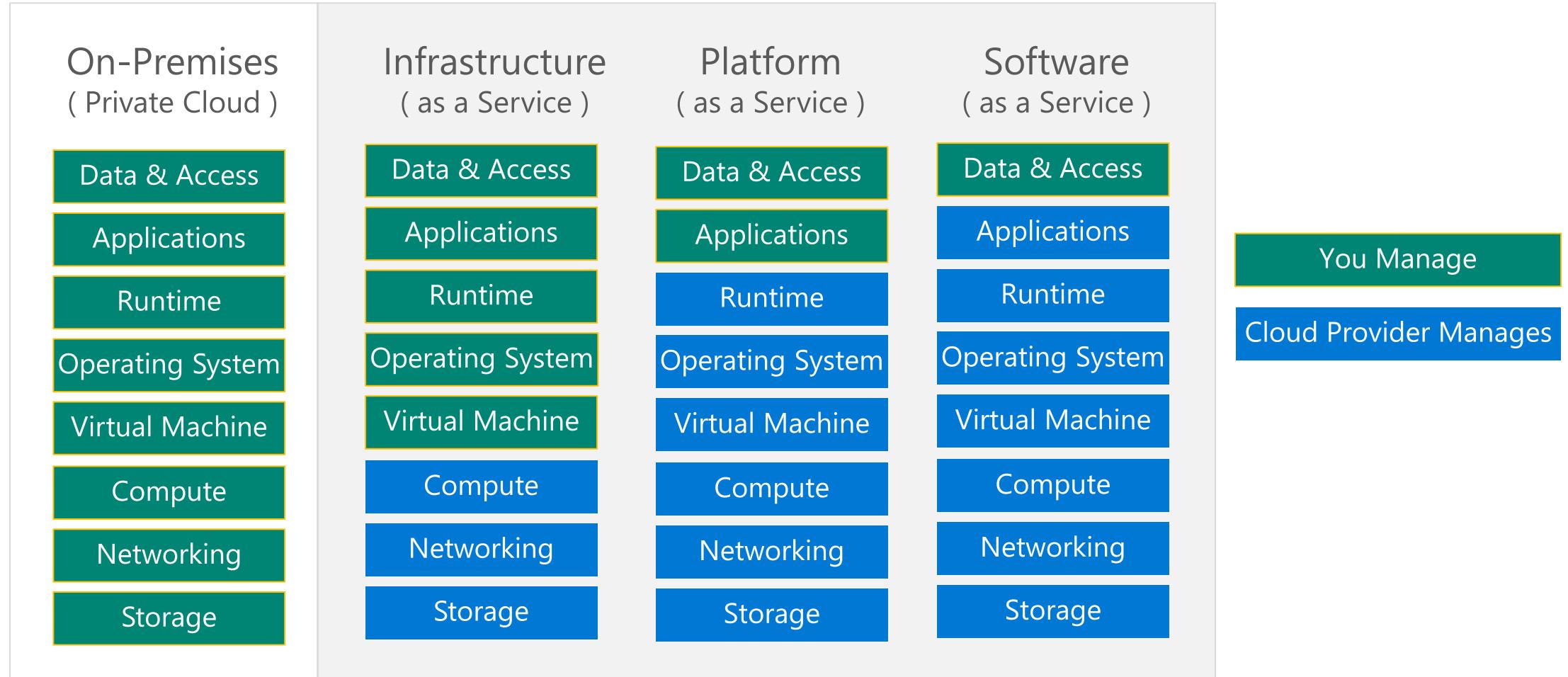
• Elasticity

• Customer latency capabilities

• Predictive cost considerations

Security

Cloud Computing Model



Serverless Computing

- With serverless computing applications, the cloud service provider automatically provisions, scales, and manages the infrastructure required to run the code.



	<p>Azure Functions is code running your service and not the underlying platform or infrastructure. It creates infrastructure based on an event.</p>
	<p>Azure Logic Apps is a cloud service that helps you automate and orchestrate tasks, business processes, and workflows when you need to integrate apps, data, systems, and services.</p>

How to get the Cloud

Access to Azure credits and free developer tools



Students: Get \$100 credit when you create your [free Azure for Students account](#). 12 months of free Azure services, renewable annually (for students over 18)



Educators: Get \$200 credit (check by geo) of free Azure services when you create your [free Azure account](#)



[Azure Lab Services](#) enables educators to set up and provide on-demand access to preconfigured virtual machines (VMs) to support classroom scenarios



[Azure Dev Tools for Teaching](#) is available to institutions with Microsoft volume license agreements. For more information, connect with your Microsoft contact

Based on feedback from students and instructors

- Azure Fundamentals uses \$10 or less.
- To complete all the Fundamentals courses, Azure fees total approximately \$55, if you **shut down all Azure services when not in use**.

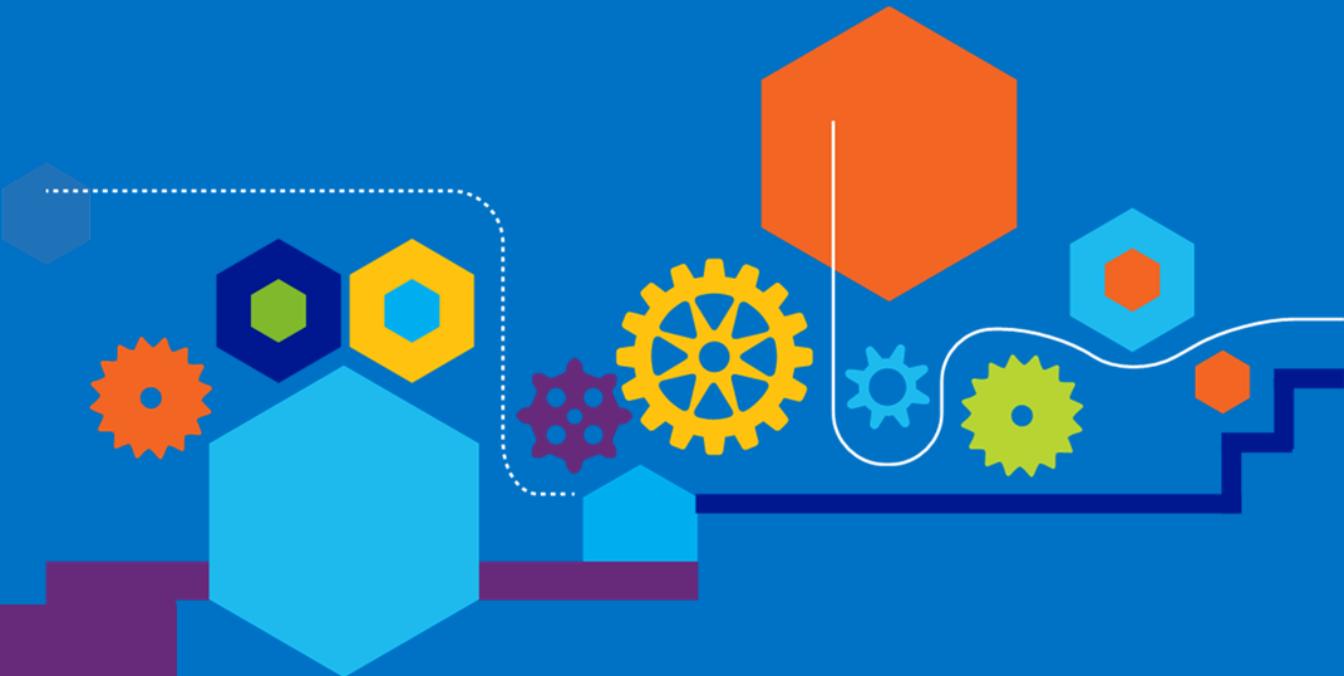
Useful links

- azure.microsoft.com/en-us/free/students/
- azure.microsoft.com/en-us/free/
- aka.ms/azlabs
- aka.ms/ADT4T

Demonstration Cloud Computing Platform in Microsoft



Azure as Open Cloud



Azure is an open cloud

DevOps

Nagios®

Management



Applications



App frameworks and tools



Databases and middleware

**cloudera**

Infrastructure



A comprehensive platform for your open source development needs

Language



nodeJS



Java

Platform



redhat

Pivotal™

Data



DATASTAX

DevOps



ANSIBLE
by Red Hat™



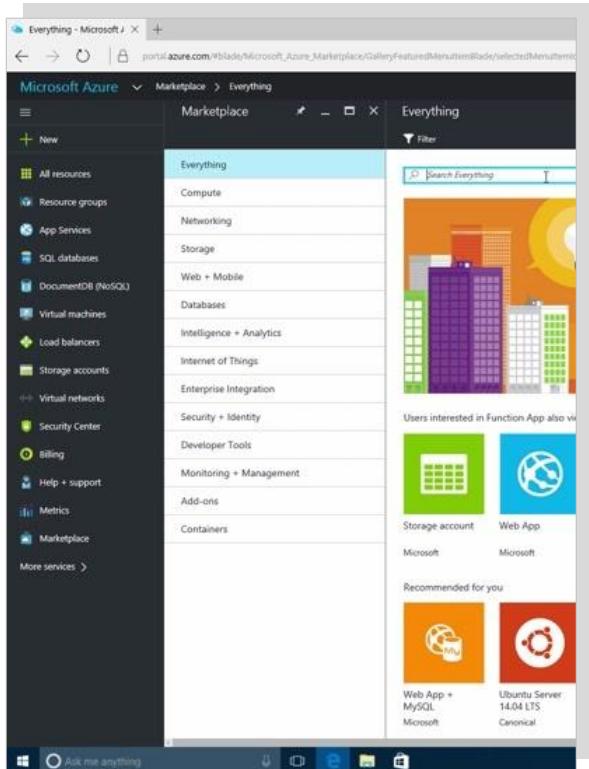
CHEF™

Infrastructure



Deployment and configuration tools

Azure Portal



Azure PowerShell

```
PS C:\Windows\system32> Get-WindowsAzurePowerShell11

Windows Azure PowerShell Installed version:

Version : 0.8.0
Name    : Azure
Author   : Microsoft Corporation

Windows Azure PowerShell available download version

Version : 0.8.0
Title   : Windows Azure PowerShell
Published : 4/3/2014 8:00:00 AM
Author   : Microsoft Corporation

Version : 0.8.0
Title   : Windows Azure PowerShell
Published : 4/3/2014 8:00:00 AM
Author   : Microsoft Corporation

PS C:\Windows\system32> $PSVersionTable

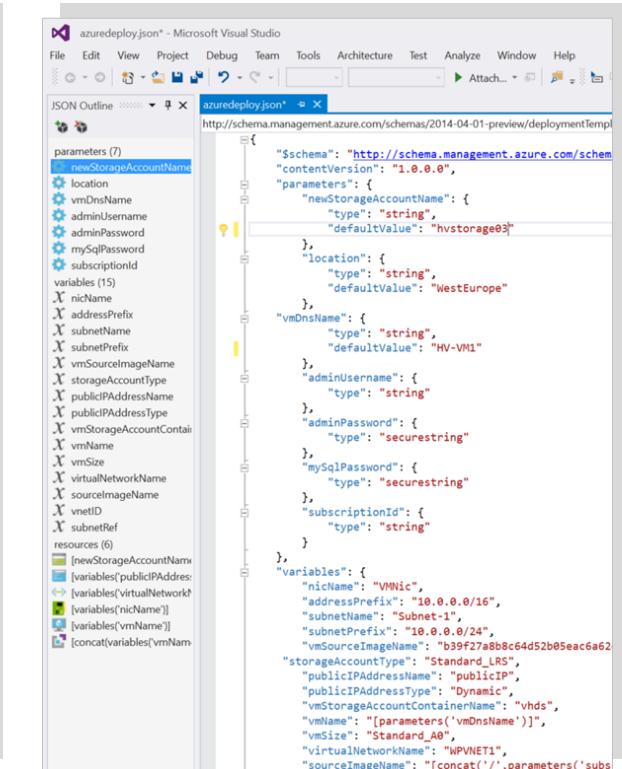
Name                           Value
----                           --
PSVersion                      5.0.9701.0
WSManStackVersion               3.0
SerializationVersion            1.1.0.1
CLRVersion                     4.0.30319.34014
BuildVersion                    6.3.9701.0
PSCompatibleVersions            {1.0, 2.0, 3.0, 4.0}
PSRemotingProtocolVersion       2.2

PS C:\Windows\system32>
```

Azure CLI

```
Info: Microsoft Azure: Microsoft's Cloud Platform
Info: Tool version 0.8.17
Help: Display help for a given command
      help [options] [command]
Help: Log in to an Azure subscription using Active Directory
User can login only via Microsoft organizational account
      login [options]
Help: Log out from Azure subscription using Active Directory
User can log out only via Microsoft organizational account
      logout [options] [username]
Help: Open the portal in a browser
      portal [options]
Help: Commands:
      account          Commands to manage your accounts
      config            Commands to manage your local configuration
      hdinsight        Commands to manage your HDInsight clusters
      mobile            Commands to manage your Mobile Services
      network           Commands to manage your Network
      sb                Commands to manage your Service Bus
      service           Commands to manage your Services
      site              Commands to manage your Web sites
      sql               Commands to manage your SQL databases
      storage           Commands to manage your Storage
      vm                Commands to manage your Virtual Machines
Help: Options:
      -h, --help          output usage information
      -v, --version       output the application version
```

ARM templates



Azure Cloud Shell



Create VM with Azure CLI

View offline list of images published by Canonical

```
az vm image list --publisher Canonical --output table
```

View up-to-date list of images published by Canonical

```
az vm image list --publisher Canonical --all --output table
```

Listing images published by Canonical which are available in westus region

```
az vm image list-offers --location westus --publisher Canonical --output table
```

Create a latest available Ubuntu image by specifying UrnAlias

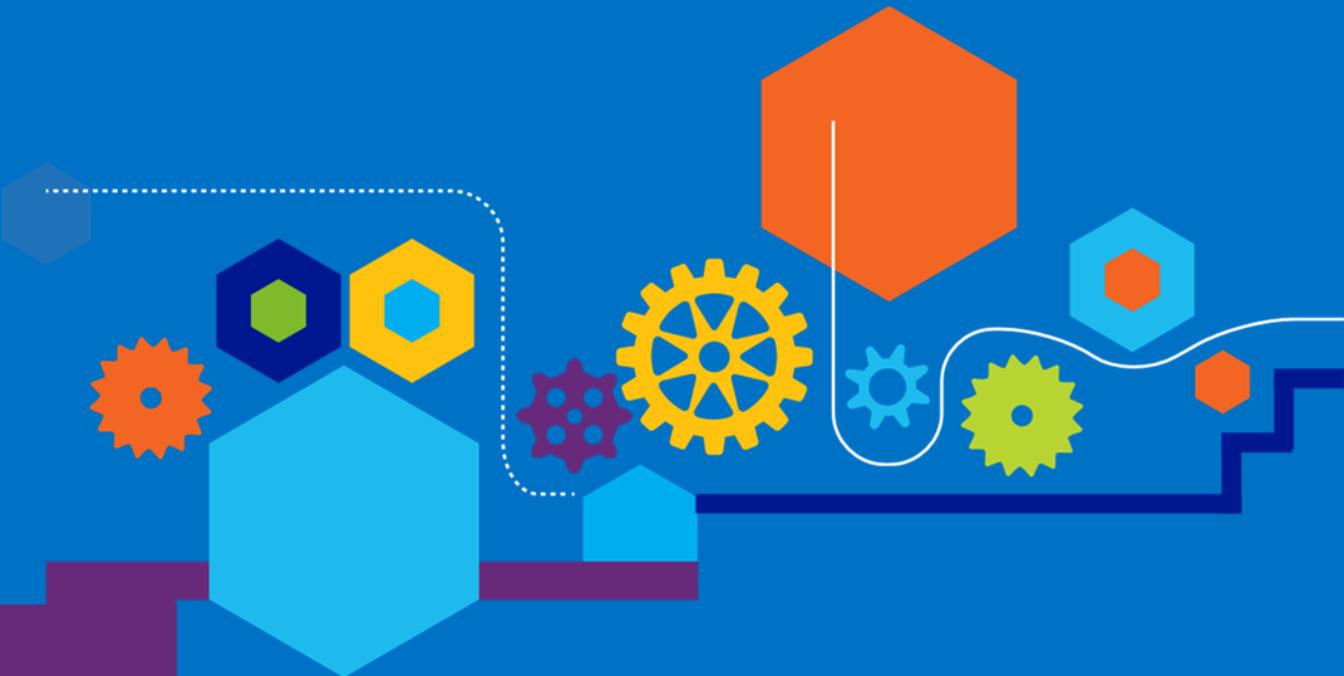
```
az vm create -n linuxqkvm -g FastTrackRG --image UbuntuLTS --admin-username "azureadmin" --admin-password "reallybadpassword"
```

Demonstration

Azure Pricing Calculator and Sizing

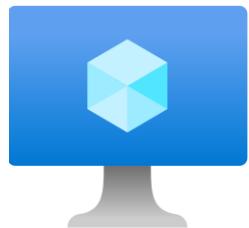


Azure Core Services



Azure Resources

- Azure **resources** are components like storage, virtual machines, and networks that are available to build cloud solutions.



Virtual Machines



Storage Accounts



Virtual Networks



App Services



SQL Databases



Functions

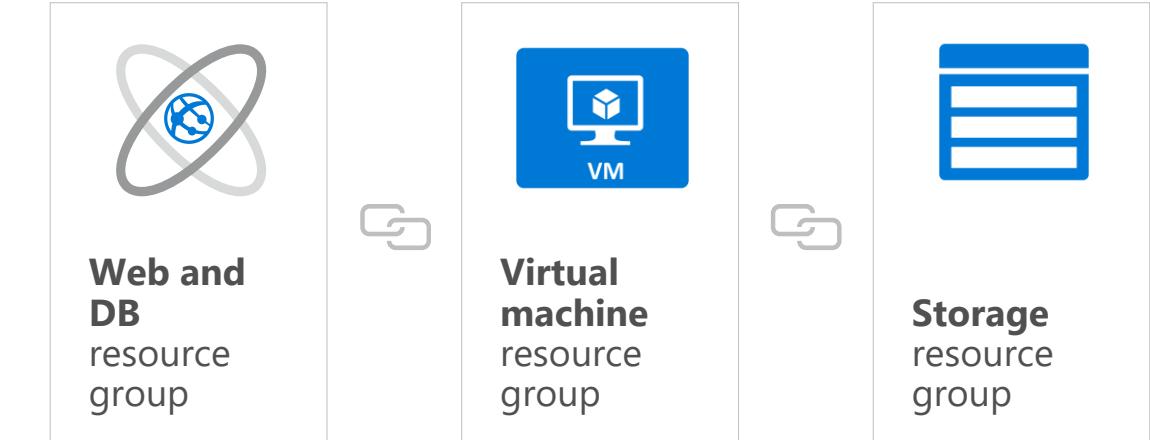
Resource groups

- A **resource group** is a container to manage and aggregate resources in a single unit.
- Resources can exist in only one resource group.
- Resources can exist in different regions.
- Resources can be moved to different resource groups.
- Applications can utilize multiple resource groups.

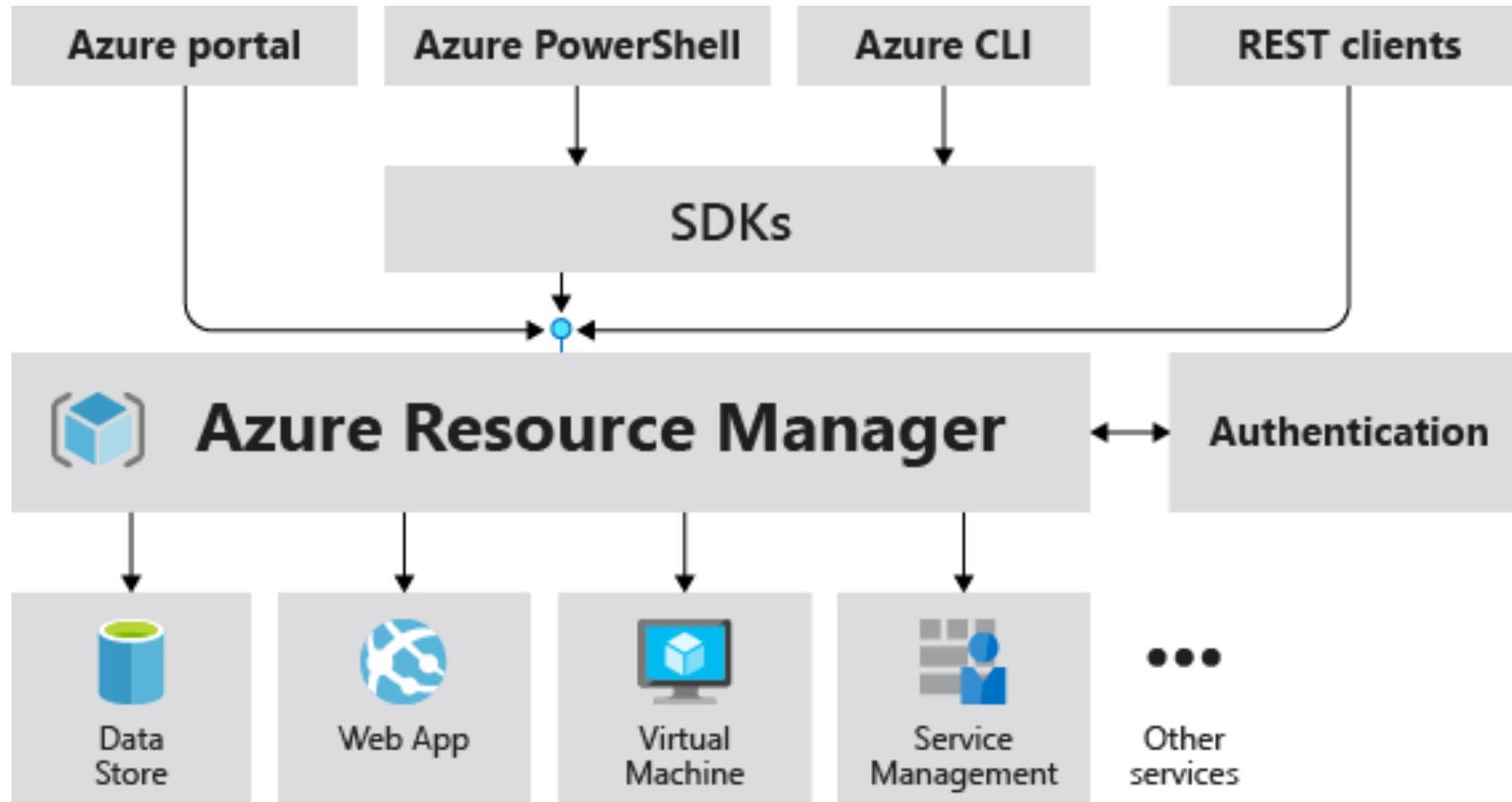
Resource groups
(web + DB, VM, Storage) in one group



OR



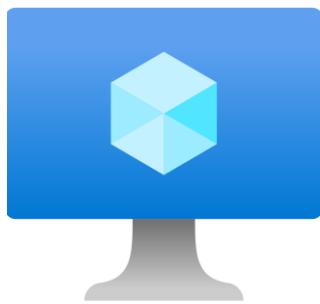
Azure Resource Manager



- The **Azure Resource Manager (ARM)** provides a management layer that enables you to create, update, and delete resources in your Azure subscription.

Azure compute services

- Azure **compute** is an on-demand computing service that provides computing resources such as disks, processors, memory, networking, and operating systems.



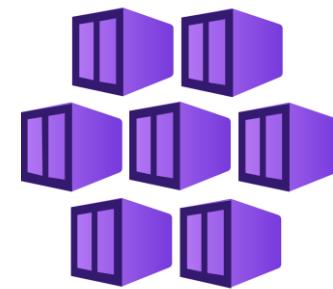
Virtual
Machines



App
Services



Container
Instances



Azure Kubernetes
Services (AKS)



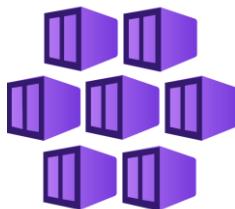
Windows Virtual
Desktop

Azure Container Services

- Azure **Containers** are a light-weight, virtualized environment that does not require operating system management, and can respond to changes on demand.

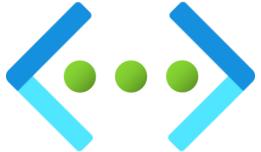


Azure Container Instances: a PaaS offering that runs a container in Azure without the need to manage a virtual machine or additional services.



Azure Kubernetes Service: an orchestration service for containers with distributed architectures and large volumes of containers.

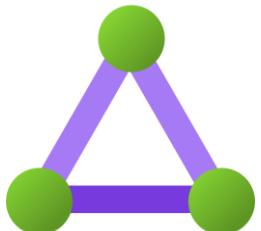
Azure networking services



Azure Virtual Network (VNet) enables Azure resources to communicate with each other, the internet, and on-premises networks.



Virtual Private Network Gateway (VPN) is used to send encrypted traffic between an Azure virtual network and an on-premises location over the public internet.

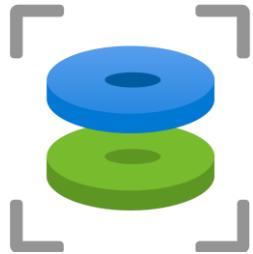


Azure Express Route extends on-premises networks into Azure over a private connection that is facilitated by a connectivity provider.

Azure storage services



Container storage (blob) is optimized for storing massive amounts of unstructured data, such as text or binary data.



Disk storage provides disks for virtual machines, applications, and other services to access and use.



Azure Files sets up a highly available network file shares that can be accessed by using the standard Server Message Block (SMB) protocol.

Azure database services



Azure Cosmos Database is a globally-distributed database service that elastically and independently scales throughput and storage.



Azure SQL Database is a relational database as a service (DaaS) based on the latest stable version of the Microsoft SQL Server database engine.



Azure Database for MySQL is a fully-managed MySQL database service for app developers.



Azure Database for PostgreSQL is a relational database service based on the open-source Postgres database engine.

Explore Azure Marketplace

- **Azure Marketplace** allows customers to find, try, purchase, and provision applications and services from hundreds of leading service providers, which are all certified to run on Azure.
- Open source container platforms.
- Virtual machine and database images.
- Application build and deployment software.
- Developer tools.
- And much more, with 10,000+ listings!

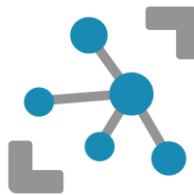


Azure Internet of Things

- Internet of Things (IoT) is the ability for devices to garner and then relay information for data analysis.



Azure IoT Central is a fully managed global IoT SaaS solution that makes it easy to connect, monitor, and manage IoT assets at scale.



Azure IoT Hub is a managed service hosted in the cloud that acts as a central message hub for bi-directional communication between IoT applications and the devices it manages.



Azure Sphere is a secured, high-level application platform with built-in communication and security features for internet-connected devices.

Big data and analytics

Azure Synapse Analytics



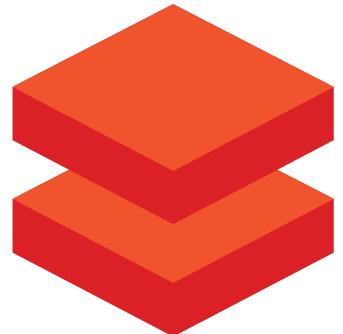
A cloud-based Enterprise Data Warehouse.

Azure HDInsight



A fully-managed, open-source analytics service for enterprises.

Azure Databricks



Apache Spark based analytics service.

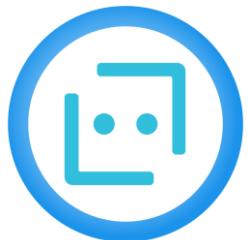
Artificial Intelligence & Machine Learning



Azure Machine Learning: cloud-based to develop, train, and deploy machine learning models.

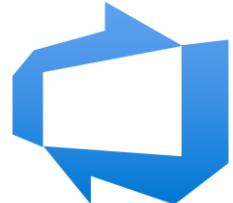


Cognitive Services: quickly enable apps to see, hear, speak, understand, and interpret a user's needs.



Azure Bot Service: develop intelligent, enterprise-grade bots.

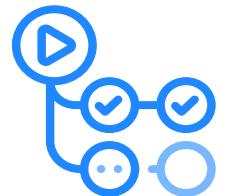
Develop your apps with DevOps and GitHub



Azure DevOps: development collaboration tools including pipelines, Kanban boards, and automated cloud-based load testing.



GitHub: software development hosting with version control, source code management, and bug/task management.



GitHub Actions for Azure: automate software workflow to build, test, and deploy from within GitHub.



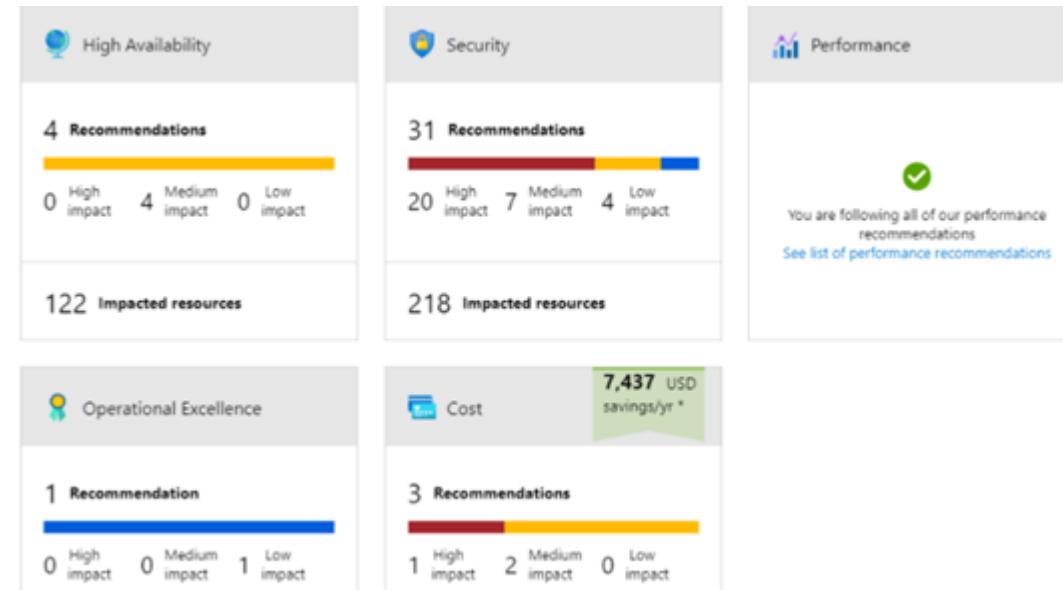
Azure DevTest Labs: quickly create environments in Azure while minimizing waste and controlling cost.



Azure Advisor

- **Azure Advisor** analyzes deployed Azure resources and makes recommendations based on best practices to optimize Azure deployments.

- Reliability
- Security
- Performance
- Cost
- Operational Excellence



Azure Monitor

- **Azure Monitor** maximizes the availability and performance of applications and services by collecting, analyzing, and acting on telemetry from cloud and on-premises environments.
 - Application Insights
 - Log Analytics
 - Smart Alerts
 - Automation Actions
 - Customized Dashboards



Azure Service Health

Microsoft Azure Search resources, services, and docs (G+)

Home > Service Health | Service issues

ACTIVE EVENTS

Service issues (4) Save View Delete View Add service health alert

Subscription	Region	Service			
28 selected	28 selected	170 selected			
Issue Name	Tracking ID	Service(s)	Region(s)	Start Time	Updated
Availability issues – Storage	DTTL-HP8	Storage	West US, West US 2	2020-06-24T00:00:00Z (6 days ago)	3 hours ago
Allocation Failures – Virtual Machi...	TTTL-H90	SQL Database, Virtual...	East US, West Central...	2020-06-24T00:00:00Z (6 days ago)	3 hours ago

No permissions to read Service Health events for 22 subscription(s). To view Service Health events, users must have the reader role on a subscription. See 2 service issue(s) outside of your filter.

Summary Potential impact Issue updates

Tracking ID
DTTL-HP8
Share the below link with your team or use it for reference in your problem management system
<https://app.azure.com/h/DTTL-HP8/76c813>

Impacted service(s)
Storage

Impacted region(s)
West US; West US 2

Impacted subscription(s)

Last update (3 hours ago)
Customers may have experience difficulties connecting to resources hosted in Central India. A number of Storage and Compute scale units had gone offline, impacting Virtual Machines and other Azure services with dependencies on these.
[See all updates](#)

Potential impact
60 resource(s) in 1 subscription(s)
[View details](#)

Was this helpful?



- Evaluate the impact of Azure service issues with personalized guidance and support, notifications, and issue resolution updates.

Demonstration

Creating VM (IAAS)

Demonstration Artificial Intelligence (PAAS)

Certification areas (AZ-900)

Study areas	Weight
Describe Cloud concepts	20-25%
Describe core Azure services	15-20%
Describe core solutions and management tools	10-15%
Describe general security and network security	10-15%
Describe identity, governance, privacy, and compliance	20-25%
Describe Azure cost management and Service Level Agreements	10-15%



This course maps directly to the exam AZ-900 Microsoft Azure Fundamentals



Percentages indicate the relative weight of each area on the exam



The higher the percentage, the more questions you are likely to see in that area

E-Book, Biar kamu yakin Melangkah

Learn Azure in a Month of Lunches, Second Edition

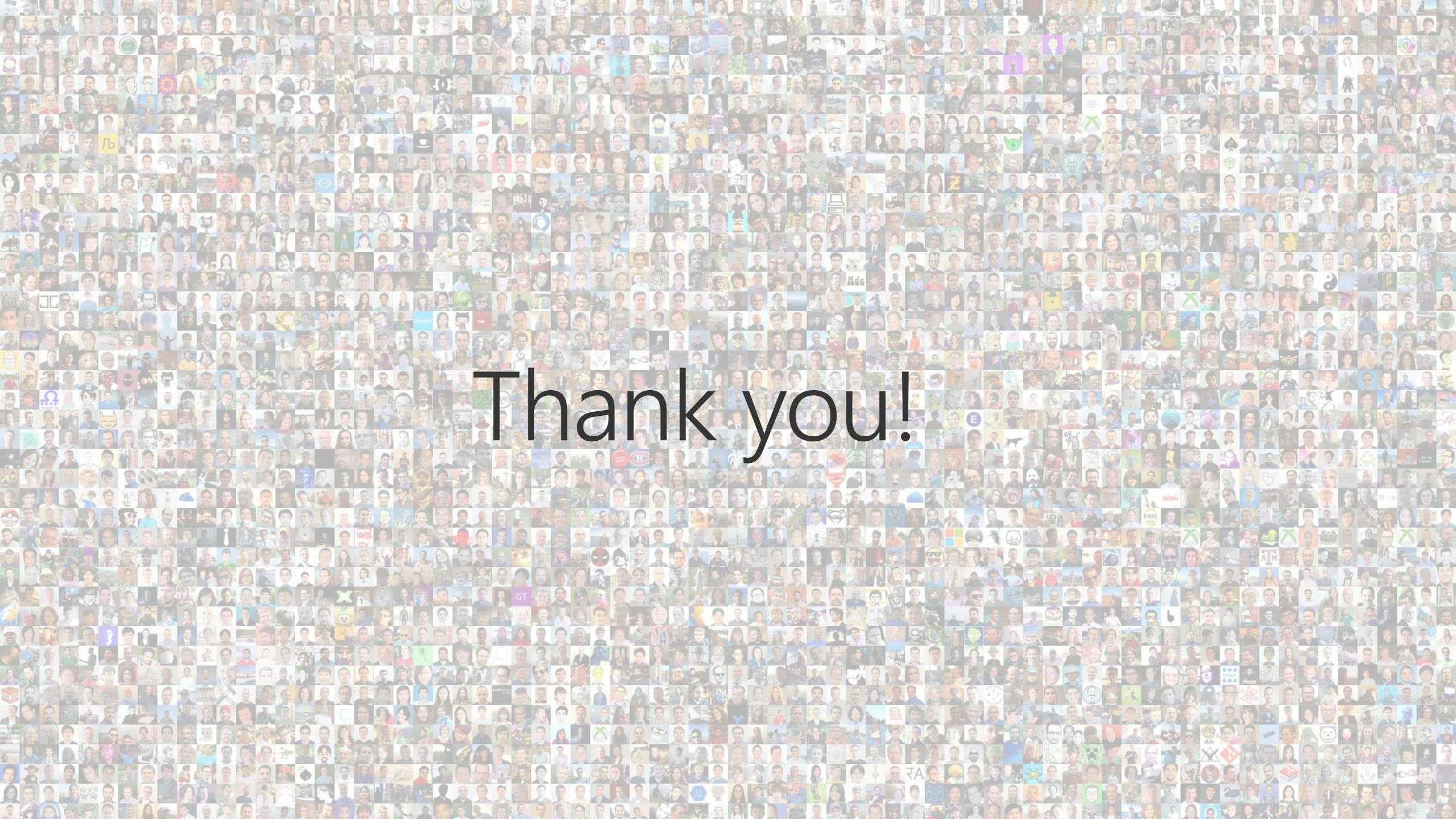


Synopsis:

Learn Azure in a Month of Lunches, Second Edition breaks down the most important Azure concepts into bite-sized lessons with exercises and labs—along with project files available in GitHub—to reinforce your skills.



Shorten Link: aka.ms/LearnAzure1Month



Thank you!