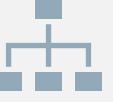


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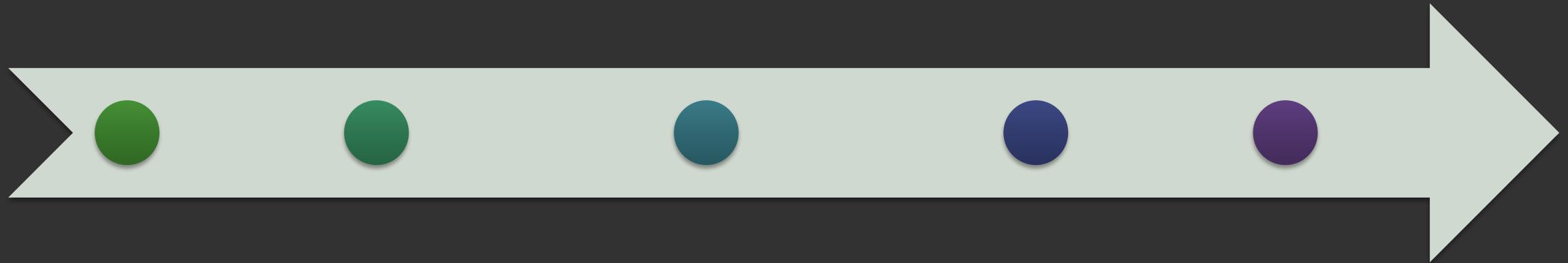
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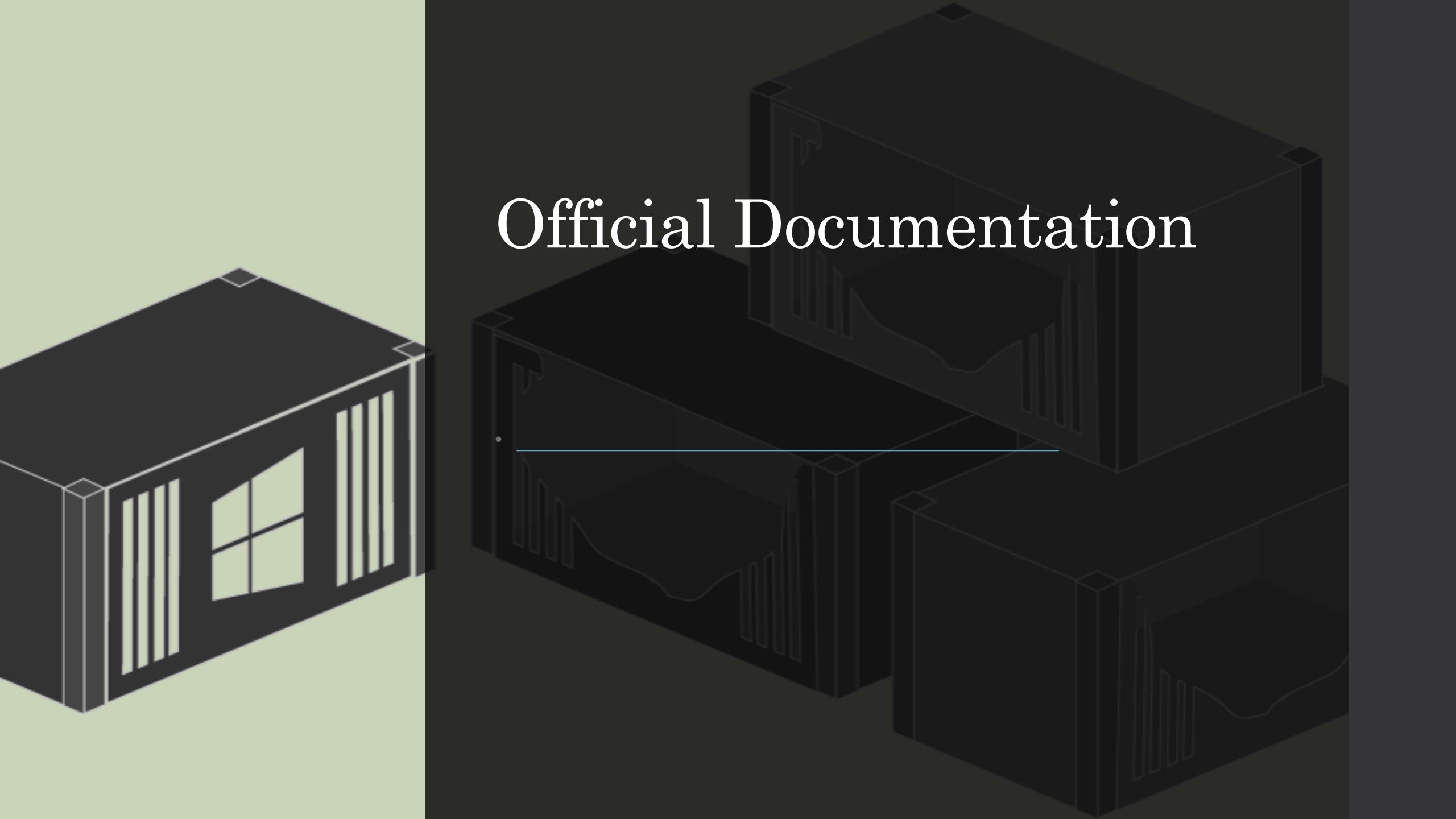
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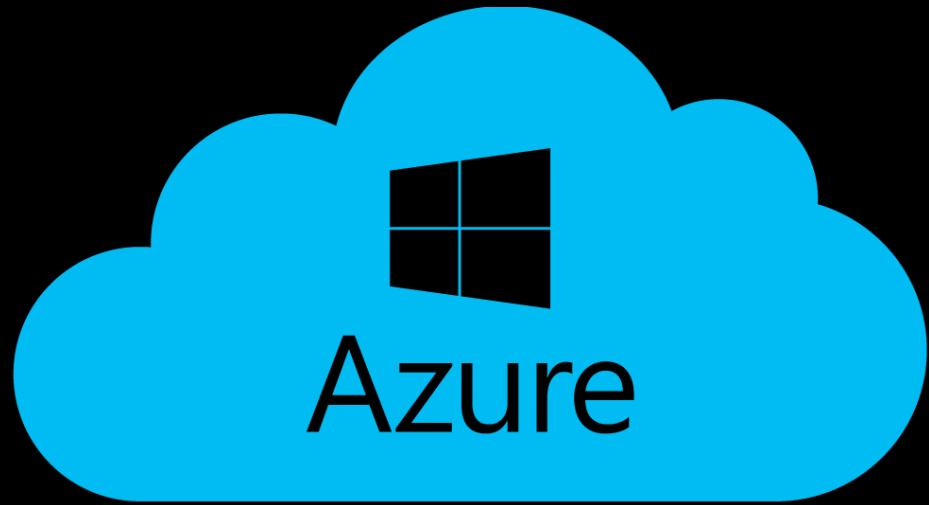
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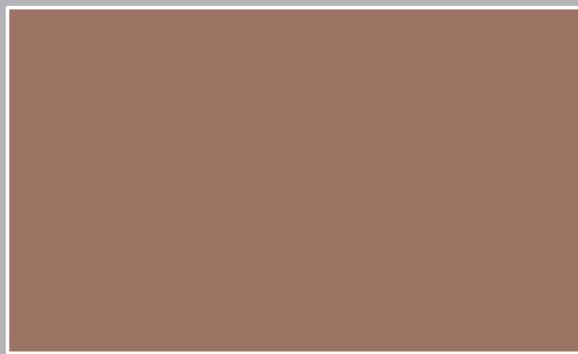


# Official Documentation

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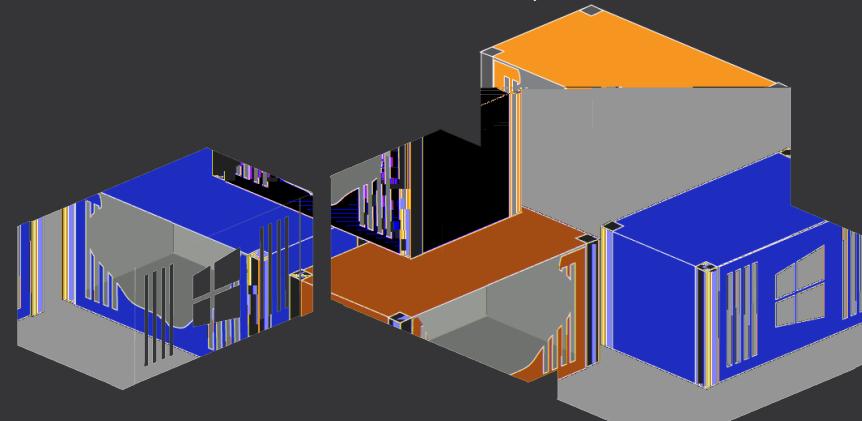
# Computing & Virtualization

## Computing:

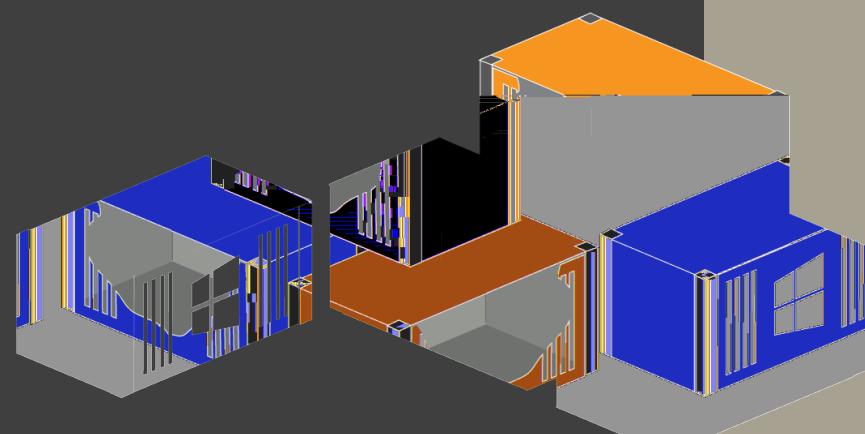
The process of utilizing computer technology to complete a task. Computing may involve computer hardware and/or software, but must involve some form of a computer system.

## Virtualization:

In computing, virtualization means to create a virtual version of a device or resource, such as a server, storage device, network or even an operating system.



# What is Cloud Computing



# What is Cloud Computing

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# Cloud Computing

Essential Characteristics of Cloud Computing

- ✓
- ✓
- ✓
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- ✓

# As per NIST, Cloud Computing

✓

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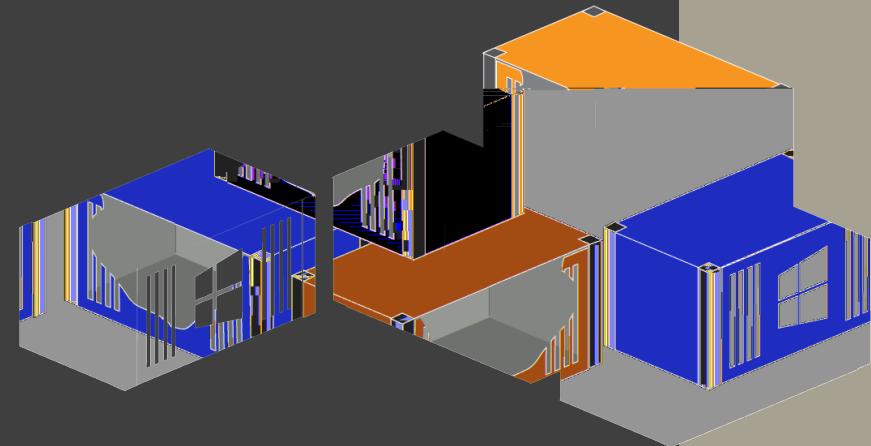
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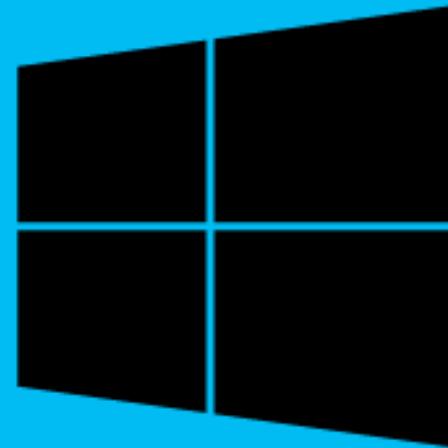
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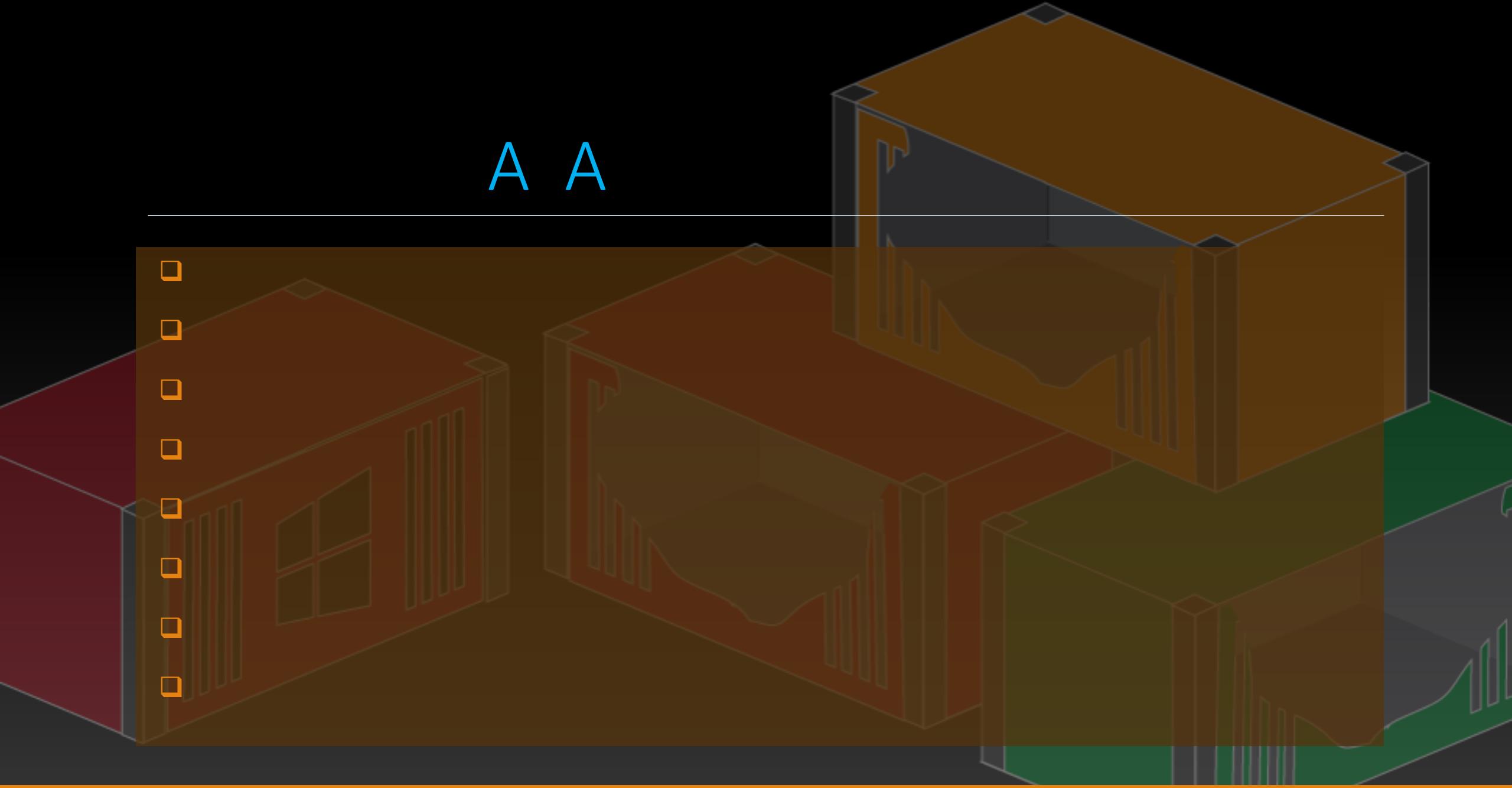
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Azure

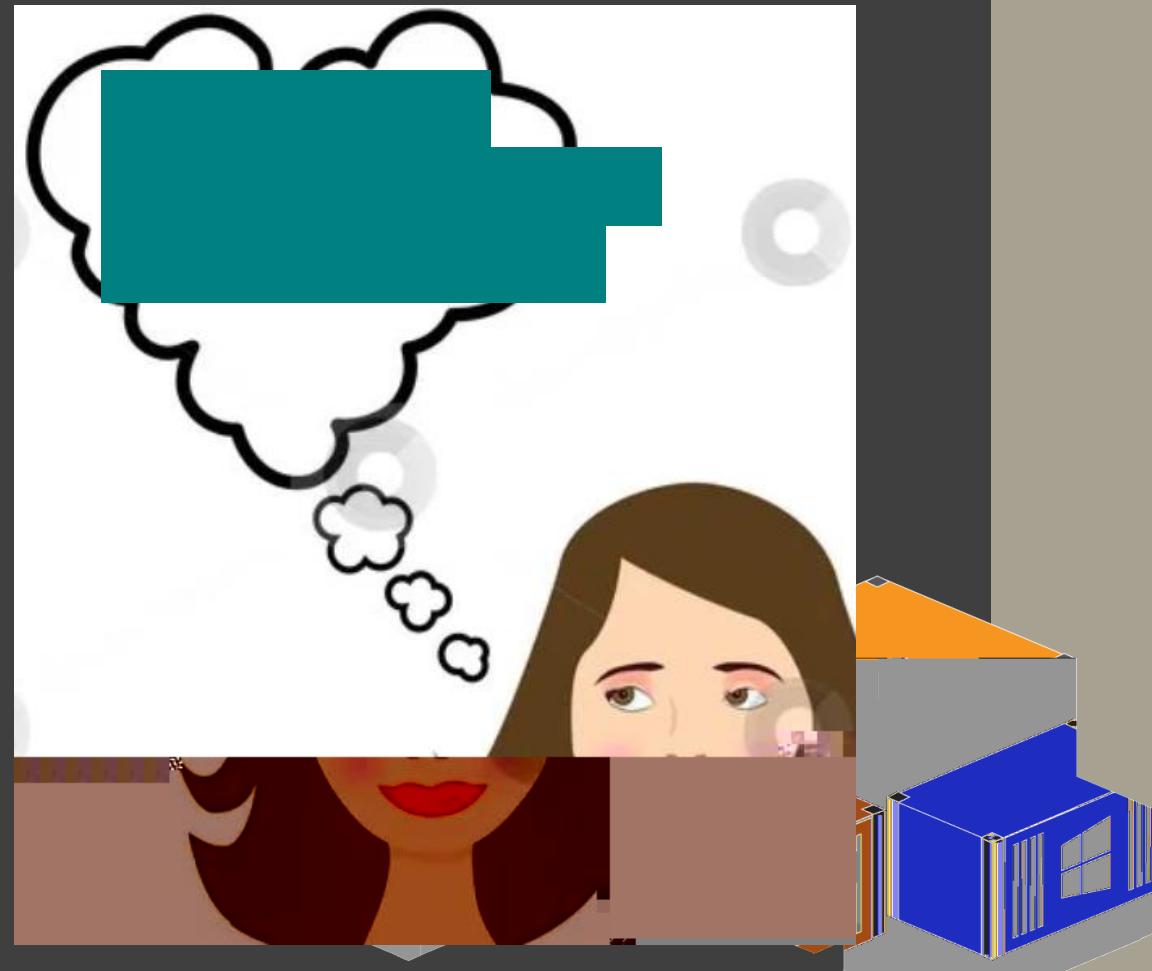
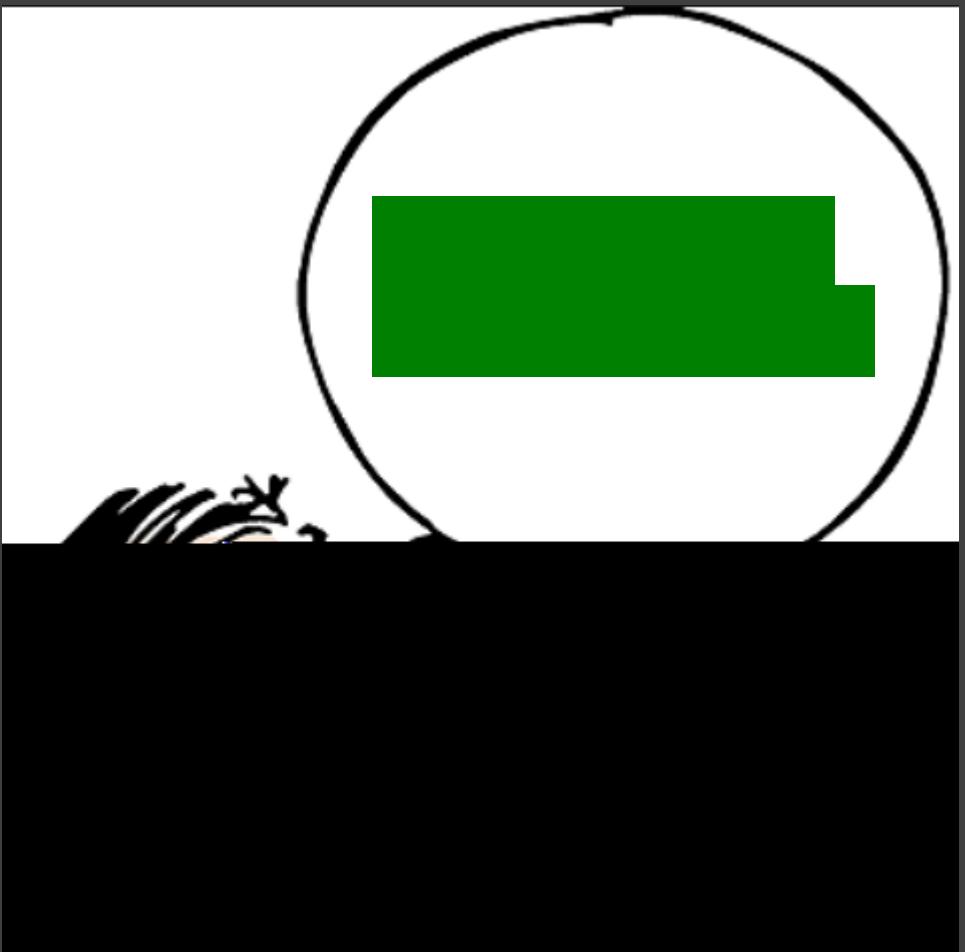
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# CapEx vs OpEx



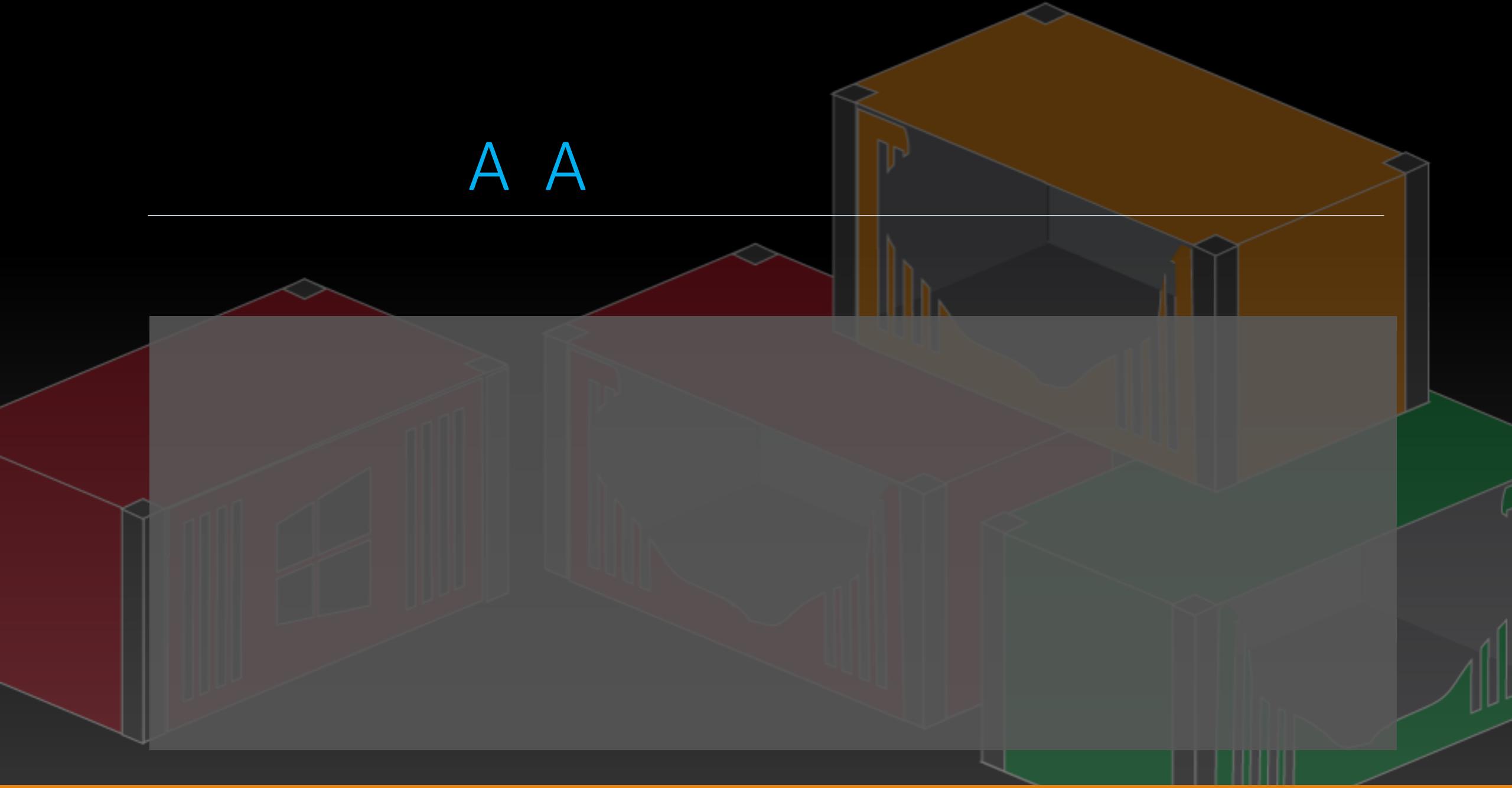


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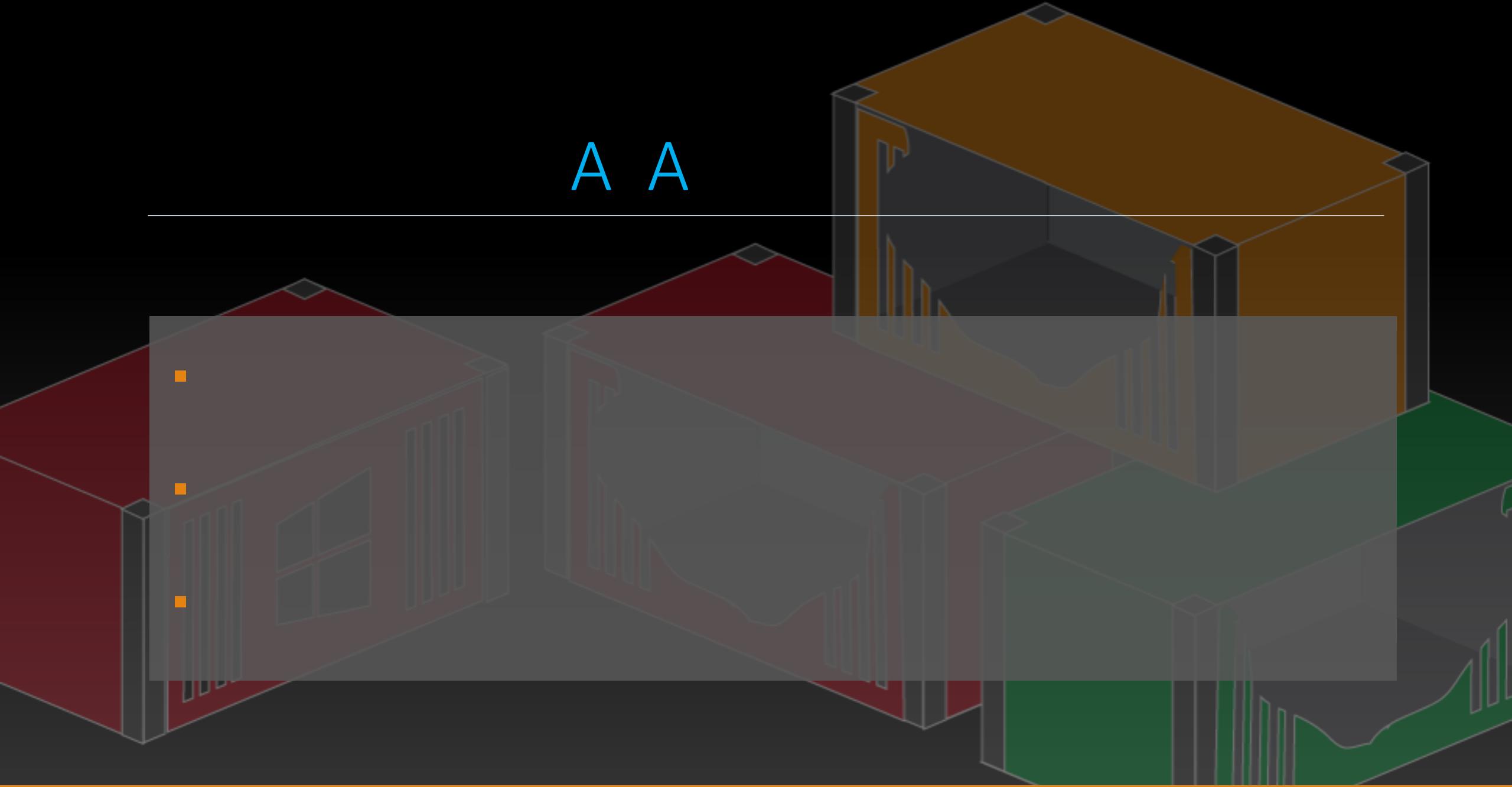


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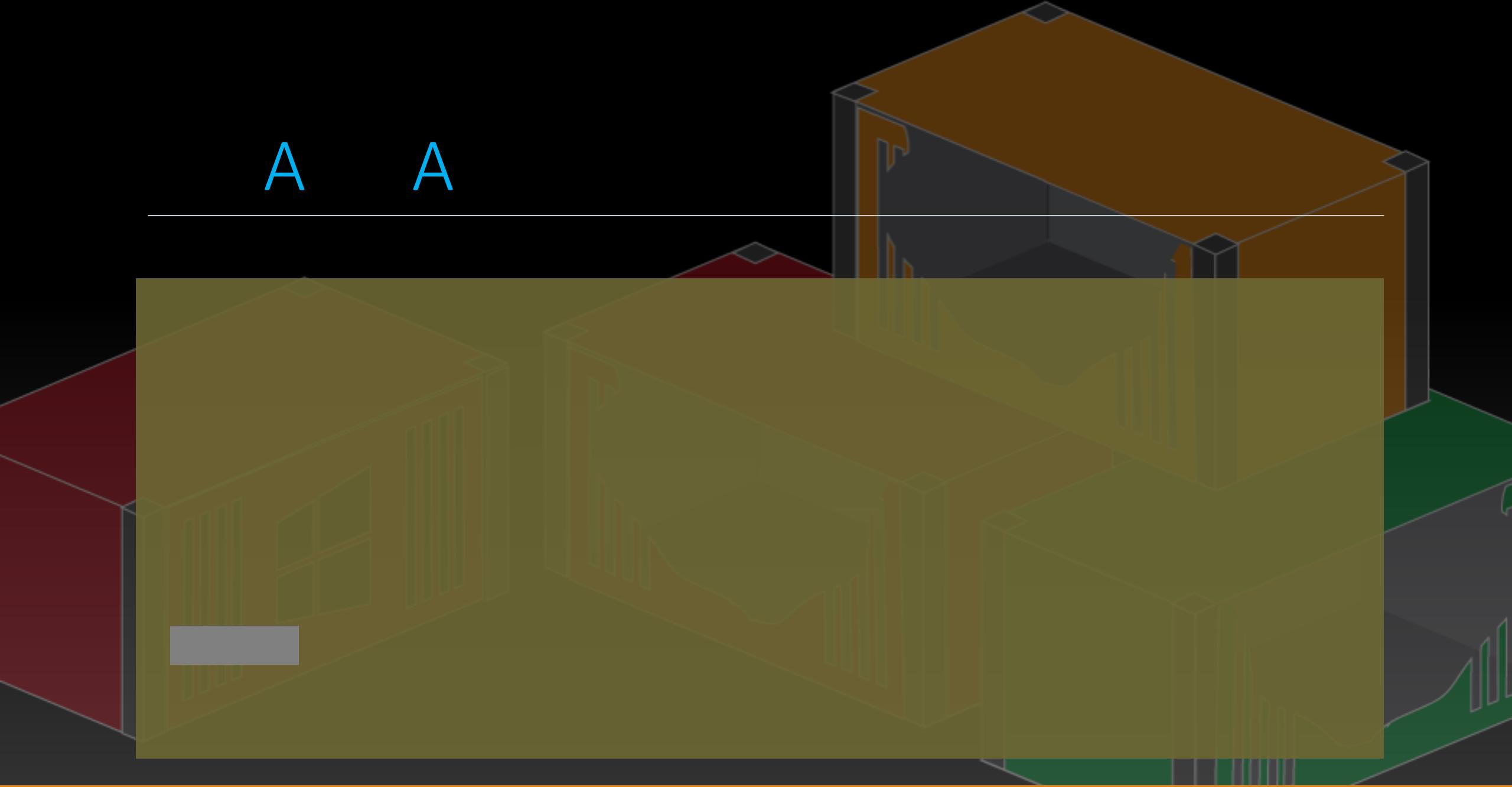
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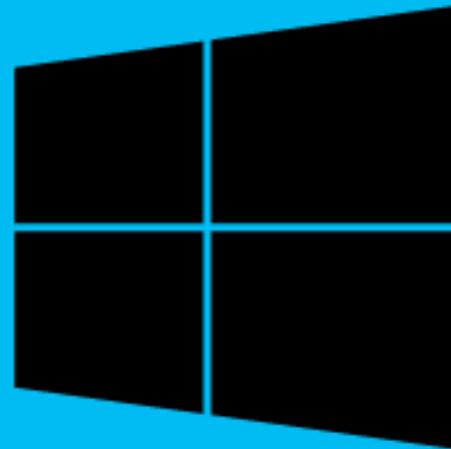


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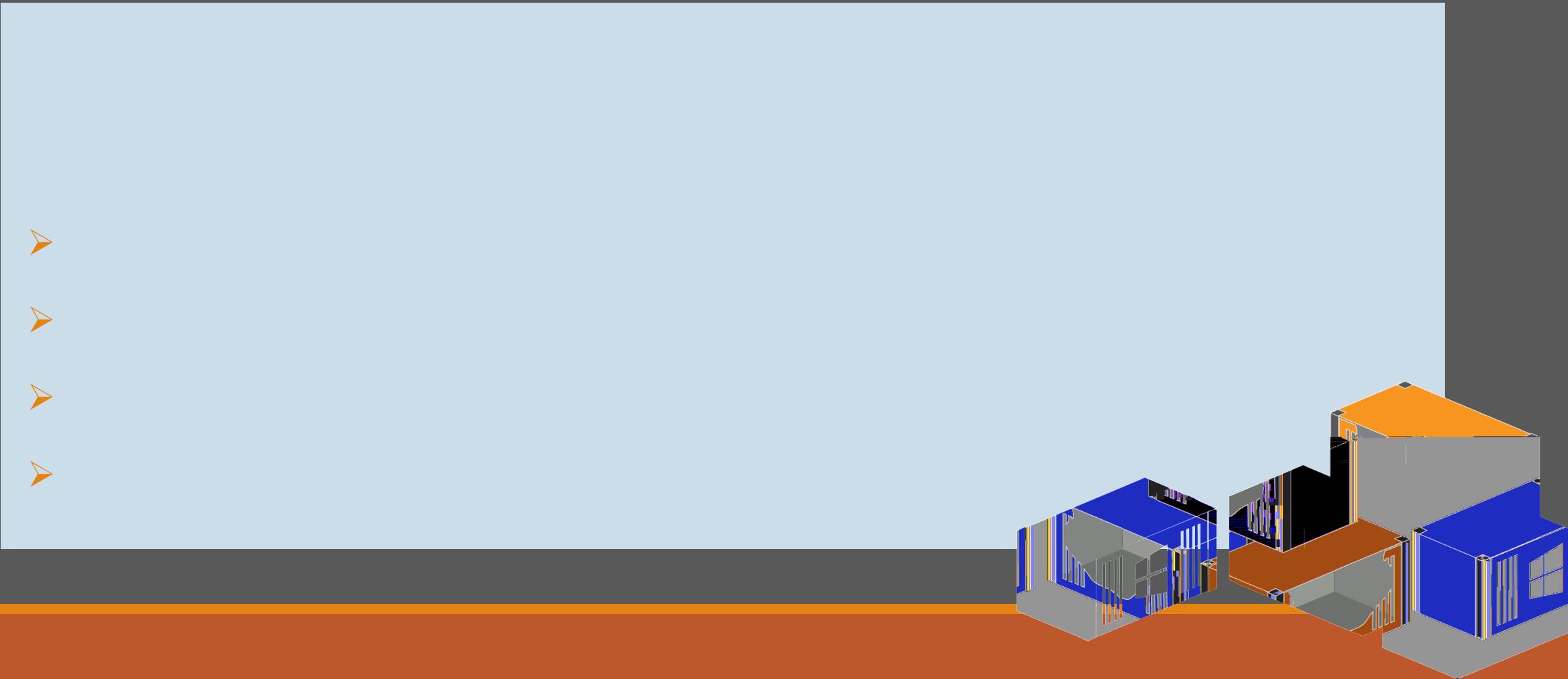




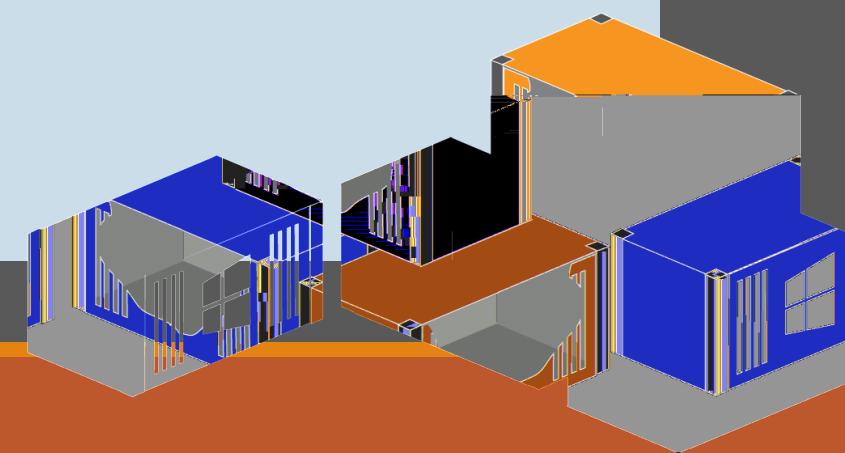
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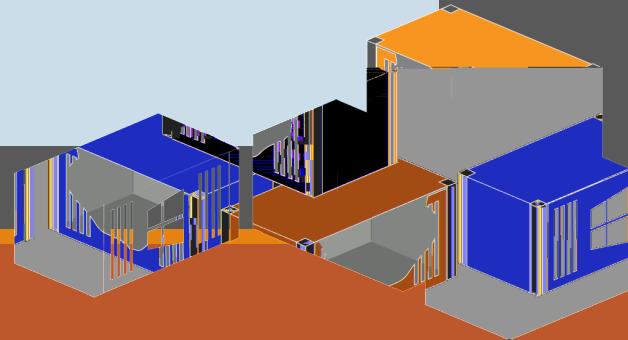
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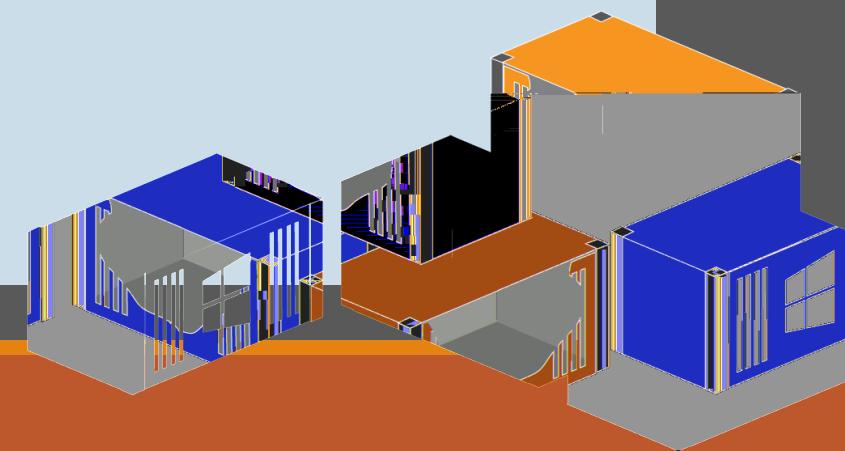
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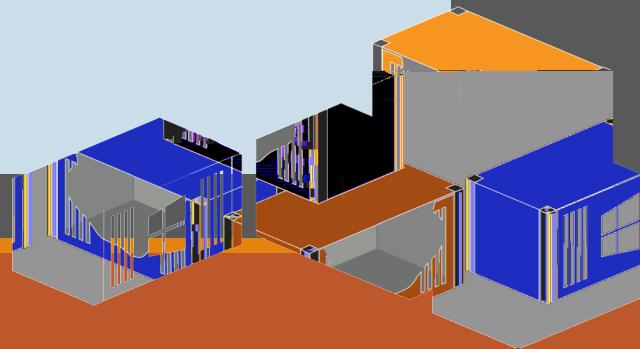
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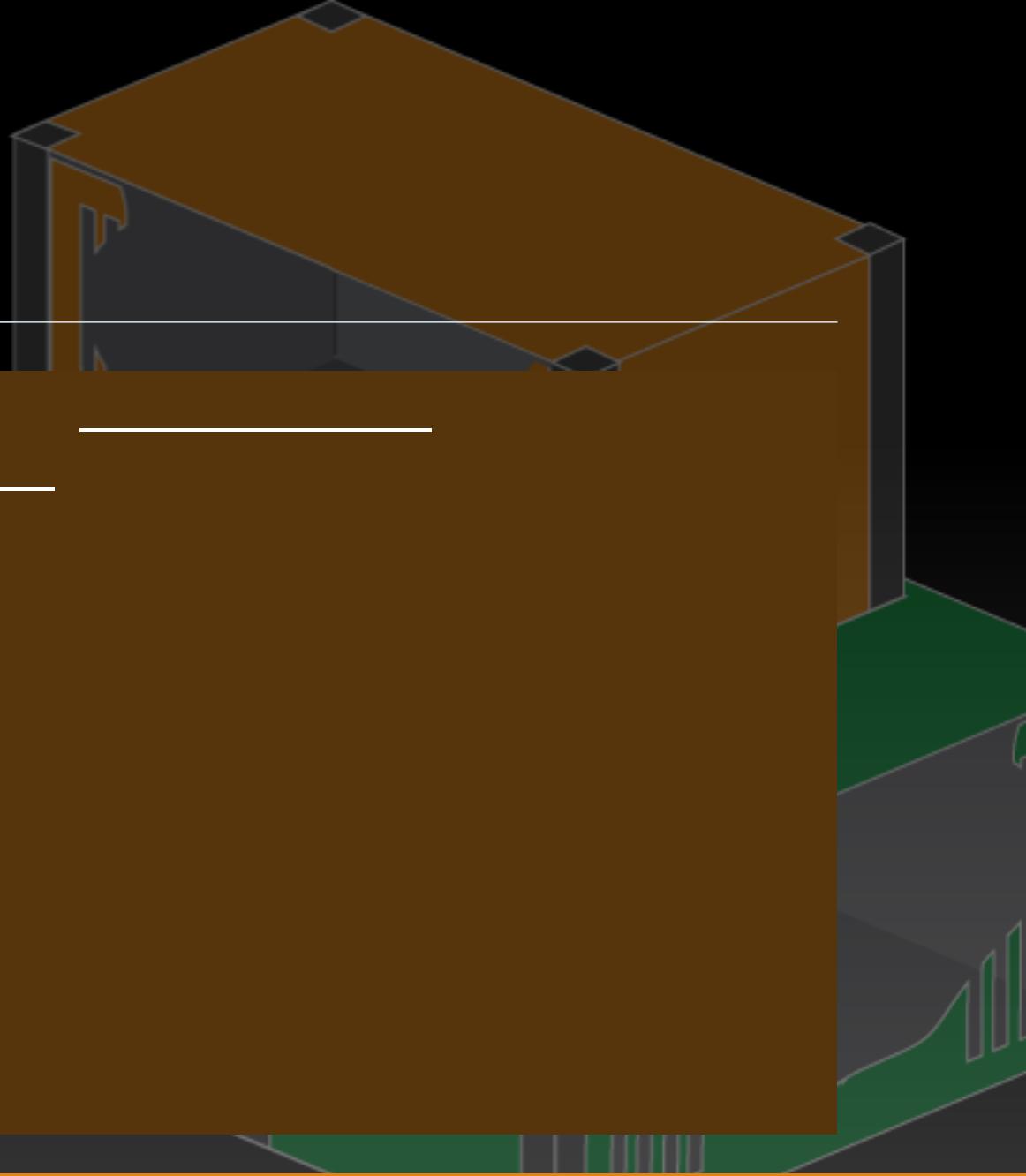
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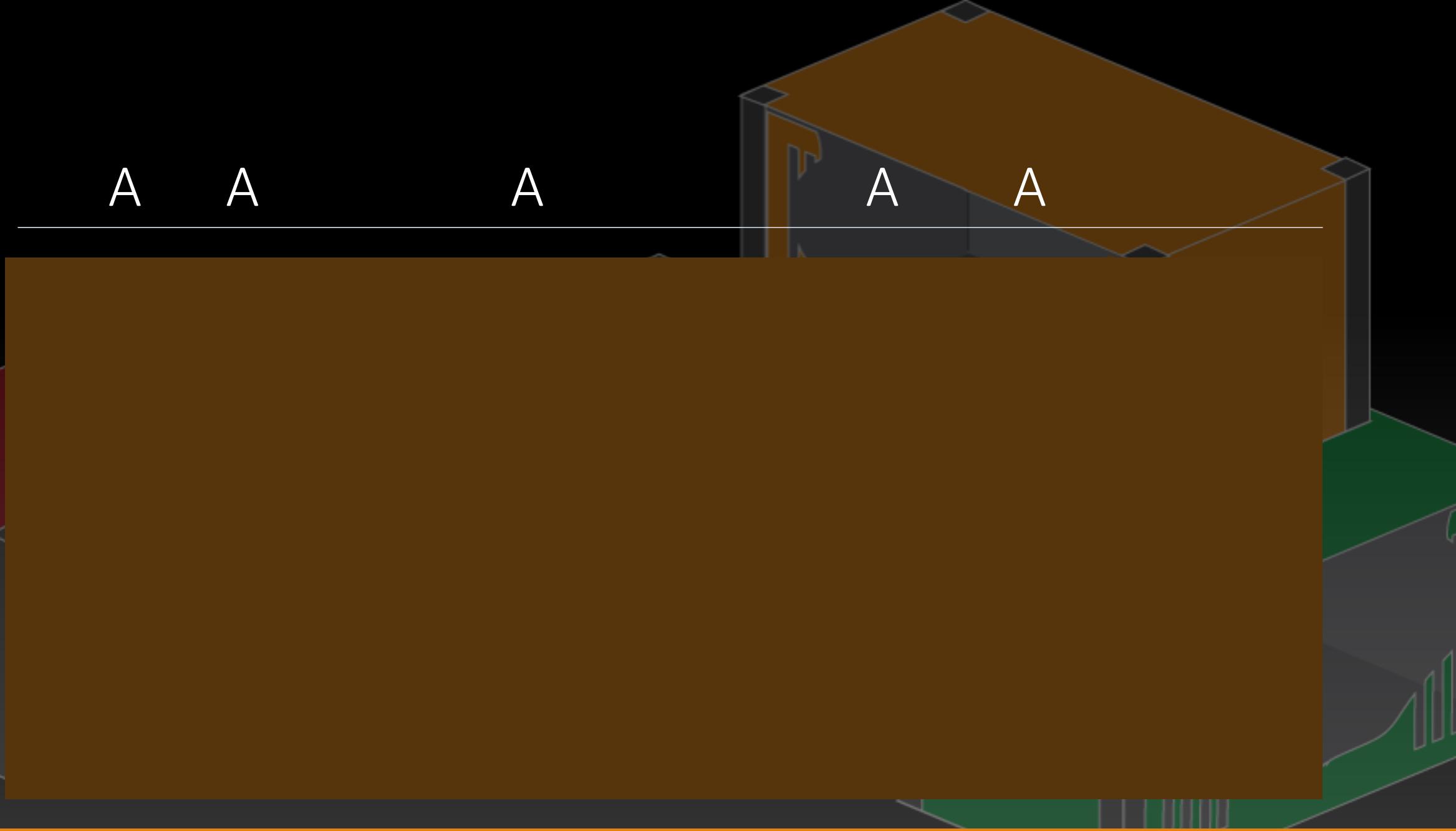
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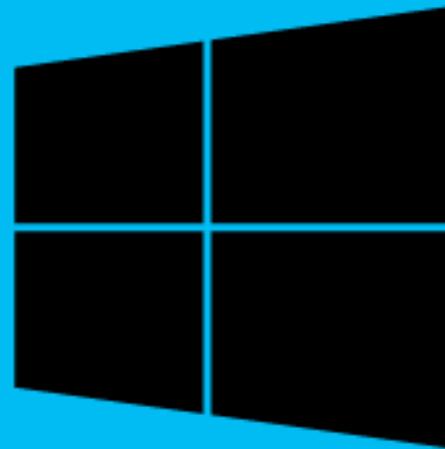
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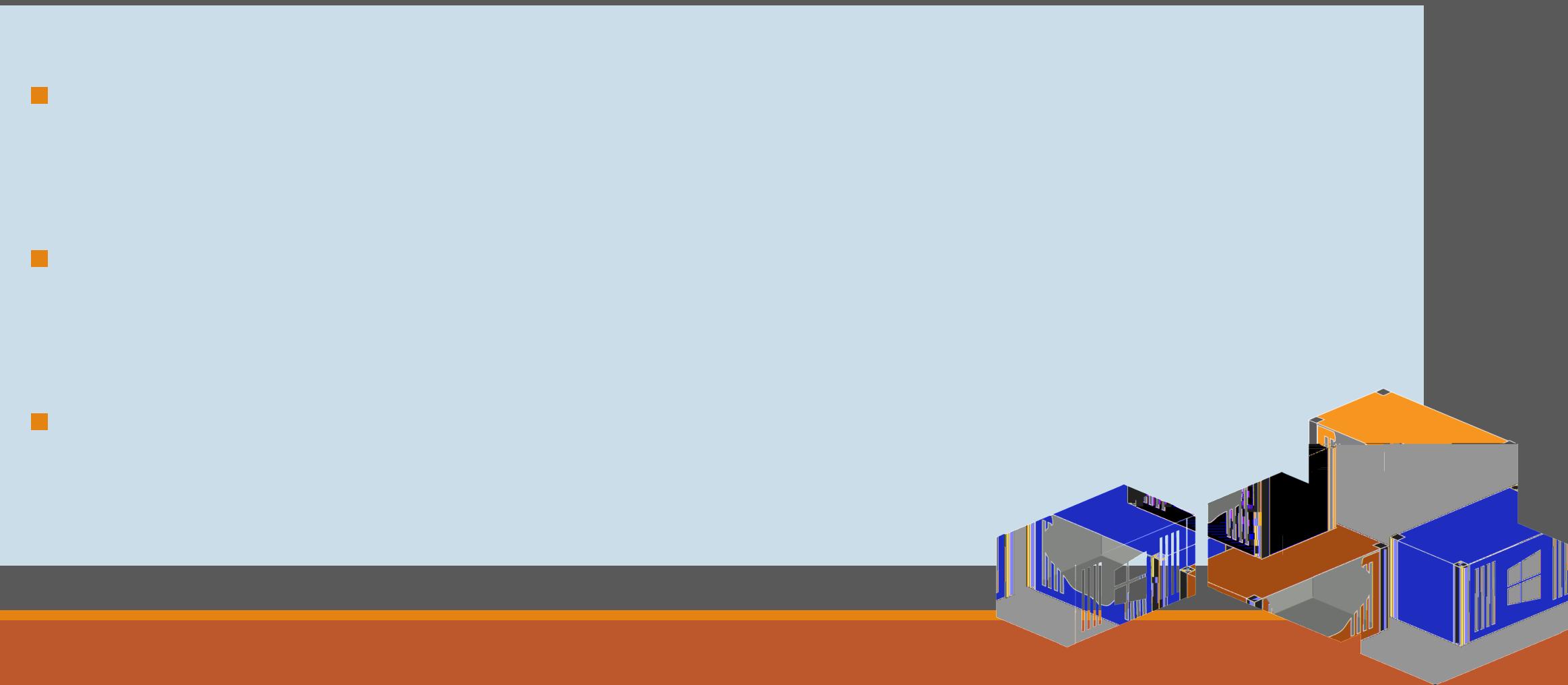
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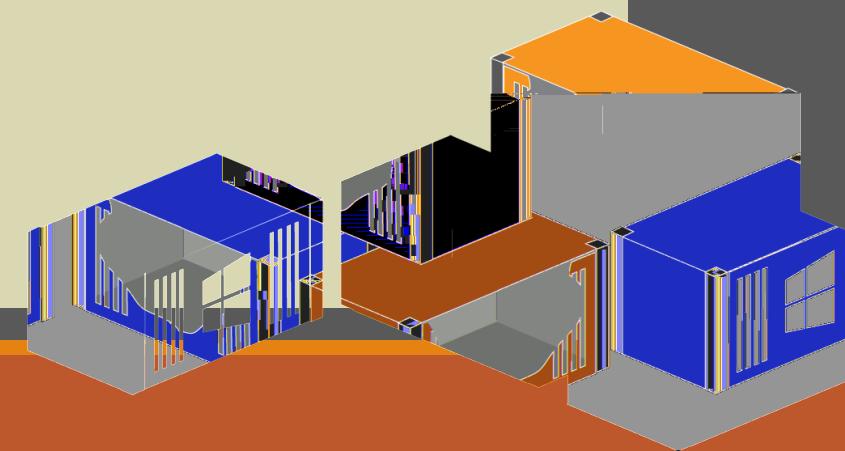
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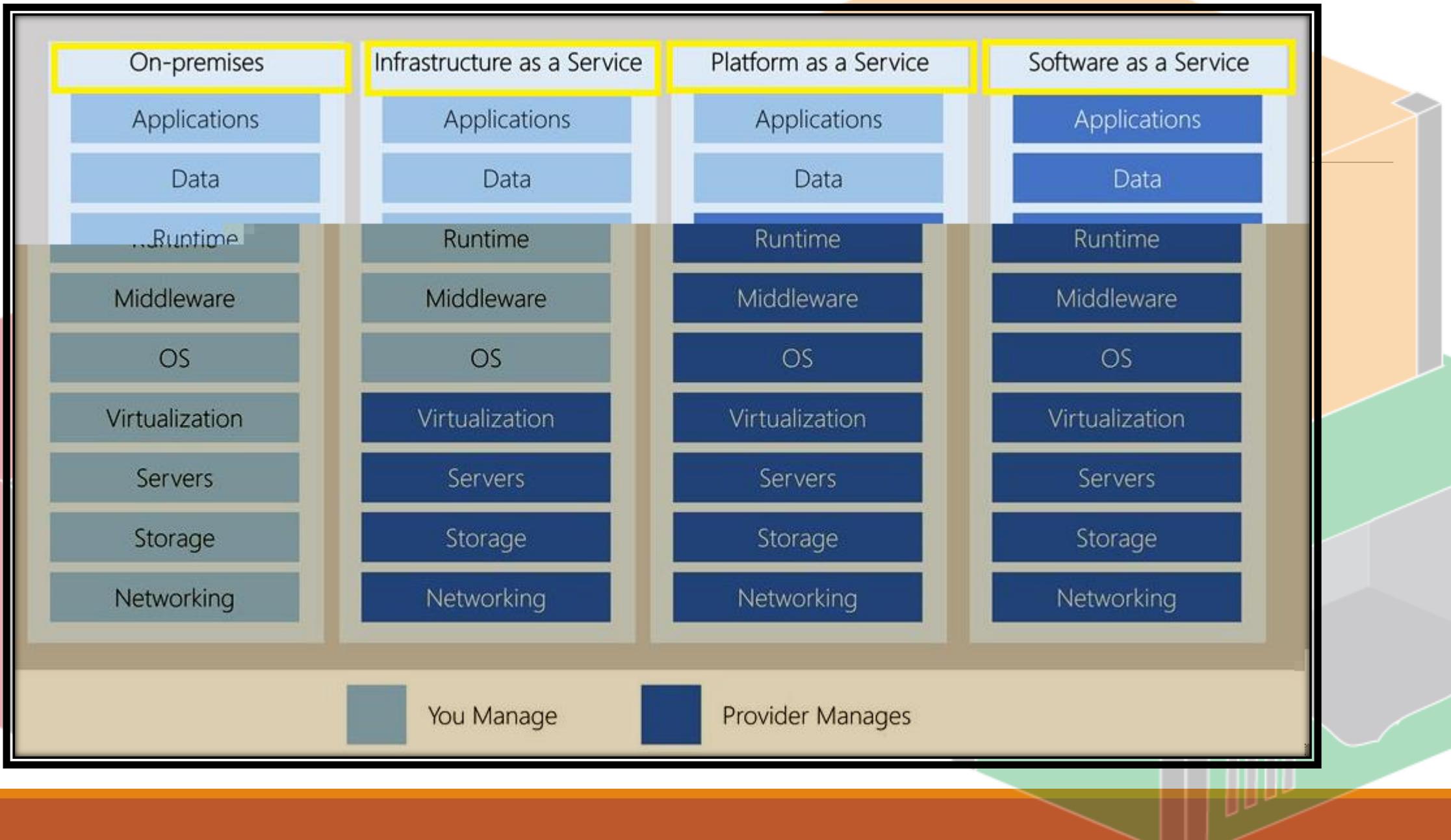
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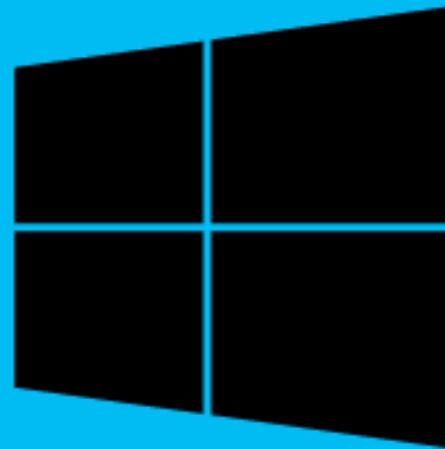
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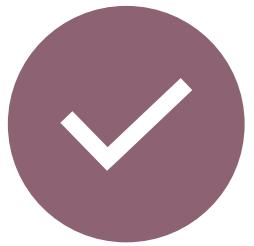
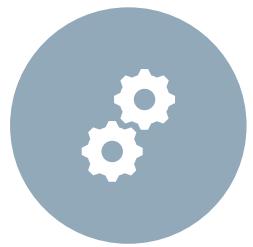
# Cloud computing summary



Azure

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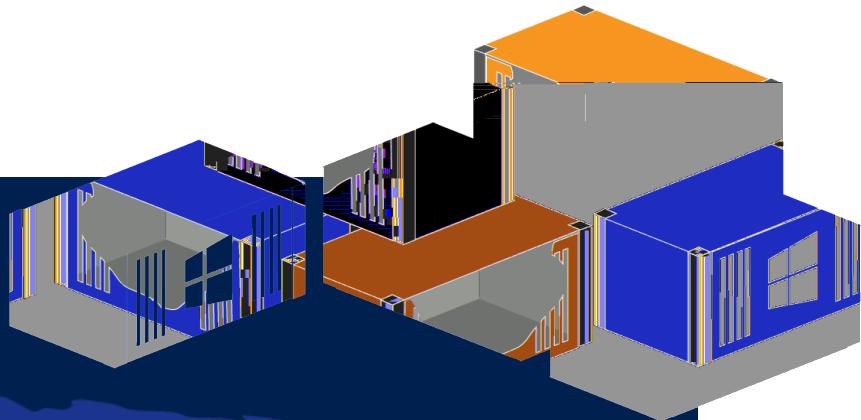






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## 54 Azure regions, more than any cloud provider



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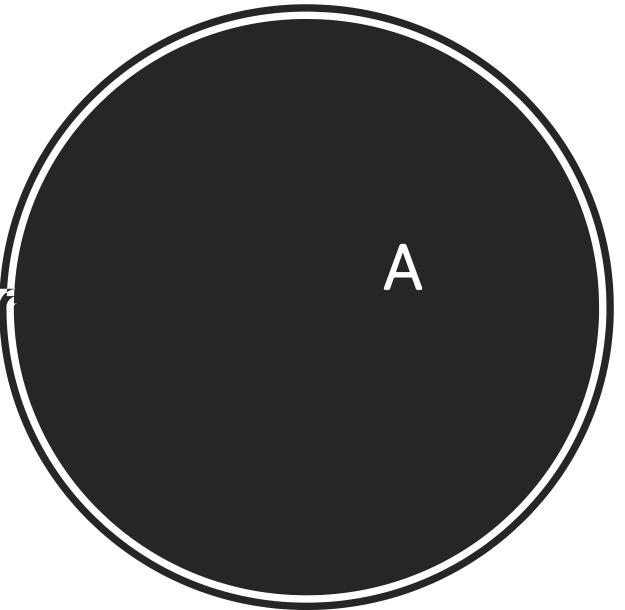
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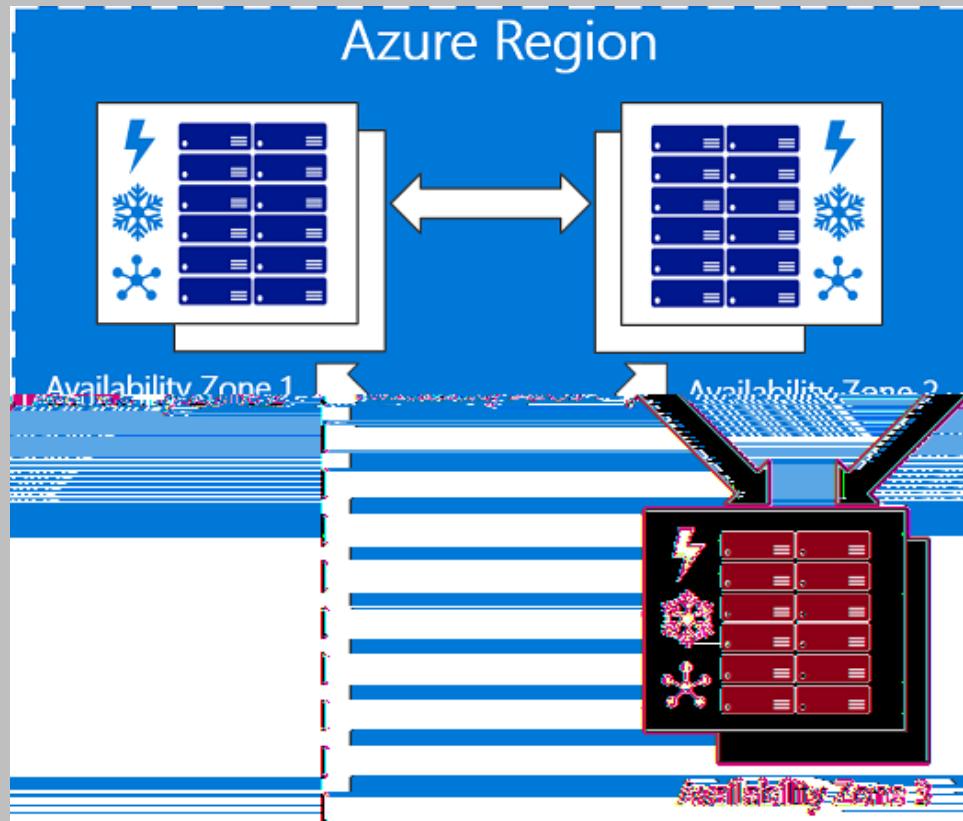
## **Microsoft just dropped 864 servers into the sea to run an underwater data center**



Credit: Microsoft



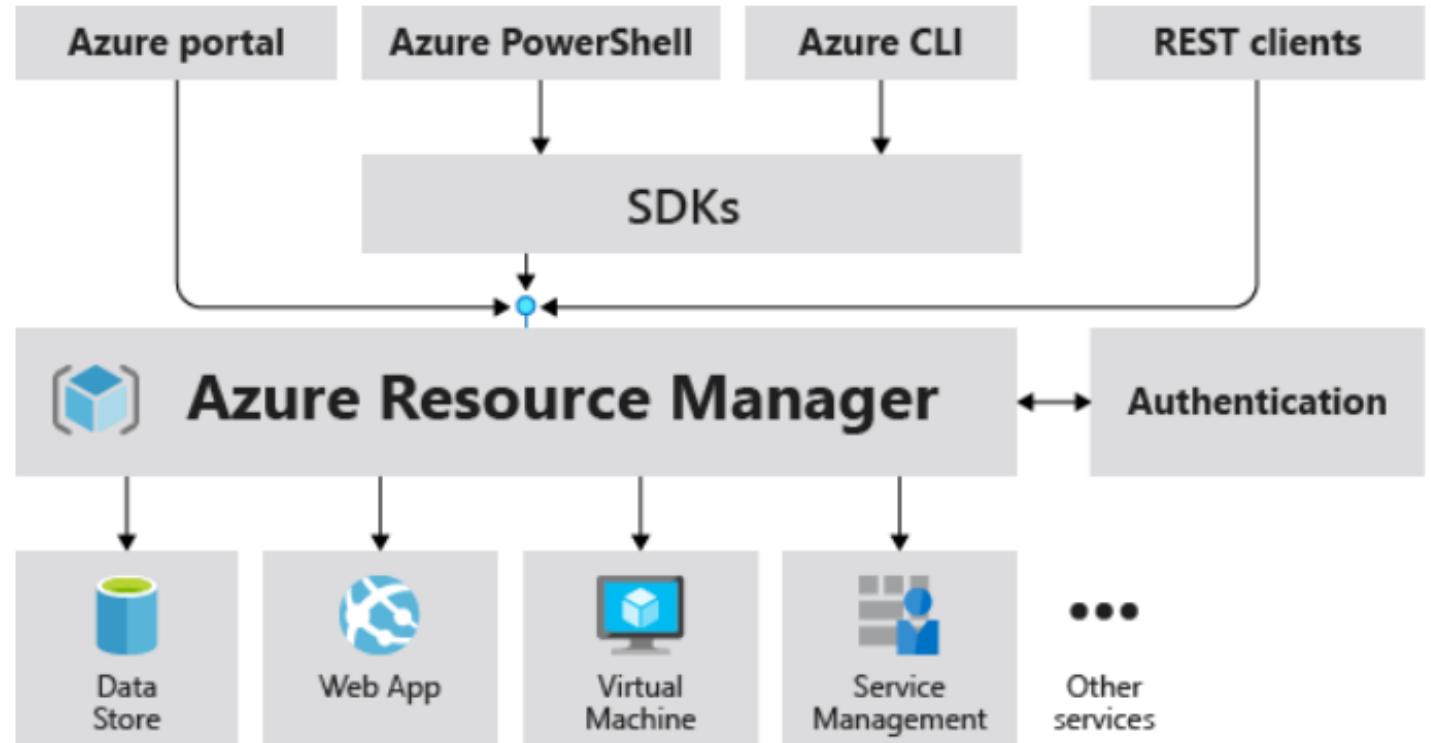
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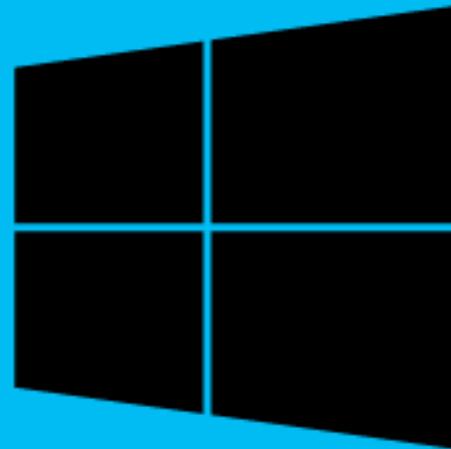












Azure



## WEBSCALE - Scaling

Virtual machine scale set

Search (Ctrl+J)

Save Discard Refresh

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Instances

Scaling

Storage

Operating system

Security

Delete warning i The very last or default recurrence rule cannot be deleted. Instead, you can disable autoscale to turn off autoscale.

Scale mode  Scale based on a metric  Scale to a specific instance count

i It is recommended to have at least one scale in rule. New rules can be created by click hyperlink [Add a rule](#).

### Rules

Scale out

When	WEBSCALE	(Average) Percentage CPU > 80	Increase count by 2
<a href="#">+ Add a rule</a>			

### Instance limits

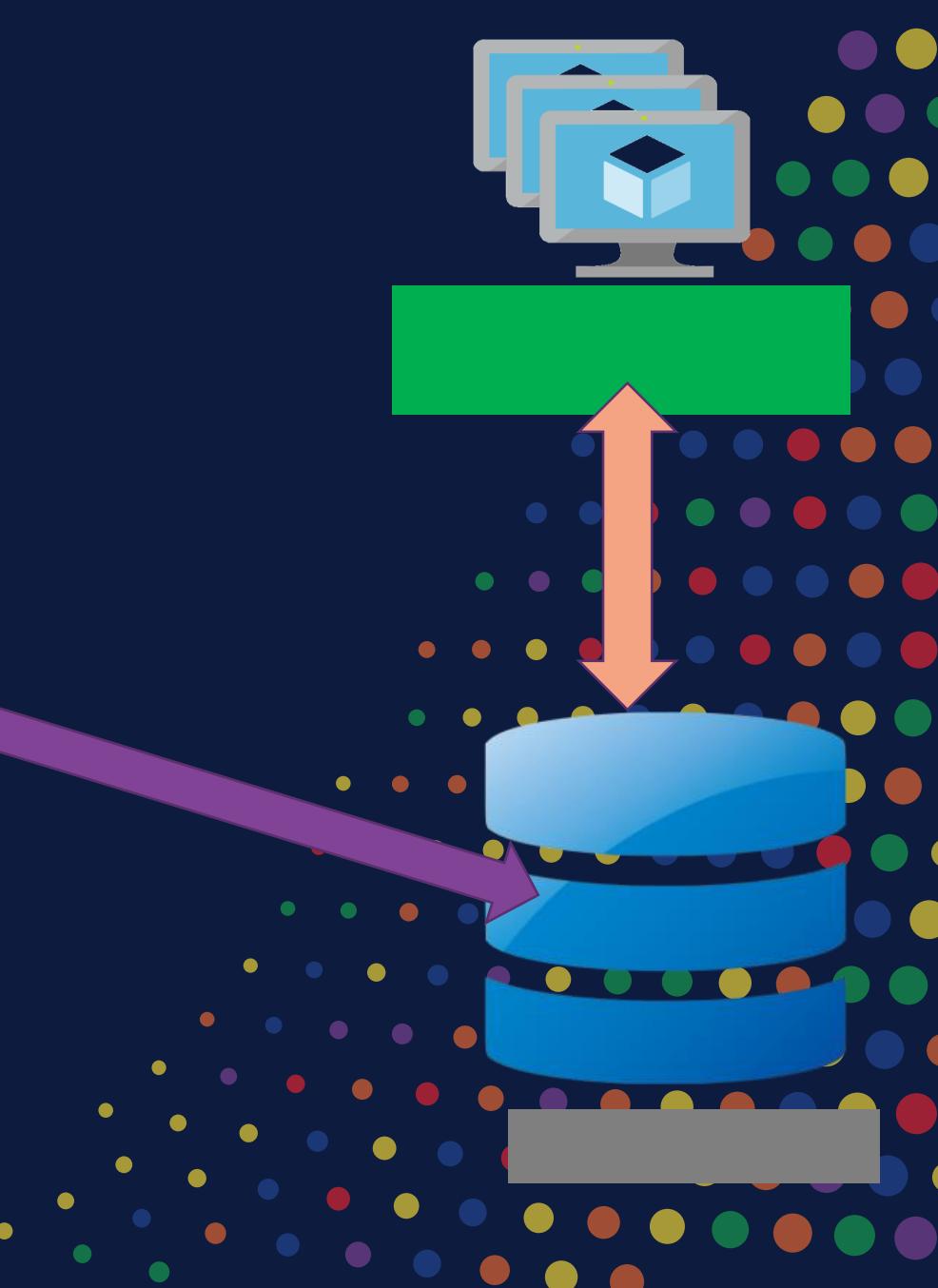
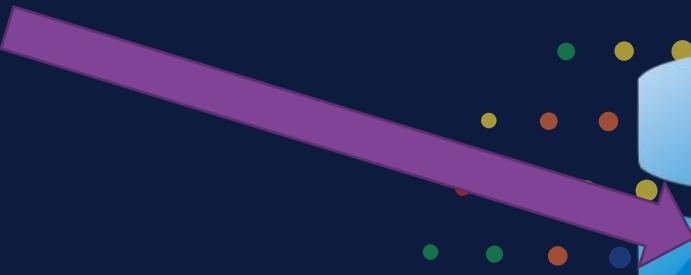
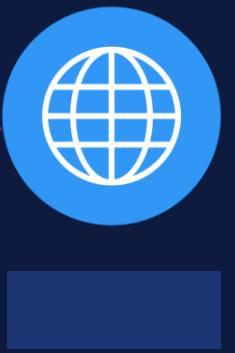
Minimum <span style="color: #0070C0;">i</span>	1	✓
Maximum <span style="color: #0070C0;">i</span>	10	✓
Default <span style="color: #0070C0;">i</span>	1	✓

### Schedule

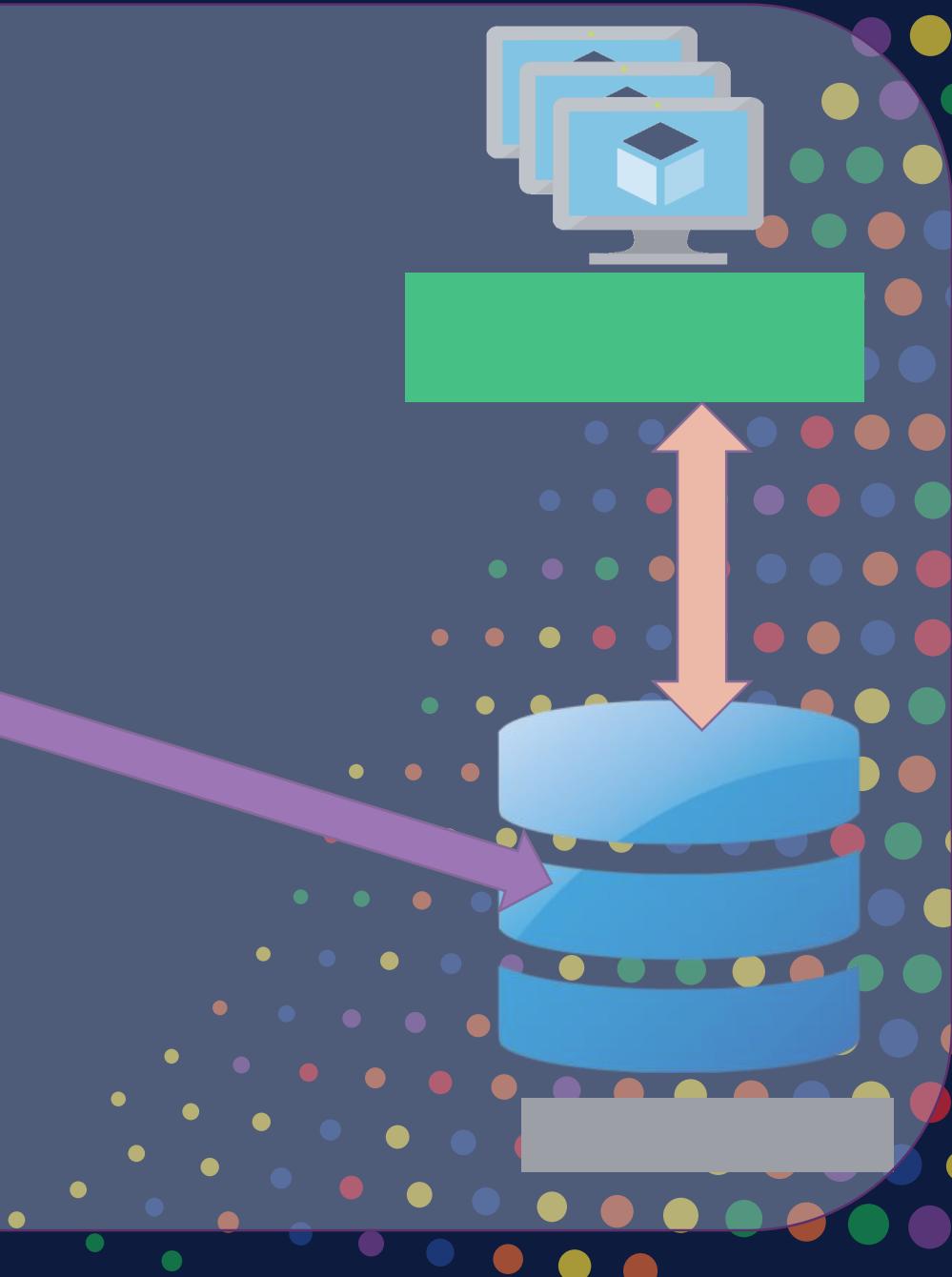
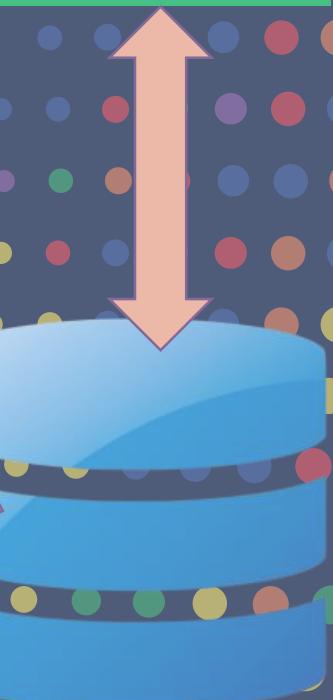
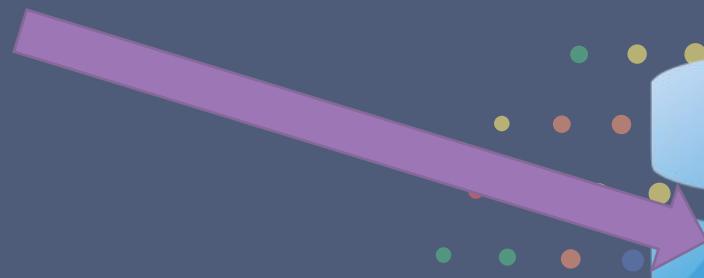
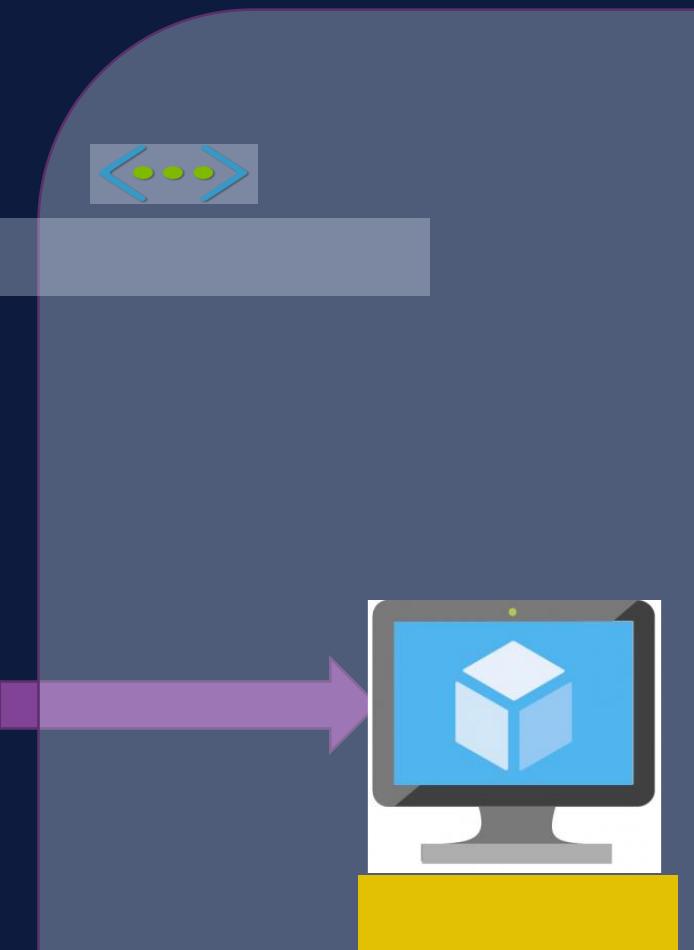
Specify start/end dates  Repeat specific days

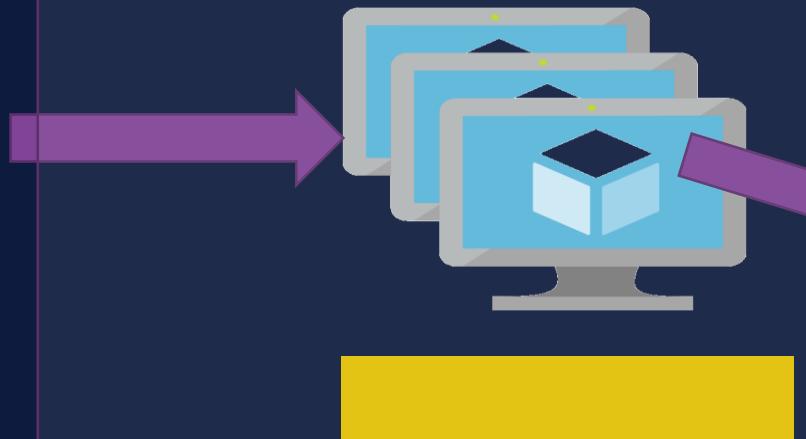
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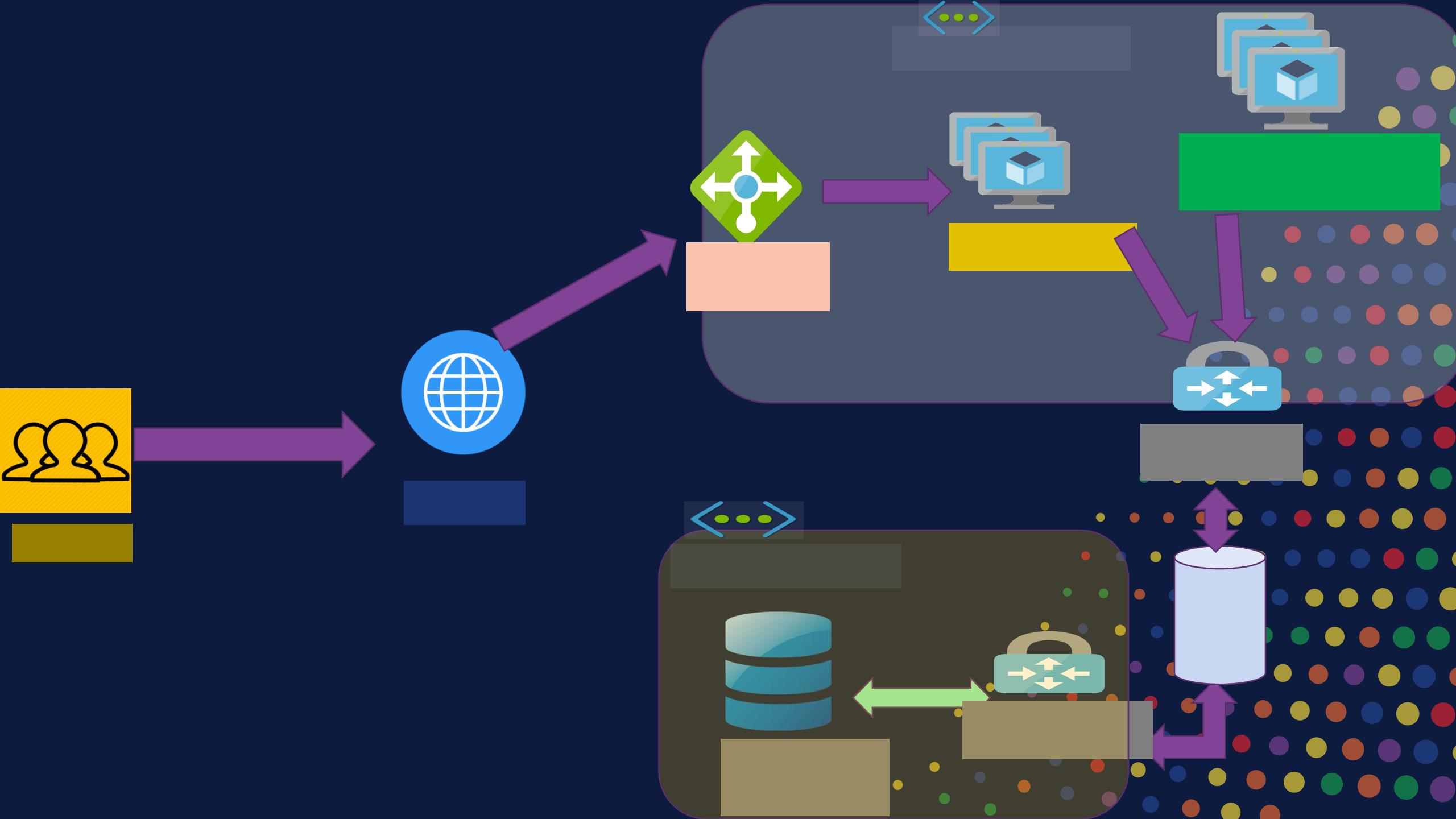








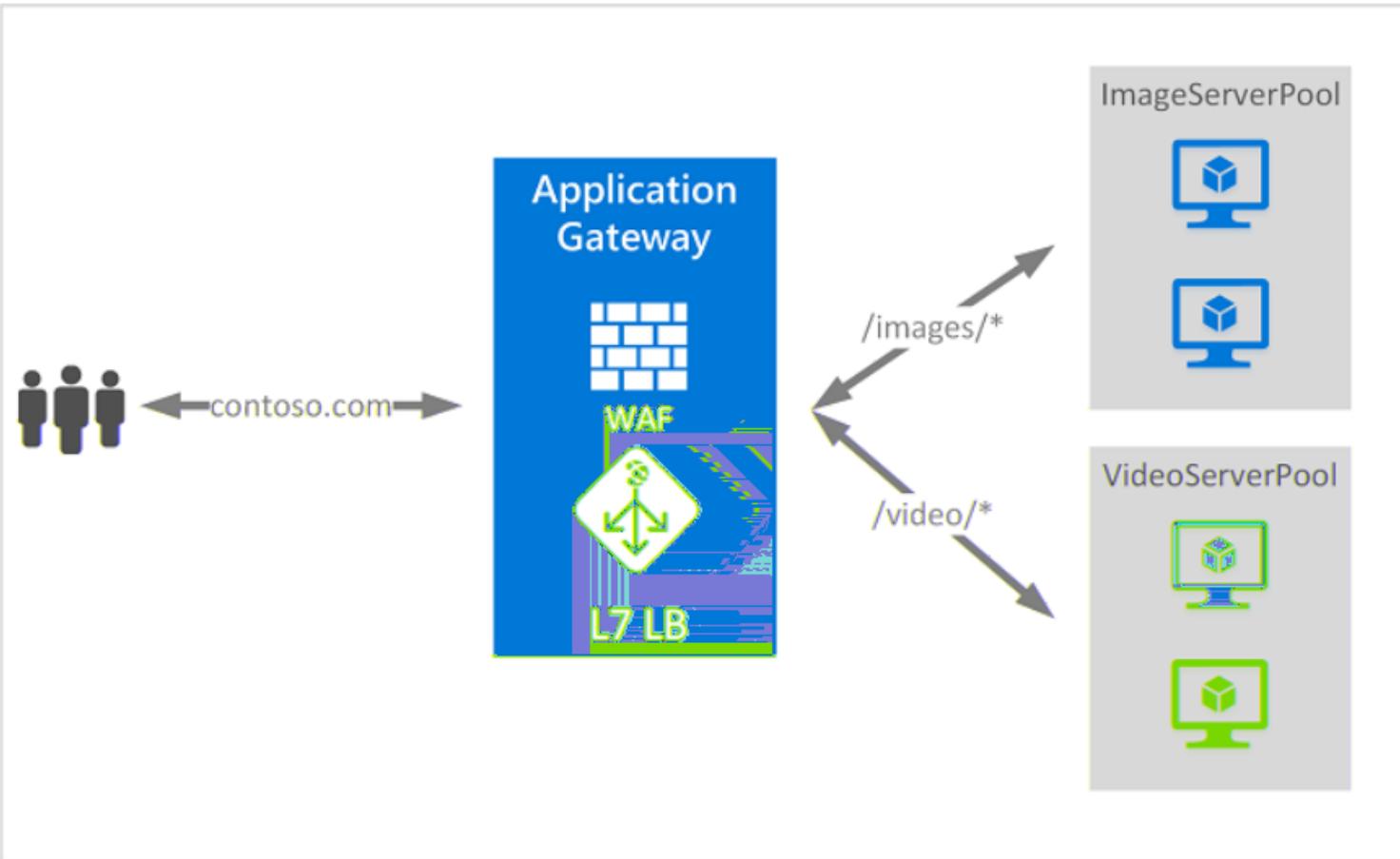


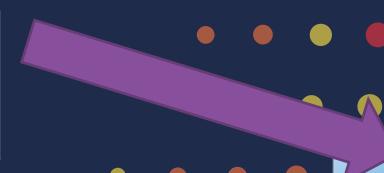
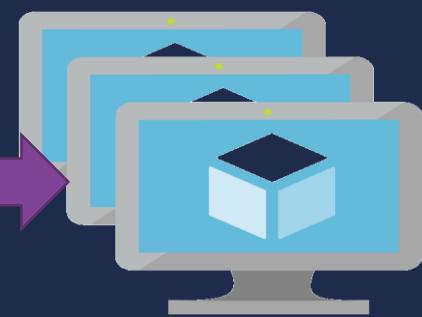


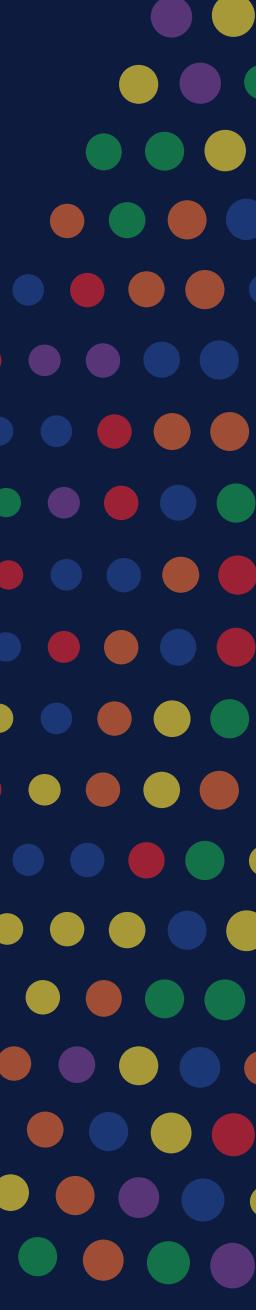


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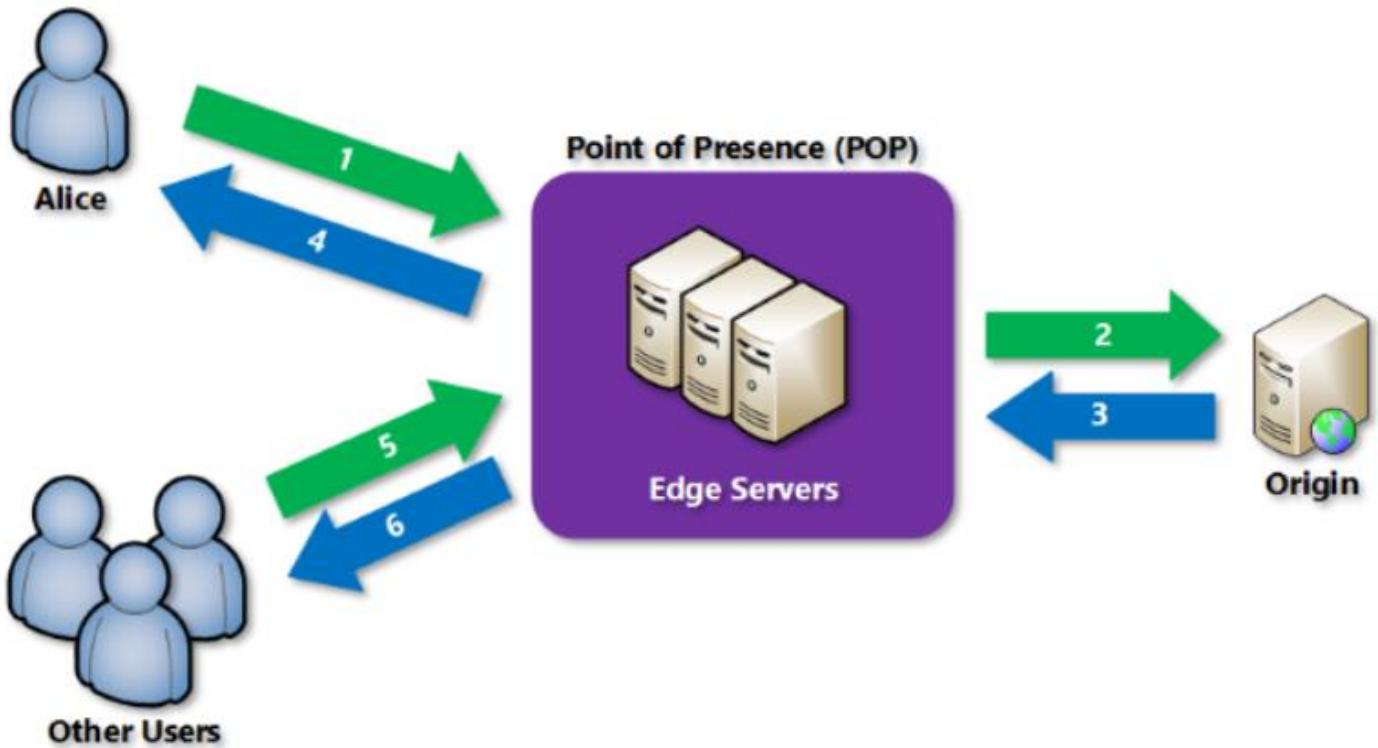
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The background features a grayscale globe centered against a dark, textured background. The globe is covered in a grid of black lines and numerous binary digits (0s and 1s) in a smaller font. A complex network of black lines connects various points on the globe's surface, forming a mesh-like structure. The bottom portion of the image has a pinkish-purple gradient, also featuring a similar network of lines and binary code.

Data is The New Oil







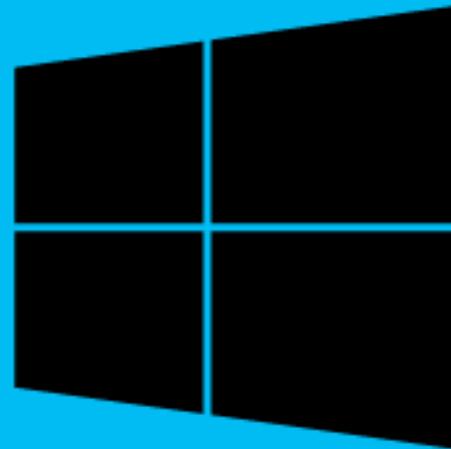












Azure





















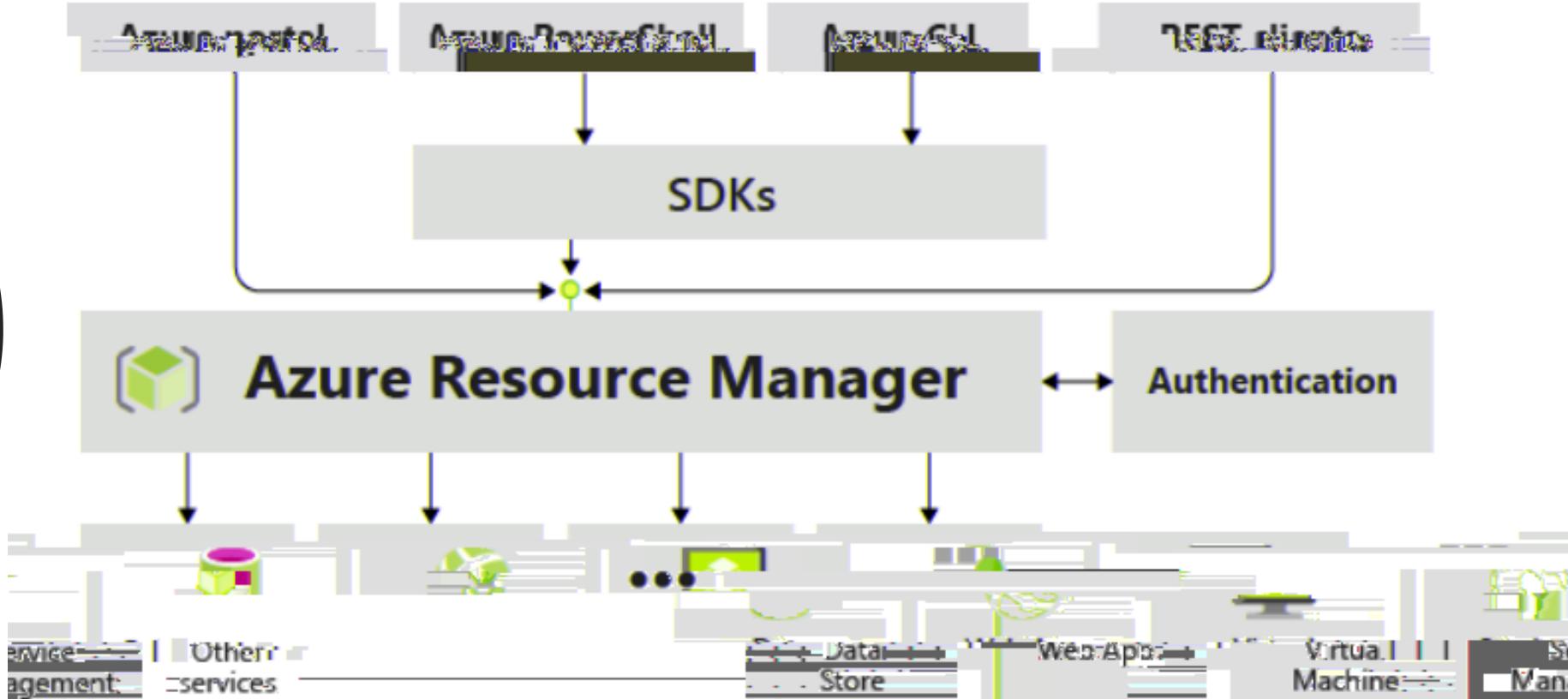
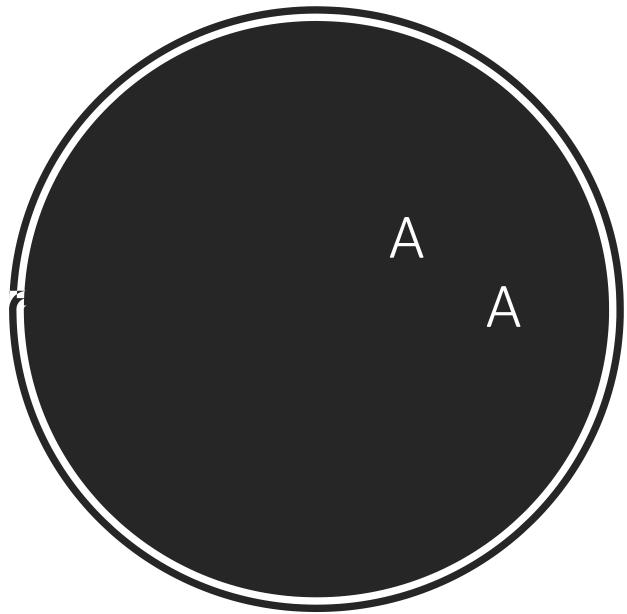


# Microsoft Azure Fundamentals















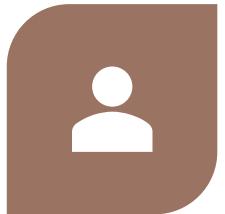
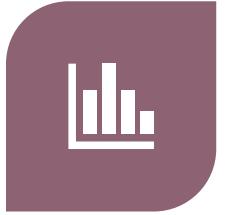


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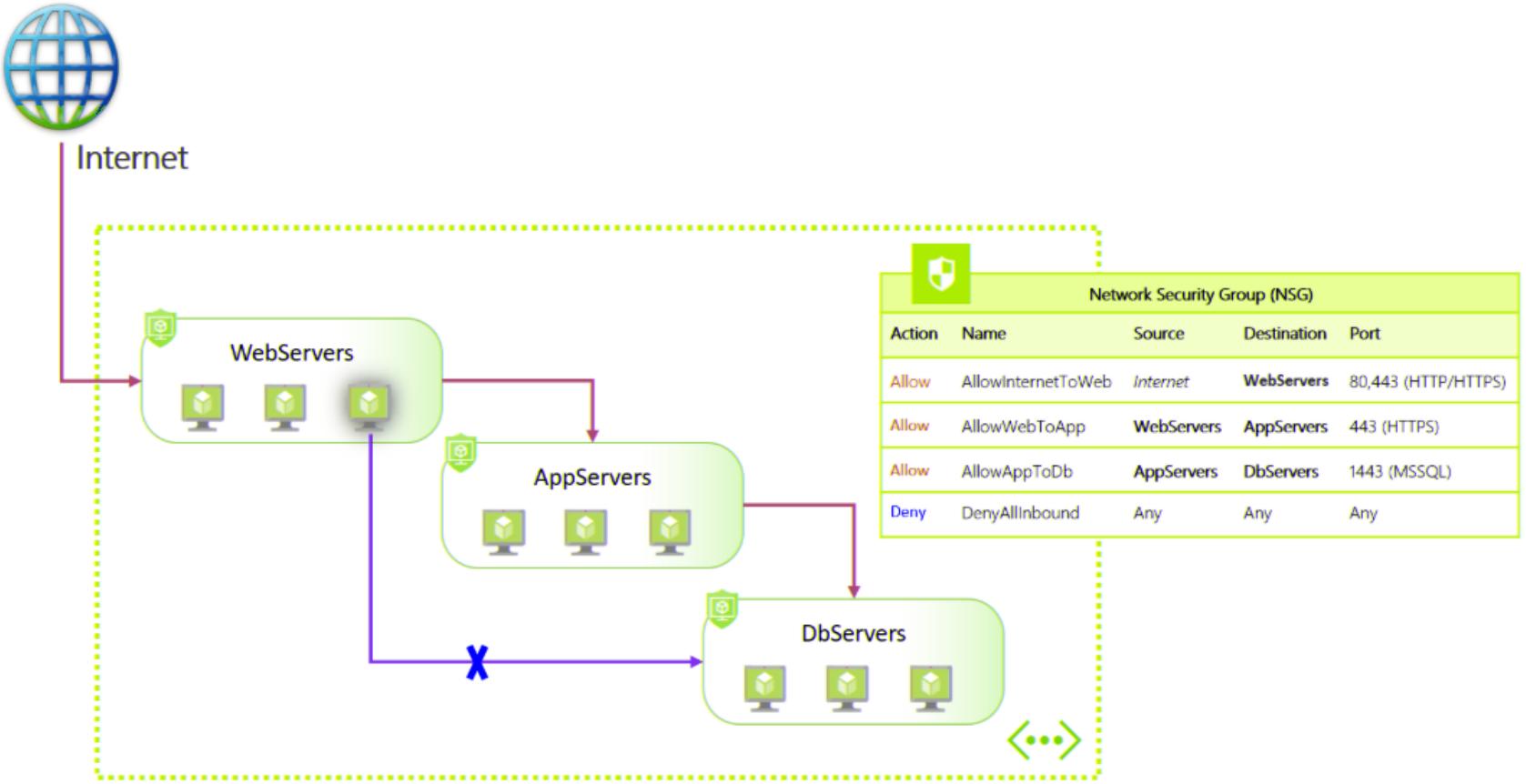




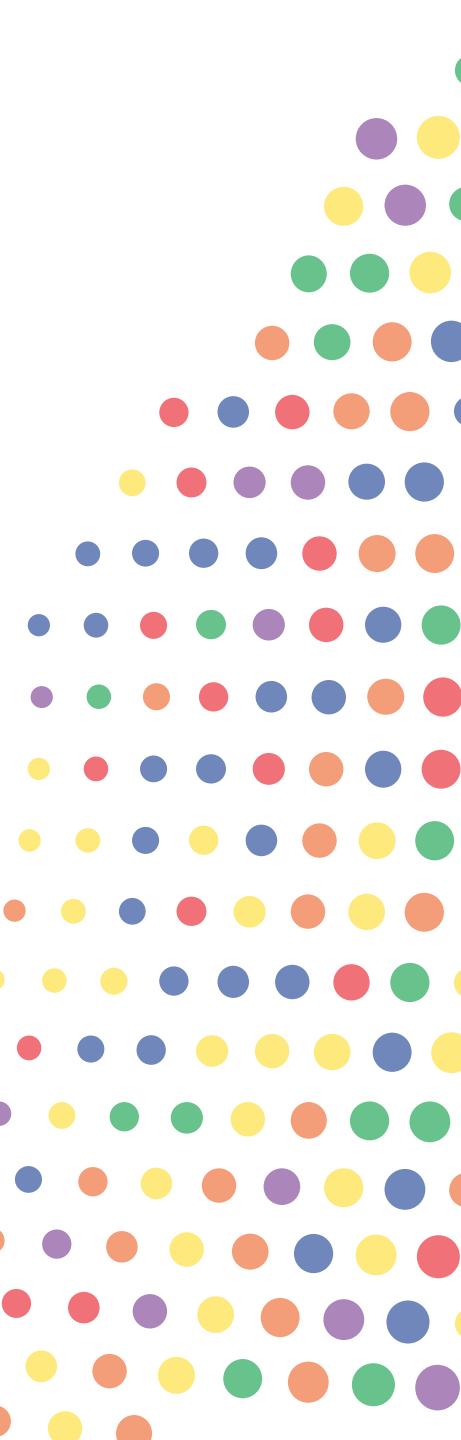












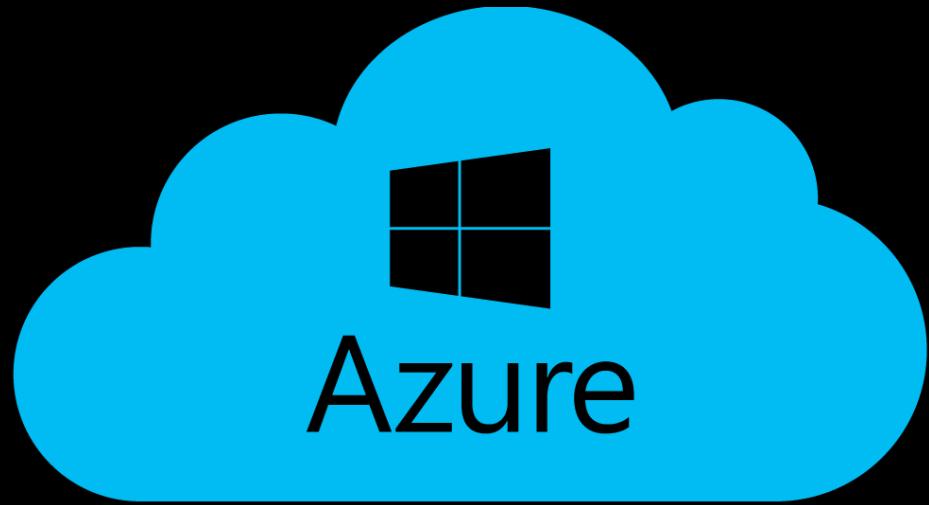










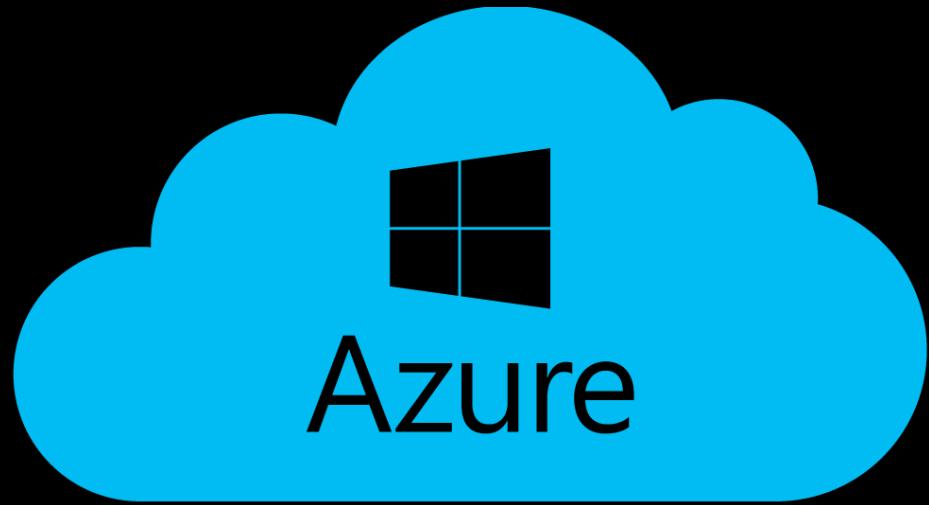




















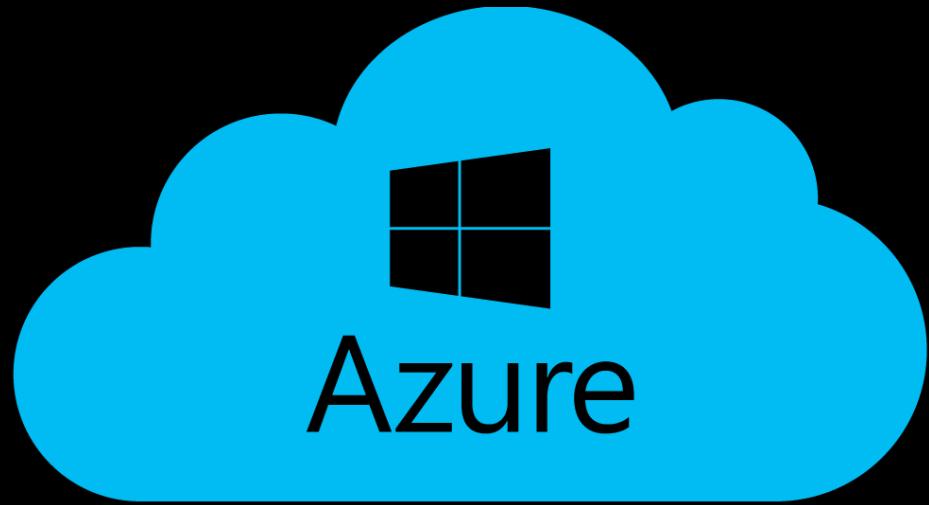










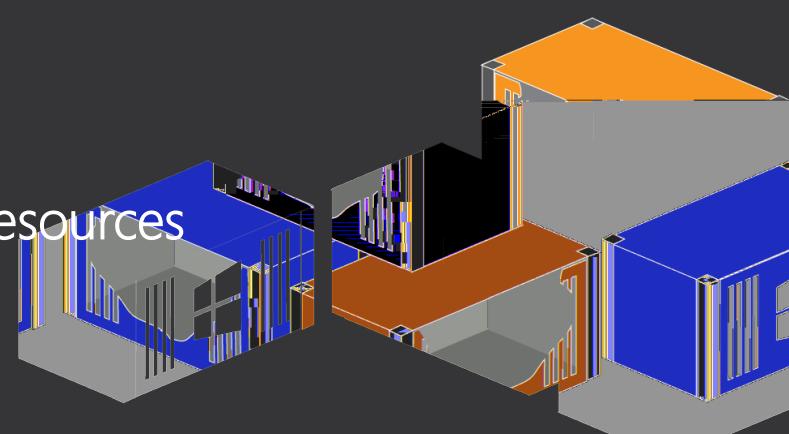


# IT Governance

Good IT governance involves planning your initiatives and setting priorities on a strategic level to help manage and prevent issues.

You need good governance when:

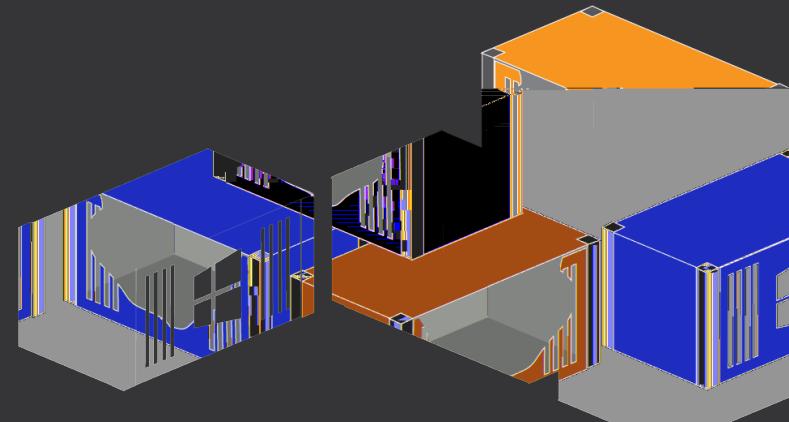
- You have multiple engineering teams working in Azure
- You have multiple subscriptions in your tenant
- You have regulatory requirements which must be enforced
- You want to ensure standards are followed for all IT allocated resources



# Need of Good Governance

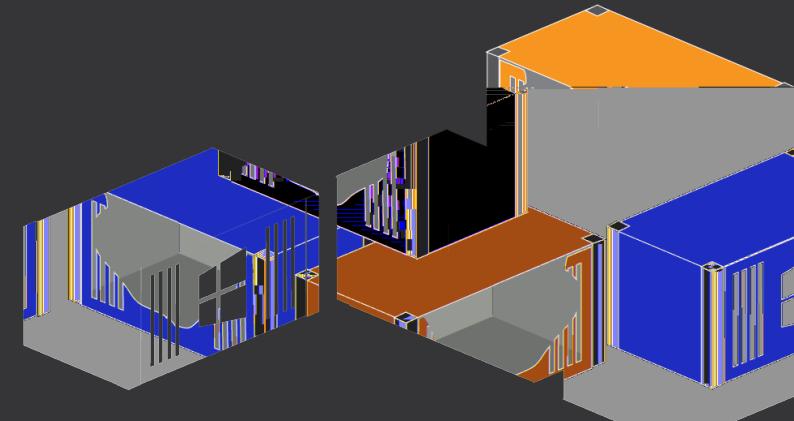
Your organization which need to enforced:

- All VM should be created should be of D series
- All resources should be tagged properly
- All resources should be created only in selected regions closer to your customers



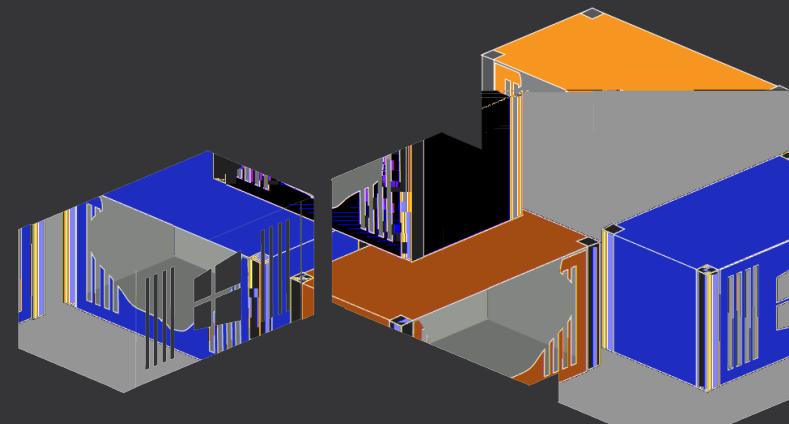
# Good Governance

- Azure Policies
- Initiatives
- Role-Based Access Control (RBAC)
- Lock
- Azure Blueprints



# Azure Policy

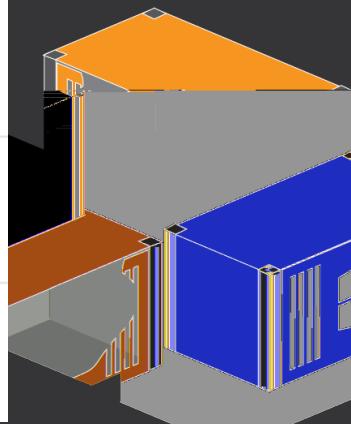
Azure Policy is an Azure service you use to create, assign and, manage policies. These policies enforce different rules and effects over your resources so that those resources stay compliant with your corporate standards and service level agreements.



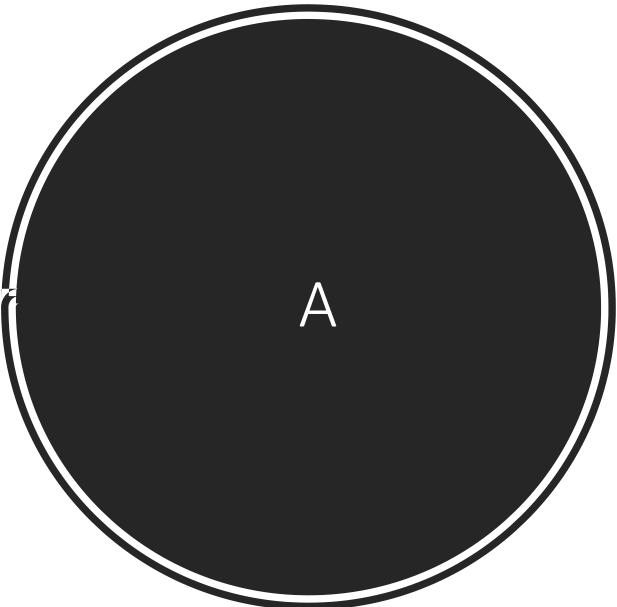
# Policy effects

Requests to create or update a resource through Azure Resource Manager are evaluated by Azure Policy first. Policy creates a list of all assignments that apply to the resource and then evaluates the resource against each definition.

Policy Effect	What happens?
Deny	The resource creation/update fails due to policy.
Disabled	The policy rule is ignored (disabled). Often used for testing.
Append	Adds additional parameters/fields to the requested resource during creation or update. A common example is adding tags on resources such as Cost Center or specifying allowed IPs for a storage resource.
Audit, AuditIfNotExists	Creates a warning event in the activity log when evaluating a non-compliant resource, but it doesn't stop the request.
DeployIfNotExists	Executes a template deployment when a specific condition is met. For example, if SQL encryption is enabled on a database, then it can run a template after the DB is created to set it up a specific way.







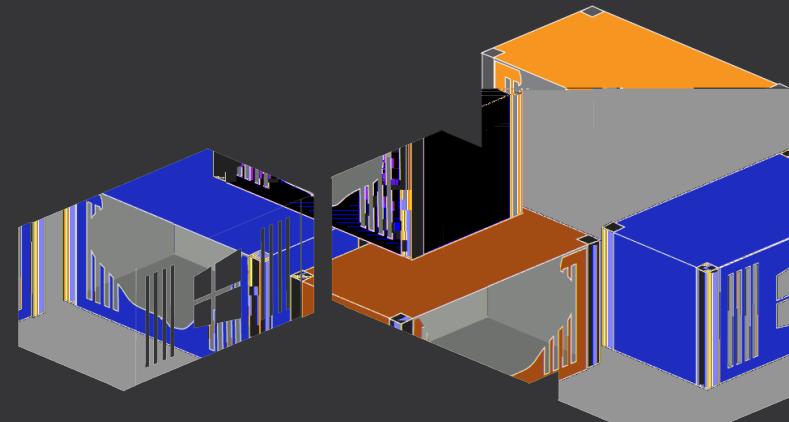
## Examples of Built-In Policies

- Require SQL Server 12.0
- Allowed Storage Account SKUs
- Allowed Locations
- Allowed Virtual Machine SKUs
- Apply tag and its default value
- Not allowed resource types

# Initiatives

An initiative definition is a set or group of policy definitions to help track your compliance state for a larger goal.

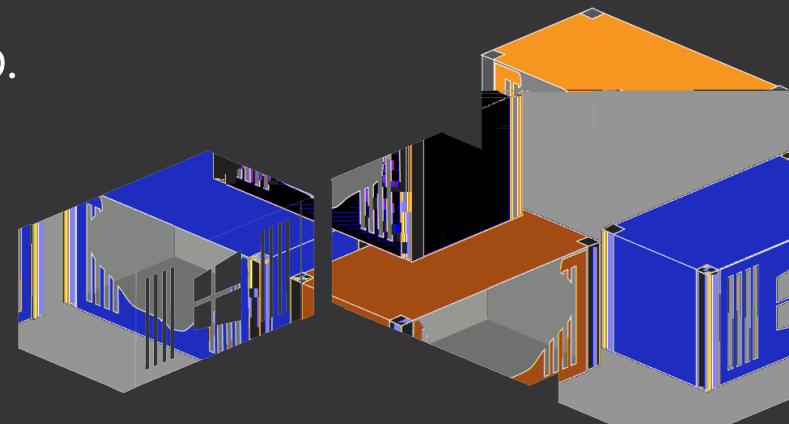
Even if you have a single policy, it is recommended to use initiatives if you anticipate increasing the number of policies over time.



# Role-based access control (RBAC)

Examples of when you might use RBAC, when you want to:

- Allow one user to manage VMs in a subscription, and another user to manage Vnet.
- Allow a database administrator (DBA) group to manage SQL databases in a subscription.
- Allow a user to manage all resources in a resource group, such as VMs, websites, and subnets.
- Allow an application to access all resources in a resource group.



# Locks

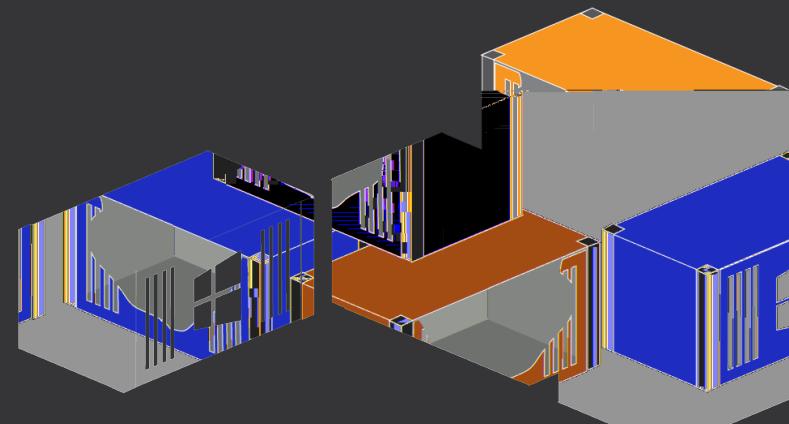
Locks help you prevent accidental deletion or modification of your Azure resources.

You may need to lock a subscription, resource group, or resource to prevent other users in your organization from accidentally deleting or modifying critical resources.

You can set the lock level to

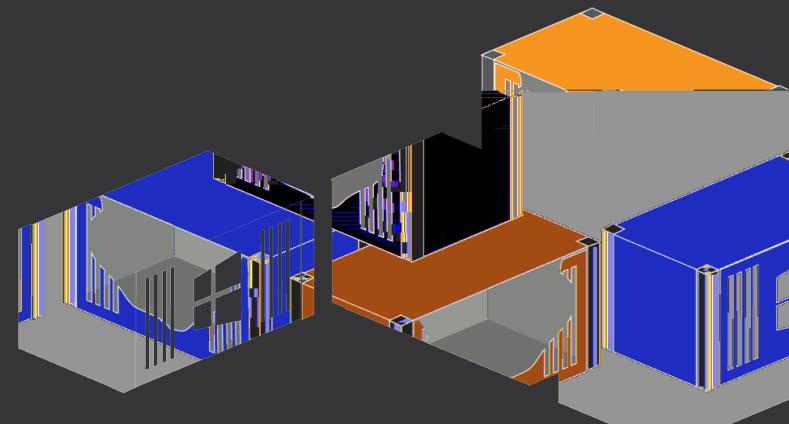
Delete

ReadOnly



# Azure Blueprints

Azure Blueprints enables cloud architects and central information technology groups to define a repeatable set of Azure resources that implements and adheres to an organization's standards, patterns, and requirements..



# Azure Blueprints

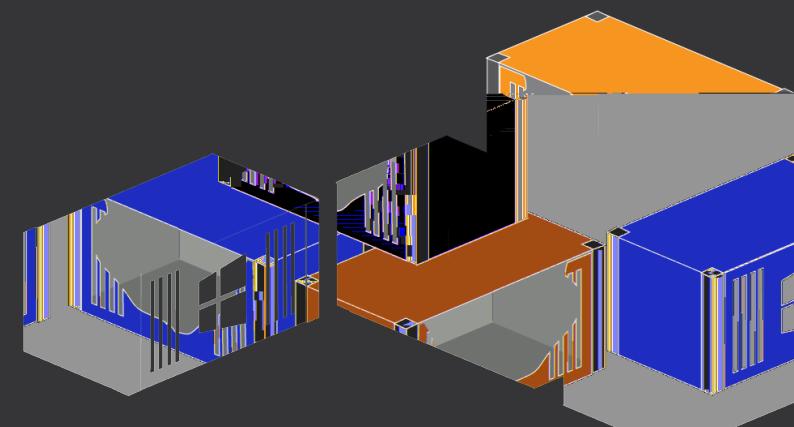
Azure Blueprints is a declarative way to orchestrate the deployment of various resource templates and other artifacts, such as:

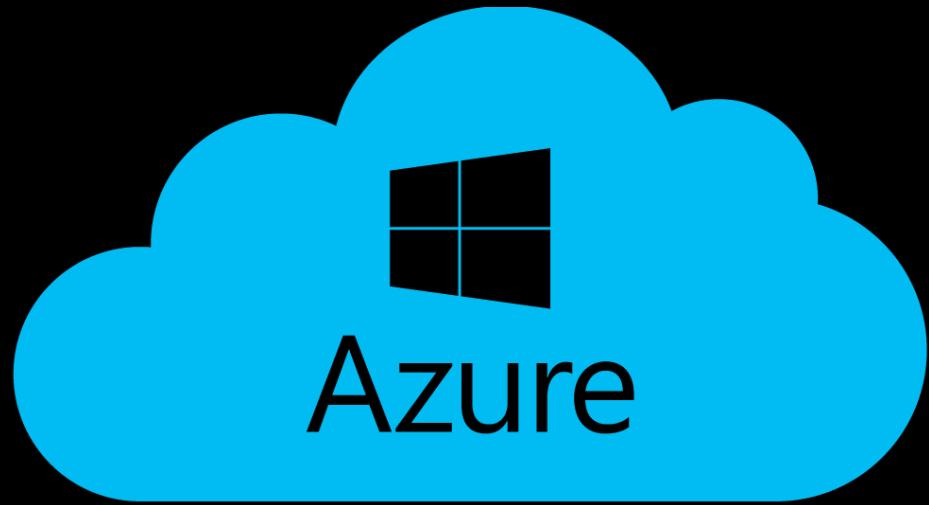
Role assignments

Policy assignments

Azure Resource Manager templates

Resource groups

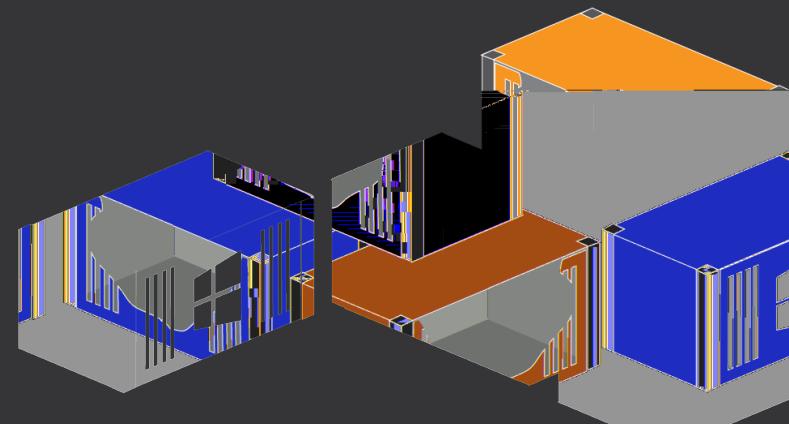




# Azure Monitor

Azure Monitor maximizes the availability and performance of your applications by delivering a comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments.

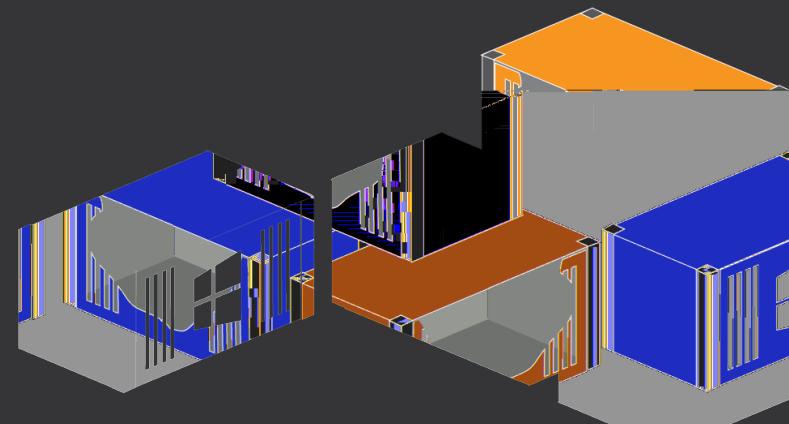
It helps you understand how your applications are performing and proactively identifies issues affecting them and the resources they depend on.



# Azure Monitor

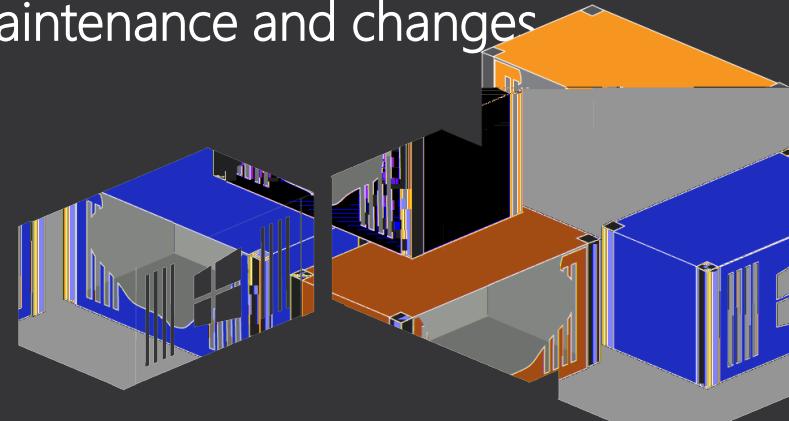
Can collect Data from different sources, such as :

- ✓ Application monitoring data
- ✓ Guest OS monitoring data
- ✓ Azure resource monitoring data
- ✓ Azure subscription monitoring data
- ✓ Azure tenant monitoring data

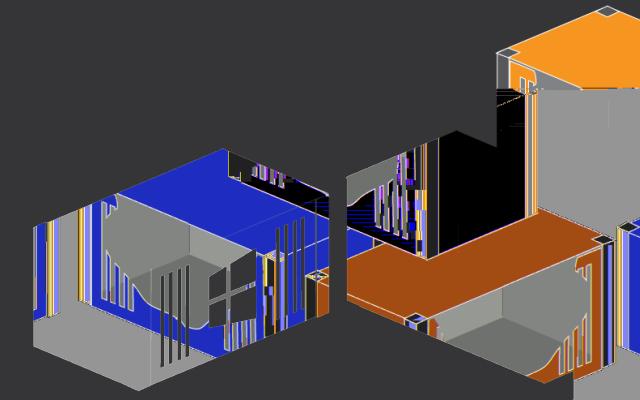


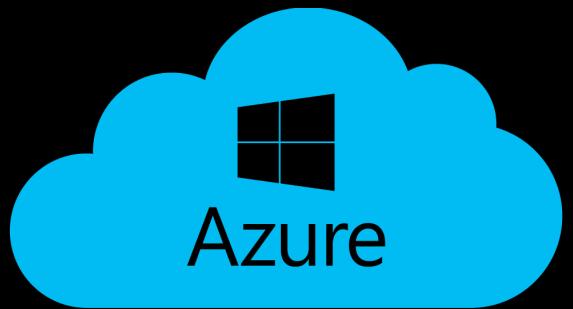
# Azure Service Health

- Azure Service Health is a suite of experiences that provide personalized guidance and support when issues with Azure services affect you.
- It can notify you, help you understand the impact of issues, and keep you updated as the issue is resolved.
- Azure Service Health can also help you prepare for planned maintenance and changes that could affect the availability of your resources.



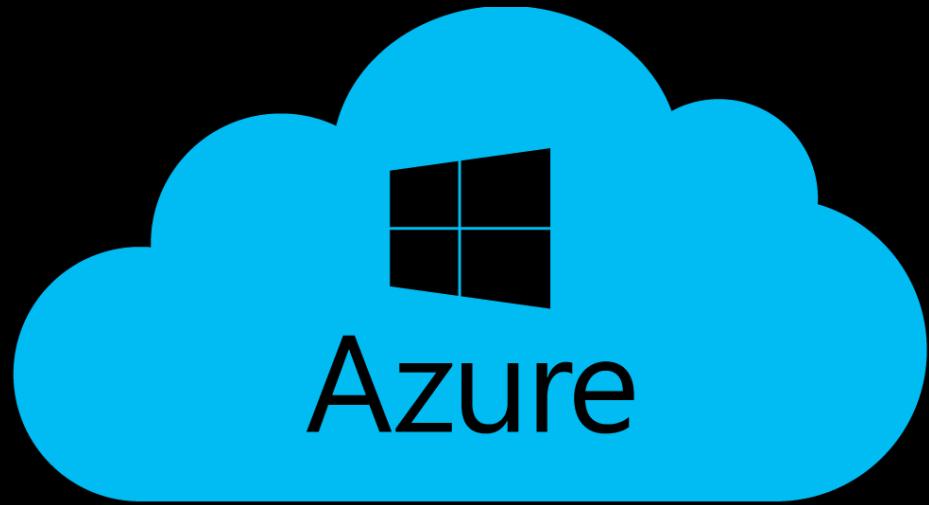
# Azure Service Health





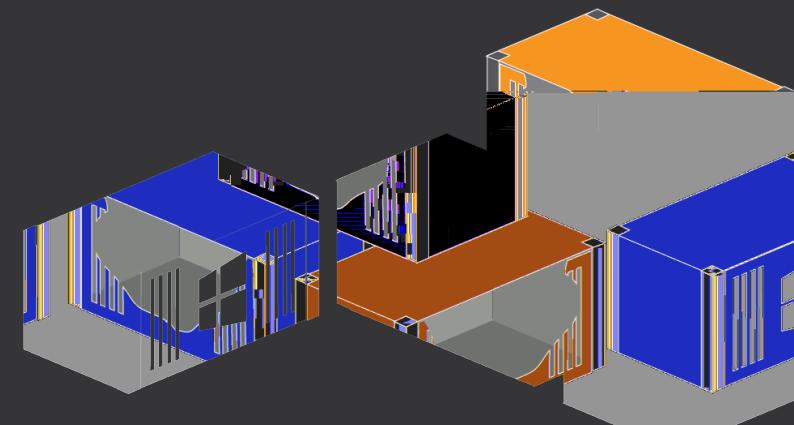
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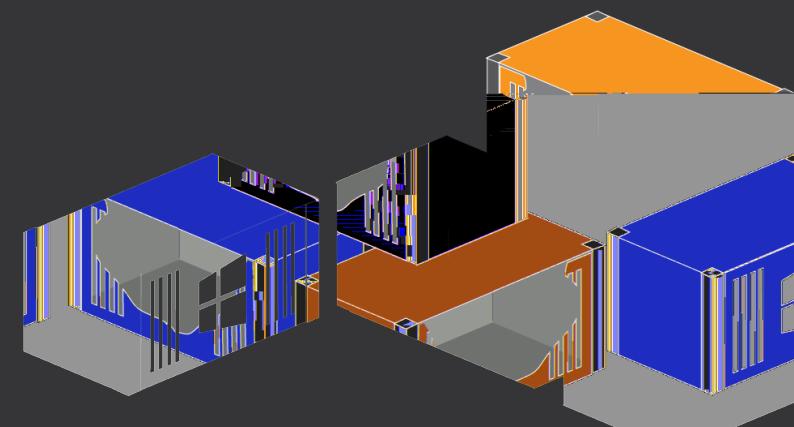




# Azure Account

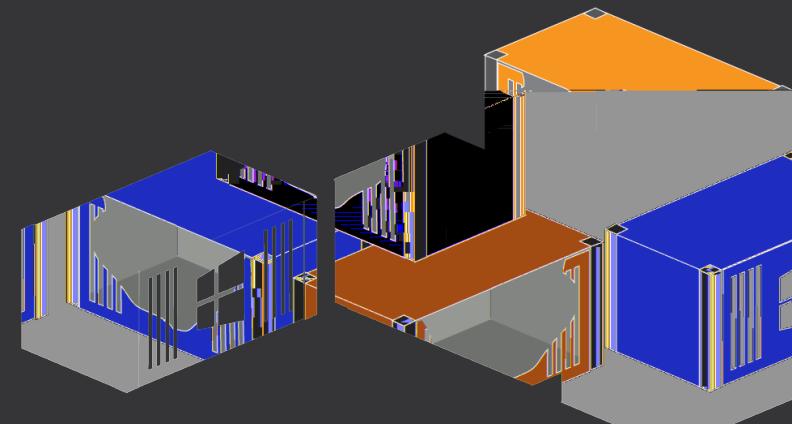


# Azure Subscriptions

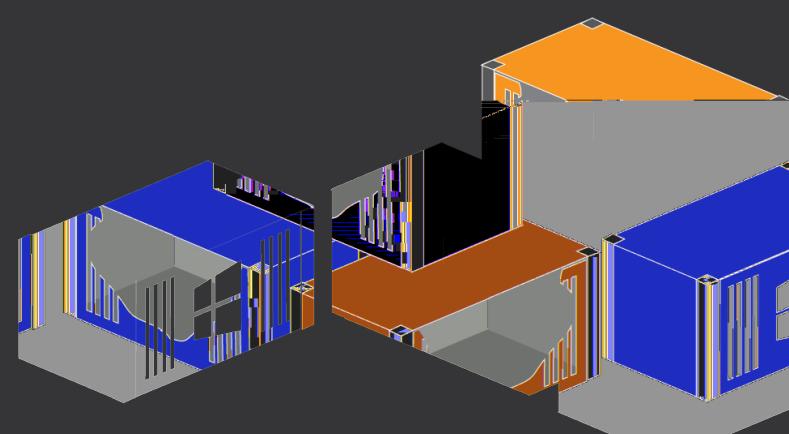


# Azure Subscriptions

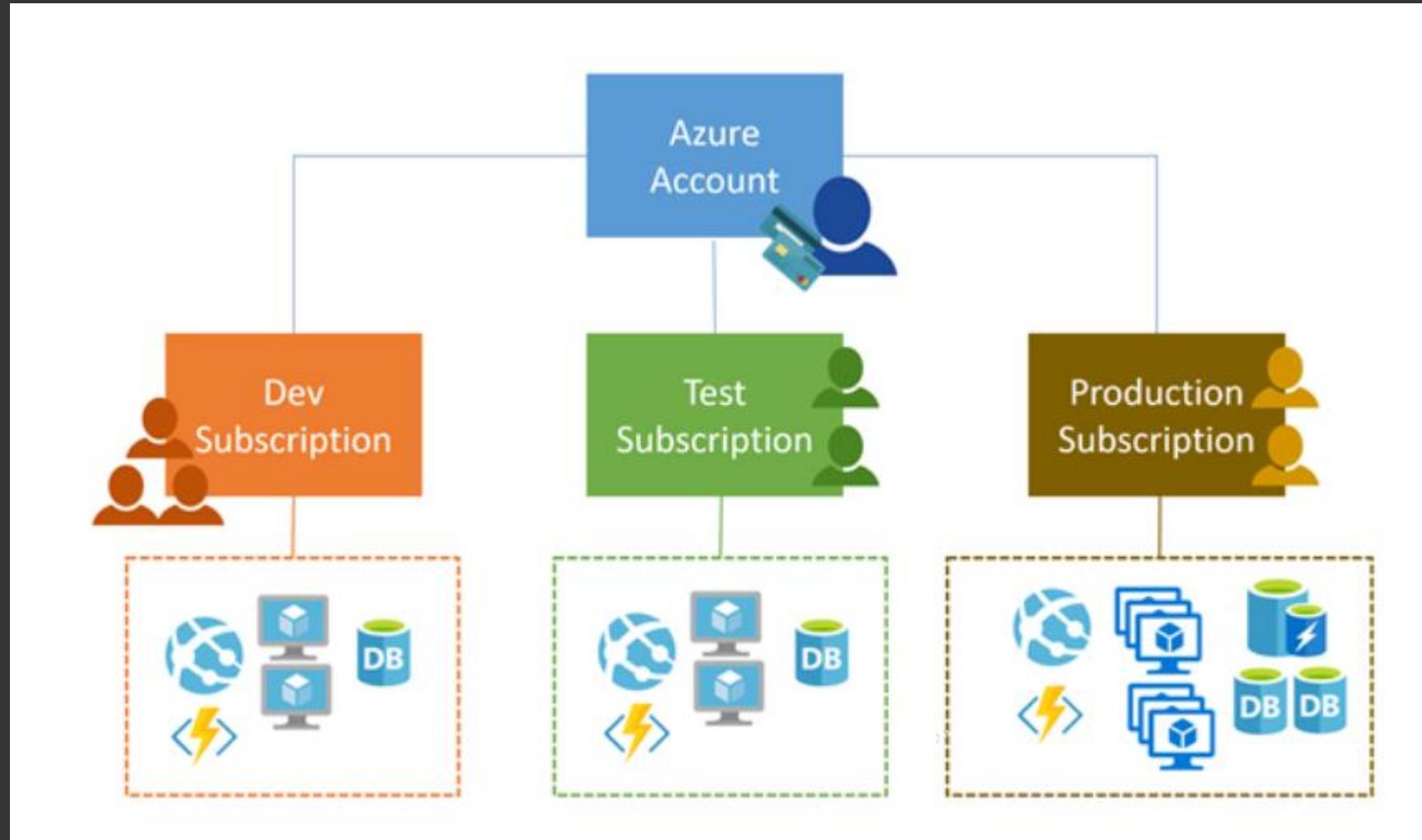
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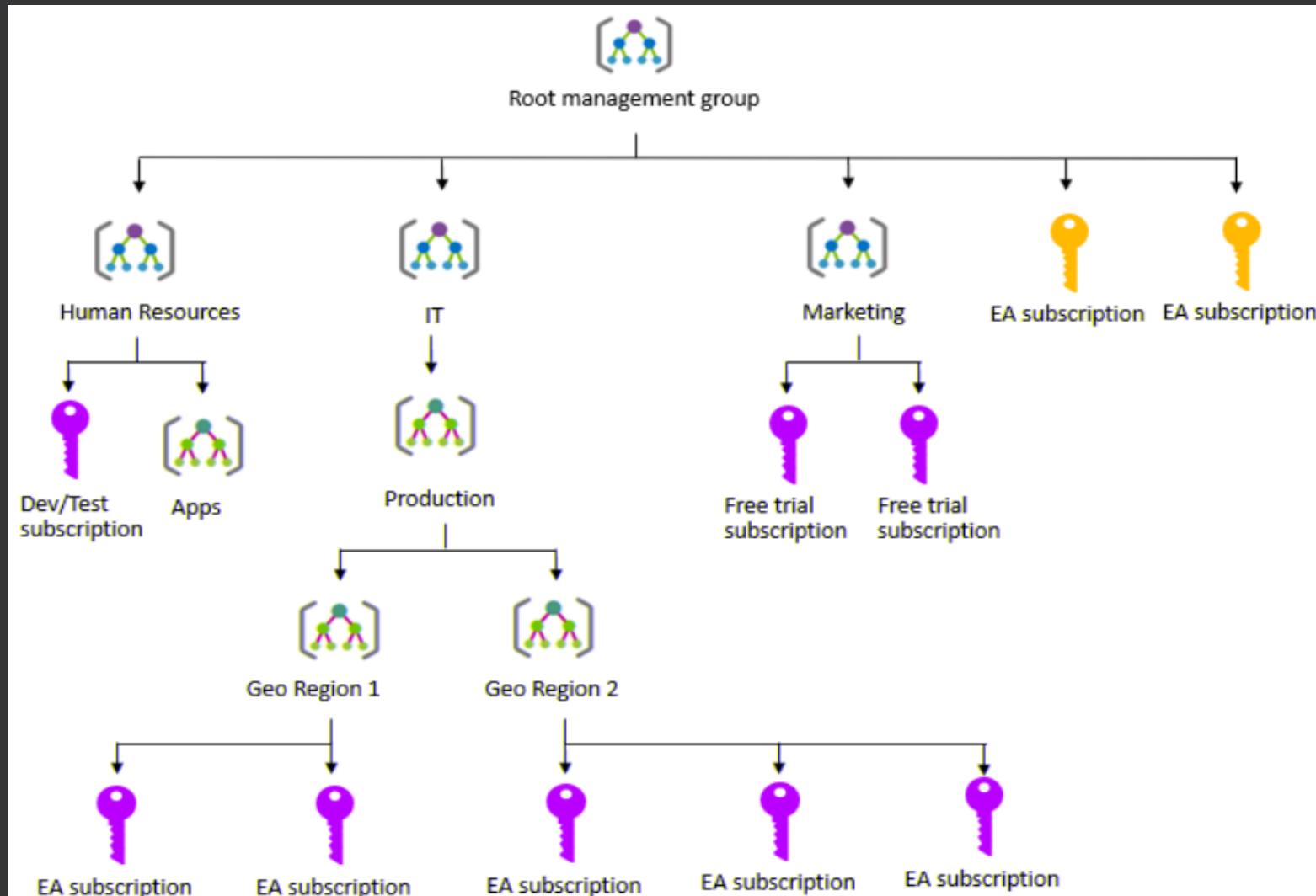
# Azure Subscriptions



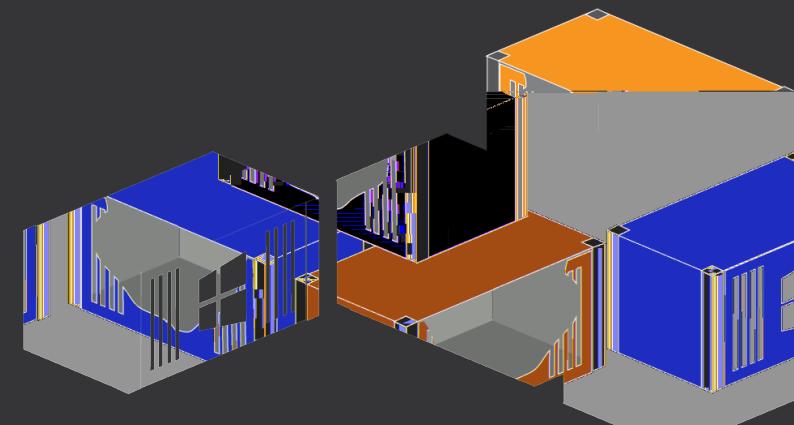
# Azure Subscriptions



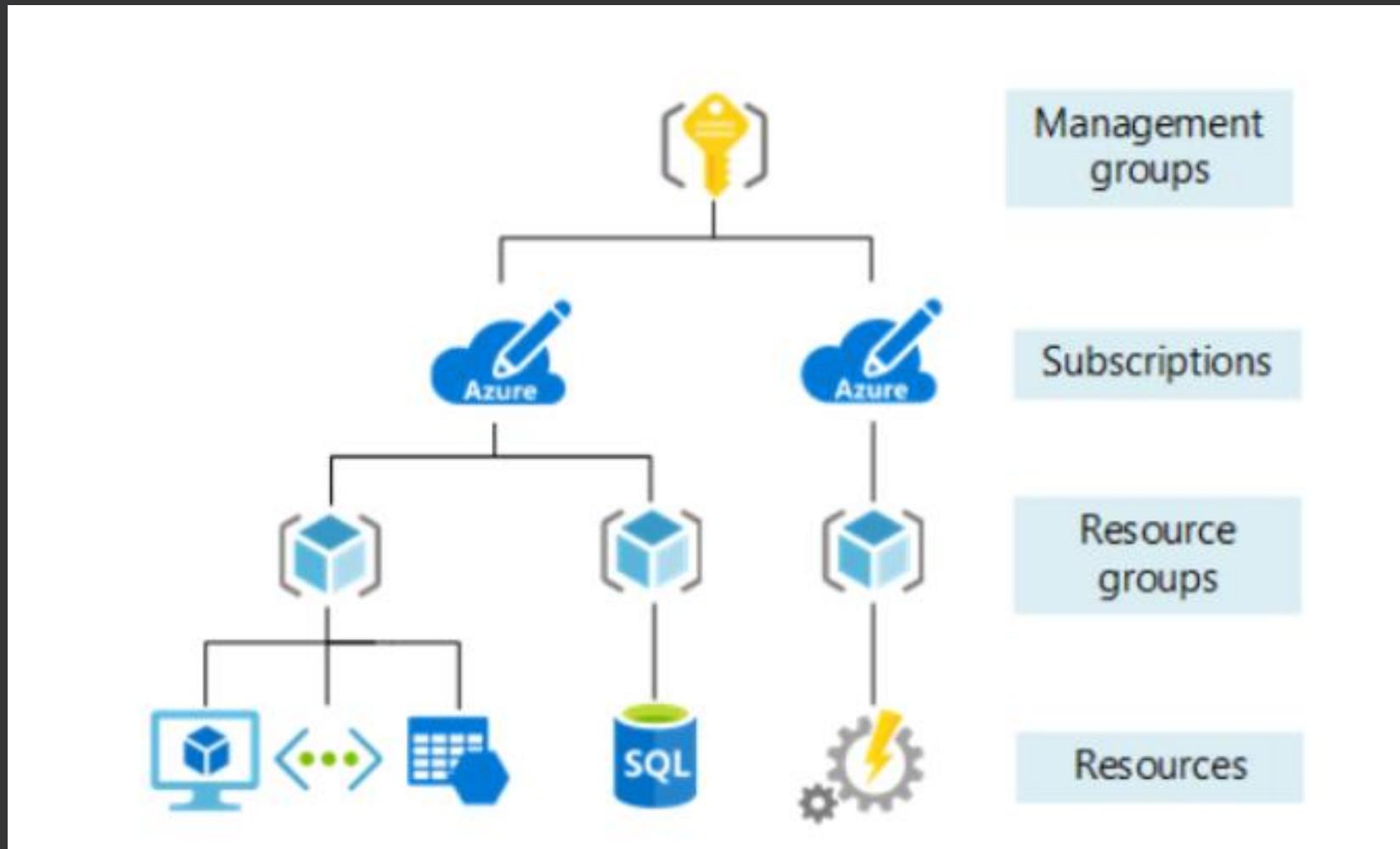
# Management Groups



# Management Groups



# Object Hierarchy

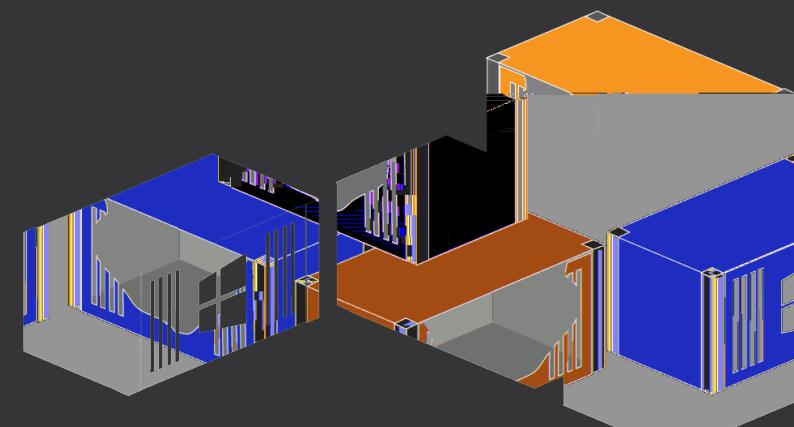


# <https://azure.microsoft.com/en-in/support/plans/>

	Purchase support	Purchase support	Purchase support	Contact Premier	
Scope	Available to all Microsoft Azure accounts	Microsoft Azure: Trial and non-production environments	Microsoft Azure: Production workload environments	Microsoft Azure: Business-critical dependence	All Microsoft Products, including Azure: Substantial dependence across multiple products
Customer Service, Self-Help and Communities	24x7 access to billing and subscription support, online self-help, documentation, whitepapers and support forums	24x7 access to billing and subscription support, online self-help, documentation, whitepapers and support forums	24x7 access to billing and subscription support, online self-help, documentation, whitepapers and support forums	24x7 access to billing and subscription support, online self-help, documentation, whitepapers and support forums	24x7 access to billing and subscription support, online self-help, documentation, whitepapers and support forums
Best Practices	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations
Health Status and Notifications	Access to personalised Service Health Dashboard and Health API	Access to personalised Service Health Dashboard and Health API	Access to personalised Service Health Dashboard and Health API	Access to personalised Service Health Dashboard and Health API	Access to personalised Service Health Dashboard and Health API
Technical Support	Business hours access <sup>1</sup> to Support Engineers via email	24x7 access to Support Engineers via email and phone	24x7 access to Support Engineers via email and phone	24x7 access to Support Engineers via email and phone	24x7 access to Support Engineers via email and phone
Microsoft Cloud Components	unlimited cases				
Interoperability and Configuration	Third-Party Software Support	Interoperability and configuration	Interoperability and configuration	Interoperability and configuration	Interoperability and configuration

# Azure Support Options

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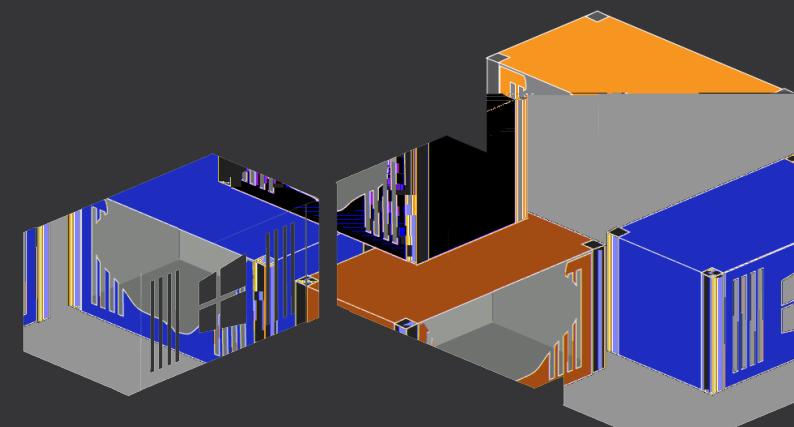


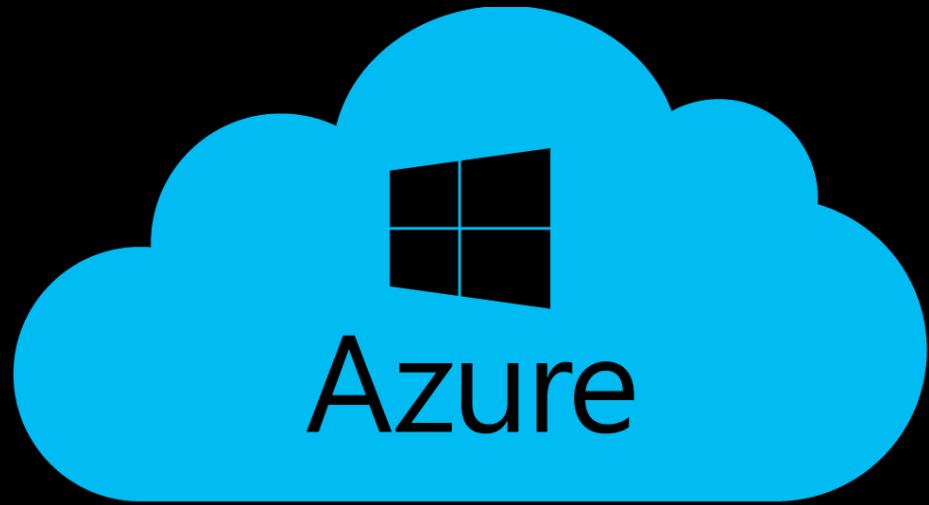
# Available support channels outside of support plan channels

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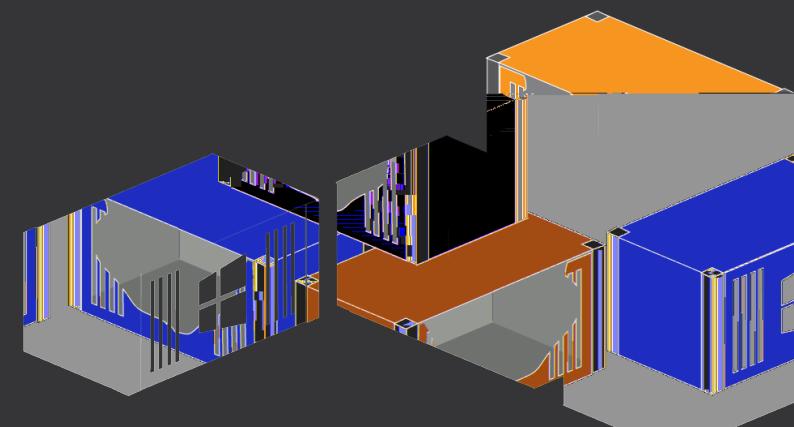
# Knowledge Center

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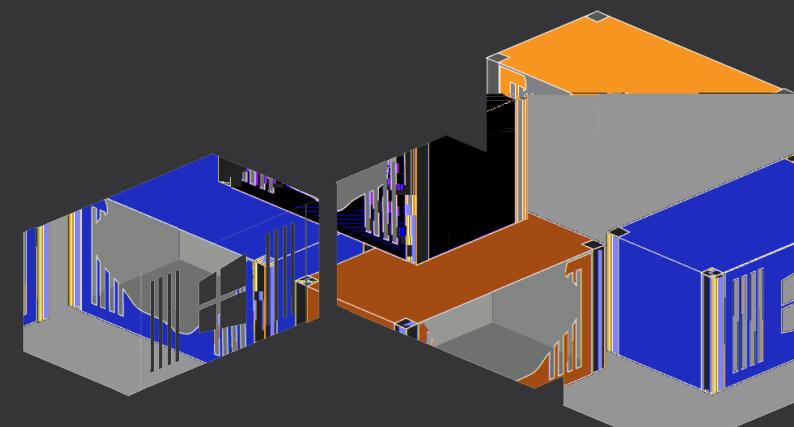




# Service Level Agreements (SLAs)



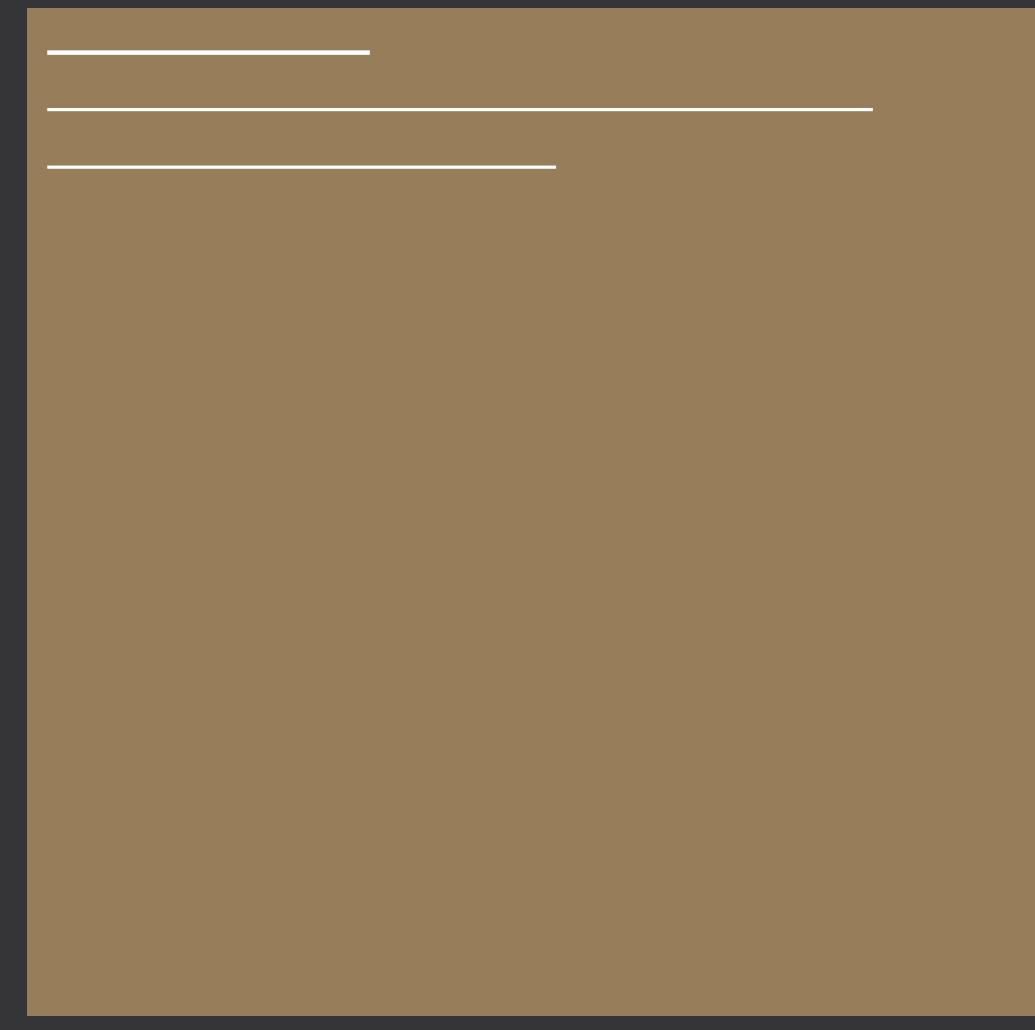
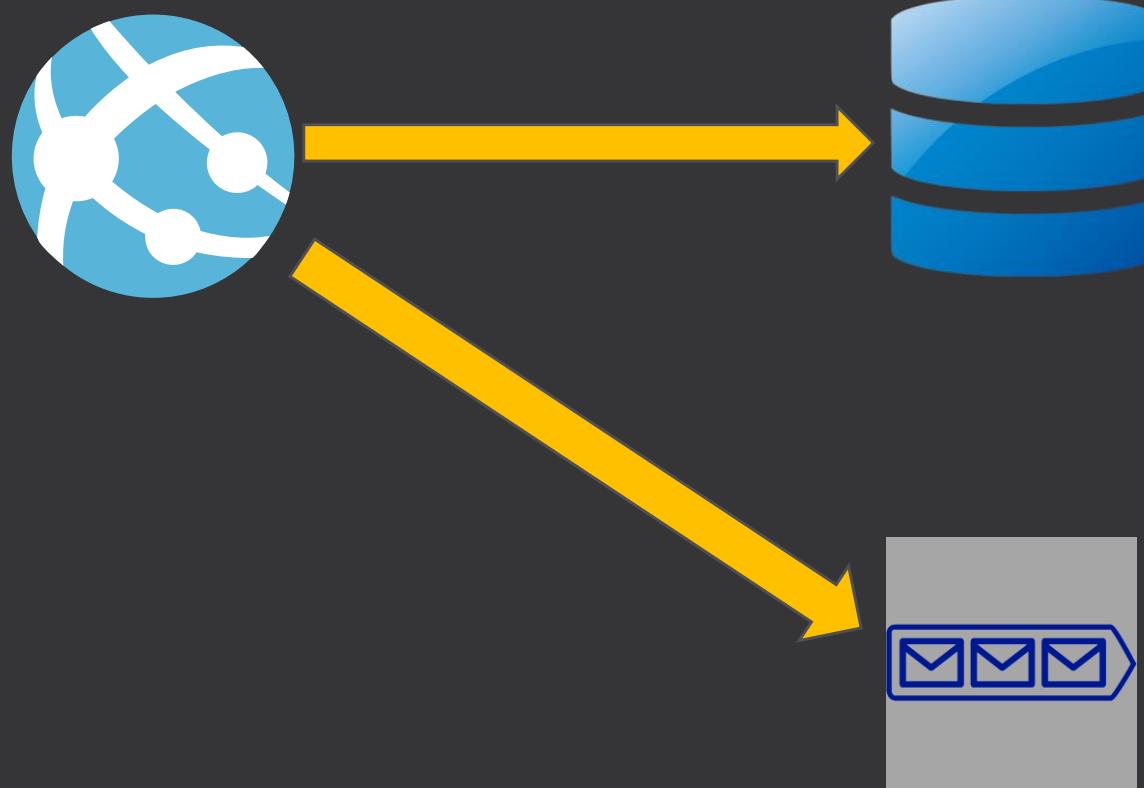
# Service Level Agreements (SLAs)



# Composite SLAs



# Composite SLAs



# Service Credits

MONTHLY UPTIME PERCENTAGE

< 99.9

< 99

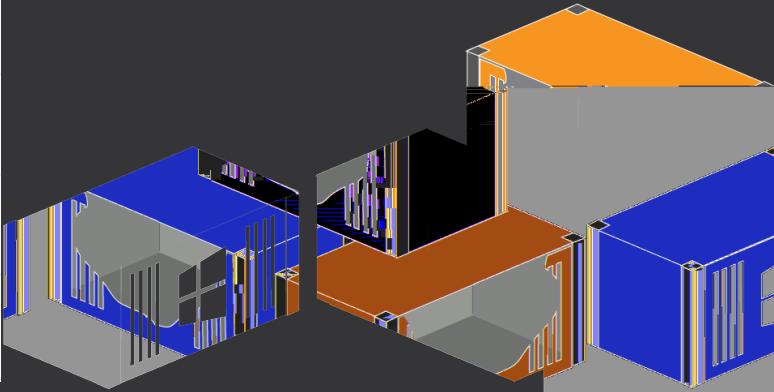
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SERVICE CREDIT PERCENTAGE

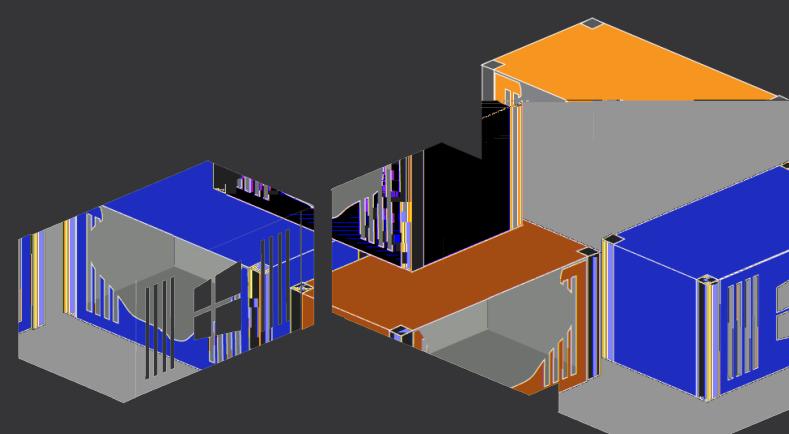
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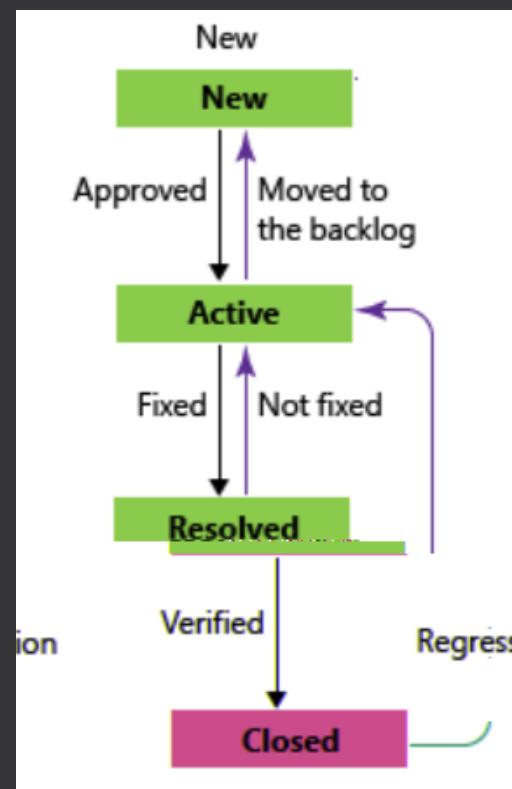
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# Public and Private Preview Features



# General Availability (GA)



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