

About Rahul Joshi:

22 Years exp, 15th year as Microsoft certified trainer & AWS Authorized instructor

- Helping customers add Application Modernization capabilities by Replatforming ASP.NET sites to Azure App Services, Rearchitecting of monolithic applications to microservices or containers.
- Reengineering of legacy applications to cloud-native apps with improved user experience.
- Designing cloud strategy, solution design, cloud adoption frameworks, app modernization and cloud migration.
- Develop Proof of Concept by working closely with Microsoft and Amazon Web Services and design frameworks for cloud adoption and Enterprise Architecture, Cloud Infrastructure/ Migrations.
- Responsible for Migration to Microsoft Azure (Brownfield and Greenfield Projects). In-Premise To Cloud Migration and Storage Migration.
- Perform Application Readiness Assessment, an investigation at application level in preparation for cloud deployment, to look at issues that will either block or detract from the application's abilities to fully utilize the cloud, then act on this report to ensure cloud readiness.
- Designing applications for scalability
- Migrating to PaaS & Container Architecture, Migrating from Traditional .NET Application Web Apps

"Executed more than 580+ Trainings engagements on Microsoft Azure for more than 220+ clients"

Google Drive Link:

https://drive.google.com/drive/folders/181ebdbVLk5xpLu5ArR_BFWeM9b3N2x3?usp=sharing

Recording:

Please Note, Post Session Completes Zoom Recording Link will be shared on WhatsApp, Download it from Zoom Directly. It will not be uploaded on Google Drive

One Note Documentation:

<https://1drv.ms/u/s!Aht-oGFG3XwWgagy2dnZHuXQmk0wkg>

Case Study: Good to know for Fundamentals, Imp for Admin, Imp for Dev / Architect

The customer was quite impressed with the way the Azure Masters provided a way to create a Virtual Machine, the customer was impressed with the finer level details that went into the explanation. The customer now has a different requirement.

High Availability is very important and just having 1 virtual machine may not serve that. So, the customer wants to have a bundle of Virtual Machines which can serve the customers and also help achieve High Availability, Performance, Reliability, Scalability and help the business become 365*24*7 running venture.

The customer is planning to have 1 Virtual Machine minimum and if the CPU goes above 70% then the customer wants another Virtual Machine to come into picture and get provisioned. If the CPU < 30% then the additional virtual machine should be removed and de-allocated. This way, maximum 3 virtual machines are acceptable.

STAR

Situation = Case Study

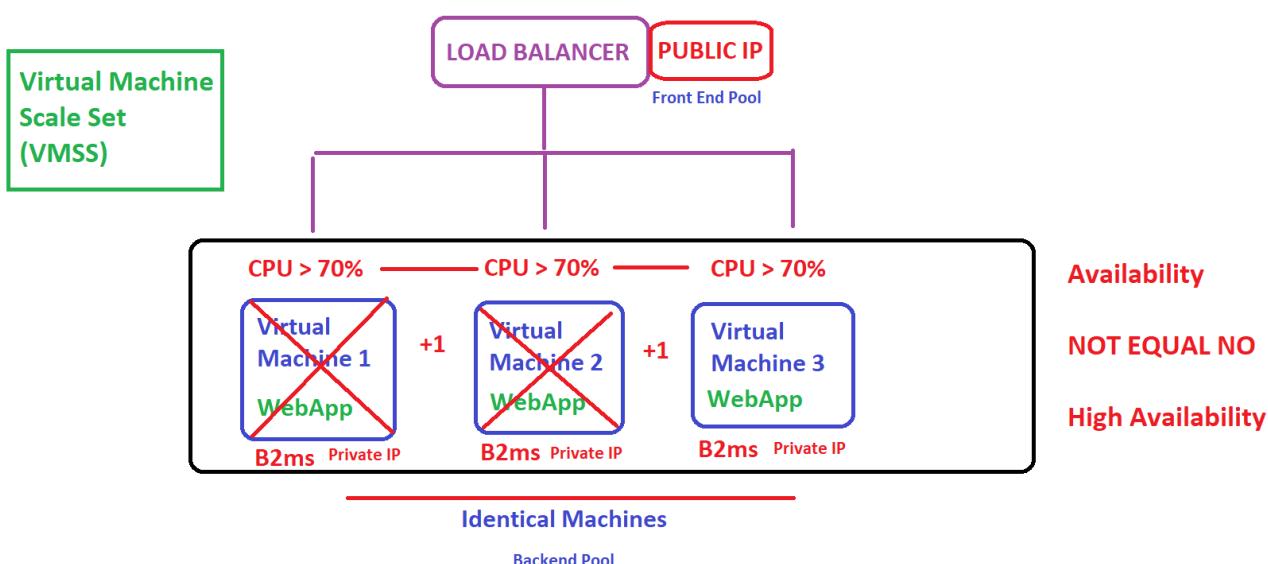
Interviews | Architecting solutions | EXAM

Task: Creating Virtual Machine Scale Set

When should we use Virtual Machine Scale Set

1. Big data Hadoop - 100 Nodes - For Analytics Purpose - 70% SPOT Instanced 30% On-Demand
2. 70% Instance, if 30% are removed by Microsoft, ITs Oks - Stateless Workload

Action:



<https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/overview>

FAQ:

<https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-faq>

↳ How many VMs can I have in a scale set?

A scale set can have 0 to 1,000 virtual machines (VMs) based on platform images, or 0 to 600 VMs based on custom images.

The screenshot shows the Azure portal's 'All services' view under the 'Compute' category. The 'Virtual machine scale sets' option is highlighted with a yellow box. The left sidebar shows various service categories like Home, Dashboard, All services, Favorites, and Compute. The main area displays a list of services including Virtual machines, Virtual machine scale sets, App Services, Function App, Container instances, Service Fabric clusters, and Kubernetes services. Below this, there is a 'Virtual machine scale sets' blade with a 'Create' button and a table showing 0 items.

Create a virtual machine scale set

This screenshot shows the 'Create a virtual machine scale set' blade. It includes fields for 'Subscription' (MSDN Platforms), 'Resource group' (rg-vmss-remove), 'Virtual machine scale set name' (webscaleset), 'Region' (US Central US), and 'Availability zone' (None). A note about the scale set model is present at the bottom.

In real world, it is mandatory to keep the VMs in maximum zones, example 1st VM - 1st DC, 2nd VM in 2nd DC, 3rd VM in 3rd DC, 4th VM in 1st DC, 5th in 2nd DC and 6th VM in 3rd DC.

99.99% Service Level Agreement

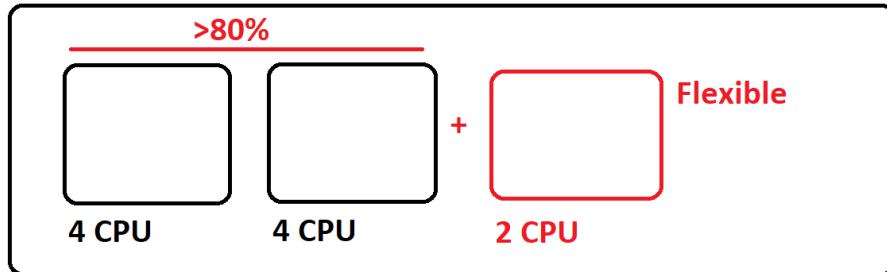
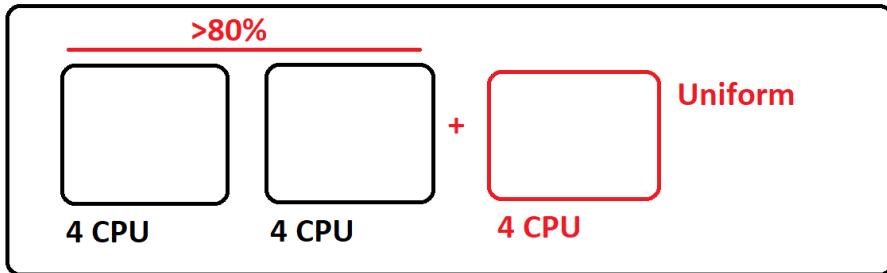
This is only for Training

This screenshot shows the 'This is only for Training' blade, which has a dropdown for 'Availability zone' set to 'None'.

Interviews:

In flexible orchestration mode, you manually create and add a virtual machine of any configuration to the scale set.

In uniform orchestration mode, you define a virtual machine model and Azure will generate identical instances based on that model.



Orchestration

A scale set has a "scale set model" that defines the attributes of virtual machine instances (size, number of data disks, etc). As the number of instances in the scale set changes, new instances are added based on the scale set model.

[Learn more about the scale set model](#)

- Orchestration mode * ⓘ
- Uniform:** optimized for large scale stateless workloads with identical instances.
 - Flexible:** achieve high availability at scale with identical or multiple virtual machine types

Good Documentation:

<https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-orchestration-modes>

Scale sets with Flexible orchestration

Achieve high availability at scale with identical or multiple virtual machine types.

With Flexible orchestration, Azure provides a unified experience across the Azure VM ecosystem. Flexible orchestration offers high availability guarantees (up to 1000 VMs) by spreading VMs across fault domains in a region or within an Availability Zone. This enables you to scale out your application while maintaining fault domain isolation that is essential to run quorum-based or stateful workloads, including:

- Quorum-based workloads
- Open-Source databases
- Stateful applications
- Services that require High Availability and large scale
- Services that want to mix virtual machine types, or leverage Spot and on-demand VMs together
- Existing Availability Set applications



Instance details

Image *	<input type="text" value="Windows Server 2016 Datacenter - Gen2"/>
	See all images Configure VM generation
Run with Azure Spot discount	<input type="checkbox"/>
Size *	<input type="text" value="Standard_B2ms - 2 vcpus, 8 GiB memory (15.248.79/month)"/>
	See all sizes

Administrator account

Username *	rahul	✓
Password *	*****	✓
Confirm password *	*****	✓

Licensing

Save up to 49% with a license you already own using Azure Hybrid Benefit. [Learn more](#)

Would you like to use an existing Windows Server license? *

Review + create **< Previous** **Next : Disks >**

Create a virtual machine scale set ...

Basics **Disks** Networking Scaling Management Health Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

Disk options

OS disk type * **Standard HDD (locally-redundant storage)**

The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

Encryption type * **(Default) Encryption at-rest with a platform-managed key**

Enable encryption at host

Data disks

You can add and configure additional data disks for your virtual machine scale set or attach existing disks. This VMSS also comes with a temporary disk.

LUN	Name	Size (GiB)	IOPS	THRO...	Disk type	Host cachin

[Create and attach a new disk](#)

Advanced

Review + create **< Previous** **Next : Networking >**

Create a virtual machine scale set ...

Basics Disks **Networking** Scaling Management Health Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more about VMSS networking](#)

Virtual network configuration

Azure Virtual Network (VNet) enables many types of Azure resources to securely communicate with each other, the internet, and on-premises networks. [Learn more about VNets](#)

Virtual network * **(New) rg-vmss-remove-vnet (recommended)**

[Create virtual network](#)

Network interface

A network interface enables an Azure virtual machine to communicate with internet, Azure, and on-premises resources. A VM can have one or more network interfaces.

+ Create new nic	Delete			
<input type="checkbox"/>	NAME	CREATE PUBLI...	SUBNET	NETWORK SECURI...
<input type="checkbox"/>	rg-vmss-remove-vnet...	No	default (10.0.0.0/16)	Basic

Load balancing

You can place this virtual machine scale set in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Review + create **< Previous** **Next : Scaling >**

Public inbound ports * ⓘ

None

Allow selected ports

*Select inbound ports

RDP (3389)

⚠ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Public IP address ⓘ

Disabled **Enabled**

Accelerated networking ⓘ

Disabled Enabled

OK **Cancel**

By default, the Virtual Machines that will be the backend, will be part of the Virtual Network, by default, RDP and Public IP is disabled for these VMs, and that is BEST PRACTICE, but, in our training, we want to login to the VM and burn the CPU, so it crosses 70% and that will trigger Auto Scale and add one more instance, that is the only reason, we are enabling the above settings, **In real world, DO NOT GIVE PUBLIC IP TO THE BACKEND VMs**

Create a virtual machine scale set ...

inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution.
[Learn more about VMSS networking](#)

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Network interface

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NAME CREATE PUBL... SUBNET NETWORK SECUR... ACCELERATED N...

rg-vmss-remove-vnet... Yes default (10.0.0.0/16)

Basic

Off



Load balancing

You can place this virtual machine scale set in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Use a load balancer



Review + create **Next : Scaling >**

This automated and elastic behavior reduces the management overhead to monitor and optimize the performance of your scale set. The number of virtual machines in the scale set (0 - 1000).

Initial instance count * ⓘ

Scaling

Scaling policy ⓘ Manual Custom

Minimum number of instances * ⓘ

Maximum number of instances * ⓘ

Scale out

CPU threshold (%) * ⓘ

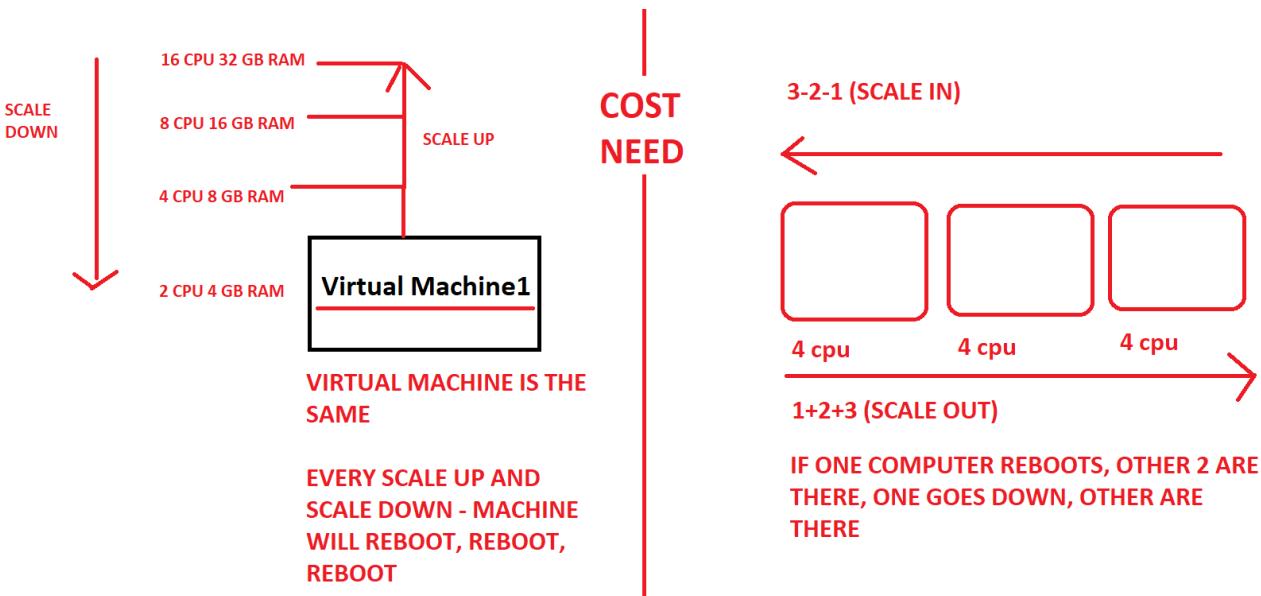
Duration in minutes * ⓘ

Number of instances to increase by * ⓘ

Scale in

CPU threshold (%) * ⓘ

Number of instances to decrease by * ⓘ



EXAM Questions

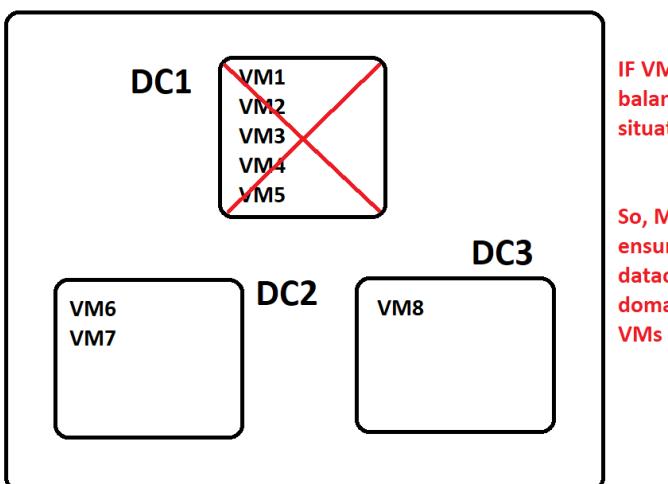
Scale-In policy

Configure the order in which virtual machines are deleted. Default - Balance across availability zones and fault domains, then delete VM with highest instance ID.

Learn more about scale-in policies. ↗

Scale-In policy

Default - Balance across availability zones and fault domains, then delete VM with highest instance ID.
Newest VM - Balance across availability zones, then delete the newest created VM
Oldest VM - Balance across availability zones, then delete the oldest created VM
Default - Balance across availability zones and fault domains, then delete V...



Create a virtual machine scale set ...

Maximum number of instances * ⓘ 2 ✓

Scale out

CPU threshold (%) * ⓘ 70 ✓

Duration in minutes * ⓘ 5 ✓

Number of instances to increase by * ⓘ 1 ✓

Scale in

CPU threshold (%) * ⓘ 30 ✓

Number of instances to decrease by * ⓘ 1 ✓

Diagnostic logs

Collect diagnostic logs from Autoscale ⓘ

Scale-In policy

Configure the order in which virtual machines are selected for deletion during a scale-in operation.
Learn more about scale-in policies. ⓘ

Scale-in policy Default - Balance across availability zones and fault domains, then delete V... ▾

[Review + create](#)

< Previous

Next : Management >

Create a virtual machine scale set ...

✓ Your subscription is protected by Microsoft Defender for Cloud basic plan.

Upgrade policy

Upgrade mode * ⓘ

Manual - Existing instances must be manually upgraded

Monitoring

Boot diagnostics ⓘ

Enable with managed storage account (recommended)

Enable with custom storage account

Disable

With overprovisioning turned on, the scale set actually spins up more VMs than you asked for, then deletes the extra VMs once the requested number of VMs are successfully provisioned. Overprovisioning improves provisioning success rates and reduces deployment time. You are not billed for the extra VMs, and they do not count toward your quota limits.

Overprovisioning

With overprovisioning turned on, the scale set actually spins up more VMs than you asked for, then deletes the extra VMs once the requested number of VMs are successfully provisioned. Overprovisioning improves provisioning success rates and reduces deployment time. You are not billed for the extra VMs, and they do not count toward your quota limits.
Learn more about overprovisioning ⓘ

Enable overprovisioning

Create a virtual machine scale set ...

Basics Disks Networking Scaling Management **Health** Advanced Tags Review + create

You can configure health monitoring on an application endpoint to update the status of the application on that instance. This instance status is required to enable platform managed upgrades like automatic OS updates and virtual machine instance upgrades. Learn more about application health monitoring ⓘ

Health

Enable application health monitoring ⓘ

VM1 **VM2** **VM3**
VM4 **VM5** **VM6**

Availability Set
Maximum Fault Domains - 3

	Fault Domain 1	Fault Domain 2	Fault Domain 3
RAC	RAC	RAC	

VMSS

FIXED SPREADING

MAX SPREADING

YOU TELL MICROSOFT, PUT MY VMS, IN AS MANY DIFFERENT RAC POSSIBLE, NOT LIMITED TO 3 OR 5

Fault domains 3

Fixed spreading (not recommended with zones)

Fault domain count *

VM applications

VM applications contain application files that the application files, an install and uninstall

Max spreading
 Fixed spreading (not recommended with zones)



Create a virtual machine scale set

Pass a script, configuration file, or other data that will be accessible to your applications **throughout the lifetime of the virtual machine**. Don't use user data for storing your secrets or passwords. [Learn more about user data for VMSS](#)

Enable user data

Host

Azure Dedicated Hosts allow you to provision and manage a physical server within our data centers that are dedicated to your Azure subscription. A dedicated host gives you assurance that only VMs from your subscription are on the host, flexibility to choose VMs from your subscription that will be provisioned on the host, and the control of platform maintenance at the level of the host. [Learn more](#)

Host group

No host group found

Proximity placement group

Proximity placement groups allow you to group Azure resources physically closer together in the same region. [Learn more](#)

Proximity placement group

No proximity placement groups found

Capacity reservations

Capacity reservations allow you to reserve capacity for your virtual machine needs. You get the same SLA as normal virtual machines with the security of reserving the capacity ahead of time. [Learn more](#)

Capacity reservation group

None

Review + create

< Previous

Next: Tags >

Create a virtual machine scale set ...

Validation passed

Basics Disks Networking Scaling Management Health Advanced Tags Review + create

Basics

Subscription	MSDN Platforms
Resource group	(new) rg-vmss-remove
Virtual machine scale set name	webscaleset
Region	Central US
Orchestration mode	Uniform
Availability zone	None
Image	Windows Server 2016 Datacenter - Gen2
Size	Standard B2ms (2 vcpus, 8 GiB memory)
Security type	Standard
Username	rahul
Azure Spot	No

Instance

Initial instance count	1
Already have a Windows license?	No

Actions

- Create
- < Previous
- Next >
- Download a template for automation

FREE PROMOTIONAL SUBSCRIPTION - 100\$ CREDIT

10 vCPUs (Per Region)

East - 10
West - 10
Japan East - 10
Australia East - 10

VM - Size
B2ms this size is not available in this region

B2ms - 2 cpus

min - 1
max - 2

Solution: change Region

Quota exceeded - maximum allowed 10, used 8, expected more 4

CreateVmss-MicrosoftWindowsServer.WindowsServer-2-20220813103105 Deployment

Search (Ctrl+ /) Delete Cancel Redeploy Download Refresh

Overview We'd love your feedback! →

Your deployment is complete

Deployment name: CreateVmss-MicrosoftWindowsServer.WindowsServer-2-20220813103105 Start time: 8/13/2022 10:31:05 AM Correlation ID: 80c1

Subscription: MSDN Platforms Resource group: rg-vmss-remove

Deployment details

Next steps

Go to resource

AWS > Documentation > Amazon EC2 Auto Scaling > User Guide

Amazon EC2 Auto Scaling

User Guide

Auto Scaling groups

PDF | RSS

What is Amazon EC2 Auto

Microsoft Azure

All services > Virtual machines

Default Directory (talktorahuljoshioutlook.onmicrosoft.com)

+ Create a resource Home Dashboard All services FAVORITES All resources Resource groups App Services Function App SQL databases Azure Cosmos DB Virtual machines Load balancers

Filter for any field... Subscription equals all Type equals all Resource group equals all Location

Name ↑	Type ↑	Subscription ↑	Resource group ↑	Location ↑
vmwebserver01	Virtual machine	MSDN Platforms	rg-rahal-training	East US

Not Seen

Resources Recommendations

Filter for any field... Type equals all Location equals all Add filter

Showing 1 to 3 of 3 records. Show hidden types No grouping

Name ↑	Type ↑	Location ↑
basicNsrg-vmss-remove-vnet-nic01	Network security group	Central US
rg-vmss-remove-vnet	Virtual network	Central US
webscaleset	Virtual machine scale set	Central US

webscaleset | Instances

Virtual machine scale set

Search (Ctrl+ /) Start Restart Stop Reimage Delete Upgrade Refresh Protection Policy

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Instances Networking Scaling

RAC

webscaleset_0

Scale set instance

Search (Ctrl+ /) Connect Start Restart Stop Reimage Delete Refresh Upgrade Protection Policy

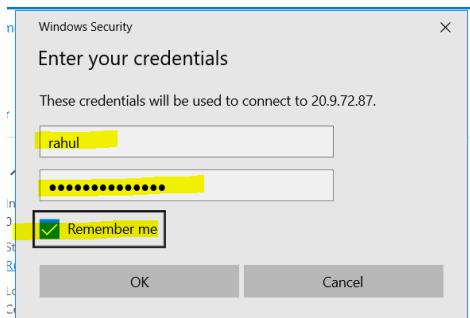
Overview

Settings

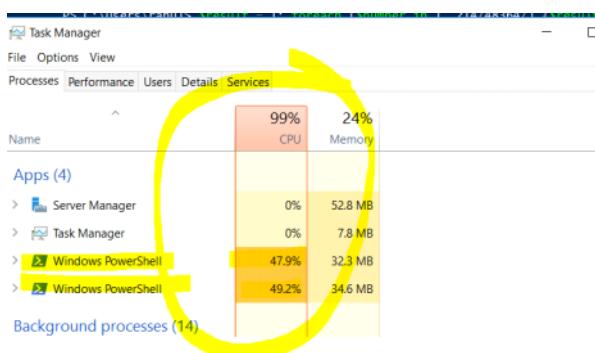
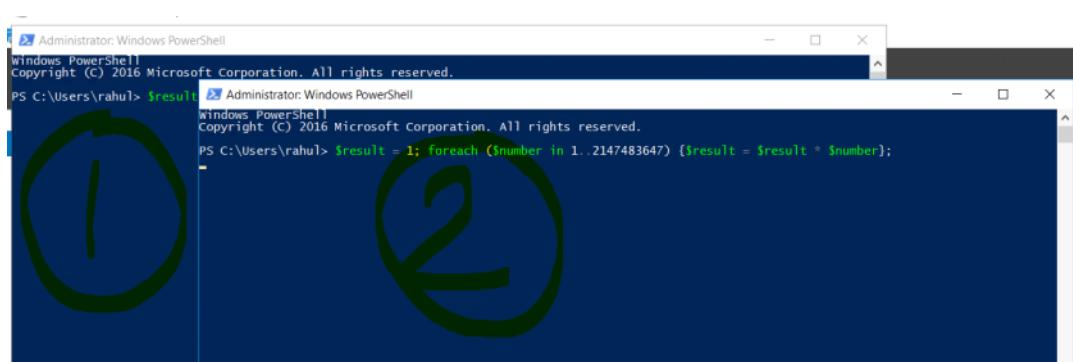
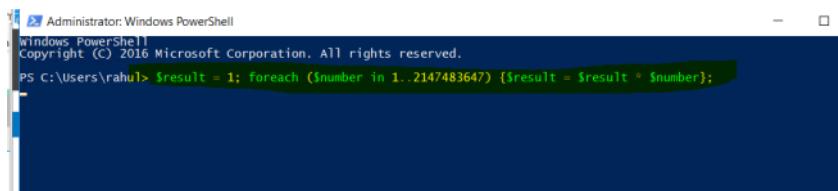
- Networking
- Connect
- Disks

Essentials

Instance ID	0	Public IP address	20.9.72.87
Status	Running, 1 more	Private IP address	10.0.0.4
Location	Central US	Public IP address (IPv6)	



```
$result = 1; foreach ($number in 1..2147483647) {$result = $result * $number};
```



webscaleset | Instances

Virtual machine scale set

Search (Ctrl+ /)

Start Restart Stop Reimage Delete Upgrade Refresh Protection Policy

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Name	Computer name	Status	Health state	Provisioning state	Protection policy	Latest mode
webscaleset_0	webscales000000	Running	Green	Succeeded		Yes

webscaleset | Instances

Virtual machine scale set

Search (Ctrl+ /)

Start Restart Stop Reimage Delete Upgrade Refresh Protection Policy

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings

Name	Computer name	Status	Health state	Provisioning state	Protection policy	Latest mode
webscaleset_0	webscales000000	Running	Green	Succeeded		Yes
webscaleset_1	webscales000001	Running	Green	Succeeded		Yes

Scale Out Was Triggered

What we learned?

1. Two VMs or more are better than 1 VM - Availability and High Availability are two words
2. Auto - Scaling is always better than Manual Scaling as you can write rules, conditions and only when those conditions come true
3. When you have more than 2 VMs, a Load Balancer will be perfect, to route the incoming request to the VMs in Round Robin Fashion
4. To have 3 RACs is great, but to have 5 RACs and MAX Spreading is also great
5. Having Two VMs or Three with Identical configuration is Great for mass deployment, but having mix of Size is also preferred
6. Having a mix of SPOT Instances where 80% - 90% discount is given and blending that with On-Demand Instances is a perfect plan to save cost and get maximum availability

Scale In Triggered

20.9.72.87 - Remote Desktop Connection

Task Manager

File Options View

Processes Performance Users Details Services

Apps (1)

Task Manager

Background processes (17)

Name	CPU	Memory
Task Manager	1%	16%
Background processes (17)	0%	7.4 MB

webscaleset | Instances

Virtual machine scale set

Search (Ctrl+ /)

Start Restart Stop Reimage Delete Upgrade Refresh Protection Policy

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings

Name	Computer name	Status	Health state	Provisioning state	Protection policy	Latest mode
webscaleset_0	webscales000000	Running	Green	Succeeded		Yes
webscaleset_1	webscales000001	Deleting	Green	Deleting		Yes

webscaleset | Instances

Virtual machine scale set

Search (Ctrl+I) Start Restart Stop Reimage Delete Upgrade Refresh Protection Policy

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Name	Computer name	Status	Health state	Provisioning state
webscaleset_0	webscaleset000000	Running	Green	Succeeded

webscaleset | Scaling

Virtual machine scale set

Search (Ctrl+I) Save Discard Refresh Logs Feedback

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Settings

- Instances
- Networking
- Scaling**
- Disks
- Operating system
- Microsoft Defender for Cloud

Predictive autoscale (public preview) is currently supported in the following regions: Australia East, Australia Southeast, Canada South, UK West, West Central US, West US 2.

Configure Scale-In Policy Predictive charts Run history JSON Notify Diagnostic settings

Autoscale is a built-in feature that helps applications perform their best when demand changes. You can choose to scale based on specific instance count, or via a custom Autoscale policy that scales based on metric(s) thresholds, or schedule instance counts in designated time windows. Autoscale enables your resource to be performant and cost effective by adding and removing demand. Learn more about Azure Autoscale or view the how-to video.

Choose how to scale your resource

- Manual scale**: Maintain a fixed instance count.
- Custom autoscale**: Scale on any schedule, based on any metrics.

Custom autoscale

Default* Profile1

Delete warning

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

Rules

Scale out

When webscaleset (Average) Percentage CPU > 70 Increase count by 1

Scale in

When webscaleset (Average) Percentage CPU < 30 Decrease count by 1

+ Add a rule

Instance limits

Minimum: 1 Maximum: 2 Default: 1

Schedule

This scale condition is executed when none of the other scale condition(s) match

+ Add a scale condition

Auto created scale condition 1

Scale mode

Scale based on a metric Scale to a specific instance count

Rules

⚠ Scale is based on metric trigger rules but no rule(s) is defined; click Add a rule to create a rule. For example: 'Add a rule that increases instance count by 1 when CPU Percentage is above 70%. If no rules is defined, the resource will be set to default instance count.'

Instance limits

Minimum: 1 Maximum: 1 Default: 1

Schedule

Specify start/end dates Repeat specific days

Repeat every

Monday Tuesday Wednesday Thursday Friday Saturday Sunday

Timezone

(UTC+05:30) Chennai, Kolkata, Mumbai, Ne...

Start time

09:00

End time

Scale rule

Rahul V Joshi

SELECTED VALUES, NOT EVERYONE USE THE MECHANISM TO EDIT VALUES INDIVIDUALLY.

Percentage CPU (Average)
6.42 %

Enable metric divide by instance count

Operator * Metric threshold to trigger scale action *
Greater than 70 %

Duration (minutes) * 10

Time grain (minutes) 1 Time grain statistic * Average

Action
Operation * Increase count by 1
Instance count * 1

Cool down (minutes) * 5

Update **Delete**



Save Discard Refresh Logs Feedback

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

It is recommended to have at least one scale in rule. To create new rules, click [Add a rule](#)

Rules

Scale out

When webscaleset (Average) Percentage CPU > 70 Increase count by 1

+ Add a rule

Instance limits

Minimum 1 Maximum 1 Default 1

Schedule

Specify start/end dates Repeat specific days

Repeat every Monday Tuesday Wednesday Thursday Friday Saturday Sunday

Timezone (UTC +05:30) Chennai, Kolkata, Mumbai, Ne...

Start time 09:00

End time 18:00

Cost save

+ Add a scale condition

Auto created scale condition 1

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

Rules: It is recommended to have at least one scale rule. To create new rules, click [Add a rule](#)

Scale out: When **webscaleset** (Average) Percentage CPU > 70, increase count by 2

+ Add a rule

Instance limits: Minimum 1, Maximum 6, Default 1

Schedule: Specify start/end dates

Timezone: (UTC+05:30) Chennai, Kolkata, Mumbai, Ne...

Start date: 08/15/2022, 12:00:00 AM

End date: 08/16/2022, 11:59:00 PM

VMSS allows you to change the Size of the Scale Set, but the biggest problem is, if your scale set has 6 VMs, all the 6 VMS will become B4ms, is this a need, or becoming A BIG COST ISSUE?

webscaleset | Size

Virtual machine scale set

Search (Ctrl+F)

Search by VM size...

Display cost: **Monthly**

vCPUs: All RAM (GiB): All

VM Size ↑↓	Type ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓	Data d
DS1_v2 ↗	General purpose	1	3.5	4
D2s_v3 ↗	General purpose	2	8	4
D2as_v4 ↗	General purpose	2	8	4
B2s ↗	General purpose	2	4	4
B1s ↗	General purpose	1	1	2
B2ms ↗	General purpose	2	8	4
DS2_v2 ↗	General purpose	2	7	8
B4ms ↗	General purpose	4	16	8
D4s_v3 ↗	General purpose	4	16	8
DS3_v2 ↗	General purpose	4	14	16
D8s_v3 ↗	General purpose	8	32	16

Prices presented are estimates in your local currency that include only Azure infrastructure costs. Prices don't include any applicable software costs. Final charges will appear in your local currency.

Resize

Uniform vs Flexible

Flexible

Virtual machine scale sets

Default Directory (talktorahuljoshioutlook.onmicrosoft.com)

+ Create Edit columns Refresh Feedback

Subscriptions: All 2 selected – Don't see a subscription? Open Directory

Filter by name... All subscriptions

1 items

Create a virtual machine scale set

applications, and allow you to centrally manage, configure, and update a large number of VMs.
[Learn more about virtual machine scale sets](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *

Scale set details

Virtual machine scale set name *

Region *

Orchestration mode * Uniform: optimized for large scale stateless workloads with identical instances
 Flexible: achieve high availability at scale with identical or multiple virtual machine types

Security type

Instance details

Image *
See all images | Configure VM generation

Run with Azure Spot discount

Size *
See all sizes

Administrator account

Username *
Password *
Confirm password *

Licensing

Save up to 49% with a license you already own using Azure Hybrid Benefit. [Learn more](#)

Create a virtual machine scale set ...

Basics Disks Networking Scaling Management Health Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

Disk options

OS disk type * Standard HDD (locally-redundant storage) The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

Encryption type * (Default) Encryption at-rest with a platform-managed key

Enable encryption at host

 Encryption at host is not registered for the selected subscription. [Learn more about enabling this feature](#)

Enable Ultra Disk compatibility

Ultra Disk compatibility is not available for scale sets with flexible orchestration mode. However, ultra disk compatibility can be enabled on the constituent virtual machines after the scale set is provisioned

Data disks

[Review + create](#)

< Previous

Next : Networking >

Create a virtual machine scale set ...

Basics Disks Networking Scaling Management Health Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more about VMSS networking](#)

Virtual network configuration

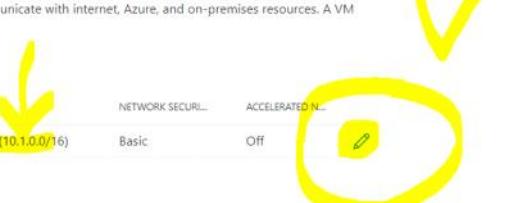
Azure Virtual Network (VNet) enables many types of Azure resources to securely communicate with each other, the internet, and on-premises networks. [Learn more about VNets](#)

Virtual network * (New) rg-vmssflexible-remove-vnet (recommended) Create virtual network

Network interface

A network interface enables an Azure virtual machine to communicate with internet, Azure, and on-premises resources. A VM can have one or more network interfaces.

<input type="checkbox"/> NAME	<input type="checkbox"/> CREATE PUBLI...	SUBNET	NETWORK SECUR...	ACCELERATED N...
<input type="checkbox"/> rg-vmssflexible-remov...	<input type="checkbox"/> Yes	default (10.1.0.0/16)	Basic	Off



Load balancing

You can place this virtual machine scale set in the backend pool of an existing Azure load balancing solution. [Learn more](#)

[Review + create](#)

< Previous

Next : Scaling >

Create a virtual machine scale set ...

application. [Learn more about VMSS scaling](#)

Initial instance count * 

Scaling

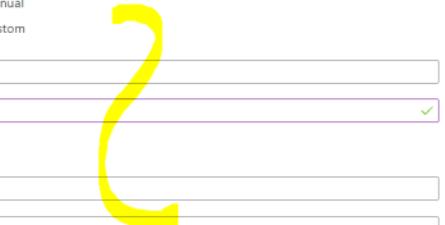
Scaling policy Manual

Custom

Minimum number of instances * 

Maximum number of instances * 

Scale out

CPU threshold (%) * 

Duration in minutes * 

Number of instances to increase by * 

Scale in

CPU threshold (%) * 

Number of instances to decrease by * 

[Review + create](#)

[< Previous](#)

[Next : Management >](#)

Create a virtual machine scale set ...

Microsoft Defender for Cloud

Microsoft Defender for Cloud provides unified security management and advanced threat protection across hybrid cloud workloads. [Learn more](#)

 Your subscription is protected by Microsoft Defender for Cloud basic plan.

Upgrade policy

Upgrade mode Manual - Existing instances must be manually upgraded

 Upgrade policy is not supported for virtual machine scale sets with flexible orchestration mode.

Monitoring

Boot diagnostics Enable with managed storage account (recommended)

Enable with custom storage account

Disable

Azure AD

Login with Azure AD

[Review + create](#)

[< Previous](#)

[Next : Health >](#)

Create a virtual machine scale set ...

Basics Disks Networking Scaling Management Health Advanced Tags Review + create

Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.

Allocation policy

Spreading algorithm

Max spreading

Fixed spreading (not recommended with zones)

VM applications

VM applications contain application files that are securely and reliably downloaded on your VM after deployment. In addition to the application files, an install and uninstall script are included in the application. You can easily add or remove applications on your VM after create. [Learn more](#)

Select a VM application to install

Custom data

Pass a script, configuration file, or other data into the virtual machine **while it is being provisioned**. The data will be saved on the VM in a known location. [Learn more about custom data for VMSS](#)

Custom data

[Review + create](#)

[< Previous](#)

[Next : Tags >](#)

Create a virtual machine scale set ...

Validation passed

Basics Disks Networking Scaling Management Health Advanced Tags Review + create

Basics

Subscription	MSDN Platforms
Resource group	(new) rg-vmssflexible-remove
Virtual machine scale set name	webserverflexible
Region	Japan East
Orchestration mode	<input checked="" type="radio"/> Flexible
Availability zone	None
Image	Windows Server 2016 Datacenter - Gen2
Size	Standard B2ms (2 vcpus, 8 GiB memory)
Security type	Standard
Username	rahul
Azure Spot	No
Fault domain count	2

Instance

Initial instance count	1
Already have a Windows license?	No

[Create](#)

[< Previous](#)

[Next >](#)

Download a template for automation

Virtual machines ...

Default Directory (talktorahuljoshioutlook.onmicrosoft.com)

+ Create Switch to classic Reservations Manage view Refresh Export to CSV Open query Assign tags

Filter for any field...	Subscription equals all	Type equals all	Resource group equals all	Location equals all	Add filter
<input type="checkbox"/> Name ↑	Type ↑	Subscription ↑	Resource group ↑	Location ↑	Status ↑
<input type="checkbox"/> vmwebserver01	Virtual machine	MSDN Platforms	rg-rahul-training	East US	Stopped (dealloc)
<input type="checkbox"/> webserverflexible-452a381d	Virtual machine	MSDN Platforms	rg-vmssflexible-remove	Japan East	Running

Virtual machines ...

Default Directory (talktorahuljoshioutlook.onmicrosoft.com)

+ Create Switch to classic Reservations

Azure virtual machine
Create a virtual machine hosted by Azure

Create a virtual machine ...

for full customization. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *
[Create new](#)

Instance details

Virtual machine name *

Region *

Create a virtual machine ...

Subscription *

Resource group *
[Create new](#)

Instance details

Virtual machine name *

Region *

Availability options

Virtual machine scale set *
[Create new](#)

Image *
[See all images](#) | [Configure VM generation](#)

Run with Azure Spot discount

Size *
[See all sizes](#)

Administrator account

Username *

Password *

Confirm password *

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * None Allow selected ports

Select inbound ports *

This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Licensing

[Review + create](#)

[< Previous](#) [Next : Disks >](#)

Create a virtual machine ...

Basics Disks Networking Management Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution.

[Learn more](#)

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * [Create new](#)

Subnet * [Manage subnet configuration](#)

Public IP [Create new](#)

NIC network security group None Basic Advanced

Public inbound ports * None Allow selected ports

Select inbound ports * RDP (3389)

[Review + create](#) [< Previous](#) [Next : Management >](#)



Create a virtual machine ...

Validation passed

Basics Disks Networking Management Advanced Tags Review + create

[Cost given below is an estimate and not the final price. Please use \[Pricing calculator\]\(#\) for all your pricing needs.](#)

PRODUCT DETAILS

1 X Standard B4ms
by Microsoft
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply
15.7059 INR/hr
[Pricing for other VM sizes](#)

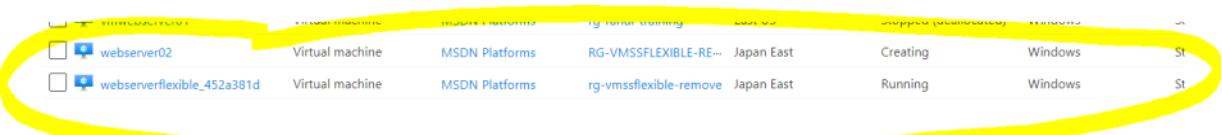
TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

⚠ You have set RDP port(s) open to the internet. This is only recommended for testing. If you want to change this:

[Create](#) [< Previous](#) [Next >](#) [Download a template for automation](#)

Name	Type	Offer	Region	Status	OS	SKU
<input type="checkbox"/>  webserver02	Virtual machine	MSDN Platforms	RG-VMSSFLEXIBLE-RE...	Japan East	Creating	Windows
<input type="checkbox"/>  webserverflexible_452a381d	Virtual machine	MSDN Platforms	rg-vmssflexible-remove	Japan East	Running	Windows



rg-vmssflexible-remove

Overview

- Activity log
- Access control (IAM)
- Tags
- Resource visualizer
- Events

Settings

- Deployments
- Security
- Policies
- Properties
- Locks

Cost Management

- Cost analysis
- Cost alerts (preview)
- Budgets

Advisor recommendations

Essentials

Subscription ([move](#)) [MSDN Platforms](#)

Subscription ID ee7bab70-0709-4f4f-9829-790225dc5be4

Tags ([edit](#)) [Click here to add tags](#)

Deployments [2 Succeeded](#)

Location Japan East

Resources

Filter for any field... Type equals all Location equals all Add filter

Showing 1 to 12 of 12 records. Show hidden types [①](#) No grouping

Name	Type	Location
webserver02-nsg	Network security group	Japan East
webserver02361	Network Interface	Japan East
webserver02_OsDisk_1_fcaae8ce73eb47b3b...	Disk	Japan East
webserverflexible	Virtual machine scale set	Japan East

Page 1 of 1

All services | Compute

All Favorites Recents

Categories

- General
- Compute**
- Networking
- Storage
- Web
- Mobile
- Containers
- Databases
- Analytics
- AI + machine learning
- Internet of things
- Mixed reality
- Integration
- Identity
- Security

Filter services

Virtual machines	Virtual machines (classic)
Virtual machine scale sets	Function App
App Services	Container instances
Batch accounts	Service Fabric clusters
Cloud services (classic)	Kubernetes services
Availability sets	Disks (classic)
OS images (classic)	VM images (classic)
Citrix Virtual Desktops Essentials	Citrix Virtual Apps Essentials
SAP HANA on Azure	CloudSimple Virtual Machines
CloudSimple Services	CloudSimple Nodes
Proximity placement groups	Hosts
Host groups	Azure Spring Apps
Application groups	Maintenance Configurations
Workspaces	Container Apps

Pre-Lunch One Note

Compute Category

All services | Compute

All Favorites Recents

Categories

- General
- Compute**
- Networking
- Storage
- Web
- Mobile

Filter services

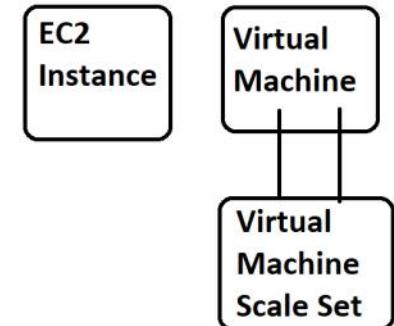
Virtual machines	Virtual machines (classic)
Virtual machine scale sets	Function App
App Services	Container instances
Batch accounts	Service Fabric clusters
Cloud services (classic)	Kubernetes services
Availability sets	Disks (classic)
OS images (classic)	VM images (classic)

On-Premise (No Cloud)



Team Members working

Cloud - AWS - Microsoft



Computer
 1. Restart - 2 minutes
 2. New VM - 3-4 Minutes
 3. Licence - Cost is added in PASS
 4. Updates | Patches | Network | Firewall | Security
 5. Antivirus | Disk - OS disk, Add Disk

WITHOUT
VM

Hating Virtual Machine

SERVERLESS



Case Study: Admin, Developers, DevOps, Architect

The customer was quite happy with the way Azure Master's demonstrated Virtual Machine Scale Set. But at the end of the day, even this feature uses Virtual Machine logic behind the scene. The customer understands, there are a lot of challenges with Virtual Machine (Reboot, Time To Create, License, Upgrades, Patching, Security, Disk) and many more.

Customer Wants to deploy Websites and they are looking for a serverless way of deploying Websites. The number of Websites can grow over time and they want a **less management overhead and less administrative efforts solution**.

If 1 WebApp is not enough or the Size is not right, the scale up and Scale down, Scale Out and Scale In **should happen in 10 to 20 seconds** and not take minutes.

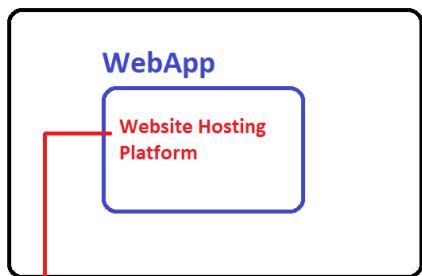
Situation = Case Study

Task: Create an App Services - Web App

Action:



App Service Plan



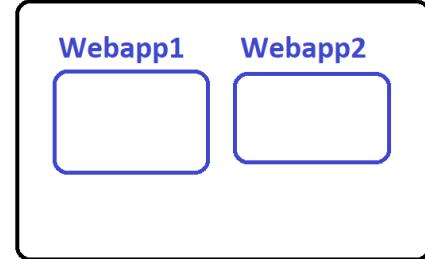
.NET 3.1 | .NET 6
ASP.NET
Java
Python
PHP
Ruby

Hardware CPU | Memory

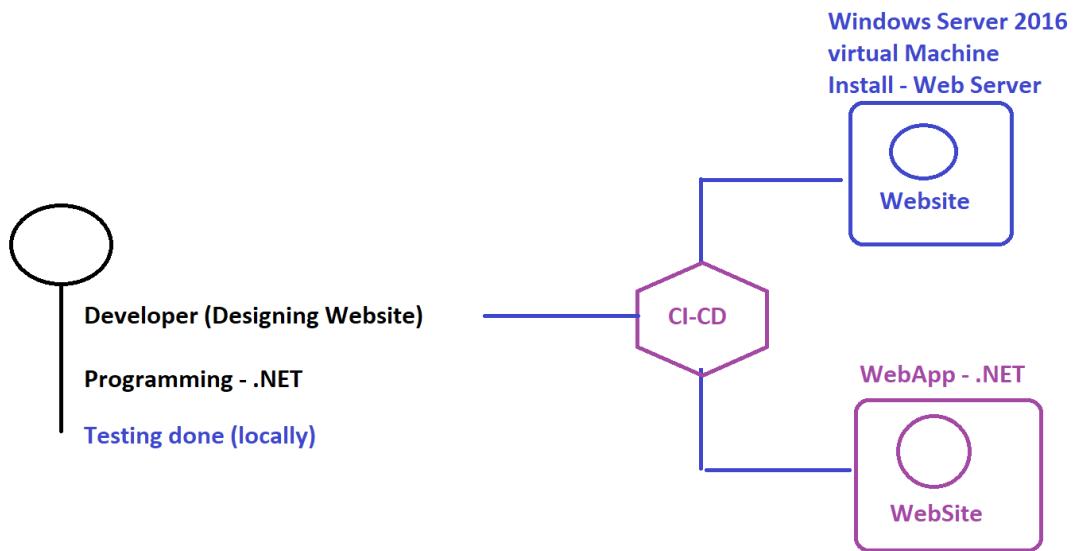
Dev/
Test

Production

App Service Plan

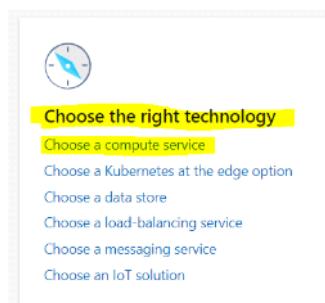


Isolated
Single Tenant
Dedicated Network

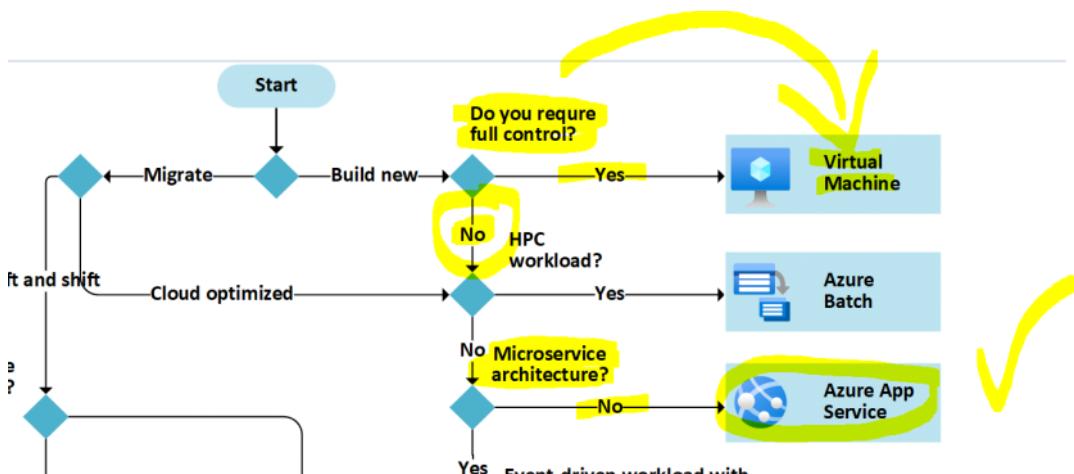


Golden Website

<https://docs.microsoft.com/en-us/azure/architecture/>



<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/compute-decision-tree>



Azure - App Services - Web App
AWS - Elastic Beanstalk

AWS

Contact Us

Products Solutions Pricing Documentation Learn Partner Network AWS Marketplace Customer Enablement Events

AWS Elastic Beanstalk Overview Features Pricing Getting Started Resources FAQs Partners

AWS Elastic Beanstalk

Easy to begin, Impossible to outgrow

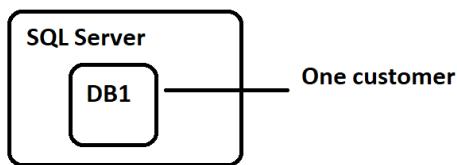
Create an AWS Account

AWS Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS.

You can simply upload your code and Elastic Beanstalk automatically handles the deployment, from capacity provisioning, load balancing, auto-scaling to application health monitoring. At the same time, you retain full control over the AWS resources powering your application and can access the underlying resources at any time.

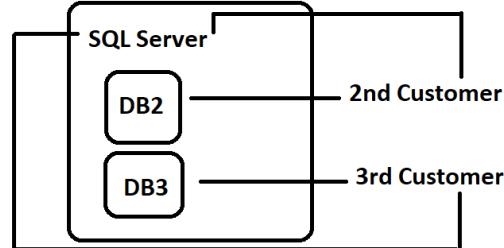
There is no additional charge for Elastic Beanstalk - you pay only for the AWS resources needed to store and run your applications.

Single Tenant



- 1. Security (isolated)**
- 2. Cannot Share**
- 3. Price is higher 2 BHK - Rs.20000**
- 4. Performance**

Multi Tenant



- 1. Security - Stake - Multiple Tenants**
 - 2. Performance - DBs - Sharing the same server**
 - 3. Price can lower - Hardware - Shared**
- 2 BHK
A - Rs.10000
B - Rs.10000

Action: Create a WebApp

Microsoft Azure

All services | Compute

+ Create a resource

Search resources, services, and docs (G+)

Home Dashboard All services (yellow circle)
Favorites Recents Categories General Compute (yellow circle)
Networking Storage Web Mobile Containers Databases Analytics AI + machine learning Internet of things Mixed reality Integration Identity

Virtual machines Virtual machine scale sets App Services (yellow circle)
Batch accounts Cloud services (classic) Availability sets OS images (classic) Citrix Virtual Desktops Essentials SAP HANA on Azure CloudSimple Services Proximity placement groups Host groups Application groups

Virtual machines (classic) Function App Container instances Service Fabric clusters Kubernetes services Disks (classic) VM images (classic) Citrix Virtual Apps E CloudSimple Virtua CloudSimple Nodes Hosts Azure Spring Apps Maintenance Config

All services | Web

Categories

- All
- Favorites
- Recents
- General
- Compute
- Networking
- Storage
- Web**
- Mobile
- Containers
- Databases

App Services

Front Door and CDN profiles
Notification Hubs
App Service plans
App Service Certificates
Media Services
Power Platform
API Connections

All services >

App Services

Default Directory (talktorahuljoshioutlook.onmicrosoft.com)

Create Manage view Refresh

Filter for any field... Subscription equals all

Name ↑↓	Status ↑↓

Create Web App

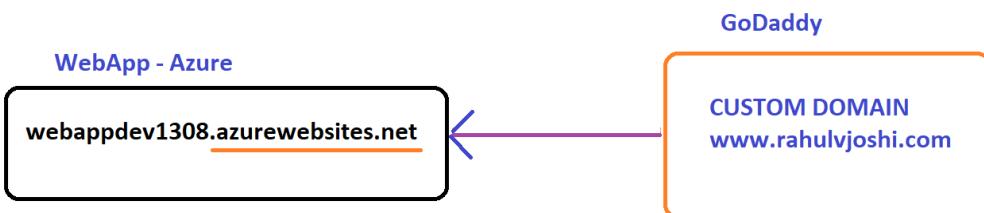
Basics Deployment Networking Monitoring Tags Review + create

App Service Web Apps lets you quickly build, deploy, and scale enterprise-grade web, mobile, and API apps running on any platform. Meet rigorous performance, scalability, security and compliance requirements while using a fully managed platform to perform infrastructure maintenance. [Learn more](#)

Project Details

Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *	<input type="button" value="MSDN Platforms"/>
Resource Group *	<input type="button" value="(New) rg-webapp-remove"/> <input type="button" value="Create new"/>



Publish *

Code Docker Container Static Web App

Runtime stack *

Operating System * Linux Windows

Runtime stack *

Java web server stack *

Operating System * Linux Windows

Runtime stack *

Operating System * Linux Windows

Open Source .NET - Platform Independent.

Publish * Code Docker Container Static Web App

Runtime stack *

Operating System * Linux Windows

Runtime stack *

Operating System * Linux Windows

Publish * Code Docker Container Static Web App

Runtime stack *

Operating System * Linux Windows

Region *

Not finding your App Service Plan? Try a different region or select your App Service Environment.

App Service Plan

App Service plan pricing tier determines the location, features, cost and compute resources associated with your app.

[Learn more](#) ↗

Windows Plan (Central US) *

Create new

Sku and size *

Standard S1
100 total ACU, 1.75 GB memory

Change size

SKU - Stock Keeping Unit - CPU + RAM

Spec Picker

Dev / Test
For less demanding workloads

Production
For most production workloads

Isolated
Advanced networking and scale

Recommended pricing tiers

F1 Shared infrastructure 1 GB memory 60 minutes/day compute Free	D1 Shared infrastructure 1 GB memory 240 minutes/day compute 683.71 INR/Month (Estimated)	B1 100 total ACU 1.75 GB memory A-Series compute equivalent 2314.09 INR/Month (Estimated)
---	--	--

seeAllOptions

Included hardware

Every instance of your App Service plan will include the following hardware configuration:

- Memory**
Memory available to run applications deployed and running in the App Service plan.
- Storage**
1 GB disk storage shared by all apps deployed in the App Service plan.

Spec Picker

X


Dev / Test
For less demanding workloads


Production
For most production workloads


Isolated
Advanced networking and scale

Recommended pricing tiers

F1 Shared infrastructure 1 GB memory 60 minutes/day compute Free	D1 Shared infrastructure 1 GB memory 240 minutes/day compute 683.71 INR/Month (Estimated)	B1 100 total ACU 1.75 GB memory A-Series compute equivalent 2314.09 INR/Month (Estimated)
---	--	--

[seeAllOptions](#)

Included features

Every app hosted on this App Service plan will have access to these features:

-  **Custom domains**
Configure and purchase custom domain names.

Included hardware

Every instance of your App Service plan will include the following hardware configuration:

 Memory Memory available to run applications deployed and running in the App Service plan.	 Storage 1 GB disk storage shared by all apps deployed in the App Service plan.
---	--


Dev / Test
For less demanding workloads


Production
For most production workloads


Isolated
Advanced networking and scale

Recommended pricing tiers

F1 Shared infrastructure 1 GB memory 60 minutes/day compute Free	D1 Shared infrastructure 1 GB memory 240 minutes/day compute 683.71 INR/Month (Estimated)	B1 100 total ACU 1.75 GB memory A-Series compute equivalent 2314.09 INR/Month (Estimated)
---	--	--

[seeAllOptions](#)

Included features

Every app hosted on this App Service plan will have access to these features:

-  **Custom domains / SSL**
Configure and purchase custom domains with SNI SSL bindings
-  **Manual scale**
Up to 3 instances. Subject to availability.

Included hardware

Every instance of your App Service plan will include the following hardware configuration:

 Azure Compute Units (ACU) Dedicated compute resources used to run applications deployed in the App Service Plan. Learn more	 Memory Memory per instance available to run applications deployed and running in the App Service plan.	 Storage 10 GB disk storage shared by all apps deployed in the App Service plan.
---	--	---

Dev/Test is also very powerful, you get 1.75GB RAM - A-Series Computer - [Custom Domian + SSL](#)


Dev / Test
For less demanding workloads


Production
For most production workloads


Isolated
Advanced networking and scale

Recommended pricing tiers

S1 100 total ACU 1.75 GB memory A-Series compute equivalent 3155.58 INR/Month (Estimated)	P1V2 210 total ACU 3.5 GB memory Dv2-Series compute equivalent 3839.29 INR/Month (Estimated)	P2V2 420 total ACU 7 GB memory Dv2-Series compute equivalent 7678.58 INR/Month (Estimated)
--	---	---

P3V2 840 total ACU 14 GB memory Dv2-Series compute equivalent 15409.76 INR/Month (Estimated)	P1V3 195 minimum ACU/vCPU 8 GB memory 2 vCPU 6731.91 INR/Month (Estimated)	P2V3 195 minimum ACU/vCPU 16 GB memory 4 vCPU 13463.82 INR/Month (Estimated)
---	---	---

P3V3 195 minimum ACU/vCPU 32 GB memory 8 vCPU 26927.64 INR/Month (Estimated)

[seeRecommendedOptions](#)

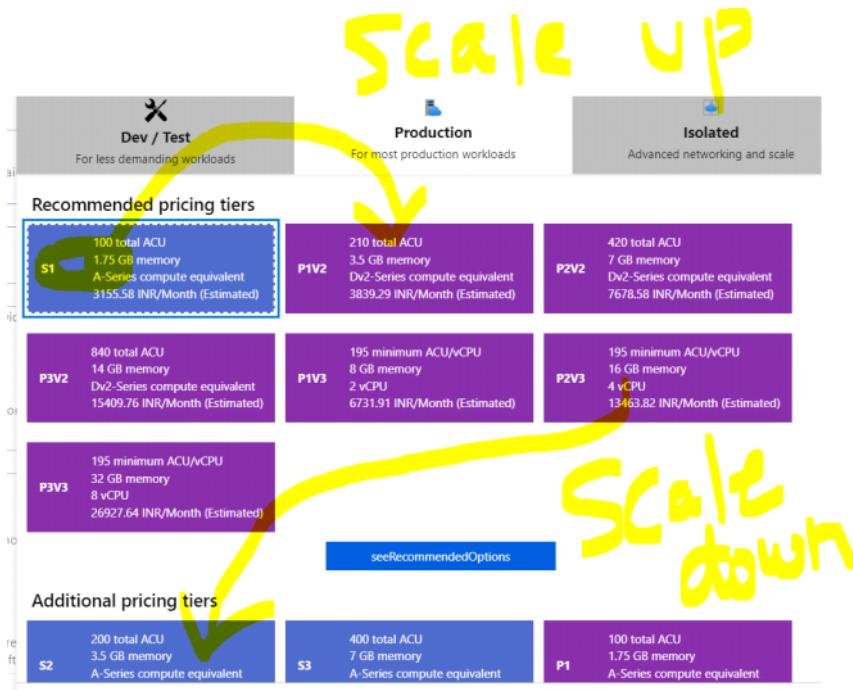
Additional pricing tiers

S2 200 total ACU 3.5 GB memory A-Series compute equivalent	S3 400 total ACU 7 GB memory A-Series compute equivalent	P1 100 total ACU 1.75 GB memory A-Series compute equivalent
--	--	---

[Apply](#)

S - Standard - A- Series

P - Premium - D-Series (Compute)



Additional Information

S1	100 total ACU 1.75 GB memory A-Series compute equivalent 3155.58 INR/Month (Estimated)
----	---

Included features

Every app hosted on this App Service plan will have access to these features:

Custom domains / SSL	Configure and purchase custom domains with SNI and IP SSL bindings
Auto scale	Up to 10 instances. Subject to availability.
Staging slots	Up to 5 staging slots to use for testing and deployments before swapping them into production.
Daily backups	Backup your app 10 times daily.
Traffic manager	Improve performance and availability by routing traffic between multiple instances of your app.

P1V2	210 total ACU 3.5 GB memory Dv2-Series compute equivalent 3839.29 INR/Month (Estimated)
-------------	--

Included features

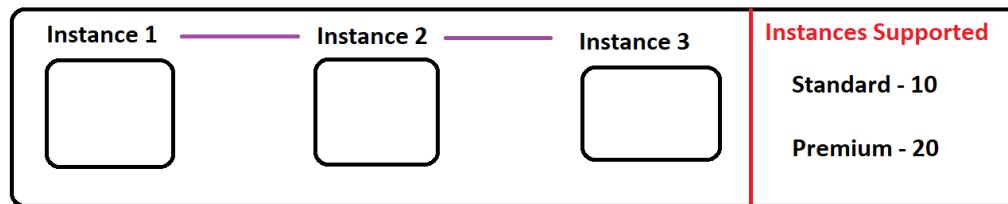
Every app hosted on this App Service plan will have access to these features:

Custom domains / SSL	Configure and purchase custom domains with SNI and IP SSL bindings
Auto scale	Up to 20 instances. Subject to availability.
Staging slots	Up to 20 staging slots to use for testing and deployments before swapping them into production.
Daily backups	Backup your app 50 times daily.
Traffic manager	Improve performance and availability by routing traffic between multiple instances of your app.

30min

>70% + 1

> 70% + 1



EXAM Question

Own Private Network, Not Shared with anybody

Spec Picker

Rahul V Joshi

X

Dev / Test
For less demanding workloads

Production
For most production workloads

Isolated
Advanced networking and scale

Recommended pricing tiers

I1V2 195 minimum ACU/vCPU 8 GB memory 2 vCPU 29557.29 INR/Month (Estimated)	I2V2 195 minimum ACU/vCPU 16 GB memory 4 vCPU 59114.58 INR/Month (Estimated)	I3V2 195 minimum ACU/vCPU 32 GB memory 8 vCPU 11829.15 INR/Month (Estimated)
--	---	---

Included features
Every app hosted on this App Service plan will have access to these features:

- Single tenant system**
Take more control over the resources being used by your app.
- Isolated network**
Runs within your own virtual network.
- Private app access**
Using an App Service Environment with Internal Load Balancing (ILB).
- Scale to a large number of instances**
Up to 100 instances. More allowed upon request.

Included hardware
Every instance of your App Service plan will include the following hardware configuration:

- Azure Compute Units (ACU)**
Dedicated compute resources used to run applications deployed in the App Service Plan. [Learn more](#)
- Memory**
Memory per instance available to run applications deployed and running in the App Service plan.
- Storage**
1 TB disk storage shared by all apps deployed in the App Service plan.

Spec Picker

Dev / Test
For less demanding workloads

Production
For most production workloads

Isolated
Advanced networking and scale

Recommended pricing tiers

S1 100 total ACU 1.75 GB memory A-Series compute equivalent 3155.58 INR/Month (Estimated)	P1V2 210 total ACU 3.5 GB memory Dv2-Series compute equivalent 3839.29 INR/Month (Estimated)	P2V2 420 total ACU 7 GB memory Dv2-Series compute equivalent 7678.58 INR/Month (Estimated)
--	---	---

P3V2 840 total ACU 14 GB memory Dv2-Series compute equivalent 15409.76 INR/Month (Estimated)	P1V3 195 minimum ACU/vCPU 8 GB memory 2 vCPU 6731.91 INR/Month (Estimated)	P2V3 195 minimum ACU/vCPU 16 GB memory 4 vCPU 13463.82 INR/Month (Estimated)
---	---	---

P3V3 195 minimum ACU/vCPU 32 GB memory 8 vCPU 26927.64 INR/Month (Estimated)

seeRecommendedOptions

Additional pricing tiers

S2 200 total ACU 3.5 GB memory A-Series compute equivalent 6311.16 INR/Month (Estimated)	S3 400 total ACU 7 GB memory A-Series compute equivalent 12622.33 INR/Month (Estimated)	P1 100 total ACU 1.75 GB memory A-Series compute equivalent 15777.91 INR/Month (Estimated)
---	--	---

Apply

App Service Plan

App Service plan pricing tier determines the location, features, cost and compute resources associated with your app.
[Learn more](#)

Windows Plan (Central US) * (New) mycompanyplan

Sku and size * Standard S1
100 total ACU, 1.75 GB memory

Zone redundancy

An App Service plan can be deployed as a zone redundant service in the regions that support it. This is a deployment time only decision. You can't make an App Service plan zone redundant after it has been deployed. [Learn more](#)

- Zone redundancy
- Enabled:** Your App Service plan and the apps in it will be zone redundant. The minimum App Service plan instance count will be three.
 - Disabled:** Your App Service Plan and the apps in it will not be zone redundant. The minimum App Service plan instance count will be one.

Review + create

< Previous

Next : Deployment >

Create Web App ...

Basics Deployment Networking Monitoring Tags Review + create

Enable GitHub Actions to continuously deploy your app. GitHub Actions is an automation framework that can build, test, and deploy your app whenever a new commit is made in your repository. If your code is in GitHub, choose your repository here and we will add a workflow file to automatically deploy your app to App Service. If your code is not in GitHub, go to the Deployment Center once the web app is created to set up your deployment. [Learn more](#)

GitHub Actions settings

Continuous deployment Disable Enable

GitHub Actions details

Select your GitHub details, so Azure Web Apps can access your repository.

GitHub account	<input type="button" value="Authorize"/>
Organization	<input type="button" value="Select organization"/>
Repository	<input type="button" value="Select repository"/>
Branch	<input type="button" value="Select branch"/>

Workflow configuration

File with the GitHub Actions workflow configuration.

[Review + create](#) [< Previous](#) [Next : Networking >](#)

Create Web App ...

Basics Deployment Networking Monitoring Tags Review + create

Web Apps can be provisioned with the inbound address being public to the internet or isolated to an Azure virtual network. Web Apps can also be provisioned with outbound traffic able to reach endpoints in a virtual network, be governed by network security groups or affected by virtual network routes. By default, your app is open to the internet and cannot reach into a virtual network. These aspects can also be changed after the app is provisioned. [Learn more](#)

Enable network injection * On Off

Create Web App ...

Basics Deployment Networking Monitoring Tags Review + create

Azure Monitor application insights is an Application Performance Management (APM) service for developers and DevOps professionals. Enable it below to automatically monitor your application. It will detect performance anomalies, and includes powerful analytics tools to help you diagnose issues and to understand what users actually do with your app. [Learn more](#)

Application Insights

Enable Application Insights * No Yes

Create Web App ...

Basics Deployment Networking Monitoring Tags Review + create

Summary

 **Web App**
by Microsoft

Standard (S1) sku
Estimated price - 3155.58 INR/Month

Details

Subscription	ee7bab70-0709-4f4f-9829-790225dc5be4
Resource Group	rg-webapp-remove
Name	webappdev1308
Publish	Code
Runtime stack	.NET 6 (LTS)

App Service Plan (New)

Name	mycompanyplan
Operating System	Windows
Region	Central US
SKU	Standard
Size	Small
ACU	100 total ACU
Memory	1.75 GB memory

Create < Previous Next > Download a template for automation

Microsoft.Web-WebApp-Portal-b5feb9ec-bf54 | Overview

Deployment

 Search (Ctrl+ /) <>  Delete  Cancel  Redeploy  Download  Refresh

 We'd love your feedback! →

 Your deployment is complete

Deployment name: Microsoft.Web-WebApp-Portal-b5... Start time: 8/13/2022, 3:18:33 PM
Subscription: [MSDN Platforms](#) Correlation ID: a2b5165f-11da-4
Resource group: rg-webapp-remove

 Deployment details
 Next steps

Manage deployments for your app. Recommended
Protect your app with authentication. Recommended
Add a deployment slot. Recommended

Go to resource

webappdev1308

App Service

 Search (Ctrl+ /) <>  Browse  Stop  Swap  Restart  Delete  Refresh  Get publish profile  Reset publish profile  Share to mobile ...

 Click here to access our Quickstart guide for deploying code to your app →

 Essentials JSON View

Resource group (move) : rg-webapp-remove	URL : https://webappdev1308.azurewebsites.net
Status : Running	Health Check : Not Configured
Location : Central US	App Service Plan : mycompanyplan (S1-1)
Subscription (move) : MSDN Platforms	FTP/deployment username : No FTP/deployment user set
Subscription ID : ee7bab70-0709-4f4f-9829-790225dc5be4	FTP hostname : ftp://waws-prod-dm1-193.ftp.azurewebsites....
Tags (edit) : Click here to add tags	FTPS hostname : ftps://waws-prod-dm1-193.ftp.azurewebsites....



Your web app is running and waiting for your content

Your web app is live, but we don't have your content yet. If you've already deployed, it could take up to 5 minutes for your content to show up, so come back soon.

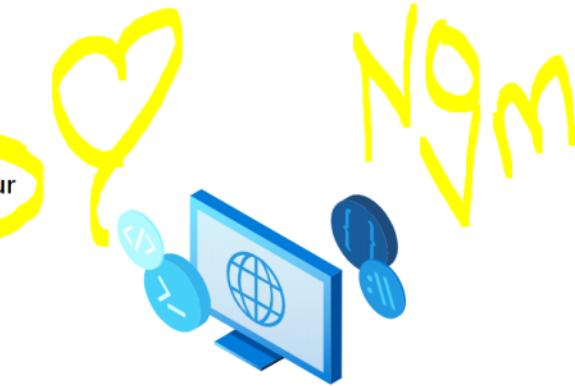
</> Supporting Node.js, Java, .NET and more

Haven't deployed yet?
Use the deployment center to publish code or set up continuous deployment.

Starting a new web site?
Follow our Quickstart guide to get a web app ready quickly.

[Deployment center](#)

[Quickstart](#)



Serverless

WebApp - S1 Plan

WebApp is Running
Get your content

Creating of VM
Windows Server 2016 DC
Size | Disk | License | Network | All

RDP

Install the Role
(Web Server)

Modernization

Code - Legacy App

Scale Up

Services > Microsoft.Web-WebApp-Portal-b5feb9ec-bf54 | Overview > webappdev1308

webappdev1308 | Scale up (App Service plan)

App Service

[Search \(Ctrl+ /\)](#)

- Identity
- Backups
- Custom domains
- TLS/SSL settings
- Certificates (preview)
- Networking
- Scale up (App Service plan)**
- Scale out (App Service plan)
- WebJobs
- Push
- MySQL In App
- Service Connector
- Properties
- Locks

App Service plan

- App Service plan
- Quotas
- Change App Service plan

Dev / Test For less demanding workloads **Production** For most production workloads

Recommended pricing tiers

Pricing Tier	Total ACU	Memory	Compute Equivalent	Cost (INR/Month)
S1	100 total ACU	1.75 GB memory	A-Series compute equivalent	3155.58 INR/Month (Estimated)
P1V2	210 total ACU	3.5 GB memory	Dv2-Series compute equivalent	3839.29 INR/Month (Estimated)
P2V2	420 total ACU	7 GB memory	Dv2-Series compute equivalent	7678.58 INR/Month (Estimated)
P3V2	840 total ACU	14 GB memory	Dv2-Series compute equivalent	15409.76 INR/Month (Estimated)
P1V3	195 minimum ACU/vCPU	8 GB memory	2 vCPU	6731.91 INR/Month (Estimated)
P2V3	195 minimum ACU/vCPU	16 GB memory	4 vCPU	13463.82 INR/Month (Estimated)
P3V3	195 minimum ACU/vCPU	32 GB memory	8 vCPU	26927.64 INR/Month (Estimated)

[seeAllOptions](#)

Included features
Every app hosted on this App Service plan will have access to these features:

[Apply](#) i Outgoing IP addresses for your app might change. [Learn more](#)

Included hardware
Every instance of your App Service plan will include the following hardware:

Scale Up - 10 Seconds

Scale Down - 8 Seconds

Services > Microsoft.Web-WebApp-Portal-b5feb9ec-bf54 | Overview > webappdev1308

webappdev1308 | Scale up (App Service plan)

App Service

Identity

Backups

Custom domains

TLS/SSL settings

Certificates (preview)

Networking

Scale up (App Service plan)

Scale out (App Service plan)

Logs

MySQL In App

Service Connector

Properties

Locks

App Service plan

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[seeAllOptions](#)

Scale Out

Services > Microsoft.Web-WebApp-Portal-b5feb9ec-bf54 | Overview > webappdev1308

webappdev1308 | Scale out (App Service plan) ...

App Service

Search (Ctrl+ /) Save Discard Refresh Logs Feedback

Configure Run history JSON Notify Diagnostic settings

Autoscale is a built-in feature that helps applications perform their best when demand changes. You can choose to scale your resource manually to a specific instance count, or via a custom Autoscale policy that scales based on metric(s) thresholds, or schedule instance count which scales during designated time windows. Autoscale enables your resource to be performant and cost effective by adding and removing instances based on demand. Learn more about Azure Autoscale or view the how-to video.

Choose how to scale your resource

- Manual scale
- Custom autoscale

Maintain a fixed instance count

Custom autoscale Scale on any schedule, based on any metrics

Manual scale

Override condition

Instance count 1



web / https://www.microsoft.com/learn/azure/autoscale-tutorial | Overview > webappdev1308

webappdev1308 | Scale out (App Service plan) ...

App Service

Search (Ctrl+ /) Save Discard Refresh Logs Feedback

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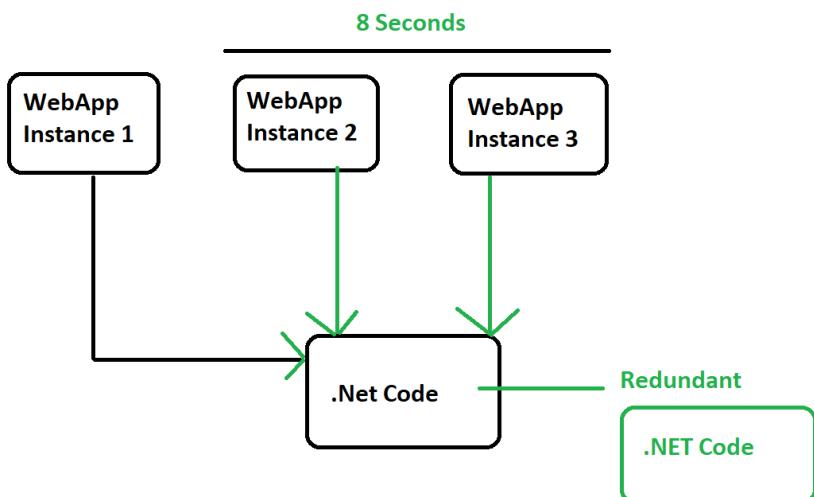
Manual scale

Override condition

Instance count 3



Scale Out - 8 Seconds



All services | Compute

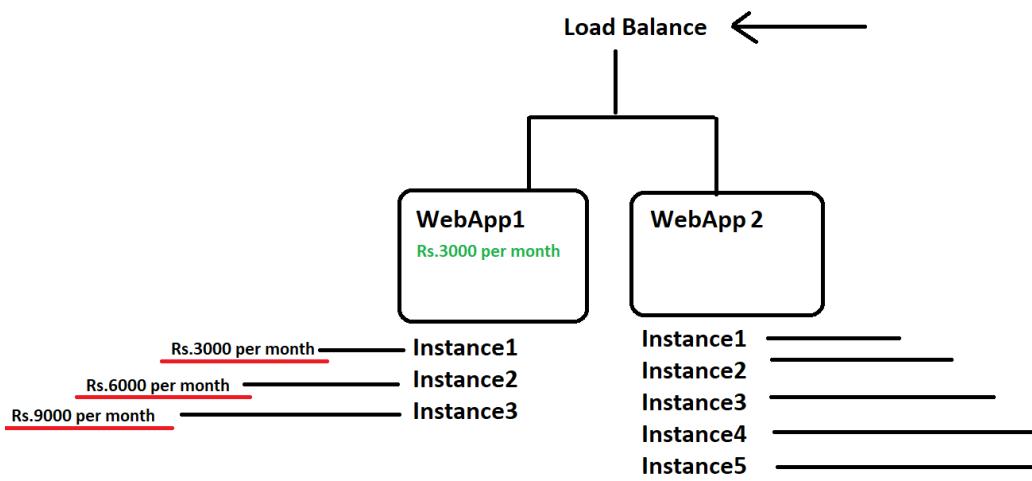
- All
- Favorites
- Recents
- Categories**
- General
- Compute**
- Networking
- Storage
- Web
- Mobile
- Containers
- Databases
- Analytics
- AI + machine learning
- Internet of things
- Mixed reality
- Integration

Filter services

- Virtual machines**
- Virtual machine scale sets**
- App Services**
- Batch accounts
- Cloud services (classic)
- Availability sets
- OS images (classic)
- Citrix Virtual Desktops Essentials
- SAP HANA on Azure PREVIEW
- CloudSimple Services
- Proximity placement groups
- Host groups
- Application groups

Virtual machines (classic)

- Function App
- Container instances
- Service Fabric clusters
- Kubernetes services
- Disks (classic)
- VM images (classic)
- Citrix Virtual Apps Essentials
- CloudSimple Virtual Machines
- CloudSimple Nodes
- Hosts
- Azure Spring Apps
- Maintenance Configurations



webappdev1308 | Scale out (App Service plan) ...

Search (Ctrl+ /) Save Discard Refresh Logs Feedback

Configure Run history JSON Notify Diagnostic settings

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Choose how to scale your resource

Manual scale Custom autoscale

Manual scale

Override condition

Instance count

Stop The Resource

The screenshot shows the Azure portal interface for an App Service named 'webappdev1308'. The top navigation bar includes a search bar, a star icon, and three dots for more options. Below the bar, there are several action buttons: 'Browse' (blue), 'Stop' (yellow), 'Swap' (green), 'Restart' (blue), and a gear icon for settings. A message box says 'Click here to access our Quickstart guide for deploy!'. On the left, a sidebar lists 'Overview' (selected), 'Activity log', and 'Access control (IAM)'. At the bottom, there's a note about moving resources.

End of Day 4