



# AZURE Kubernetes Service

Managed Service?

- Control Plane Management
- Node auto-repair
- Cluster auto-scaling
- NAP (PREVIEW)
- Automatic Upgrade
- Automatic Security Patches
- UI dashboard
- Inbuilt add-on metric server
- CNI Plugin

MICROSOFT  
REDHAT  
AWS  
ORACLE  
Google

Google

OpenSourced

Fork

additional features

- Infra maintenance, Scaling
- Advance Security
- Integration with other cloud services
- Multi-cloud Capabilities

↳ PRODUCTION READY Kubernetes



# AKS MODES

## Standard

- Azure will take care of control plane nodes.
- Worker node management
- you can use tPA, vPA cluster autoscaler, Node auto Provisioning
- full customization

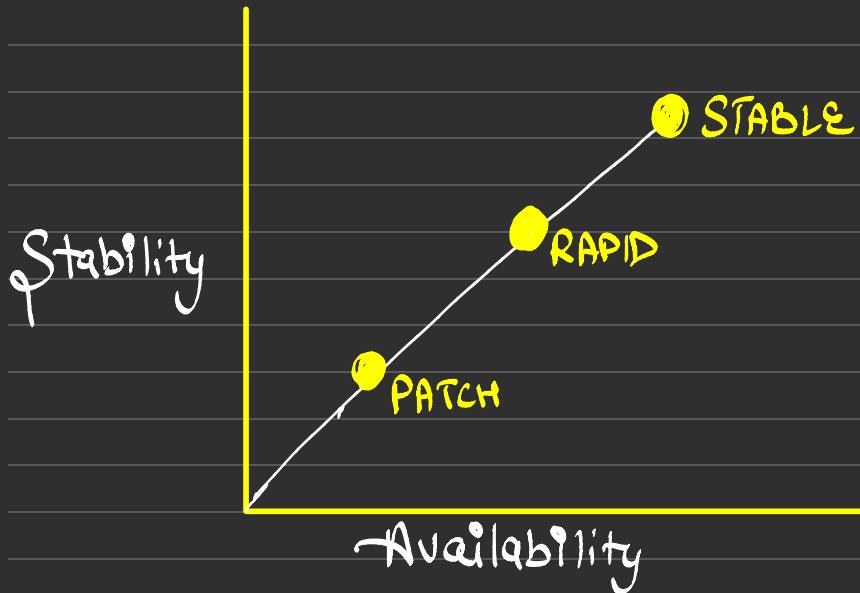
## Automatic

- Automated Node Management
- No operational overhead
- Fully Managed Service
- Nodes are added based on resource requests

## UPGRADE CHANNELS

→ How the cluster will be auto-upgraded

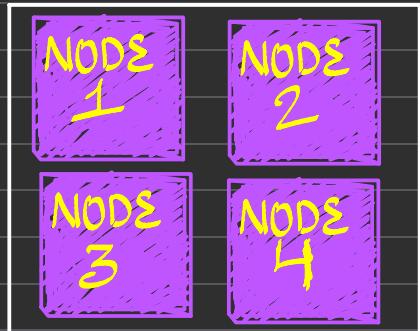
- 1) Node-image (legacy) → Node OS Image (Security fixes)  
No KBS upgrade
- 2) Rapid → As soon as it is available (less stable)
- 3) Stable → Slow but steady release (Most Stable)
- 4) Patch → Gets minor bug / Security fixes (1.30.1 → 1.30.2)
- 5) None → NO automatic upgrades (full control)



- Your clusters are auto-upgraded based on the upgrade channel you opted
- for clusters Not ENROLLED , you Manually takes care of the upgrades .

# AKS NODE POOL

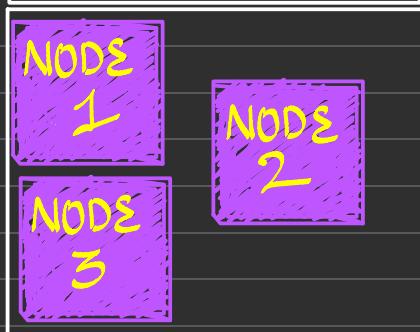
{Group of nodes with similar attributes}



NODE POOL → default

Machine type → D2s-v5

Image → Ubuntu - Linux



NodePool → Custom-NP

Machine type → NV4as-v4

does not work with CA  
NODE Auto Provisioning (NAP)

Preview

Cluster Autoscaler

CREATE-NP

Scheduled

diff. Machine



Add Nodes

POD

Pending → Insufficient Capacity

Scheduled

Azure Automatically creates/delete Node pools

Cluster Autoscaler → add new nodes in existing node pools

↓  
NAP Enabled

→ Create new node pool based  
on Specs of Pending pods  
CPU, memory, storage, gpu, labels, selectors

# Cluster Projects



	Dev/Test	Production Economy	Production Standard	Production Enterprise
Master Node Size	DS2-v2	DB ds.v5	DBds.v5	D16ds.v5
Private cluster	X	X	X	✓
Azure policy	X	X	✓	✓
Azure Monitor	X	X	✓	✓
Subnet ID	X	✓	X	✓

# AKS Pricing Tier

**FREE**

**Standard**

**Premium**

- \* charged for resources per cluster mgmt → free
- \* ideal for PoC, learning, dev/test
- \* suitable for less than 10 nodes
- \* \$0.10 per cluster per hour + resources
- \* up to 5000 nodes per cluster
- \* production workload require 2 yrs of support
- \* all features of the Standard Tier

→ Creating AKS cluster → AZ C4

→ Portal → Dev/Test

↳ Production Standard

→ deploy a small app.

→ cluster autoscaling demo

→ dynamic storage demo

→ deployed a full stack to AKS -