

Custom k8s deployed on Azure

List of Reasons

1 *Reasons*

- *List of Reasons*

2 *Fundamentals*

3 *Costs*

4 *Customization*

5 *Scaling*

6 *Summary*

List of Reasons

Reasons for Considering Alternative(s)



- The cost of an AKS cluster Super High!
- Azure Kubernetes Service (AKS)
 - k8s Node(s)

Figure: Cost !!!

List of Reasons

Reasons for Considering Alternative(s)



Figure: Customization

- The cost of an AKS cluster **Super High!**
- **Azure Kubernetes Service (AKS)**
 - k8s Node(s)
 - No SSH to Node(s)
 - No Options for OS
 - One choice for all
 - Ability to split the node(s) to different region(s)

List of Reasons

Reasons for Considering Alternative(s)

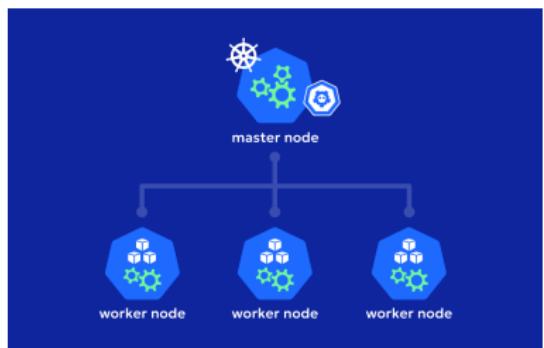


Figure: k8s Cluster

- The cost of an AKS cluster **Super High!**
- Azure Kubernetes Service (**AKS**)
 - **k8s Node(s)**
 - No SSH to Node(s)
 - No Options for OS
 - One choice for all
 - Ability to split the node(s) to different region(s)

List of Reasons

Reasons for Considering Alternative(s)



Figure: Troubleshooting

- The cost of an AKS cluster **Super High!**
- Azure Kubernetes Service (**AKS**)
 - k8s Node(s)
 - **No SSH to Node(s)**
 - No Options for OS
 - One choice for all
 - Ability to split the node(s) to different region(s)

List of Reasons

Reasons for Considering Alternative(s)



Figure: Operating System

- The cost of an AKS cluster **Super High!**
- Azure Kubernetes Service (**AKS**)
 - k8s Node(s)
 - No SSH to Node(s)
 - **No Options for OS**
 - One choice for all
 - Ability to split the node(s) to different region(s)

List of Reasons

Reasons for Considering Alternative(s)

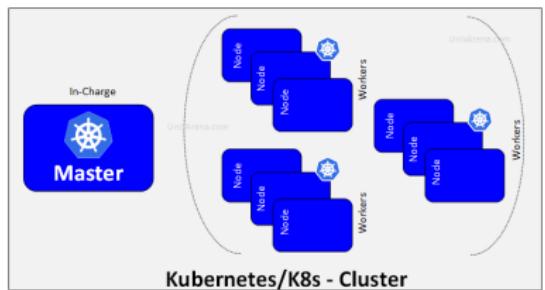


Figure: Node(s) Scaling

- The cost of an AKS cluster **Super High!**
- Azure Kubernetes Service (**AKS**)
 - k8s Node(s)
 - No SSH to Node(s)
 - No Options for OS
 - **One choice for all**
 - Ability to split the node(s) to different region(s)

List of Reasons

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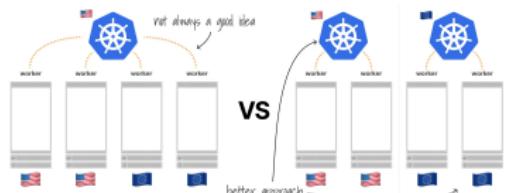


Figure: k8s Region(s)

- The cost of an AKS cluster **Super High!**
- Azure Kubernetes Service (**AKS**)
 - k8s Node(s)
 - No SSH to Node(s)
 - No Options for OS
 - One choice for all
 - **Ability to split the node(s) to different region(s)**

HLD Local ETCD

1 Reasons

2 Fundamentals

- HLD Local ETCD
- HLD External ETCD

3 Costs

4 Customization

5 Scaling

6 Summary

Local ETCD

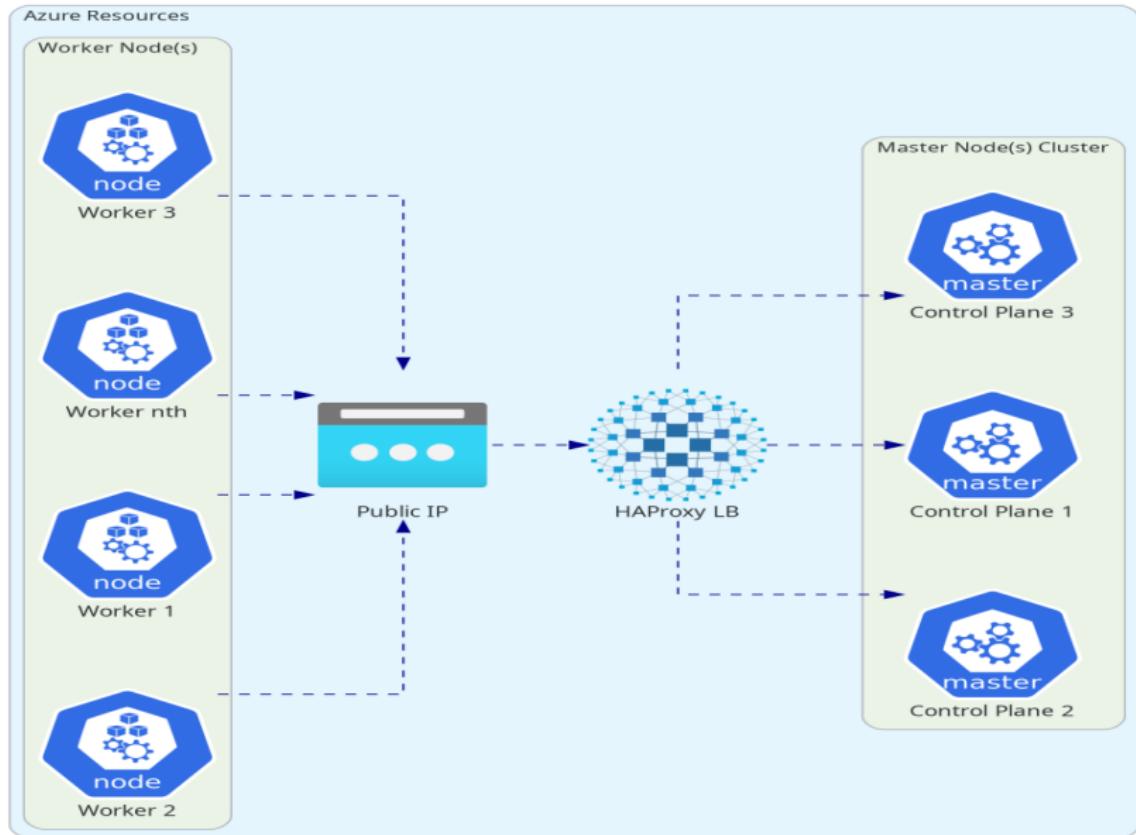


Figure: HLD Local ETCD

HLD External ETCD

1 Reasons

2 Fundamentals

- HLD Local ETCD
- HLD External ETCD

3 Costs

4 Customization

5 Scaling

6 Summary

External ETCD

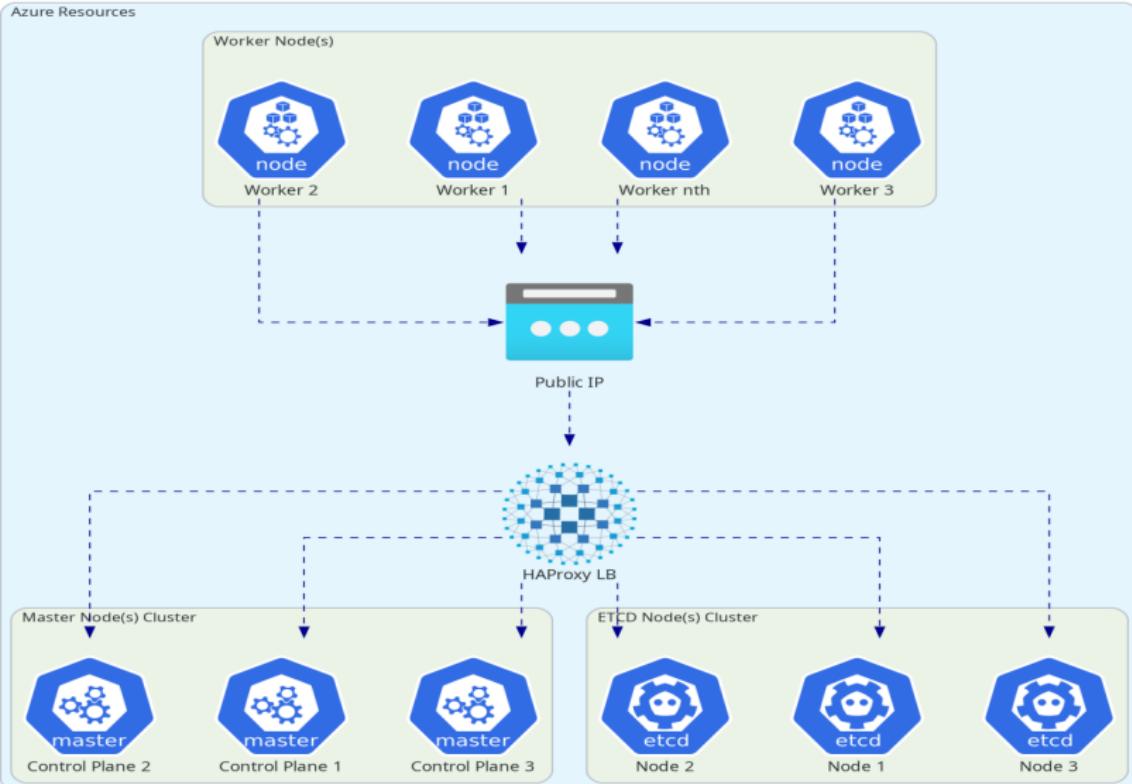


Figure: HLD External ETCD

AKS Costs

● Custom k8s Costs

1 Reasons

2 Fundamentals

3 Costs

● AKS Costs

4 Customization

5 Scaling

6 Summary

AKS Costs

How Expensive is AKS?

Your Estimate

Your Estimate

Azure Kubernetes Service (AKS)

Standard; Cluster management for 1 clusters; 1 B2s...

Upfront: DKK 0.00

Monthly: DKK 768.77

Region: North Europe

Tier: Standard

Cluster Management

Standard tier is recommended for all production workload, large and mission-critical applications. Standard tier charges on a per cluster basis and comes with a guaranteed SLA, scalable control plane, and higher node limits per cluster.

1

DKK 522.57

Nodes

Operating system: Linux

Category: All

Instance Series: B2s v2-series

INSTANCE: (Need help finding the right VM?)

B2s v2: 2 vCPUs, 4 GB RAM, 0 GB Temporary storage, DKK 0.292/ho...

1

x

1 Month

Virtual Machines

Chat with Sales

Figure: Basic 770 DKK / month !!!

AKS Costs

How Expensive is AKS?

	Free tier	Standard tier	Premium tier
When to use	<ul style="list-style-type: none">You want to experiment with AKS at no extra costYou're new to AKS and Kubernetes	<ul style="list-style-type: none">You're running production or mission-critical workloads and need high availability and reliabilityYou need a financially backed SLAAutomatically selected for AKS automatic clusters	<ul style="list-style-type: none">You're running production or mission-critical workloads and need high availability and reliabilityYou need a financially backed SLAAll mission critical, at scale, or production workloads requiring two years of one Kubernetes version support
Supported cluster types	<ul style="list-style-type: none">Development clusters or small scale testing environmentsClusters with fewer than 10 nodes	<ul style="list-style-type: none">Enterprise-grade or production workloadsClusters with up to 5,000 nodes	<ul style="list-style-type: none">Enterprise-grade or production workloadsClusters with up to 5,000 nodes
Pricing	<ul style="list-style-type: none">Free cluster managementPay-as-you-go for resources you consume	<ul style="list-style-type: none">Pay-as-you-go for resources you consumeStandard tier Cluster Management Pricing ↴	<ul style="list-style-type: none">Pay-as-you-go for resources you consumePremium tier Cluster Management Pricing ↴
Feature comparison	<ul style="list-style-type: none">Recommended for clusters with fewer than 10 nodes, but can support up to 1,000 nodesIncludes all current AKS features	<ul style="list-style-type: none">Uptime SLA is enabled by defaultGreater cluster reliability and resourcesCan support up to 5,000 nodes in a clusterIncludes all current AKS features	<ul style="list-style-type: none">Includes all current AKS features from standard tierMicrosoft maintenance past community support

Figure: Basic and Premium

How Expensive is AKS?

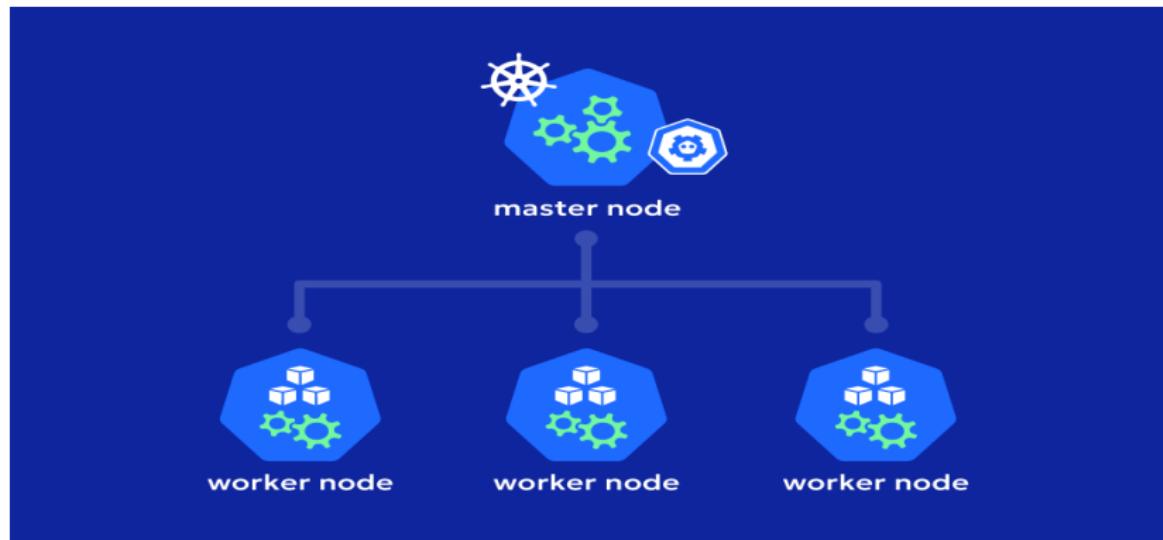


Figure: Basic is not Really HA !!!

AKS Costs

How Expensive is AKS?

The screenshot shows the Azure Cost Estimator interface. At the top, it displays "Your Estimate" and "Your Estimate". Below this, it shows the service as "Azure Kubernetes Service (AKS)" with a "Premium" tier selected. The estimated cost is listed as "Upfront: DKK 0.00" and "Monthly: DKK 4,491.67".

The configuration section for "Azure Kubernetes Service (AKS)" includes "Region: North Europe" and "Tier: Premium".

Under "Cluster Management", it notes that the "Premium tier is recommended for all mission critical, at scale or production workloads requiring 2 years of support". A cluster count of "1" is selected, with a total monthly cost of "DKK 3,135.42".

The "Nodes" section specifies "Operating system: Linux" and "Category: General purpose". It lists the "Instance Series: Av2 Standard" and provides a detailed breakdown for "INSTANCES": "A2 v2: 2 Cores, 4 GB RAM, 20 GB Temporary storage, DKK 0.616/hour".

At the bottom, there are buttons for "Virtual Machines" (with a value of "3" and a multiplier of "Month"), a "Chat with Sales" button, and a "Next Step" button.

Figure: Premium 4000 DKK / Month !!!

AKS Costs

How Expensive is AKS?

Support

SUPPORT: Basic (Included) DKK 0.00

Select your program/offer

LICENSING PROGRAM: Microsoft Customer Agreement (MCA)

Show Dev/Test Pricing

Estimated upfront cost DKK 0.00

Estimated monthly cost DKK 1,160.65

[Export](#) [Save](#) [Share](#) [Log in to save](#)

Prices are estimates only and are not intended as actual and the currency exchange rate. Prices are calculated based on current account agreement terms with Microsoft. Contact an Azure sales specialist for more information or pricing or to request a quote.

Basic (Included)

Basic support is included for companies or individuals using Azure in a non-production environment or for trial and evaluation. [Learn more](#)

Developer

Developer support is for companies or individuals using Azure in a non-production environment or for trial and evaluation. [Learn more](#)

Standard

Standard support is for small- or mid-size companies with minimal business-critical dependence on Azure. [Learn more](#)

CURRENCY Denmark Krone (DKK)

1 USD = 7.16 DKK

To get the most accurate pricing estimate, [sign in](#) to your account and ensure you've selected the correct licensing program.

Chat with Sales

Figure: Support level(s)

AKS Costs

How Expensive is AKS?

The screenshot shows the Microsoft Azure Pricing calculator interface. At the top, it says "Support" and "Professional Direct" with a value of "DKK 7,158.50". Below that, it says "Select your program/offer" and "Microsoft Customer Agreement (MCA)" with a link to "Log in to see your Azure agreement pricing". There's also a link to "Show Dev/Test Pricing". Under "Estimated upfront cost", it shows "DKK 0.00". Under "Estimated monthly cost", it shows "DKK 8,319.15". At the bottom, there are buttons for "Export", "Save", and "Share", and a note to "Log in to save and share cost estimates". A currency dropdown shows "Denmark - Krone (kr) DKK" with "1 USD = 7.16 DKK". A message box says: "To get the most accurate pricing estimate, log in to your account and ensure you've selected the correct licensing program." At the very bottom, a note states: "Prices are estimates only and are not intended as actual price quotes. Actual pricing may vary depending on the type of agreement entered with Microsoft, date of purchase, and the currency exchange rate. Prices are calculated based on US dollars and converted using London closing spot rates that are captured in the two business days prior to the last business day of the previous month end. If the two business days prior to the end of the month fall on a bank holiday in major markets, the rate setting day is generally the day immediately preceding the two business days. This rate applies to all transactions during the upcoming month. Sign in to the [Azure pricing calculator](#) to see more information on pricing or to contact a sales representative." A "Chat with Sales" button is also present.

Category	Value
Support	DKK 7,158.50
Licensing Program	Microsoft Customer Agreement (MCA)
Estimated upfront cost	DKK 0.00
Estimated monthly cost	DKK 8,319.15

Figure: Cost of Support Premium level 7160 DKK !!!

Custom k8s Costs

● Custom k8s Costs

1 Reasons

2 Fundamentals

3 Costs
● AKS Costs

4 Customization

5 Scaling

6 Summary

Custom k8s Costs

How Expensive is custom k8s?

The screenshot shows a cost estimation interface for a virtual machine. At the top, it says "Your Estimate" with a plus sign button. Below that, it says "Your Estimate". Under "Virtual Machines", it lists "1 B2s v2 (2 vCPUs, 4 GB RAM) x 1 Month (Pay as you go)" with an "Upfront: DKK 0.00" and "Monthly: DKK 213.21" breakdown. There are edit, delete, and copy icons next to the list. A callout box below the list says "Get DKK 200 credit plus free monthly amounts of popular services for 12 months—including Virtual Machines. See free amounts." The configuration section includes dropdowns for Region (North Europe), Operating system (Linux), Type (Ubuntu), Tier (Standard), Category (All), Instance Series (B2s v2-series), and a note about INSTANCE: (Need help finding the right VM?). It also shows a quantity of 1 selected for both "Virtual machines" and "Month". A "Chat with Sales" button is at the bottom right.

Figure: Basic 214 DKK / month (including SSD disc) !!!

Node customization

1 Reasons

2 Fundamentals

3 Costs

4 Customization

- Node customization

5 Scaling

6 Summary

Node customization

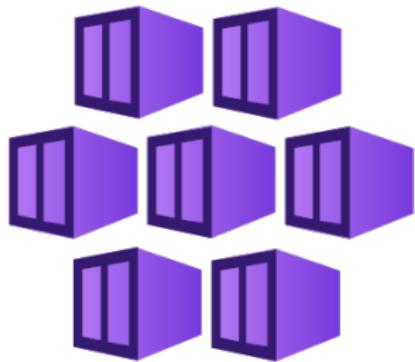


Figure: AKS

- No customization with AKS
- Custom Linux VM
100% Customization
 - RedHat OS
 - Amazon Linux
 - Ubuntu
 - Alpine Linux

Node customization



Figure: Azure

- No customization with AKS
- Custom Linux VM
100% Customization
 - RedHat OS
 - Core OS
 - Debian OS
 - Oracle Linux OS
 - Suse Linux EE OS
 - Suse Linux OS
 - Ubuntu OS

Node customization



Figure: RedHat OS

- No customization with AKS
- Custom Linux VM
100% Customization
 - RedHat OS
 - Core OS
 - Debian OS
 - Oracle Linux OS
 - Suse Linux EE OS
 - Suse Linux OS
 - Ubuntu OS

Node customization



Figure: Core OS

- No customization with AKS
- Custom Linux VM
100% Customization
 - RedHat OS
 - **Core OS**
 - Debian OS
 - Oracle Linux OS
 - Suse Linux EE OS
 - Suse Linux OS
 - Ubuntu OS

Node customization



Figure: Debian OS

- No customization with AKS
- Custom Linux VM
100% Customization
 - RedHat OS
 - Core OS
 - **Debian OS**
- Oracle Linux OS
- Suse Linux EE OS
- Suse Linux OS
- Ubuntu OS

Node customization



Figure: Oracle Linux OS

- No customization with AKS
- Custom Linux VM 100% Customization
 - RedHat OS
 - Core OS
 - Debian OS
 - **Oracle Linux OS**
 - Suse Linux EE OS
 - Suse Linux OS
 - Ubuntu OS

Node customization



Figure: Suse EE OS

- No customization with AKS
- Custom Linux VM
100% Customization
 - RedHat OS
 - Core OS
 - Debian OS
 - Oracle Linux OS
 - **Suse Linux EE OS**
 - Suse Linux OS
 - Ubuntu OS

Node customization



Figure: Suse OS

- No customization with AKS
- Custom Linux VM
100% Customization
 - RedHat OS
 - Core OS
 - Debian OS
 - Oracle Linux OS
 - Suse Linux EE OS
 - **Suse Linux OS**
 - Ubuntu OS

Node customization



Figure: Ubuntu OS

- No customization with AKS
- Custom Linux VM
100% Customization
 - RedHat OS
 - Core OS
 - Debian OS
 - Oracle Linux OS
 - Suse Linux EE OS
 - Suse Linux OS
 - **Ubuntu OS**

Reasons
oo

Fundamentals
oo

Costs
oo

Customization
oo

Scaling
●○

Summary
○○

Node(s) Scaling

4 Customization

1 Reasons

2 Fundamentals

3 Costs

5 Scaling

- Node(s) Scaling

6 Summary

Node(s) Scaling

Node(s) Scaling

Different Methods for Autoscaling in Kubernetes

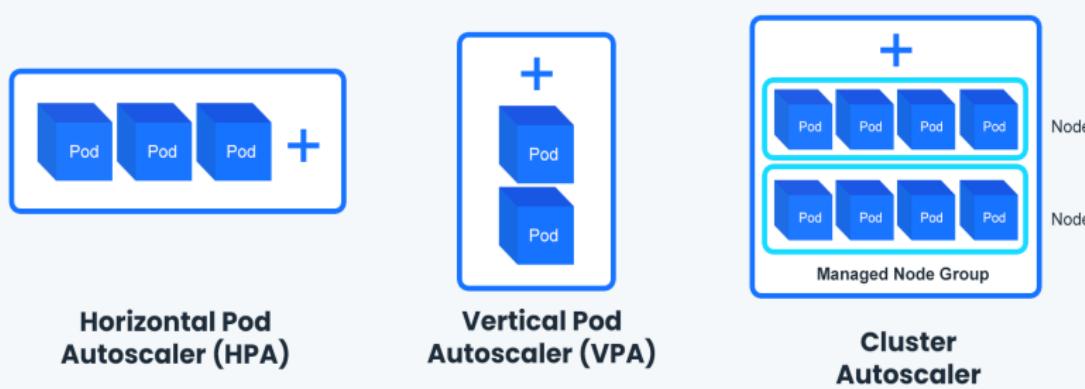


Figure: Horizontal and Vertical Scaling

Node(s) Scaling

Node(s) Scaling

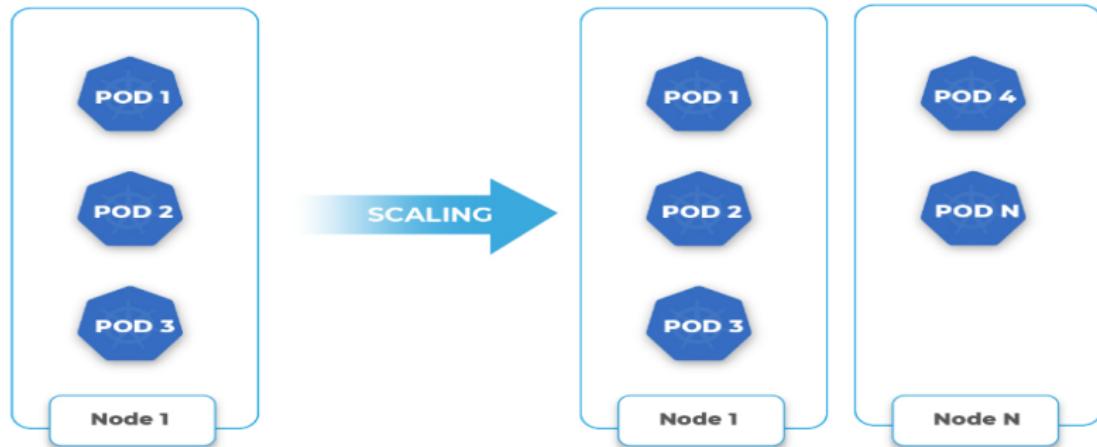


Figure: Scaling with Custom k8s VS AKS

Key points repetition

1 Reasons

2 Fundamentals

3 Costs

4 Customization

5 Scaling

6 Summary

- Key points repetition

Key points repetition

Summary

- In section “**Reasons**” page “1” Listed the reasons!
- In section “**Fundamentals**” page “2” Kubernetes cluster fundamentals!
- In section “**Costs**” page “3” Comparison of costs (per version)!
- In section “**Customization**” page “4” How customizable is each one!
- In section “**Scaling**” page “5” Discussed the scaling for different clusters!

Key points repetition

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Questions

Coming up: Q & A