Karpenter for AKS

Karpenter

karpenter-provider-aws

Public

Watch 71 Fork 731 Starred 5.5k

main 27 Branches 109 Tags Go to file t Code

engedaam ci: Update Snapshot_Account_ID for E2E Up... 14d33c6 · 10 hours ago 2,997 Commits

.github	ci: Update Snapshot_Account_ID for E2E Upg...	10 hours ago
charts	docs: Update dnsPolicy to ClusterFirst away ...	last week
cmd/controller	chore: Update usage of aws/karpenter throu...	last month
designs	chore: Update usage of aws/karpenter throu...	last month
examples	feat: add support for mounted instance-stor...	last month
hack	ci: Fix make codegen for network bandwidth (...	2 weeks ago
pkg	Support spot-to-spot consolidation. (#5377)	last week
test	test: Add E2E testing for fully blocking budg...	last week
tools	chore: Update module paths for the website...	last month
website	docs: Update Drift fields include correct CR...	12 hours ago

About

Karpenter is a Kubernetes Node Autoscaler built for flexibility, performance, and simplicity.

karpenter.sh

Readme
Apache-2.0 license
Code of conduct
Security policy
Activity
Custom properties
5.5k stars
71 watching
731 forks
Report repository

Releases 106

karpenter-provider-azure

Public

Watch 59 Fork 25 Starred 215

main Branches Tags Go to file t Code

Bryce-Soghigian and tallaxes fix: mark spot as una... dccb36e · 3 hours ago 55 Commits

.devcontainer	initial commit	2 months ago
.github	test(e2e): cut down on resource name lengt...	last month
.vscode	initial commit	2 months ago
charts	fix: drop nodeclaim webhook operation DEL...	2 months ago
cmd/controller	initial commit	2 months ago
designs	fix: bootstrap contract for GPUs to include ...	last month
examples	fix: remove support for HyperV generation s...	2 months ago
hack	test: adding test coverage for image resoluti...	3 days ago
pkg	fix: mark spot as unavailable on LowPriority...	3 hours ago
test	test(e2e): add in grouping for e2e logs (#69)	5 days ago

About

AKS Karpenter Provider

Readme
Apache-2.0, Apache-2.0 licenses found
Code of conduct
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215 stars
59 watching
25 forks
Report repository

Releases

3 tags

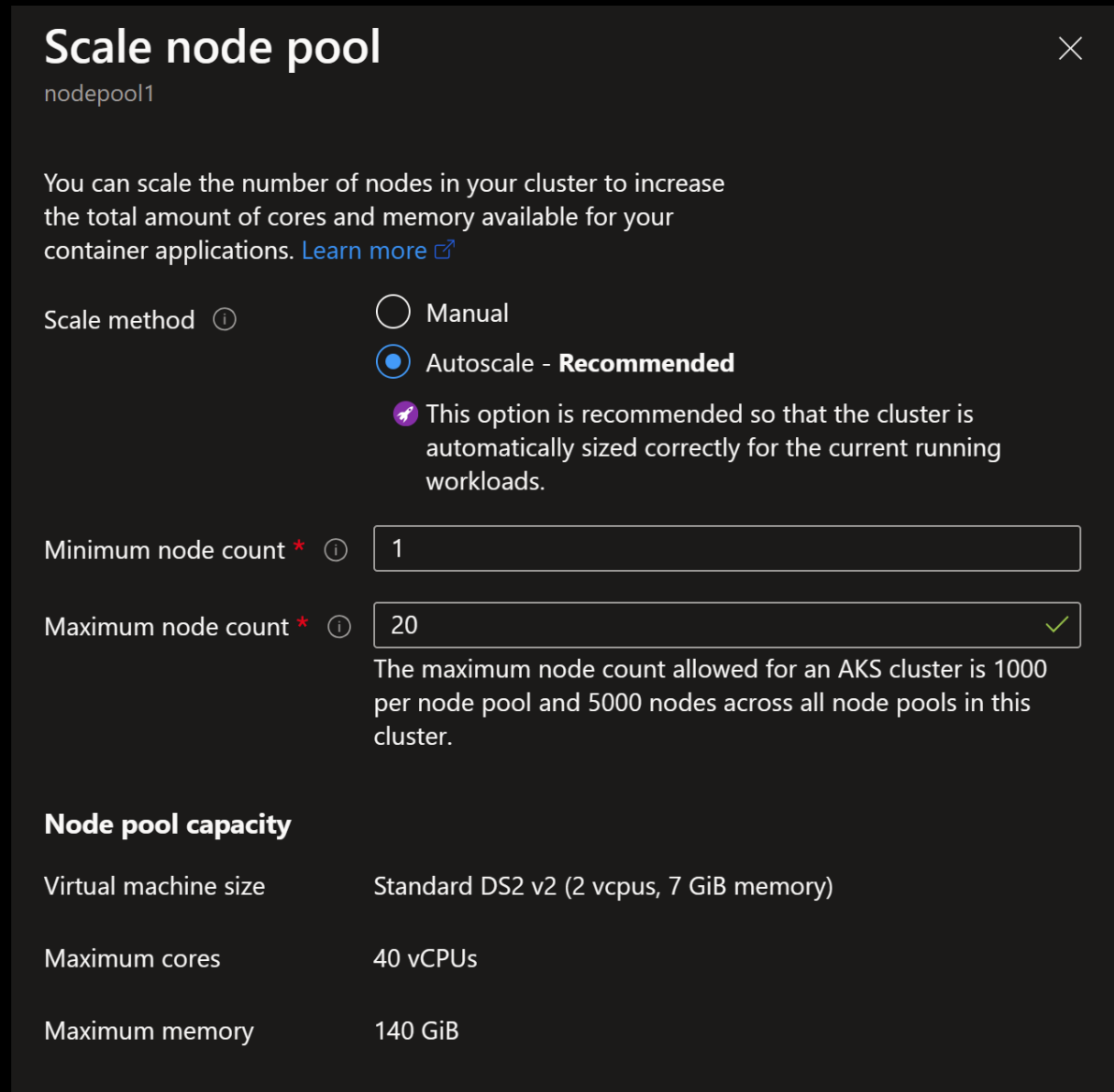
AKS Cluster Autoscaler

The cluster autoscaler on Azure dynamically scales Kubernetes worker nodes. It runs as a deployment in your cluster.

Enabled by default in AKS.

Creates Nodepools (Azure VMSS) with specific VM SKU.

https://github.com/kubernetes/autoscaler/tree/master/cluster-autoscaler/cloudprovider/azure



Karpenter for AKS

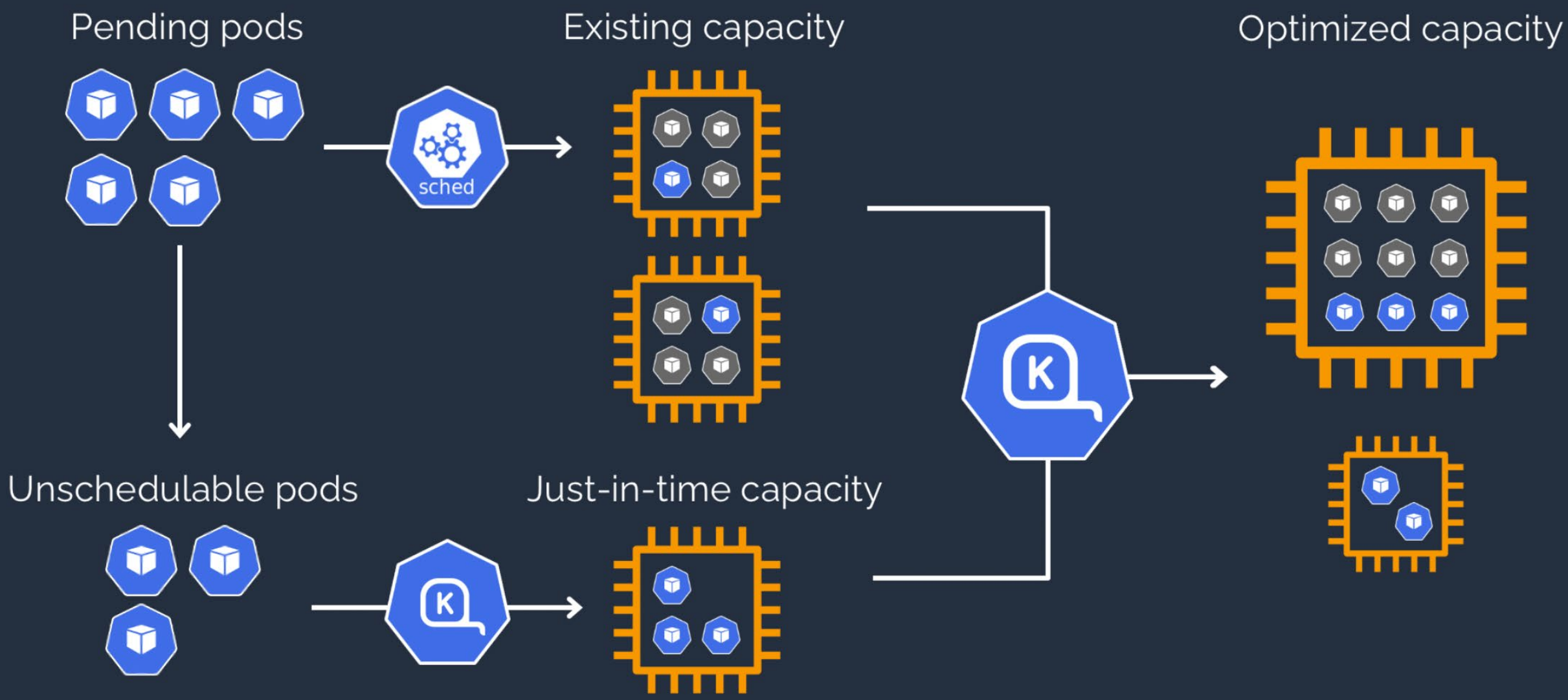
Replaces the default Cluster Autoscaler in Kubernetes.

Improve application availability
Responds quickly and automatically to changes in application load

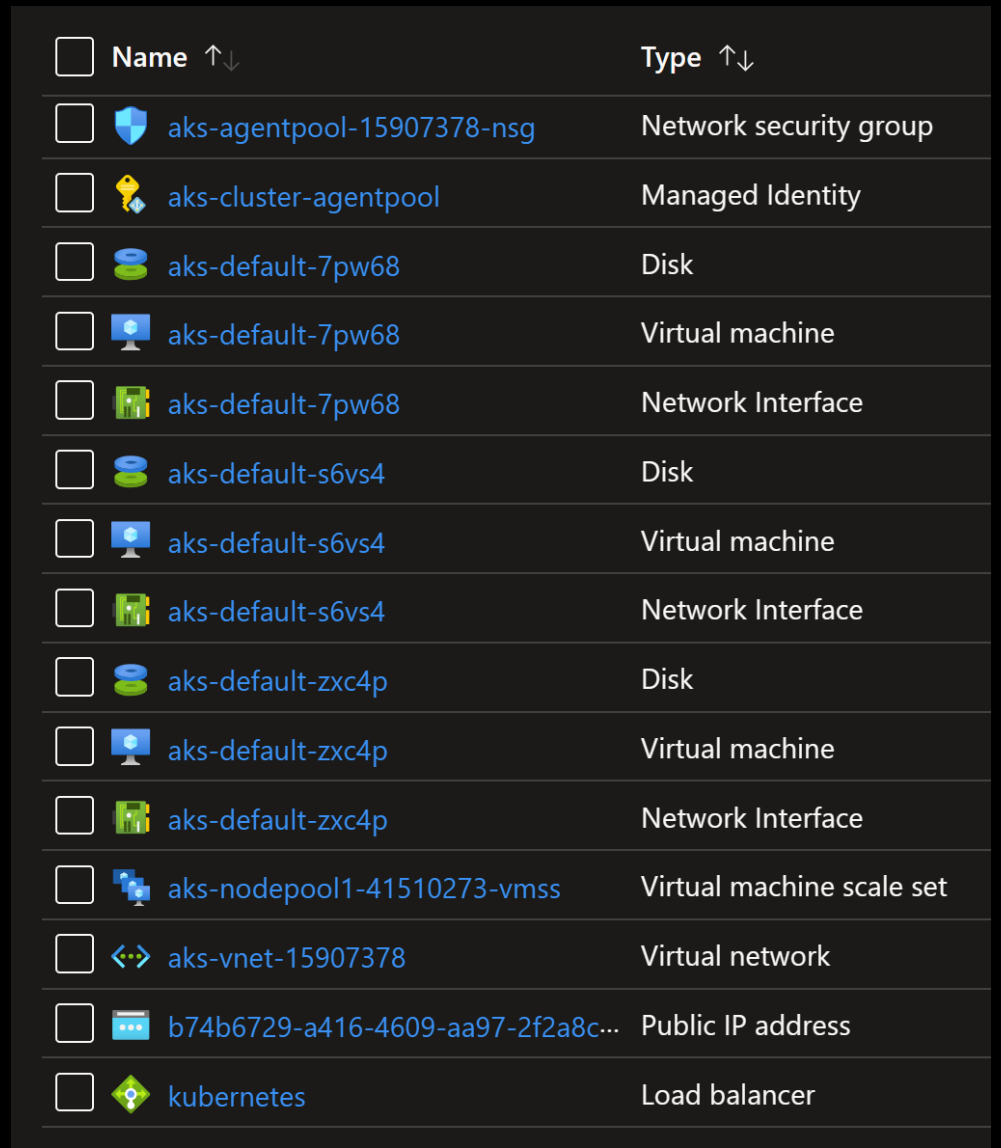
Lower compute costs
Remove under-utilized nodes
Replace expensive nodes with cheaper alternatives
Consolidate workloads onto more efficient compute resources

```
$ az aks create -n $AKS_NAME -g $AKS_RG --node-provisioning-mode Auto
```

Karpenter design



Karpenter Nodepool



Name	Type
aks-agentpool-15907378-nsg	Network security group
aks-cluster-agentpool	Managed Identity
aks-default-7pw68	Disk
aks-default-7pw68	Virtual machine
aks-default-7pw68	Network Interface
aks-default-s6vs4	Disk
aks-default-s6vs4	Virtual machine
aks-default-s6vs4	Network Interface
aks-default-zxc4p	Disk
aks-default-zxc4p	Virtual machine
aks-default-zxc4p	Network Interface
aks-nodepool1-41510273-vmss	Virtual machine scale set
aks-vnet-15907378	Virtual network
b74b6729-a416-4609-aa97-2f2a8c...	Public IP address
kubernetes	Load balancer

```yaml
apiVersion: karpenter.sh/v1beta1
kind: NodePool
metadata:
  name: burstable
spec:
  template:
    spec:
      nodeClassRef:
        name: default
      requirements:
        - key: kubernetes.io/arch
          operator: In
          values: ["amd64"] # arm64
        - key: kubernetes.io/os
          operator: In
          values: ["linux"]
        - key: karpenter.sh/capacity-type
          operator: In
          values: ["on-demand"] # spot
        - key: karpenter.azure.com/sku-family
          operator: In
          values: [B] # D, F, E, M, NV, etc
        - key: topology.kubernetes.io/zone
          operator: In
          values: ["1", "2", "3"]
```

Karpenter Nodepool

Name	Type
aks-agentpool-15907378-nsg	Network security group
aks-cluster-agentpool	Managed Identity
aks-default-7pw68	Disk
aks-default-7pw68	Virtual machine
aks-default-7pw68	Network Interface
aks-default-s6vs4	Disk
aks-default-s6vs4	Virtual machine
aks-default-s6vs4	Network Interface
aks-default-zxc4p	Disk
aks-default-zxc4p	Virtual machine
aks-default-zxc4p	Network Interface
aks-nodepool1-41510273-vmss	Virtual machine scale set
aks-vnet-15907378	Virtual network
b74b6729-a416-4609-aa97-2f2a8c...	Public IP address
kubernetes	Load balancer

Node pool ↑	Provisioning state ⓘ	Power state ⓘ
nodepool1	Succeeded	Running

```
$ kubectl get nodes
NAME                                STATUS   ROLES   AGE    VERSION
aks-default-7pw68                   Ready    agent   17m    v1.27.7
aks-default-s6vs4                   Ready    agent   18m    v1.27.7
aks-default-zxc4p                   Ready    agent   18m    v1.27.7
aks-nodepool1-41510273-vmss000000   Ready    agent   6h4m   v1.27.7
aks-nodepool1-41510273-vmss000001   Ready    agent   6h4m   v1.27.7
aks-nodepool1-41510273-vmss000002   Ready    agent   6h4m   v1.27.7
```

Karpenter Nodepool won't be seen in AKS dashboard.