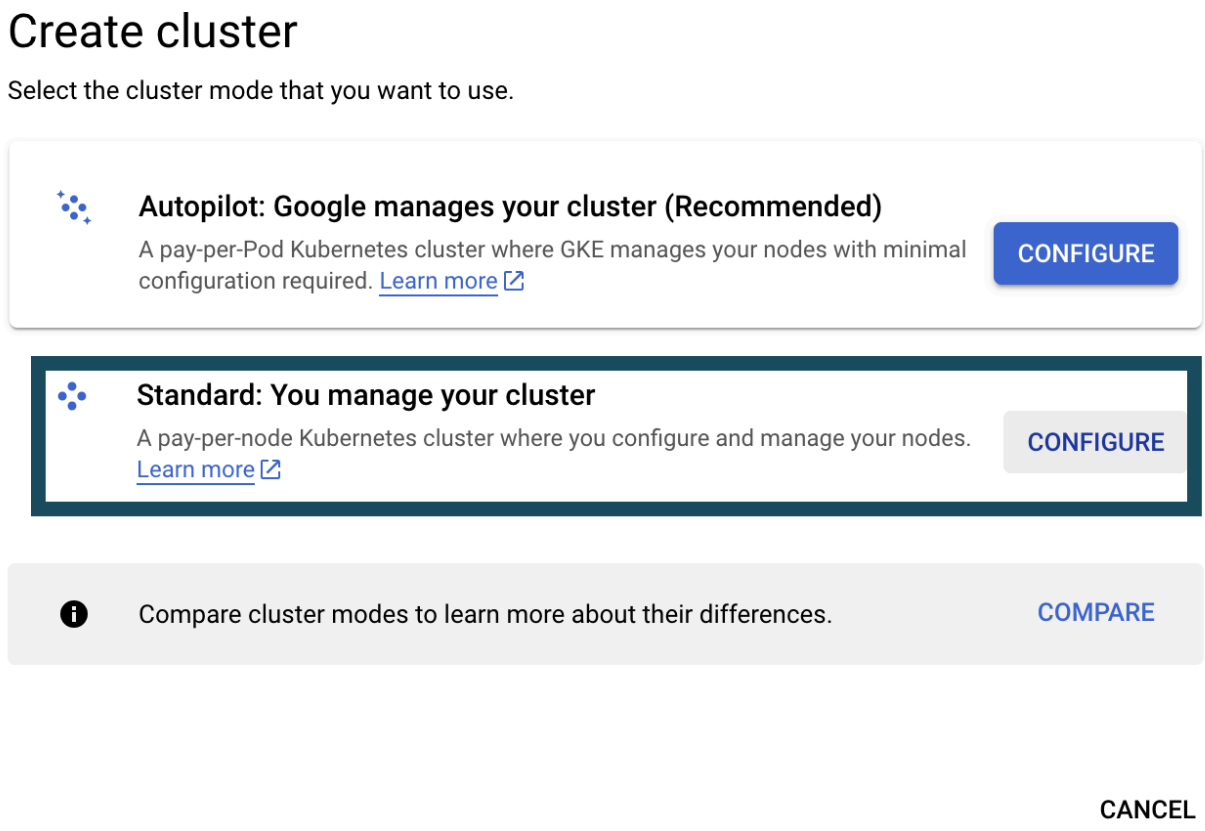
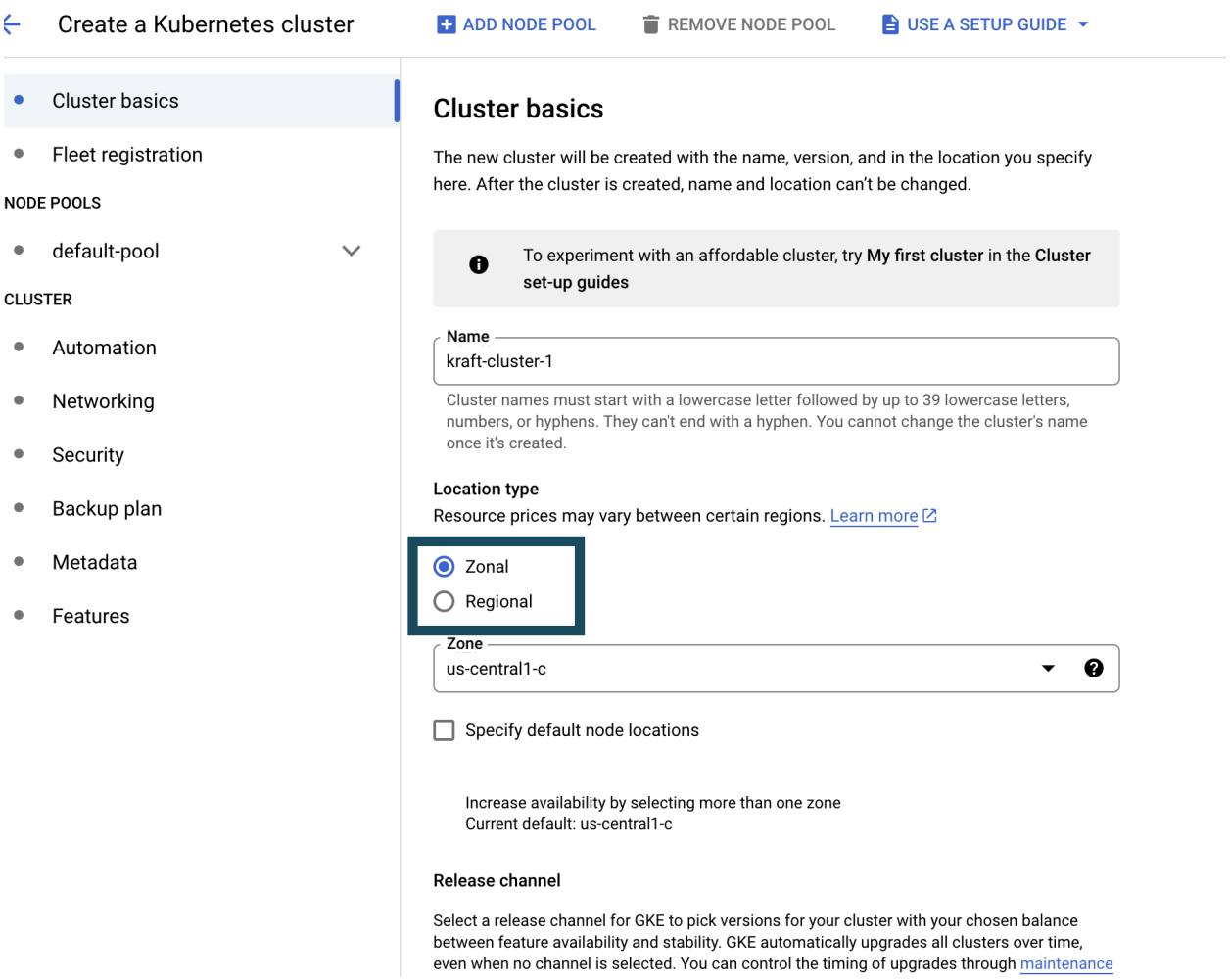
Go to GKE > Clusters > Create Cluster

Select “**Standard mode**“ of cluster creation

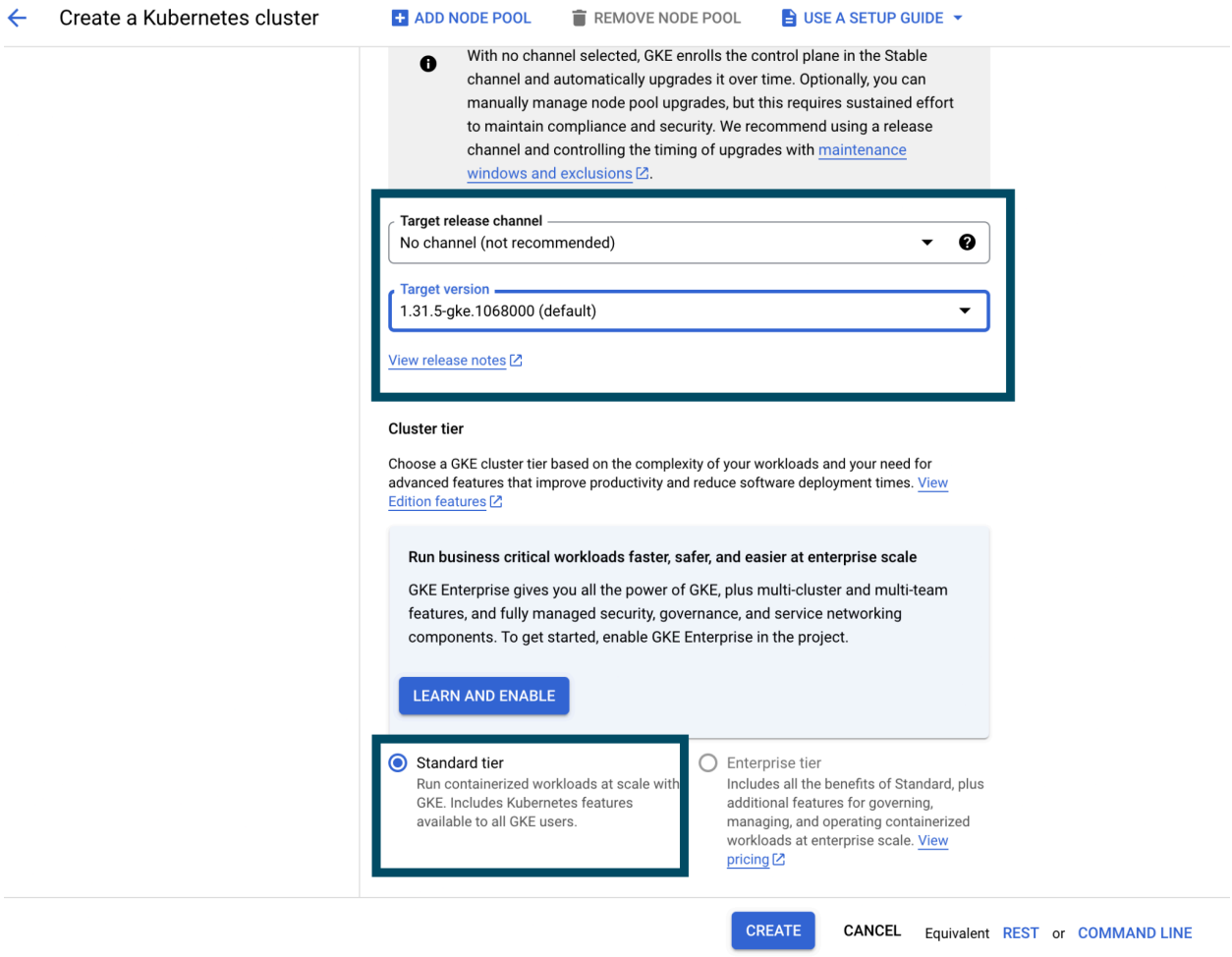
1)



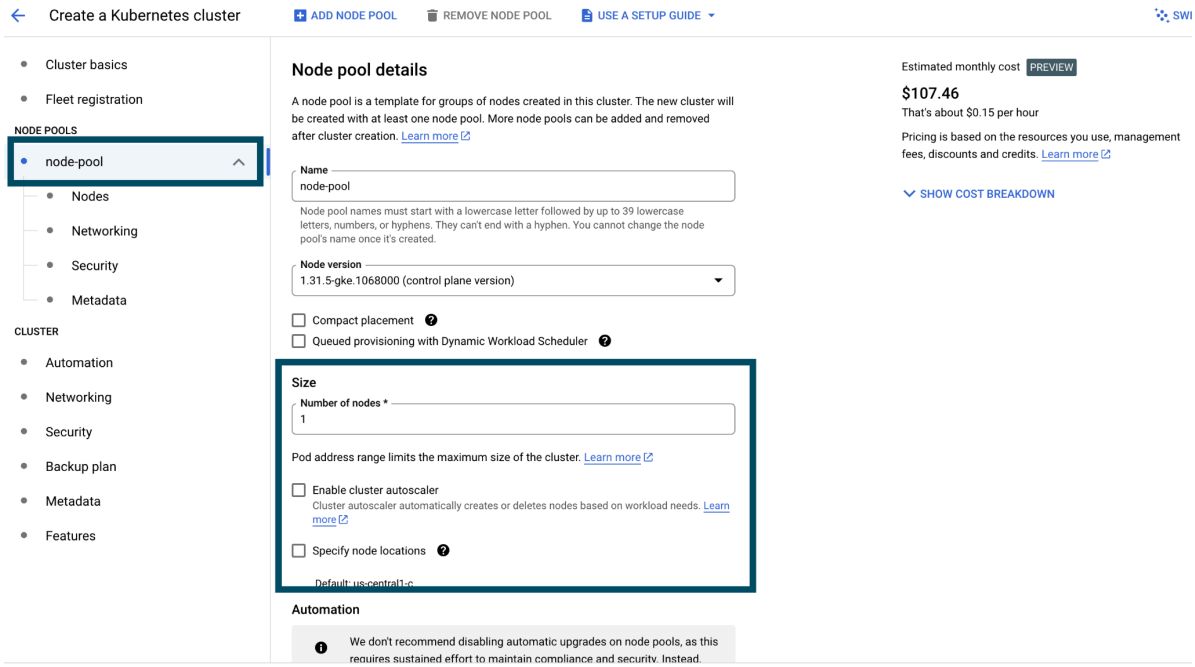
2)


Create a Kubernetes cluster
ADD NODE POOL
REMOVE NODE POOL
USE A SETUP GUIDE
Cluster basics
Fleet registration
NODE POOLS
default-pool
CLUSTER
Automation
Networking
Security
Backup plan
Metadata
Features
Cluster basics
The new cluster will be created with the name, version, and in the location you specify here. After the cluster is created, name and location can't be changed.
To experiment with an affordable cluster, try My first cluster in the Cluster set-up guides
Name
kraft-cluster-1
Cluster names must start with a lowercase letter followed by up to 39 lowercase letters, numbers, or hyphens. They can't end with a hyphen. You cannot change the cluster's name once it's created.
Location type
Resource prices may vary between certain regions. Learn more
Zonal
Regional
Zone
us-central1-c
Specify default node locations
Increase availability by selecting more than one zone
Current default: us-central1-c
Release channel
Select a release channel for GKE to pick versions for your cluster with your chosen balance between feature availability and stability. GKE automatically upgrades all clusters over time, even when no channel is selected. You can control the timing of upgrades through maintenance

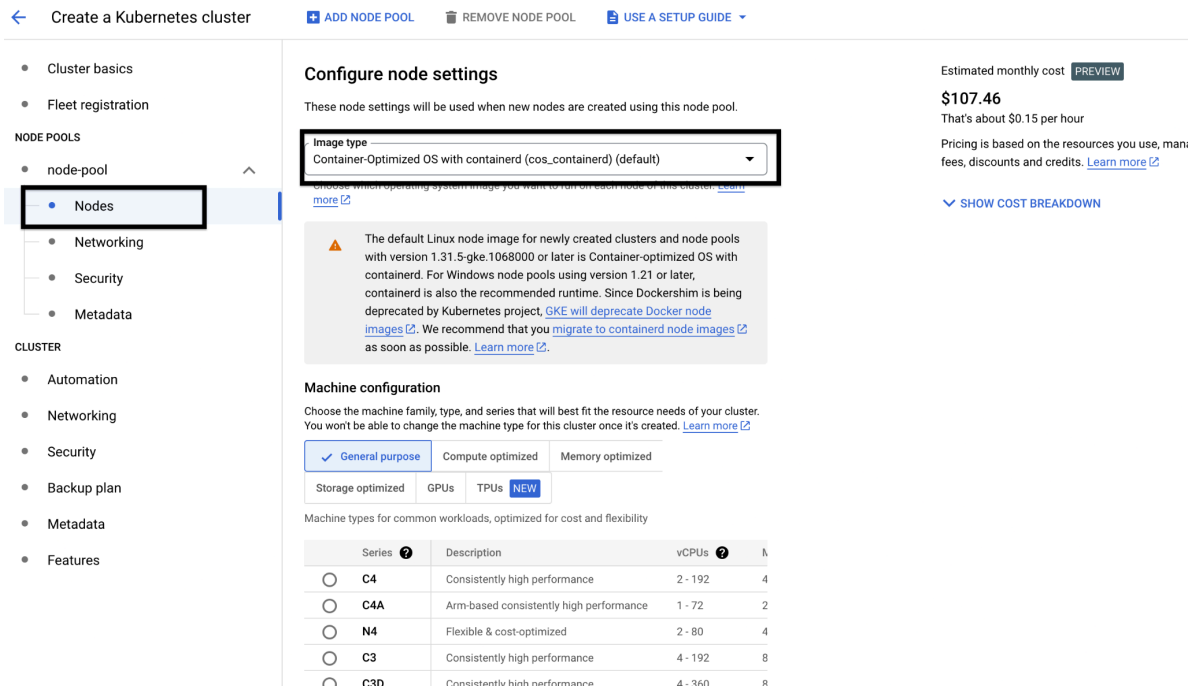
3)


Create a Kubernetes cluster
ADD NODE POOL
REMOVE NODE POOL
USE A SETUP GUIDE
With no channel selected, GKE enrolls the control plane in the Stable channel and automatically upgrades it over time. Optionally, you can manually manage node pool upgrades, but this requires sustained effort to maintain compliance and security. We recommend using a release channel and controlling the timing of upgrades with maintenance windows and exclusions.
Target release channel
No channel (not recommended)
Target version
1.31.5-gke.1068000 (default)
View release notes
Cluster tier
Choose a GKE cluster tier based on the complexity of your workloads and your need for advanced features that improve productivity and reduce software deployment times. View Edition features
Run business critical workloads faster, safer, and easier at enterprise scale
GKE Enterprise gives you all the power of GKE, plus multi-cluster and multi-team features, and fully managed security, governance, and service networking components. To get started, enable GKE Enterprise in the project.
LEARN AND ENABLE
Standard tier
Run containerized workloads at scale with GKE. Includes Kubernetes features available to all GKE users.
Enterprise tier
Includes all the benefits of Standard, plus additional features for governing, managing, and operating containerized workloads at enterprise scale. View pricing
CREATE
CANCEL
Equivalent REST or COMMAND LINE

4)


Create a Kubernetes cluster
ADD NODE POOL
REMOVE NODE POOL
USE A SETUP GUIDE
Cluster basics
Fleet registration
NODE POOLS
node-pool
Nodes
Networking
Security
Metadata
CLUSTER
Automation
Networking
Security
Backup plan
Metadata
Features
Node pool details
A node pool is a template for groups of nodes created in this cluster. The new cluster will be created with at least one node pool. More node pools can be added and removed after cluster creation. Learn more
Name
node-pool
Node pool names must start with a lowercase letter followed by up to 39 lowercase letters, numbers, or hyphens. They can't end with a hyphen. You cannot change the node pool's name once it's created.
Node version
1.31.5-gke.1068000 (control plane version)
Compact placement
Queued provisioning with Dynamic Workload Scheduler
Size
Number of nodes *
1
Pod address range limits the maximum size of the cluster. Learn more
Enable cluster autoscaler
Cluster autoscaler automatically creates or deletes nodes based on workload needs. Learn more
Specify node locations
Automation
We don't recommend disabling automatic upgrades on node pools, as this
Estimated monthly cost
PREVIEW
$107.46
That's about $0.15 per hour
Pricing is based on the resources you use, management fees, discounts and credits. Learn more
SHOW COST BREAKDOWN

5)


Create a Kubernetes cluster
ADD NODE POOL
REMOVE NODE POOL
USE A SETUP GUIDE
Cluster basics
Fleet registration
NODE POOLS
node-pool
Nodes
Networking
Security
Metadata
CLUSTER
Automation
Networking
Security
Backup plan
Metadata
Features
Configure node settings
These node settings will be used when new nodes are created using this node pool.
Image type
Container-Optimized OS with containerd (cos_containerd) (default)
The default Linux node image for newly created clusters and node pools with version 1.31.5-gke.1068000 or later is Container-optimized OS with containerd. For Windows node pools using version 1.21 or later, containerd is also the recommended runtime. Since Dockershim is being deprecated by Kubernetes project, GKE will deprecate Docker node images. We recommend that you migrate to containerd node images as soon as possible. Learn more.
Machine configuration
Choose the machine family, type, and series that will best fit the resource needs of your cluster. You won't be able to change the machine type for this cluster once it's created. Learn more
General purpose
Compute optimized
Memory optimized
Storage optimized
GPUs
TPUs
NEW
Machine types for common workloads, optimized for cost and flexibility
Series
Description
vCPUs
C4
Consistently high performance
2 - 192
C4A
Arm-based consistently high performance
1 - 72
N4
Flexible & cost-optimized
2 - 80
C3
Consistently high performance
4 - 192
Estimated monthly cost
PREVIEW
$107.46
That's about $0.15 per hour
Pricing is based on the resources you use, mana
fees, discounts and credits. Learn more
SHOW COST BREAKDOWN

6)

○	C3	Consistently high performance	4 - 192	8
○	C3D	Consistently high performance	4 - 360	8
◉	E2	Low cost, day-to-day computing	0.25 - 32	1
○	N2	Balanced price & performance	2 - 128	2
○	N2D	Balanced price & performance	2 - 224	2
○	T2A	Scale-out workloads	1 - 48	4
○	T2D	Scale-out workloads	1 - 60	4
○	N1	Balanced price & performance	0.5 - 96	1

Machine type

Choose a machine type with preset amounts of vCPUs and memory that suit most workloads. Or, you can create a custom machine for your workload's particular needs. Learn more

PRESET CUSTOM

e2-medium (2 vCPU, 1 core, 4 GB memory)

vCPU
1-2 vCPU (1 shared core)

Memory
4 GB

CPU PLATFORM

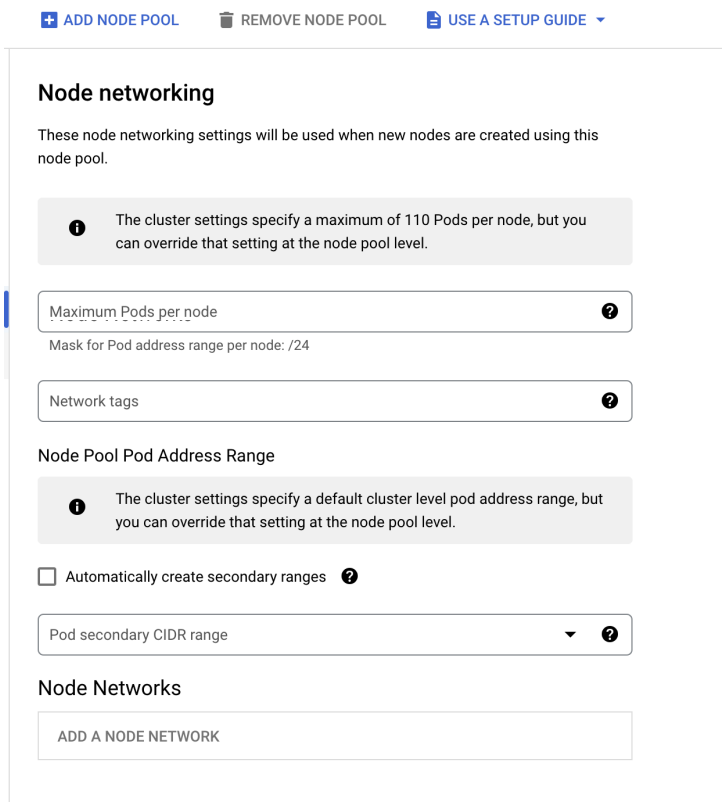
Boot disk type
Balanced persistent disk

Secondary boot disk

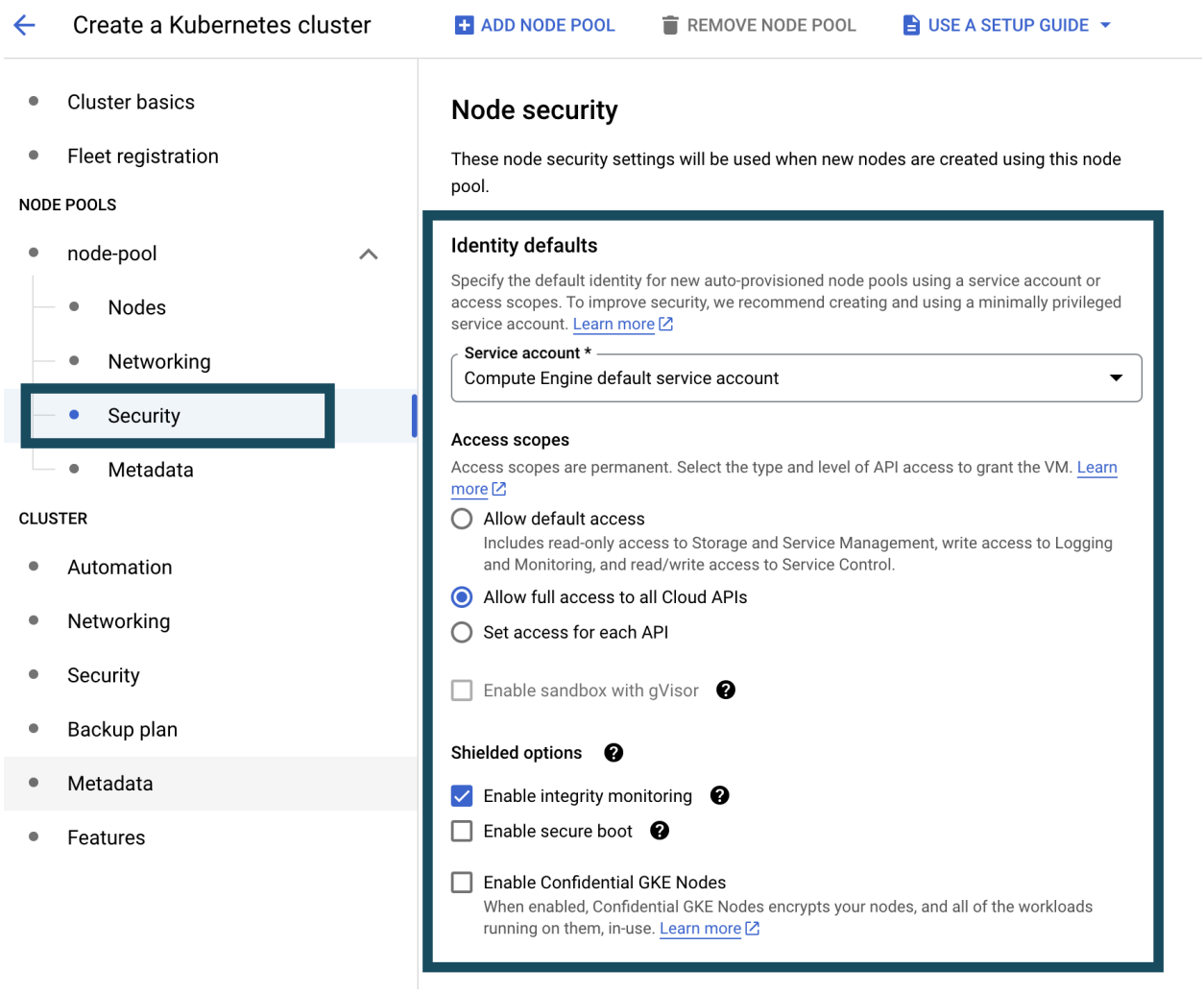
ADD A SECONDARY BOOT DISK

Boot disk size (GB)
100

7)


ADD NODE POOL
REMOVE NODE POOL
USE A SETUP GUIDE
Node networking
These node networking settings will be used when new nodes are created using this node pool.
The cluster settings specify a maximum of 110 Pods per node, but you can override that setting at the node pool level.
Maximum Pods per node
Mask for Pod address range per node: /24
Network tags
Node Pool Pod Address Range
The cluster settings specify a default cluster level pod address range, but you can override that setting at the node pool level.
Automatically create secondary ranges
Pod secondary CIDR range
Node Networks
ADD A NODE NETWORK

8)


Create a Kubernetes cluster
ADD NODE POOL
REMOVE NODE POOL
USE A SETUP GUIDE
Cluster basics
Fleet registration
NODE POOLS
node-pool
Nodes
Networking
Security
Metadata
CLUSTER
Automation
Networking
Security
Backup plan
Metadata
Features
Node security
These node security settings will be used when new nodes are created using this node pool.
Identity defaults
Specify the default identity for new auto-provisioned node pools using a service account or access scopes. To improve security, we recommend creating and using a minimally privileged service account. Learn more
Service account *
Compute Engine default service account
Access scopes
Access scopes are permanent. Select the type and level of API access to grant the VM. Learn more
Allow default access
Includes read-only access to Storage and Service Management, write access to Logging and Monitoring, and read/write access to Service Control.
Allow full access to all Cloud APIs
Set access for each API
Enable sandbox with gVisor
Shielded options
Enable integrity monitoring
Enable secure boot
Enable Confidential GKE Nodes
When enabled, Confidential GKE Nodes encrypts your nodes, and all of the workloads running on them, in-use. Learn more

9)

Automation

Set cluster-level criteria for automatic maintenance, autoscaling, and auto-provisioning. Edit the node pool for automation like auto-scaling, auto-upgrades, and repair.

Maintenance Policy

☐ Enable Maintenance Window

Configure maintenance exclusions

Configure maintenance exclusions to specify when you don't want automated version upgrades of the control plane and nodes to occur. This can help prevent disruption to your workloads during specific times, such as during peak hours or outside of working hours. Learn more

+ ADD MAINTENANCE EXCLUSION

Notifications

☐ Enable notifications

Receive important Pub/Sub notifications from Kubernetes Engine about your cluster. Learn more

Autoscaling

☐ Enable vertical Pod autoscaling

Enabling vertical Pod autoscaling on a cluster lets you configure a vertical Pod autoscaler object for the cluster's workloads. Vertical Pod autoscaling automatically analyzes and adjusts your containers' CPU requests and memory requests based on the actual resource use of your workloads. Learn more

☐ Enable node auto-provisioning

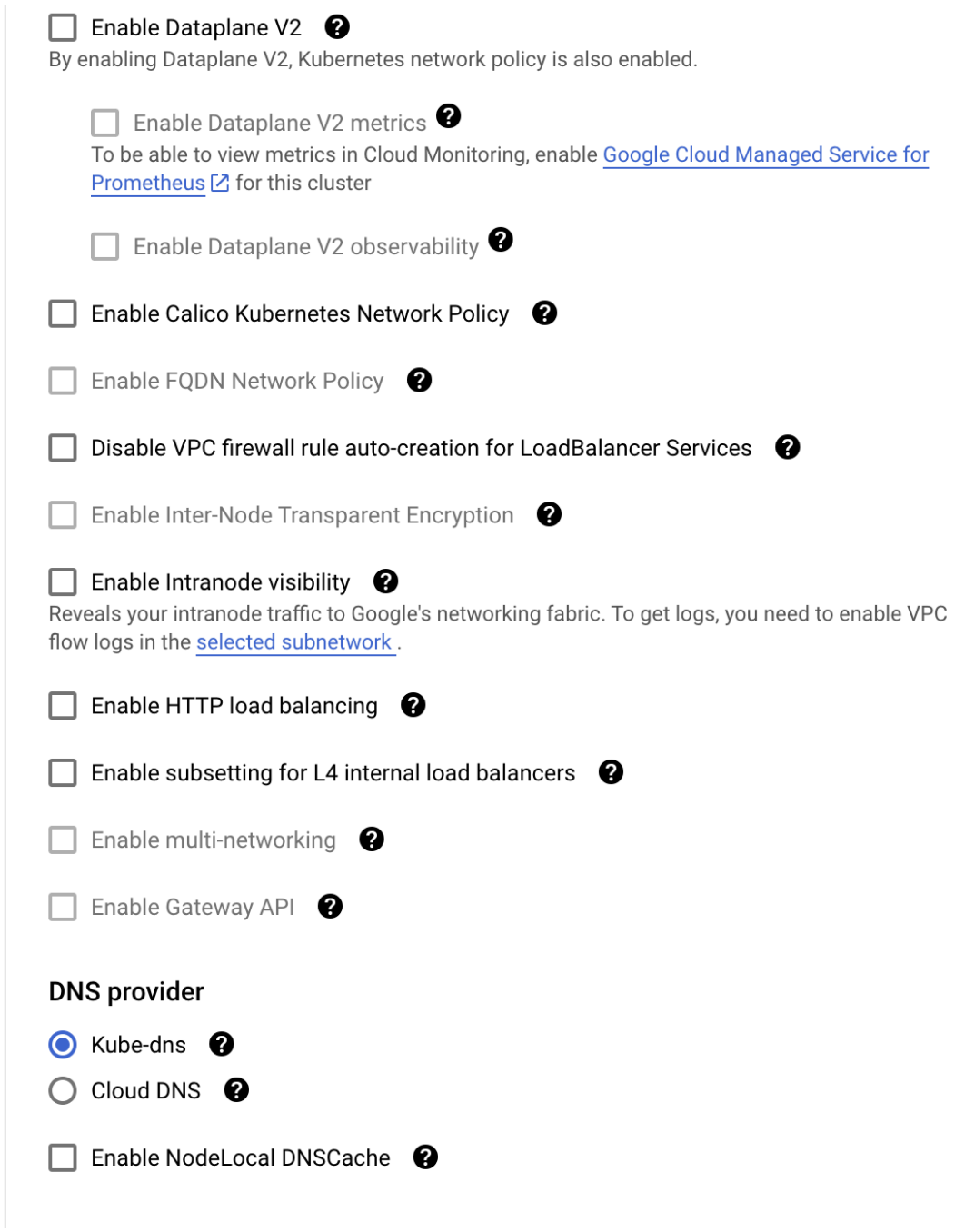
Node auto-provisioning manages the cluster's node pools by creating and deleting node pools as needed based on workload needs. Without node auto-provisioning, Kubernetes Engine will only start new nodes when you create new node pools. Learn more

Auto-provisioning network tags

Autoscaling profile

Balanced (default)

10)


Enable Dataplane V2
By enabling Dataplane V2, Kubernetes network policy is also enabled.
Enable Dataplane V2 metrics
To be able to view metrics in Cloud Monitoring, enable Google Cloud Managed Service for Prometheus for this cluster
Enable Dataplane V2 observability
Enable Calico Kubernetes Network Policy
Enable FQDN Network Policy
Disable VPC firewall rule auto-creation for LoadBalancer Services
Enable Inter-Node Transparent Encryption
Enable Intranode visibility
Reveals your intranode traffic to Google's networking fabric. To get logs, you need to enable VPC flow logs in the selected subnetwork .
Enable HTTP load balancing
Enable subsetting for L4 internal load balancers
Enable multi-networking
Enable Gateway API
DNS provider
Kube-dns
Cloud DNS
Enable NodeLocal DNSCache

11)

Security

For features not in beta, defaults are set according to the Security hardening guide. Security includes cluster authentication handled by IAM and Google-managed encryption by default.

- [ ] Enable Binary Authorization
- [ ] Enable Secret Manager
- [x] Enable Shielded GKE Nodes
- [ ] Enable Confidential GKE Nodes
  When enabled, Confidential GKE Nodes encrypts your nodes, and all of the workloads running on them, in-use. Learn more
- [ ] Encrypt secrets at the application layer
- [ ] Enable Workload Identity
- [ ] Enable Google Groups for RBAC
- [ ] Security posture
- [ ] Workload vulnerability scanning

Legacy security options

- [ ] Enable legacy authorization
- [ ] Issue a client certificate
  To maximize security, do not select. You cannot change this setting once the cluster is created. Clients use this base64-encoded public certificate to authenticate to the cluster endpoint. Certificates don't rotate automatically and are difficult to revoke. You can still authenticate to the cluster using Identity and Access Management (IAM) or with basic authentication, which is not recommended. Learn more.

12)

Backup plan

Create a backup plan to enable native recovery from disasters and cyber attacks, workload rollback, and cluster-to-cluster migration. Costs are based on the size of the data and the number of pods you protect through backups. Backup for GKE is a separate service from GKE with independent certifications and accrediation. Learn more

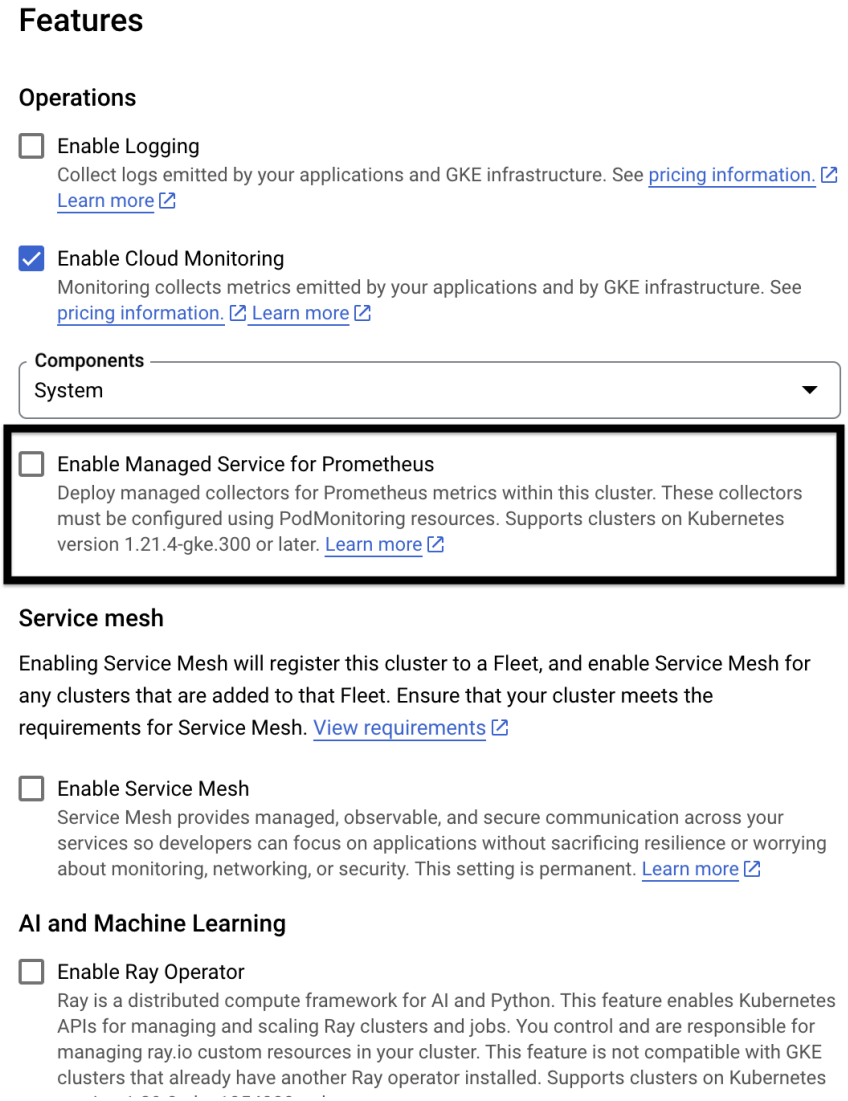
☐ Enable Backup for GKE

Back up and restore GKE workloads. Costs are based on the size of the data and the number of pods you protect through backups. Supports clusters on Kubernetes versions 1.24.2-gke.1900 or later. Backup for GKE is a separate service from GKE with independent certifications and accrediation. Learn more

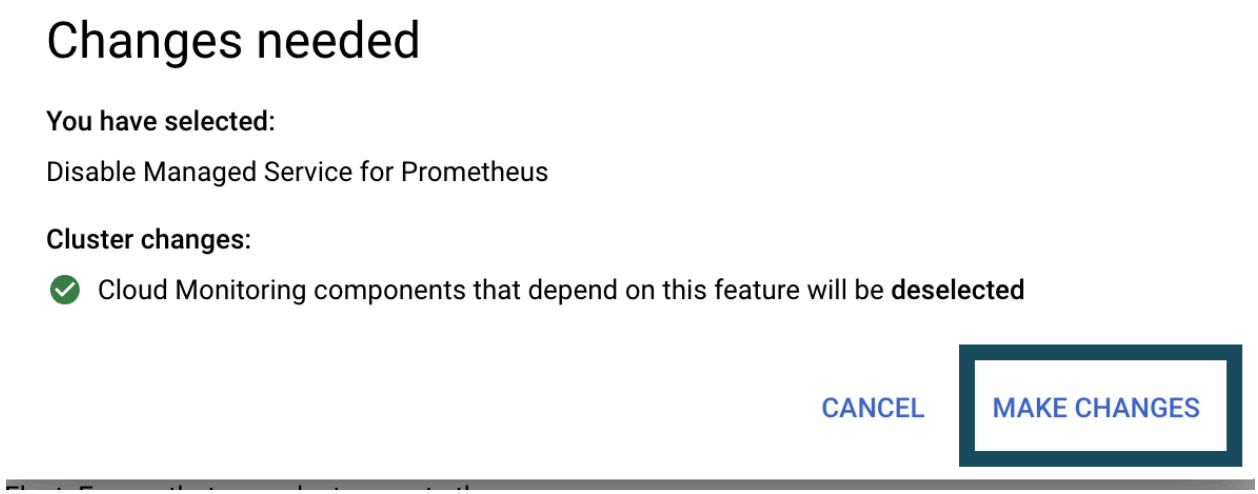
☐ Create backup plan

Additional backup plan can be created from Backup for GKE page.

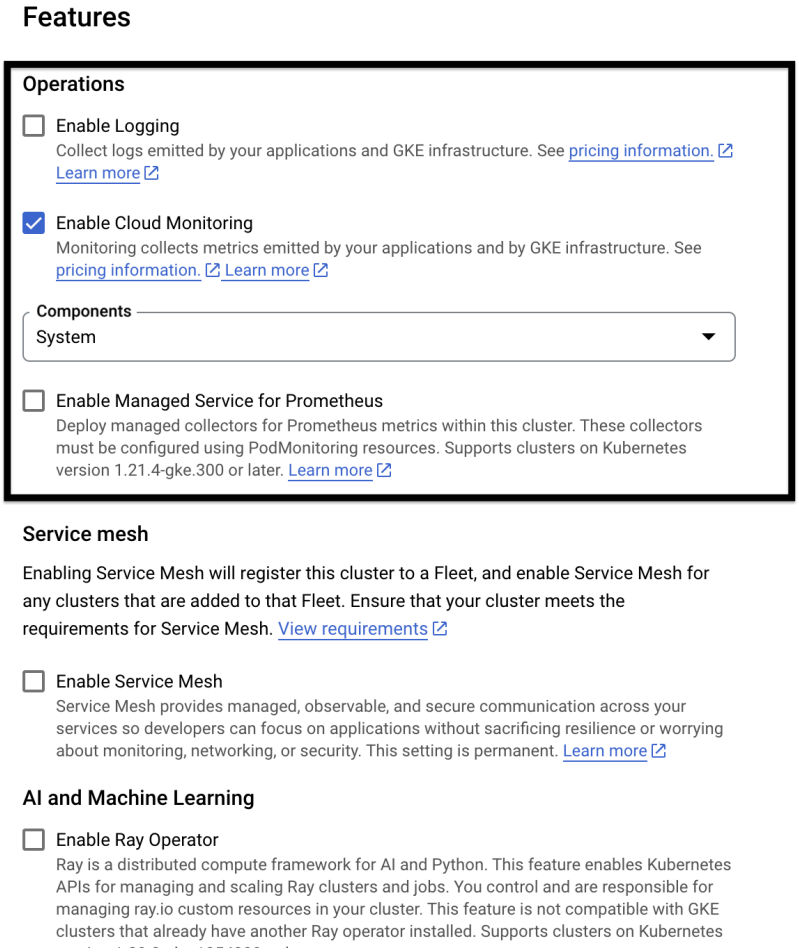
13)


Features
Operations
Enable Logging
Collect logs emitted by your applications and GKE infrastructure. See pricing information.
Learn more
Enable Cloud Monitoring
Monitoring collects metrics emitted by your applications and by GKE infrastructure. See pricing information. Learn more
Components
System
Enable Managed Service for Prometheus
Deploy managed collectors for Prometheus metrics within this cluster. These collectors must be configured using PodMonitoring resources. Supports clusters on Kubernetes version 1.21.4-gke.300 or later. Learn more
Service mesh
Enabling Service Mesh will register this cluster to a Fleet, and enable Service Mesh for any clusters that are added to that Fleet. Ensure that your cluster meets the requirements for Service Mesh. View requirements
Enable Service Mesh
Service Mesh provides managed, observable, and secure communication across your services so developers can focus on applications without sacrificing resilience or worrying about monitoring, networking, or security. This setting is permanent. Learn more
AI and Machine Learning
Enable Ray Operator
Ray is a distributed compute framework for AI and Python. This feature enables Kubernetes APIs for managing and scaling Ray clusters and jobs. You control and are responsible for managing ray.io custom resources in your cluster. This feature is not compatible with GKE clusters that already have another Ray operator installed. Supports clusters on Kubernetes

14)

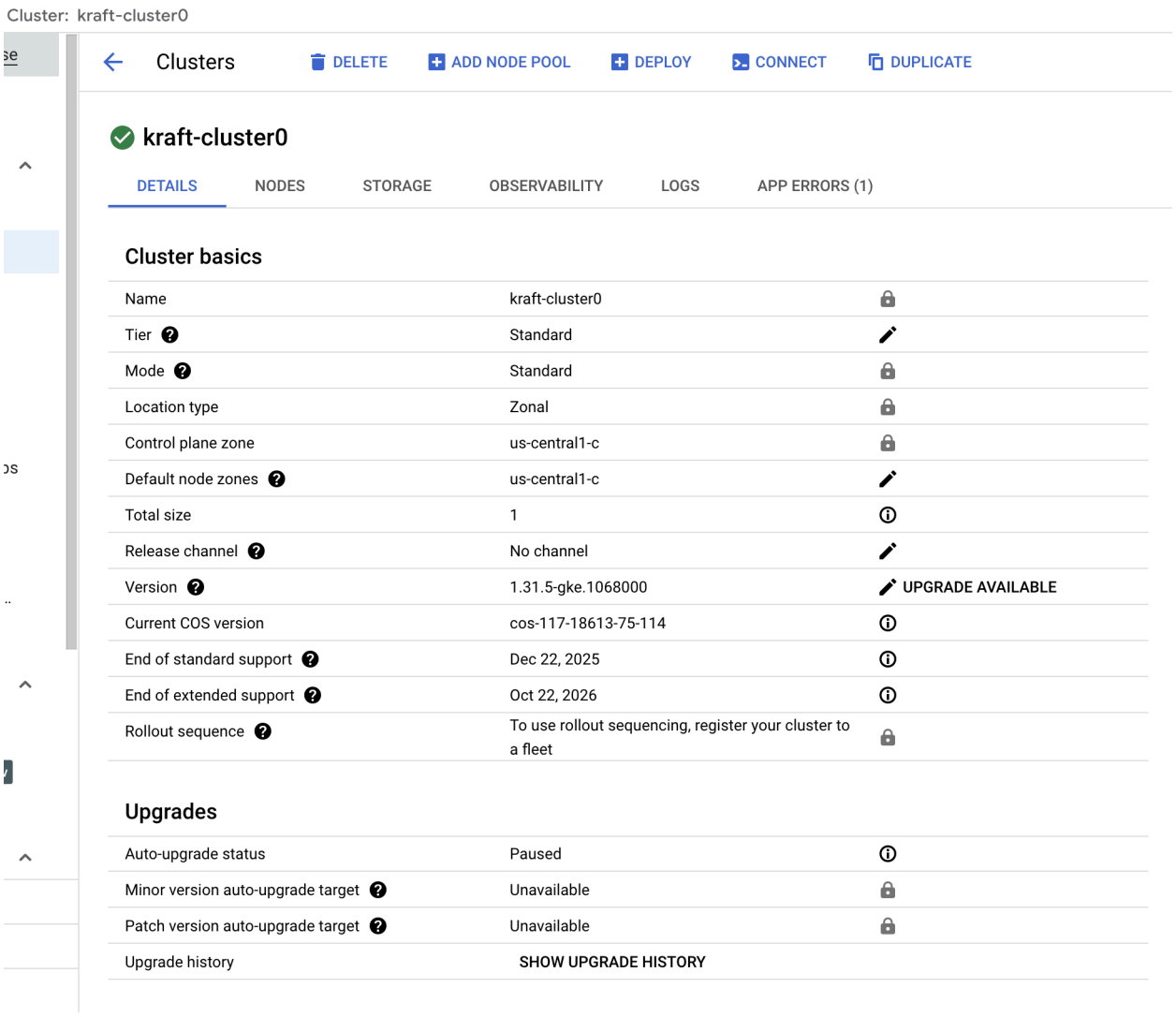

Changes needed
You have selected:
Disable Managed Service for Prometheus
Cluster changes:
Cloud Monitoring components that depend on this feature will be deselected
CANCEL
MAKE CHANGES

15)


Features
Operations
Enable Logging
Collect logs emitted by your applications and GKE infrastructure. See pricing information. Learn more
Enable Cloud Monitoring
Monitoring collects metrics emitted by your applications and by GKE infrastructure. See pricing information. Learn more
Components
System
Enable Managed Service for Prometheus
Deploy managed collectors for Prometheus metrics within this cluster. These collectors must be configured using PodMonitoring resources. Supports clusters on Kubernetes version 1.21.4-gke.300 or later. Learn more
Service mesh
Enabling Service Mesh will register this cluster to a Fleet, and enable Service Mesh for any clusters that are added to that Fleet. Ensure that your cluster meets the requirements for Service Mesh. View requirements
Enable Service Mesh
Service Mesh provides managed, observable, and secure communication across your services so developers can focus on applications without sacrificing resilience or worrying about monitoring, networking, or security. This setting is permanent. Learn more
AI and Machine Learning
Enable Ray Operator
Ray is a distributed compute framework for AI and Python. This feature enables Kubernetes APIs for managing and scaling Ray clusters and jobs. You control and are responsible for managing ray.io custom resources in your cluster. This feature is not compatible with GKE clusters that already have another Ray operator installed. Supports clusters on Kubernetes

Once done with all above configuration setup, click on create cluster.
It'll take around 10 minutes for the cluster to spin up.

Once done, final output should look like this ⇒



Clusters EDIT DELETE ADD NODE POOL DEPLOY CONNECT DUPLICATE

kraft-cluster0

DETAILS NODES STORAGE OBSERVABILITY LOGS APP ERRORS (1)

Node Pools

Filter Filter node pools

Name	Status	Version	Number of nodes	Machine type	Image type	Autoscaling	Default IPv4 Pod IP address range
node-pool	Ok	1.31.5-gke.1068000	1	e2-medium	Container-Optimized OS with containerd (cos_containerd)	Off	10.48.0.0/14

Nodes

Filter Filter nodes

Name	Status	CPU requested	CPU allocatable	Memory requested	Memory allocatable	Storage requested	Storage allocatable
gke-kraft-cluster0-node-pool-8d3e2846-6g53	Ready	479 mCPU	940 mCPU	460.89 MB	2.94 GB	0 B	0 B