VMUG usercon 2023

kubernetes ovunque con TKGm

VMware Tanzu

kubernetes

abstract

Inizieremo con una breve panoramica su Tanzu Kubernetes Grid e come si è evoluta per giungere all'attuale TKGm, vedremo i requisiti necessari per l'installazione e il licensing. Passeremo poi ai dettagli tecnici su com'è strutturato e come funziona andando infine a vedere come integrare TKGm con i cloud provider supportati per il deploy dei cluster k8s.

outdated

New abstract

Inizieremo con una breve panoramica sulla suite Tanzu per poi giungere a TKG 2.4, vedremo i requisiti necessari per l'installazione e il licensing. Passeremo poi ai dettagli tecnici su installare un cluster di management andando infine a vedere come eseguire il deploy di cluster k8s su vSphere. Infine una breve menzione su TMC per il deploy sui maggiori cloud provider.

abstract

- Intro
  - Tanzu
    - TKG
      - Requisiti e installazione
        - Deploy di un cluster k8s
          - TMC

VMUG usercon

WHOAMI

Marco Scandaletti

Systems Engineer @ ASSYRUS

@scandaletti

Networking, virtualization, learning by doing #vexpert

www.scanda.it

VMUG VMWARE USER GROUP

vmware vEXPERT 2023

vmware vEXPERT ★ ★ ★ ★ ★

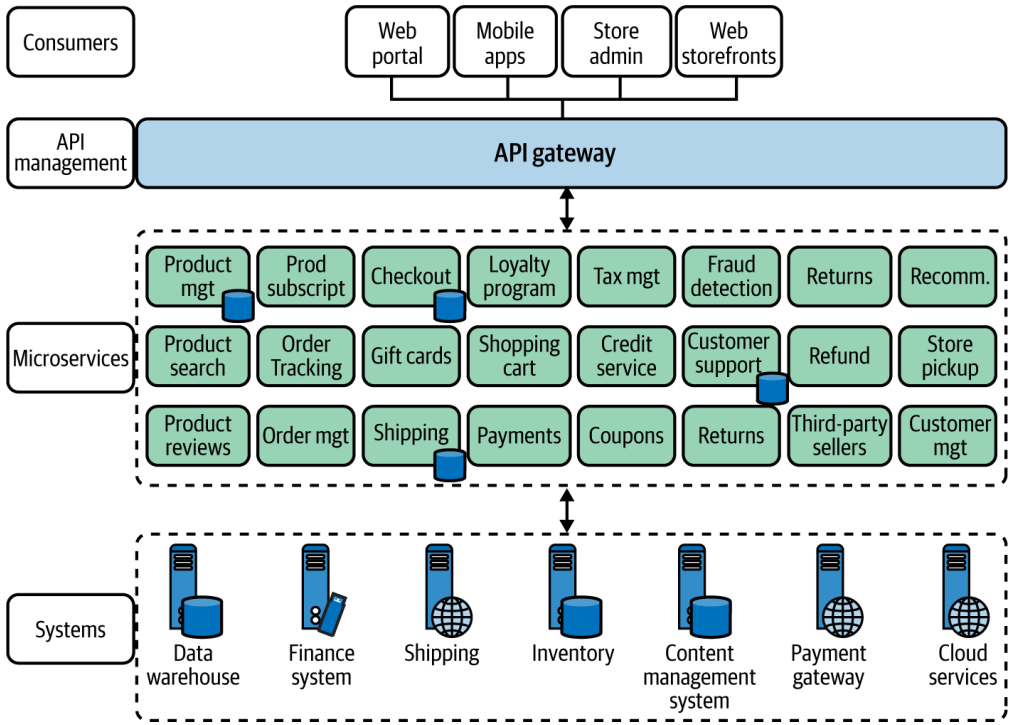
Intro

Ma di cosa stiamo parlando?

MODERN APPS

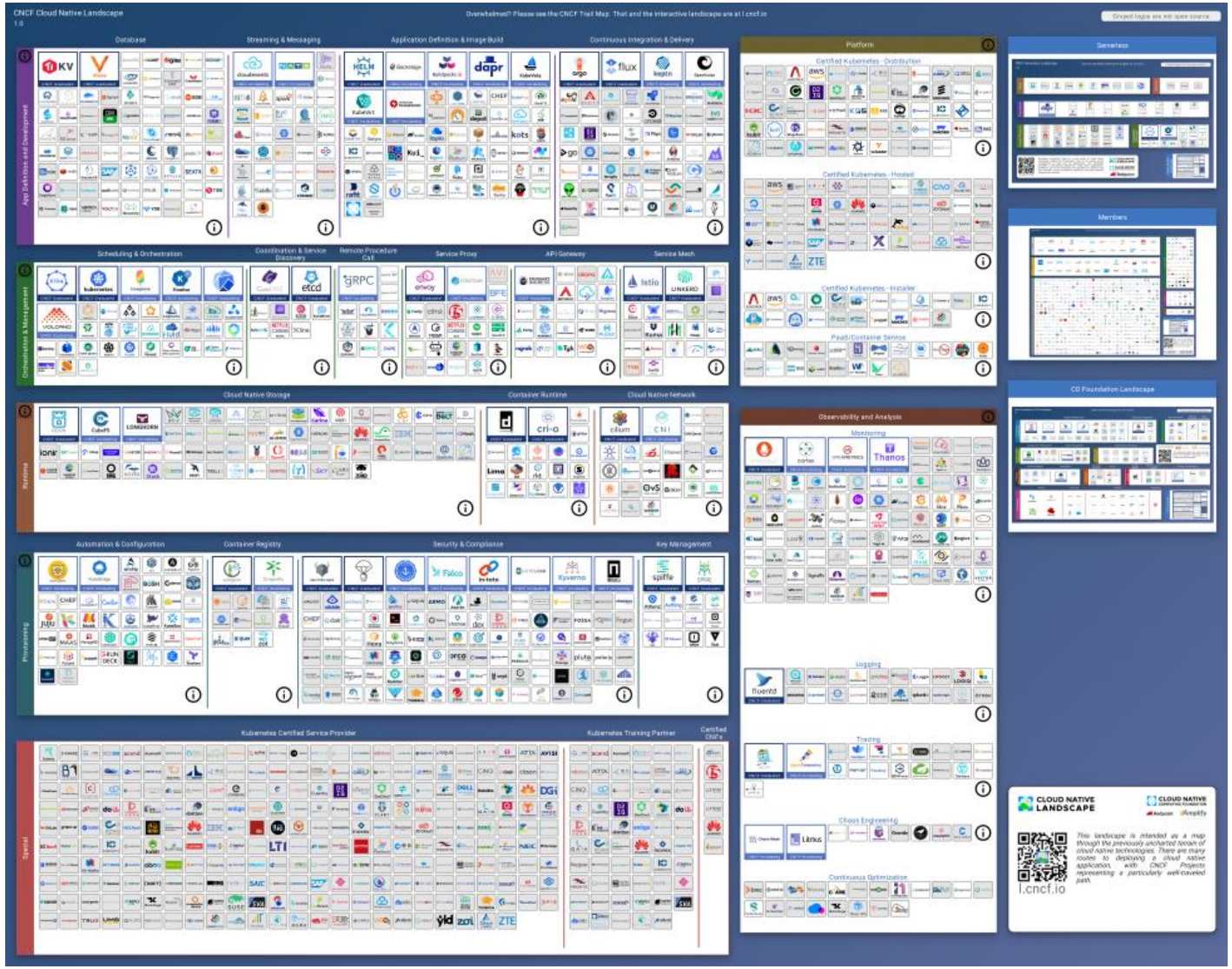
Le tecnologie **cloud native** permettono alle organizzazioni di costruire ed eseguire applicazioni scalabili in ambienti moderni e dinamici come cloud pubblici, privati e ibridi. I container, i micro-servizi, le infrastrutture immutabili e le API dichiarative esemplificano questo approccio.
Queste tecniche permettono che sistemi debolmente accoppiati siano resilienti, gestibili e osservabili. Combinati con un sistema robusto di automazione, permettono agli ingegneri di eseguire frequentemente e con minimo sforzo i cambi ad alto impatto
La **Cloud Native Computing Foundation** cerca di favorire l'adozione di questo paradigma incoraggiando e sostenendo un ecosistema di progetti open source e indipendenti dai vendor. Noi democratizziamo le pratiche allo stato dell'arte per rendere queste innovazioni accessibili a tutti.

https://github.com/cncf/toc/blob/main/DEFINITION.md



Intro

CLOUD NATIVE
COMPUTING FOUNDATION



https://landscape.cncf.io/

VMware Tanzu

ENTERPRISE-GRADE KUBERNETES

VMware Tanzu for Kubernetes Operations	Automated Kubernetes platform operations
VMware Tanzu Kubernetes Grid	Enterprise-ready Kubernetes runtime
VMware Tanzu Mission Control	Multi-cloud Kubernetes management
VMware Tanzu Service Mesh	Connectivity and security for modern applications

VMware Tanzu

CLOUD NATIVE APP DEVELOPMENT

VMware Tanzu Application Platform	Faster, more secure paths to production
VMware Tanzu Application Catalog	Secure open source software supply chain
VMware Tanzu Application Service	A modern runtime for microservices, built on Cloud Foundry
VMware Tanzu Build Service	Automated container creation, management, governance
VMware Tanzu Data Services	Cloud native data and messaging including **GemFire**, **RabbitMQ**, **Postgres**, and **Greenplum**

VMware Tanzu

https://tanzu.vmware.com/get-started

https://tanzu.vmware.com/products

https://vmc.techzone.vmware.com/resource/tanzu-explainer#overview

VMware Tanzu

VMware Tanzu Entitlements by Bundle, Edition, or Platform

	Tanzu Bundle			vSphere Edition		VMware Cloud Platform	
	Tanzu for Kubernetes Operations Foundation	Tanzu for Kubernetes Operations	VMware Cloud with Tanzu services	vSphere 8 Enterprise Plus with Tanzu Kubernetes Grid	vSphere+	VMware Cloud Foundation	VMware Cloud on AWS
Tanzu Application Service							
Tanzu Application Platform							
Tanzu Build Service							
VMware Application Catalog							
Tanzu Kubernetes Grid		Included	Included	Included	Included	Included	Included
Tanzu Kubernetes Grid Integrated Edition							
Tanzu Mission Control	Advanced	Advanced	Essentials		Essentials	Essentials	Essentials
Aria Operations for Applications		Included					
Tanzu Service Mesh	Included	Included					
Tanzu Labs	Tanzu Activation Services available separately	Tanzu Activation Services available separately					

TKG

Tanzu Kubernetes Grid

CNCF-certified, enterprise-ready Kubernetes runtime that streamlines operations across a multi-cloud infrastructure. TKG offers simplified installation, automated multi-cluster operations, integrated platform service, and open source alignment. Includes support for Harbor, Antrea, Calico, NSX Advanced Load Balancer Essentials, Contour, FluentBit, Prometheus, Grafana, and Velero. TKG can be deployed as the integrated vSphere with Tanzu experience using Tanzu Kubernetes Grid with Supervisor Clusters on supported platforms, or Tanzu Kubernetes Grid with Management Clusters.

TKG

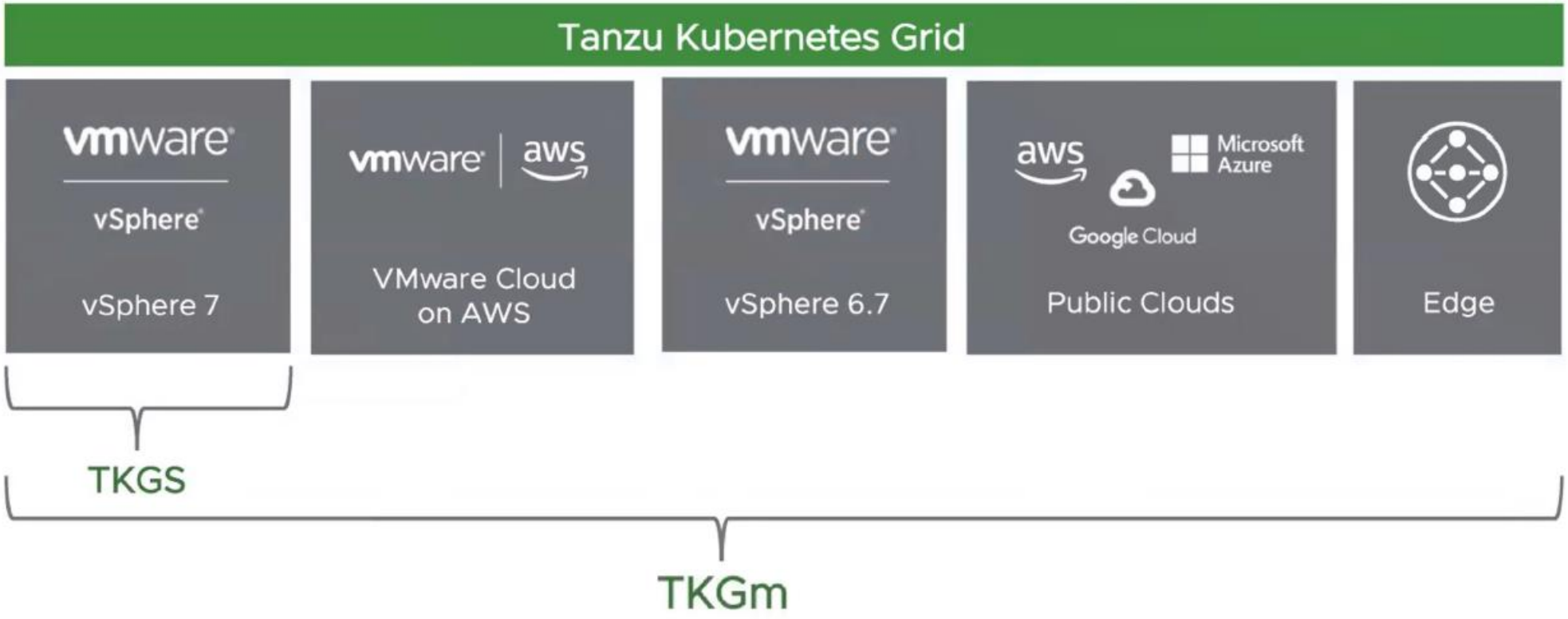
TKGm Tanzu Kubernetes Grid Multi-cloud

TKGs Tanzu Kubernetes Grid Service

TKGi Tanzu Kubernetes Grid Integrated (ex PKS)

	On-premise (vSphere)	Multi-cloud (+ on prem)
vSphere 7 with NSX	TKGi	TKGm
vSphere 7 without NSX	TKGs	TKGm
vSphere 8	TKG 2.0	TKG 2.0

TKG


Tanzu Kubernetes Grid
vmware
vSphere
vSphere 7
vmware
aws
VMware Cloud
on AWS
vmware
vSphere
vSphere 6.7
aws
Microsoft
Azure
Google Cloud
Public Clouds
Edge
TKGS
TKGm

TKG

Tanzu Kubernetes Grid Service

- Tightly integrated / Deploy Kubernetes on premise exclusively on vSphere
- Simplified cluster operations with CAPI
- One CRD TanzuKubernetesCluster
- Best UX experience for AI admins
- Companion to VM Service, Registry Service, as part of the Tanzu ecosystem, first release of GPU/NIC support

Tanzu Kubernetes Grid Multi-cloud

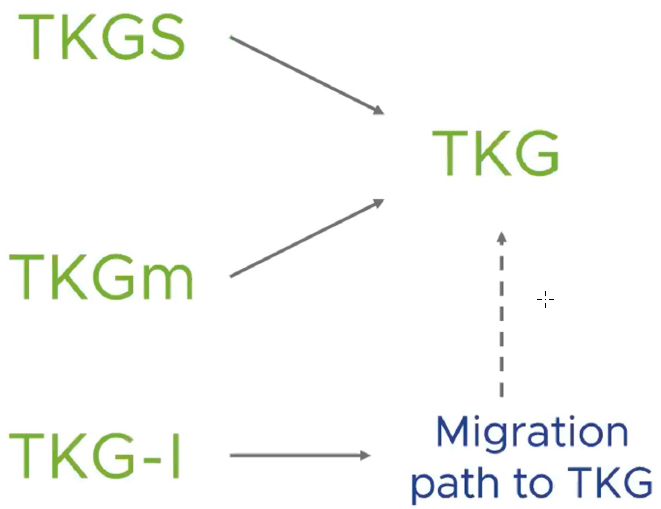
- UX focused on the Kubernetes operator, operating across clouds using Tanzu CLI
- Pure 100% upstream cluster API enables complete control over cluster definition
- Rapid innovation of in-cluster & shared services through new Tanzu Packaging ecosystem, and first release vehicle for multi AZ, Ubuntu, and bring-your-own-image, etc.

2 Different APIs, different packaging

TKG 2.0

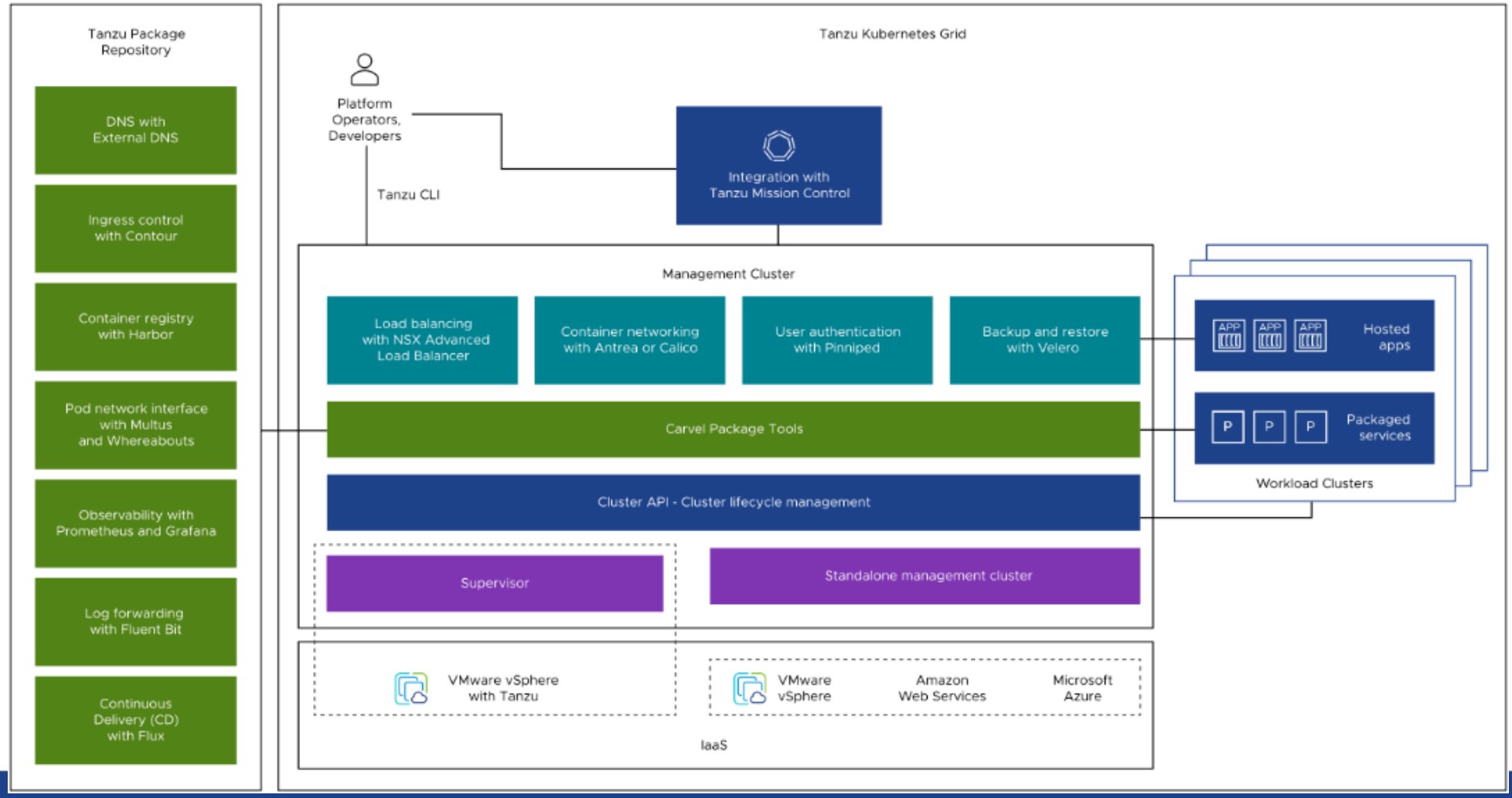
New: Tanzu Kubernetes Grid 2.0

One unified, declarative API



- TKG 2.x supports running on vSphere and public cloud
- On vSphere, there are two deployment options with identical northbound API
  - TKG 2.x with Supervisor
  - TKG 2.x with Standalone Management Cluster
- For datacenter use cases, we position TKG 2.x with Supervisor by default
- For Edge and Telco use cases, we will continue leveraging TKG 2.x with Standalone Management Clusters till the use cases are supported with TKG 2.x with Supervisor

TKG 2.0


Tanzu Package Repository
DNS with External DNS
Ingress control with Contour
Container registry with Harbor
Pod network interface with Multus and Whereabouts
Observability with Prometheus and Grafana
Log forwarding with Fluent Bit
Continuous Delivery (CD) with Flux
Tanzu Kubernetes Grid
Platform Operators, Developers
Tanzu CLI
Integration with Tanzu Mission Control
Management Cluster
Load balancing with NSX Advanced Load Balancer
Container networking with Antrea or Calico
User authentication with Pinniped
Backup and restore with Velero
Carvel Package Tools
Cluster API - Cluster lifecycle management
Supervisor
Standalone management cluster
VMware vSphere with Tanzu
VMware vSphere
Amazon Web Services
Microsoft Azure
IaaS
APP
Hosted apps
P
Packaged services
Workload Clusters

Requisiti

Standalone Management Cluster Requirements (tkg-deploy-mc)

- A machine with the Tanzu CLI, Docker, and kubectl installed
- A vSphere 8, vSphere 7, VMware Cloud on AWS, or Azure VMware Solution
- At least the permissions described in Required Permissions for the vSphere Account
- vSphere instance has the following objects in place
  - a standalone host or a vSphere cluster with at least two hosts
  - Optionally, a resource pool in which to deploy the Tanzu Kubernetes Grid Instance
  - A VM folder in which to collect the Tanzu Kubernetes Grid VMs
  - A datastore with sufficient capacity for the control plane and worker node VM files
  - Created a base image template that matches the management cluster's Kubernetes version
  - Created a vSphere account for Tanzu Kubernetes Grid
  - NSX Advanced Load Balancer to load-balance workloads
  - DNS record, DHCP pool for network involved, NTP, Firewall rules to permit traffic

Management Cluster Sizing Examples

Management cluster plan	Management cluster VM size	Can manage...	Workload cluster VM size
3 control plane nodes and 3 worker nodes	Control plane nodes: • CPU: 2 • Memory: 4 GB • Disk: 20 GB Worker nodes: • CPU: 2 • Memory: 4 GB • Disk: 20 GB	**Examples:** • 5 workload clusters, each cluster deployed with 3 control plane and 200 worker nodes; or • 10 workload clusters, each cluster deployed with 3 control plane and 50 worker nodes	Control plane nodes: • CPU: 2 • Memory: 4 GB • Disk: 20 GB Worker nodes: • CPU: 2 • Memory: 4 GB • Disk: 20 GB
3 control plane nodes and 3 worker nodes	Control plane nodes: • CPU: 4 • Memory: 16 GB • Disk: 40 GB Worker nodes: • CPU: 4 • Memory: 16 GB • Disk: 40 GB	**Example:** One workload cluster, deployed with 3 control plane and 500 worker nodes	Control plane nodes: • CPU: 16 • Memory: 64 GB • Disk: 100 GB Worker nodes: • CPU: 8 • Memory: 8 GB • Disk: 20 GB
3 control plane nodes and 3 worker nodes	Control plane nodes: • CPU: 4 • Memory: 16 GB • Disk: 40 GB Worker nodes: • CPU: 4 • Memory: 16 GB • Disk: 40 GB	**Example:** 200 workload clusters, each cluster deployed with 3 control plane and 5 worker nodes	Control plane nodes: • CPU: 2 • Memory: 4 GB • Disk: 20 GB Worker nodes: • CPU: 2 • Memory: 4 GB • Disk: 20 GB

Requisiti

vSphere with Tanzu Supervisor is a Management Cluster

On vSphere 8, the vSphere with Tanzu feature includes a Supervisor that you can use as a management cluster for Tanzu Kubernetes Grid. This means that on vSphere 8, you do not need to use *tanzu management-cluster create* or *tanzu mc create* to deploy a management cluster if vSphere with Tanzu and the Supervisor are enabled. Deploying a Tanzu Kubernetes Grid management cluster to vSphere 8 when vSphere with Tanzu is not enabled is supported, but the preferred option is to enable vSphere with Tanzu and use the built-in Supervisor Cluster if possible. The vSphere with Tanzu Supervisor is closely integrated with vSphere, so offers a more streamlined user experience than using a standalone management cluster. **However, using a standalone management cluster on vSphere offers more configuration and customization options than a Supervisor.**

Requisiti

Import the Base Image Template into vSphere

Supported base images for cluster nodes depend on the type of cluster, as follows:

Management Cluster: OVA must have Kubernetes v1.27.5, the default version for Tanzu Kubernetes Grid v2.4.0. So it must be one of the following:

- Ubuntu v20.04 Kubernetes v1.27.5 OVA
- Photon v3 Kubernetes v1.27.5 OVA
- A custom OVA with a custom Tanzu Kubernetes release (TKr)

Deploy OVA on vcenter and after convert to template

Requisiti

Bootstrap machine

VM con Ubuntu server 20.04 + ambiente grafico

16GB RAM

4 vCPU

Almeno 50GB di spazio disco libero

È possibile utilizzare altri sistemi operativi per la Bootstrap machine : macOS e Windows

https://docs.vmware.com/en/VMware-Tanzu-Kubernetes-Grid/2.4/tkg-deploy-mc/install-cli.html

Bootstrap machine

```
super@jumplinux:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:    Ubuntu 20.04.6 LTS
Release:        20.04
Codename:       focal
super@jumplinux:~$
```

```
sudo apt update
```

```
sudo apt upgrade
```

```
super@jumplinux:~$ timedatectl
               Local time: Tue 2023-11-14 16:10:56 UTC
           Universal time: Tue 2023-11-14 16:10:56 UTC
                 RTC time: Tue 2023-11-14 16:10:56
                Time zone: Etc/UTC (UTC, +0000)
System clock synchronized: yes
              NTP service: active
          RTC in local TZ: no
super@jumplinux:~$
```

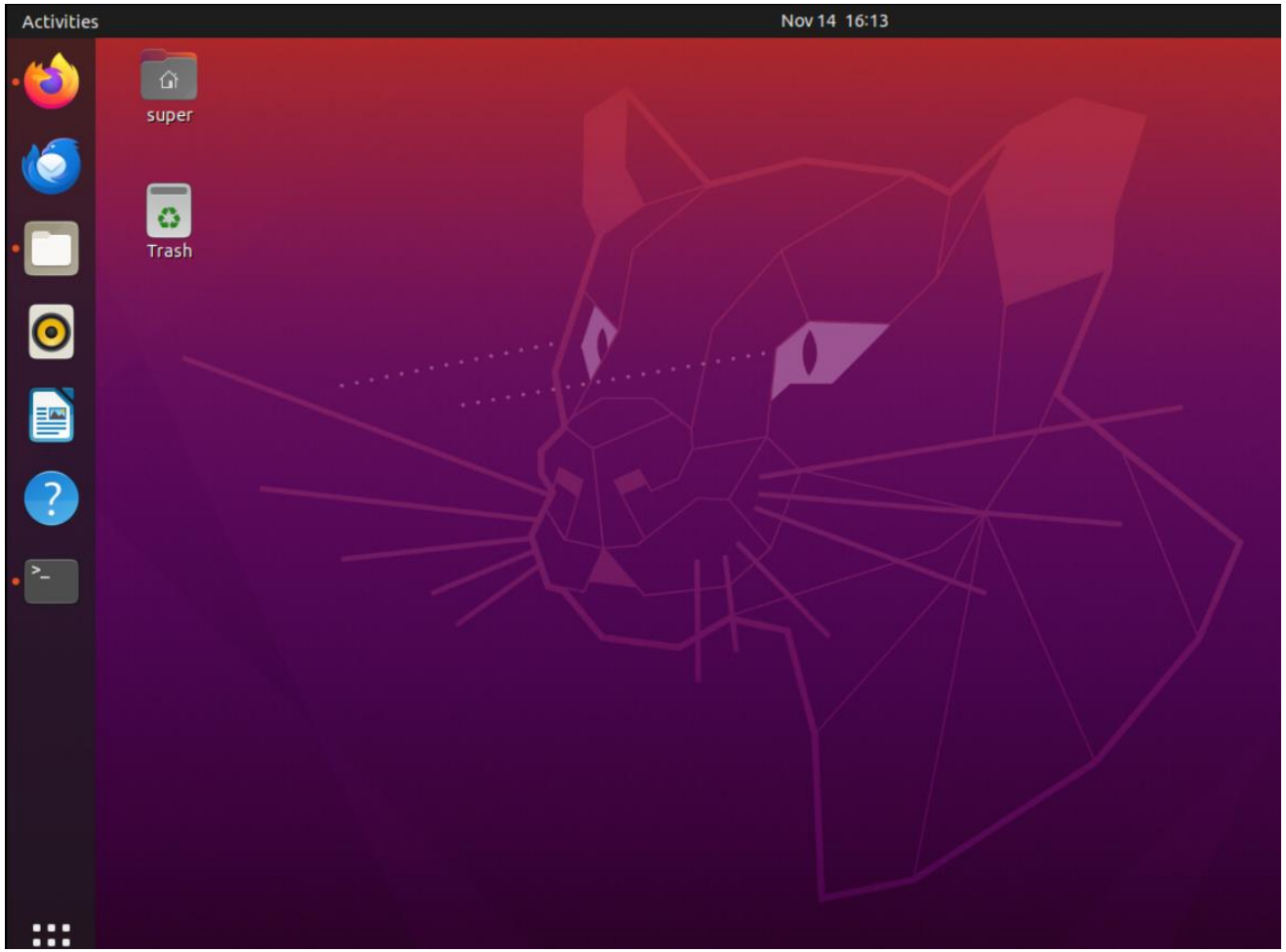
Bootstrap machine

installare l’ambiente grafico

```
apt install tasksel

tasksel install ubuntu-desktop

reboot
```



Bootstrap machine

installare Docker https://docs.docker.com/engine/install/ubuntu/

```
super@jumplinux:~$ sudo docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/

super@jumplinux:~$
```

Bootstrap machine

Manage Docker as a non-root user

https://docs.docker.com/engine/install/linux-postinstall/#manage-docker-as-a-non-root-user

```
sudo groupadd docker
sudo usermod -aG docker $USER
docker run hello-world
```

Configure Docker to start on boot with systemd

```
sudo systemctl enable docker.service
sudo systemctl enable containerd.service
```

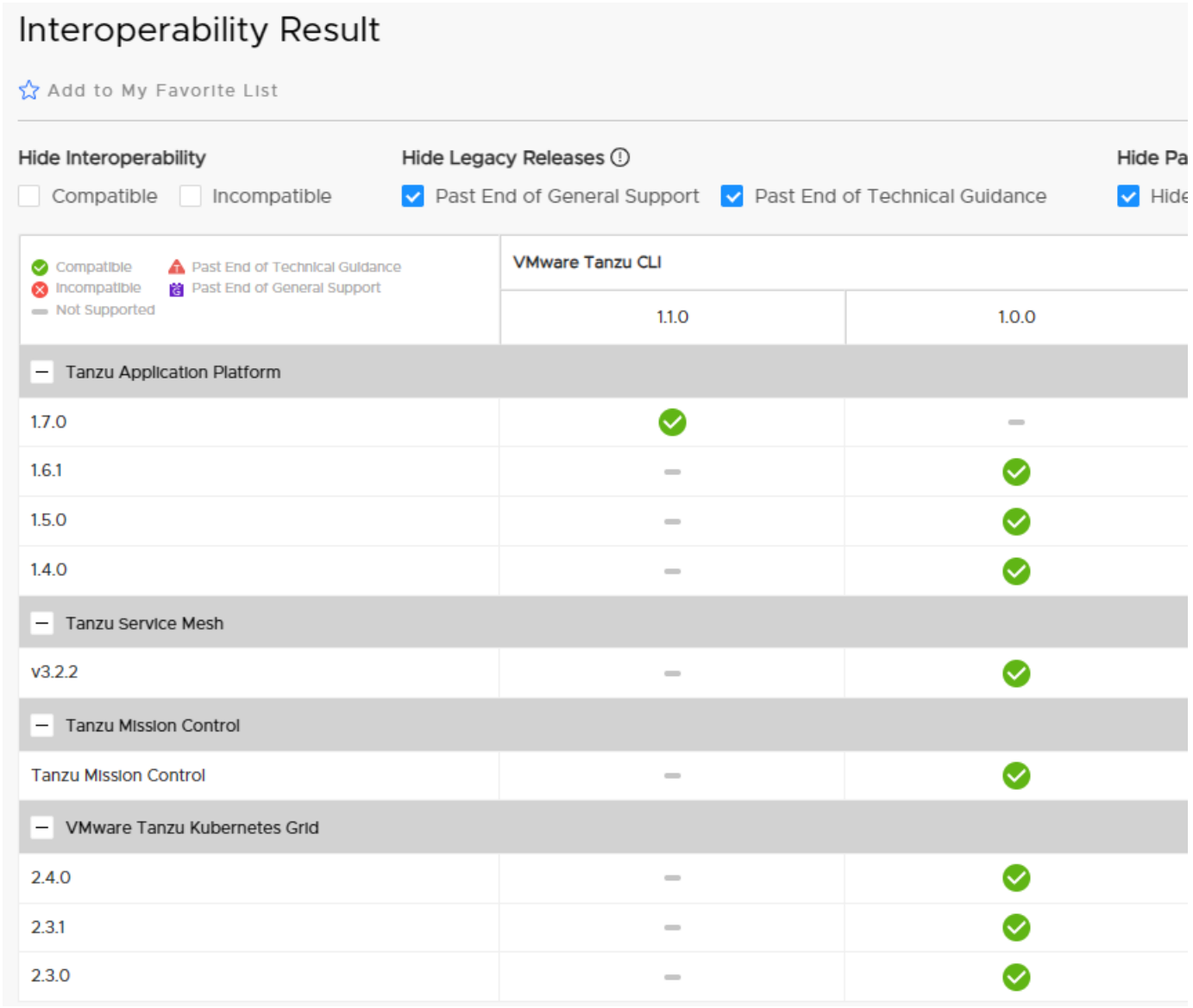
attivare kind

```
sudo modprobe nf_conntrack
```

Bootstrap machine

Installare Tanzu CLI 2.4

Check Product Interoperability Matrix



Interoperability Result

Add to My Favorite List

Hide Interoperability: Compatible, Incompatible

Hide Legacy Releases: Past End of General Support, Past End of Technical Guidance

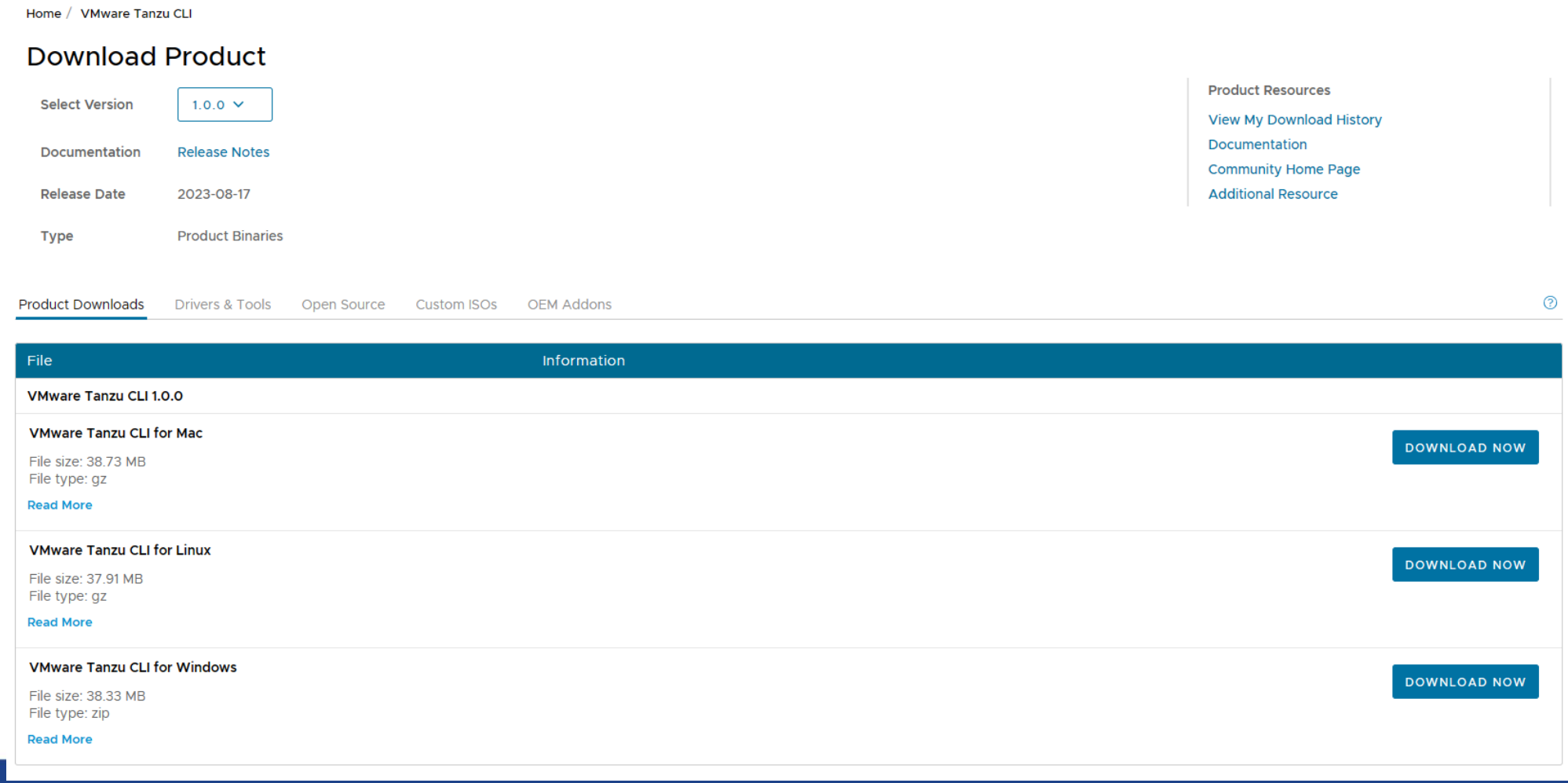
Hide Pa: Hide

Compatible · Incompatible · Not Supported · Past End of Technical Guidance · Past End of General Support

	VMware Tanzu CLI	
	1.1.0	1.0.0
Tanzu Application Platform		
1.7.0	✓	–
1.6.1	–	✓
1.5.0	–	✓
1.4.0	–	✓
Tanzu Service Mesh		
v3.2.2	–	✓
Tanzu Mission Control		
Tanzu Mission Control	–	✓
VMware Tanzu Kubernetes Grid		
2.4.0	–	✓
2.3.1	–	✓
2.3.0	–	✓

Bootstrap machine

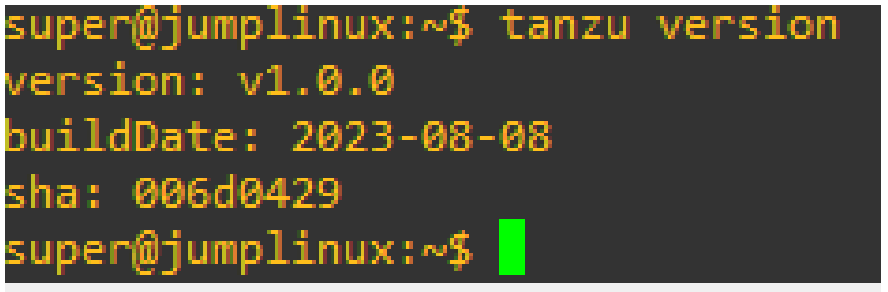
scaricare la versione per linux



Bootstrap machine

Installare Tanzu CLI 2.4 come utente non root

```
mkdir tkg
cd tkg
wget https://download3.vmware.com/software/TCLI-100/tanzu-cli-linux-amd64.tar.gz
tar -xvf tanzu-cli-linux-amd64.tar.gz
cd v1.0.0
sudo install tanzu-cli-linux_amd64 /usr/local/bin/tanzu
```



Bootstrap machine

Installare i Tanzu CLI Plugins per TKG v2.4

```
tanzu plugin group search -n vmware-tkg/default --show-details
tanzu plugin install --group vmware-tkg/default:v2.4.0
tanzu plugin list
```

```
super@jumplinux:~$ tanzu plugin list
Standalone Plugins
  NAME                DESCRIPTION                                                    TARGET      VERSION  STATUS
  isolated-cluster    Prepopulating images/bundle for internet-restricted environments   global      v0.31.0  installed
  pinniped-auth       Pinniped authentication operations (usually not directly invoked)  global      v0.31.0  installed
  telemetry           configure cluster-wide settings for vmware tanzu telemetry     global      v1.1.0   installed
  management-cluster  Kubernetes management cluster operations                       kubernetes  v0.31.0  installed
  package             Tanzu package management                                       kubernetes  v0.31.0  installed
  secret              Tanzu secret management                                        kubernetes  v0.31.0  installed
  telemetry           configure cluster-wide settings for vmware tanzu telemetry     kubernetes  v0.31.0  installed
super@jumplinux:~$
```

Bootstrap machine

Installare la Kubernetes CLI

Scaricare il file `kubectl-linux-v1.27.5+vmware.1.gz` e portarlo sulla Boostrap machine

```
gunzip kubectl-linux-v1.27.5+vmware.1.gz
chmod ugo+x kubectl-linux-v1.27.5+vmware.1
sudo install kubectl-linux-v1.27.5+vmware.1 /usr/local/bin/kubectl
kubectl version --short --client=true
```

```
super@jumplinux:~/tkg$ kubectl version --short --client=true
Flag --short has been deprecated, and will be removed in the future. The --short output will become the default.
Client Version: v1.27.5+vmware.1
Kustomize Version: v5.0.1
super@jumplinux:~/tkg$
```

Bootstrap machine

Installare la Kubernetes CLI

```
Enable autocompletion for kubectl
echo 'source <(kubectl completion bash)' >> ~/.bash_profile

Enable autocompletion for Tanzu CLI
echo 'source <(tanzu completion bash)' >> ~/.bash_profile
```

Generare le chiavi ssh da utilizzare per la creazione del management cluster

```
ssh-keygen
cat ~/.ssh/id_rsa.pub
```

Installazione

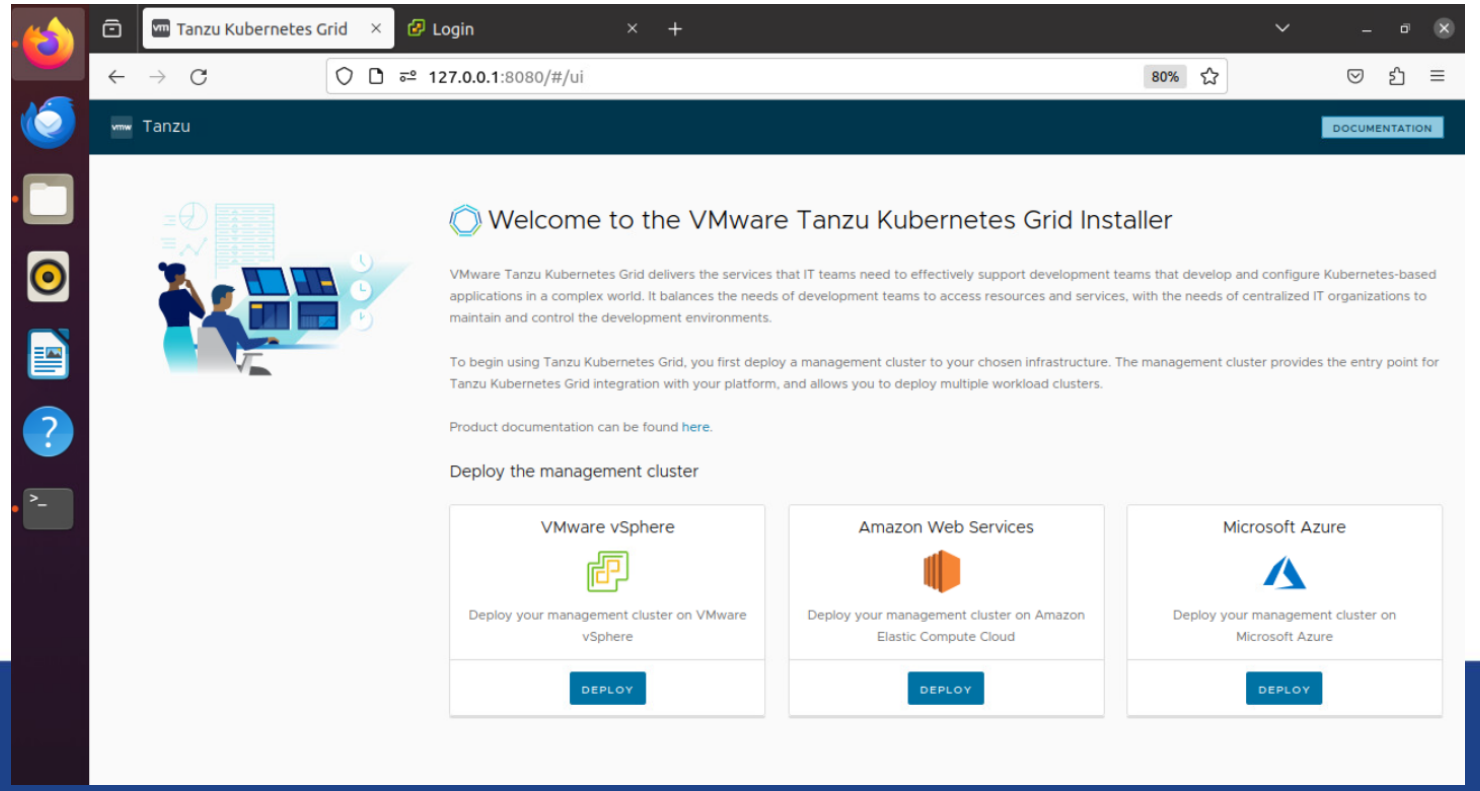
Per l'installazione dello standalone management cluster vmware raccomanda la modalità grafica

https://docs.vmware.com/en/VMware-Tanzu-Kubernetes-Grid/2.4/tkg-deploy-mc/mgmt-deploy-ui.html

```
tanzu management-cluster create --ui --bind 10.20.30.40:8080
```

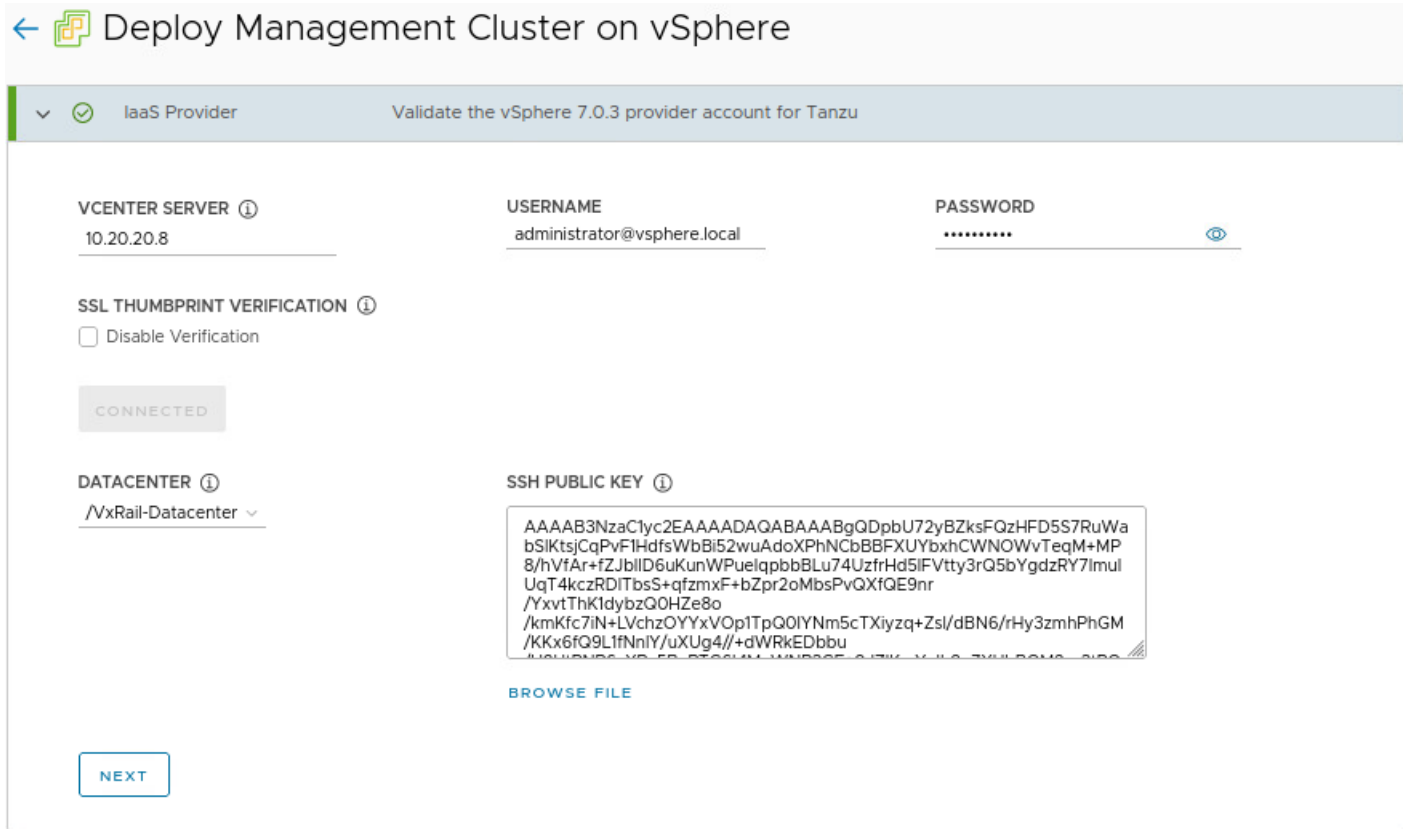
```
super@jumplinux:~/tkg$ tanzu management-cluster create --ui

Validating the pre-requisites...
Serving kickstart UI at http://127.0.0.1:8080
```



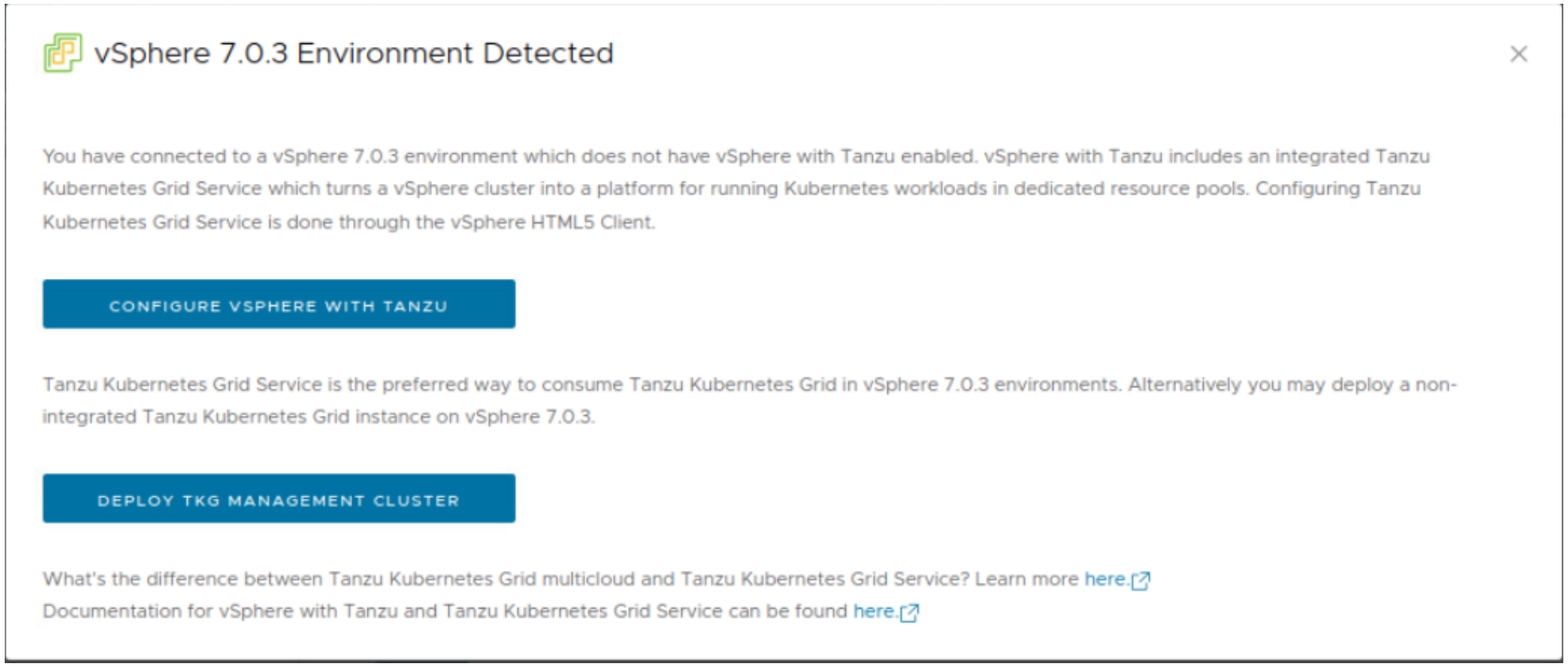
Installazione

Procedere selezionando come target VMware vSphere



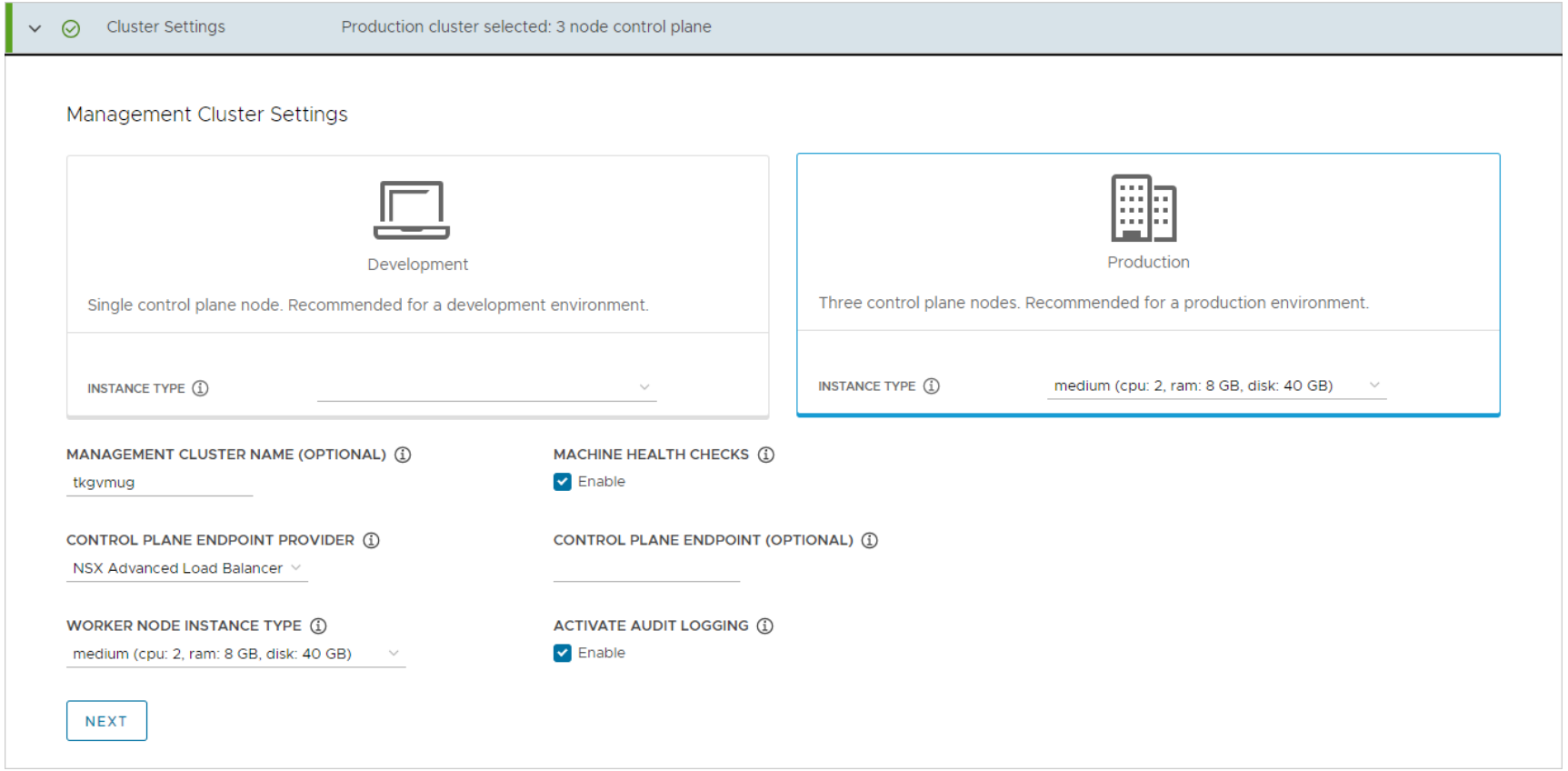
Installazione

Selezionare Deploy TKG Management Cluster



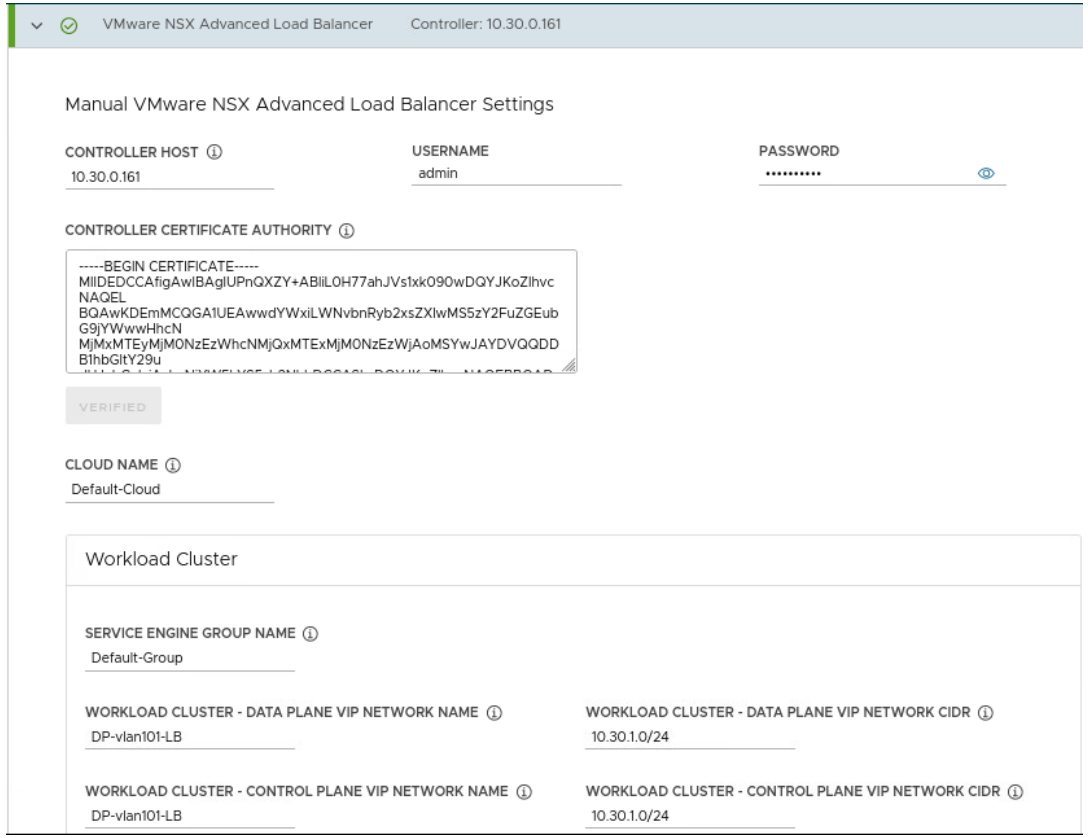
Installazione

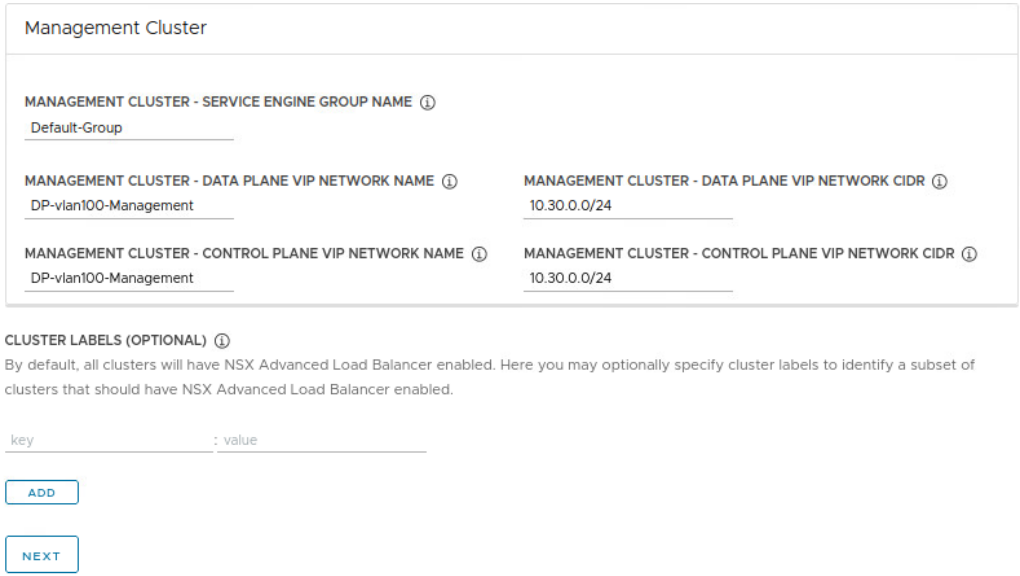
Selezionare il tipo di controlplane, il size dei nodi e il tipo di bilanciatore



Installazione

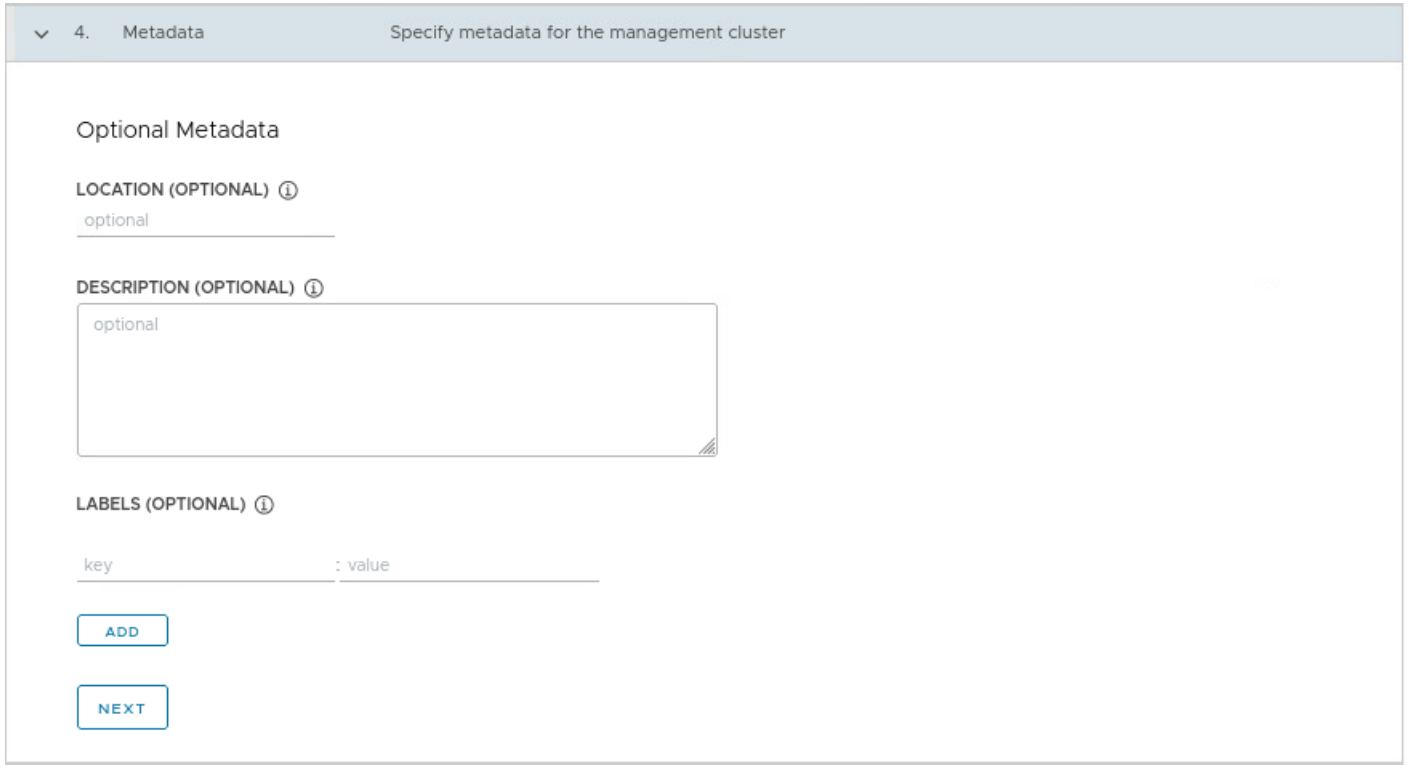
Inserire I dati del bilanciatore NSX-ALB e le reti da utilizzare sui cluster di management e workload





Installazione

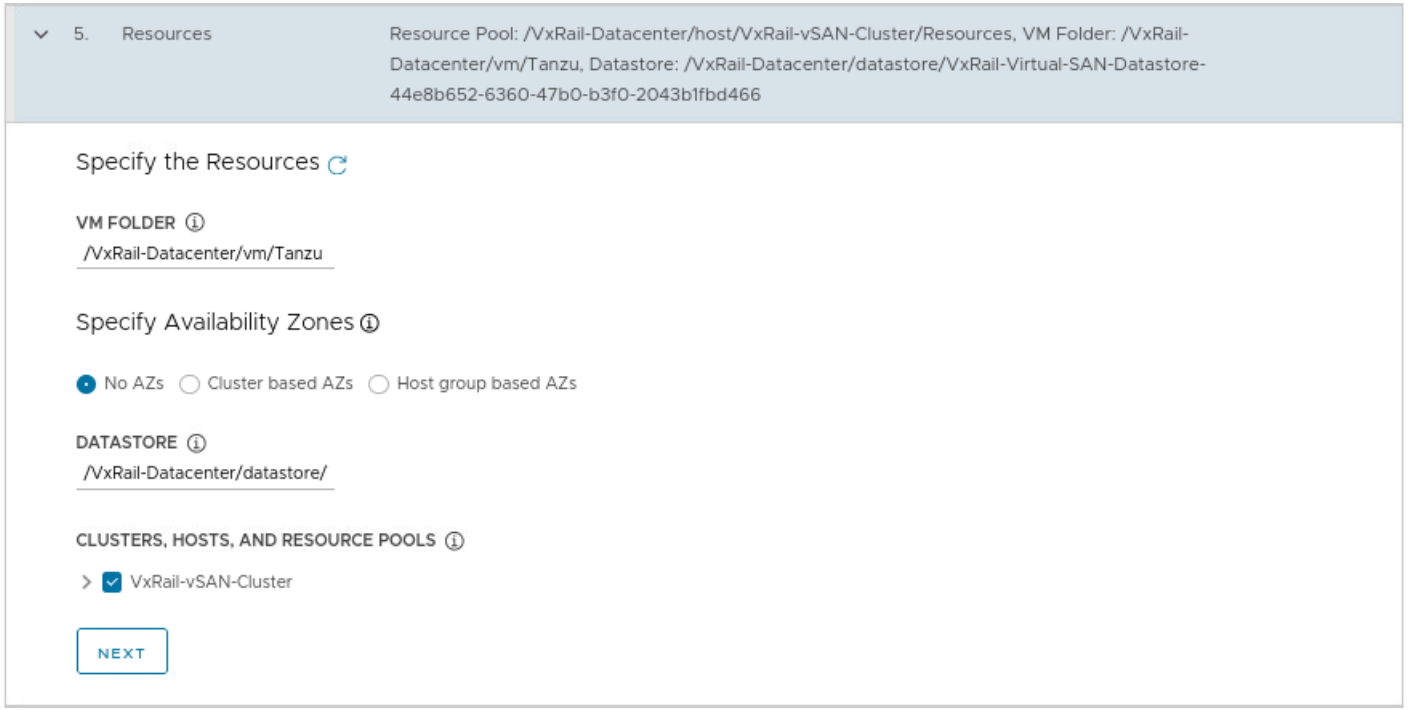
Inserire eventuali dati nella sezione Metadata



Installazione

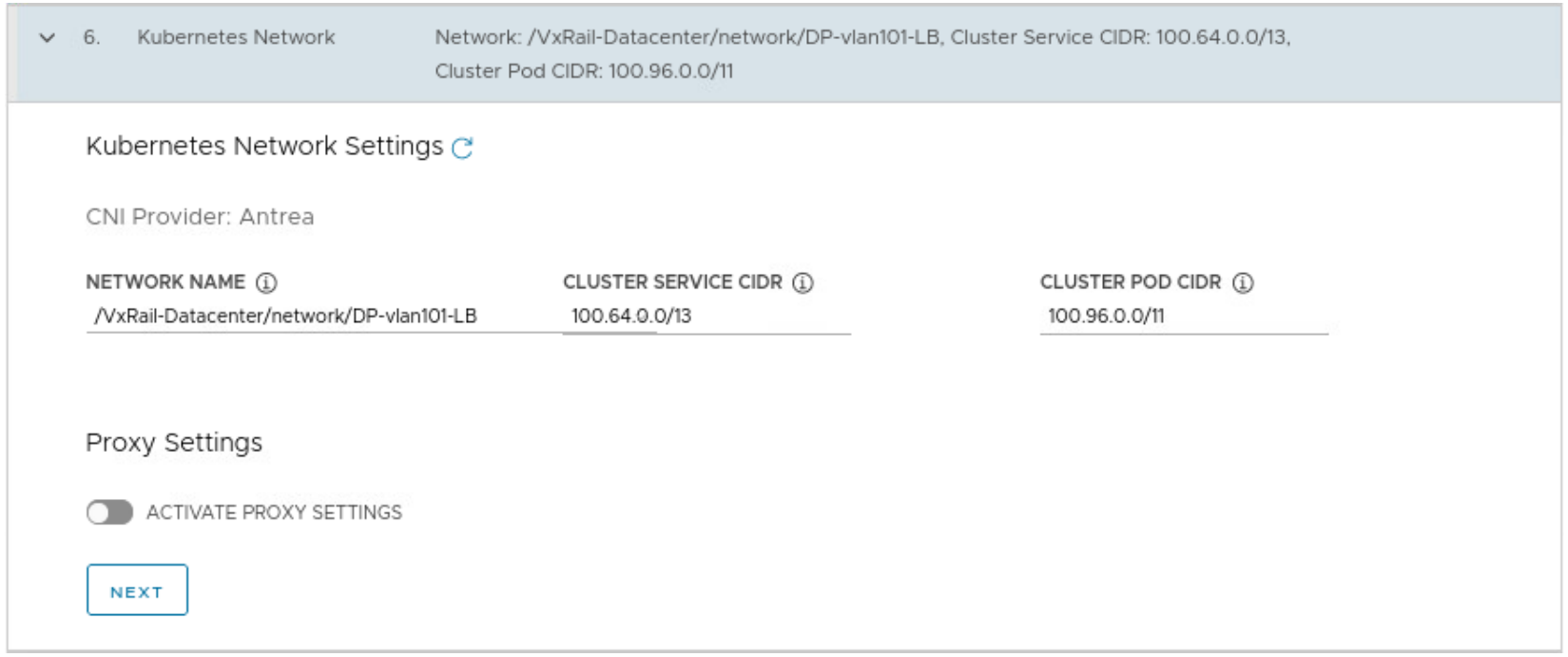
Selezionare la VM folder

Selezionare il Datastore e il cluster da utilizzare per il deploy



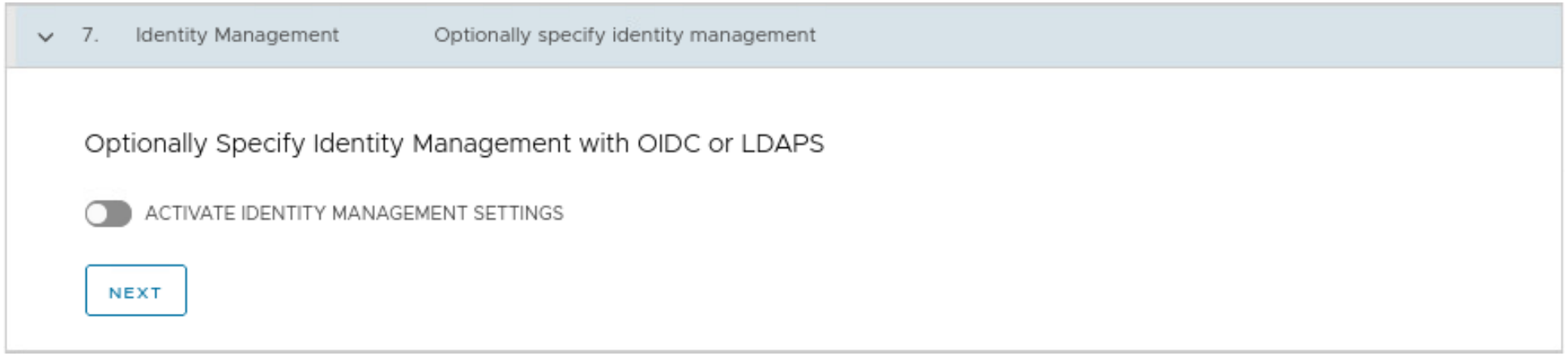
Installazione

Selezionare la Kubernetes network



Installazione

Configurare l’eventuale Identity provider



Installazione

Selezionare l’imagine da utilizzare per il deploy dei nodi controller e worker

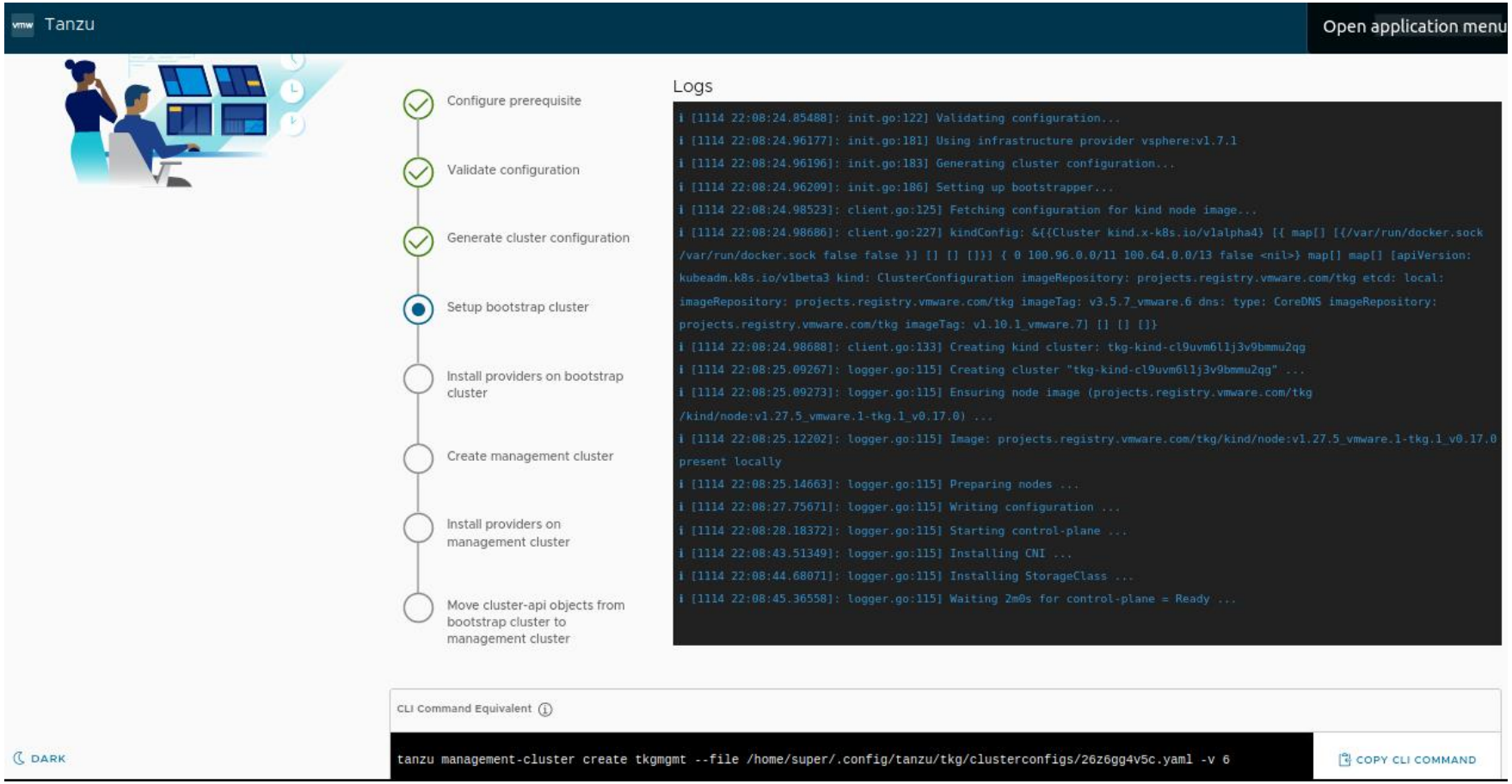
Installazione

Selezionare se abilitare il CEIP

Verificare I dati inseriti e avviare la creazione del management cluster

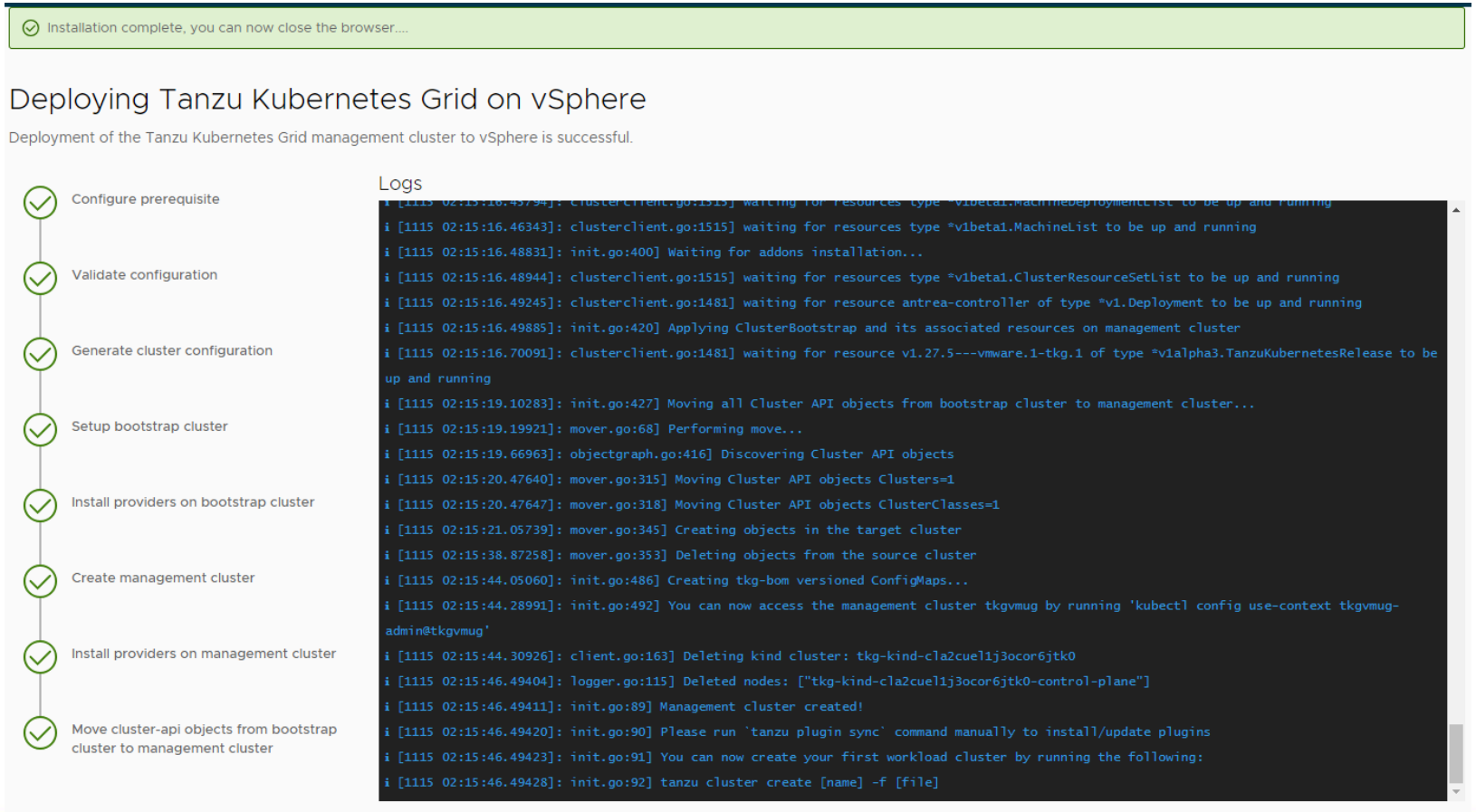
Installazione

Inizia la fase di deploy del cluster di management



Installazione

Verificare che tutte le fasi vadano a buon fine e che il cluster di management venga creato



Installazione

Verificare dalla Bootstrap machine lo stato del cluster

`tanzu mc get`

```
super@jumplinux:~$ tanzu mc
available-zone      (Get or set or delete available zone of the management cluster)  get               (Get details about the current management cluster)
ceip-participation  (Get or set ceip participation)                                  help              (Help about any command)
create              (Create a Tanzu Kubernetes Grid management cluster)              kubeconfig        (Kubeconfig of management cluster)
credentials         (Update Credentials for Management Cluster)                      permissions       (Configure permissions on cloud providers)
delete              (Delete a management cluster)                                    upgrade           (Upgrades the management cluster)
super@jumplinux:~$ tanzu mc get
  NAME     NAMESPACE   STATUS   CONTROLPLANE  WORKERS  KUBERNETES        ROLES       PLAN  TKR
  tkgvmug  tkg-system  running  3/3           3/3      v1.27.5+vmware.1  management  prod  v1.27.5---vmware.1-tkg.1


Details:

NAME                                                READY  SEVERITY  REASON  SINCE  MESSAGE
/tkgvmug                                            True                     24s
├─ClusterInfrastructure - VSphereCluster/tkgvmug-rx88s  True                     24s
├─ControlPlane - KubeadmControlPlane/tkgvmug-x9mpz  True                     24s
│ ├─Machine/tkgvmug-x9mpz-5lbmz                     True                     23s
│ ├─Machine/tkgvmug-x9mpz-wp4rp                     True                     23s
│ └─Machine/tkgvmug-x9mpz-zz4rp                     True                     23s
└─Workers
  ├─MachineDeployment/tkgvmug-md-0-lb8tm            True                     23s
  │ └─Machine/tkgvmug-md-0-lb8tm-6c75df7954x6d6b4-t7cdd  True                     23s
  ├─MachineDeployment/tkgvmug-md-1-6w94d            True                     23s
  │ └─Machine/tkgvmug-md-1-6w94d-d64bc688cxhbp5l-tmjf6  True                     23s
  └─MachineDeployment/tkgvmug-md-2-c62t6            True                     23s
    └─Machine/tkgvmug-md-2-c62t6-57c57c99bbxbhn69-nrj9d  True                     23s


Providers:

  NAMESPACE                          NAME                    TYPE                     PROVIDERNAME  VERSION
  caip-in-cluster-system             ipam-in-cluster         IPAMProvider             in-cluster    v0.1.0
  capi-kubeadm-bootstrap-system      bootstrap-kubeadm       BootstrapProvider        kubeadm       v1.4.5
  capi-kubeadm-control-plane-system  control-plane-kubeadm   ControlPlaneProvider     kubeadm       v1.4.5
  capi-system                        cluster-api             CoreProvider             cluster-api   v1.4.5
  capv-system                        infrastructure-vsphere  InfrastructureProvider   vsphere       v1.7.1
super@jumplinux:~$
```

Deploy di un cluster k8s

Installare i Carvel tools

https://docs.vmware.com/en/VMware-Tanzu-Kubernetes-Grid/2.4/using-tkg/workload-carvel-tools.html

```
super@jumplinux:~/tkg/cli$ kbld --version
kbld version 0.37.0

Succeeded
super@jumplinux:~/tkg/cli$  ytt --version
ytt version 0.45.0
super@jumplinux:~/tkg/cli$  imgpkg --version
imgpkg version 0.36.0

Succeeded
super@jumplinux:~/tkg/cli$  kapp --version
kapp version 0.55.0

Succeeded
super@jumplinux:~/tkg/cli$ kbld --version
kbld version 0.37.0

Succeeded
super@jumplinux:~/tkg/cli$
```

Deploy di un cluster k8s

Creare il file di configurazione del nuovo cluster di workload

Dopo la creazione del cluster di management troviamo il suo file di definizione al percorso
~/.config/tanzu/tkg/clusterconfigs
Il file ha un nome generato casualmente (9zjvc31zb7.yaml), viene poi convertito in un file con le specifiche per la creazione del cluster (tkgvmug.yaml)

Fare una copia del file 9zjvc31zb7.yaml dando il nome del nuovo cluster da creare (myk8svmug.yaml)

Editare il nuovo file modificando la variabile CLUSTER_NAME inserendo il nome del nuovo cluster

```
super@jumplinux:~/.config/tanzu/tkg/clusterconfigs$ ls -lrt
total 24
-rw------- 1 super super 4699 Nov 15 02:01 9zjvc31zb7.yaml
-rw------- 1 super super 5293 Nov 15 02:04 tkgvmug.yaml
-rw------- 1 super super 4564 Nov 15 09:47 myk8svmug.yaml
super@jumplinux:~/.config/tanzu/tkg/clusterconfigs$
```

Deploy di un cluster k8s

Creare il nuovo cluster

Eseguire il comando e attendere la creazione del cluster

```
tanzu cluster create --file ~/.config/tanzu/tkg/clusterconfigs/myk8svmug.yaml
```

```
Using this new Cluster configuration '/home/super/.config/tanzu/tkg/clusterconfigs/myk8svmug.yaml' to create the cluster.
creating workload cluster 'myk8svmug'...
waiting for cluster to be initialized...
[zero or multiple KCP objects found for the given cluster, 0 myk8svmug default, no MachineDeployment objects found for the given cluster]
cluster control plane is still being initialized: ScalingUp
waiting for cluster nodes to be available...
unable to get the autoscaler deployment, maybe it is not exist
waiting for addons core packages installation...

Workload cluster 'myk8svmug' created

super@jumplinux:~/.config/tanzu/tkg/clusterconfigs$ tanzu cluster list
  NAME       NAMESPACE  STATUS   CONTROLPLANE  WORKERS  KUBERNETES        ROLES   PLAN  TKR
  myk8svmug  default    running  3/3           3/3      v1.27.5+vmware.1  <none>  prod  v1.27.5---vmware.1-tkg.1
super@jumplinux:~/.config/tanzu/tkg/clusterconfigs$
```

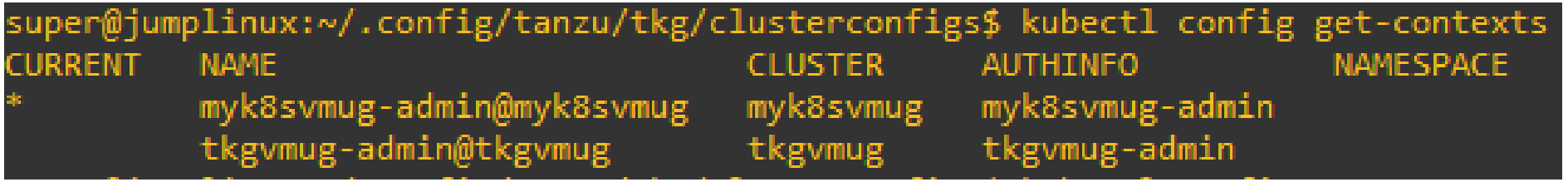
Deploy di un cluster k8s

Accedere al nuovo cluster

Recuperiamo le configurazioni da utilizzare con kubectl per accedere al nuovo cluster

```
tanzu cluster kubeconfig get --admin myk8svmug
```

```
kubectl config get-contexts
```




```
kubectl config use-context myk8svmug-admin@myk8svmug
```

Deploy di un cluster k8s

Accedere al nuovo cluster

Creiamo un pod di test

```
kubectl run nginx --image=nginx

kubectl get pods
```

```
super@jumplinux:~/.config/tanzu/tkg/clusterconfigs$ kubectl get pods
NAME    READY   STATUS    RESTARTS   AGE
nginx   1/1     Running   0          5m16s
```

TKG 2.5

Deprecation of TKG Management and Workload Clusters on AWS and Azure

Important

Tanzu Kubernetes Grid v2.4 (including patch releases) is the last minor version of TKG that supports the creation of standalone TKG management clusters and TKG workload clusters on AWS and Azure. The ability to create standalone TKG management clusters and TKG workload clusters on AWS and Azure will be removed in the Tanzu Kubernetes Grid v2.5 release.

- Starting from now, VMware recommends that you use Tanzu Mission Control to create native AWS EKS and Azure AKS clusters instead of creating new standalone TKG management clusters or new TKG workload clusters on AWS and Azure. For information about how to create native AWS EKS and Azure AKS clusters with Tanzu Mission Control, see Managing the Lifecycle of AWS EKS Clusters and Managing the Lifecycle of Azure AKS Clusters in the Tanzu Mission Control documentation.
- Although the recommendation is to use Tanzu Mission Control to create native AWS EKS and Azure AKS clusters, creating and using standalone TKG management clusters and TKG workload clusters on AWS and Azure remains fully supported for all TKG releases up to and including TKG v2.4.x.
- For information about why VMware is deprecating TKG clusters on AWS and Azure, see VMware Tanzu Aligns to Multi-Cloud Industry Trends on the VMware Tanzu blog.

https://docs.vmware.com/en/VMware-Tanzu-Kubernetes-Grid/2.4/tkg-deploy-mc/mgmt-release-notes.html#deprecate-aws-azure

TMC

VMware Tanzu Mission Control is a centralized Kubernetes management hub for multi-cluster deployments.

Category	Key Features	Tanzu Mission Control Essentials *(Available with VMware Cloud offerings only - SaaS)*	Tanzu Mission Control Advanced *(SaaS)*	Tanzu Mission Control Advanced *(Self-managed)*
Provisioning and lifecycle management	Tanzu Kubernetes Grid clusters on vSphere	✓	✓	✓
	Tanzu Kubernetes Grid clusters on VMware Cloud on AWS, Azure, Dell, Google, Oracle	✓	✓	○
	Amazon EKS clusters on AWS	✓	✓	○
	Azure AKS clusters	✓	✓	○
Attaching clusters	Attach and manage policies on *CNCF-conformant* Kubernetes clusters	✓	✓	✓
Identity and access management	Access policies	✓	✓	✓
	IaaS account permissions	✓	✓	✓
	View existing access policies on a cluster	✓	✓	✓
	Federation to customer's identity provider	✓	✓	✓

○ = *Not available on 1.0 release announced Ju 29, 2023*

NOTE

I port-group utilizzati per i deploy dei cluster devono avere un DHCP server associato con un pool di indirizzi adeguato e con una lease bassa

Verificare che la chiave ssh generata venga riportata per intero nel campo dello step 1 (ssh-rsa AAAAB3..)

Se si utilizza NSX ALB non specificare un indirizzo per la CONTROL_PLANE_EDNPOINT, se lo fate deve essere un indirizzo compreso nel pool definite su NSX ALB (se diverso il cluster di management non sale)

Alla prossima

VMUG usercon