Cluster Essentials for VMware Tanzu v1.6

Cluster Essentials for VMware Tanzu 1.6

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https://docs.vmware.com/

Contents

Deploying Cluster Essentials v1.6.10

This topic tells you how to install, upgrade, and uninstall Cluster Essentials v1.6.10.

Supported Kubernetes versions

Installation requires Kubernetes cluster v1.23, v1.24, v1.25, v1.26 or v1.27 on one of the following Kubernetes providers:

- Azure Kubernetes Service
- Amazon Elastic Kubernetes Service
- Google Kubernetes Engine
- Red Hat OpenShift v4.12 or v4.13 running on vSphere and baremetal clusters
- Minikube
- Kind

Supported Platforms

The Cluster Essentials install script can only be run on AMD64 CPUs with macOS, Windows or Linux.

Install

If you are using a VMware Tanzu Kubernetes Grid cluster, you do not need to install Cluster Essentials because the contents of Cluster Essentials are already installed on your cluster.

For all other clusters, install Cluster Essentials using the following steps.

Download artifacts from the Broadcom Support Portal

1. Sign in to the Broadcom Support Portal.
2. Go to Cluster Essentials for VMware Tanzu in Tanzu > My Downloads.
3. Expand the **Cluster Essentials for VMWare Tanzu** section.
4. Retrieve your Broadcom registry API token:
   1. Click the Token Download icon next to the Cluster Essentials version you want to download.

Cluster Essentials for VMware Tanzu			⌄

Release ⇕	Release Level Info ⇕	Language ⇕	
1.9.1	521243	English	🛡
1.9.0	360010	English	
1.8.4	521263	English	

2. Follow the instructions in the dialog box. Save the token as a variable named `MY_BROADCOM_SUPPORT_ACCESS_TOKEN`. For example:

```
export MY_BROADCOM_SUPPORT_ACCESS_TOKEN=API-TOKEN
```

Where `API-TOKEN` is your token from the Broadcom Support Portal.

5. Click **1.6.10**.

6. Select the **I agree to Terms and Conditions** check box.

7. Choose a download according to your Kubernetes provider and operating system:

   - For macOS, download `tanzu-cluster-essentials-darwin-amd64-1.6.10.tgz`.

   - For Linux, download `tanzu-cluster-essentials-linux-amd64-1.6.10.tgz`.

   - For Windows, download `tanzu-cluster-essentials-windows-amd64-1.6.10.tgz`.

8. Unpack the TAR file into the `tanzu-cluster-essentials` directory:

   - On macOS or Linux:

```
mkdir $HOME/tanzu-cluster-essentials
tar -xvf DOWNLOADED-CLUSTER-ESSENTIALS-BUNDLE -C $HOME/tanzu-cluster-esse
ntials
```

Where `DOWNLOADED-CLUSTER-ESSENTIALS-BUNDLE` is the name of the bundle you downloaded.

   - On Windows, in Command Prompt:

```
:: Ensure you are in the directory where you have downloaded DOWNLOADED-C
LUSTER-ESSENTIALS-BUNDLE
mkdir tanzu-cluster-essentials
tar -xvf DOWNLOADED-CLUSTER-ESSENTIALS-BUNDLE -C tanzu-cluster-essentials
```

Where `DOWNLOADED-CLUSTER-ESSENTIALS-BUNDLE` is the name of the bundle you downloaded.

9. For air-gapped installation, download the bundle:

   - On macOS or Linux:

```
$ cd tanzu-cluster-essentials

$ IMGPKG_REGISTRY_HOSTNAME=registry.packages.broadcom.com \
  IMGPKG_REGISTRY_USERNAME=BROADCOM-REGISTRY-USERNAME \
  IMGPKG_REGISTRY_PASSWORD=${MY_BROADCOM_SUPPORT_ACCESS_TOKEN} \
  ./imgpkg copy \
```

```
    -b registry.packages.broadcom.com/tanzu-cluster-essentials/cluster-es
sentials-bundle@sha256:639fc3f3d3ec9bd215a287915c21505b12e0deaedb9af0b195
0b0ef5c1d6b472 \
    --to-tar cluster-essentials-bundle-1.6.10.tar \
    --include-non-distributable-layers
```

Where `BROADCOM-REGISTRY-USERNAME` is your username for Broadcom registry.

- On Windows, in Command Prompt:

```
cd tanzu-cluster-essentials

set IMGPKG_REGISTRY_HOSTNAME=registry.packages.broadcom.com
set IMGPKG_REGISTRY_USERNAME=BROADCOM-REGISTRY-USERNAME
set /p IMGPKG_REGISTRY_PASSWORD=password:
:: Interactively enter $MY_BROADCOM_SUPPORT_ACCESS_TOKEN
imgpkg copy ^
  -b registry.packages.broadcom.com/tanzu-cluster-essentials/cluster-esse
ntials-bundle@sha256:639fc3f3d3ec9bd215a287915c21505b12e0deaedb9af0b1950b
0ef5c1d6b472 ^
  --to-tar cluster-essentials-bundle-1.6.10.tar ^
  --include-non-distributable-layers
```

Where `BROADCOM-REGISTRY-USERNAME` is your username for Broadcom registry.

Set Kubernetes cluster context

1. List the existing contexts by running:

```
kubectl config get-contexts
```

2. Set the context to the cluster that you want to use for the Cluster Essentials install.

```
kubectl config use-context CONTEXT-NAME
```

Where `CONTEXT-NAME` can be retrieved from the outputs of the previous step.

Deploy onto the cluster

To deploy to your cluster, create a configuration secret if your registry requires a custom certificate then run the script to install Cluster Essentials.

(Optional) Set your custom certificate

If your registry needs a custom certificate, you must load that configuration into the cluster before installing `kapp-controller`.

If your registry uses a public certificate, these steps are not required.

1. Create the `kapp-controller` namespace:

```
kubectl create namespace kapp-controller
```

2. Create a configuration secret by using the registry's `ca.crt` stored on local disk:

```
kubectl create secret generic kapp-controller-config \
  --namespace kapp-controller \
  --from-file caCerts=ca.crt
```

Deploy using macOS or Linux

Configure and run `install.sh`, which installs `kapp-controller` and `secretgen-controller` on your cluster:

- For online installation, run:

```
export INSTALL_BUNDLE=registry.packages.broadcom.com/tanzu-cluster-essentials/c
luster-essentials-bundle@sha256:639fc3f3d3ec9bd215a287915c21505b12e0deaedb9af0b
1950b0ef5c1d6b472
export INSTALL_REGISTRY_HOSTNAME=registry.packages.broadcom.com
export INSTALL_REGISTRY_USERNAME=BROADCOM-REGISTRY-USERNAME
export INSTALL_REGISTRY_PASSWORD=${MY_BROADCOM_SUPPORT_ACCESS_TOKEN}
cd $HOME/tanzu-cluster-essentials
./install.sh --yes
```

  Where `BROADCOM-REGISTRY-USERNAME` is your username for Broadcom registry.

- For air-gapped installation:

  Upload the previously downloaded bundle to the air-gapped registry and install Cluster Essentials by running:

```
$ cd tanzu-cluster-essentials

$ IMGPKG_REGISTRY_HOSTNAME=MY-REGISTRY \
  IMGPKG_REGISTRY_USERNAME=MY-REGISTRY-USER \
  IMGPKG_REGISTRY_PASSWORD=MY-REGISTRY-PASSWORD \
  ./imgpkg copy \
    --tar cluster-essentials-bundle-1.6.10.tar \
    --to-repo MY-REGISTRY/cluster-essentials-bundle \
    --include-non-distributable-layers \
    --registry-ca-cert-path CA_PATH

$ INSTALL_BUNDLE=MY-REGISTRY/cluster-essentials-bundle@sha256:639fc3f3d3ec9bd21
5a287915c21505b12e0deaedb9af0b1950b0ef5c1d6b472 \
  INSTALL_REGISTRY_HOSTNAME=MY-REGISTRY \
  INSTALL_REGISTRY_USERNAME=MY-REGISTRY-USER \
  INSTALL_REGISTRY_PASSWORD=MY-REGISTRY-PASSWORD \
  ./install.sh
```

  Where:

  - `MY-REGISTRY` is your air-gapped container registry.

  - `MY-REGISTRY-USER` is the user with write access to `MY-REGISTRY`.

  - `MY-REGISTRY-PASSWORD` is the password for `MY-REGISTRY-USER`.

Deploy using Windows

Configure and run `install.bat`, which installs `kapp-controller` and `secretgen-controller` on your cluster:

- For online installation, run:

```
cd tanzu-cluster-essentials

set INSTALL_BUNDLE=registry.packages.broadcom.com/tanzu-cluster-essentials/cluster-essentials-bundle@sha256:639fc3f3d3ec9bd215a287915c21505b12e0deaedb9af0b1950b0ef5c1d6b472
set INSTALL_REGISTRY_HOSTNAME=registry.packages.broadcom.com
set INSTALL_REGISTRY_USERNAME=BROADCOM-REGISTRY-USERNAME
set /p INSTALL_REGISTRY_PASSWORD=password:
:: Interactively enter $MY_BROADCOM_SUPPORT_ACCESS_TOKEN

install.bat
```

  Where `BROADCOM-REGISTRY-USERNAME` is your username for Broadcom registry.

- For air-gapped installation:

  Upload the previously downloaded bundle to the air-gapped registry and install Cluster Essentials by running:

```
cd tanzu-cluster-essentials

set IMGPKG_REGISTRY_HOSTNAME=MY-REGISTRY
set IMGPKG_REGISTRY_USERNAME=MY-REGISTRY-USER
set IMGPKG_REGISTRY_PASSWORD=password:
:: Interactive enter MY-REGISTRY-PASSWORD
imgpkg copy ^
  --tar cluster-essentials-bundle-1.6.10.tar ^
  --to-repo MY-REGISTRY/cluster-essentials-bundle ^
  --include-non-distributable-layers ^
  --registry-ca-cert-path CA_PATH

set INSTALL_BUNDLE=MY-REGISTRY/cluster-essentials-bundle@sha256:639fc3f3d3ec9bd215a287915c21505b12e0deaedb9af0b1950b0ef5c1d6b472
set INSTALL_REGISTRY_HOSTNAME=MY-REGISTRY
set INSTALL_REGISTRY_USERNAME=MY-REGISTRY-USER
set /p INSTALL_REGISTRY_PASSWORD=password:
:: Interactively enter MY-REGISTRY-PASSWORD
install.bat
```

  Where:

  - `MY-REGISTRY` is your air-gapped container registry.

  - `MY-REGISTRY-USER` is the user with write access to `MY-REGISTRY`.

  - `MY-REGISTRY-PASSWORD` is the password for `MY-REGISTRY-USER`.

(Optional) Install CLIs onto your `$PATH`

1. (Optional) Several Tanzu products, such as Tanzu Application Platform, use the `kapp` CLI to deploy. For convenience, you can install the `kapp` CLI onto your `$PATH`:

```
sudo cp $HOME/tanzu-cluster-essentials/kapp /usr/local/bin/kapp
```

2. (Optional) Several Tanzu products, such as Tanzu Application Platform, use the `imgpkg` CLI to relocate packages. For convenience, you can install the `imgpkg` CLI onto your `$PATH`:

```
sudo cp $HOME/tanzu-cluster-essentials/imgpkg /usr/local/bin/imgpkg
```

Upgrade

Cluster Essentials components (such as `kapp-controller` and `secretgen-controller`) cannot be upgraded on clusters provisioned using VMware Tanzu Kubernetes Grid, Tanzu Community Edition, and VMware Tanzu Mission Control.

For all other clusters, if you already have Cluster Essentials v1.0 or later installed on your target cluster, you can upgrade to Cluster Essentials v1.6.10 using the following steps. Running this upgrade updates the `kapp-controller` version on your cluster to `v0.46.11` and `secretgen-controller` version to `v0.14.17`.

1. Follow the steps in Download artifacts from the Broadcom Support Portal and Set Kubernetes cluster context.

2. Configure and run `install.sh`, which installs `kapp-controller` and `secretgen-controller` on your cluster:

   ○ On macOS or Linux:

```
cd $HOME/tanzu-cluster-essentials

export INSTALL_BUNDLE=registry.packages.broadcom.com/tanzu-cluster-essent
ials/cluster-essentials-bundle@sha256:639fc3f3d3ec9bd215a287915c21505b12e
0deaedb9af0b1950b0ef5c1d6b472
export INSTALL_REGISTRY_HOSTNAME=registry.packages.broadcom.com
export INSTALL_REGISTRY_USERNAME=BROADCOM-REGISTRY-USERNAME
export INSTALL_REGISTRY_PASSWORD=${MY_BROADCOM_SUPPORT_ACCESS_TOKEN}

./install.sh --yes
```

   Where `BROADCOM-REGISTRY-USERNAME` is your username for Broadcom registry.

   ○ On Windows, in Command Prompt:

```
cd tanzu-cluster-essentials

set INSTALL_BUNDLE=registry.packages.broadcom.com/tanzu-cluster-essential
s/cluster-essentials-bundle@sha256:639fc3f3d3ec9bd215a287915c21505b12e0de
aedb9af0b1950b0ef5c1d6b472
set INSTALL_REGISTRY_HOSTNAME=registry.packages.broadcom.com
set INSTALL_REGISTRY_USERNAME=BROADCOM-REGISTRY-USERNAME
set /p INSTALL_REGISTRY_PASSWORD=password:
:: Interactively enter $MY_BROADCOM_SUPPORT_ACCESS_TOKEN

install.bat
```

   Where `BROADCOM-REGISTRY-USERNAME` is your username for Broadcom registry.

3. (Optional) Follow the steps in Install CLIs onto your $PATH to install newer versions of the `kapp` and `imgpkg` CLIs to your path.

Rollback

> ⚠️ **Caution**
>
> Uninstalling Cluster Essentials when the upgrade fails will cause an unrepairable state for your cluster.

To rollback to the previously installed version, follow the previous version of Cluster Essentials deployment instructions.

Uninstall

> ⚠️ **Caution**
>
> Uninstalling Cluster Essentials when the installation fails will cause an unrepairable state for your cluster.
>
> You must uninstall all the Custom Resources created by `kapp-controller` and `secretgen-controller` before running the uninstall script for Cluster Essentials.

1. Follow the steps in Set Kubernetes cluster context.

2. Run `uninstall.sh`, which uninstalls `kapp-controller` and `secretgen-controller` on your cluster:

   On macOS or Linux:

   ```
   cd $HOME/tanzu-cluster-essentials
   ./uninstall.sh --yes
   ```

   On Windows (in "Command Prompt" app):

   ```
   cd tanzu-cluster-essentials
   uninstall.bat
   ```

Cluster Essentials Release notes

This topic contains release notes for Cluster Essentials for VMware Tanzu. A new minor release for Cluster Essentials is publish every quarter. Monthly patch releases are published to address critical bugs and CVEs, if there are any.

v1.6.10

Release Date: May 28, 2024

Resolved Issues

- Updates **kapp-controller to v0.46.11**. This patch release addresses CVEs identified in v1.6.8. For a full list of new features, see the kapp-controller release notes.

- Updates **secretgen-controller to v0.14.17**. For a full list of new features, see the secretgen-controller release notes.

- Updates Carvel CLIs:

    - imgpkg to v0.37.11. See the imgpkg release notes.

    - kapp to v0.57.9. See the kapp release notes.

    - kbld to v0.37.13. See the kbld release notes.

    - ytt to v0.45.12. See the ytt release notes.

v1.6.9

Release Date: April 30, 2024

Resolved Issues

- Updates **kapp-controller to v0.46.9**. This patch release addresses CVEs identified in v1.6.8. For a full list of new features, see the kapp-controller release notes.

- Updates **secretgen-controller to v0.14.16**. For a full list of new features, see the secretgen-controller release notes.

- Updates Carvel CLIs:

    - imgpkg to v0.37.10. See the imgpkg release notes.

    - kapp to v0.57.7. See the kapp release notes.

    - kbld to v0.37.12. See the kbld release notes.

    - ytt to v0.45.11. See the ytt release notes.

v1.6.8

Release Date: March 29, 2024

Resolved Issues

- Updating **kapp-controller to v0.46.8**. This patch release addresses CVEs identified in v1.6.7. A full list of fixes can be found in the open source release notes.

v1.6.7

Release Date: February 29, 2024

Resolved Issues

- Updating **kapp-controller to v0.46.7**. This patch release addresses CVEs identified in v1.6.6. A full list of fixes can be found in the open source release notes.

v1.6.6

Release Date: January 31, 2024

Resolved Issues

- Updating **kapp-controller to v0.46.6**. This patch release addresses CVEs identified in v1.6.5. A full list of fixes can be found in the open source release notes.

- Updating **secretgen-controller to v0.14.14**.

v1.6.5

Release Date: December 29, 2023

Resolved Issues

- Updating **kapp-controller to v0.46.5**. This patch release addresses CVEs identified in v1.6.4. A full list of fixes can be found in the open source release notes.

- Updating **secretgen-controller to v0.14.13**.

- Updating Carvel CLIs
    - imgpkg to v0.37.9 release notes
    - kapp to v0.57.6 release notes
    - kbld to v0.37.11
    - ytt to v0.45.9

v1.6.4

Release Date: November 30, 2023

Resolved Issues

- Updating **kapp-controller to v0.46.4**. This patch release addresses CVEs identified in v1.6.3. A full list of fixes can be found in the open source release notes.

- Updating **secretgen-controller to v0.14.12**.

- Updating Carvel CLIs

  - imgpkg to v0.37.8 release notes

  - kapp to v0.57.5 release notes

  - kbld to v0.37.10

  - ytt to v0.45.8

v1.6.3

Release Date: October 31, 2023

Resolved Issues

- Updating **kapp-controller to v0.46.3**. This patch release addresses CVEs identified in v1.6.2. A full list of fixes can be found in the open source release notes.

- Updating **secretgen-controller to v0.14.11**.

- Updating Carvel CLIs

  - imgpkg to v0.37.7 release notes

  - kapp to v0.57.4 release notes

  - kbld to v0.37.9

  - ytt to v0.45.7

v1.6.2

Release Date: September 29, 2023

Resolved Issues

- Updating **kapp-controller to v0.46.2** with photon patch. This patch release addresses CVEs identified in v1.6.1 .

v1.6.1

Release Date: August 31, 2023

Resolved Issues

- Updating **kapp-controller to v0.46.2**. This patch release addresses CVEs identified in v1.6. A full list of fixes can be found in the open source release notes.

- Updating **secretgen-controller to v0.14.10**.

- Updating Carvel CLIs
    - imgpkg to v0.37.3 release notes
    - kapp to v0.57.2 release notes
    - kbld to v0.37.5
    - ytt to v0.45.4

v1.6.0

Release Date: July 6, 2023

New features

- Unblock app deletion when namespace is terminating and resources are in the same namespace.

- Don't fallback to automatic noopDelete if cluster is set.

- Updating **kapp-controller to v0.46.1**. A full list of new features can be found in the open source release notes.

- Updating **secretgen-controller to v0.14.8**.

- Updating Carvel CLIs
    - imgpkg to v0.37.2 release notes
    - kapp to v0.57.1 release notes
    - kbld to v0.37.4
    - ytt to v0.45.3