

This page explains how to create an admin workstation that you can use to install Anthos GKE deployed on-prem.

In this topic, you create an admin workstation that has a static IP address. That is consistent with the basic installation journey, which creates clusters that use static IP addresses.

If you want to create an admin workstation that uses Dynamic Host Configuration Protocol (DHCP) to get its IP address, see [Creating an admin workstation using DHCP](/gke-on-prem/docs/how-to/admin-workstation-dhcp) (/gke-on-prem/docs/how-to/admin-workstation-dhcp).

[< Previous](/gke-on-prem/docs/how-to/gcp-project) (/gke-on-prem/docs/how-to/gcp-project)

The admin workstation is a vSphere VM that contains all the [tools](/gke-on-prem/docs/tools) (/gke-on-prem/docs/tools) you need to create and manage GKE on-prem clusters. To create the admin workstation, you perform the following steps described in this topic:

- Download the admin workstation [Open Virtual Appliance](#) ([https://en.wikipedia.org/wiki/Open\\_Virtualization\\_Format](https://en.wikipedia.org/wiki/Open_Virtualization_Format)) (OVA) file, a compressed image of the admin workstation VM.
- Use [govc](/gke-on-prem/docs/tools#govc) (/gke-on-prem/docs/tools#govc), the command line interface to vSphere, to import the OVA to vSphere as a VM template.
- Copy and populate [HashiCorp Terraform](#) (<https://releases.hashicorp.com/terraform/0.11.7/>) configuration files.
- Use Terraform version 0.11 to create the admin workstation VM.

If you don't already have a JSON key file for your whitelisted service account, create one now:

- 1.

2.

where **[WHITELISTED\_SERVICE\_ACCOUNT\_EMAIL]** is the email address of your whitelisted service account.

The admin workstation OVA includes all of the cluster components, command line tools, and other entities needed to install and manage GKE on-prem clusters.

Activate your whitelisted service account:

where **[KEY\_WHITELISTED\_ACCOUNT]** is the path of the JSON key file for your whitelisted service account.

Download the latest version of the admin workstation OVA and its signature file:

Verify the OVA file you downloaded against the public key using `openssl`:

Expected output of this command is **Verified OK**.

In the following sections, you:

1. Create some variables declaring elements of your vCenter Server and vSphere environment.
2. Import the admin workstation OVA to vSphere and mark it as a VM template.

Before you import the admin workstation OVA to vSphere, you need to provide `govc` some variables declaring elements of your vCenter Server and vSphere environment:

You can find many of these values by logging in to the [vCenter Server](#)

(<https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.install.doc/GUID-CE128B59-E236-45FF-9976-3AADC8178.html>)

You can choose to use vSphere's default resource pool or [create your own](#)

(<https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.resmgmt.doc/GUID-60077B40-66FF-4625-934A-641703ED7601.html>)

:

where:

- **[VCENTER\_SERVER\_ADDRESS]** is your vCenter Server's IP address or hostname.
- **[VCENTER\_SERVER\_USERNAME]** is the username of an account that holds the Administrator role or equivalent privileges in vCenter Server.
- **[VCENTER\_SERVER\_PASSWORD]** is the vCenter Server account's password.
- **[VSPHERE\_DATASTORE]** is the name of the datastore you've configured in your vSphere environment.
- **[VSPHERE\_DATACENTER]** is the name of the datacenter you've configured in your vSphere environment.
- **[VSPHERE\_CLUSTER]** is the name of the cluster you've configured in your vSphere environment.

For using a non-default resource pool,

- **[VSPHERE\_RESOURCE\_POOL]** is the name of the resource pool you've configured to your vSphere environment.

If you are using a proxy, export variables for its the HTTP and HTTPS address, where **[PROXY\_ADDRESS]** is the proxy's IP address or hostname:

If you are using a vSphere Standard Switch

(<https://docs.vmware.com/en/VMware-vSphere/6.0/com.vmware.vsphere.networking.doc/GUID-350344DE-483A-42ED-B0E2-C811EE927D59.html>)

, import the OVA to vSphere using this command:

If you are using a [vSphere Distributed Switch](https://www.vmware.com/products/vsphere/distributed-switch.html)

(<https://www.vmware.com/products/vsphere/distributed-switch.html>), import the OVA to vSphere using this command, where **[YOUR\_DISTRIBUTED\_PORT\_GROUP\_NAME]** is the name of your [distributed port group](https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.networking.doc/GUID-B15C6A13-797E-4BCB-B9D9-5CBC5A60C3A6.html)

(<https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.networking.doc/GUID-B15C6A13-797E-4BCB-B9D9-5CBC5A60C3A6.html>)

:

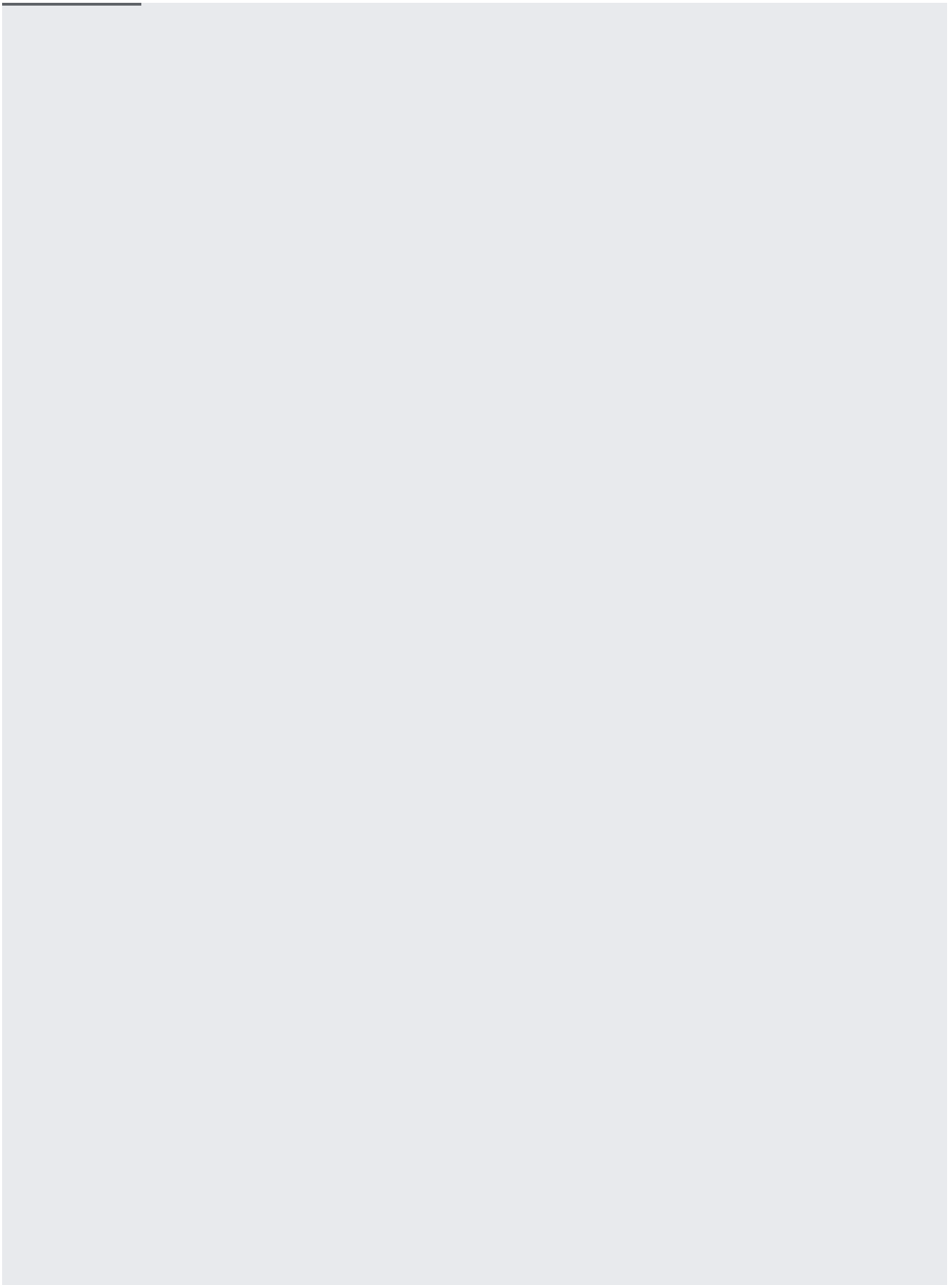
Create a directory for your Terraform files:

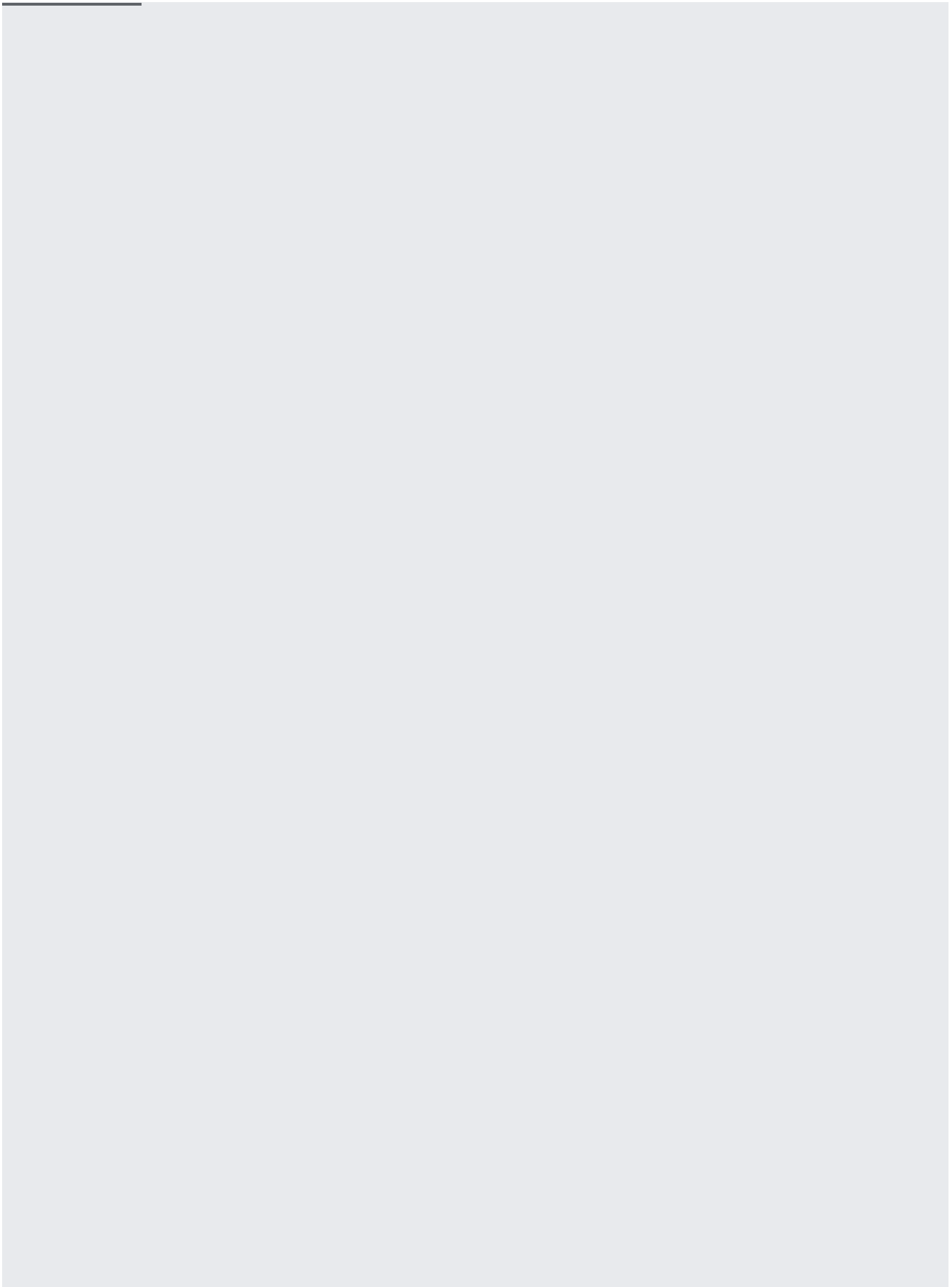
where **[TERRAFORM\_DIR]** is the path of a directory where you want to keep your Terraform files.

Copy the following TF and TFVARS files and save them to `[TERRAFORM_DIR]/terraform.tf` and `[TERRAFORM_DIR]/terraform.tfvars`, respectively.

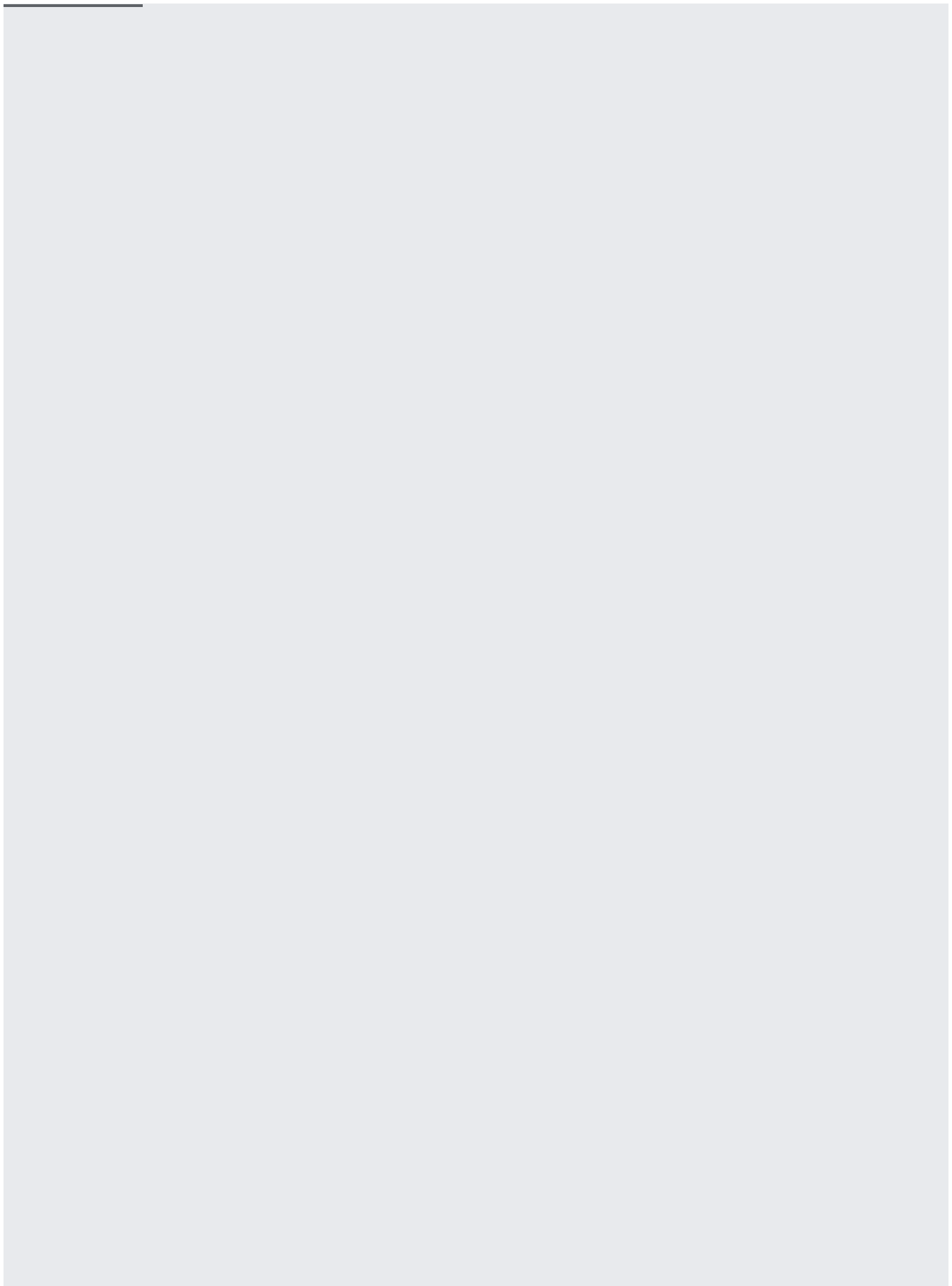
The TF file is the Terraform [HCL config](https://www.terraform.io/docs/configuration/syntax.html) (<https://www.terraform.io/docs/configuration/syntax.html>) that performs the VM creation.

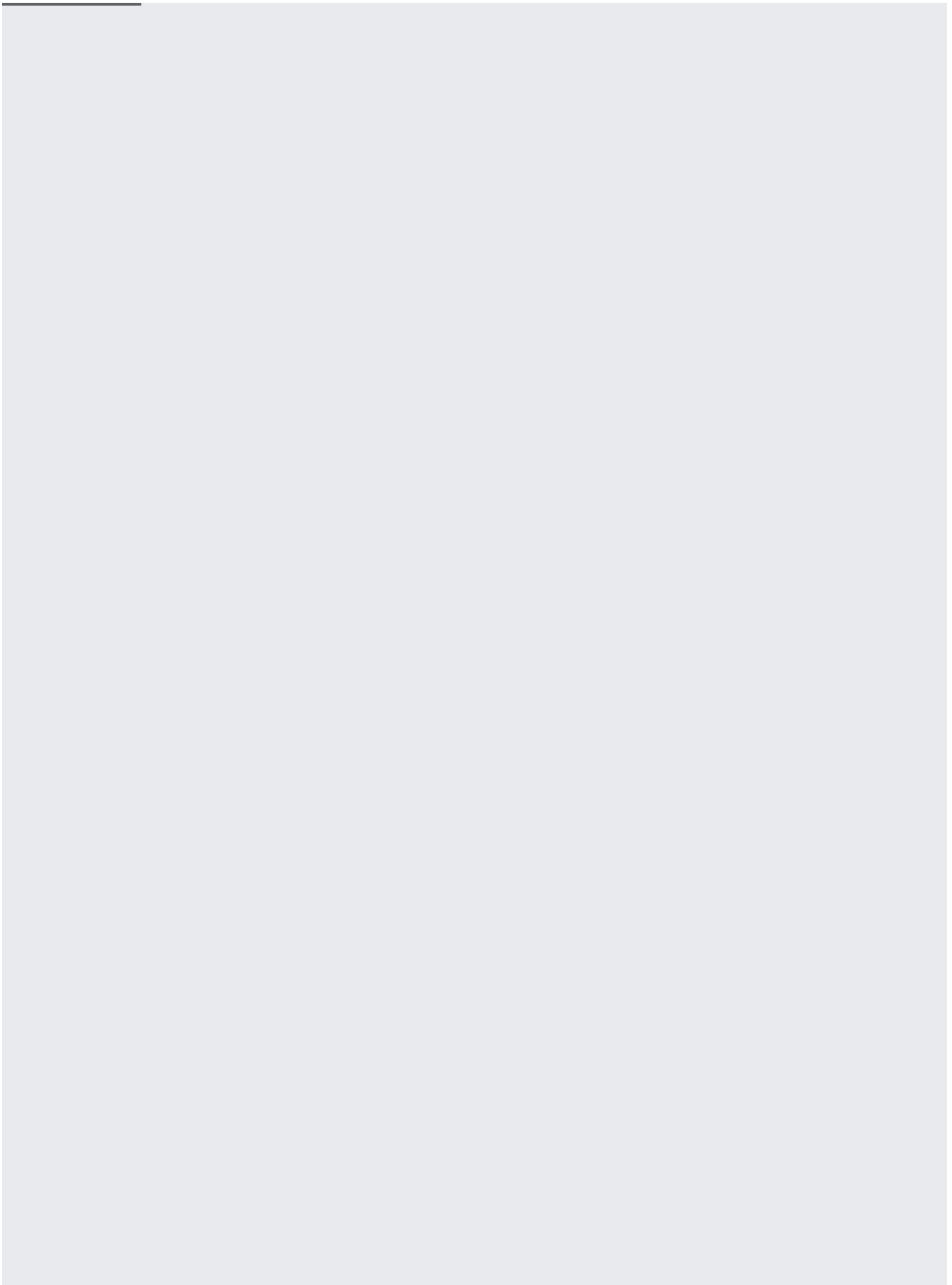
The Terraform files given here apply to an admin workstation that has a static IP address. If you want to create an admin workstation that uses DHCP to get its IP address, use the Terraform files given in [Creating an admin workstation using DHCP](/gke-on-prem/docs/how-to/admin-workstation-dhcp) (</gke-on-prem/docs/how-to/admin-workstation-dhcp>).











Create an SSH key, so that you can SSH into the admin workstation from your local laptop or workstation. On Linux-based operating systems, you can use `ssh-keygen`:

Open `terraform.tfvars` in a text editor and provide values for the following variables. You can find many of these values by logging in to the [vCenter Client](#)

(<https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.install.doc/GUID-CE128B59-E236-45FF-9976-D134DADC8178.html>)

:

Provide a vCenter Server user account as a string. The user account should have the Administrator role or equivalent privileges (see [vSphere requirements](#) (`/gke-on-prem/docs/how-to/vsphere-requirements-basic`)).

For example:

Provide the vCenter Server user account's password as a string. For example:

Provide your vCenter Server's address (IP or hostname) as a string. For example:

---

Provide the path to your SSH public key. You created this in a [previous step](#) (#create\_ssh\_key):

Provide a name of your choice for the admin workstation. For example:

Provide the name of your vSphere datastore as a string. For example:

Provide the name of your vSphere datacenter as a string. For example:

Provide the name of your vSphere cluster as a string. For example.

If you are using a non-default resource pool, provide the name of your vSphere resource pool as a string. For example:

If you are using the default resource pool, provide the following value:

where **[MY\_CLUSTER]** is the name of your vSphere cluster.

See [Specifying the root resource pool for a standalone host](https://www.terraform.io/docs/providers/vsphere/d/resource_pool.html#specifying-the-root-resource-pool-for-a-standalone-host)

([https://www.terraform.io/docs/providers/vsphere/d/resource\\_pool.html#specifying-the-root-resource-pool-for-a-standalone-host](https://www.terraform.io/docs/providers/vsphere/d/resource_pool.html#specifying-the-root-resource-pool-for-a-standalone-host))

Provide the vSphere network where you want to create your admin workstation, as a string. For example:

Provide the VM template name as a string. You created imported the OVA and marked it as a template in a [previous step](#) (#import). Notice that the template name does not have the `.ova` extension.

Provide an IPv4 static IP address for the admin workstation. For example:

Provide the number of bits in the subnet mask of the network where you want to create your admin workstation. For example:

Provide the IP address of the default gateway of the subnet in which the admin workstation is to be created. For example:

Provide DNS nameservers to be used by the admin workstation, separated by commas. For example:

Now you are ready to create the admin workstation VM. Use Terraform version 0.11 for the steps in this section.

1. Go to the directory that contains your Terraform configuration files (TF and TFVARS):
2. Initialize Terraform in the directory and apply the configuration. This might take a few minutes:

★ **Note:** The name of the TFVARS file must be `terraform.tfvars`. Otherwise, you have to pass in the `--var-file` parameter and specify the TFVARS file.

1. Go to the directory that contains your Terraform configuration files.
2. Retrieve the IP address of the admin workstation:

Make note of the admin workstation's IP address.

3. SSH in to the admin workstation by using your SSH key and the IP address:

Verify that `gkectl` and `docker` are installed on your admin workstation:

By default, the admin workstation uses `ntp.ubuntu.com` as its Network Time Protocol (NTP) server. If your organization uses a different time server, configure your admin workstation to use the same



NTP server as the rest of your organization.

Enter the following commands to configure the NTP server on your admin workstation:

where **[NTP\_SERVER]** is the hostname or IP address of your NTP server.

To verify that your NTP server is working, enter the following command:

The output is similar to this:

[← Previous \(/gke-on-prem/docs/how-to/gcp-project\)](/gke-on-prem/docs/how-to/gcp-project)

[Next > \(/gke-on-prem/docs/how-to/service-accounts\)](/gke-on-prem/docs/how-to/service-accounts)

**Symptoms**

Attempting to download the admin workstation OVA and signature returns the following error:

### Potential causes

Your whitelisted service account is not activated.

### Resolution

Make sure you have activated your whitelisted service account. If the issue persists, reach out to Google for assistance.

### Symptoms

Running `openssl dgst` against the admin workstation OVA file doesn't return `Verified OK`

### Potential causes

An issue is present in the OVA file that prevents successful validation.

### Resolution

Try downloading and deploying the admin workstation OVA again, as instructed in [Download the admin workstation OVA](/gke-on-prem/docs/how-to/admin-workstation) (/gke-on-prem/docs/how-to/admin-workstation). If the issue persists, reach out to Google for assistance.

For more information, refer to [Troubleshooting](/gke-on-prem/docs/troubleshooting) (/gke-on-prem/docs/troubleshooting).

[< Previous](/gke-on-prem/docs/how-to/gcp-project) (/gke-on-prem/docs/how-to/gcp-project)

[Next >](/gke-on-prem/docs/how-to/service-accounts) (/gke-on-prem/docs/how-to/service-accounts)