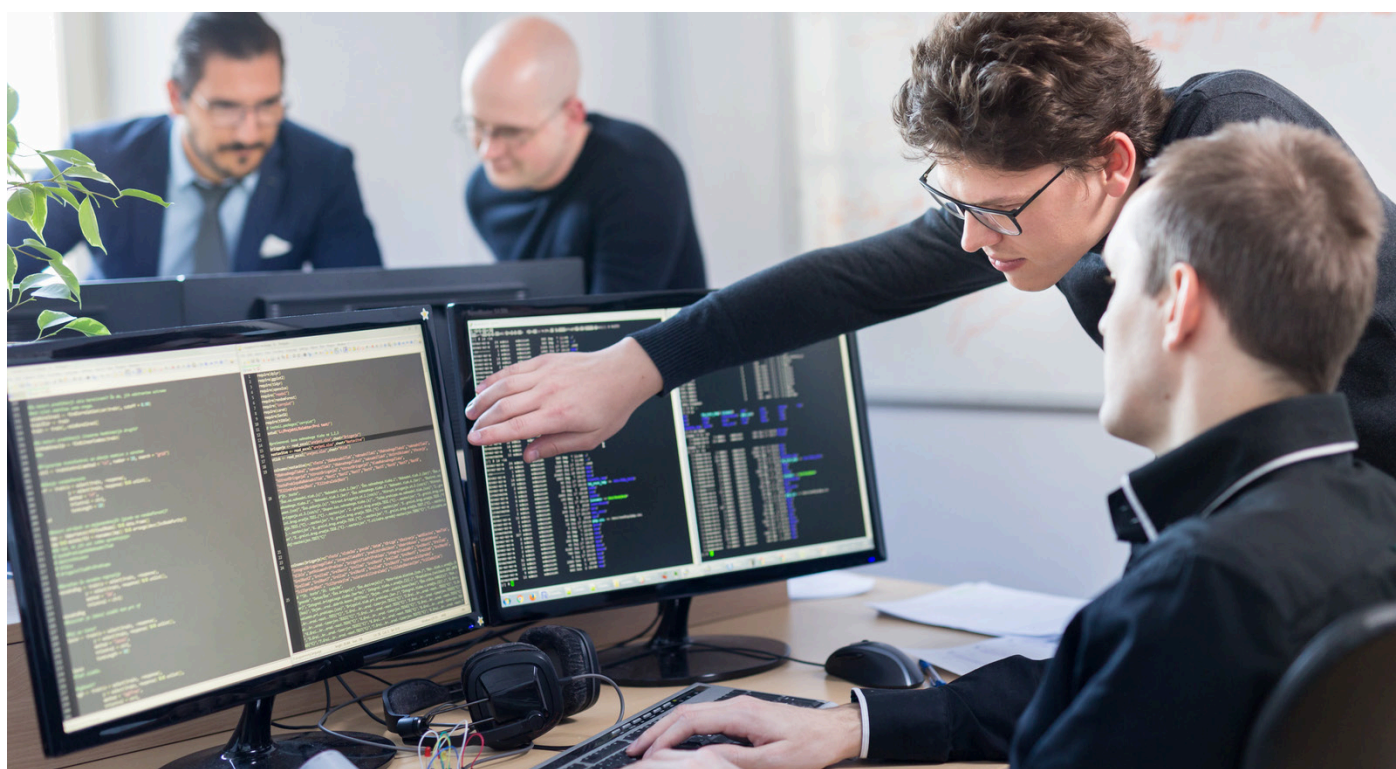




MIGRATION FROM A TERRAFORM V0.11-BASED PROVIDER TO A TERRAFORM V0.13-BASED PROVIDER FOR HPE ONEVIEW

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PREFACE

This HPE OneView Terraform Provider Installation and User Guide provides instruction on how to migrate from the HPE OneView Terraform Provider based on Terraform v0.11 to the HPE OneView Terraform Provider based on Terraform v0.13. Customers that move to the HPE OneView Terraform Provider based on Terraform v0.13 will be able to take full advantage of the improved infrastructure automation capabilities available in the latest versions of Terraform offer.

Terraform v0.13 that supports the HashiCorp Configuration Language version 2 (HCL 2) language simplifies coding, introduces new capabilities, and supports the provider source attribute in Terraform. This attribute enables automated installation of the HPE OneView Terraform Provider, which is a significant improvement in customer experience. HashiCorp verifies the HPE OneView Terraform Provider based on Terraform v0.13, which enables HPE code to be available in the Terraform Registry. The verification process ensures that provider code is from a reliable source, making automated installation a secure process. In the case of HPE OneView Terraform Provider, GPG encryption is used to digitally sign HPE code.

This migration guide covers various aspects including installation of Terraform v0.13, the new Terraform Provider for HPE OneView and upgrading existing configuration files using HCL 2. This guide also provides step-by-step best practices to the customer for adopting, moving, and migrating to Terraform Provider for HPE OneView v6.00-13 that supports Terraform v0.13.

Terraform v0.13 is a major update that includes dozens of improvements and features spanning the breadth and depth of Terraform functionality. One of the major changes in Terraform v0.13 is HCL 2. HCL 2 introduces Rich Data Types to describe more complex structures with your Terraform modules. In HPE OneView Terraform Provider v6.00-13, existing example configuration files are upgraded to HCL 2 language.

The Terraform Provider for HPE OneView v6.00-13 now uses Go Modules for dependency management and vendoring. The Terraform Provider for HPE OneView is also an upgrade to the Terraform Plugin SDK. More details on the Terraform Plugin SDK can be found at terraform.io/docs/extend/guides/v1-upgrade-guide.html.

Terraform Provider for HPE OneView v6.00-13 is available as a verified provider at [Terraform Registry](https://registry.terraform.io/providers/hpe/hpe-oneview). The registry enables the initialization of the Terraform Provider for HPE OneView v6.00-13, to be initiated directly from the registry maintained by HashiCorp.

Terraform Provider for HPE OneView v6.00-13 is encrypted with an HPE digital signature. This makes it possible for the signed provider to be checked for authenticity and integrity. GPG asymmetric encryption is used to sign the file, which is part of the release shown in Figure 1. You can find the verification steps at myenterpriselicence.hpe.com/cwp-ui/free-software/HPLinuxCodeSigning.

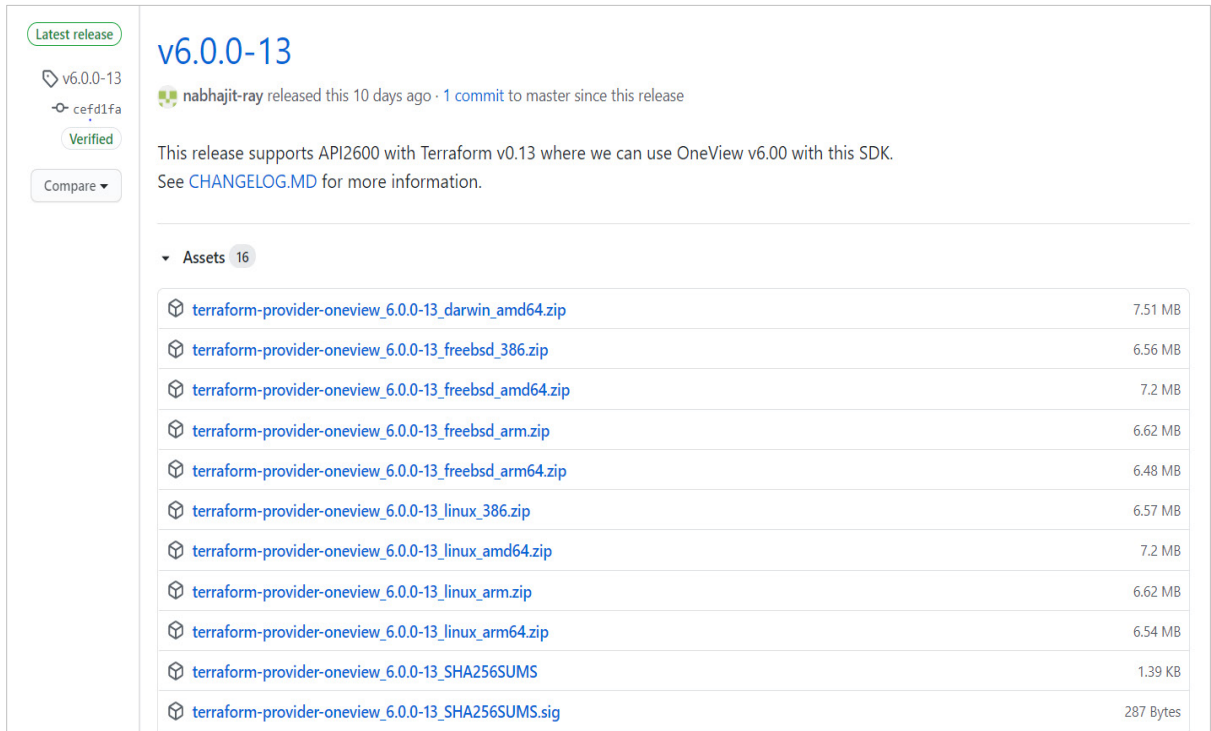


FIGURE 1. HPE OneView Terraform Provider v0.13 repository release entry



The following steps explain how to set up your environment to use the Terraform Provider for HPE OneView v6.00-13.

- 1. [Installation of Terraform Provider for HPE OneView](#)
- 2. [Migrating existing Terraform v0.11 configuration file \(.tf file\) to Terraform v0.13](#)
- 3. [Custom resource upgradation](#)
- 4. [Running the configuration files](#)

1. INSTALLATION OF TERRAFORM PROVIDER FOR HPE ONEVIEW

Terraform Provider for HPE OneView can be installed from source, Docker container, and Terraform Registry installation methods. You can either use a Docker container, which will have the HPE OneView Terraform Provider installed or perform local installation manually.

We can install Terraform Provider for HPE OneView through multiple ways as listed in the following table.

Repositories	HPE GitHub	Terraform Registry	Docker image
Terraform Provider for HPE OneView	Open source community project	The Terraform Registry is an interactive resource for discovering a wide selection of integrations (providers) and configuration packages (modules) for use with Terraform.	Open source—The containerized version of the GitHub of Terraform Provider for HPE OneView is available in the Docker Store.

- a. Using the Terraform Registry to install HashiCorp verified Terraform Provider for HPE OneView v0.13 or higher.

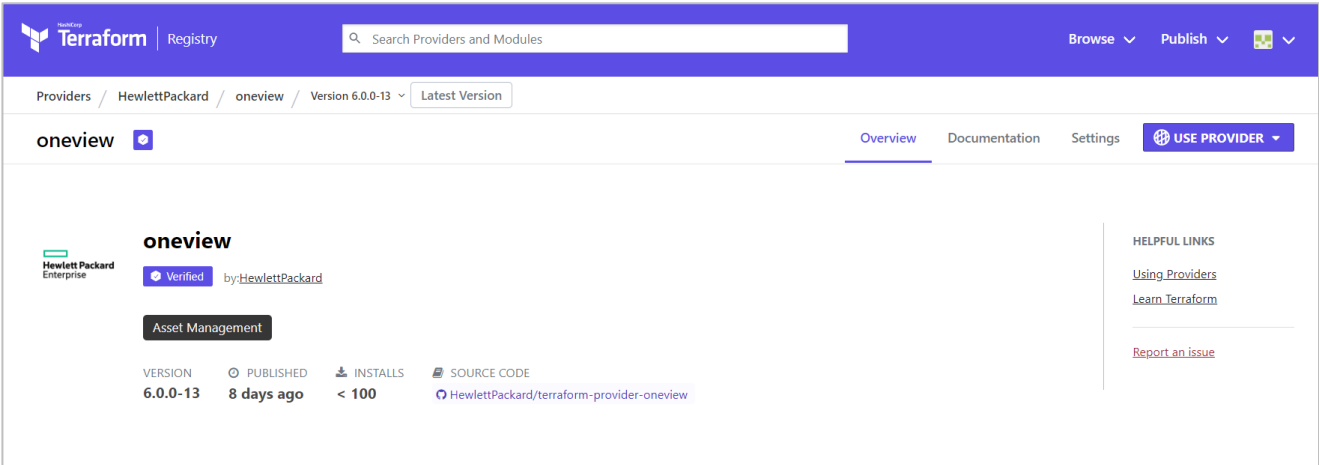


FIGURE 2. Terraform Registry

Steps to provision using the Terraform Registry

If you are using Terraform v0.13, you can automatically download the providers from the Terraform Registry. Add the following to your Terraform project.

```
terraform {
  required_providers {
    oneview = {
      source = "HewlettPackard/oneview"
      version = "6.0.0-13"
    }
  }
}
```

FIGURE 3. Version instructions for v0.13



b. Installing from Docker.

The lightweight containerized version of the HPE OneView SDK for Terraform is available in the Docker Store. The Docker Store image tag consist of two sections: <sdk_version> and <OV_version>

```
# Download and store a local copy of oneview-sdk-for-terraform and use it as a Docker Image.
$ docker pull hewlettpackardenterprise/hpe-oneview-sdk-for-terraform:v6.0.0-12-OV6.0
# Run docker commands below given, which will in turn create a sh session
# where you can create files, issue commands and execute the examples.
$ docker run -it docker pull hewlettpackardenterprise/hpe-oneview-sdk-for-terraform:v6.0.0-12-OV6.0 /bin/sh
```

FIGURE 4. Docker Image instructions

c. Install Terraform Provider for HPE OneView from GitHub.

GitHub releases version tag supporting Terraform v0.12 that is appended with numeric 12 to distinguish it from release supporting Terraform v0.11, that is, <OV-version>-12. Download the Terraform Provider for HPE OneView plug-in from latest GitHub [release](#)

The screenshot shows the GitHub repository page for `HewlettPackard/terraform-provider-oneview`. The `Releases` tab is selected, displaying the latest release `v6.0.0-12`. The release was made by `nabhajit-ray` 12 days ago. A note states: "This release supports API2600 with Terraform v0.12 where we can use OneView v6.00 with this SDK. See [CHANGELOG.MD](#) for more information." Below the release information, there is a list of 15 assets. The assets are as follows:

Asset Name	Size
terraform-provider-oneview_6.0.0-12_darwin_amd64.zip	7.51 MB
terraform-provider-oneview_6.0.0-12_freebsd_386.zip	6.55 MB
terraform-provider-oneview_6.0.0-12_freebsd_amd64.zip	7.19 MB
terraform-provider-oneview_6.0.0-12_freebsd_arm.zip	6.62 MB
terraform-provider-oneview_6.0.0-12_freebsd_arm64.zip	6.48 MB
terraform-provider-oneview_6.0.0-12_linux_386.zip	6.57 MB
terraform-provider-oneview_6.0.0-12_linux_amd64.zip	7.2 MB
terraform-provider-oneview_6.0.0-12_linux_arm.zip	6.62 MB
terraform-provider-oneview_6.0.0-12_linux_arm64.zip	6.53 MB
terraform-provider-oneview_6.0.0-12_SHA256SUMS	1.27 KB
terraform-provider-oneview_6.0.0-12_SHA256SUMS.sig	287 Bytes
terraform-provider-oneview_6.0.0-12_windows_386.zip	6.85 MB

FIGURE 5. HPE OneView Terraform Provider v0.12 repository release entry

```
$ wget https://github.com/HewlettPackard/terraform-provider-  
oneview/releases/download/v6.0.0-12/terraform-provider-oneview_6.0.0-  
12_linux_amd64.zip  
  
# Create the plugin location if it does not exist and copy the provider binary there.  
  
$ mkdir -p ~/.terraform.d/plugins/  
  
$ mv terraform-provider-oneview ~/.terraform.d/plugins/
```

FIGURE 6. Version instructions for v0.12

2. MIGRATING EXISTING TERRAFORM V0.11 CONFIGURATION FILE (.TF FILE) TO TERRAFORM V0.13

If you were using the configuration files which were compatible with Terraform v0.11, those need to be upgraded to Terraform v0.12 first and then to Terraform v0.13.

For each upgrade, you must install the corresponding Terraform binary.

1a. Install Terraform v0.12.

Download Terraform v0.12 core binary from releases.hashicorp.com/terraform/0.12.30/.

```
$wget https://releases.hashicorp.com/terraform/0.12.29/terraform_0.12.29_linux_amd64.zip  
  
#Unzip it  
$unzip terraform_0.12.29_linux_amd64.zip  
  
#Copy the binary  
$mv terraform /usr/local/bin/
```

FIGURE 7. Binary instructions for v0.12

1b. Upgrade the configuration to conform to Terraform v0.12.

```
$ terraform 0.12upgrade  
  
# To see the full set of errors that led to this message, run:  
  
$ Terraform validate
```

FIGURE 8. Validation instructions for v0.12

More details on upgrade process for Terraform v0.12 can be found at terraform.io/upgrade-guides/0-12.html.

Once the configuration files are upgraded to Terraform v0.12 level, we can upgrade it to Terraform v0.13.



2a. Install Terraform v0.13.

Download Terraform v0.13 core binary from releases.hashicorp.com/terraform/0.13.6/.

```
$wget https://releases.hashicorp.com/terraform/0.13.6/terraform_0.13.6_linux_amd64.zip

#Unzip it
$unzip terraform_0.13.6_linux_amd64.zip

#Copy the binary
$mv terraform /usr/local/bin/
```

FIGURE 9. Binary instructions for v0.13

2b. Upgrade the configuration to conform to Terraform v0.13.

```
$ terraform 0.13upgrade

# To see the full set of errors that led to this message, run:

$ Terraform validate
```

FIGURE 10. Validation instructions for v0.13

Additional details concerning the upgrade process for Terraform v0.13 can be found at terraform.io/upgrade-guides/0-13.html.

3. CUSTOM RESOURCE UPGRADATION

If you have your own custom HPE OneView resources, you must follow the steps to upgrade the terraform-provider-oneview. You will need to upgrade your resources to support Golang modules. If you are not using a plug-in SDK, you will need to upgrade that first. Provider upgradation steps are available at terraform.io/docs/extend/terraform-0.12-compatibility.html.

4. RUNNING THE CONFIGURATION FILES

Once your installation is complete, you may run the configuration files to manage infrastructures.

The Terraform Provider for HPE OneView provides many examples to maintain the various HPE OneView resources. Each resource example directory contains *.tf, which can be used to perform the following process.

```
#Copy the main.tf files to the root directory and initialize the plugin
$terraform init

#Run Terraform plan to see the changes that will be done by running the configuration
$terraform plan

# Then run the configuration to create the resource

$terraform apply
```

FIGURE 11. Plug-in initialization: Provisioning



```
#Copy the update.tf files to the root directory and initialize the plugin
$terraform init

#Run Terraform plan to see the changes that will be done by running the configuration
$terraform plan

# Then run the configuration to update the resource

$terraform apply
```

FIGURE 12. Plug-in initialization: Updating resources

```
#Copy the data_source.tf files to the root directory and initialize the plugin
$terraform init

#Run Terraform plan to see the changes that will be done by running the configuration
$terraform plan

# Then run the configuration to read the resource

$terraform apply
```

FIGURE 13. Plug-in initialization: Reading resources

Importing resources

```
#Edit the data_source.tf file to uncomment the resource section
$ cat Ethernet_network.tf

    resource "oneview_ethernet_network" "import_eth"{
    }
# Then run the configuration to read the resource

$ terraform import oneview_ethernet_network.import_eth eth1
```

FIGURE 14. Importing instructions

SUMMARY

By upgrading to Terraform v0.13 and the Terraform Provider for HPE OneView based on this version, the user can take full advantage of the improved HCL, the syntax of Terraform configurations, improved error messages, and automated installation of Terraform Providers via the Terraform Registry. With HPE OneView Provider for Terraform, now available in the Terraform Registry as a **verified provider**, the installation and usage of HPE OneView plug-in has been significantly streamlined. A significant boost in security has been introduced through Terraform verification, with the inclusion of HPE digitally signed code. It is based on GPG asymmetric encryption, ensuring a trusted source of the code.

This document shows that there are multiple paths to migration, which are straightforward and can be adjusted to suit a user's particular circumstance to achieve a seamless migration with limited effort. Upgrading existing configuration files and custom HPE OneView Terraform Providers are also explained.

LEARN MORE AT

[HPE OneView](#)

[HPE OneView SDK for Terraform—GitHub](#)

[HPE OneView SDK for Terraform—Terraform Registry](#)

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