

Automate Infrastructure Deployment using Terraform

Easy Ways to Spin up Your openSUSE Machine
on Linode Public Cloud Providers

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Class Objectives

1 Understanding
Terraform Concepts

2 Understanding Basic of
Terraform
Configuration File

3 Understanding How to
Provision your Infra
using terraform

4 Understanding How to
provision and deploy
apps using terraform





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- Student at STMIK Bani Saleh Bekasi
- Geeko Lovers!
- Community Members of openSUSE & openSUSE Indonesia
 - Not a code contributor
 - Organizing openSUSE Translator Meetup ID
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 - openSUSE Asia Summit 2017 Speaker (Japan)
 - Local Committee for openSUSE Asia Summit 2019



What is Terraform?



Terraform is ...

- A Tool to provisioning your infrastructure as a code
- Just imagine you are consumer of this ...



And then you want to ...

- Spin up some machines/instances
- Deploy an application

Why Terraform?

- Terraform is a tool for automation your infrastructure easily
- Auditable, you know what you created and changed
 - You can keep change history in system versioning like Git
- Keep your infrastructure in a certain state
- Terraform can provision your cloud or on-premise infrastructure



Terraform VS Ansible, SaltStack, Chef



Terraform has a focus
to provision the
infrastructure



These tools has a focus
to instal, configure and
manage the software



Terraform
communicate with
provider using API

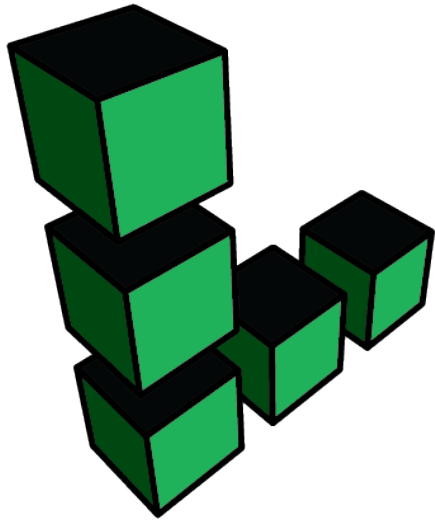


These tools
communicate with the
software using SSH or
agent

You can use all of these tools to manage your deployment



And We will collaborate Terraform with ...



linode



Why **Linode**?

- Officially support for openSUSE Leap Cloud Images every single release!
- API Support
- Simple management
- Powerfull



< > Before this, **make sure you have ..**

01

Installing terraform on
your PC

02

registered and verified
Linode Account

03

You have internet
connection



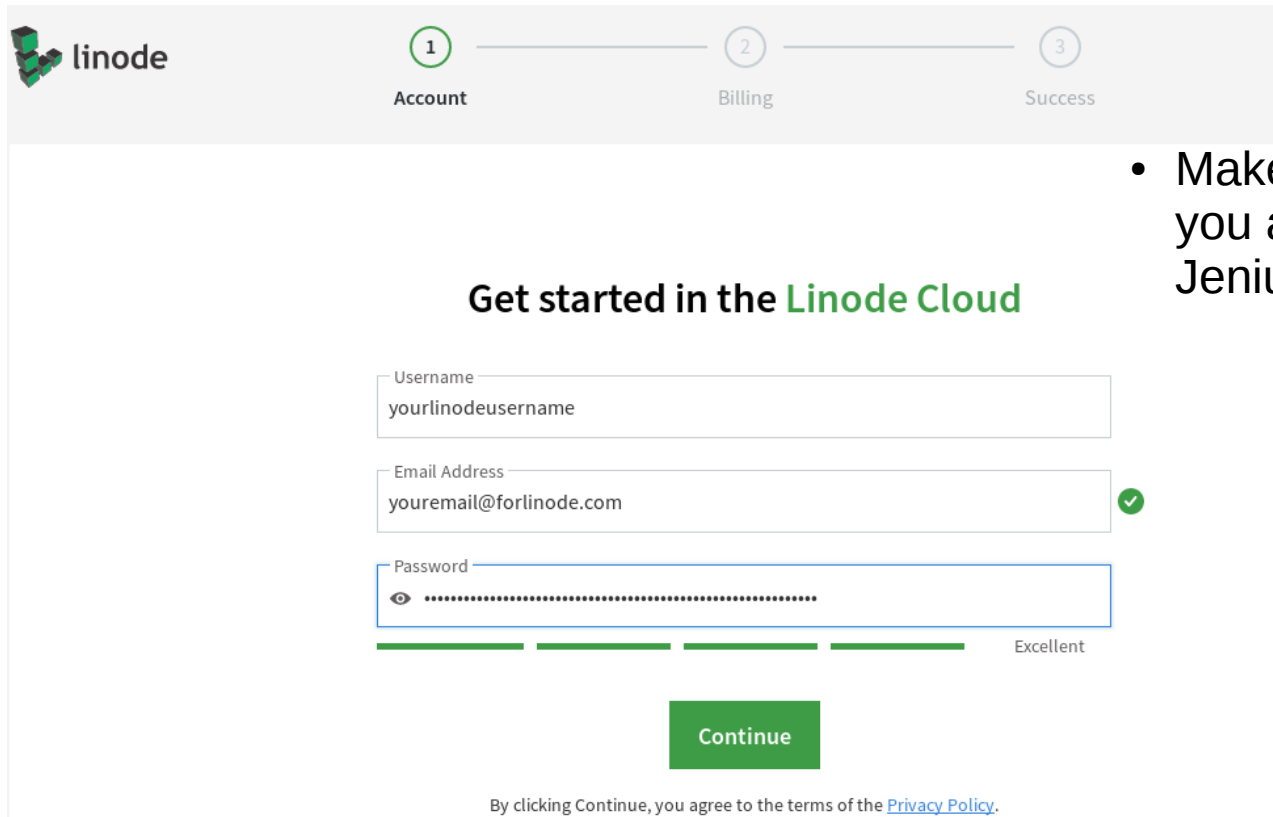
1. Terraform Installation

<https://learn.hashicorp.com/terraform/getting-started/install.html>



2. Registering Linode Account

- Navigate to: <https://login.linode.com/signup>



The screenshot shows the Linode registration interface. At the top, the Linode logo is on the left, and a progress bar on the right indicates three steps: 1. Account (highlighted with a green circle), 2. Billing, and 3. Success. Below the progress bar, the heading "Get started in the Linode Cloud" is displayed. The registration form consists of three input fields: "Username" with the placeholder "yourlinodeusername", "Email Address" with the placeholder "youremail@forlinode.com" and a green checkmark icon to its right, and "Password" with a masked password "....." and an eye icon to its left. Below the password field is a green progress bar with four segments, the last of which is filled, and the word "Excellent" to its right. A green "Continue" button is centered below the progress bar. At the bottom, a small text line reads "By clicking Continue, you agree to the terms of the [Privacy Policy](#)."

linode

1 Account 2 Billing 3 Success

Get started in the Linode Cloud

Username
yourlinodeusername

Email Address
youremail@forlinode.com ✓

Password
.....

Excellent

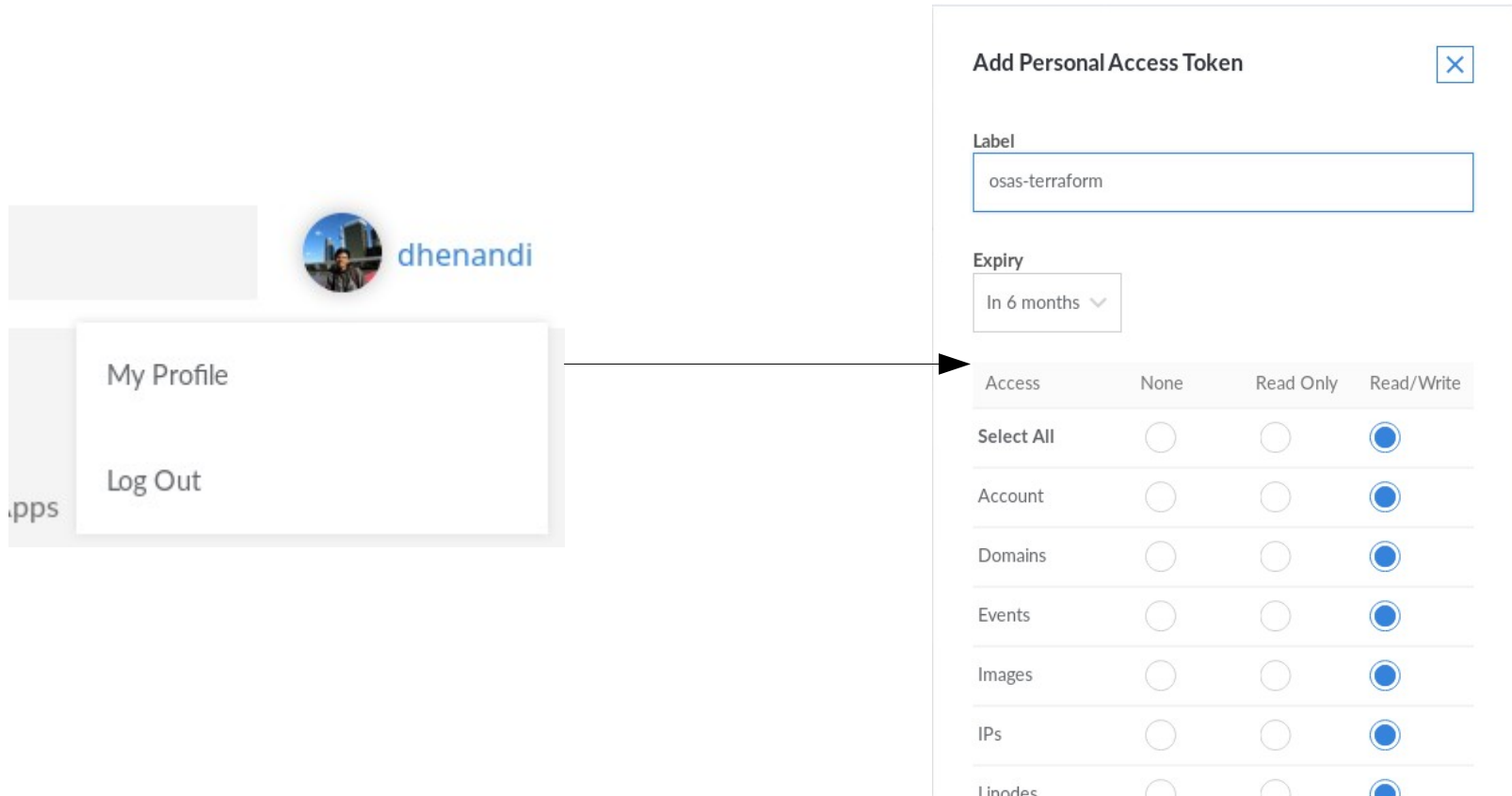
Continue

By clicking Continue, you agree to the terms of the [Privacy Policy](#).

- Make sure you have a credit card (or if you are Indonesian people you can use Jenius)

Initializing Terraform (Create an API)

- Go to My Profiles | API Token | Create New API with full access



The screenshot shows the Linode user interface. On the left, a user profile for 'dhenandi' is visible with a dropdown menu containing 'My Profile' and 'Log Out'. An arrow points from the 'My Profile' option to a modal window titled 'Add Personal Access Token'.

The modal window contains the following fields:

- Label:** osas-terraform
- Expiry:** In 6 months (dropdown menu)

Below these fields is a table with columns for 'Access', 'None', 'Read Only', and 'Read/Write'. The 'Read/Write' column is selected for all resources.

Access	None	Read Only	Read/Write
Select All	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Account	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Domains	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Images	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
IPs	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Linodes	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Terraform Syntax

- Define the Provider
- Specify the Resources

```
provider "linode" {  
  token = "YOUR TOKEN HERE"  
}
```

1 references

```
resource "linode_sshkey" "opensusekey" {  
  label = "opensuse-asus-pub-key"  
  ssh_key = "${chomp(file("~/ssh/id_rsa.pub"))}"  
}
```



Execute!

terraform init
terraform plan
terraform apply



Let's Hands on!

<https://github.com/dhenandi/osas19-terraform>

