**Linkerd Installation/Configuration Using Terraform**

Linkerd is a *service mesh* for Kubernetes. It makes running services easier and safer by giving you runtime debugging, observability, reliability, and security—all without requiring any changes to your code.

Linkerd has three basic components: a UI, a *data plane*, and a *control plane*. You run Linkerd by:

1. [Installing the CLI on your local system](https://linkerd.io/2/getting-started/#step-1-install-the-cli) (for Dashboard);
2. [Installing the control plane into your cluster](https://linkerd.io/2/getting-started/#step-3-install-linkerd-onto-the-cluster) (via Terraform, as described below);
3. [Adding your services to Linkerd's data plane](https://linkerd.io/2/tasks/adding-your-service/) (by adding annotations to your pods).

Once a service is running with Linkerd, you can use [Linkerd's UI](https://linkerd.io/2/getting-started/" \l "step-4-explore-linkerd) to inspect and manipulate it.

This document details the installation and (minimal) configuration of linkerd in a Kubernetes cluster. The standard installation, using helm, requires PEM certificates which must be generated prior to installation. This Terraform module generates the required certificates. You must provide the necessary data for the certificate ttl and expiration.

1. Install the terraform client used to deploy linkerd. (<https://www.terraform.io/downloads.html>)
2. Install the linkerd client

curl -sL https://run.linkerd.io/install | sh

1. Verify your Kubernetes cluster is ready for linkerd install

linkerd check --pre

If there are any checks that do not pass, make sure to fix those issues before proceeding.

1. Configure terraform.tfvars with the desired configuration
   1. linkerd – must be configured with the information required to access the target database.
   2. additional\_yaml\_config – configure if you want to modify the default linkerd configuration. Example (note – if using functions, as shown, this must be in the module specification of the .tf file, NOT the terraform.tfvars):

# override the default 'clockSkewAllowance' of 20s

additional\_yaml\_config = yamlencode({"identity":{"issuer":{"clockSkewAllowance":"30s"}}})

1. Run Terraform to install linkerd

* terraform init
* terraform plan –out config.plan
* terraform apply config.plan

1. Verify linkerd is ready for configuration

* linkerd check

1. Add annotations to your pod to add them to the service mess. Example:

apiVersion: apps/v1

kind: Deployment

metadata:

name: missouri-fortune

namespace: missouri-demo

spec:

selector:

matchLabels:

app: missouri-fortune

template:

metadata:

**annotations:**

**linkerd.io/inject: enabled** # add to the service mesh

**Notes:**

This terraform module is set up to automatically rotate the control plane and webhook TLS credentials. It relies upon Cert Manager which must be installed in your Kubernetes cluster prior to deploying this module.

**References:**

Terraform:

<https://www.terraform.io/downloads.html>

<https://registry.terraform.io/providers/hashicorp/helm/latest/docs>

Linkerd:

[https://linkerd.io/2/overview](https://linkerd.io/2/overview/)

CertManager:

<https://cert-manager.io/docs>