Building Infrastructure on GCP

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About Me

IT Consultant with 8+ years of experience.

Expertise
- Big Data
- Cloud (GCP & AWS)
- DevOps

Agenda

- Terraform Introduction
- Terraform Lifecycle
- Setup Terraform
- Setup gcloud
- Hands-on exercises

What we need for workshop?

- Access to a GCP account
- Project owner or Project editor role on a GCP Project
- Text editor or IDE - Atom or IntelliJ or your choice
- Terraform and gcloud setup

Note: Running workshop example may incur charges on your GCP account.

Terraform

Terraform allows to build, change and version our infrastructure in an easy and efficient way.

terraform.io

Terraform features

- Infrastructure as Code
- State of Infrastructure with CRUD operations
- Infer dependencies
- Execution plan
- Resource graph
- Parallel execution

Terraform concepts

- Providers: API interaction and authentication
- Resource: Describe infrastructure object(s)
- Module: Collection of resources defined in a way
- Data Source: Read infrastructure information
- State: Stores information about infrastructure created by Terraform code
  - Local: Stores on local filesystem
  - Remote: Stores on remote storage - GCS, S3, Consul etc.

Benefits

- Code reuse
- Easy resource management
- Resource tagging
- Savings - $$$$ and time
- Consistency

Terraform Lifecycle

Init
`terraform init`

Plan
`terraform plan`

Apply
`terraform apply`

Destroy
`terraform destroy`

Terraform Setup (Mac Users)

```
$> brew install terraform
```

```
$> terraform -help
```

Terraform Setup (Linux Users)

```
$> wget https://releases.hashicorp.com/terraform/0.12.15/terraform_0.12.15_linux_amd64.zip \
    -O /tmp/terraform.zip
```

```
$> sudo unzip /tmp/terraform.zip -d /usr/local/bin/
```
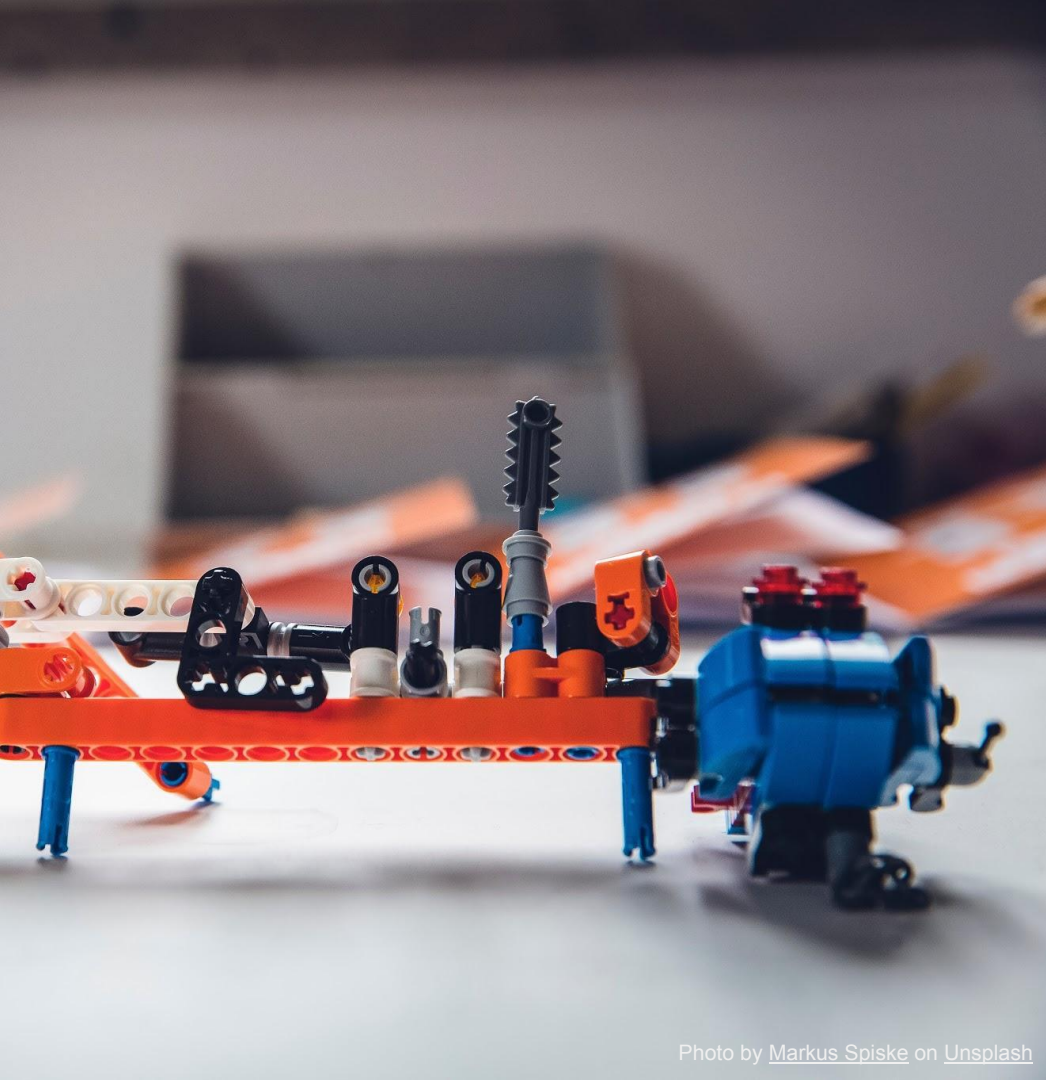
```
$> terraform --help
```
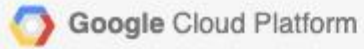
gcloud setup

```
$> curl https://sdk.cloud.google.com | bash
```

```
$> exec -l $SHELL
```

```
$> gcloud init
```

Let's build something

Architecture Diagram

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github.com/pradeepbhadani

stackoverflow.com/users/1158351