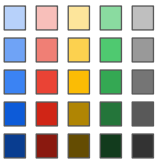
Google Cloud Platform

Infrastructure Automation

Infrastructure Automation with Deployment Manager

v 1.0



Agenda

1. Deployment Manager
2. Templates
3. Cloud Launcher
4. Lab
5. Review

Deployment Manager

- An infrastructure automation tool
  - Creates GCP resources
  - Not limited to 1 VM like an Instance Template
- Create the Deployment Template in a Cloud API-enabled environment such as Cloud Shell
  - View results and manage deployment in console

Comparing orchestration tools

	Deployment Manager	Puppet	Chef	Terraform	Cloud Formation
Imperative vs Declarative	Declarative	Imperative	Imperative	Declarative	Declarative
Hosted	Yes	No	No	No	Yes
Driven by Discovery/Swagger	Yes	No	No	No	No
Multi-Platform	No	Yes	Yes	Yes	No
Integrated with a Platform (IAM, UI, ...)	Yes	No	No	No	Yes

https://cloud.google.com/solutions/google-compute-engine-management-puppet-chef-salt-ansible

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Creating a Deployment Template

- Creating a template
  - `*.yaml` file defines the basic template
  - Include `import` at the top of the yaml file to expand to full-featured templates written in python or jinja2
  - Program template is bidirectional and interactive: receives data like `machine-type` and returns data like `ip-address`
- Use "preview" to validate template before using it:
- Example
  - `gcloud deployment-manager deployments update accel --config *.yaml --preview`

Features

- Templates can be nested
  - Isolate specific functions into meaningful configuration files
  - Create reusable assets
  - Example: a separate template for firewall rules
- Templates have properties
- Templates can use environment variables
- Supports the startup script and metadata capabilities
- Deployments can be updated - uses GCP API
  - Add resources: default policy is `acquire` or `create` as needed
  - Remove resources: default policy is to `delete` the resource

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Cloud Launcher

- Pre-packaged solutions by 3rd party vendors
- A "solution marketplace"
- Separate fees
  - license fees for software
  - image usage fees
- Image usage fee vs separate license -up to vendor
- Google updates images, but not running instances
- Cloud technology partners

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Lab #1 Deployment Manager

In this lab you will create a network and VM using Deployment Manager templates and explore the structure of the configuration and template system.

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More...

- Startup scripts
  - https://cloud.google.com/compute/docs/startupscript
- Shutdown scripts
  - https://cloud.google.com/compute/docs/shutdownscript
- Storing and retrieving metadata
  - https://cloud.google.com/compute/docs/storing-retrieving-metadata


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