

Techpuzzle #8

rloesch@

[Link to the Techpuzzle Challenge](#)

Relevant Links for this techpuzzle

[Deploying containers on VMs and MIGs](#)

[Creating a basic build configuration file](#)

[Enabling the logging agent](#)

[Authorize the Logging agent](#)

[Troubleshoot the Ops Agent](#)

Prerequisite

default VPC network

Cloud Build API enabled

Compute API enabled

constraints/compute.vmExternallpAccess - Allowed

constraints/compute.requireShieldedVm - Not enforced

Permissions

Assign Compute Engine Default Service Account the role Container Registry Service Agent

Assign Compute Engine Default Service Account the role Monitoring Metric Writer



Assign Compute Engine Default Service Account the role Log Writer

Permissions for project "techpuzzle8"

These permissions affect this project and all of its resources. [Learn more](#)

View By: **PRINCIPALS** ROLES

☐ Include Google-provided role grants [?](#)

Filter		Enter property name or value					
<input type="checkbox"/> Type	Principal	Name	Role	Security insights	Inheritance		
<input type="checkbox"/> 	1096910426030-compute@developer.gserviceaccount.com	Compute Engine default service account	Container Registry Service Agent Logs Writer Monitoring Metric Writer				

Github

https://github.com/googlecloudlab/techpuzzle8

github.com/googlecloudlab/techpuzzle8/tree/main

github.com/googlecloudlab/techpuzzle8/tree/main

Search or jump to...

Pulls

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user

googlecloudlab / techpuzzle8

Public

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Settings

main

Go to file

Add file

Code

About

googlecloudlab Update README.md ...

7 minutes ago

3

.DS_Store	Initial Commit	40 minutes ago
Dockerfile	Initial Commit	40 minutes ago
README.md	Update README.md	7 minutes ago
index.js	Initial Commit	40 minutes ago
package.json	Initial Commit	40 minutes ago

README.md

techpuzzle8

No description, website, or topics provided.

Readme

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

Languages

JavaScript 61.3%

Dockerfile 38.7%

Set up the Environment for the Release of Version 1.0

Cloudbuild for Initial Setup for first commit

Create an initial cloudbuild.yaml file to create/build and push the image and create a new vm for version 1.0.

Create a cloudbuild.yaml file that will be triggered when the source code on Github changes.

steps:

```
# Docker Build
- name: 'gcr.io/cloud-builders/docker'
  args: ['build', '-t',
        'gcr.io/${PROJECT_ID}/techpuzzle8-repo/techpuzzle8',
        '.']
```

```
# Docker Push
- name: 'gcr.io/cloud-builders/docker'
  args: ['push',
```

```
'gcr.io/${PROJECT_ID}/techpuzzle8-repo/techpuzzle8:latest']
```

```
# Entrypoint, timeout and environment variables
- name: 'gcr.io/google.com/cloudsdktool/cloud-sdk'
  entrypoint: 'gcloud'
  timeout: 240s
  args: ['compute', 'instances',
        'create-with-container', 'nginx-vm',
        '--image-family', 'cos-stable',
        '--image-project', 'cos-cloud',
        '--container-image',
```

```
'gcr.io/${PROJECT_ID}/techpuzzle8-repo/techpuzzle8:latest',
        '--metadata', 'google-logging-enabled=true']
```

```
env:
```

```
- 'CLOUDSDK_COMPUTE_REGION=us-central1'
- 'CLOUDSDK_COMPUTE_ZONE=us-central1-a'
```

Create Cloud Build Trigger

Google Cloud

techpuzzle8

Search Products, resources, docs (/)

Cloud Build

Dashboard

History

Triggers

Settings

← Edit trigger

DISABLE

DELETE

LEARN

Source

Source: googlecloudlab/techpuzzle8

View triggered builds

Name *

techpuzzle8-build-trigger

Must be unique within the project's region

Region *

global (non-regional)

Description

Tags

Event

Repository event that invokes trigger

☒ Push to a branch

☐ Push new tag

☐ Pull request

Not available for Cloud Source Repositories

Or in response to

☐ Manual invocation

☐ Pub/Sub message

☐ Webhook event

Source

Repository *

googlecloudlab/techpuzzle8 (GitHub App)

Select the repository to watch for events and clone when the trigger is invoked

Branch *

*main\$

Trigger only for a branch that matches the given regular expression

☐ Invert Regex

Matches the branch: main

SHOW INCLUDED AND IGNORED FILES FILTERS

Configuration

Configuration

Type

☐ Autodetected

A cloudbuild.yaml or Dockerfile will be detected in the repository

☒ Cloud Build configuration file (yaml or json)

☐ Dockerfile

☐ Buildpacks

Location

☒ Repository

googlecloudlab/techpuzzle8 (GitHub App)

☐ Inline

Write inline YAML

Cloud Build configuration file location *

/ cloudbuild.yaml

Specify the path to a Cloud Build configuration file in the Git repo

Advanced

Substitution variables

Substitutions allow re-use of a cloudbuild.yaml file with different variable values. Use bash string manipulation to combine variables and bindings to access arbitrary data in the JSON payload of the webhook.

ADD VARIABLE

Approval

☐ Require approval before build executes

Build logs

☐ Send build logs to GitHub

Service account

Trigger a build with the following service account

Service account email

SAVE

Cancel

Release Notes

Triggers

Settings

Release Notes

Run the Cloud Build Trigger

The screenshot shows the Google Cloud Build Dashboard for the project 'techpuzzle8'. The interface includes a left-hand navigation menu with 'Dashboard', 'History', 'Triggers', and 'Settings'. The main content area is titled 'Dashboard' and features a 'Region' dropdown set to 'global (non-regional)'. Below this is a 'Filter' input field. A prominent green checkmark and the text 'Successful: googlecloudlab/techpuzzle8 - techpuzzle8-build-trigger' indicate a successful build. A table below this provides details for the latest build, including its timestamp, duration, trigger description, source, and commit. At the bottom, a 'Build History' section shows a bar chart for the latest build, an 'Average Duration' of 00:01:59, and a 'Pass - Fail %' of 80% - 20%.

Google Cloud | techpuzzle8 | Search | Products, resources, docs (/)

Cloud Build | Dashboard | History | Triggers | Settings

Region: global (non-regional)

Filter: Enter property name or value

✓ Successful: googlecloudlab/techpuzzle8 - techpuzzle8-build-trigger

Latest Build	Duration	Trigger description	Source	Commit
7/1/22, 5:54 PM	00:01:55	-	googlecloudlab/techpuzzle8	51a8728

Build History | Average Duration: 00:01:59 | Pass - Fail %: 80% - 20%

Verify the VM is up and running

Google Cloud

techpuzzle8

Search Products, resources, docs (/)

Compute Engine

Virtual machines

VM instances

Instance templates

Sole-tenant nodes

Machine images

TPUs

Committed use discounts

Migrate for Compute Engi...

Storage

Disks

Snapshots

Images

Instance groups

Instance groups

Health checks

VM Manager

OS patch management

OS configuration manage...

Bare Metal Solution

Servers

VM instances

CREATE INSTANCE

IMPORT VM

REFRESH

OPERATIONS

HELP ASSISTANT

LEARN

HIDE INFO PAN

INSTANCES

INSTANCE SCHEDULES

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. [Learn more](#)

Filter

Enter property name or value

<input type="checkbox"/>	Status	Name ↑	Zone	Recommendations	In use by	Internal IP	Connect
<input type="checkbox"/>	✓	nginx-vm	us-central1-a			10.128.0.9 (nic0)	SSH

Related actions

Explore Actifio GO

Back up your VMs and set up disaster recovery

View billing report

View and manage your Compute Engine billing

Monitor VMs

View outlier VMs across metrics like CPU and network

Explore VM logs

View, search, analyze, and download VM instance logs

Set up firewall rules

Control traffic to and from a VM instance

Patch management

Schedule patch updates and view patch compliance on VM instances

Select an instance

PERMISSIONS

LABELS

MONITORING

Please select at least one resource.

SSH to the VM and verify the version

[illegible]

Verify the logs in Cloud Logging

Note: Make sure Compute Engine Default Service Account has proper permissions to write logs and monitoring metric writer. See the beginning of the document for permission setup.

```
(resource.type="gce_instance" AND resource.labels.instance_id="226088883522324593")
```

```
OR (resource.type="global" AND jsonPayload.instance.id="226088883522324593")
```

```
resource.type="gce_instance"
```

```
logName="projects/techpuzzle8-355019/logs/cos_containers"
```

```
resource.labels.instance_id="226088883522324593"
```

The screenshot shows the Google Cloud Logs Explorer interface. The left sidebar contains navigation options: Operations Logging, Logs Explorer, Logs Dashboard, Logs-based Metrics, Logs Router, and Logs Storage. The main panel displays a query for logs from a specific VM instance. The query is: `(resource.type="gce_instance" AND resource.labels.instance_id="226088883522324593")`. The results show 52 log entries, all with a severity of 'Notice' and a message of 'Hello from App version 2.0'. The interface includes filters for Resource, Log name, and Severity, and a 'Run query' button. The bottom of the interface shows a 'Release Notes' link and a 'Log fields' section.

Modify the Environment for the Release of Version 2.0

Update index.js with the new version

```
const VERSION="2.0"
setInterval(function() {
```

```
    console.log(`Hello from App version ${VERSION}`)  
  }, 5000)
```

Update cloudbuild.yaml to update container

Change create-with-container to update-container and remove vm options.

steps:

Docker Build

```
- name: 'gcr.io/cloud-builders/docker'  
  args: ['build', '-t',  
        'gcr.io/${PROJECT_ID}/techpuzzle8-repo/techpuzzle8',  
        '.']
```

Docker Push

```
- name: 'gcr.io/cloud-builders/docker'  
  args: ['push',
```

```
'gcr.io/${PROJECT_ID}/techpuzzle8-repo/techpuzzle8:latest']
```

Entrypoint, timeout and environment variables

```
- name: 'gcr.io/google.com/cloudsdktool/cloud-sdk'  
  entrypoint: 'gcloud'  
  timeout: 240s  
  args: ['compute', 'instances',  
        'update-container', 'nginx-vm',  
        '--container-image',
```

```
'gcr.io/${PROJECT_ID}/techpuzzle8-repo/techpuzzle8:latest']
```

env:

```
- 'CLOUDSDK_COMPUTE_REGION=us-central1'  
- 'CLOUDSDK_COMPUTE_ZONE=us-central1-a'
```


Commit and Push the changes to github and trigger the build

Google Cloud

techpuzzle8

Search Products, resources, docs (/)

Cloud Build

Build details

REBUILD

COPY URL

LEARN

Dashboard

History

Triggers

Settings

Successful: 28f08a6d

Started on Jul 1, 2022, 6:11:08 PM

Trigger: techpuzzle8-build-trigger

Source: googlecloudlab/techpuzzle8

Branch: main

Commit: c706801

Steps	Duration	BUILD LOG	EXECUTION DETAILS	BUILD ARTIFACTS
<div>Build Summary</div> <div>3 Steps</div>	00:02:19	<div><input type="checkbox"/> Wrap lines</div> <div><input type="checkbox"/> Show newest entries first</div> <div><div>T</div><div>↓</div></div> <div>EXPAND</div> <div>VIEW RAW</div>		
<div>0: gcr.io/cloud-builders/docker</div> <div>build -t gcr.io/techpuzzle8-355019/tec...</div>	00:00:23	<div>122 Step #2: cc36c3a7e753: Waiting</div> <div>123 Step #2: 0f2106809b3a: Waiting</div> <div>124 Step #2: 607a2a6845dd: Verifying Checksum</div> <div>125 Step #2: 607a2a6845dd: Download complete</div> <div>126 Step #2: 8abb8a19e5f9: Verifying Checksum</div> <div>127 Step #2: 8abb8a19e5f9: Download complete</div> <div>128 Step #2: 3f8b5cb562a2: Download complete</div> <div>129 Step #2: cc36c3a7e753: Verifying Checksum</div> <div>130 Step #2: cc36c3a7e753: Download complete</div> <div>131 Step #2: 4bc6f99dfc1c: Verifying Checksum</div> <div>132 Step #2: 4bc6f99dfc1c: Download complete</div> <div>133 Step #2: 0f2106809b3a: Verifying Checksum</div> <div>134 Step #2: 0f2106809b3a: Download complete</div> <div>135 Step #2: 8abb8a19e5f9: Pull complete</div> <div>136 Step #2: 607a2a6845dd: Pull complete</div> <div>137 Step #2: 233202f511ab: Download complete</div> <div>138 Step #2: 233202f511ab: Pull complete</div> <div>139 Step #2: 4bc6f99dfc1c: Pull complete</div> <div>140 Step #2: 3f8b5cb562a2: Pull complete</div> <div>141 Step #2: cc36c3a7e753: Pull complete</div> <div>142 Step #2: 0f2106809b3a: Pull complete</div> <div>143 Step #2: Digest: sha256:c0a47037dc10f8750a04a1507ad9a57f82948f10450e927f5506582dab812d5f</div> <div>144 Step #2: Status: Downloaded newer image for gcr.io/google.com/cloudsdktool/cloud-sdk:latest</div> <div>145 Step #2: gcr.io/google.com/cloudsdktool/cloud-sdk:latest</div> <div>146 Step #2: Updating specification of container [nginx-vm]...</div> <div>147 Step #2:done.</div> <div>148 Step #2: Stopping instance [nginx-vm]...</div> <div>149 Step #2:done.</div> <div>150 Step #2: Starting instance [nginx-vm]...</div> <div>151 Step #2:done.</div> <div>152 Finished Step #2</div> <div>153 PUSH</div> <div>154 DONE</div>		
<div>1: gcr.io/cloud-builders/docker</div> <div>push gcr.io/techpuzzle8-355019/techp...</div>	00:00:03			
<div>2: gcr.io/google.com/cloudsdktool/clo...</div> <div>gcloud compute instances update-cont...</div>	00:01:49			

Release Notes

Terminal (techpuzzle8-355019) × +

Open Editor

🔍

⚙️

📧

📄

⋮

↕

🔗

✕

Verify the VM is up and running

Google Cloud

techpuzzle8

Search

Products, resources, docs (/)

Compute Engine

VM instances

CREATE INSTANCE

IMPORT VM

REFRESH

OPERATIONS

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Virtual machines

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Instance groups

Health checks

Marketplace

Release Notes

Cloud Shell

Terminal

techpuzzle8-3550191

INSTANCES

INSTANCE SCHEDULES

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. [Learn more](#)

Filter Enter property name or value

Status	Name	Zone	Recommendations	In use by	Internal IP	Connect
<input type="checkbox"/>	<input checked="" type="checkbox"/>	nginx-vm	us-central1-a		10.128.0.9 (nic0)	SSH

Related actions

Explore Actifio GO

View billing report

Monitor VMs

Explore VM logs

Set up firewall rules

Patch management

Select an instance

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Please select at least one resource.

SSH to the VM and verify the version

[illegible]

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```
resource.type="gce_instance"
```

```
logName="projects/techpuzzle8-355019/logs/cos_containers"
```

```
resource.labels.instance_id="226088883522324593"
```

The screenshot displays the Google Cloud Logging interface. On the left, the 'Operations Logging' sidebar is visible with options like 'Logs Explorer', 'Logs Dashboard', 'Logs-based Metrics', 'Logs Router', and 'Logs Storage'. The main area is titled 'Logs Explorer' and shows a query for 'Project'. The query results are displayed in a table with columns: SEVERITY, TIMESTAMP, CDT, and SUMMARY. The logs show messages from 'nginx-vm' with the text 'Hello from App version 2.0'. The table is filtered by 'Last 1 hour' and shows 52 log entries. The 'Log fields' section on the left shows 'RESOURCE TYPE' as 'VM Instance' and 'SEVERITY' as 'Default'.

SEVERITY	TIMESTAMP	CDT	SUMMARY
>	2022-07-02 07:08:32.646 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:08:37.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:08:42.646 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:08:47.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:08:52.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:08:57.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:02.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:07.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:12.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:17.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:22.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:27.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:32.646 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:37.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:42.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:47.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:52.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:09:57.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:10:02.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:10:07.648 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:10:12.647 CDT		nginx-vm Hello from App version 2.0
>	2022-07-02 07:10:17.648 CDT		nginx-vm Hello from App version 2.0