



Deploying the Two-Tier-Sample Template



in



Google Cloud Platform

- **Prerequisites**

- **Bootstrap package**

- <https://www.paloaltonetworks.com/documentation/80/virtualization/virtualization/bootstrap-the-vm-series-firewall/bootstrap-package#id88dce8d3-3665-4794-b7ed-0fd47581ebd2>

- **Template Files**

- <https://github.com/PaloAltoNetworks/wwce/tree/master/googlecloud/pglynn/two-tier-sample>

- **GCloud CLI (native or Docker image)**

- <https://cloud.google.com/sdk/downloads>
    - <https://github.com/GoogleCloudPlatform/cloud-sdk-docker>



# Create a Project

Login to the GCP console and click the project-list dropdown.

The screenshot shows the Google Cloud Platform dashboard. At the top, there is a blue header bar with the text "Google Cloud Platform" and a dropdown menu showing "two-tier-test". A red arrow points to the dropdown menu. Below the header, there are two tabs: "DASHBOARD" (which is underlined in blue) and "ACTIVITY". The main content area is divided into three sections: "Project info", "Resources", and "Trace".

**Project info**

- Project name: two-tier-test
- Project ID: two-tier-test-191900
- Project number: 249079969883

[Go to project settings](#)

**Resources**

This project has no resources

**Trace**



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# Create a Project

Click the '+' in the upper-right corner.

Select

Search projects and folders

Recent All

Name	ID
two-tier-test	two-tier-test-191900
pgtest-two-tier	pgtest-two-tier
pglynn-demo	pglynn-demo-187622
pglynn-budapest-test	pglynn-budapest-test
pglynn-lb-sandwich	pglynn-lb-sandwich

**+**

**CANCEL OPEN**



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Google Cloud Platform

# Create a Project

Click the '+' in the upper-right corner.

Select

Search projects and folders

Recent All

Name	ID
two-tier-test	two-tier-test-191900
pgtest-two-tier	pgtest-two-tier
pglynn-demo	pglynn-demo-187622
pglynn-budapest-test	pglynn-budapest-test
pglynn-lb-sandwich	pglynn-lb-sandwich

**+**

**CANCEL OPEN**



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# Create a Project

Specify a name and note the project ID.

≡ Google Cloud Platform

New Project

You have 488 projects remaining in your quota. [Learn more.](#)

Project name [?](#)

Your project ID will be pglynn-2tier-test [?](#) [Edit](#)

[Create](#) [Cancel](#)



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Google Cloud Platform

# Create a Project

The process will take a few minutes to complete.

## Select

Search projects and folders

Recent All

Name	ID
pglynn-2tier-test	pglynn-2tier-test
two-tier-test	two-tier-test-191900
pgtest-two-tier	pgtest-two-tier
pglynn-demo	pglynn-demo-187622
pglynn-budapest-test	pglynn-budapest-test
pglynn-lb-sandwich	pglynn-lb-sandwich

[CANCEL](#) [OPEN](#)



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# Verify Permissions

Navigate to the project and select “IAM & admin > IAM”.

The screenshot shows the Google Cloud Platform navigation menu. The top bar is blue with the text "Google Cloud Platform" and "pglynn-2tier-test". Below the bar is a sidebar with various options: Home, VPC network, Compute Engine, Network services, Interconnect, PRODUCTS (with a dropdown arrow), Cloud Launcher, Billing, APIs & Services, Support, and IAM & admin. The "IAM & admin" option is highlighted with a light gray background. To the right of the sidebar, there are three main sections: "Project info" (Project name: pglynn-2tier-test, Project ID: pglynn-2tier-test, Project number: 91210539986), "Resources" (Compute Engine: You do not have permission to see this information), and a partially visible section starting with "IAM".



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Two service accounts are required to deploy the template.

[\\*-compute@developer.gserviceaccount.com](#)  
(necessary to deploy the instance)

[\\*@clouddservices.gserviceaccount.com](#)  
(necessary to access the image)

If the only account available is the owner, then Deployment Manager API access will need to be enabled for this project. See the section titled “Enable Deployment Manager API” for details.

# Verify Permissions

## Permissions for project "pglynn-2tier-test"

These permissions affect the entire "pglynn-2tier-test" project and all of its resources. To grant permissions, add a member and then select a role for them. Members can be people, domains, groups, or service accounts.

Some roles are in beta development and might be changed or deprecated in the future. [Learn more](#)

Filter by name or role		View by:	Members	
Type	Members	Role(s)		
<input type="checkbox"/>	Compute Engine default service account 91210539986-compute@developer.gserviceaccount.com		Editor	
<input type="checkbox"/>	Google APIs service account 91210539986@clouddservices.gserviceaccount.com		Editor	
<input type="checkbox"/>	Patrick Glynn ptglynn@gmail.com		Owner	
<input type="checkbox"/>	service-91210539986@container-engine-robot.iam.gserviceaccount.com	Container Engine Service Agent		
<input type="checkbox"/>	Google APIs service account service-91210539986@containerregistry.iam.gserviceaccount.com		Editor	



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Google Cloud Platform

Create a new project and then navigate to "Storage > Browser".

# Create a Bootstrap Bucket

The screenshot shows the Google Cloud Platform IAM (Identity and Access Management) permissions page for the project "pglynn-demo". The left sidebar lists various services: Home, VPC network, Compute Engine, Network services, Interconnect, Storage, SQL, and Spanner. Under Storage, a dropdown menu is open, showing options: Browser (which is highlighted), Transfer, Transfer Appliance, and Settings. The main content area displays the IAM permissions for the project, including sections for roles and members. A search bar at the bottom allows filtering by name or role.



# Create a Bootstrap Bucket

Click “CREATE BUCKET”.

Browser      CREATE BUCKET

---

Filter by prefix... Columns ▾

Buckets

<input type="checkbox"/> Name	Default storage class <small>?</small>	Location	Lifecycle <small>?</small>
<input type="checkbox"/> panos-images	Multi-Regional	US	None
<input type="checkbox"/> pglynn-bootstrap	Regional	US-CENTRAL1	None



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Google Cloud Platform

Specify a globally-unique name as well as a storage class of “Regional”.

Select the region into which the template will be deployed.

# Create a Bootstrap Bucket

[←](#) Create a bucket

## Name ?

Must be unique across Cloud Storage. **Privacy:** Do not include sensitive information in your bucket name. Others can discover your bucket name if it matches a name they're trying to use.

pg-bootstrap-bucket

## Default storage class ?

Multi-Regional

Use to stream videos and host hot web content.  
Best for data accessed frequently around the world.

Regional

Use to store data and run data analytics.  
Best for data accessed frequently in one part of the world.

Nearline

Use to store rarely accessed documents.  
Best for data accessed less than once per month.

Coldline

Use to store very rarely accessed documents.  
Best for data accessed less than once per year.

## Regional location

Redundant within a single region.

us-central1



## Specify labels

Create

Cancel



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Google Cloud Platform

Navigate to the bucket and create the bootstrap folders (config, content, license, software).

Populate the folders with the contents of the bootstrap package.

<https://www.paloaltonetworks.com/documentation/80/virtualization/virtualization/bootstrap-the-vm-series-firewall/prepare-the-bootstrap-package>

# Create a Bootstrap Bucket

Browser	UPLOAD FILES	UPLOAD FOLDER	CREATE FOLDER	REFRESH	SH
<input type="text"/> Filter by prefix...					
Buckets / pg-bootstrap-bucket					
	Name	Size	Type	Storage class	Last modified
	config/	—	Folder	—	—
	content/	—	Folder	—	—
	license/	—	Folder	—	—
	software/	—	Folder	—	—



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Create a second storage bucket to host the webserver and dbserver startup scripts.

# Create a Bootstrap Bucket

[←](#) Create a bucket

## Name ?

Must be unique across Cloud Storage. **Privacy:** Do not include sensitive information in your bucket name. Others can discover your bucket name if it matches a name they're trying to use.

pg-startup-bucket

## Default storage class ?

Multi-Regional

Use to stream videos and host hot web content.  
Best for data accessed frequently around the world.

Regional

Use to store data and run data analytics.  
Best for data accessed frequently in one part of the world.

Nearline

Use to store rarely accessed documents.  
Best for data accessed less than once per month.

Coldline

Use to store very rarely accessed documents.  
Best for data accessed less than once per year.

## Regional location

Redundant within a single region.

us-central1



## Specify labels

[Create](#)

[Cancel](#)



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Upload the startup files (dbserver-startup.sh and webserver-startup.sh) to the newly-created storage bucket.

# Create a Bootstrap Bucket

Browser	UPLOAD FILES	UPLOAD FOLDER	CREATE FOLDER	REFRESH	SH
<input type="text"/> Filter by prefix...					
Buckets / pg-startup-bucket					
<input type="checkbox"/> Name	Size	Type	Storage class	Last modified	
<input type="checkbox"/> dbserver-startup.sh	1.95 KB	text/x-sh	Regional	1/15/18, 1:	
<input type="checkbox"/> webserver-startup.sh	2.63 KB	text/x-sh	Regional	1/15/18, 1:	



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Update the main template file with the implementation-specific details.

# Modify the Main Template File

```
imports:
- path: two-tier-sample.py

resources:
- name: two-tier-sample
  type: two-tier-sample.py
  properties:
    project: <PROJECT NAME>
    region: <REGION>
    zone: <ZONE>
    sourceimage: <SOURCE IMAGE>
    bootstrapbucket: <BOOTSTRAP BUCKET>
    startupbucket: <STARTUP SCRIPT BUCKET>
    serviceaccount: <SERVICE ACCOUNT>
    sshkey: <SSH KEY>

~
~
~
```



in



# Modify the Main Template File

project: The name of the project created earlier

region: The GCP region where the resources will be deployed

<https://console.cloud.google.com/compute/zones?project=pgtest-two-tier>

zone: The zone within the chosen region

<https://console.cloud.google.com/compute/zones?project=pgtest-two-tier>

sourceimage: The relative location of the source image used for the firewall.

Format: projects/<PROJECT NAME>/global/images/<IMAGE NAME>

**NOTE: Only required if deploying non-GA images.**

bootstrapbucket: The name of the bucket hosting the bootstrap package

startupbucket: The name of the bucket hosting the startup scripts

serviceaccount: The GCP service account used to deploy the template

Format: <UNIQUE ID>-compute@developer.gserviceaccount.com

sshkey: The SSH key used to login to the deployed instances

Format: <USERNAME>:<KEY FORMAT> <PUBLIC KEY> <USERNAME>



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# Modify the Main Template File

Sample file:

```
imports:
- path: two-tier-sample.py

resources:
- name: two-tier-sample
  type: two-tier-sample.py
  properties:
    project: pgtest-two-tier
    region: us-central1
    zone: us-central1-a
    sourceImage: projects/pglynn-budapest-test/global/images/pa-vm-8-1-ob8
    bootstrapBucket: two-tier-bootstrap
    startupBucket: two-tier-startup
    serviceAccount: 85979524782-compute@developer.serviceaccount.com
    sshKey: "pglynn:ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQDFdrfdjQAR/cgzURE6o/1JlqhYq+kqHxcq2ZNM4yV
DhmVw+ggQpqMdoto2FdYyuxmHGuQxlalLBJxPomqnKSp6yHjgj+14G+ohaZJmnAwp6audmuGVEd2ybVfopg6vXwYWHhWlJY77nDI+q
CU5nTe29Y6ZoS0ObbYZAjf69MtAS1vnQodwnS960J8dghZ3i+fym1Vt0yXYfgBOaN2+Bb+GQkWkxD7Pq+PEXwq/w+2j6wwvf1EFAUd
5sLz8vOoUooDaVbTUo2AhGUQfw5RlL3SC7si4Pt7Xiel+k0Mnxg32RKzPS4dwzzf1FIIGeaaaSgmQModnCHqb3g37sYjrmaUHj pgl
ynn"
```



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# Deploy the Template

Authenticate to GCP using the command “gcloud auth login <USERNAME>@gmail.com”

```
root@3918152b8cf3:/# gcloud auth login ptglynn@gmail.com
Go to the following link in your browser:

https://accounts.google.com/o/oauth2/auth?redirect_uri=urn%3Ai%etf%3Awg%3Aoauth%3A2.o%3Aooob&prompt=
select_account&response_type=code&client_id=32555940559.apps.googleusercontent.com&scope=https%3A%2F%2F
www.googleapis.com%2Faauth%2Fuserinfo.email+https%3A%2F%2Fwww.googleapis.com%2Faauth%2Fcloud-platform+m+h
ttps%3A%2F%2Fwww.googleapis.com%2Faauth%2Fappengine.admin+https%3A%2F%2Fwww.googleapis.com%2Faauth%2Fcom
pute+https%3A%2F%2Fwww.googleapis.com%2Faauth%2Faccounts.reauth&access_type=offline

Enter verification code: 4/xww7ZdeHNTvL24Hw3_8Pu1fVND9FuNARSX9fBCGxEY
WARNING: `gcloud auth login` no longer writes application default credentials.
If you need to use ADC, see:
  gcloud auth application-default --help

You are now logged in as [ptglynn@gmail.com].
Your current project is [None]. You can change this setting by running:
  $ gcloud config set project PROJECT_ID
root@3918152b8cf3:/# █
```



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# Deploy the Template

Point gcloud to the project that will host the infrastructure via “gcloud config set project <PROJECT NAME>

```
root@3918152b8cf3: ~ gcloud config set project pgtest-two-tier
Updated property [core/project].
root@3918152b8cf3: ~
```

Launch the template with the command “gcloud deployment-manager deployments create <DEPLOYMENT NAME> --config=two-tier-sample.yaml”

Where <DEPLOYMENT NAME> is a free-form text name identifying the template deployment for tracking purposes.

```
root@3918152b8cf3: ~ gcloud deployment-manager deployments create pgtest-two-tier --config=two-tier-sample.yaml
```



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# Deploy the Template

The deployment will take several minutes to complete. If all goes well, the state will show “COMPLETED” for all deployed resources.

```
root @3918152b8cf3: ~/Development/GCP/working# gcloud deployment-manager deployments create pgtest-two-tier --config=two-tier-sample.yaml
The fingerprint of the deployment is Ich3-pzwFyfVajpblijan-Q==
Waiting for create [operation-1516047166700-562d63cd579eo-a74cffcde-72e86154]... done.
Create operation operation-1516047166700-562d63cd579eo-a74cffcde-72e86154 completed successfully.

NAME          TYPE           STATE          ERRORS        INTENT
db            compute.v1.network    COMPLETED      []
db-firewall   compute.v1.firewall  COMPLETED      []
db-route      compute.v1.route    COMPLETED      []
db-subnet     compute.v1.subnetwork COMPLETED      []
db-server     compute.v1.instance  COMPLETED      []
firewall      compute.v1.instance  COMPLETED      []
management   compute.v1.network    COMPLETED      []
management-firewall  compute.v1.firewall  COMPLETED      []
management-subnet  compute.v1.subnetwork COMPLETED      []
untrust       compute.v1.network    COMPLETED      []
untrust-firewall  compute.v1.firewall  COMPLETED      []
untrust-subnet  compute.v1.subnetwork COMPLETED      []
web           compute.v1.network    COMPLETED      []
web-firewall  compute.v1.firewall  COMPLETED      []
web-route     compute.v1.route    COMPLETED      []
web-subnet    compute.v1.subnetwork COMPLETED      []
webserver    compute.v1.instance  COMPLETED      []

root @3918152b8cf3: ~/Development/GCP/working# █
```



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The state of all instances deployed to the project will be reflected under “Compute Engine > VM Instances”.

# Verification

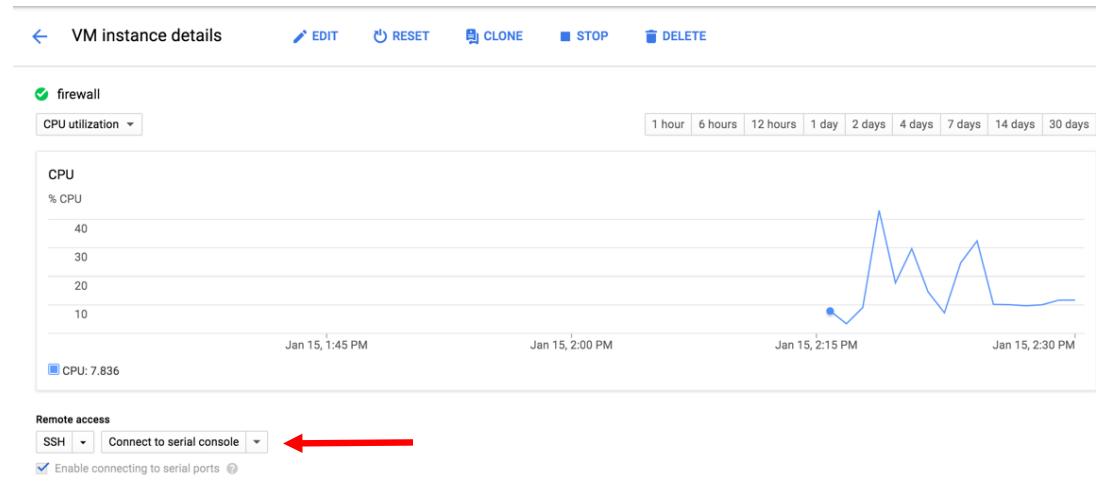
VM instances						CREATE INSTANCE	IMPORT VM	REFRESH	START	
						Filter VM instances				
	Name	Zone	Recommendation	Internal IP	External IP	Connect				
<input type="checkbox"/>	dbserver	us-central1-a		10.5.3.5	None	SSH				
<input type="checkbox"/>	firewall	us-central1-a		10.5.0.4	35.194.10.35	SSH				
<input type="checkbox"/>	webserver	us-central1-a		10.5.2.5	None	SSH				



Clicking on a deployed instance will show additional information. By default, CPU utilization is shown but other resource metrics are available. When deploying the firewall, it is normal to see multiple CPU utilization spikes over the course of a few minutes. These are due to the initial deployment as well as the restart required after the license is imported.

Click on "Connect to serial console" to launch the interactive serial console. Note: The template enables it for the firewall. It must be manually enabled for the other devices.

## Verification





in

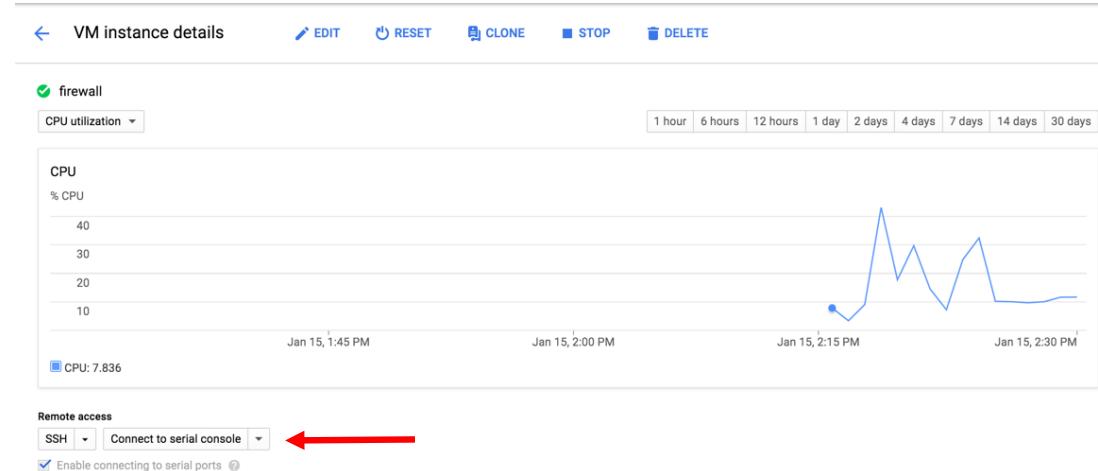


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Clicking on a deployed instance will show additional information. By default, CPU utilization is shown but other resource metrics are available. When deploying the firewall, it is normal to see multiple CPU utilization spikes over the course of a few minutes. These are due to the initial deployment as well as the restart required after the license is imported.

Click on "Connect to serial console" to launch the interactive serial console.

# Verification





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Once a username/password are set on the firewall, login via the serial console is possible.

**Note that there is a bug in the beta version that occasionally results in the serial console being inaccessible post-deployment. This can sometimes be remedied by upgrading to the latest PANOS version.**

## Verification

```
serialport: Connected to pgtest-two-tier.us-central1-a.firewall port 1 (session ID: b062fef337c637f52af0700a27a2d11  
7ba866e55, active connections: 1).  
eth0      Link encap:Ethernet HWaddr 42:01:0A:05:00:04  
          inet addr:10.5.0.4 Bcast:10.5.0.4 Mask:255.255.255.255  
          inet6 addr: fe80::4001:aff:fe05:4/64 Scope:Link  
             UP BROADCAST RUNNING MULTICAST MTU:1460 Metric:1  
             RX packets:5 errors:0 dropped:0 overruns:0 frame:0  
             TX packets:7 errors:0 dropped:0 overruns:0 carrier:0  
             collisions:0 txqueuelen:1000  
             RX bytes:1470 (1.4 KiB) TX bytes:1326 (1.2 KiB)
```



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If all goes well, the firewall will be licensed and upgraded where appropriate.

# Verification

General Information	
Device Name	sample-cft-fw
MGT IP Address	10.5.0.4 (DHCP)
MGT Netmask	255.255.255.255
MGT Default Gateway	10.5.0.1
MGT IPv6 Address	unknown
MGT IPv6 Link Local Address	fe80::4001:aff:fe05:4/64
MGT IPv6 Default Gateway	
MGT MAC Address	42:01:0a:05:00:04
Model	PA-VM
Serial #	007200000040614
CPU ID	GCP:D7060200FFFFB8B1F
UUID	9B313AD5-CDBB-A386-6BE5-1988F2387CDD
VM License	VM-300
VM Mode	GCE
Software Version	8.1.0-b8
GlobalProtect Agent	0.0.0
Application Version	764-4417
Threat Version	764-4417
Antivirus Version	2486-2980
URL Filtering Version	0000.00.00.0000
GlobalProtect Clientless VPN Version	0
Time	Mon Jan 15 12:35:53 2018
Uptime	0 days, 0:13:21



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Navigate to <http://<PUBLIC IP OF FW>/sql-attack.html>

Launch the brute force attack against the SQL database.

# Verification

---

## Attack the database

---

[LAUNCH WEB TO DB SSH ATTEMPT](#)

[LAUNCH BRUTE FORCE SQL ROOT PASSWORD GUESSING](#)



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# Verification

Verify that the SQL attack has been blocked.

	Receive Time	Type	Name	From Zone	To Zone	Source address	Source User	Destination address	To Port	Application	Action	Severity	File Name
	01/15 12:44:35	vulnerability	MySQL Login Authentication Failed	Web	Db	10.5.2.5		10.5.3.5	3306	mysql	reset-client	informational	



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# Clean Up

To delete the deployment, deactivate the firewall license. And then issue the command “gcloud deployment-manager deployments delete <DEPLOYMENT NAME>”

Where <DEPLOYMENT NAME> is the same name used at deployment time.

```
root@3918152b8cf3:~/Development/GCP/working# gcloud deployment-manager deployments delete pgtest-two-tier
The following deployments will be deleted:
- pgtest-two-tier

Do you want to continue (y/N)? y

Waiting for delete [operation-1516049628874-562d6cf974510-4006a61b-fedca195]... done.
Delete operation operation-1516049628874-562d6cf974510-4006a61b-fedca195 completed successfully.
root@3918152b8cf3:~/Development/GCP/working# █
```



# Enable Deployment Manager API

GCP occasionally fails to enable the Deployment Manager API. When this happens, you will not see the necessary service accounts in the IAM tile.

The screenshot shows the Google Cloud Platform IAM & admin interface for the project "pglynn-2tier-test". The left sidebar lists various IAM-related services: IAM, Identity, Quotas, Service accounts, Labels, GCP Privacy & Security, Settings, Encryption keys, Identity-Aware Proxy, and Roles. The main pane displays the "Permissions for project 'pglynn-2tier-test'" section. It includes a note about beta roles and a "Learn more" link. A search bar and a "View by: Members" dropdown are at the top right. Below is a table with one row:

Type	Members	Role(s)
<input type="checkbox"/>	Patrick Glynn ptglynn@gmail.com	Owner



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# Enable Deployment Manager API

Navigate to “APIs & Services > Library”.

The screenshot shows the Google Cloud Platform IAM (Identity and Access Management) interface. At the top, it says "Permissions for project 'pglynn-2tier-test'". Below this, there's a table showing a single member: "Patrick Glynn" with email "ptglynn@gmail.com" and role "Owner". A "Members" dropdown menu is open, showing three options: "Dashboard", "Library", and "Credentials". On the left sidebar, under "APIs & Services", the "Library" option is highlighted in blue, indicating it is selected or about to be selected.

Type	Members	Role(s)
User	Patrick Glynn ptglynn@gmail.com	Owner

- Dashboard
- Library**
- Credentials



# Enable Deployment Manager API

Under "Filter by", select "Google Cloud APIs".

Filter by

CATEGORY	API	DESCRIPTION
Advertising (13)	Google Maps Android API	Maps for your native Android app.
Analytics (1)	Google Maps SDK for iOS	Maps for your native iOS app.
Big data (9)		
Blog & CMS (1)		
Compute (7)		
CRM (1)		
Databases (3)		
Developer tools (8)		
Email (1)		
Firebase (2)		
<b>Google Cloud APIs (26)</b>	<b>Dialogflow API</b>	An end-to-end development suite for conversational interfaces.
G Suite (17)	Google Cloud Vision API	Image Content Analysis
Machine learning (8)		
Maps (18)		
Mobile (13)		
Monitoring (4)		
Networking (3)		
Security (?)		

Machine learning

G Suite



# Enable Deployment Manager API

Locate and click on the “Google Cloud Deployment Manager V2 API” tile.



## BigQuery Data Transfer API

Google

Transfers data from partner SaaS applications to Google BigQuery on a scheduled, managed basis.



## Cloud Source Repositories API

Google

Access source code repositories hosted by Google.



## Cloud Spanner API

Google

Cloud Spanner is a managed, mission-critical, globally consistent and scalable relational



## Google App Engine Flexible Environment

Google

This service enables App Engine's Flexible Environment, which gives you the benefits of App...



## Google Cloud Deployment Manager V2 API

Google

The Google Cloud Deployment Manager V2 API provides services for configuring, deploying, and...



## Google Cloud Monitoring API

Google

This API allows you to monitor resource usage and costs, detect and investigate issues, and



## Google Cloud Runtime Configuration API

Google

The Runtime Configurator allows you to dynamically configure and expose variables through Google...



## Google Cloud SQL

Google

Google Cloud SQL is a hosted and fully managed relational database service on Google's...



## Google Cloud Storage

Google

Google Cloud Storage is a RESTful service for storing and accessing your data on Google's ...



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# Enable Deployment Manager API

Click “Enable”.

The process will take a few moments to complete.

The screenshot shows the Google Cloud Platform API Library interface. At the top, there's a blue header bar with the text "Google Cloud Platform" and a dropdown menu. Below the header, a breadcrumb navigation shows "API Library". The main content area features a circular icon with a blue monitor displaying a chart. To the right of the icon, the text "Google Cloud Deployment Manager V2 API" and "Google" are displayed. A descriptive paragraph below states: "The Google Cloud Deployment Manager V2 API provides services for configuring, deploying, and...". At the bottom of this section are two buttons: a blue "ENABLE" button and a white "TRY THIS API" button with a small arrow icon. The entire interface has a clean, modern design with a light gray background.

Type  
APIs & services

Last updated  
10/2/17, 1:39 AM

Category

## Overview

The Google Cloud Deployment Manager V2 API provides services for configuring, deploying, and managing Cloud services and APIs via templates which specify deployments of Cloud resources.

## About Google



# Enable Deployment Manager API

Success.

The screenshot shows the Google Cloud Platform APIs & Services page. The navigation bar at the top includes the Google Cloud logo, the project name "pglynn-2tier-test", and a "DISABLE" button. The main area is titled "Google Cloud Deployment Manager V2 API". On the left, there's a sidebar with "APIs & Services" and links to "Dashboard", "Library", and "Credentials". The main content area has tabs for "Overview" (which is selected) and "Quotas". Below these are sections for "About this API", "Traffic" (with dropdowns for "All API versions", "All API credentials", and "All API methods"), and a chart for "Requests/sec (1 min average)".



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It may be necessary to refresh the view by reloading the page.

# Verify Permissions

## Permissions for project "pglynn-2tier-test"

These permissions affect the entire "pglynn-2tier-test" project and all of its resources. To grant permissions, add a member and then select a role for them. Members can be people, domains, groups, or service accounts.

Some roles are in beta development and might be changed or deprecated in the future. [Learn more](#)

Filter by name or role View by: Members ▾

Type	Members	Role(s)
<input type="checkbox"/>	Compute Engine default service account 91210539986-compute@developer.gserviceaccount.com	Editor <span>⋮</span>
<input type="checkbox"/>	Google APIs service account 91210539986@cloudservices.gserviceaccount.com	Editor <span>⋮</span>
<input type="checkbox"/>	Patrick Glynn ptglynn@gmail.com	Owner <span>⋮</span>
<input type="checkbox"/>	service-91210539986@container-engine-robot.iam.gserviceaccount.com	Container Engine Service Agent <span>⋮</span>
<input type="checkbox"/>	Google APIs service account service-91210539986@containerregistry.iam.gserviceaccount.com	Editor <span>⋮</span>



in



Google Cloud Platform

# Create the PANOS Image

**Only required if deploying custom or Non-GA images (e.g. alpha or beta).**

- Upload the PANOS based image to a storage bucket (must be tar'ed and gzip'ed). (e.g. PA-VM-GCP-8.1.0-b37.tar.gz).
- Launch a gcloud shell by clicking on the cloud shell icon in the upper right hand corner:
- Create the image: “gcloud beta compute images create <IMAGE NAME> --source-uri=gs://<STORAGE BUCKET NAME>/<BASE IMAGE NAME> --guest-os-features MULTI\_IP\_SUBNET”

Cloud Shell

pgtest-two-tier x +

```
ptglynn@pgtest-two-tier:~$ gcloud beta compute images create pa-vm-8-1-b37-mult --source-uri=gs://budapest-test/PA-VM-GCP-8.1.0-b37.tar.gz --guest-os-features MULTI_IP_SUBNET
Created [https://www.googleapis.com/compute/beta/projects/pgtest-two-tier/global/images/pa-vm-8-1-b37-mult].
NAME          PROJECT      FAMILY DEPRECATED STATUS
pa-vm-8-1-b37-mult pgtest-two-tier          READY
ptglynn@pgtest-two-tier:~$
```