



TECHNOLOGY CAMP

DAY 3 : CLOUD COMPUTING

Google Cloud Platform

Session 3



YELLOW CIRCLE INC
PO Box 2383
Elk Grove, CA 95759-2383

Teacher Lesson Plan

Google Cloud Platform

Session Name:

Google Cloud Platform

Summary:

In this lesson, you will learn how to use Google Cloud Platform to build a virtual machine and how to use click to deploy to create a virtual machine with WordPress.

Time Allotment:

65 minutes

Learning Objectives:

- *Learn how to Login to Google Cloud Platform*
- *Learn how to build a virtual machine on Google Cloud Platform*
- *Learn how use click to deploy to create a virtual machine with WordPress on Google Cloud Platform*

Supplies:

- *Scrap paper / notepad to take notes*
- *Laptop / computer with Internet access*
- *Google Cloud Platform Login Credentials (provided)*

Learning Activities:

- **(2 minutes) - Session overview**

In this session, students will learn how to login to Google Cloud Platform, build a virtual machine on Google Cloud Platform, and use 'click to deploy' to create a virtual machine with WordPress on Google Cloud Platform



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Google Cloud Platform

Discuss how Google Cloud Platform allows for the deployment of virtual machines and how one click deploy allows for the rapid creation of virtual machine instances with some popular applications.

- **(8 minutes) - Video : How to Create a Virtual Machine in the Google Cloud Platform**

<https://www.youtube.com/watch?v=1FpMe8na64A>

- **(5 minutes) - Lab : Login to Google Cloud Platform**

- *Quick safety reminder about use of laptops while distributing login credentials*
- *Provide students with password to student account (password will be provided)*
- *Sign In button at the top right*
- *Remind students to follow along with the demonstration and that they will have time at the end of the lesson to work and experiment.*
- *Confirm that everyone is logged into the Google Cloud Platform Portal before beginning the lesson.*

- **(15 minutes) – Demonstration : Virtual Machine on Google Cloud Platform**

1. After logging in, you will be on the Platform Console.

- If you land on the splash screen, click on the go to console button to launch the console.*
- If you land on the intro screen, click on the hamburger menu in the upper left and select Home to be taken to the console.*
- The Console will look similar to this:*



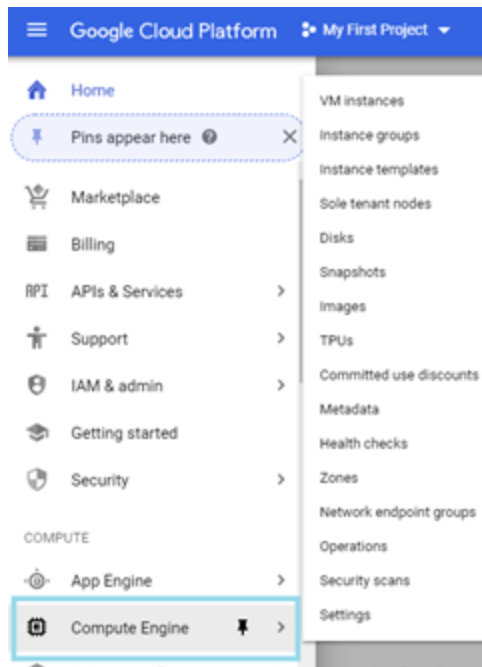
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Google Cloud Platform

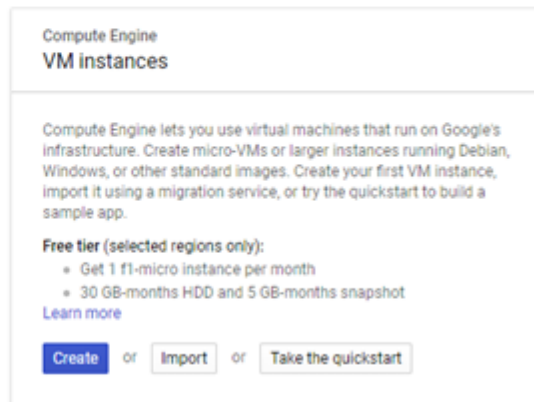


2. Select the hamburger menu in the upper left of the Console and from the left slide out menu select Compute Engine



3. From the VM instances screen, select Create to create a new machine

Google Cloud Platform



4. From the Create an instance screen, complete the configuration of the VM.

Note: Selecting f1-micro is the free tier. Demonstrate the pricing information on the left by selecting different Machine types from the dropdown to show how the pricing information changes...this is important information if trying to manage costs or use only free services for learning purposes.

- i. *Name: enter desired VM name*
- ii. *Region: Free tier VMs are only available in select regions this demo uses Oregon. Advise learners to confirm free regions when building machines to avoid unexpected charges.*
- iii. *Machine type: f1-micro is the free tier VM*
- iv. *Boot Disk: Select Change and pick the desired operating system from the dropdown. The OS selected will effect pricing. For this demo, Debian GNU/Linux 9 (stretch) is selected.*
- v. *Firewall: If this will be used for any type of access over the internet, select Allow HTTP traffic options as appropriate.*
- vi. *Allow HTTPS traffic*

Google Cloud Platform

Name

instance-1

Region

us-west1 (Oregon)

Zone

us-west1-b

Machine configuration

Machine family

General-purpose

Machine types for common workloads, optimized for cost and flexibility

Generation

First

Powered by Skylake CPU platform or one of its predecessors

Machine type

f1-micro (1 vCPU, 614 MB memory)

vCPU 1 shared core

Memory 614 MB

CPU platform and GPU

Container

☐ Deploy a container image to this VM instance. [Learn more](#)

Boot disk

New 10 GB standard persistent disk

Image

Debian GNU/Linux 9 (stretch) [Change](#)

Identity and API access

Service account

Compute Engine default service account

Access scopes

☒ Allow default access

☐ Allow full access to all Cloud APIs

☐ Set access for each API

Firewall

Add tags and firewall rules to allow specific network traffic from the Internet

☒ Allow HTTP traffic

☒ Allow HTTPS traffic

Management, security, disks, networking, sole tenancy

Your free trial credit will be used for this VM instance. [GCP Free Tier](#)

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

Equivalent [REST](#) or [command line](#)

You have \$300.00 free trial credits remaining

\$4.28 monthly estimate

That's about \$0.006 hourly

Pay for what you use: No upfront costs and per second billing

Your first 744 hours of f1-micro instance usage are free this month. [Learn more](#)

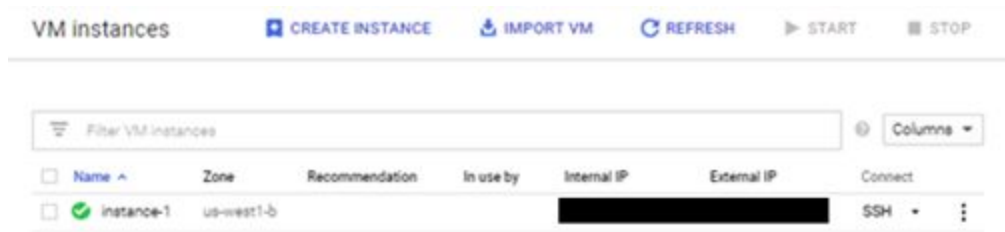
Item	Estimated costs
1 shared vCPU + 0.6 GB memory	\$5.55/month
10 GB standard persistent disk	\$0.40/month
Sustained use discount	- \$1.66/month
Total	\$4.28/month

[Compute Engine pricing](#)

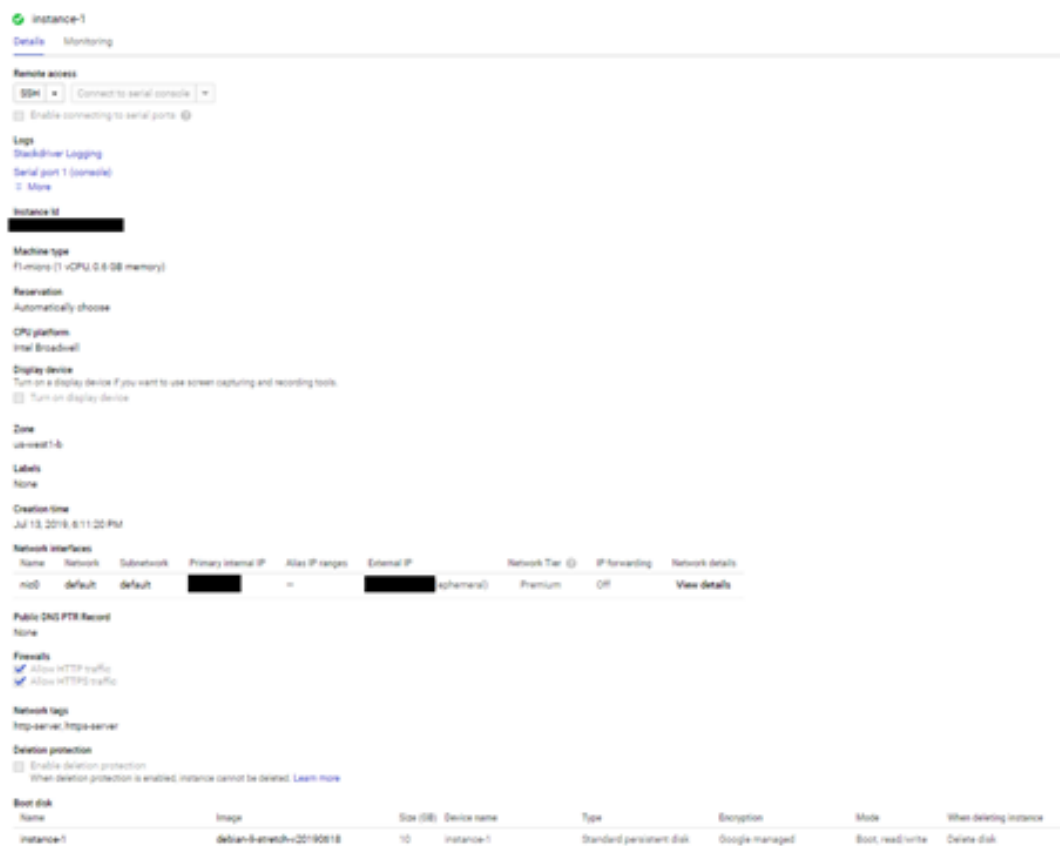
[Less](#)

5. Select Create and wait for Google Cloud to provision the new VM. (Green check=complete)

Google Cloud Platform



6. Select the Name of the instance to view and confirm the VM instance details.



Note that the details screen provides information including IP information for the virtual machine.

7. In the upper left corner under Remote Access, select the down arrow and Open in browser window to open an SSH session to the server.

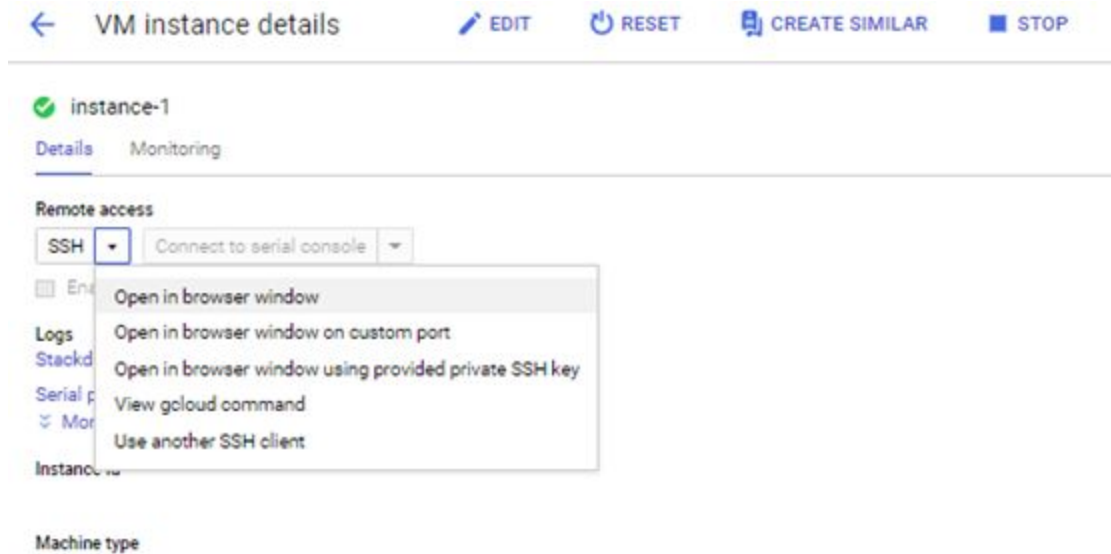


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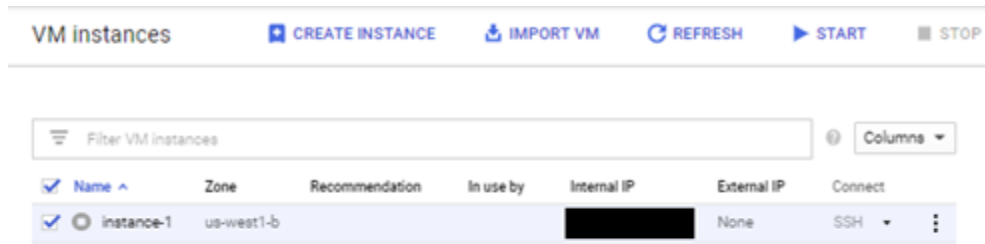


8. This will open and SSH session in a new browser window. You can now access the server, install and configure your software.

```
Connected, host fingerprint:  
  
Linux instance-1 4.9.0-9-amd64 #1 SMP Debian 4.9.168-1+deb9u3 (2019-06-16) x86_64  
  
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
#instance-1:~$
```

9. Note that the VM can be stopped or deleted from the menu at the top of the VM details screen (see image in step 7) or from the VM instances screen

Google Cloud Platform



10. Demonstrate selecting and deleting the instance to complete the lesson.

11. Select the hamburger menu in the upper left and from the left slide out menu select Home to return to the Console.

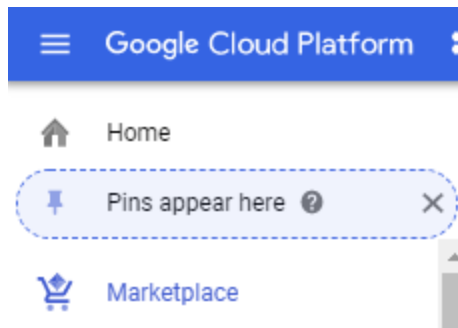
12. Confirm that all students have successfully completed the lesson before continuing.

- **(7 minutes) - Video : Setup & Install WordPress on GCP (Click-to-Deploy)**

<https://youtu.be/wMQpoO1VUrU>

- **(10 minutes) – Demonstration : Click to Deploy to Create a VM with WordPress**

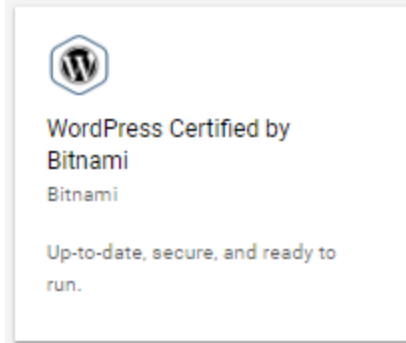
1. Select the hamburger menu in the upper left of the Console and from the left slide out menu select Marketplace



2. From the Marketplace left side Filter by menu select Virtual machines. When the screen refreshes select Price > Free from the left side menu

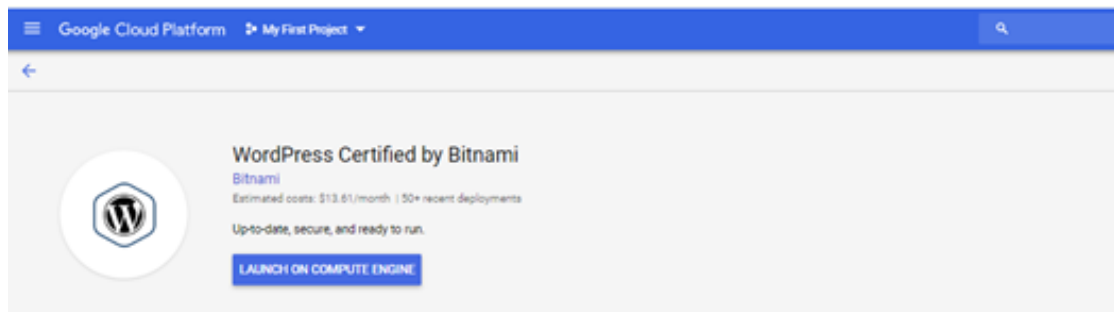
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3. *Select WordPress Certified by Bitnami tile*



4. *This will open the product screen. Note the pricing information on the left. This information can be edited once the button is selected and the exact options for this feature are configured in the next step.*

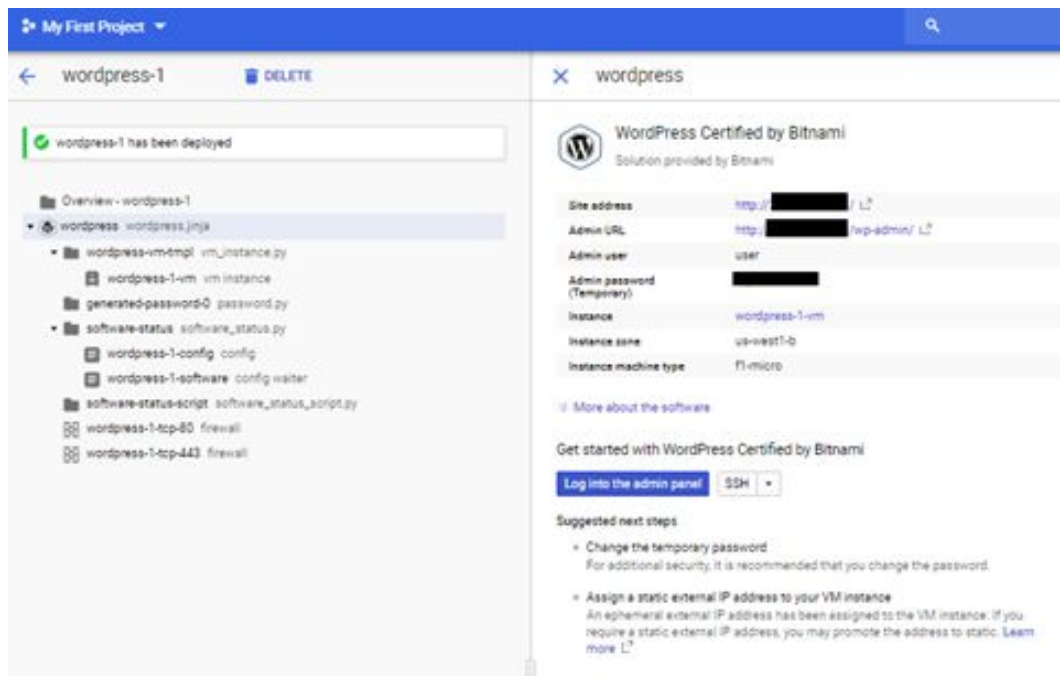
Select the Launch on Compute Engine button



5. *The New WordPress Certified by Bitnami deployment screen will open and allow you to configure your application.*
- i. *Deployment name: Name your Wordpress instance*
 - ii. *Zone: as with the VM this can impact pricing we are using us-west1-b in this example*
 - iii. *Machine type: The default is small (note estimated price is 13.61 per month) Change this to micro and note the price change to 5.13 per month*

Google Cloud Platform

- iv. Leave all fields in the Boot Disk and Networking sections at default for this demo.
 - v. Confirm that both Allow HTTP and Allow HTTPS traffic are checked under Firewall
 - vi. Accept the terms of service and select Deploy
6. Wait for the VM to be provisioned and the software to install. When complete you will see:



7. Click on the Site address link to see the default WordPress page launch in a new tab.

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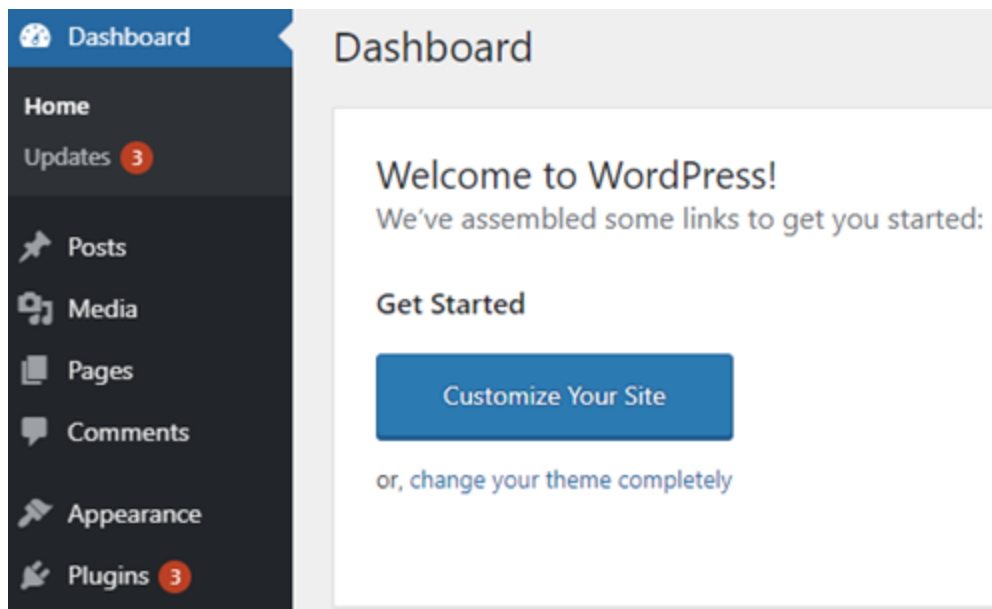
user's Blog! — Just another WordPress site

Hello world!

Welcome to WordPress. This is your first post. Edit or delete it, then start writing!

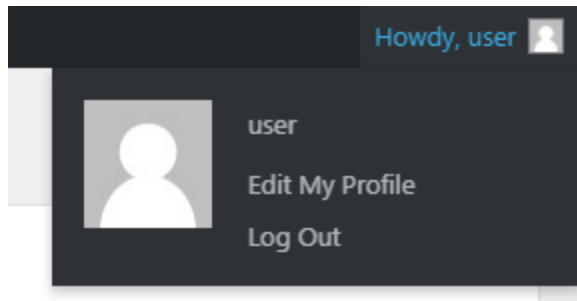
user June 21, 2019 Uncategorized 1 Comment

8. Note Admin user name and Admin password, then click on the Admin URL link to launch the admin login in a new tab.
9. Using the Admin user name and Admin password provided, login to the WordPress Admin console to confirm your access.



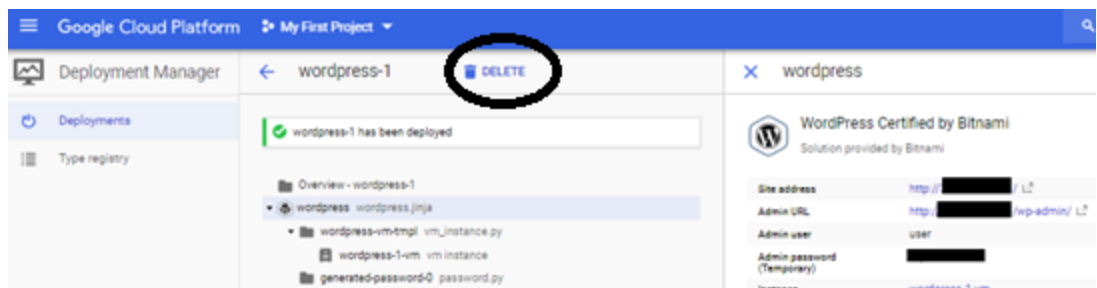
10. From the upper right corner of the WordPress Admin console, hover over Howdy, user and select Log Out from the dropdown.

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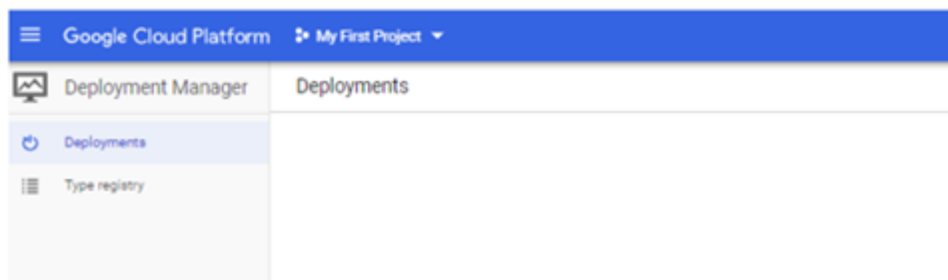


11. Note for students that different click to deploy offerings offer different configurations of options and services. For example, the version used in this example did not include the phpmyAdmin application. These differences in packaged applications can influence the server types that you can select (and consequently pricing).

12. Return to the Deployment Manager in the Google Cloud Platform tab and delete the WordPress instance using the delete button in the top menu



13. Confirm the deletion in the Deployment manager



Google Cloud Platform

14. Confirm that all students have successfully completed the lesson before continuing.

- **(15 minutes) – Activity: Try It**

- *Build another Virtual Machine*
- *Use click to deploy to build instances with other applications*

- **(3 minutes) Closing / Wrap-up**

- *How to Login to Google Cloud Platform*
- *How to build a virtual machine on Google Cloud Platform*
- *How use click to deploy to create a virtual machine with WordPress on Google Cloud Platform*

- **(1 minutes) - What's next?**

Inform students to head back to the cafeteria for snacks / break, and remind them to use the restroom before next session starts.



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