

Kishan Bhakta

CMPSCI 4750

LAB 2

October 27, 2021

2.2.1

The screenshot shows two consecutive pages from the Google Cloud Platform MySQL instance creation process.

Create a MySQL instance - SQL - My First Project - Google Cloud Platform — Mozilla Firefox

Instance info

- Instance ID *: wordpress-db
- Password *: [REDACTED]
- No password
- Database version *: MySQL 5.7

Choose region and zonal availability

For better performance, keep your data close to the services that need it. Region is permanent, while zone can be changed any time.

Summary

Region	us-central1 (Iowa)
DB Version	MySQL 5.7
vCPUs	4 vCPU
Memory	26 GB
Storage	100 GB
Network throughput (MB/s)	1,000 of 2,000
Disk throughput (MB/s)	Read: 48.0 of 240.0 Write: 48.0 of 240.0
IOPS	Read: 3,000 of 15,000 Write: 3,000 of 15,000
Connections	Public IP
Backup	Automated
Availability	Multiple zones (Highly available)

wordpress-db - Overview - SQL - My First Project - Google Cloud Platform — Mozilla Firefox

SQL

PRIMARY INSTANCE

- Overview
- Connections
- Users
- Databases
- Backups
- Replicas
- Operations

Overview

All instances > wordpress-db

wordpress-db

MySQL 5.7

Chart CPU utilization

1 hour 6 hours 12 hours 1 day 2 days 4 days 7 days 14 days 30 days Custom

1
0.5
0

UTC-5 10:40 AM 10:45 AM 10:50 AM 10:55 AM 11:00 AM 11:05 AM 11:10 AM 11:15 AM 11:20 AM 11:25 AM 11:30 AM 11:35 AM

Connect to this instance

Public IP address: 34.133.61.69

Connection name: turnkey-delight-324615:us-central1:wordpress-db

Configuration

vCPUs	NaN	Memory	0 B	SSD storage	100 GB
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Uploads and My First Project operations

Created wordpress-db 11:41:08 AM GMT-5

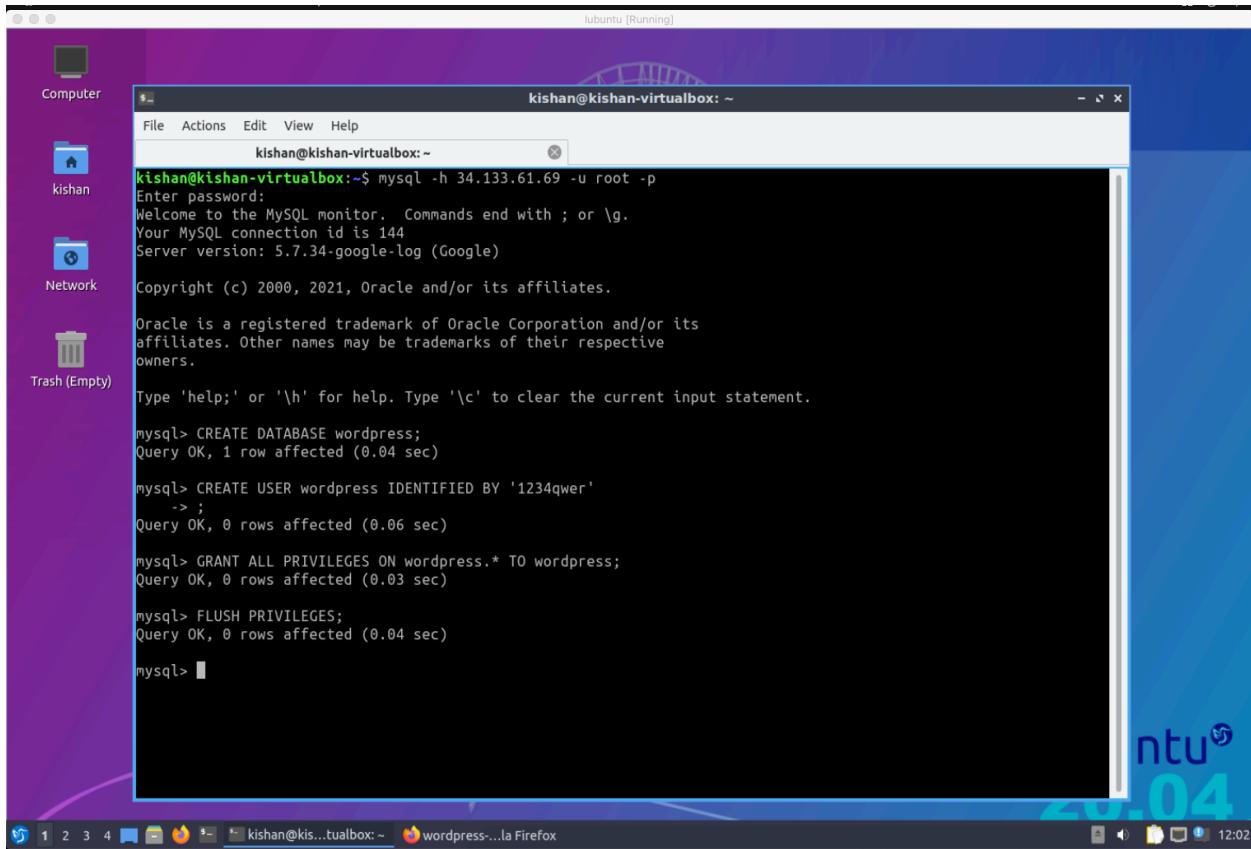
Auto storage Inc

2.2.2

The screenshot shows a Lubuntu 20.04 desktop environment. On the left, there is a vertical dock with icons for Computer, kishan, Network, and Trash (Empty). The main window is a terminal titled "kishan@kishan-virtualbox: ~". It displays the command "gcloud sql instances list" and its output:

```
kishan@kishan-virtualbox:~$ gcloud sql instances list
NAME      DATABASE_VERSION LOCATION    TIER        PRIMARY_ADDRESS PRIVATE_ADDRESS STATUS
wordpress-db MySQL_5.7   us-central1-f db-custom-4-26624 34.133.61.69 - RUNNABLE
kishan@kishan-virtualbox:~$
```

The desktop background features a blue and purple globe graphic. The taskbar at the bottom shows the terminal window and a Firefox window titled "wordpress-db - Connections - SQL - My First Project - Google Cloud Platform". The Firefox window displays the Google Cloud Platform SQL interface for the "wordpress-db" instance, showing networking settings and a "New network" dialog.

2.2.3 & 2.2.4


```

ubuntu [Running]
kishan@kishan-virtualbox:~$ mysql -h 34.133.61.69 -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 144
Server version: 5.7.34-google-log (Google)

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE wordpress;
Query OK, 1 row affected (0.04 sec)

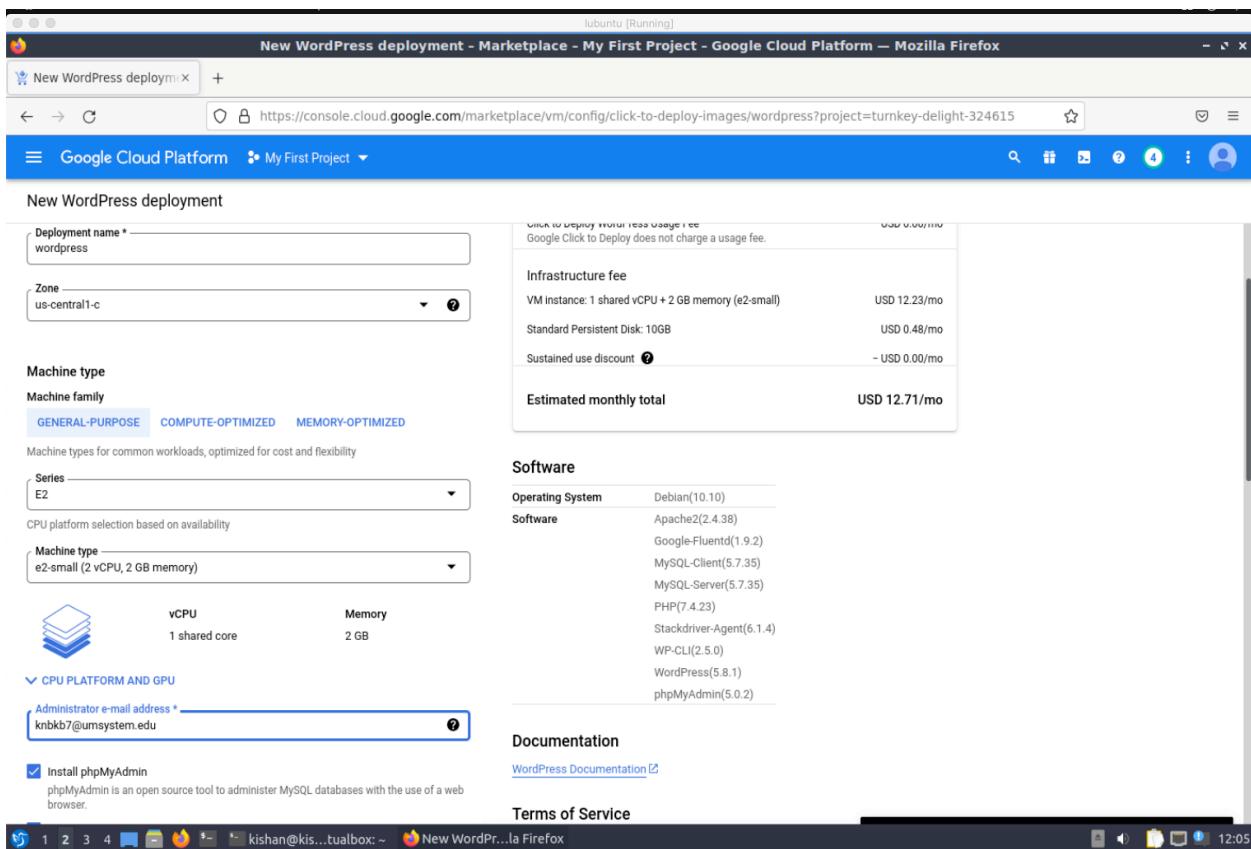
mysql> CREATE USER wordpress IDENTIFIED BY '1234qwer'
-> ;
Query OK, 0 rows affected (0.06 sec)

mysql> GRANT ALL PRIVILEGES ON wordpress.* TO wordpress;
Query OK, 0 rows affected (0.03 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.04 sec)

mysql> 

```

2.3


New WordPress deployment - Marketplace - My First Project - Google Cloud Platform — Mozilla Firefox

New WordPress deployment

Deployment name *

Zone

Machine type

Machine family

Machine types for common workloads, optimized for cost and flexibility

Series

CPU platform selection based on availability

Machine type

vCPU 1 shared core **Memory** 2 GB

CPU PLATFORM AND GPU

Administrator e-mail address *

Install phpMyAdmin
phpMyAdmin is an open source tool to administer MySQL databases with the use of a web browser.

Software

- Operating System Debian(10.10)
- Software Apache2(2.4.38)
- Google-Fluentd(1.9.2)
- MySQL-Client(5.7.35)
- MySQL-Server(5.7.35)
- PHP(7.4.23)
- Stackdriver-Agent(6.1.4)
- WP-CLI(2.5.0)
- WordPress(5.8.1)
- phpMyAdmin(6.0.2)

Documentation

[WordPress Documentation](#)

Terms of Service

New WordPress deployment - Marketplace - My First Project - Google Cloud Platform — Mozilla Firefox

New WordPress deployment x +

https://console.cloud.google.com/marketplace/vm/config/click-to-deploy-images/wordpress?project=turnkey-delight-324615

Google Cloud Platform My First Project

New WordPress deployment

browser.

HTTPS Enabled
Enabled HTTPS communication.

Boot Disk

Boot disk type * Standard Persistent Disk

Boot disk size in GB * 10

Networking

Network interfaces

default default (10.128.0.0/20)

[ADD NETWORK INTERFACE](#)

Firewall ⓘ

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

⚠️ Creating certain firewall rules may expose your instance to the Internet.
Please check if the rules you are creating are aligned with your security preferences. [Learn more](#)

Allow HTTP traffic from the Internet

Source IP ranges for HTTP traffic

New WordPress deployment - Marketplace - My First Project - Google Cloud Platform — Mozilla Firefox

New WordPress deployment x +

https://console.cloud.google.com/marketplace/vm/config/click-to-deploy-images/wordpress?project=turnkey-delight-324615

Google Cloud Platform My First Project

New WordPress deployment

[ADD NETWORK INTERFACE](#)

Firewall ⓘ

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

⚠️ Creating certain firewall rules may expose your instance to the Internet.
Please check if the rules you are creating are aligned with your security preferences. [Learn more](#)

Allow HTTP traffic from the Internet

Source IP ranges for HTTP traffic

Allow HTTPS traffic from the Internet

Source IP ranges for HTTPS traffic

Stackdriver

Monitoring and management for services, containers, applications, and infrastructure

Enable Stackdriver Logging ⓘ
 Enable Stackdriver Monitoring ⓘ

I accept the [GCP Marketplace Terms of Service](#).

DEPLOY

The screenshot shows a Firefox browser window titled "wordpress - Deployment Manager - My First Project - Google Cloud Platform — Mozilla Firefox". The URL is <https://console.cloud.google.com/dm/deployments/details/wordpress?project=turnkey-delight-324615>. The page displays the "Deployment Manager" interface for a "wordpress" deployment. On the left, under "Deployments", it says "wordpress has been deployed". The deployment tree shows files like "wordpress.jinja", "wordpress-vm-tmpl", "software-status", and "wordpress-tcp-80". On the right, there is a "WordPress" configuration panel with fields for "Site address" (https://34.72.217.132/), "Admin URL" (https://34.72.217.132/wp-admin), "WordPress MySQL user" (wordpress), "MySQL root user" (root), "MySQL root password" (J2aRDb7GZC9S32), "Wordpress Admin user" (knbkb7@umsystem.edu), "Wordpress Admin password" (CxgAJzU), "Instance" (wordpress-vm), "Instance zone" (us-central1-c), and "Instance machine type" (e2-small). Below this, there are sections for "Get started with WordPress" (with "LOG INTO THE ADMIN PANEL" and "SSH" buttons) and "Suggested next steps" (with a link to phpMyAdmin).

2.4

The screenshot shows a Linux desktop environment with a purple desktop background. A terminal window titled "kishan@kishan-virtualbox: ~" is open, showing the command `gcloud compute instances list` and its output:

```
kishan@kishan-virtualbox:~$ gcloud compute instances list
NAME          ZONE      MACHINE_TYPE  PREEMPTIBLE INTERNAL_IP  EXTERNAL_IP    STATUS
learning-cloud-demo  us-central1-b  n1-standard-1      10.128.0.3   10.128.0.3  TERMINATED
wordpress-vm     us-central1-c  e2-small           10.128.0.4   34.72.217.132 RUNNING
kishan@kishan-virtualbox:~$
```

The desktop environment includes a sidebar with icons for Computer, Network, and Trash (Empty). The bottom status bar shows the user's name, session ID, and system status.

The screenshot shows a desktop environment with a purple theme. On the left, there's a sidebar with icons for Computer, kishan, Network, and Trash (Empty). Four terminal windows are open, each showing a different command being run on a 'wordpress-vm' instance:

- Terminal 1:** `kishan@wordpress-vm:~\$ gcloud compute ssh --zone us-central1-c wordpress-vm`
Output:

```
Updating project ssh metadata...:Updated [https://www.googleapis.com/compute/v1/projects/turnkey-delight-324615]
.
Updating project ssh metadata...done.
Waiting for SSH key to propagate.
Warning: Permanently added 'compute.4712453736890594265' (ECDSA) to the list of known hosts.
Linux wordpress-vm 4.19.0-17-cloud-amd64 #1 SMP Debian 4.19.194-3 (2021-07-18) 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.
kishan@wordpress-vm:~$
```
- Terminal 2:** `kishan@wordpress-vm:~\$ curl -O https://wordpress.org/latest.tar.gz`
Output:

```
% Total    % Received % Xferd  Average Speed   Time     Time     Current
          Dload  Upload Total   Spent    Left Speed
100 14.3M  100 14.3M    0      0  66.6M      0 --:--:-- --:--:-- 66.9M
kishan@wordpress-vm:~$
```
- Terminal 3:** `kishan@wordpress-vm:~\$ sudo apt-get install apache2 mysql-client php7.0-mysql php7.0 libapache2-mod-php7.0 php7.0-mcrypt php7.0-gd`
Output:

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.38-3+deb10u6).
The following additional packages will be installed:
  libmcrypt4 libpcre3 mysql-community-client mysql-community-server mysql-server php7.0-cli php7.0-common
  php7.0-json php7.0-opcache php7.0-readline
Suggested packages:
  php-pear libmcrypt-dev mcrypt
The following NEW packages will be installed:
  libapache2-mod-php7.0 libmcrypt4 php7.0 php7.0-common php7.0-gd php7.0-json php7.0-mcrypt
  php7.0-mysql php7.0-opcache php7.0-readline
kishan@wordpress-vm:~$
```
- Terminal 4:** `kishan@wordpress-vm:~\$ sudo apt -y install rsync`
Output:

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  rsync
0 upgraded, 1 newly installed, 0 to remove and 25 not upgraded.
Need to get 397 kB of archives.
After this operation, 746 kB of additional disk space will be used.
Get:1 http://deb.debian.org/buster/main amd64 rsync amd64 3.1.3-6 [397 kB]
Fetched 397 kB in 0s (3174 kB/s)
perl: warning: Setting locale failed.
perl: warning: Please check that your locale settings:
  LANGUAGE = (unset),
  LC_ALL = (unset),
  LC_TIME = "en_US.UTF-8",
  LC_MONETARY = "en_US.UTF-8",
  LC_ADDRESS = "en_US.UTF-8",
  LC_TELEPHONE = "en_US.UTF-8",
  LC_NAME = "en_US.UTF-8",
  LC_MEASUREMENT = "en_US.UTF-8",
  LC_IDENTIFICATION = "en_US.UTF-8",
  LC_NUMERIC = "en_US.UTF-8"
```

```

LC_IDENTIFICATION = "en_US.UTF-8",
LC_NUMERIC = "en_US.UTF-8",
LC_PAPER = "en_US.UTF-8",
LANG = "C.UTF-8"
    are supported and installed on your system.
perl: warning: Falling back to a fallback locale ("C.UTF-8").
>Selecting previously unselected package rsync.
(Reading database ... 69067 files and directories currently installed.)
Preparing to unpack .../rsync_3.1.3-6_amd64.deb ...
Unpacking rsync (3.1.3-6) ...
Setting up rsync (3.1.3-6) ...
Created symlink /etc/systemd/system/multi-user.target.wants/rsync.service → /lib/systemd/system/rsync.service.
Processing triggers for man-db (2.8.5-2) ...
Processing triggers for systemd (241-7-deb10u8) ...
kishan@wordpress-vm:~$ sudo apt-get install php7.3-mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
php7.3-common
The following NEW packages will be installed:
  php7.3-common php7.3-mysql
0 upgraded, 2 newly installed, 0 to remove and 25 not upgraded.
Need to get 700 kB of archives.
After this operation, 7170 kB of additional disk space will be used.
Do you want to continue? [Y/n] y

```

Did extract the latest.tar.gz file but couldn't take a screenshot.

The screenshot displays two terminal windows side-by-side. Both terminals are running on a desktop environment with a dark theme. The top terminal window has a title bar 'kishan@wordpress-vm: ~/wordpress'. It contains the command history:

```

kishan@wordpress-vm:~/wordpress$ cp wp-config-sample.php wp-config.php
kishan@wordpress-vm:~/wordpress$ vim wp-config.php

```

The bottom terminal window also has a title bar 'kishan@wordpress-vm: ~/wordpress'. It shows the content of the wp-config.php file, which is a PHP configuration script. The content includes comments explaining the file's purpose, MySQL settings, and various defines for database credentials and host.

```

/*
 * The wp-config.php creation script uses this file during the installation.
 * You don't have to use the web site, you can copy this file to "wp-config.php"
 * and fill in the values.
 *
 * This file contains the following configurations:
 *
 * * MySQL settings
 * * Secret keys
 * * Database table prefix
 * * ABSPATH
 *
 * @link https://wordpress.org/support/article/editing-wp-config-php/
 *
 * @package WordPress
 */

// ** MySQL settings - You can get this info from your web host ** //
/** The name of the database for WordPress */
define( 'DB_NAME', 'wordpress' );

/** MySQL database username */
define( 'DB_USER', 'wordpress' );

/** MySQL database password */
define( 'DB_PASSWORD', '1234qwer' );

/** MySQL hostname */
define( 'DB_HOST', '34.133.61.69' );

/** Database charset to use in creating database tables. */
define( 'DB_CHARSET', 'utf8' );

/** The database collate type. Don't change this if in doubt. */
-- INSERT --

```

At the bottom right of the screen, there are status indicators showing '32,33' and '6%'.

kishan@wordpress-vm: ~/wordpress

```
kishan@wordpress-vm:~/wordpress$ sudo rm /var/www/html/index.html
rm: cannot remove '/var/www/html/index.html': No such file or directory
kishan@wordpress-vm:~/wordpress$ sudo rsync -avP ~/wordpress/ /var/www/html/
```

kishan@kishan-virtualbox: ~

```
kishan@wordpress-vm:~/wordpress$ exit
logout
Connection to 34.72.217.132 closed.
kishan@kishan-virtualbox:~$ gcloud compute instances list
NAME          ZONE      MACHINE_TYPE  PREEMPTIBLE INTERNAL_IP  EXTERNAL_IP    STATUS
learning-cloud-demo us-central1-b n1-standard-1        10.128.0.3   TERMINATED
wordpress-vm      us-central1-c e2-small            10.128.0.4   34.72.217.132 RUNNING
kishan@kishan-virtualbox:~$
```

WordPress > Installation — Mozilla Firefox

Deployment x WordPress > Installation x +

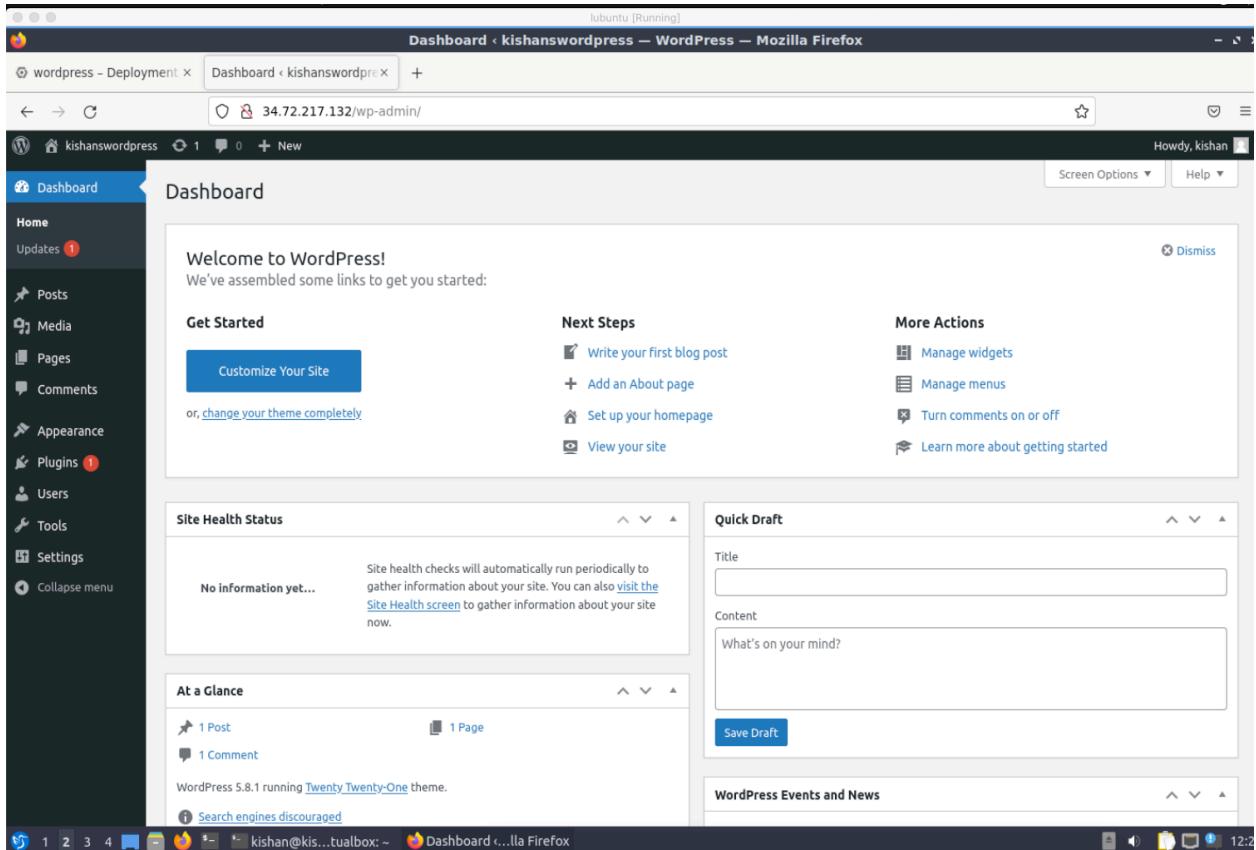
34.72.217.132/wp-admin/install.php

Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world.

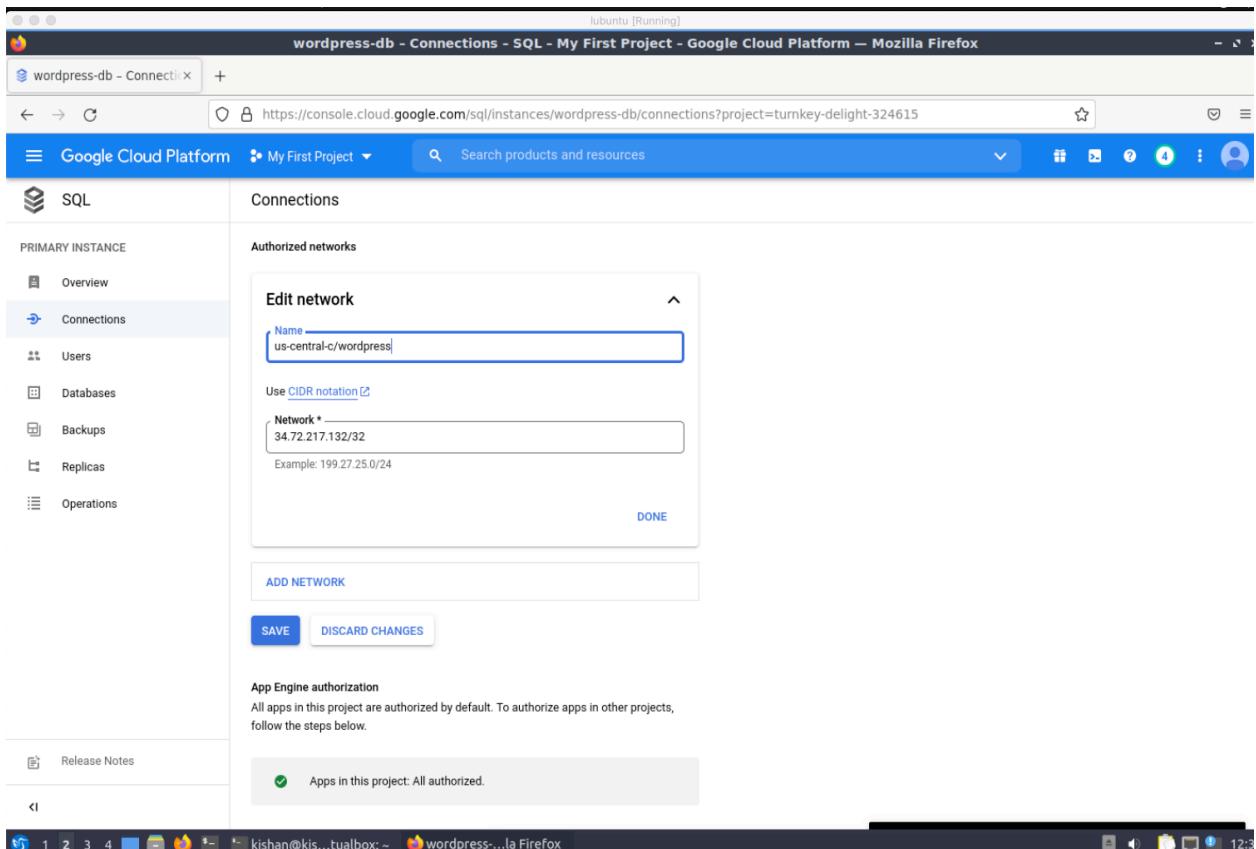
Information needed

Please provide the following information. Don't worry, you can always change these settings later.

Site Title	kishanswordpress
Username	kishan
Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.	
Password	<input type="password" value="*****"/> Very weak Show
Important: You will need this password to log in. Please store it in a secure location.	
Confirm Password	<input checked="" type="checkbox"/> Confirm use of weak password
Your Email	knbkb7@umsystem.edu
Double-check your email address before continuing.	
Search engine visibility	<input checked="" type="checkbox"/> Discourage search engines from indexing this site
It is up to search engines to honor this request.	
Install WordPress	



2.5



wordpress-db - Connections - SQL - My First Project - Google Cloud Platform — Mozilla Firefox

Google Cloud Platform My First Project Search products and resources

SQL

PRIMARY INSTANCE

- Overview
- Connections**
- Users
- Databases
- Backups
- Replicas
- Operations

Connections

Authorized networks

us-central-c/wordpress (34.72.217.132/32)

ADD NETWORK

SAVE DISCARD CHANGES

App Engine authorization

All apps in this project are authorized by default. To authorize apps in other projects, follow the steps below.

Apps in this project: All authorized.

AUTHORIZE APPS IN OTHER PROJECTS

Security

You can manage secure connections to this instance using Transport Layer Security (SSL/TLS) protocol. [Learn more](#)

SSL encryption

If you're connecting using a public IP network, SSL encryption is recommended. [Learn more](#)

Allow only SSL connections

Unsecured connections are allowed to connect to this instance.

Uploads and My First Project operations

- Edited wordpress-db 12:34:11 PM GMT-5
- Edited wordpress-db 11:52:30 AM GMT-5
- Created wordpress-db 11:41:08 AM GMT-5

2.6

Instances are highly configurable virtual machines for running workloads on Google Infrastructure. [Learn more](#)

Resources

- Compute Engine 2 instances
- SQL 1 instance

Filter Enter property name or value

Status	Name	Zone	Recommendations	In use by	Internal IP	E
<input type="radio"/>	wordpress-vm	us-central1-a			3.0.3 (nic0)	N
<input type="radio"/>	wordpress-vm-tmpl-boot-disk	us-central1-a			3.0.4 (nic0)	N

Delete wordpress-vm?

Are you sure you want to delete instance "wordpress-vm"? (This will also delete boot disk "wordpress-vm-tmpl-boot-disk")

CANCEL DELETE

Related actions

- View billing report**
- View and manage your Compute Engine billing
- Set up firewall rule**
- Control traffic to and from instance