

Cloud (AWS) Week 1 Task

Deploy Application in monolithic and Microservices Architecture

***Description:**

Task 1: For Microservices: 2 EC2 instances , 1 for Wordpress and
EC2 instances, 1 for MYSQL.

Task 2: For Monolithic: 1 EC2 instance ,deploy Wordpressand MYSQL on
the same instance.

-Configure the necessarysecurity group for the instances

-EC2 instance type:t2 micro,AMI-Ubuntu-*

Task 1

**For Microservices: 2 EC2 instances , 1 for Wordpress and 1 EC2
instances, 1 for MYSQL.**

a) 1 EC2 instance for Wordpress

Create a Wordpress instance launch

aws Services Search [Alt+S] N. Virginia Prasan V

New EC2 Experience Tell us what you think

EC2 Dashboard
EC2 Global View
Events

▼ Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations

▼ Images
AMIs
AMI Catalog

▼ Elastic Block Store
Volumes

Instances (1/1) Info

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 D
Wordpress Ser...	i-0d9c57cbb16801941	Running	t2.micro	2/2 checks passed	0 in alarm	us-east-1a	ec2-54-91-65

Instance: i-0d9c57cbb16801941 (Wordpress Server)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary Info

Instance ID i-0d9c57cbb16801941 (Wordpress Server)	Public IPv4 address 54.91.65.93 open address	Private IPv4 addresses 172.31.40.250
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-54-91-65-93.compute-1.amazonaws.com open address
Hostname type IP name: ip-172-31-40-250.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-40-250.ec2.internal	

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

Click actions and Monitor troubleshoot and access Get the system log

aws Services Search [Alt+S] N. Virginia Prasan V

New EC2 Experience Tell us what you think

EC2 Dashboard
EC2 Global View
Events

▼ Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations

▼ Images
AMIs
AMI Catalog

▼ Elastic Block Store
Volumes

Instances (1/1) Info

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 D
Wordpress Ser...	i-0d9c57cbb16801941	Running	t2.micro	2/2 checks passed	0 in alarm	us-east-1a	ec2-54-91-65

Instance: i-0d9c57cbb16801941 (Wordpress Server)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary Info

Instance ID i-0d9c57cbb16801941 (Wordpress Server)	Public IPv4 address 54.91.65.93 open address	Private IPv4 addresses 172.31.40.250
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-54-91-65-93.compute-1.amazonaws.com open address
Hostname type IP name: ip-172-31-40-250.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-40-250.ec2.internal	

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

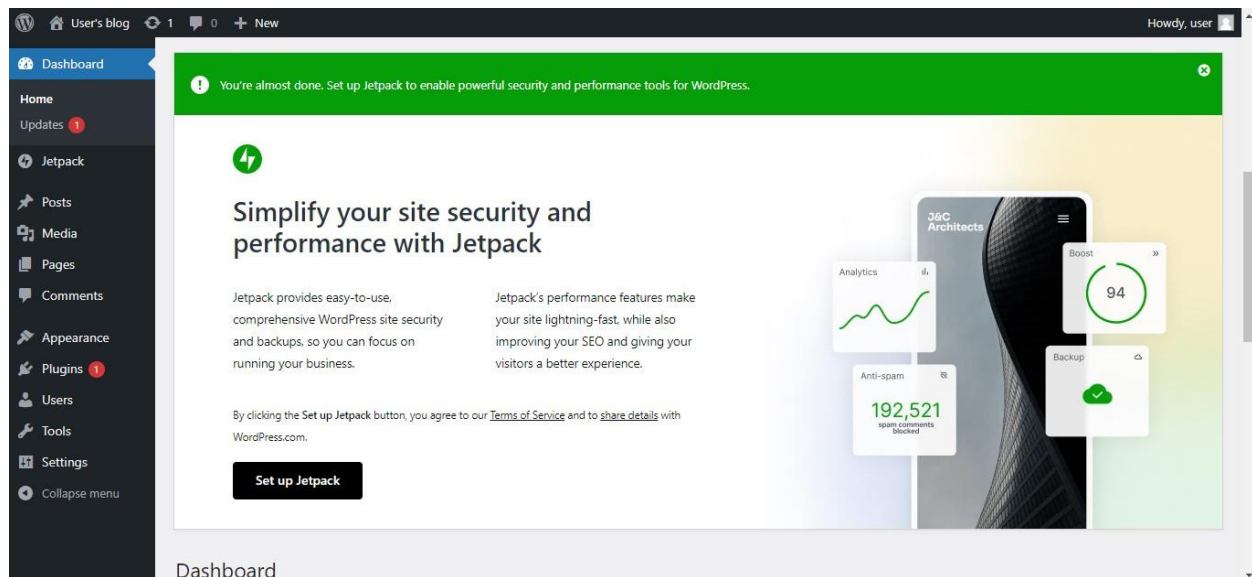
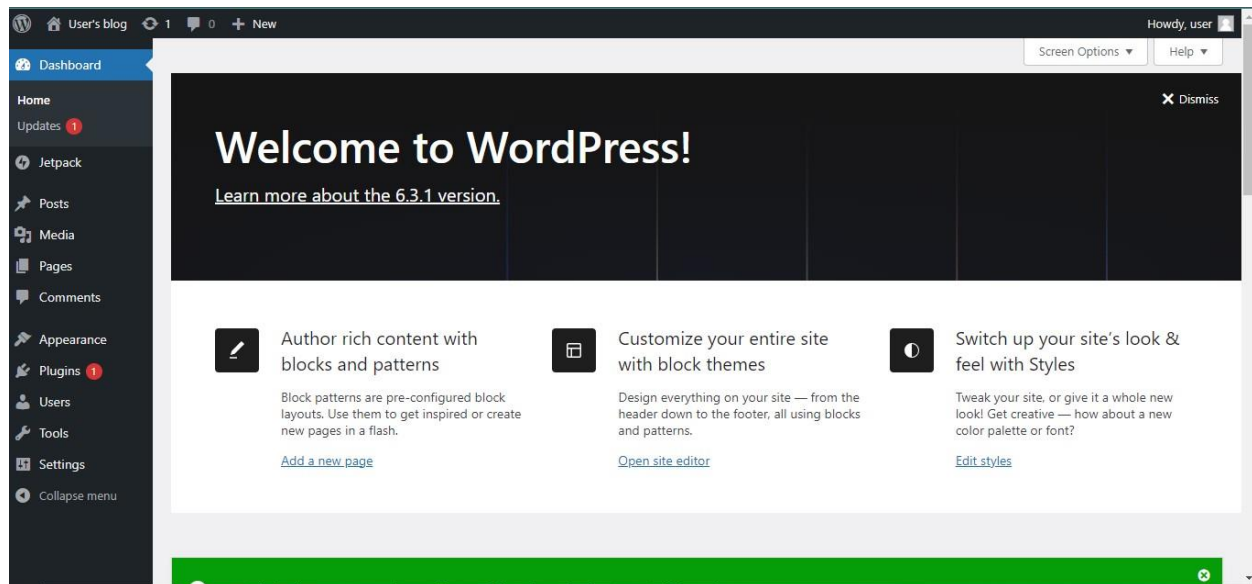
Get System Log

The screenshot shows the AWS Management Console interface. On the left is a navigation sidebar with options like 'EC2 Dashboard', 'Instances', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', 'Images', 'AMI Catalog', 'Elastic Block Store', and 'Volumes'. The main content area is titled 'Get system log' with a subtitle 'When you experience issues with your EC2 instance, reviewing system logs can help you pinpoint the cause.' Below this, there's a 'System log' section for instance 'i-0d9c57cbb16801941' as of 'Thu Sep 14 2023 13:06:07 GMT+0530 (India Standard Time)'. The log content is displayed in a dark-themed terminal window, showing SSH session details, host key fingerprints, and system boot logs. At the top right of the console, there are buttons for 'Copy log' and 'Download'. The footer of the console shows '© 2023, Amazon Web Services India Private Limited or its affiliates.' and links for 'Privacy', 'Terms', and 'Cookie preferences'.

Click the password for Wordpress Login

This screenshot shows the same AWS Management Console 'System log' page, but with the log content scrolled down to show the Bitnami application setup phase. The log entries include messages from 'device-mapper', 'bitnami[508]', and 'bitnami[502]'. Key messages include 'Setting Bitnami application password to 'aRkzVXlQWZl'', '(the default application username is 'user')', and 'Running first-boot...'. The interface elements like the sidebar, navigation buttons, and footer are consistent with the previous screenshot.

Dashboard Showing in WordPress



b) **1 EC2 Instance for MYSQL**

Create a MYSQL Server instance Launch

Command:

```
sudo apt update
```

```
sudo apt install mysql-server
```

```
sudo systemctl status mysql
```

```
sudo mysql
```

```
ALTER USER 'root'@'localhost' IDENTIFIED WITH  
mysql_native_password BY 'Prasan@12';
```

```
CREATE DATABASE mysql_test;
```

```
USE mysql_test;
```

```
CREATE TABLE table1 ( id INT, name VARCHAR(45));
```

```
INSERT INTO table1 VALUES(1, 'INFOTRIX'), (2,'CLOUD'),  
(3,'DEVOPS'), (4,'PRASAN');
```

```
SELECT *FROM table1;
```

aws Services Search [Alt+S] N. Virginia Prasan V

New EC2 Experience Tell us what you think

EC2 Dashboard
EC2 Global View
Events

Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations

Images
AMIs
AMI Catalog

Elastic Block Store
Volumes

Instances (1/2) Info

Find instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 D
<input checked="" type="checkbox"/>	MySQL_Server	i-07829f20367131a3d	Running	t2.micro	2/2 checks passed	0 in alarm	us-east-1a	ec2-3-85-28-
<input type="checkbox"/>	Wordpress Ser...	i-0d9c57cbb16801941	Running	t2.micro	2/2 checks passed	0 in alarm	us-east-1a	ec2-54-91-65

Instance: i-07829f20367131a3d (MySQL_Server)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary info

Instance ID i-07829f20367131a3d (MySQL_Server)	Public IPv4 address 3.85.28.166 open address	Private IPv4 addresses 172.31.42.92
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-3-85-28-166.compute-1.amazonaws.com open address
Hostname type IP name: ip-172-31-42-92.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-42-92.ec2.internal	

https://us-east-1.console.aws.amazon.com/console/home?region=us-east-1 © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

aws Services Search [Alt+S] N. Virginia Prasan V

```
System load: 0.5986328125 Processes: 107
Usage of /: 30.0% of 7.57GB Users logged in: 1
Memory usage: 61% IPv4 address for eth0: 172.31.42.92
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

120 updates can be applied immediately.
70 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Thu Sep 14 08:36:37 2023 from 18.206.107.29
ubuntu@ip-172-31-42-92:~$ sudo systemctl status mysql
● mysql.service - MySQL Community Server
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-09-14 08:38:26 UTC; 1min 42s ago
   Process: 2810 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
   Main PID: 2818 (mysqld)
   Status: "Server is operational"
   Tasks: 37 (limit: 1141)
   Memory: 356.3M
   CPU: 1.532s
   CGroup: /system.slice/mysql.service
           └─2818 /usr/sbin/mysqld

Sep 14 08:38:25 ip-172-31-42-92 systemd[1]: Starting MySQL Community Server...
Sep 14 08:38:26 ip-172-31-42-92 systemd[1]: Started MySQL Community Server.
ubuntu@ip-172-31-42-92:~$
```

CloudShell Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences


```
aws
Services
Search [Alt+S]
N. Virginia
Prasan V

-> CREATE DATABASE mysql_test;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'CREATE DATABASE mysql_test' at line 2
mysql>
mysql> CREATE DATABASE mysql_test;
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> USE mysql_test;
Database changed
mysql> CREATE TABLE table1 ( id INT, name VARCHAR(45));
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO table1 VALUES(1, 'INFOTRIX'), (2,'CLOUD'), (3,'DEVOPS'), (4,'PRASAN');
ERROR 1054 (42S22): Unknown column 'INFOTRIX' in 'field list'
mysql> CREATE TABLE table1 (id INT, name VARCHAR(45));
ERROR 1050 (42S01): Table 'table1' already exists
mysql> INSERT INTO table1 VALUES(1, 'INFOTRIX'), (2, 'CLOUD'), (3, 'DEVOPS'), (4, 'PRASAN');
Query OK, 4 rows affected (0.01 sec)
Records: 4 Duplicates: 0 Warnings: 0

mysql> SELECT *FROM table1;
+----+-----+
| id | name |
+----+-----+
| 1  | INFOTRIX |
| 2  | CLOUD |
| 3  | DEVOPS |
| 4  | PRASAN |
+----+-----+
4 rows in set (0.00 sec)

mysql>
```

CloudShell Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

Task -2

2) For Monolithic : 1 EC2 instances,deploy wordpress and MYSQL, on the same instance.

Create 2 Security Groups

RDS Security Group

aws Services Search [Alt+S] N. Virginia Prasan V

Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
▼ Images
AMIs
AMI Catalog
▼ Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
▼ Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs

Security Groups (1/11) Info

Filter security groups

Actions Export security groups to CSV Create security group

	Name	Security group ID	Security group name	VPC ID	Description	Owner
<input type="checkbox"/>	-	sg-05030801d8f97a3fb	launch-wizard-3	vpc-00a8dceecb3b52c1b	launch-wizard-3 create...	348653781156
<input checked="" type="checkbox"/>	-	sg-0904e550b111b69d6	drssecuritygroup	vpc-00a8dceecb3b52c1b	drssecuritygroup	348653781156
<input type="checkbox"/>	-	sg-01ad4026b6bc207e5	launch-wizard-4	vpc-00a8dceecb3b52c1b	launch-wizard-4 create...	348653781156
<input type="checkbox"/>	SG	sg-06c9932ba71466eac	SG	vpc-00a8dceecb3b52c1b	launch-wizard-4 create...	348653781156
<input type="checkbox"/>	-	sg-0b4aaf8de9c924ad6	launch-wizard-5	vpc-00a8dceecb3b52c1b	launch-wizard-5 create...	348653781156

sg-0904e550b111b69d6 - drssecuritygroup

Details Inbound rules Outbound rules Tags

Details

Security group name	Security group ID	Description	VPC ID
drssecuritygroup	sg-0904e550b111b69d6	drssecuritygroup	vpc-00a8dceecb3b52c1b

CloudShell Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

For EC2 Security Group

The screenshot shows the AWS Management Console interface for the 'Security Groups' page. The left sidebar contains navigation links for various AWS services. The main content area displays a list of security groups. The 'ec2securitygroup' is selected, and its details are shown below the list.

Name	Security group ID	Security group name	VPC ID	Description	Owner
-	sg-0904e550b111b69d6	drsecuritygroup	vpc-00a8dceecb3b52c1b	drsecuritygroup	348653781156
-	sg-01ad4026b6bc207e5	launch-wizard-4	vpc-00a8dceecb3b52c1b	launch-wizard-4 create...	348653781156
SG	sg-06c9932ba71466eac	SG	vpc-00a8dceecb3b52c1b	launch-wizard-4 create...	348653781156
-	sg-0b4aaf8de9c924ad6	launch-wizard-5	vpc-00a8dceecb3b52c1b	launch-wizard-5 create...	348653781156
-	sg-0b35ee663043ace21	ec2securitygroup	vpc-00a8dceecb3b52c1b	ec2securitygroup	348653781156

sg-0b35ee663043ace21 - ec2securitygroup

Details

Security group name	Security group ID	Description	VPC ID
ec2securitygroup	sg-0b35ee663043ace21	ec2securitygroup	vpc-00a8dceecb3b52c1b

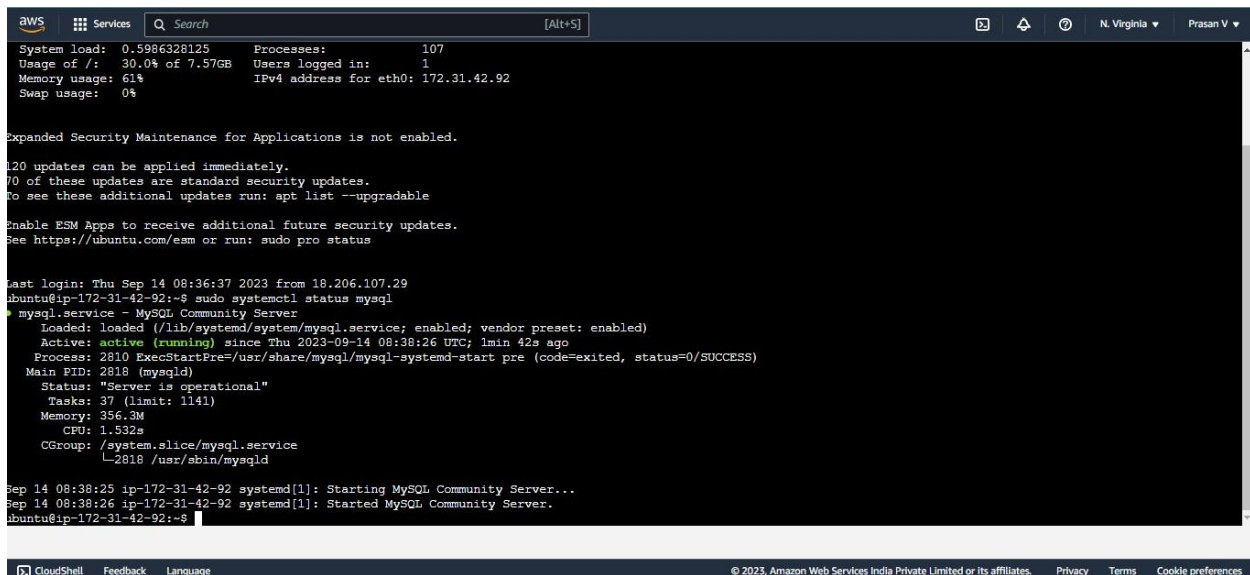
Create RDS

The screenshot shows the AWS Management Console interface for the 'Amazon RDS' page. The left sidebar contains navigation links for various AWS services. The main content area displays a list of databases. The 'prasadatabase1' database is listed.

DB identifier	Status	Role	Engine	Region & AZ	Size	Actions	CPU	Current
prasadatabase1	Available	Instance	MySQL Community	us-east-1f	db.t2.micro	-	5.69%	

Commands:

```
sudo apt update
sudo apt install apache2
sudo systemctl start apache2
sudo apt-get install software-properties-common -y
sudo apt-get install php libapache2-mod-php php-mysql php-curl php-gd php-json
php-zip
sudo wget https://wordpress.org/latest.tar.gz
sudo tar -xvzf latest.tar.gz
sudo cp wp-config-sample.php wp-config.php
sudo chown -R www-data:www-data /var/www/wordpress
sudo cd /var/www/wordpress
sudo vim wp-config.php
sudo a2ensite wordpress.conf
sudo a2enmod rewrite
sudo apache2ctl configtest
sudo service apache2 restart
```



The screenshot shows an AWS CloudShell terminal window. At the top, there's a header bar with the AWS logo, a search bar, and user information (N. Virginia, Prasan V). Below the header, system statistics are displayed: System load: 0.5986328125, Processes: 107, Usage of /: 30.0% of 7.57GB, Users logged in: 1, Memory usage: 61%, IPv4 address for eth0: 172.31.42.92, Swap usage: 0%. A message indicates that Expanded Security Maintenance for Applications is not enabled and that 120 updates can be applied immediately. The user then runs the command `sudo systemctl status mysql`. The output shows that the MySQL Community Server is loaded, active, and running since 2023-09-14 08:38:26 UTC. It also displays details about the process, main PID, status, tasks, memory, CPU, and cgroup. At the bottom, there are timestamps showing the system starting and then starting the MySQL Community Server.

```
aws
Services
Q Search [Alt+S]
System load: 0.5986328125 Processes: 107
Usage of /: 30.0% of 7.57GB Users logged in: 1
Memory usage: 61% IPv4 address for eth0: 172.31.42.92
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

120 updates can be applied immediately.
70 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Thu Sep 14 08:36:37 2023 from 18.206.107.29
ubuntu@ip-172-31-42-92:~$ sudo systemctl status mysql
mysql.service - MySQL Community Server
  Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2023-09-14 08:38:26 UTC; 1min 42s ago
  Process: 2810 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
  Main PID: 2818 (mysqld)
  Status: "Server is operational"
  Tasks: 37 (limit: 1141)
  Memory: 356.3M
  CPU: 1.532s
  CGroup: /system.slice/mysql.service
          └─2818 /usr/sbin/mysqld

Sep 14 08:38:25 ip-172-31-42-92 systemd[1]: Starting MySQL Community Server...
Sep 14 08:38:26 ip-172-31-42-92 systemd[1]: Started MySQL Community Server.
ubuntu@ip-172-31-42-92:~$
```

CloudShell Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

aws

Services

Search

[Alt+S]

N. Virginia

Prasan V

New EC2 Experience

EC2 Dashboard

EC2 Global View

Events

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Instances (1/2) Info

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 D
MySQL_Server	i-07829f20367131a3d	Running	t2.micro	2/2 checks passed	0 in alarm	us-east-1a	ec2-3-85-28-
Wordpress Ser...	i-0d9c57cbb16801941	Running	t2.micro	2/2 checks passed	0 in alarm	us-east-1a	ec2-54-91-65

Instance: i-07829f20367131a3d (MySQL_Server)

DetailsSecurityNetworkingStorageStatus checksMonitoringTags

Instance summary Info

Instance ID

i-07829f20367131a3d (MySQL_Server)

IPv6 address

-

Hostname type

IP name: ip-172-31-42-92.ec2.internal

Public IPv4 address

3.85.28.166 [open address](#)

Instance state

Running

Private IP DNS name (IPv4 only)

ip-172-31-42-92.ec2.internal

Private IPv4 addresses

172.31.42.92


Public IPv4 DNS

ec2-3-85-28-166.compute-1.amazonaws.com [open address](#)

https://us-east-1.console.aws.amazon.com/console/home?region=us-east-1

© 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

← → ↺ ⚠ Not secure 52.90.234.202



Apache2 Default Page

Ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|   |-- ports.conf
|-- mods-enabled
|   |-- *.load
|   |-- *.conf
|-- conf-enabled
|   |-- *.conf
|-- sites-enabled
|   |-- *.conf
```



Below you should enter your database connection details. If you're not sure about these, contact your host.

Database Name	<input type="text" value="Prasandatabase1"/>	The name of the database you want to use with WordPress.
Username	<input type="text" value="admin"/>	Your database username.
Password	<input type="password" value="admin123456"/>	Your database password.
Database Host	<input type="text" value="prasandatabase1.chv7r3lp1i1b.l"/>	You should be able to get this info from your web host. If localhost doesn't work.
Table Prefix	<input type="text" value="wp_"/>	If you want to run multiple WordPress installations in a single database, change this.

User's blog

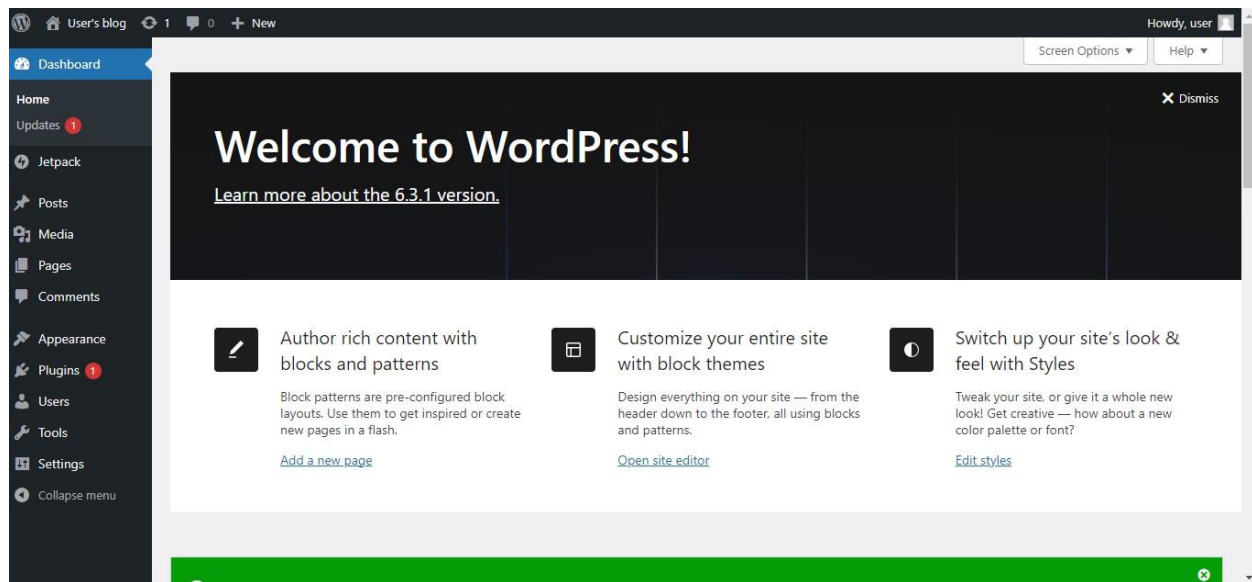
Sample Page

Mindblown: a blog about philosophy.

Hello world!

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

September 14, 2023



That's all Thanks....