

# Document Control

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Approved by: Parth Bhansali DPO

# Business Continuity Plan- Testing Report

**Issue Date: 16/09/2025**

**Service Line: AWS Cloud DR Test**

**Service Leader: Aditya Goyal (DevOps & Cloud  
Department)**

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# 1 Introduction

## 1.1 Purpose

Business continuity plan needs to be tested. The result of testing to be used as an input to update and maintain the BCP Plans based on suggested improvement, corrective action and recommendations

## 1.2 Scope

The scope of this BCP testing is for AWS- Mumbai going down. Testing the Business Continuity Plan to cover the aspect that the AWS- Mumbai is not accessible in case of a disaster and Singapore region backup shall be re-stored and used as primary.

## 1.3 Objective

To test the preparedness of the in case of unavailability AWS- Mumbai

# 2 BCP Testing

## 2.1 Conducting the test

- **Date:** 15/09/2025
- **Start Time:** 3:08 PM IST
- **End Time:** 4:18 PM IST
- **Duration:** 70 Minutes

### 2.1.1 Test Scenario

#### 1. Scenario Description

Testing the Business Continuity Plan to cover the aspect that the AWS- Mumbai is unavailable due to a disaster and backup maintained at AWS Mumbai shall be used to conduct the operations and client's services & Organization business continues. Failover was executed to AWS–Singapore region by restoring EC2 server and RDS instance, and validating connectivity via phpMyAdmin.

#### 2. Resources

Number of FTEs participating in Test: 02

Name	Designation
Aditya goyal	DevOps & Cloud Department
Shakir Khan	Software Engineering Manager

## 2.2 Reporting Test Results

### 2.2.1 BCP Scenario Test Card

**Time of Testing:** 15:08 IST

**Test Location:** AWS Singapore.

**Recovery Time Objective:** 180

**Time taken for starting operations from home (should be within RTO):**

70 Minutes

#### **Steps Performed:**

1. Checked latest RDS snapshot (Mumbai region).
2. Copied RDS snapshot to Singapore region.
3. Copied EC2 AMI from Mumbai to Singapore.
4. Launched EC2 server from copied AMI (Singapore).
5. Attempted connection – failed initially.
6. Investigated issue – identified SG/NACL configuration error.
7. Fixed issue and updated Route 53 with Elastic IP + Load Balancer.
8. Verified RDS + phpMyAdmin connectivity successfully.

## 2.3 After Test Meeting

### 2.3.1 Summary of Test Results

Mission Critical Application's backup is restored and tested and determined that restored data is integral to continue business.

- **EC2 Web Server** – Application server launched in Singapore from Mumbai AMI.
- **RDS MySQL Database** – Restored from latest snapshot in Singapore region.
- **phpMyAdmin** – Verified database connectivity and accessibility.

### Activities Performed along with Time spent

Sl. No.	Action	Recovery Time Objective (mins)	ETA Time Frame (mins)	Actual Time Taken (mins)	Actual Time & Date
-	In case of the Server failures resulting in the application down time, following are the actions to be performed by the DevOps team				
1	Pull latest RDS snapshot (Mumbai) & verification	15	15	16	3:08 PM – 3:24 PM, 15/09/2025
2	Restore RDS from snapshot in Singapore region	20	20	3	3:21 PM – 3:24 PM, 15/09/2025
	Re-map Security Group with instance	30	30	10	3:55 PM – 4:05 PM, 15/09/2025
3	Re-associate EIP with new instance	20	20	2	4:10 PM – 4:12 PM, 15/09/2025
5	ELB health check	15	15	Included above	4:12 PM, 15/09/2025
6	Basic smoke testing (environmental, functional testing)	30	30	6	4:12 PM – 4:18 PM, 15/09/2025
7	Re-map IAM role with instance	20	20	Included above	4:12 PM – 4:18 PM, 15/09/2025
8	Re-map CloudWatch custom metrics	20	20	Included above	4:12 PM – 4:18 PM, 15/09/2025
8	Test connection via phpMyAdmin (RDS verification)	20	20	6	4:12 PM – 4:18 PM, 15/09/2025

Since the backup happens once a day so Recovery Point Objective is 24 Hours

#### 2.3.2 Issues or Concerns

- Initial **connection failure** (3:55 PM – 4:05 PM)
- Root cause: **NACL + Security Group misconfiguration**

#### 2.3.3 Suggestions & Feedback (Lessons Learnt)

Following Improvement points were suggested by AVP Operations:

- Capture IP Address details of instances during DR test for audit reference.
- Pre-validate Security Groups & NACLs in DR region before cutover.
- Automate EC2 + RDS restore and Route 53 update steps in next cycle.
- Include additional failover scenarios (multi-AZ DR, IAM role mapping).

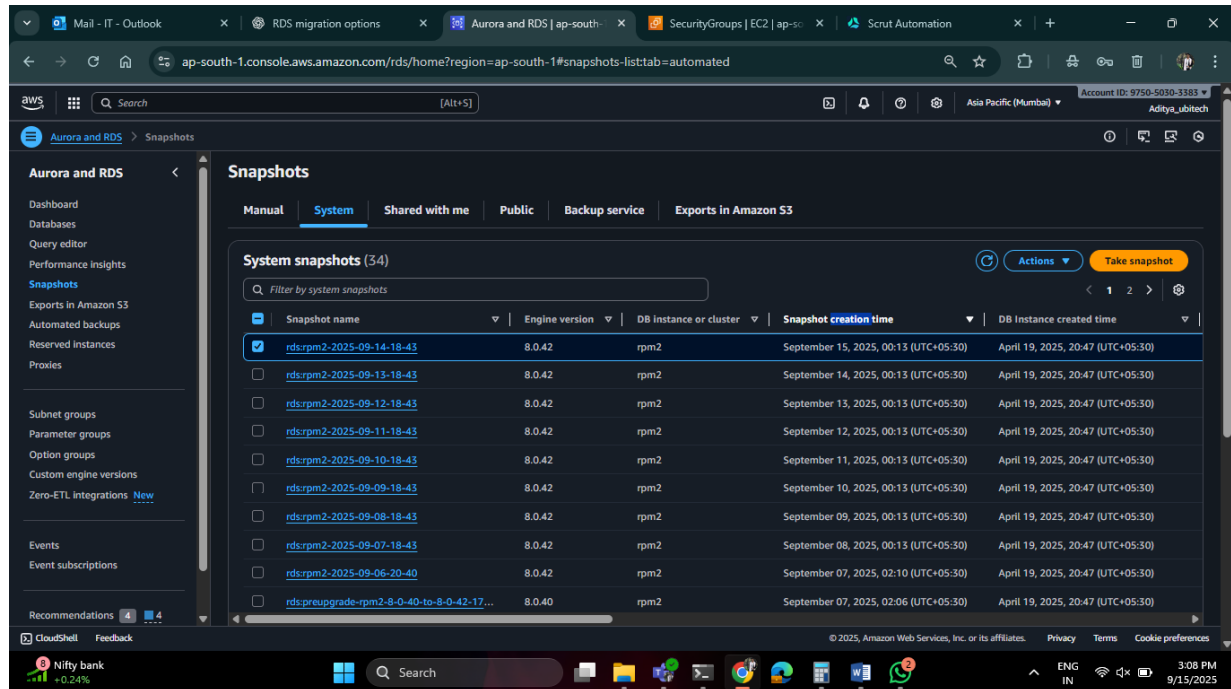
#### 2.3.4 Test Result Approved by

CISO

## Annexure 1 – Screenshots of activities performed

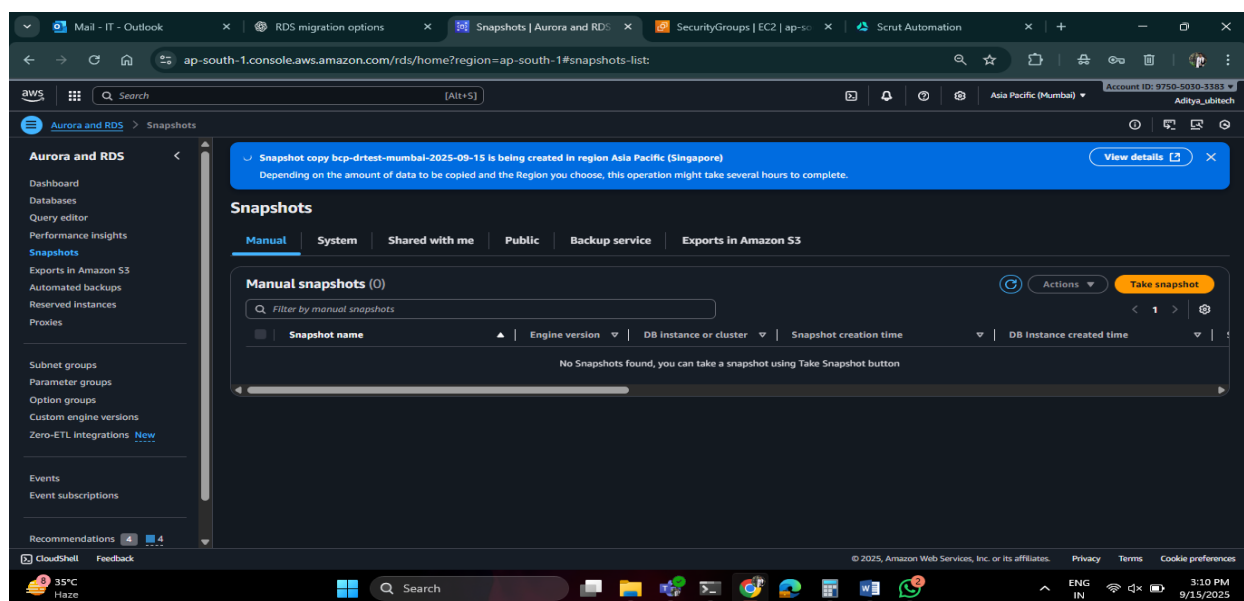
### Screenshot 1

Description of Activity: Showing the latest RDS snapshot in Mumbai region before failover.



### Screenshot 2

Description of Activity: Confirmation of snapshot replication in Singapore region.



## Screenshot 3

### Description of Activity: EC2 AMI Copy to Singapore

The screenshot shows the AWS Management Console for the 'ap-south-1' region. A blue notification banner at the top states: 'AMI copy operation for ami-0a10f29c54bd9f2bf initiated. It can take a few minutes for the AMI to be copied. You can check the progress of the operation in the AMI list in ap-southeast-1. The AMI ID of the new AMI is ami-08045ef911615595f.' Below this, the 'Amazon Machine Images (AMIs) (1/16)' page is displayed. A table lists the AMIs:

Name	AMI name	AMI ID	Source	Owner	Visibility	Status
<input checked="" type="checkbox"/>	hrm-dev-ami-mumbai-2025-09-15	ami-0a10f29c54bd9f2bf	975050303383/hrm-dev-ami-mumbai-2025-09-15	975050303383	Private	Available
<input type="checkbox"/>	DLM_policy-02e5fc896c55e214...	ami-0fd78729eef70b07	975050303383/DLM_policy-02e5fc896c55e214...	975050303383	Private	Available
<input type="checkbox"/>	biometric-prod-AMI	ami-01a77f829c2dfea88	975050303383/biometric-prod-AMI	975050303383	Private	Available

The details for the selected AMI (ami-0a10f29c54bd9f2bf) are shown below:

Details	Permissions	Storage	My AMI usage - new	Tags
<b>AMI ID</b> ami-0a10f29c54bd9f2bf	<b>Image type</b> machine	<b>Platform details</b> Linux/UNIX	<b>Root device type</b> EBS	
<b>AMI name</b> hrm-dev-ami-mumbai-2025-09-15	<b>Owner account ID</b> 975050303383	<b>Architecture</b> x86_64	<b>Usage operation</b> RunInstances	
<b>Root device name</b> /dev/xvda	<b>Status</b> Available	<b>Source</b> 975050303383/hrm-dev-ami-mumbai-2025-09-15	<b>Virtualization type</b> hvm	

## Screenshot 4

### Description of Activity: EC2 Instance Launch in Singapore

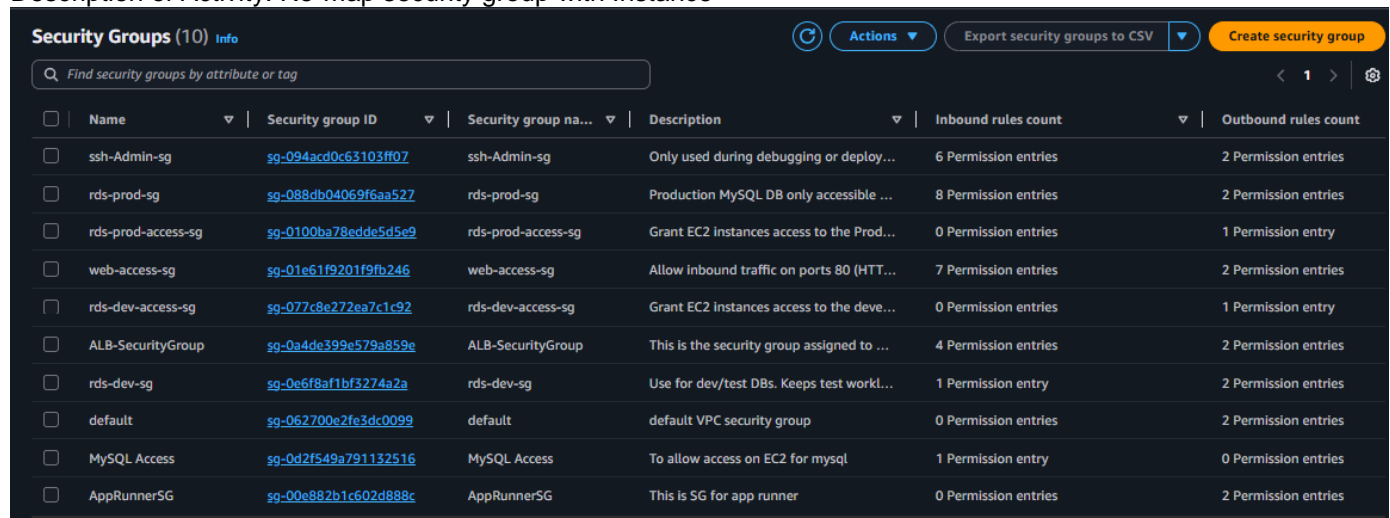
The screenshot shows the AWS Management Console for the 'ap-southeast-1' region, displaying the details of an EC2 instance with ID 'i-0e8bca40702f5fd16'. The instance is in the 'Running' state. The 'Instance summary' section provides the following details:

Instance summary for i-0e8bca40702f5fd16 (hrm-dev-ami-singapore-2025-09-15)		
<b>Instance ID</b> i-0e8bca40702f5fd16	<b>Public IPv4 address</b> 18.143.130.122   open address	<b>Private IPv4 addresses</b> 172.31.34.170
<b>IPv6 address</b> -	<b>Instance state</b> Running	<b>Public DNS</b> ec2-18-143-130-122.ap-southeast-1.compute.amazonaws.com   open address
<b>Hostname type</b> IP name: ip-172-31-34-170.ap-southeast-1.compute.internal	<b>Private IP DNS name (IPv4 only)</b> ip-172-31-34-170.ap-southeast-1.compute.internal	<b>Elastic IP addresses</b> -
<b>Answer private resource DNS name</b> IPv4 (A) 18.143.130.122 [Public IP]	<b>Instance type</b> t2.micro	<b>AWS Compute Optimizer finding</b> No recommendations available for this instance.
<b>Auto-assigned IP address</b> 18.143.130.122 [Public IP]	<b>VPC ID</b> vpc-0d4047646e37ca70c	<b>Auto Scaling Group name</b> -
<b>IAM Role</b> -	<b>Subnet ID</b> subnet-0fd71bd19f069bb74	<b>Managed</b> false
<b>IMDSv2</b> Optional EC2 recommends setting IMDSv2 to required   Learn more	<b>Instance ARN</b> arn:aws:ec2:ap-southeast-1:975050303383:instance/i-0e8bca40702f5fd16	
<b>Operator</b> -		



## Screenshot 5

Description of Activity: Re-map security group with Instance



The screenshot shows the AWS Security Groups console. At the top, there's a search bar and buttons for 'Actions', 'Export security groups to CSV', and 'Create security group'. Below is a table with 10 security groups. Each row includes a checkbox, the group name, its ID, a truncated description, the inbound rules count, and the outbound rules count.

<input type="checkbox"/>	Name	Security group ID	Security group na...	Description	Inbound rules count	Outbound rules count
<input type="checkbox"/>	ssh-Admin-sg	sg-094acd0c63103ff07	ssh-Admin-sg	Only used during debugging or deploy...	6 Permission entries	2 Permission entries
<input type="checkbox"/>	rds-prod-sg	sg-088db04069f6aa527	rds-prod-sg	Production MySQL DB only accessible ...	8 Permission entries	2 Permission entries
<input type="checkbox"/>	rds-prod-access-sg	sg-0100ba78edde5d5e9	rds-prod-access-sg	Grant EC2 instances access to the Prod...	0 Permission entries	1 Permission entry
<input type="checkbox"/>	web-access-sg	sg-01e61f9201f9fb246	web-access-sg	Allow inbound traffic on ports 80 (HTT...	7 Permission entries	2 Permission entries
<input type="checkbox"/>	rds-dev-access-sg	sg-077c8e272ea7c1c92	rds-dev-access-sg	Grant EC2 instances access to the deve...	0 Permission entries	1 Permission entry
<input type="checkbox"/>	ALB-SecurityGroup	sg-0a4de399e579a859e	ALB-SecurityGroup	This is the security group assigned to ...	4 Permission entries	2 Permission entries
<input type="checkbox"/>	rds-dev-sg	sg-0a6f8af1bf3274a2a	rds-dev-sg	Use for dev/test DBs. Keeps test worl...	1 Permission entry	2 Permission entries
<input type="checkbox"/>	default	sg-062700e2fe3dc0099	default	default VPC security group	0 Permission entries	2 Permission entries
<input type="checkbox"/>	MySQL Access	sg-0d2f549a791132516	MySQL Access	To allow access on EC2 for mysql	1 Permission entry	0 Permission entries
<input type="checkbox"/>	AppRunnerSG	sg-00e882b1c602d888c	AppRunnerSG	This is SG for app runner	0 Permission entries	2 Permission entries

## Screenshot 6

Description of Activity: Re-associate EIP with new instance

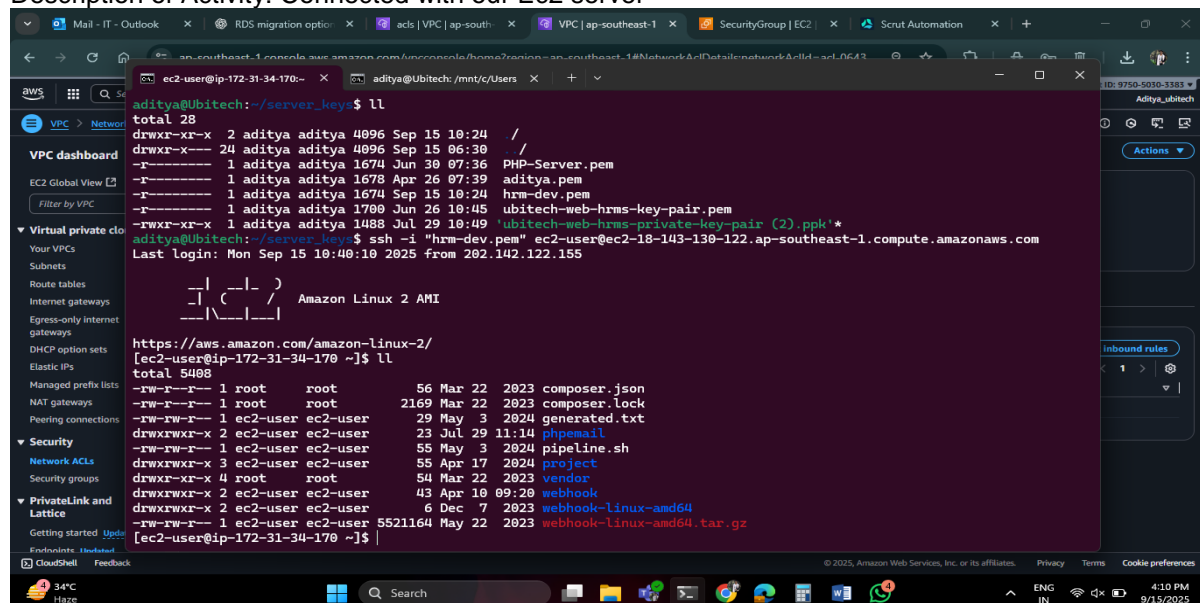


The screenshot shows the AWS Elastic IP addresses console. At the top, there's a search bar and buttons for 'Actions' and 'Allocate Elastic IP address'. Below is a table with 4 Elastic IP addresses. Each row includes a checkbox, the name, the allocated IPv4 address, the type, the allocation ID, the reverse DNS record, and the associated instance ID.

<input type="checkbox"/>	Name	Allocated IPv4 addr...	Type	Allocation ID	Reverse DNS record	Associated instance ID
<input type="checkbox"/>	redis-server-eip	13.234.70.160	Public IP	eipalloc-0ab372ba68ea48845	-	i-0867b3489cd136260 [?]
<input type="checkbox"/>	ubihrm-dev-eip	3.111.18.155	Public IP	eipalloc-0ca6ee4e298f9dc3d	-	i-00ff89599d78ee44a [?]
<input type="checkbox"/>	php-server-eip	65.0.249.252	Public IP	eipalloc-05cf847e81a827ba5	-	i-049ba5aff503a6b6e [?]
<input type="checkbox"/>	nat-gw-eip	65.1.77.125	Public IP	eipalloc-0234a9650df711b30	-	-

## Screenshot 7

Description of Activity: Connected with our Ec2 server



The screenshot shows the AWS CloudShell interface. The terminal window displays the following commands and output:

```
aditya@Ubitech:~/server_key$ ll
total 28
drwxr-xr-x 2 aditya aditya 4096 Sep 15 10:24 /
drwxr-xr-x 24 aditya aditya 4096 Sep 15 06:30 /
-rw-r--r-- 1 aditya aditya 1674 Jun 30 07:36 PHP-Server.pem
-rw-r--r-- 1 aditya aditya 1678 Apr 26 07:39 aditya.pem
-rw-r--r-- 1 aditya aditya 1674 Sep 15 10:24 hrm-dev.pem
-rw-r--r-- 1 aditya aditya 1700 Jun 26 10:45 ubitech-web-hrms-key-pair.pem
-rw-r--r-- 1 aditya aditya 1488 Jul 29 10:49 'ubitech-web-hrms-private-key-pair (2).ppk'
aditya@Ubitech:~/server_key$ ssh -i "hrm-dev.pem" ec2-user@ec2-18-143-130-122.ap-southeast-1.compute.amazonaws.com
Last login: Mon Sep 15 10:40:10 2025 from 202.142.122.155

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Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-34-170 ~]$ ll
total 5408
-rw-r--r-- 1 root root 56 Mar 22 2023 composer.json
-rw-r--r-- 1 root root 2169 Mar 22 2023 composer.lock
-rw-r--r-- 1 ec2-user ec2-user 29 May 3 2024 generated.txt
drwxrwxr-x 2 ec2-user ec2-user 23 Jul 29 11:14 phpemail
-rw-r--r-- 1 ec2-user ec2-user 55 May 3 2024 pipeline.sh
drwxrwxr-x 3 ec2-user ec2-user 55 Apr 17 2024 project
drwxr-xr-x 4 root root 54 Mar 22 2023 vendor
drwxrwxr-x 2 ec2-user ec2-user 43 Apr 18 09:20 webhook
drwxrwxr-x 2 ec2-user ec2-user 6 Dec 7 2023 webhook-linux-amd64
-rw-r--r-- 1 ec2-user ec2-user 5521164 May 22 2023 webhook-linux-amd64.tar.gz
[ec2-user@ip-172-31-34-170 ~]$
```

## Screenshot 8

Description of Activity: Final verification of restored RDS database via phpMyAdmin access.

The screenshot shows the phpMyAdmin web interface in a browser. The current server is 'dr-mumbai-backup-singap'. The 'SQL' tab is active, and a query has been executed successfully. The query was 'show PROCESSLIST;'. The results are displayed in a table with columns: Id, User, Host, db, Command, Time, State, and Info. The table shows four processes: event\_scheduler (Id 5, localhost, Daemon), rdsadmin (Id 12, localhost, Sleep), ubiadmin (Id 1510, ec2-3-111-18-155.ap-south-1.compute.amazonaws.com, Query), and ubiadmin (Id 1511, ec2-3-111-18-155.ap-south-1.compute.amazonaws.com, Sleep). A warning message at the bottom states: 'Warning: #1287 'INFORMATION\_SCHEMA.PROCESSLIST' is deprecated and will be removed in a future release. Please use performance\_schema.processlist instead'.

Id	User	Host	db	Command	Time	State	Info
5	event_scheduler	localhost	NULL	Daemon	0	Waiting for next activation	NULL
12	rdsadmin	localhost	mysql	Sleep	14		NULL
1510	ubiadmin	ec2-3-111-18-155.ap-south-1.compute.amazonaws.com:...	NULL	Query	0	init	show PROCESSLIST
1511	ubiadmin	ec2-3-111-18-155.ap-south-1.compute.amazonaws.com:...	NULL	Sleep	0		NULL