

FACE DETECTION APP ON AWS CLOUD

● Engine Compute Cloud(EC2) Dashboard

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with navigation links for Instances, Images, and Elastic Block Store. The main area has a 'Launch instance' section with a 'Launch instance' button and a 'Launch instance from template' link. Below it is a 'Scheduled events' section showing 'No scheduled events'. To the right is a 'Service health' section for the 'Service Health Dashboard' in the 'Asia Pacific (Mumbai)' region, which is operating normally. There's also an 'Availability Zone status' section listing three availability zones: ap-south-1a, ap-south-1b, and ap-south-1c, all of which are operating normally. A sidebar on the right titled 'Explore AWS' provides links to save with AMD EPYC-Powered EC2 instances, optimize costs with Spot Instances, and easily launch third-party AMI products.

● Selecting AMI

The screenshot shows the 'Choose AMI' step of the EC2 Launch Instance Wizard. It lists several AMIs under the 'Quick Start' section:

- Amazon Linux 2 AMI (HVM), SSD Volume Type** - ami-03b5297d565ef30a6 (64-bit x86) / ami-0292503f80fe49021 (64-bit Arm)
Status: Free tier eligible
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
Select button (radio buttons for 64-bit (x86) and 64-bit (Arm))
- Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type** - ami-0fa6cd5aeftb0f2afe
Status: Free tier eligible
The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
Select button (radio button for 64-bit (x86))
- Red Hat Enterprise Linux 8 (HVM), SSD Volume Type** - ami-0a74bfeb190bd404f
Status: Free tier eligible
Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
Select button (radio button for 64-bit (x86))
- SUSE Linux Enterprise Server 15 SP1 (HVM), SSD Volume Type** - ami-0e0e7b909aea48186 (64-bit x86) / ami-0ee4e92e70c6b59e0 (64-bit Arm)
Status: Free tier eligible
SUSE Linux Enterprise Server 15 SP1 (HVM), EBS General Purpose (SSD) Volume Type
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
Select button (radio button for 64-bit (x86))

At the bottom, there are 'Cancel and Exit' and 'Next Step' buttons.

● Choosing Instance Type

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

| Family | Type | vCPUs | Memory (GiB) | Instance Storage (GB) | EBS-Optimized Available | Network Performance | IPv6 Support |
|-----------------|------------|-------|--------------|-----------------------|-------------------------|---------------------|--------------|
| General purpose | t2.nano | 1 | 0.5 | EBS only | - | Low to Moderate | Yes |
| General purpose | t2.micro | 1 | 1 | EBS only | - | Low to Moderate | Yes |
| General purpose | t2.small | 1 | 2 | EBS only | - | Low to Moderate | Yes |
| General purpose | t2.medium | 2 | 4 | EBS only | - | Low to Moderate | Yes |
| General purpose | t2.large | 2 | 8 | EBS only | - | Low to Moderate | Yes |
| General purpose | t2.xlarge | 4 | 16 | EBS only | - | Moderate | Yes |
| General purpose | t2.2xlarge | 8 | 32 | EBS only | - | Moderate | Yes |
| General purpose | t3a.nano | 2 | 0.5 | EBS only | Yes | Up to 5 Gigabit | Yes |

Cancel Previous Review and Launch Next: Configure Instance Details

● Instance Details

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

| | | |
|-------------------------------|---|--|
| Number of instances | 1 | Launch into Auto Scaling Group |
| Purchasing option | <input type="checkbox"/> Request Spot Instances | |
| Network | vpc-979481ff (default) | <input type="button"/> Create new VPC |
| Subnet | No preference (default subnet in any Availability Zone) | <input type="button"/> Create new subnet |
| Auto-assign Public IP | Use subnet setting (Enable) | |
| Placement group | <input type="checkbox"/> Add instance to placement group | |
| Capacity Reservation | Open | <input type="button"/> Create new Capacity Reservation |
| IAM role | None | <input type="button"/> Create new IAM role |
| Shutdown behavior | Stop | |
| Stop - Hibernate behavior | <input type="checkbox"/> Enable hibernation as an additional stop behavior | |
| Enable termination protection | <input type="checkbox"/> Protect against accidental termination | |
| Monitoring | <input type="checkbox"/> Enable CloudWatch detailed monitoring Additional charges apply. | |

Cancel Previous Review and Launch Next: Add Storage

● EBS

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

| Volume Type | Device | Snapshot | Size (GiB) | Volume Type | IOPS | Throughput (MB/s) | Delete on Termination | Encryption |
|-------------|-----------|------------------------|------------|---------------------------|------------|-------------------|-------------------------------------|---------------|
| Root | /dev/xvda | snap-0a65864f0ac2b05f1 | 8 | General Purpose SSD (gp2) | 100 / 3000 | N/A | <input checked="" type="checkbox"/> | Not Encrypted |

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Cancel Previous Review and Launch Next: Add Tags

● Security Group

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:

Create a new security group
 Select an existing security group

Security group name:

Description:

| Type | Protocol | Port Range | Source | Description |
|------|----------|------------|------------------|----------------------------|
| SSH | TCP | 22 | Custom 0.0.0.0/0 | e.g. SSH for Admin Desktop |

Add Rule

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Previous Review and Launch

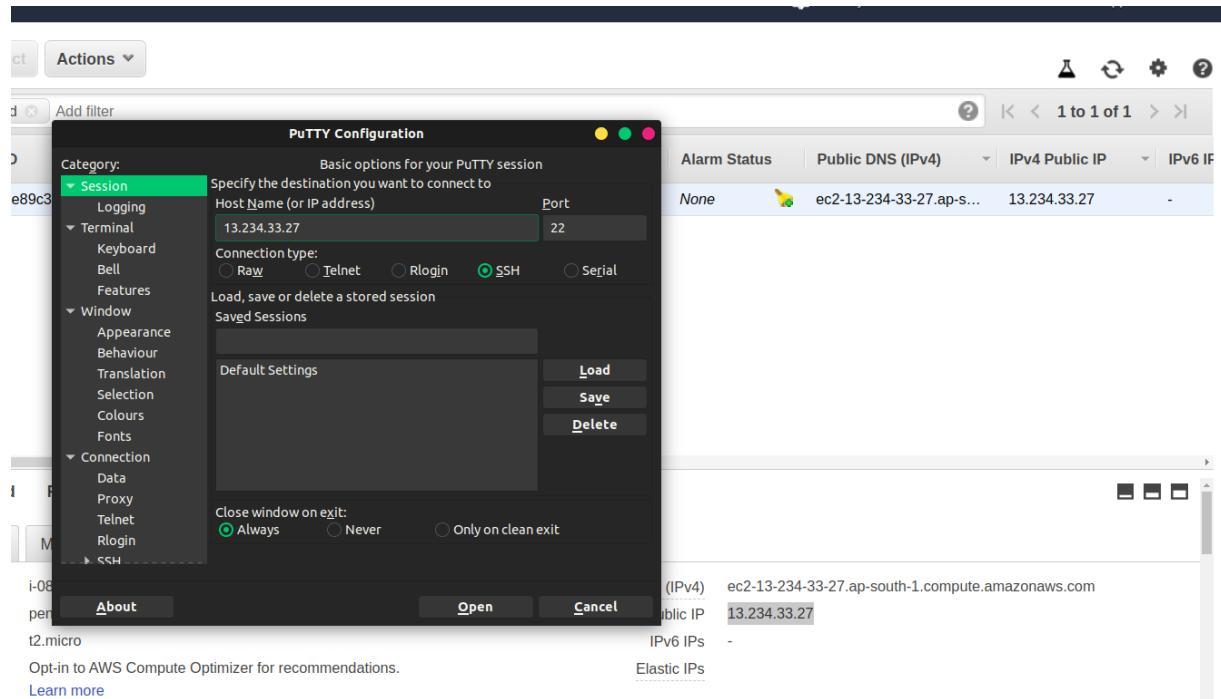
● Final Launch

The screenshot shows the AWS EC2 Launch Wizard at Step 7: Review Instance Launch. The page title is "Step 7: Review Instance Launch". Below it, a message says: "Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process." A warning box contains the text: "⚠ Improve your instances' security. Your security group, launch-wizard-2, is open to the world. Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)". The "AMI Details" section shows "Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-03b5297d565ef30a6" and "Free tier eligible". The "Instance Type" section shows "t2.micro" selected. The "Security Groups" section shows "Security group name: launch-wizard-2" and "Description: launch-wizard-2 created 2020-03-27T00:11:50.801+05:30". At the bottom right are "Cancel", "Previous", and "Launch" buttons.

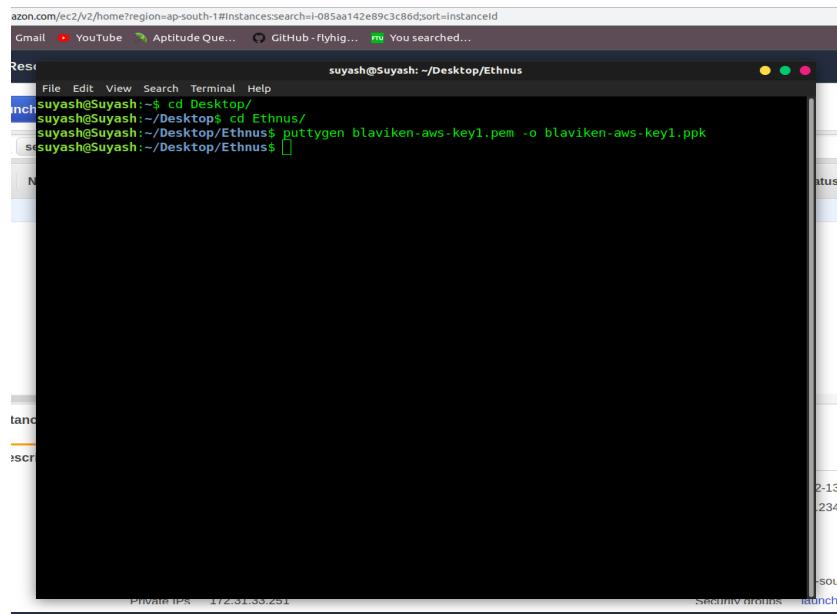
● Successful Launch

The screenshot shows the AWS EC2 Launch Wizard after a successful launch. The title is "Launch Status". It displays a green box with the message: "Your instances are now launching. The following instance launches have been initiated: i-085aa142e89c3c86d [View launch log](#)". Below this, a blue box contains the message: "Get notified of estimated charges. Create [billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier)." The "How to connect to your instances" section provides instructions: "Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances. Click [View Instances](#) to monitor your instances' status. Once your instances are in the **running** state, you can [connect](#) to them from the Instances screen. [Find out](#) how to connect to your instances." A "Helpful resources" section lists links to "How to connect to your Linux instance", "Amazon EC2 User Guide", "Learn about AWS Free Usage Tier", and "Amazon EC2: Discussion Forum". The "While your instances are launching you can also" section includes links to "Create status check alarms", "Create and attach additional EBS volumes", and "Manage security groups". The bottom of the page includes standard AWS footer links: "Feedback", "English (US)", "Privacy Policy", "Terms of Use", and "Show all".

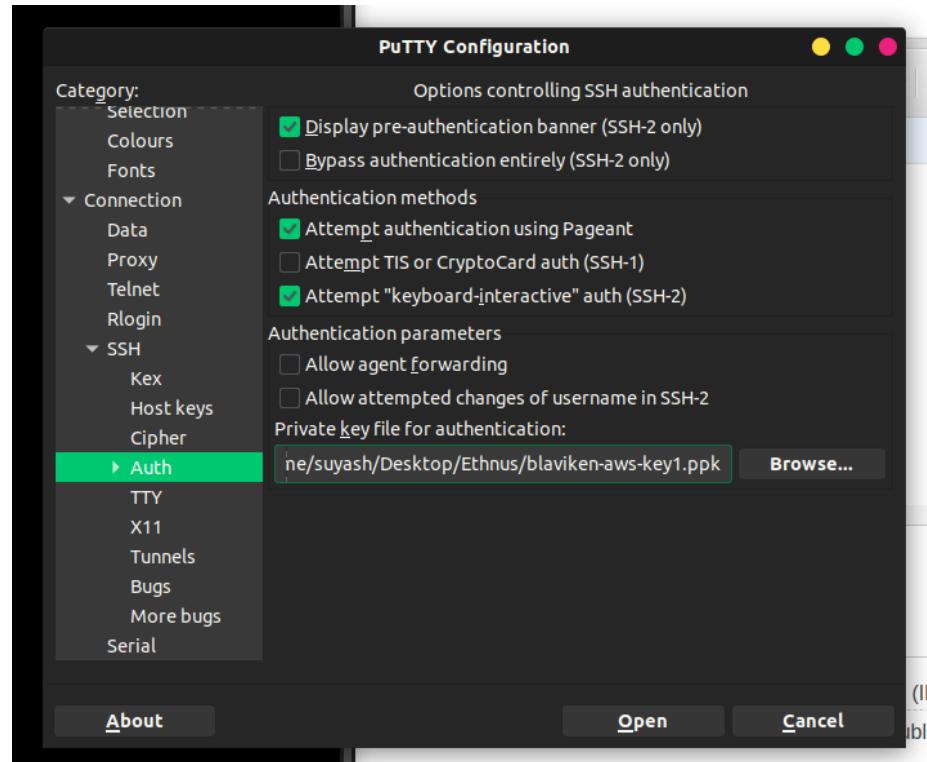
● PuTTY Configuration



● Convert .pem to .ppk



- Path to .ppk file -> Private Key



- Virtual Machine

```
ec2-user@ip-172-31-33-251:~  
login as: ec2-user  
Authenticating with public key "imported-openssh-key"  
[ec2-user@ip-172-31-33-251 ~]$ https://aws.amazon.com/amazon-linux-2/  
1 package(s) needed for security, out of 7 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-31-33-251 ~]$
```

● Installation

```
Activities PuTTY SSH Client Fri Mar 27, 00:16
ec2-user@ip-172-31-33-251~
```

```
generic-logos-httdp      noarch    18.0.0-4_amzn2           amzn2-core          19 k
httpd-filesystem          noarch    2.4.41-1_amzn2.0.1     amzn2-core          23 k
httpd-tools                x86_64   2.4.41-1_amzn2.0.1     amzn2-core          87 k
mailcap                   noarch    2.1.41-2_amzn2          amzn2-core          31 k
mod_http2                 x86_64   1.15.3-2_amzn2         amzn2-core          146 k

Transaction Summary
=====
Install 1 Package (+8 Dependent packages)

Total download size: 1.8 M
Installed size: 5.1 M
Is this ok [y/d/N]: y
Downloading packages:
(1/9): apr-util-1.6.1-5_amzn2.0.2.x86_64.rpm | 99 kB 00:00:00
(2/9): apr-util-1.6.3-5_amzn2.0.2.x86_64.rpm | 118 kB 00:00:00
(3/9): apr-util-bdb-1.6.1-5_amzn2.0.2.x86_64.rpm | 19 kB 00:00:00
(4/9): generic-logos-httdp-18.0.0-4_amzn2.noarch.rpm | 19 kB 00:00:00
(5/9): httpd-filesystem-2.4.41-1_amzn2.0.1.noarch.rpm | 23 kB 00:00:00
(6/9): httpd-tools-2.4.41-1_amzn2.0.1.x86_64.rpm | 87 kB 00:00:00
(7/9): httpd-2.4.41-1_amzn2.0.1.x86_64.rpm | 1.3 MB 00:00:00
(8/9): mailcap-2.1.41-2_amzn2.noarch.rpm | 31 kB 00:00:00
(9/9): mod_http2-1.15.3-2_amzn2.x86_64.rpm | 146 kB 00:00:00

Total                                         11 MB/s | 1.8 MB 00:00:00

Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : apr-1.6.3-5_amzn2.0.2.x86_64          1/9
  Installing : apr-util-bdb-1.6.1-5_amzn2.0.2.x86_64  2/9
  Installing : apr-util-1.6.1-5_amzn2.0.2.x86_64    3/9
  Installing : httpd-tools-2.4.41-1_amzn2.0.1.x86_64 4/9
  Installing : generic-logos-httdp-18.0.0-4_amzn2.noarch 5/9
  Installing : mailcap-2.1.41-2_amzn2.noarch        6/9
  Installing : httpd-filesystem-2.4.41-1_amzn2.0.1.noarch 7/9
  Installing : mod_http2-1.15.3-2_amzn2.x86_64       8/9
  Installing : httpd-2.4.41-1_amzn2.0.1.x86_64       9/9
  Verifying  : apr-1.6.3-5_amzn2.0.2.x86_64          1/9
  Verifying  : apr-util-bdb-1.6.1-5_amzn2.0.2.x86_64  2/9
  Verifying  : apr-util-1.6.1-5_amzn2.0.2.x86_64    3/9
  Verifying  : httpd-tools-2.4.41-1_amzn2.0.1.x86_64  4/9
  Verifying  : generic-logos-httdp-18.0.0-4_amzn2.noarch 5/9
  Verifying  : mailcap-2.1.41-2_amzn2.noarch        6/9
  Verifying  : httpd-filesystem-2.4.41-1_amzn2.0.1.noarch 7/9
  Verifying  : mod_http2-1.15.3-2_amzn2.x86_64       8/9
  Verifying  : httpd-2.4.41-1_amzn2.0.1.x86_64       9/9

Installed:
  httpd.x86_64 0:2.4.41-1.amzn2.0.1

Dependency Installed:
  apr.x86_64 0:1.6.3-5_amzn2.0.2           apr-util.x86_64 0:1.6.1-5_amzn2.0.2           apr-util-bdb.x86_64 0:1.6.1-5_amzn2.0.2
  generic-logos-httdp.noarch 0:18.0.0-4.amzn2  httpd-filesystem.noarch 0:2.4.41-1.amzn2.0.1  httpd-tools.x86_64 0:2.4.41-1.amzn2.0.1
  mailcap.noarch 0:2.1.41-2.amzn2

Completed!
[ec2-user@ip-172-31-33-251 ~]$ sudo service httpd start
Redirecting to /bin/systemctl start httpd.service
[ec2-user@ip-172-31-33-251 ~]$ sudo service httpd status
Redirecting to /bin/systemctl status httpd.service
[ec2-user@ip-172-31-33-251 ~]$ systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Thu 2020-03-26 18:46:25 UTC; 3s ago
     Docs: man:httpd.service(8)
   Main PID: 3657 (httpd)
      Status: "Processing requests..."
    CGroup: /system.slice/httpd.service
           ├─3657 /usr/sbin/httpd -DFOREGROUND
           ├─3658 /usr/sbin/httpd -DFOREGROUND
           ├─3659 /usr/sbin/httpd -DFOREGROUND
           ├─3660 /usr/sbin/httpd -DFOREGROUND
           ├─3661 /usr/sbin/httpd -DFOREGROUND
           └─3662 /usr/sbin/httpd -DFOREGROUND

Mar 26 18:46:25 ip-172-31-33-251.ap-south-1.compute.internal systemd[1]: Starting The Apache HTTP Server...
Mar 26 18:46:25 ip-172-31-33-251.ap-south-1.compute.internal systemd[1]: Started The Apache HTTP Server.
[ec2-user@ip-172-31-33-251 ~]$
```

● Inbound Rule

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like EC2 Dashboard, Events, Tags, Reports, and various sections for Instances, Images, and Elastic Block Store. The main area displays a table of instances. One row is selected, showing details for an 'i-085aa142e89c3c86d' instance. A modal window titled 'Security Groups associated with i-085aa142e89c3c86d' is open, listing a single rule: Port 22, Protocol TCP, Source 0.0.0.0/0, and a green checkmark icon indicating it's active.

● Security Group

The screenshot shows the AWS EC2 Security Groups page. The sidebar includes links for EC2 Dashboard, Events, Tags, and Instance Types. The main content shows a table of security groups. One row is selected, showing details for 'sg-0d23333d39f454c87' named 'launch-wizard-2'. Below the table, a detailed view for 'sg-0d23333d39f454c87 - launch-wizard-2' is shown, with tabs for Details, Inbound rules, Outbound rules, and Tags. The 'Details' tab is selected.

● Edit Inbound Rules

EC2 > Security Groups > sg-0d23333d39f454c87 - launch-wizard-2

Details

| | | | |
|--|---|--|------------------------|
| Security group name launch-wizard-2 | Security group ID sg-0d23333d39f454c87 | Description launch-wizard-2 created 2020-03-27T00:11:50.801+05:30 | VPC ID vpc-979481ff |
| Owner 894248871767 | Inbound rules count 1 Permission entry | Outbound rules count 1 Permission entry | |

Inbound rules | Outbound rules | Tags

Inbound rules

| Type | Protocol | Port range | Source | Description - optional |
|------|----------|------------|-----------|------------------------|
| SSH | TCP | 22 | 0.0.0.0/0 | - |

Edit inbound rules

● Add Inbound Rule (HTTP)

EC2 > Security Groups > sg-0d23333d39f454c87 - launch-wizard-2 > Edit inbound rules

Edit inbound rules [Info](#)

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules [Info](#)

| Type Info | Protocol Info | Port range Info | Source Info | Description - optional Info |
|---------------------------|-------------------------------|---------------------------------|-----------------------------|---|
| SSH | TCP | 22 | Custom | 0.0.0.0/0 |

Add rule

⚠ NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Cancel | Preview changes | Save rules

● Save Rules

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules

| Type | Protocol | Port range | Source | Description - optional |
|------|----------|------------|-------------------------------|------------------------|
| SSH | TCP | 22 | Custom 0.0.0.0/0 | |
| HTTP | TCP | 80 | Anywhere 0.0.0.0/0 ::/0 | |

Note: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Cancel | Preview changes | **Save rules**

● Updated Security Group

sg-0d23333d39f454c87 - launch-wizard-2

Details

| | | | |
|--|---|--|------------------------|
| Security group name launch-wizard-2 | Security group ID sg-0d23333d39f454c87 | Description launch-wizard-2 created 2020-03-27T00:11:50.801+05:30 | VPC ID vpc-979481ff |
| Owner 891248871767 | Inbound rules count 3 Permission entries | Outbound rules count 1 Permission entry | |

Inbound rules

| Type | Protocol | Port range | Source | Description - optional |
|------|----------|------------|-----------|------------------------|
| HTTP | TCP | 80 | 0.0.0.0/0 | - |
| HTTP | TCP | 80 | ::/0 | - |
| SSH | TCP | 22 | 0.0.0.0/0 | - |

Feedback | English (US) | © 2006 - 2020, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. | Privacy Policy | Terms of Use

● Added HTTP Rule

The screenshot shows the AWS EC2 Instances page. On the left sidebar, under 'INSTANCES', 'Instances' is selected. In the main content area, two instances are listed:

| Name | Instance ID | Instance Type | Availability Zone | Instance State | Status Checks | Alarm Status | Public DNS (IPv4) | IPv4 Public IP | IPv6 IP |
|----------------------|----------------------|---------------|-------------------|----------------|----------------|--------------|--------------------------|----------------|---------|
| i-085aa142e89c3c86d | i-085aa142e89c3c86d | t2.micro | ap-south-1a | running | 2/2 checks ... | None | ec2-13-234-33-27.ap-s... | 13.234.33.27 | - |
| i-0b5939841b0b819... | i-0b5939841b0b819... | t2.micro | ap-south-1b | running | 2/2 checks ... | None | ec2-13-126-216-94.ap... | 13.126.216.94 | - |

A modal window is open for the first instance, showing its detailed configuration. The 'Security Groups' section is highlighted, showing the following inbound rules:

| Ports | Protocol | Source | Action |
|-------|----------|-----------|--------|
| 80 | tcp | 0.0.0.0/0 | ✓ |
| 22 | tcp | 0.0.0.0/0 | ✓ |

Other visible details include:

- Private IPs: 172.31.33.251
- Secondary private IPs: vpc-979481ff
- VPC ID: vpc-979481ff
- Subnet ID: subnet-5cdeec34
- Network interfaces: eth0
- IAM role: -
- Key pair name: blaviken-aws-key1
- Owner: 894248871767
- Launch time: March 27, 2020 at 12:13:04 AM UTC+5:30 (less than one day ago)

● Final Page

The screenshot shows a web browser window with the URL '13.234.33.27'. The page content is:

Hello there. I am Suyash Khachane. Welcome!