

LAB ASSIGNMENTS 1: Spring boot application on EC2 instance

Instruction:

1. create aws account
2. aws iam user

The first screenshot shows the 'Create user' page in the AWS IAM console. A green banner at the top states 'User created successfully'. A sidebar on the left shows the steps: Step 1: Specify user details, Step 2: Set permissions, Step 3: Review and create, and Step 4: Retrieve password (which is currently selected). The main content area is titled 'Retrieve password' and contains 'Console sign-in details' including the sign-in URL, user name 'tr_ravi_admin', and a masked console password. A 'View user' button is in the top right.

The second screenshot shows the 'User groups' page. A green banner states 'tr_administrator user group created'. The left sidebar shows 'Identity and Access Management (IAM)' with 'User groups' selected. The main content area shows a table with one user group: 'tr_administrator' with 1 user, 'Defined' permissions, and a creation time of 'Now'.

The third screenshot shows the 'Console Home' dashboard. It features a 'Recently visited' section with links to EC2, S3, RDS, and Lambda. The 'Applications' section shows 'No applications' and a 'Create application' button. The top right of the dashboard includes buttons for 'Reset to default layout' and 'Add widgets'.

3. Create EC2 instance as demonstrated in the session

ips > sg-02ca5abd52c652585 - assignment_sg

Security group (sg-02ca5abd52c652585 | assignment_sg) was created successfully
Details

sg-02ca5abd52c652585 - assignment_sg

Actions

Details

Security group name assignment_sg	Security group ID sg-02ca5abd52c652585	Description assignment_sg	VPC ID vpc-0c187e62eae5114
Owner 515966518319	Inbound rules count 3 Permission entries	Outbound rules count 1 Permission entry	

Inbound rules | Outbound rules | Sharing - new | VPC associations - new | Tags

[Alt+S] [Email] [Alert] [Help] [Settings] Asia Pacific (Mumbai) tr_ravi_admin @ 5159-6651-8319

sg-02ca5abd52c652585 - assignment_sg

Owner
515966518319

Inbound rules count
3 Permission entries

Outbound rules count
1 Permission entry

Inbound rules | Outbound rules | Sharing - new | VPC associations - new | Tags

Inbound rules (3) Manage tags Edit inbound rules

Search

Security group rule ID	IP version	Type	Protocol	Port range
sgr-0154bfb3f61fdf446	IPv4	SSH	TCP	22
sgr-059b8f72e630ba099	IPv4	HTTP	TCP	80
sgr-0a15a43b7e68883a3	IPv4	Custom TCP	TCP	8080

aws [Search] [Alt+S] [Email] [Alert] [Help] [Settings] Asia Pacific (Mumbai) tr_ravi_admin @ 5159-6651-8319

EC2 > Instances > i-0a06315357e9a9b19

EC2

- Dashboard
- EC2 Global View
- Events
- Instances**
 - Instances
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances
 - Dedicated Hosts
 - Capacity Reservations
- Images**
 - AMIs

Instance summary for i-0a06315357e9a9b19 (spring_boot_application_week2) Info

Connect Instance state Actions

Updated less than a minute ago

Instance ID i-0a06315357e9a9b19	Public IPv4 address 3.110.124.24 open address	Private IPv4 addresses 172.31.3.247
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-3-110-124-24.ap-south-1.compute.amazonaws.com open address
Hostname type IP name: ip-172-31-3-247.ap-south-1.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-3-247.ap-south-1.compute.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	

4. Run spring boot application on EC2 instance

```
ubuntu@ip-172-31-3-247:~$ sudo su
root@ip-172-31-3-247:/home/ubuntu# apt-get update
```

```
root@ip-172-31-3-247:/home/ubuntu# apt-get update -y
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:10 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:11 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:12 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:13 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [866 kB]
Get:14 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [196 kB]
Get:15 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [150 kB]
Get:16 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1015 kB]
Get:17 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [254 kB]
Get:18 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [362 kB]
Get:19 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [19.9 kB]
Get:20 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [654 kB]
Get:21 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [128 kB]
Get:22 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:23 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [16.3 kB]
Get:24 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [3944 B]
Get:25 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:26 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [552 B]
Get:27 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:28 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [142 B]
```

```
root@ip-172-31-3-247:/home/ubuntu# apt-get upgrade -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages will be upgraded:
base-files bind9-dnswriter bind9-host bind9-libs bpftrace bsdxattrutils bsduutils eject fdisk intel-microcode kmod krb5-locales
landscape-common libaio1t64 libattr1 libblkid1 libbsd0 libc-bin libc6 libc6-i386 libc6-i386 libc6-i386 libc6-i386 libc6-i386 libc6-i386
libelf1t64 libfdisk1 libgmp10 libgnutls30t64 libgpg-error-l10n libgpg-error0 libgssapi-krb5-2 libidn2-0 libk5crypto3 libkmod2
libkrb5-3 libkrb5support0 libldap-common libldap2 libmd0 libmount1 libmpfr6 libnghttp2-14 libnl-3-200 libnl-genl-3-200
libnl-route-3-200 libnss-systemd libpam-cap libpam-systemd libpcrc2-8-0 libperl5.38t64 libpolkit-agent-1-0
libpolkit-gobject-1-0 libpython3.12-minimal libpython3.12-stdlib libpython3.12t64 libselinux1 libsmartcols1 libsqlite3-0
libssl3t64 libsystemd-shared libsystemd0 libtasn1-6 libudev1 libunistring5 libunwind8 libuuid1 libxml2 linux-tools-common
locales motd-news-config mount openssl-client openssl-server openssl-sftp-server openssl perl-base perl-modules-5.38
polkitd python-apt-common python3-apt python3-distupgrade python3-jinja2 python3.12 python3.12-minimal rsync systemd
systemd-dev systemd-resolved systemd-sysv tzdata tzdata-legacy ubuntu-kernel-accessories ubuntu-minimal
ubuntu-release-upgrader-core ubuntu-server ubuntu-standard udev util-linux uuid-runtime vim vim-common vim-runtime vim-tiny
xfsprogs xxd
106 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Need to get 72.3 MB of archives.
After this operation, 2941 kB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 motd-news-config all 13ubuntu10.2 [4000 B]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libc6 amd64 2.39-0ubuntu8.4 [3264 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 base-files amd64 13ubuntu10.2 [73.2 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 bsduutils amd64 1:2.39.3-9ubuntu6.2 [95.2 kB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libperl5.38t64 amd64 5.38.2-3.2build2.1 [4867 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 perl amd64 5.38.2-3.2build2.1 [231 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 perl-base amd64 5.38.2-3.2build2.1 [1823 kB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 perl-modules-5.38 all 5.38.2-3.2build2.1 [3110 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 util-linux amd64 2.39.3-9ubuntu6.2 [1127 kB]
Get:10 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libc-bin amd64 2.39-0ubuntu8.4 [682 kB]
Get:11 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 mount amd64 2.39.3-9ubuntu6.2 [118 kB]
Get:12 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libpython3.12t64 amd64 3.12.3-1ubuntu0.5 [2339 kB]
```

```
root@ip-172-31-3-247:/home/ubuntu# apt install openjdk-17-jdk openjdk-17-jre -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certificates-java dconf-gsettings-backend
dconf-service fontconfig fontconfig-config fonts-dejavu-core fonts-dejavu-extra fonts-dejavu-mono gsettings-desktop-schemas
gtk-update-icon-cache hicolor-icon-theme humanity-icon-theme java-common libasound2-data libasound2t64 libatk-bridge2.0-0t64
libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0t64 libatspi2.0-0t64 libavahi-client3 libavahi-common-data
libavahi-common3 libcairo-gobject2 libcairo2 libcups2t64 libdatatr1 libdconf1 libdeflate0 libdrm-amdgpu1 libdrm-intel1
libdrm-nouveau2 libdrm-radeon1 libfontconfig1 libgail-common libgail18t64 libgbm1 libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin
libgdk-pixbuf2.0-common libgif7 libgl1 libgl1-amd-glx libgl1-mesa-dri libglapi-mesa libglvnd0 libglx-mesa0 libglx0
libgraphite2-3 libgtk2.0-0t64 libgtk2.0-bin libgtk2.0-common libharfbuzz0b libice-dev libice6 libjbig0 libjpeg-turbo8 libjpeg8
liblcms2-2 liblerc4 libllvml19 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciaccess0 libpcsclite1 libpixmap1-10
libpthread-stubs0-dev librsync2-2 librsync2-common libsharpyuv0 libsm-dev libsm6 libthai-data libthai0 libtiff6 libvulkan1
libwayland-client0 libwayland-server0 libwebp7 libx11-dev libx11-xcb1 libxau-dev libxaw7 libxcb-dri2-0 libxcb-dri3-0
libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb-sync1 libxcb-xf86-dri3-0
libxcb-composite1 libxcursor1 libxdamage1 libxdmcp-dev libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxpm4
libxrandr2 libxrender1 libxshmfence1 libxt-dev libxt6t64 libxtst6 libxv1 libxxf86dga1 libxxf86vm1 mesa-libgallium
mesa-vulkan-drivers openjdk-17-jdk-headless openjdk-17-jre-headless session-migration ubuntu-mono x11-common x11-utils
x11proto-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
default-jre alsa-utils libasound2-plugins cups-common gvfs libice-doc liblcms2-utils pcsd librsync2-bin libsm-doc libx11-doc
libxcb-doc libxt-doc openjdk-17-demo openjdk-17-source visualvm libnss-mdns fonts-ipafont-gothic fonts-ipafont-mincho
fonts-wqy-microhei fonts-wqy-zenhei fonts-indic mesa-utils
Recommended packages:
```

```
root@ip-172-31-3-247:/home/ubuntu# apt-get install maven -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libaopalliance-java libapache-pom-java libatinject-jsr330-api-java libcdi-api-java libcommons-cli-java libcommons-io-java
  libcommons-lang3-java libcommons-parent-java liberror-prone-java libgeronimo-annotation-1.3-spec-java
  libgeronimo-interceptor-3.0-spec-java libguava-java libguice-java libjansi-java libjsr305-java libmaven-parent-java
  libmaven-resolver-java libmaven-shared-utils-java libmaven3-core-java libplexus-cipher-java libplexus-classworlds-java
  libplexus-component-annotations-java libplexus-interpolation-java libplexus-sec-dispatcher-java libplexus-utils2-java
  libsisu-inject-java libsisu-plexus-java libslf4j-java libwagon-file-java libwagon-http-shaded-java libwagon-provider-api-java
Suggested packages:
  libatinject-jsr330-api-java-doc libel-api-java libcommons-io-java-doc libasm-java libcglib-java libjsr305-java-doc
  libmaven-shared-utils-java-doc liblogback-java libplexus-utils2-java-doc junit4 testng libcommons-logging-java liblog4j1.2-java
The following NEW packages will be installed:
  libaopalliance-java libapache-pom-java libatinject-jsr330-api-java libcdi-api-java libcommons-cli-java libcommons-io-java
  libcommons-lang3-java libcommons-parent-java liberror-prone-java libgeronimo-annotation-1.3-spec-java
  libgeronimo-interceptor-3.0-spec-java libguava-java libguice-java libjansi-java libjsr305-java libmaven-parent-java
  libmaven-resolver-java libmaven-shared-utils-java libmaven3-core-java libplexus-cipher-java libplexus-classworlds-java
  libplexus-component-annotations-java libplexus-interpolation-java libplexus-sec-dispatcher-java libplexus-utils2-java
  libsisu-inject-java libsisu-plexus-java libslf4j-java libwagon-file-java libwagon-http-shaded-java libwagon-provider-api-java
```

```
root@ip-172-31-3-247:/home/ubuntu# mvn -version
Apache Maven 3.8.7
Maven home: /usr/share/maven
Java version: 17.0.14, vendor: Ubuntu, runtime: /usr/lib/jvm/java-17-openjdk-amd64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.8.0-1021-aws", arch: "amd64", family: "unix"
root@ip-172-31-3-247:/home/ubuntu# mkdir week2
root@ip-172-31-3-247:/home/ubuntu# cd week2
```

```
root@ip-172-31-3-247:/home/ubuntu/week2# git clone https://github.com/rgupta00/employeeappaws.git
Cloning into 'employeeappaws'...
remote: Enumerating objects: 27, done.
remote: Counting objects: 100% (27/27), done.
remote: Compressing objects: 100% (17/17), done.
remote: Total 27 (delta 1), reused 27 (delta 1), pack-reused 0 (from 0)
Receiving objects: 100% (27/27), 9.31 KiB | 2.33 MiB/s, done.
Resolving deltas: 100% (1/1), done.
root@ip-172-31-3-247:/home/ubuntu/week2# ls
employeeappaws
root@ip-172-31-3-247:/home/ubuntu/week2# cd employeeappaws
root@ip-172-31-3-247:/home/ubuntu/week2/employeeappaws# ls
mvnw mvnw.cmd pom.xml src
```

```
root@ip-172-31-3-247:/home/ubuntu/week2# git clone https://github.com/rgupta00/employeeappaws.git
Cloning into 'employeeappaws'...
remote: Enumerating objects: 27, done.
remote: Counting objects: 100% (27/27), done.
remote: Compressing objects: 100% (17/17), done.
remote: Total 27 (delta 1), reused 27 (delta 1), pack-reused 0 (from 0)
Receiving objects: 100% (27/27), 9.31 KiB | 2.33 MiB/s, done.
Resolving deltas: 100% (1/1), done.
```

```
root@ip-172-31-3-247:/home/ubuntu/week2# ls
employeeappaws
root@ip-172-31-3-247:/home/ubuntu/week2# cd employeeappaws
root@ip-172-31-3-247:/home/ubuntu/week2/employeeappaws# ls
mvnw mvnw.cmd pom.xml src
```

```
root@ip-172-31-3-247:/home/ubuntu/week2/employeeappaws# mvn clean package
[INFO] Scanning for projects...
Downloading from central: https://repo.maven.apache.org/maven2/org/springframework/boot/spring-boot-starter-parent/3.3.9/spring-bo
o-starter-parent-3.3.9.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/springframework/boot/spring-boot-starter-parent/3.3.9/spring-bo
ot-starter-parent-3.3.9.pom (13 kB at 25 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/springframework/boot/spring-boot-dependencies/3.3.9/spring-boot-
dependencies-3.3.9.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/springframework/boot/spring-boot-dependencies/3.3.9/spring-boot-d
ependencies-3.3.9.pom (100 kB at 1.4 MB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/activemq/activemq-bom/6.1.5/activemq-bom-6.1.5.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/activemq/activemq-bom/6.1.5/activemq-bom-6.1.5.pom (7.9 kB
at 464 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/activemq/artemis-bom/2.33.0/artemis-bom-2.33.0.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/activemq/artemis-bom/2.33.0/artemis-bom-2.33.0.pom (9.6 kB
at 567 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/activemq/artemis-project/2.33.0/artemis-project-2.33.0.p
om
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/activemq/artemis-project/2.33.0/artemis-project-2.33.0.pom
(64 kB at 1.6 MB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/apache/31/apache-31.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/apache/31/apache-31.pom (24 kB at 1.2 MB/s)
```

```
s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-collections4/4.4/commons-collections4-4.4.
jar (752 kB at 1.4 MB/s)
[INFO] Replacing main artifact /home/ubuntu/week2/employeeappaws/target/employeeappaws-0.0.1-SNAPSHOT.jar with repackaged archive,
adding nested dependencies in BOOT-INF/.
[INFO] The original artifact has been renamed to /home/ubuntu/week2/employeeappaws/target/employeeappaws-0.0.1-SNAPSHOT.jar.origina
l
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 22.266 s
[INFO] Finished at: 2025-02-24T13:48:49Z
[INFO] -----
```

```
[INFO] -----
root@ip-172-31-3-247:/home/ubuntu/week2/employeeappaws# ls
mvnw mvnw.cmd pom.xml src target
root@ip-172-31-3-247:/home/ubuntu/week2/employeeappaws# cd target
root@ip-172-31-3-247:/home/ubuntu/week2/employeeappaws/target# ls
classes generated-sources maven-status
employeeappaws-0.0.1-SNAPSHOT.jar generated-test-sources surefire-reports
employeeappaws-0.0.1-SNAPSHOT.jar.original maven-archiver test-classes
root@ip-172-31-3-247:/home/ubuntu/week2/employeeappaws/target# ^C
root@ip-172-31-3-247:/home/ubuntu/week2/employeeappaws/target# java -jar employeeappaws-0.0.1-SNAPSHOT.jar
```

← → ↻ ⚠ Not secure 3.110.124.24:8080/emp

☆ 📄 🔒 ⋮

emp v4: LOCAL