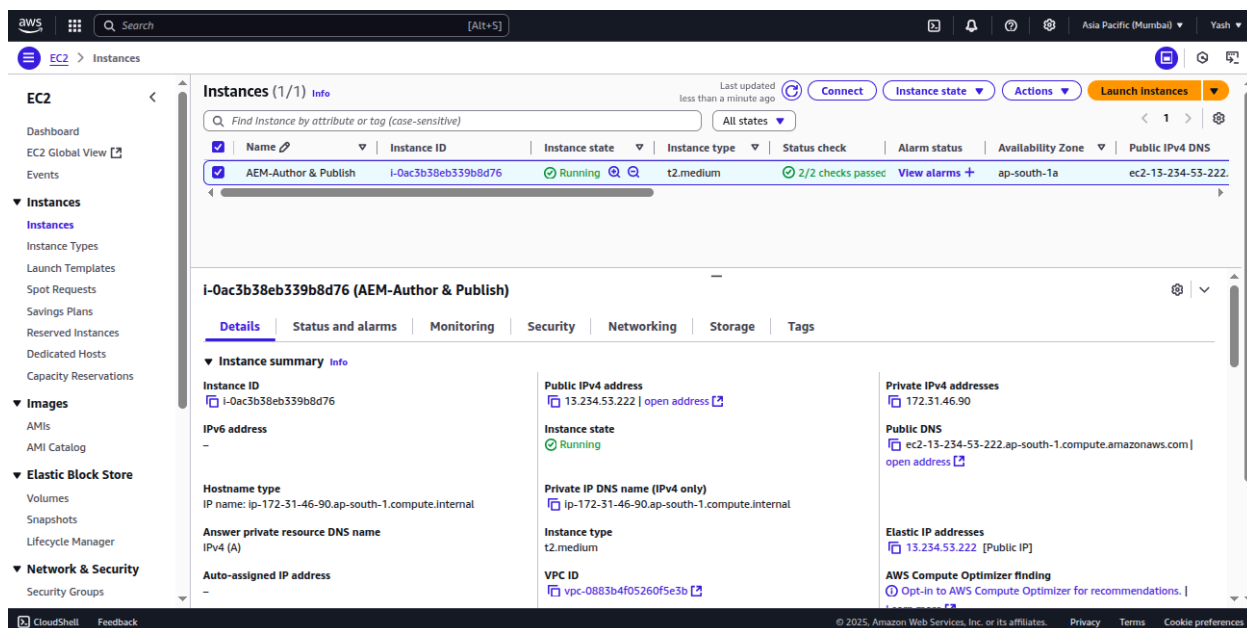# 🚀 AEM Author & Publish Setup on Ubuntu EC2

This guide helps you set up Adobe Experience Manager (AEM) Author and Publish instances on a single Ubuntu EC2 instance (t2.medium, 2 vCPU, 4 GB RAM).

## 🖥️ Prerequisites

- AWS EC2 instance with:

  - **OS**: Ubuntu 24.04 LTS
  - **Instance Type**: `t2.medium` (2 vCPU, 4 GB RAM)
  - **Disk**: 20 GB (minimum)
  - **Ports Open**: 22, 4502, 4503
  - **AEM:** Adobe Experience Manager Quickstart `.jar` file with `license.properties` is required — not open-source and needs a valid subscription from Adobe.

# 🔌 Connect to EC2

```
ssh -i ~/Downloads/AL2023.pem ubuntu@13.234.53.222
```

```
yaswanth@PWSLTP204:~$ sudo ssh -i Downloads/AL2023.pem ubuntu@13.234.53.222
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-1031-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Fri Jul 11 06:50:08 UTC 2025

  System load:  0.26               Processes:             118
  Usage of /:   31.2% of 28.02GB   Users logged in:       0
  Memory usage: 46%                IPv4 address for enX0: 172.31.46.90
  Swap usage:   0%

 * Ubuntu Pro delivers the most comprehensive open source security and
   compliance features.

   https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

12 updates can be applied immediately.
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: Fri Jul 11 06:48:24 2025 from 103.120.51.124
ubuntu@ip-172-31-46-90:~$ 
```

# ☕ Install Java 11

AEM requires Java 11. Install it using:

```
sudo apt update
sudo apt install openjdk-11-jdk
java -version
```

```
ubuntu@ip-172-31-46-90:~$ java -version
openjdk version "11.0.27" 2025-04-15
OpenJDK Runtime Environment (build 11.0.27+6-post-Ubuntu-0ubuntu124.04)
OpenJDK 64-Bit Server VM (build 11.0.27+6-post-Ubuntu-0ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-46-90:~$ 
```

# 📁 Directory Structure

Place the `.jar` and `license.properties` files provided by your Adobe/IT team as follows:

```
/opt/aem/
├── author/
│   ├── aem-author.jar
│   └── license.properties
└── publish/
    ├── aem-publish.jar
    └── license.properties
```

💡 Both `author` and `publish` can initially contain identical files, but the **run modes** and **ports** differ.

```
ubuntu@ip-172-31-46-90:~$ tree /opt/aem/
/opt/aem/
├── author
│   ├── aem-author.jar
│   └── license.properties
└── publish
    ├── aem-publish.jar
    └── license.properties

3 directories, 4 files
ubuntu@ip-172-31-46-90:~$ 
```

# 🚀 First-Time Setup

## ▶️ Start Author Instance (Port: 4502)

```
cd /opt/aem/author
java -Xmx1024m -Dsling.run.modes=author -jar aem-author.jar -p 4502
```

- The system prompts for an **admin password**.
- Takes ~5–10 mins to initialize.

```
ubuntu@ip-172-31-46-90:/opt/aem/author$ java -Xmx1024m -Dsling.run.modes=author -jar aem-author.jar -p 4502
Loading quickstart properties: default
Loading quickstart properties: instance
Low-memory action set to fork
Using 64bit VM settings, min.heap=1024MB, min permgen=256MB, default fork arguments=[-Xmx1024m, -XX:MaxPermSize=256m]
The JVM reports a heap size of 1024 MB, meets our expectation of 1024 MB +/- 20
Setting properties from filename '/opt/aem/author/aem-author.jar'
Setting 'sling.run.modes' to 'author' from system property.
The admin password for this instance hasn't been defined yet.
Please enter the desired admin password:
Please re-enter password:
Verbose option not active, closing stdin and redirecting stdout and stderr
Redirecting stdout to /opt/aem/author/crx-quickstart/logs/stdout.log
Redirecting stderr to /opt/aem/author/crx-quickstart/logs/stderr.log
Press CTRL-C to shutdown the Quickstart server...
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.felix.framework.ext.ClassPathExtenderFactory$DefaultClassLoaderExtender (file:/opt/aem/author/crx-quickstart/la
unchpad/org.apache.sling.launchpad.base.jar.1752217346194) to method java.net.URLClassLoader.addURL(java.net.URL)
WARNING: Please consider reporting this to the maintainers of org.apache.felix.framework.ext.ClassPathExtenderFactory$DefaultClassLoaderExtender
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
```

- Output is logged to:

    - `/opt/aem/author/crx-quickstart/logs/stdout.log`
    - `/opt/aem/author/crx-quickstart/logs/stderr.log`

```
ubuntu@ip-172-31-46-90:~$ cat /opt/aem/author/crx-quickstart/logs/stdout.log
Loading quickstart properties: default
Loading quickstart properties: instance
Quickstart startup at Fri Jul 11 07:02:18 UTC 2025
UpgradeUtil.handleInstallAndUpgrade has mode INSTALL
11.07.2025 07:02:26.182 *INFO * [main] Setting sling.home=/opt/aem/author/crx-quickstart (command line)
11.07.2025 07:02:26.183 *INFO * [main] Starting Apache Sling in /opt/aem/author/crx-quickstart
11.07.2025 07:02:26.185 *INFO * [main] Sling  Extension Lib Home : /opt/aem/author/crx-quickstart/launchpad/ext
11.07.2025 07:02:26.186 *INFO * [main] Checking launcher JAR in folder /opt/aem/author/crx-quickstart/launchpad
11.07.2025 07:02:26.194 *INFO * [main] Installing new launcher: jar:file:/opt/aem/author/crx-quickstart/app/cq-quickstart-6.5.0-
standalone-quickstart.jar!/resources/org.apache.sling.launchpad.base.jar, 6.0.2.2_6_36 (org.apache.sling.launchpad.base.jar.1752
217346194)
11.07.2025 07:02:26.196 *INFO * [main] Loading launcher class org.apache.sling.launchpad.base.app.MainDelegate from org.apache.s
ling.launchpad.base.jar.1752217346194
11.07.2025 07:02:26.196 *INFO * [main] External Libs Home (ext) is null or does not exists.
11.07.2025 07:02:26.204 *INFO * [main] Setting sling.properties=conf/sling.properties
11.07.2025 07:02:26.204 *INFO * [main] Setting sling.home=/opt/aem/author/crx-quickstart
11.07.2025 07:02:26.204 *INFO * [main] Setting sling.launchpad=/opt/aem/author/crx-quickstart/launchpad
11.07.2025 07:02:26.204 *INFO * [main] Setting org.osgi.service.http.port=4502
11.07.2025 07:02:26.204 *INFO * [main] Starting launcher ...
11.07.2025 07:02:26.211 *INFO * [main] HTTP server port: 4502
```

```
11.07.2025 07:47:59.152 *INFO* [pool-4-thread-1] org.apache.sling.serviceusermapper Service [982, [org.apache.sling.serviceuserm
apping.ServiceUserMapped]] ServiceEvent UNREGISTERING
11.07.2025 07:47:59.152 *INFO* [OsgiInstallerImpl] org.apache.sling.audit.osgi.installer Installed bundle com.adobe.cq.core.wcm.
components.core [579] from resource TaskResource(url=jcrinstall:/apps/core/wcm/install/core.wcm.components.core-2.3.2.jar, entit
y=bundle:com.adobe.cq.core.wcm.components.core, state=INSTALL, attributes=[org.apache.sling.installer.api.tasks.ResourceTransfor
mer=:35:19:, Bundle-SymbolicName=com.adobe.cq.core.wcm.components.core, Bundle-Version=2.3.2], digest=1752219917088)
11.07.2025 07:47:59.161 *INFO* [OsgiInstallerImpl] com.adobe.cq.core.wcm.components.extension.contentfragment.bundle BundleEvent
 INSTALLED
11.07.2025 07:47:59.162 *INFO* [pool-4-thread-1] org.apache.sling.serviceusermapper Service [989, [org.apache.sling.serviceuserm
apping.ServiceUserMapped]] ServiceEvent UNREGISTERING
Attempting to load ESAPI.properties via file I/O.
Attempting to load ESAPI.properties as resource file via file I/O.
Not found in 'org.owasp.esapi.resources' directory or file not readable: /opt/aem/author/ESAPI.properties
Not found in SystemResource Directory/resourceDirectory: .esapi/ESAPI.properties
Not found in 'user.home' (/home/ubuntu) directory: /home/ubuntu/esapi/ESAPI.properties
Loading ESAPI.properties via file I/O failed. Exception was: java.io.FileNotFoundException
Attempting to load ESAPI.properties via the classpath.
SUCCESSFULLY LOADED ESAPI.properties via the CLASSPATH from '/ (root)' using class loader for DefaultSecurityConfiguration class
!
Attempting to load validation.properties via file I/O.
Attempting to load validation.properties as resource file via file I/O.
Not found in 'org.owasp.esapi.resources' directory or file not readable: /opt/aem/author/validation.properties
Not found in SystemResource Directory/resourceDirectory: .esapi/validation.properties
Not found in 'user.home' (/home/ubuntu) directory: /home/ubuntu/esapi/validation.properties
Loading validation.properties via file I/O failed.
Attempting to load validation.properties via the classpath.
SUCCESSFULLY LOADED validation.properties via the CLASSPATH from '/ (root)' using class loader for DefaultSecurityConfiguration
class!
```

Check logs:

`tail -f /opt/aem/author/crx-quickstart/logs/stdout.log`

Once you see SUCCESSFULLY LOADED, press Ctrl + C to terminate.

## 🧠 What Happens After Startup?

- A directory `crx-quickstart/` is created.
- Contains binary files, configuration, start/stop scripts, etc.

```
ubuntu@ip-172-31-46-90:~$ ls -l /opt/aem/author/
total 544320
-rw-rw-r--  1 ubuntu ubuntu 557369047 Jul  1 09:43 aem-author.jar
drwxrwxr-x 11 ubuntu ubuntu      4096 Jul 11 07:07 crx-quickstart
-rw-rw-r--  1 ubuntu ubuntu       228 Jul  1 09:51 license.properties
ubuntu@ip-172-31-46-90:~$ 
```

```
ubuntu@ip-172-31-46-90:~$ ll /opt/aem/author/crx-quickstart/
total 92
drwxrwxr-x 11 ubuntu ubuntu  4096 Jul 11 07:07 ./
drwxr-xr-x  3 ubuntu ubuntu  4096 Jul 11 07:02 ../
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 07:02 app/
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 07:02 bin/
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 07:02 conf/
-rw-rw-r--  1 ubuntu ubuntu  7968 Jul 11 07:02 eula-de_DE.html
-rw-rw-r--  1 ubuntu ubuntu  7004 Jul 11 07:02 eula-en_US.html
-rw-rw-r--  1 ubuntu ubuntu  8955 Jul 11 07:02 eula-fr_FR.html
-rw-rw-r--  1 ubuntu ubuntu 14458 Jul 11 07:02 eula-ja_JP.html
drwxrwxr-x  7 ubuntu ubuntu  4096 Jul 11 07:02 launchpad/
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 07:07 logs/
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 07:07 metrics/
drwxrwxr-x  6 ubuntu ubuntu  4096 Jul 11 07:02 opt/
-rw-rw-r--  1 ubuntu ubuntu    84 Jul 11 07:02 readme.txt
drwxrwxr-x  6 ubuntu ubuntu  4096 Jul 11 07:02 repository/
drwxrwxr-x  3 ubuntu ubuntu  4096 Jul 11 07:06 threaddumps/
ubuntu@ip-172-31-46-90:~$ ll /opt/aem/author/crx-quickstart/bin/
total 52
drwxrwxr-x  2 ubuntu ubuntu 4096 Jul 11 07:02 ./
drwxrwxr-x 11 ubuntu ubuntu 4096 Jul 11 07:07 ../
-rw-rw-r--  1 ubuntu ubuntu 3118 Jul 11 07:02 GetProcessID.class
-rwxrwxr-x  1 ubuntu ubuntu 2946 Jul 11 07:02 quickstart*
-rw-rw-r--  1 ubuntu ubuntu 3044 Jul 11 07:02 quickstart.bat
-rwxrwxr-x  1 ubuntu ubuntu 4212 Jul 11 07:02 start*
-rw-rw-r--  1 ubuntu ubuntu 4402 Jul 11 07:02 start.bat
-rwxrwxr-x  1 ubuntu ubuntu  380 Jul 11 07:02 status*
```

# ⚙️ Configure Systemd for Author

Create the service file:

```
sudo nano /etc/systemd/system/aem-author.service

[Unit]
Description=AEM Author Instance
After=network.target

[Service]
Type=forking
User=ubuntu
Group=ubuntu
WorkingDirectory=/opt/aem/author
ExecStart=/opt/aem/author/crx-quickstart/bin/start
ExecStop=/opt/aem/author/crx-quickstart/bin/stop
PIDFile=/opt/aem/author/crx-quickstart/conf/cq.pid
SuccessExitStatus=0 143
Restart=on-failure

[Install]
WantedBy=multi-user.target
```

Enable and start the service:

```
sudo systemctl daemon-reexec
sudo systemctl daemon-reload
sudo systemctl enable aem-author.service
sudo systemctl start aem-author.service
sudo systemctl status aem-author.service
```

```
ubuntu@ip-172-31-46-90:/opt/aem/author$ sudo systemctl daemon-reexec
sudo systemctl daemon-reload
ubuntu@ip-172-31-46-90:/opt/aem/author$ sudo systemctl start aem-author.service
ubuntu@ip-172-31-46-90:/opt/aem/author$ sudo systemctl status aem-author.service
● aem-author.service - AEM Author Instance
     Loaded: loaded (/etc/systemd/system/aem-author.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-07-11 07:53:33 UTC; 13s ago
    Process: 13063 ExecStart=/opt/aem/author/crx-quickstart/bin/start (code=exited, status=0/SUCCESS)
   Main PID: 13088 (java)
      Tasks: 80 (limit: 4670)
     Memory: 462.5M (peak: 462.7M)
        CPU: 25.591s
     CGroup: /system.slice/aem-author.service
             └─13088 java -server -Xmx1024m -XX:MaxPermSize=256M -Djava.awt.headless=true -Dsling.run.modes=author,crx3,crx3tar -Djava.locale.providers=CLDR,JR>

Jul 11 07:53:33 ip-172-31-46-90 systemd[1]: Starting aem-author.service - AEM Author Instance...
Jul 11 07:53:33 ip-172-31-46-90 systemd[1]: Started aem-author.service - AEM Author Instance.
ubuntu@ip-172-31-46-90:/opt/aem/author$
```
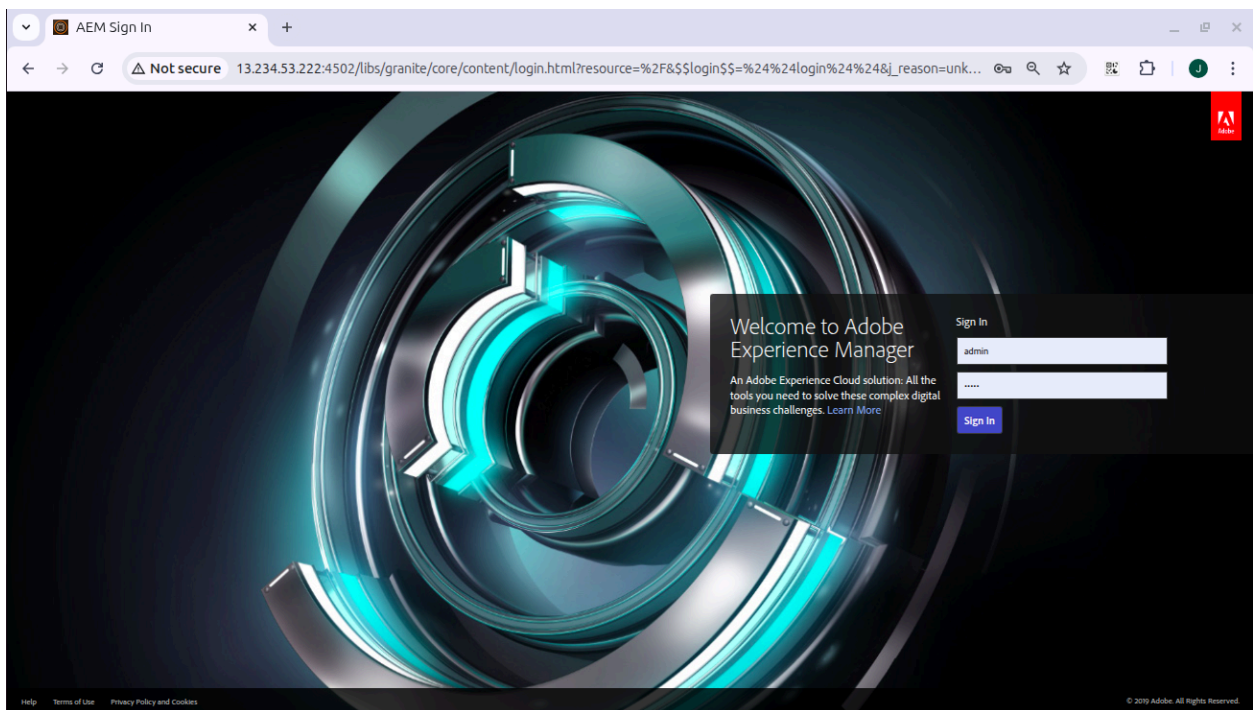
Check listening port:

```
sudo netstat -nltp | grep 4502
```



🔗 Visit: http://13.234.53.222:4502/

# ▶️ Start Publish Instance (Port: 4503)

Start the publish instance:



```
cd /opt/aem/publish

java -Xmx1024m -Dsling.run.modes=publish -jar aem-publish.jar -p 4503
```

It will again request the admin password (in a separate instance).

Monitor logs:

```
tail -f /opt/aem/publish/crx-quickstart/logs/stdout.log
```



```
ubuntu@ip-172-31-46-90:~$ cat /opt/aem/publish/crx-quickstart/logs/stdout.log
Loading quickstart properties: default
Loading quickstart properties: instance
Quickstart startup at Fri Jul 11 08:08:31 UTC 2025
UpgradeUtil.handleInstallAndUpgrade has mode INSTALL
11.07.2025 08:08:39.627 *INFO * [main] Setting sling.home=/opt/aem/publish/crx-quickstart (command line)
11.07.2025 08:08:39.630 *INFO * [main] Starting Apache Sling in /opt/aem/publish/crx-quickstart
11.07.2025 08:08:39.632 *INFO * [main] Sling  Extension Lib Home : /opt/aem/publish/crx-quickstart/launchpad/ext
11.07.2025 08:08:39.633 *INFO * [main] Checking launcher JAR in folder /opt/aem/publish/crx-quickstart/launchpad
11.07.2025 08:08:39.641 *INFO * [main] Installing new launcher: jar:file:/opt/aem/publish/crx-quickstart/app/cq-quickstart-6.5.0-standalone-quickstart.jar!/reso
urces/org.apache.sling.launchpad.base.jar, 6.0.2.2_6_36 (org.apache.sling.launchpad.base.jar.1752221319640)
11.07.2025 08:08:39.642 *INFO * [main] Loading launcher class org.apache.sling.launchpad.base.app.MainDelegate from org.apache.sling.launchpad.base.jar.17522213
19640
11.07.2025 08:08:39.642 *INFO * [main] External Libs Home (ext) is null or does not exists.
11.07.2025 08:08:39.652 *INFO * [main] Setting sling.properties=conf/sling.properties
11.07.2025 08:08:39.652 *INFO * [main] Setting sling.home=/opt/aem/publish/crx-quickstart
11.07.2025 08:08:39.652 *INFO * [main] Setting sling.launchpad=/opt/aem/publish/crx-quickstart/launchpad
11.07.2025 08:08:39.652 *INFO * [main] Setting org.osgi.service.http.port=4503
11.07.2025 08:08:39.652 *INFO * [main] Starting launcher ...
11.07.2025 08:08:39.658 *INFO * [main] HTTP server port: 4503
```



```
Attempting to load ESAPI.properties via file I/O.
Attempting to load ESAPI.properties as resource file via file I/O.
Not found in 'org.owasp.esapi.resources' directory or file not readable: /opt/aem/publish/ESAPI.properties
Not found in SystemResource Directory/resourceDirectory: .esapi/ESAPI.properties
Not found in 'user.home' (/home/ubuntu) directory: /home/ubuntu/esapi/ESAPI.properties
Loading ESAPI.properties via file I/O failed. Exception was: java.io.FileNotFoundException
Attempting to load ESAPI.properties via the classpath.
SUCCESSFULLY LOADED ESAPI.properties via the CLASSPATH from '/ (root)' using class loader for DefaultSecurityConfiguration class!
Attempting to load validation.properties via file I/O.
Attempting to load validation.properties as resource file via file I/O.
Not found in 'org.owasp.esapi.resources' directory or file not readable: /opt/aem/publish/validation.properties
Not found in SystemResource Directory/resourceDirectory: .esapi/validation.properties
Not found in 'user.home' (/home/ubuntu) directory: /home/ubuntu/esapi/validation.properties
Loading validation.properties via file I/O failed.
Attempting to load validation.properties via the classpath.
SUCCESSFULLY LOADED validation.properties via the CLASSPATH from '/ (root)' using class loader for DefaultSecurityConfiguration class!
```

After seeing "SUCCESSFULLY LOADED", stop using Ctrl + C.

# 🧠 What Happens After Startup?

- A directory `crx-quickstart/` is created.
- Contains binary files, configuration, start/stop scripts, etc.

```
ubuntu@ip-172-31-46-90:/opt/aem/publish$ ll
total 544328
drwxr-xr-x  3 ubuntu ubuntu      4096 Jul 11 08:08 ./
drwxr-xr-x  4 ubuntu ubuntu      4096 Jul  2 08:53 ../
-rw-r--r--  1 ubuntu ubuntu 557369047 Jul  2 05:47 aem-publish.jar
drwxrwxr-x 11 ubuntu ubuntu      4096 Jul 11 08:13 crx-quickstart/
-rw-r--r--  1 ubuntu ubuntu       228 Jul  2 06:52 license.properties
ubuntu@ip-172-31-46-90:/opt/aem/publish$
```

```
ubuntu@ip-172-31-46-90:/opt/aem/publish$ ll crx-quickstart/
total 92
drwxrwxr-x 11 ubuntu ubuntu  4096 Jul 11 08:13 ./
drwxr-xr-x  3 ubuntu ubuntu  4096 Jul 11 08:08 ../
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 08:08 app/
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 08:08 bin/
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 08:08 conf/
-rw-rw-r--  1 ubuntu ubuntu  7968 Jul 11 08:08 eula-de_DE.html
-rw-rw-r--  1 ubuntu ubuntu  7004 Jul 11 08:08 eula-en_US.html
-rw-rw-r--  1 ubuntu ubuntu  8955 Jul 11 08:08 eula-fr_FR.html
-rw-rw-r--  1 ubuntu ubuntu 14458 Jul 11 08:08 eula-ja_JP.html
drwxrwxr-x  7 ubuntu ubuntu  4096 Jul 11 08:08 launchpad/
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 08:13 logs/
drwxrwxr-x  2 ubuntu ubuntu  4096 Jul 11 08:13 metrics/
drwxrwxr-x  6 ubuntu ubuntu  4096 Jul 11 08:08 opt/
-rw-rw-r--  1 ubuntu ubuntu    84 Jul 11 08:08 readme.txt
drwxrwxr-x  6 ubuntu ubuntu  4096 Jul 11 08:09 repository/
drwxrwxr-x  3 ubuntu ubuntu  4096 Jul 11 08:13 threaddumps/
ubuntu@ip-172-31-46-90:/opt/aem/publish$
ubuntu@ip-172-31-46-90:/opt/aem/publish$ ll crx-quickstart/bin/
total 52
drwxrwxr-x  2 ubuntu ubuntu 4096 Jul 11 08:08 ./
drwxrwxr-x 11 ubuntu ubuntu 4096 Jul 11 08:13 ../
-rw-rw-r--  1 ubuntu ubuntu 3118 Jul 11 08:08 GetProcessID.class
-rwxrwxr-x  1 ubuntu ubuntu 2946 Jul 11 08:08 quickstart*
-rw-rw-r--  1 ubuntu ubuntu 3044 Jul 11 08:08 quickstart.bat
-rwxrwxr-x  1 ubuntu ubuntu 4212 Jul 11 08:08 start*
-rw-rw-r--  1 ubuntu ubuntu 4402 Jul 11 08:08 start.bat
-rwxrwxr-x  1 ubuntu ubuntu  380 Jul 11 08:08 status*
-rw-rw-r--  1 ubuntu ubuntu  516 Jul 11 08:08 status.bat
-rwxrwxr-x  1 ubuntu ubuntu  716 Jul 11 08:08 stop*
-rw-rw-r--  1 ubuntu ubuntu  479 Jul 11 08:08 stop.bat
ubuntu@ip-172-31-46-90:/opt/aem/publish$
```

## 🔁 Fix Default Port for Publish instance

By default, the quickstart config sets port 4502.

Fix to 4503 for publish:

```
sed -i 's/CQ_PORT=4502/CQ_PORT=4503/'
/opt/aem/publish/crx-quickstart/bin/start

sed -i 's/CQ_PORT=4502/CQ_PORT=4503/'
/opt/aem/publish/crx-quickstart/bin/quickstart
```

```
ubuntu@ip-172-31-46-90:/opt/aem/publish$ grep CQ_PORT /opt/aem/publish/crx-quickstart/bin/quickstart
grep CQ_PORT /opt/aem/publish/crx-quickstart/bin/start
#       % CQ_PORT=1234 ./start
CQ_PORT=4502
if [ $CQ_PORT ]; then
        START_OPTS="${START_OPTS} -p ${CQ_PORT}"
#       % CQ_PORT=1234 ./start
if [ -z "$CQ_PORT" ]; then
        CQ_PORT=4502
if [ $CQ_PORT ]; then
        START_OPTS="${START_OPTS} -p ${CQ_PORT}"
ubuntu@ip-172-31-46-90:/opt/aem/publish$ █
```

```
ubuntu@ip-172-31-46-90:/opt/aem/publish$ sed -i 's/CQ_PORT=4502/CQ_PORT=4503/' /opt/aem/publish/crx-quickstart/bin/quickstart
sed -i 's/CQ_PORT=4502/CQ_PORT=4503/' /opt/aem/publish/crx-quickstart/bin/start
ubuntu@ip-172-31-46-90:/opt/aem/publish$
ubuntu@ip-172-31-46-90:/opt/aem/publish$ grep CQ_PORT /opt/aem/publish/crx-quickstart/bin/quickstart
grep CQ_PORT /opt/aem/publish/crx-quickstart/bin/start
#       % CQ_PORT=1234 ./start
CQ_PORT=4503
if [ $CQ_PORT ]; then
        START_OPTS="${START_OPTS} -p ${CQ_PORT}"
#       % CQ_PORT=1234 ./start
if [ -z "$CQ_PORT" ]; then
        CQ_PORT=4503
if [ $CQ_PORT ]; then
        START_OPTS="${START_OPTS} -p ${CQ_PORT}"
ubuntu@ip-172-31-46-90:/opt/aem/publish$ █
```

# ⚙️ Configure Systemd for Publish

Create the service file:

```
sudo nano /etc/systemd/system/aem-publish.service

[Unit]
Description=AEM Publish Instance
After=network.target
[Service]
Type=forking
User=ubuntu
Group=ubuntu
WorkingDirectory=/opt/aem/publish
ExecStart=/opt/aem/publish/crx-quickstart/bin/start
ExecStop=/opt/aem/publish/crx-quickstart/bin/stop
PIDFile=/opt/aem/publish/crx-quickstart/conf/cq.pid
SuccessExitStatus=0 143
Restart=on-failure
[Install]
WantedBy=multi-user.target
```

Enable and start:

```
sudo systemctl daemon-reexec
sudo systemctl daemon-reload
sudo systemctl enable aem-publish.service
sudo systemctl start aem-publish.service
sudo systemctl status aem-publish.service
```

```
ubuntu@ip-172-31-46-90:/opt/aem/publish$ sudo systemctl daemon-reexec
sudo systemctl daemon-reload
ubuntu@ip-172-31-46-90:/opt/aem/publish$
ubuntu@ip-172-31-46-90:/opt/aem/publish$
ubuntu@ip-172-31-46-90:/opt/aem/publish$ sudo systemctl start aem-publish.service
ubuntu@ip-172-31-46-90:/opt/aem/publish$ sudo systemctl status aem-publish.service
● aem-publish.service - AEM Publish Instance
     Loaded: loaded (/etc/systemd/system/aem-publish.service; disabled; preset: enabled)
     Active: active (running) since Fri 2025-07-11 08:22:32 UTC; 8s ago
    Process: 20154 ExecStart=/opt/aem/publish/crx-quickstart/bin/start (code=exited, status=0/SUCCESS)
   Main PID: 20179 (java)
      Tasks: 61 (limit: 4670)
     Memory: 368.8M (peak: 369.0M)
        CPU: 12.628s
     CGroup: /system.slice/aem-publish.service
             └─20179 java -server -Xmx1024m -XX:MaxPermSize=256M -Djava.awt.headless=true -Dsling.run.modes=author,crx3,crx3tar -Djava.locale.providers=CLDR,JR>

Jul 11 08:22:32 ip-172-31-46-90 systemd[1]: Starting aem-publish.service - AEM Publish Instance...
Jul 11 08:22:32 ip-172-31-46-90 systemd[1]: aem-publish.service: Can't open PID file /opt/aem/publish/crx-quickstart/conf/cq.pid (yet?) after start: No such fi>
Jul 11 08:22:32 ip-172-31-46-90 systemd[1]: Started aem-publish.service - AEM Publish Instance.
ubuntu@ip-172-31-46-90:/opt/aem/publish$ []
```
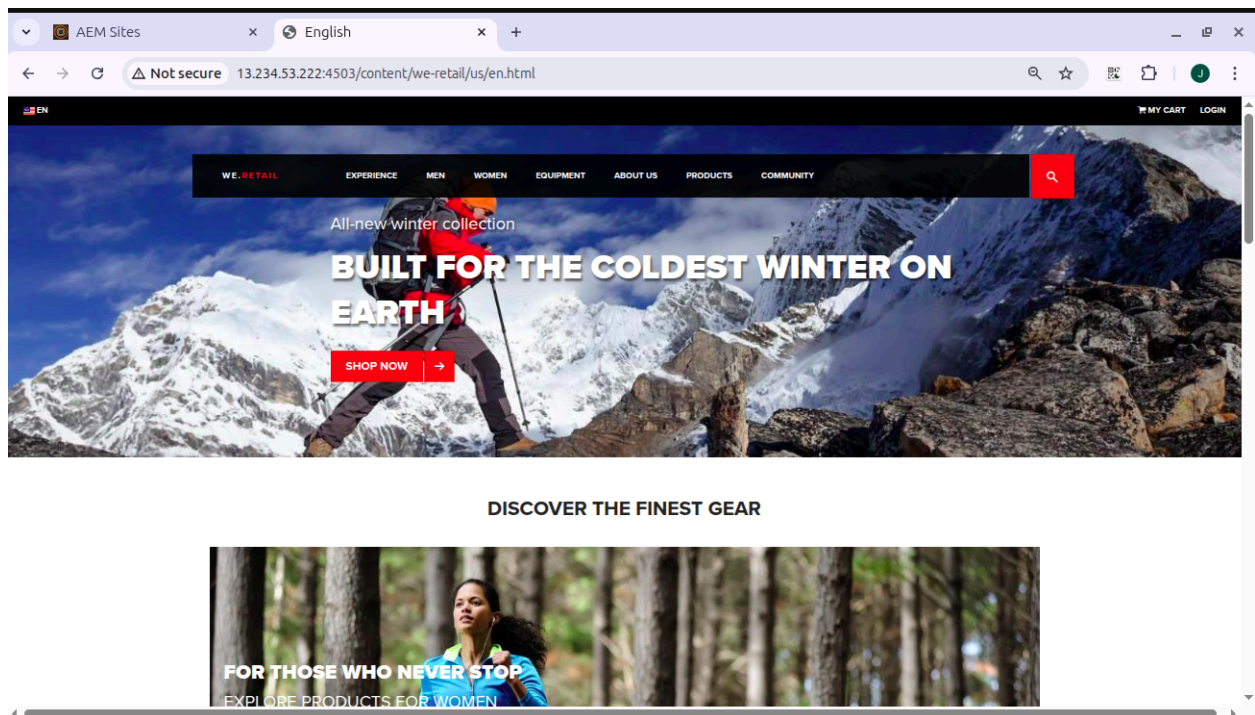
Verify:

```
sudo netstat -nltp | grep 4503
```



🔗 Visit: http://13.234.53.222:4503/

# ✅ Verify Author → Publish Content

Visit the default content page:

http://13.234.53.222:4503/content/we-retail/us/en.html
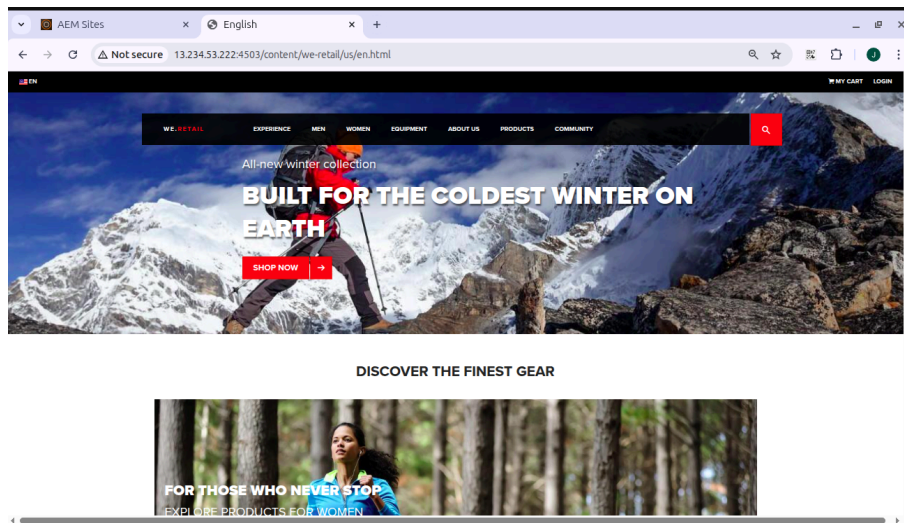


Check related projects by the author:

http://13.234.53.222:4502/projects.html/content/projects
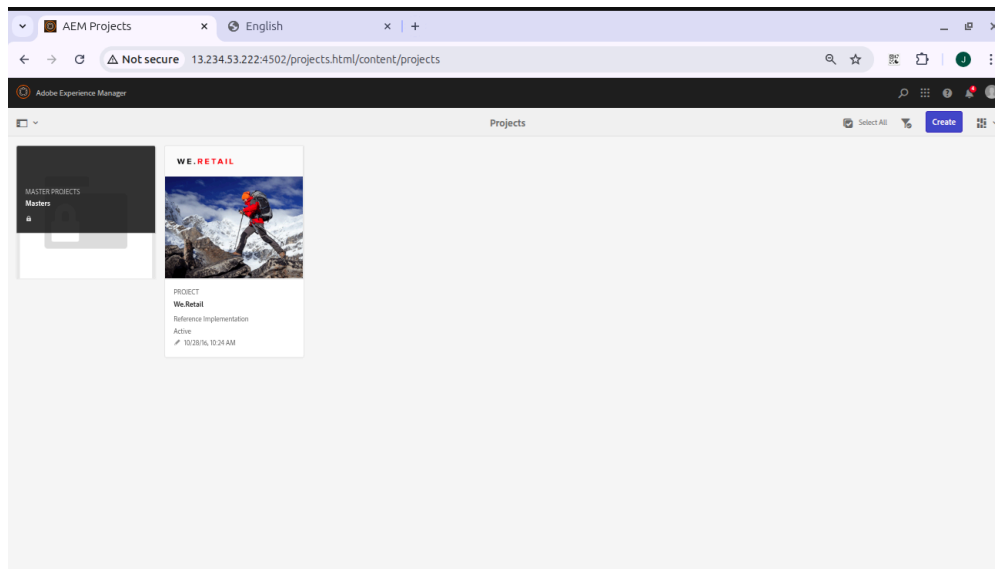
# 📝 Notes

- **Author and Publish are independent instances.**
- **Maintain different run modes (`author`, `publish`).**
- **Systemd handles background services and autostart.**
- **Ensure `4502` and `4503` ports are open in the security group.**