

AWS CERTIFIED SOLUTION ARCHITECT: ASSOCIATE

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ASSOCIATE



AMAZON WEB SERVICES

EC2

- Meta Data
- User Data

EC2 Instance Meta-data

Metadata is the information about your EC2 instance, such as the public ip address, or the security groups it belongs to, which AZ it is in etc.

You can access EC2 instance meta-data using:

curl <http://169.254.169.254/latest/meta-data>

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```
ec2-user@ip-172-31-11-43:~  
File Edit View Search Terminal Help  
user-data[ec2-user@ip-172-31-11-43 ~]$ curl http://169.254.169.254/latest/meta-data/  
ami-id  
ami-launch-index  
ami-manifest-path  
block-device-mapping/  
hostname  
instance-action  
instance-id  
instance-type  
local-hostname  
local-ipv4  
mac  
metrics/  
network/  
placement/  
profile  
public-hostname  
public-ipv4  
public-keys/  
reservation-id  
security-groups  
services/[ec2-user@ip-172-31-11-43 ~]$ curl http://169.254.169.254/latest/meta-data/ami-id  
ami-5b673c34[ec2-user@ip-172-31-11-43 ~]$  
[ec2-user@ip-172-31-11-43 ~]$
```

ec2-metadata - EC2 instance query tool

A simple bash script that uses curl to query the EC2 instance Metadata from within a running EC2 instance.

Step #1 - Download the tool from within a linux / unix instance

```
wget http://s3.amazonaws.com/ec2metadata/ec2-metadata
```

Step #2 - Make it executable

```
chmod u+x ec2-metadata
```

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```
root@ip-172-31-11-43:~  
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[root@ip-172-31-11-43 ~]# wget http://s3.amazonaws.com/ec2metadata/ec2-metadata  
--2018-08-03 12:32:40-- http://s3.amazonaws.com/ec2metadata/ec2-metadata  
Resolving s3.amazonaws.com (s3.amazonaws.com)... 52.216.227.35  
Connecting to s3.amazonaws.com (s3.amazonaws.com)|52.216.227.35|:80... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 7868 (7.7K) [binary/octet-stream]  
Saving to: 'ec2-metadata'  
  
100%[=====>] 7,868 --.-K/s in 0s  
  
2018-08-03 12:32:40 (593 MB/s) - 'ec2-metadata' saved [7868/7868]  
  
[root@ip-172-31-11-43 ~]# ll  
total 24  
-rw----- . 1 root root 7752 Mar 23 17:52 anaconda-ks.cfg  
-rw-r--r-- . 1 root root 7868 Feb 20 21:01 ec2-metadata  
-rw----- . 1 root root 7080 Mar 23 17:52 original-ks.cfg  
[root@ip-172-31-11-43 ~]#  
[root@ip-172-31-11-43 ~]# chmod u+x ec2-metadata  
[root@ip-172-31-11-43 ~]#  
[root@ip-172-31-11-43 ~]# ll ec2-metadata  
-rwxr--r-- . 1 root root 7868 Feb 20 21:01 ec2-metadata  
[root@ip-172-31-11-43 ~]#
```


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```
root@ip-172-31-11-43:~  
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[root@ip-172-31-11-43 ~]# ./ec2-metadata --help  
ec2-metadata v0.1.1  
Use to retrieve EC2 instance metadata from within a running EC2 instance.  
e.g. to retrieve instance id: ec2-metadata -i  
      to retrieve ami id: ec2-metadata -a  
      to get help: ec2-metadata --help  
For more information on Amazon EC2 instance meta-data, refer to the documentation at  
http://docs.amazonwebservices.com/AWSEC2/2008-05-05/DeveloperGuide/AESDG-chapter-instancedata.html  
  
Usage: ec2-metadata <option>  
Options:  
--all                Show all metadata information for this host (also default).  
-a/--ami-id          The AMI ID used to launch this instance  
-l/--ami-launch-index The index of this instance in the reservation (per AMI).  
-m/--ami-manifest-path The manifest path of the AMI with which the instance was launched.  
-n/--ancestor-ami-ids The AMI IDs of any instances that were rebundled to create this AMI.  
-b/--block-device-mapping Defines native device names to use when exposing virtual devices.  
-i/--instance-id      The ID of this instance  
-t/--instance-type     The type of instance to launch. For more information, see Instance Types.  
-h/--local-hostname    The local hostname of the instance.  
-o/--local-ipv4        Public IP address if launched with direct addressing; private IP address if  
launched with public addressing.  
-k/--kernel-id         The ID of the kernel launched with this instance if applicable
```

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```
root@ip-172-31-11-43:~  
File Edit View Search Terminal Help  
[root@ip-172-31-11-43 ~]# ./ec2-metadata -a  
ami-id: ami-5b673c34  
[root@ip-172-31-11-43 ~]#  
[root@ip-172-31-11-43 ~]# ./ec2-metadata -t  
instance-type: t2.micro  
[root@ip-172-31-11-43 ~]#  
[root@ip-172-31-11-43 ~]# ./ec2-metadata -z  
placement: ap-south-1b  
[root@ip-172-31-11-43 ~]#  
[root@ip-172-31-11-43 ~]# █
```


EC2 Instance - User Data

When you launch an instance in Amazon EC2, you have the option of passing user data to the instance that can be used to perform common automated configuration tasks and even run scripts after the instance starts.

You can pass two types of user data to Amazon EC2: shell scripts and cloud-init directives.

You can also pass this data into the launch wizard as plain text, as a file

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Additional charges may apply for dedicated tenancy.

T2 Unlimited 

☐ Enable

Additional charges may apply

Advanced Details

User data 

☒ As text ☐ As file ☐ Input is already base64 encoded

```
#!/bin/bash
yum install httpd -y
echo "our webserver using user data " >> /var/www/html/index.html
systemctl start httpd
systemctl enable httpd
useradd alok -p redhat -c "alok srivastava"
```

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```
ec2-user@ip-172-31-15-55:~  
File Edit View Search Terminal Help  
alok@legacy:~/Downloads$ ssh -i "test-server-alok.pem" ec2-user@ec2-52-66-26-49.ap-south-1.compute.amazonaws.com  
The authenticity of host 'ec2-52-66-26-49.ap-south-1.compute.amazonaws.com (52.66.26.49)' can't be established.  
ECDSA key fingerprint is SHA256:xVNjTCcDzlPCctZmeqPFZE+QQXNijHxE2btqcRJYcek.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added 'ec2-52-66-26-49.ap-south-1.compute.amazonaws.com,52.66.26.49' (ECDSA) to the list of known hosts.  
[ec2-user@ip-172-31-15-55 ~]$  
[ec2-user@ip-172-31-15-55 ~]$ curl http://169.254.169.254/latest/user-data  
#!/bin/bash  
yum install httpd -y  
echo "our webserver using user data " >> /var/www/html/index.html  
systemctl start httpd  
systemctl enable httpd  
useradd alok -p redhat -c "alok srivastava"  
[ec2-user@ip-172-31-15-55 ~]$  
[ec2-user@ip-172-31-15-55 ~]$ █
```

AWS CERTIFIED SOLUTION ARCHITECT: ASSOCIATE

root@ip-172-31-15-55:~

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```
[ec2-user@ip-172-31-15-55 ~]$ sudo su -
[root@ip-172-31-15-55 ~]#
[root@ip-172-31-15-55 ~]# tail -3 /etc/passwd
ec2-user:x:1000:1000:Cloud User:/home/ec2-user:/bin/bash
apache:x:48:48:Apache:/usr/share/httpd:/sbin/nologin
alok:x:1001:1001:alok srivastava:/home/alok:/bin/bash
[root@ip-172-31-15-55 ~]#
[root@ip-172-31-15-55 ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Fri 2018-08-03 12:44:47 UTC; 7min ago
     Docs: man:httpd(8)
           man:apachectl(8)
  Main PID: 1339 (httpd)
    Status: "Total requests: 1; Current requests/sec: 0; Current traffic:  0 B/sec"
   CGroup: /system.slice/httpd.service
           └─1339 /usr/sbin/httpd -DFOREGROUND
             └─1340 /usr/sbin/httpd -DFOREGROUND
               └─1341 /usr/sbin/httpd -DFOREGROUND
                 └─1342 /usr/sbin/httpd -DFOREGROUND
                   └─1343 /usr/sbin/httpd -DFOREGROUND
                     └─1344 /usr/sbin/httpd -DFOREGROUND

Aug 03 12:44:47 ip-172-31-15-55.ap-south-1.compute.internal systemd[1]: Starting The Apache HTTP Se...
Aug 03 12:44:47 ip-172-31-15-55.ap-south-1.compute.internal systemd[1]: Started The Apache HTTP Ser...
Hint: Some lines were ellipsized, use -l to show in full.
[root@ip-172-31-15-55 ~]#
```

root@ip-172-31-15-55:~

File Edit View Search Terminal Help

```
[root@ip-172-31-15-55 ~]# cat /var/lib/cloud/instance/user-data.txt
#!/bin/bash
yum install httpd -y
echo "our webserver using user data " >> /var/www/html/index.html
systemctl start httpd
systemctl enable httpd
useradd alok -p redhat -c "alok srivastava"
[root@ip-172-31-15-55 ~]#
[root@ip-172-31-15-55 ~]# █
```