

Blueventure:  
Blockchain Lab

Track-and-Trace Blockchain  
Workshop for Hyperledger  
Fabric 2.2 (BETA)

▼ Create a Hyperledger Fabric  
Network

► Create Network & Member

► Accept invite and create  
Supplier member

Congratulations

▼ Setup Development  
Environment

**Create a Cloud9  
environment**

IAM Configuration

Modify Cloud9 IAM role

► Set up a Fabric client

► Write and deploy chaincode

▼ AWS account access

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[Event dashboard](#) > [Setup Development Environment](#) > **Create a Cloud9 environment**

## Create a Cloud9 environment

Make sure that both members of the consortium perform this setup in their respective AWS accounts.

Ensure you are *not* using Incognito window(s) on Chrome, as this can cause errors during the process of creating and using your Cloud9 environment.

Once you have both your Supplier and Retailer accounts created and AWS Consoles open, please copy the AWS Account IDs from the top right corner and save them in a notepad for later. Please label them so you know which is which!

Several steps in this workshop will need to be performed from a Linux command prompt. An especially convenient way of doing this is to use [AWS Cloud9](#), a cloud-based integrated development environment (IDE). Cloud9 allows you to edit source files and execute commands from an easy-to-use web interface. It comes preconfigured with many of the tools needed for software development, and because it runs in the AWS Cloud, it can be an especially easy way to access other cloud services. One other handy feature is that your Cloud9 instances automatically stop running after a configurable period of inactivity, which helps reduce costs.

Navigate to the AWS Cloud9 service in your Management Console, then select **Create environment**. Choose any name you want, such as *amb-development*. For environment type, select **New EC2 instance**. For instance type, select **Additional instance type** and choose **t3.medium**. For platform, select **Amazon Linux 2**. Leave all other settings at their default, then select **Create**.

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## Details

### Name

amb-development

Limit of 60 characters, alphanumeric, and unique per user.

### Description - optional

Limit 200 characters.

### Environment type [Info](#)

Determines what the Cloud9 IDE will run on.

#### ☒ New EC2 instance

Cloud9 creates an EC2 instance in your account. The configuration of your EC2 instance cannot be changed by Cloud9 after creation.

#### ☐ Existing compute

You have an existing instance or server that you'd like to use.

## New EC2 instance

### Instance type [Info](#)

The memory and CPU of the EC2 instance that will be created for Cloud9 to run on.

☐ t2.micro (1 GiB GiB RAM + 1 vCPU)  
Free-tier eligible. Ideal for educational users and exploration.

☐ t3.small (2 GiB GiB RAM + 2 vCPU)  
Recommended for small web projects.

☐ m5.large (8 GiB GiB RAM + 2 vCPU)  
Recommended for production and most general-purpose development.

#### ☒ Additional instance types

Explore additional instances to fit your need.

### Additional instance types

t3.medium

### Platform [Info](#)

This will be installed on your EC2 instance. We recommend Amazon Linux 2.

Amazon Linux 2

### Timeout

How long Cloud9 can be inactive (no user input) before auto-hibernating. This helps prevent unnecessary charges.

30 minutes

The Cloud9 environment will take a minute or two to start up. You will want to close the welcome window and expand the terminal, leaving you with a file tree on the left sidebar and a terminal view taking up most of the rest of the space, like so:

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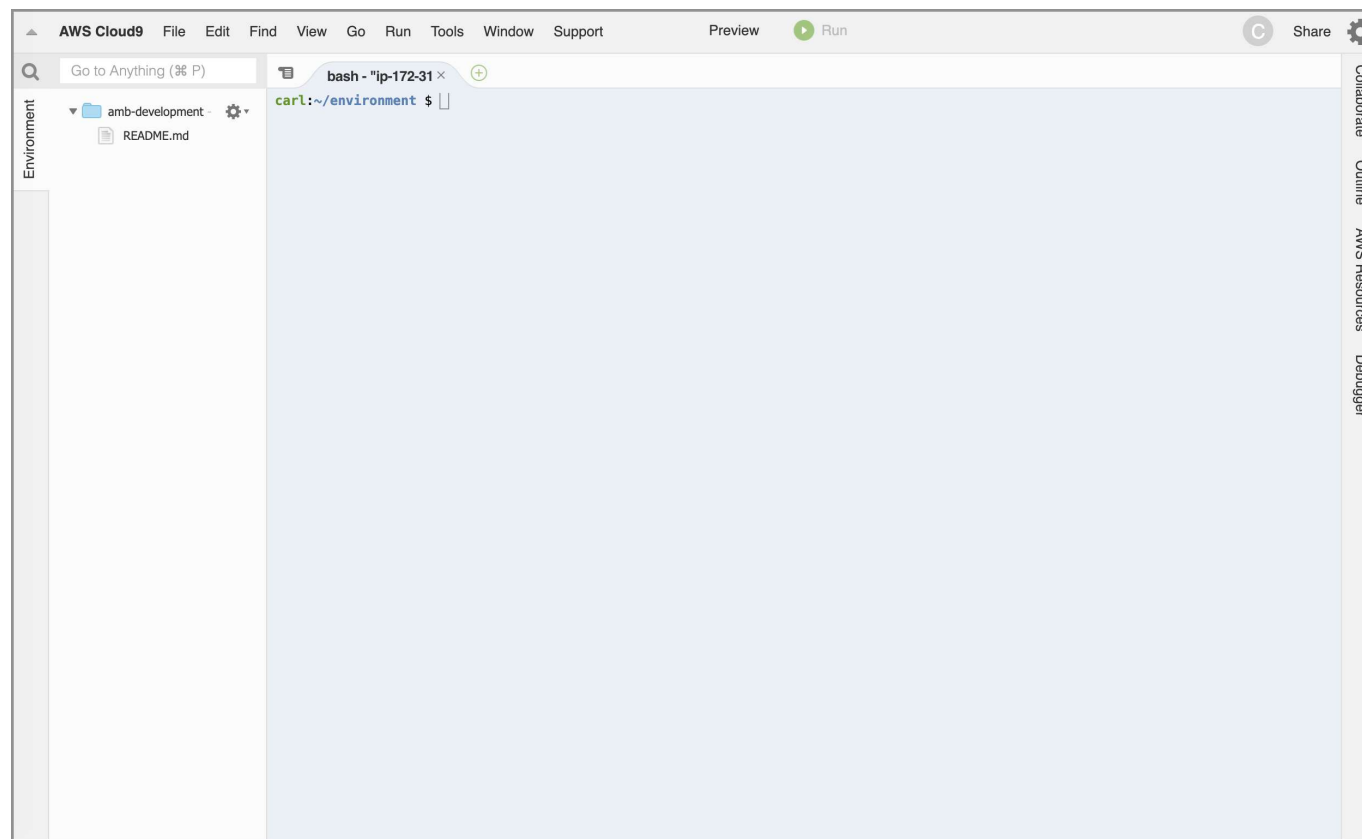
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After arranging your environment windows, you'll want to install and update some utilities in your environment and set your default AWS region. If you are working in another region, substitute it for `us-east-1` in the commands below:

```
1 sudo pip install awscli --upgrade
2 sudo yum install -y jq
3 aws configure set default.region us-east-1
```

The next step you'll need to perform is to resize the disk on the Cloud9 environment to be able to fit some additional dependencies that need to be installed. Copy and paste the following commands into the Cloud9 terminal.

```
1 SIZE=${1:-40}
2 INSTANCEID=$(curl http://169.254.169.254/latest/meta-data//instance-id)
3 VOLUMEID=$(aws ec2 describe-instances \
4   --instance-id $INSTANCEID \
5   --query "Reservations[0].Instances[0].BlockDeviceMappings[0].Ebs.VolumeId" \
6   --output text)
7
8 aws ec2 modify-volume --volume-id $VOLUMEID --size $SIZE
9 while [ \
```

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```

10  "${aws ec2 describe-volumes-modifications \
11  --volume-id $VOLUMEID \
12  --filters Name=modification-state,Values="optimizing","completed" \
13  --query "length(VolumesModifications)"\
14  --output text)" != "1" ]; do
15  sleep 1
16  done
17
18  if [ $(readlink -f /dev/xvda) = "/dev/xvda" ]
19  then
20      sudo growpart /dev/xvda 1
21      sudo xfs_growfs /dev/xvda1
22  else
23      sudo growpart /dev/nvme0n1 1
24      sudo xfs_growfs /dev/nvme0n1p1
25  fi


```

Finally, some of your configuration steps will require the AWS account IDs of the other members of the consortium. Each member of the consortium should execute the following commands from their bash prompts, replacing 123456789012 with the retailer AWS ID and 123456789013 with the supplier AWS ID. Copy the following bash code snippet into a text file on your computer, substitute the account IDs for your two AWS accounts, and then copy the result and paste it into your terminal. You can find these AWS account ID's in the top right-hand corner of your AWS Management Console for each consortia member.

```

1  export RETAILER_AWS_ID=123456789012
2  export SUPPLIER_AWS_ID=123456789013


```

 The Retailer should execute the following step.

```

1  export MEMBER_NAME='Retailer'

```

 The Supplier should execute the following step.

```

1  export MEMBER_NAME='Supplier'

```

Then, source these changes to your .bash\_profile so they persist between Cloud9 instance sessions. \*Please replace the placeholder value :

```

1  echo "export MEMBER_NAME='$MEMBER_NAME'" >> ~/.bash_profile
2  echo "export RETAILER_AWS_ID=$RETAILER_AWS_ID" >> ~/.bash_profile
3  echo "export SUPPLIER_AWS_ID=$SUPPLIER_AWS_ID" >> ~/.bash_profile
4
5

```

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```
echo "export THIS_AWS_ID=\$(case \${MEMBER_NAME} in Retailer) echo \$RETAILER_AWS_ID;; Supplier) echo \$SUPPLIER_AWS_ID;; esac)" >> ~/.bash_profile
source ~/.bash_profile
```

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