

# PROJECT 1: Deploying a web server in Windows instance

## Task 1: Create a windows instance using AMI: Windows 2012 R2 base

The screenshot shows the AWS Management Console's 'Launch instance wizard' at the 'Step 1: Choose an Amazon Machine Image (AMI)' stage. The 'Microsoft Windows Server 2012 R2 Base' AMI is selected. The console displays the following details for the selected AMI:

Operating System	AMI ID	Architecture	Root Device Type	Virtualization Type	ENA Enabled
Microsoft Windows Server 2012 R2 Base	ami-00133f78ad56a5c91	64-bit (x86)	ebs	hvm	Yes

The console also shows other available AMIs, including 'Microsoft Windows Server 2016 with SQL Server 2019 Standard' and 'SUSE Linux Enterprise Server 12 SP5 (HVM)'. The 'Launch Instance Wizard' progress bar indicates the current step is '1. Choose AMI'.

The screenshot shows the AWS Management Console's 'Instances' page. A table lists the launched Windows instance, and a detailed view of the instance is shown below.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6
Windows	i-095421e46d6a08706	t2.micro	us-east-2a	running	2/2 checks ...	None	ec2-3-12-147-138.us-e...	3.12.147.138	-

The detailed view of the instance shows the following information:

- Instance: i-095421e46d6a08706
- Public DNS: ec2-3-12-147-138.us-east-2.compute.amazonaws.com
- Description: Instance ID: i-095421e46d6a08706, Instance state: running, Instance type: t2.micro, Finding: Opt-in to AWS Compute Optimizer for recommendations.
- Public DNS (IPv4): ec2-3-12-147-138.us-east-2.compute.amazonaws.com
- IPv4 Public IP: 3.12.147.138
- IPv6 IPs: -
- Elastic IPs: -

## Task 2: Launch the Windows instance using RDP

The screenshot shows the AWS Management Console interface. A modal dialog titled "Connect to your instance" is open, displaying connection details for a Windows instance. The dialog includes a "Connection method" section with "A standalone RDP client" selected. It provides the "Public DNS" as "ec2-3-12-147-138.us-east-2.compute.amazonaws.com", the "User name" as "Administrator", and a "Get Password" button. A "Download Remote Desktop File" button is also present. The background shows the EC2 instance list with the instance ID "i-095421e46d6a08706" selected.

**Connect to your instance**

Connection method ☒ A standalone RDP client <sup>(i)</sup>  
☐ Session Manager <sup>(i)</sup>

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

[Download Remote Desktop File](#)

When prompted, connect to your instance using the following details:

**Public DNS** ec2-3-12-147-138.us-east-2.compute.amazonaws.com  
**User name** Administrator  
**Password** [Get Password](#)

If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.  
If you need any assistance connecting to your instance, please see our [connection documentation](#).

[Close](#)

The screenshot shows a Windows Server 2012 R2 desktop environment. The desktop background is dark gray. On the left side, there is a Recycle Bin icon and two shortcuts labeled "EC2 Feedback" and "EC2 Micros...". On the right side, there is a text box displaying instance details:

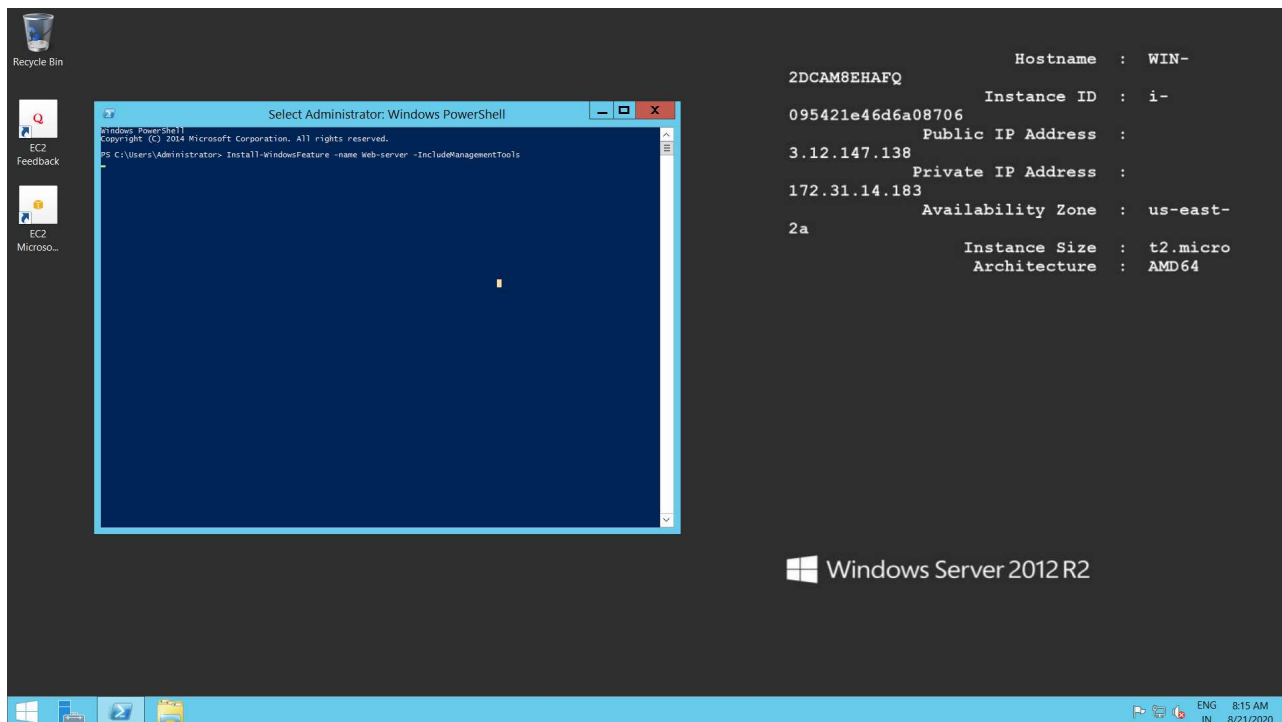
```
Hostname : WIN-2DCAM8EHAFQ
Instance ID : i-095421e46d6a08706
Public IP Address : 3.12.147.138
Private IP Address : 172.31.14.183
Availability Zone : us-east-2a
Instance Size : t2.micro
Architecture : AMD64
```

At the bottom right, the Windows logo and "Windows Server 2012 R2" are displayed. The taskbar at the bottom shows the Start button, several application icons, and the system tray with the date and time (8:07 AM, 8/21/2020).

### Task 3: Install IIS web server using Powershell ISE

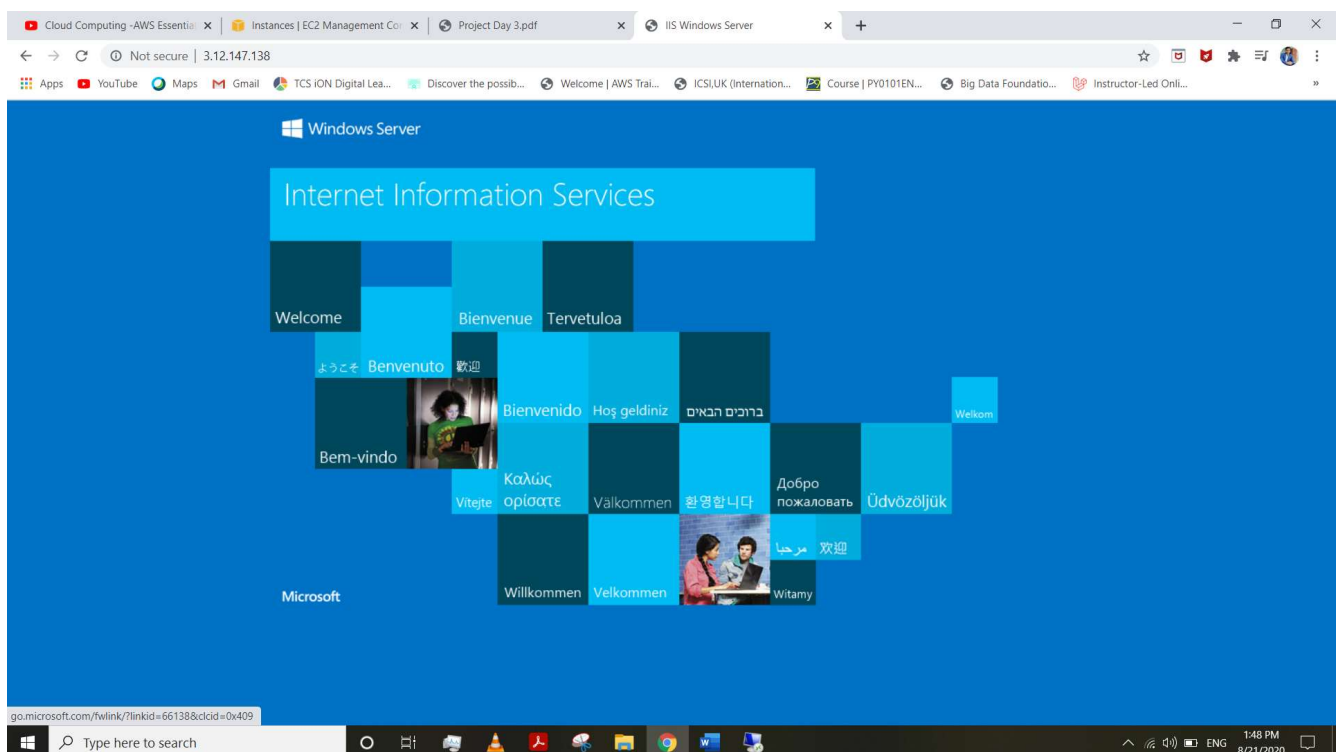
**Note: Command to install the IIS web server.**

**Install-WindowsFeature -name Web-Server -IncludeManagementTools**



### Task 4: Verify successful installation of IIS Web Server

**Note: You should be able to see the Internet Information Services Web page when you paste the public IP into the browser**



# PROJECT 2: Deploying a web server in Ubuntu instance

## Task 1: Create a windows instance using AMI: Ubuntu Server 18.04 LTS (HVM).

Step 1: Choose an Amazon Machine Image (AMI)

Cancel and Exit

64-bit (x86)  
64-bit (Arm)

Select

SUSE Linux Enterprise Server 15 SP2 (HVM), SSD Volume Type - ami-03f4c416f489586a3 (64-bit x86) / ami-0d24f1c1ba96d2803 (64-bit Arm)

SUSE Linux Enterprise Server 15 Service Pack 2 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

64-bit (x86)  
64-bit (Arm)

Select

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-0bbe28eb2173f6167 (64-bit x86) / ami-04adf33460efc8798 (64-bit Arm)

Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

64-bit (x86)  
64-bit (Arm)

Select

Are you launching a database instance? Try Amazon RDS.

Amazon RDS

Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale your database on AWS by automating time-consuming database management tasks. With RDS, you can easily deploy **Amazon Aurora**, **MariaDB**, **MySQL**, **Oracle**, **PostgreSQL**, and **SQL Server** databases on AWS. **Aurora** is a MySQL- and PostgreSQL-compatible, enterprise-class database at 1/10th the cost of commercial databases. [Learn more about RDS](#)

Launch a database using RDS

Microsoft Windows Server 2019 Base - ami-0239d3998515e9ed1

Windows

Microsoft Windows 2019 Datacenter edition. [English]

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Launch Instance Connect Actions

search: i-0a0e3994b2926a942 Add filter

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6
Ubuntu	i-0a0e3994b2926a942	t2.micro	us-east-2b	running	2/2 checks ...	None	ec2-18-220-83-212.us-east-2.compute.amazonaws.com	18.220.83.212	-

Instance: i-0a0e3994b2926a942 (Ubuntu) Public DNS: ec2-18-220-83-212.us-east-2.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID: i-0a0e3994b2926a942 Public DNS (IPv4): ec2-18-220-83-212.us-east-2.compute.amazonaws.com

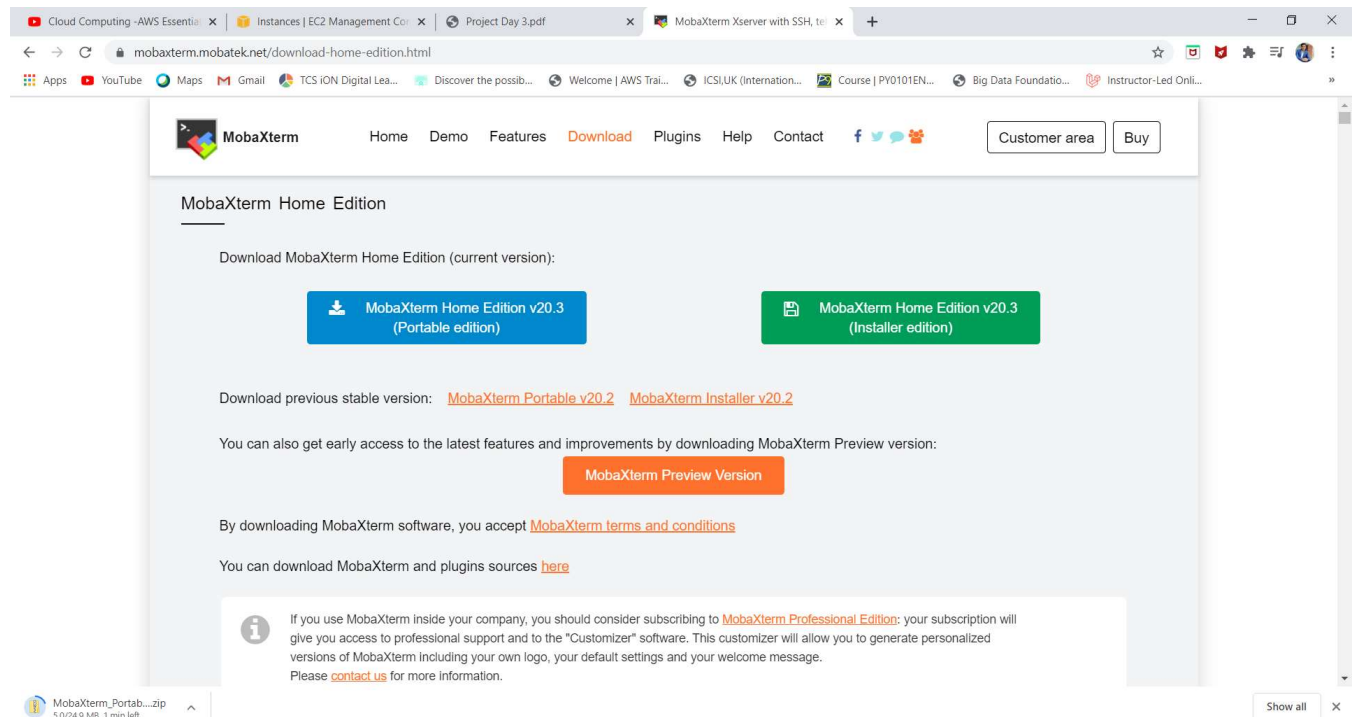
Instance state: running IPv4 Public IP: 18.220.83.212

Instance type: t2.micro IPv6 IPs: -

Finding: Opt-in to AWS Compute Optimizer for recommendations. Elastic IPs

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## Task 2: Download and install MobaXterm Portable Edition



The screenshot shows the MobaXterm website's download page. The browser's address bar displays 'mobaxterm.mobatek.net/download-home-edition.html'. The website has a navigation bar with links: Home, Demo, Features, Download, Plugins, Help, and Contact. There are also social media icons and buttons for 'Customer area' and 'Buy'. The main content area is titled 'MobaXterm Home Edition' and provides instructions for downloading the current version (v20.3) in both Portable and Installer editions. It also offers links for previous stable versions (v20.2) and a preview version. A note mentions that downloading the software implies acceptance of the terms and conditions. A download progress bar at the bottom shows 'MobaXterm\_Portab...zip' at 5.0/24.9 MB, 1 min left.

Cloud Computing -AWS Essential... x | Instances | EC2 Management Co... x | Project Day 3.pdf x | MobaXterm Xserver with SSH, tel... x

mobaxterm.mobatek.net/download-home-edition.html

Apps YouTube Maps Gmail TCS ION Digital Lea... Discover the possib... Welcome | AWS Trai... ICSI/UK (Internation... Course | PY0101EN... Big Data Foundatio... Instructor-Led Onli...

MobaXterm Home Demo Features Download Plugins Help Contact Customer area Buy

### MobaXterm Home Edition

Download MobaXterm Home Edition (current version):

MobaXterm Home Edition v20.3 (Portable edition) MobaXterm Home Edition v20.3 (Installer edition)

Download previous stable version: [MobaXterm Portable v20.2](#) [MobaXterm Installer v20.2](#)

You can also get early access to the latest features and improvements by downloading MobaXterm Preview version:

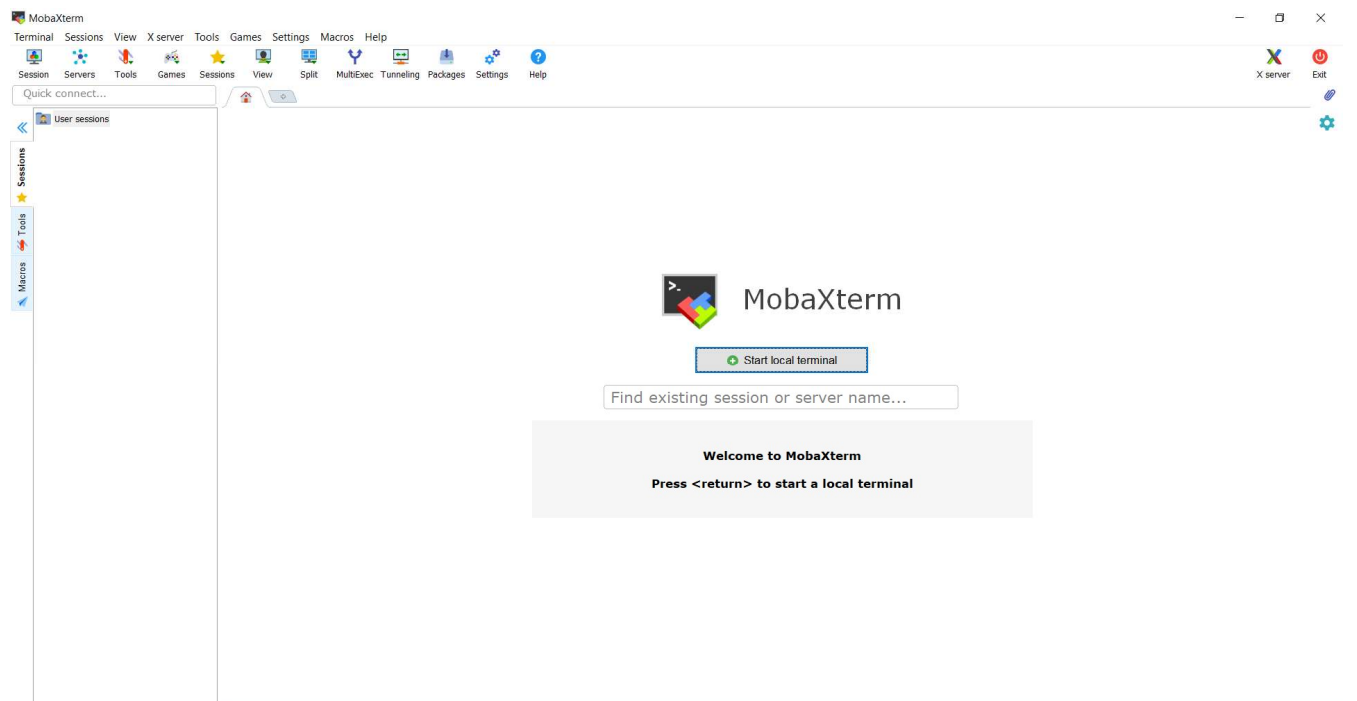
MobaXterm Preview Version

By downloading MobaXterm software, you accept [MobaXterm terms and conditions](#)

You can download MobaXterm and plugins sources [here](#)

If you use MobaXterm inside your company, you should consider subscribing to [MobaXterm Professional Edition](#): your subscription will give you access to professional support and to the "Customizer" software. This customizer will allow you to generate personalized versions of MobaXterm including your own logo, your default settings and your welcome message. Please [contact us](#) for more information.

MobaXterm\_Portab...zip 5.0/24.9 MB, 1 min left Show all



The screenshot shows the MobaXterm application interface. The title bar reads 'MobaXterm'. The menu bar includes Terminal, Sessions, View, X server, Tools, Games, Settings, Macros, and Help. The toolbar contains icons for Session, Servers, Tools, Games, Sessions, View, Split, MultiExec, Tunneling, Packages, Settings, and Help. A 'Quick connect...' search bar is present. On the left, there is a sidebar with 'User sessions' and 'Sessions' panels. The main window displays the MobaXterm logo and a 'Start local terminal' button. Below this is a search bar for 'Find existing session or server name...'. A welcome message states: 'Welcome to MobaXterm Press <return> to start a local terminal'. At the bottom, a footer message reads: 'UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net'.

MobaXterm

Terminal Sessions View X server Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...

User sessions

Sessions

Macros

MobaXterm

Start local terminal

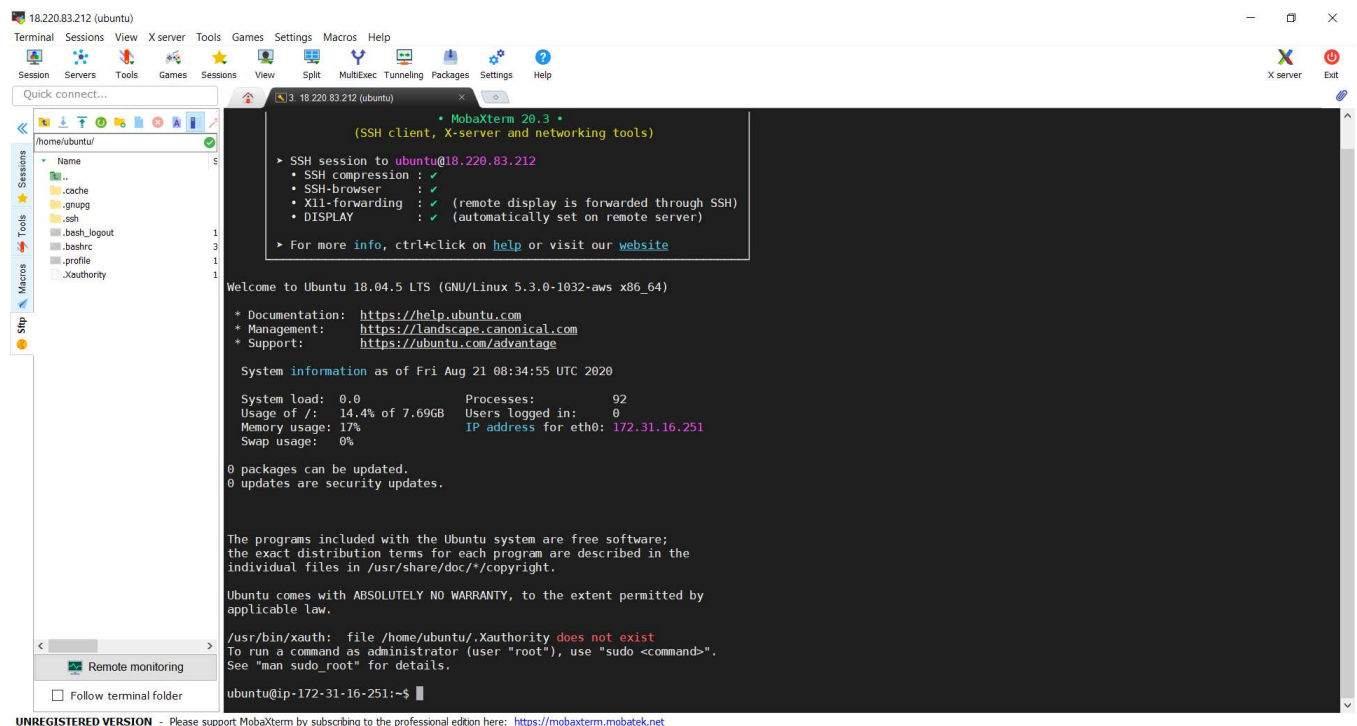
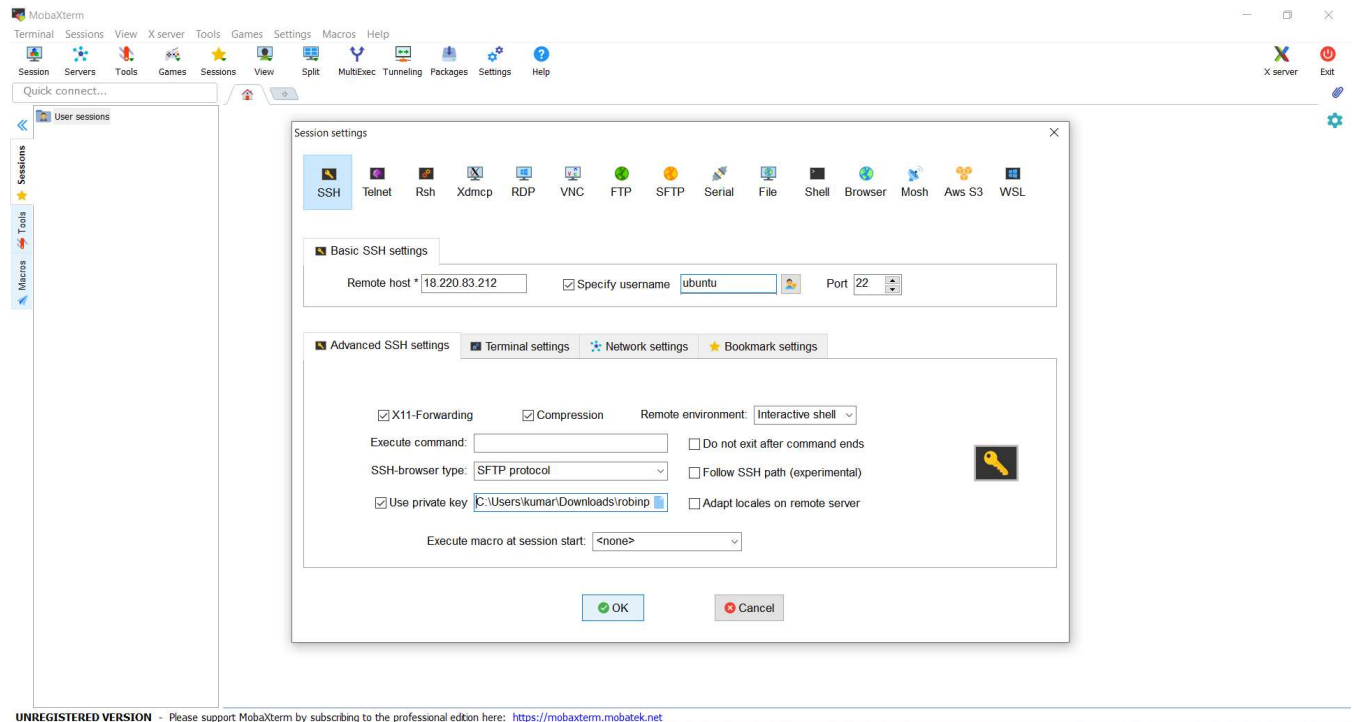
Find existing session or server name...

Welcome to MobaXterm  
Press <return> to start a local terminal

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## Task 3: Launch the Ubuntu instance using SSH

**Note: Username is ubuntu**



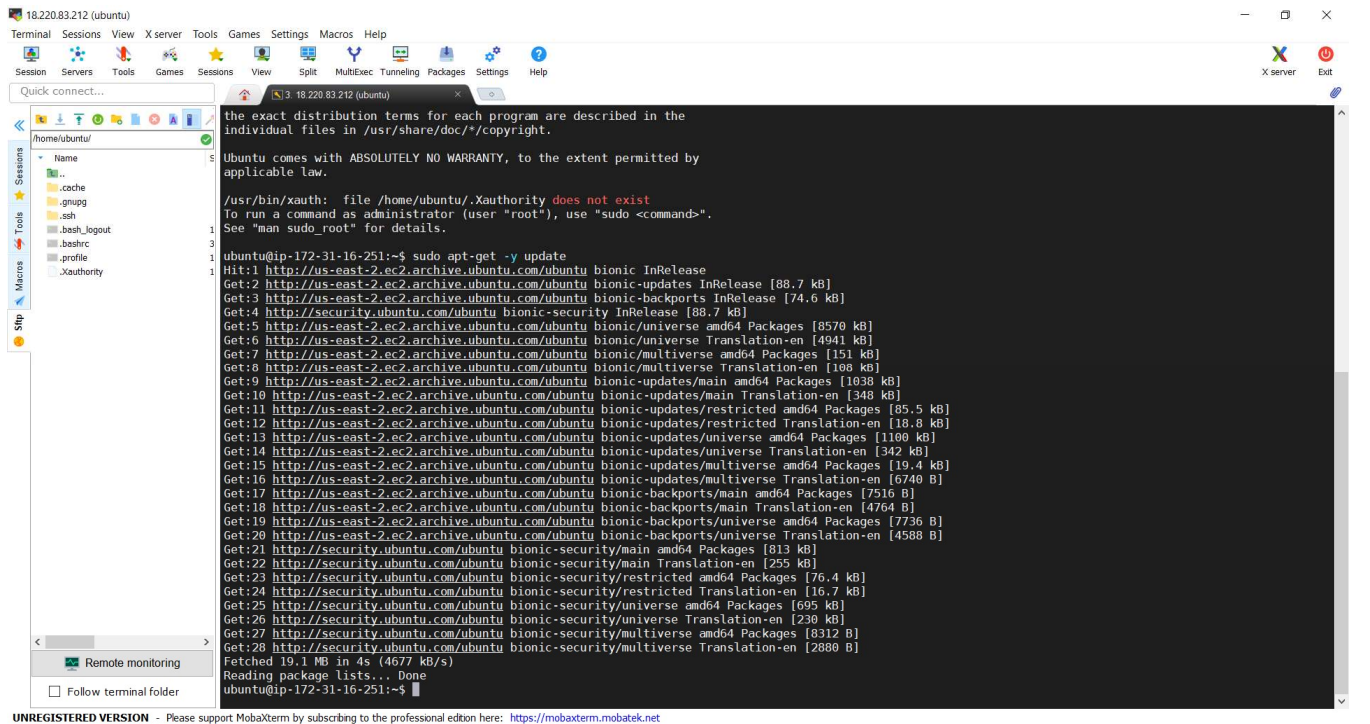


## Task 4: Install nginx web server using bash

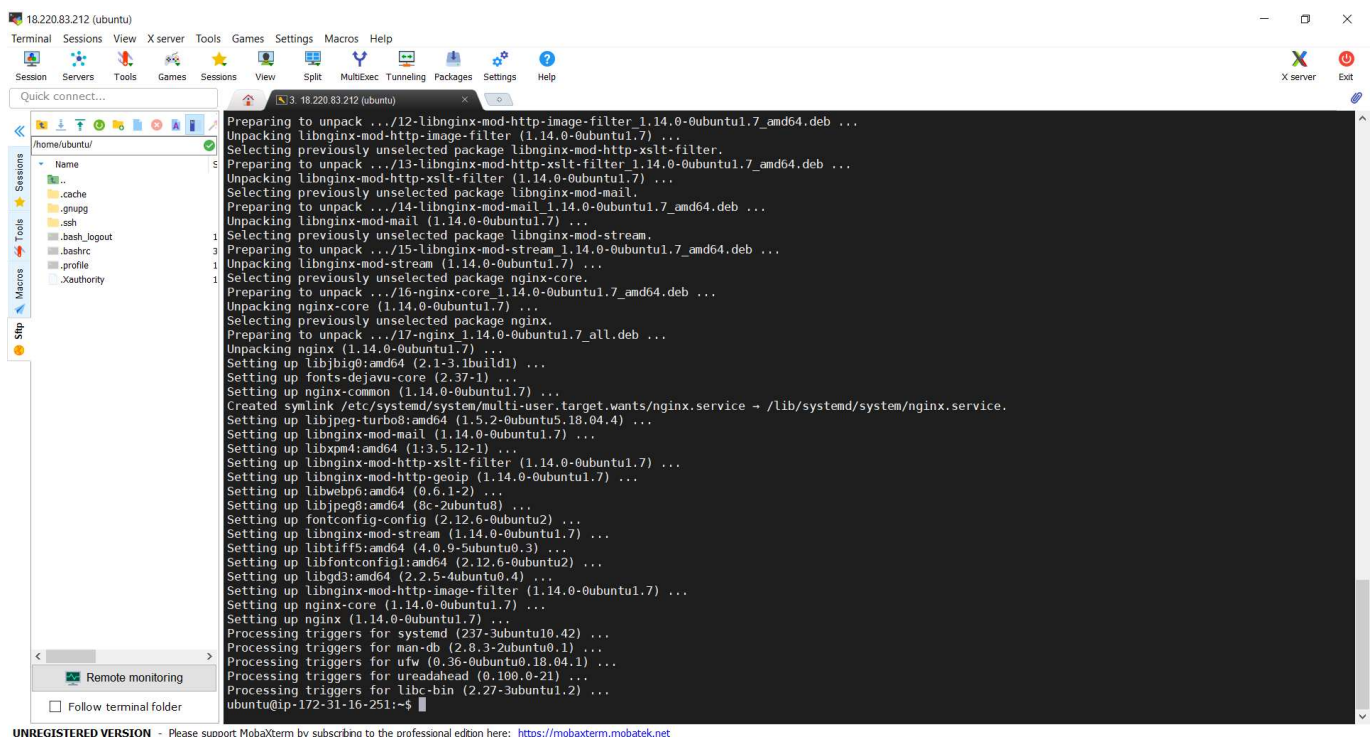
**Note:** The command to install the nginx web server.

```
sudo apt-get -y update
```

```
sudo apt-get -y install nginx
```



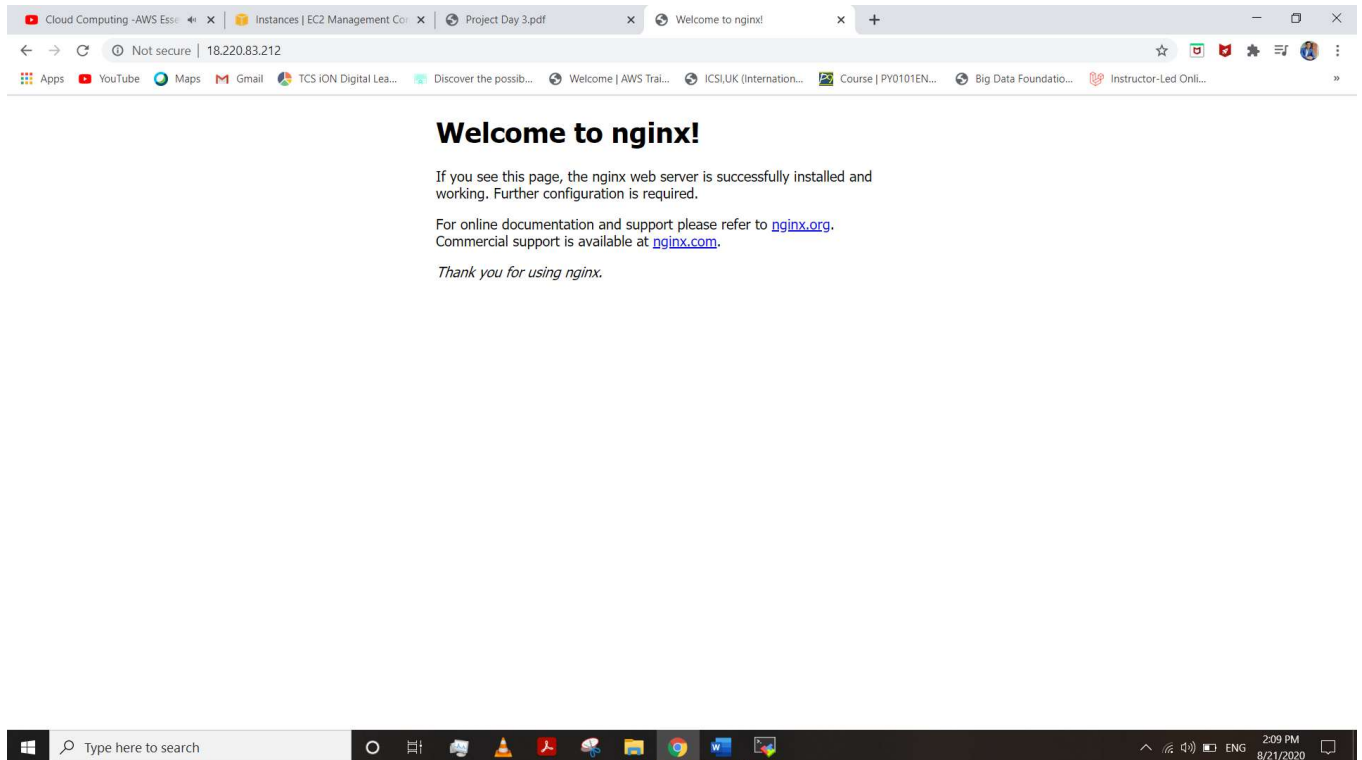
```
18.220.83.212 (ubuntu)
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultExec Tunneling Packages Settings Help
Quick connect...
/home/ubuntu/
Name
..
.cache
.gnupg
.ssh
.bash_logout
.bashrc
.profile
.Xauthority
Remote monitoring
Follow terminal folder
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
/usr/bin/xauth: file /home/ubuntu/.Xauthority does not exist
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-172-31-16-251:~$ sudo apt-get -y update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:4 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:5 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [8570 kB]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic/universe Translation-en [4941 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [151 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic/multiverse Translation-en [108 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [1038 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates/main Translation-en [348 kB]
Get:11 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [85.5 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates/restricted Translation-en [18.8 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [1100 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe Translation-en [342 kB]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [19.4 kB]
Get:16 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-updates/multiverse Translation-en [6740 B]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [7516 B]
Get:18 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-backports/main Translation-en [4764 B]
Get:19 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [7736 B]
Get:20 http://us-east-2.ec2.archive.ubuntu.com/ubuntu bionic-backports/universe Translation-en [4588 B]
Get:21 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [813 kB]
Get:22 http://security.ubuntu.com/ubuntu bionic-security/main Translation-en [255 kB]
Get:23 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [76.4 kB]
Get:24 http://security.ubuntu.com/ubuntu bionic-security/restricted Translation-en [16.7 kB]
Get:25 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [695 kB]
Get:26 http://security.ubuntu.com/ubuntu bionic-security/universe Translation-en [238 kB]
Get:27 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [8312 B]
Get:28 http://security.ubuntu.com/ubuntu bionic-security/multiverse Translation-en [2880 B]
Fetched 19.1 MB in 4s (4677 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-16-251:~$
```



```
18.220.83.212 (ubuntu)
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultExec Tunneling Packages Settings Help
Quick connect...
/home/ubuntu/
Name
..
.cache
.gnupg
.ssh
.bash_logout
.bashrc
.profile
.Xauthority
Remote monitoring
Follow terminal folder
Preparing to unpack .../12-libnginx-mod-http-image-filter_1.14.0-0ubuntu1.7_amd64.deb ...
Unpacking libnginx-mod-http-image-filter (1.14.0-0ubuntu1.7) ...
Selecting previously unselected package libnginx-mod-http-xslt-filter.
Preparing to unpack .../13-libnginx-mod-http-xslt-filter_1.14.0-0ubuntu1.7_amd64.deb ...
Unpacking libnginx-mod-http-xslt-filter (1.14.0-0ubuntu1.7) ...
Selecting previously unselected package libnginx-mod-mail.
Preparing to unpack .../14-libnginx-mod-mail_1.14.0-0ubuntu1.7_amd64.deb ...
Unpacking libnginx-mod-mail (1.14.0-0ubuntu1.7) ...
Selecting previously unselected package libnginx-mod-stream.
Preparing to unpack .../15-libnginx-mod-stream_1.14.0-0ubuntu1.7_amd64.deb ...
Unpacking libnginx-mod-stream (1.14.0-0ubuntu1.7) ...
Selecting previously unselected package nginx-core.
Preparing to unpack .../16-nginx-core_1.14.0-0ubuntu1.7_amd64.deb ...
Unpacking nginx-core (1.14.0-0ubuntu1.7) ...
Selecting previously unselected package nginx.
Preparing to unpack .../17-nginx_1.14.0-0ubuntu1.7_all.deb ...
Unpacking nginx (1.14.0-0ubuntu1.7) ...
Setting up libjpeg-turbo8:amd64 (2.1.3-1build1) ...
Setting up fonts-dejavu-core (2.37-1) ...
Setting up nginx-common (1.14.0-0ubuntu1.7) ...
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service -> /lib/systemd/system/nginx.service.
Setting up libjpeg-turbo8:amd64 (1.5.2-0ubuntu5.18.04.4) ...
Setting up libnginx-mod-mail (1.14.0-0ubuntu1.7) ...
Setting up libxpm4:amd64 (1:3.5.12-1) ...
Setting up libnginx-mod-http-xslt-filter (1.14.0-0ubuntu1.7) ...
Setting up libnginx-mod-http-geoip (1.14.0-0ubuntu1.7) ...
Setting up libwebp6:amd64 (0.6.1-2) ...
Setting up libjpeg8:amd64 (8c-2ubuntu2) ...
Setting up fontconfig-config (2.12.6-0ubuntu2) ...
Setting up libnginx-mod-stream (1.14.0-0ubuntu1.7) ...
Setting up libtiff5:amd64 (4.0.9-5ubuntu0.3) ...
Setting up libfontconfig1:amd64 (2.12.6-0ubuntu2) ...
Setting up libgd3:amd64 (2.2.5-4ubuntu0.4) ...
Setting up libnginx-mod-http-image-filter (1.14.0-0ubuntu1.7) ...
Setting up nginx-core (1.14.0-0ubuntu1.7) ...
Setting up nginx (1.14.0-0ubuntu1.7) ...
Processing triggers for systemd (237-3ubuntu10.42) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for ufw (0.36-0ubuntu0.18.04.1) ...
Processing triggers for ureadahead (0.100-0-21) ...
Processing triggers for libc-bin (2.27-3ubuntu1.2) ...
ubuntu@ip-172-31-16-251:~$
```

## Task 5: Verify successful installation of nginx

**Note: You should be able to see the Welcome to nginx Web page when you paste the public IP into the browser**





Cloud Computing - AWS Ess... x Instances | EC2 Management Co... x Project Day 3.pdf x Welcome to nginx! x +

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:sort=instancetype

Apps YouTube Maps Gmail TCS ION Digital Lea... Discover the possib... Welcome | AWS Trai... ICSI/UK (Internation... Course | PY0101EN... Big Data Foundatio... Instructor-Led Onli...

aws Services Resource Groups Robin Kumar Ohio Support

New EC2 Experience Tell us what you think

EC2 Dashboard New

Events New

Tags

Limits

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts New

Capacity Reservations

Images

AMIs

Elastic Block Store

Volumes

Snapshots

Life cycle Manager

Feedback English (US)

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

1 to 2 of 2

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6
Windows	i-095421e46d6a087...	t2.micro	us-east-2a	running	2/2 checks ...	None	ec2-3-12-147-138.us-e...	3.12.147.138	-
Ubuntu	i-0a0e3994b2926a9...	t2.micro	us-east-2b	running	2/2 checks ...	None	ec2-18-220-83-212.us...	18.220.83.212	-

Instance: i-095421e46d6a08706 (Windows) Public DNS: ec2-3-12-147-138.us-east-2.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID i-095421e46d6a08706 Public DNS (IPv4) ec2-3-12-147-138.us-east-2.compute.amazonaws.com

Instance state running IPv4 Public IP 3.12.147.138

Instance type t2.micro IPv6 IPs -

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us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:sort=instancetype

Apps YouTube Maps Gmail TCS ION Digital Lea... Discover the possib... Welcome | AWS Trai... ICSI/UK (Internation... Course | PY0101EN... Big Data Foundatio... Instructor-Led Onli...

aws Services Resource Groups Robin Kumar Ohio Support

New EC2 Experience Tell us what you think

EC2 Dashboard New

Events New

Tags

Limits

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts New

Capacity Reservations

Images

AMIs

Elastic Block Store

Volumes

Snapshots

Life cycle Manager

Feedback English (US)

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

1 to 2 of 2

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6
Windows	i-095421e46d6a087...	t2.micro	us-east-2a	running	2/2 checks ...	None	ec2-3-12-147-138.us-e...	3.12.147.138	-
Ubuntu	i-0a0e3994b2926a942	t2.micro	us-east-2b	running	2/2 checks ...	None	ec2-18-220-83-212.us...	18.220.83.212	-

Instance: i-0a0e3994b2926a942 (Ubuntu) Public DNS: ec2-18-220-83-212.us-east-2.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID i-0a0e3994b2926a942 Public DNS (IPv4) ec2-18-220-83-212.us-east-2.compute.amazonaws.com

Instance state running IPv4 Public IP 18.220.83.212

Instance type t2.micro IPv6 IPs -

Finding Opt-in to AWS Compute Optimizer for recommendations. Elastic IPs

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