

Hortonworks

Guide for Attempting the HDP Certification Developer: Java Practice Exam

Revision 1
Hortonworks University

Overview

Hortonworks University has developed a practice environment that emulates our actual exam environment. The practice environment consists of:

- An Amazon Machine Image (AMI) that is publicly shared
- A collection of tasks reflective of what you may be asked to perform on the actual exam

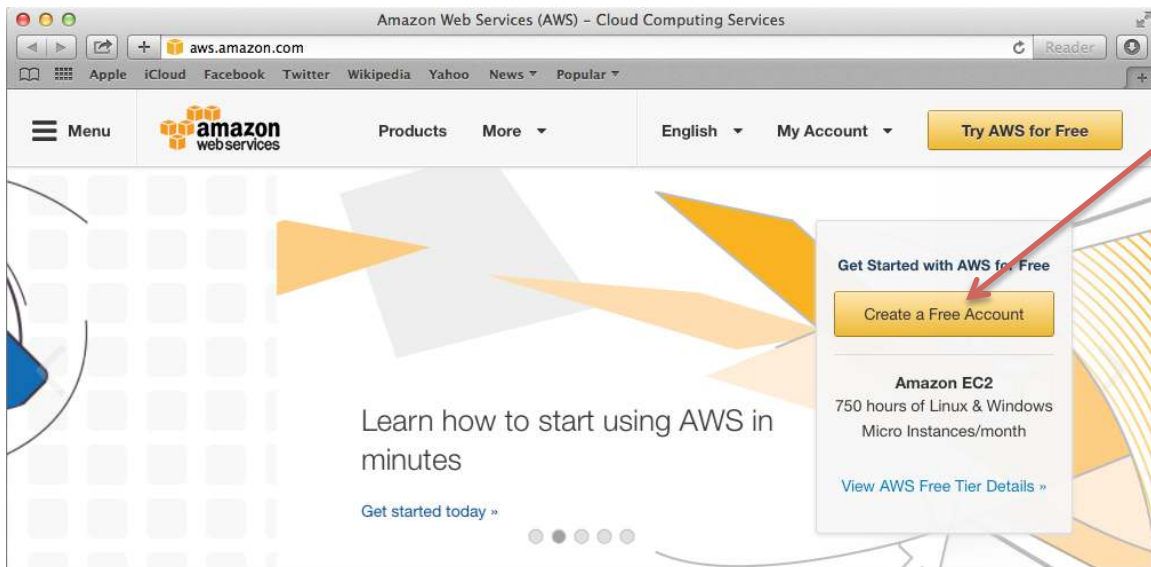
In order to take the practice exam, you need to create an Amazon Web Services (AWS) account and pay for the usage of an EC2 instance, as explained below in this guide. The cost is very minimal.

Complete the Following Steps

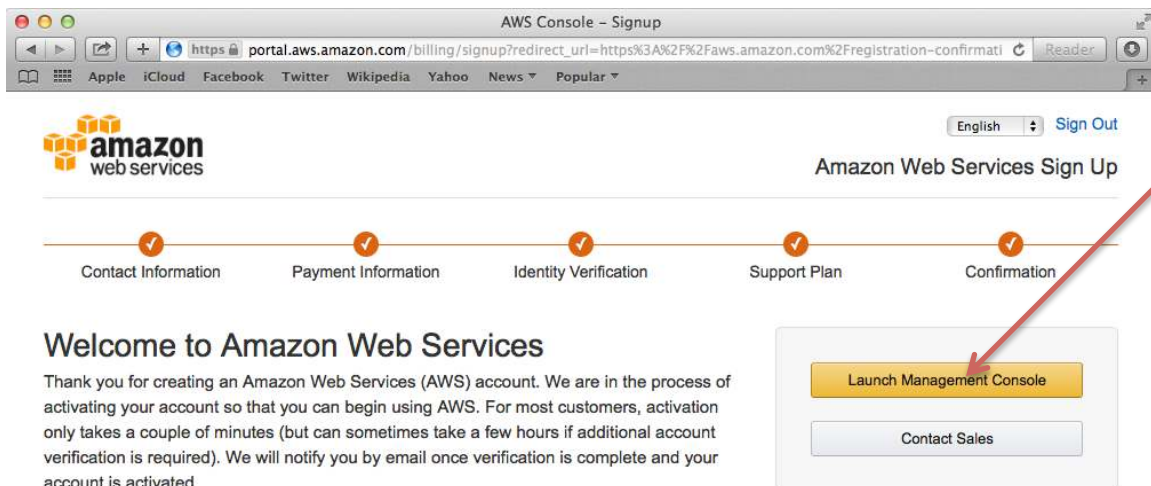
Step 1: Create an AWS Account

1.1. You need an Amazon Web Services (AWS) account. If you do not already have one, create an account at:

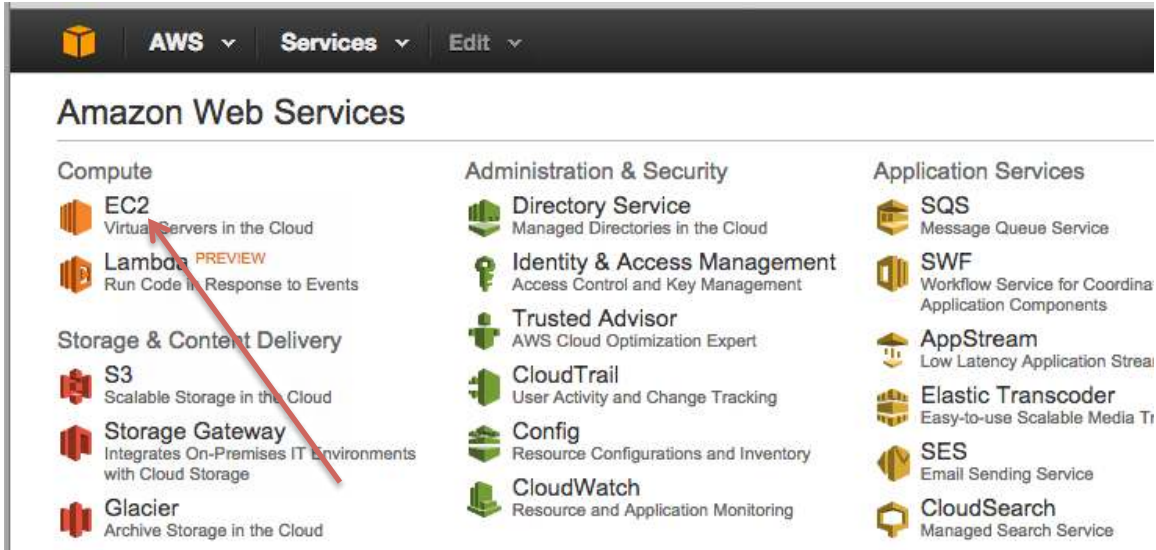
```
http://aws.amazon.com
```



1.2. Once you are signed in, launch the **Management Console**:



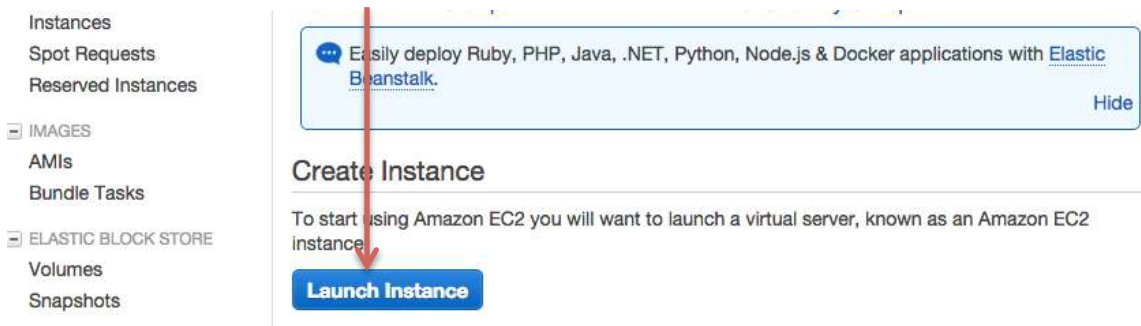
1.3. You should see the home page of your AWS Console:



Step 2: Run the EC2 Launch Instance Wizard

2.1. From the AWS Console, click on **EC2** to view your EC2 Dashboard.

2.2. Click the **Launch Instance** button:



2.3. You should see **Step 1** of the Launch Instance wizard:

Step 1: Choose an Amazon Machine Image (AMI)

[Cancel and Exit](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start |< < 1 to 22 of 22 AMIs > >|

- My AMIs
- AWS Marketplace
- Community AMIs
- Free tier only ⓘ

	Amazon Linux AMI 2014.09.2 (HVM) - ami-146e2a7c Free tier eligible	The Amazon Linux AMI is an EBS backed image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Apache HTTPD, Docker, PHP, MySQL, PostgreSQL, and other packages. Root device type: ebs Virtualization type: hvm	Select 64-bit
	Red Hat Enterprise Linux 6.6 (HVM), SSD Volume Type - ami-48400720 Free tier eligible	Red Hat Enterprise Linux version 6.6 (HVM), EBS General Purpose (SSD) Volume Type Root device type: ebs Virtualization type: hvm	Select 64-bit
	SUSE Linux Enterprise Server 12 (HVM), SSD Volume Type - ami-aeb532c6 Free tier eligible	SUSE Linux Enterprise Server 12 (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	Select 64-bit
	Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-9a562df2 Free tier eligible	Ubuntu Server 14.04 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	Select 64-bit
	Microsoft Windows Server 2012 R2 Base - ami-b27830da	Microsoft Windows 2012 R2 Standard edition with 64-bit architecture. [English]	Select 64-bit

Step 3: Find the AMI for the Practice Exam

3.1. Click the **Community AMIs** tab on the left-hand menu.

3.2. Type **"Hortonworks"** in the search box and press **Enter**:

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI) [Cancel and Exit](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start |< < 1 to 8 of 8 AMIs > >|

- My AMIs
- AWS Marketplace
- Community AMIs

Community AMIs

Operating system

- Amazon Linux
- Cent OS
- Debian
- Fedora
- Gentoo
- OpenSUSE
- Other Linux
- Red Hat
- SUSE Linux
- Ubuntu
- Windows

Architecture

- 32-bit
- 64-bit

Root device type

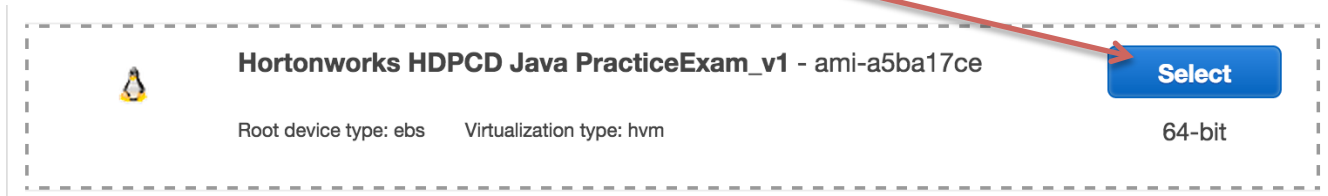
- EBS
- Instance store

Search: Hortonworks

1 results for "Hortonworks" on AWS Marketplace
Partner software pre-configured to run on AWS

	Hortonworks - ami-02ae336a	[Copied ami-3fo7of7a from us-west-1] Hortonworks Root device type: ebs Virtualization type: paravirtual	Select 64-bit
	HDP 2.1 SANDBOX NFS ENABLED - ami-36d95d5e	nfs enabled - hortonworks 2.1 - sandbox Root device type: ebs Virtualization type: hvm	Select 64-bit
	Hortonworks sandbox with DMX-h - ami-4eb41126	Hortonworks sandbox with Syncsort DMX-h Root device type: ebs Virtualization type: hvm	Select 64-bit
	HWX HDP-2.2 BASE - ami-7642111e	CentOS 6.5 / Java version 1.7u75 / Hortonworks HDP 2.2 / API tools v1.7.1.1 Root device type: ebs Virtualization type: paravirtual	Select 64-bit
	Hortonworks HDPCDeveloper_2.2 PracticeExam_v6 - ami-93b75bf8	Root device type: ebs Virtualization type: hvm	Select 64-bit
	Hortonworks HDPCD Java PracticeExam_v1 - ami-a5ba17ce	Root device type: ebs Virtualization type: hvm	Select 64-bit

3.3. You are looking for an AMI with a name similar to “**Hortonworks HDPCD Java PracticeExam_vx**” where the “**x**” values are version numbers that change periodically. There should only be one AMI that matches this name. Click the **Select** button next to it (as shown below):



Step 4: Choose an Instance Type

4.1. Step 2 of the wizard is selecting an instance type. **You will be charged by Amazon based on the instance type you select.** To view the pricing for your region, visit the following page:

<https://aws.amazon.com/ec2/pricing/>

You can also read about Spot Instances on the pricing page, which provide an even cheaper alternative.

4.2. You need at least a **c3.2xlarge** or **c3.4xlarge**. The instance runs a single-node HDP cluster, and the more memory you purchase, the more responsive the instance will run.

NOTE: You are charged by the hour for EC2 instances. If you start an instance and stop it 5 minutes later, you will be billed for an entire hour. However, you are not charged for a stopped instance until you resume it again.

<input type="checkbox"/>	Compute optimized	c3.large	2	3.75	2 x 16 (SSD)	-	Moderate
<input type="checkbox"/>	Compute optimized	c3.xlarge	4	7.5	2 x 40 (SSD)	Yes	Moderate
<input type="checkbox"/>	Compute optimized	c3.2xlarge	8	15	2 x 80 (SSD)	Yes	High
<input checked="" type="checkbox"/>	Compute optimized	c3.4xlarge	16	30	2 x 160 (SSD)	Yes	High
<input type="checkbox"/>	Compute optimized	c3.8xlarge	32	60	2 x 320 (SSD)	-	10 Gigabit
<input type="checkbox"/>	GPU instances	g2.2xlarge	8	15	1 x 60 (SSD)	Yes	High
<input type="checkbox"/>	GPU instances	g2.8xlarge	32	60	2 x 120 (SSD)	-	10 Gigabit
<input type="checkbox"/>	Memory optimized	r3.large	2	15	1 x 32 (SSD)	-	Moderate

4.3. After you have selected your instance type, click the button labeled **Next: Configure Instance Details**.

Step 5: Configure Instance Details

5.1. The defaults are fine for **Step 3: Configure Instance Details**. Make sure the **Network** is “**Launch into EC2-Classical**”, and click the **Next: Add Storage** button to continue.

Step 6: Add Storage

6.1. The default settings for **Step 4: Add Storage** are also fine, so simply click the **Next: Tag Instance** button to continue.

Step 7: Tag Instance

7.1. Give your instance a name like “Hortonworks Practice Exam”:

Step 5: Tag Instance

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more](#) about tagging your Amazon EC2 resources.

Key (127 characters maximum)	Value (255 characters maximum)
<input type="text" value="Name"/>	<input type="text" value="Hortonworks Practice Exam"/>

(Up to 10 tags maximum)

7.2. Click the **Next: Configure Security Group** button to continue.

Step 8: Configure Security Group

8.1. In **Step 6: Configure Security Group**, you need to create a new security group. Start by giving it a name like “hwx-practice-exam”:

- Assign a security group:** Create a **new** security group
 Select an **existing** security group

Security group name:

hwx-practice-exam

8.2. Notice an SSH rule is already defined. Click the **Add Rule** button and add a **Custom TCP Rule** for port **5901** with **Custom IP** equal to **0.0.0.0/0**, as shown here:

Type <small>i</small>	Protocol <small>i</small>	Port Range <small>i</small>	Source <small>i</small>
SSH	TCP	22	Anywhere 0.0.0.0/0 <small>x</small>
Custom TCP Rule	TCP	5901	Custom IP 0.0.0.0/0 <small>x</small>

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Previous](#) [Review and Launch](#)

8.3. Click the **Review and Launch** button to continue.


Step 9: Review Instance Launch

9.1. In **Step 7: Review Instance Launch**, you will be warned that this is not a free instance and you will be charged. There is also a warning about security that you can ignore.

9.2. Verify the AMI, instance type, and also that your security group has port 5901 open:

Step 7: Review Instance Launch

▼ AMI Details [Edit AMI](#)

 **Hortonworks HDPCD Java PracticeExam_v1 - ami-a5ba17ce**
Root Device Type: ebs Virtualization type: hvm

▼ Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
c3.4xlarge	55	16	30	2 x 160	Yes	High

▼ Security Groups [Edit security groups](#)

Security Group ID	Name	Description
sg-3f944552	hwx-practice-exam	launch-wizard-4 created 2015-02-20T07:59:42.979-07:00

All selected security groups inbound rules

Security Group ID	Type <small>(i)</small>	Protocol <small>(i)</small>	Port Range <small>(i)</small>	Source <small>(i)</small>
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[Cancel](#) [Previous](#) [Launch](#)


9.3. Click the **Launch** button to continue:

▶ Instance Details [Edit instance details](#)

▶ Storage [Edit storage](#)

▶ Tags [Edit tags](#)

[Cancel](#) [Previous](#) [Launch](#)



Step 10: Create a Private Key File

10.1. Before launching an EC2 instance, you must create (or select an existing) key pair, which consists of a public key that AWS stores and a private key file that you need to download. You should see the following dialog window:

Select an existing key pair or create a new key pair



A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair

Select a key pair

cert-keypair.pem

I acknowledge that I have access to the selected private key file (cert-keypair.pem.pem), and that without this file, I won't be able to log into my instance.

10.2. Select “Create a new key pair” and give it a name like “hwx-practice-exam”:

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

Key pair name

hwx-practice-exam

Download Key Pair

10.3. Click the **Download Key Pair** button and save the file on your local machine.

Step 11: Launch the Instance

11.1. After you have downloaded the private key file, click the **Launch Instances** button:

Create a new key pair

Key pair name

hw-x-practice-exam

Download Key Pair



You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel

Launch Instances

11.2. You should see a confirmation screen that your instance is being launched:

Launch Status



Your instances are now launching

The following instance launches have been initiated: [i-da99e2f5](#) [View launch log](#)



Get notified of estimated charges

[Create billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

Step 12: Determine the Public DNS of the EC2 Instance

12.1. From the AWS menu, click on **Services**. In the drop-down menu select **EC2** to view the **EC2 Dashboard**. Your instance should appear in the list of **Instances**:

Name	Instance ID	Instance Type	Availability Zone
Hortonworks Practice Exam	i-7055518d	c3.4xlarge	us-east-1

12.2. Scroll to the right of the instance **Name** and you should see a column labeled **Public DNS**. The public DNS name is in the format **ec2-xx-xx-xx-xx.compute-1.amazonaws.com**.

12.3. Leave this window open in your Web browser, as you will need the public DNS name of your EC2 instance after you install the VNC client application.

Step 13: Install a VNC Client

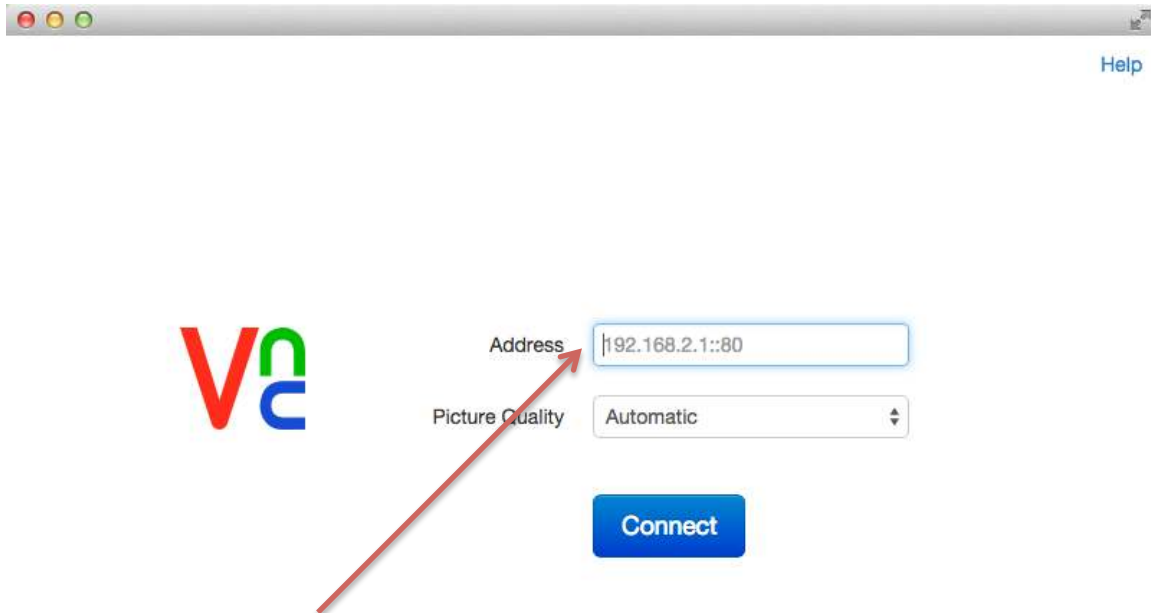
13.1. You will connect to your EC2 instance using VNC. You need a VNC client application installed on your local machine. Any VNC client should work. The instructions here are for the Real VNC Viewer app, which runs on a Mac, PC, or Linux machine.

13.2. Download and install the appropriate version of VNC Viewer for your computer at:

```
http://www.realvnc.com/download/viewer/
```

Step 14: Connect to the EC2 Instance

14.1. Start the VNC Viewer application. On a Mac the app looks like:



14.2. In the **Address** field, enter the public DNS name of your EC2 instance, followed by **:5901** (which is the port that the VNC server is listening on):

Address

Picture Quality



14.3. Click the **Connect** button. You will be warned about an unencrypted connection:

Unencrypted Connection ×

This connection will not be encrypted. Your authentication credentials will be transmitted securely, but all subsequent data exchanged while the connection is in progress may be susceptible to interception by third parties.

If you are connecting to VNC and it is licensed to use this premium feature, consider enabling it. If not, you will need to upgrade your VNC license.

Do not warn me for ec2-54-237-120-193.compute-1.amazonaws.com:5901 again

14.4. Click the **Connect** button. You will be prompted for a password, which is “hadoop”:



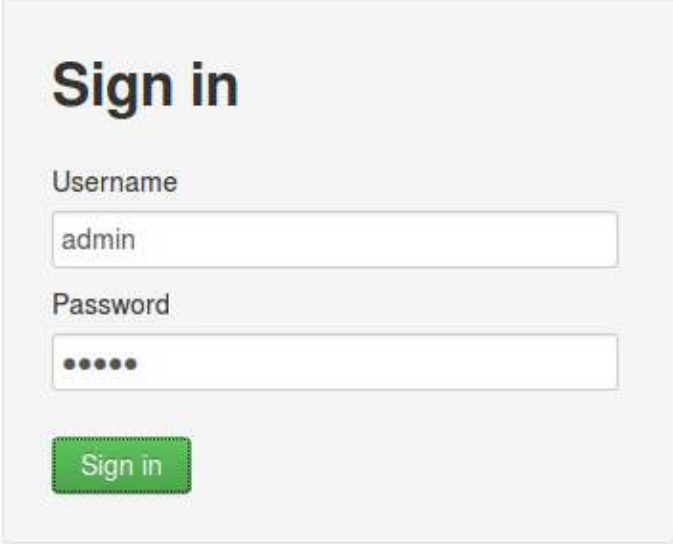
14.5. Click the **OK** button and the desktop of your EC2 instance should appear:



IMPORTANT: The screen size of the EC2 instance is 1600x900. **This is also the screen size of the actual exam.** If you cannot see the entire screen, adjust the resolution of your monitor to a size that is larger than 1600x900.

Step 15: Verify HDP is Running

15.1. There is a shortcut to Ambari on the Desktop. Double-click on it and login to Ambari. Both the username and password are “**admin**”:

A screenshot of the Ambari Sign in page. The page has a light gray background. At the top, the text "Sign in" is displayed in a large, bold, black font. Below this, there are two input fields. The first is labeled "Username" and contains the text "admin". The second is labeled "Password" and contains six black dots. Below the password field is a green button with the text "Sign in" in white.

15.2. You should see the Admin Dashboard. If your services are not currently being started, open a Terminal window and run the **./start-all-services.sh** script in the **/home/horton** directory:

```
horton@ip-10-95-217-80: ~  
File Edit View Search Terminal Help  
horton@ip-10-95-217-80:~$ ./start-all-services.sh  
HTTP/1.1 202 Accepted  
Set-Cookie: AMBARISESSIONID=lhzfs1ypf0siv1u1d8b01igskg;Path=/  
Expires: Thu, 01 Jan 1970 00:00:00 GMT  
Content-Type: text/plain  
Content-Length: 145  
Server: Jetty(7.6.7.v20120910)  
  
{  
  "href" : "http://namenode:8080/api/v1/clusters/singlenode-min/requests/39",  
  "Requests" : {  
    "id" : 39,  
    "status" : "InProgress"  
  }  
}  
}horton@ip-10-95-217-80:~$
```

The above command sends a command to Ambari that starts all services. You can view the progress in Ambari.

Step 16: The Exam Tasks

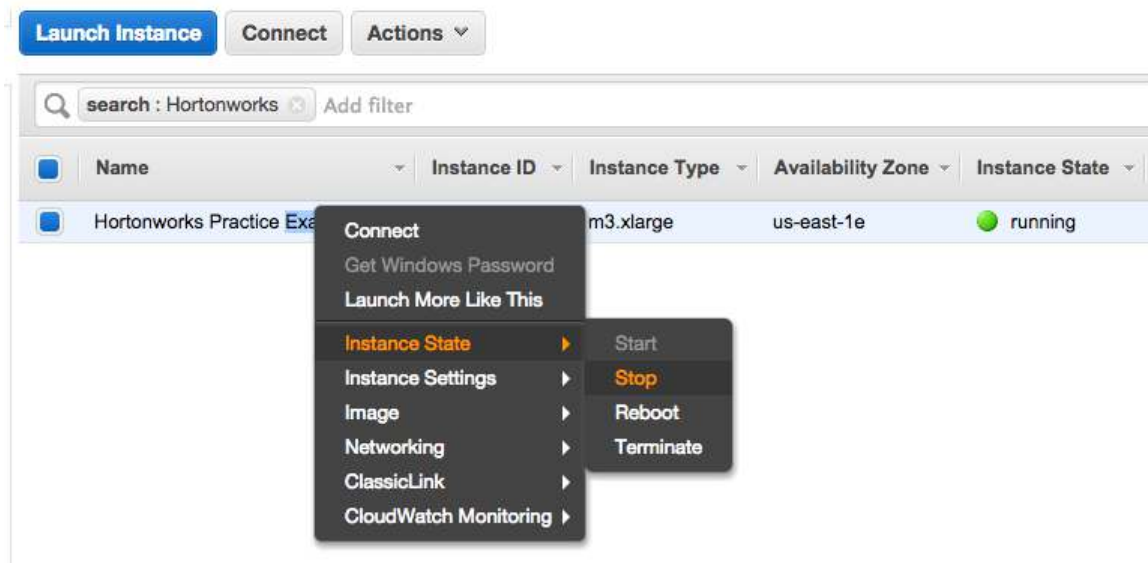
16.1. The practice exam consists of tasks that are reflective of what you may see on the actual exam. The tasks are in the **EXAM** folder on the desktop in an HTML file.

IMPORTANT: The practice exam is designed to familiarize you with the wording and length of the actual exam tasks. This practice exam does not cover all of the exam objectives and is only intended to assist you in becoming comfortable with the actual exam's environment. The actual exam may contain fewer or more tasks, and may contain tasks on topics not found on this practice exam. Candidates should be familiar with all of the tasks listed on the exam objectives before attempting an exam.

Step 17: Stopping the Instance

17.1. When you are not working on the practice exam, you can stop the EC2 instance to avoid Amazon charges. From the **AWS Console**, open the **EC2 Dashboard**.

17.2. From the **Instances** page, right-click on the instance and select **Instance State -> Stop**:



17.3. When you want to resume the practice exam, simply **Start** the instance from this same **Instances** page.

Step 18: Terminating the Instance

18.1. When you are completely finished with the practice exam, you can terminate the instance by right-clicking on the instance and selecting **Instance State -> Terminate**. This will remove the instance from your AWS account.

IMPORTANT: If you have any issues or questions with this setup guide, please send an email to certification@hortonworks.com.