

Cloud Service Provider Companies

Cloud Service providers (CSP) offers various services such as **Software as a Service, Platform as a service, Infrastructure as a service, network services, business applications, mobile applications**, and **infrastructure** in the cloud. The cloud service providers host these services in a data center, and users can access these services through cloud provider companies using an Internet connection.

There are the following Cloud Service Providers Companies -

1) Amazon Web Services (AWS)

AWS (Amazon Web Services) is a **secure cloud service platform** provided by **Amazon**. It offers various services such as database storage, computing power, content delivery, Relational Database, Simple Email, Simple Queue, and other functionality to increase the organization's growth.



Features of AWS

AWS provides various powerful features for building scalable, cost-effective, enterprise applications. Some important features of AWS is given below-

- AWS is **scalable** because it has an ability to scale the computing resources up or down according to the organization's demand.
- AWS is **cost-effective** as it works on a **pay-as-you-go** pricing model.
- It provides various flexible storage options.
- It offers various **security services** such as infrastructure security, data encryption, monitoring & logging, identity & access control, penetration testing, and DDoS attacks.
- It can efficiently manage and secure Windows workloads.

2) Microsoft Azure

Microsoft Azure is also known as **Windows Azure**. It supports various operating systems, databases, programming languages, frameworks that allow IT professionals to easily build, deploy, and manage applications through a worldwide network. It also allows users to create different groups for related utilities.



Microsoft Azure

Features of Microsoft Azure

- Microsoft Azure provides **scalable, flexible, and cost-effective**
- It allows developers to quickly manage applications and websites.
- It managed each resource individually.
- Its IaaS infrastructure allows us to launch a general-purpose virtual machine in different platforms such as Windows and Linux.
- It offers a **Content Delivery System (CDS)** for delivering the Images, videos, audios, and applications.

3) Google Cloud Platform

Google cloud platform is a product of **Google**. It consists of a set of physical devices, such as computers, hard disk drives, and virtual machines. It also helps organizations to simplify the migration process.



Google Cloud Platform

Features of Google Cloud

- Google cloud includes various **big data services** such as Google BigQuery, Google CloudDataproc, Google CloudDatalab, and Google Cloud Pub/Sub.
- It provides various services related to **networking**, including Google Virtual Private Cloud (VPC), Content Delivery Network, Google Cloud Load Balancing, Google Cloud Interconnect, and Google Cloud DNS.
- It offers various **scalable** and **high-performance**
- GCP provides various **serverless services** such as Messaging, Data Warehouse, Database, Compute, Storage, Data Processing, and Machine learning (ML)
- It provides a free cloud shell environment with Boost Mode.

4) IBM Cloud Services

IBM Cloud is an open-source, faster, and more reliable platform. It is built with a suite of advanced data and AI tools. It offers various services such as **Infrastructure as a service**, **Software as a service**, and **platform as a service**. You can access its services like compute power, cloud data & Analytics, cloud use cases, and storage networking using internet connection.



IBM Cloud Services

Feature of IBM Cloud

- IBM cloud improves operational efficiency.
- Its speed and agility improve the customer's satisfaction.
- It offers Infrastructure as a Service (IaaS), Platform as a Service (PaaS), as well as Software as a Service (SaaS)
- It offers various cloud communications services to our IT environment.

5) VMware Cloud

VMware cloud is a Software-Defined Data Center (SSDC) unified platform for the Hybrid Cloud. It allows cloud providers to build agile, flexible, efficient, and robust cloud services.



VMware

Features of VMware

- VMware cloud works on the **pay-as-per-use** model and **monthly subscription**
- It provides better customer satisfaction by protecting the user's data.

- It can easily create a new VMware **Software-Defined Data Center (SDDC)** cluster on AWS cloud by utilizing a RESTful API.
- It provides flexible storage options. We can manage our application storage on a per-application basis.
- It provides a dedicated high-performance network for managing the application traffic and also supports multicast networking.
- It eliminates the time and cost complexity.

6) Oracle cloud

Oracle cloud platform is offered by the **Oracle Corporation**. It combines Platform as a Service, Infrastructure as a Service, Software as a Service, and Data as a Service with cloud infrastructure. It is used to perform tasks such as moving applications to the cloud, managing development environment in the cloud, and optimize connection performance.



Features of Oracle cloud

- Oracle cloud provides various tools for build, integrate, monitor, and secure the applications.
- Its infrastructure uses various languages including, Java, Ruby, PHP, Node.js.
- It integrates with Docker, VMware, and other DevOps tools.
- Oracle database not only provides unparalleled integration between IaaS, PaaS, and SaaS, but also integrates with the on-premises platform to improve operational efficiency.
- It maximizes the value of IT investments.
- It offers customizable Virtual Cloud Networks, firewalls, and IP addresses to securely support private networks.

7) Red Hat

Red Hat virtualization is an open standard and desktop virtualization platform produced by Red Hat. It is very popular for the **Linux** environment to provide various infrastructure solutions for virtualized servers as well as technical workstations. Most of the small and medium-sized organizations use Red Hat to run their organizations smoothly. It offers higher density, better performance, agility, and security to the resources. It also improves the organization's economy by providing cheaper and easier management capabilities.



Red Hat

Features of Red Hat

- Red Hat provides secure, certified, and updated container images via the Red Hat Container catalog.
- Red Hat cloud includes **OpenShift**, which is an app development platform that allows developers to **access, modernize, and deploy apps**
- It supports up to 16 virtual machines, each having up to 256GB of RAM.
- It offers better reliability, availability, and serviceability.
- It provides flexible storage capabilities, including very large SAN-based storage, better management of memory allocations, high availability of LVMs, and support for particularly roll-back.
- In the Desktop environment, it includes features like New on-screen keyboard, GNOME software, which allows us to install applications, update application, as well as extended device support.

8) **DigitalOcean**

DigitalOcean is the unique cloud provider that offers computing services to the organization. It was founded in 2011 by Moisey Uretsky and Ben. It is one of the best cloud providers that allows us to manage and deploy web applications.



Features of DigitalOcean

- It uses the KVM hypervisor to allocate physical resources to the virtual servers.
- It provides high-quality performance.
- It offers a digital community platform that helps to answer queries and holding feedbacks.
- It allows developers to use cloud servers to quickly create new virtual machines for their projects.
- It offers one-click apps for droplets. These apps include MySQL, Docker, MongoDB, Wordpress, PhpMyAdmin, LAMP stack, Ghost, and Machine Learning.

9) **Rackspace**

Rackspace offers cloud computing services such as hosting web applications, Cloud Backup, Cloud Block Storage, Databases, and Cloud Servers. The main aim to designing Rackspace is to easily manage private and public cloud deployments. Its data centers operating in the USA, UK, Hong Kong, and Australia.



Features of Rackspace

- Rackspace provides various tools that help organizations to collaborate and communicate more efficiently.
- We can access files that are stored on the Rackspace cloud drive, anywhere, anytime using any device.
- It offers 6 globally data centers.
- It can manage both virtual servers and dedicated physical servers on the same network.
- It provides better performance at a lower cost.

10) Alibaba Cloud

Alibaba Cloud is used to develop data management and highly scalable cloud computing services. It offers various services, including Elastic Computing, Storage, Networking, Security, Database Services, Application Services, Media Services, Cloud Communication, and Internet of Things.



Features of Alibaba Cloud

- Alibaba cloud offers a suite of global cloud computing services for both international customers and Alibaba Group's e-commerce ecosystem.
- Its services are available on a pay-as-per-use basis.
- It globally deals with its 14 data centers.
- It offers scalable and reliable data storage.

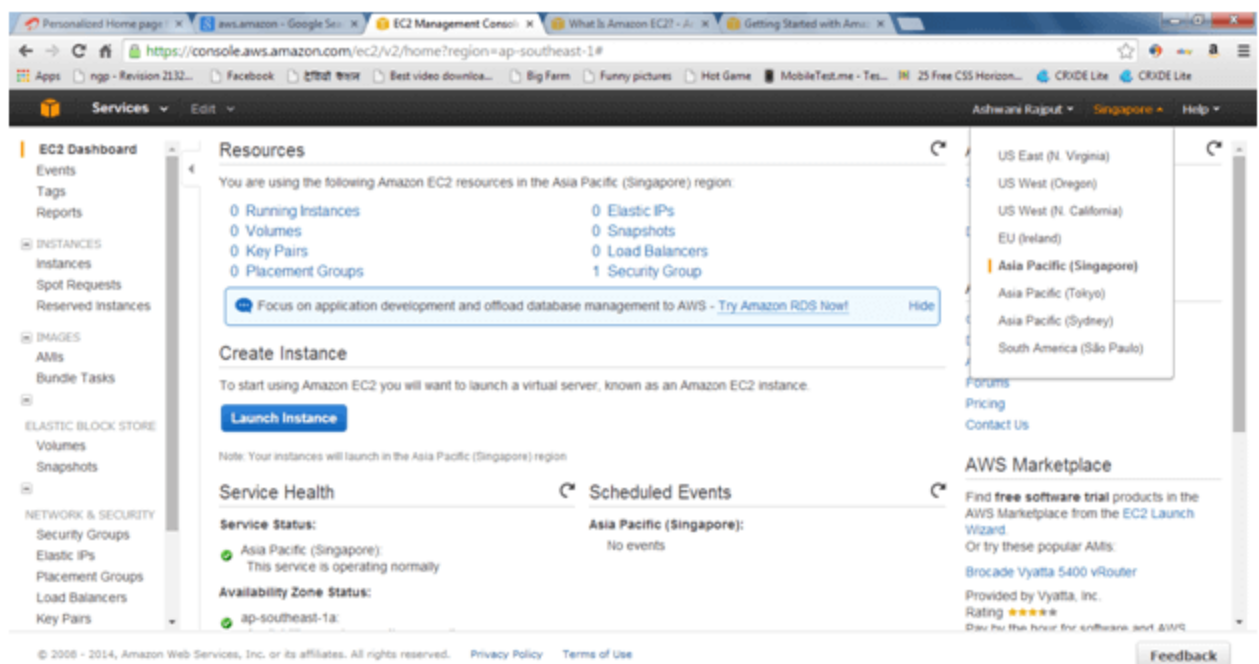
How to create amazon EC2 window instances:

Launch a Windows Instance

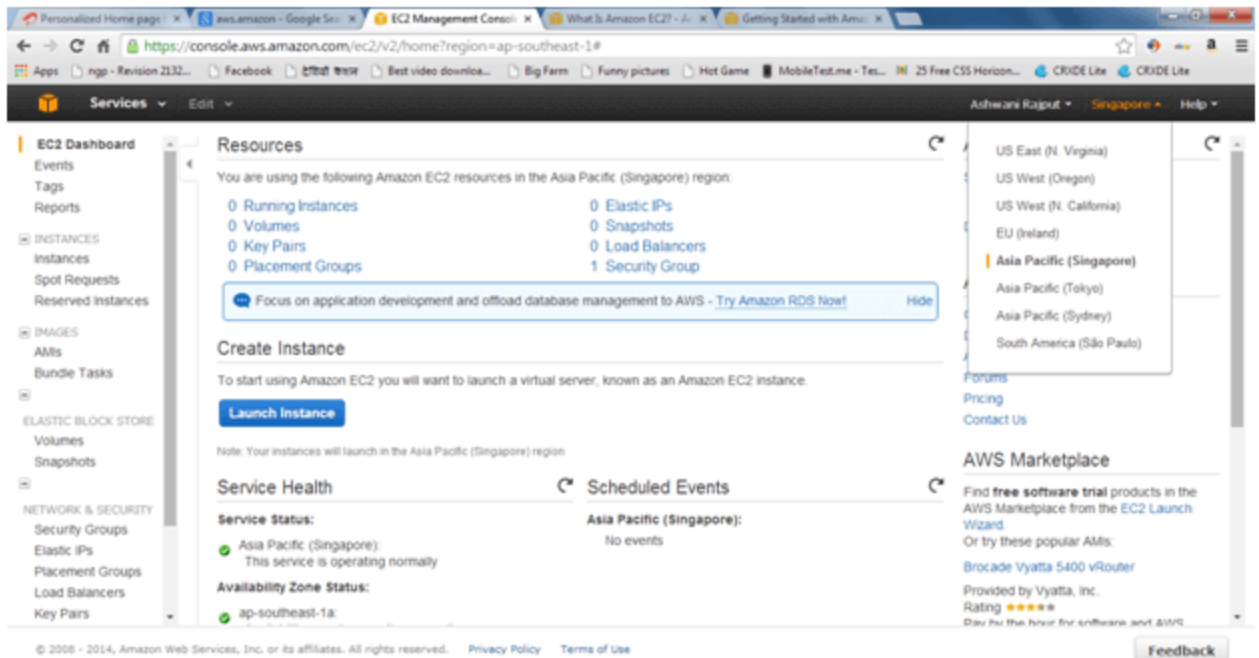
You can launch a Windows instance using the AWS Management Console as described following. An instance is a virtual server in the AWS cloud. With the help of Amazon EC2, you can set up and configure the operating system and applications that run on your instance.

To launch an instance

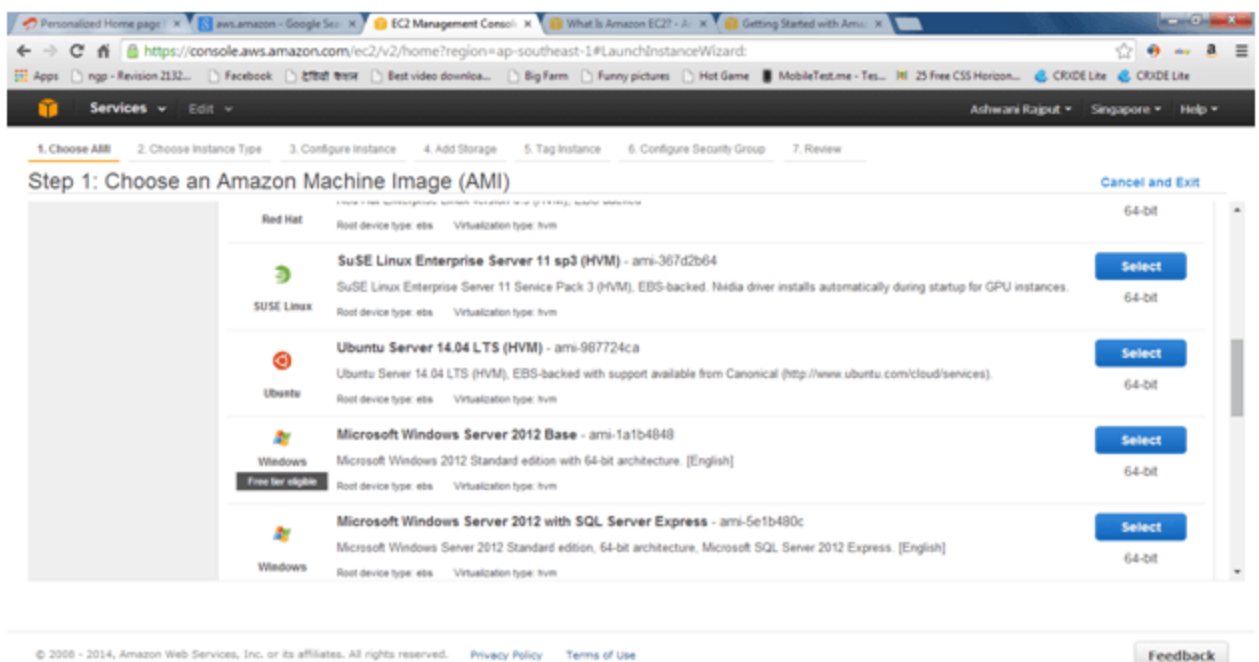
1. Sign in to the AWS Console and open the Amazon EC2 console.
2. From the navigation bar, select the region for the instance. Here we are going to choose Singapore data region. Otherwise, this choice is important because some Amazon EC2 resources can be shared between regions, while others can't be.



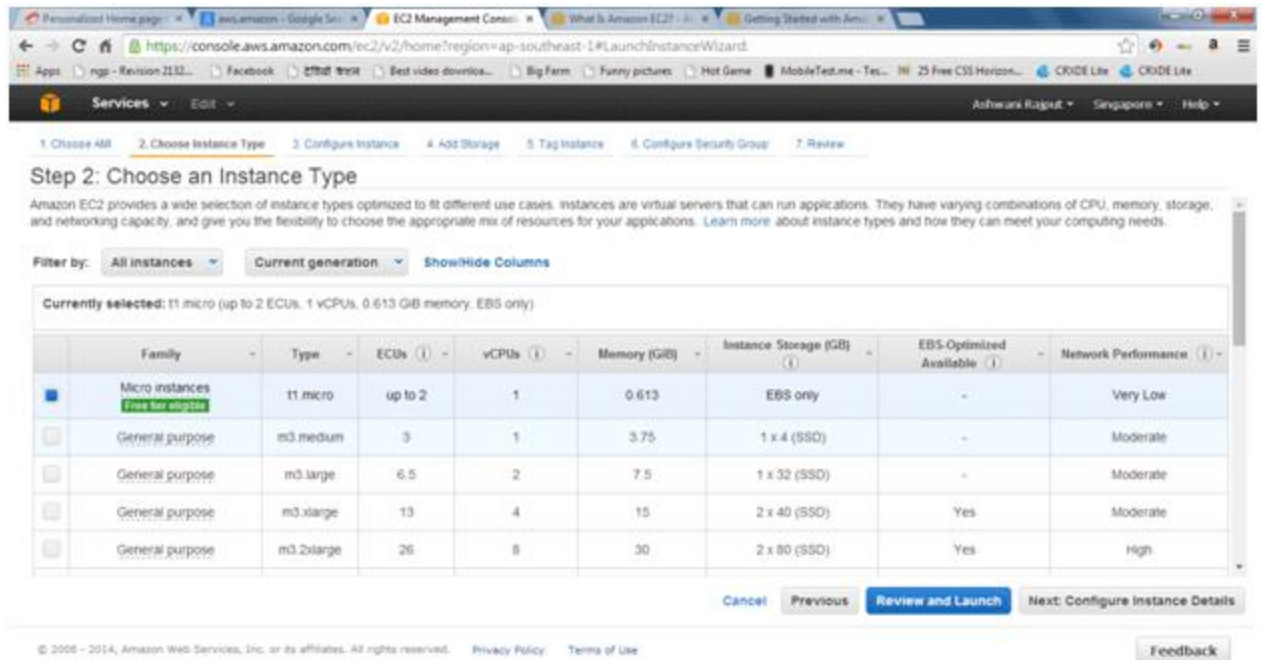
- On console dashboard, click **Launch Instance**.



- To **Choose an Amazon Machine Image (AMI)** page displays a list of basic configurations called Amazon Machine Images (AMIs) that serve as templates for your instance. Select the 64-bit version of Microsoft Windows Server 2008 R2. Notice that this configuration is marked as **Free tier eligible**.



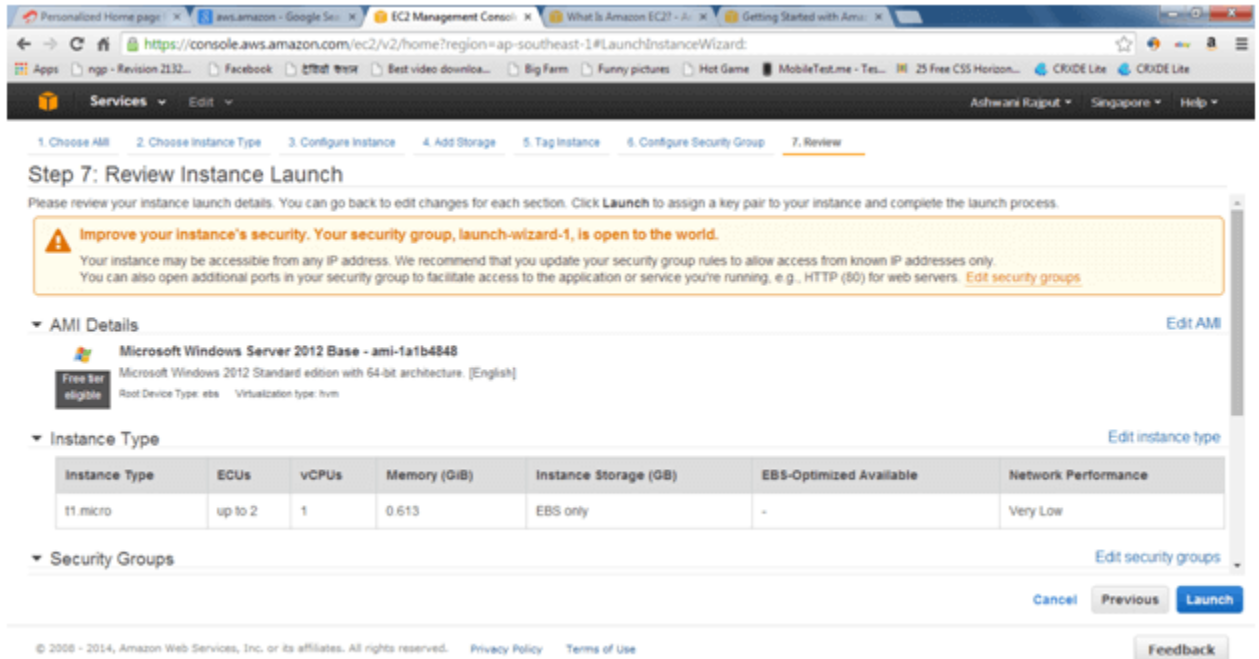
- To **Choose an Instance Type** page, you can select the hardware configuration for your instance. The **t1.micro** instance will be selected by default. Click **Review and Launch** to let the wizard complete or not with other configuration settings for you, so you can get started quickly.



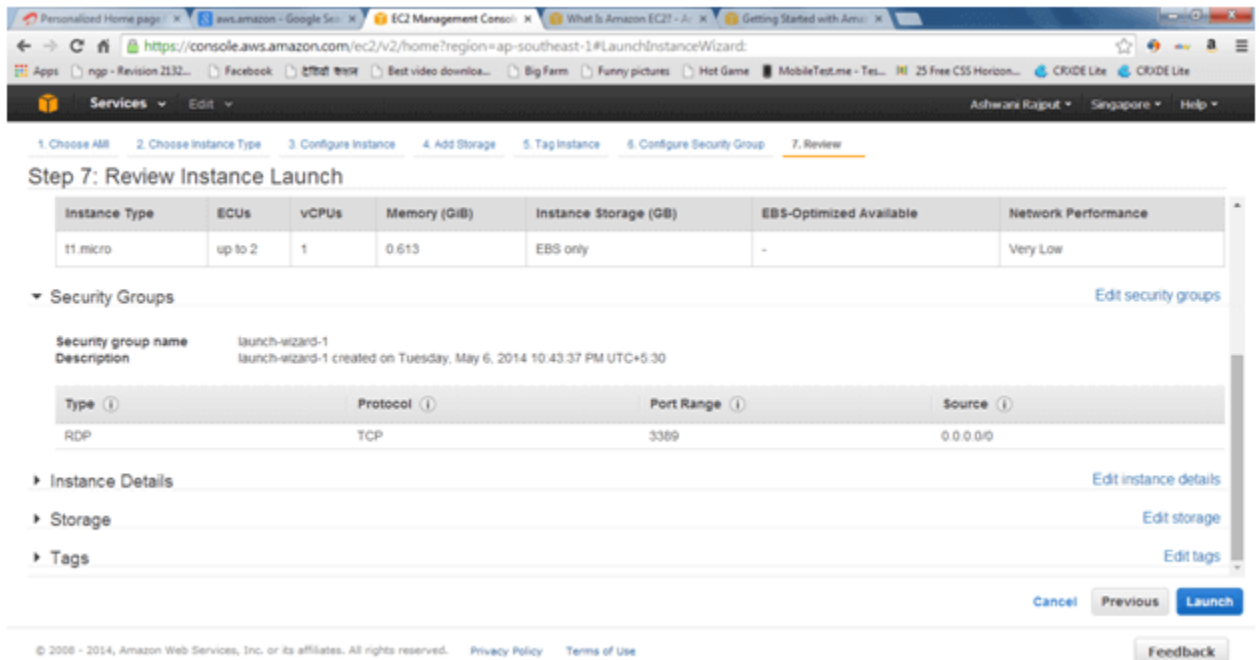
- To **Review Instance, launch** page, you need to go to the settings for your instance.

Under **Security Groups**, you will see that the wizard will be created and selected a security group for you. The security group includes basic firewall rules that will enable you to connect to your instance. For a Windows instance, you connect through Remote Desktop Protocol (RDP) on port 3389.

If you have an existing security group then you need to use by clicking **Edit security groups**, and select your group on the **Configure Security Group** page. When done, click **Review and Launch** to return to the **Review Instance Launch** page.



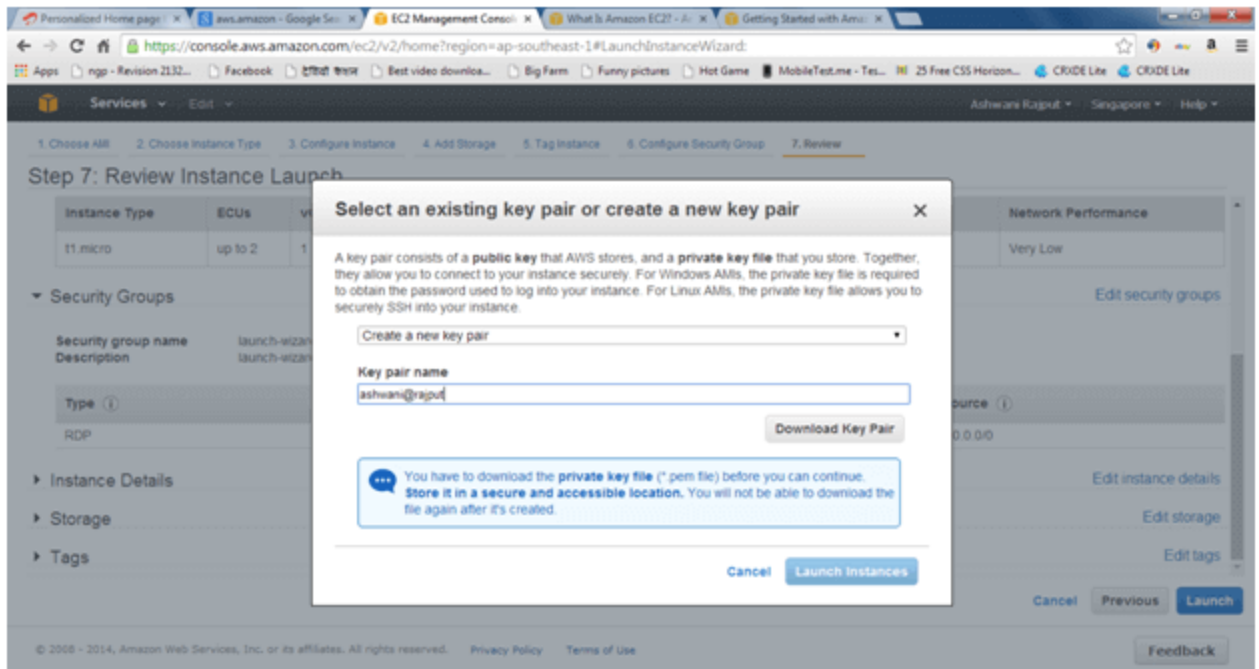
7. Click on **Launch**.



8. In the **Select an existing key pair or create a new key pair** dialog box, you can select **Choose an existing key pair**, to select a key pair you already created.

Alternatively, you can create a new key pair. Select **Create a new key pair**, enter a name for the key pair, and then click **Download Key Pair**.

This is the only chance for you to save the private key file, so be sure to download it. Save the private key file in a safe place. You'll need to provide the name of your key pair when you launch an instance and the corresponding private key each time you connect to the instance.



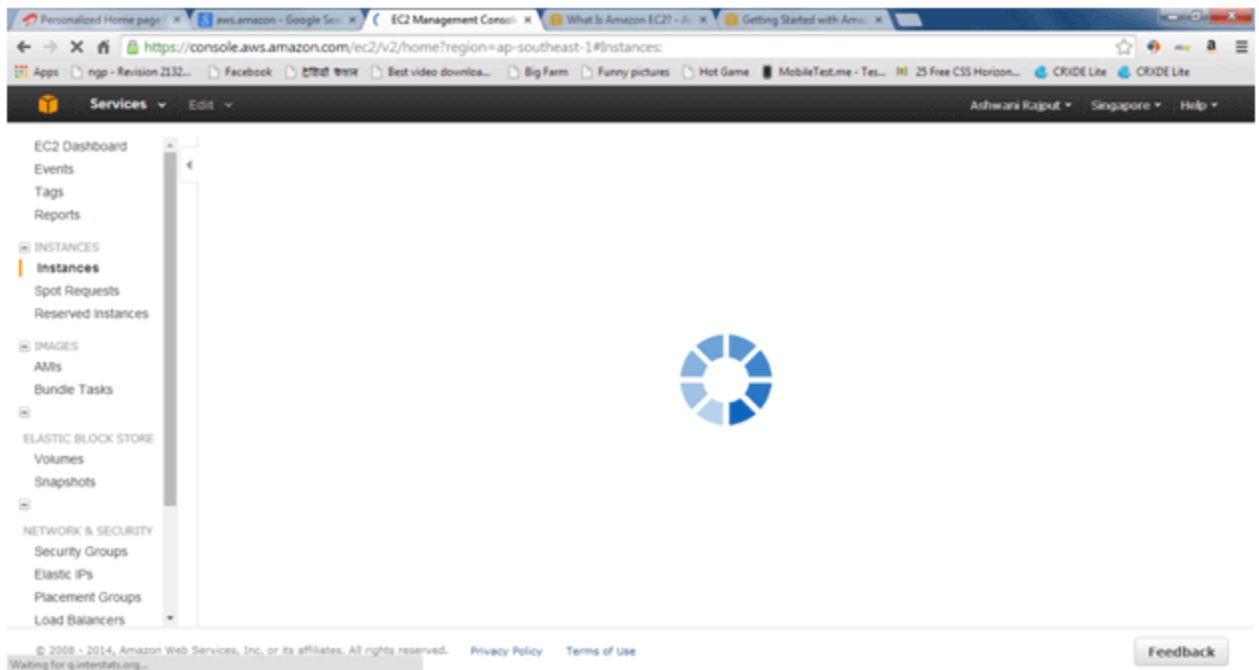
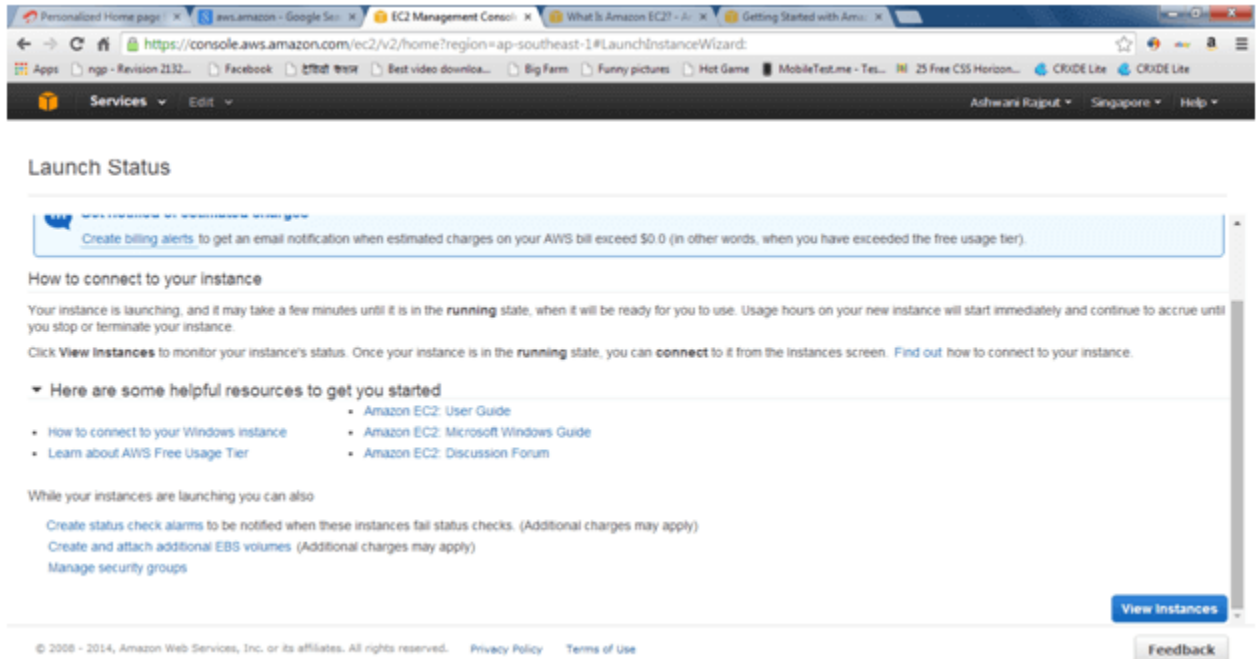
It will be downloaded in the form of .pem file and save it for future purpose.

Attention

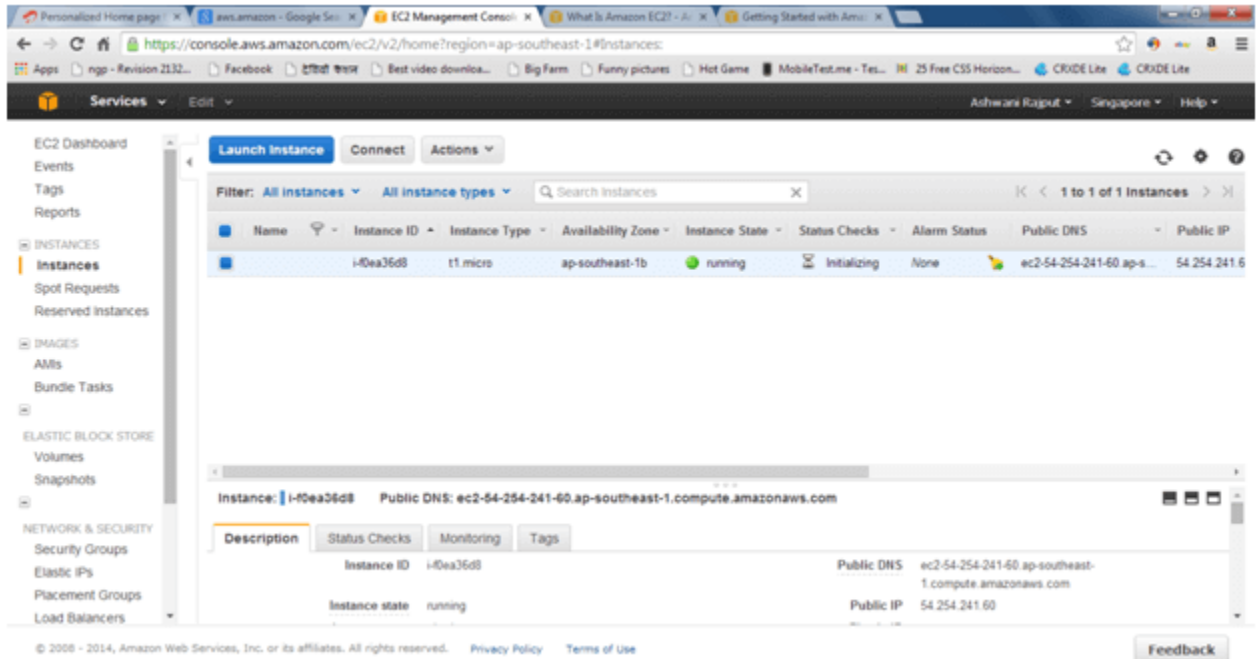
Don't select the **Proceed without a key pair** option. If you launch your instance without a key pair, then you can't connect to it.

When you are ready, select the acknowledgement check box, and then click **Launch Instances**.

9. A confirmation page will open to know that your instance is launching. Click **View Instances** to close the confirmation page and return to the console.



- On the **Instances** page, you can view the status of the launch. It takes a short time for an instance to launch. When you launch an instance, its initial state is **pending**. After the instance starts, its state changes to **running** and it receives a public DNS name.



11. Record the public DNS name for your instance because you'll need it for the next step.
12. (Optional) After your instance is launched, you can view its security group rules. From the Instances page, select the instance. In the **Description** tab, find **Security groups** and click **view rules**.

Security Groups associated with i-1a2b3c4d			
Ports	Protocol	Source	my-security-group
3389	tcp	0.0.0.0/0	✓

As you can see, if you used the security group the wizard created for you, it contains one rule that allows RDP traffic from any IP source to port 3389. If you launch a Windows instance running IIS and SQL, the wizard creates a security group that contains additional rules to allow traffic to port 80 for HTTP (for IIS) and port 1433 for MS SQL.

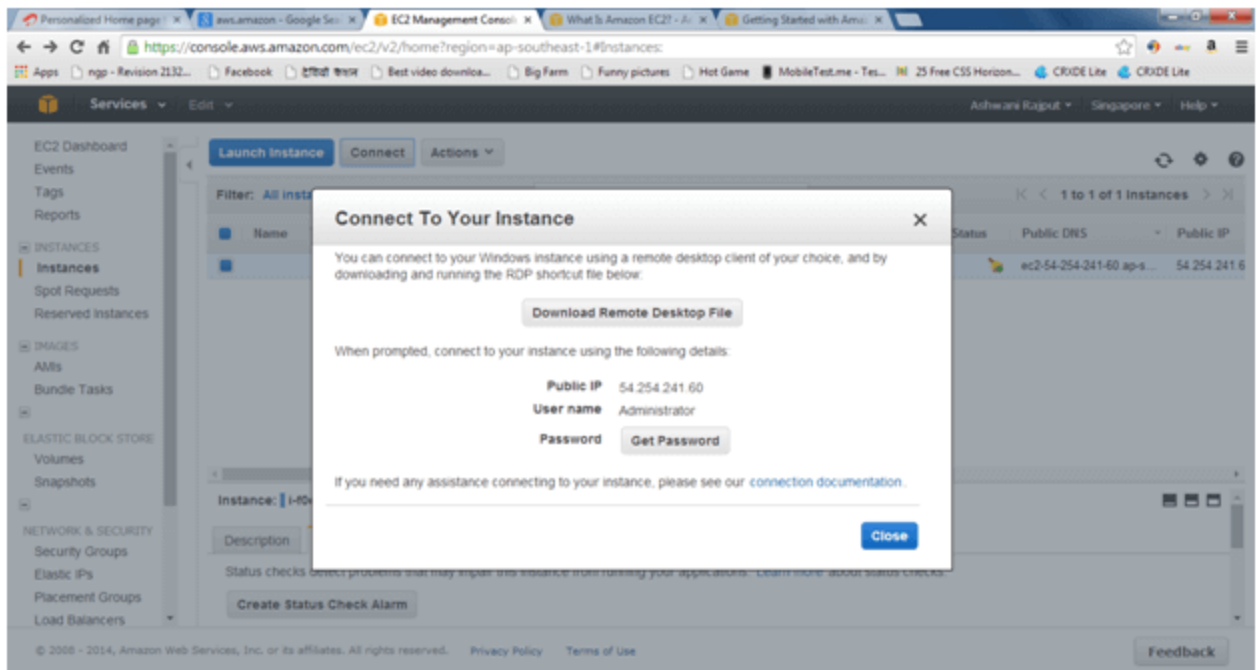
Connect to Your Windows Instance

To connect to a Windows instance, you must retrieve the initial administrator password and then specify this password when you connect to your instance using Remote Desktop.

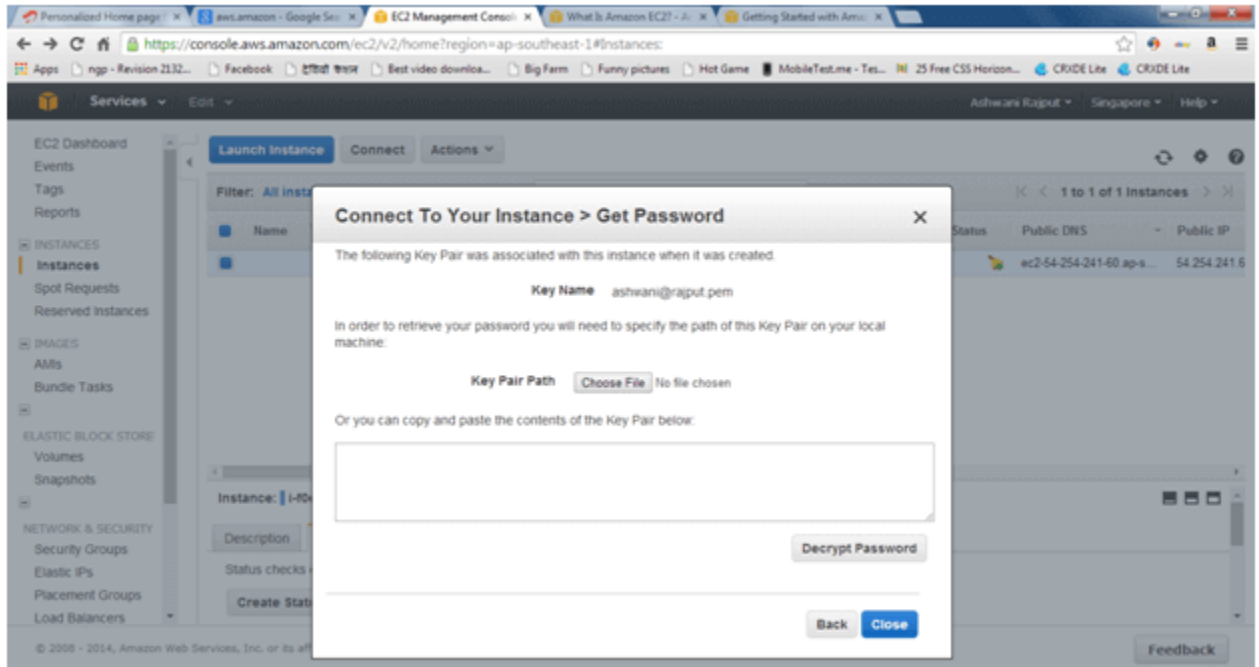
Note:- Windows instances are limited to two simultaneous remote connections at one time. If you attempt a third connection, an error will occur. For more information, see [Configure the Number of Simultaneous Remote Connections Allowed for a Connection](#).

To connect to your Windows instance

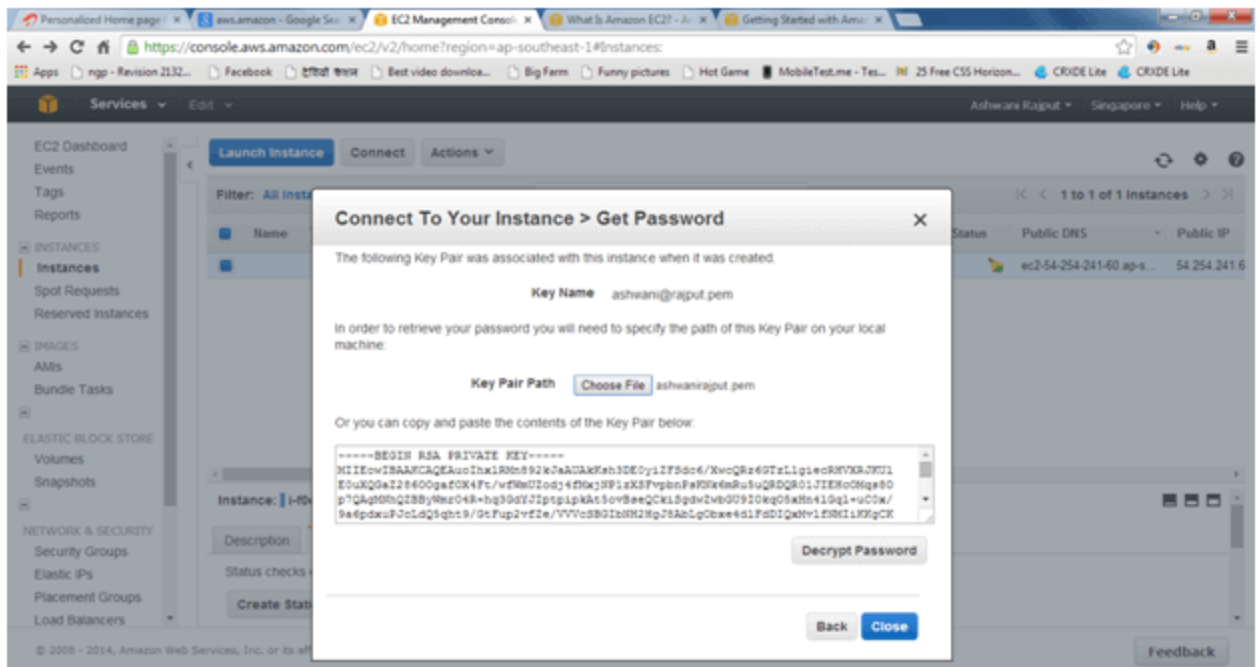
1. In the Amazon EC2 console, select the instance, and then click **Connect**.



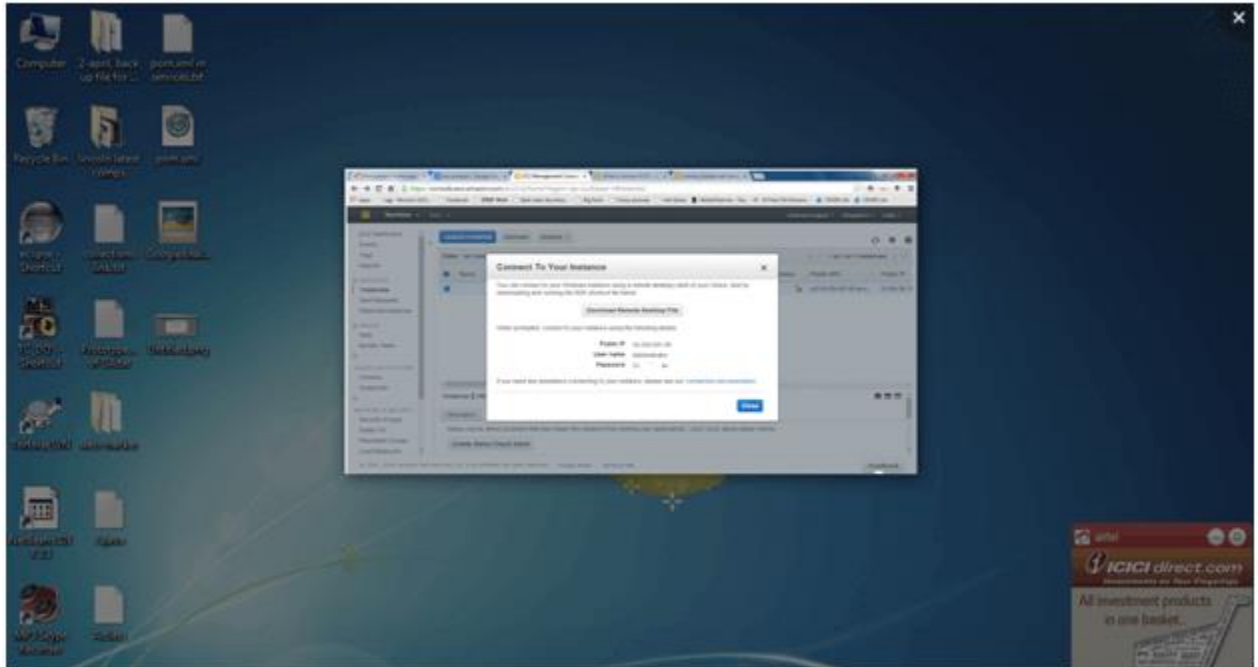
2. In the **Connect To Your Instance** dialog box, click **Get Password** (it will take a few minutes after the instance is launched before the password is available).



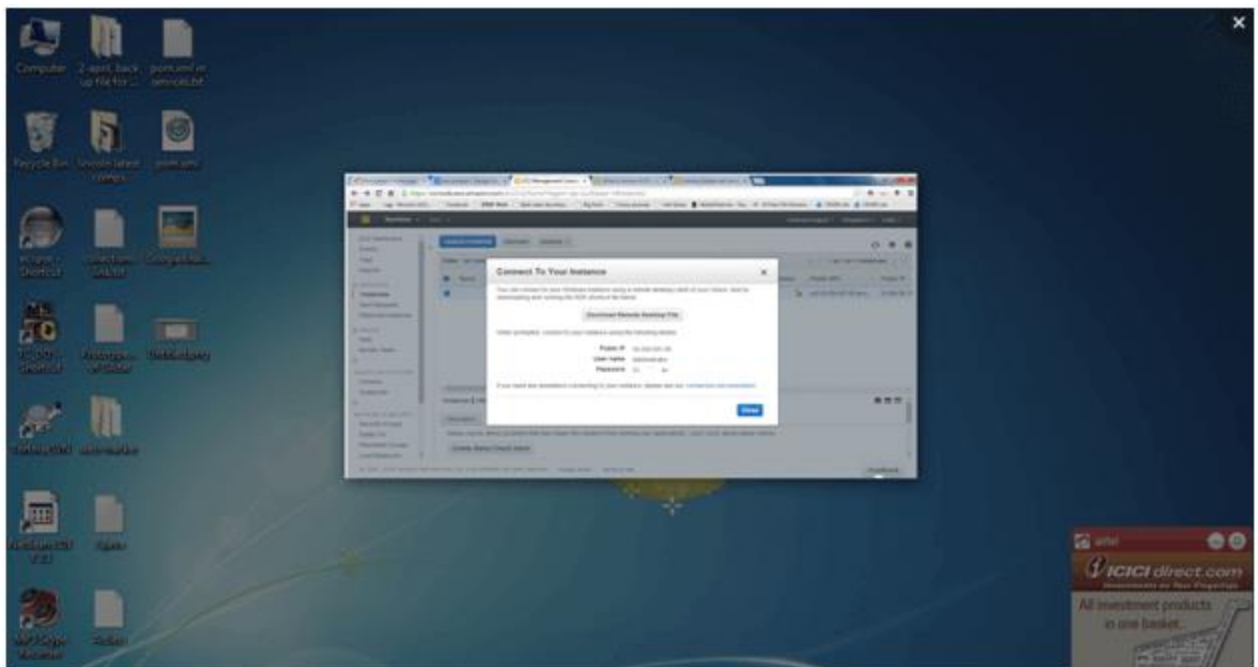
3. Click **Browse** and navigate to the private key file you created when you launched the instance. Select the file and click **Open** to copy the entire contents of the file into contents box.



4. Click **Decrypt Password**. The console displays the default administrator password for the instance in the **Connect To Your Instance** dialog box, replacing the link to **Get Password** shown previously with the actual password.

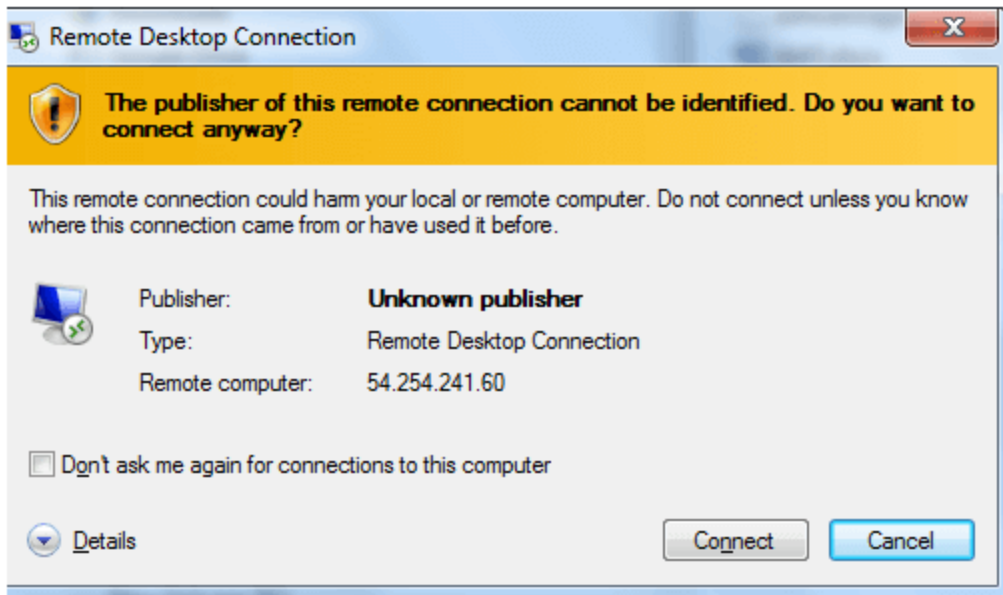


5. Click **Download Remote Desktop File**. Your browser prompts you to either open or save the .rdp file. Either option is fine. When you have finished, you can click **Close** to dismiss the **Connect To Your Instance** dialog box.

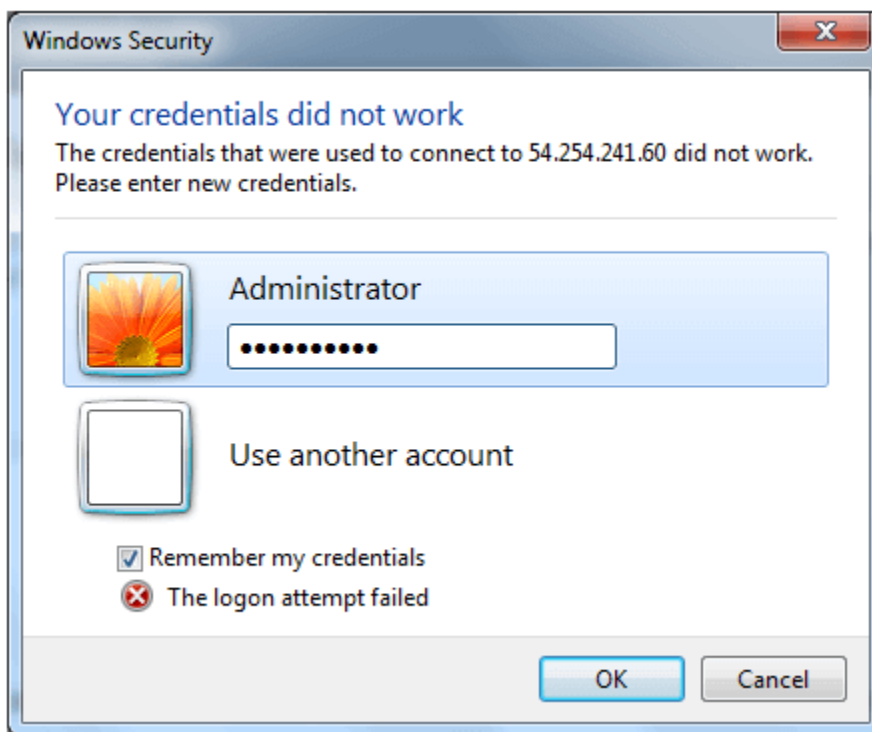


6. If you opened the .rdp file, you will see the **Remote Desktop Connection** dialog box. If you saved the .rdp file then navigate to your downloads directory, and double-click the .rdp file to display the dialog box. You will get a warning that the publisher of the remote connection is

unknown. Click **Connect** to connect to your instance. You may get a warning that the security certificate could not be authenticated. Click **Yes** to continue.

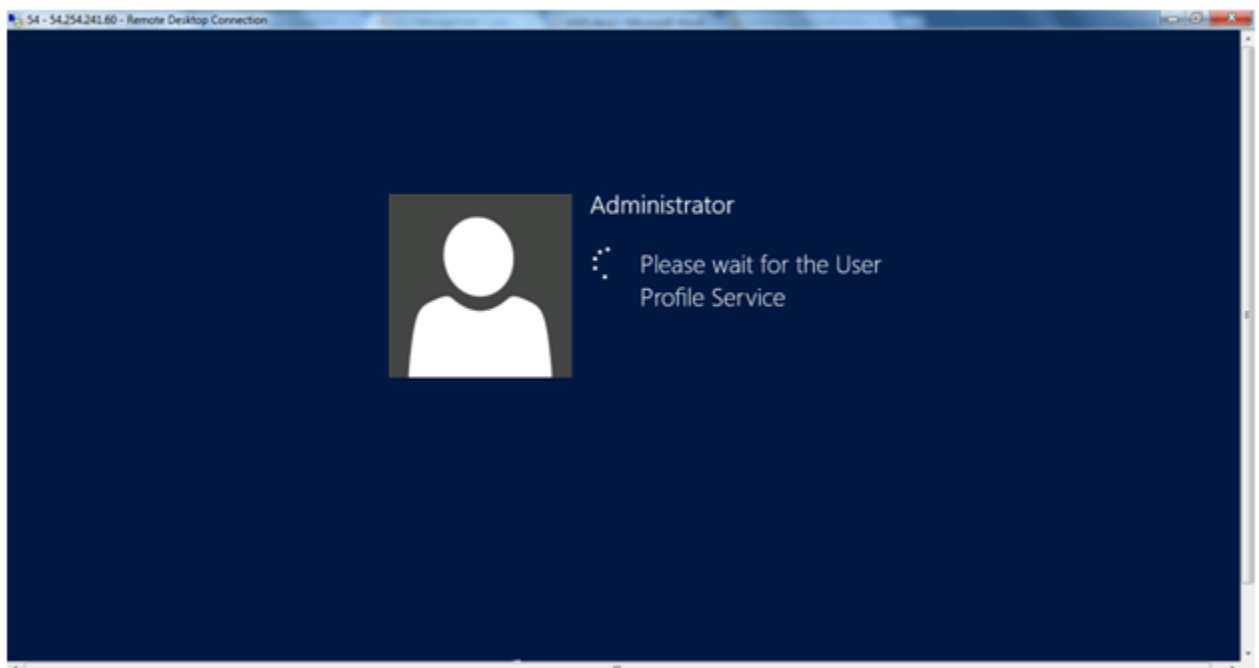
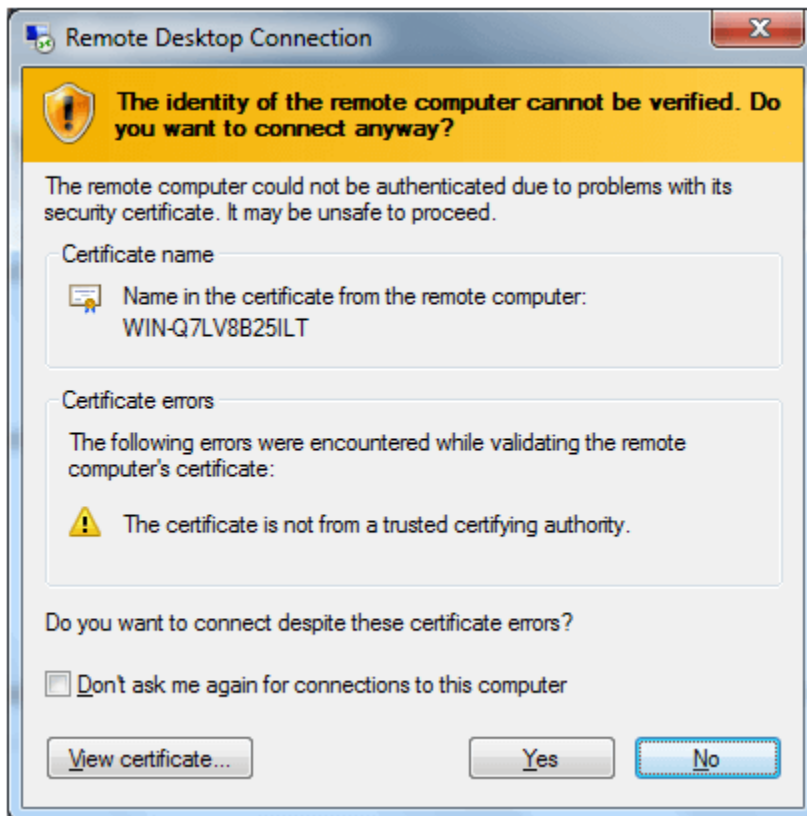


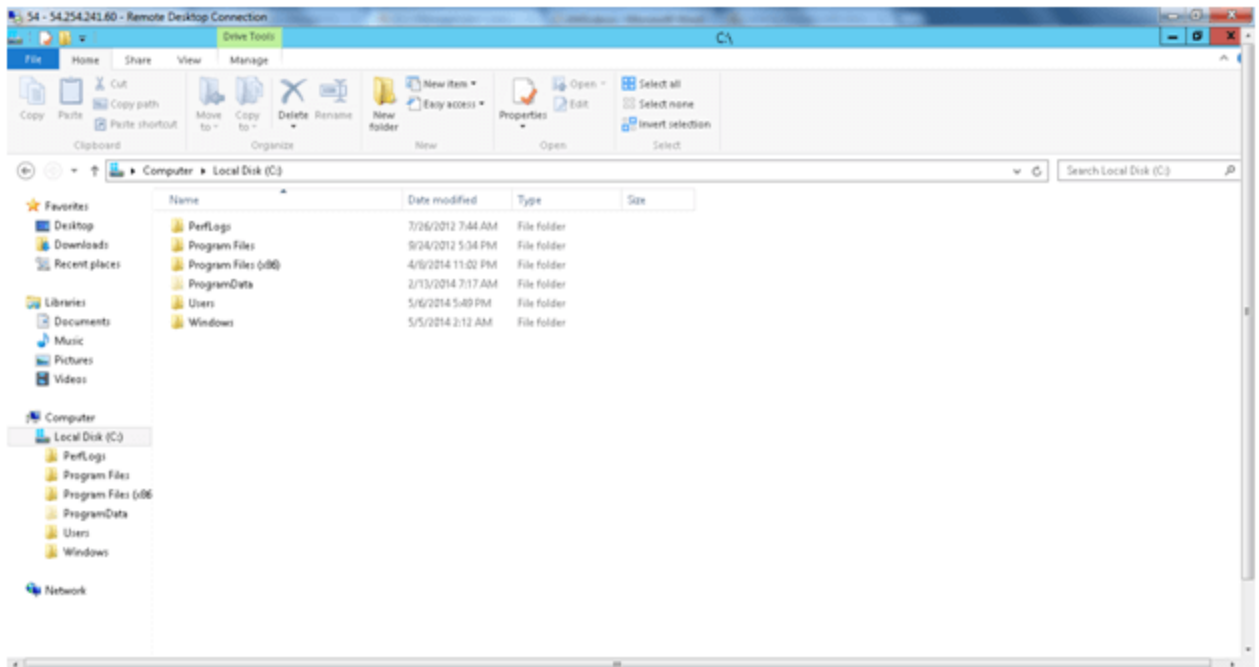
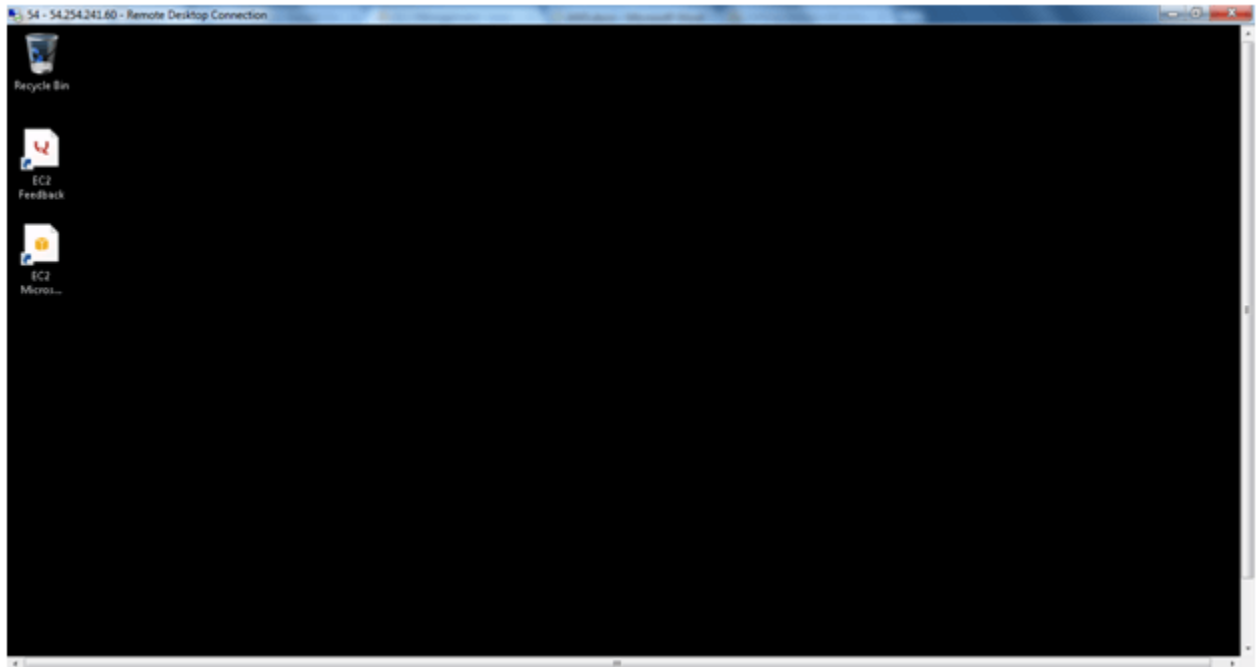
7. Log in to the instance as prompted, using the default **Administrator** account and the default administrator password that you recorded or copied previously.



After you connect, we recommend that you do the following:

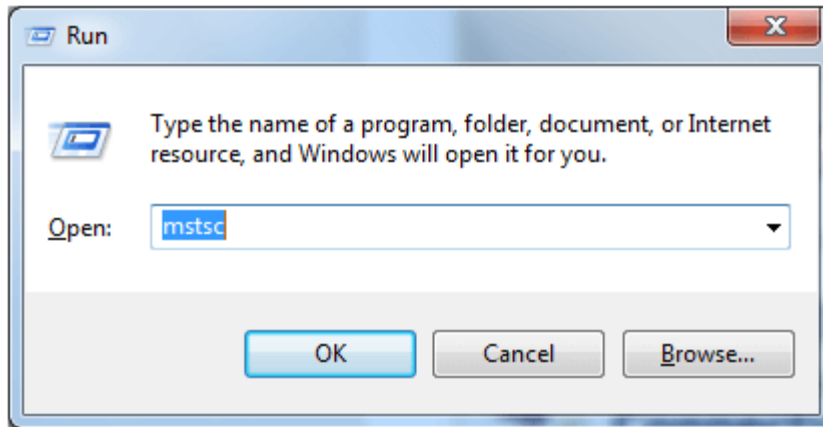
- Change the Administrator password from the default value. You change the password while logged on to the instance itself, just as you would on any other Windows Server.
- Create another user account with administrator privileges on the instance. Another account with administrator privileges is a safeguard if you forget the Administrator password or have a problem with the Administrator account.



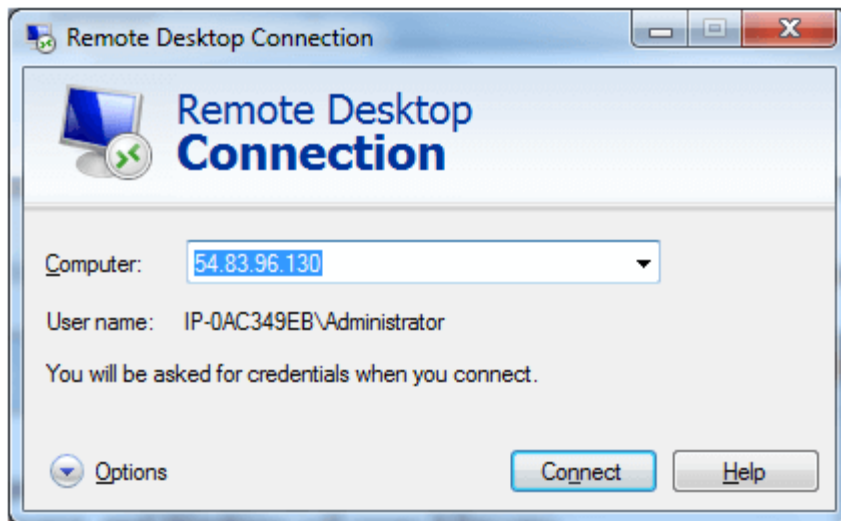


Now how can you share your local drives with the Singapore or others data center?

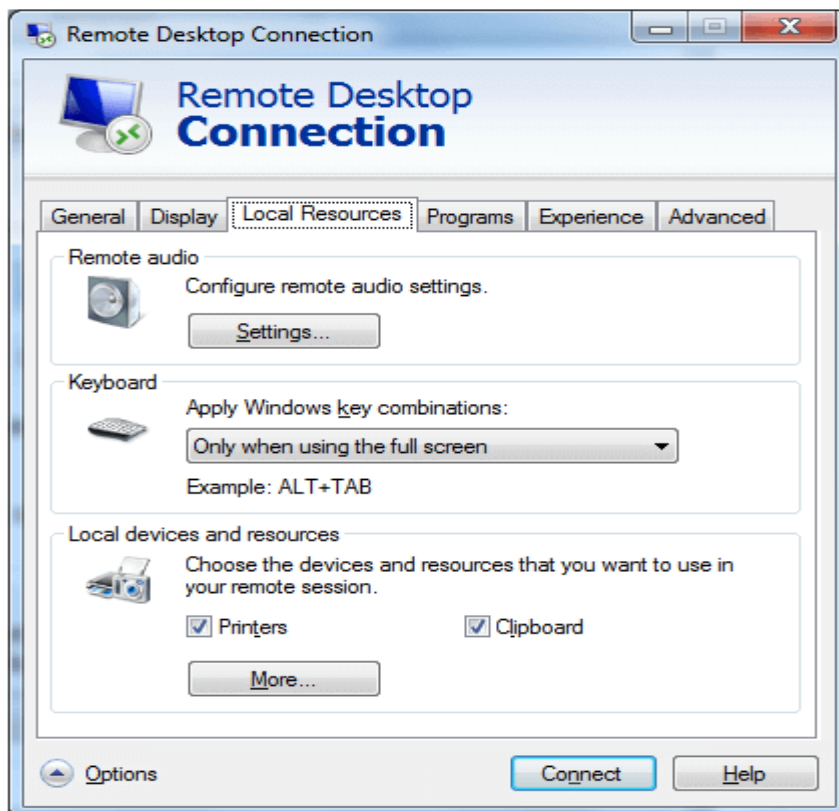
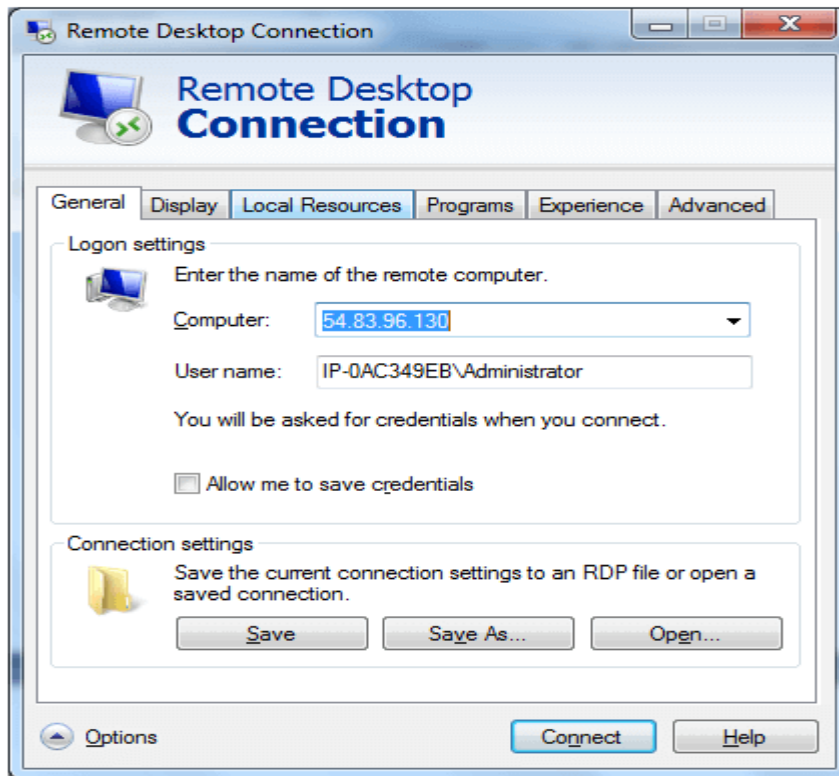
Now start the RDP (Remote Desktop Service) from the Windows machine as shown below. Run themstsc command from the Run menu.



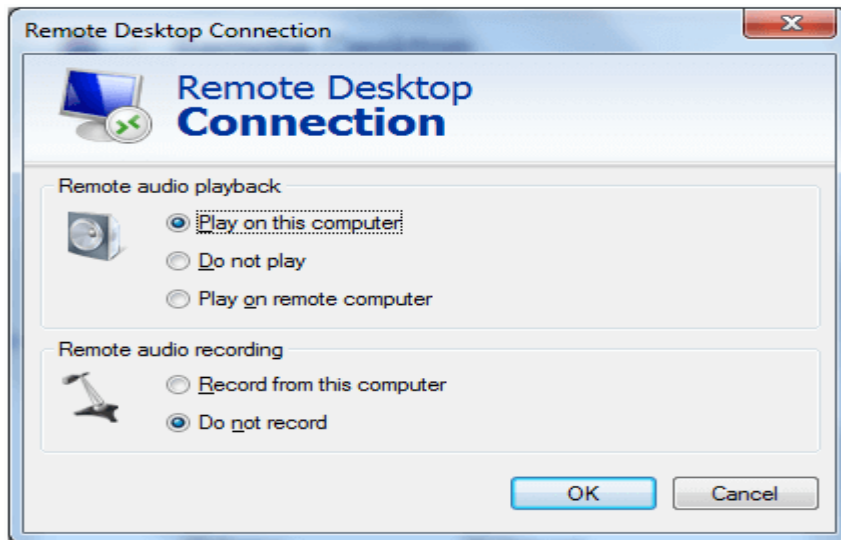
The Remote Desktop Connection window is displayed.



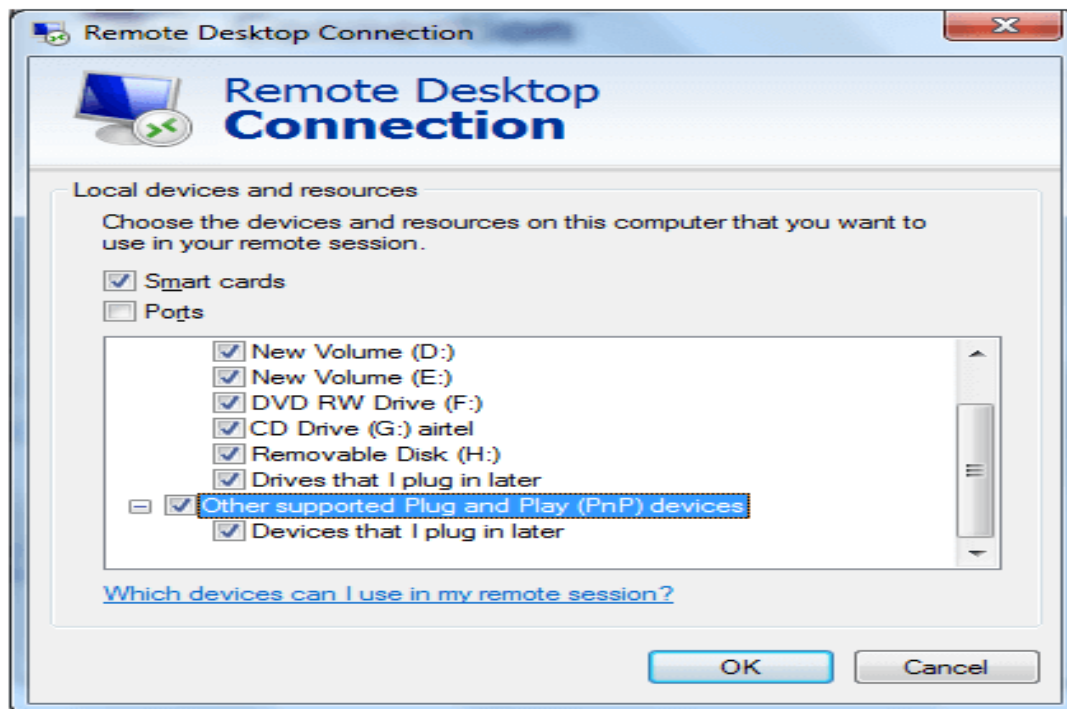
Click the **Options** button and then select the **Local Resources** tab.

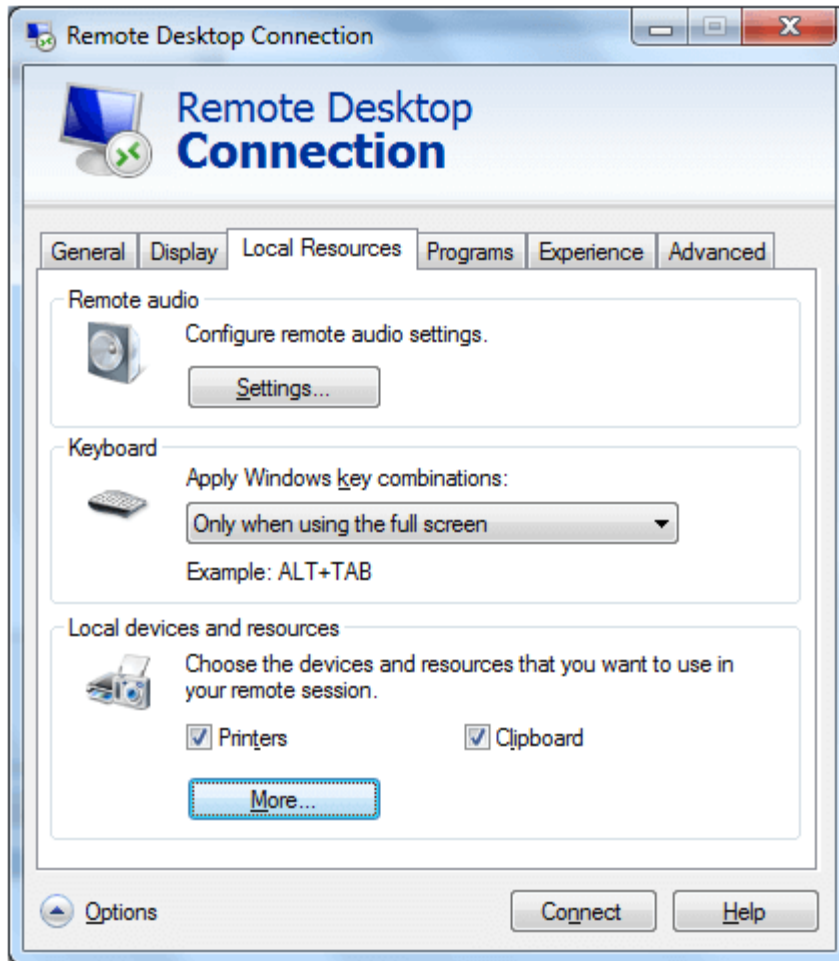


In the Remote audio area, select **Settings** to configure the audio settings of your instance.

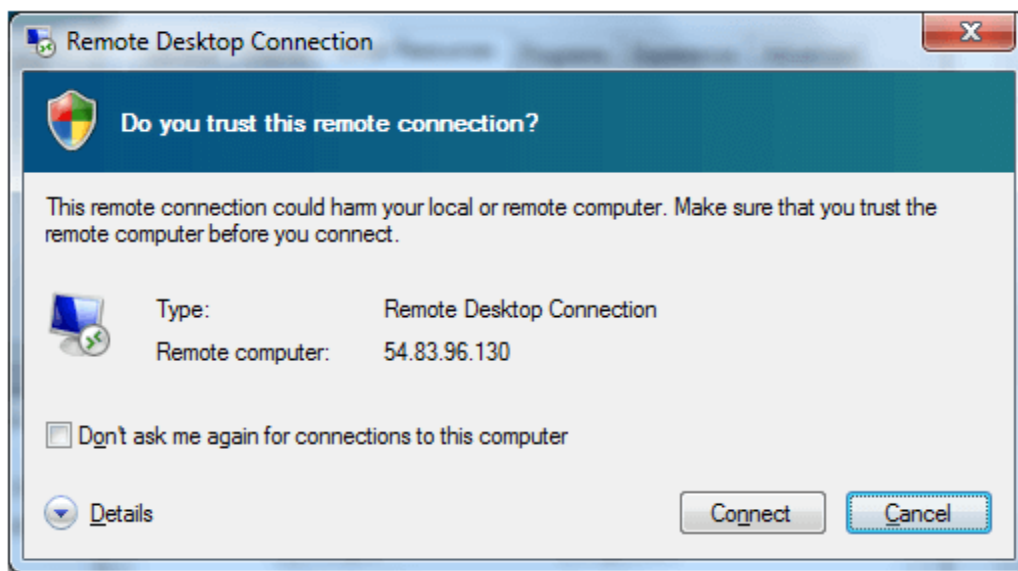


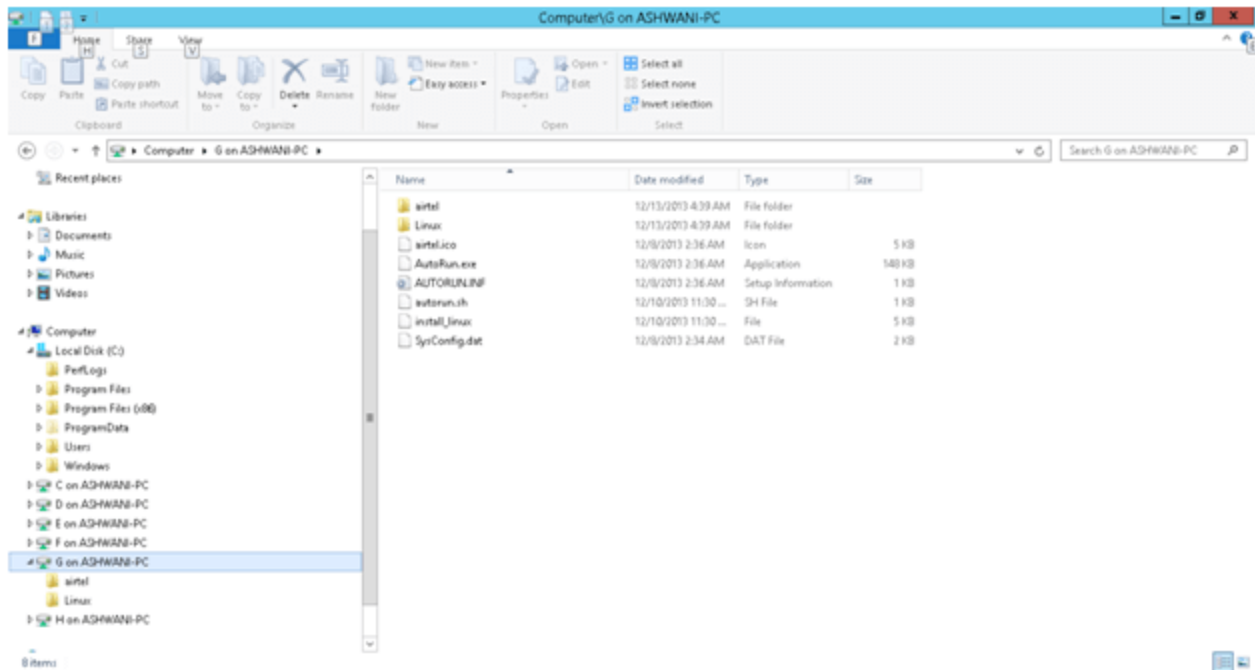
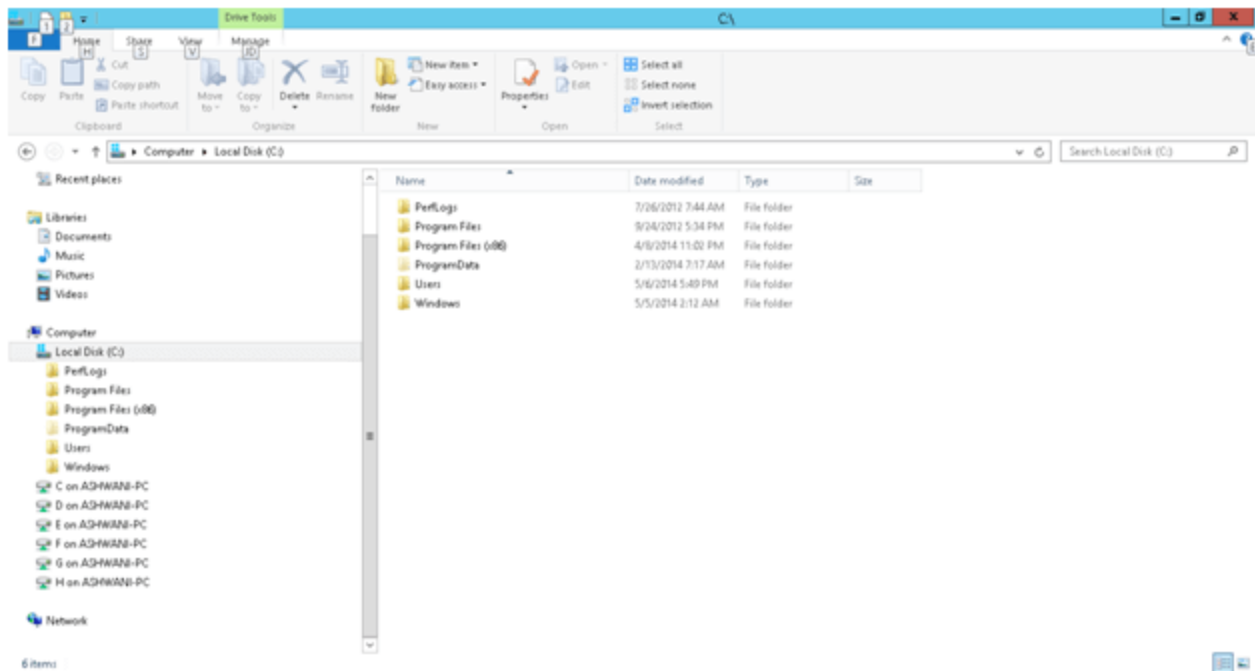
In the **Local Resource** tab, in the **Local devices and resources** area, click **More**. All the plug and play devices that can be available through network in the AWS EC2 server instance are listed, as well as the disk drives.





Click **Connect**.





Now we can install anything in the Singapore datacenter from our local drives.

Difference between AWS, Azure, and Google Cloud Platform

Amazon Web Services (AWS)

Amazon Web Services (AWS) is a cloud computing platform which was introduced in 2002. It offers a wide range of cloud services such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).

AWS provides the largest community with millions of active customers as well as thousands of partners globally. Most of the organizations use AWS to expand their business by moving their IT management to the AWS.

Flexibility, security, scalability, and better performance are some important features of AWS.

Microsoft Azure

Microsoft Azure is also called as **Windows Azure**. It is a worldwide cloud platform which is used for building, deploying, and managing services. It supports multiple programming languages such as Java, Nodejs, C, and C#. The advantage of using Microsoft Azure is that it allows us to a wide variety of services without arranging and purchasing additional hardware components.

Microsoft Azure provides several computing services, including servers, storage, databases, software, networking, and analytics over the Internet.

Google Cloud Platform (GCP)

Google Cloud Platform (GCP) is introduced by **Google** in 2011. It allows us to use Google's products such as **Google search engine, Gmail, YouTube**, etc. Most of the companies use this platform to easily build, move, and deploy applications on the cloud. It allows us to access these applications using a high-speed internet connection. The advantage of GCP is that it supports various databases such as **SQL, MYSQL, Oracle, Sam**, and **more**.

Google Cloud Platform (GCP) provides various cloud computing services, including computing, data analytics, data storage, and machine learning.

Difference between AWS, Azure, and Google Cloud Platform (GCP)

Although AWS, Microsoft Azure, and Google cloud platforms offer various high-level features in terms of computing, management, storage, and other services, but there are also some differences between these three.



The below table shows the difference between AWS, Azure, and Google Cloud Platform -

Parameter	AWS	Azure	Google Cloud Platform
App Testing	It uses device farm	It uses DevTest labs	It uses Cloud Test labs.
API Management	Amazon API gateway	Azure API gateway	Cloud endpoints.
Kubernetes Management	EKS	Kubernetes service	Kubernetes engine
Git Repositories	AWS source repositories	Azure source repositories	Cloud source repositories.
Data warehouse	Redshift	SQL warehouse	Big Query
Object Storage	S3	Block Blobs and files	Google cloud storage.
Relational DB	RDS	Relational DBs	Google Cloud SQL
Block Storage	EBS	Page Blobs	Persistent disks

Marketplace	AWS	Azure	G suite
File Storage	EFS	Azure Files	ZFS and Avere
Media Services	Amazon Elastic transcoder	Azure media services	Cloud video intelligence API
Virtual network	VPC	VNet	Subnet
Pricing	Per hour	Per minute	Per minute
Maximum processors in VM	128	128	96
Maximum memory in VM (GiB)	3904	3800	1433
Caching	ElasticCache	RedisCache	CloudCDN
Load Balancing Configuration	Elastic Load Balancing	Load Balancer Application Gateway	Cloud Load Balancing
Global Content Delivery Networks	CloudFront	Content Delivery Network	Cloud Interconnect