

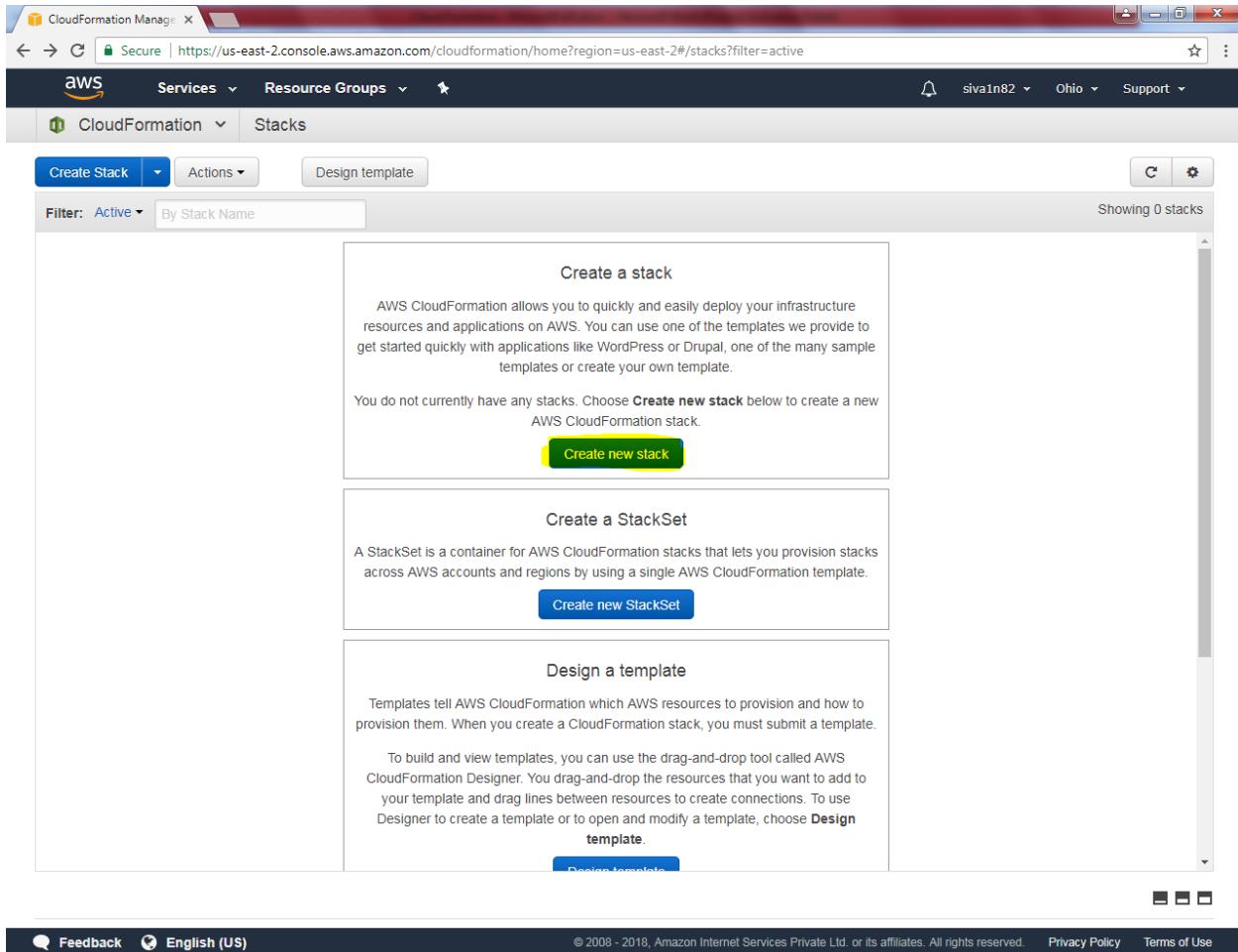
Lab19

Cloud Formation – Microsoft AD

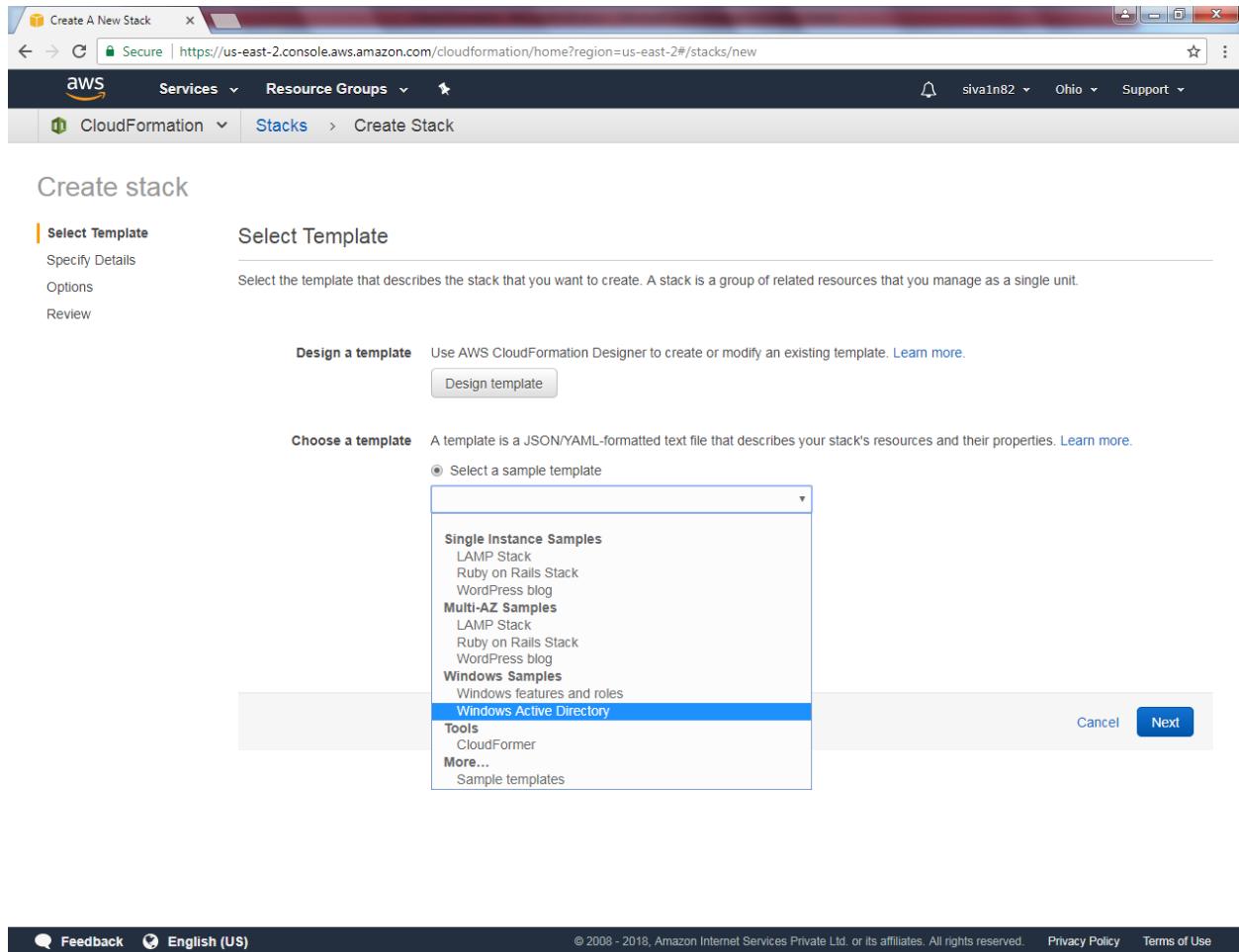
Click “Cloud Formation”service.

The screenshot shows the AWS IAM Management Console interface. The top navigation bar includes the AWS logo, a search bar with the URL [https://console.aws.amazon.com/iam/home?region=us-east-1#users\\$new?step=details&accessKey\\$login&userNames=student1&passwordType=manual&group...](https://console.aws.amazon.com/iam/home?region=us-east-1#users$new?step=details&accessKey$login&userNames=student1&passwordType=manual&group...), and user information (siva1n82, Global, Support). The main menu on the left lists services like IAM, S3, EC2, etc. The 'Services' dropdown is open, showing categories such as Compute, Developer Tools, Machine Learning, AR & VR, Application Integration, Customer Engagement, Business Productivity, Desktop & App Streaming, and Internet Of Things. Under the 'Compute' category, 'CloudFormation' is specifically highlighted with a yellow box. Other visible services in this category include EC2, Lightsail, Elastic Container Service, Lambda, Batch, and Elastic Beanstalk.

Click “Create new stack”.



In Select a sample template, select “Windows Active directory”.



Click "Next".

The screenshot shows the 'Create stack' wizard in the AWS CloudFormation console. The current step is 'Select Template'. The 'Choose a template' section is active, with the 'Select a sample template' radio button selected. The dropdown menu shows 'Windows Active Directory' as the chosen option. Other options include 'Upload a template to Amazon S3' (with a 'Choose File' button) and 'Specify an Amazon S3 template URL' (with a URL input field containing 'https://s3.us-east-2.amazonaws.com/cloudformation-template'). The 'Design a template' section is also visible, with a 'Design template' button.

Type Stack name as “WindowsAD”, DomainDNSName as “Sansbound.pvt”, DomainNetBIOSName as “Sans”, Instance type “t2.micro”, keyname = (Select the keyname), Restoremode password as “12345678”, Source CIDR For RDP = 0.0.0.0/0

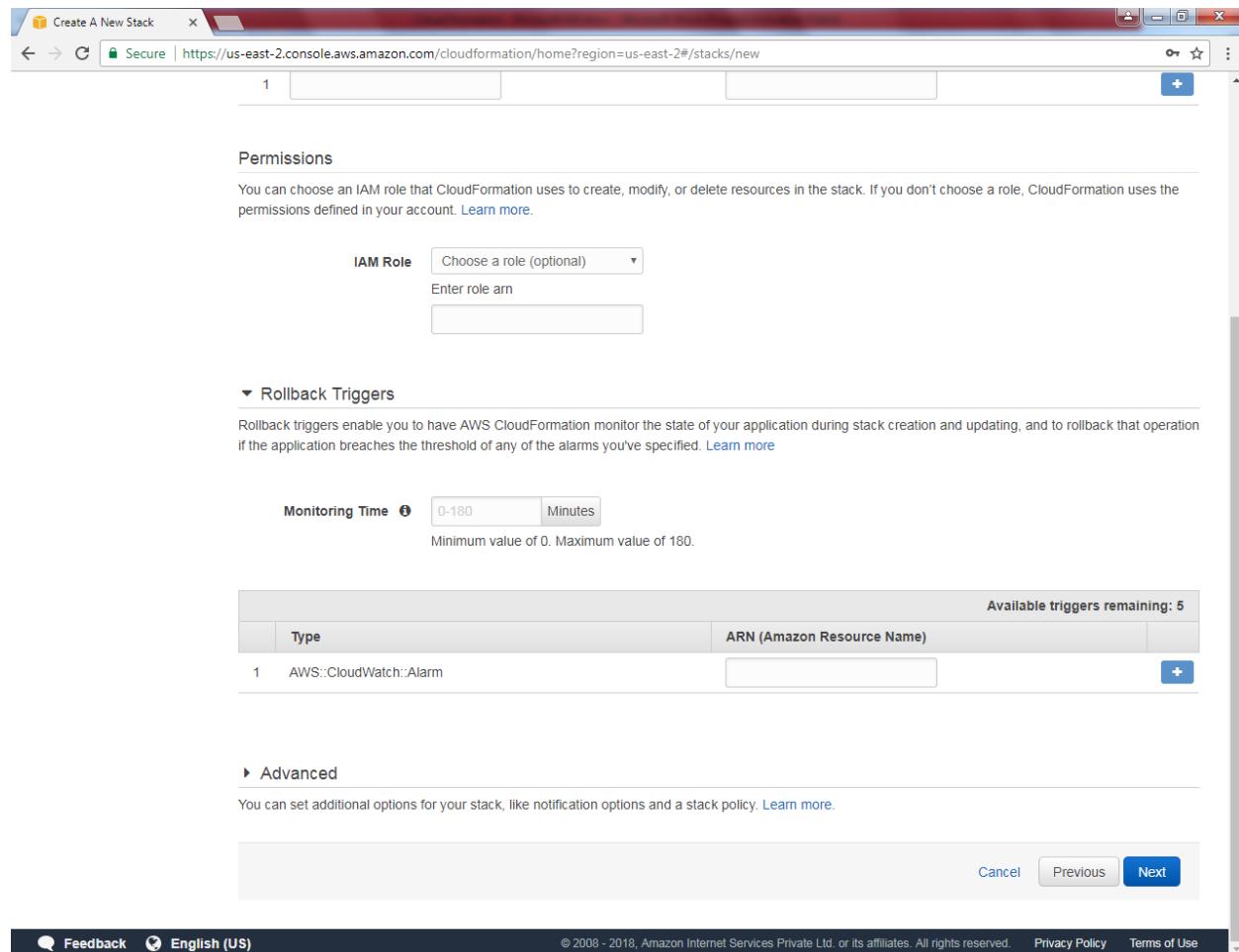
The screenshot shows the 'Create stack' wizard in the AWS CloudFormation console. The current step is 'Specify Details'. The 'Stack name' field contains 'WindowsAD'. The 'Parameters' section includes:

- DomainDNSName:** sansbound.pvt (description: Fully qualified domain name (FQDN) of the forest root domain e.g. corp.example.com)
- DomainNetBIOSName:** sans (description: NetBIOS name of the domain (upto 15 characters) for users of earlier versions of Windows e.g. CORP)
- InstanceType:** t2.micro (description: Amazon EC2 instance type)
- KeyName:** siva_ohio (description: Name of an existing EC2 KeyPair)
- RestoreModePassword:** (redacted) (description: Password for a separate Administrator account when the domain controller is in Restore Mode. Must be at least 8 characters containing letters, numbers and symbols)
- SourceCidrForRDP:** 0.0.0.0/0 (description: IP Cidr from which you are likely to RDP into the instances. You can add rules later by modifying the created security groups e.g. 54.32.98.160/32)

At the bottom, there are 'Cancel', 'Previous', and 'Next' buttons. The 'Next' button is highlighted in blue.

Click “Next”.

Leave default and click “Next”.



Click “Create”.

The screenshot shows the 'Create A New Stack' wizard in the AWS CloudFormation console. The current step is 'Details'. The page includes the following sections:

- Details**:
 - Stack name:** WindowsAD
 - DomainDNSName**: sansbound.pvt
 - DomainNetBIOSName**: sans
 - InstanceType**: t2.micro
 - KeyName**: siva_ohio
 - RestoreModePassword**:
 - SourceCidrForRDP**: 0.0.0.0/0
- Options**:
 - Tags**: No tags provided
 - Rollback Triggers**: No monitoring time provided
No rollback triggers provided
 - Advanced**:
 - Notification**:
 - Termination Protection**: Disabled
 - Timeout**: none
 - Rollback on failure**: Yes

At the bottom, there is a 'Quick Create Stack' link, a 'Cancel' button, a 'Previous' button, and a prominent blue 'Create' button.

Wait for 15-20 minutes to create a server with DC.

DC created successfully.

The screenshot shows the AWS CloudFormation Manager interface. At the top, there's a navigation bar with the AWS logo, Services dropdown, Resource Groups dropdown, a user icon for 'siva1n82', and a location dropdown for 'Ohio'. Below the navigation is a search bar and a 'CloudFormation' dropdown. The main area is titled 'Stacks' and shows a table with one row. The table has columns for Stack Name, Created Time, Status, and Description. The status is 'CREATE_COMPLETE'. The description indicates it creates a single server installation of Active Directory. A 'Events' tab is selected at the bottom, showing a detailed log of the stack creation process with various AWS service types like CloudFormation, EC2, and IAM.

Stack Name	Created Time	Status	Description
WindowsAD	2018-02-05 09:04:37 UTC+0550	CREATE_COMPLETE	This template creates a single server installation of Active Dire...

Events					
Filter by:	Status	Search events			
2018-02-05	Status	Type	Logical ID	Status Reason	
▶ 09:15:27 UTC+0550	CREATE_COMPLETE	AWS::CloudFormation::Stack	WindowsAD		
▶ 09:15:24 UTC+0550	CREATE_COMPLETE	AWS::CloudFormation::WaitCondition	DomainControllerWaitCondition		
▶ 09:05:27 UTC+0550	CREATE_IN_PROGRESS	AWS::CloudFormation::WaitCondition	DomainControllerWaitCondition	Resource creation initiated	
▶ 09:05:26 UTC+0550	CREATE_IN_PROGRESS	AWS::CloudFormation::WaitCondition	DomainControllerWaitCondition		
▶ 09:05:24 UTC+0550	CREATE_COMPLETE	AWS::EC2::Instance	DomainController		
▶ 09:04:51 UTC+0550	CREATE_IN_PROGRESS	AWS::EC2::Instance	DomainController	Resource creation initiated	
▶ 09:04:50 UTC+0550	CREATE_IN_PROGRESS	AWS::EC2::Instance	DomainController		
▶ 09:04:46 UTC+0550	CREATE_COMPLETE	AWS::EC2::SecurityGroup	DomainControllerSecurityGroup		
▶ 09:04:45 UTC+0550	CREATE_IN_PROGRESS	AWS::EC2::SecurityGroup	DomainControllerSecurityGroup	Resource creation initiated	
▶ 09:04:45 UTC+0550	CREATE_COMPLETE	AWS::EC2::SecurityGroupIngress	DomainMemberSecurityGroup1		

We need to launch instance in ohio for member server.

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with various services like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The 'Instances' section is currently selected. The main content area displays a table of instances. One instance is listed: i-00ff5794b669c63dd, which is an t2.micro type running in the us-east-2b availability zone. It has a Public DNS of ec2-13-58-76-72.us-east-2.compute.amazonaws.com and a Private IP of 172.31.31.145. Below the table, a detailed view for the selected instance is shown, including fields for Instance ID, Instance state, Instance type, Availability zone, Public DNS (IPv4), IPv4 Public IP, IPv6 IPs, Private DNS, and Private IPs.

Select “Microsoft Windows Server 2016 Base”.

Step 1: Choose an Amazon Machine Image (AMI)

Red Hat Enterprise Linux 7.4 (HVM), SSD Volume Type - ami-0b1e356e
 Red Hat Enterprise Linux version 7.4 (HVM), EBS General Purpose (SSD) Volume Type
 Root device type: ebs Virtualization type: hvm
 Free tier eligible

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-2581aa40
 Ubuntu Server 16.04 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
 Free tier eligible

Amazon RDS
 Are you launching a database instance? Try 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](#)

Select 64-bit

Microsoft Windows Server 2016 Base - ami-05446e60
 Microsoft Windows 2016 Datacenter edition. [English]
 Root device type: ebs Virtualization type: hvm
 Free tier eligible

Select 64-bit

Deep Learning AMI (Ubuntu) Version 3.0 - ami-0a7e4b6f
 Latest versions of deep learning frameworks pre-installed in separate virtual environments: MXNet, TensorFlow, Caffe, Caffe2, PyTorch, Theano, CNTK, Keras
 Root device type: ebs Virtualization type: hvm
 Free tier eligible

Select 64-bit

Deep Learning AMI (Amazon Linux) Version 3.0 - ami-8a794cef
 Latest versions of deep learning frameworks pre-installed in separate virtual environments: MXNet, TensorFlow, Caffe, Caffe2, PyTorch, Theano, CNTK, Keras
 Amazon Linux
 Free tier eligible

Select 64-bit

Select “t2.micro”.

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types ▾ Current generation ▾ Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High	Yes
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High	Yes
<input type="checkbox"/>	General purpose	m4.4xlarge	16	64	EBS only	Yes	High	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

Feedback English (US) © 2008 - 2018, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use

Click “Next”.

Leave default settings and click “Next”.

The screenshot shows the AWS EC2 Management Console interface for launching a new instance. The user is currently on Step 3: Configure Instance Details. The configuration includes:

- Number of instances:** 1
- Purchasing option:** Request Spot instances
- Network:** vpc-1de10e75 (default)
- Subnet:** No preference (default subnet in any Availability Zone)
- Auto-assign Public IP:** Use subnet setting (Enable)
- Domain join directory:** None
- IAM role:** None
- Shutdown behavior:** Stop
- Enable termination protection:** Protect against accidental termination
- Monitoring:** Enable CloudWatch detailed monitoring (Additional charges apply)
- Tenancy:** Shared - Run a shared hardware instance (Additional charges will apply for dedicated tenancy)
- Elastic GPU:** Add GPU (Additional charges apply)
- T2 Unlimited:** Enable (Additional charges may apply)

At the bottom, there are buttons for **Cancel**, **Previous**, **Review and Launch** (which is highlighted in blue), and **Next: Add Storage**.

Click “Next”.

Leave default settings and click “Next”.

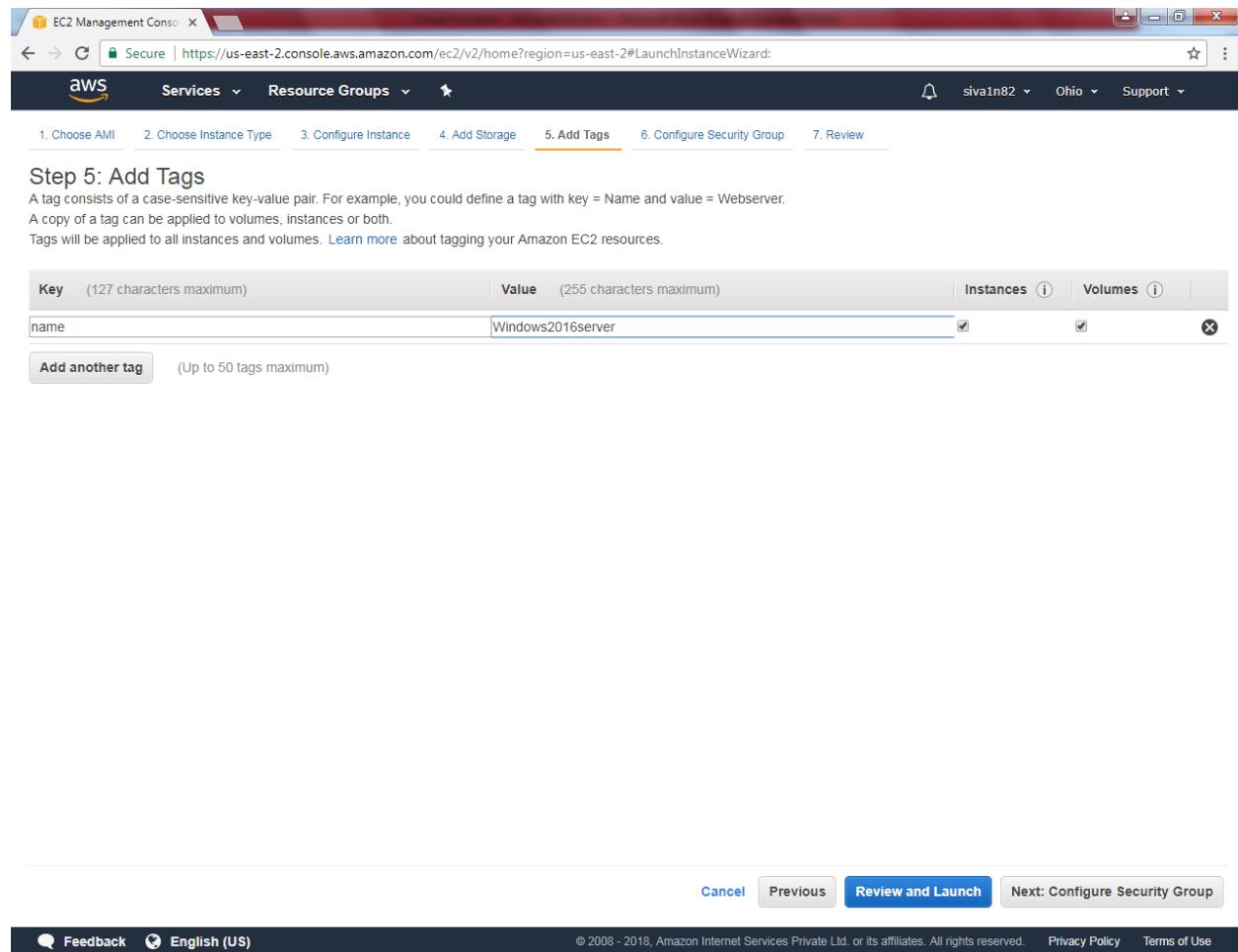
The screenshot shows the AWS EC2 Management Console interface. The top navigation bar includes the AWS logo, Services, Resource Groups, and a user dropdown for siva1n82, Ohio, and Support. Below the navigation is a progress bar with steps 1 through 7: Choose AMI, Choose Instance Type, Configure Instance, Add Storage (which is highlighted in yellow), Add Tags, Configure Security Group, and Review. The main content area is titled "Step 4: Add Storage". It displays a table for adding storage volumes. A single row is shown for the "Root" volume:

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-0b89cd4ad85d012dc	30	General Purpose SSD (GP2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Below the table is a note: "Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions." At the bottom of the page are buttons for Cancel, Previous, Review and Launch (which is highlighted in blue), and Next: Add Tags. The footer includes links for Feedback, English (US), Privacy Policy, and Terms of Use, along with a copyright notice: "© 2008 - 2018, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved."

Key – Name

Value – Windows 2016server



Click "Next".

Need to select the “Domain members” Security group.

The screenshot shows the AWS EC2 Management Console interface. At the top, the URL is https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:. The navigation bar includes 'Services' (selected), 'Resource Groups', and 'Support'. On the left, a sidebar lists '1. Choose AMI', '2. Choose Instance Type', '3. Configure Instance', '4. Add Storage', '5. Add Tags', '6. Configure Security Group' (selected), and '7. Review'. The main content area is titled 'Step 6: Configure Security Group'. It explains that a security group is a set of firewall rules that control the traffic for your instance. It allows adding rules to allow specific traffic to reach your instance, such as HTTP and HTTPS ports. It also provides links to learn more about Amazon EC2 security groups and how to create a new security group or select an existing one. A table lists existing security groups: 'sg-5cb6e834' (default, VPC security group), 'sg-429c4329' (WindowsAD-DomainControllerSecurityGroup-1OI7PCBFXK7Z4, Domain Controller), and 'sg-2198474a' (WindowsAD-DomainMemberSecurityGroup-1707TCKMOW9PL, Domain Members). The 'sg-2198474a' row is selected. Below the table, a section titled 'Inbound rules for sg-2198474a (Selected security groups: sg-2198474a)' shows a single rule: Type RDP, Protocol TCP, Port Range 3389, Source 0.0.0.0/0. At the bottom, there are 'Cancel', 'Previous', and 'Review and Launch' buttons. The footer includes links for Feedback, English (US), Privacy Policy, and Terms of Use.

Click “Review and Launch”.

Click “Launch”.

The screenshot shows the AWS EC2 Management Console in a web browser. The URL is <https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard>. The top navigation bar includes the AWS logo, Services dropdown, Resource Groups dropdown, and user information (siva1n82, Ohio, Support). Below the navigation is a progress bar with steps 1 through 7, where step 7 is highlighted.

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

AMI Details

Microsoft Windows Server 2016 Base - ami-05446e60
Free tier eligible
Microsft Windows 2016 Datacenter edition. [English]
Root Device Type: ebs Virtualization type: hvm

If you plan to use this AMI for an application that benefits from Microsoft License Mobility, fill out the [License Mobility Form](#). Don't show me this again

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Security Groups

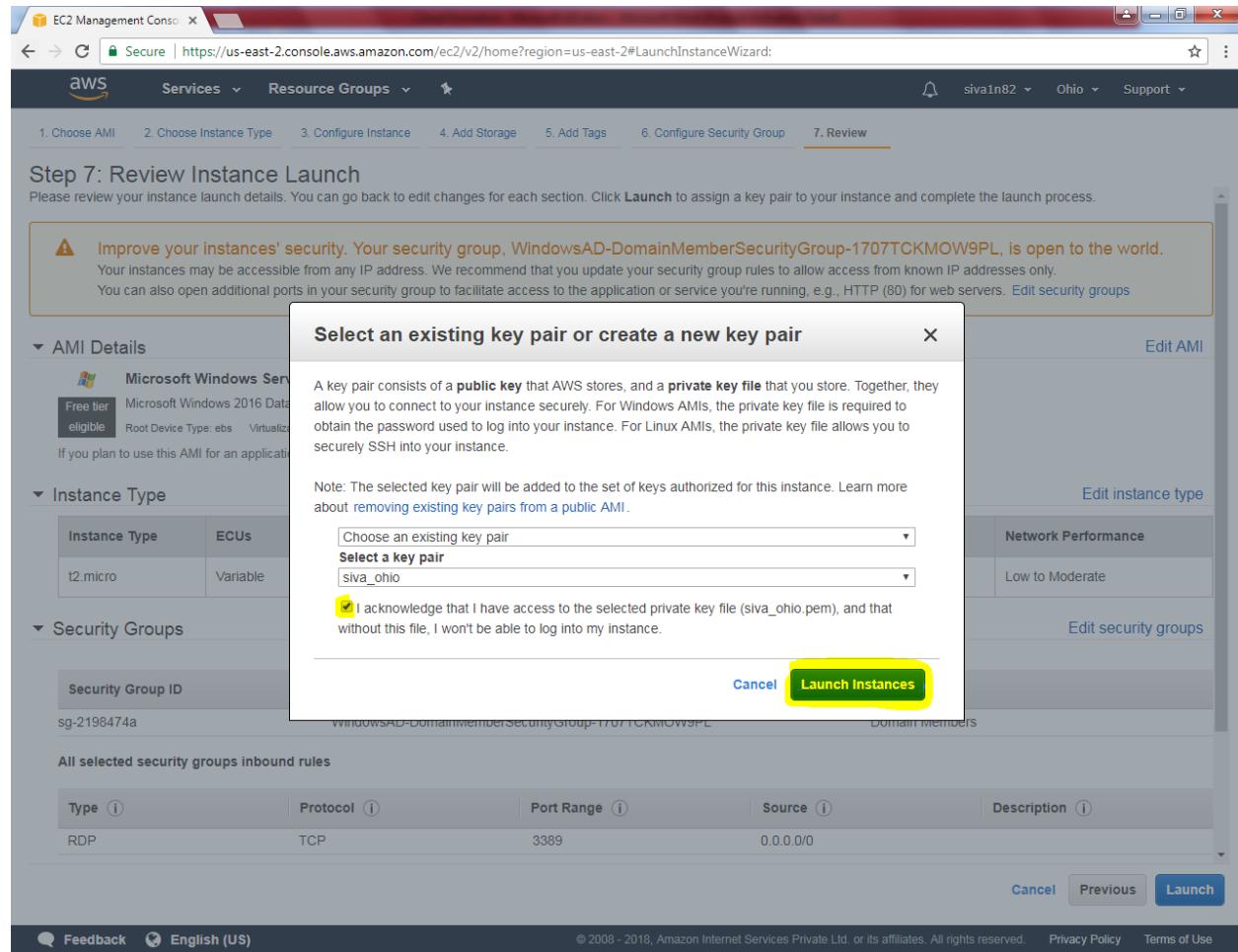
Security Group ID	Name	Description
sg-2198474a	WindowsAD-DomainMemberSecurityGroup-1707TCKMOW9PL	Domain Members

All selected security groups inbound rules

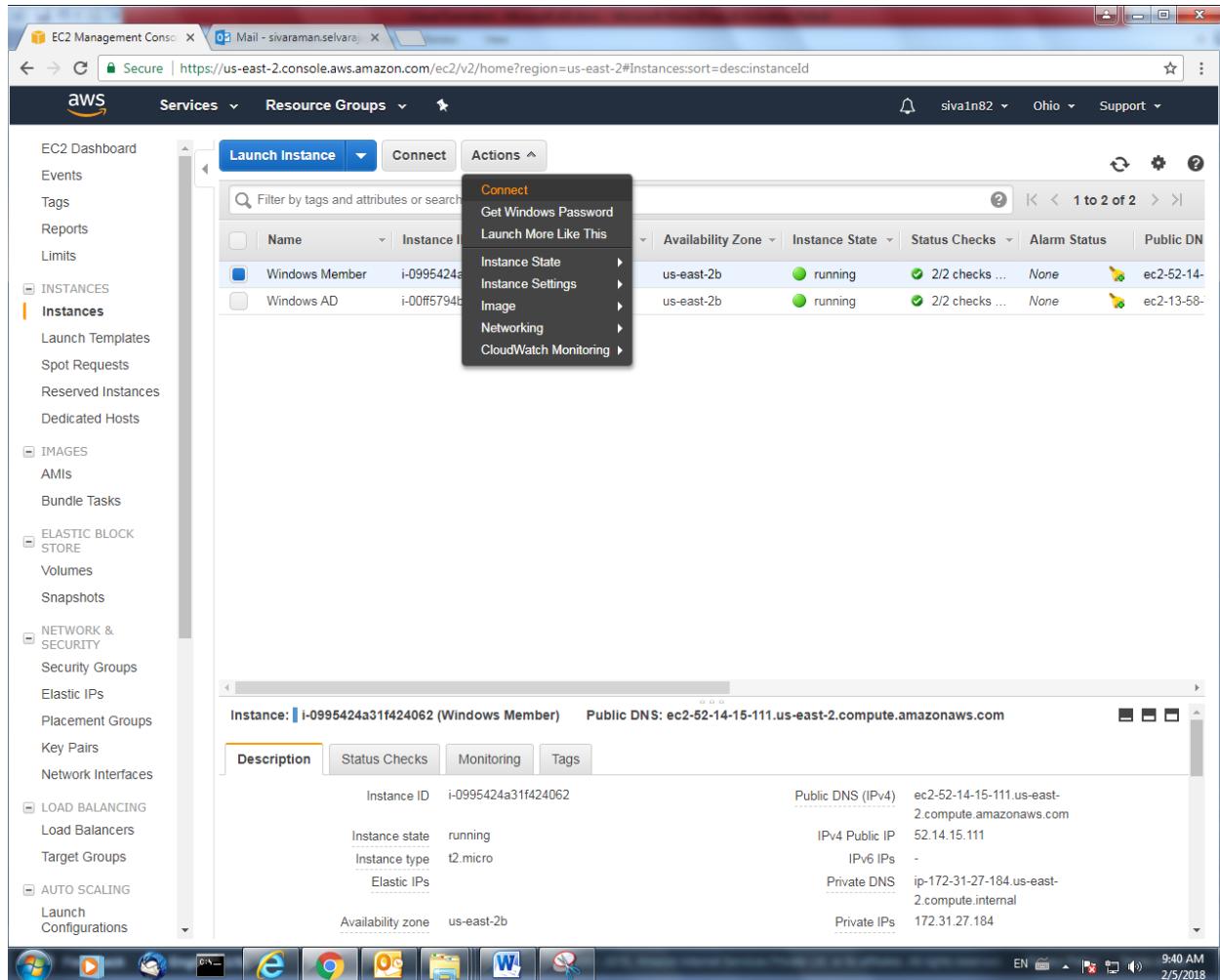
Type (i)	Protocol (i)	Port Range (i)	Source (i)	Description (i)
RDP	TCP	3389	0.0.0.0/0	

Buttons at the bottom: Cancel, Previous, **Launch**.

Click “Launch Instances”.



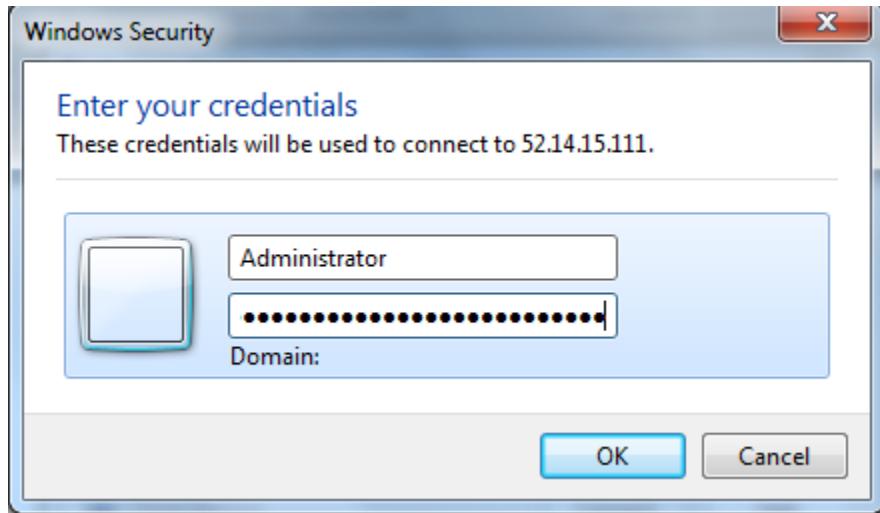
Click member server and then click “Connect” to get login credentials of the server.



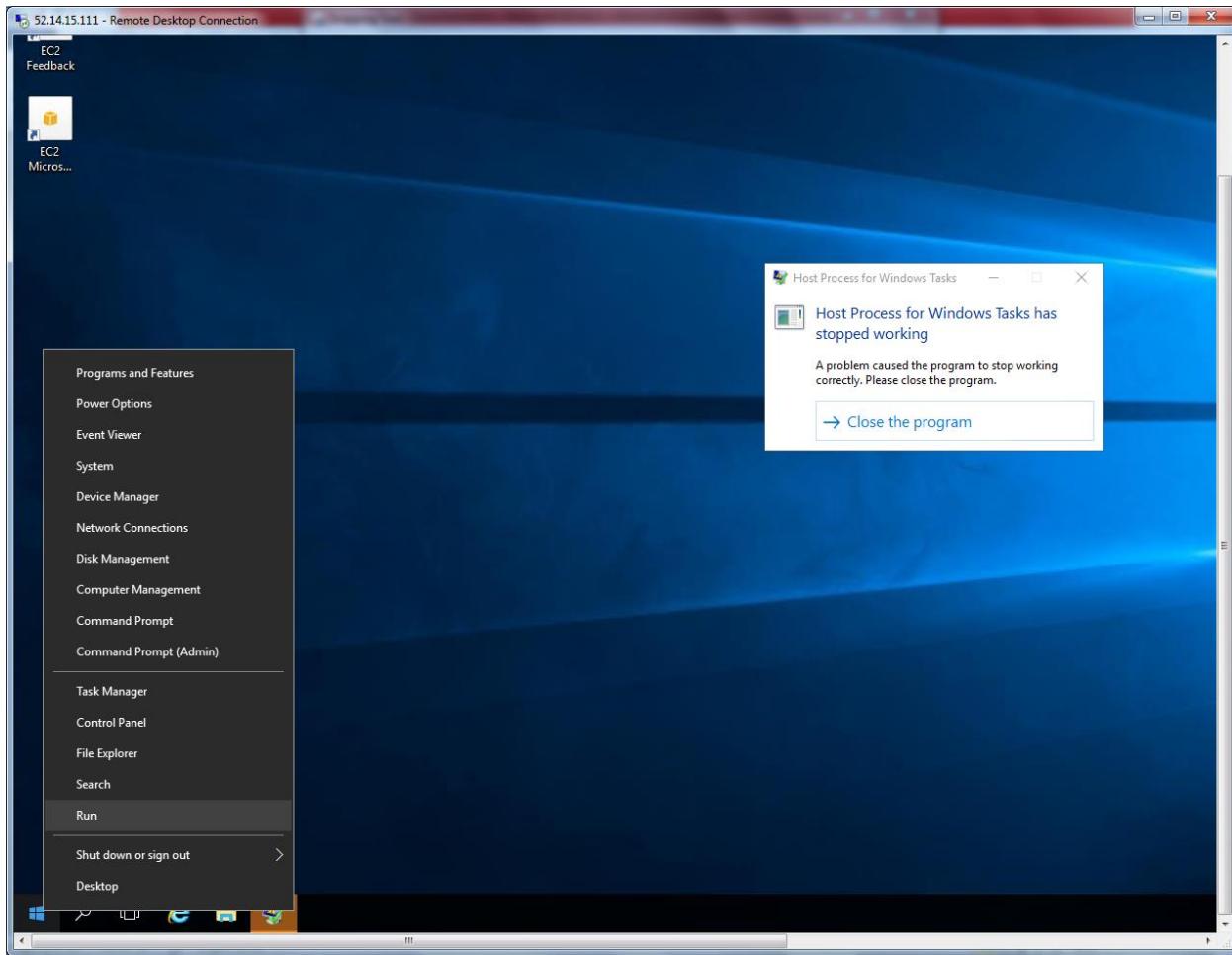
Choose the *.pem file and click Decrypt password.

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with various services like EC2 Dashboard, Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main area displays a list of instances. Two instances are currently running: 'Windows Member' (Instance ID: i-0995424a31f424062, Type: t2.micro, Zone: us-east-2b) and 'Windows AD' (Instance ID: i-0ff5794b669c63dd, Type: t2.micro, Zone: us-east-2b). A modal window titled 'Connect To Your Instance' is overlaid on the instance details for 'Windows Member'. It contains instructions for connecting using a remote desktop client, a 'Download Remote Desktop File' button, and connection details including Public DNS (ec2-52-14-15-111.us-east-2.compute.amazonaws.com), User name (Administrator), and Password (g)pQcEpuPgKvBJCUQYz9oE8*v(dif7BZ). There's also a link to connection documentation and a 'Close' button.

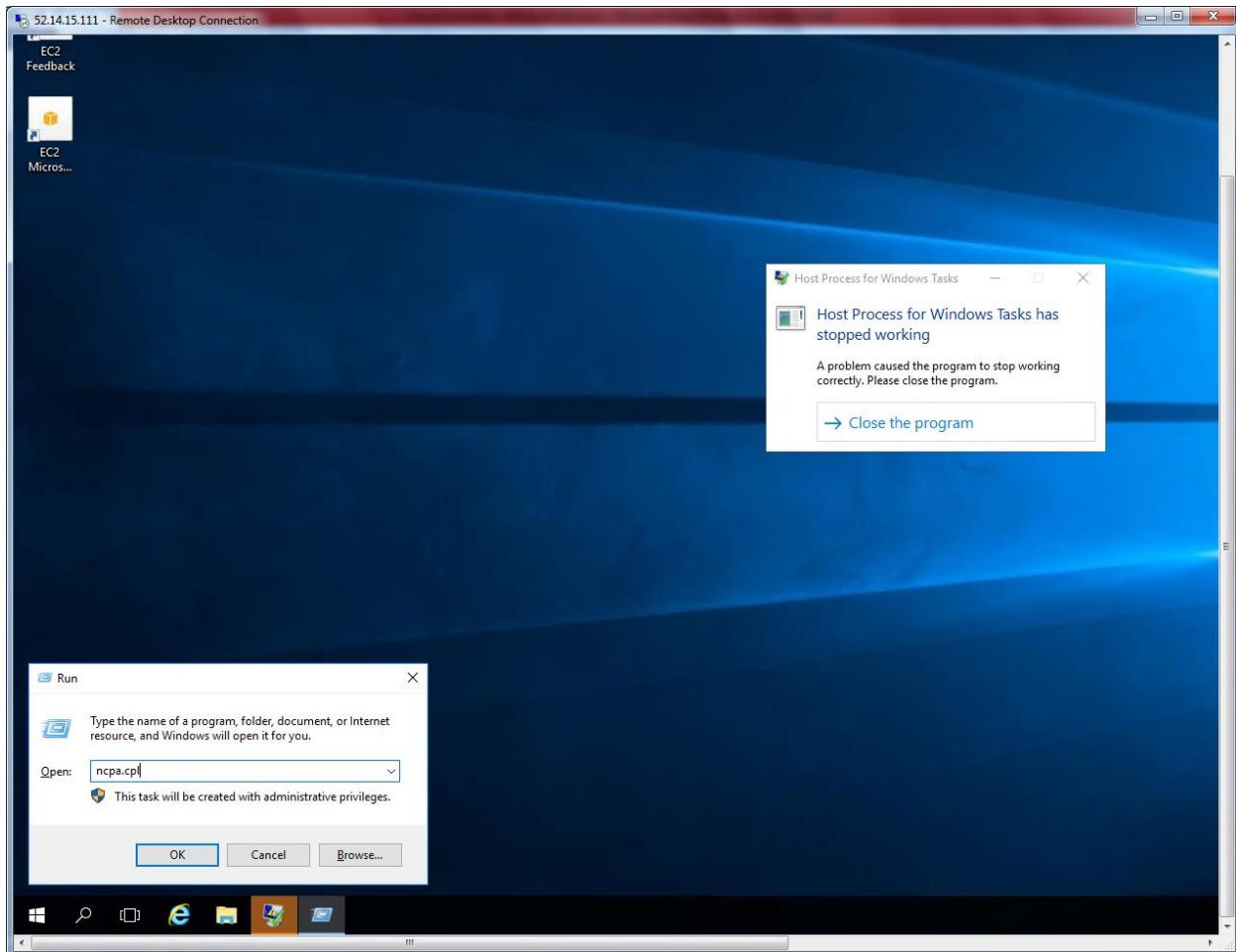




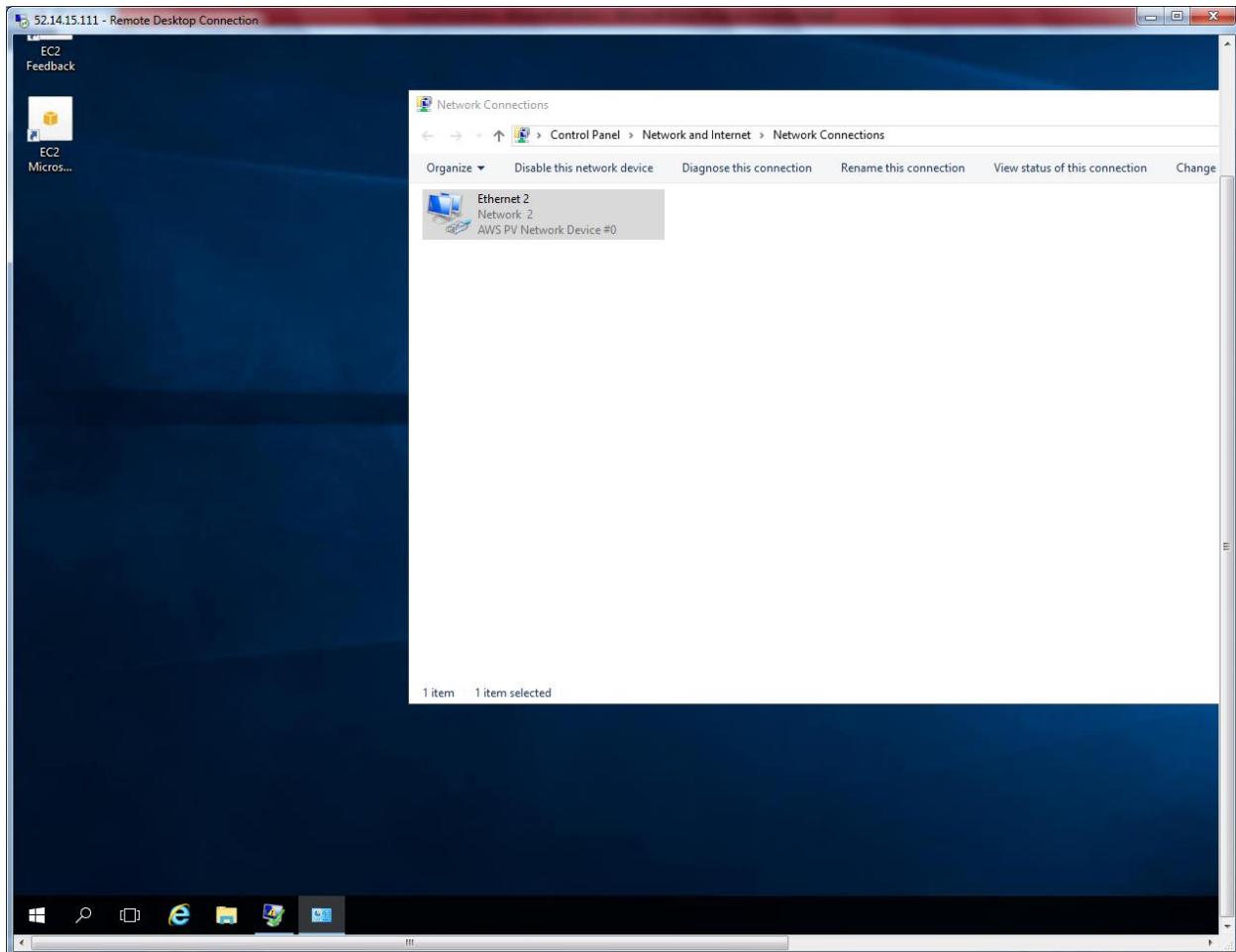
Right click “Start” menu of member server. Then click “Run”.



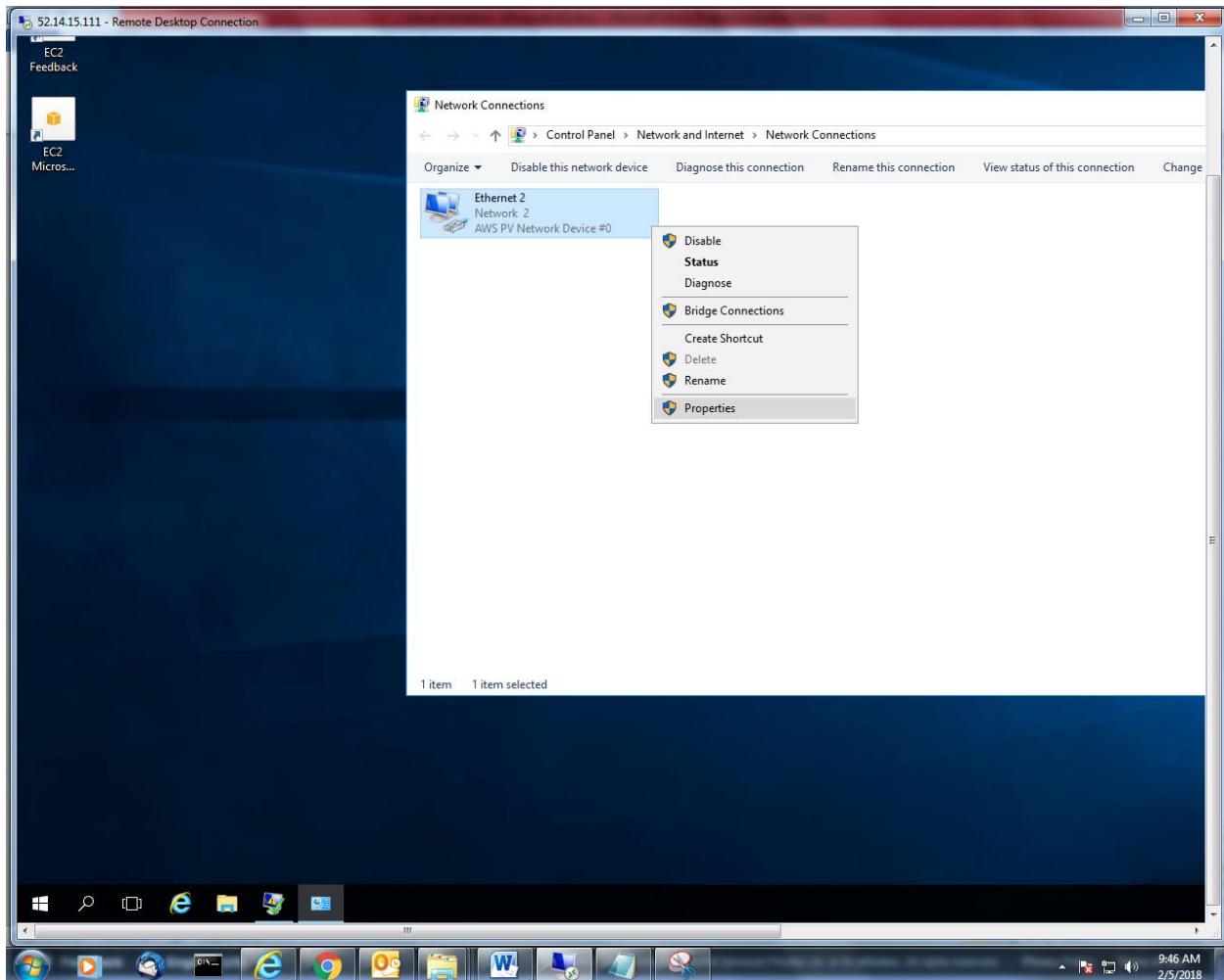
Type ncpa.cpl



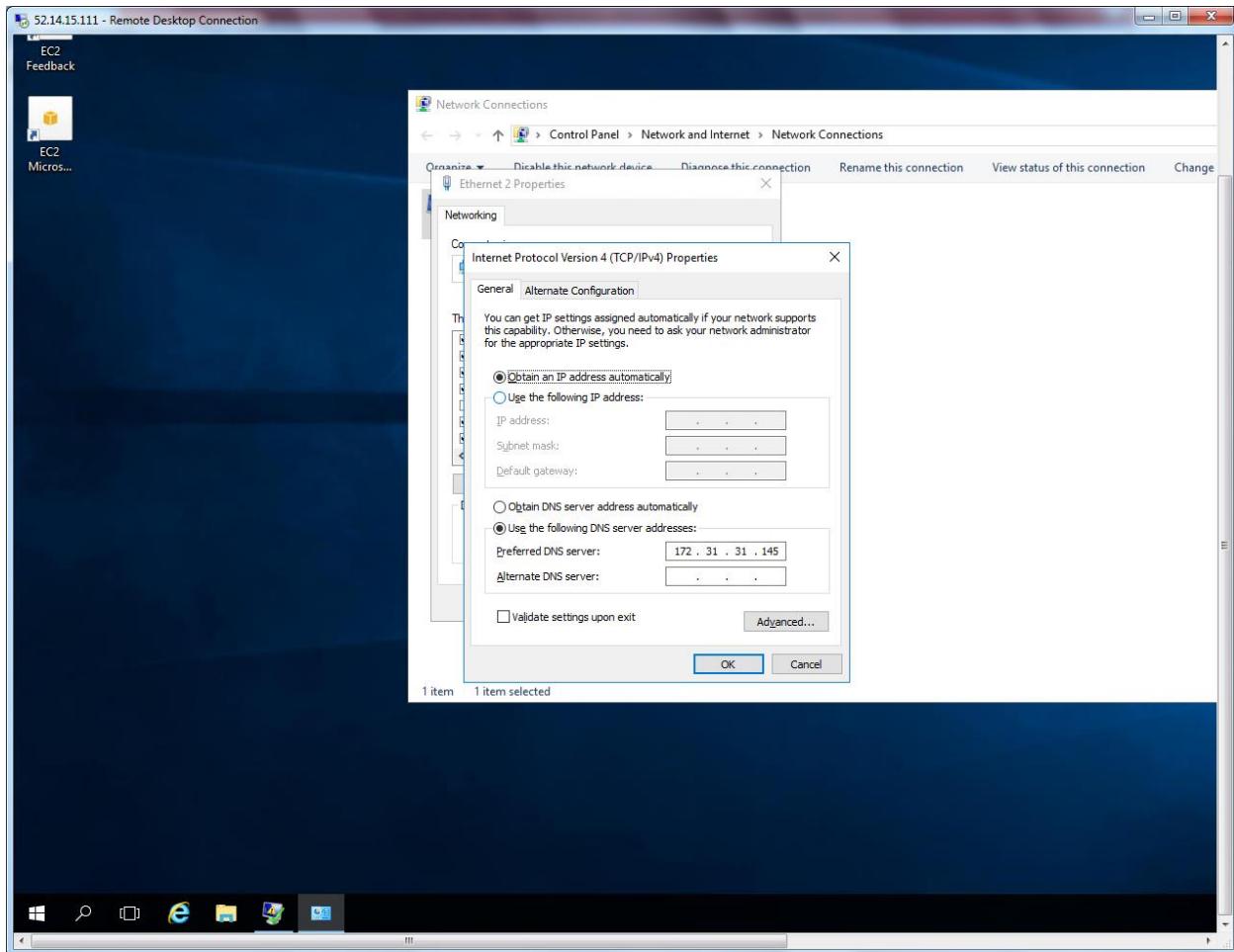
In Network card right click.



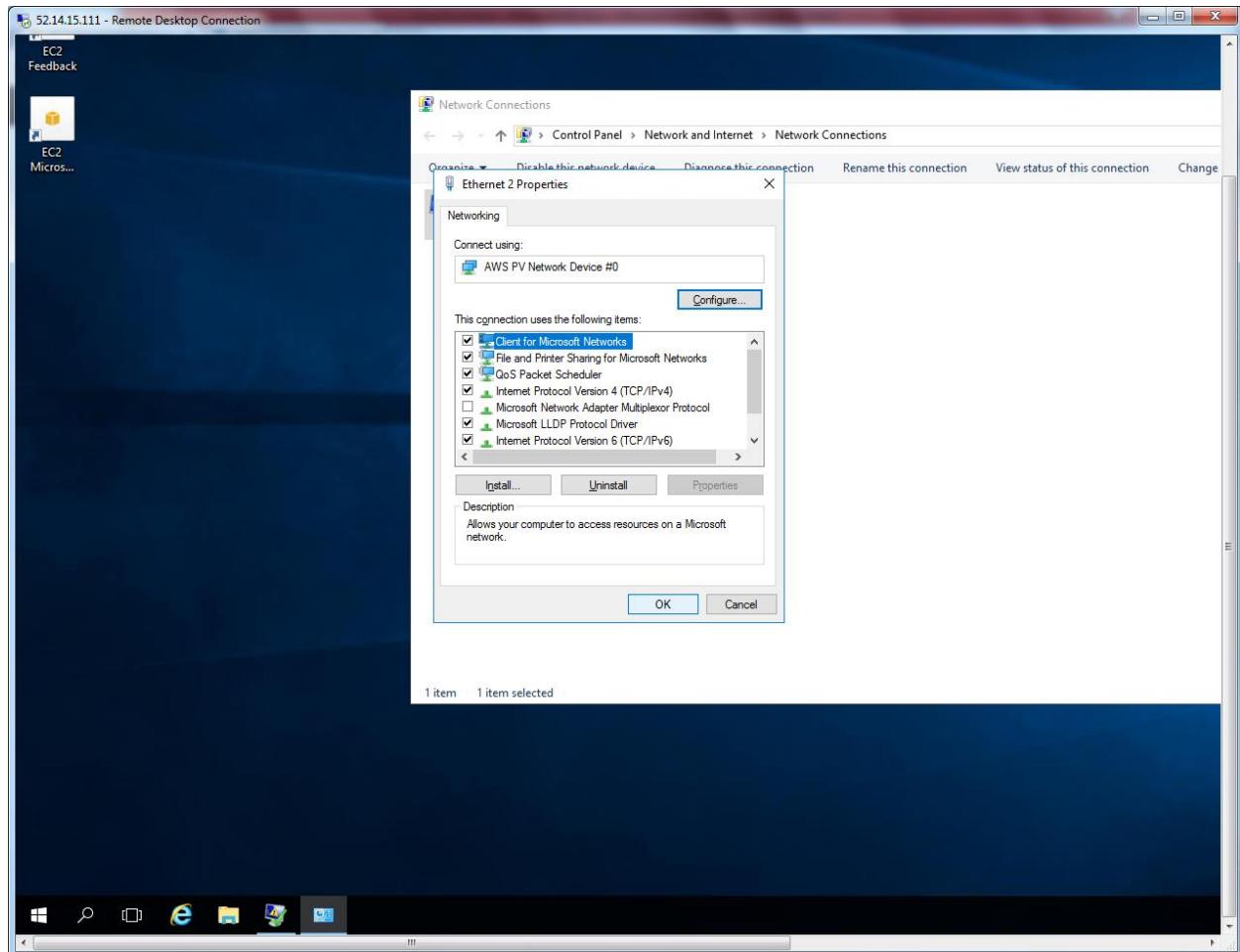
Select properties.



Type the DC IP address i.e. 172.31.31.145 and click “Ok”.



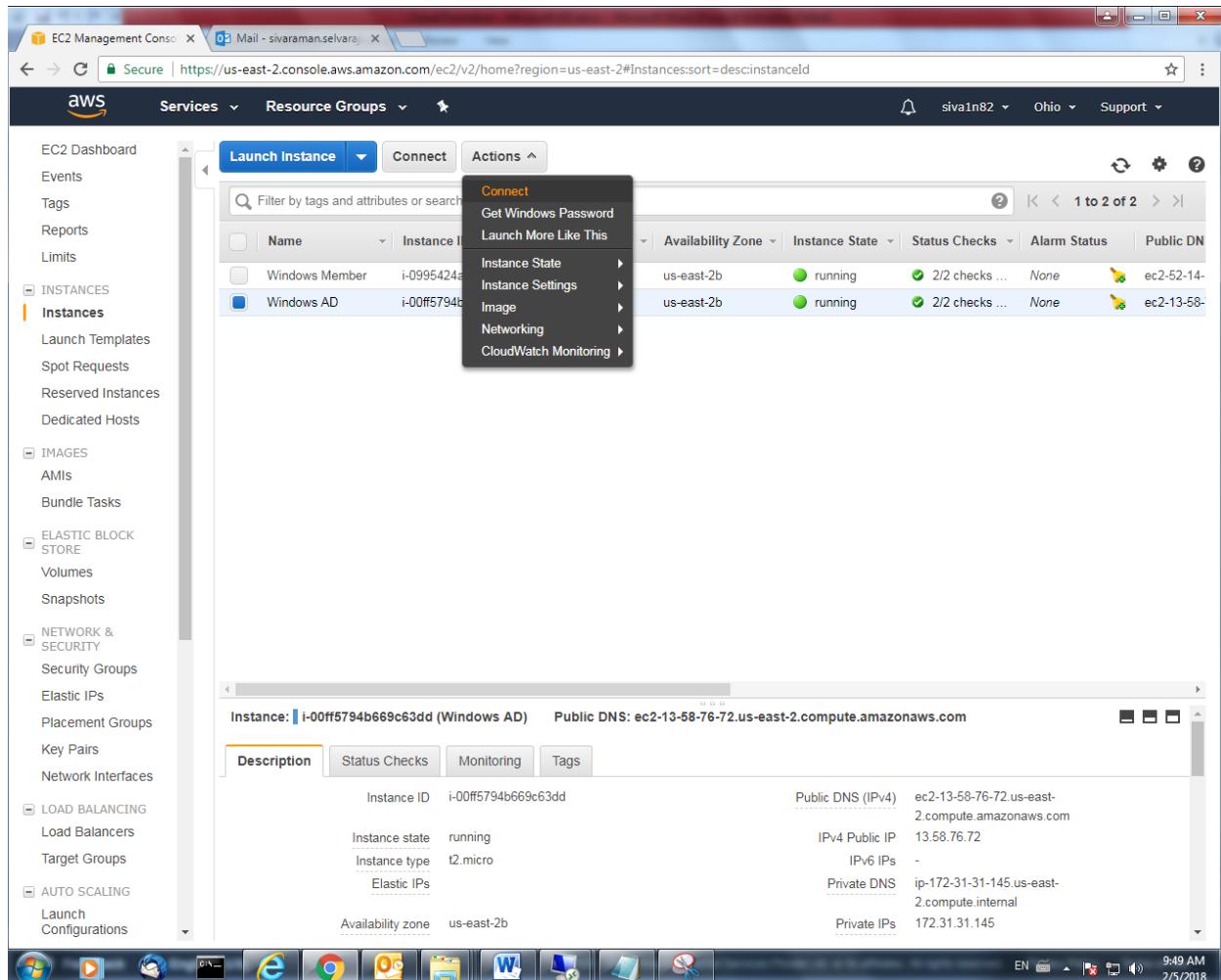
Click "Ok".



Try to connect DC server



Select Domain controller, click Actions → Connect to get password.



Click "Get password".

Connect To Your Instance



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 ec2-13-58-76-72.us-east-2.compute.amazonaws.com

User name Administrator

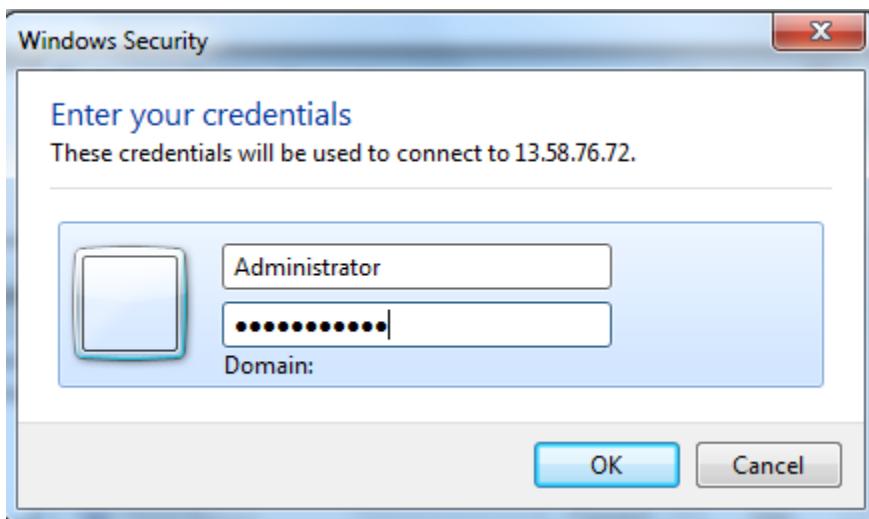
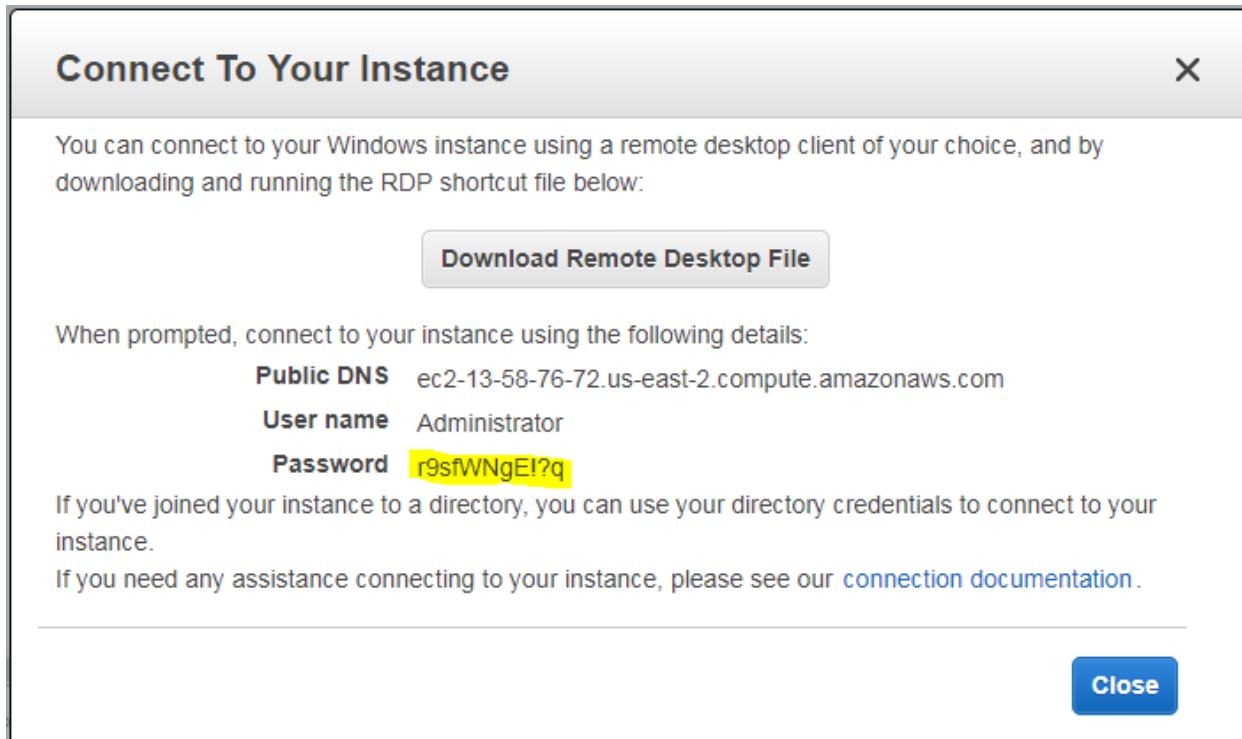
Password [Get Password](#)

If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

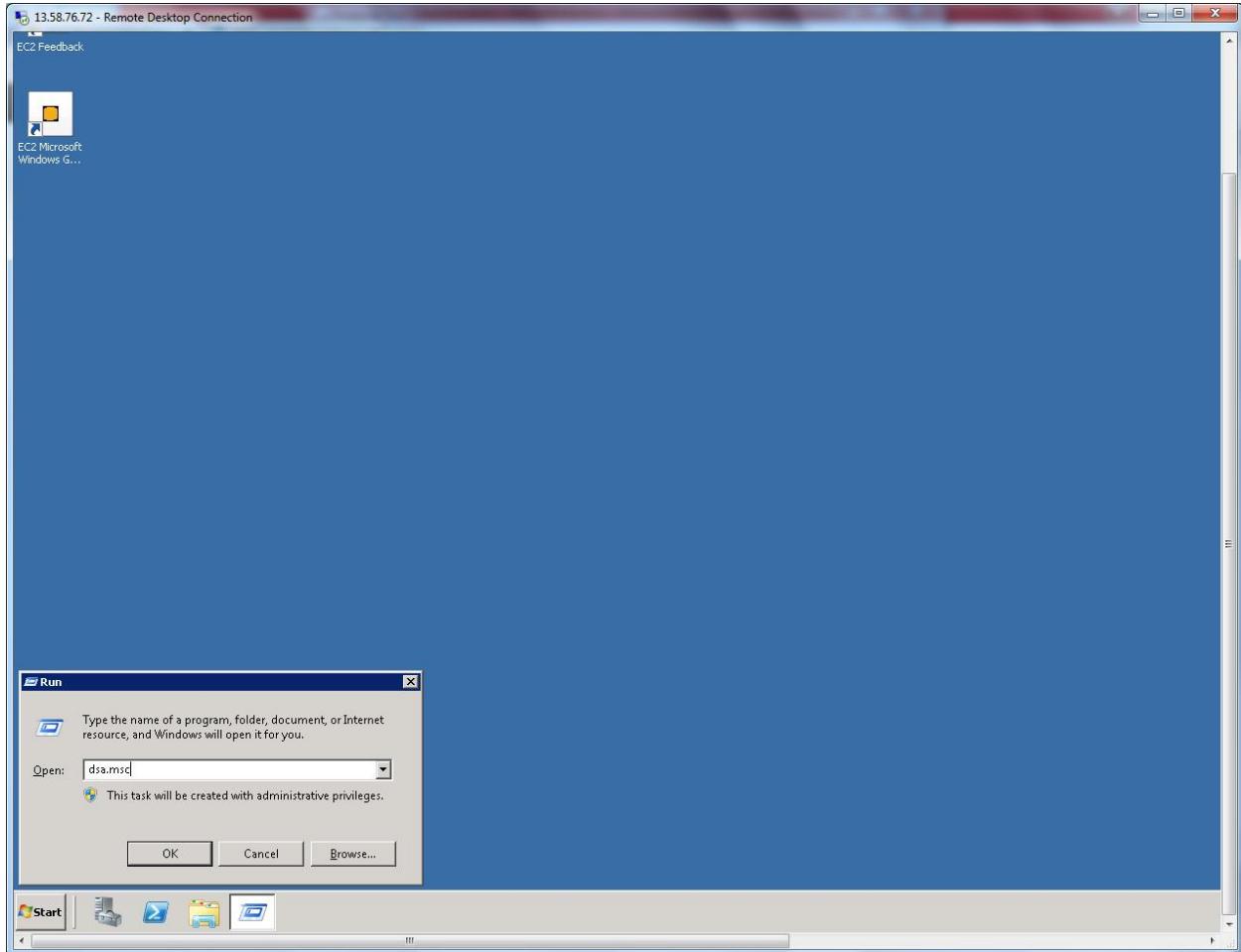
If you need any assistance connecting to your instance, please see our [connection documentation](#).

[Close](#)

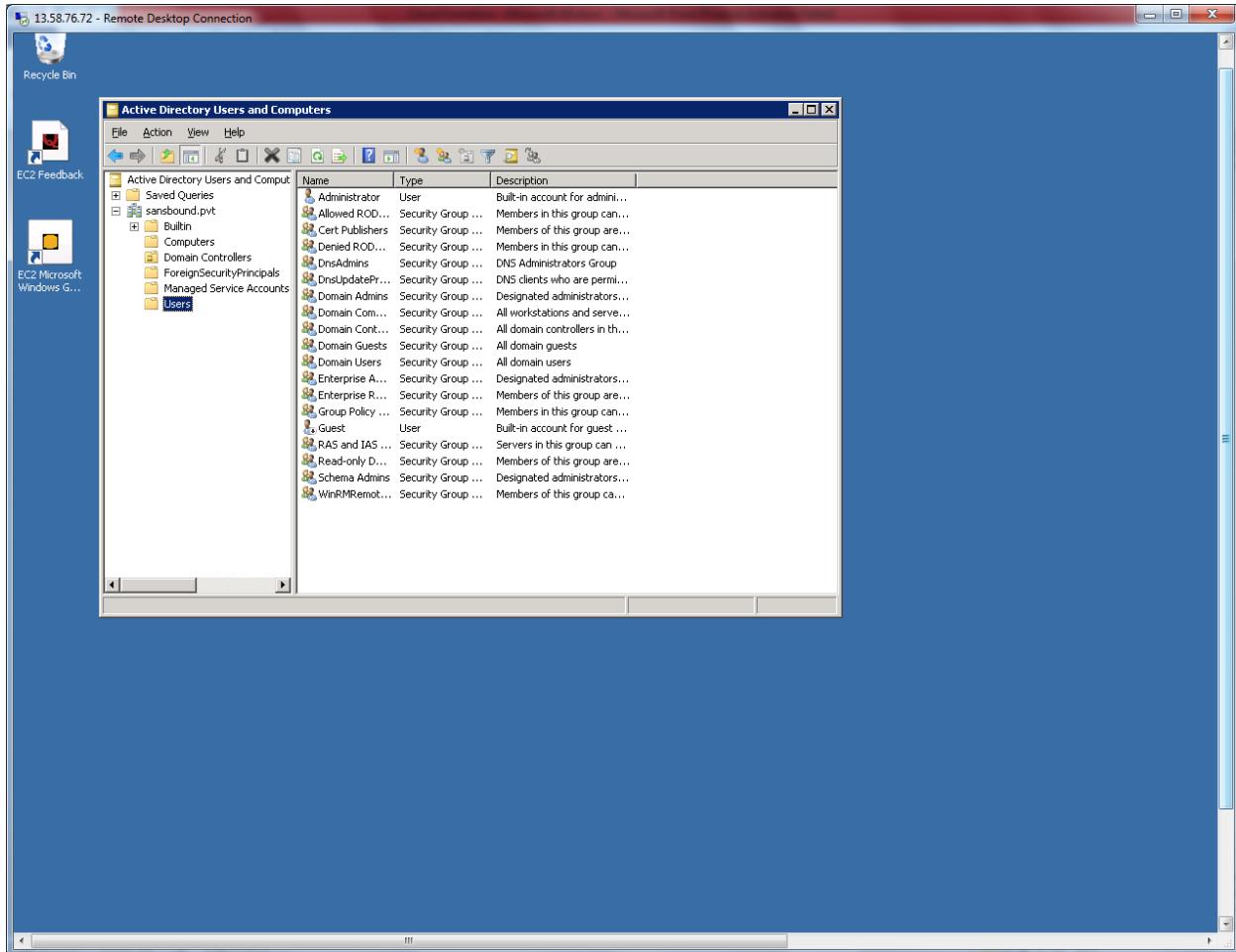
Choose the *.pem file



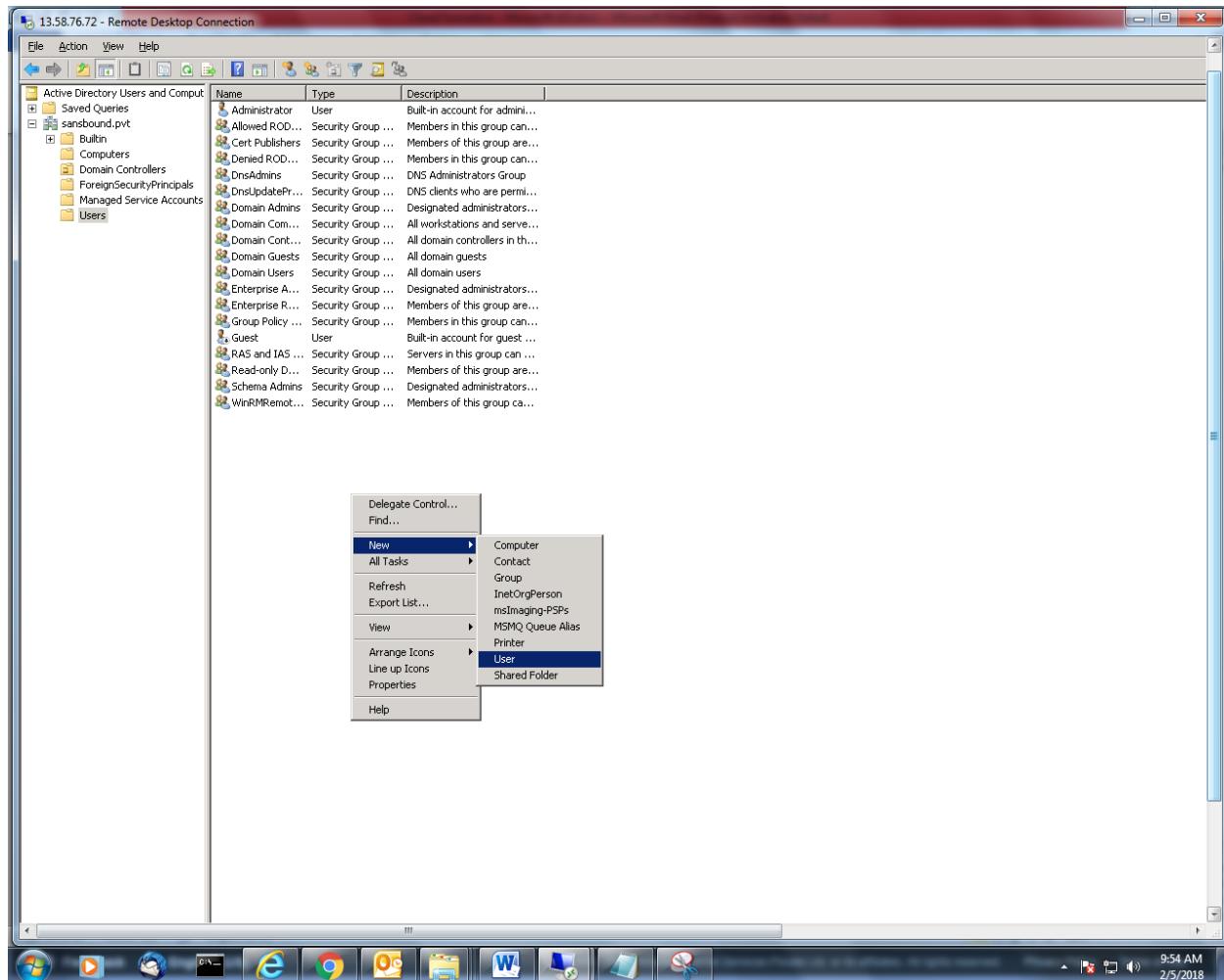
Type dsa.msc to get active directory console.



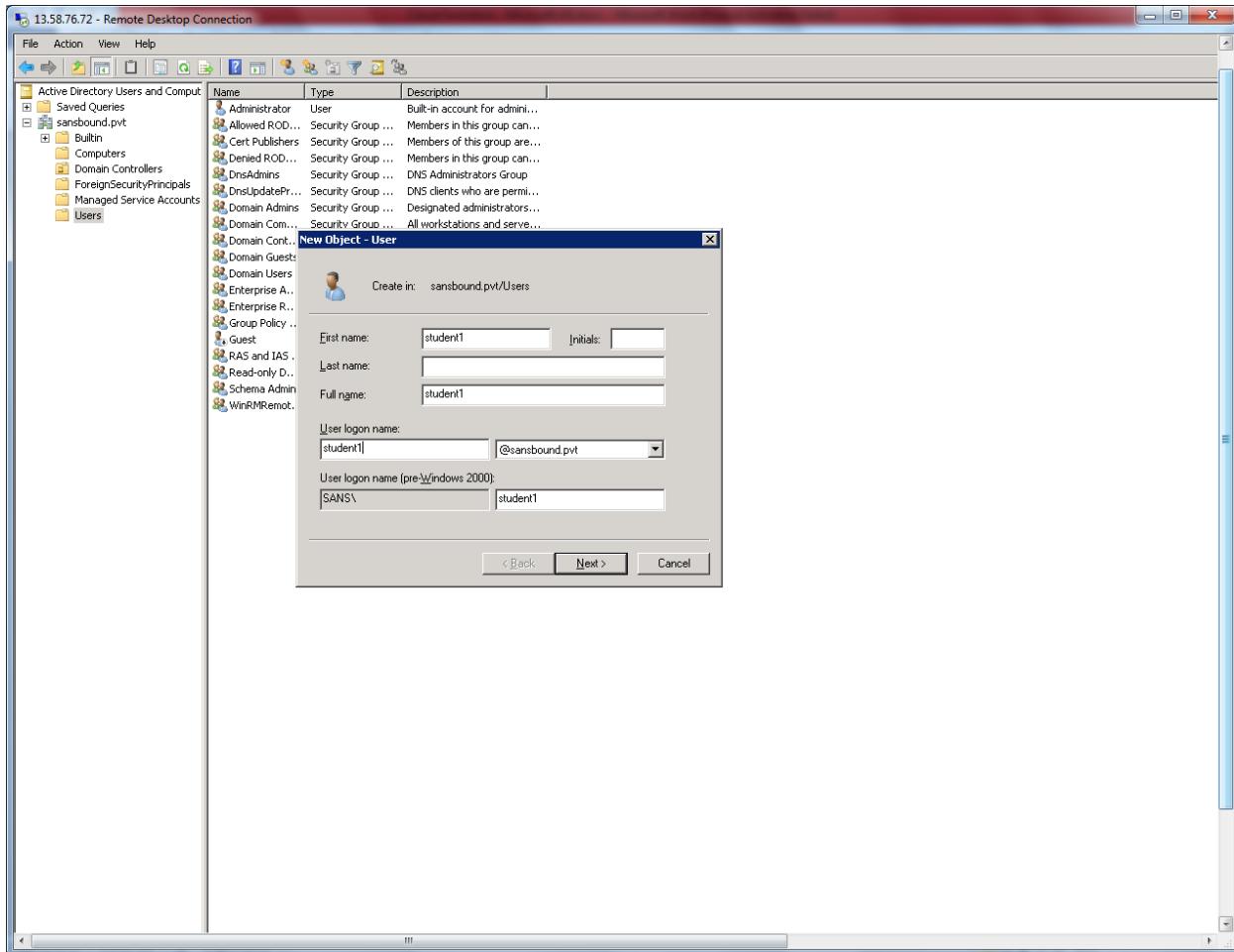
Click "Users".



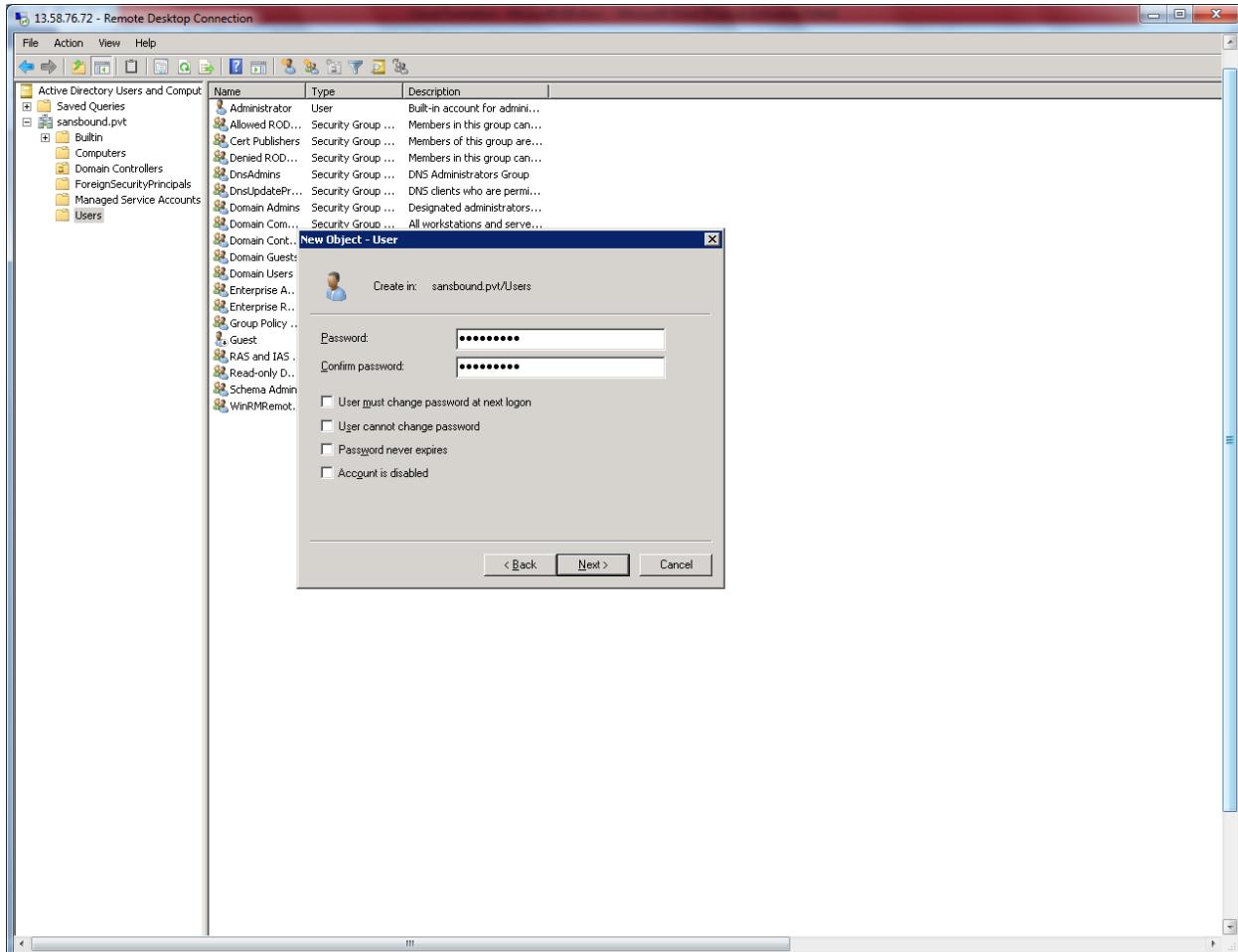
Right click and then click new → User



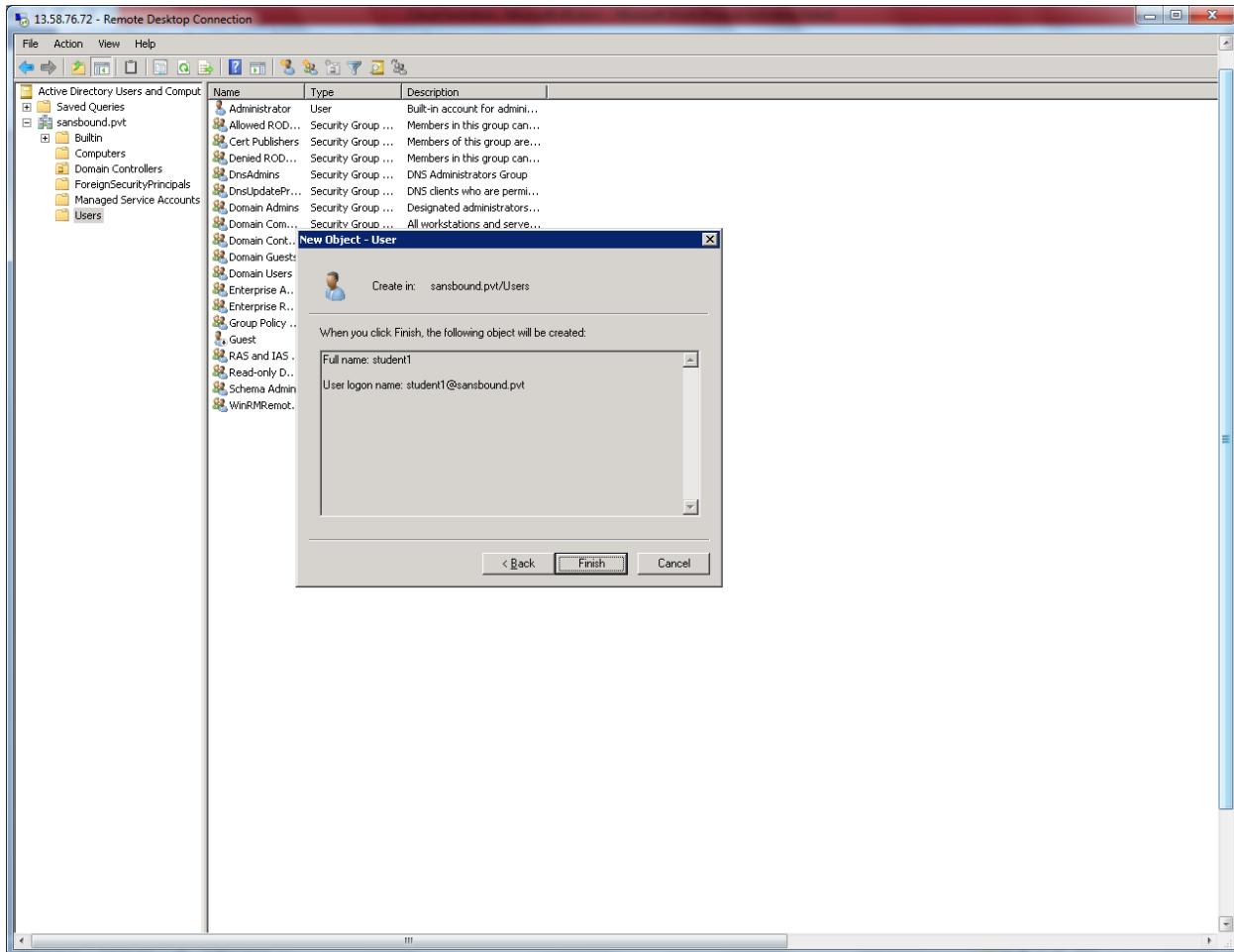
Type the username as student1 and click “Next”.



Type the password of Student1 and then click “Next”.

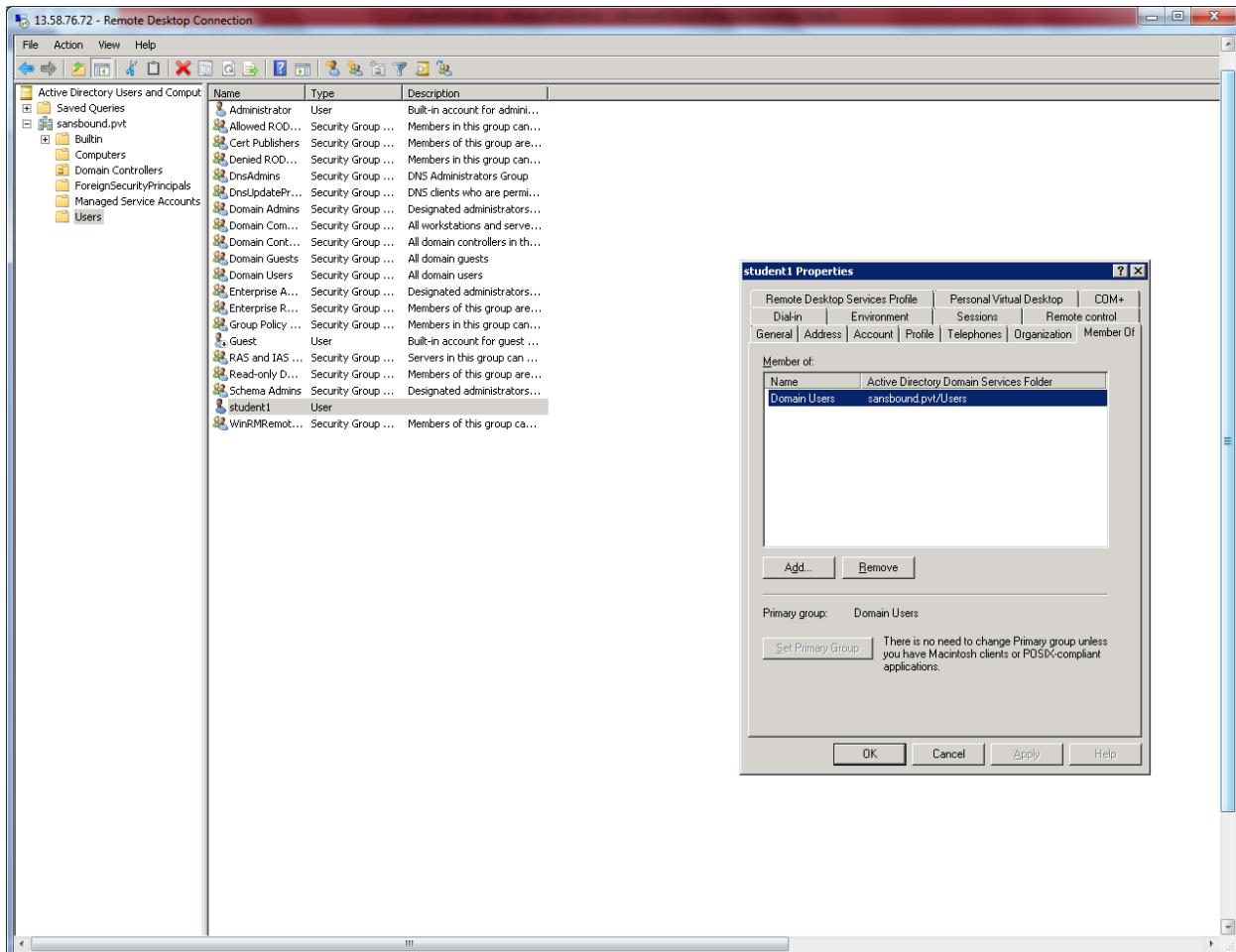


Click “Finish” to create.



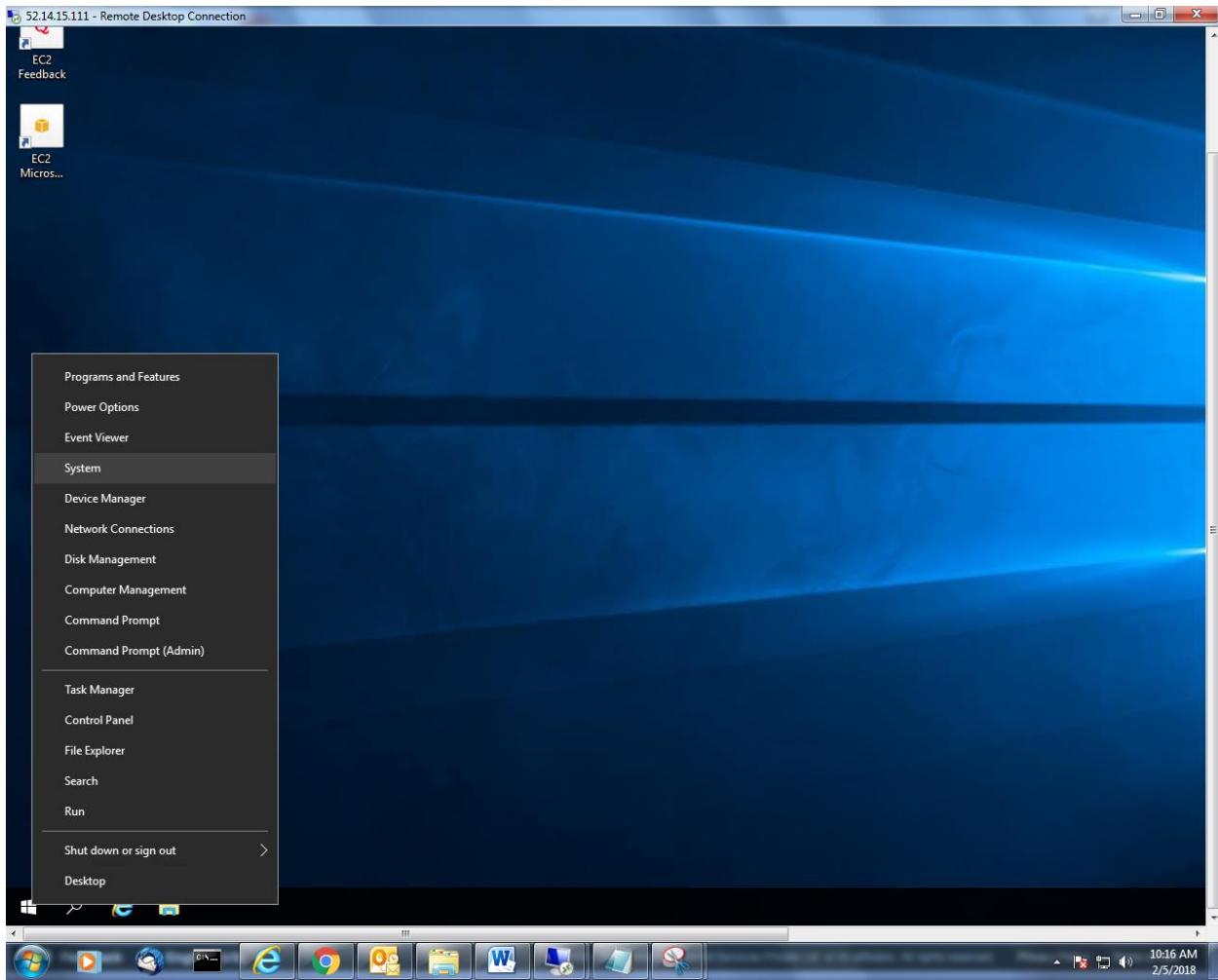
User has been created successfully. Now right click username and click properties.

Then click “Member of” tab.

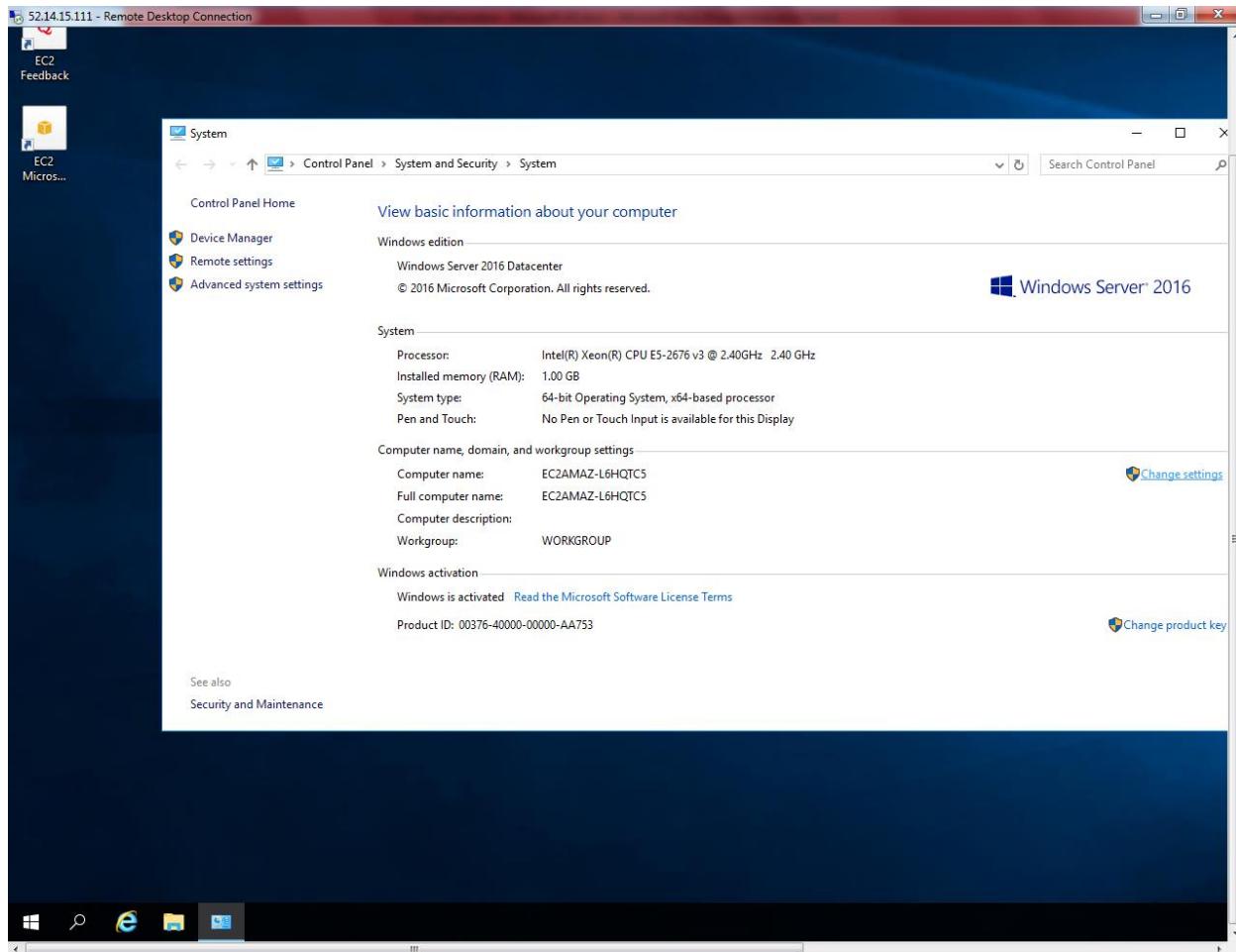


Go to member Server,

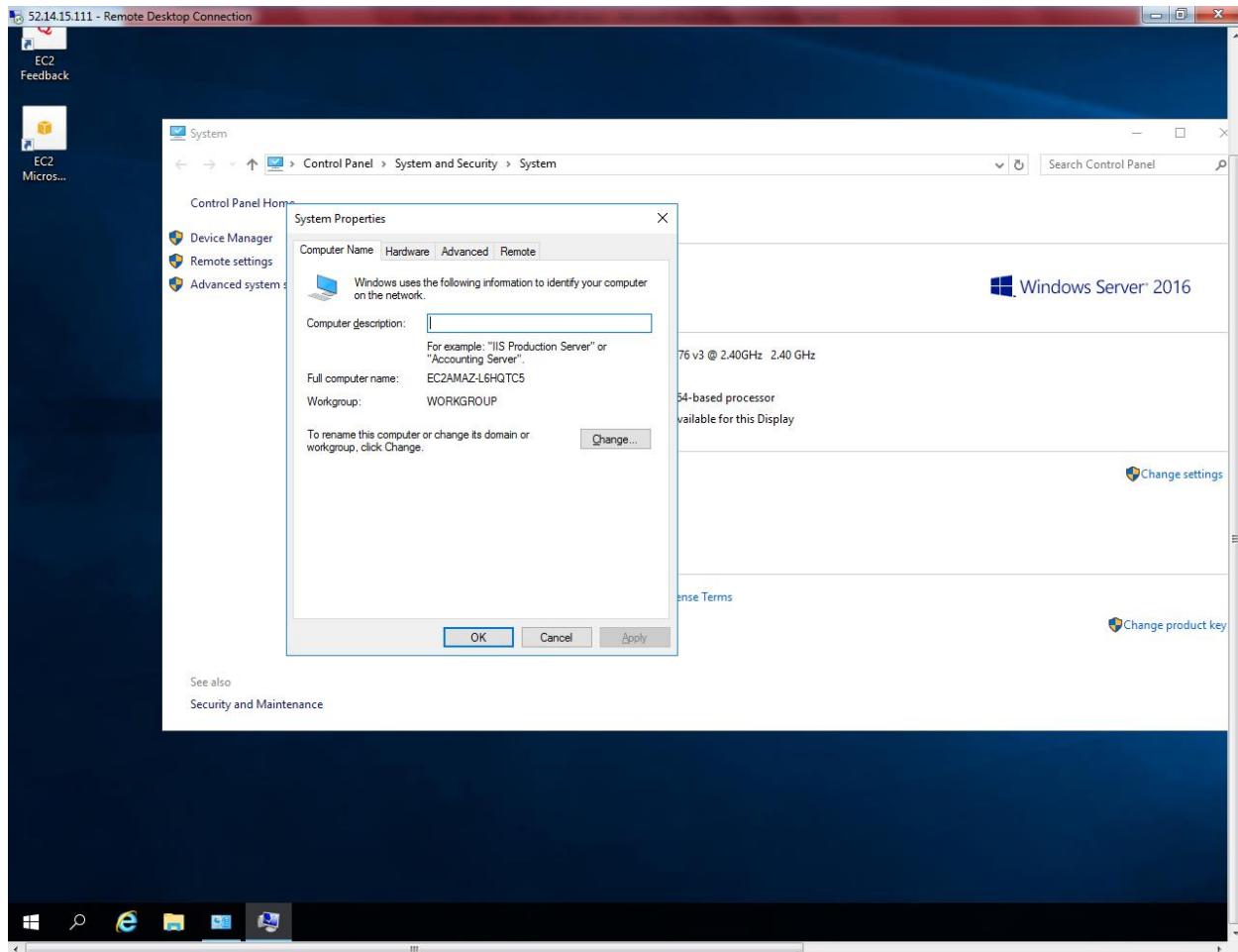
Right click the start menu and click ‘System’.



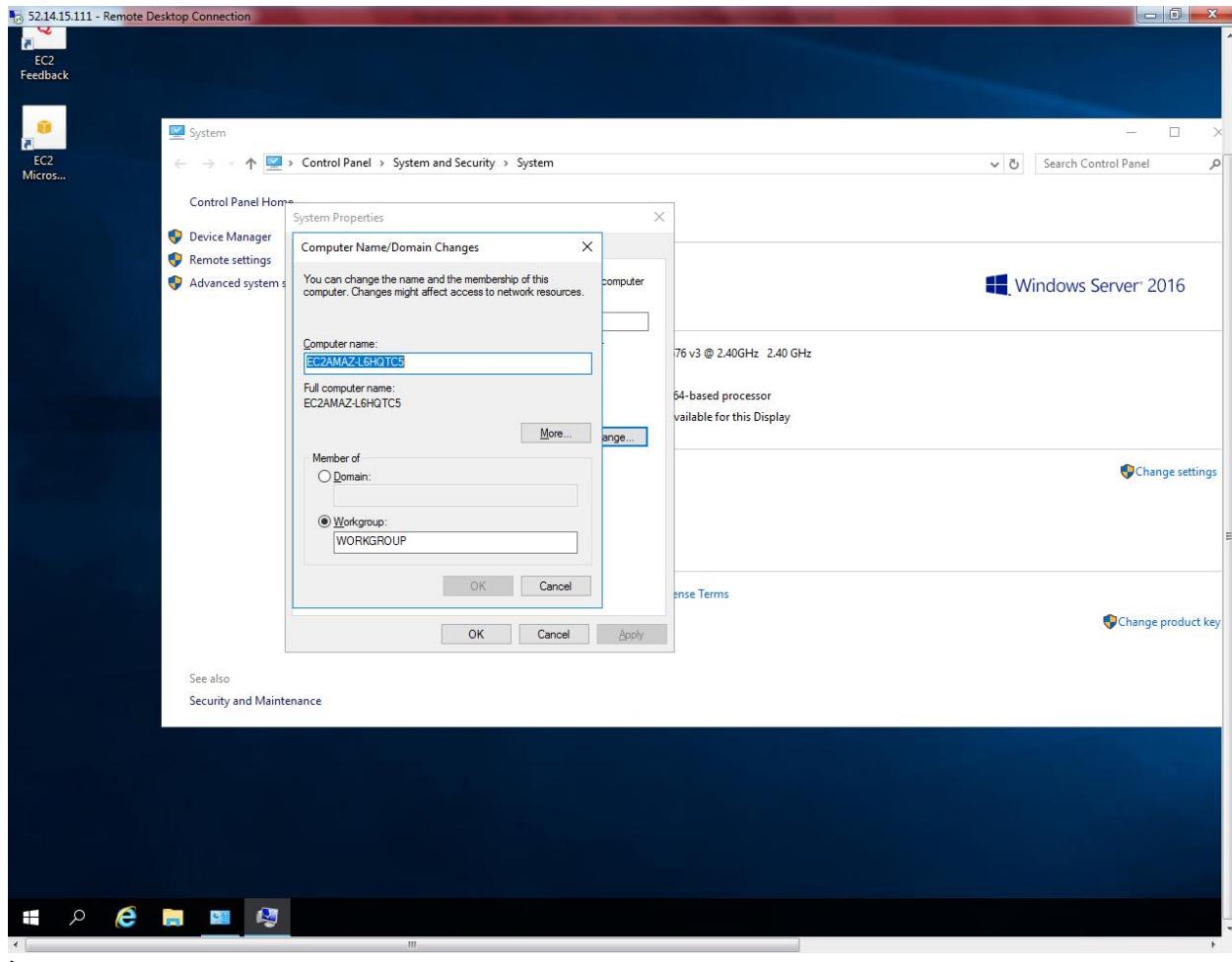
Click "Change settings".



Click "Change".

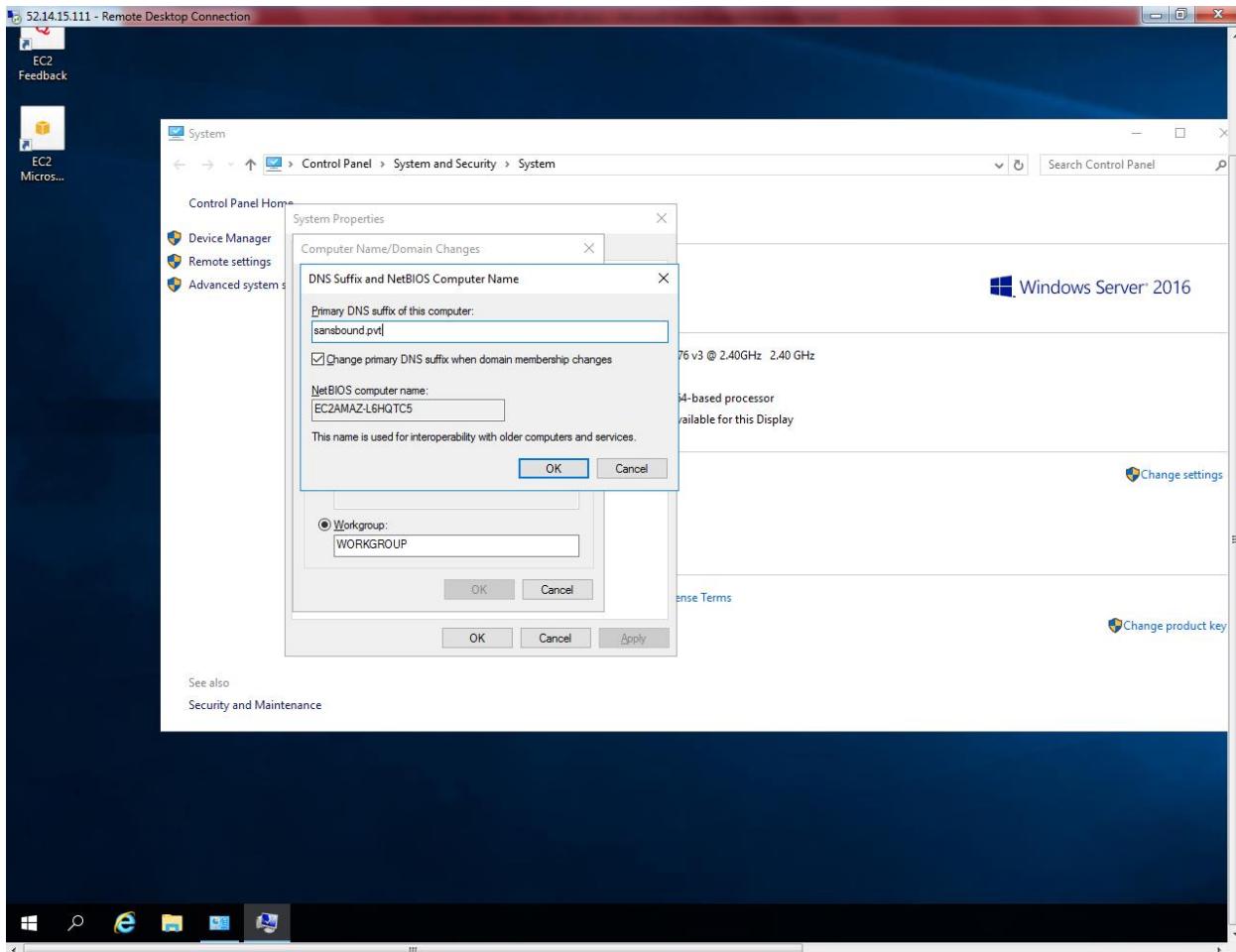


Click “More”.

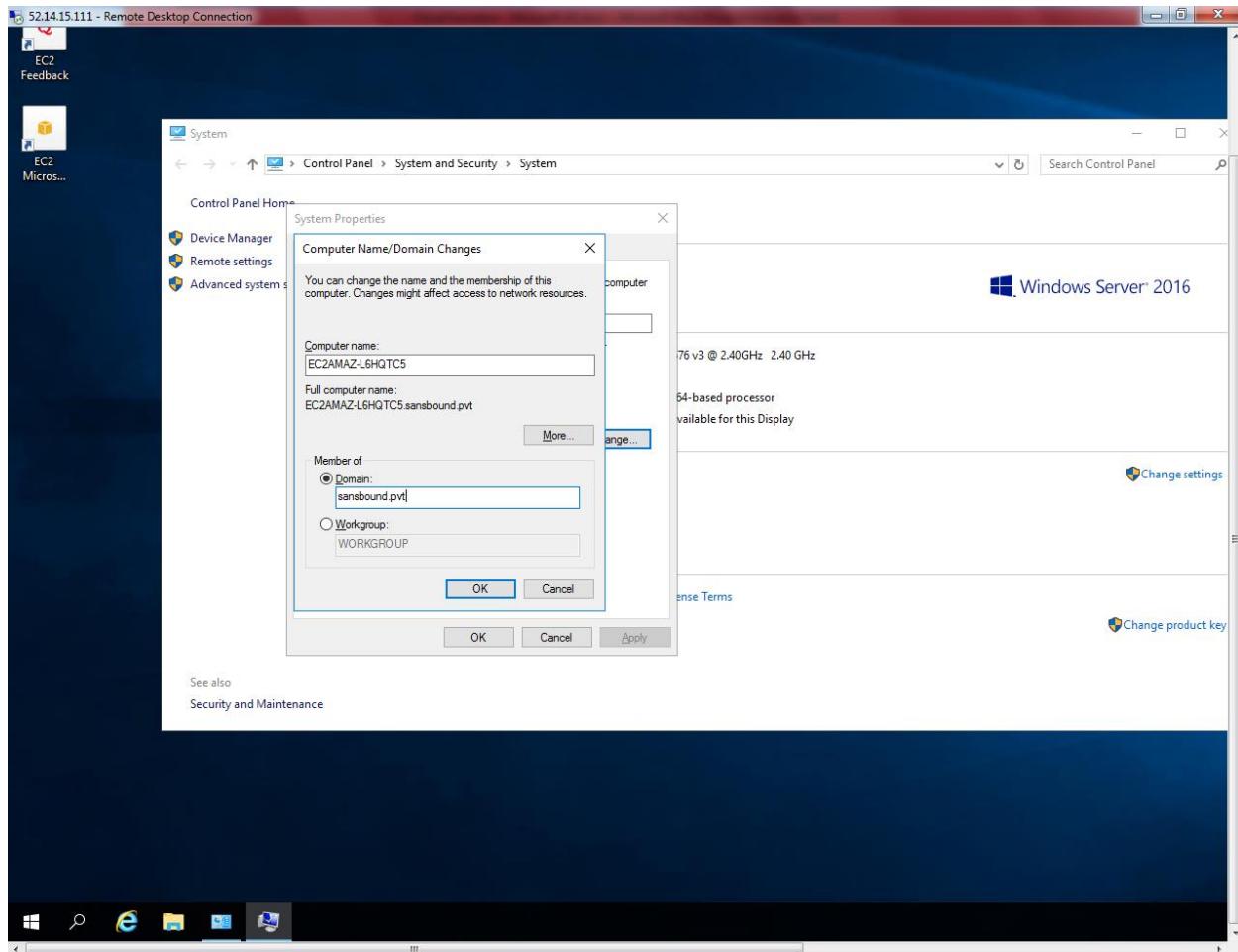


Type "sansbound.pvt"

Then click “Ok”.

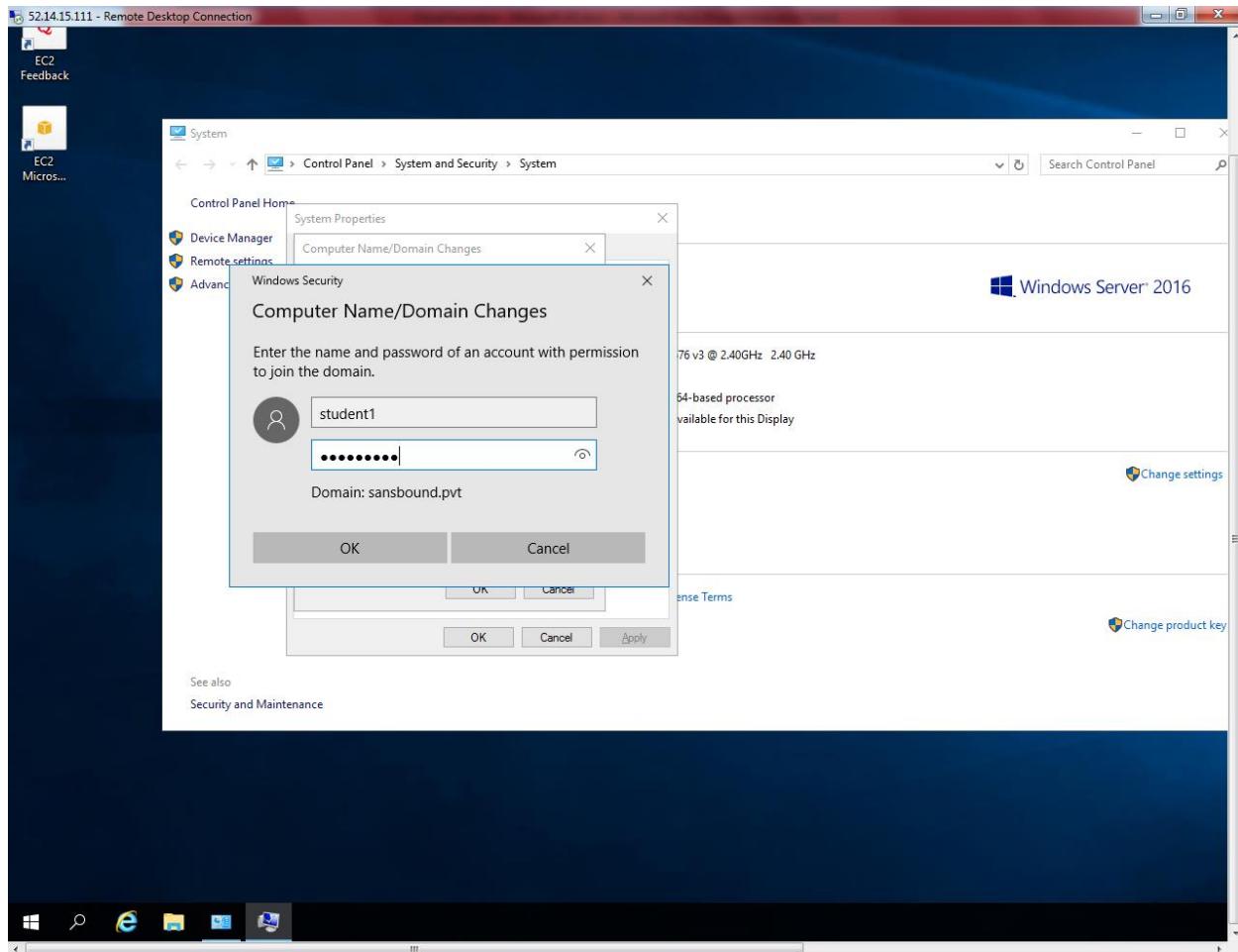


Click “Domain”and then type sansbound.pvt .

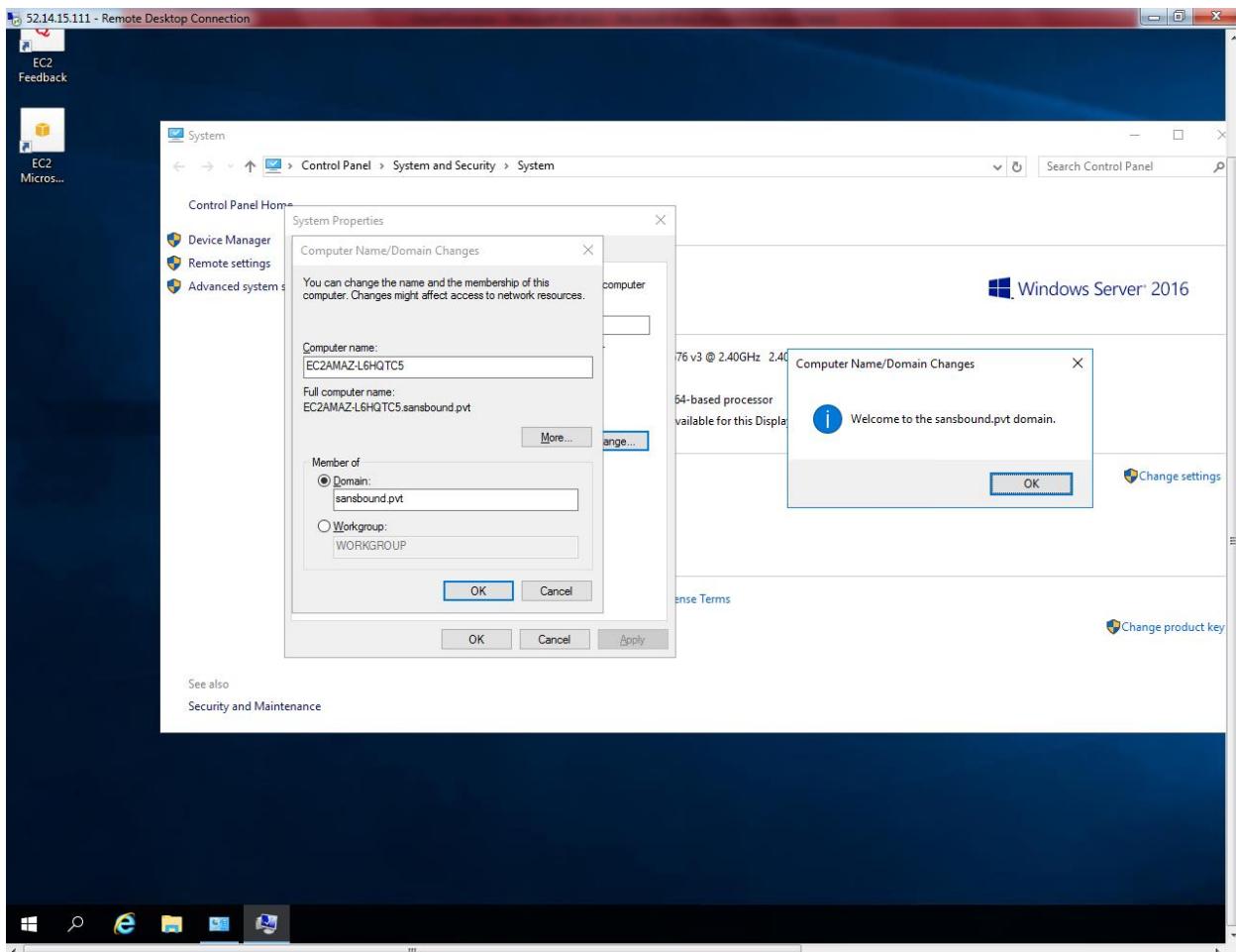


Click "Ok".

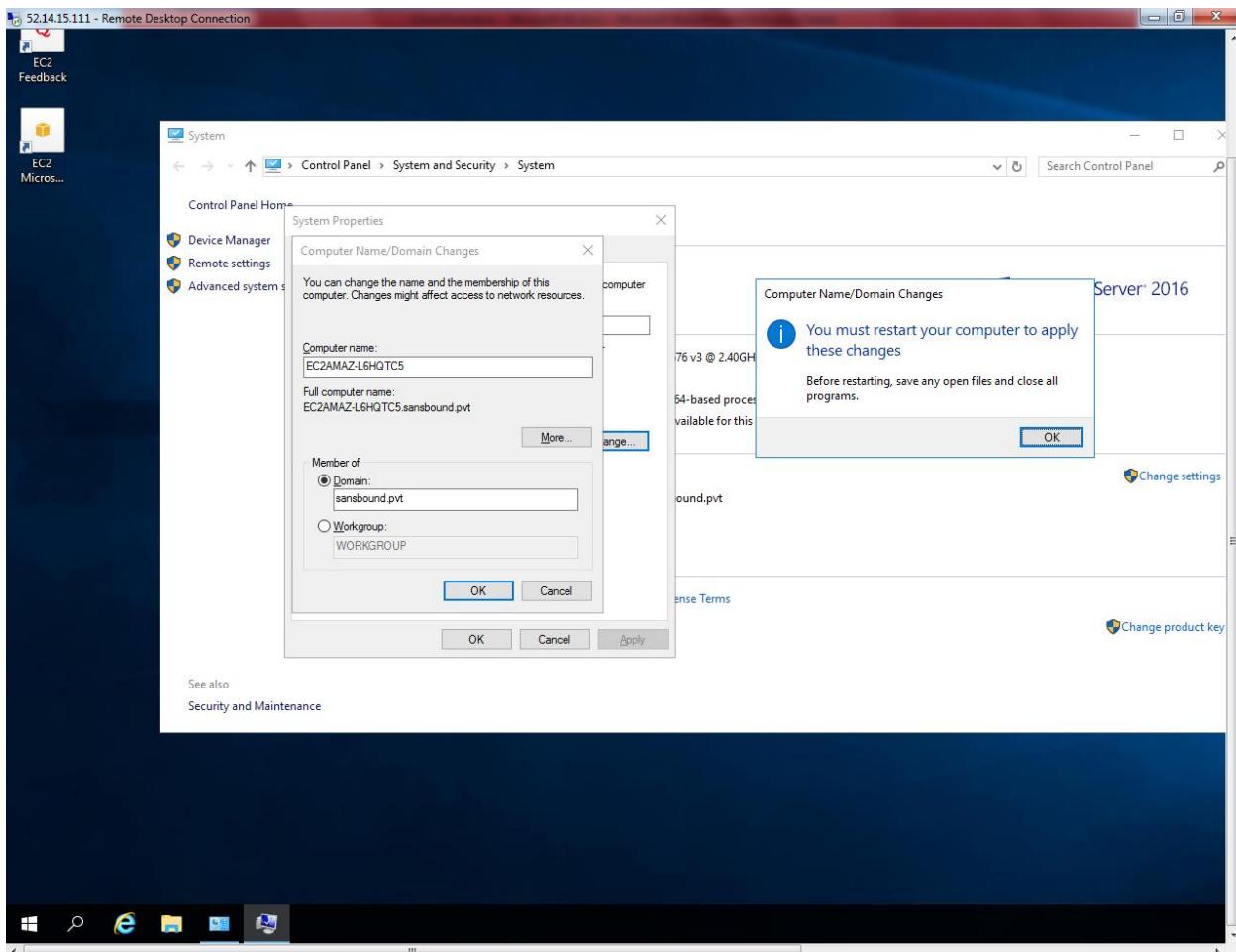
Type the username password of Student1 to join the system to domain.



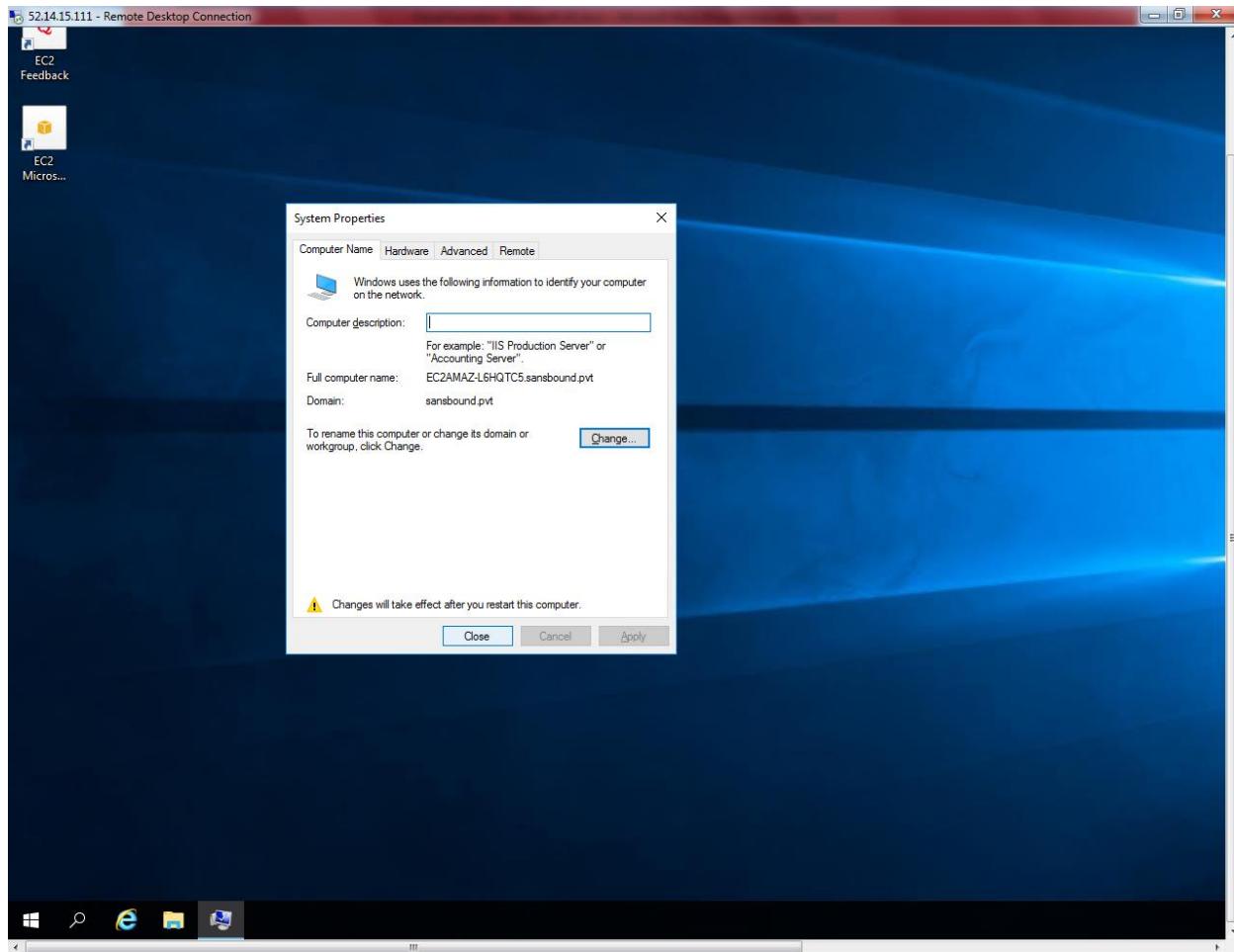
Now system has been successfully joined to domain.



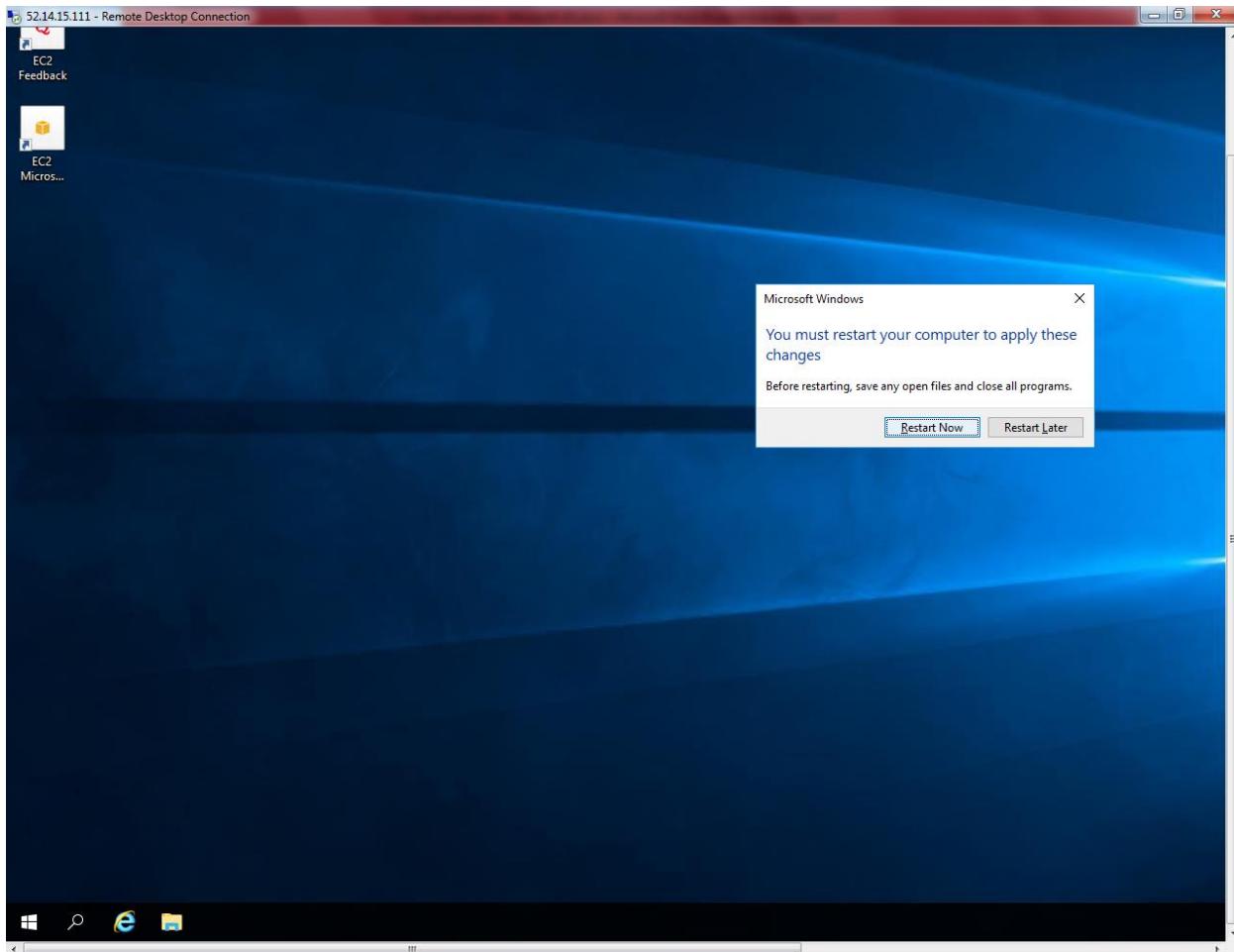
Click "Ok".



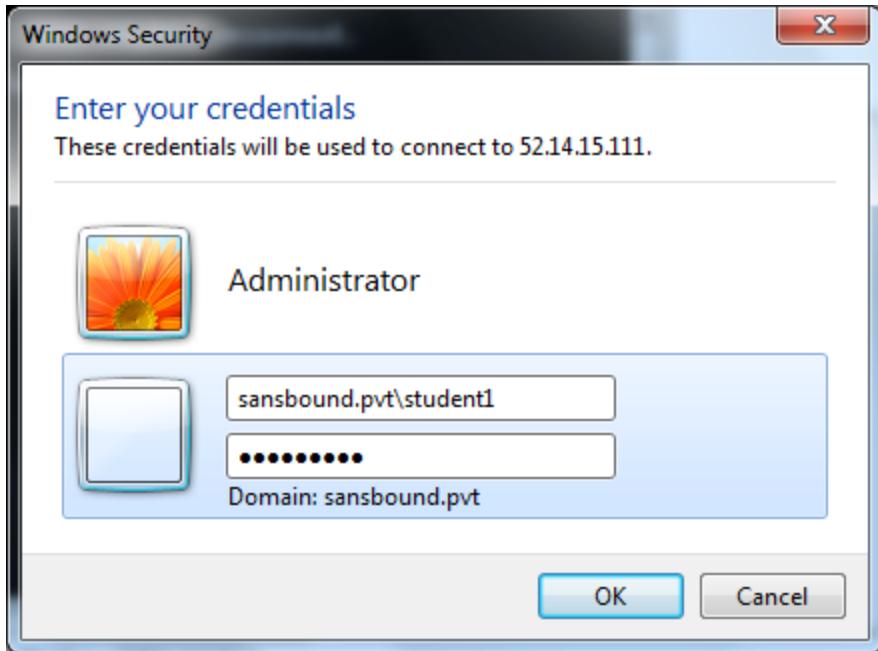
Click "Close".



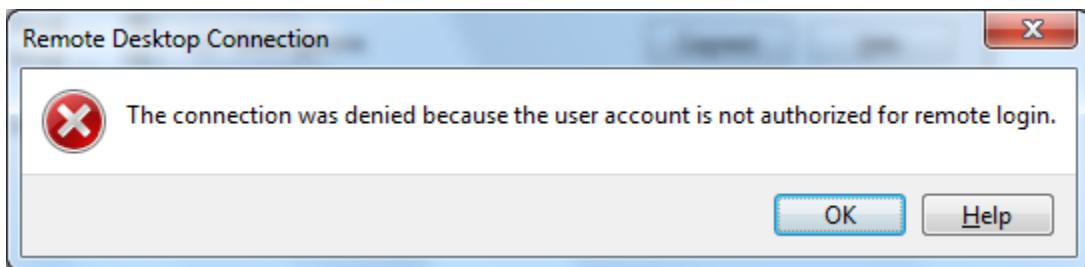
Click "Restart now".



Now try to connect the member server with domain user (student1) login credentials.



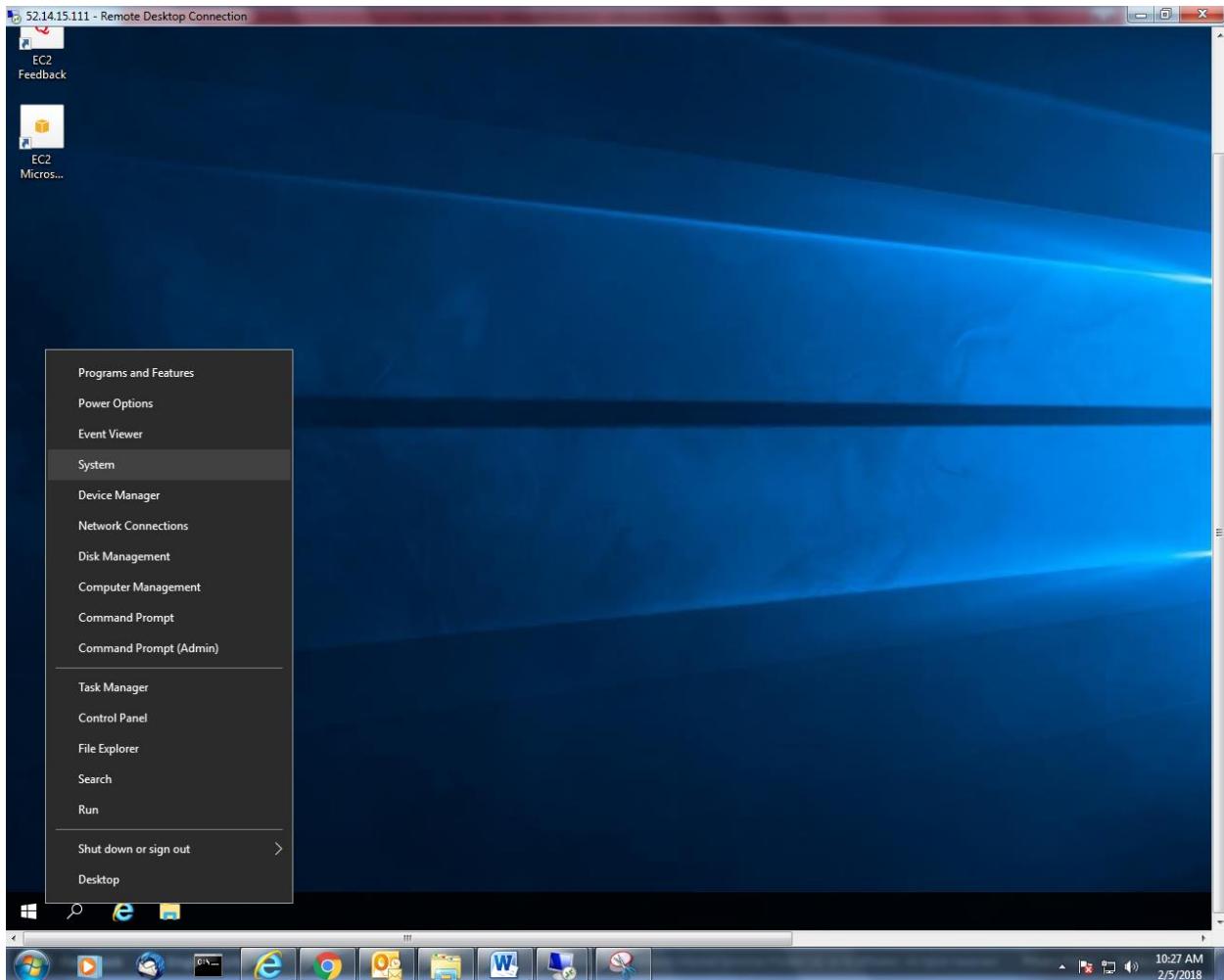
Serve has refused that the connection was denied because the user account is not authorized for remote login.



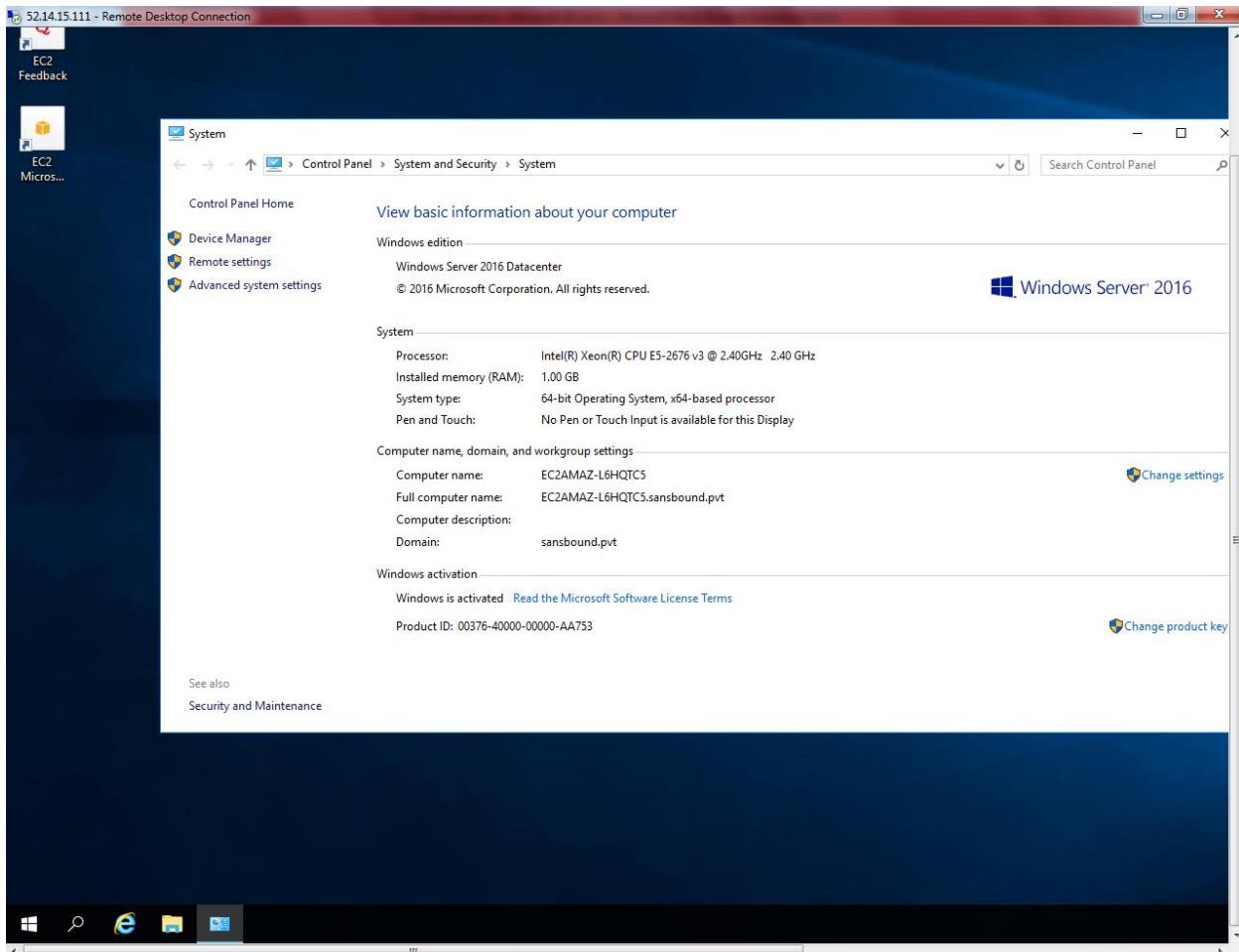
What could be cause of this issue?

We need to add user to “Allow remote connection to this computer” option.

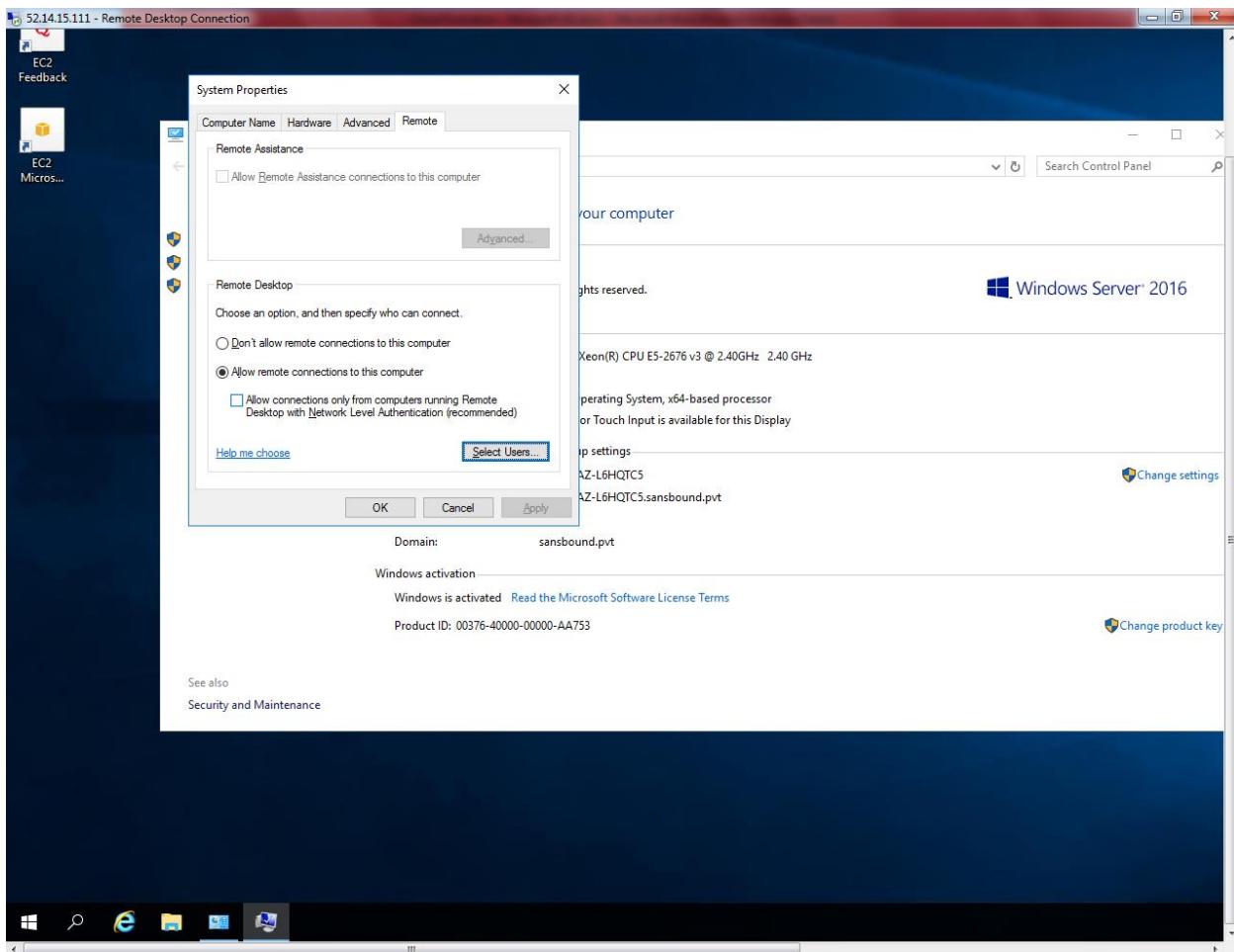
Right click the start menu and then click “System”.



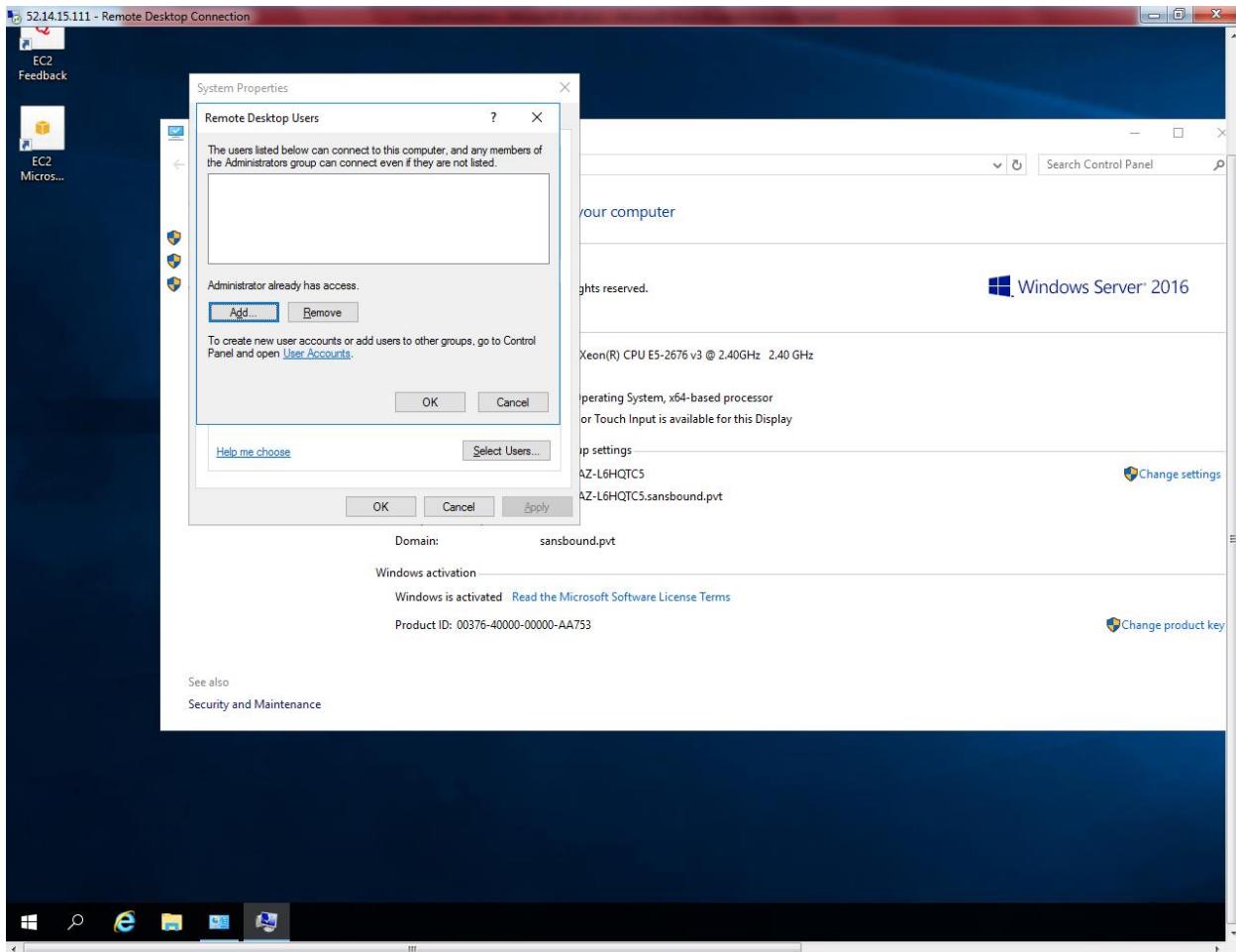
Click “Remote settings”.



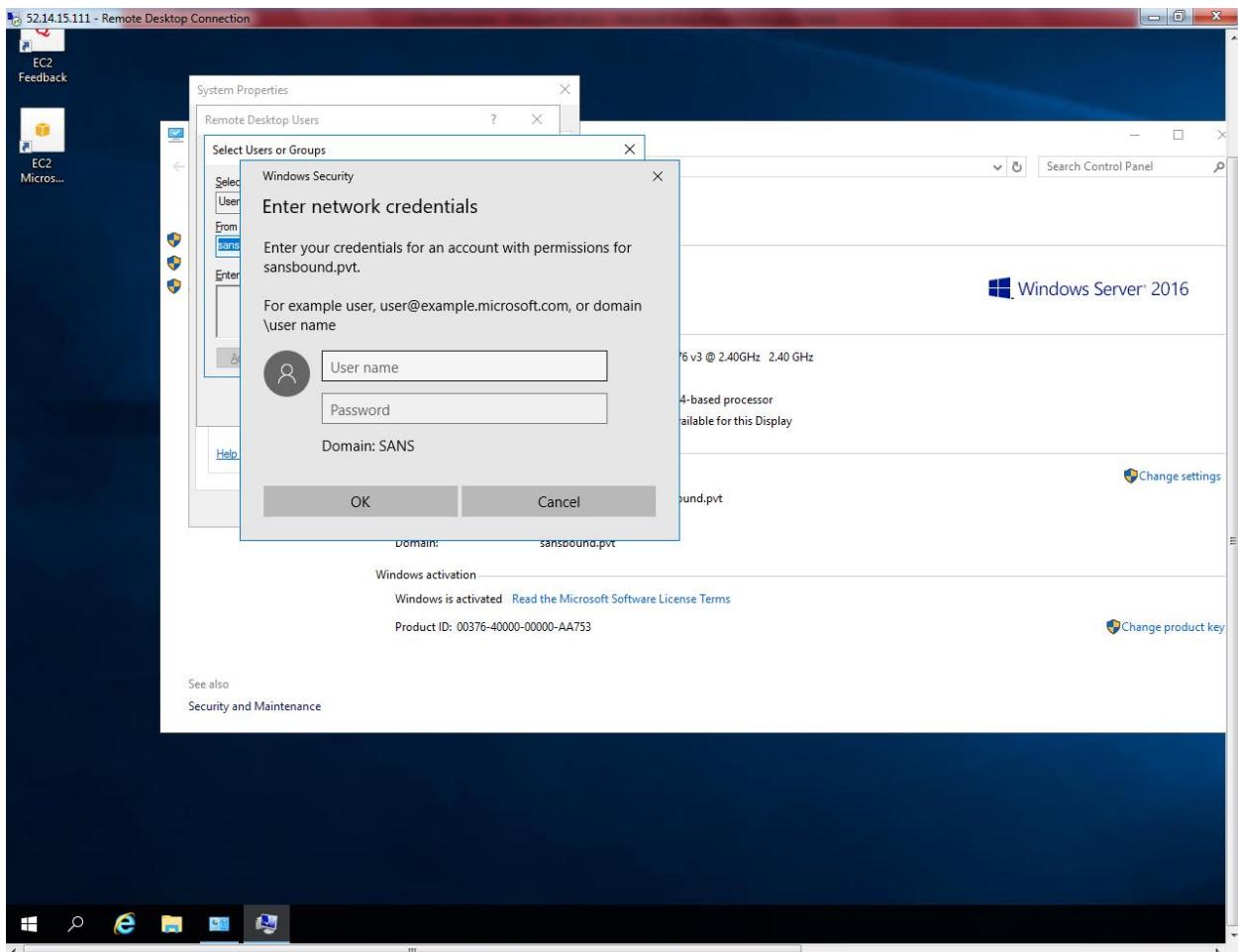
Click "Select users".



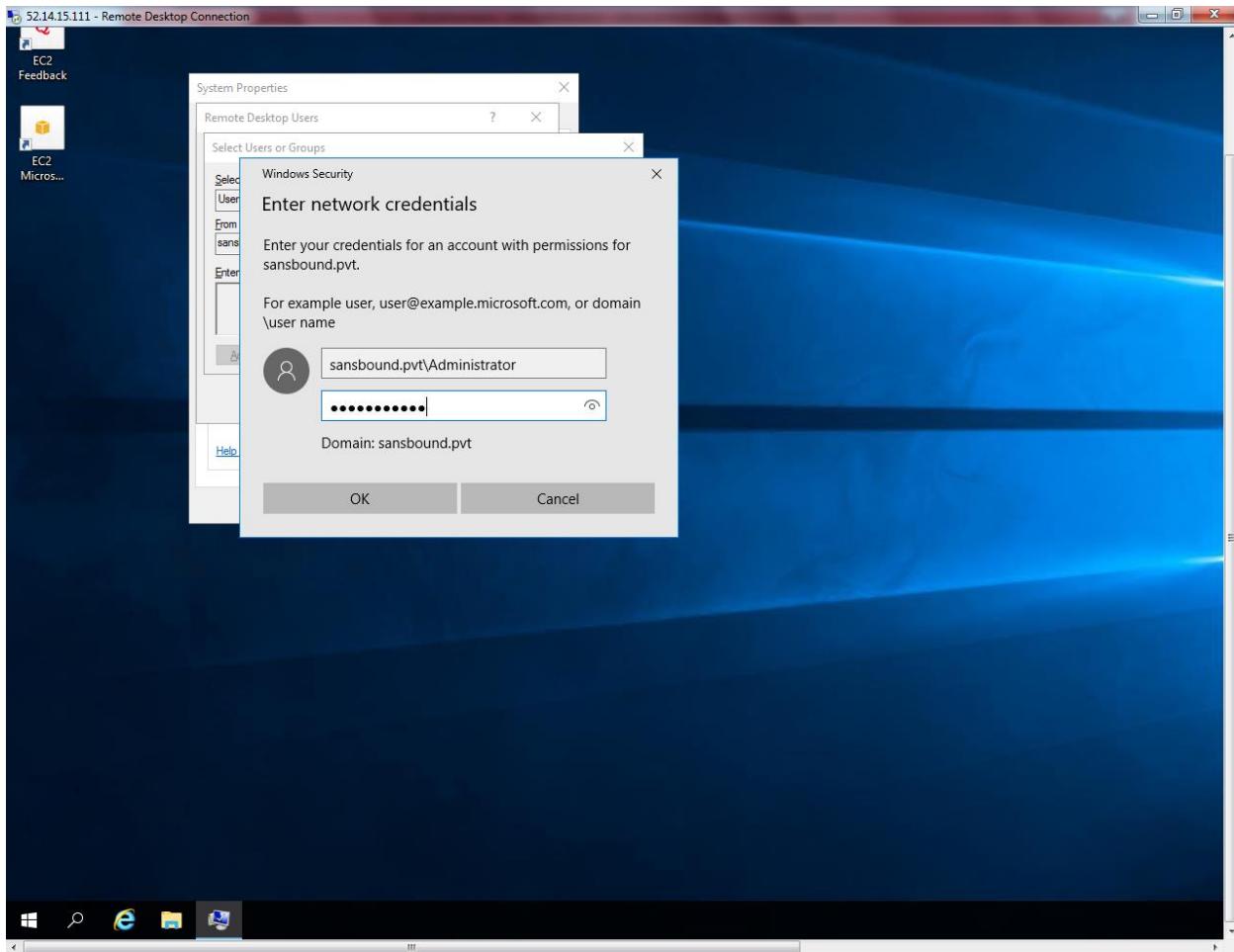
Click "Add".



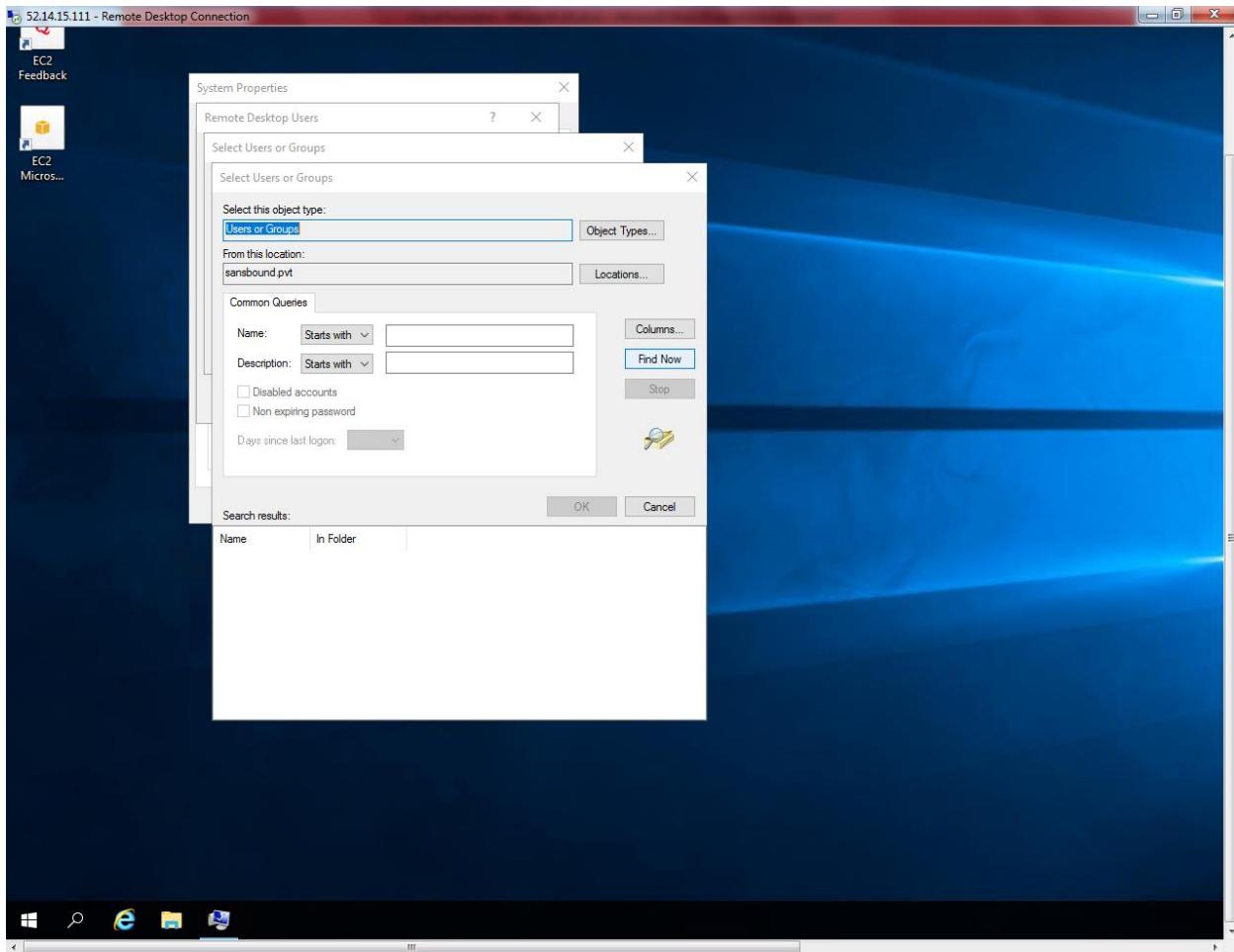
Type the domain admin privilege user to list the use detail.



Click "Ok".



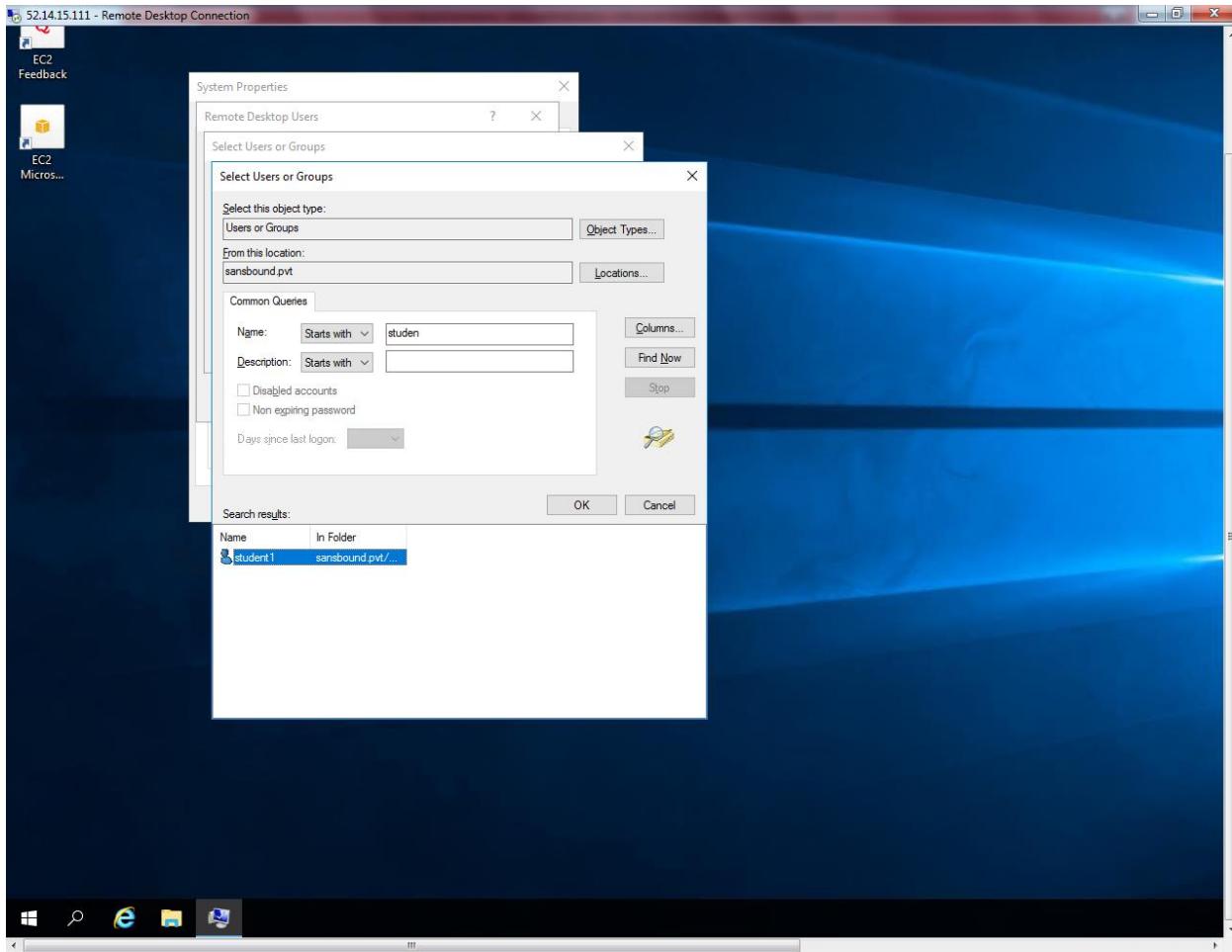
Click "Find now".



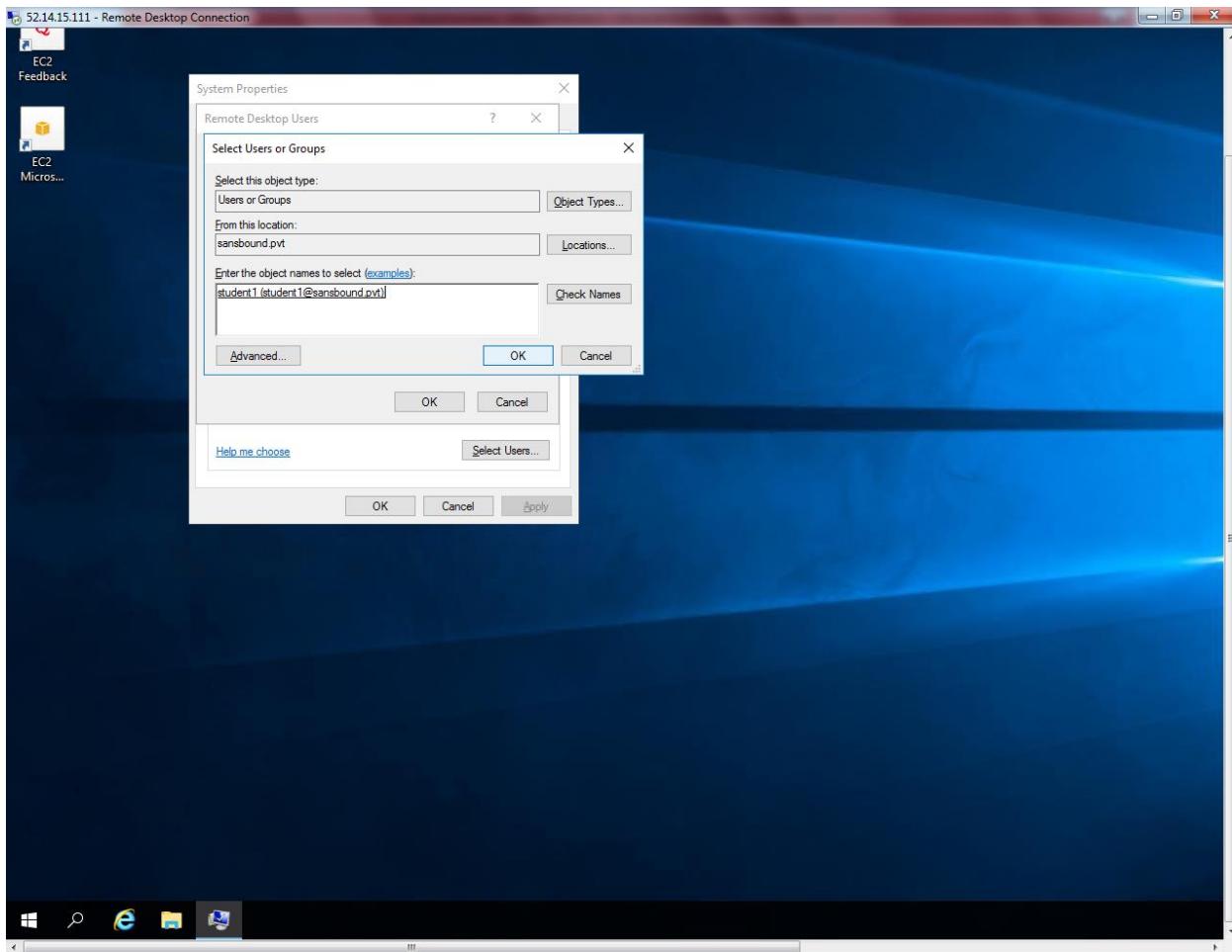
If it requires login credentials please type domain admin privilege password to get below option.

Type the user student1 and click Find now.

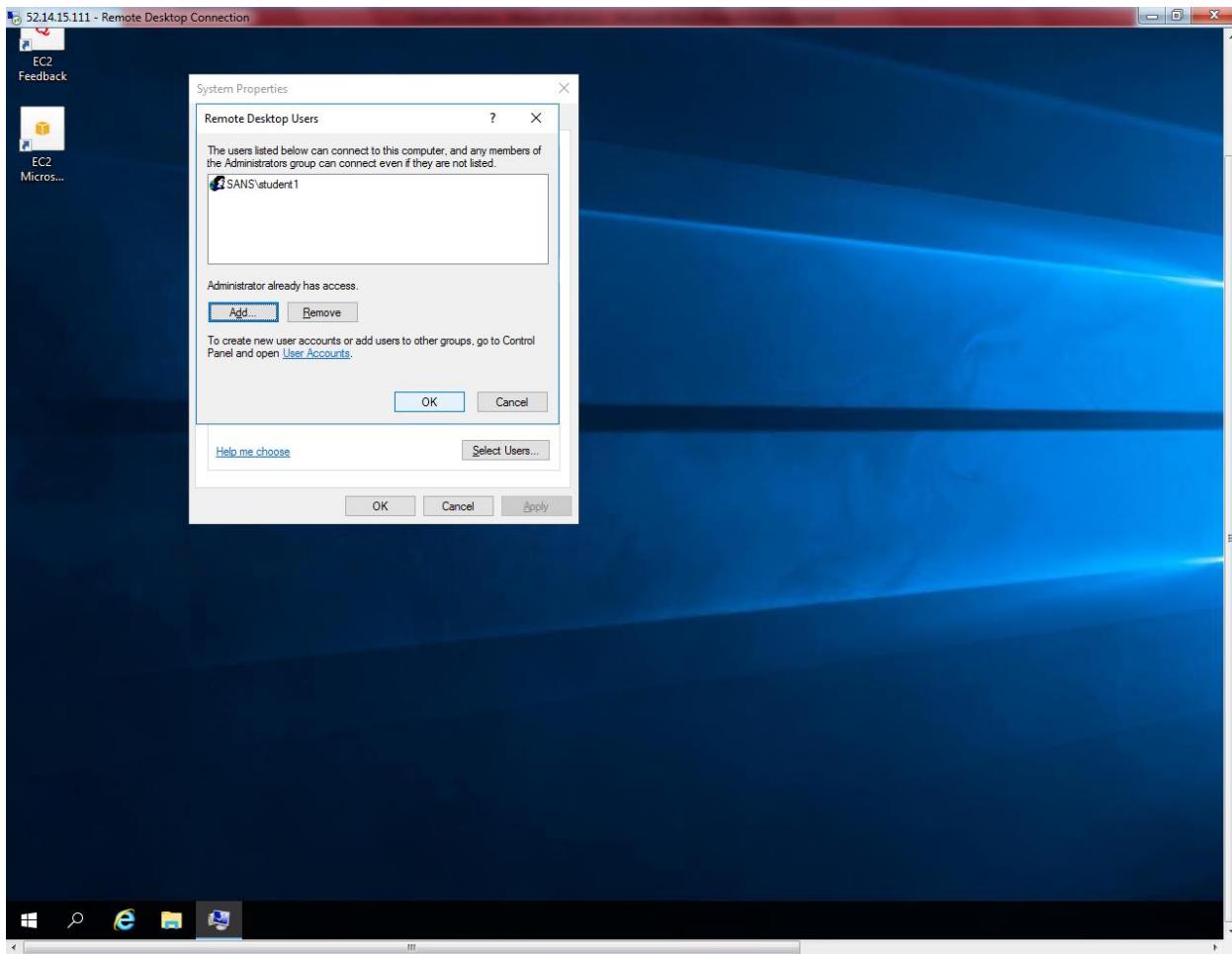
Then click "Ok".



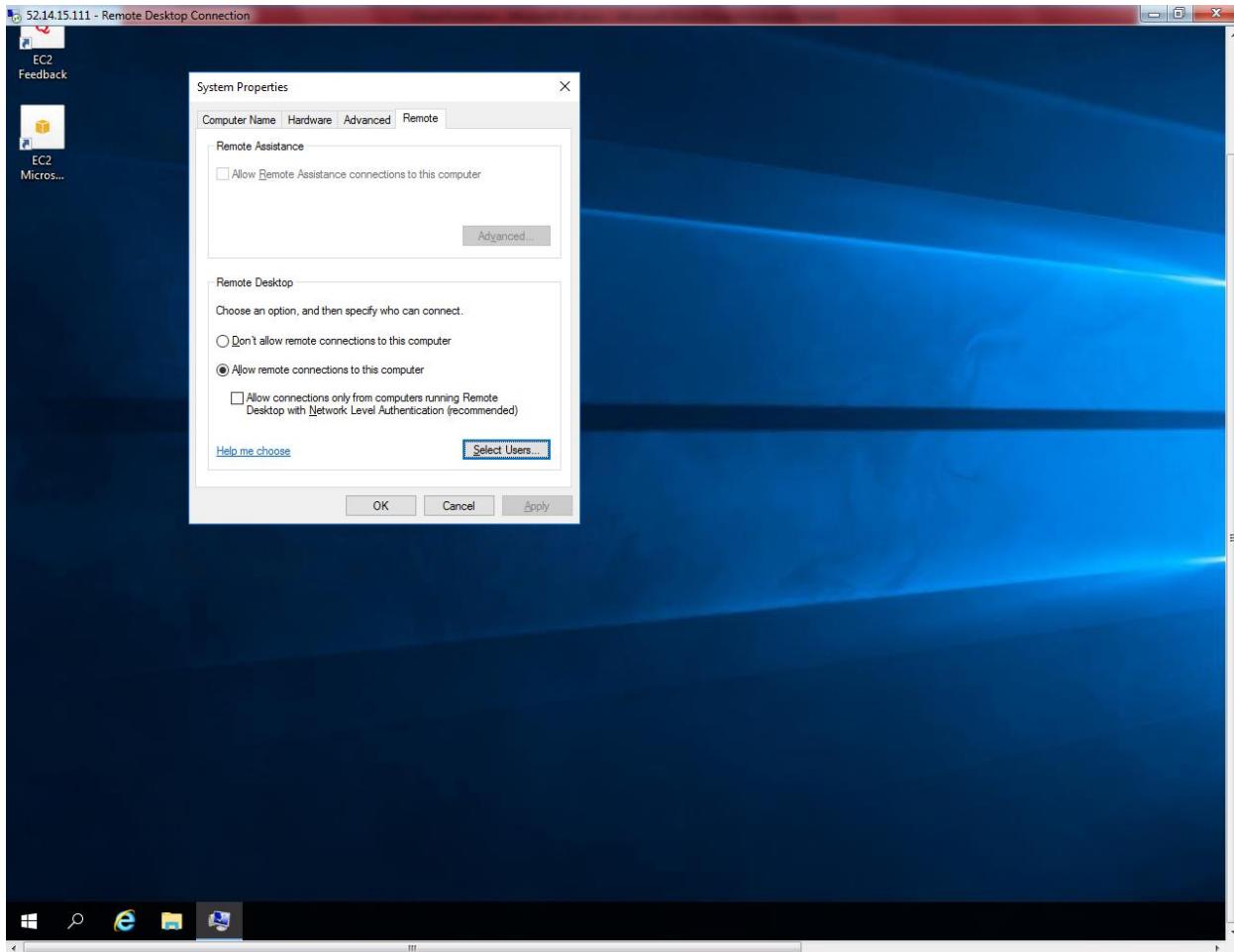
Click “Ok”.



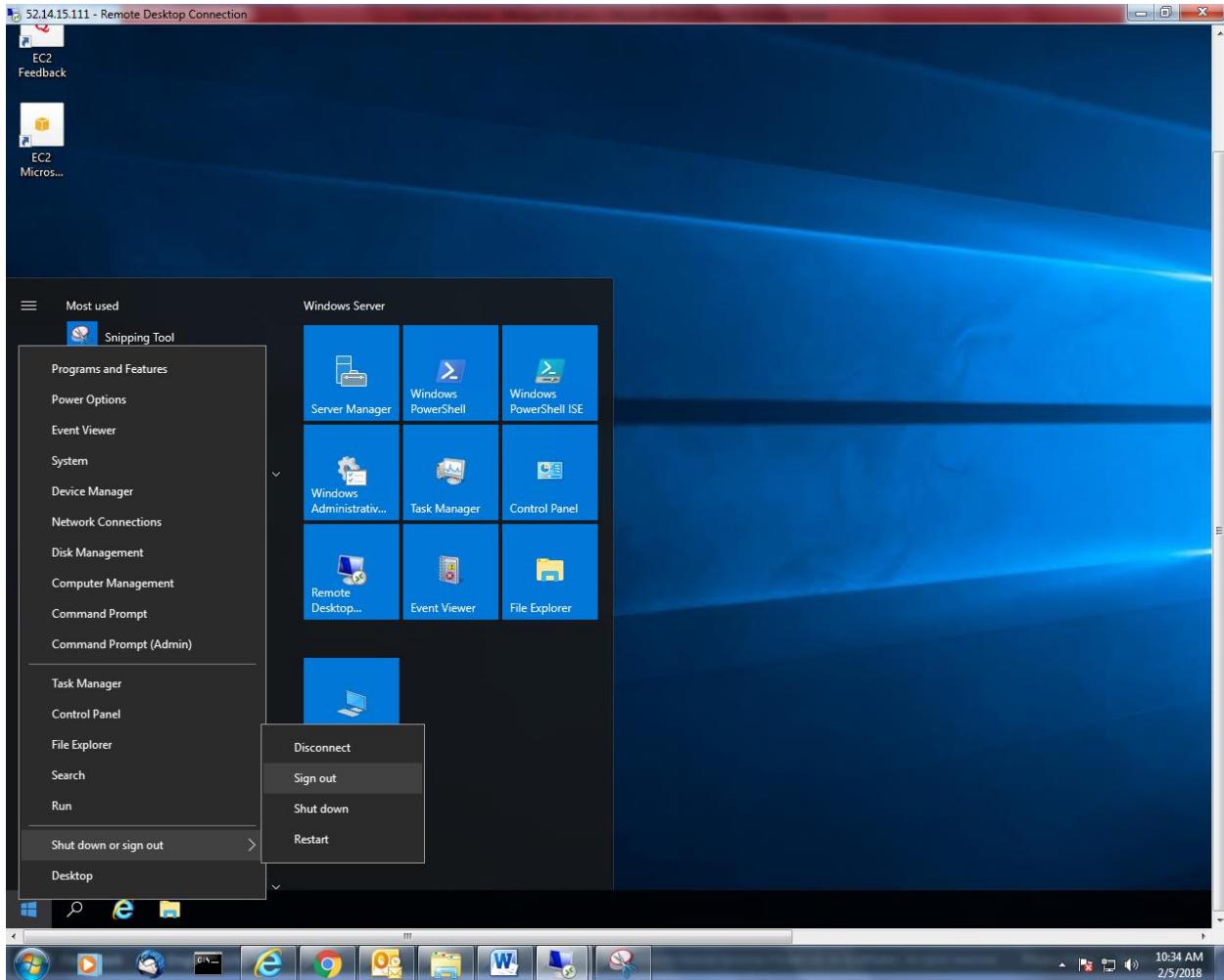
Click "Ok".



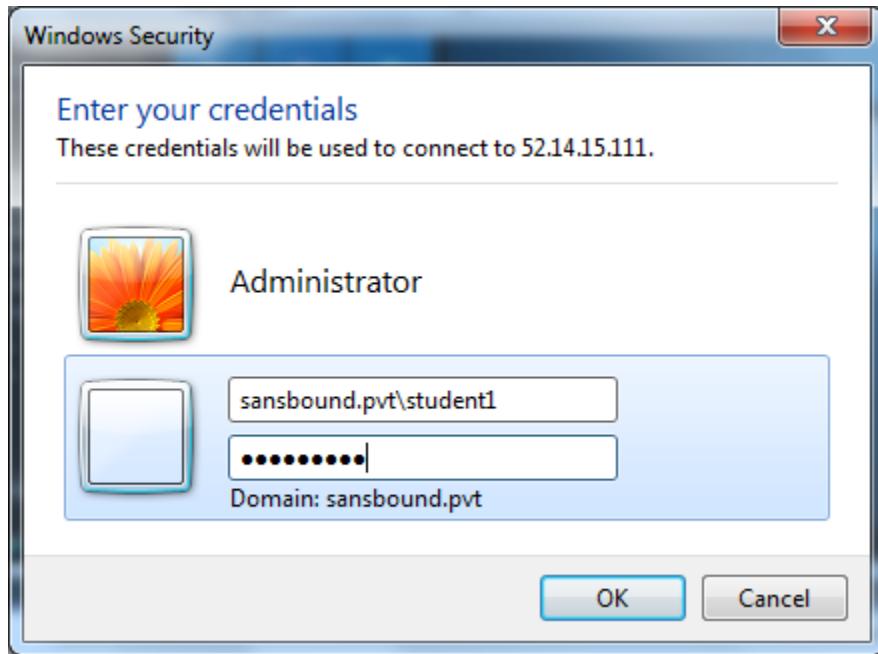
Click “OK”.



Sign out from the member server.



Login to member server with student1 login credentials.



Now, you have successfully logged on to the server.

