


You must record your procedures with a Screen / Video Capturing software.

Windows build-in “Steps Recorder” is sufficient for this lab. However, a more robust Video Capture software is preferred.

- Camtasia Studio (can be found from <https://myapps.senecacollege.ca> )
- Xbox Game Bar that comes with Windows OS. “+G” to launch
- CamStudio (Free and performs well, though discontinued a while ago, no support)


For Mac users, please refer to <https://support.apple.com/en-ca/HT208721>

## Validate your access to CloudLabs.

1. Check your Seneca email. You should have received an email from CloudLabs [noreply@cloudlabsai.net](mailto:noreply@cloudlabsai.net) where you will be able to retrieve the assigned username and password to login to <https://portal.azure.com>

CloudLabs <noreply@cloudlabsai.net> | Jason Pang | Mon 6:59 AM

Invite for On demand lab - OPS345V1A | Feb 13 - Apr 19

 Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

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You don't often get email from [noreply@cloudlabsai.net](mailto:noreply@cloudlabsai.net). [Learn why this is important](#)

[EXTERNAL EMAIL] Please take caution when clicking links, opening attachments or responding to requests for information.

### OPS345V1A | Feb 13 - Apr 19

Dear Jason Pang

You are invited to take an On demand lab - **OPS345V1A | Feb 13 - Apr 19**.

Please note that the maximum duration is 1584Hrs, 28Mins from the start of the lab, after which it will be automatically deallocated. This invite will expire on Thursday, April 20, 2023.

[Launch Lab](#)

Thank you and have a great On Demand Lab!

Lab environments are monitored to ensure that usage is for intended purposes only. If actual usage differs from the designed lab scenario, your environment will be terminated without notice. Please refer to [Acceptable Usage Policy](#)

I agree to the Seneca College [Privacy Policy](#) (required).

This email is sent by Spektra Systems LLC, on behalf of Seneca College.



## OPS345V1A | Feb 13 - Apr 19

Your On Demand Lab is ready (1584 hour(s), 26 minute(s) remaining)

[Environment Details](#)

[Resources](#)

Here are your credentials to login to [Microsoft Azure](#) and access the On Demand Lab.

Fields	Credentials	Action
Username	odl_user_@seneca-ops345v1e	
Password		

2. Login to <https://portal.azure.com> with assigned username and password.
3. Follow the onscreen instruction to setup your Microsoft Authenticator.

## Keep your account secure

Your organization requires you to set up the following methods of proving who you are.

### Microsoft Authenticator



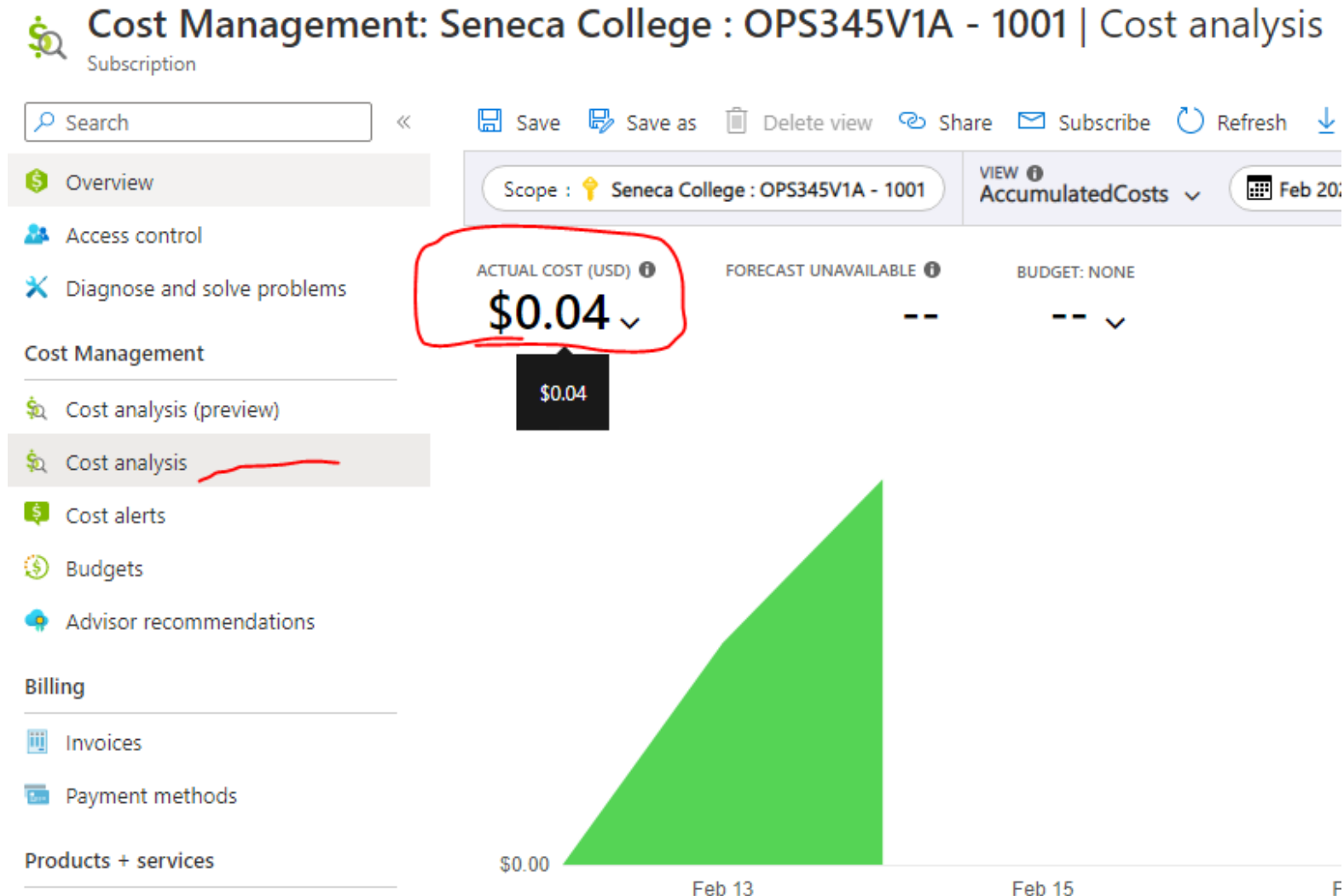
✓ Notification approved

Back

Next

4. After sign-in to Azure portal. Search “Cost Management” and then click the “Cost Analysis” tab. Make sure your account is not being used or minimal cost occurred. (Each student has US\$40 quota per course per semester)

[Home](#) > [Cost Management: Seneca College : OPS345V1A - 1001](#)



5. Please let me know if you have any issue with the "Actual Cost". It is your own responsibility to monitor your credit balance and make sure to remove/shutdown/deallocate resources to minimize the cost. Once you used up the US\$40 quota, your account will be locked.

## Create your first Virtual Machine

1. Navigate to “Resource Groups”. You may see few resource groups created already. Those are the default Resource Groups created automatically. You can ignore them for now.

[Home](#) >

### Resource groups ...

Seneca (seneca.onmicrosoft.com)

[+](#) Create [⚙️](#) Manage view [v](#) [🔄](#) Refresh [↓](#) Export to CSV [🔗](#) Open query | [🏷️](#) Assign tags | [💬](#) Feedback

Filter for any field...

Subscription == all

Location == all [×](#)

[+](#) [🔍](#) Add filter

Showing 1 to 3 of 3 records.

☐ Name [↑↓](#)

☐ [🔗](#) cloud-shell-storage-eastus

☐ [🔗](#) DefaultResourceGroup-EUS


☐ [🔗](#) NetworkWatcherRG

2. Create a new Resource Groups as "OPS345". Your subscription may show a little different. Review and Create the Resource Group.

[Home](#) > [Resource groups](#) >


## Create a resource group ...

**Basics**   Tags   Review + create



**Resource group** - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#) 

### Project details

Subscription \* ⓘ

Seneca College : OPS345V1A - 1001 

Resource group \* ⓘ

OPS345  

### Resource details

Region \* ⓘ

(US) East US

**Review + create**







< Previous

Next : Tags >

3. Confirm the Resource Group “OPS345” created.


## Resource groups ...


Seneca


 Create  Manage view   Refresh  Export to CSV  Open query |  Assign tags


Filter for any field...

Subscription equals **Azure for Students**

Location equals **all** 

 Add filter

 **0** Unsecure resources

 **0** Recommendations

☐ Name 

☐  NetworkWatcherRG

☐  OPS345

4. Navigate to “Virtual Machines” and Create a VM with **CentOS**. Please make sure you choose the **B1s** size, which cost about \$3.80/month, **otherwise your quota will run out soon**.

Check “See all images” and “See all sizes” if you don’t see the option on the list.

[Home](#) >

## Create a virtual machine ...

[Basics](#) [Disks](#) [Networking](#) [Management](#) [Monitoring](#) [Advanced](#) [Tags](#) [Review + create](#)

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

### Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription \*

Resource group \*  [Create new](#)

### Instance details

Virtual machine name \*

Region \*

Availability options

Security type

Image \*  [See all images](#) | [Configure VM generation](#)

VM architecture ☐ Arm64 ☒ x64

Run with Azure Spot discount ☐

Size \*  [See all sizes](#)

[Home](#) > [Virtual machines](#) > [Create a virtual machine](#) >

## Select an image ...

### Other Items

[My Images](#)

[Shared Images](#)

[Community Images \(PREVIEW\)](#)

[Direct Shared Images \(PREVIEW\)](#)

### Marketplace

[All](#)

[Recently created](#)


[Private products](#)

### Categories

[Compute \(83\)](#)

## Marketplace

Showing 1 to 20 of 160 results for 'ce

**CentOS-based**

Rogue Wave Software (formerly ...

Virtual Machine

This distribution of Linux is based on CentOS and is provided by Rogue Wave Software.

1/160 (20)



5. Under Administrator account, create a new user named as “ops345” with **password of your own choice. (I will use “OPS345@Seneca” as the password throughout the labs.)** Make sure other options are set as attached screenshot.

#### Administrator account

Authentication type ⓘ

- ☐ SSH public key  
☒ Password

Username \* ⓘ

ops345 ✓

Password \* ⓘ

..... ✓

Confirm password \* ⓘ

..... ✓

#### Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports \* ⓘ

- ☐ None  
☒ Allow selected ports

Select inbound ports \*

SSH (22) ▼

**⚠ This will allow all IP addresses to access your virtual machine.** This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Review + create

< Previous

Next : Disks >

6. Proceed to the “Disks” tab. Make sure you select “**Standard HDD (locally-redundant storage)**”. Additional charge will be incurred if you choose other options and you may not have enough credit to finish the course.  
Make sure “**Delete with VM**” is checked.

To understand the cost of Disks. <https://azure.microsoft.com/en-ca/pricing/details/managed-disks/>

[Home](#) >

## Create a virtual machine ...

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#) ↗

### VM disk encryption

Azure disk storage encryption automatically encrypts your data stored on Azure managed disks (OS and data disks) at rest by default when persisting it to the cloud.

Encryption at host ⓘ



Encryption at host is not registered for the selected subscription.  
[Learn more about enabling this feature](#) ↗

### OS disk

OS disk type \* ⓘ

Standard SSD (locally-redundant storage) ▼

The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

Delete with VM ⓘ



7. Proceed to the “Networking” tab. Make sure “Delete Public IP and NIC when VM is deleted” is checked.

To understand the cost of Public IP: <https://azure.microsoft.com/en-ca/pricing/details/ip-addresses/>

[Home](#) >

## Create a virtual machine ...

Basics   Disks   **Networking**   Management   Monitoring   Advanced   Tags   Review + create


Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution.

[Learn more](#) 

### Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * ⓘ	<div>(new) OPS345-vnet</div> <div>Create new</div>
Subnet * ⓘ	<div>(new) default (10.0.0.0/24)</div> <div></div>
Public IP ⓘ	<div>(new) vm1-ip</div> <div>Create new</div>
NIC network security group ⓘ	<div><input type="radio"/> None</div> <div><input checked="" type="radio"/> Basic</div> <div><input type="radio"/> Advanced</div>
Public inbound ports * ⓘ	<div><input type="radio"/> None</div> <div><input checked="" type="radio"/> Allow selected ports</div>
Select inbound ports *	<div>SSH (22)</div> <div></div>

 **This will allow all IP addresses to access your virtual machine.** This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Delete public IP and NIC when VM is deleted ⓘ

☒

8. Proceed to the “Monitoring” tab. (Optional)

Check the “Boot diagnostics” with “Disable” option. This will reduce the VM’s boot up time.

[Home](#) >

## Create a virtual machine ...

Basics   Disks   Networking   Management   Monitoring   Advanced   Tags   Review + create

Configure monitoring options for your VM.

### Alerts

Enable recommended alert rules ⓘ ☐

### Diagnostics

Boot diagnostics ⓘ

☐ Enable with managed storage account (recommended)

☐ Enable with custom storage account

☒ Disable

Enable OS guest diagnostics ⓘ ☐

9. Keep all the other settings as default, Review and Create the VM.

10. Find out the public IP address of the newly created VM and write it down.

[Home](#) >

## Virtual machines


Seneca College (senecacollegelabs.onmicrosoft.com)

[+](#) Create [↔](#) Switch to classic [🕒](#) Reservations [⚙️](#) Manage view [🔄](#) Refresh [↓](#) Export to CSV [🔗](#) Open query | [🏷️](#) Assign tags [▶](#)

[Subscription equals all](#) [Type equals all](#) [Resource group equals all](#) [Location equals all](#) [+ Add filter](#)

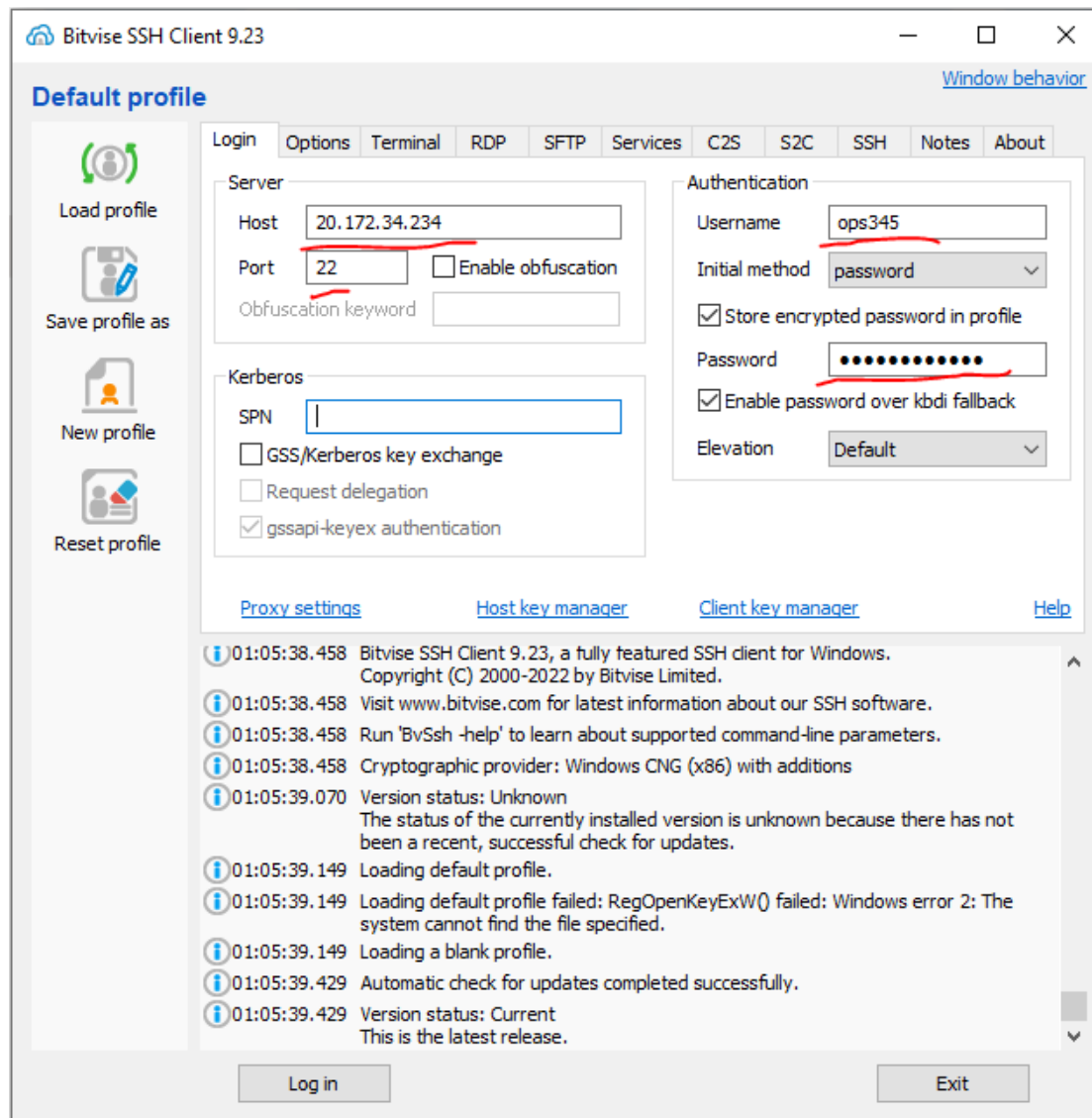
Showing 1 to 1 of 1 records.

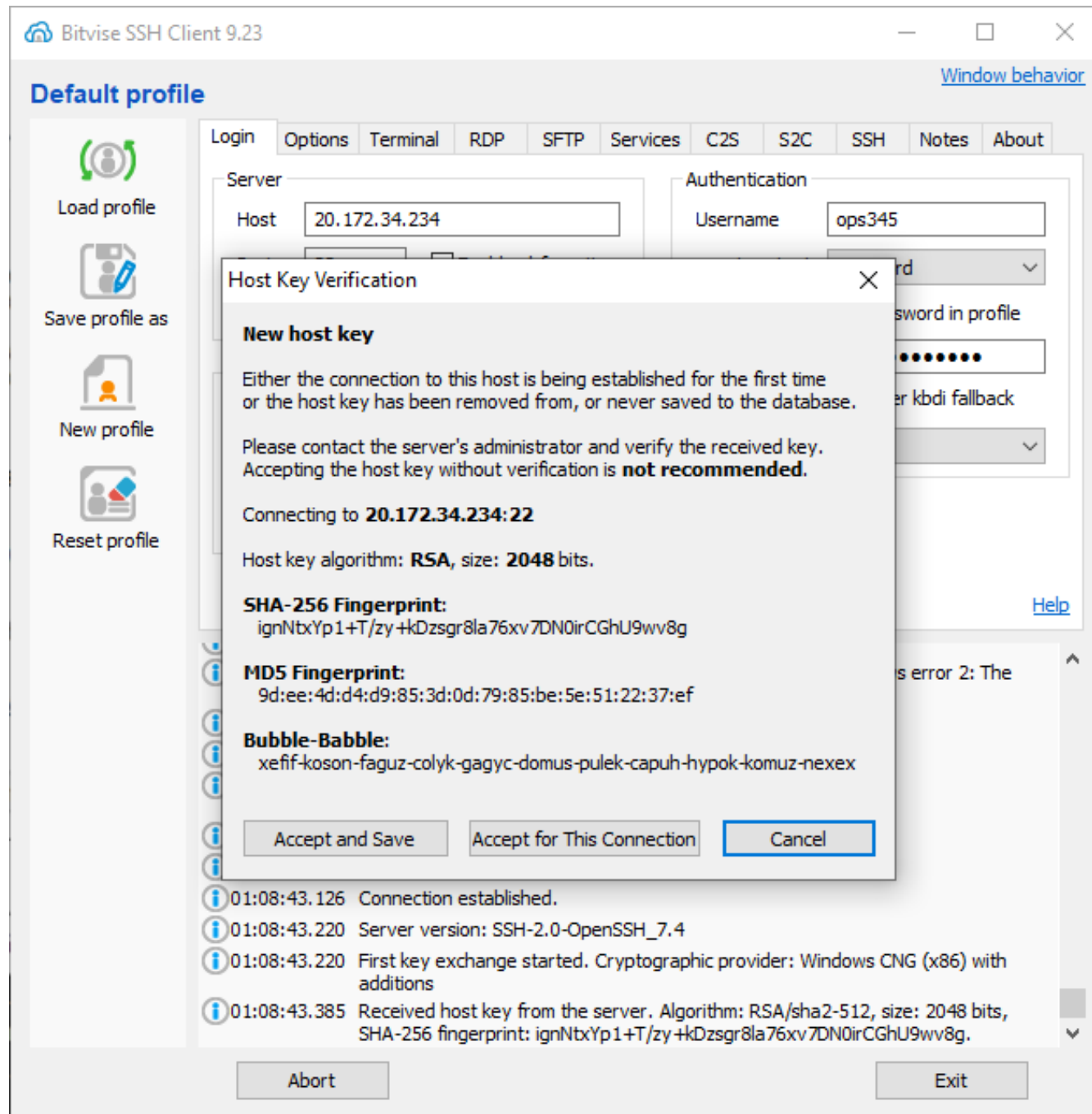
[No grouping](#)

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Stat... ↑↓	Operating system ↑↓	Size ↑↓	Public IP address
<input type="checkbox"/>	 vm1	Virtual machine	Seneca College : O...	OPS345	East US	Running	Linux	Standard...	<u>40.76.37.248</u>

## Install Bitvise SSH client (or any other SSH client of your choice) to your own computer

1. You can skip this part if you already have an SSH client installed. (Any SSH client would work.)
2. Download and install Bitvise from the official site. <https://www.bitvise.com/download-area>
3. SSH to the VM with Bitvise.





4. Open “New terminal console” on the left-hand side. And try to run few commands such as `ls`, `cd`, `mkdir`, `clear`...etc.

Thank you for choosing this Microsoft sponsored CentOS image from OpenLogic!

by Perforce

While OpenLogic support is not including with this image, OpenLogic does offer Silver (12x5) & Gold (24x7) support options and consulting for enterprise and/or mission critical systems as well as over 400 open-source packages. If interested, email [info@perforce.com](mailto:info@perforce.com) or call +1 612.517.2100.

```
[ops345@vm1 ~]$ mkdir hello
[ops345@vm1 ~]$ ls
hello
[ops345@vm1 ~]$ cd hello
[ops345@vm1 hello]$ mkdir world
[ops345@vm1 hello]$ ls
world
[ops345@vm1 hello]$
```



5. Please make sure you **“Stop”** the VM “vm1” from Azure Portal to conserve your credit.  
**“Refresh”** to make sure it is **deallocated**.

Simply shutdown (stop) the VM without deallocated will still incur the charges.

There are charges on a lot of components of a VM separately. (CPU, RAM, Disks, Public IP...etc.)

We will try our best to conserve the cost.

Home >


## Virtual machines

Seneca College (senecacollegelabs.onmicrosoft.com)

+ Create ▾ ↺ Switch to classic ⌚ Reservations ▾ ⚙ Manage view ▾ ↻ Refresh ⬇ Export to CSV 🔗 Open query | 🏷 Assign tags ▶ Start ↶ Restart ☐ Stop

Filter for any field... Subscription equals all Type equals all Resource group equals all × Location equals all × + Add filter

Showing 1 to 1 of 1 records.

<input type="checkbox"/> Name ↑↓	Type ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating system ↑↓
<input type="checkbox"/>  vm1	Virtual machine	Seneca College : OPS345V1A - 1001	OPS345	East US	Stopped <u>(deallocated)</u>	Linux

**Please stop the screen capturing software and save the captured file.**

**Upload the captured file to Blackboard \ My Tasks \ Prep Lab**

**If it is a video file, please upload to OneDrive and share the link with me.**

**All Seneca Users each have 1TB storage on OneDrive.**