

Creating an Office 365 Development Environment

Lab Time: 45 minutes

Lab Folder: C:\Student\Modules\01_GettingStarted\Lab

Lab Overview: In this lab you will get up and running with an Office 365 and SharePoint Online development environment. You should be working with a Windows PC that has been set up according to the [Setup.pdf](#) document that accompanies this course. You will perform the necessary tasks of creating a new Office 365 trial account which will create an Azure Active Directory (AAD) tenant and a SharePoint Online environment that you will use to complete your lab exercise throughout his training course. Once you have created and tested your Office 365 tenant, you can optionally create a trial subscription for Microsoft Azure (unless you already have an Azure account that you can use). Along the way, you will use PowerShell libraries for SharePoint Online and Microsoft Azure to verify you can connect to your Office 365 and Azure accounts and automate developer tasks using PowerShell scripts.

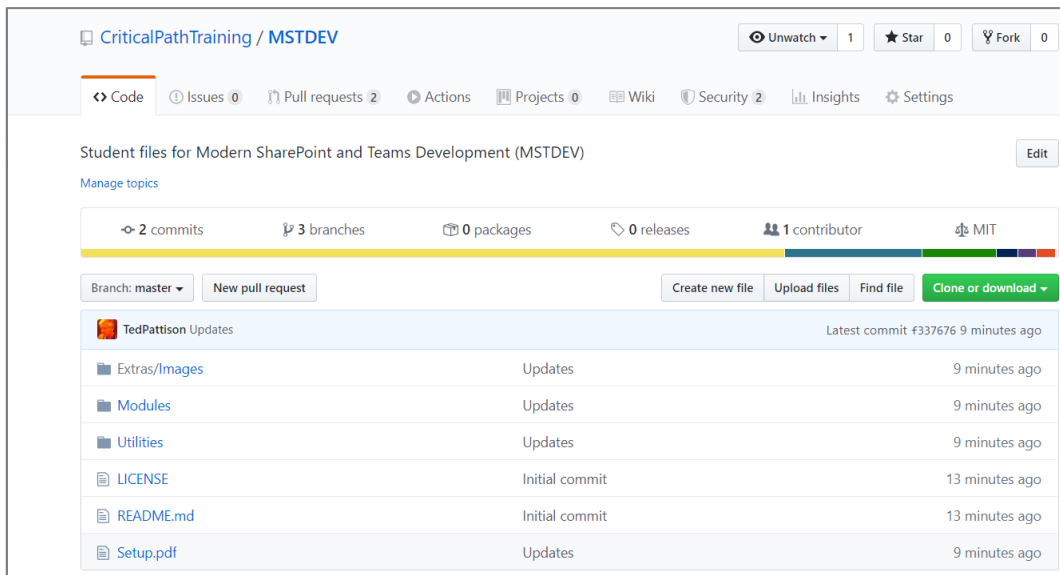
Exercise 1: Download a Local Copy of the Student Lab Files

In this exercise, you will use the GIT utility to download a local copy of the student files from the **MSTDEV** repository in GitHub. Note that this exercise assumes that GIT has already been installed on your PC as discussed in the setup guide for this course.

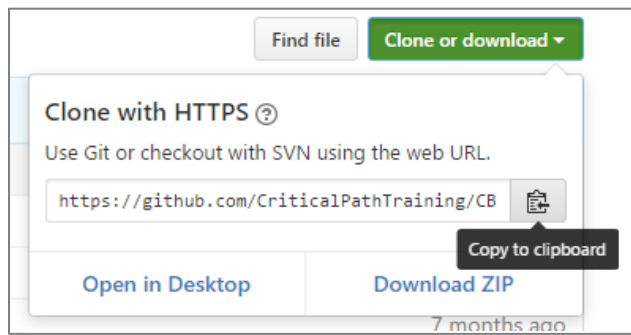
1. Launch a browser and navigate to the GitHub repository for this course at the following URL.

<https://github.com/CriticalPathTraining/MSTDEV>

2. You should see the home page for the repository as shown in the following screenshot.



3. Copy the URL to clone the repository.
 - a) On the home page of the **MSTDEV** repository, click the green **Clone or download** dropdown menu.
 - b) Click the **Copy to clipboard** button to copy the URL for cloning to the Windows clipboard.



4. Use GIT to clone the **MSTDEV** repository.
- Open up a Windows PowerShell command prompt.
 - Type in and execute the following **git** command to download the student files to a local folder named **C:\Student**. Note that you copied the URL to github.com in the previous step and you can paste it from the Windows clipboard instead of typing it.

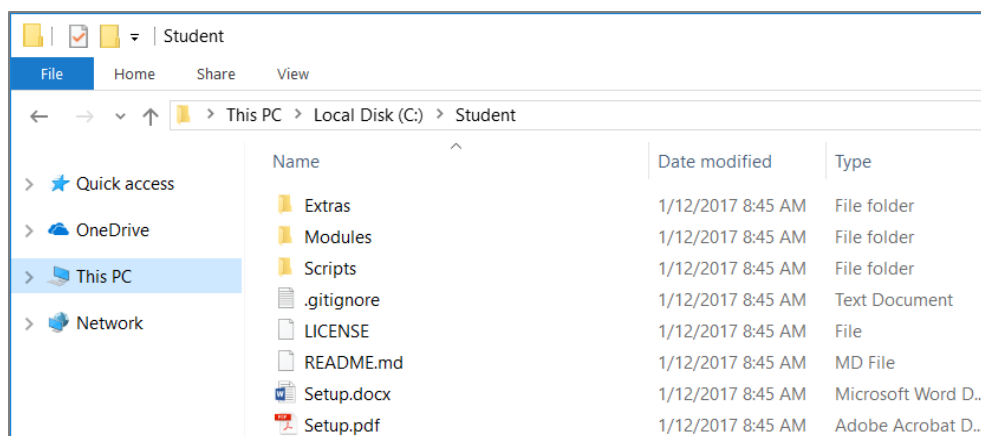
```
git clone https://github.com/CriticalPathTraining/MSTDEV.git C:\Student
```

- c) When the **git clone** command runs, it will create a local copy of the repository on your local machine in the **C:\Student** folder.

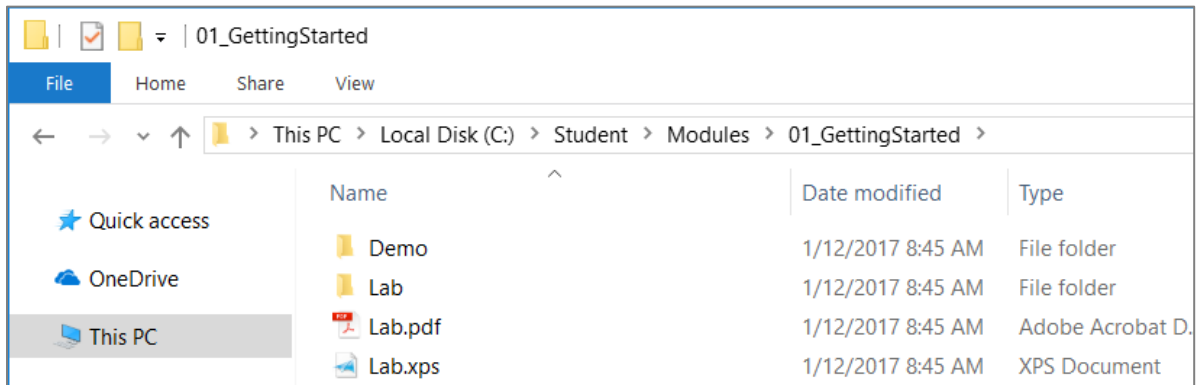
```
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Student> git clone https://github.com/CriticalPathTraining/CBD365.git C:\Student
Cloning into 'C:\Student'...
remote: Counting objects: 6032, done.
remote: Total 6032 (delta 0), reused 0 (delta 0), pack-reused 6032
Receiving objects: 100% (6032/6032), 212.51 MiB | 9.00 MiB/s, done.
Resolving deltas: 100% (2604/2604), done.
Checking out files: 100% (3678/3678), done.
PS C:\Users\Student>
```

- d) When the **git clone** command completes, open Windows Explorer and examine the **Student** folder. You should be able to see the **Student** folder has child folders named **Extras**, **Modules** and **Scripts**.



- e) Drill into the **Modules** folder and look in the folder inside named **01_GettingStarted**.



You can see that the **01_GettingStarted** folder contains two child folders named **Demo** and **Lab**.

Exercise 2: Create an Office 365 Trial Account

In this exercise, you will create a new Office 365 trial account which in turn will create a new Office 365 tenant. This Office 365 tenant will allow you to create up to 25 user accounts with Enterprise E5 trial licenses. Note that the Enterprise E5 trial license provides the benefits of the Office 365, SharePoint Online and Power BI Pro. Being able to create multiple Office 365 user accounts in your cloud-based testing environment will be important so that you can test the effects working with multiple users.

1. Navigate to the Office 365 trial sign up web page.
 - a) Launch the Chrome browser.
 - b) Copy and paste the following URL into the address bar of the incognito window to navigate to the signup page.

<https://go.microsoft.com/fwlink/p/?LinkID=698279&culture=en-US&country=US>

- c) You should now see the form you need to fill out to create your new **Office 365 E5** trial.
 - d) Enter your email address and click **Next**.

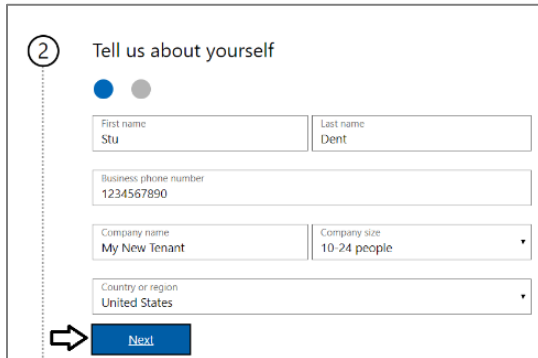
The screenshot shows the Microsoft Office 365 E5 trial sign-up page. It has a progress bar with four steps: 1. Let's set up your account (selected), 2. Tell us about yourself, 3. Create your business identity, and 4. Get Office. Under step 1, it says 'Enter your work or school email address, we'll check if you need to create a new account for Office 365 E5.' There is an email input field containing 'tedp@sharepointconfessions.onmicrosoft.com' and a 'Next' button.

If you enter an email address for an organization account, the form provides the option to sign in. Do not click the **Sign in** button because you don't want to sign with an existing organization account. The purpose of this exercise is to create a new organizational account in a new Microsoft 365 tenant.

- e) Click the **Create a new account instead** link.

The screenshot shows the same Microsoft Office 365 E5 trial sign-up page as before, but now it displays a message: 'Looks like you're already using TedP@SharePointConfessions.onMicrosoft.com with another Microsoft service. Sign in to use this account with this trial, or create a new account.' There are two buttons: a blue 'Sign in' button and a blue link that says 'Create a new account instead'.

- f) Enter your **First name** and **Last name**.
- g) Enter your mobile phone number as the **Business phone number**.
- h) Provides values for **Company size** and **Country or region** and click **Next**.



2 Tell us about yourself

First name: Stu, Last name: Dent

Business phone number: 1234567890

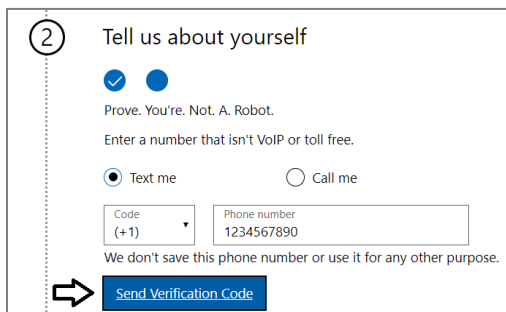
Company name: My New Tenant, Company size: 10-24 people

Country or region: United States

Next

Whatever **Company name** you enter will be used as the name of the Azure AD tenant that will be created during the sign up process.

- i) When prompted to prove you're not a robot, select the **Text me** option and ensure Phone number of for your mobile phone.
- j) Click **Send Verification Code**.



2 Tell us about yourself

Prove. You're. Not. A. Robot.

Enter a number that isn't VoIP or toll free.

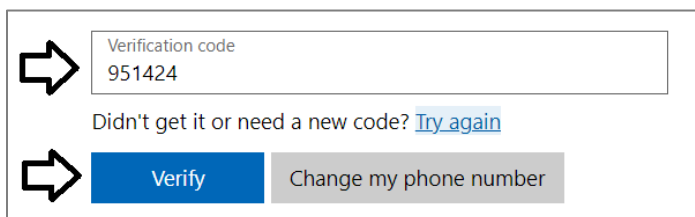
☒ Text me ☐ Call me

Code (+1): , Phone number: 1234567890

We don't save this phone number or use it for any other purpose.

Send Verification Code

- k) Retrieve the access code from your mobile device and use it to complete the validation process.

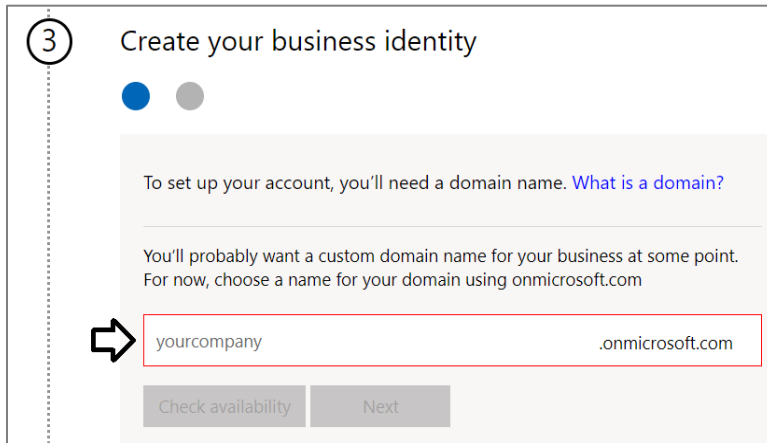


Verification code: 951424

Didn't get it or need a new code? [Try again](#)

Verify Change my phone number

- l) In the **Create your business identity** step, locate the textbox into which you will enter a domain name.



3 Create your business identity

To set up your account, you'll need a domain name. [What is a domain?](#)

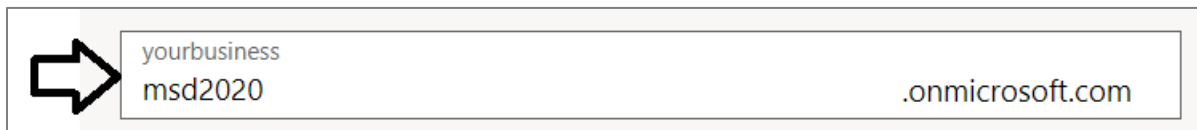
You'll probably want a custom domain name for your business at some point. For now, choose a name for your domain using onmicrosoft.com

yourcompany .onmicrosoft.com

Check availability Next

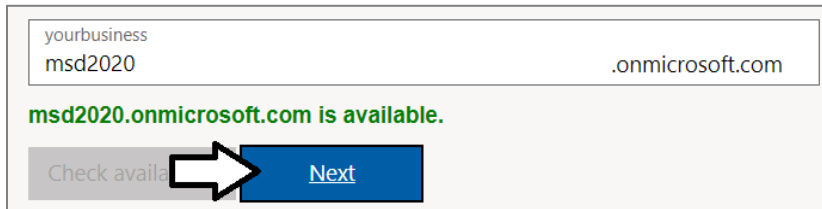
Note that the company name you enter in this textbox will be used to create an Internet domain name for a new Microsoft 365 tenant. For example, if you were to enter a company name of **cptstudent**, it would result in the creation of a new Office 365 tenant within a domain of **cptstudent.onMicrosoft.com**. The user name you enter will be used to create the first user account which will be given global admin permissions throughout the Azure AD tenant. If you enter a user name of **Student**, then the email address as well as user principal name for this account will be **student@cptstudent.onMicrosoft.com**

- m) Enter a domain name for your new Microsoft 365 tenant.



yourbusiness msd2020 .onmicrosoft.com

- n) If the domain name you enter is not available, modify the domain name until you can verify that it is available.
- o) Once you have created a domain name that is available, click **Next**.



yourbusiness msd2020 .onmicrosoft.com

msd2020.onmicrosoft.com is available.

Check availability Next

- p) Enter a **Name** for your user account, a **Password** that you will remember and then click **Sign up**.

Now create your user ID and password to sign in to your account.

Name
student @msd2020.onmicrosoft.com

Password
.....

Confirm password
.....

By clicking **Sign up**, I agree to the [privacy statement](#), [default communication preferences](#) and the [trial agreement](#).

☐ Microsoft Partners may contact me with information about their products, services, and events

Sign up

At this point, the Sign up process should begin to provision your new Microsoft 365 tenant and your new organizational account.

- q) Once the provision process completes, take note of your new **user ID** and click the **Go To Setup** button.

④ Get Office

Save this info. You'll need it later.

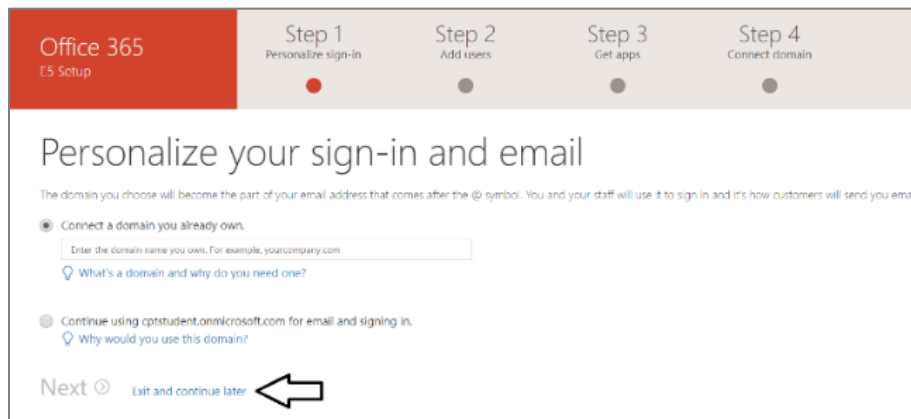
Sign-in page
<https://www.office.com/>

Your user ID
student@msd2020.onmicrosoft.com

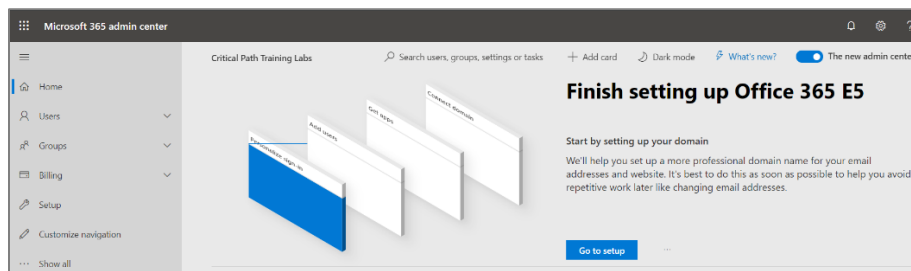
Go to Setup

You have just created a new Microsoft 365 tenant with a 30-day trial for 25 Office 365 E5 licenses. Note that some Microsoft cloud services within your new tenant such as the Microsoft 365 admin center, Power BI, Power Apps and Flow can be accessed immediately. Other Office 365 services such as SharePoint Online, OneDrive for Business and your Outlook mailbox will not be ready immediately and can take some time to provision.

- r) If you see the **Personalize your sign-in and email** setup page, click **Exit and continue later**.

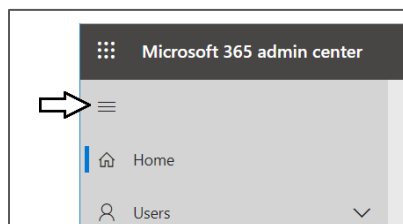


- s) You should now be located at the home page of the **Microsoft 365 admin center**.

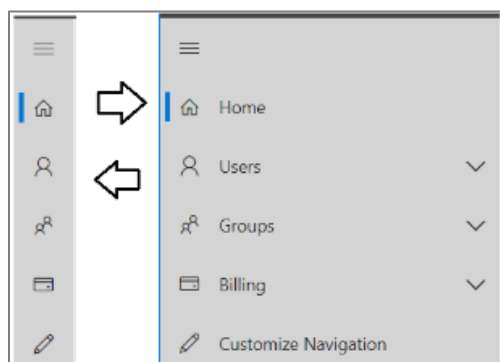


If you don't see the home page of the **Microsoft 365 admin center**, navigate to <https://admin.microsoft.com/Adminportal>.

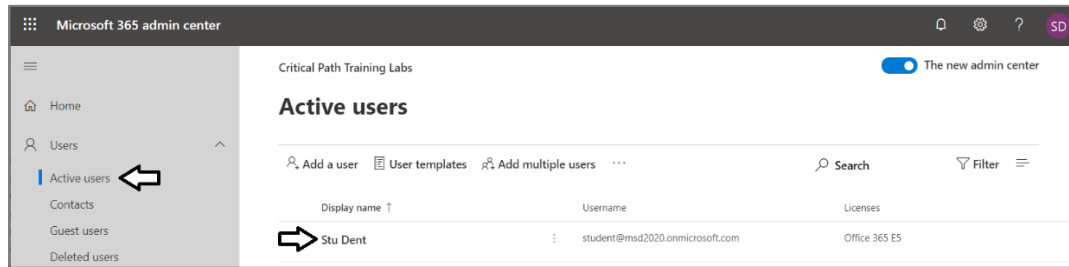
2. Inspect the set of active users in the current Azure AD tenant.
- a) Locate the top **Collapse navigation menu** with the hamburger icon just under the Microsoft 365 App Launcher menu.



- b) Toggle the **Collapse navigation menu** button to see how it collapses and expands the left navigation menu.



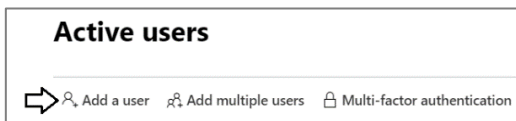
- c) Navigate to the **Active users** view where you should be able to verify that the user account you are currently logged in as is the only user account that exists in the current tenant.



Remember that your account is global tenant administrator. You have permissions to configure any settings throughout the tenant.

3. Create a second Azure AD user account in your new Azure AD tenant.

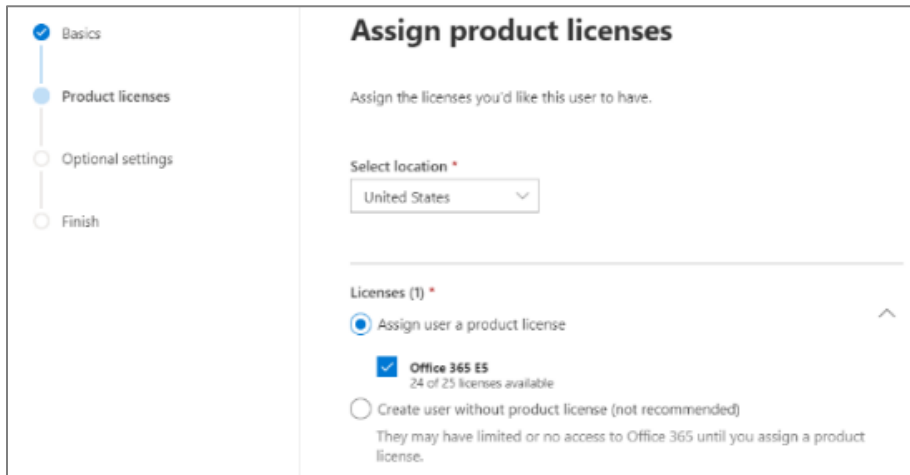
- a) On the **Active Users** page, click the button **Add a user** button to create a new user account



- b) Fill in the **Set up the basics** form with information for a new user account. When creating this account, you can use any name you would like. These lab instructions will demonstrate this by creating a user account for a person named **James Bond** with a user name and email of **JamesB@msd2020.onmicrosoft.com**.

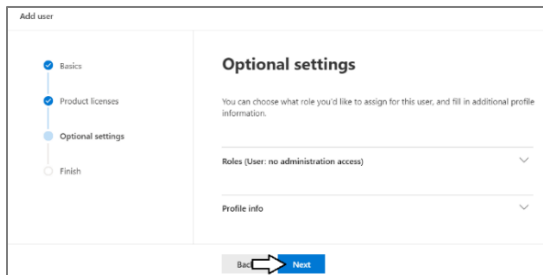
- c) Move below to the **Password settings** section.
- d) Select the option for **Let me create the password**.
- e) Enter a password of **pass@word1** into the textbox labeled **Password**.
- f) Uncheck the checkbox for the **Require this user change their password when they first sign in** option.
- g) Click **Next**.

- h) In the **Product licenses** section, make sure the **Office 365 E5** license is set to **On**.

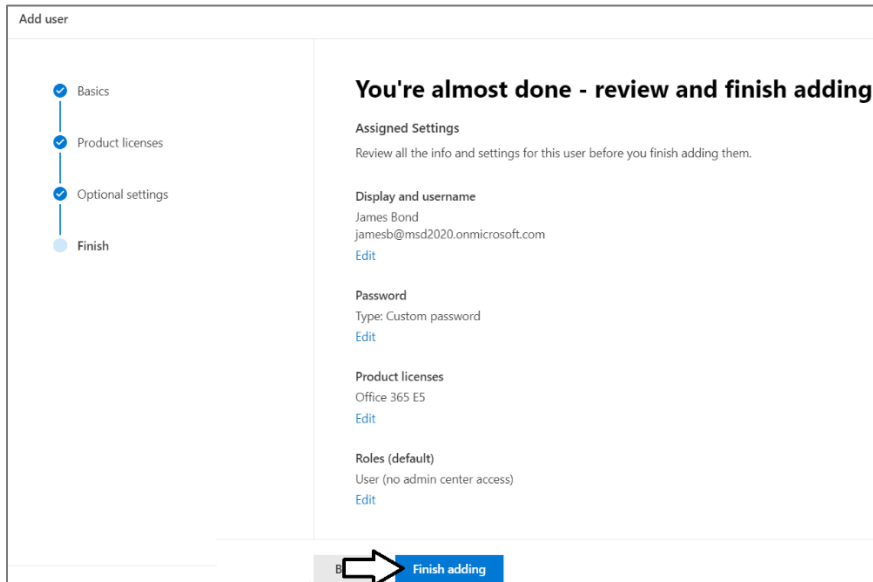


Note that the new account is usually assigned a trial license for **Office 365 E5** plan. However, it's a good practice to check and make sure the new user has been assigned a license for **Office 365 E5**.

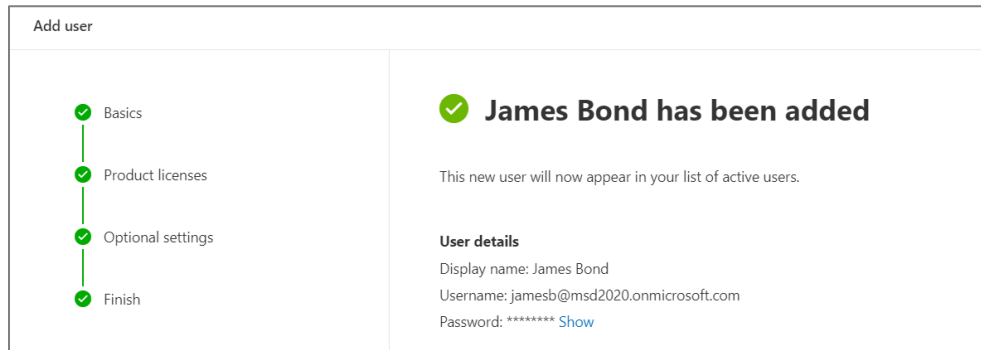
- i) Click the **Next** button down below.
j) On the **Optional settings** view, click **Next**.



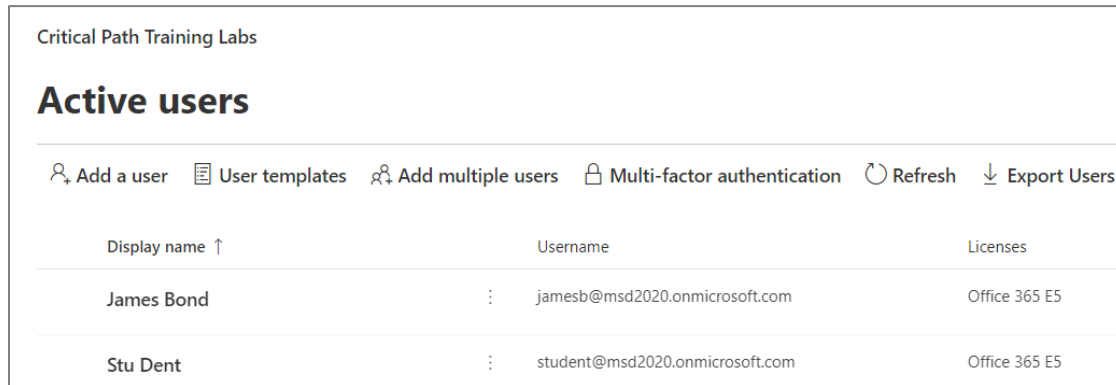
- k) On the **Finish** view, Click the **Finish adding** button at the bottom to create the new user account.



- l) You should see the **Finish** view with a message indicating that the new user account has been created.



- m) Click the **Close** button at the bottom of the **Finish** view to close the **Add User** pane on the right.
- n) Verify that the new user account has been created and is displayed along with your primary Office 365 user account.



Now you know how to create a new Active Directory user account by hand. Next, you will accomplish the same goal using a PowerShell script to automate the task.

Exercise 3: Create New Office 365 User Accounts using a PowerShell Script

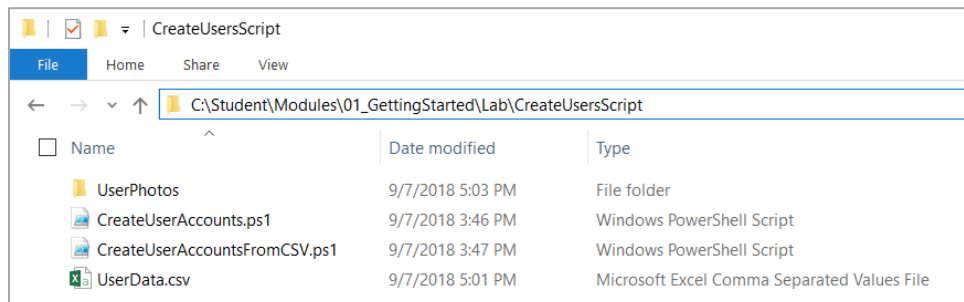
In this exercise, you will use the Azure AD PowerShell module to verify connectivity to your Office 365 tenant and to create a few new user accounts in your new Active Directory tenant.

1. Open and review the PowerShell script named **CreateUserAccountsFromCSV.ps1**.

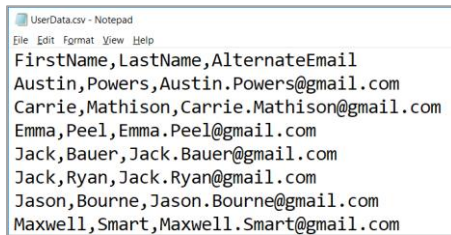
- a) Using Windows Explorer, open the folder at the following location.

C:\Student\Modules\01_GettingStarted\Lab\CreateUsersScript

- b) You should see several files including **UserData.csv** and **CreateUserAccountsFromCSV.ps1**.

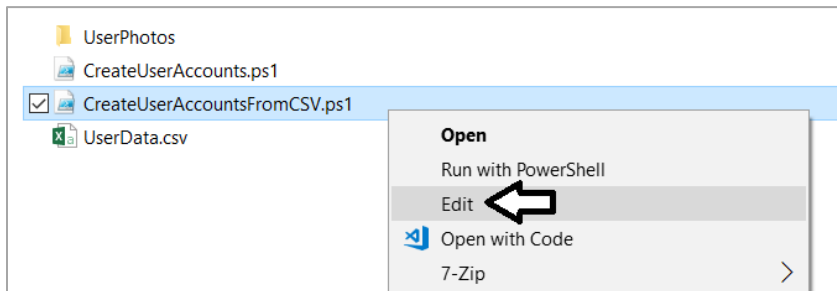


- c) Open **UserData.csv** file in Notepad and examine the data inside which is formatted in a CSV format.

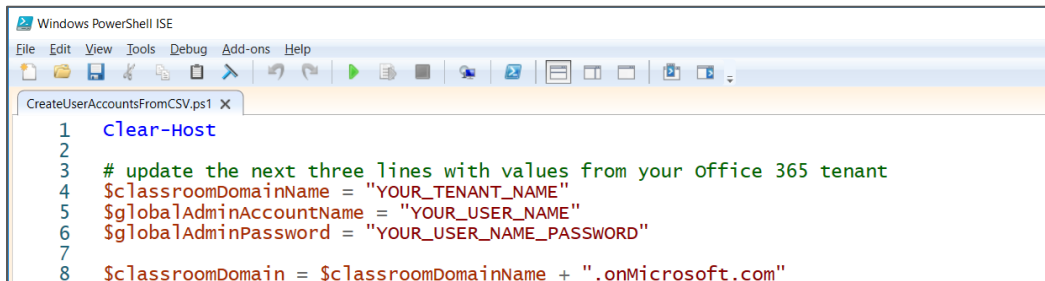


```
UserData.csv - Notepad
File Edit Format View Help
FirstName,LastName,AlternateEmail
Austin,Powers,Austin.Powers@gmail.com
Carrie,Mathison,Carrie.Mathison@gmail.com
Emma,Peel,Emma.Peel@gmail.com
Jack,Bauer,Jack.Bauer@gmail.com
Jack,Ryan,Jack.Ryan@gmail.com
Jason,Bourne,Jason.Bourne@gmail.com
Maxwell,Smart,Maxwell.Smart@gmail.com
```

- d) Close **UserData.csv** without saving any changes.
e) Right click on the file named **CreateUserAccountsFromCSV.ps1** and click Edit to open the file in the PowerShell ISE.



- f) Take a moment to walk through the code in this PowerShell script.



```
Windows PowerShell ISE
File Edit View Tools Debug Add-ons Help
CreateUserAccountsFromCSV.ps1 X
1 clear-Host
2
3 # update the next three lines with values from your office 365 tenant
4 $classroomDomainName = "YOUR_TENANT_NAME"
5 $globalAdminAccountName = "YOUR_USER_NAME"
6 $globalAdminPassword = "YOUR_USER_NAME_PASSWORD"
7
8 $classroomDomain = $classroomDomainName + ".onmicrosoft.com"
```

- g) As you can see, the script creates new Azure AD user accounts using the **New-AzureADUser** cmdlet.

```
$password = "pass@word1"
$passwordProfile = New-Object -TypeName Microsoft.Open.AzureAD.Model.PasswordProfile
$passwordProfile.Password = $password
$passwordProfile.EnforceChangePasswordPolicy = $false
$passwordProfile.ForceChangePasswordNextLogin = $false

$secureStringPassword = ConvertTo-SecureString -String "pass@word1" -AsPlainText -Force

# Create new user account
$newUser = New-AzureADUser `
    -DisplayName $displayName `
    -GivenName $firstName `
    -Surname $lastName `
    -MailNickname $mailNickname `
    -PasswordProfile $passwordProfile `
    -PasswordPolicies "DisablePasswordExpiration, DisableStrongPassword" `
    -UserPrincipalName $userPrincipalName `
    -UsageLocation "US" `
    -AccountEnabled $True
```

Note that any user account created with this script will have a password of **pass@word1**.

- h) Move to the top of the script and edit the script to include the details for your tenant name, user account and password.

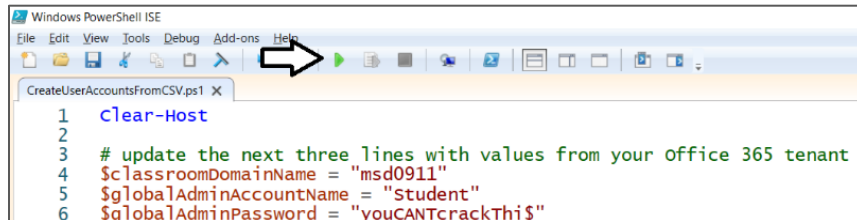
```
# update the next three lines with values from your Office 365 tenant
$classroomDomainName = "msd0911"
$globalAdminAccountName = "Student"
$globalAdminPassword = "youCANTcrackThi$"
```

- i) Save your changes to **CreateUserAccountsFromCSV.ps1**.

In the next step you will execute the PowerShell script which means you must have the ability to run PowerShell scripts on your Windows PC. If you are not able to run PowerShell scripts, you might need to open a PowerShell prompt as Administrator and then execute the **Set-ExecutionPolicy Bypass** command.

2. Run the PowerShell script named **CreateUserAccountsFromCSV.ps1** to create new user accounts in your new AD tenant.

- a) Inside the Windows PowerShell ISE, click the green arrow button on the toolbar to execute the script.



- b) Once the script executes, return to the **Active users** view in Microsoft 365 admin center to verify new users have been created.

Critical Path Training Labs			
Active users			
Add a user User templates Add multiple users Multi-factor authentication Refresh Export Users			
Display name ↑		Username	Licenses
Austin Powers	:	AustinP@msd2020.onMicrosoft.com	Office 365 E5
Carrie Mathison	:	CarrieM@msd2020.onMicrosoft.com	Office 365 E5
Emma Peel	:	EmmaP@msd2020.onMicrosoft.com	Office 365 E5
Jack Bauer	:	JackB@msd2020.onMicrosoft.com	Office 365 E5
Jack Ryan	:	JackR@msd2020.onMicrosoft.com	Office 365 E5
James Bond	:	jamesb@msd2020.onmicrosoft.com	Office 365 E5
Jason Bourne	:	JasonB@msd2020.onMicrosoft.com	Office 365 E5
Maxwell Smart	:	MaxwellS@msd2020.onMicrosoft.com	Office 365 E5
Stu Dent	:	student@msd2020.onmicrosoft.com	Office 365 E5

Note, there are user photos in the folder at **C:\Student\Modules\01_GettingStarted\Lab\CreateUsersScript\UserPhotos** if you want to upload photos for each of these users. Uploading user photos is not required so we leave this as an optional exercise for the reader.

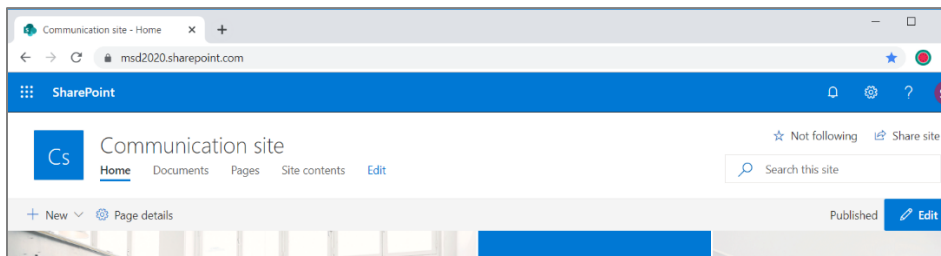
Exercise 4: Navigate to the Root SharePoint Site for Your Tenant

In this exercise, you will navigate to the root SharePoint site for your new Office 365 tenant. You will not do much with this site in this lab. However, you will be using this SharePoint site in later labs as you develop SharePoint Framework webparts.

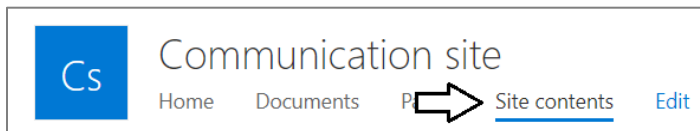
NOTE: When you create an Office 365 trial tenant, it takes a certain amount of time to provision the standard SharePoint sites that are automatically created. In many cases, the SharePoint sites will be ready within 5 minutes. However, it is not uncommon for the provisioning to take as long as 10-20 minutes. In less common scenarios, it might take over an hour for the sites to be created. If the SharePoint sites in your tenant are still being provisioned, you must wait for them to be ready before you can work on this exercise.

1. Navigate to your root SharePoint site in your new Office 365 tenant.
 - a) Take the following URL and replace **YOUR_TENANT_NAME** with the name of your new Office 365 tenant.

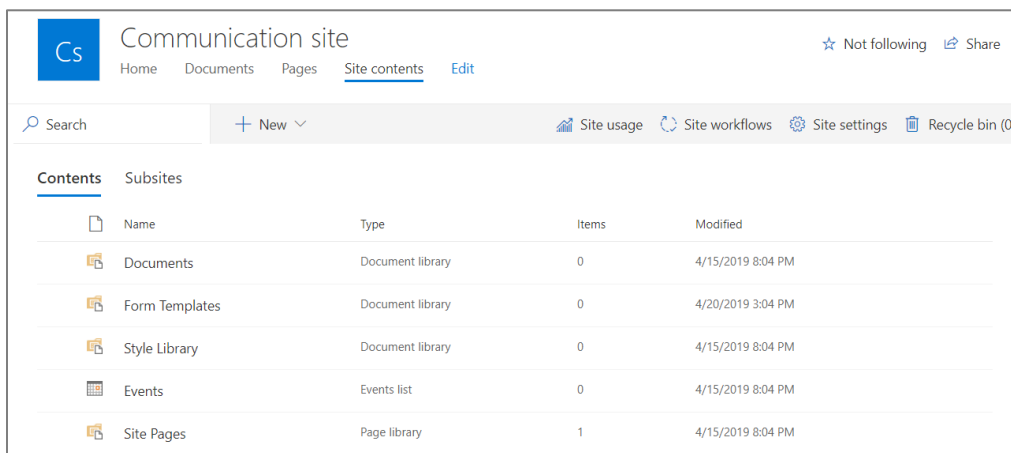
```
https://YOUR_TENANT_NAME.sharepoint.com
```
 - b) Paste the URL into the address bar of the browser to navigate to your root SharePoint site.
 - c) When prompted, log in with your new Office 365 user account credentials.
 - d) At this point, you should see the home page of the **Communications site** which is the root SharePoint site for your tenant.



- e) Click the **Site contents** link to see the **Site contents** page.



- f) Inspect the contents of the Communications site.



Take a moment to navigate around in this SharePoint Communications site. You will find that this is a standard site that includes the standard lists and document libraries included with every new Communications site. You might consider adding a bookmark to this site because you will be returning when you begin the labs which work with the SharePoint Framework.

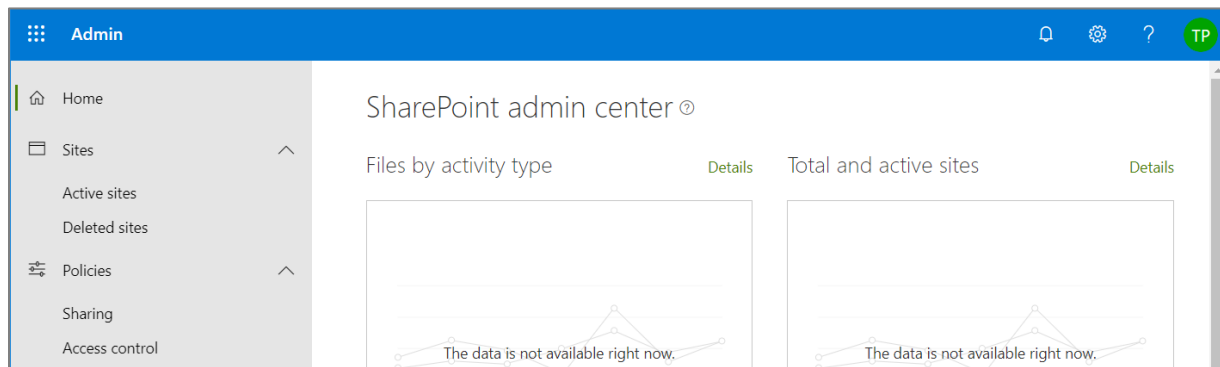
Exercise 5: Create a New SharePoint Site using the SharePoint Admin Center

In this exercise, you will navigate to the SharePoint admin center where it is possible to administer the SharePoint sites within the current Office 365 tenant. You will also go through the process of manually creating a new SharePoint team site.

1. Navigate to the SharePoint admin center for your new Office 365 tenant.
 - a) Take the following URL and replace **YOUR_TENANT_NAME** with the name of your new Office 365 tenant.

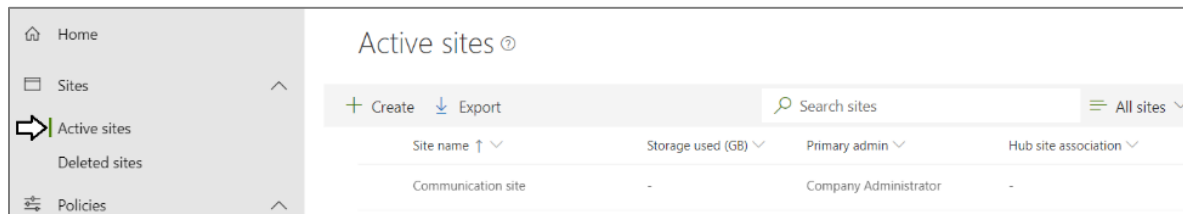
https://YOUR_TENANT_NAME-admin.sharepoint.com

- b) Paste the URL into the browser to navigate to the SharePoint site collection which is the SharePoint admin center.
- c) At this point, you should see the site collection page of the SharePoint admin center.

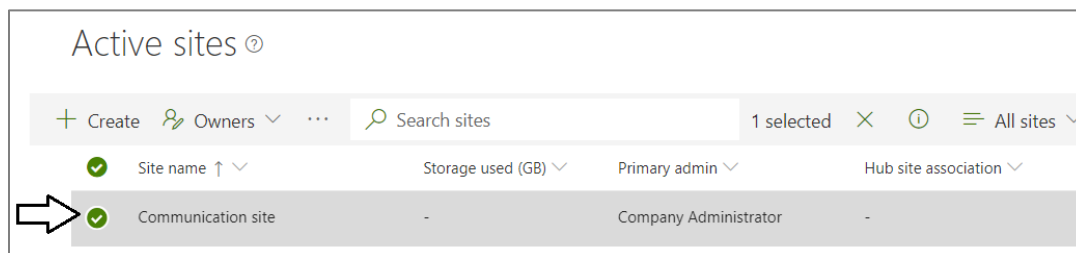


2. Create a new SharePoint team site by hand using the SharePoint admin center.

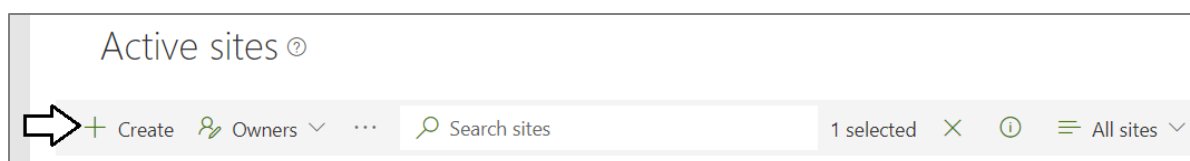
- a) Click the **Active sites** link in the left navigation.



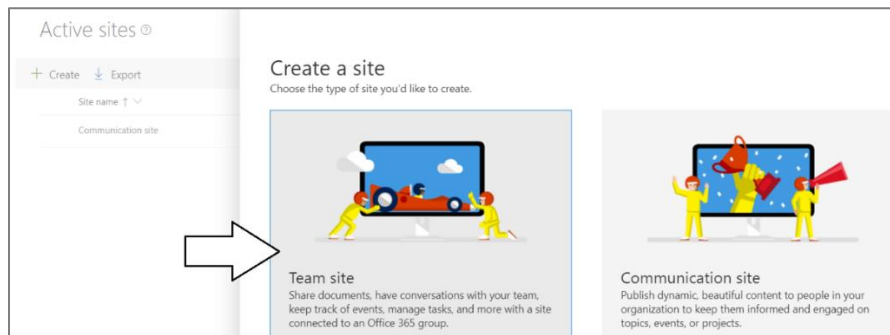
- b) In the **Active sites** list, you should see the **Communications site** that was automatically created in your new tenant.



- c) Click the **Create** button on the **Active sites** page to create a new site.



- d) When prompted to **Choose the type of site you'd like to create** on the **Create a site** page, select **Team site**.



- e) Add a **Site name** of **Team Site**.
f) In the **Group owner** section, add your new user account to make yourself an owner of the new site.
g) Click **Next**.

- h) In the **Add additional owners** input control, the user **Austin Powers**.
i) In the **Add members** input control, and the users **Jason Bourne** and **Jack Bauer**.
j) Click **Finish** to create the new Team site.

- k) You should now be able to see your new site with a **Site name** of **Team Site** on the **Active sites** page.

Active sites ⓘ

+ Create ↓ Export 🔍 Search sites

Site name ↑	Storage used (GB) ↓	Primary admin ↓	Hub site association ↓	Template ↓
Communication site	-	Company Administrator	-	Communication site
➡ Team Site	-	👤 Group owners	-	Team site

- l) Click on the **Team Site** link in the Active sites list.
- m) Locate and click on the **URL** in the property pane on the right to navigate to the new site.

Site name ↑ Storage used (GB) ↓ Primary admin ↓ Hub site association ↓ Templ...

Communication site	-	Company Administrator	-	Comm
➡ Team Site	-	👤 Group owners	-	Team :

Team Site

Insights
No data available

Properties

Domain
mstd0429.sharepoint.com

URL
➡ ../sites/TeamSite

- n) You should now see the home page of the new Team Site.

SharePoint

TS Team Site
Private group

★ Following Next steps
👤 4 members

🔍 Search this site + New Page details Published Edit

Home
Conversations
Documents
Notebook
Pages
Site contents
Recycle bin

News
+ Add

Keep your team updated with News on your team site

Add News

Quick links

- Learn about a team site
- Learn how to add a page

Documents See all

3. Verify that a new Office 365 group has been created for the new **Team Site**.
- Return to the Microsoft admin center at <https://admin.microsoft.com/Adminportal>.
 - Click on the **Groups** link in the left navigation.
 - You should be able to see that there is a new Office 365 group named **Team Site**.

Microsoft 365 admin center

Critical Path Training Labs The new admin center

Groups

It can take up to an hour for new distribution groups and mail-enabled security groups to appear in your groups list. If you don't see your new group yet, [go to the Exchange admin center](#).
[Learn more about group types](#)

👤 Add a group Refresh 🔍 Search Filter

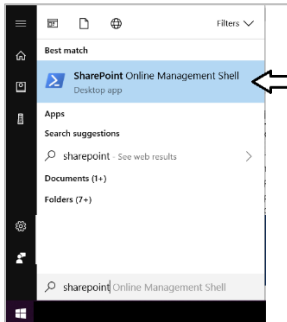
Group name	Group email	Type	Sync status	Choose col
➡ Team Site	TeamSite@mstd2020.onmicrosoft.com	Office 365	☁	

This Office 365 group was automatically created when you created the SharePoint Team site through the SharePoint admin center.

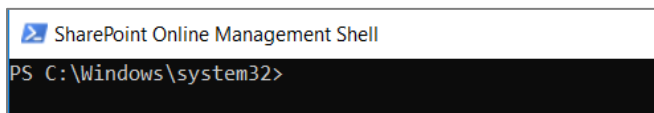
Exercise 6: Create a New SharePoint Site using PowerShell

In this exercise, you will use the SharePoint Online PowerShell module to connect to your Office 365 tenant. Note that this exercise assumes you have already installed the SharePoint Online Management Shell as discussed in the lab setup document.

1. Connect to SharePoint Online and sign in using PowerShell.
 - a) From the **Windows Start** menu, open **SharePoint Online Management Shell**.



- b) You should now see a new console window for the SharePoint Online Management Shell.

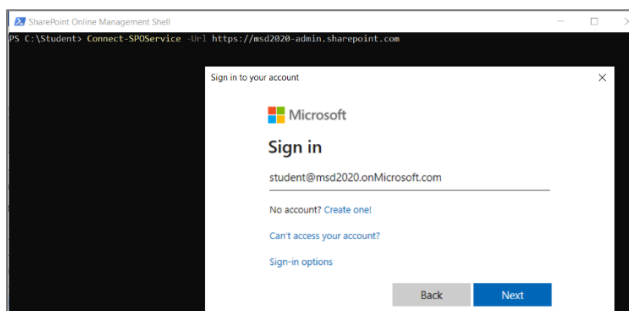


- c) Run the following command to connect to your SharePoint Online tenant. Be sure to replace **[your tenant]** with the value you provided when creating your Office 365 tenant (this will be the same value that is preceding **onmicrosoft.com** in your login).

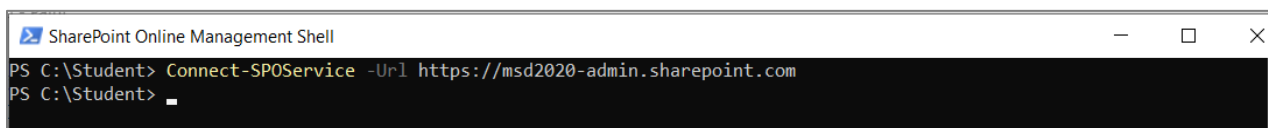
```
Connect-SPOService -Url https://[your tenant]-admin.sharepoint.com
```

When the **Connect-SPOService** cmdlet begins to execute, you will be prompted to sign in.

- d) Enter the credentials of your primary Office 365 user account and click **Sign In**.



- e) Once the call to **Connect-SPOService** returns, you can now begin to call the other SPO cmdlets.



2. Execute SharePoint Online PowerShell cmdlets to view information about existing site collections in your Office 365 tenant.
 - a) Type and execute the following command.

```
Get-SPOsite
```

- b) You should see that the call to **Get-SPOSite** displays the set of site collection in your Office 35 tenancy.

```
SharePoint Online Management Shell
PS C:\Student> Connect-SPOService -Url https://msd2020-admin.sharepoint.com
PS C:\Student> Get-SPOSite

Url                                     Owner Storage Quota
---
https://msd2020.sharepoint.com/portals/Community 26214400
https://msd2020.sharepoint.com/search            26214400
https://msd2020.sharepoint.com/sites/TeamSite    1048576
https://msd2020.sharepoint.com/                  26214400
https://msd2020.sharepoint.com/portals/hub       26214400
https://msd2020-my.sharepoint.com/               26214400
```

3. Create a new Site Collection using the **New-SPOSite** cmdlet.

- a) Execute the following lines of code to set up a few variables for the new site. Be sure to replace **[Your tenant]** and **[Your User Account]** with the value you provided when creating your Office 365 tenant

```
$url = "https:// [Your Tenant].sharepoint.com/sites/teamsite2"
$owner = "[Your User Account]@[Your Tenant].onmicrosoft.com"
$quota = 0
$siteTitle = "Team Site 2"
$template = "STS#3"
```

```
SharePoint Online Management Shell
PS C:\Student> $url = "https://msd2020.sharepoint.com/sites/teamsite2"
PS C:\Student> $owner = "student@msd2020.onmicrosoft.com"
PS C:\Student> $quota = 0
PS C:\Student> $siteTitle = "Team Site 2"
PS C:\Student> $template = "STS#3"
PS C:\Student>
```

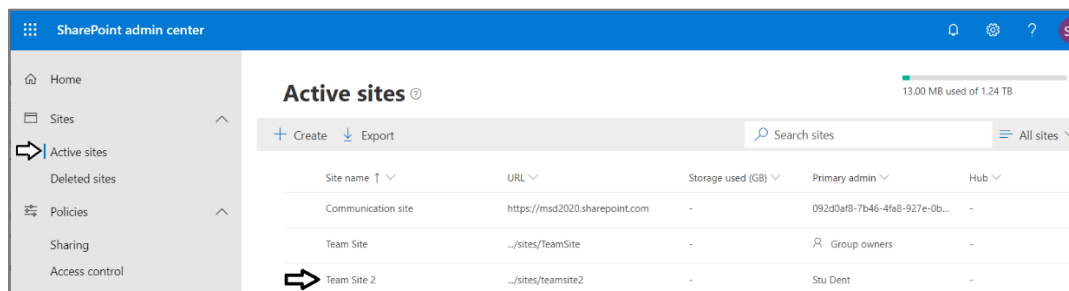
- b) Execute the **New-SPOSite** cmdlet to create a new SharePoint site in SharePoint Online.

```
New-SPOSite -Url $url -Owner $owner -Title $siteTitle -StorageQuota $quota -Template $template
```

- c) The **New-SPOSite** cmdlet will block while the site is being created.

```
SharePoint Online Management Shell
PS C:\Student> $url = "https://msd2020.sharepoint.com/sites/teamsite2"
PS C:\Student> $owner = "student@msd2020.onmicrosoft.com"
PS C:\Student> $quota = 0
PS C:\Student> $siteTitle = "Team Site 2"
PS C:\Student> $template = "STS#3"
PS C:\Student> New-SPOSite -Url $url -Owner $owner -Title $siteTitle -StorageQuota $quota -Template $template
PS C:\Student>
```

- d) If you move back to the SharePoint admin center, you should be able to see the new Team site has been created.



Note that the **New-SPOSite** cmdlet provides a **-NoWait** parameter for scenarios where you want your PowerShell code to continue running while the site is being provisioned.

- e) Return to the SharePoint Online Management Shell and wait until the call to **New-SPOSite** completes.
- f) Execute another call to **Get-SPOSite** and make sure you see the new site collection you just created.

```
PS C:\Student> Get-SPOSite

Url                                Owner                                Storage Quota
---                                -
https://msd2020.sharepoint.com/portals/Community 26214400
https://msd2020.sharepoint.com/search            26214400
https://msd2020.sharepoint.com/sites/TeamSite    1048576
https://msd2020.sharepoint.com/                  26214400
https://msd2020.sharepoint.com/sites/teamsite2   student@msd2020.onmicrosoft.com 26214400
https://msd2020.sharepoint.com/portals/hub       26214400
https://msd2020-my.sharepoint.com/              26214400
```

- g) Execute the following PowerShell command to get more information about the new site.

```
Get-SPOSite -Identity $url | select *
```

- h) You should see a list of properties similar to what you can see in the following screenshot.

```
SharePoint Online Management Shell
PS C:\Student> Get-SPOSite -Identity $url | select *

LastContentModifiedDate      : 12/1/2019 9:16:59 PM
Status                       : Active
ResourceUsageCurrent         : 0
ResourceUsageAverage         : 0
StorageUsageCurrent          : 1
LockIssue                    :
WebCount                     : 1
CompatibilityLevel           : 15
DisableSharingForNonOwnersStatus :
HubSiteId                   : 00000000-0000-0000-0000-000000000000
IsHubSite                    : False
RelatedGroupId               : 00000000-0000-0000-0000-000000000000
GroupId                      : 00000000-0000-0000-0000-000000000000
Url                           : https://msd2020.sharepoint.com/sites/teamsite2
LocaleId                     : 1033
LockState                    : Unlock
Owner                        : student@msd2020.onmicrosoft.com
StorageQuota                  : 26214400
StorageQuotaWarningLevel     : 25574400
ResourceQuota                 : 0
ResourceQuotaWarningLevel    : 0
Template                     : STS#3
Title                         : Team Site 2
AllowSelfServiceUpgrade      : True
DenyAddAndCustomizePages    : Disabled
```

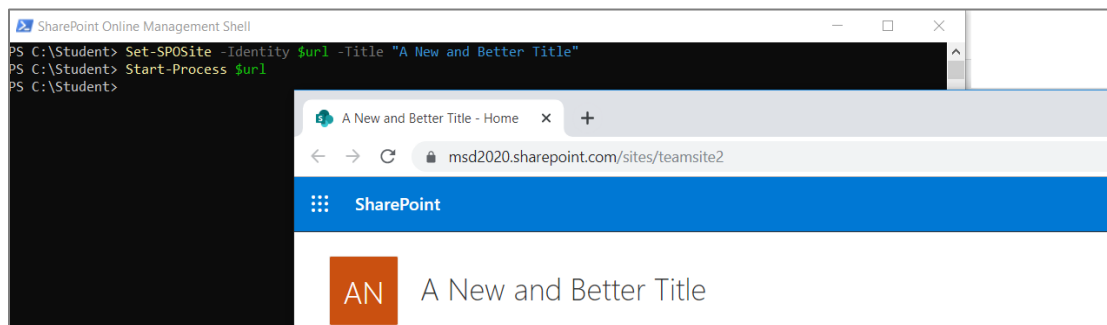
- i) Execute the following PowerShell command to write back to SharePoint by modifying the title for a SharePoint site.

```
Set-SPOSite -Identity $url -Title "A New and Better Title"
```

- j) Run the following PowerShell command to open the new SharePoint site in the browser.

```
Start-Process $url
```

- k) Take a moment to inspect your new SharePoint Online site.



Exercise 7: Creating SharePoint Lists with the Client-side Object Model (CSOM)

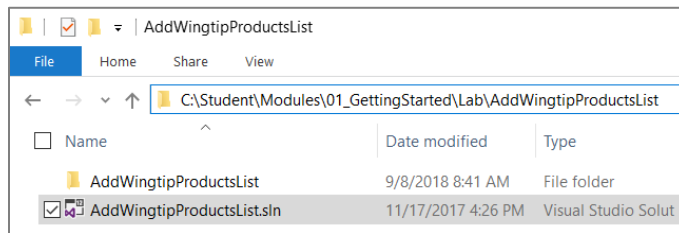
In the following exercise, you will open and run a Visual Studio solution with a C# console application that uses CSOM to create site columns, a content type, a picture library and a list of data for a set of products. You will configure the C# console application to add these SharePoint site elements to the new site collection you created in the previous lab exercise.

1. Open the Visual Studio project named **AddWingtipProductsList.sln**.

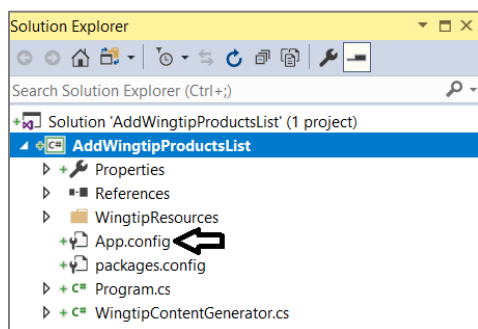
- a) In Windows Explorer, navigate to the following folder.

C:\Student\Modules\01_GettingStarted\Lab\AddWingtipProductsList

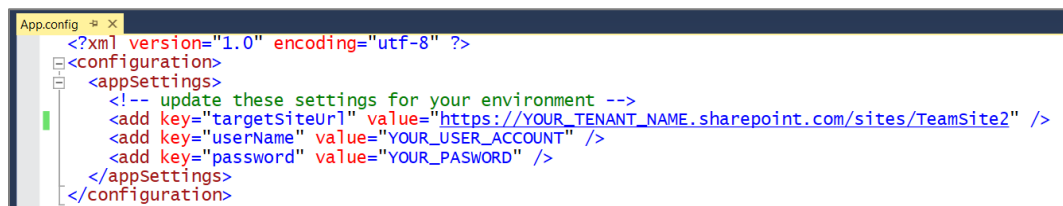
- b) In this folder you should see a Visual Studio solution file named **AddWingtipProductsList.sln**.



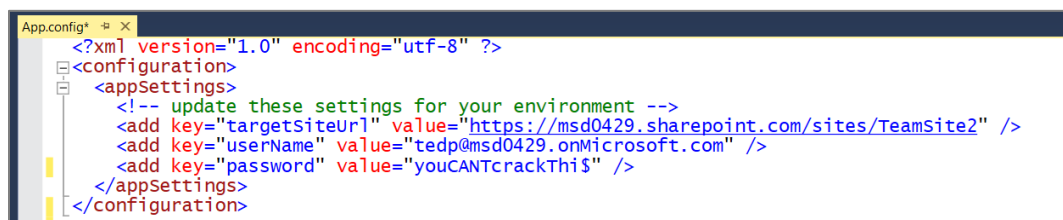
- c) Double click on **AddWingtipProductsList.sln** to open the solution in Visual Studio 2017.
- d) When the solution opens in Visual Studio, click the **App.config** file to open it in an editor window



- e) The **App.config** file contains three **appSetting** values named **targetSiteUrl**, **username** and **password**.



- f) Update the **AppSetting** values with the site URL you created in earlier and with your Office 365 user account details.



- g) Save your changes to **App.config**.

At this point, you are ready to run the application and execute the CSOM code against the new site you created earlier.

- h) Press the {F5} key in Visual Studio 2017 to run the **AddWingtipProductsList** program.
- i) You will see output in the console window as the program runs.

```

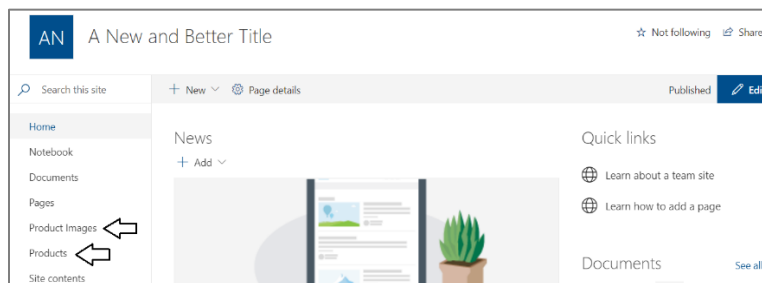
C:\Windows\system32\cmd.exe
Adding Team Site Content

Creating Product Category Termset
Deleting existing Product Images list...
Deleting existing Products list...

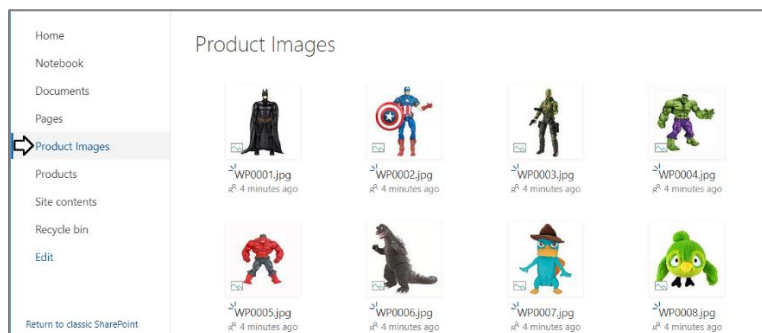
Creating Product Images library...

Uploading Product Images...
  uploading WP0001.jpg
  uploading WP0002.jpg
  uploading WP0003.jpg
  
```

- j) Wait until the program completes and then navigate to the SharePoint site to the changes.
- k) You should see that there are two new links in the left navigation for **Product Images** and **Products**.



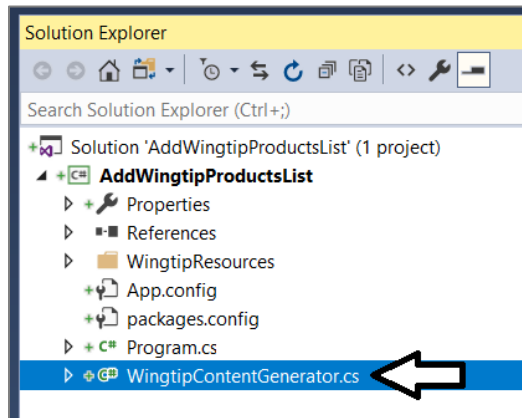
- l) Click on the **Product Images** link to see the Picture Library that was created and the images uploaded by the CSOM code.



- m) Click on the **Products** link to see the custom list and product items that were created by the CSOM code.

Title	Product Code	List Price	Product Category	Product Color	Age Range	Product Image Link
Batman Action Figure	WP0001	\$14.95	Tough Guys	Black	Ages 7 to 12	
Captain America Action Figure	WP0002	\$12.95	Tough Guys	Red, White, Blue	Ages 7 to 12	
GI Joe Action Figure	WP0003	\$14.95	Tough Guys	Green	All ages	

- n) Return to the **AddWingtipProductsList** solution in Visual Studio 2017.
- o) Open the file named **WingtipContentGenerator.cs**.



- p) Take a few minutes to examine the CSOM code that was used to conduct the provision of SharePoint site items.
- q) When you are done, close Visual Studio.

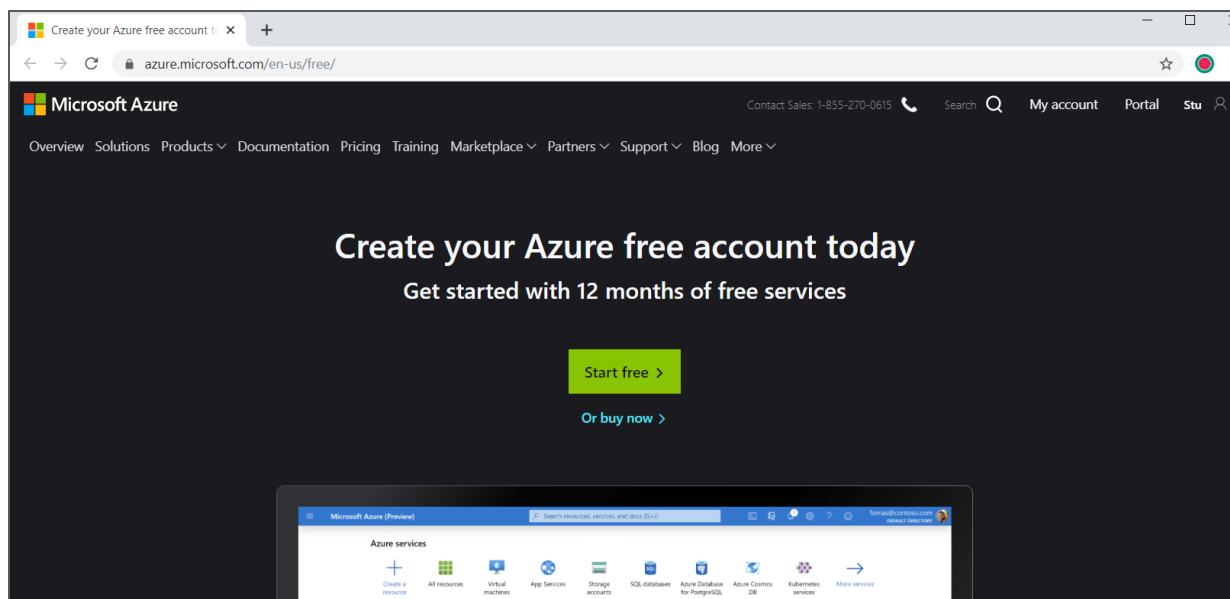
Exercise 8: Getting Started with an Azure Subscription

In this exercise you will create a trial Azure subscription using the primary account that was created in your Office 365 tenant.

IMPORTANT: Over the steps of this lab exercise, it is critical that you authenticate using the primary Office 365 user account that was created for you when you created the Office 365 tenancy earlier in this lab. Make sure you do not log into any site on the Internet using any personal account or organization account other than your primary Office 365 user account. If you have logged on to any site using another account, then you should close all browser instances and then launch a new browser session for this exercise.

If you have an Azure subscription, skip ahead to **Exercise 9: Connect to Your Microsoft Azure Subscription using PowerShell**.

1. Sign up for a free Microsoft Azure trial account using your primary Office 365 account.
 - a) Navigate to <https://azure.microsoft.com/en-us/free/>.
 - b) Click the **Start Free** button to go to the sign up screen to navigate to the **Free trial sign up** page.



- c) Once you get to the **Free trial sign up** page, start by looking at the logged in user name in the top right corner of the page and verify that you are logged in under the identity of your primary Office 365 user account. Also verify that the **Country/Region** setting is correct. Fill in the rest of the information requested in the **About you** section and then click **Next**.

Microsoft Azure

student@msd2020.onmicrosoft.com Sign out

Try Azure for free

Follow these steps to get started. We ask for these details to protect your account and information. There are no upfront charges or fees.

1 About you

Country/Region United States

First name Stu

Last name Dent

What's included

- 12 months of free products**
Get free access to popular products like virtual machines, storage, and databases in your first 30 days, and for 12 months after you upgrade your account to pay-as-you-go pricing.
- \$200 credit**
Use your \$200 credit to experiment with any Azure service in your first 30 days—beyond the free product amounts.

- d) In the **Identity verification by phone** setting, enter the phone number of your mobile phone and click the **Send text message** button. Wait until you receive a text message with your access code.

Identity verification by phone

United States (+1)

((111) 222-3333)

Send text message Call me

- e) Once you receive the text message with the access code, enter the access code in the bottom textbox and click the **Verify code** button.

Identity verification by phone

United States (+1)

((111) 222-3333)

Send text message Call me

480406

Verify code

- f) In the **Identity verification by card** section, you must enter the information for a valid credit card. This is a required step. Once you have entered the credit card information, click the **Next** button to verify the credit card information.

Identity verification by card

This information is collected only to verify your identity. You will not be charged unless you explicitly upgrade to a paid offer.

Payment method New Credit/Debit Card

Your card will not be charged, though you might see a temporary authorization hold.

VISA MASTERCARD DISCOVER

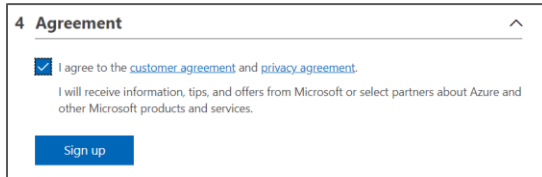
* Card number

* Expiration date MM YYYY * CVV

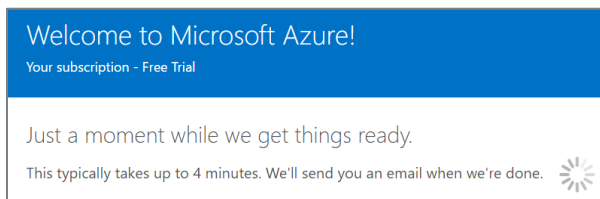
* Name on card

Note that Microsoft will not charge your credit card for any type of Azure usage as you work with new your free trial subscription. However, your credit card information is retained by Microsoft in case you upgrade your free trial to a pay-as-you-go subscription.

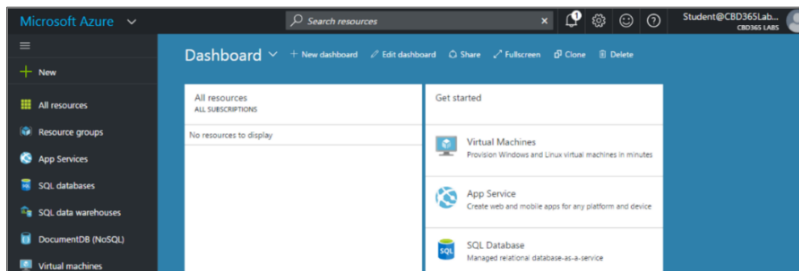
- g) Complete the final step in the **Agreement** section by checking the **I agree** checkbox and clicking the **Sign up** button.



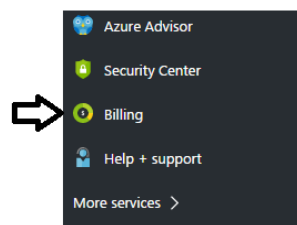
- h) You should now see a page that indicates your free trial Azure subscription has been created.



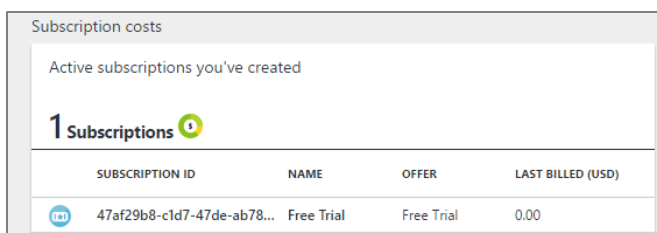
- i) Once the setup process completes, click on the big button on the page to navigate to the new Azure portal.
j) You should now see the main page of the Azure portal which displays the dashboard and the left navigation menu.



- k) Locate and click the **Billing** link which is down toward the bottom of the left navigation menu.



- l) When you click Billings, the Azure portal will display a pane which shows your subscriptions at the bottom. Note that this view allows you to see and copy the GUID associated with your subscription. Note that you should copy this GUID and save it to a local text file because you will need it in later lab exercises.



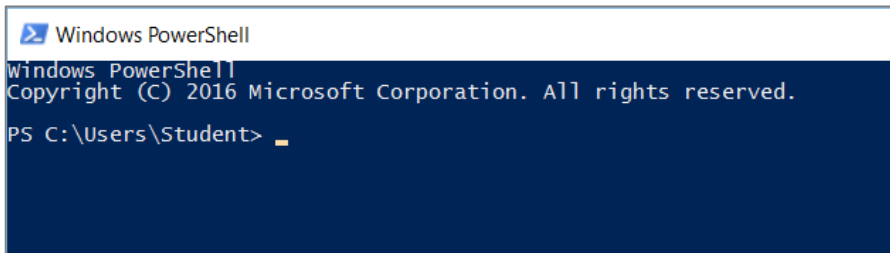
SUBSCRIPTION ID	NAME	OFFER	LAST BILLED (USD)
47af29b8-c1d7-47de-ab78...	Free Trial	Free Trial	0.00

Now that you have an active Azure subscription, it's time to test out this subscription by using a few Azure PowerShell commands.

Exercise 9: Connect to Your Microsoft Azure Subscription using PowerShell

In this exercise, you will use the Azure ARM PowerShell module to verify PowerShell connectivity to your Azure subscription. Note that this exercise assumes you have already installed the Azure PowerShell modules as discussed in the lab setup document.

1. Open up a PowerShell command prompt.



2. Use PowerShell to establish a login to Microsoft Azure
 - a) Type and execute the following PowerShell command to establish a login to Microsoft Azure.

Login-AzureRmAccount

- b) The first time you execute the **Login-AzureRmAccount** cmdlet, you might be prompted as to whether you want to allow Azure PowerShell to collect data. If you see this prompt, you can answer with either a Y or an N.

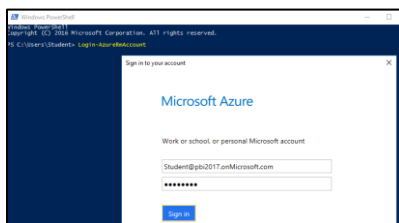
```
PS C:\Users\Student> Login-AzureRmAccount
WARNING: Microsoft Azure PowerShell collects data about how users use PowerShell cmdlets and some problems they encounter. Microsoft uses this information to improve our PowerShell cmdlets. Participation is voluntary and when you choose to participate your device automatically sends information to Microsoft about how you use Azure PowerShell.

If you choose to participate, you can stop at any time by using Azure PowerShell as follows:
1. Use the Disable-AzureDataCollection cmdlet to turn the Feature Off. The cmdlet can be found in the AzureResourceManager module
To disable data collection: PS > Disable-AzureDataCollection

If you choose to not participate, you can enable at any time by using Azure PowerShell as follows:
1. Use the Enable-AzureDataCollection cmdlet to turn the Feature On. The cmdlet can be found in the AzureResourceManager module
To enable data collection: PS > Enable-AzureDataCollection

Select Y to enable data collection [Y/N]:
```

- c) When the **Login-AzureRmAccount** cmdlet begins to execute, you will be prompted to sign in. Enter the credentials for the user account associated with your Azure subscription and click **Sign In**.



- d) When the **Login-AzureRmAccount** cmdlet executes successfully, it displays the information shown in the following screenshot. You should be able to see the GUIDs for your Azure subscription and for its associated Azure AD tenant.

```
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Student> Login-AzureRmAccount

Environment      : AzureCloud
Account          : Student@pb2017.onmicrosoft.com
TenantId         : d9a1b89e-6d90-4aa9-ad2e-472840e09214
SubscriptionId   : 6f28b023-7e49-4f74-b53e-46a0966ea67c
SubscriptionName : Free Trial
CurrentStorageAccount :
```

Make sure you see a **SubscriptionId** value for your Azure subscription. If you have more than one Azure subscription, you might need to make one of them the active subscription by calling the **Set-AzureRmContext** with the **SubscriptionName** parameter.

- e) Type and execute the **Get-AzureRmADUser** cmdlet to display the users in your Office 365 tenancy.

Get-AzureRmADUser

- f) When **Get-AzureRmADUser** executes, it should display information about the user accounts the Azure AD tenant associated with your Azure subscription.

```
PS C:\Users\Student> Get-AzureRmADUser

DisplayName      Type      ObjectId
-----
Ted Pattison     User      03d0f4a0-7d28-4bc9-946a-811f6fe3b653
```

You have now completed all the exercise in this lab.