# Setup Guide for Creating Test Environment for Power BI Projects

**Setup Time**: 1 to 2 hours

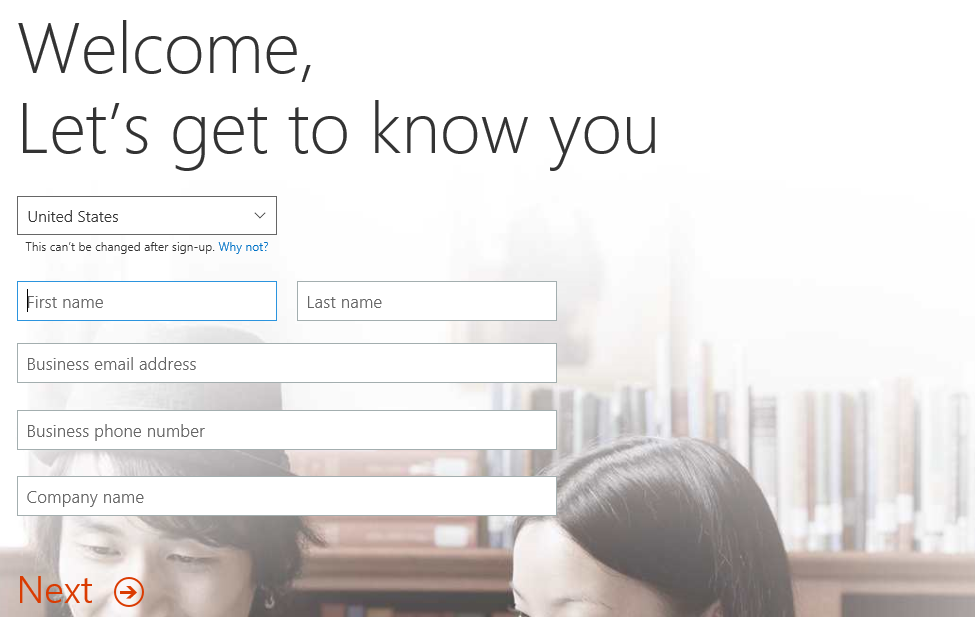
**Overview**: This guide walks you through the steps of creating a new Office 365 tenant which has trial subscriptions to Office 365 and Power BI Pro. The main purpose of creating this new Office 365 tenant is that it will provide a new and isolated testing environment which will allow you to begin working directly with the Power BI service. This, in turn, will allow you to begin kicking the tires of the Power BI platform and to get experience working with BI authoring tools such as Power BI Desktop and Microsoft Excel 2016. One important aspect of creating a new Office 365 tenant with trial subscriptions is that you will have full administrative permissions at the tenant levels and you will be able to perform tenant-level configurations with the Power BI service in isolation from any existing Office 365 tenancy.

**Prerequisites**:

### Setup Task 1: Create a new Office 365 Trial Tenant

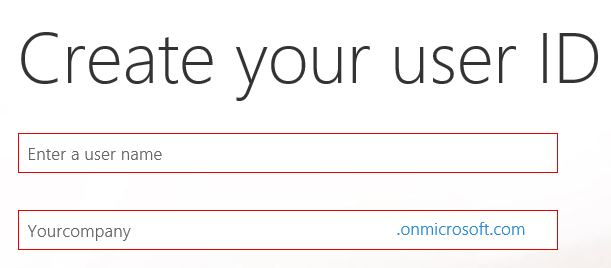
In this step you will create a trial Office 365 Tenant in which you can create up to 25 user accounts with Enterprise E3.user accounts You will use a special link provided in this document to ensure that you create an Office 365 trial tenant account that allows you to create up to 25 users. Being able to create multiple Office 365 user accounts in your Power BI testing environment will be important so that you can test the effects of sharing Power BI dashboards.

1. Navigate to **https://go.microsoft.com/fwlink/p/?LinkID=403802&culture=en-US&country=US**.
   1. Fill out the form with your personal information and click **Next**.



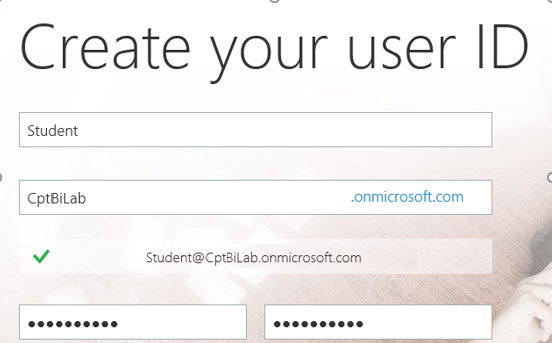
The information you provide here will be used throughout your tenant so if you do not wish to use your actual company name then provide humorous and fictitious company name.

* 1. On the next page, you are prompted to provide a user ID, company name and password.

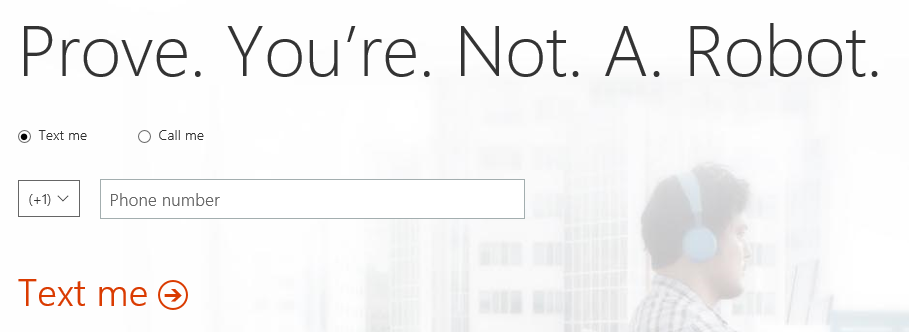


Note that the company name you enter on this page will be used to create the domain name for your new Office 365 trial tenant. For example, if you were to enter a company name of **CptBiLabs**, it would result in the creation of a new Office 365 tenant within a domain of **CptBiLabs.onMicrosoft.com**. The user name you enter will be used to create the first user account which will be given administrative rights within the trial 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@CptBiLabs.onMicrosoft.com**.

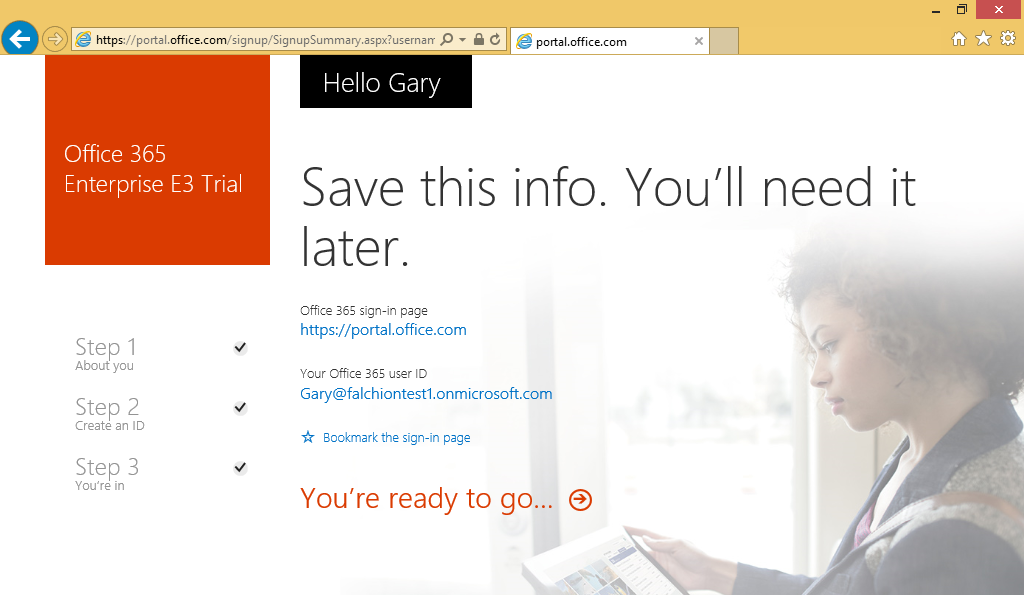
* 1. Enter a user name and a company name for your new Office 365 trial tenant. For the company name, you may wish to simply use your first and/or last name with a number which you can increment each time you have to create a new trial account (e.g. EricClapton1.onmicrosoft.com). Don’t use your actual company name as that may cause some conflict when your company decides to create their own official tenant. Throughout the remainder of this guide you will see a company domain name of **CptBiLab** which you should replace with the value specified for your company name.



* 1. Click **Next** to continue to step 3.
  2. Complete the validation form in step 3 by proving you are not a robot. Select the text me option and provide the number of your mobile phone. When you go through this process, a Microsoft service will send you a text message that contains an access code. You will enter that access code to complete the validation process.

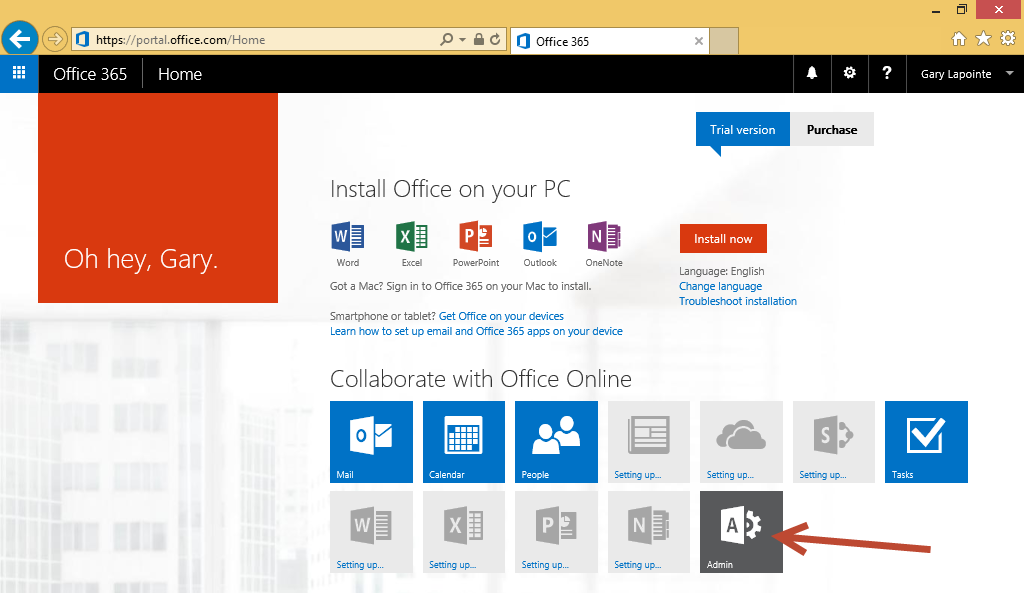


* 1. When complete, click the **You’re ready to go…** link to navigate to the portal welcome page for your new Office 365 trial tenant. Note that you will already be logged on using the user account that was created during the sign up process.

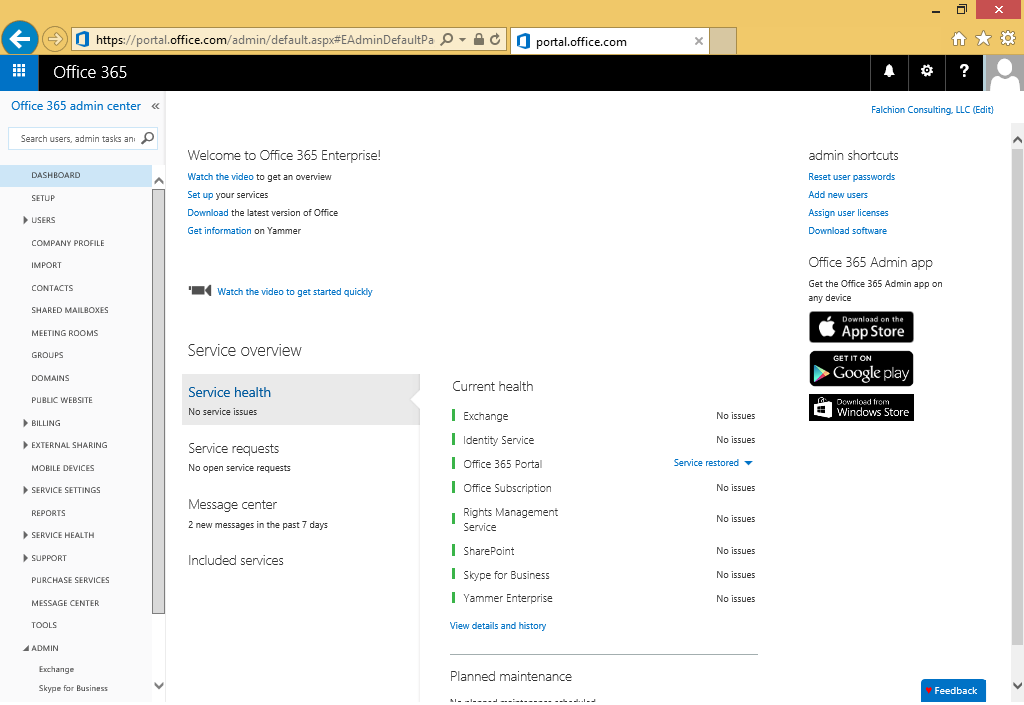


At this point, you have already created your new Office 365 tenant with 25 Office 365 Enterprise E3 trial licenses. Now it’s time to begin configuring the tenancy.

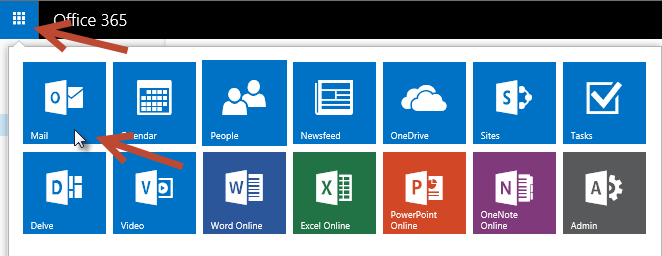
1. On the portal welcome page, you will notice that it is slowly setting up each of the individual services that make up your new Office 365 tenant. Click the **Admin** tile to proceed to the Office 365 Tenant Admin site.



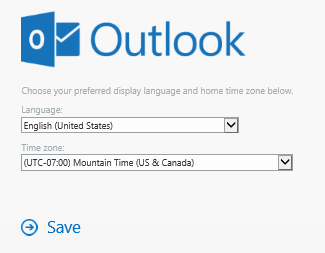
* 1. Verify that you are able to access the home page of the **Office 365 admin** center.



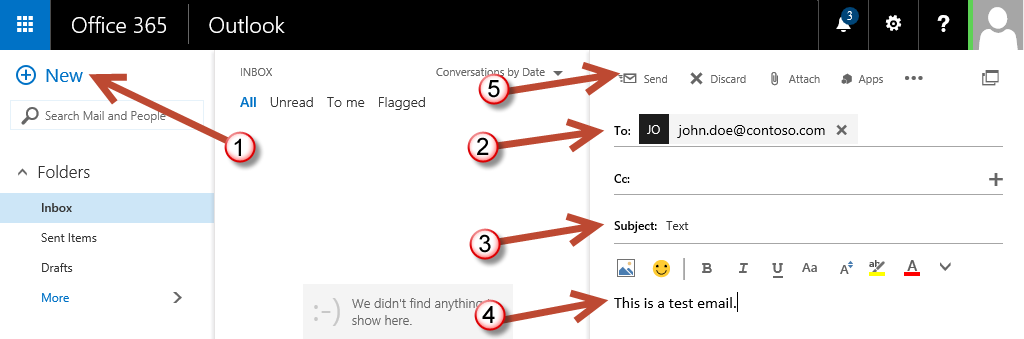
1. Open the Outlook web client and verify you can send and receive emails.
   1. Navigate to **https://outlook.office365.com** or click the **Mail** icon in the Application Launcher accessible via the **Waffle** **Button**.



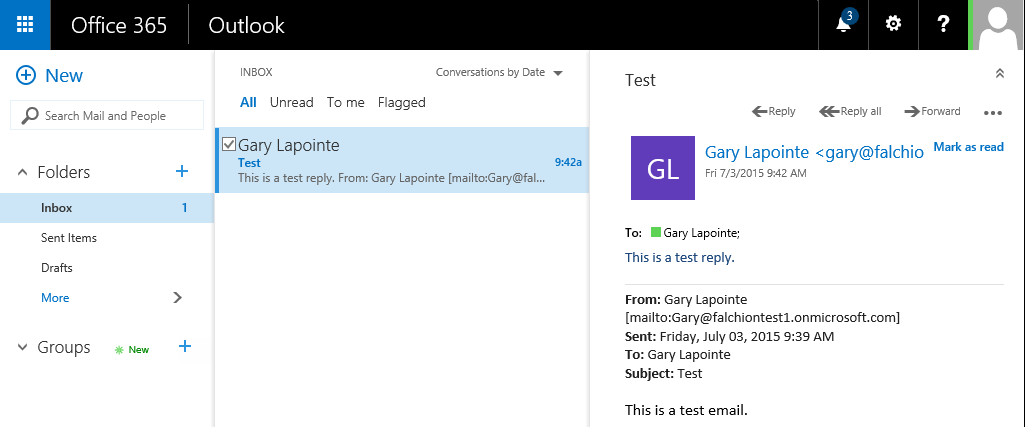
* 1. If prompted, specify your language and time zone for Outlook.



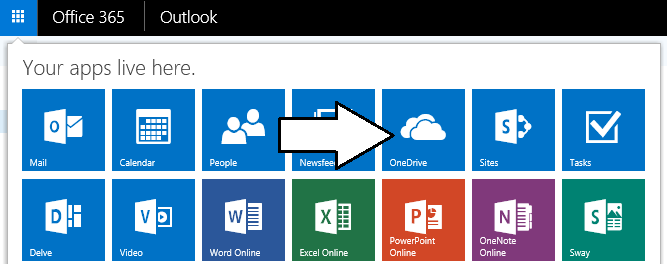
* 1. In the Outlook Web Client, click **New** to create a new email and specify the **To**, **Subject**, and email content. Be sure to provide a valid email address
  2. Click **Send** to send the email.



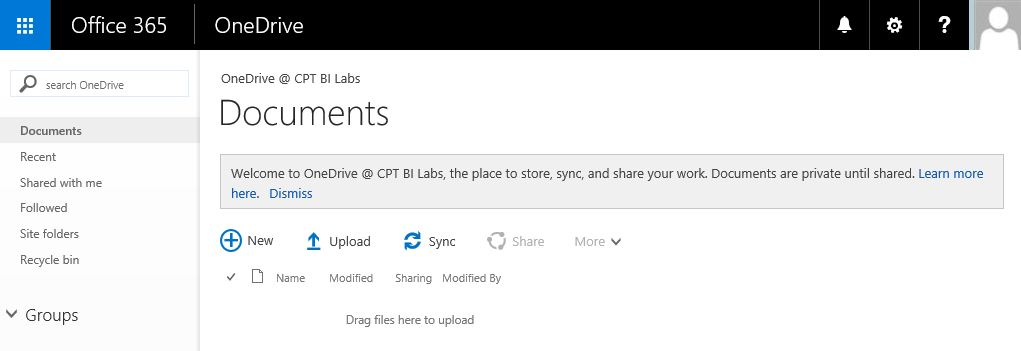
* 1. Check the email account you sent the email to and verify that you received the email.
  2. Reply to the email to verify that you can send an email to your new account.
  3. Return to the Outlook Web Client and verify receipt of your reply.



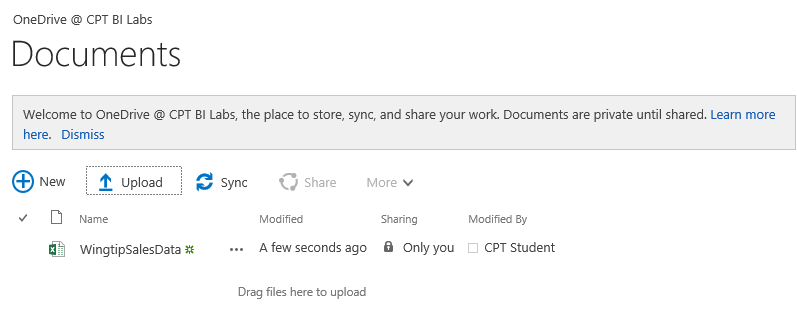
1. Verify you have access to your OneDrive for Business site and upload an Excel workbook for sales data for testing in Power BI.



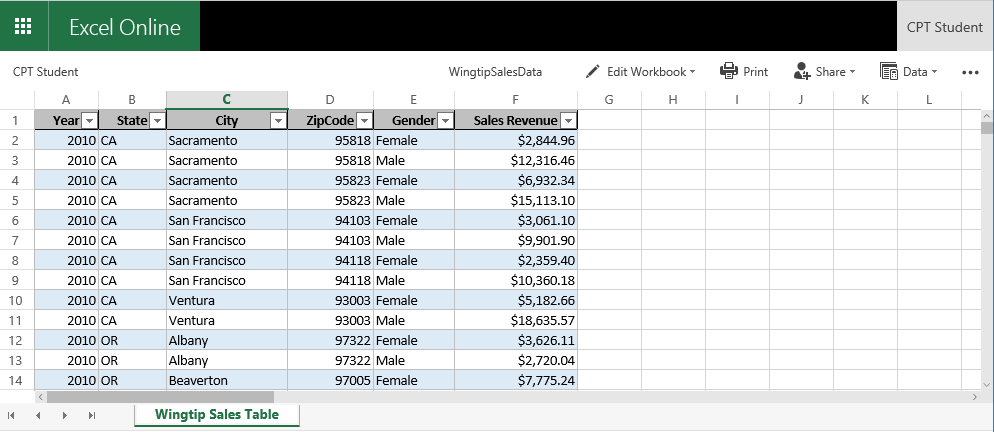
* 1. See the page



* 1. Cc



* 1. Xx

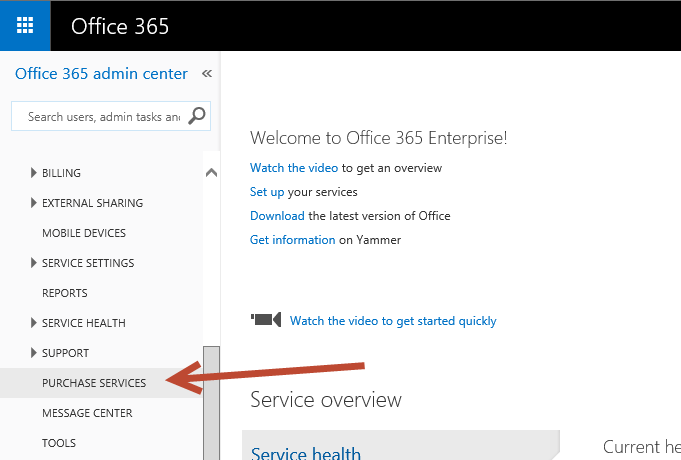


* 1. xx

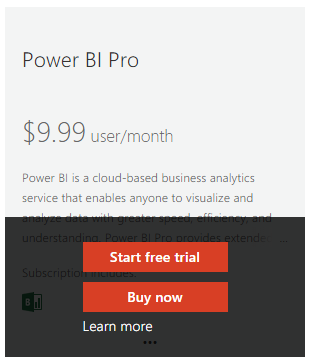
### Setup Task 2: Configure the Tenant by Adding a Power BI Trial Licenses

In this task, you will configure your new Office 365 tenant by adding a trial subscription to Power BI Pro. Once you have completed this task, you will be able to begin working with the Power BI service.

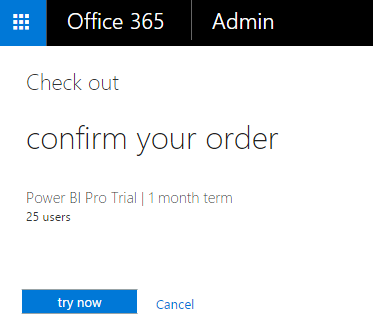
1. Add a Power BI trial account to the Office 365 tenant.
   1. In the **Office 365 admin center**, click the **Purchase Services** link in the left column.



* 1. Scroll down the page of available services and locate the **Power BI Pro** tile. Hover over the ellipses (…) in the bottom of the tile and click **Start free trial**.

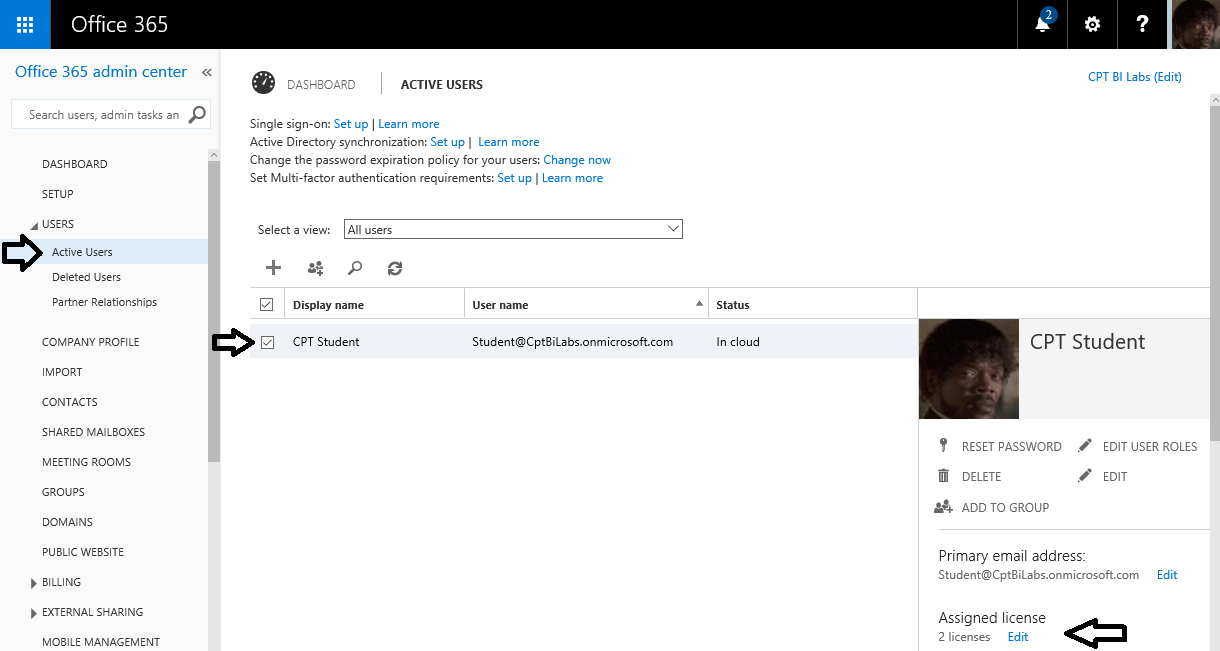


* 1. On the **Check out** page, click **try now** to add the subscription to your tenant.

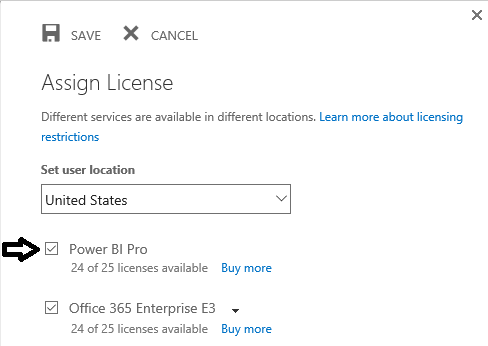


* 1. Click **continue** on the **order receipt** page.

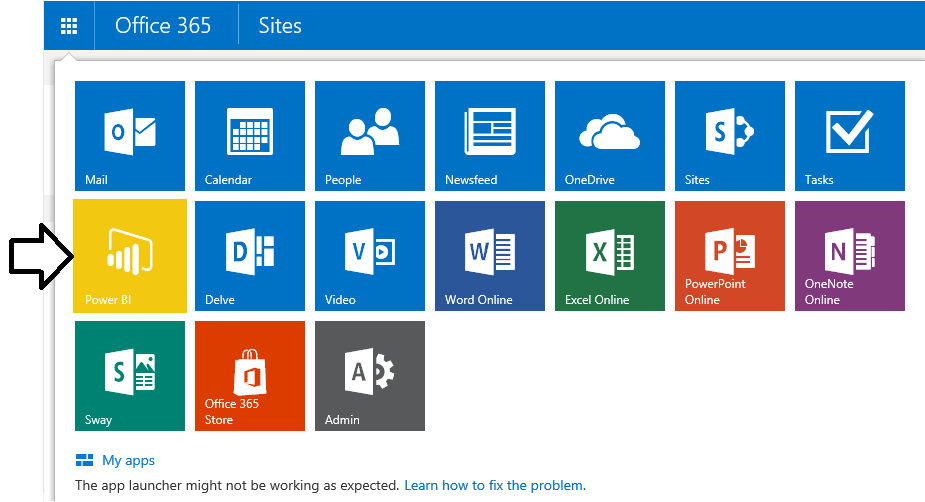
1. Assign the Power BI license to your account.
   1. In the Office 365 admin center, expand the **Users** node in the left column and click **Active Users**.
   2. Check the box next to your account and click **Edit** next to **Office 365 Enterprise E3** in the tool pane on the right.



* 1. Expand **Microsoft Power BI for Office 365** and select the checkbox for the Power Bi pro license.



* 1. Click **Save** to complete the assignment.

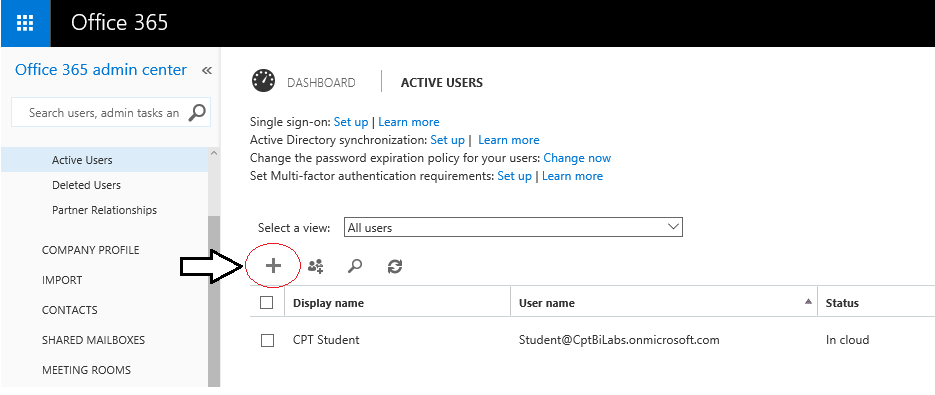


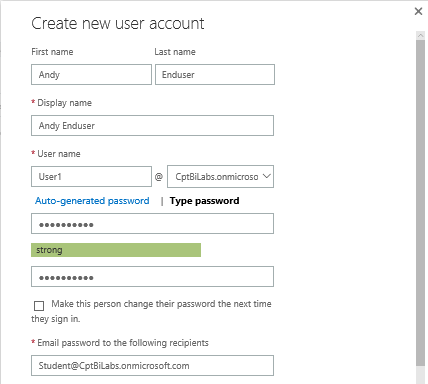
* 1. xx

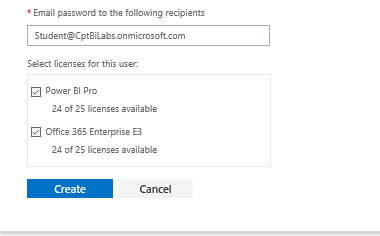
### Setup Task 3: Create a secondary user Account for Testing

In this step you will create a trial Azure subscription.

1. Navigate

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Note that you should still be logged in with the account created during the Office 365 trial creation, however, if you are not then make sure you log in using that account – this is critical to ensure that the Azure account is properly associated with your Office 365 tenant. Also, if you attempt to create more than one Azure trial account using the same personal information, credit card and/or verification number you may get an error as you are only allowed to create one trial account (Microsoft will not share what the specific combination of data is that constitutes a duplicate trial account).

* 1. On the sign up page provide the required information including the verification and credit card details. The credit card information is required but you will not be charged anything unless you explicitly choose to upgrade to a paid offering.
  2. Click **Sign up** to continue.

### ****Task 2: Download Installation Files****

In this task you will download the installation files for the **SharePoint Online Management Shell** and **Azure Active Directory PowerShell Module**, **SharePoint Designer 2013,** and **Fiddler** and make them available on the local hard drive of the **WingtipWorkstation** VM.

1. If not already created, create a new directory named **Install** on the **C:\** drive of the **WingtipWorkstation** VM.
   1. Once created, the path to this directory should be **C:\Install**
2. Download the installation files for the **Microsoft Online Services Sign-In Assistant**.
   1. Go to the Microsoft Online Services Sign-In Assistant download page at **http://www.microsoft.com/en-us/download/details.aspx?id=41950**.
   2. Download the x64 version of the installation file to the **WingtipWorkstation** VM at the path **c:\Install\msoidcli\_64.msi**.
3. Download the installation files for **Fiddler**.
   1. Go to the Fiddler download page at **http://www.telerik.com/download/fiddler** and select the **Fiddler 4** build.
   2. Downloadthe installation file to the **WingtipWorkstation** VM at the path **c:\Install\** **fiddler4setup.exe**
4. Download the installation files for **SharePoint Online Management Shell**.
   1. Go to the SharePoint Online Management Shell download page at **https://www.microsoft.com/en-us/download/details.aspx?id=35588**.
   2. Download the x64 version of the installation file to the **WingtipWorkstation** VM at the path **c:\Install\sharepointonlinemanagementshell\_4017-1200\_x64\_en-us.msi**.
5. Download the installation files for the **Azure Active Directory PowerShell Module**.
   1. Go to **http://go.microsoft.com/fwlink/p/?linkid=236297** and save the file to the **WingtipWorkstation** VM at the path **c:\Install\AdministrationConfig-en.msi**.

At this point you have downloaded the various installation files and made them available on the local hard drive of the WingtipWorkstation VM.

### Task 6: Install Downloaded Files

In this section you will install Fiddler, SharePoint Designer 2013, and the various PowerShell modules.

1. Navigate to **C:\Install.**
2. Double click on the **fiddler4setup.exe** file to install Fiddler.
   1. Click **I Agree** to the License Agreement.
   2. Click **Install.**
   3. Click **Close.**
   4. Internet explorer should appear with a **First Run** Screen for **Fiddler.**
   5. Close **Internet Explorer.**
3. Double click the **msoidcli\_64.msi** file to install the Microsoft Online Services Sign-In Assistant.
   1. **Accept** the License Terms and click **Install.**
   2. When finished installing click **Finish**.
4. Double click the **AdministrationConfig-en.msi** file to install the Azure Active Directory PowerShell Module.
   1. Click **Next**.
   2. **Accept** the License Terms and click **Next**.
   3. Leave the default install location and click **Next**.
   4. Click **Install**.
   5. When finished installing click **Finish**.
5. Double click the **sharepointonlinemanagementshell\_4017-1200\_x64\_en-us.msi** file to install the SharePoint Online Management Shell.
   1. **Accept** the License Terms and click **Install.**
   2. When finished installing click **Finish**.

You have now successfully installed Fiddler, SharePoint Designer 2013, and the various PowerShell modules.

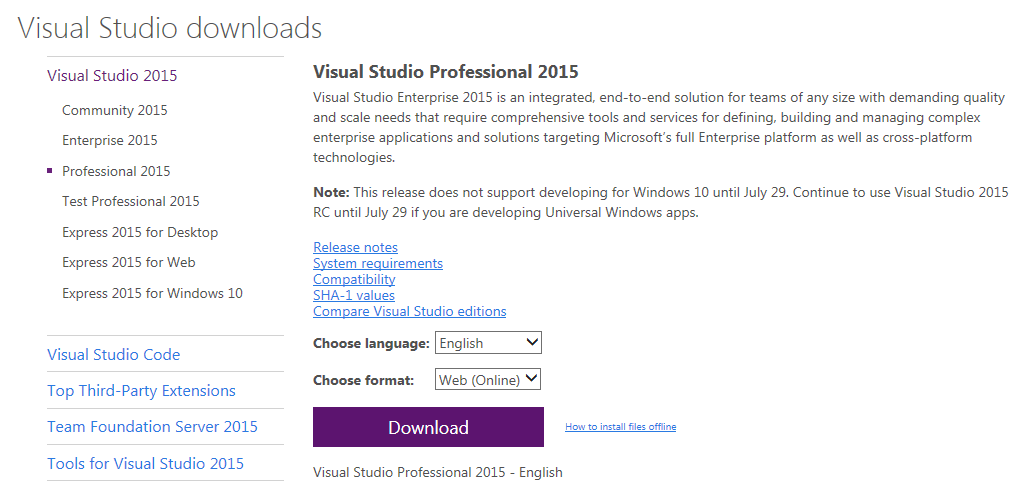
### Task 7: Install and Configure Visual Studio 2015

In this section you will Install Visual Studio 2015 and configure it for use with SharePoint 2013 and Office 365.

1. Create a new directory named **VSInstall** in the **C:\Install** directory of the **WingtipWorkstation** VM.
   1. Once created, the path to this directory should be **c:\Install\VSInstall**

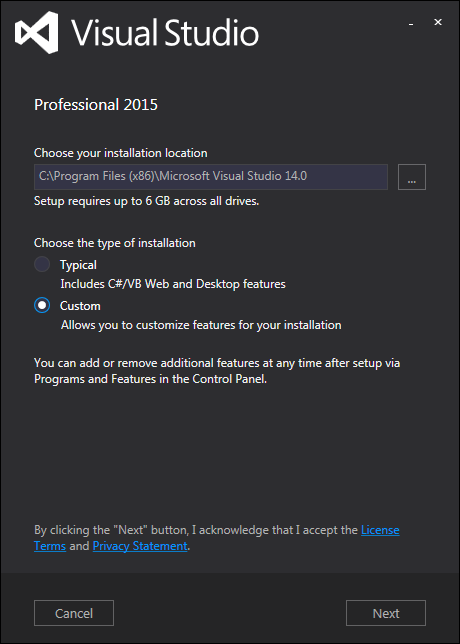
Note that minimally you will need Visual Studio Professional 2015 if you wish to use an MSDN licensed copy for this setup.

1. Download the installation files for the trial edition of Visual Studio 2015.
   1. Go to the Visual Studio 2015 RC download page at **https://www.visualstudio.com/products/visual-studio-2015-downloads-vs**.
   2. Click the **Visual Studio 2015** category in the lower portion of the page and select **Professional 2015**.

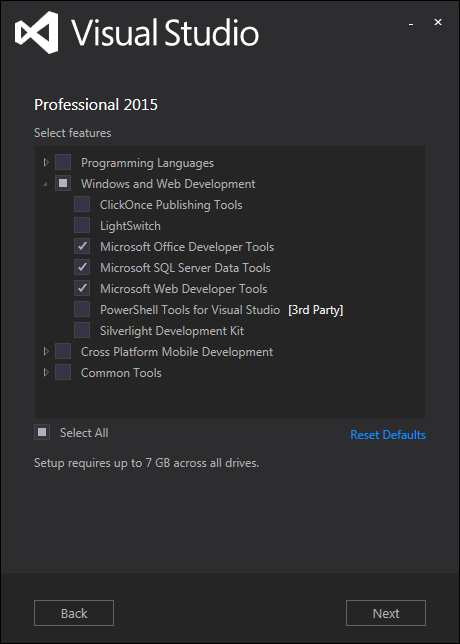


* 1. Click the **Download** link to download to the VM.
  2. If prompted, login using your Microsoft Account.

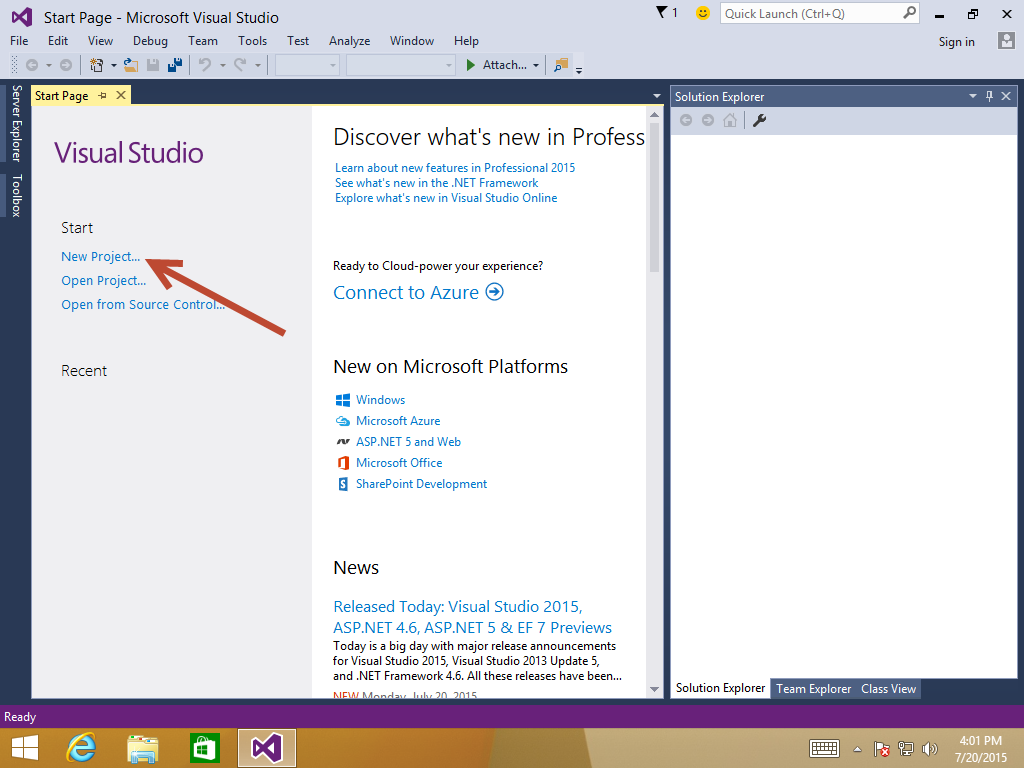
1. Download the installation file named **vs\_professional.exe** to the **c:\Install\VSInstall** directory.
2. Double-click on the **vs\_professional.exe** program to install the application.
   1. For the type of installation choose **Custom** and click **Next.**



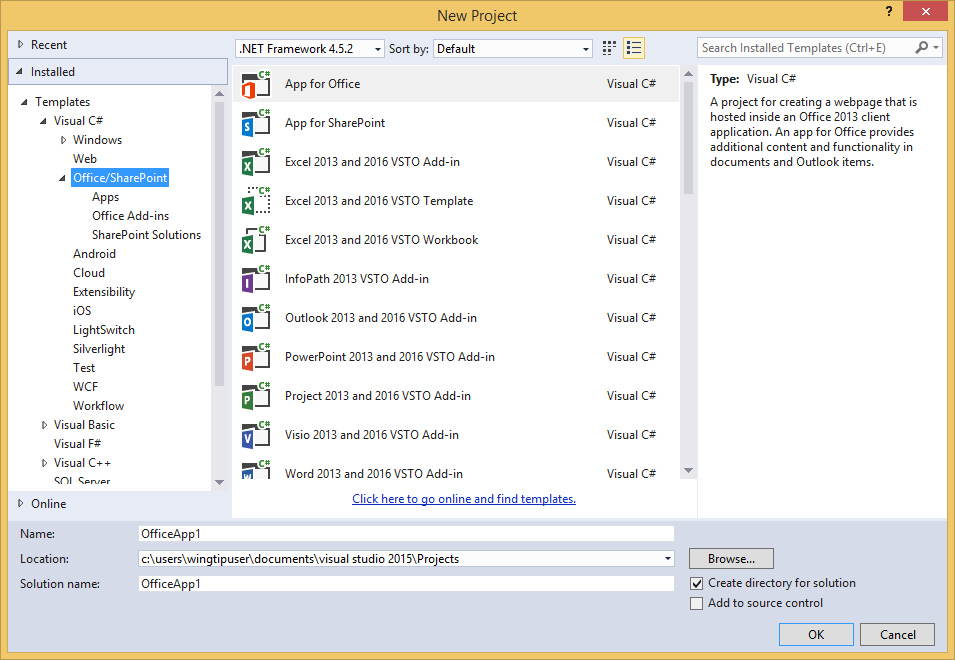
1. On the **Select features** page select the following features and click **Next**:



1. On the **Selected features** page click **Install**.
   1. Wait for the install to finish (this will take approximately 20 minutes to finish… relax, grab a muffin and another cup of coffee; decaf this time (don’t want to overdo it…)).
   2. When finished, if prompted to restart the machine click the **Restart Now** button, otherwise, start Visual Studio 2015 by clicking the **Launch** button.
      1. After restarting open Visual Studio 2015 by clicking the Visual Studio 2015 tile in the Start screen.
   3. If asked to sign in click **Not now, maybe later**
   4. Click **Start Visual Studio** to accept the default environment settings
2. Verify that the Office Developer Tools are available.
   1. Click **New Project…** in the left pane:



* 1. In the New Project dialog select **Office/SharePoint** from the **Templates > Visual C#** node and verify that the SharePoint and Office templates are available:



* 1. Click **Cancel** to close the dialog.

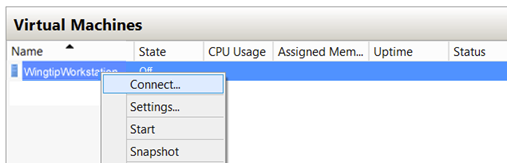
### Task 8: Install Office 2013 Professional and Visio 2013

In this step you will install Microsoft Office 2013 Professional. Note that if you are using a trial version of Microsoft Office 2013 Professional, you may wish to wait until closer to your actual class date to install these as you only have a 30 day trial period with these.

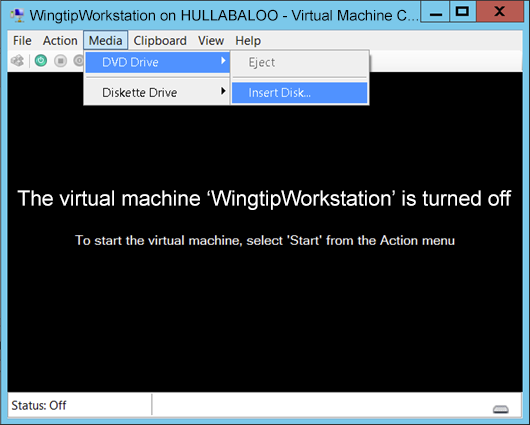
1. Obtain a copy of the 64-bit installation binaries for Office 2013 Professional
   1. Choose between using your own licensed copy of Office 2013 Professional or using the free trial version.
   2. If you plan to use a licensed copy, you must acquire the install image (\*.iso) for Office 2013 Professional as well as a product key.
   3. If you plan to use a free trial copy of Office 2013 Professional, follow these steps:
      1. Navigate to the Office 2013 Professional trial download site: **http://msdn.microsoft.com/en-US/evalcenter/jj720319.aspx** or you can use an MSDN version of this if you have an MSDN subscription
      2. Download the install files to a location on your host computer (these will typically be in .iso or .img format.
      3. Once this has been downloaded you may either 1) burn this to a blank dvd or 2) attempt to attach to this file. We will attempt to attach the VM to this file using Hyper-V Manager

This download is over a gigabyte in size so it will take some time to download. The amount of time it takes to download will depend upon the speed of your Internet connection.

1. Navigate to the Hyper-V Manager. Right-click the **WingtipWorkstation** VM and select the **Connect…** command to display the Hyper-V console window for this VM.



1. In this step you will configure the VM to load the .ISO file with the Office 2013 Professional installation files as a DVD drive.
   1. In the Hyper-V console windows for the **WingtipWorkstation** VM, select the **Insert Disk…** command.



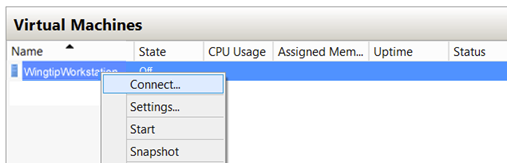
* 1. When the **Open File** dialog appears, enter the path to the .ISO/.IMG file with the Office 2013 Professional installation files. Click **OK**.

1. Navigate back into the user interface of the **WingtipWorkstation** VM.
2. Depending on your configuration, the Office 2013 Professional installation program in the DVD might or might not start automatically.
   1. If the **AutoPlay** dialog box is open, click run **setup.exe**.
   2. If the **AutoPlay** dialog box is not open, use Windows Explorer to navigate to the DVD drive and execute the **setup.exe** file in the root of the DVD drive.
   3. Wait for the Microsoft Office Professional 2013 installation program to initialize and display the **License Terms** dialog.
3. In the **Microsoft Office Professional 2013 Installation** dialog, complete the following steps:
   1. **Accept** the terms of the license agreement and click **Continue**
   2. Click **Install Now** to install the application
   3. Wait for this to finish and click **Close** when done.
   4. Start Word
      1. Press the **Windows** key and type Word.
      2. Select the **Word 2013** tile
      3. When Word starts you will see an **Activate Office** window
      4. Click **Enter a product key instead**
      5. Enter your product key and click **Install**
   5. Your Office 2013 Professional installation is now ready to use.
4. The final thing we need to do is download and install Visio 2013.
5. Obtain a copy of the 64 bit installation binaries/executable for Visio Professional 2013
   1. Choose between using your own licensed copy of Visio Professional 2013 or use the free trial version.
   2. If you plan to use a licensed copy, acquire the install image (\*.iso or .exe) for Visio Professional 2013 and the product key.
   3. If you plan to use a free trial copy of Visio Professional 2013, follow these steps:
   4. Navigate to the Visio Professional 2013 trial download site: **http://technet.microsoft.com/en-US/evalcenter/hh973399?WT%2Eintid1=ODC%5FENUS%5FFX103791368%5FXT104000916**

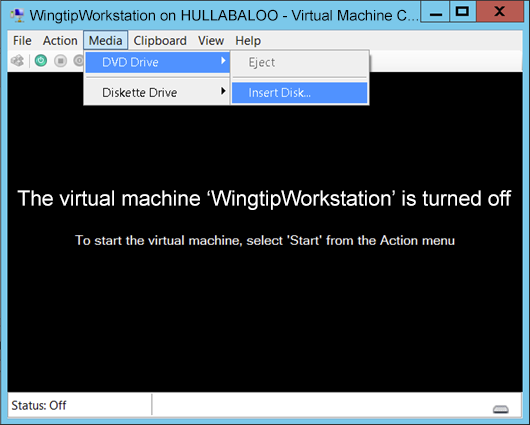
or you can use an MSDN version of this if you have an MSDN subscription

* + 1. Download the install files to a location on your host computer (these will typically be in .iso, .img, or .exe format.

1. Once this has been downloaded, if you have an iso/img file, you may either 1) burn this to a blank dvd or 2) attempt to attach to this file. We will attempt to attach the VM to this file using Hyper-V Manager  
   (Note: if you have an .exe file skip ahead to step 18.
   1. Navigate to the Hyper-V Manager. Right-click the **WingtipWorkstation** VM and select the **Connect…** command to display the Hyper-V console window for this VM.



* 1. In this step you will configure the VM to load the .ISO file with the Visio Professional 2013 installation files as a DVD drive.
     1. In the Hyper-V console windows for the **WingtipWorkstation** VM, select the **Insert Disk…** command.



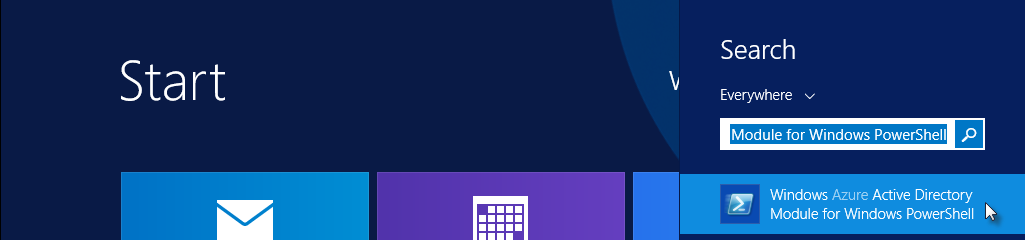
* + 1. When the **Open File** dialog appears, enter the path to the .ISO/.IMG file with the Visio Professional 2013 installation files. Click **OK**.
  1. Navigate back into the user interface of the **WingtipWorkstation** VM.
  2. Depending on your configuration, the Visio Professional 2013 installation program in the DVD might or might not start automatically.
     1. If the **AutoPlay** dialog box is open, click run **setup.exe**.
     2. If the **AutoPlay** dialog box is not open, use Windows Explorer to navigate to the DVD drive and execute the **setup.exe** file in the root of the DVD drive.
     3. Wait for the Microsoft Visio Professional 2013 installation program to initialize and display the **License Terms** dialog

1. Now let’s install and activate Visio Professional 2013
   1. **Accept** the terms of the license agreement and click **Continue.**
   2. Click **Install Now.**
   3. Click the **Close** button.
   4. Press the **Windows** key and type **Visio**.
   5. Select the Visio Professional tile.
   6. When Visio starts you will see an **Activate Office** window.
   7. Click **Enter a product key instead.**
   8. Enter your product key and click **Install.**
   9. Your Visio Professional 2013 installation is now ready to use.

### Task 11: Verify PowerShell Connectivity

In this step you will use the previously installed PowerShell modules to verify connectivity and create a new Site Collection.

1. Use the **Windows** key to navigate to the Start screen and type **azure** to search for the Windows Azure Active Directory Module for Windows PowerShell.



* 1. Click the **Windows Azure Active Directory Module for Windows PowerShell** application to open the PowerShell console window.
  2. Type the following command to store your credentials and establish a connection to the tenant (use the same username and password you used when creating the Office 365 trial - we’ll use these credentials later so keep the console window open when complete):

$cred = Get-Credential

Connect-MsolService -Credential $cred

* 1. Run the following command to retrieve your company information that you provided when creating the tenant

Get-MsolCompanyInformation

1. Now that you’ve verified your Azure Active Directory PowerShell module can connect to your tenant you can now validate that the SharePoint Online Management Shell module works.
   1. It’s not necessary to load the SharePoint Online Management Shell as the PowerShell module we need will be loaded automatically when you attempt to use one of the applicable cmdlets.
   2. Run the following command to connect to your SharePoint Online tenant:

Connect-SPOService -Url https://[your tenant]-admin.sharepoint.com -Credential $cred

* + 1. 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).
  1. Run the following command to retrieve the list of existing Site Collections:

Get-SPOSite -Limit All | select Url

1. Create a new Site Collection using the **New-SPOSite** cmdlet.
   1. Be sure to replace **[your tenant]** with the value you provided when creating your Office 365 tenant:

New-SPOSite -Url https://[your tenant].sharepoint.com/sites/Test -Owner $cred.UserName -StorageQuota 1000 -Title "Test Site" -Template "STS#0"

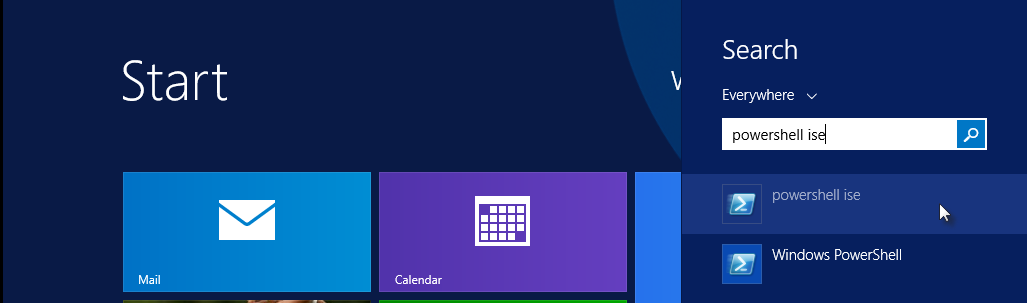
* 1. This command could take several minutes to complete.

1. Verify creation of the Site Collection.
   1. Navigate to **https://[your tenant]-admin.sharepoint.com**
   2. You should see your new Site Collection listed. Click the URL of the Site Collection to open its properties.
   3. Click the Web Site Address to open the Site Collection in a new window.

### Task 12: Create a New User

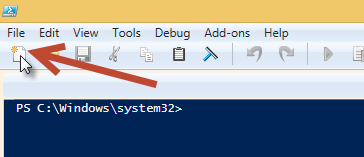
In this step you will use Windows PowerShell to create a new test user and assign a license to that user.

1. If not already created, create a new directory named **Scripts** on the **C:\** drive of the **WingtipWorkstation** VM.
   1. Once created, the path to this directory should be **C:\Scripts**
2. Use the **Windows** key to navigate to the Start screen and type **powershell ise** to search for the Windows PowerShell ISE.



* 1. Click the **PowerShell** **ISE** application to open the PowerShell ISE window.

1. Click the **New** icon to create a new script file.



1. Enter the following script:
   1. Note the tick marks (`) to denote a new line when calling the various cmdlet.

function New-Student($username, $password, $displayName, $alternateEmail) {

# Get the tenant name (license prefix).

$tenant = (Get-MsolAccountSku)[0].AccountSkuId.Split(":")[0]

# Create the user

New-MsolUser -UserPrincipalName $username `

-DisplayName $displayName `

-UsageLocation "US" `

-UserType Member `

-LicenseAssignment "$tenant`:ENTERPRISEPACK" `

-AlternateEmailAddresses $alternateEmail `

-Password $password `

-PasswordNeverExpires $true

# Create a license options object that removes SharePoint Online Plan 2 from Power BI Standalone.

$licenseOption = New-MsolLicenseOptions -AccountSkuId "$tenant`:POWER\_BI\_STANDALONE" `

-DisabledPlans "SHAREPOINTENTERPRISE"

# Add the Power BI license to the user.

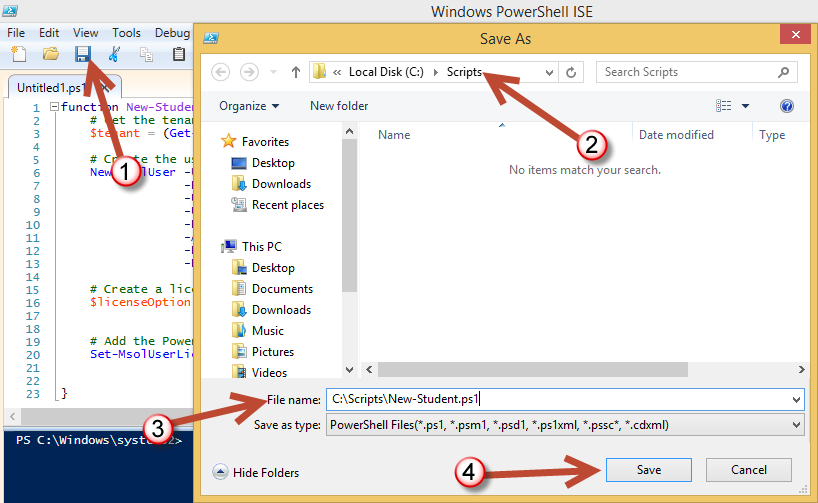
Set-MsolUserLicense -AddLicenses "$tenant`:POWER\_BI\_STANDALONE" `

-LicenseOptions $licenseOption `

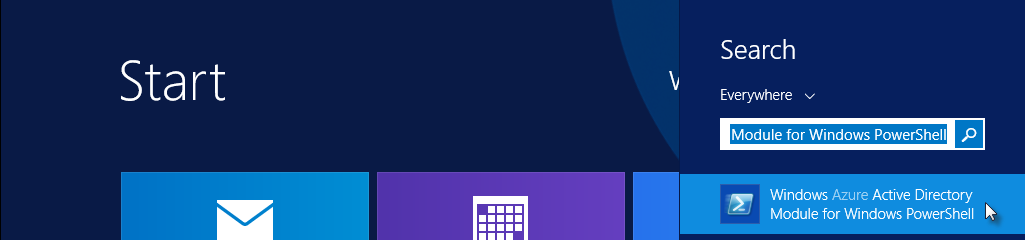
-UserPrincipalName $username

}

1. Click the **Save** icon to save the file as **C:\Scripts\New-Student.ps1**.



1. Click **Save** to save the file.
2. Use the **Windows** key to navigate to the Start screen and type **azure** to search for the Windows Azure Active Directory Module for Windows PowerShell.



* 1. Click the **Windows Azure Active Directory Module for Windows PowerShell** application to open the PowerShell console window.

1. Ensure that the current execution policy allows the execution of scripts by running the following command:

Set-ExecutionPolicy Bypass -Force -Scope CurrentUser

1. Load the **New-Student** function by executing the following command which uses PowerShell’s dot source notation (note the space after the first dot):

. C:\Scripts\New-Student.ps1

1. Run the following command to connect to your tenant:

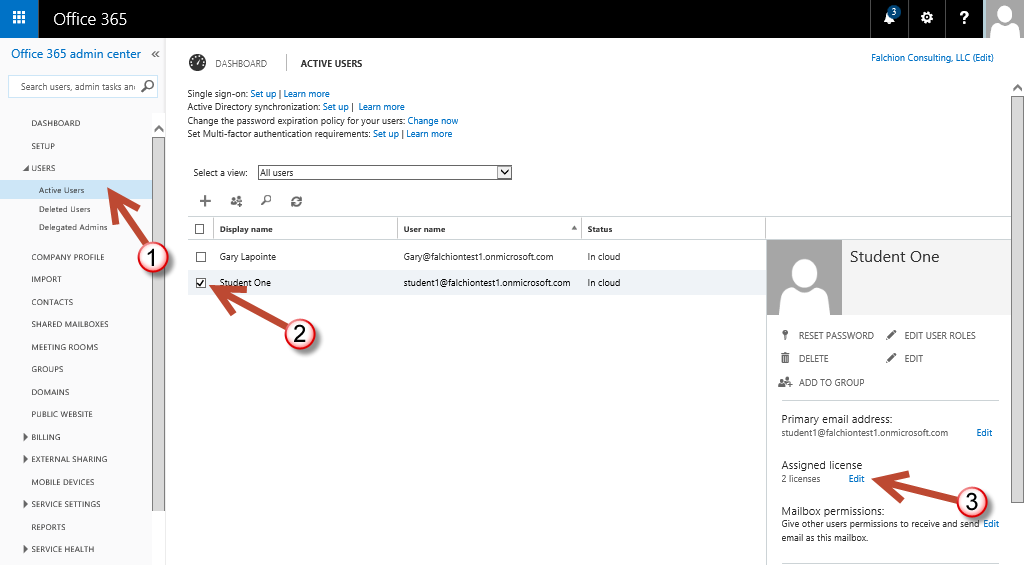
$cred = Get-Credential

Connect-MsolService -Credential $cred

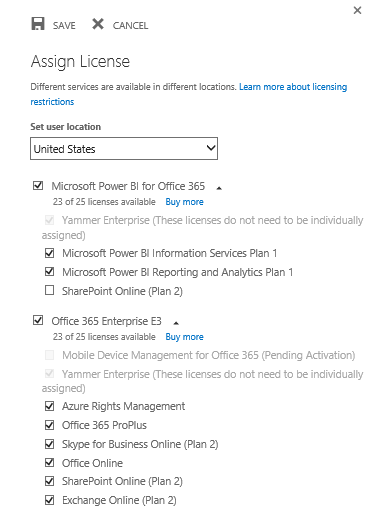
1. Run the following command replacing the **-username** and **-alternateEmail** parameters with appropriate values for your new tenant.
   1. The username should be in the form <user>@<your tenant>.onmicrosoft.com.
   2. The alternate email should be a valid email address that you have access to.
   3. Enter the entire command on one line.

New-Student -username "student1@yourtenant.onmicrosoft.com" -password "Password1" -displayName "Student One" -alternateEmail "john.doe@contoso.com"

1. Verify account creation in the Office 365 admin center.
   1. Navigate to **https://portal.office.com/admin/default.aspx** and click **Active Users** within the **Users** node.
   2. Select the checkbox next to the new user and click **Edit** under the **Assigned license** section in the right panel.



* 1. Verify the license assignment is as shown:

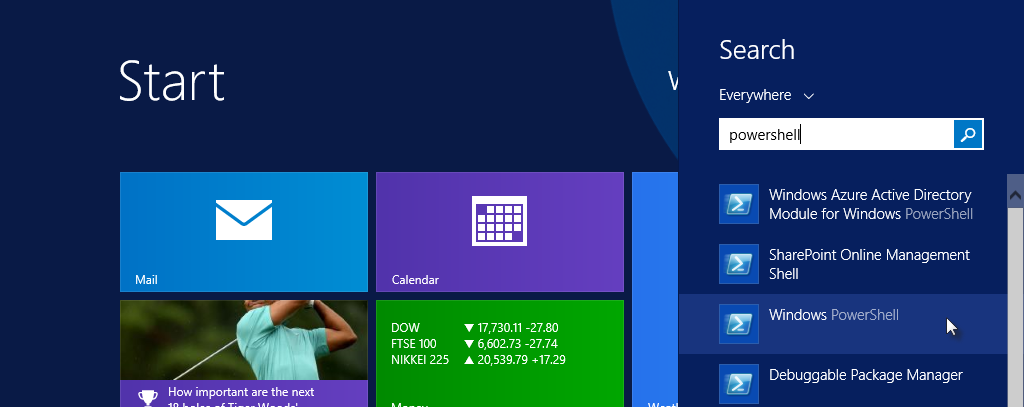


* 1. Click **Cancel** to close the Assign license dialog.

### Task 13: Create a Unified Group

In this step you will connect to Exchange Online to create a new Unified Group.

1. Use the **Windows** key to navigate to the Start screen and type **powershell** to search for Windows PowerShell.



* 1. Click the **Windows PowerShell** application to open the PowerShell console window.

1. Create a new remote PowerShell session by running the following command:

$session = New-PSSession -ConfigurationName Microsoft.Exchange -ConnectionUri "https://outlook.office365.com/powershell-liveid/" -Credential $cred -Authentication Basic –AllowRedirection

1. Run the following command to import the available cmdlets into the current PowerShell runspace:

Import-PSSession $session

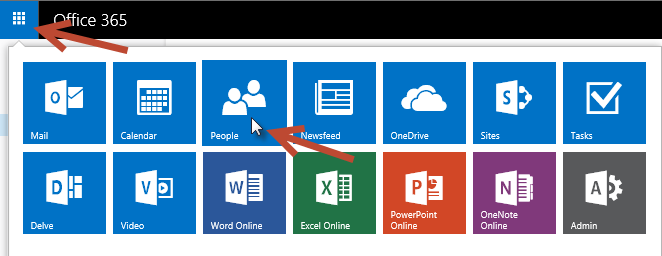
1. User the imported New-UnifiedGroup cmdlet to create a new Unified Group:

New-UnifiedGroup -DisplayName "My First Group" -Alias "MyFirstGroup" -AccessType Public

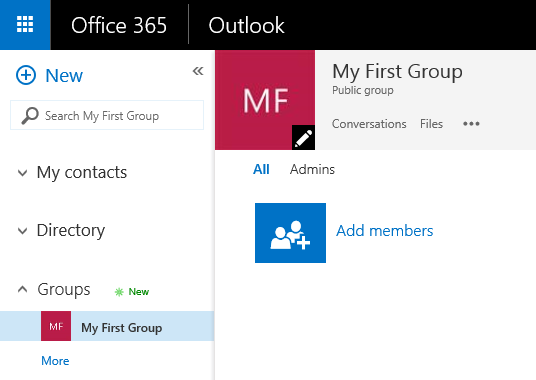
1. Use the Remove-PSSession cmdlet to end the remote session:

Remove-PSSession -Session $session

1. Verify group creation.
   1. Return to the Office 365 admin center if not already open: **https://portal.office.com/admin/default.aspx**
   2. Click the **Waffle** **Button** in the top left and select **People**.



* 1. In Outlook, verify that **My First Group** is present and click it to view the Group.



1. Close all windows and prepare to shut down your Virtual Machine…

You have now completed building the VM that can be used as the starting point to complete the lab exercises for the Office 365 Developer courses offered by Critical Path Training. You may now shut down the VM in preparation for the course start.

To shut down the VM press **Windows Key + I** and then on the Settings window select the **Power** button.  
(Note: it is always a good idea to take a backup of this VM Image just in case you would like to try something again after you begin the course)

