A Guide to Running Statgraphics using Microsoft Azure

This guide provides step-by-step instructions for installing and running Statgraphics Version 19 using Microsoft Azure. It is designed for organizations that want to provide predictive analytics and data visualization through the cloud rather than on local desktops. Implementing Statgraphics in this manner requires:

1. An Azure account to install and run Statgraphics. All Azure charges are the responsibility of the organization installing the software.
2. An internet license permitting Statgraphics to be used by multiple users on Azure. Internet licenses are provided by Statgraphics Technologies, Inc. and charged on an annual basis. The cost of the license depends on the maximum number of concurrent users, which is monitored over the Internet.

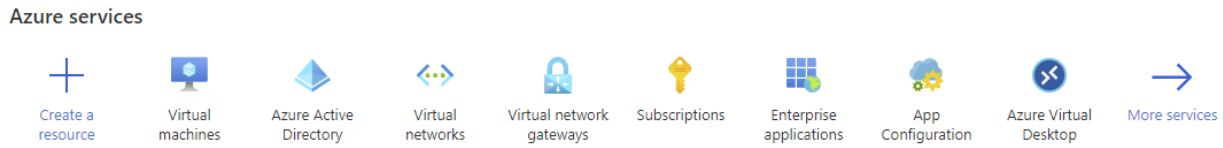
Contents

Step 1: Acquire an AWS account

In order to use Statgraphics under Azure, an organization must first create an Azure account. This may be done by going to https://azure.microsoft.com. An owner email address is required to create the items necessary to run Statgraphics.

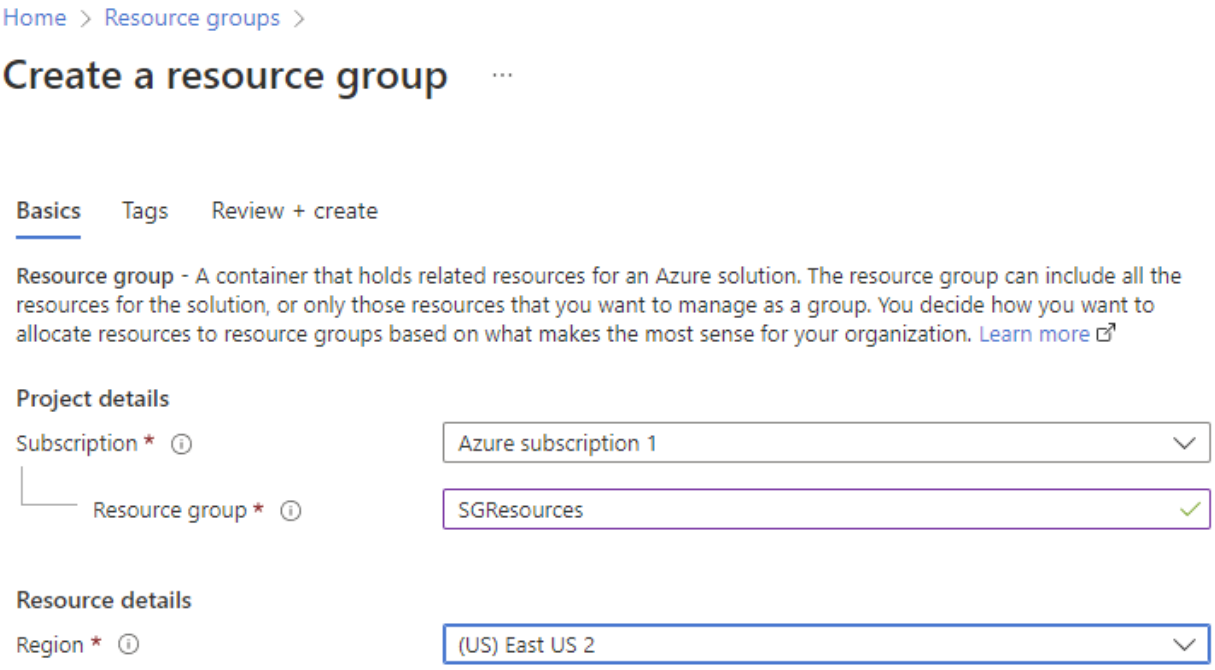
Step 2: Log into Azure

Go to azure.microsoft.com and log into Azure using your username and password.

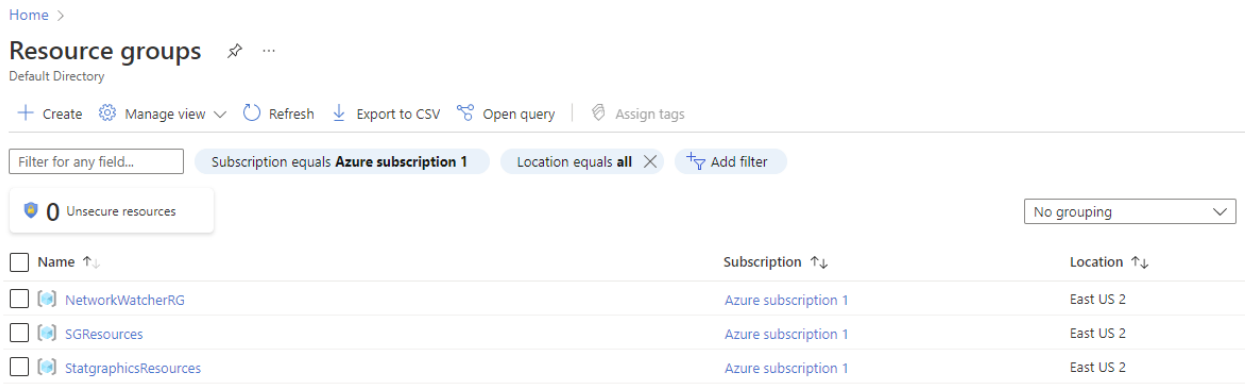


Step 3: Create a new resource group

Search for research groups. Then press *Create*. Give the group a name, select a region, and then press *Review and create*. After validation is passed, press *Create* again.

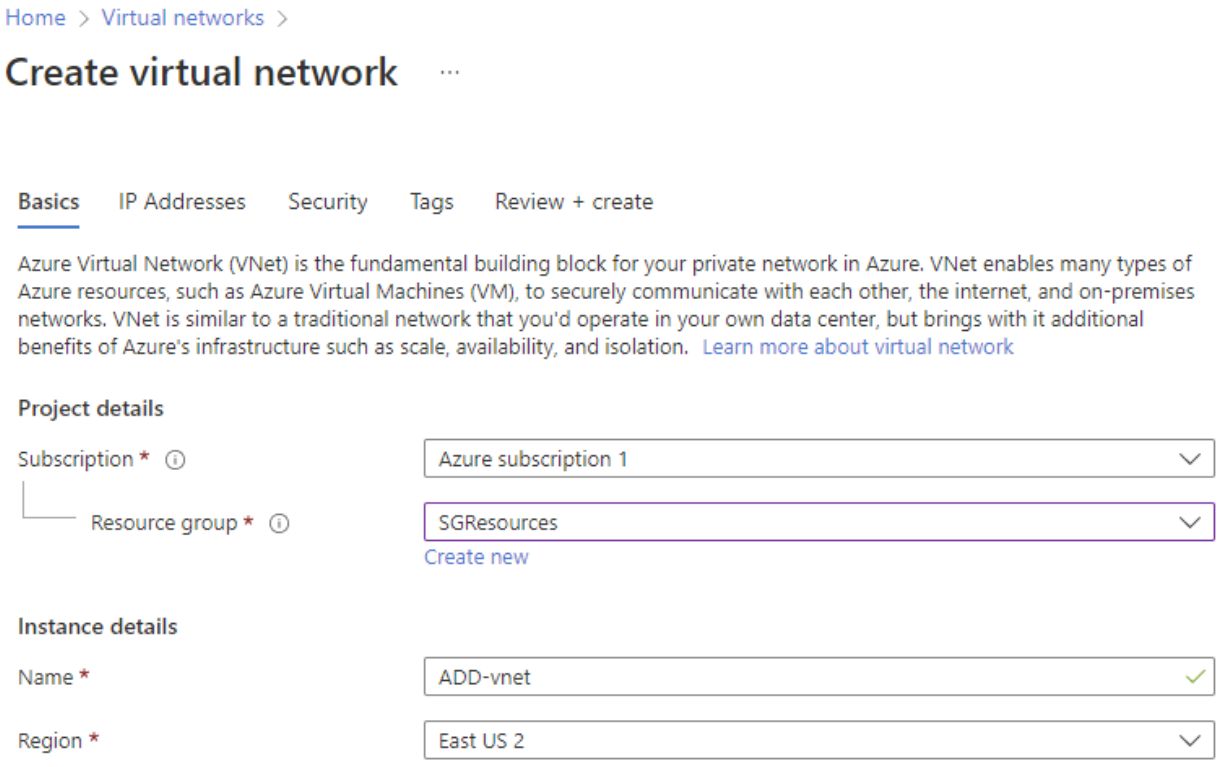


It should be added to the list:



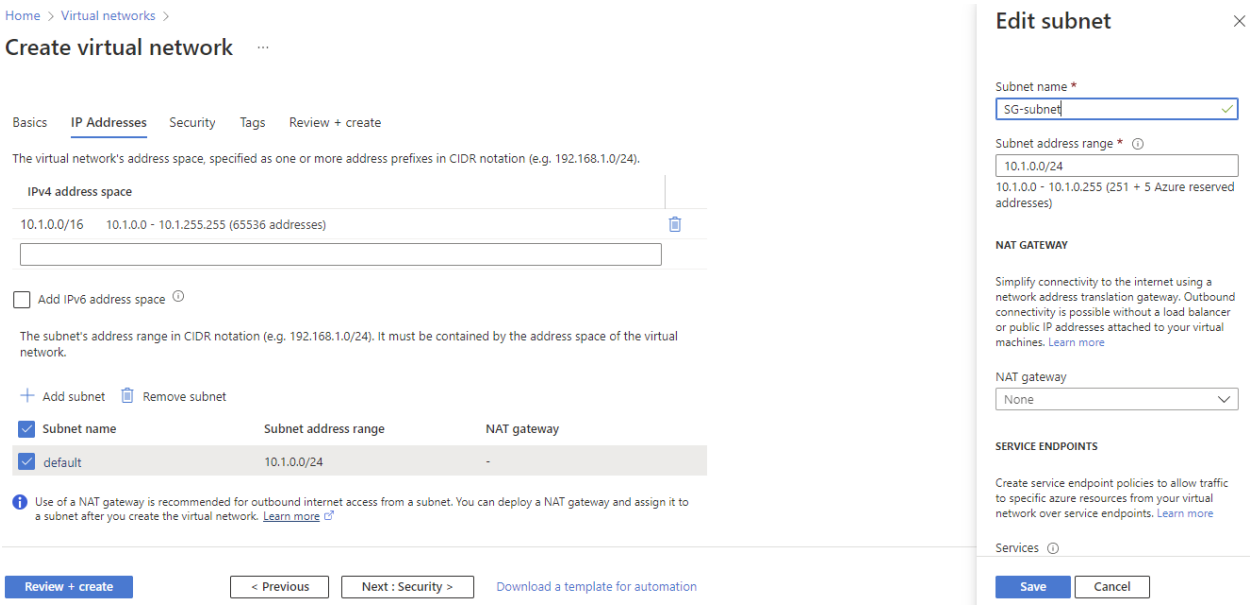
Step 4: Create a virtual network

Search for Virtual networks and then press *Create*. Select the resource group that we just created as name the network:



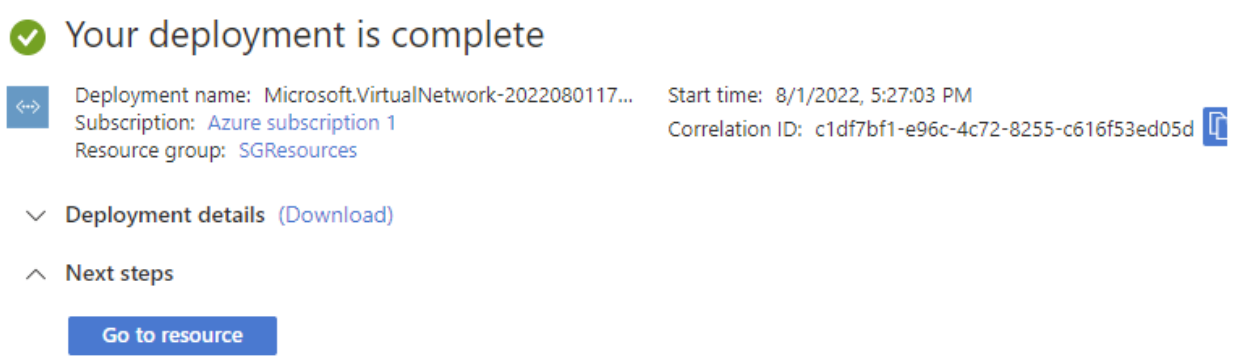
Then click on *Next: IP Addresses.*

Double-click on the name *default* and name it something more meaningful.



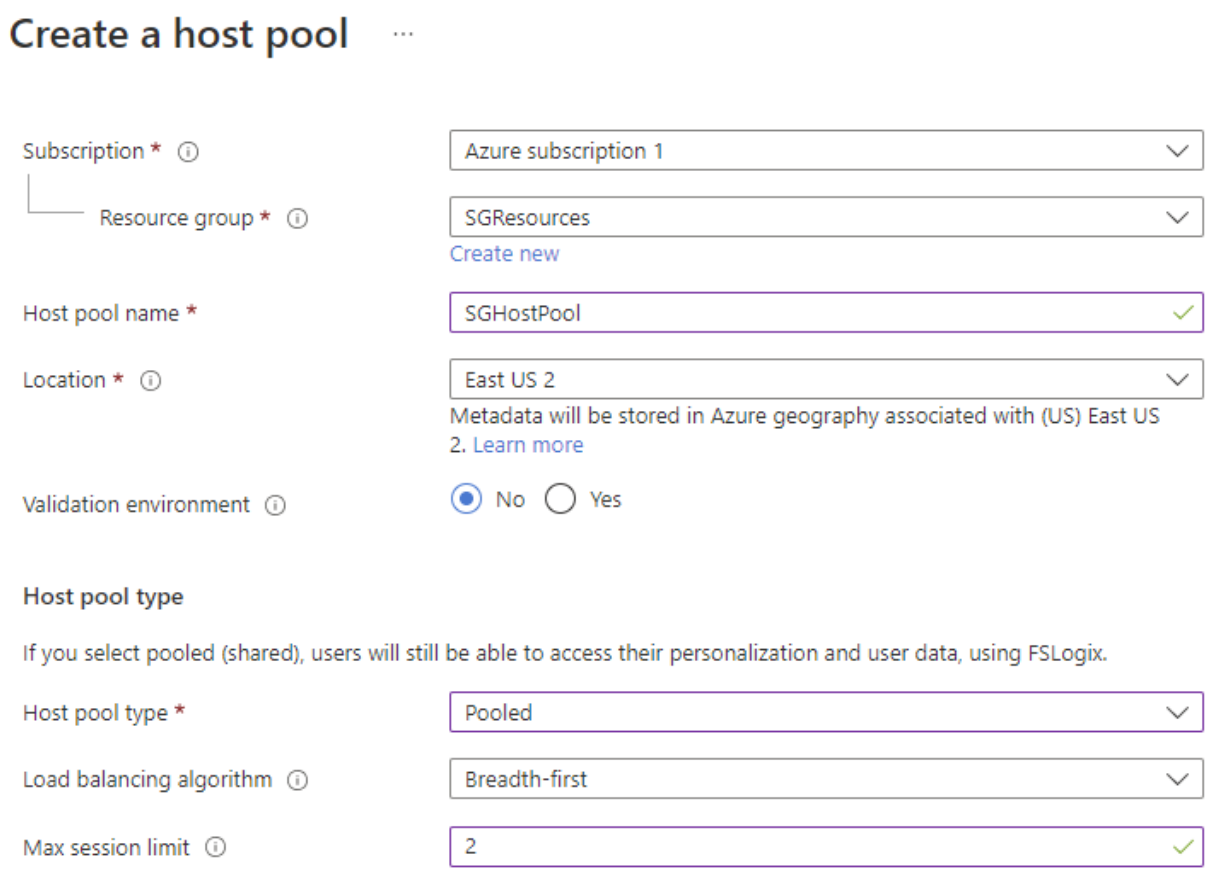
Accept all of the other defaults and press *Create*.

When deployment is complete, you will see this:



Step 5: Create a host pool

Search for *Azure virtual desktop*. Press *Create a host pool*. On the next screen, select the proper resource group, name the host pool, and pick a location. Set the type to *Pooled* and specify the number of virtual machines to be created.

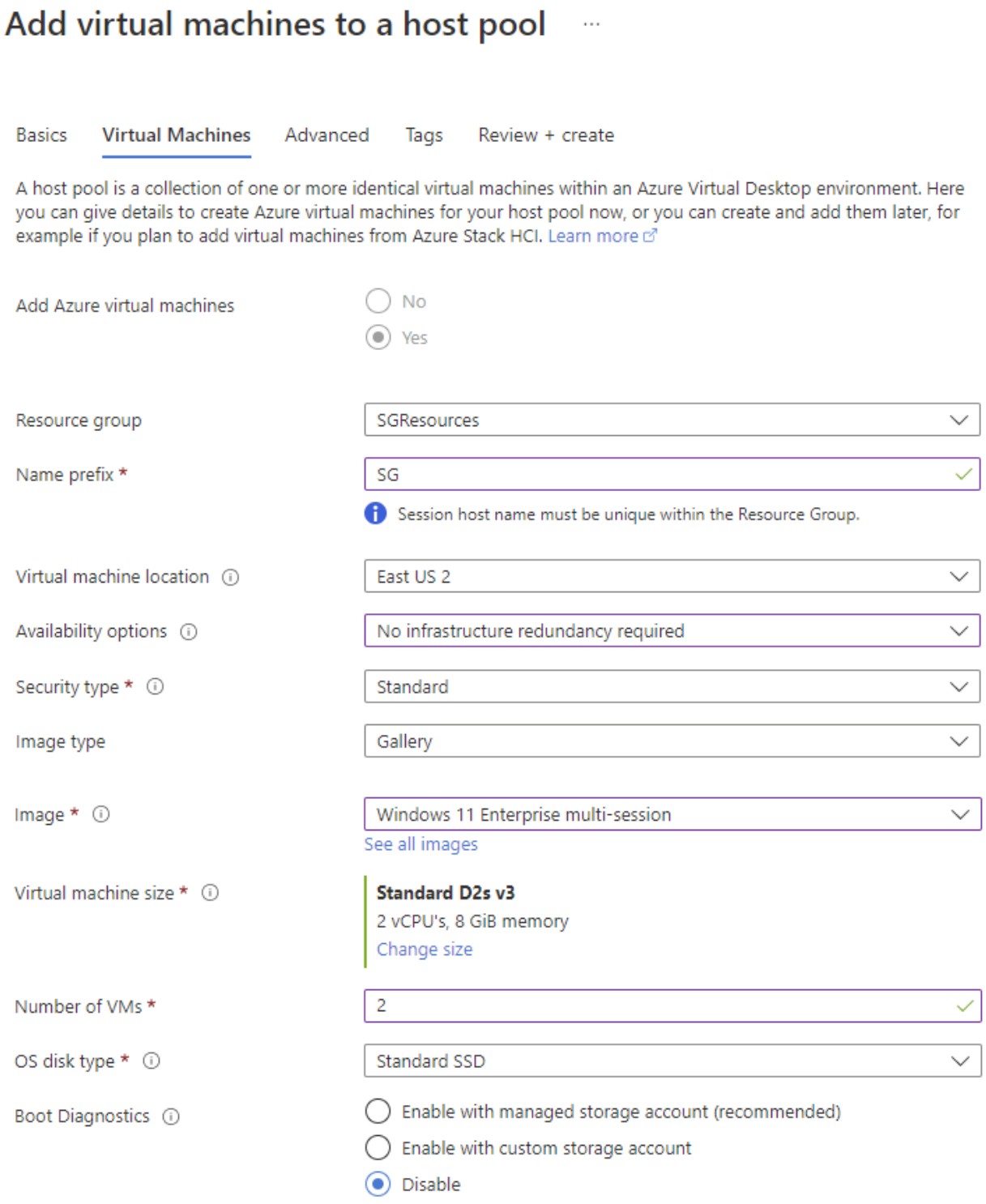


On the subsequent screens, take all of the defaults and then press *Create*.

Step 6: Add virtual machines

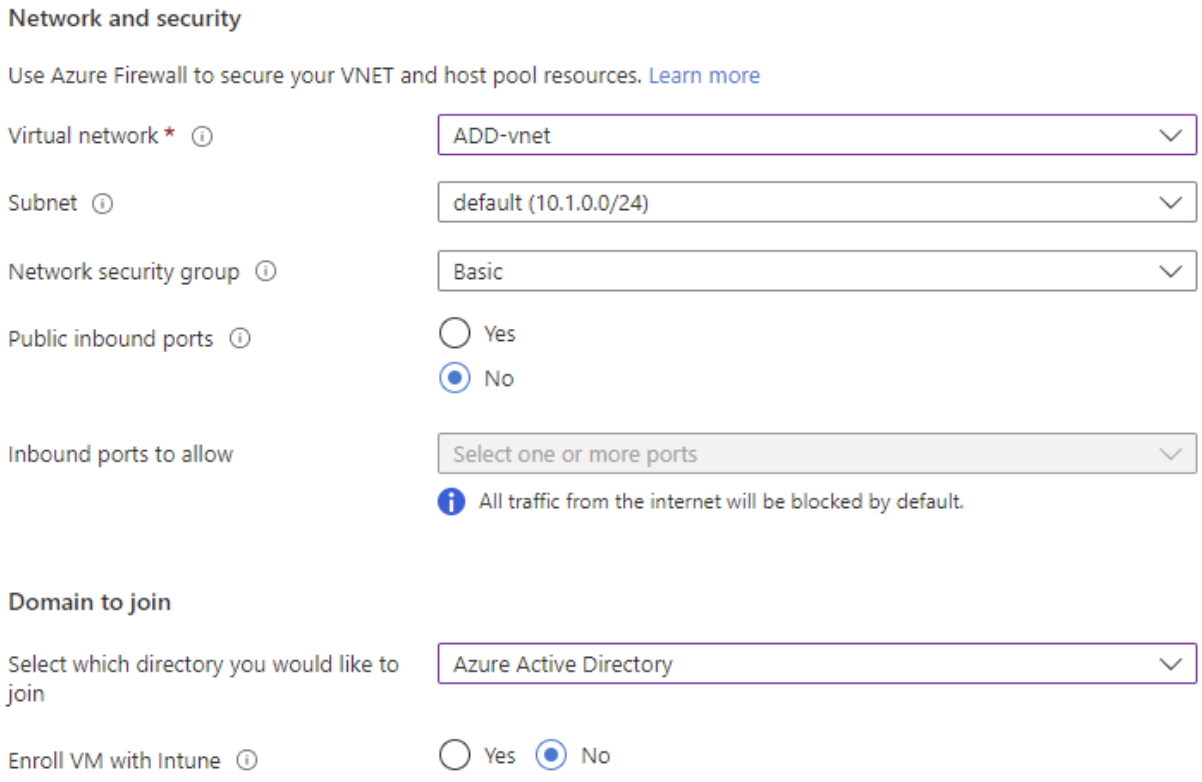
Once the host pool is created, click on *Go to resource*. Then select *Session host* under *Manage*. Click on *Add* and then *Next: Virtual machines*. On the subsequent screen:

- Specify a prefix such as *SG* for the VMs.
- Set *Availability* to *No infrastructure redundancy required*.
- Set *Image* to *Windows 11 Enterprise multi-session*
- Set *Number of VMs* to *2*.
- Set *Disk type* to *Standard SSD*.
- Set *Boot diagnostics* to *Disable*.

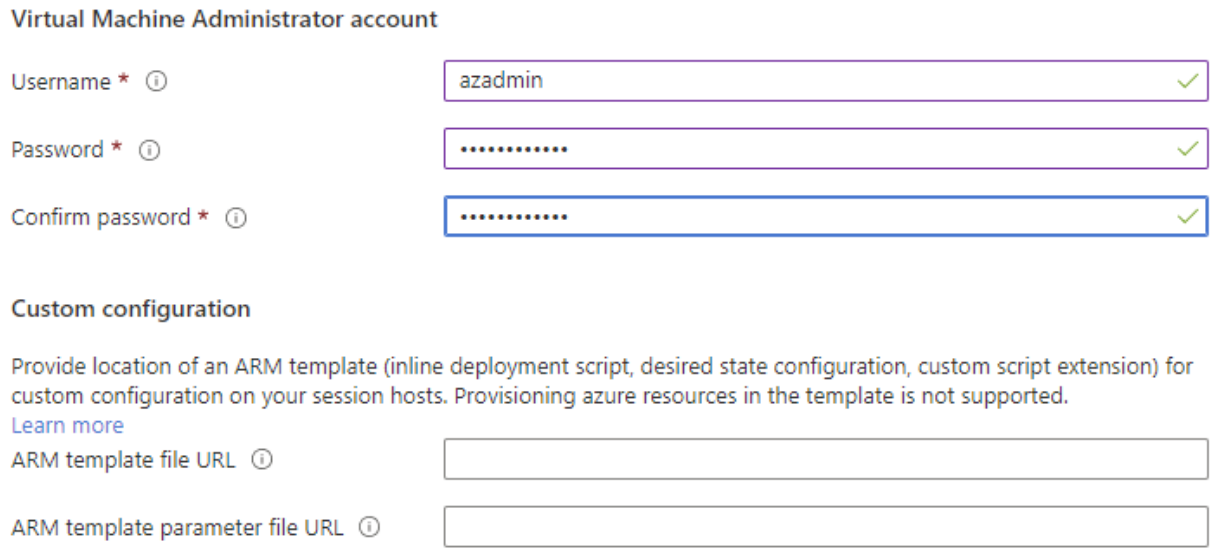


Farther down on the page:

- Pick the virtual network we created earlier.
- Under *Domain to join*, select *Azure active directory*.



Also set up a VM administrator account:



Step 7: Create a test user

Go to Azure Active Directory and create a new user:

New user

Default Directory

Got feedback?

Select template

- (●) **Create user**
  Create a new user in your organization.
- ( ) **Invite user**
  Invite a new guest user to collaborate with your organization. The user will be ema

Help me decide

Identity

User name * : SuperUser @ neilpolhemusgmail.onmi...

The domain name I need isn't shown here

Name * : Super User

First name :

Last name :

Password

- ( ) Auto-generate password
- (●) Let me create the password

Initial password * : ••••••••••

Groups and roles

Groups: 0 groups selected

Roles: User

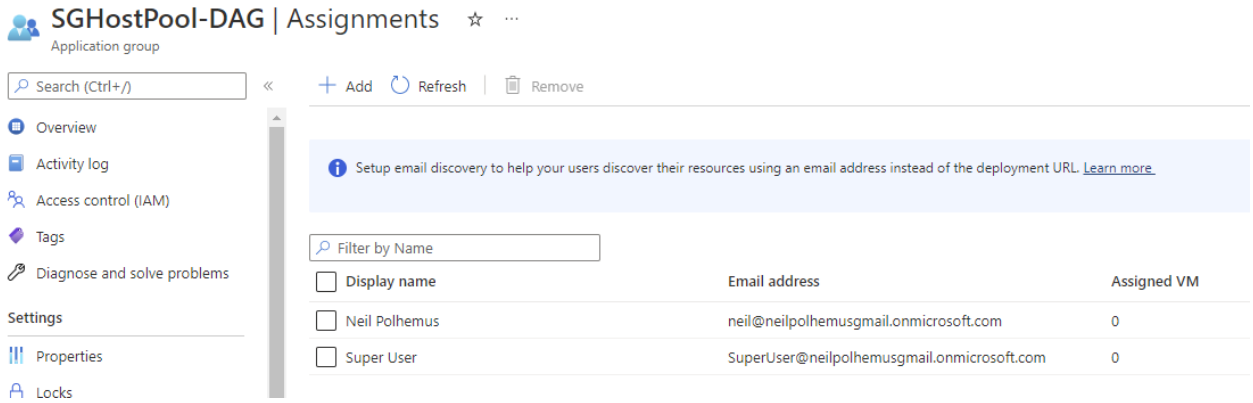
Settings

Block sign in: Yes / No

Usage location :

Step 8: Assign user to host pool

Go to *Host Pools* and select the host pool we created. The click on *Assignments* and *Add*. Select the user we just created and add it to the pool.



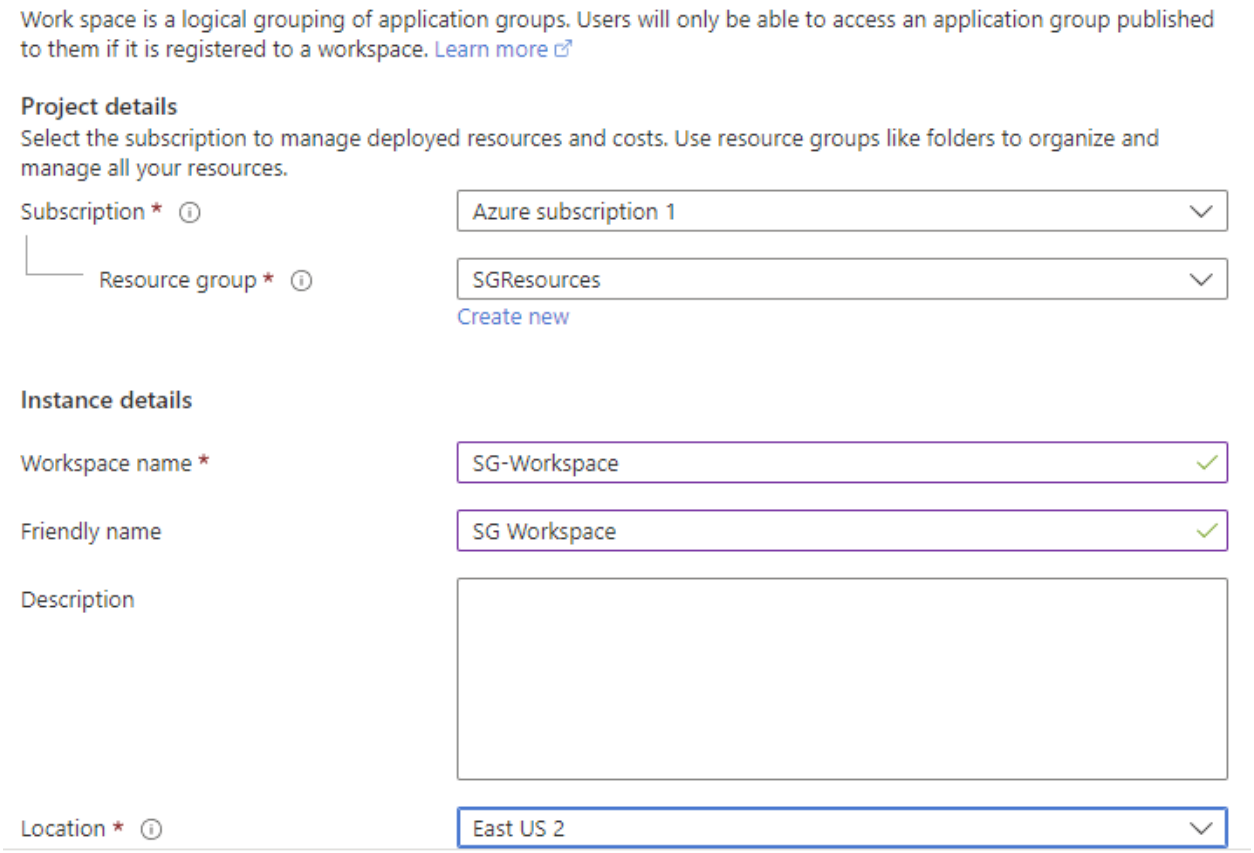
Step 9: Add permissions to users

Search for *Resource Groups* and select our resource group. *Go to Access control (IAM).* Click on *Add role assignment*, find *Virtual Machine User Login*, and then click *Next*. Then click on *Super user, Select*, *Review and assign* to give the user access to the VMs.

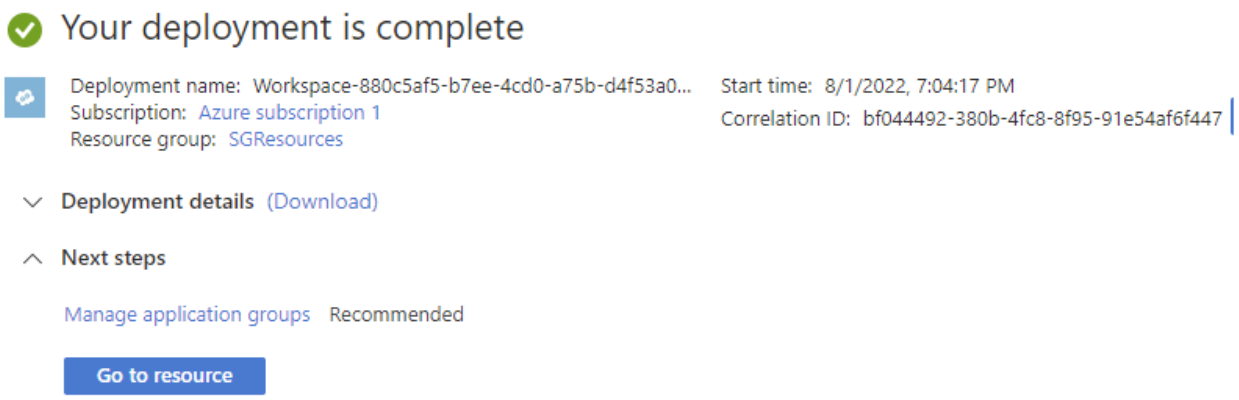
Repeat the same process for the Super User, this time giving them a *Virtual Machine Administrative Login* so that they can install software.

Step 10: Create a workspace

Go back to *Azure Virtual Desktop* and click on *Workspaces*. Click *Create* and select our resource group. Give the workspace a name.



Accept the other defaults and press *Review and Create*.

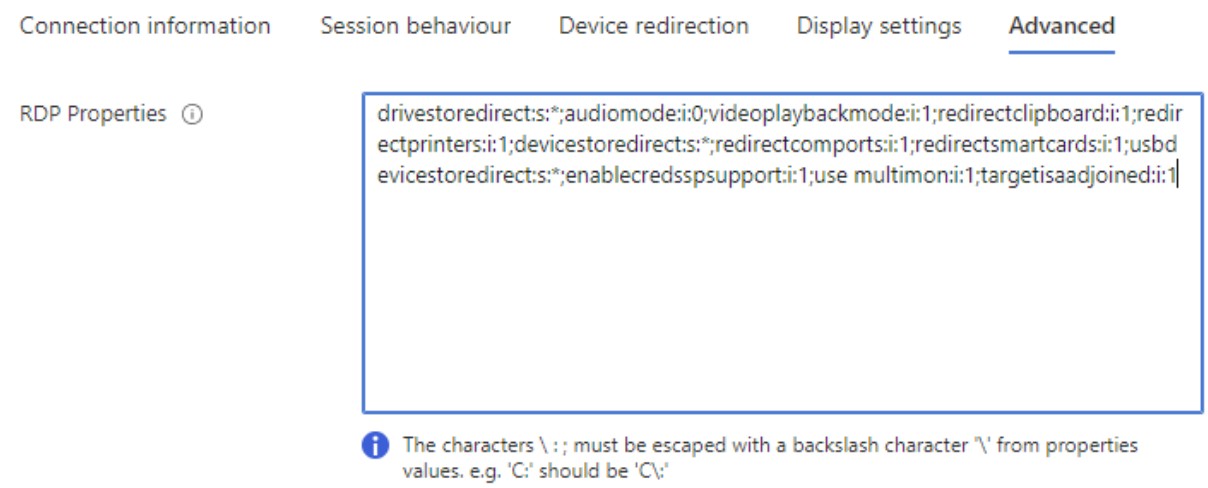


Step 11: Add workspace to application group

Press *Go to resource* and then *Application group*. Select our host pool and add it to the workspace.

Step 12: Add custom RDP property to host pool

Go back to *Azure Virtual Desktop* and select our *Host Pool*. The go to *RDP properties*. Click on Advanced and add ";targetisaadjoined:i:1" to the end of the string.



Now go back to Azure Virtual Desktop and select our host pool again.

Step 13: Login to desktop through browser

Go to browser and type: [Remote Desktop Web Client (microsoft.com)]

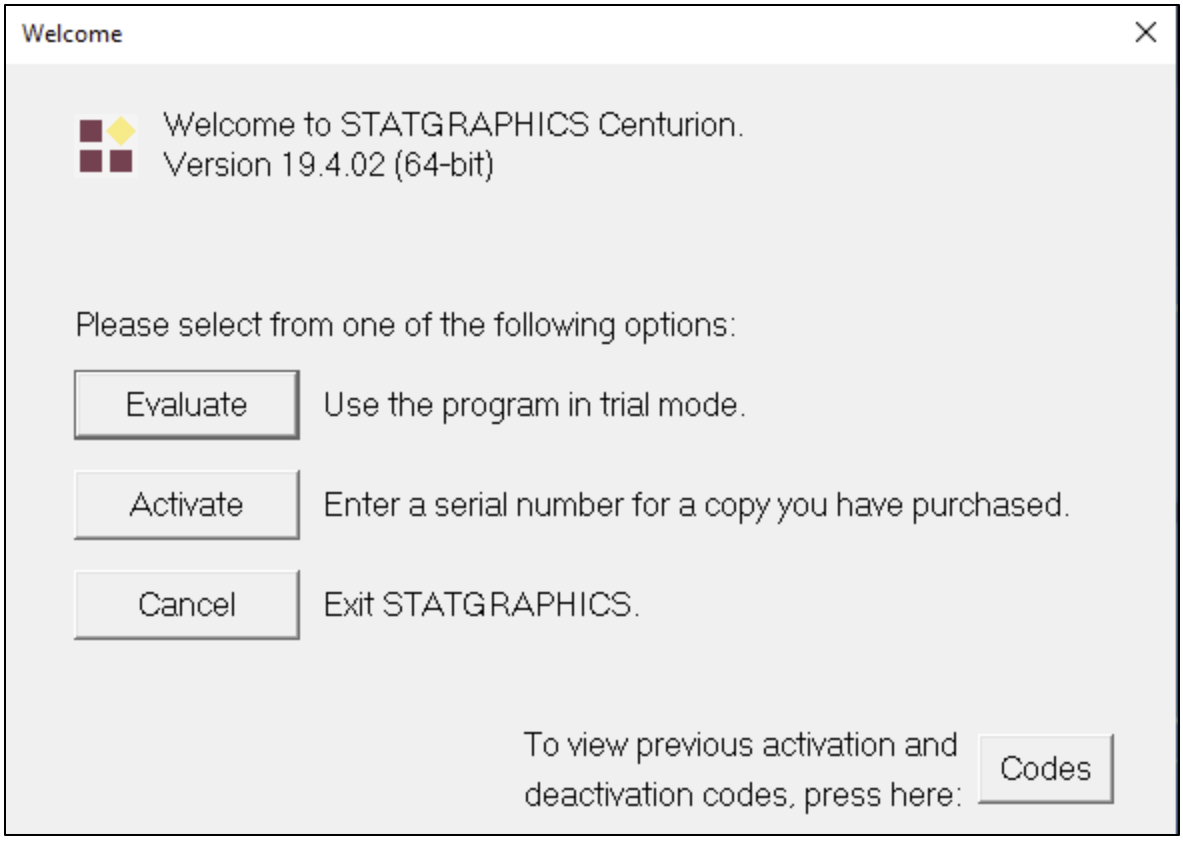
This should allow you to connect to your VM desktop. When logging in, use the SuperUser username and password.

Step 14: Install Statgraphics

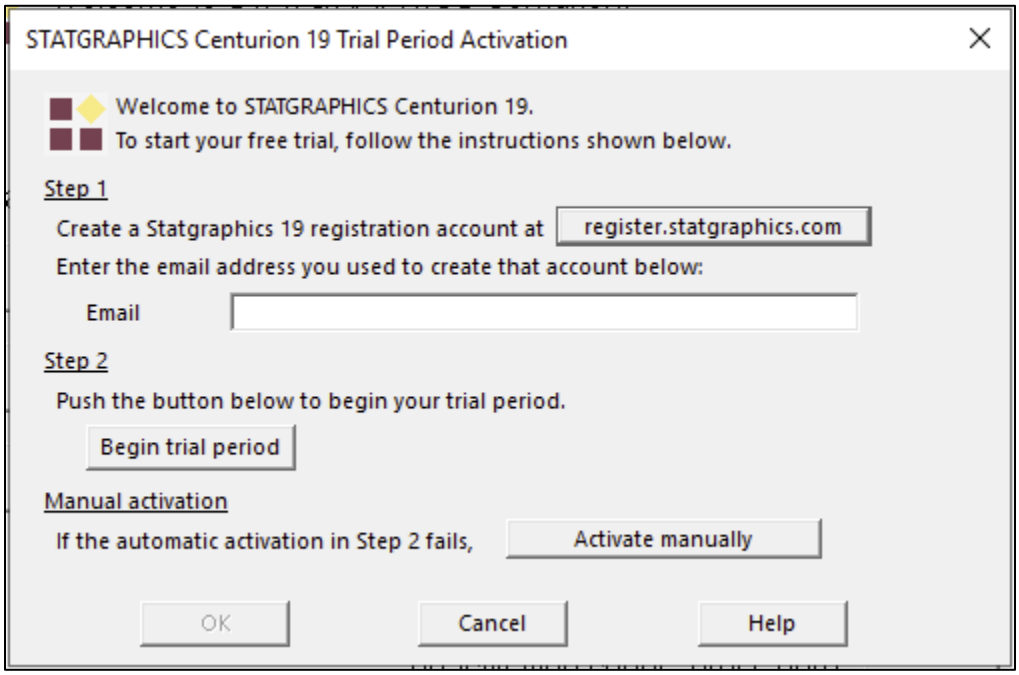
Install Statgraphics

To install Statgraphics, open a browser on your VM and go to www.statgraphics.com/download19. Download and install the English 64-bit primary language build.

Back on the desktop, click on the new Statgraphics shortcut with the **right** mouse button and select *Run as administrator* to start the program. The first dialog box you'll see is shown below:



If you have already purchased a license for Statgraphics, press *Activate*. If not, you can press *Evaluate* to set up a free 30-day trial period. If you select *Evaluate*, you will next see the following dialog box:

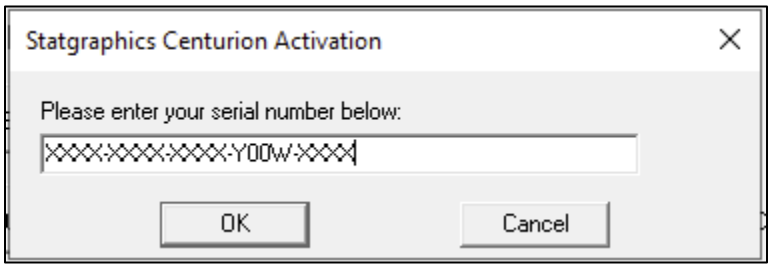


You need to do the following:

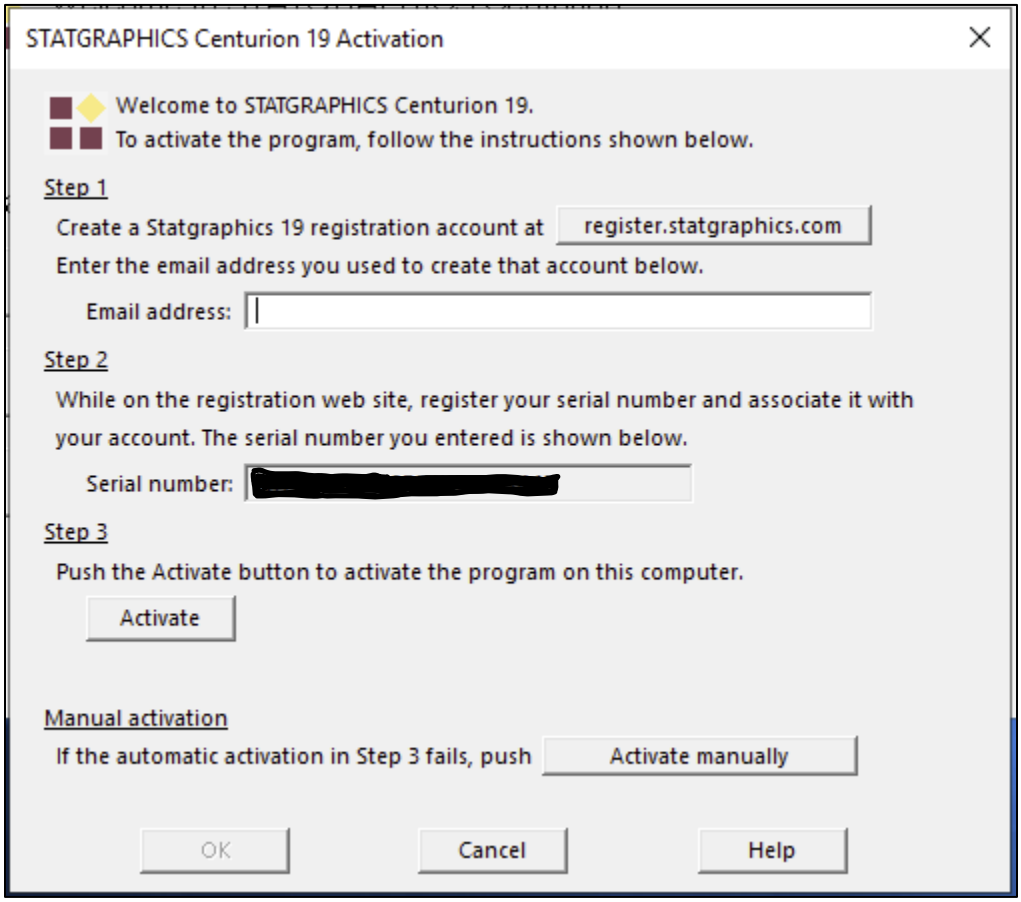
1. Go to *register.statgraphics.com* and set up an account using your email address.
2. Enter that email address on the dialog box shown above.
3. Press *Begin trial period*.

This will contact a Statgraphics web service that will send back a 30-day activation code to use with the program. Statgraphics will then automatically launch.

If you already have a serial number, press *Activate* instead. You'll then be asked to enter a serial number:



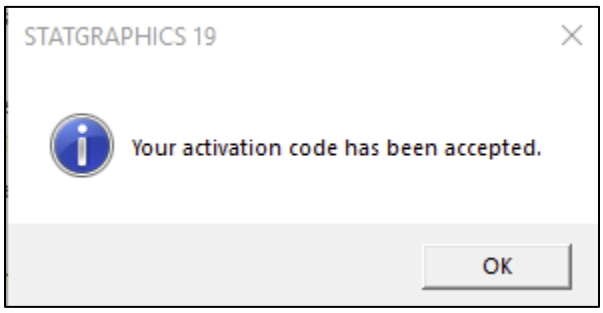
Be sure to enter a serial number that has the pattern "Y00W" in the fourth section. The "W" indicates that this is a serial number intended for use in a web environment. Press *OK* to display the final activation dialog box:



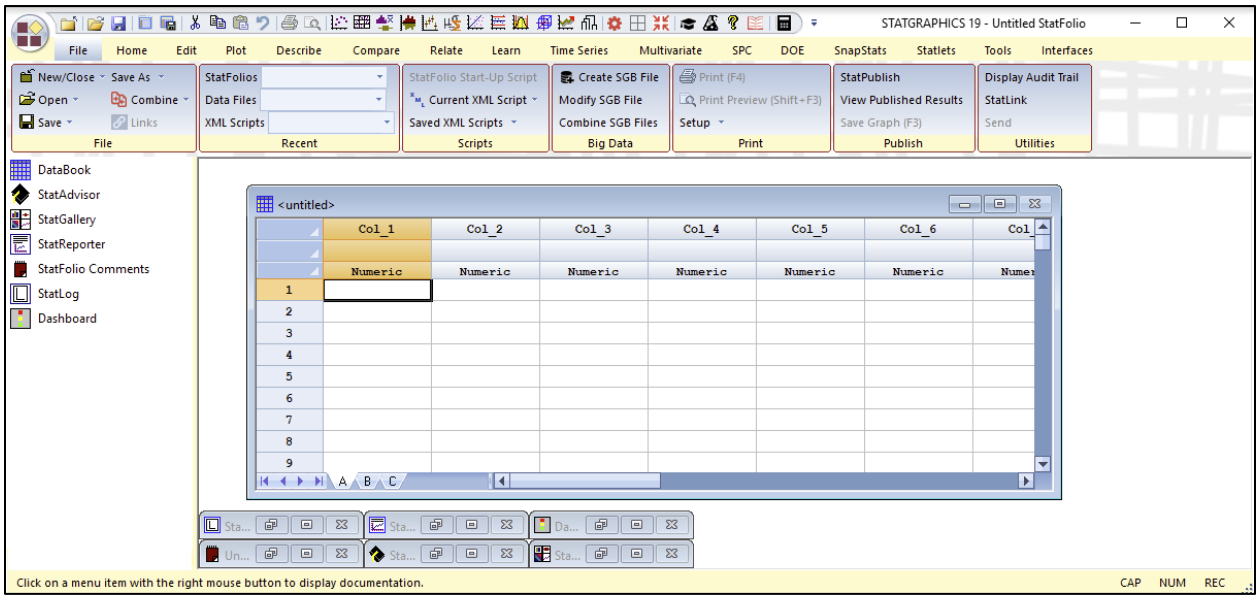
Now:

1. If you have not done so, go to *register.statgraphics.com* and set up an account using your email address.
2. Enter that email address on the dialog box shown above.
3. Press *Activate*.

You should then see the message:

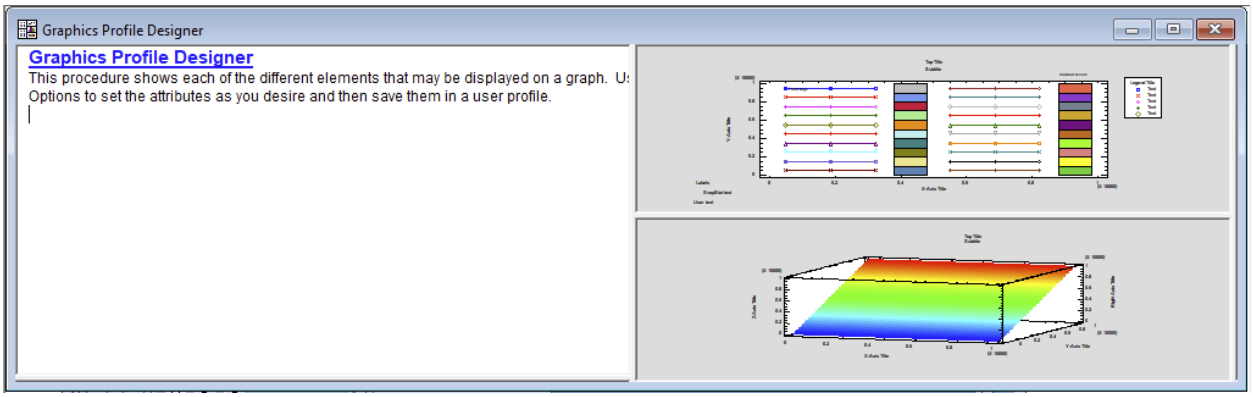


after which the main Statgraphics window should open:



Note: you'll probably want to expand the size of the window.

To be sure that everything is working properly, go to *Tools* on the main menu and select *Graphics Profile Designer*. When the dialog box appears, press *OK* and you should see the following analysis window:



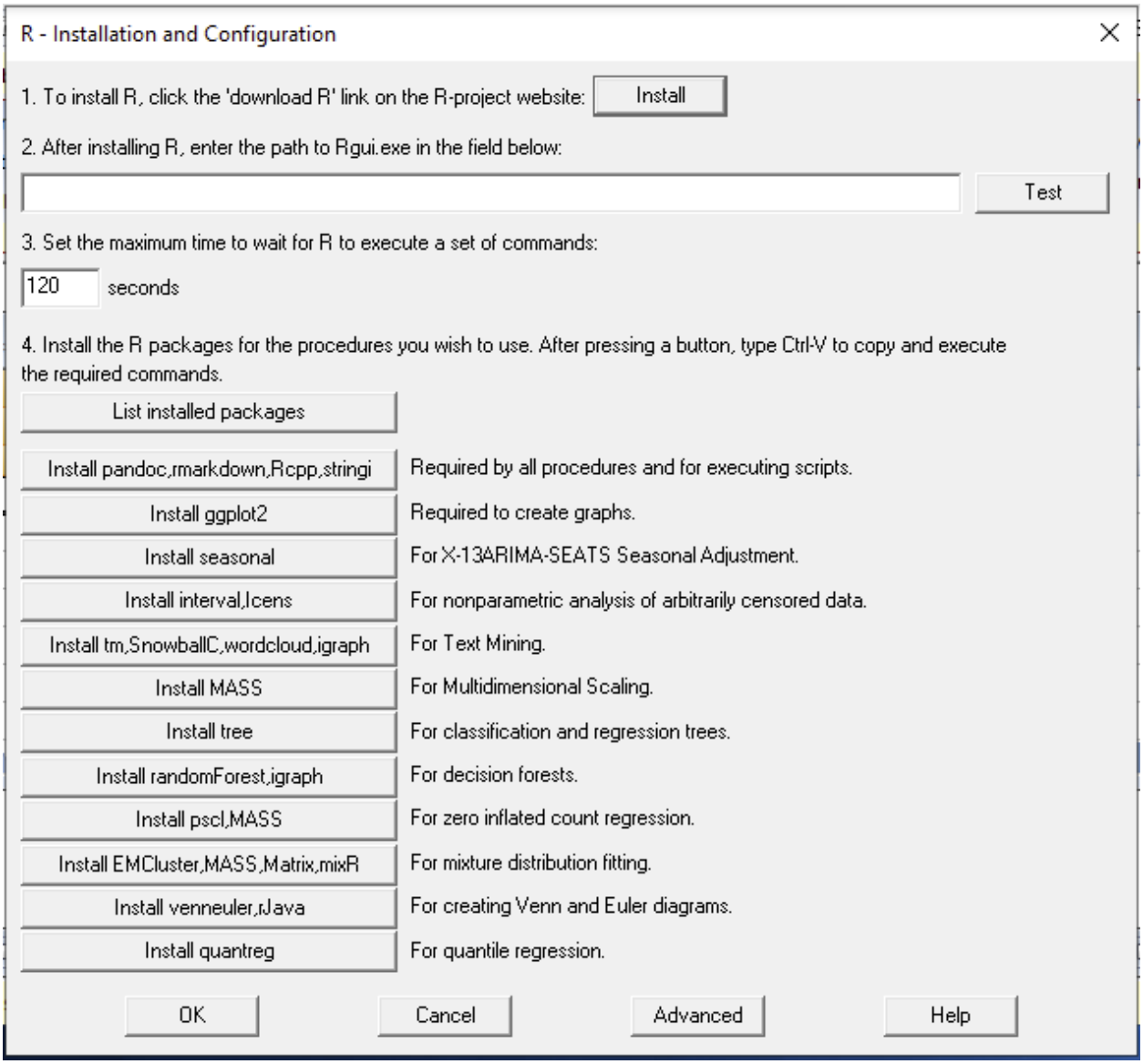
It's also a good idea to now exit Statgraphics and launch Statgraphics again. The program should open without prompting for an activation code.

You can now return to www.statgraphics.com/download19 and download and install one or more additional languages from the *Supplementary Languages* table. Run the normal installer for each language you download. No further activation is required

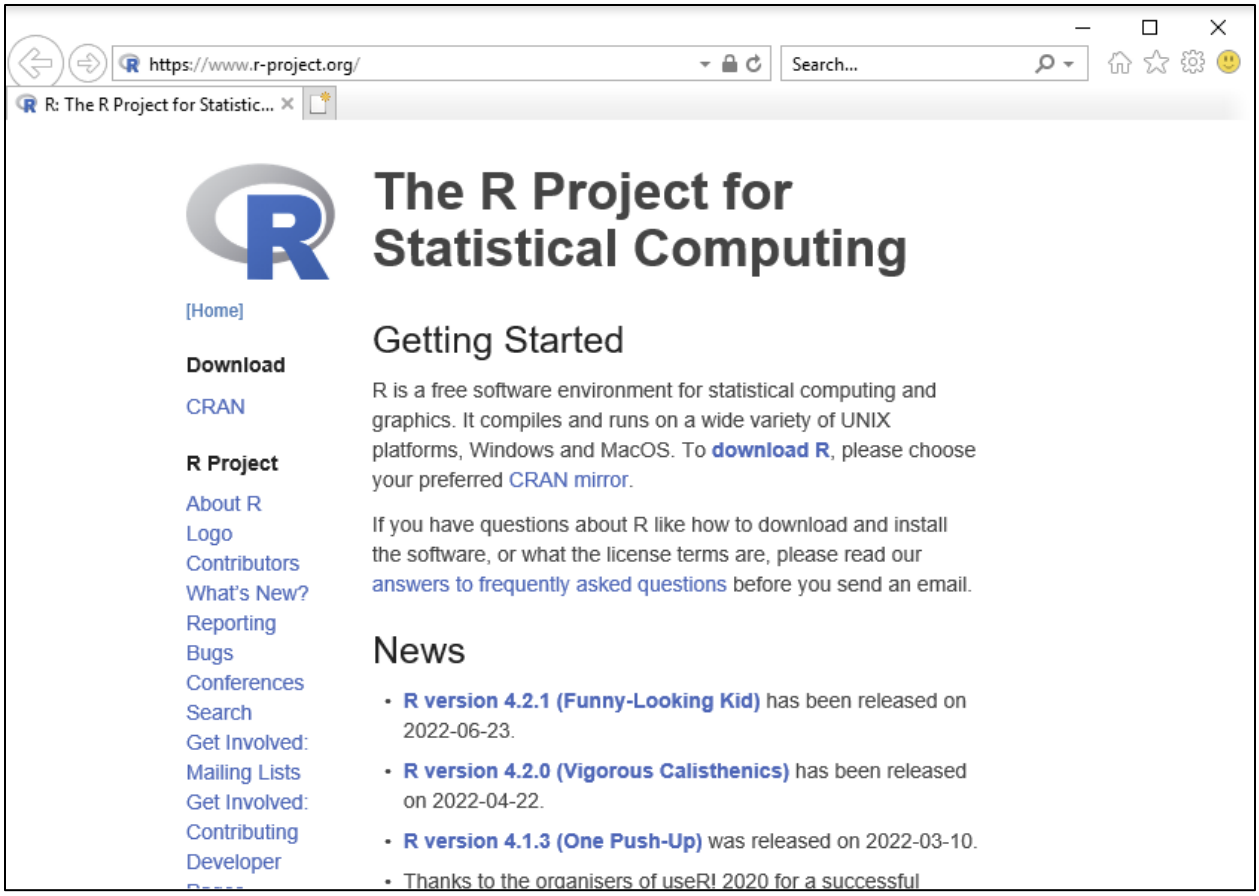
Step 15: Install R

Several procedures such as *Text Mining* and *Multidimensional Scaling* require that R be installed together with Statgraphics. R is a free statistical computing environment that may be downloaded over the internet.

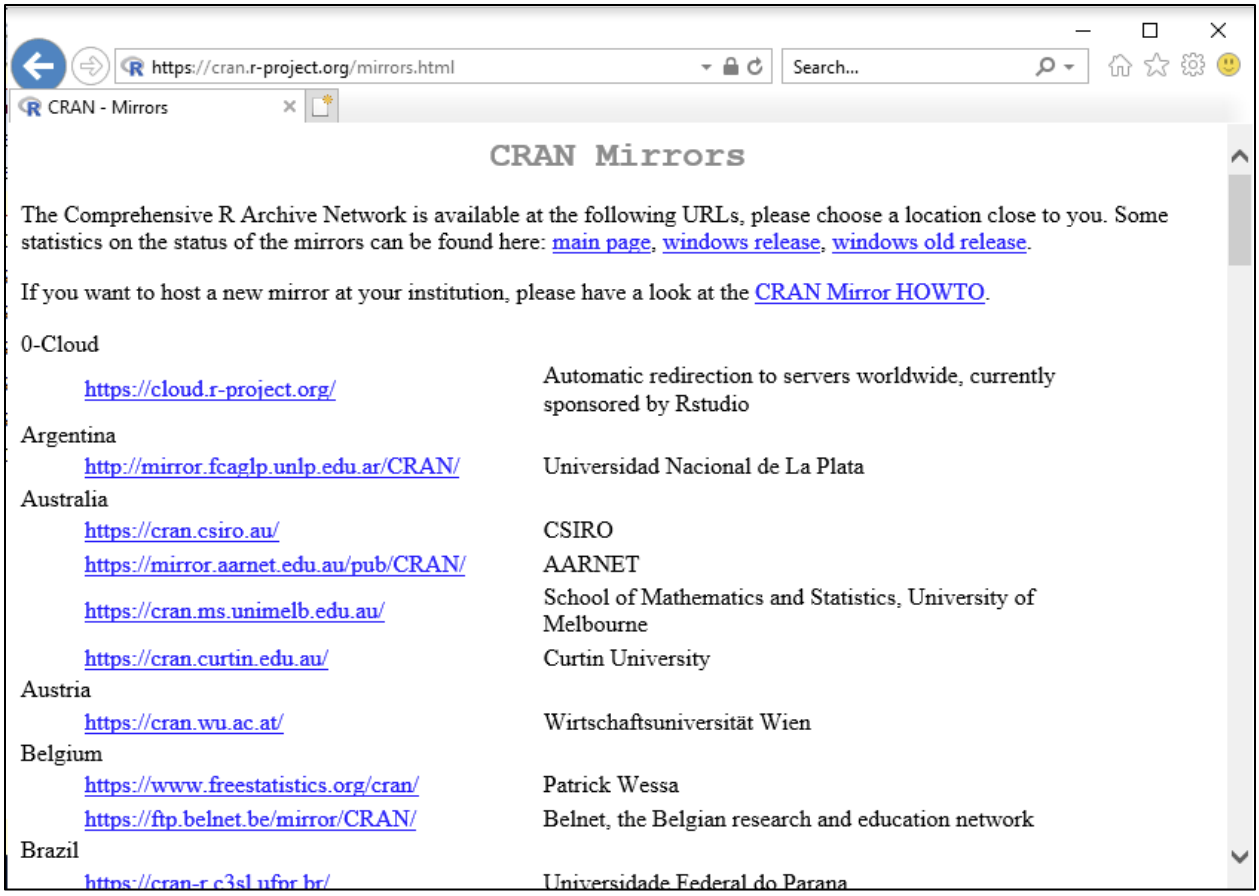
To install R, return to your VM desktop and start Statgraphics again by clicking on the Statgraphics shortcut with the **right** mouse button and selecting *Run as administrator*. Then click on *Interfaces* on the main Statgraphics menu and select *R – Installation and Configuration*. When you do so, you'll see the following dialog box:



To install R, click on the *Install* button. This displays the following web page:

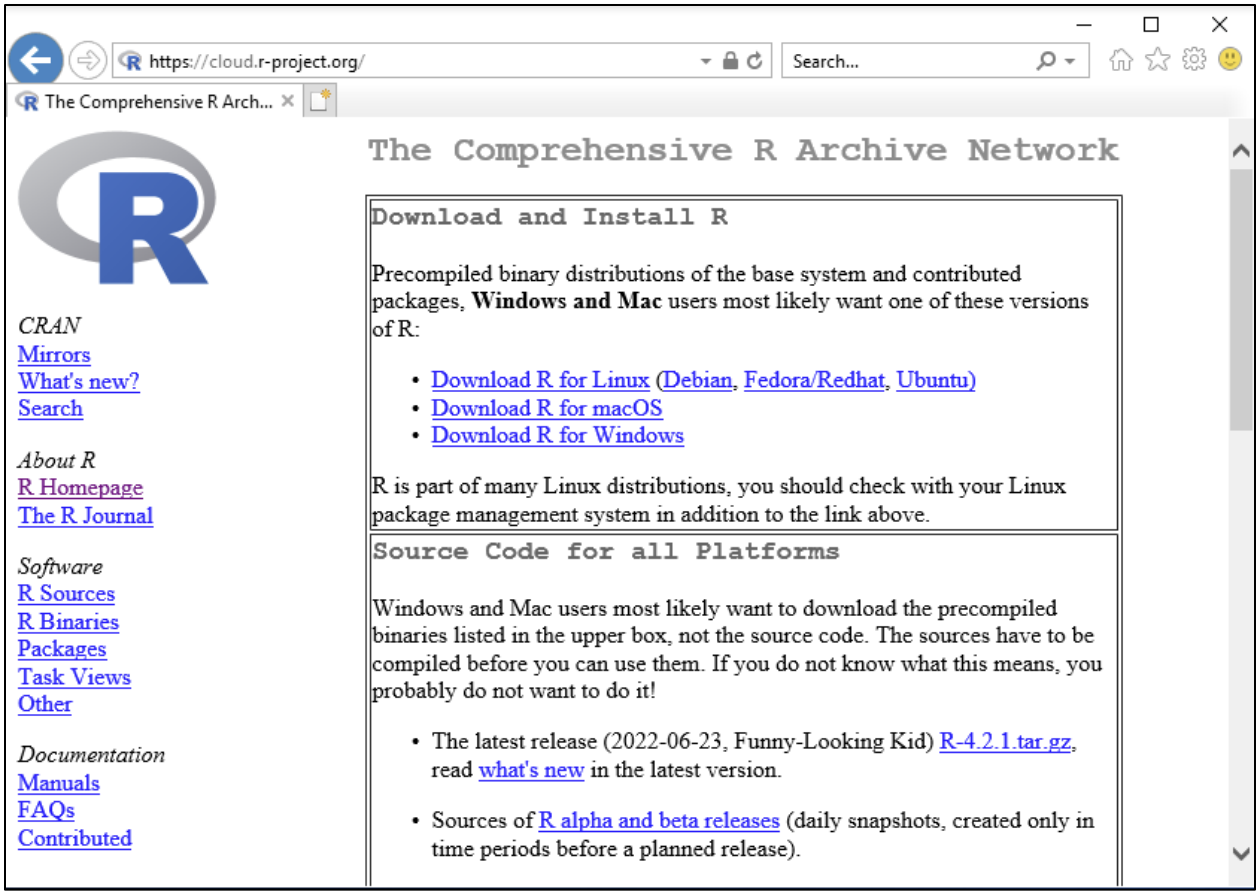


Click on *download R* to display a list of CRAN Mirrors from which the program may be downloaded:

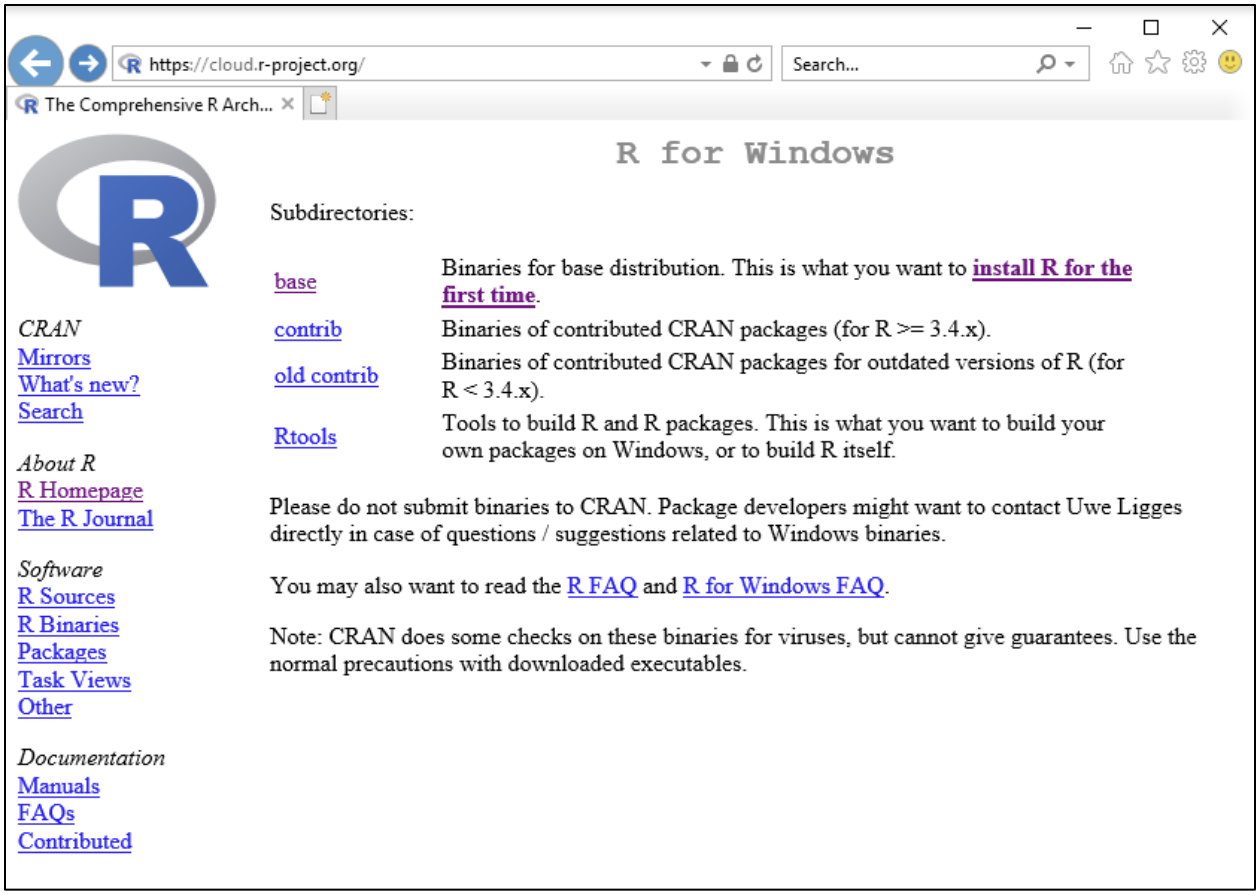


A good choice is https://cloud.r-project.org/ which will attempt to select a site close to you geographically.

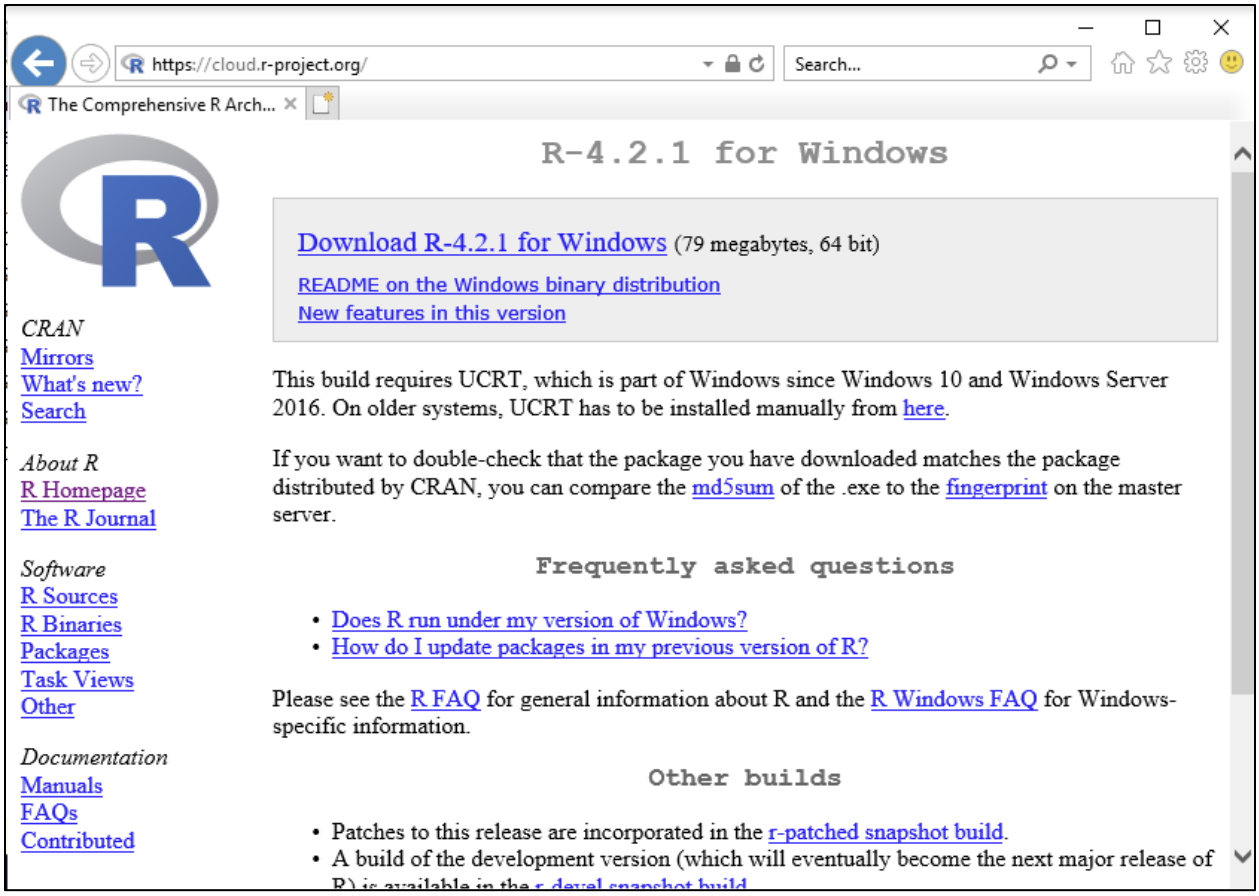
On the next page, select *Download R for Windows*.



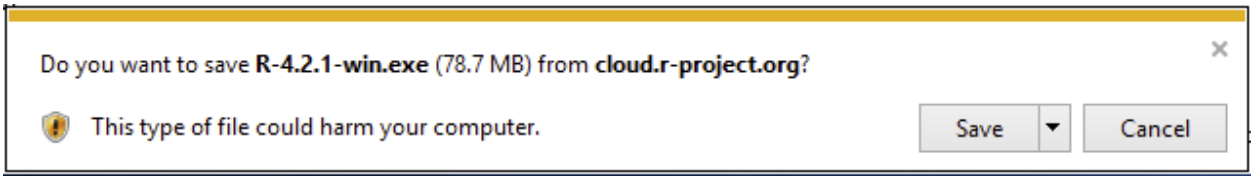
On the next page, *install R for the first time:*



On the next page, select *Download R-4.2.1 for Windows* or a newer release if available:



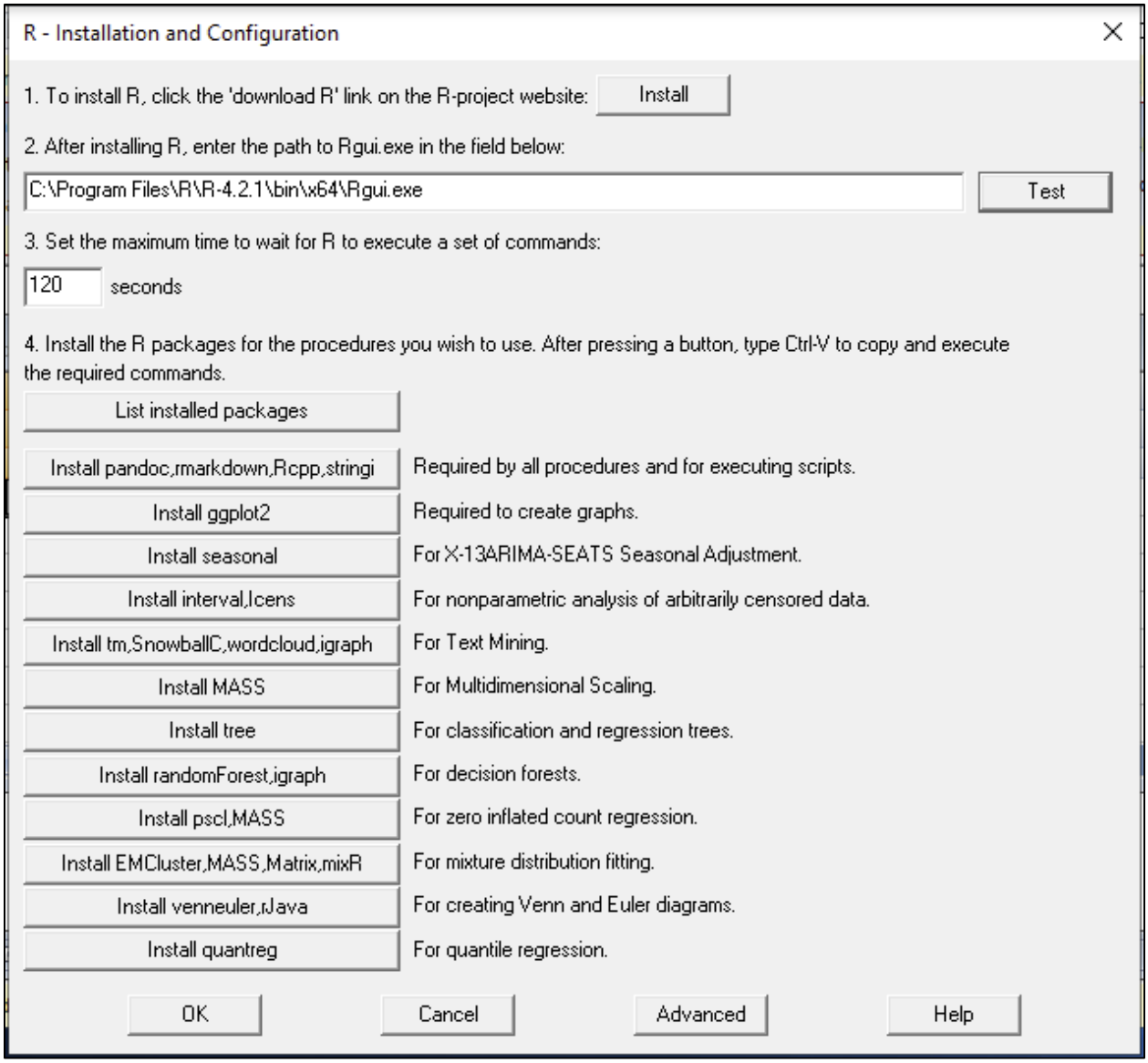
The browser will then ask if you want to save the file:



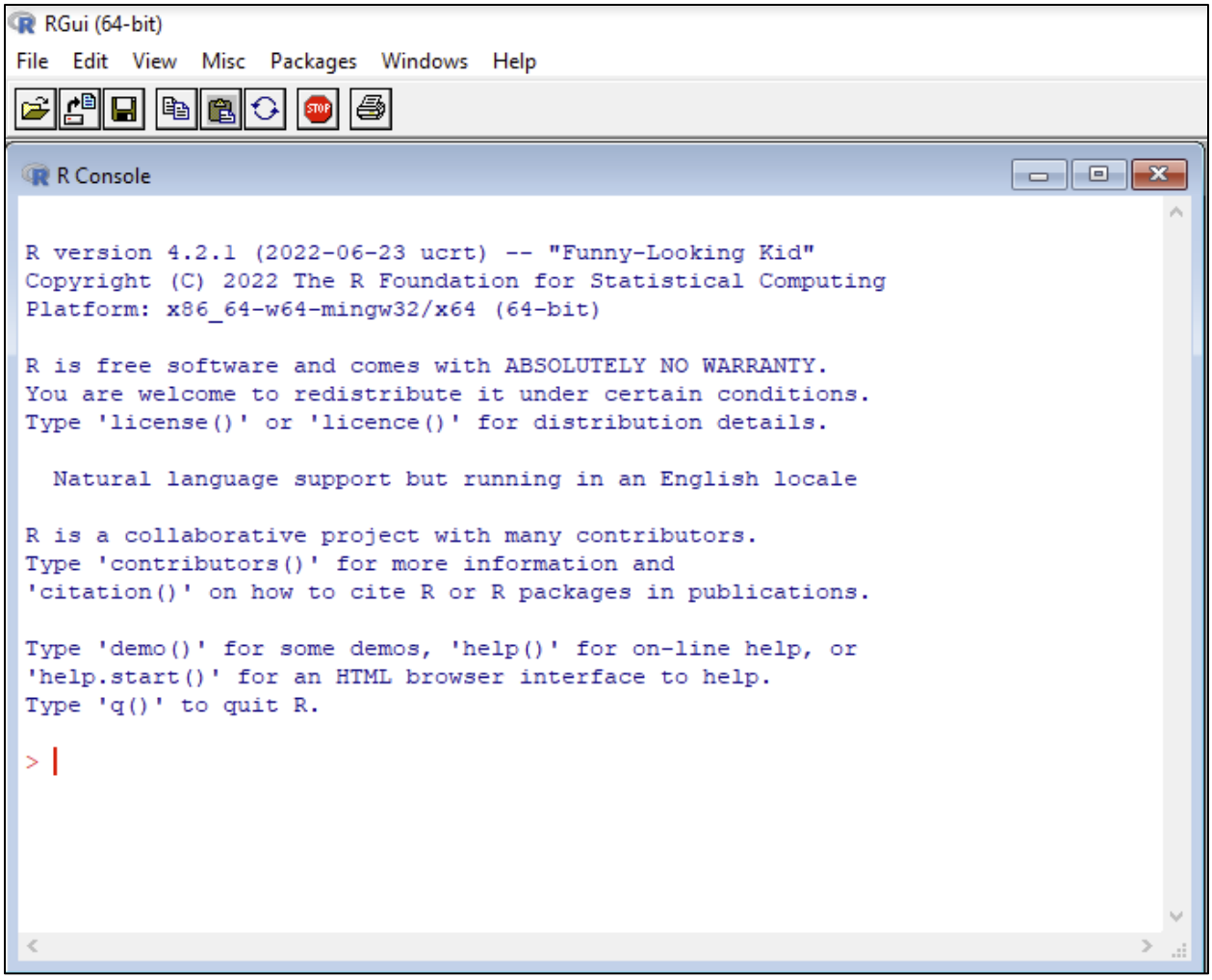
Press *Save*. Note: you may have to add *cloud.r.project.org* to your list of trusted sites when the browser prompts you to do so.

After the download is complete, select *Run* to complete the installation. You can safely select all of the defaults. Note that R is installed in *C:\Program Files\R\R-4.2.1\bin\x64*.

You can now return to Statgraphics and enter the path to R as shown below:



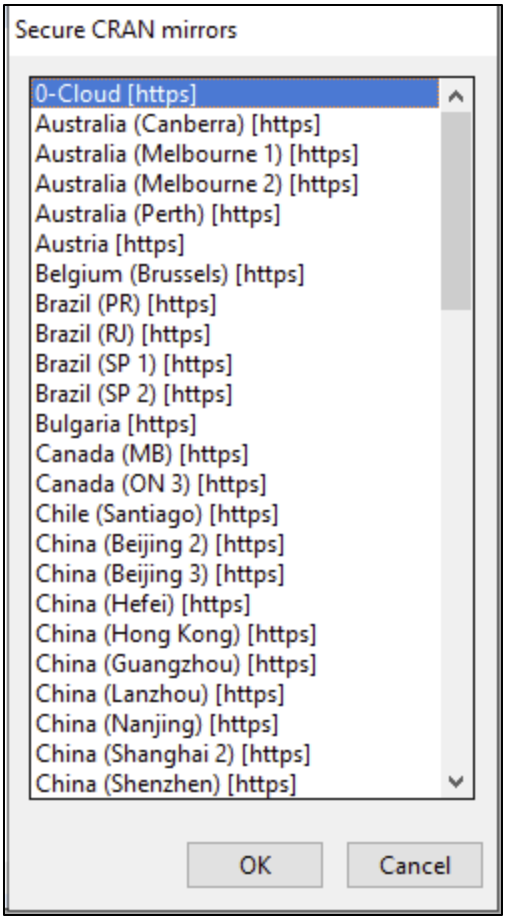
When you press *Test*, R should open in a new window:



If it doesn't, you can check the properties of the shortcut for R which should have been placed on your Windows desktop.

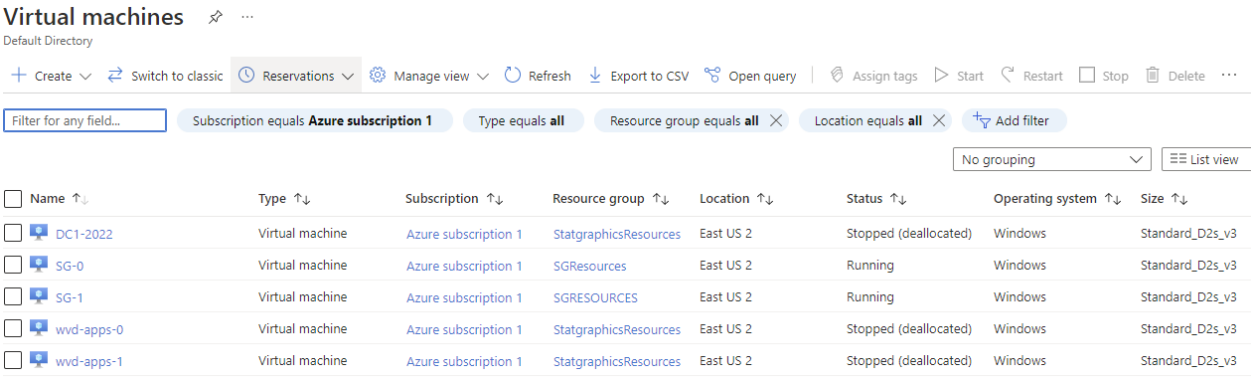
Now that R has been installed, a number of supporting libraries must be added. Step 3 on the *Statgraphics Installation and Configuration* dialog box has several buttons which must be pressed, one at a time, starting with *Install pandoc, rmarkdown, Rcpp, stringi*. You need to:

1. Press each button which will open R.
2. Press Ctrl+V to paste a statement from the clipboard into the R console. This will display a dialog box asking you to select a CRAN Mirror:

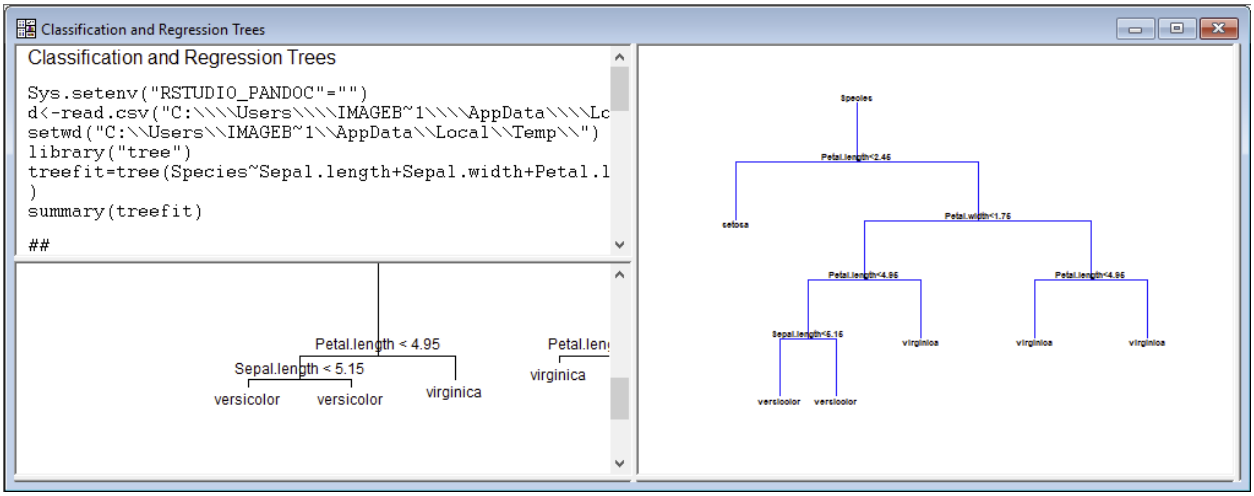


3. Select *O-Cloud (https)* and press *OK*.

After all of the libraries have been installed, you must log out of the VM. Then go to Azure and select *Virtual Machines*. When you see the list of VMs, check the too you created earlier and then press *Restart*.



Wait a few minutes for the VMs to reboot. Then log into your virtual machine again and go to your virtual desktop. Click on the Statgraphics icon to reload it. You can test the installation by going to *File* on the main Statgraphics menu and selecting *Examples – StatFolios*. Select the StatFolio file named *trees1* and open it. It should create the following analysis window:



Step 16: Install Python

Several procedures such as *K-Means Clustering* and *Support Vector Machines* require that Python be installed together with Statgraphics. Python is a free computing environment that may be downloaded over the internet. Because of Azure security restrictions, you will have to install Python outside of Statgraphics. To do so, exit Statgraphics and load your browser. Type in the following URL:

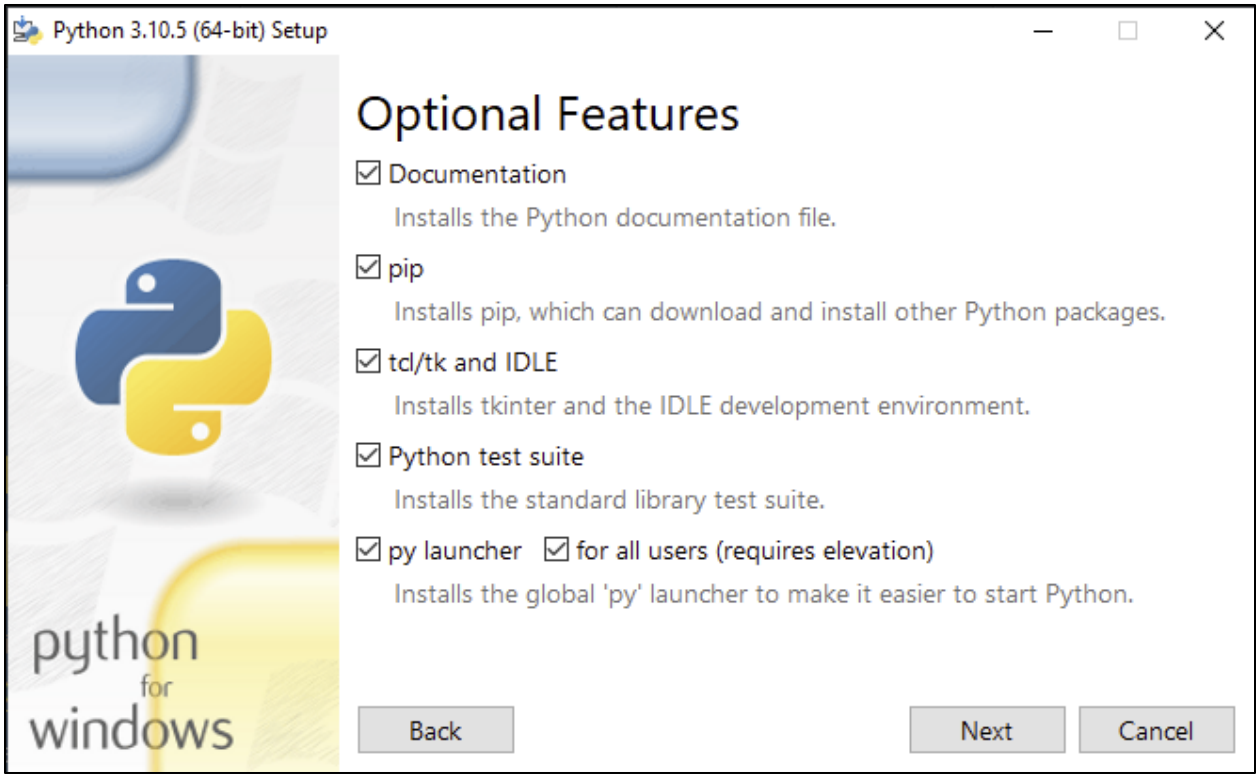
https://www.python.org/downloads

This displays the following web page:

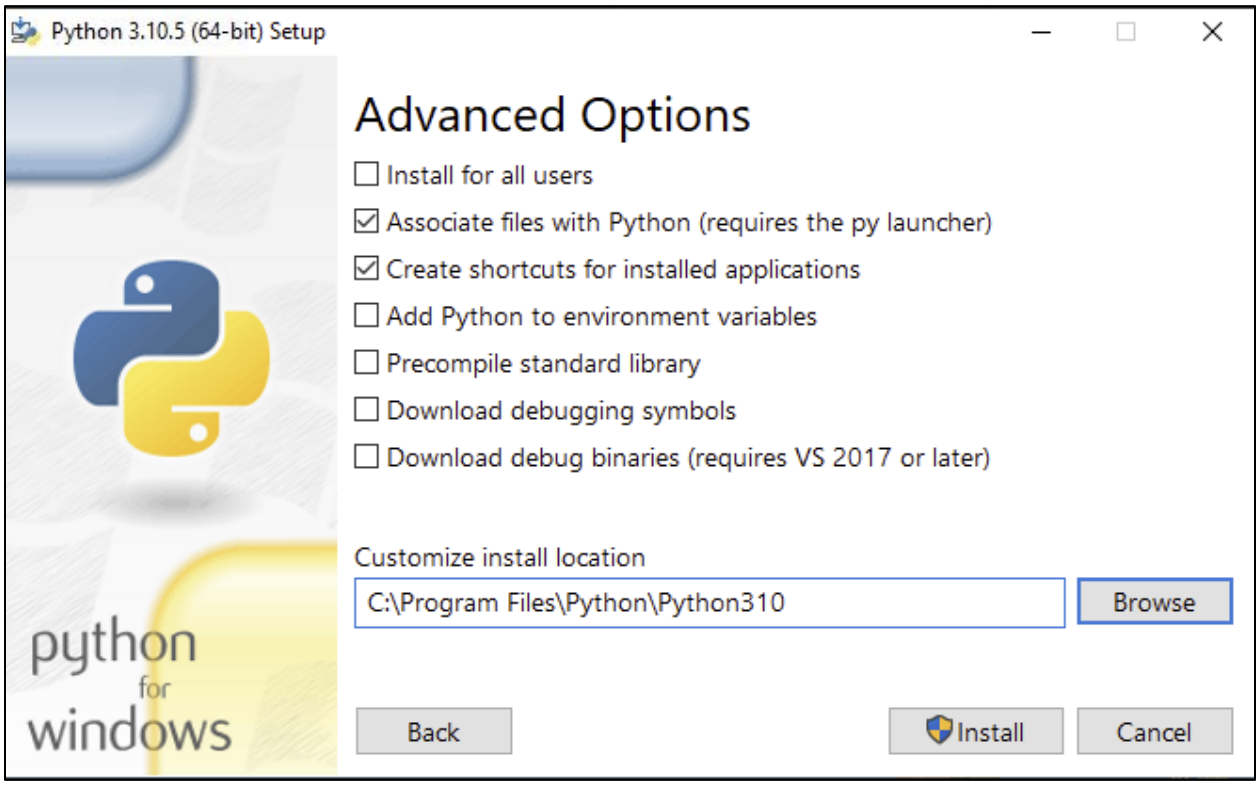
Click on *Download Python 3.10.5* or whatever the latest version is. When the download is complete, you will see a message similar to:

Click on *python-3.10.5-amd64.exe*. When the installation begins, the following dialog box will be displayed:

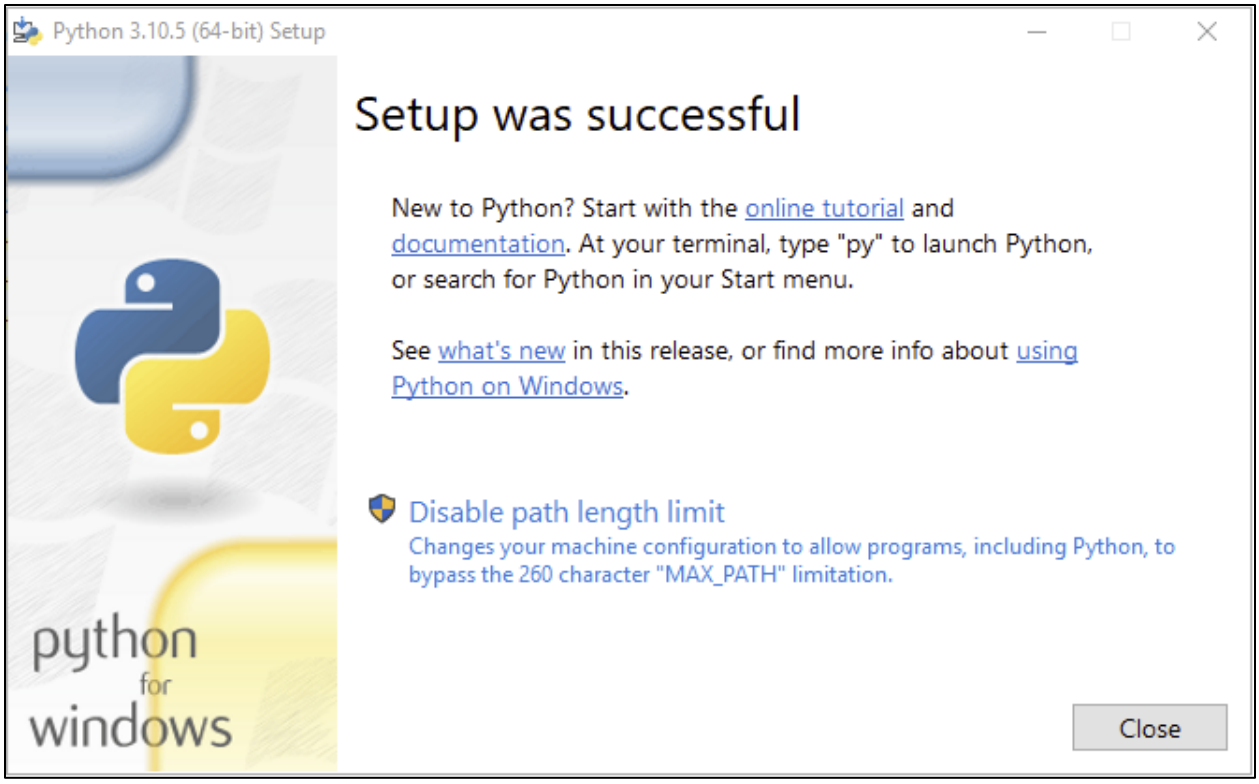
Be sure to click on *Customize installation* so that Python can be installed in a shared location. On the next dialog box, select all of the options and click on *Next*:



On the *Advanced Options* dialog box, set the install location as shown below:

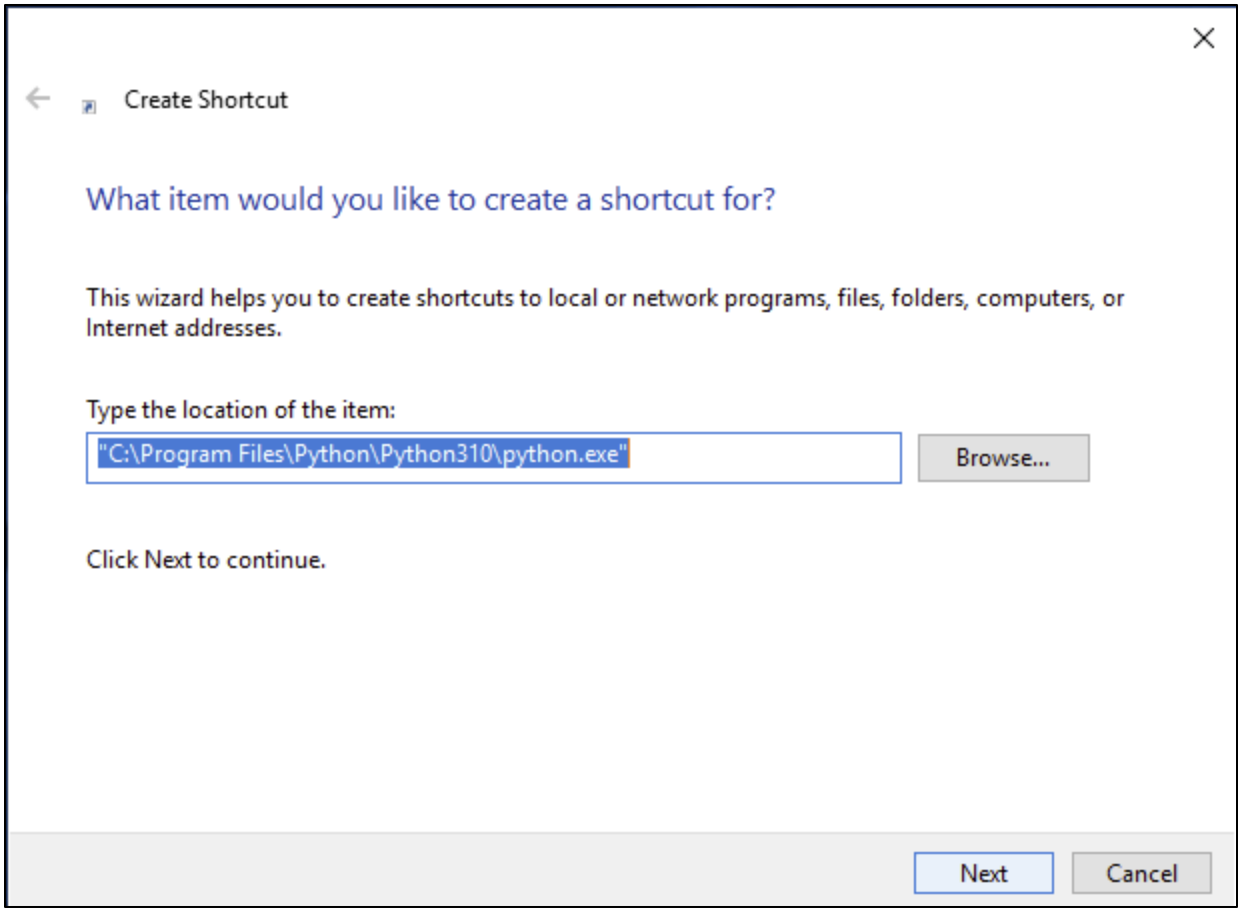


Then press *Install*. When the installation is complete, you will see:



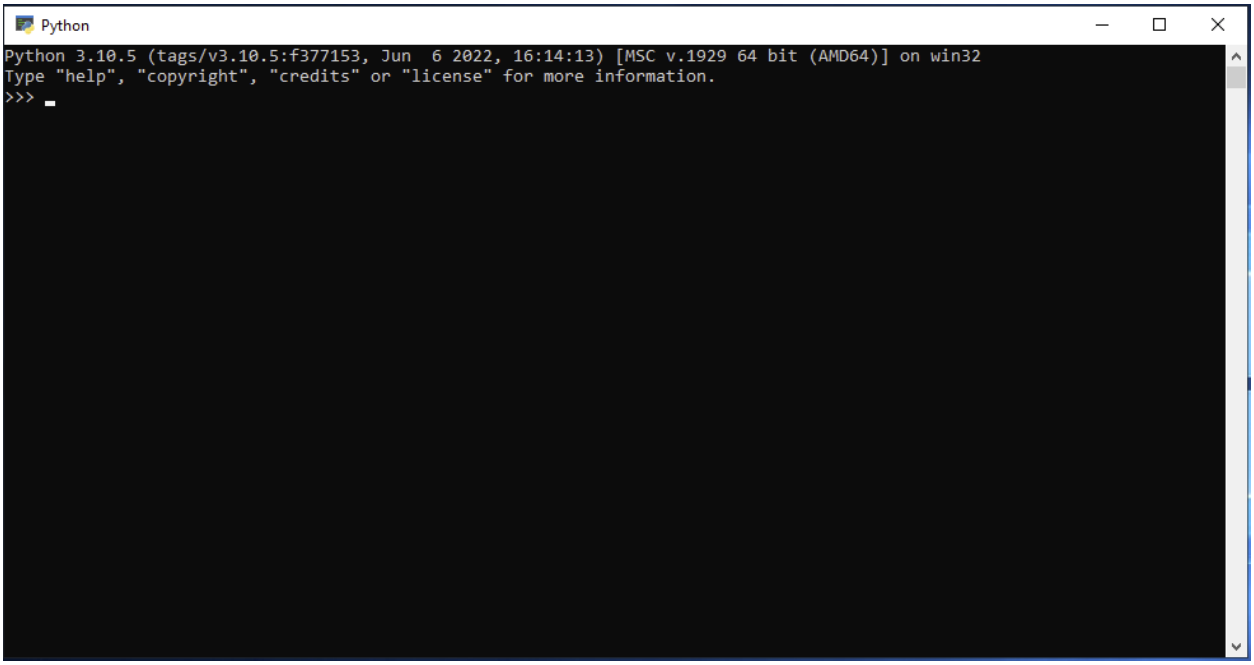
Note: if installation fails, you may have to exit your browser, go to File Explorer, right-click on the downloaded msi file and select *Run as administrator*.

Now return to your desktop. Click anywhere on your desktop with the right mouse button and select *Create Shortcut*. Click on *Browse* and locate the installed Python executable:

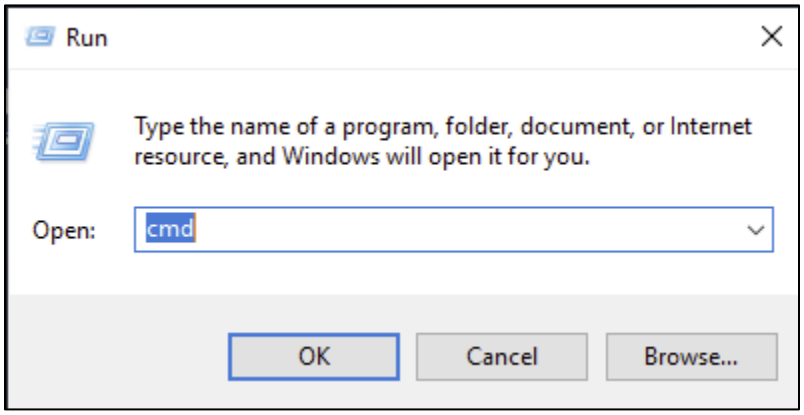


Click *Next* to add a shortcut to your desktop:

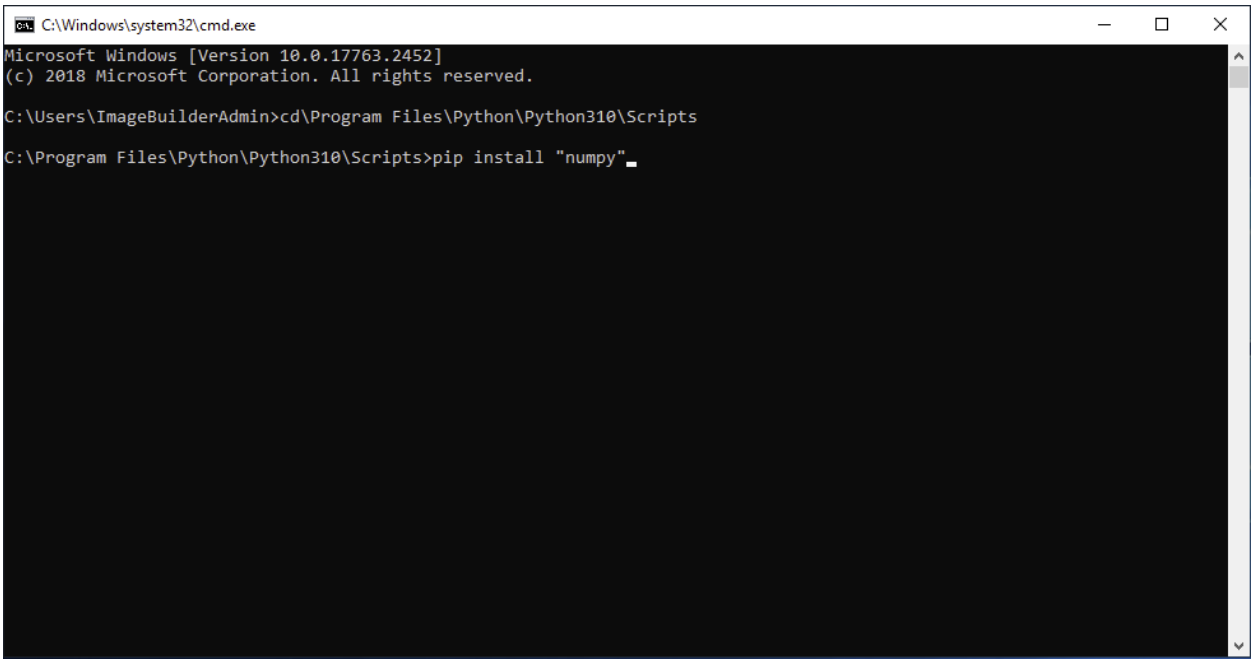
Now click on that shortcut to ensure that Python is properly installed. If it is, the following Python window will open:



The next step is to install several libraries needed by Python. To do this, you need to open a command window with administrative rights. To do this, click on the Windows icon at the bottom left corner of your screen and select *Run* to open the following window:



Type “cmd” in the edit field and press *Ctrl+Shift+Enter*. This will open a command window with full administrator rights as shown below:



Enter the following commands, one at a time:

cd\Program Files\Python\Python310\Scripts

pip install “numpy”

pip install “pandas”

pip install “jupyter”

pip install “ipython”

pip install “scipy”

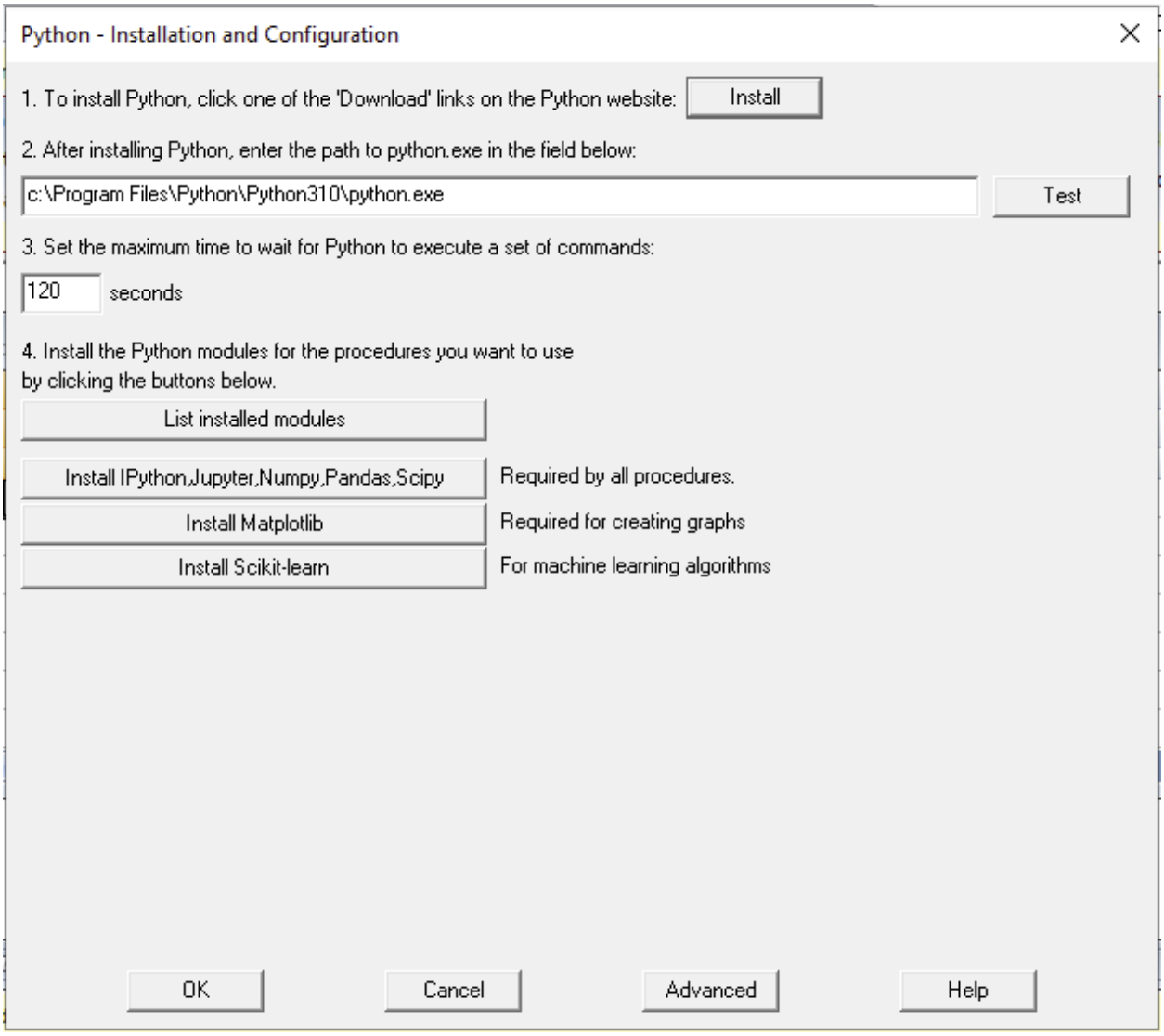
pip install “scikit-learn”

pip install “matplotlib”

If the installation worked properly, new libraries will have been added to

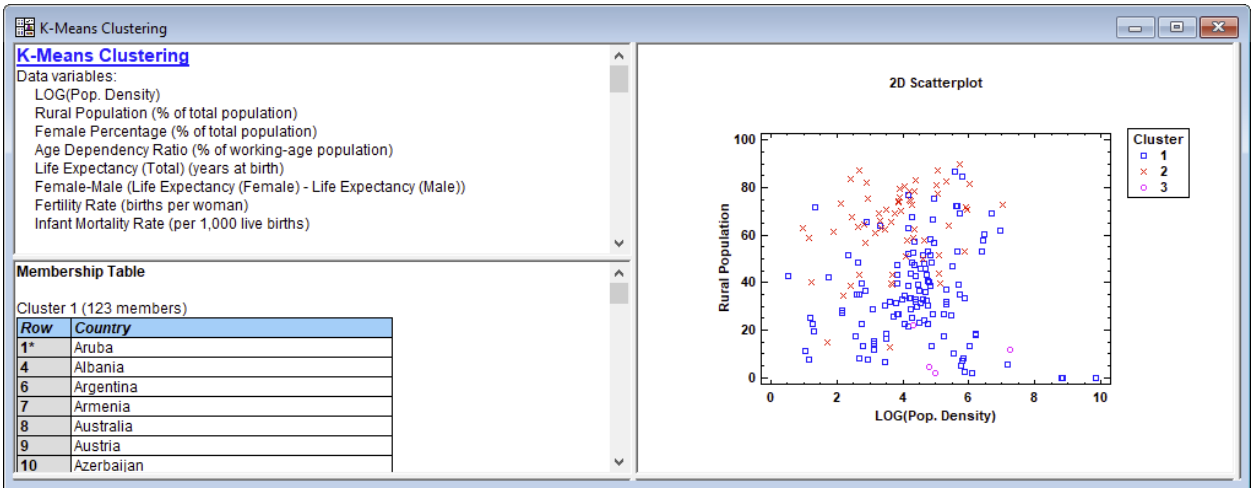
c:\Program Files\Python\Python310\lib\site-packages

To complete the installation, launch Statgraphics again from the VM desktop. Select *Interfaces* from the main menu and then *Python – Installation and Configuration*. On the dialog box that is displayed, enter the path to the Python executable:



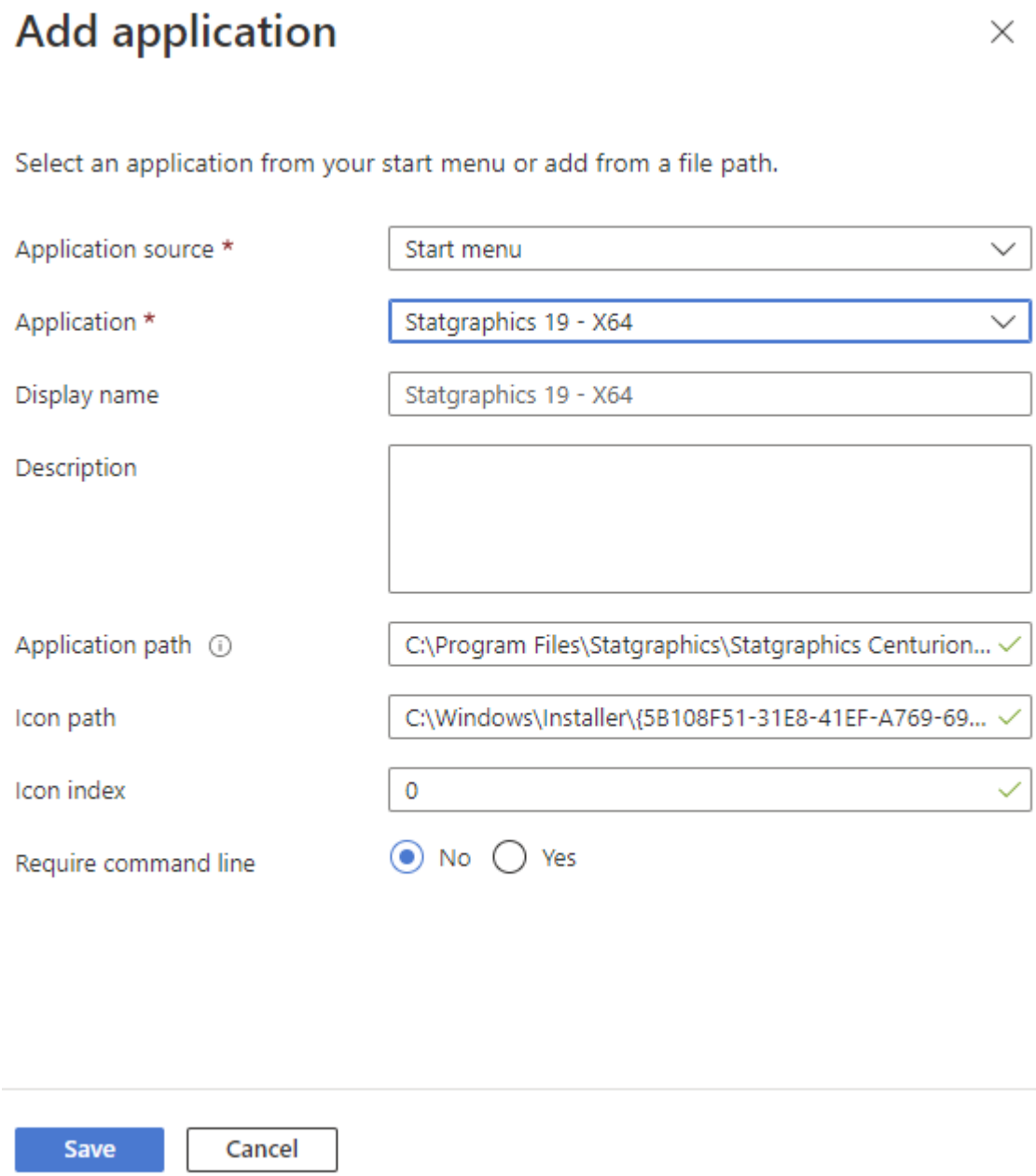
Pressing *Test* should launch a Python session. You can close the session and press *OK* to save the path.

As a final test, go to *File* on the main Statgraphics menu and select *Examples* – *StatFolios*. Select the StatFolio file named *kmeans* and open it. It should create the following analysis window:

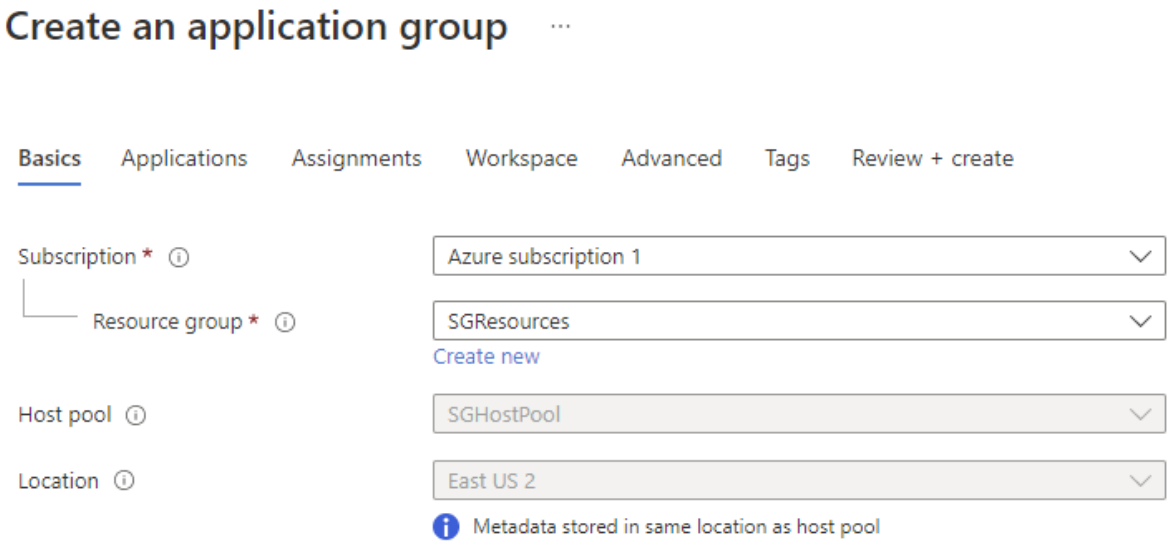


Step 17: Create applications group

Now go back to *Azure Virtual Desktop* and select our host pool again. Select *Applications Group* and click on *Create*. We will now create an application group called *Statgraphics*. Click on *Add applications* and search for *Statgraphics*.



Click *Save*. Then click *Add assignments*. Select *Super User*. On the next screen, select *Yes* next to *Register workspace*. Take all of the other defaults and then *Create*.



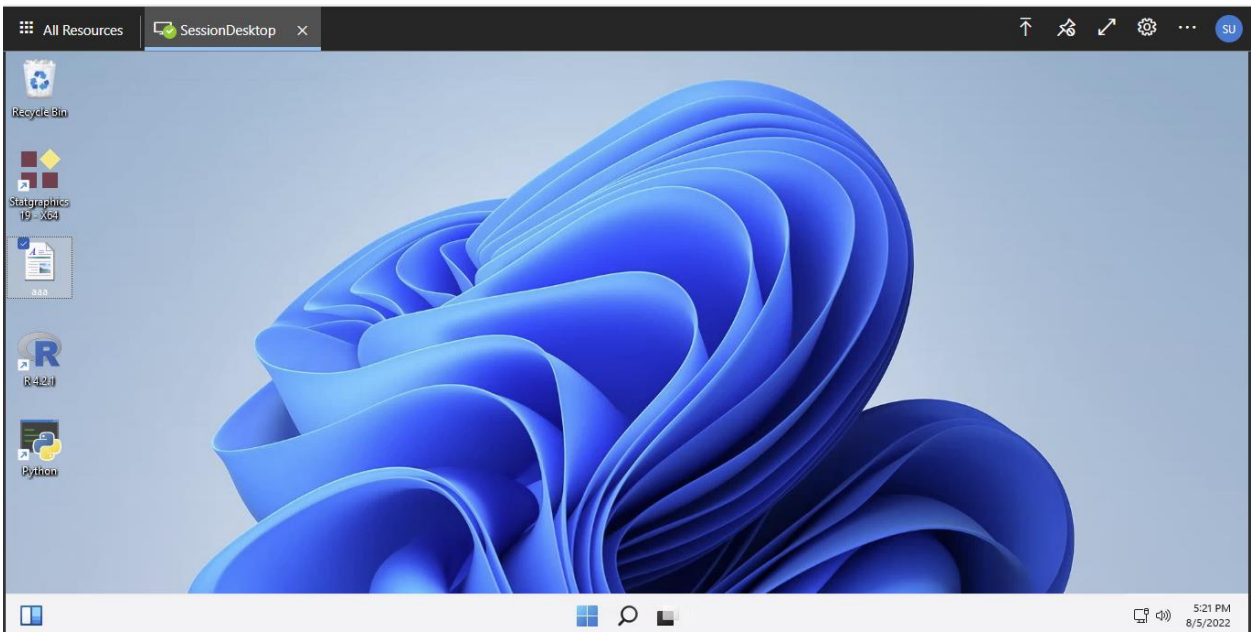
Step 18: Launch Statgraphics

To access the VM containing Statgraphics, open a browser and enter:

https://rdweb.wvd.microsoft.com/arm/webclient/index.html

When requested, enter the name of the superuser (or other user) and the associated password. You will then be presented with a web page displaying your workspace:

Click on the *Statgraphics* icon to start Statgraphics or on the *SessionDesktop* icon to launch the virtual desktop. If you launch the desktop, you'll see shortcuts to Statgraphics, R, and Python. You also see any other items that you have saved to the desktop in earlier sessions. These items are visible only to the user who created them.


All Resources
SessionDesktop
SU
Recycle Bin
Statgraphics 19 - X64
R 4.2.1
Python
5:21 PM
8/5/2022