



ESRI
EXTERNAL

Getting Started with ArcGIS for Microsoft Planetary Computer

July 1, 2023

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1.0 Introduction

ArcGIS for Microsoft Planetary Computer is a new offering from Esri that brings hundreds of ready-to-use analysis tools from ArcGIS to the Microsoft Planetary Computer so users can observe and monitor the planet. ArcGIS for Microsoft Planetary Computer spins up a virtual ArcGIS Pro virtual machine on demand in the cloud that offers all the capabilities the user has licensed for ArcGIS Pro—including its raster analytics tools, geoprocessing tools, publishing tools, as well as any extensions the user has purchased.

With ArcGIS for Microsoft Planetary Computer, users can apply image processing and raster analytics tools from ArcGIS Pro to support workflows such as:

- Suitability assessment to find the best sites for conservation and agriculture
- Change detection to locate areas impacted by disasters, identify new urban development, monitor sea level changes, and update trend forecasts
- Susceptibility analysis to identify areas at risk of fires, floods, and other disasters
- AI and machine learning workflows like land cover classification and object detection

2.0 Configuring ArcGIS for Microsoft Planetary Computer

The Microsoft (MS) Planetary Computer is an Analysis platform that allows for Analysts to leverage cloud computer services and a catalog of petabytes of Earth Science data layers. To access these resources using ArcGIS, you will need to have your own Azure cloud account. Please see the Microsoft Azure documentation or technical support team if you need help setting up and configuring that account before you proceed.

Creating a New ArcGIS for Microsoft Planetary Computer Instance

- a) Navigate the [azure marketplace](#) and search for the “ArcGIS for Microsoft Planetary Computer”. This should bring you to a page with the ArcGIS for Microsoft Planetary Computer card. Click on “Get it now”

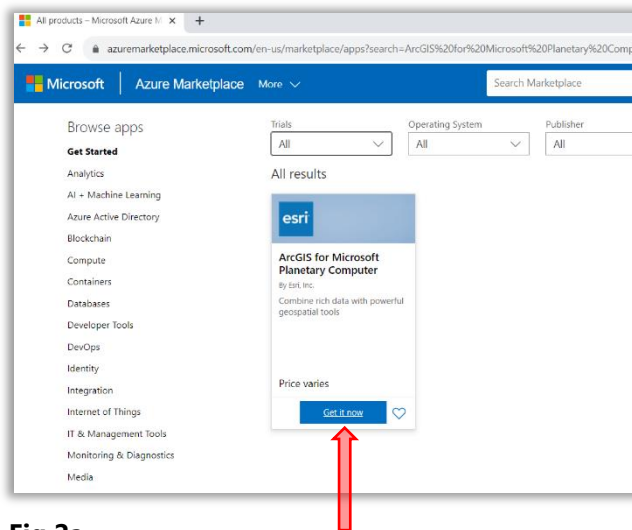


Fig 2a.

- b) This initializes your setup – and lets you continue the process when you accept the terms of use.

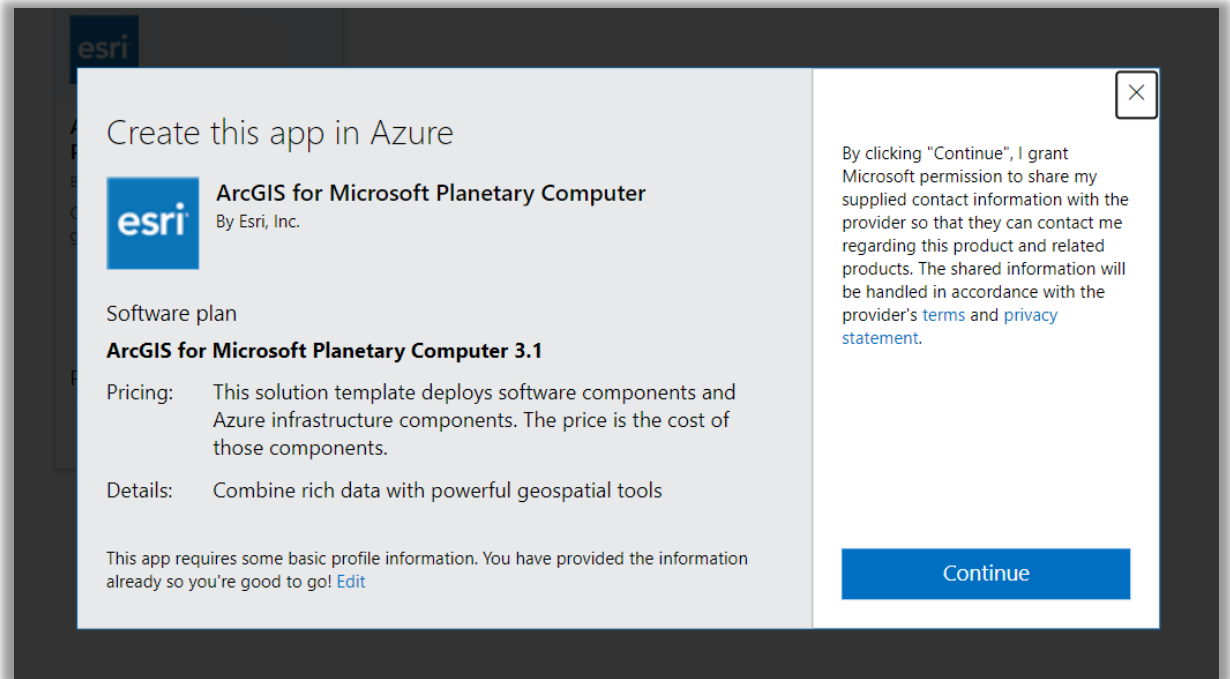


Fig 2b.

Hit "Continue". This takes you to the ArcGIS for Microsoft Planetary Computer landing page.

- c) Hit "Create" next to the ArcGIS for Planetary computer drop down selector as shown.

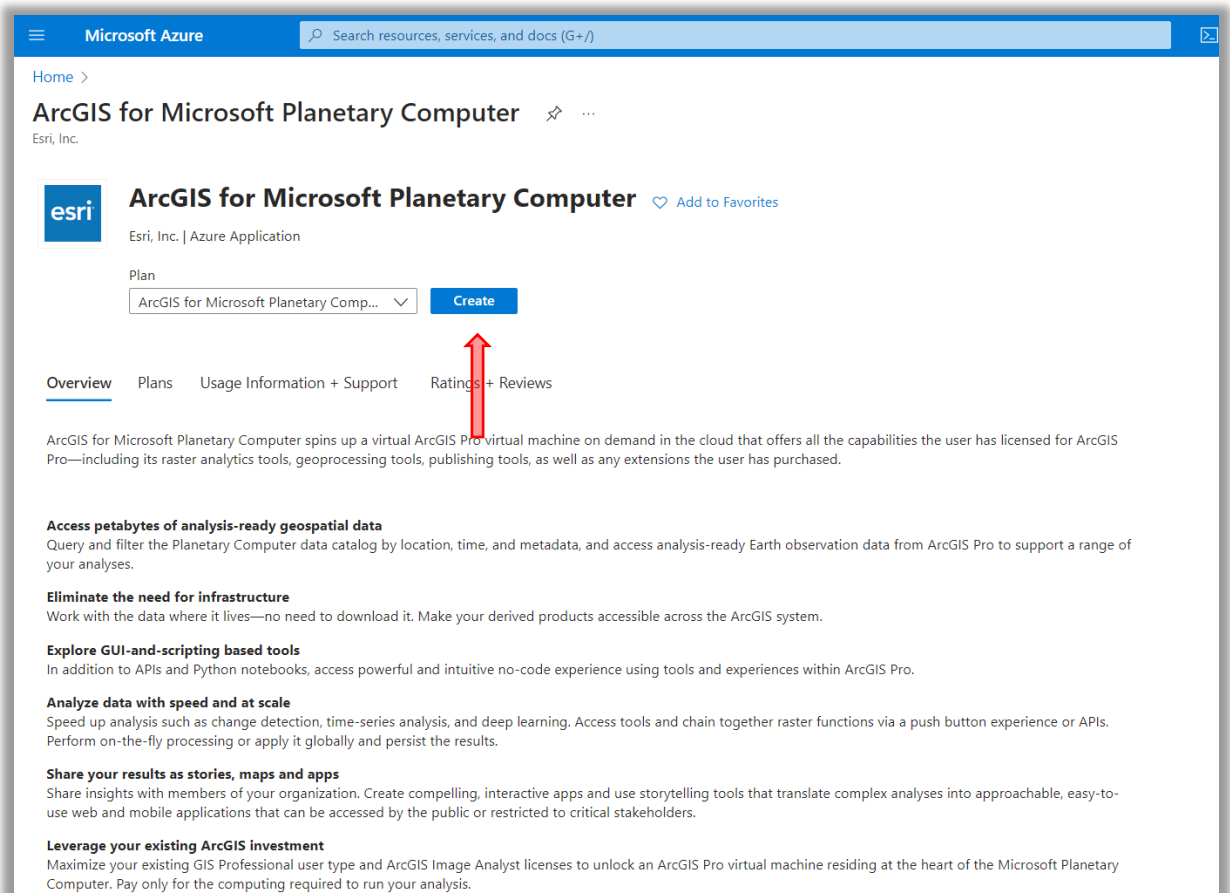


Fig 2c.

- d) This will direct you to the solution template/wizard to create your new instance. Here you will see Four tabs at the top: Basics, Virtual Machine Settings, Management Settings, and Review + Create. This is the configuration sequence you will follow as you step through the template.

[Home](#) > [ArcGIS for Microsoft Planetary Computer](#) >

Create ArcGIS for Microsoft Planetary Computer ...

Basics Virtual Machine Settings Management Settings Review + create

Project details

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

Subscription * ⓘ ✓

Resource group * ⓘ ✓
[Create new](#)

Instance details

Region * ⓘ ✓

Virtual Machine name * ⓘ ✓

Size * ⓘ **1x Standard NC8as T4 v3**
8 vcpus, 56 GB memory
[Change size](#)

Administrator account

Username * ⓘ ✓

Password * ⓘ ✓

Confirm password * ✓

Fig 2d.

Tab 1 Basics

Below is some additional information to help the user understand the options that are available in this configuration tab.

Project Details

Subscription

Pick the Azure subscription you would like to use for this project (VM). This is also the account that will be billed by Microsoft (for use of this instance).

Resource Group

This is usually defined by an administrator, if the account has predetermined permissions or policies. Or you can just create new, and provide a resource group (think of it like a folder)

Instance Details

Regions – This option is non-selectable. Because the Planetary Computer data catalog resides only in the West Europe Region, creating and using a Virtual Machine in the same region eliminates latency in data transfer and removes data movement charges.

Virtual Machine Name –Here's where the user names the VM. A pre-defined name is selected by default.

Size – The default (NV8as_V4) instance is an 8-core 28GB RAM, dedicated Graphics Processing Unit (GPU) instance. Some Analysis tasks may require higher level computing instances. If you prefer more compute resources, you can click "Change size" option. This selection provides a list of compatible and recommended instances for you to choose.

Administrator Account

This is a new administrator account that is needed for this virtual windows machine, and includes the credentials (username, password) you will be using to log into the virtual machine.

Home > ArcGIS for Microsoft Planetary Computer >

Create ArcGIS for Microsoft Planetary Computer

Basics Virtual Machine Settings Management Settings Review + create

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

Subscription * ⓘ Imagery4AMPC_AZ

Resource group * ⓘ (New) test1
[Create new](#)

Instance details

Region * ⓘ West Europe

Virtual Machine name * ⓘ vin-ampc-vm

Size * ⓘ **1x Standard NC8as T4 v3**
8 vcpus, 56 GB memory
[Change size](#)

Administrator account

Username * ⓘ vinayivt

Password * ⓘ

Confirm password * ⓘ

Previous Next **Review + create**

Fig 2e.

Scroll down and hit Next

Tab 2 (Virtual Machine Settings)

Disk Settings

For this portion of the template, the default settings should be adequate for most users, however, you may configure the options if needed. (At a later point through azure console users can attach their own disks)

Networking

Public IP Address (default in most cases)

Unless otherwise indicated by your organization, you should use the default setting for this option.

System administrators may want to consider restricting the inbound IPs to enhance performance. This can be done using the Azure user dashboard.

Configure Virtual networks

For this portion of the template, the default settings should be adequate for most users, in some cases however, there is some organization-specific information that needs to be entered here. In most cases, these were pre- configured by your System Administrator when your Azure account was established and is associated with the selected resource group from Tab 1, in which case you do not have to make any changes

Virtual Network – you can pick an existing network or create a new network if you have the appropriate organizational permissions.

Subnet –This is part of the virtual network configuration and should be pre-defined by your System Administrator.

Home > ArcGIS for Microsoft Planetary Computer >

Create ArcGIS for Microsoft Planetary Computer

Basics **Virtual Machine Settings** Management Settings Review + create

Disk Settings

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

OS Disk Type * ⓘ Premium SSD (locally-redundant storage) ▼

Virtual Machine OS Disk Size ⓘ 512 ▼

Virtual Machine Data Disk Size ⓘ 512 ▼

Networking

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings.

Public IP address ⓘ (new) arcgis4mpcPublicIp ▼
[Create new](#)

Configure virtual networks

Virtual network * ⓘ (new) arcgis4mpc-vn ▼
[Create new](#)

Subnet * ⓘ (new) subnet-1 (10.0.0.0/24) ▼

Previous Next **Review + create**

Fig 2f.

Scroll down and hit next

[Tab 3 \(Management Settings\)](#)

Configure management options for your VM

A note about auto-shutdown. It is **highly recommended** that you keep this setting selected. Auto shutdown is used to make sure a user does not accidentally let an instance run longer than it should, which can lead to unwanted compute costs. Provide an email id where you would want to receive notifications about your instance

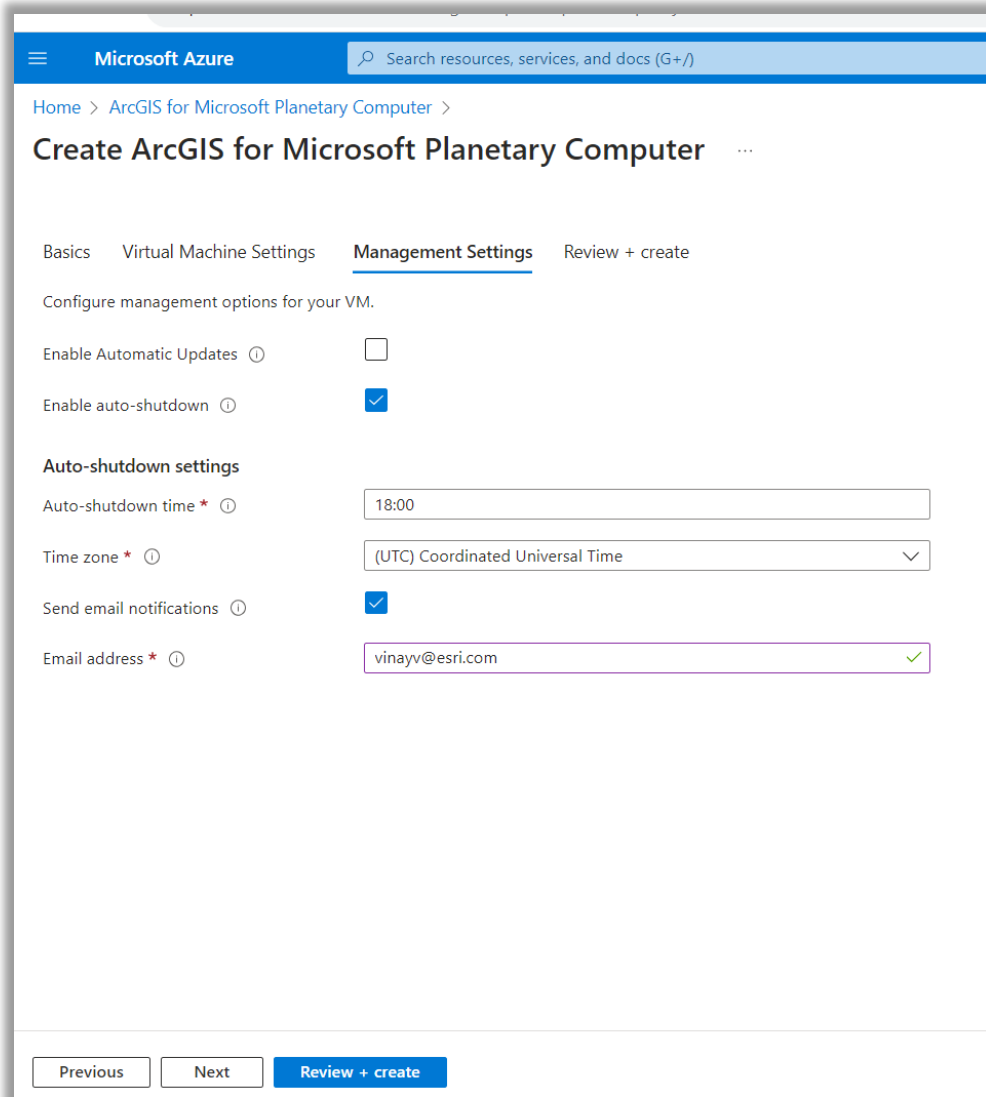


Fig 2g.

Scroll down and hit the “Next: Review + create” button to move to the next template tab

Tab 4: Review + Create

This tab allows for you to see your settings, and confirm they are correct. They are automatically validated by the system for any errors.

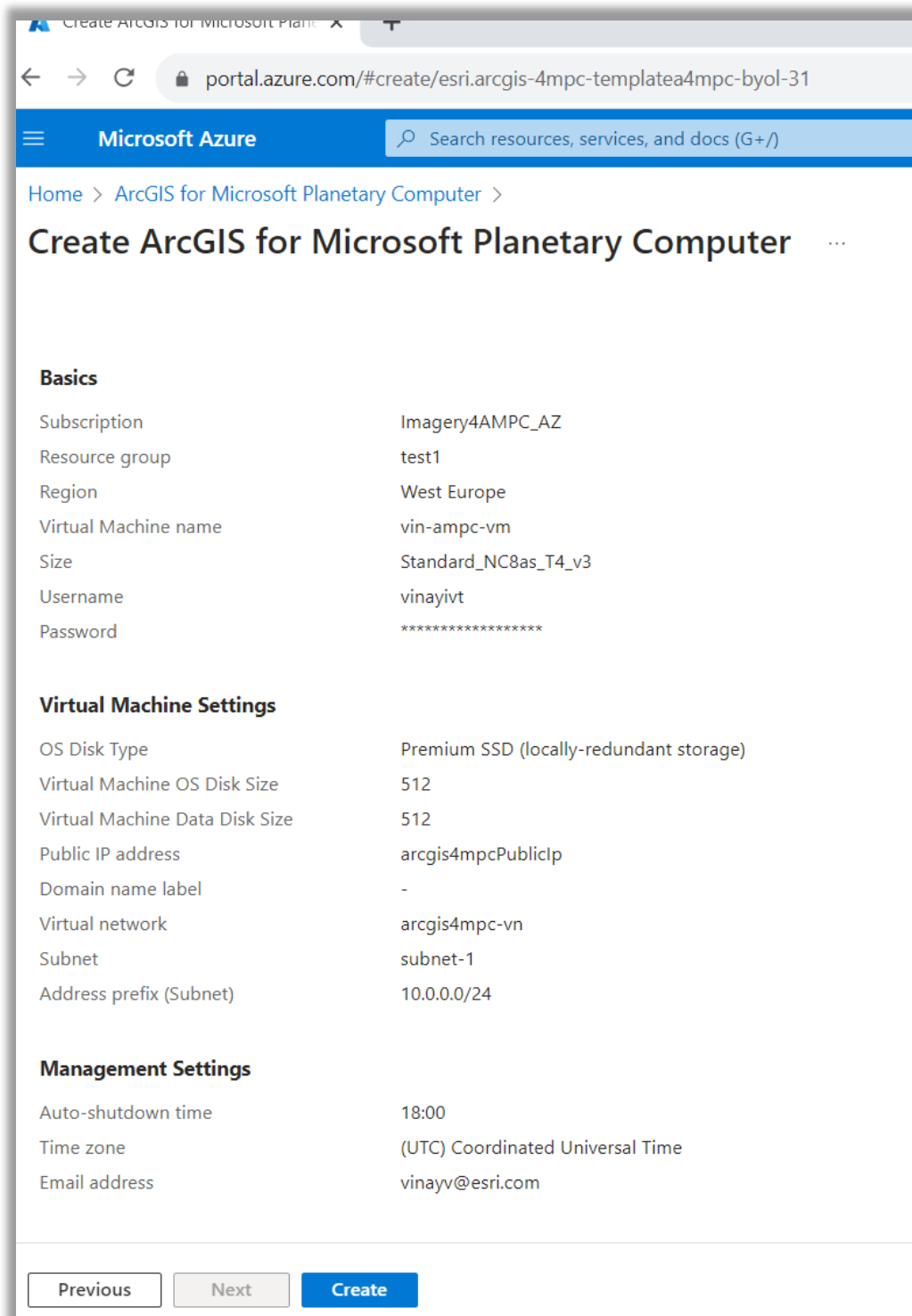


Fig 2h.

Hit the "Create" button to complete the process. It may take upto five minutes for the new virtual machine to be completed.

Once done – hit "Go to resource group"

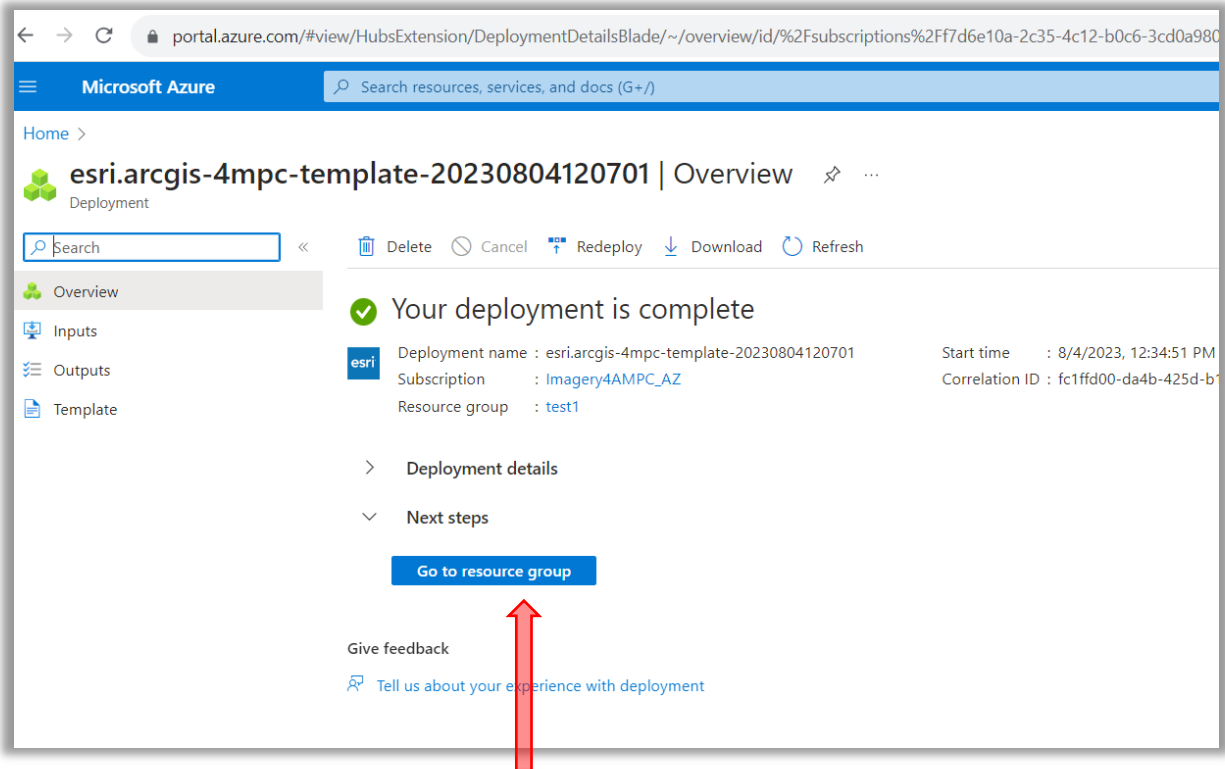


Fig 2i.

This will take you to your resources for the instance.

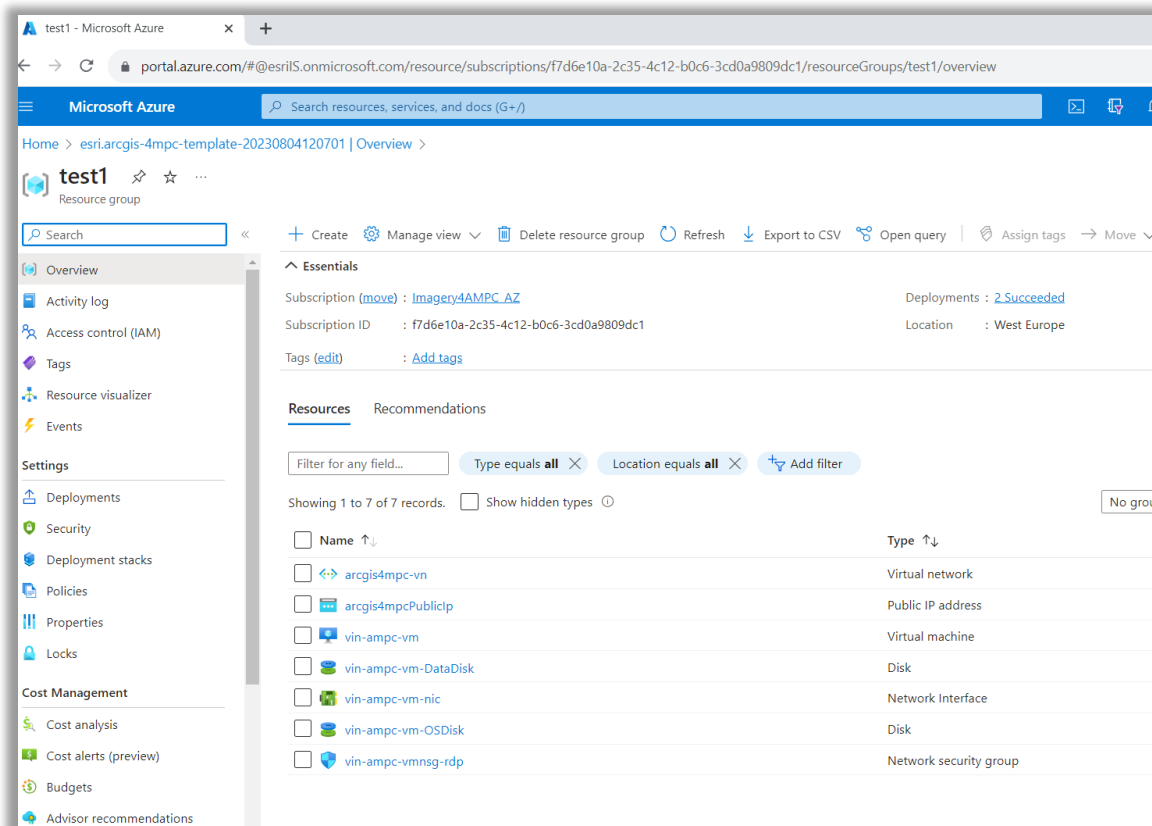


Fig 2j.

Click on the Virtual machine (vina-ampc-vm in Figure 2k). It's the name you specified when creating the instance

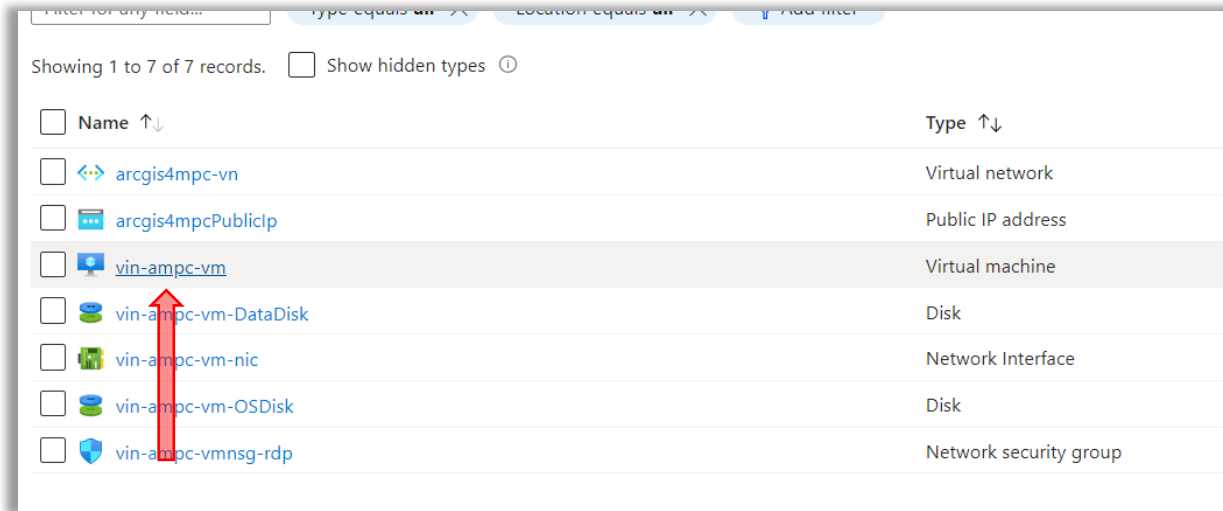


Fig 2k.

This takes you to the dashboard, where you can manage your instance, delete your instance, start your instance, connect to your instance and so on.

You can click on connect at this point (highlighted in Fig 2L. below)

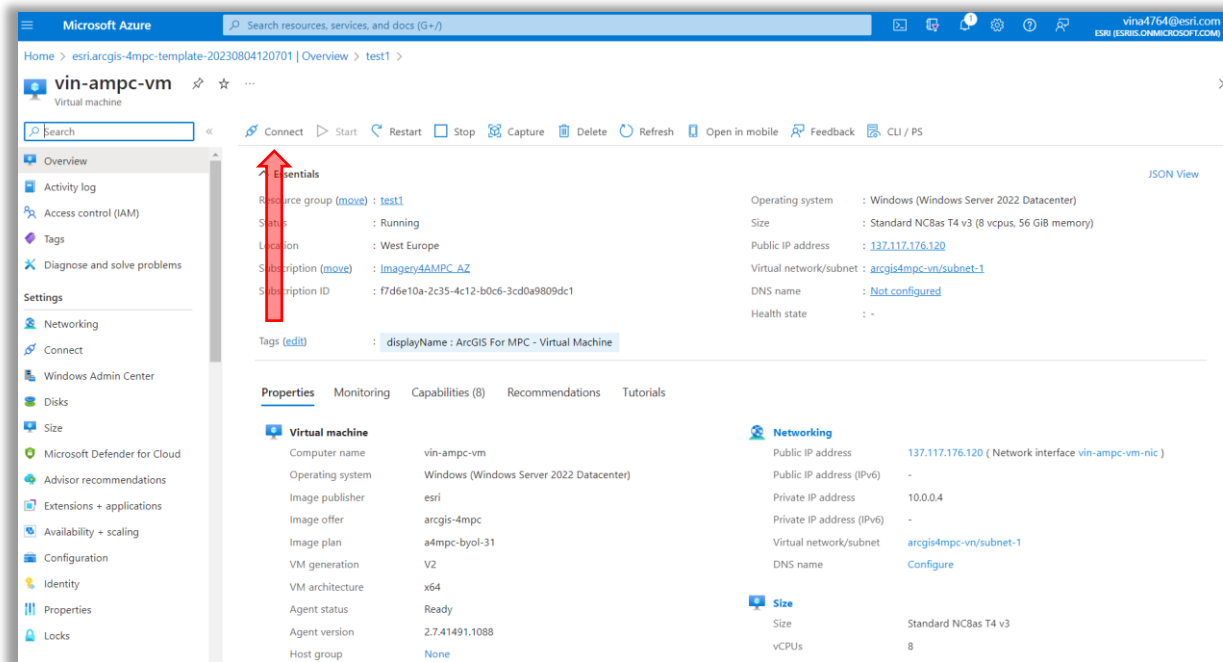


Fig 2L.

3.0 Starting and Stopping the Virtual Machine

You can start or stop the VMs whenever you choose. Ideally, you might want to stop a machine when it is not in use to prevent incurring unwanted cost and start it up again when you would like to work. Follow these steps to start and stop your virtual machine:

- a) Navigate to your portal. <https://portal.azure.com/>
- b) Either click on the resource (as in Figure 2K) and follow steps to start your instance and remote in or click on the VM name as in Figure 3b below

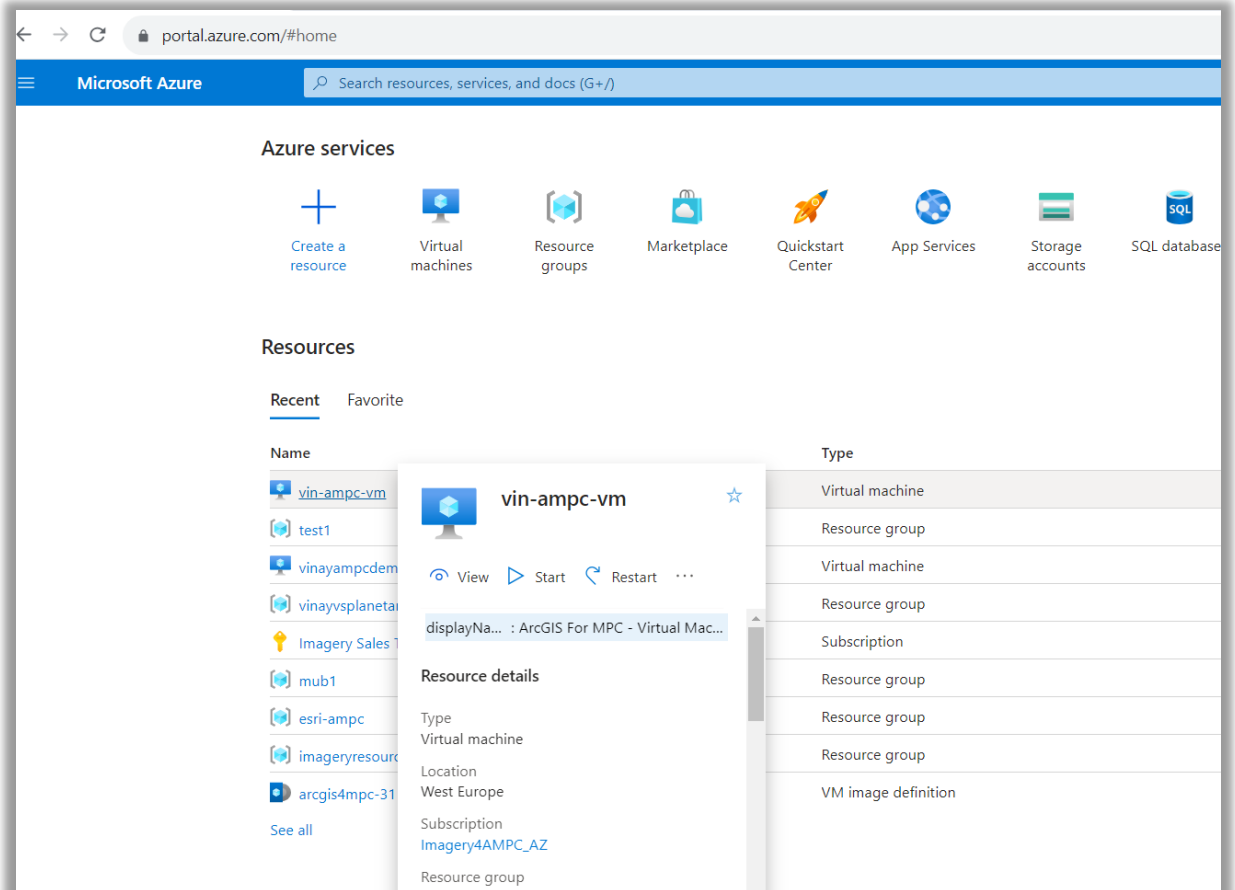


Fig 3b.

- c) This will take you to the instance portal to manage the instance.

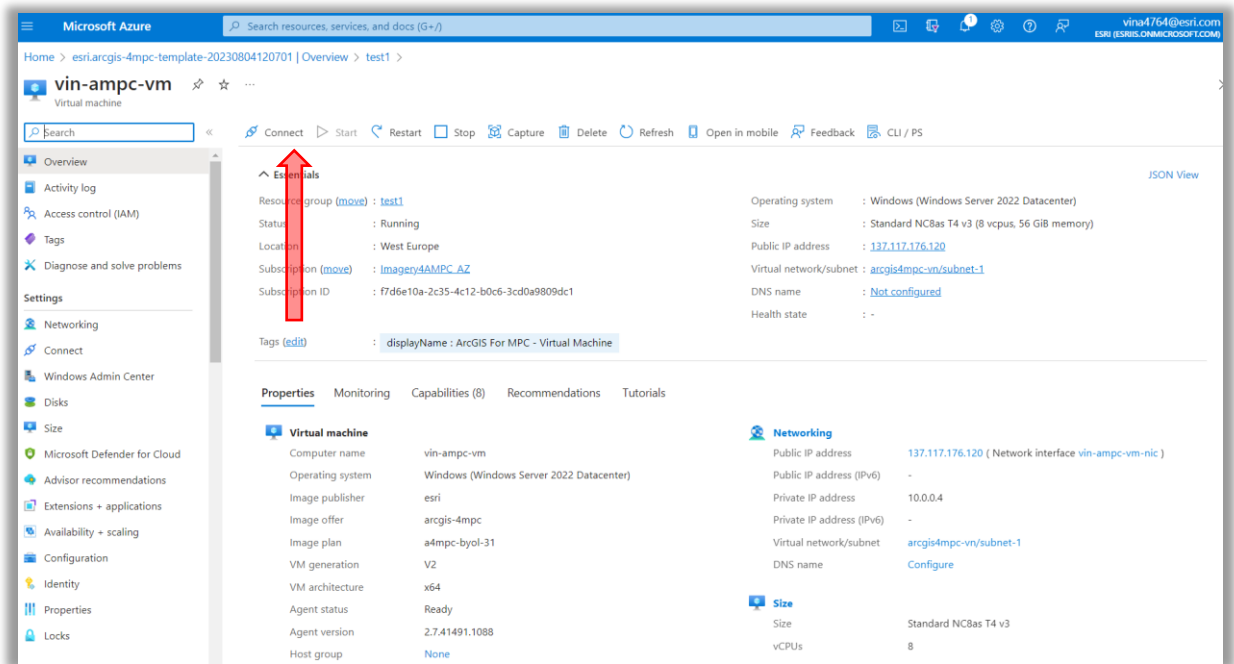


Fig 3c.

- d) Hit "Connect", as shown in Figure 3c above. here's where you can download the remote desktop protocol (RDP) connection file to your local machine.
- e) once downloaded, you can connect to the new virtual machine by keying in your Administrator credentials that you specified when creating the instance.

3.1 Managing Your Virtual Machine

- a) Navigate to your Azure portal webpage (portal.azure.com)
- b) Select "Virtual Machines". You should now see the machine you created using the Configuration template listed.
- c) Click on the instance; a new dashboard will appear that gives you control of the virtual machine. Here you can modify settings, start the instance, delete the instance, review logs, attach disks, etc.

3.2 Deleting the Virtual Machine

When you have completed your Analysis using the ArcGIS virtual machine, you can delete your instance using the same portal dashboard where you started and connected to the machine.

3.3 Accessing the ArcGIS Pro Virtual Desktop

When you create an ArcGIS for Planetary Computer Machine and log into the account, you will see what looks like a typical windows desktop configuration. However, there are still some steps to complete before you can begin your Analysis.

- a) Just like on a normal desktop machine, ArcGIS for Microsoft Planetary Computer requires an ArcGIS Pro license for the software to work. However, Users can use their existing licenses from an existing ArcGIS pro system. All license types are applicable:

single user, concurrent user, or named user license. The license level can be Basic, Standard or Advanced and can include any ArcGIS Pro extensions for additional processing such as such as Image Analyst. The type of license the user connects to this system will determine the functionality that is available for processing in this environment.

- b) The C drive configured for the virtual machine contains two folders with specialized tools and connection files designed to work with the Planetary Computer data.
- ACSFiles - This folder contains the pre-created cloud storage connection files (ACS) that identify the public datasets available at Microsoft's [Planetary Computer Data Catalog](#), so they are visible to the users directly within the Catalog view. These are cloud region specific, so can only be used in this setting.
 - Image_Mgmt_Workflows – This folder contains the raster templates needed to build mosaic datasets and analyze the data catalog files within this ArcGIS pro instance.

Note: Do not delete or rename the folders mentioned above.