

NComputing PMC Device Management

Importing PMC VHD to Azure

This document describes the process to upload the PMC VHD to your Microsoft Azure account.



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PREQUISITES

You must have administrator rights to your Azure account. During this process you will be creating several objects in Azure including Resource Group, HDD and a virtual machine.

Access to a Windows 10 desktop with PowerShell

Download and install the Azure Command Line Interface (CLI)

<https://docs.microsoft.com/en-us/cli/azure/install-azure-cli>

Download and install the Azure AZCOPY Utility

<https://docs.microsoft.com/en-us/azure/storage/common/storage-use-azcopy-v10>

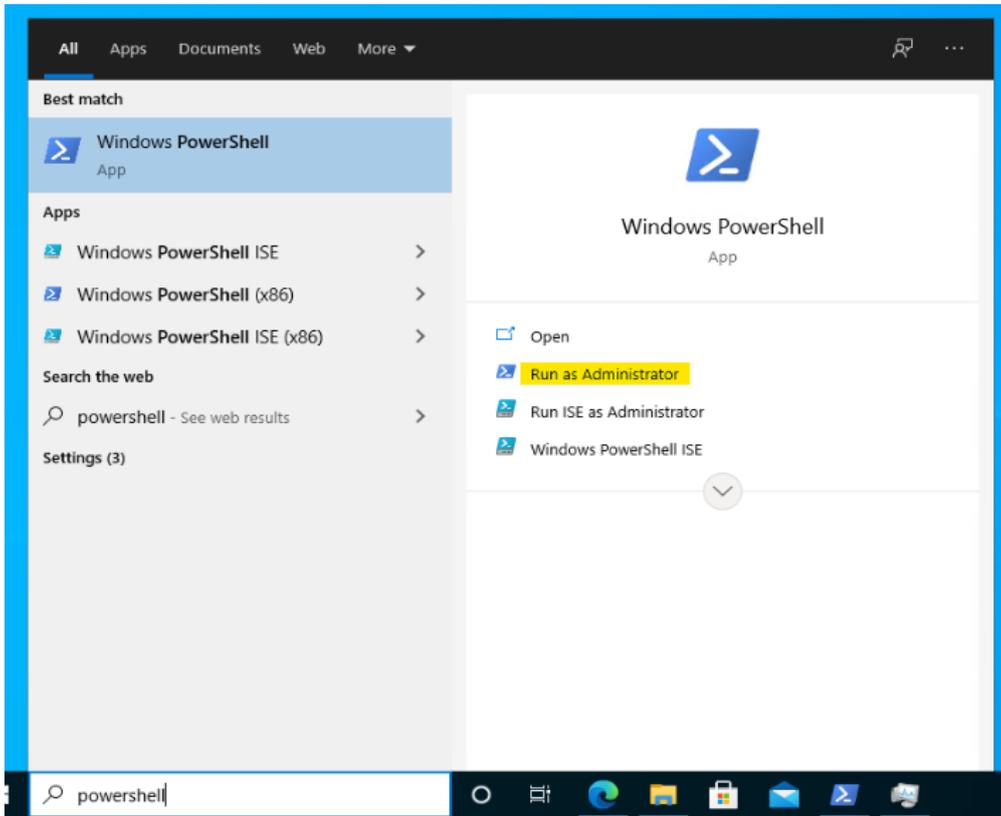
Download the PMC VHD to your Windows 10 desktop:

<https://nccorporate.s3.us-west-1.amazonaws.com/PMC/PMCVHD270Release>

PROCESS DETAILS

All commands described are executed in PowerShell

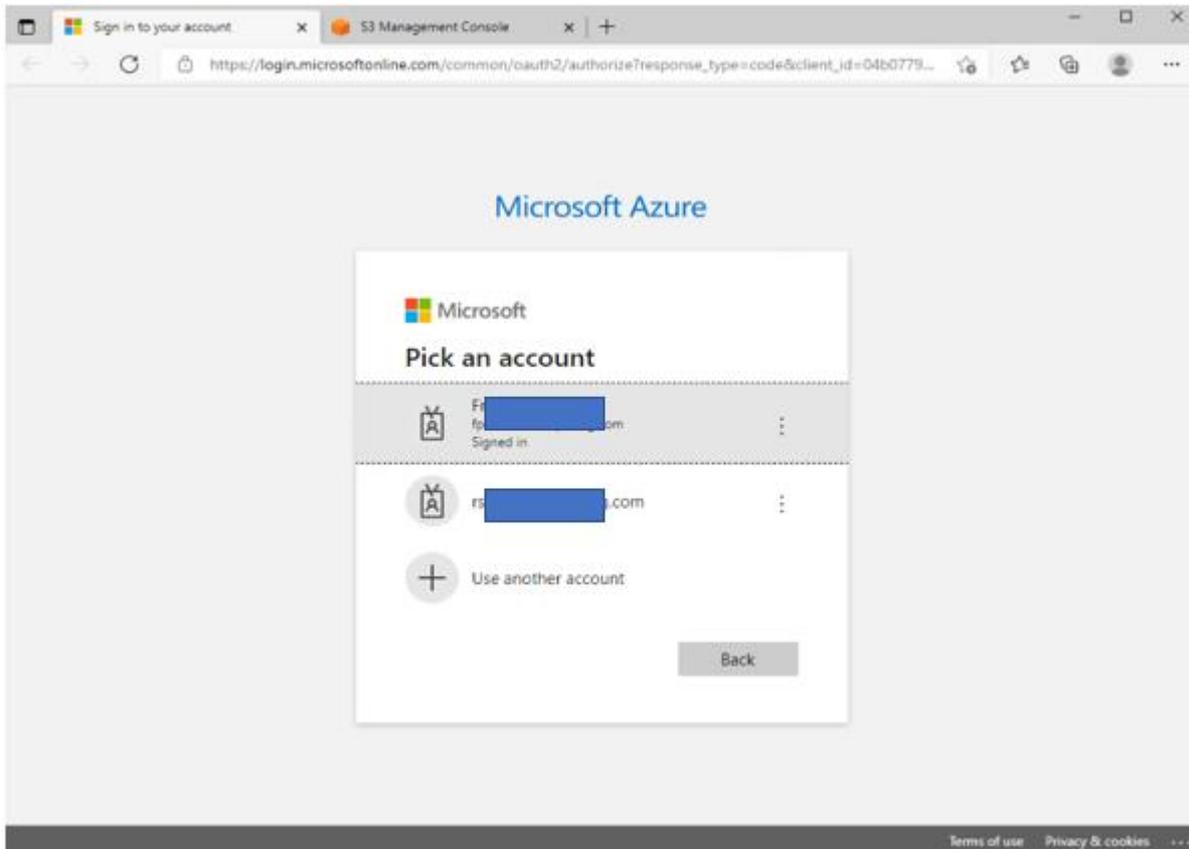
Open PowerShell - run as administrator



Login to your Azure account

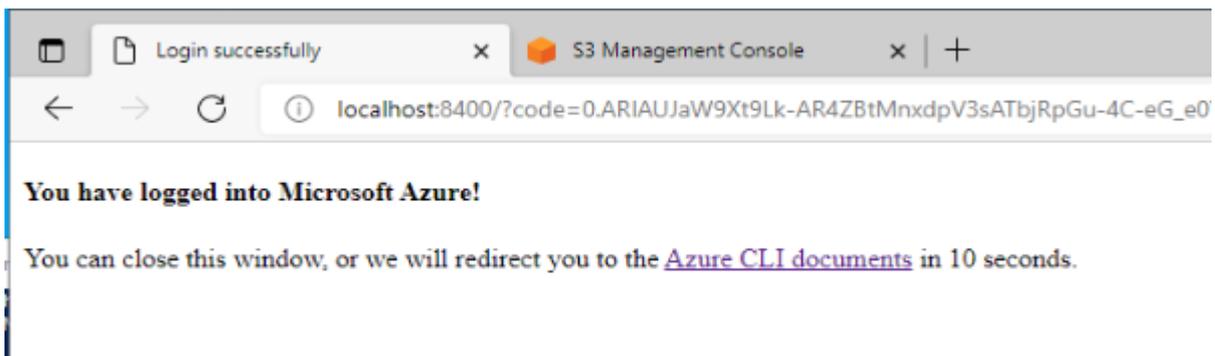
AZ CLI: `az login`

This will open your default browser to the Azure login page:



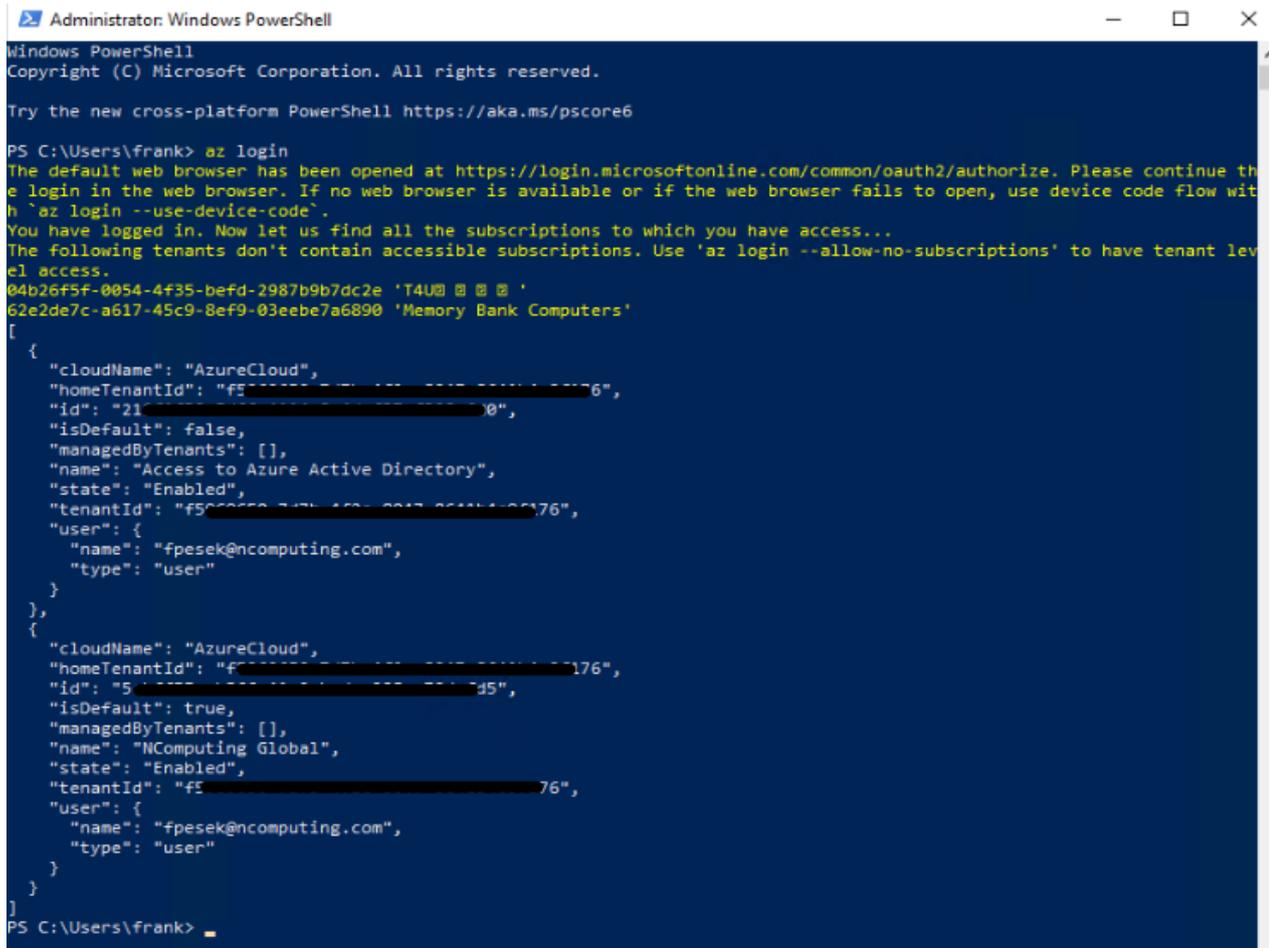
Login into your account using the browser.

Successful login:



You can close the browser now.

PowerShell is now logged in to Azure:



```
Administrator: Windows PowerShell
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\frank> az login
The default web browser has been opened at https://login.microsoftonline.com/common/oauth2/authorize. Please continue the login in the web browser. If no web browser is available or if the web browser fails to open, use device code flow with 'az login --use-device-code'.
You have logged in. Now let us find all the subscriptions to which you have access...
The following tenants don't contain accessible subscriptions. Use 'az login --allow-no-subscriptions' to have tenant level access.
04b26f5f-0054-4f35-befd-2987b9b7dc2e 'T4U'
62e2de7c-a617-45c9-8ef9-03eebe7a6890 'Memory Bank Computers'
[
  {
    "cloudName": "AzureCloud",
    "homeTenantId": "f5...",
    "id": "21...",
    "isDefault": false,
    "managedByTenants": [],
    "name": "Access to Azure Active Directory",
    "state": "Enabled",
    "tenantId": "f5...",
    "user": {
      "name": "fpesek@ncomputing.com",
      "type": "user"
    }
  },
  {
    "cloudName": "AzureCloud",
    "homeTenantId": "f5...",
    "id": "5...",
    "isDefault": true,
    "managedByTenants": [],
    "name": "NComputing Global",
    "state": "Enabled",
    "tenantId": "f5...",
    "user": {
      "name": "fpesek@ncomputing.com",
      "type": "user"
    }
  }
]
PS C:\Users\frank>
```

If you have more than one Azure subscription you must set AZ CLI to use the desired account name:

AZ CLI: `az account set --subscription "<subscription name>"`

e.g., `az account set --subscription "NComputing Global"`

Create a new Azure Resource Group in your desired region

AZ CLI: `az group create --name <resource group> --location "<location>"`

e.g., `az group create --name PMCRessourceGroup --location "West US"`

To obtain a list of available locations for your account:

AZ CLI: `az account list-locations`

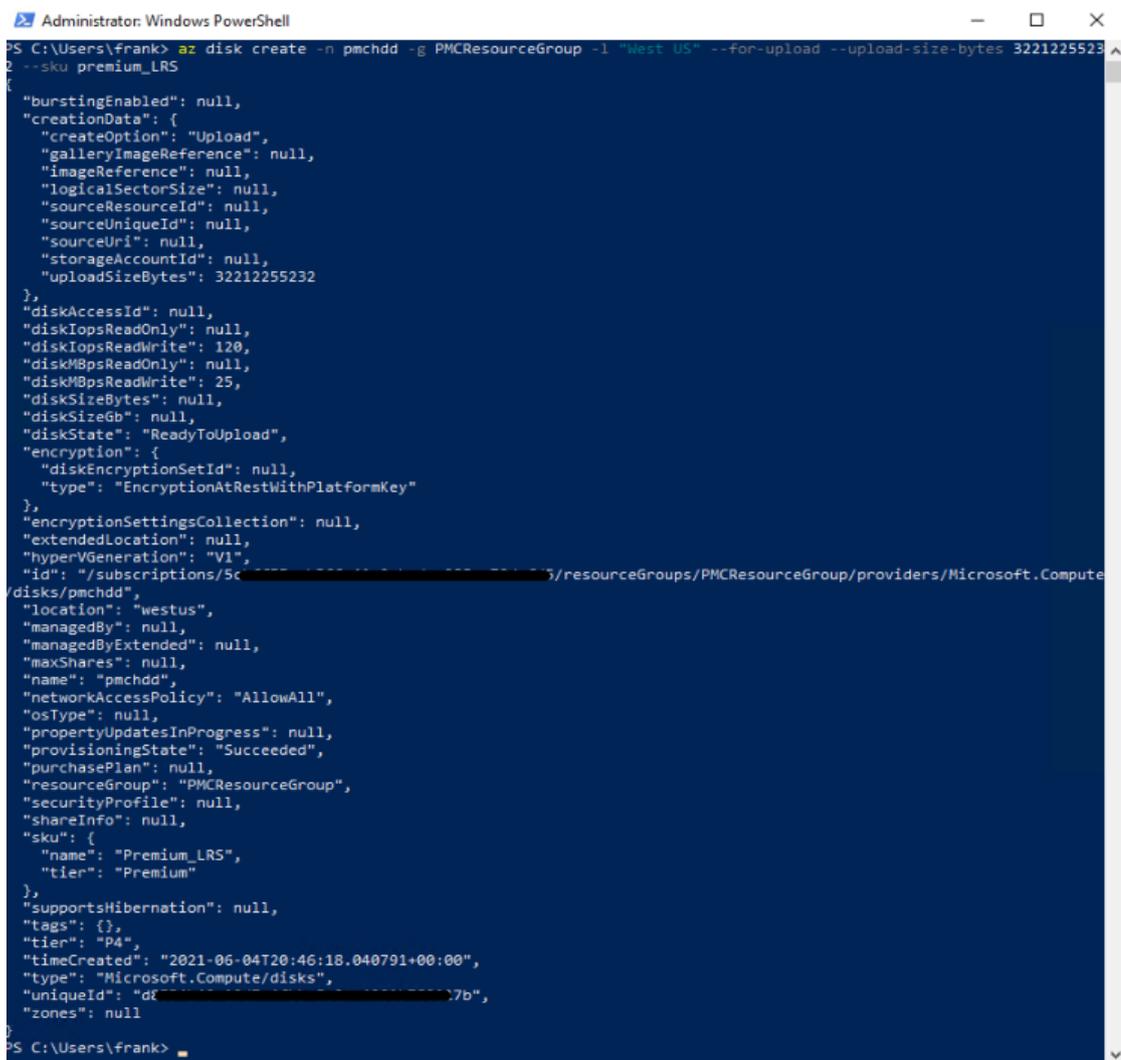
Alternatively, you can create the Resource group using the Azure web-based dashboard

Create an empty HDD object in Azure

AZ CLI: `az disk create -n <hdd name> -g <resource group> -l <location> --for-upload --upload-size-bytes <size in bytes of the PMCVHD file> --sku premium_LRS`

e.g., `az disk create -n pmchdd -g PMCRessourceGroup -l "West US" --for-upload --upload-size-bytes 32212255232 --sku premium_LRS`

Successful results:



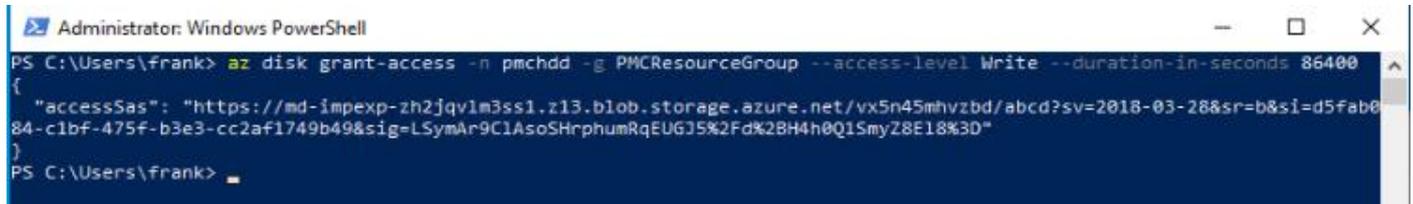
```
Administrator: Windows PowerShell
PS C:\Users\frank> az disk create -n pmchdd -g PMCRessourceGroup -l "West US" --for-upload --upload-size-bytes 32212255232 --sku premium_LRS
{
  "burstingEnabled": null,
  "creationData": {
    "createOption": "Upload",
    "galleryImageReference": null,
    "imageReference": null,
    "logicalSectorSize": null,
    "sourceResourceId": null,
    "sourceUniqueId": null,
    "sourceUri": null,
    "storageAccountId": null,
    "uploadSizeBytes": 32212255232
  },
  "diskAccessId": null,
  "diskIopsReadOnly": null,
  "diskIopsReadWrite": 120,
  "diskMBpsReadOnly": null,
  "diskMBpsReadWrite": 25,
  "diskSizeBytes": null,
  "diskSizeGb": null,
  "diskState": "ReadyToUpload",
  "encryption": {
    "diskEncryptionSetId": null,
    "type": "EncryptionAtRestWithPlatformKey"
  },
  "encryptionSettingsCollection": null,
  "extendedLocation": null,
  "hyperVGeneration": "V1",
  "id": "/subscriptions/Sc[REDACTED]/resourceGroups/PMCRessourceGroup/providers/Microsoft.Compute/disks/pmchdd",
  "location": "westus",
  "managedBy": null,
  "managedByExtended": null,
  "maxShares": null,
  "name": "pmchdd",
  "networkAccessPolicy": "AllowAll",
  "osType": null,
  "propertyUpdatesInProgress": null,
  "provisioningState": "Succeeded",
  "purchasePlan": null,
  "resourceGroup": "PMCRessourceGroup",
  "securityProfile": null,
  "shareInfo": null,
  "sku": {
    "name": "Premium_LRS",
    "tier": "Premium"
  },
  "supportsHibernation": null,
  "tags": {},
  "tier": "P4",
  "timeCreated": "2021-06-04T20:46:18.040791+00:00",
  "type": "Microsoft.Compute/disks",
  "uniqueId": "df[REDACTED]7b",
  "zones": null
}
```

Enable write access to the new HDD object to allow upload

AZ CLI: `az disk grant-access -n <hdd name> -g <resource group> --access-level Write --duration-in-seconds 86400`

e.g., `az disk grant-access -n pmchdd -g PMResourceGroup --access-level Write --duration-in-seconds 86400`

Successful results:



```
Administrator: Windows PowerShell
PS C:\Users\frank> az disk grant-access -n pmchdd -g PMResourceGroup --access-level Write --duration-in-seconds 86400
{
  "accessSas": "https://md-impexp-zh2jqv1m3ss1.z13.blob.storage.azure.net/vx5n45mhvzbd/abcd?sv=2018-03-28&sr=b&si=d5fab084-c1bf-475f-b3e3-cc2af1749b49&sig=LSymAr9C1AsoSHrphumRqEUGJ5%2Fd%2BH4h0Q1SmyZ8E18%3D"
}
PS C:\Users\frank>
```

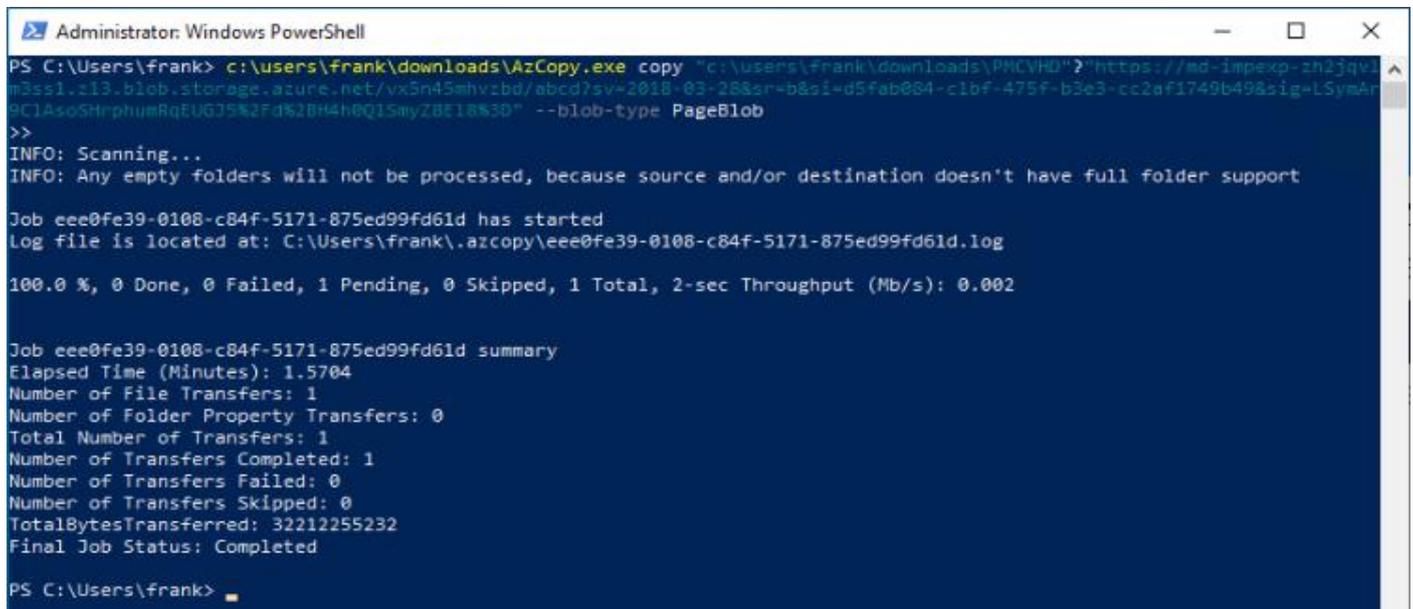
Upload PMCVHD to the new HDD object

You will need the accessSas value returned by the az disk grant-access command.

AZ CLI: `AzCopy.exe copy <PMCVHD file> <accessSas value> --blob-type PageBlob`

e.g., `c:\users\frank\downloads\AzCopy.exe copy "c:\users\frank\downloads\PMCVHD" "https://md-impexp-zh2jqv1m3ss1.z13.blob.storage.azure.net/vx5n45mhvzbd/abcd?sv=2018-03-28&sr=b&si=d5fab084-c1bf-475f-b3e3-cc2af1749b49&sig=LSymAr9C1AsoSHrphumRqEUGJ5%2Fd%2BH4h0Q1SmyZ8E18%3D" --blob-type PageBlob`

Successful results:



```
Administrator: Windows PowerShell
PS C:\Users\frank> c:\users\frank\downloads\AzCopy.exe copy "c:\users\frank\downloads\PMCVHD" "https://md-impexp-zh2jqv1m3ss1.z13.blob.storage.azure.net/vx5n45mhvzbd/abcd?sv=2018-03-28&sr=b&si=d5fab084-c1bf-475f-b3e3-cc2af1749b49&sig=LSymAr9C1AsoSHrphumRqEUGJ5%2Fd%2BH4h0Q1SmyZ8E18%3D" --blob-type PageBlob
>>
INFO: Scanning...
INFO: Any empty folders will not be processed, because source and/or destination doesn't have full folder support

Job eee0fe39-0108-c84f-5171-875ed99fd61d has started
Log file is located at: C:\Users\frank\.azcopy\eee0fe39-0108-c84f-5171-875ed99fd61d.log

100.0 %, 0 Done, 0 Failed, 1 Pending, 0 Skipped, 1 Total, 2-sec Throughput (Mb/s): 0.002

Job eee0fe39-0108-c84f-5171-875ed99fd61d summary
Elapsed Time (Minutes): 1.5704
Number of File Transfers: 1
Number of Folder Property Transfers: 0
Total Number of Transfers: 1
Number of Transfers Completed: 1
Number of Transfers Failed: 0
Number of Transfers Skipped: 0
TotalBytesTransferred: 32212255232
Final Job Status: Completed

PS C:\Users\frank>
```

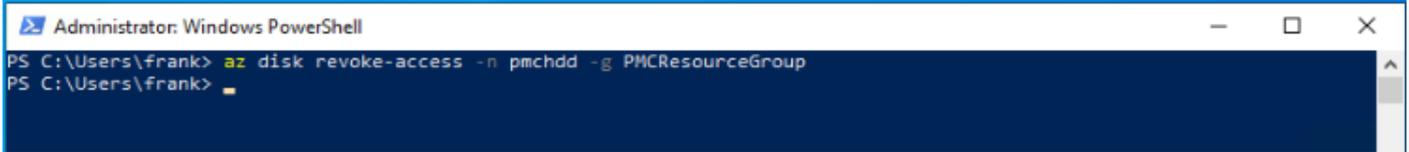
Revoke write access granted to HDD

Before you can use the HDD object you must first revoke the write access granted in the step above.

AZ CLI: `az disk revoke-access -n <hdd name> -g <resource group>`

e.g., `az disk revoke-access -n pmchdd -g PMCResourceGroup`

Successful results:



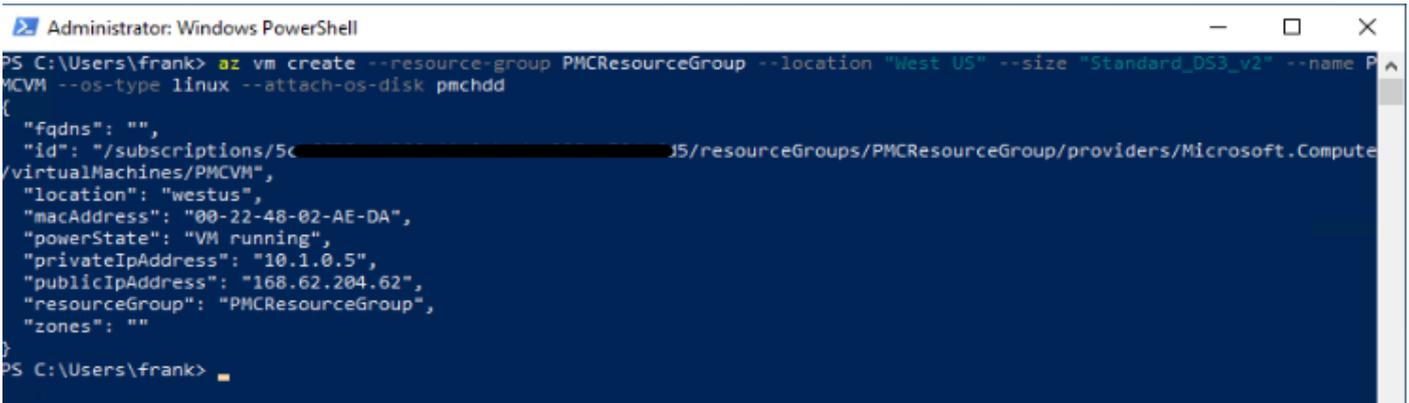
```
Administrator: Windows PowerShell
PS C:\Users\frank> az disk revoke-access -n pmchdd -g PMCResourceGroup
PS C:\Users\frank>
```

Create a new Virtual Machine using the HDD

AZ CLI: `az vm create --resource-group <resource group> --location <location> --size <server instance size> --name <vm name> --os-type linux --attach-os-disk <hdd name>`

e.g., `az vm create --resource-group PMCResourceGroup --location "West US" --size "Standard_DS3_v2" --name PMCVm --os-type linux --attach-os-disk pmchdd`

Successful results:



```
Administrator: Windows PowerShell
PS C:\Users\frank> az vm create --resource-group PMCResourceGroup --location "West US" --size "Standard_DS3_v2" --name PMCVm --os-type linux --attach-os-disk pmchdd
{
  "fqdns": "",
  "id": "/subscriptions/5c.../resourceGroups/PMCResourceGroup/providers/Microsoft.Compute/virtualMachines/PMCVm",
  "location": "westus",
  "macAddress": "00-22-48-02-AE-DA",
  "powerState": "VM running",
  "privateIpAddress": "10.1.0.5",
  "publicIpAddress": "168.62.204.62",
  "resourceGroup": "PMCResourceGroup",
  "zones": ""
}
PS C:\Users\frank>
```

To obtain a list of available server instance sizes use:

AZ CLI: `az vm list-sizes --location <location>`

e.g., `az vm list-sizes --location "West US"`

The PowerShell session is complete. You can close the PowerShell window at this time.

Enable access to PMC

It is recommended to use the Azure web-based dashboard for the following steps:

Go to <https://portal.azure.com> and log in using your Azure administrator credentials.

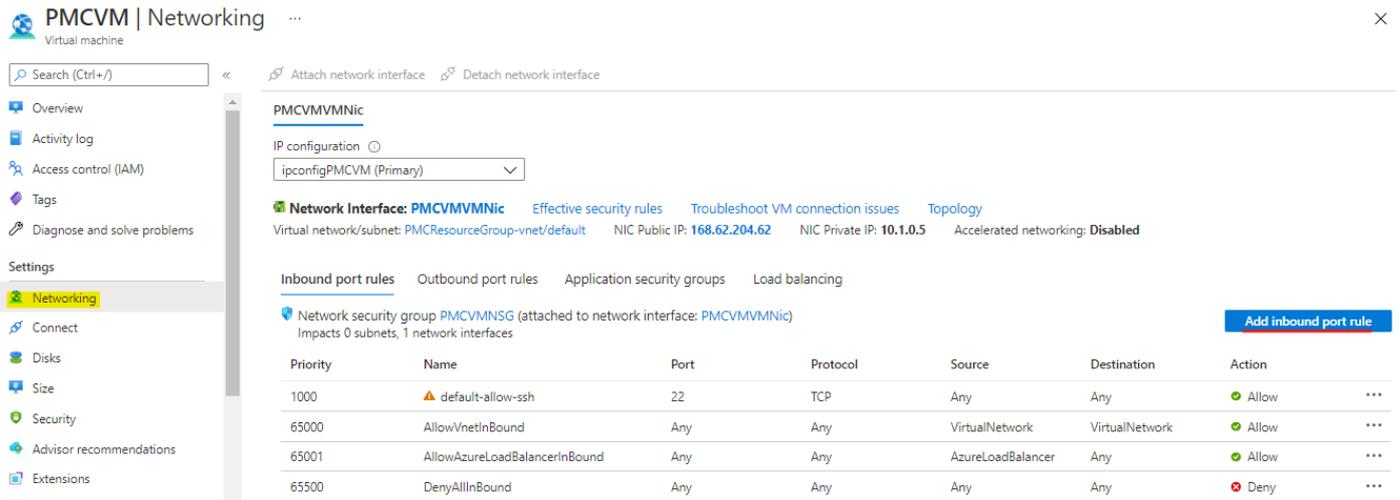
Find the newly created VM in the Resources list. Click on the VM to access the details.

Recommendation: change assigned IP address to static:

When you stop the Azure VM you will be prompted to optionally change the assigned IP address to static assignment type. We recommend that you enable this option.

Change Network Settings to allow access to the VM

Click on the Networking option then Add inbound port rule:



PMCVMM | Networking

Search (Ctrl+/) < Attach network interface Detach network interface

Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems

Settings

Networking
Connect
Disks
Size
Security
Advisor recommendations
Extensions

PMCVMMNIC

IP configuration
ipconfigPMCVMM (Primary)

Network Interface: PMCVMMNIC Effective security rules Troubleshoot VM connection issues Topology

Virtual network/subnet: PMCVMMNIC Virtual network/default NIC Public IP: 168.62.204.62 NIC Private IP: 10.1.1.5 Accelerated networking: Disabled

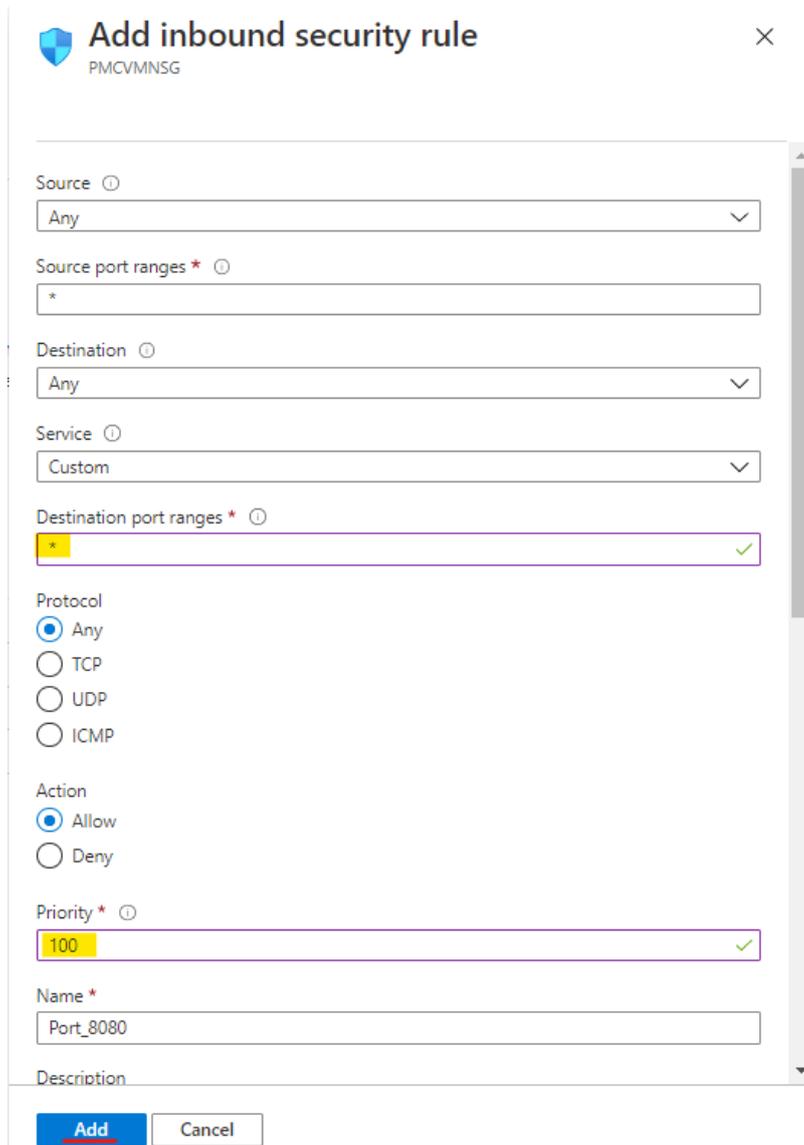
Inbound port rules Outbound port rules Application security groups Load balancing

Network security group PMCVMMNSG (attached to network interface: PMCVMMNIC)
Impacts 0 subnets, 1 network interfaces

Add inbound port rule

Priority	Name	Port	Protocol	Source	Destination	Action	
1000	default-allow-ssh	22	TCP	Any	Any	Allow	...
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow	...
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow	...
65500	DenyAllInBound	Any	Any	Any	Any	Deny	...

Recommended settings - then click Add:



Add inbound security rule

PMCVMMNSG

Source
Any

Source port ranges *
*

Destination
Any

Service
Custom

Destination port ranges *
*

Protocol
 Any
 TCP
 UDP
 ICMP

Action
 Allow
 Deny

Priority *
100

Name *
Port_8080

Description

Add Cancel

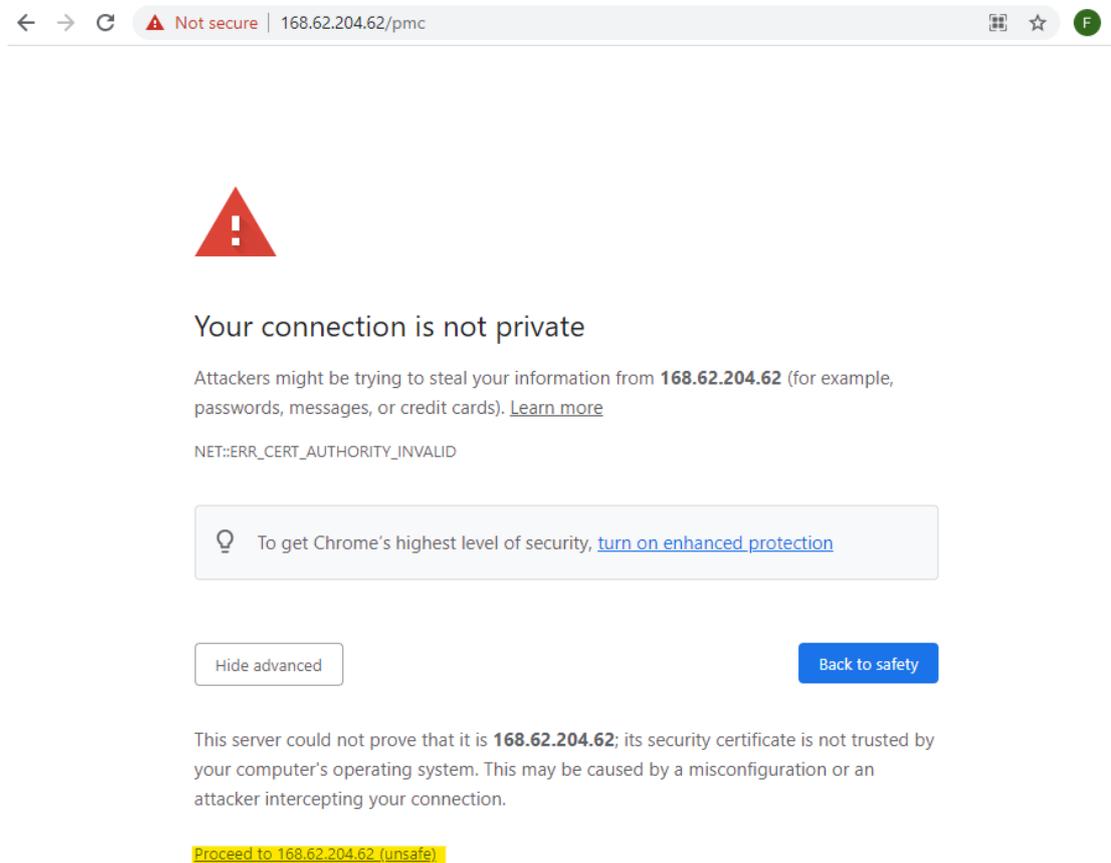
Access PMC Webpage

Azure may take 1-2 minutes to create and apply the networking changes.

Then, you will be able to access the PMC software by going to: `http://<vm ip address>/pmc`

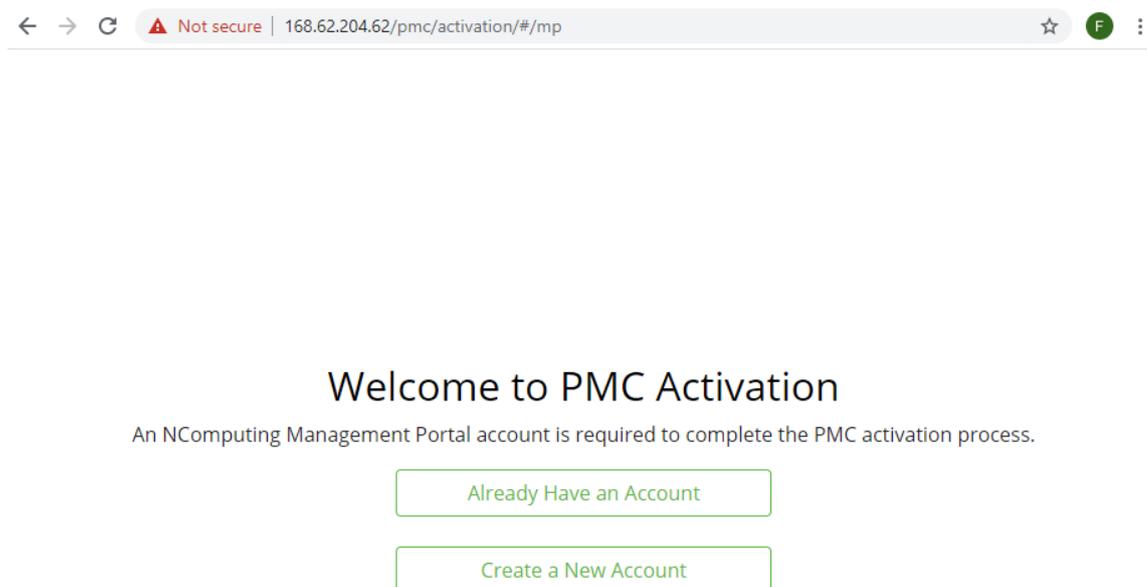
e.g., <https://168.62.204.62/pmc>

Accept the certificate warning:



The screenshot shows a browser address bar with the URL `168.62.204.62/pmc` and a "Not secure" warning. The main content area features a red warning triangle icon, the heading "Your connection is not private", and a message stating: "Attackers might be trying to steal your information from **168.62.204.62** (for example, passwords, messages, or credit cards). [Learn more](#)". Below this, the error code "NET::ERR_CERT_AUTHORITY_INVALID" is displayed. A light blue box contains a lightbulb icon and the text: "To get Chrome's highest level of security, [turn on enhanced protection](#)". At the bottom of the warning area, there are two buttons: "Hide advanced" and "Back to safety". A paragraph explains: "This server could not prove that it is **168.62.204.62**; its security certificate is not trusted by your computer's operating system. This may be caused by a misconfiguration or an attacker intercepting your connection." A yellow button labeled "Proceed to 168.62.204.62 (unsafe)" is located at the bottom of the warning area.

To display the PMC activation page:



The screenshot shows a browser address bar with the URL `168.62.204.62/pmc/activation/#/mp` and a "Not secure" warning. The main content area features the heading "Welcome to PMC Activation" and a message: "An NComputing Management Portal account is required to complete the PMC activation process." Below this message are two green buttons: "Already Have an Account" and "Create a New Account".

IMPORTANT:

The HDD created by following the above steps is permanently attached to the virtual machine specified in the `az cm create` command. It can not be used as a template to create other VMs.

You must create a new HDD and upload the PMCVHD file to create additional VMs hosting the PMC software solution.

end of document

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