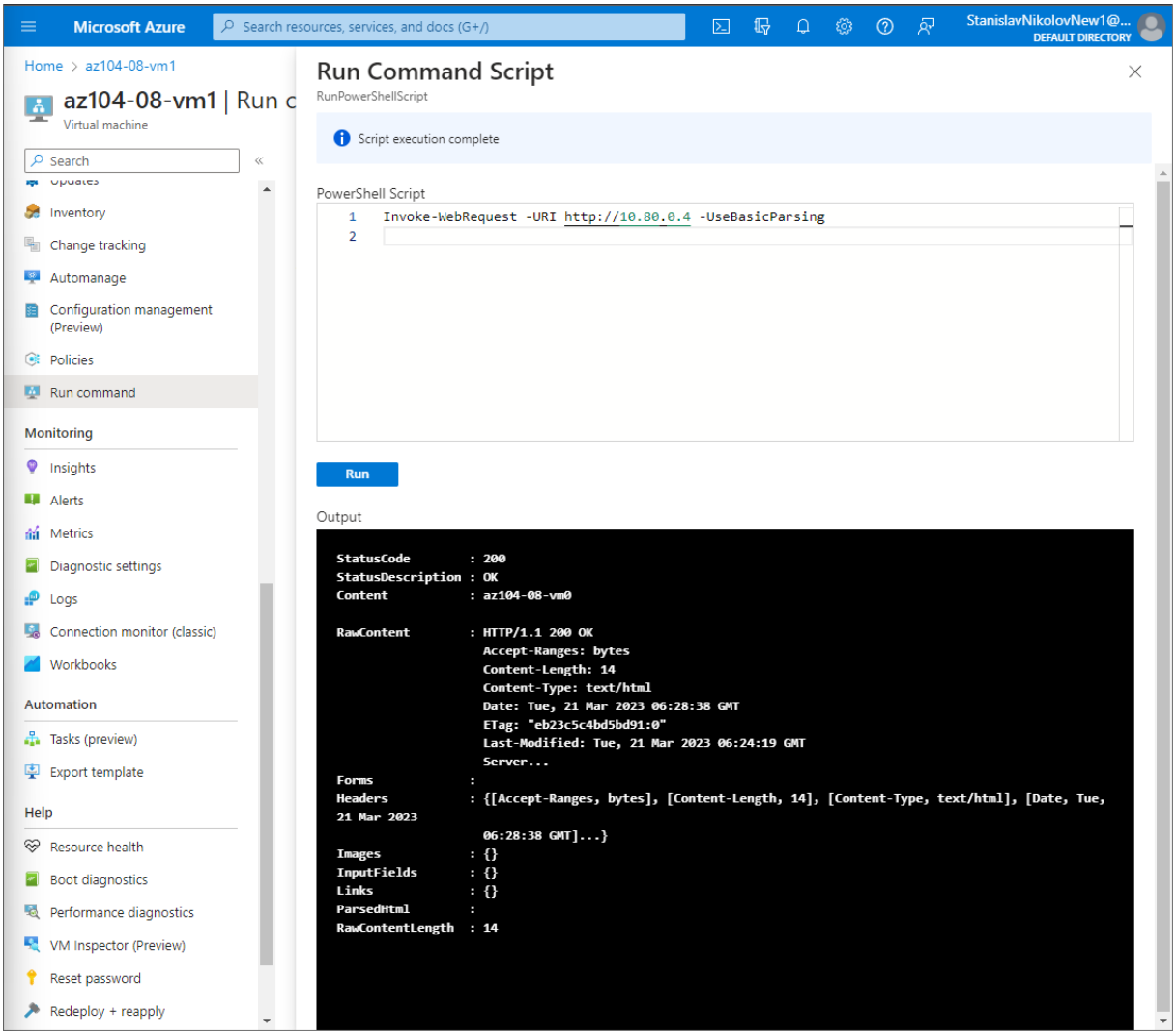
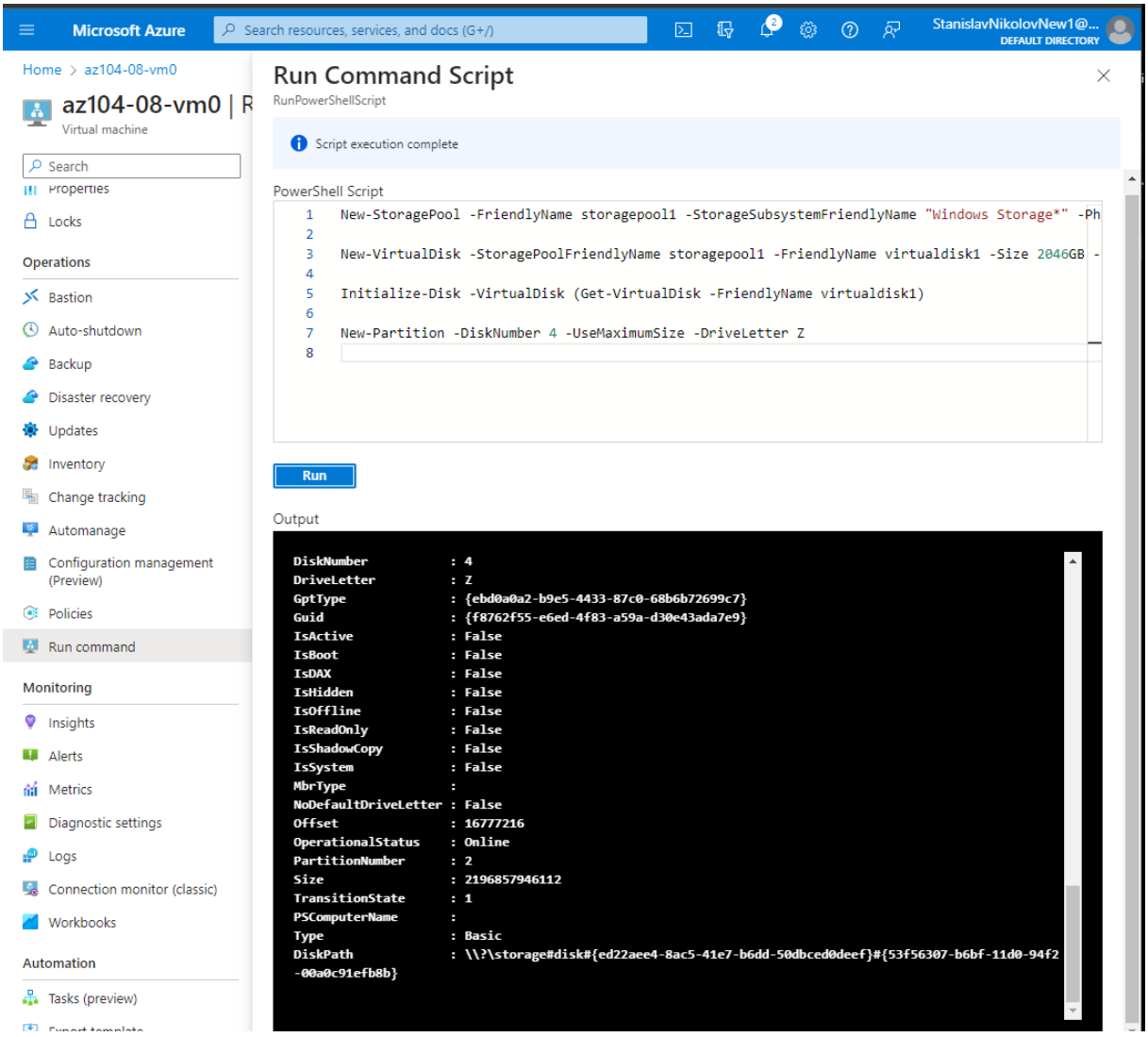
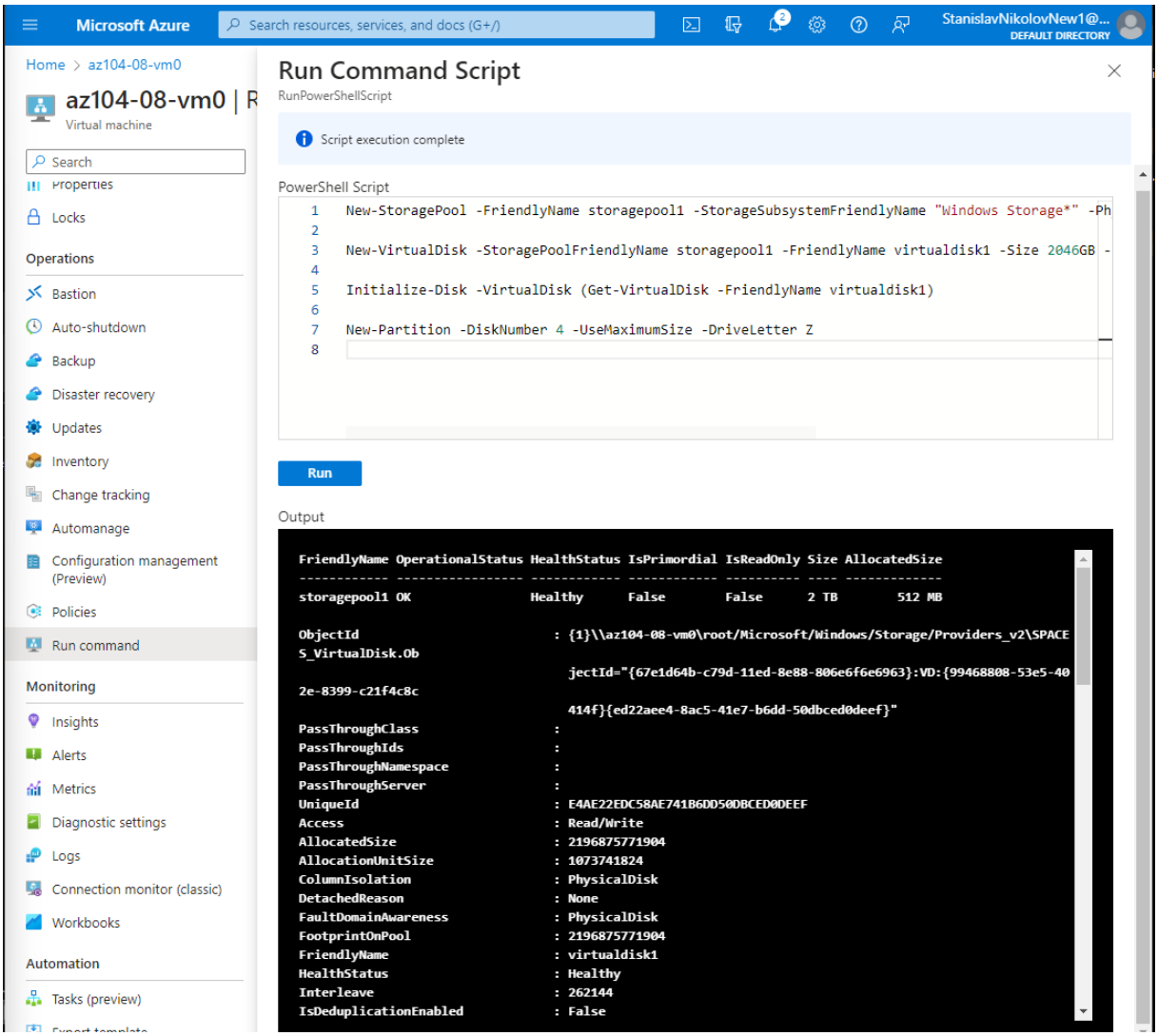
Lab 08 - Manage Virtual Machines

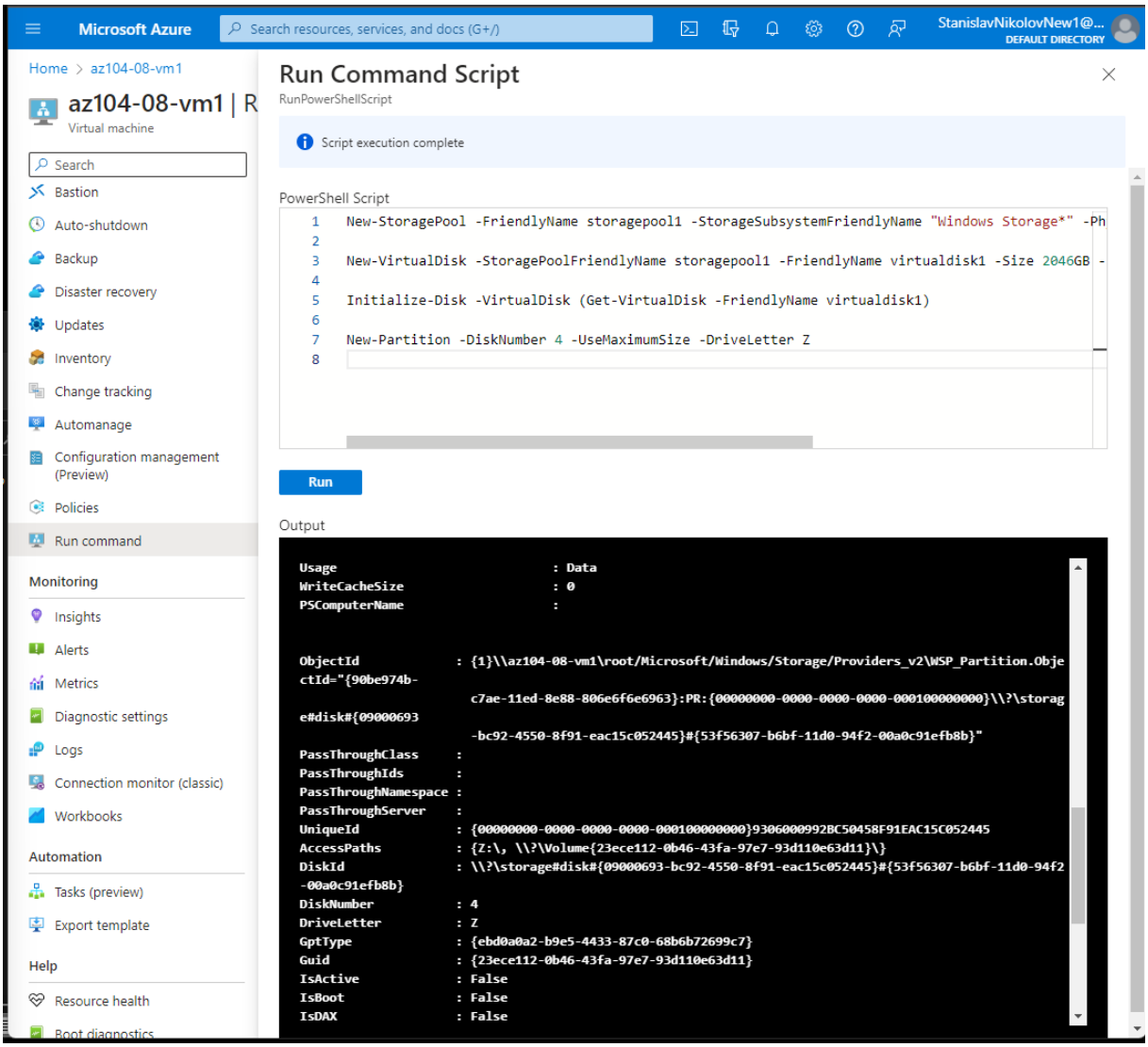
Task 1 and Task 2: Configure Azure virtual machines by using virtual machine extensions. Deploy zone-resilient Azure virtual machines by using the Azure portal and an Azure Resource Manager template.

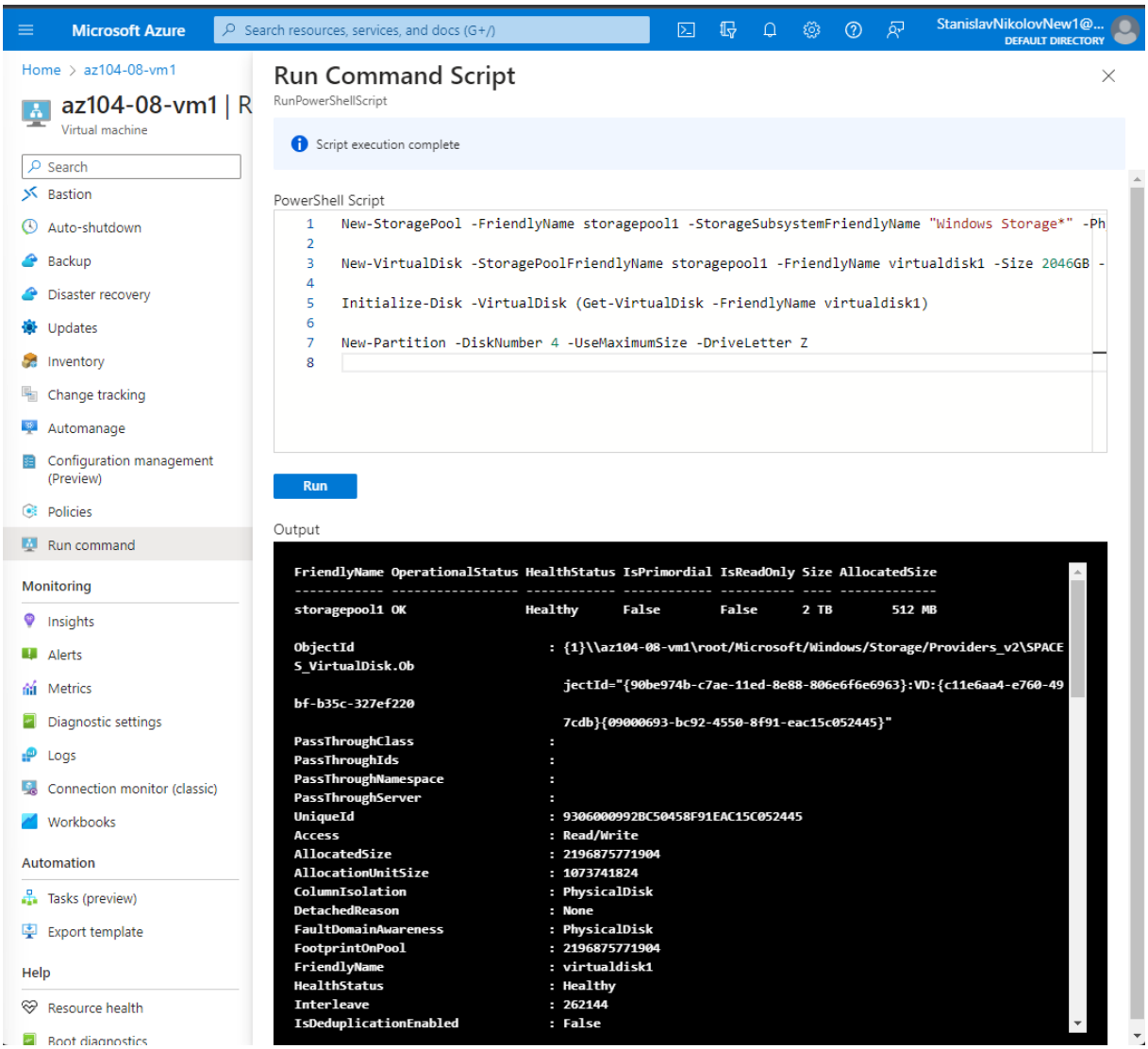


Task 3: Scale compute and storage for Azure virtual machines.

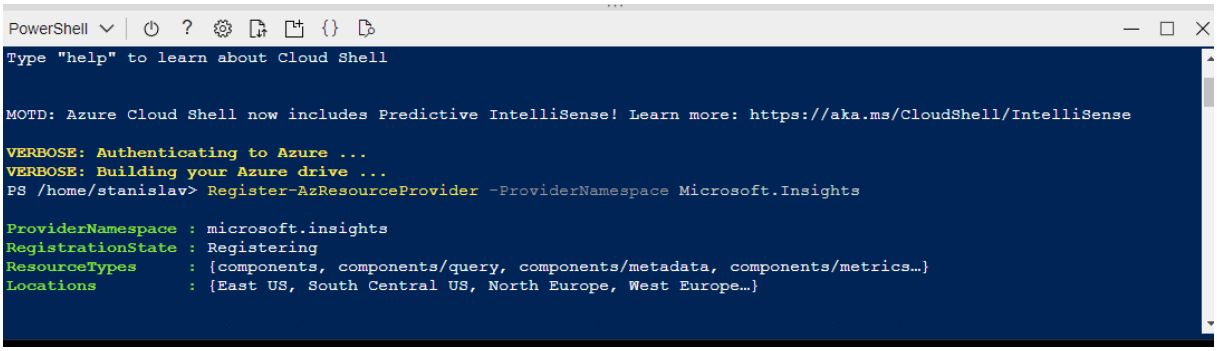



Microsoft Azure
Search resources, services, and docs (G+/)
StanislavNikolovNew1@...
DEFAULT DIRECTORY
Home > az104-08-vm0
az104-08-vm0 | R
Virtual machine
Search
Properties
Locks
Operations
Bastion
Auto-shutdown
Backup
Disaster recovery
Updates
Inventory
Change tracking
Automanage
Configuration management (Preview)
Policies
Run command
Monitoring
Insights
Alerts
Metrics
Diagnostic settings
Logs
Connection monitor (classic)
Workbooks
Automation
Tasks (preview)
Run Command Script
RunPowerShellScript
Script execution complete
PowerShell Script
1 New-StoragePool -FriendlyName storagepool1 -StorageSubsystemFriendlyName "Windows Storage*" -Ph
2
3 New-VirtualDisk -StoragePoolFriendlyName storagepool1 -FriendlyName virtualdisk1 -Size 2046GB -
4
5 Initialize-Disk -VirtualDisk (Get-VirtualDisk -FriendlyName virtualdisk1)
6
7 New-Partition -DiskNumber 4 -UseMaximumSize -DriveLetter Z
8
Run
Output
FriendlyName OperationalStatus HealthStatus IsPrimordial IsReadOnly Size AllocatedSize
storagepool1 OK Healthy False False 2 TB 512 MB
ObjectId : {1}\\az104-08-vm0\root/Microsoft/Windows/Storage/Providers_v2\SPACES_VirtualDisk.Ob
jectId="{67e1d64b-c79d-11ed-8e88-806e6f6e6963}:VD:{99468808-53e5-402e-8399-c21f4c8c
414f}{ed22aee4-8ac5-41e7-b6dd-50dbced0deef}"
PassThroughClass :
PassThroughIds :
PassThroughNamespace :
PassThroughServer :
UniqueId : E4AE22EDC58AE741B6DD50DBCED0DEEF
Access : Read/Write
AllocatedSize : 2196875771904
AllocationUnitSize : 1073741824
ColumnIsolation : PhysicalDisk
DetachedReason : None
FaultDomainAwareness : PhysicalDisk
FootprintOnPool : 2196875771904
FriendlyName : virtualdisk1
HealthStatus : Healthy
Interleave : 262144
IsDeduplicationEnabled : False


Microsoft Azure
Search resources, services, and docs (G+/)
StanislavNikolovNew1@...
DEFAULT DIRECTORY
Home > az104-08-vm1
az104-08-vm1 | R
Virtual machine
Search
Bastion
Auto-shutdown
Backup
Disaster recovery
Updates
Inventory
Change tracking
Automanage
Configuration management (Preview)
Policies
Run command
Monitoring
Insights
Alerts
Metrics
Diagnostic settings
Logs
Connection monitor (classic)
Workbooks
Automation
Tasks (preview)
Export template
Help
Resource health
Boot diagnostics
Run Command Script
RunPowerShellScript
Script execution complete
PowerShell Script
1 New-StoragePool -FriendlyName storagepool1 -StorageSubsystemFriendlyName "Windows Storage*" -Ph
2
3 New-VirtualDisk -StoragePoolFriendlyName storagepool1 -FriendlyName virtualdisk1 -Size 2046GB -
4
5 Initialize-Disk -VirtualDisk (Get-VirtualDisk -FriendlyName virtualdisk1)
6
7 New-Partition -DiskNumber 4 -UseMaximumSize -DriveLetter Z
8
Run
Output
Usage : Data
WriteCacheSize : 0
PSComputerName :
ObjectId : {1}\\az104-08-vm1\root/Microsoft/Windows/Storage/Providers_v2\WSP_Partition.Objectid="{90be974b-c7ae-11ed-8e88-806e6f6e6963}:PR:{00000000-0000-0000-0000-000100000000}\\?\storage#disk#{09000693-bc92-4550-8f91-eac15c052445}#{53f56307-b6bf-11d0-94f2-00a0c91efb8b}"
PassThroughClass :
PassThroughIds :
PassThroughNamespace :
PassThroughServer :
UniqueId : {00000000-0000-0000-0000-000100000000}9306000992BC50458F91EAC15C052445
AccessPaths : {Z:\, \\?\Volume{23ece112-0b46-43fa-97e7-93d110e63d11}\}
DiskId : \\?\storage#disk#{09000693-bc92-4550-8f91-eac15c052445}#{53f56307-b6bf-11d0-94f2-00a0c91efb8b}
DiskNumber : 4
DriveLetter : Z
GptType : {ebd0a0a2-b9e5-4433-87c0-68b6b72699c7}
Guid : {23ece112-0b46-43fa-97e7-93d110e63d11}
IsActive : False
IsBoot : False
IsDAX : False

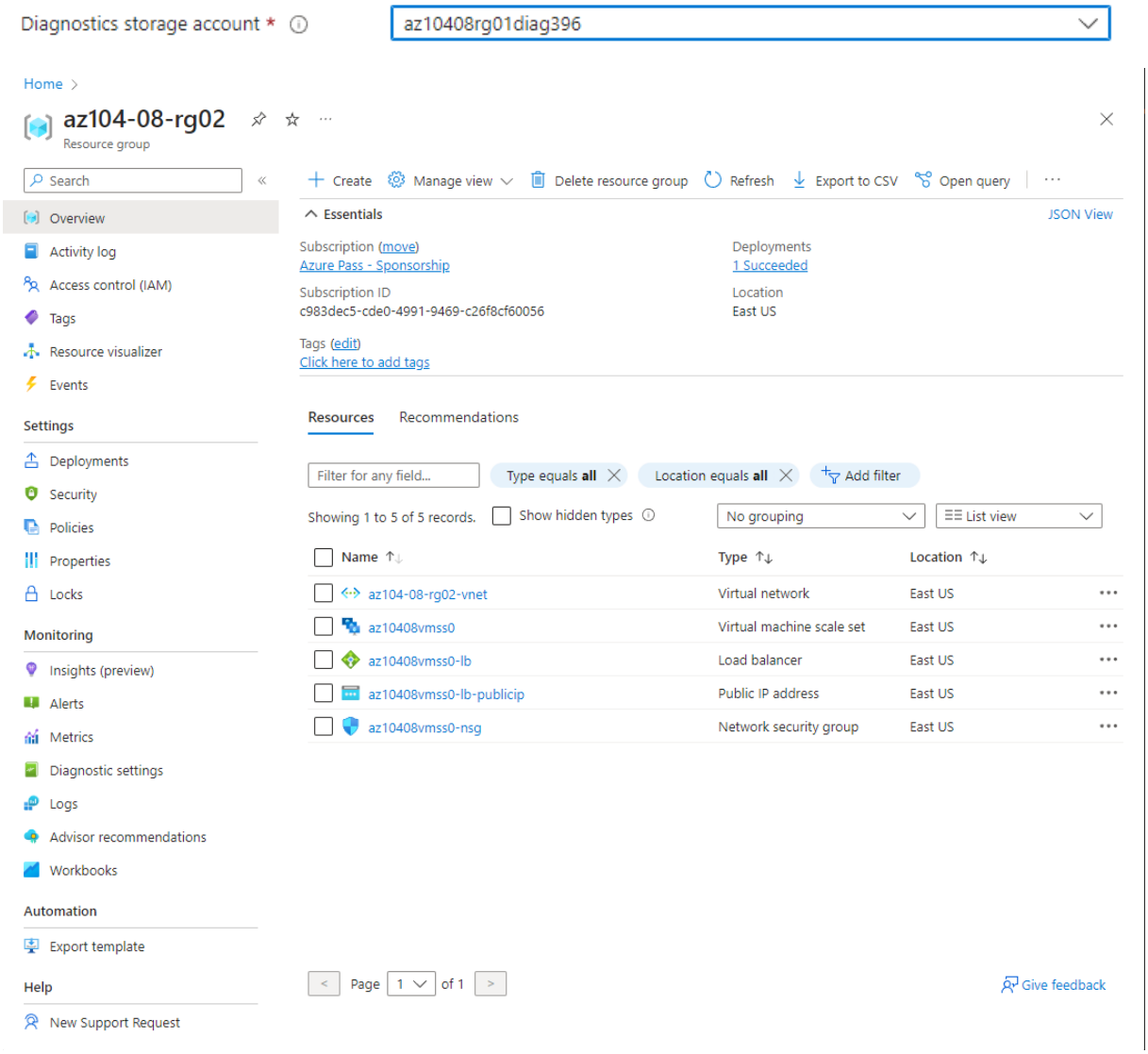


Task 4: Register the Microsoft.Insights and Microsoft.AlertsManagement resource providers.

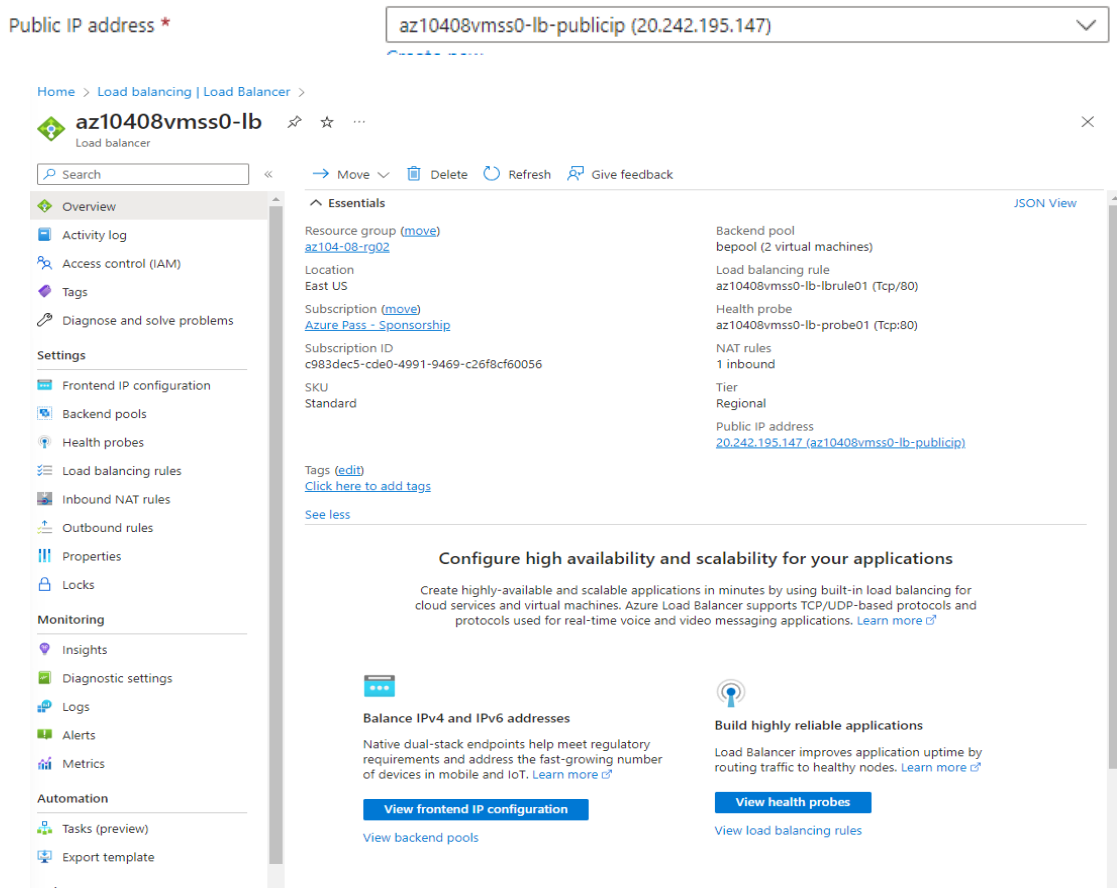


```
PS /home/stanislav> Register-AzResourceProvider -ProviderNamespace Microsoft.AlertsManagement

ProviderNamespace : Microsoft.AlertsManagement
RegistrationState : Registered
ResourceTypes     : {alerts, alertsSummary, smartGroups, smartDetectorAlertRules…}
Locations         : {global, North Central US, East US, East US 2…}

PS /home/stanislav>
```

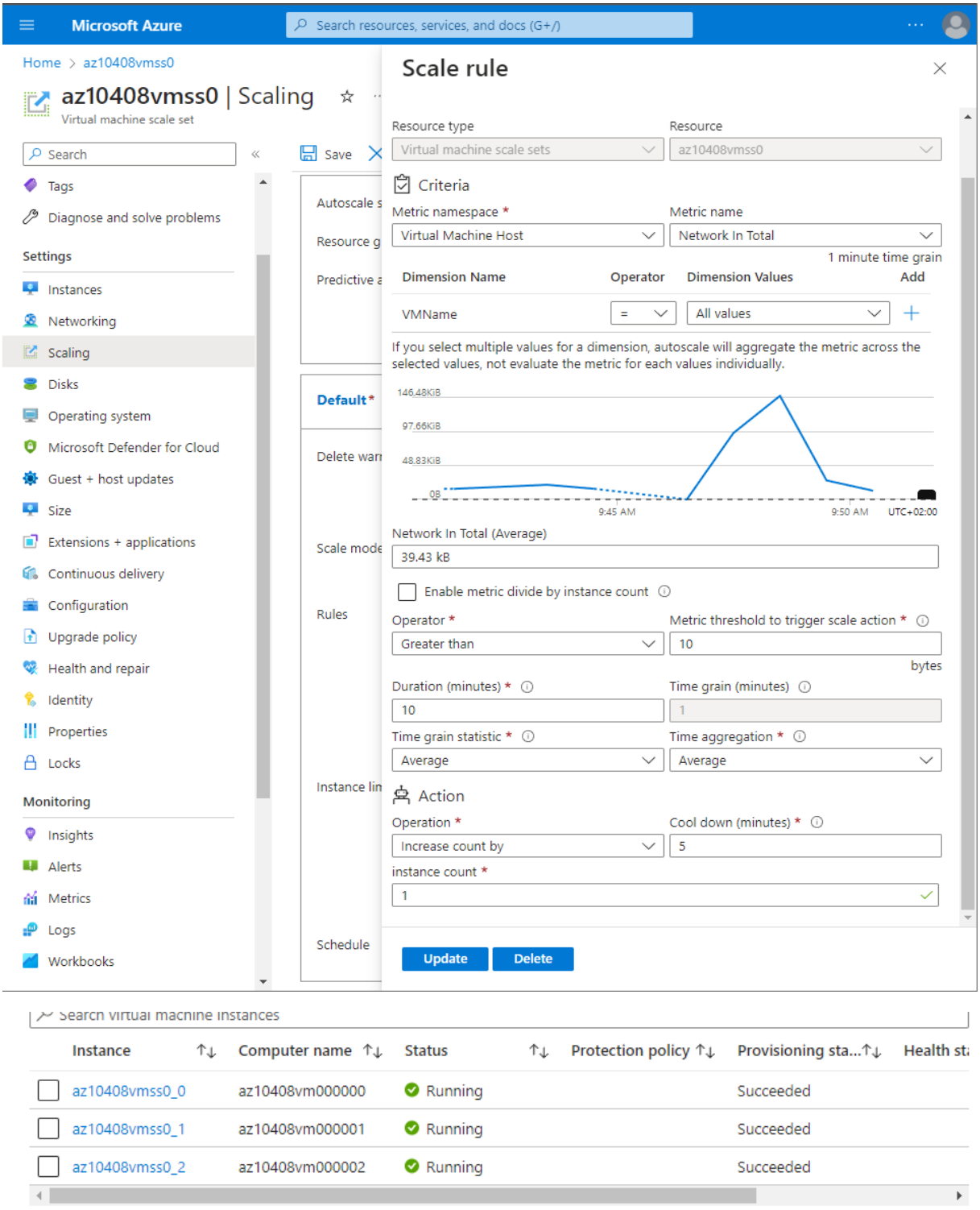
Task 5: Deploy zone-resilient Azure virtual machine scale sets by using the Azure portal.



Task 6: Configure Azure virtual machine scale sets by using virtual machine extensions.



Task 7: Scale compute and storage for Azure virtual machine scale sets.



```
PS /home/stanislav> ./az104-08-configure_VMSS_disks.ps1


ResourceGroupName                           : az104-08-rg02
Sku                                         :
  Name                                      : Standard_DS1_v2
  Tier                                      : Standard
  Capacity                                  : 3
UpgradePolicy                               :
  Mode                                      : Manual
ProvisioningState                           : Succeeded
Overprovision                               : False
DoNotRunExtensionsOnOverprovisionedVMs      : False
UniqueId                                    : b14748ec-1d1b-423c-b4a5-75051f6cee3f
SinglePlacementGroup                        : False
ZoneBalance                                 : False
PlatformFaultDomainCount                    : 5
ScaleInPolicy                               :
  Rules[0]                                  : Default
  ForceDeletion                             : False
Zones[0]                                    : 1
Zones[1]                                    : 2
Zones[2]                                    : 3
Id                                          : /subscriptions/c983dec5-cde0-4991-9469-c26f8cf60056/resourceGroups/az104-08-rg02/provid
ers/Microsoft.Compute/virtualMachineScaleSets/az10408vmss0
Name                                        : az10408vmss0
Type                                        : Microsoft.Compute/virtualMachineScaleSets
Location                                    : eastus
Tags                                        : {}
VirtualMachineProfile                       :
  OsProfile                                 :
    ComputerNamePrefix                      : az10408vm
    AdminUsername                           : Student
    WindowsConfiguration                    :
      ProvisionVMAgent                      : True
```

```
    OsDisk                                  :
      Caching                               : ReadWrite
      WriteAcceleratorEnabled               : False
      CreateOption                          : FromImage
      DiskSizeGB                            : 127
      OsType                                : Windows
      ManagedDisk                           :
        StorageAccountType                  : Premium_LRS
    DataDisks[0]                            :
      Lun                                   : 0
      Caching                               : None
      CreateOption                          : Empty
      DiskSizeGB                            : 32
      ManagedDisk                           :
        StorageAccountType                  : Standard_LRS
  NetworkProfile                            :
    NetworkInterfaceConfigurations[0]       :
      Name                                  : az104-08-rg02-vnet-nic01
      Primary                               : True
      EnableAcceleratedNetworking           : True
      DisableTcpStateTracking               : False
      NetworkSecurityGroup                  :
        Id                                  : /subscriptions/c983dec5-cde0-4991-9469-c26f8cf60056/resourceGroups/az104-08-rg02/provid
ers/Microsoft.Network/networkSecurityGroups/az10408vmss0-nsg
      DnsSettings                           :
      IpConfigurations[0]                   :
        Name                                : az104-08-rg02-vnet-nic01-defaultIpConfiguration
        Subnet                              :
          Id                                : /subscriptions/c983dec5-cde0-4991-9469-c26f8cf60056/resourceGroups/az104-08-rg02/provid
ers/Microsoft.Network/virtualNetworks/az104-08-rg02-vnet/subnets/subnet0
        Primary                             : True
        PublicIPAddressConfiguration        :
          Name                              : publicIp-az104-08-rg02-vnet-nic01
          IdleTimeoutInMinutes              : 15
          PublicIPAddressVersion            : IPv4
        PrivateIPAddressVersion             : IPv4
        LoadBalancerBackendAddressPools[0]  :
          Id                                : /subscriptions/c983dec5-cde0-4991-9469-c26f8cf60056/resourceGroups/az104-08-rg02/provid
```

```
VirtualMachineProfile                       :
  OsProfile                                 :
    ComputerNamePrefix                      : az10408vm
    AdminUsername                           : Student
    WindowsConfiguration                    :
      ProvisionVMAgent                      : True
      EnableAutomaticUpdates                : True
      EnableVMAgentPlatformUpdates          : False
    AllowExtensionOperations                : True
    RequireGuestProvisionSignal             : True
  StorageProfile                            :
    ImageReference                          :
      Publisher                             : MicrosoftWindowsServer
      Offer                                 : WindowsServer
      Sku                                   : 2016-datacenter-gensecond
      Version                               : latest
    OsDisk                                  :
      Caching                               : ReadWrite
      WriteAcceleratorEnabled               : False
      CreateOption                          : FromImage
      DiskSizeGB                            : 127
      OsType                                : Windows
      ManagedDisk                           :
        StorageAccountType                  : Premium_LRS
    DataDisks[0]                            :
      Lun                                   : 0
      Caching                               : None
      CreateOption                          : Empty
      DiskSizeGB                            : 32
      ManagedDisk                           :
        StorageAccountType                  : Standard_LRS
  NetworkProfile                            :
    NetworkInterfaceConfigurations[0]       :
```

```
ers/Microsoft.Network/virtualNetworks/az104-08-rg02-vnet/subnets/subnet0
        Primary                             : True
        PublicIPAddressConfiguration        :
          Name                              : publicIp-az104-08-rg02-vnet-nic01
          IdleTimeoutInMinutes              : 15
          PublicIPAddressVersion            : IPv4
        PrivateIPAddressVersion             : IPv4
        LoadBalancerBackendAddressPools[0]  :
          Id                                : /subscriptions/c983dec5-cde0-4991-9469-c26f8cf60056/resourceGroups/az104-08-rg02/provid
ers/Microsoft.Network/loadBalancers/az10408vmss0-lb/backendAddressPools/bepool
      EnableIPForwarding                    : False
  DiagnosticsProfile                        :
    BootDiagnostics                         :
      Enabled                               : True
      StorageUri                            : https://az10408rg01diag396.blob.core.windows.net/
  ExtensionProfile                          :
    Extensions[0]                           :
      Name                                  : customScript
      Publisher                             : Microsoft.Compute
      Type                                  : CustomScriptExtension
      TypeHandlerVersion                    : 1.8
      AutoUpgradeMinorVersion               : False
      Settings                              : {"fileUris":["https://raw.githubusercontent.com/Azure-Samples/compute-automation-config
urations/master/prepare_vm_disks.ps1"],"commandToExecute":"powershell -ExecutionPolicy Unrestricted -File prepare_vm_disks.ps1"}
    Extensions[1]                           :
      Name                                  : customScript
      Publisher                             : Microsoft.Compute
      Type                                  : CustomScriptExtension
      TypeHandlerVersion                    : 1.8
      Settings                              : System.Collections.Hashtable
OrchestrationMode                           : Uniform
TimeCreated                                 : 3/21/2023 7:10:29 AM
```