



Lab 10: Create a VM with PowerShell

At the end of each lab, any resources you created in your account will be preserved. Some Azure resources, such as VM instances, may be automatically shut down, while other resources, such as storage services will be left running. Keep in mind that some Azure features cannot be stopped and can still incur charges (i.e. Azure Bastion). To minimize your costs, delete all resources and recreate them as needed to test your work during a session.

Azure for Students
Subscription

Search (Ctrl+/) << << Upgrade Cancel subscription Rename → Change directory → Transfer billing ownership Feedback

⚠ To check your remaining credit, visit <https://www.microsoftazuresponsorships.com> →

^ **Essentials**

Subscription ID		Subscription name	: Azure for Students
Directory	: Seneca (seneca.onmicrosoft.com)	Current billing period	: 9/13/2021-10/12/2021
My role	: Account admin	Currency	: CAD
Offer	: Azure for Students	Status	: Active
Offer ID	: MS-AZR-0170P	Secure score	: Not available

Reference: [AZ-900T0X-MICROSOFTAZUREFUNDAMENTALS](#)

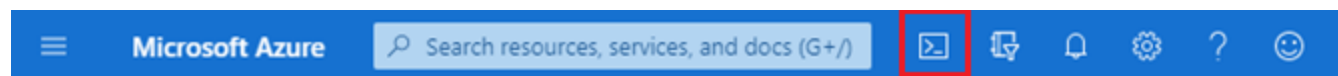
10 – Create a VM with PowerShell

In this walk-through, we will configure the Cloud Shell, use Azure PowerShell module to create a resource group and virtual machine, and review Azure Advisor recommendations.

Task 1: Configure the Cloud Shell (10 min)

In this task, we will configure Cloud Shell.

1. Sign in to the [Azure portal](#).
2. From the Azure portal, open the **Azure Cloud Shell** by clicking on the icon in the top right of the Azure Portal.



3. If you have previously used the Cloud Shell, proceed to the next task.
4. When prompted to select either **Bash** or **PowerShell**, select **PowerShell**.
5. When prompted, click **Create storage**, and wait for the Azure Cloud Shell to initialize.

Task 2: Create a resource group and virtual machine

*** Due to the Azure policy which denies the provisioning of Premium SSD disks, please use the portal to create the VM ***

In this task, we will use PowerShell to create a resource group and a virtual machine.

1. Ensure **PowerShell** is selected in the upper-left drop-down menu of the Cloud Shell pane.
2. In the PowerShell session, within the Cloud Shell pane, create a new resource group.

CodeCopy

```
New-AzResourceGroup -Name myRGPS -Location EastUS
```

3. Verify your new resource group.

CodeCopy

```
Get-AzResourceGroup | Format-Table
```

4. Create a virtual machine. When prompted provide the username (**azureuser**) and the password (**Pa\$\$w0rd1234**) that will be configured as the local Administrator account on that virtual machines. Ensure that you include the tick (') characters at the end of each line except for the last one (there should not be any tick characters if you type entire command on a single line).

CodeCopy

```
New-AzVm `
-ResourceGroupName "myRGPS" `
-Name "<studentID>VMPS" `
-Location "East US" `
-VirtualNetworkName "myVnetPS" `
-SubnetName "mySubnetPS" `
-SecurityGroupName "myNSGPS" `
-PublicIpAddressName "myPublicIpPS"
```


** Wait for VM to deploy before closing PowerShell

5. Close the PowerShell session Cloud Shell pane.
6. In the Azure portal, search for **Virtual machines** and verify the **myVMPS** is running. This may take a few minutes.

Virtual machines

Microsoft

[+ Add](#) [⌚ Reservations](#) [☰ Edit columns](#) [🔄 Refresh](#) | [🏷️ Assign tags](#) [▶ Start](#) [↺ Restart](#) [■ Stop](#) [🗑️ Delete](#)

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Private IP address	Resource group ↑↓	Location ↑↓	Status
<input type="checkbox"/>	 myVMPS	Virtual machine	192.1[REDACTED]	myRGPS	East US	Running

7. Access the new virtual machine and review the Overview and Networking settings to verify your information was correctly deployed.

Task 3: Execute commands in the Cloud Shell

In this task, we will practice executing PowerShell commands from the Cloud Shell.

1. From the Azure portal, open the **Azure Cloud Shell** by clicking on the icon in the top right of the Azure Portal.
2. Ensure **PowerShell** is selected in the upper-left drop-down menu of the Cloud Shell pane.
3. Retrieve information about your virtual machine including name, resource group, location, and status. Notice the PowerState is **running**.

CodeCopy

```
Get-AzVM -name myVMPS -status | Format-Table -autosize
```

4. Stop the virtual machine. When prompted confirm (Yes) to the action.

CodeCopy

```
Stop-AzVM -ResourceGroupName myRGPS -Name myVMPS
```

5. Verify your virtual machine state. The PowerState should now be **deallocated**. You can also verify the virtual machine status in the portal.

CodeCopy

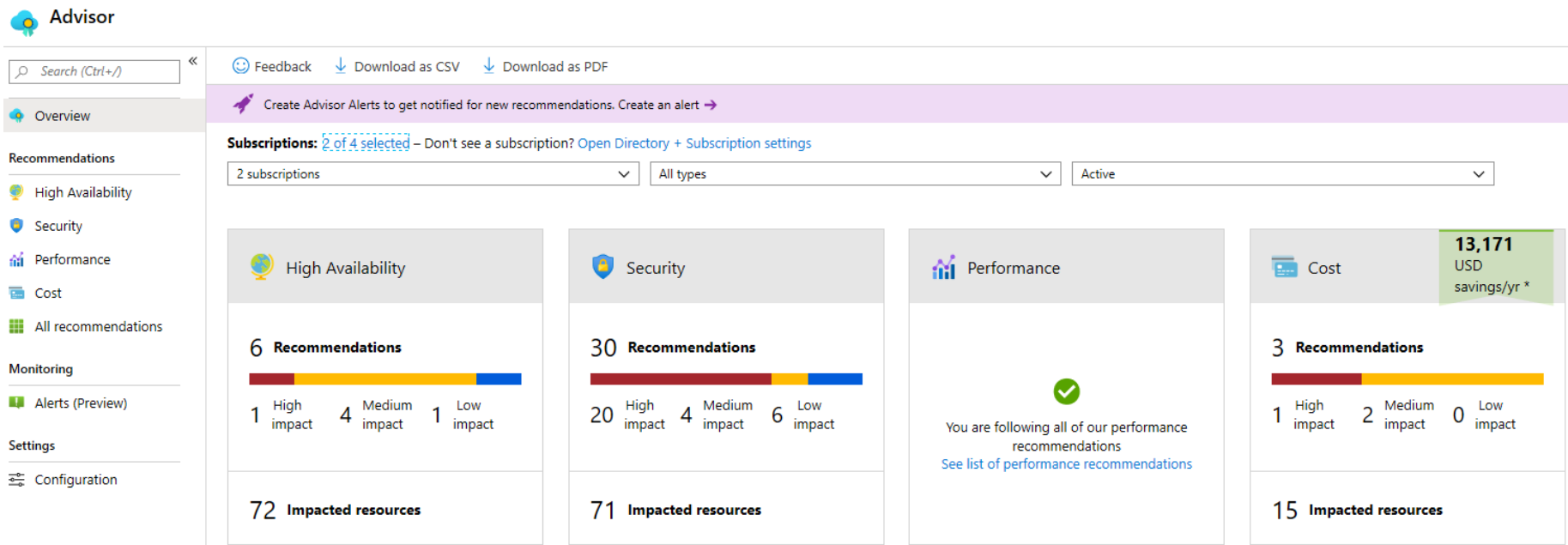
```
Get-AzVM -name myVMPS -status | Format-Table -autosize
```

Task 4: Review Azure Advisor Recommendations

Note: This same task is in the Create a VM with Azure CLI lab.

In this task, we will review Azure Advisor recommendations for our virtual machine.

1. From the **All services** blade, search for and select **Advisor**.
2. On the **Advisor** blade, select **Overview**. Notice recommendations are grouped by High Availability, Security, Performance, and Cost.




3. Select **All recommendations** and take time to view each recommendation and suggested actions.

Note: Depending on your resources, your recommendations will be different.

Advisor - All recommendations

Feedback
Download as CSV
Download as PDF
Create alert
Manage alert rules



Total recommendations

39


Recommendations by impact

22 High impact

10 Medium impact

7 Low impact

Impacted resources

152 

Potential yearly savings

13,171USD

Impact	Description	Impacted resources	updated at
High	Monitoring agent should be installed on virtual machine scale sets	1 Virtual machine scale set	10/11/2019, 9:09:31 AM
High	Just-In-Time network access control should be applied on virtual machines	5 Virtual machines	10/11/2019, 9:09:31 AM
High	System updates on virtual machine scale sets should be installed	1 Virtual machine scale set	10/11/2019, 9:09:31 AM
High	Sensitive data in your SQL databases should be classified	2 SQL servers	10/11/2019, 9:09:31 AM
High	Vulnerabilities on your SQL databases should be remediated (Preview)	9 SQL servers	10/11/2019, 9:09:31 AM

- Notice that you can download the recommendations as a CSV or PDF file.
- Notice that you can create alerts.
- If you have time, continue to experiment with Azure PowerShell.

Congratulations! You have configured Cloud Shell, created a virtual machine using PowerShell, practiced with PowerShell commands, and viewed Advisor recommendations.

Note: To avoid additional costs, you can remove all resources in the resource group. Search for resource groups, click your resource group, and then delete the resources within the resource group. **DO NOT DELETE YOUR RESOURCE GROUP.**

Submission Requirements

Submit a screenshot with the following information:

Screenshot #1:

- Azure Powershell and Portal listing of the virtual machine's status as deallocated
- The Azure Portal with your login ID

The screenshot displays the Azure Portal interface for a virtual machine named **dtrinh1VMPS**. The VM is in the **Stopped (deallocated)** state. Below the portal, a PowerShell terminal window shows the output of the `Get-AzVM` command, confirming the VM's status as **deallocated**.

Azure Portal Details:

- Resource group: MYRGPS
- Operating system: Windows
- Status: **Stopped (deallocated)**
- Size: Standard DS1 v2 (1 vcpu, 3.5 GiB memory)

PowerShell Output:

```
OperationId : 1174d925-e5ce-4de0-be8d-951e8cba6c9c
Status      : Succeeded
StartTime   : 4/5/2021 7:36:03 PM
EndTime     : 4/5/2021 7:36:52 PM
Error       :

PS /home/david> Get-AzVM -name dtrinh1VMPS -status | Format-Table -autosize
```

ResourceGroupName	Name	Location	VmSize	OsType	NIC	Provisioning	Zone	PowerState	MaintenanceAllowed
MYRGPS	dtrinh1VMPS	eastus	Standard_DS1_v2	Windows	dtrinh1VMPS	Succeeded	VM	deallocated	

Screenshot #2:

- Successful deletion of resources within resource group. **DO NOT DELETE YOUR RESOURCE GROUP!**

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information for 'dtrinh1@myseneca.ca'. The main content area is titled 'Resource groups' and shows the 'myRG' resource group. The left sidebar contains a list of resource group settings: Overview, Activity log, Access control (IAM), Tags, Resource visualizer, Events, Deployments, Security, Policies, Properties, and Locks. The 'Resources' tab is selected, showing a table with 0 records. The 'Essentials' section displays subscription information, including the Subscription ID (3e6685e5-073e-4397-8a34-b9022c3952d9) and Location (East US). The 'Deployments' section shows 'No deployments'.

Microsoft Azure

Search resources, services, and docs (G+/)

Home > Resource groups >

Resource groups

Seneca (seneca.onmicrosoft.com)

myRG

Resource group

Create Manage view

Filter for any field...

Name ↑↓

myRG

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

Events

Settings

Deployments

Security

Policies

Properties

Locks

Essentials

Subscription (Move)

Azure for Students

Subscription ID

3e6685e5-073e-4397-8a34-b9022c3952d9

Deployments

No deployments

Location

East US

Tags (Edit)

Click here to add tags

Resources Recommendations

Filter for any field...

Type == all

Location == all

Add filter

Showing 0 to 0 of 0 records.

Show hidden types

No grouping

List view

Name ↑↓

Type ↑↓

Location ↑↓