

- **Clean Up Resources**

- Delete all created resources (WebVM, webserverlogs, WebVNet, WebServerGroup) using both Azure CLI and PowerShell.

### Practical Task 7: Create and Run an Azure Automation Runbook

**Requirements:**

- Create an **Azure Automation Account** named MyAutomationAccount in the East US region using **Azure CLI**.
- Create a **PowerShell Runbook** named StartAzureVMRunbook inside MyAutomationAccount.
- Edit the Runbook to start a specified **Azure Virtual Machine** when executed.
- Test the Runbook manually by executing it and verifying that the VM starts.
- Publish the Runbook and set up a **schedule** to automatically run it every day at **6:00 AM**.

### Practical Task 8: Automate Resource Cleanup Using a PowerShell Runbook

**Requirements:**

- Create a **new Runbook** named CleanupOldResources in MyAutomationAccount.
- Write a **PowerShell script** that:
  - Lists all **resource groups** that have not been used in the past **30 days**.
  - Deletes **unused** resource groups after user confirmation.
    - Test the Runbook in **Azure Automation**.
    - Publish the Runbook and configure a **webhook** to trigger it on demand.
    - Call the webhook using **Azure CLI** and verify the cleanup process.

### Practical Task 9: Implement Desired State Configuration (DSC) to Enforce VM Settings

StartAzureVMRunbook (devMy...Automation Schedule Linking E...Smallpdf.comAzure Compute - Linux diagnos...

portal.azure.com/#@dmytroslotvinskygmail.onmicrosoft.com/resource/subscriptions/9a6ae428-d8c3-44fe-bdf2-4e08593901a0...

Microsoft AzureSearch resources, services, and docs (G+/)Copilot

StanislavKostenich@dm...DEFAULT DIRECTORY

Dashboard > devMyAutomationAccount | Runbooks > StartAzureVMRunbook (devMyAutomationAccount/StartAzureVMRunbook)

StartAzureVMRunbook (devMyAutomationAccount/StartAzureVMRunbook) | Schedules

Runbook

Search

+ Add a scheduleRefresh

Overview

Activity log

Tags

Diagnose and solve problems

Resources

Jobs

Schedules

Webhooks

Runbook settings

Properties

Description

Logging and tracing

Settings

Locks

Name	Next run	Time zone	Status
DailySchedule	2/9/2025, 6:00 AM	Coordinated Universal Time	✓ On

Switch to PowerShellRestartManage filesNew sessionEditorWeb previewSettingsHelp

DailySchedule - Microsoft AzureAutomation Schedule Linking ESmallpdf.comAzure Compute - Linux diagnos

portal.azure.com/#@dmytroslovinskygmail.onmicrosoft.com/resource/subscriptions/9a6ae428-d8c3-44fe-bdf2-4e08593901a0...

Microsoft AzureSearch resources, services, and docs (G+)

Copilot

StanislavKostenich@dm...DEFAULT DIRECTORY

Dashboard > devMyAutomationAccount

devMyAutomationAccount | SchedulesAutomation Account

Search

Process Automation

Runbooks

Jobs

Hybrid worker groups

Configuration Management

Update management

Update management (Deprecated)

Shared Resources

Schedules

Modules

Python packages

Credentials

Connections

Certificates

+ Add a schedule

Feedback

Refresh

Name	Next run
DailySchedule	2/9/2025, 6:00 AM

DailyScheduleSchedule

SaveDiscardDelete

Last modified2/8/2025, 9:13 PM

Enabled \*

Yes

No

Description

Starts \* ⓘ

02/09/2025

6:00 AM

Time zone

Coordinated Universal Time

Recurrence

Once

Recurring

Recurrence Details

Recur every \*

1

Day

Switch to PowerShell

Restart

Manage files

New session

Editor

Web preview

Settings

Help

Edit PowerShell Runbook - Micro xStartAzureVM.ps1 Issue xSmallpdf.com xAzure Compute - Linux diagnos x+

portal.azure.com/#view/Microsoft\_Azure\_Automation/TextualAuthoringWorkspace.ReactView/runbookResourceId/%2Fsubscrip... Update

Microsoft AzureSearch resources, services, and docs (G+ /)CopilotStanislavKostenich@dm... DEFAULT DIRECTORY

Dashboard > StartAzureVMRunbook (devMyAutomationAccount/StartAzureVMRunbook) >

Edit PowerShell RunbookStartAzureVMRunbook

SavePublishRevert to publishedTest paneEdit in VS CodeFeedback

> CMDLETS> RUNBOOKS> ASSETS

```
1
2 param (
3     [string]$ResourceGroupName = "devMyResourceGroup",
4     [string]$VMName = "devMyLinuxVM"
5 )
6
7 # Authenticate using Managed Identity
8 $AzContext = Connect-AzAccount -Identity
9
10 # Get Subscription ID explicitly
11 $SubscriptionId = (Get-AzSubscription -TenantId $AzContext.Context.Tenant.Id).Id
12
13 # Ensure Subscription Context is Set
14 Set-AzContext -SubscriptionId $SubscriptionId
15
16 # Start the VM
17 Start-AzVM -ResourceGroupName $ResourceGroupName -Name $VMName
18
19 Write-Output "VM $VMName in resource group $ResourceGroupName started successfully!"
20
```

Switch to PowerShellRestartManage filesNew sessionEditorWeb previewSettingsHelp



StartAzureVMRunbook 2/8/2025 x StartAzureVM.ps1 Issue x Smallpdf.com x Azure Compute - Linux diagnos x +

portal.azure.com/#view/Microsoft\_Azure\_Automation/JobDashboard.ReactView/JobResourceId/%2Fsubscriptions%2F9a6ae... Update

Microsoft Azure Search resources, services, and docs (G+/) Copilot StanislavKostenich@dm... DEFAULT DIRECTORY

Dashboard > devMyAutomationAccount | Runbooks > StartAzureVMRunbook (devMyAutomationAccount/StartAzureVMRunbook) >

StartAzureVMRunbook 2/8/2025, 8:36 PM Job

Resume Stop Suspend Feedback Refresh Export output

Essentials JSON View

Id	: f8f5106d-a454-4266-b600-e1c02887d37d	Created	: 2/8/2025, 8:36:48 PM
Status	: Completed	Last Update	: 2/8/2025, 8:38:10 PM
Ran on	: Azure	Runbook	: <a href="#">StartAzureVMRunbook</a>
Ran As	: User	Source snapshot	: <a href="#">View source snapshot</a>

Input Output Errors Warnings All Logs Exception

Name : Azure subscription 1 (9a6ae428-d8c3-44fe-bdf2-4e08593901a0) - 8d1157bb-1f96-415f-824b-ab0a29485d7d - MSI@50342

Account : MSI@50342

Environment : AzureCloud

Subscription : 9a6ae428-d8c3-44fe-bdf2-4e08593901a0

Tenant : 8d1157bb-1f96-415f-824b-ab0a29485d7d

TokenCache :

VersionProfile :

ExtendedProperties : {}

OperationId : 673b3cb0-3920-4f68-adbf-c3db1f0daf41

Status : Succeeded

StartTime : 2/8/2025 6:37:47 PM

EndTime : 2/8/2025 6:38:09 PM

Error :

Name :

VM devMyLinuxVM in resource group devMyResourceGroup started successfully!

Switch to PowerShell Restart Manage files New session Editor Web preview Settings Help

devMyAutomationAccount - Mi

StartAzureVM.ps1 Issue

Smallpdf.com

Azure Compute - Linux diagnos

portal.azure.com/#@dmytroslovinskygma.onmicrosoft.com/resource/subscriptions/9a6ae428-d8c3-44fe-bdf2-4e085939...

Update

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

StanislavKostenich@dm...  
DEFAULT DIRECTORY

Dashboard > devMyAutomationAccount

devMyAutomationAccount | Activity log

Automation Account

Search

Activity

Edit columns

Refresh

Export Activity Logs

Download as CSV

Insights

Feedback

Pin current filters

Reset filters

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Process Automation

Runbooks

Jobs

Hybrid worker groups

Configuration Management

Update management

Update management (Deprecated)

Shared Resources

Schedules

Modules

Python packages

Looking for Log Analytics? In Log Analytics you can search for performance, diagnostics, health logs, and more. [Visit Log Analytics](#)

Search

Quick Insights

Management Group : None

Subscription : Azure subscription 1

Event severity : All

Timespan : Last 6 hours

Resource group : devMyResourceGroup

Resource : devMyAutomationAccount

Add Filter

First 130 items.

Operation name	Status	Time	Time stamp	Subscription	Event initiated by
> Publish an Azure Automation runbook draft	Succeeded	3 minutes a...	Sat Feb 08 2...	Azure subscription 1	StanislavKostenich@dmyt...
> Create or Update an Azure Automation schedule asset	Succeeded	3 minutes a...	Sat Feb 08 2...	Azure subscription 1	StanislavKostenich@dmyt...
> Create an Azure Automation job	Accepted	3 minutes a...	Sat Feb 08 2...	Azure subscription 1	StanislavKostenich@dmyt...
> Write an Azure Automation runbook draft	Succeeded	3 minutes a...	Sat Feb 08 2...	Azure subscription 1	StanislavKostenich@dmyt...
> Create or Update an Azure Automation Runbook	Succeeded	3 minutes a...	Sat Feb 08 2...	Azure subscription 1	StanislavKostenich@dmyt...
> Create or Update an Azure Automation account	Succeeded	4 minutes a...	Sat Feb 08 2...	Azure subscription 1	StanislavKostenich@dmyt...
> Create or Update an Azure Automation account	Succeeded	4 minutes a...	Sat Feb 08 2...	Azure subscription 1	StanislavKostenich@dmyt...
> Delete an Azure Automation account	Succeeded	10 minutes ...	Sat Feb 08 2...	Azure subscription 1	StanislavKostenich@dmyt...

Restart

Manage files

New session

Editor

Web preview

Settings

Help

My Dashboard - Microsoft Azure

StartAzureVM.ps1 Issue

Smallpdf.com

Azure Compute - Linux diagnos

portal.azure.com/#@dmytroslovinskygmail.onmicrosoft.com/resource/subscriptions/9a6ae428-d8c3-44fe-bdf2-4e085939...

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

StanislavKostenich@dm...  
DEFAULT DIRECTORY

Switch to PowerShell

Restart

Manage files

New session

Editor

Web preview

Settings

Help

urceGroup PowerShell New

=====

Step 7: Uploading Runbook Script

=====

Command group 'automation runbook' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

=====

Step 8: Publishing Runbook

=====

Command group 'automation runbook' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

=====

Step 9: Testing Runbook Execution

=====

Command group 'automation runbook' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

CreationTime	JobId	LastModifiedTime	LastStatusModifiedTime	Name	ProvisioningSt
ate	ResourceGroup	Status	StatusDetails		
-----	-----	-----	-----	-----	-----
2025-02-08T18:36:48.356666+00:00	f8f5106d-a454-4266-b600-e1c02887d37d	2025-02-08T18:36:48.356666+00:00	2025-02-08T18:36:48.356666+00:00	c6135582-4a04-49ff-9e94-88d3d88187c3	Processing
devMyResourceGroup	New	None			

=====

Step 11: Linking Schedule to Runbook

=====

CreationTime	ExpiryTime	ExpiryTimeOffsetMinutes	Frequency	Interval	IsEnabled	LastModifiedTime	Name	NextRun
NextRunOffsetMinutes	ResourceGroup	StartTime	StartTimeOffsetMinutes	TimeZone				
-----	-----	-----	-----	-----	-----	-----	-----	-----
2025-02-08T18:36:50.680000+00:00	9999-12-31T23:59:00+00:00	0.0	Day	1	True	2025-02-08T18:36:50.680000+00:00	DailySchedule	2025-02-09T06:00:00+00:00
00+00:00 0.0	devMyResourceGroup	2025-02-09T06:00:00+00:00	0.0	Etc/UTC				

unrecognized arguments: --schedule-name DailySchedule

Examples from AI knowledge base:  
[https://aka.ms/cli\\_ref](https://aka.ms/cli_ref)  
Read more about the command in reference docs

=====

Step 11: Retrieving Public IP of the Linux VM

=====

Connect to your CentOS VM: ssh azureuser@172.203.156.109

=====

Step 12: Connecting to VM via SSH

=====

Pseudo-terminal will not be allocated because stdin is not a terminal.



My Dashboard - Microsoft Azure

StartAzureVM.ps1 Issue

Smallpdf.com

Azure Compute - Linux diagnos

portal.azure.com/#@dmytroslovinskygmail.onmicrosoft.com/resource/subscriptions/9a6ae428-d8c3-44fe-bdf2-4e085939...

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

StanislavKostenich@dm...  
DEFAULT DIRECTORY

Switch to PowerShell

Restart

Manage files

New session

Editor

Web preview

Settings

Help

/ Managed Identity Principal ID: d755a715-ca13-4fd2-b5e6-7dcc6a391160

⌘ Sleeping for 5 seconds to allow more time for replication...

✓ VM devMyLinuxVM has been stopped successfully.

CreatedOn	Name	PrincipalId	Scope	PrincipalType	RoleDefinitionId	UpdatedBy	UpdatedOn
2025-02-08T18:36:32.707836+00:00	843ee6a3-8796-45ae-a6da-ac158a0010ef	d755a715-ca13-4fd2-b5e6-7dcc6a391160	ServicePrincipal	/subscriptions/9a6ae428-d8c3-44fe-bdf2-4e08593901a0/providers/Microsoft.Authorization/roleDefinitions/b24988ac-6180-42a0-ab88-20f7382dd24c	/subscriptions/9a6ae428-d8c3-44fe-bdf2-4e08593901a0	a6ef082c-f2ff-44cb-88d6-57ead467d75e	2025-02-08T18:36:33.287751+00:00

✓ Role 'Contributor' assigned successfully to Managed Identity.

✓ Automation Account created and Managed Identity assigned with Contributor role.

Step 6: Creating PowerShell Runbook

Command group 'automation runbook' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

CreationTime	RunbookType	State	JobCount	LastModifiedTime	Location	LogActivityTrace	LogProgress	LogVerbose	Name	ProvisioningState	ResourceG
2025-02-08T18:36:38.166666+00:00	PowerShell	New	0	2025-02-08T18:36:38.166666+00:00	eastus	0	False	False	StartAzureVMRunbook	Succeeded	devMyReso

Step 7: Uploading Runbook Script

Command group 'automation runbook' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

Step 8: Publishing Runbook

Command group 'automation runbook' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

Step 9: Testing Runbook Execution

Command group 'automation runbook' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

CreationTime	ResourceGroup	Status	JobId	StatusDetails	LastModifiedTime	LastStatusModifiedTime	Name	ProvisioningSt
2025-02-08T18:36:48.356666+00:00	devMyResourceGroup	New	f8f5106d-a454-4266-b600-e1c02887d37d	None	2025-02-08T18:36:48.356666+00:00	2025-02-08T18:36:48.356666+00:00	c6135582-4a04-49ff-9e94-88d3d88187c3	Processing



My Dashboard - Microsoft Azure xStartAzureVM.ps1 Issue xSmallpdf.com xAzure Compute - Linux diagnos x+

portal.azure.com/#@dmytroslovinskygma.onmicrosoft.com/resource/subscriptions/9a6ae428-d8c3-44fe-bdf2-4e085939...

Update

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

StanislavKostenich@dm...  
DEFAULT DIRECTORY

Switch to PowerShellRestartManage filesNew sessionEditorWeb previewSettingsHelp

Your Cloud Shell session will be ephemeral so no files or system changes will persist beyond your current session.

stanislav [ ~ ]\$ ./setup\_automation\_with\_vm.sh

=====

Step 1: Creating Azure Resource Group

=====

LocationName

-----

eastusdevMyResourceGroup

=====

Step 2: Creating Virtual Network and Subnet

=====

=====

Step 3: Creating Linux Virtual Machine (CentOS 7.9)

=====

Consider upgrading security for your workloads using Azure Trusted Launch VMs. To know more about Trusted Launch, please visit <https://aka.ms/TrustedLaunch>.

ResourceGroupPowerStatePublicIpAddressFqdnsPrivateIpAddressMacAddressLocationZones

-----

devMyResourceGroupVM running172.203.156.10910.0.1.47C-1E-52-6B-75-64eastus

=====

Step 4: Opening SSH Port (22)

=====

LocationNameProvisioningStateResourceGroupResourceGuid

-----

eastusdevMyLinuxVMMSGSucceededdevMyResourceGroupe515b773-3b6d-4057-9c05-345e5c5794ab

=====

Step 5: Creating Azure Automation Account (with Managed Identity & Role Assignment)

=====

Command group 'config' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

Command group 'config' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

Command group 'automation account' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

AutomationHybridServiceUrlCreationTimeDisableLocalAuthLastMo

-----

ifiedTimeLocationNameResourceGroupState

-----

https://08bf802d-8f3f-432e-826b-3dffb515a763.jrds.eus.azure-automation.net/automationAccounts/08bf802d-8f3f-432e-826b-3dffb515a7632-08T18:35:43.323333+00:00eastusdevMyAutomationAccountdevMyResourceGroupOk2025-02-08T18:35:43.323333+00:00False2025-0

LocationNameResourceGroup

-----

eastusdevMyAutomationAccountdevMyResourceGroup

WARNING: Command group 'automation account' is experimental and under development. Reference and support levels: [https://aka.ms/CLI\\_refstatus](https://aka.ms/CLI_refstatus)

/ Managed Identity Principal ID: d755a715-ca13-4fd2-b5e6-7dcc6a391160

```
1  #!/bin/bash
2
3  # Set variables
4  RESOURCE_GROUP="devMyResourceGroup"
5  AUTOMATION_ACCOUNT="devMyAutomationAccount"
6  RUNBOOK_NAME="StartAzureVMRunbook"
7  LOCATION="East US"
8  VM_NAME="devMyLinuxVM"
9  VNET_NAME="MyVNet"
10 SUBNET_NAME="MySubnet"
11 VM_SIZE="Standard_B1s"
12 ADMIN_USER="azureuser"
13 ADMIN_PASSWORD="YourSecurePassword123!"
14 SCHEDULE_NAME="DailySchedule"
15 START_TIME="2025-02-09T06:00:00Z"
16 VM_IMAGE="OpenLogic:CentOS:7_9-gen2:latest"
17 SUBSCRIPTION_ID="9a6ae428-d8c3-44fe-bdf2-4e08593901a0"
18
19 echo "=====
20 echo "🔧 Step 1: Creating Azure Resource Group"
21 echo "=====
22 az group create --name $RESOURCE_GROUP --location "$LOCATION" --output table
23
24 echo "=====
25 echo "🌐 Step 2: Creating Virtual Network and Subnet"
26 echo "=====
27 az network vnet create --resource-group $RESOURCE_GROUP --name $VNET_NAME --address-prefix 10.0.0.0/16 --subnet-name
28
29 echo "=====
30 echo "💻 Step 3: Creating Linux Virtual Machine (CentOS 7.9)"
31 echo "=====
```