# Lab-1-2: Introduction to PowerShell

# Objectives

* Gather a basic understanding of and experience with Microsoft PowerShell



# Preparation

1. Open the PowerShell ISE (To do that type ‘powershell’ in the search field on your workstation
2. Select Windows **PowerShell ISE**). You can also perform this lab in the basic PowerShell environment (Windows **PowerShell**), but you may be missing the code completion facilities of the Interactive Scripting Environment (ISE).
3. You can also pin it to your taskbar for ease of access in future.

# Exploring PowerShell

Solve the following tasks based on the **integrated help** (get-help), **lecture slides** and PowerShell **online reference**.

**Write down the commands you used to achieve the tasks.**

1. What are the differences between the following two commands?

* get-service
* get-service | get-member

**Ans:**

**Get-service outputs a list of all active and inactive system services**

**Get-service | get-member outputs properties and methods associated with the get-service object**

1. Find all the services related to networks

**Ans:**

PS C:\WINDOWS\system32> Get-Service -DisplayName "\*network\*"

Status Name DisplayName

------ ---- -----------

Stopped NcaSvc Network Connectivity Assistant

Running NcbService Network Connection Broker

Stopped NcdAutoSetup Network Connected Devices Auto-Setup

Stopped Netman Network Connections

Running netprofm Network List Service

Stopped NetSetupSvc Network Setup Service

Running NlaSvc Network Location Awareness

Running nsi Network Store Interface Service

Stopped p2pimsvc Peer Networking Identity Manager

Stopped p2psvc Peer Networking Grouping

Running WdNisSvc Microsoft Defender Antivirus Networ...

Stopped WMPNetworkSvc Windows Media Player Network Sharin...

Stopped XboxNetApiSvc Xbox Live Networking Service

1. Show only the stopped services

**Ans:**

Get-Service | Where-Object {$\_.Status -eq "Stopped"}

1. Show all the files on c:\ sorted on size

**Ans:**

PS C:\> Get-ChildItem C:\ -File | sort length | select name, length

Name Length

---- ------

ICT.txt 53

DFInstall.log 6843

Persi0.sys 16533272

Fss0.dsk 786432000

1. Determine the average filename length for files on your C: drive. Only consider filenames, not the full paths. (Hint: look at the foreach-object and measure-object)

**Ans:**

PS C:\> Get-ChildItem -Path C:\ -File | ForEach-Object {$\_.BaseName.length} | Measure-Object -Average | select Average

Average

-------

5.5

1. Group all processes by their priority classes. (Use get-process | get-member to identify the properties of processes. In the case of errors use the -ErrorAction parameter to handle errors.)

**Ans:**

PS C:\> Get-Process | Group-Object -Property PriorityClass -ErrorAction Ignore

Count Name Group

----- ---- -----

60 Normal {System.Diagnostics.Process (acrotray), System.Diagnostics.Process (AdobeIPCBroker), System.Dia...

128 {System.Diagnostics.Process (AdobeUpdateService), System.Diagnostics.Process (AERTSr64), System...

1 Idle {System.Diagnostics.Process (chrome)}

2 AboveNormal {System.Diagnostics.Process (chrome), System.Diagnostics.Process (Teams)}

1 High {System.Diagnostics.Process (ctfmon)}

1 BelowNormal {System.Diagnostics.Process (sqlceip)}

1. Find all files on your D drive that start with a specific term (e.g. "reg"). (Note: To suppress potential errors, you may need to use the -ErrorAction parameter as done before.)

**Ans:**

PS C:\> Get-ChildItem D:\ -Recurse -File -ErrorAction Ignore | where {$\_.Name -like "r\*"} | select Name, length

Name Length

---- ------

room.skeleton 560

roomgenerator.sh 82

1. List the latest twenty error messages from the system event log. Only return the messages – no further columns.

**Ans:**

PS C:\> Get-EventLog -logname System -Newest 20 -EntryType Error | select message

Message

-------

The VMware Workstation Server service terminated unexpectedly. It has done this 1 time(s). The following corrective action wi...

The VMware Workstation Server service terminated unexpectedly. It has done this 1 time(s). The following corrective action wi...

The VMware Workstation Server service terminated unexpectedly. It has done this 1 time(s). The following corrective action wi...

The processing of Group Policy failed because of lack of network connectivity to a domain controller. This may be a transient c...

This computer was not able to set up a secure session with a domain...

The VMware Workstation Server service terminated unexpectedly. It has done this 1 time(s). The following corrective action wi...

The VMware Workstation Server service terminated unexpectedly. It has done this 1 time(s). The following corrective action wi...

Initialization failed because the transport refused to open initial addresses.

The VMware Workstation Server service terminated unexpectedly. It has done this 1 time(s). The following corrective action wi...

The processing of Group Policy failed because of lack of network connectivity to a domain controller. This may be a transient c...

This computer was not able to set up a secure session with a domain...

The VMware Workstation Server service terminated unexpectedly. It has done this 1 time(s). The following corrective action wi...

The VMware Workstation Server service terminated unexpectedly. It has done this 1 time(s).

1. Write the above solution in a powershell script that also saves the result in a .html file on c:\

**Ans:**

**Unable to get this working correctly.**

Get-EventLog -logname System -Newest 20 -EntryType Error | select message | ConvertTo-Html | Out-File C:\message.htm

1. What is the command to run the script

**Ans:**

1. Write a script that will show the freespace on different drives.

PS C:\Users\Ant> Get-PSDrive | Where-Object {$\_.Free -gt 1} | ForEach-Object { Write-Host "Free Space For" $\_.Root "is" ($\_.Free/1gb)}

Free Space For C:\ is 286.350395202637

Free Space For D:\ is 444.111301422119

Free Space For I:\ is 1508.97309112549

Free Space For X:\ is 160.021263122559