CYBER RANGERS
ARMORING YOUR BUSINESS

POWERSHELL BASIC SCRIPTING
MODULE 4: POWERSHELL REMOTING

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AGENDA

- What is PowerShell Remoting and how it is related to PowerShell Direct

- How to configure systems to use PowerShell Remoting

- Native PowerShell Remoting features like interactive and non-interactive remoting

POWERSHELL REMOTING VS. POWERSHELL DIRECT

- Remoting over network

  - `Enter-PSSession -ComputerName server123`

- Direct over VMBus

  - Available only from Hyper-V Host to local Hyper-V Guest

  - Does not require network connectivity between Hyper-V Host and Hyper-V Guest

  - `Enter-PSSession -VMName vm123`

HOW TO ENABLE PSREMOTING

- Requires configuration on target

  - `Enable-PSRemoting -Force`

- Network communication over WinRM (WSMan)

- Requires local administrator permissions or JEA for remote connectivity

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CMDLET INTEGRATED REMOTING

- Network connectivity over native PowerShell remoting (WinRM)

  - `Get-Process -ComputerName server123`

  - `Get-Service -ComputerName server123`

  - `Get-CimInstance -ComputerName server123`

  - `Get-ADUser -Server server123 -Filter *`

- Network connectivity over specific protocol (i.e. WMI over RPC)

  - `Get-WmiObject -ComputerName server123 -Class win32_bios`

INTERACTIVE REMOTING

- `Enter-PSSession -ComputerName dc`

- With specific credentials
    - `Enter-PSSession -ComputerName dc -Credential (Get-Credential)`
    - `Enter-PSSession -ComputerName dc -Credential (New-Object -TypeName pscredential `
      `-ArgumentList ('rangers\da',(ConvertTo-SecureString -String 'P@ssw0rd' -AsPlainText -Force)))`

NON-INTERACTIVE REMOTING

- `Invoke-Command -ComputerName dc -ScriptBlock {Get-Volume}`

- With specific credentials
  - `Invoke-Command -ComputerName dc -Credential (Get-Credential) ` `
    `-ScriptBlock {Get-Volume}`

NON-INTERACTIVE REMOTING

- Use local variables in remote session: using $args

```
$NameOfProcess = 'svchost'
Invoke-Command -ComputerName dc -ScriptBlock {Write-Host $args[0]} `
 -ArgumentList $NameOfProcess
```

- Use local variables in remote session: using param() block

```
 Invoke-Command -ComputerName dc -ScriptBlock {
    param(
        $ValueOf1stArgument
    )
    Write-Host $ValueOf3rdArgument
    } -ArgumentList $NameOfProcess
```

POWERSHELL SESSIONS

- First, define session

```
New-PSSession -ComputerName dc -Credential (Get-Credential) -Name ea
```

- Second, use session

```
Enter-PSSession -Name ea
```

```
Invoke-Command -Session (Get-PSSession -Name ea) -ScriptBlock {$env:username}
```

- Disconnect session, if not used & Connect session, if needed again

```
Disconnect-PSSession -Name ea
```

```
Connect-PSSession -Name ea
```

- Remove session

```
Remove-PSSession -Name ea
```

LAB

Q & A

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