Solution M2: Basic Services and Components

One possible solution to the homework, following the **PowerShell** principles, could be as the one, shown below.

Software and Services Management

One way to solve this challenge is:

1. Download the file from a remote URL:
   `wget -Uri https://zahariev.pro/files/WSA-M2-Service.zip -OutFile C:\WSAService.zip`
2. Because we don't know what is inside the archive, we can extract its content to a temporary location first:
   `Expand-Archive -Path WSAService.zip -DestinationPath C:\temp`
   Then, we can enter the destination folder and inspect what is there:
   `cd temp`
   Now, check what we have here:
   `dir`
   It appears that the result of the extraction process is a **WSAService** folder. Let's move it to **C:**
   `Move-Item -Path WSAService -Destination C:\`
3. Install the service by creating a definition for a new service:
   `New-Service -Name WSAService -BinaryPathName C:\WSAService\WSAService.exe`
4. Start the service:
   `Start-Service WSAService`
5. Check if there is **C:\WSA.log** file and what it contains:
   `Get-Content C:\WSA.log`

Disk Management

One way to solve this challenge is:

1. After we created and attached the virtual hard disk and the machine is up and running, we could start PowerShell and check the disks that the OS sees:
   `Get-Disk`
2. Then we can initialize the newly added disk:
   `Initialize-Disk -Number 1 -PartitionStyle GPT`
3. Next, we can create a 6GB partition:
   `New-Partition -DiskNumber 1 -Size 6GB`
4. And assign a drive letter:
   `Set-Partition -DiskNumber 1 -PartitionNumber 2 -NewDriveLetter X`
5. As final step we must format it:
   `Format-Volume -DriveLetter X -FileSystem NTFS -NewFileSystemLabel Disk-NTFS`
6. Now we can create one more partition:
   `New-Partition -DiskNumber 1 -UseMaximumSize`
7. Then assign a letter:
   `Set-Partition -DiskNumber 1 -PartitionNumber 3 -NewDriveLetter Y`
8. And finally, we can format it:
   `Format-Volume -DriveLetter Y -FileSystem FAT32 -NewFileSystemLabel Disk-FAT32`

As usual, there is a shorter solution:

1. Disk initialization:
   `Initialize-Disk -Number 1 -PartitionStyle GPT`
2. Handle the first set of tasks:

```
New-Partition -DiskNumber 1 -DriveLetter X -Size 6GB | Format-Volume -FileSystem
NTFS -NewFileSystemLabel Disk-NTFS
```

3. And then the second one:
```
New-Partition -DiskNumber 1 -DriveLetter Y -UseMaximumSize | Format-Volume -
FileSystem FAT32 -NewFileSystemLabel Disk-FAT32
```

Network Management

One possible way to solve the challenge is:

1. As very first step we can check installed network adapters:
```
Get-NetAdapter
```
2. Then we can continue with renaming of the first adapter:
```
Rename-NetAdapter -Name "Ethernet" -NewName "NET-Internet"
```
3. Now the second one:
```
Rename-NetAdapter -Name "Ethernet 2" -NewName "NET-Local"
```
4. Change profile of the first adapter*:
```
Set-NetConnectionProfile -InterfaceAlias "NET-Internet" -NetworkCategory Public
```
5. Then on the second*:
```
Set-NetConnectionProfile -InterfaceAlias "NET-Local" -NetworkCategory Private
```
6. Set IP address:
```
New-NetIPAddress -InterfaceAlias "NET-Local" -IPAddress 192.168.220.1 -PrefixLength
24
```
7. Change MAC address:
```
Set-NetAdapter -Name "NET-Local" -MacAddress AA-BB-CC-DD-EE-FF
```
8. Enable firewall rule:
```
Enable-NetFirewallRule -Name FPS-ICMP4-ERQ-In
```
9. Reset MAC address:
```
Set-NetAdapter -Name "NET-Local" -MacAddress ""
```

* Note that when the connection profile of an adapter that is in "unidentified network" state is changed, this change is applied to all adapters in "unidentified network" state.