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**Goals:**

* Exploring the specification of your system.
* Installing and configure a virtual machine.
* Design a calculate a small datacenter on your machine.

**Lab Requirements and Infrastructure:**

To complete this lab, you need to download, create, and prepare the following:

1. VMware Workstation Pro software.
2. Internet connection.

Pre-lab:

* Download VMware workstation pro trial version from VMware website:

<https://www.vmware.com/products/workstation-pro/workstation-pro-evaluation.html>

* Download Windows 10 evaluation version from the link below:

<https://humberital-my.sharepoint.com/:f:/g/personal/n01259050_humber_ca/EkesyzpCk5xEvcMFEtG7iOABE5qAxGAiyk1gLt-rBezPlQ?e=eMuG5M>

Task# 1: Configure VMware Workstation Networks

1. Create and install Windows 10 on a virtual machine.

Graphical user interface, application

Description automatically generated

Graphical user interface

Description automatically generated

Task#2: Get your computer specifications

Computer:

1. Find the number of logical CPUs**: For VM: 2 CPUs, and for MyComputer: 8 CPUs** (Screenshot has been pasted below for Virtual Machine and for MyComputer.
2. Find the total size of your RAM: As in screenshots, the total size is in bits, but after modifying these, the total size is **4Gb is for VM** and **32Gb is for my computer**
3. Find the total storage size: The **VM's** storage size is approximately **40 GB (with 10.39 GB as freeGb and 29.98 GB as used GB),** and for **mycomputer**, the storage size is approximately **500 GB (with 370.08 GB as used GB and 95.33 GB as free GB )**
4. Find the Speed of Network Interface: For VM and MyComputer, the speed of the Network Interface is **1 Gbps**

**For Mycomputer:**

A screenshot of a computer

AI-generated content may be incorrect.

**For VM:**

A computer screen shot of a blue screen

AI-generated content may be incorrect.

**Hint:** Feel free to use any command or GUI to answer these questions.

Note2: You need to provide a screenshot(s) for finding the answer for each question.

Task#3: Fill the below table

Vm:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | # of CPU / Cores | RAM Size | Storage Size | Network Speed |
| Your computer | 8CPUs | 32GB | 500 GB (with 370.08 GB as used GB and 95.33 GB as free GB ) | 1 Gbps |
| VM | 2CPUs | 4GB | 40 GB (with 10.39 as free GB and 29.98 as used GB) | 1Gbps |

Task#4: Calculate the number of VMs that you can deploy on your machine based on the VM specification that mentioned on Task#1 and Explain Why you have selected this number?

After checking my system specs and VM requirements, I calculated how many virtual machines I can actually run on my PC.

* My laptop has 8 CPUs, 32 GB RAM, and about 95.33 GB of free storage.
* Each VM needs 2 CPUs, 4 GB RAM, and 40 GB storage.

So here's the breakdown:

* I can run 4 VMs based on CPU (8 ÷ 2),
* 8 VMs based on RAM (32 ÷ 4),
* But only 2 VMs based on the available disk space (95.33 ÷ 40).

Since storage is the lowest, that's the limit. So, the final answer is:  
I can deploy 2 VMs without overloading my system.

Note: You can use the table on Task#3.

Task#5: Read the VMware documentation about memory overcommitment. If using overcommitment, how many VMs would you be able to deploy?

<https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.resmgmt.doc/GUID-895D25BA-3929-495A-825B-D2A468741682.html>

I can assign more virtual memory than the physical RAM, which is called memory overcommitment. This works because not all VMs use their full memory at the same time.

So, if I overcommit RAM up to 150%:

* 32 GB × 1.5 = 48 GB usable memory
* That means I could run up to 12 VMs on RAM alone (48 ÷ 4).
* But CPU still only allows 4 (8 ÷ 2).
* And again, storage is still only enough for 2 VMs.

So even with memory overcommitment, I'm still stuck at 2 VMs, just because I don’t have enough free disk space.

Task#6: What is the new number of VMs that you can deploy on your computer if you have changed the VM specification to 1CPU, 1G RAM and 40GB Storage?

When I lower the requirements for each VM, just 1 CPU, 1 GB RAM, and 40 GB storage.

In that case:

* I could run 8 VMs based on CPU (8 ÷ 1),
* 32 VMs based on RAM (32 ÷ 1),
* But again, only 2 VMs fit in my storage (95.33 ÷ 40).

So, even though the CPU and RAM usage is very low now, the storage still limits me to just 2 VMs.