

SANYAM AGRAWAL – SE21UCSE192 – CSE3**TEAM - 30****Q1. Give the configuration of your laptop.**

PS C:\Users\pc> systeminfo

Host Name: SANYAM

OS Name: Microsoft Windows 11 Pro

OS Version: 10.0.22621 N/A Build 22621

OS Manufacturer: Microsoft Corporation

OS Configuration: Standalone Workstation

OS Build Type: Multiprocessor Free

Registered Owner: pc

Product ID: 00330-52024-12646-AAOEM

Original Install Date: 3/14/2023, 1:21:08 AM

System Boot Time: 8/14/2023, 2:46:57 PM

System Manufacturer: HP

System Model: HP EliteBook 840 G5

System Type: x64-based PC

Processor(s): 1 Processor(s) Installed.

[01]: Intel64 Family 6 Model 142 Stepping 10 GenuineIntel ~1696 Mhz

BIOS Version: HP Q78 Ver. 01.25.00, 6/16/2023

Windows Directory: C:\Windows

System Directory: C:\Windows\system32

Boot Device: \Device\HarddiskVolume1

System Locale: en-us;English (United States)
Input Locale: 00004009
Time Zone: (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Total Physical Memory: 16,227 MB
Available Physical Memory: 11,314 MB
Virtual Memory: Max Size: 18,659 MB
Virtual Memory: Available: 13,703 MB
Virtual Memory: In Use: 4,956 MB
Page File Location(s): C:\pagefile.sys
Domain: WORKGROUP
Logon Server: \\SANYAM
Hotfix(s): 5 Hotfix(s) Installed.
[01]: KB5028948
[02]: KB5012170
[03]: KB5029263
[04]: KB5028320
[05]: KB5028756
Network Card(s): 2 NIC(s) Installed.
[01]: Intel(R) Ethernet Connection (4) I219-LM
Connection Name: Ethernet
Status: Media disconnected
[02]: Intel(R) Dual Band Wireless-AC 8265
Connection Name: Wi-Fi
DHCP Enabled: Yes

DHCP Server: 10.59.121.77

IP address(es)

[01]: 10.59.211.46

[02]: fe80::9aea:91e1:5878:5f59

Hyper-V Requirements: A hypervisor has been detected. Features required for Hyper-V will not be displayed.

Q2. Give the configuration of a system in IT-Lab

-> Description of configuration of a system command – lscpu

- **Architecture:** This section provides information about the CPU architecture, like the architecture type (e.g., x86_64 for 64-bit systems), CPU op-modes, byte order, and machine type.
- **CPU(s):** This section provides information about the number of CPUs, cores per socket, threads per core, and total number of CPUs.
- **Thread(s) per core:** This specifies the number of hardware threads per core, which is relevant for CPUs that support simultaneous multithreading (SMT).
- **Core(s) per socket:** This indicates the number of CPU cores present in each CPU socket.
- **Socket(s):** This shows the total number of CPU sockets in the system.
- **NUMA node(s):** If the system is NUMA (Non-Uniform Memory Access) capable, this section will display the number of NUMA nodes.
- **CPU MHz:** The clock frequency of the CPU in megahertz.
- **BogoMIPS:** A rough estimate of CPU speed measured in "bogus MIPS" (Million Instructions Per Second).
- **Virtualization:** Information about virtualization support on the CPU.
- **L1d/L1i/L2/L3 cache sizes:** Sizes of the various levels of CPU cache.

- **Flags:** A list of flags indicating CPU features and capabilities, such as SSE (Streaming SIMD Extensions), AES (Advanced Encryption Standard), etc.

-> Command – lscpu

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Address sizes: 46 bits physical, 48 bits virtual
Byte Order: Little Endian
CPU(s): 20
On-line CPU(s) list: 0-19
Vendor ID: GenuineIntel
Model name: 12th Gen Intel(R) Core(TM) i7-12700
CPU family: 6
Model: 151
Thread(s) per core: 2
Core(s) per socket: 12
Socket(s): 1
Stepping: 2
CPU max MHz: 3876.9570
CPU min MHz: 800.0000
BogoMIPS: 4224.00

Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mc
a cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss

ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art
 arch_perfmon pebs bts rep_good nopl xtopology nonstop_
 tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes6
 4 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xt
 pr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_dead
 line_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowp
 refetch cpuid_fault epb invpcid_single ssbd ibrs ibpb s
 tibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpi
 d ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms i
 nvpcid rdseed adx smap clflushopt clwb intel_pt sha_ni
 xsaveopt xsavec xgetbv1 xsaves split_lock_detect avx_vn
 ni dtherm ida arat pln pts hwp hwp_notify hwp_act_windo
 w hwp_epp hwp_pkg_req umip pku ospke waitpkg gfni vaes
 vpclmulqdq tme rdpid movdiri movdir64b fsrm md_clear se
 rialize pconfig arch_lbr flush_l1d arch_capabilities

Virtualization features:

Virtualization: VT-x

Caches (sum of all):

L1d:	512 KiB (12 instances)
L1i:	512 KiB (12 instances)
L2:	12 MiB (9 instances)
L3:	25 MiB (1 instance)

NUMA:

NUMA node(s): 1

NUMA node0 CPU(s): 0-19

Vulnerabilities:

Itlb multihit:	Not affected
L1tf:	Not affected
Mds:	Not affected
Meltdown:	Not affected
Mmio stale data:	Not affected
Spec store bypass:	Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Spectre v1:	Mitigation; usercopy/swaps barriers and __user pointer sanitization
Spectre v2:	Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Srbds:	Not affected
Tsx async abort:	Not affected

-> Some more commands:

- **lshw -short -C memory** -> Finding ram speed and max supported ram by the Linux server

```
mec@mec-HP-Pro-SFF-400-G9-Desktop-PC:~$ lshw -short -C memory
WARNING: you should run this program as super-user.
H/W path      Device      Class      Description
=====
/0/0          memory      15GiB System memory
/0/100/14.2   memory      RAM memory
WARNING: output may be incomplete or inaccurate, you should run this program as super-user.
mec@mec-HP-Pro-SFF-400-G9-Desktop-PC:~$
```

- **cat /proc/meminfo** -> To see free and used memory in the system

```
mec@mec-HP-Pro-SFF-400-G9-Desktop-PC:~$ cat /proc/meminfo
MemTotal:        16049392 kB
MemFree:         12034604 kB
MemAvailable:    13693504 kB
Buffers:         68700 kB
Cached:          2392816 kB
SwapCached:      0 kB
Active:          792640 kB
Inactive:        2140692 kB
Active(anon):    4716 kB
Inactive(anon):  1062328 kB
Active(file):    787924 kB
Inactive(file):  1078364 kB
Unevictable:     546608 kB
Mlocked:         0 kB
SwapTotal:       2097148 kB
SwapFree:        2097148 kB
Dirty:           52 kB
Writeback:       4 kB
AnonPages:       1018500 kB
Mapped:          547852 kB
Shmem:           610080 kB
KReclaimable:    99488 kB
Slab:            232848 kB
SReclaimable:    99488 kB
SUnreclaim:     133360 kB
KernelStack:    16112 kB
PageTables:      23556 kB
NFS_Unstable:    0 kB
Bounce:          0 kB
WritebackTmp:    0 kB
CommitLimit:    10121844 kB
Committed_AS:   6323700 kB
VmallocTotal:   34359738367 kB
VmallocUsed:     41984 kB
VmallocChunk:    0 kB
Percpu:         25824 kB
HardwareCorrupted: 0 kB
AnonHugePages:   0 kB
ShmemHugePages:  0 kB
ShmemPmdMapped:  0 kB
FileHugePages:   0 kB
FilePmdMapped:   0 kB
HugePages_Total: 0
HugePages_Free:  0
HugePages_Rsvd:  0
HugePages_Surp:  0
Hugepagesize:    2048 kB
Hugetlb:         0 kB
DirectMap4k:     315580 kB
DirectMap2M:     8783872 kB
DirectMap1G:     7340032 kB
```