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INSTITUTE OF INFORMATION TECHNOLOGY
ADDING VALUE TO ENGINEERING

Department of _____ Engineering

Academic Year : 2020-21

SUBJECT :**System Programming and Operating System**

CLASS: **TE** **SEMESTER:** 5th

ASSIGNMENT NO. : **OCW** **DATE OF SUBMISSION:**30/11/2021

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ROLL NO. **38**

TOPIC: **Compare and write Memory management in Linux/Windows**

WEBSITE URL REFERRED: **https://www.youtube.com/watch?v=nsWklEuhRmM,**

Summary/Abstract/Review:

comparison -

1. Data Structures

Windows

- windows uses tree data structure.
- each node of the tree is called Virtual address descriptors (VAD)
- free nodes are unused nodes.
- Reserved nodes cannot be used until reservation is lifted off.

Linux

- it uses linked list data structure.
- it maintains a list of vm_area_structs.
- this list is searched whenever a page is to be found.
- it also records the range of address.
- linux uses data structure depending upon the situation.

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2. Distribution of process address spac

Windows

- windows on 32 bit x86 system can access upto 4GB of physical memory
- the upper 2GB is kept for windows kernel mode.
- the lower 2GB is for the address space is reserved for user mode.

Linux

- 3GB of memory space is reserved for user mode.
- 1GB is kept for kernel mode.

3. Address Structure

Windows

- Address is divided into two parts
  - page number
  - page offset.

Linux

- Linear address is broken into four parts
  - Global Directory
  - Middle Directory
  - page table
  - offset.

Conclusion:

We have compared the linux and windows behalf of Memory Management.

Name & Sign of Subject In-charge:

Ms. Amrapali S. Chavan

Marks: