Storage Management

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ABSTRACT- Storage management is a general storage industry phrase that is used to describe the tools, processes, and policies used to manage storage networks and storage services such as virtualization, replication, mirroring, security, compression, traffic analysis and other services.

Storage management is a process used to optimize the use of storage devices and to protect the integrity of data for any media on which it resides. Optimizing the use of storage devices translates into making sure the maximum amount of usable data is written to and read from these units at an acceptable rate of response. Optimizing these resources also means ensuring that there is an adequate amount of storage space available while guarding against having expensive excess amounts. This notion of optimal use ties in to two of the main areas of storage management: capacity and performance.

There are many different devices on which data can be stored. The selection of devices to best meet your storage needs depends primarily on three factors:

- Performance
- Availability
- Cost

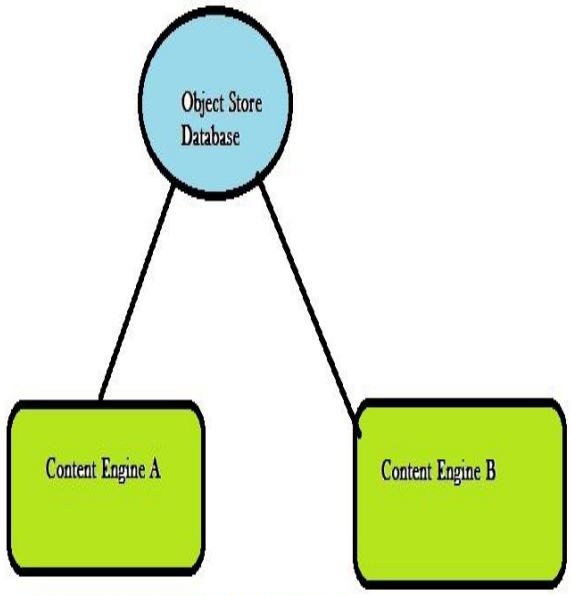
How you choose to manage your storage determines how you control the devices that store the active data on your system. To be useful, active data must be available and remain persistent even after unexpected events, such as a hardware or software failure.

The storage allocation strategy used in each of the three data areas, namely static data area, heap, stack, are different.Stack allocation lays out storage for all data objects at compile time.

- Stack allocation manages the run-time storage as a stack.

- Heap allocation allocates and deallocates

storage as needed at runtime from a data area known as heap.



STORAGE MANAGEMENT

There are three different storage allocation strategies based on this division of run time storage. The strategies are:

1) Static allocation: The state allocation is for all the data objects at compile time.

2) Heap allocation: In heap allocation the heap is used to manage the dynamic memory allocation.

Static allocation:

a) In static allocation the compile can determine the amount of storage required by each data object. And therefore it becomes easy for a compiler to find the addresses of these data in the activation record.

b) At compile time, compiler can fill the addresses at which the target code can find the data it operates on.

Limitations of static allocation

1) Recursive procedures are not supported

Heap allocation:

a) The efficient heap management can be done by

b) Creating a linked list for the free blocks and when any memory is deallocated that block of memory is appended in the linked list.

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