

# Data Center Server Provision Distributed Asynchronous Control for Coupled Renewal Systems

## ABSTRACT

A data center that consists of a central controller and  $N$  servers that serve randomly arriving requests. An active server can choose to transition to the idle state at any time. When it does so, it chooses the specific sleep mode to use and the amount of time to sleep. For example, deeper sleep modes can shut down more electronics and thereby save on per-slot idling costs. However, a deeper sleep incurs a longer setup time when transitioning back to the active state.

## EXISTING SYSTEM

In Existing System, a cost minimization problem for data centers with  $N$  servers and randomly arriving service requests. A central router decides which server to use for each new request. Each server has three types of states (active, idle, and setup) with different costs and time durations. The servers operate asynchronously over their own states and can choose one of multiple sleep modes when idle.

## DIS ADVANTAGES

- Making solutions difficult when the number of servers is large.
- some statistics of the system, such as the arrival probabilities are unknown.

## PROPOSED SYSTEM

In Proposed System, an efficient distributed asynchronous control algorithm reducing the cost in a data center, where the front-end load balancer makes slot-wise routing requests to the shortest queue and each server makes a frame-based service decision by only looking at its own request queue. Theoretically, this algorithm is shown to achieve the near optimal cost while stabilizing the request queues. Simulation experiments on a real data center traffic trace demonstrate that our algorithm outperforms several other algorithms in reducing the power consumption as well as achieving lower delays.

## ADVANTAGES

- It minimize the overall time average cost.
- Always-on with full capacity.

## SYSTEM REQUIREMENTS

### H/W System Configuration:-

Processor	-	Pentium –III
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Key Board	-	Standard Windows Keyboard
Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

### S/W System Configuration:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X
Front End	:	HTML, Jsp
Scripts	:	JavaScript.
Server side Script	:	Java Server Pages.
Database	:	MySQL 5.0
Database Connectivity	:	JDBC