CLOUD SERVICES

S Thenmozhi

Department of Computer Applications

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Cloud Computing Essentials

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Scalability & Elasticity

Multi-tier applications such as e-Commerce, social networking, business-to-business, etc. can experience rapid changes in their traffic.

Capacity planning involves determining the right sizing of each tier of the deployment of an application in terms of the number of resources and the capacity of each resource.

Capacity planning may be for computing, storage, memory or network resources.

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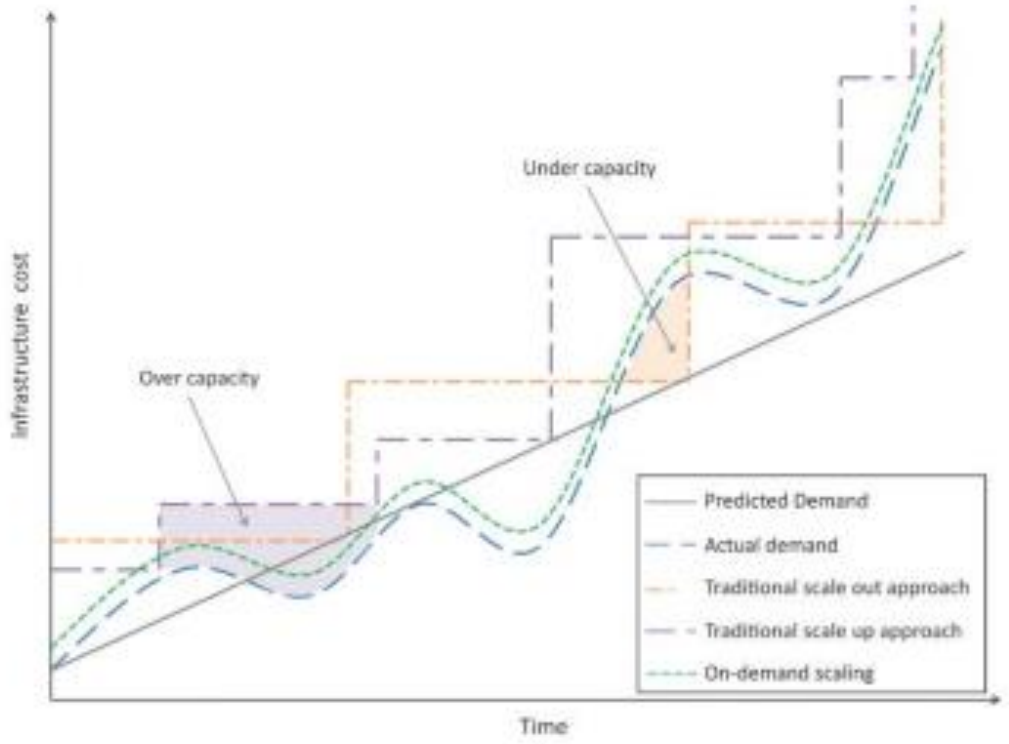
Scalability & Elasticity

Cost Vs Capacity Curves



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Vertical Scaling/Scaling up

- Involves upgrading the hardware resources (adding additional computing, memory, storage or network resources)

Horizontal scaling /Scaling out

- Involves addition of more resources of the same type.

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Src: www.esds.co.in

Deployment

Cloud application deployment design is an iterative process that involves:

Deployment Design

- The variables in this step include the number of servers in each tier, computing, memory and storage capacities of severs, server interconnection, load balancing and replication strategies.

Performance Evaluation

- To verify whether the application meets the performance requirements with the deployment.
- Involves monitoring the workload on the application and measuring various workload parameters such as response time and throughput.
- Utilization of servers (CPU, memory, disk, I/O, etc.) in each tier is also monitored.

Deployment Refinement

- Various alternatives can exist in this step such as vertical scaling (or scaling up), horizontal scaling (or scaling out), alternative server interconnections, alternative load balancing and replication strategies, for instance.

Examples

Cloud Deployment Management tool	Features
Right Scale	Design, deploy and manage cloud deployments across multiple public or private clouds
Scalr	Provides tools to automate the management of servers, monitor servers, replaces servers that fail, provides auto scaling and backups
Kaavo	Deploying applications across multiple clouds, managing distributed applications and automating high availability
Cloudstack	Allows simple and cost effective deployment management and configuration of cloud computing environments

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S Thenmozhi

Department of Computer Applications

thenmozhis@pes.edu

+91 80 6666 3333 Extn 393