

Survey Paper: Survey of Fog Computing: Fundamental, Network Applications, and Research Challenges**➤ Key findings –**

1. Large carbon footprint (increasing day by day?) with cloud data center providers. Delays due to geographical limitations affecting QoS.
2. Solution is moving computation tasks to the edge (switches, hubs, routers, BTS etc.) aka Fog computing.
3. Fog Computing can help IoT ecosystem to grow significantly, still many issues remains to be addressed.
4. Low latency for real time applications, heterogeneity are some of the features when moving towards fog computing.

➤ Key technology insights –

1. OpenFog Consortium founded by tech companies and Universities to standardize Fog computing.
2. Due to the close integration of FogComputing nodes with intelligence enabled devices, overall computing efficiency is improved.
3. Cloudlets can provide high computation power to mobile devices in proximity.
4. Virtualization of multiple edge DC helps in reduced deployment time for new applications.

➤ Relevance to Fog computing and Scalability –

1. Reduction in latency resulting in increasing scalability by decreasing data transfer time.
2. Software Defined Network (SDN) allows reconfiguration of resources in network without any hardware changes. This provides great flexibility for scaling the network.
3. Energy consumption becomes one of the major factors while scaling the fog network, various modules have been surveyed for different kind of edge devices.
4. Resource management and service allocation becomes important when processing large amount of data from different geographical nodes (and scaling the network).

Survey Paper: A Survey on Resiliency Techniques in Cloud Computing Infrastructures and Applications**➤ Key findings –**

1. With increasing business dependency on cloud computing, more emphasis on resiliency is being given.
2. Different point of failures like hosting servers, network connections between them and application also.
3. Resiliency is defined as the ability of system or business to recover, remain operational and dependable.
4. Human errors, Software failures, physical failures and Disasters are some of the major causes of service disruption in Cloud Computing.

➤ Key technology insights –

1. Business Continuity planning (BCP) process is defined to minimize the impact of large failures and keeping the business running.
2. Data replication and check pointing the storage side and virtualization of computing are some of the common techniques currently implemented in cloud data centers.
3. Network and Server resiliency provides the fundamental improvements for cloud components against large attacks and disasters.
4. SPANStore is a technique discussed for geo-distributed replication of data and content through multiple providers if cloud service.

➤ Relevance to Edge Computing and Scalability –

1. Various factors like Resiliency strategies, type of service (IaaS,Paas) are considered while deciding the process for scaling the cloud computing architecture.
2. MillWheel approach uses edge nodes to decide the replication point and as a checkpoint.
3. Various approaches are surveyed for cloud application design using edge/fog computing as resiliency strategies.
4. New energy efficient techniques needs to be proposed as resiliency techniques typically increases the overall energy consumption of the cloud services.