

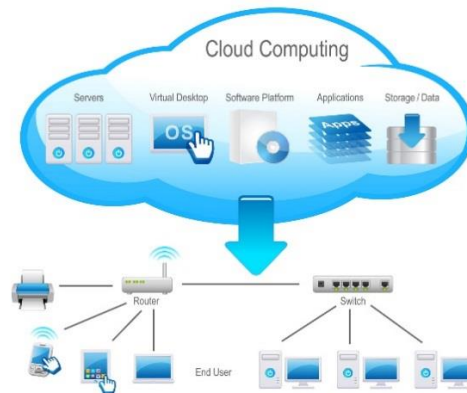


## Cloud Noisy-Neighbor Detection

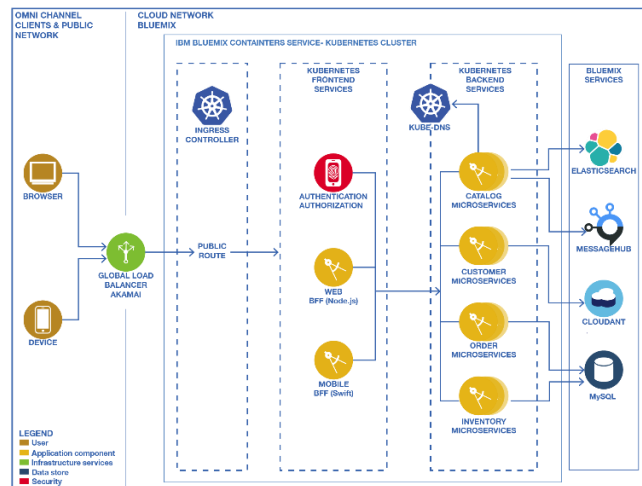
### Abstract:

In the past, businesses and firms spent large capital investments on locally hosting of software and Information Technology (IT) infrastructure. The emerging Cloud computing technology is a big shift from this traditional way of thinking about IT resources.

Cloud computing enables standard access to shared pools of configurable system resources and higher-level services that can be rapidly provisioned with minimal management effort, often over the Internet. It relies on sharing of resources to achieve coherence and economies of scale, similarly to a public utility.



The main enabling technology for cloud computing is virtualization. Virtualization software separates a physical resource into one or more "virtual" resources, each of which can be easily used and managed to perform computing tasks. Cloud network is one such resource and is virtualized through multiple logical constructs and SW layers. It is essential to monitor cloud network to ensure transparency, correct and efficient operations, both from the customer and from the provider perspectives.





## Goals:

The project's objective is to study cloud networking and deploy cutting-edge technologies for monitoring and analyzing network behavior. The project will include the following phases:

1. Deploy Skydive into IBM Cloud Private (ICP)
  - a. Refer to: <https://developer.ibm.com/recipes/tutorials/deploy-skydive-into-ibm-cloud-private/>
  - b. To learn about Skydive, refer to Skydive tutorial – how to get started: <http://skydive.network/tutorials/first-steps-1.html>
  
2. Learn how to inject traffic into the created cloud network environment and how to capture it Skydive workflows. Refer to: <http://skydive.network/blog/introduction-to-workflows.html>
  
3. Extend the analyzer capabilities:
  - a. The new capability will target troubleshooting of “Noisy Neighbor” scenario. “Noisy neighbor” is a scenario in shared infrastructure environment, where one tenant monopolizes resources, negatively affecting other users' performance. The new capability implementation will include enhancements and/or extensions of the Skydive tool.
  - b. Create additional analytical view of the network connectivity matrix emphasizing the simulated use case.
  - c. Optional: Use big data analytics tool such as: ElasticSearch or PNDA.
  - d. Optional: Upstream Skydive enhancements to the Open Source community.

## Requirements:

Introduction to Networking (236334), Internet Networking (236341)

Python or Golang

## Guided by:

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**IBM**