

Intro into FogSim

Done by:

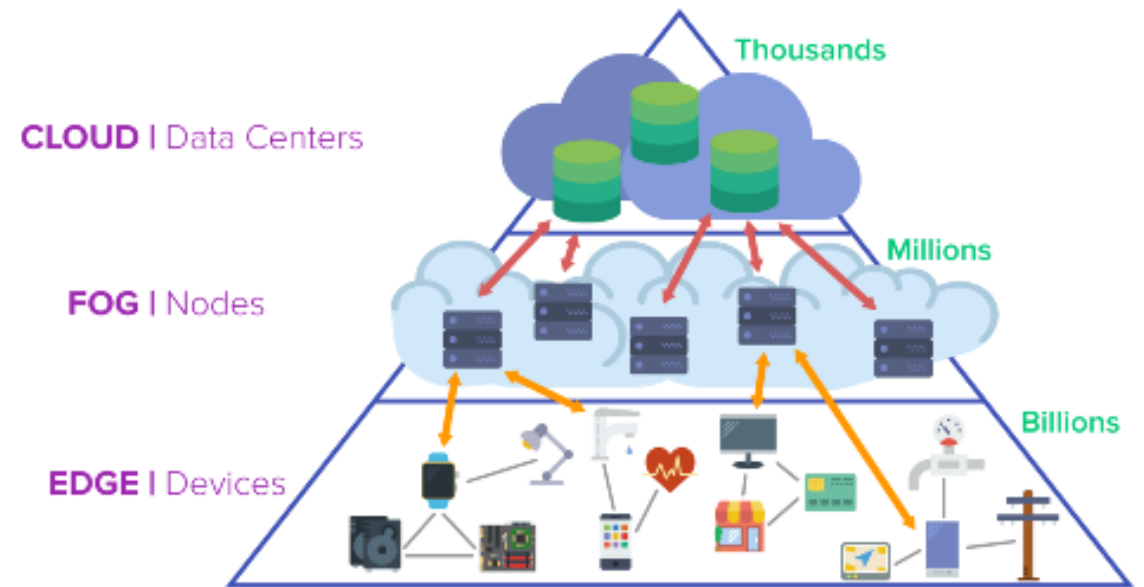
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What is Fog Computing?

Fog computing is a decentralized computing infrastructure in which data, compute, storage and applications are located somewhere between the edge computing nodes and the cloud. Since they are located “above” the IoT devices in the ground and below cloud servers, it is called Fog.



What is FogTorch

Since the field of Fog Computing is relatively new, there is still research and development going on to further improve it. One of the new tools that have been made is FogTorch. It is an open source tool that has been made recently for individuals and companies to try out various different ways of deploying their solutions of Fog Computing.



Capabilities of FogTorch

A user of FogTorch has the ability to change various parameters such as the specifications of the infrastructure (CPU cores, RAM, Storage), the QoS capabilities (Quality-of-Service) such as latency & bandwidth and also the specification of the application that will be deployed on these servers.

In addition to this, we can also change the CPU, RAM etc of the required input IoT devices and also specify how the final output will be displayed and in what format.

Installation of FogTorch

FogTorch has no build file for installation nor is it available on any Linux repositories. The user is supposed to download the source code and build it on their system itself. Since you're building it from source, you can install it on any Operating System.

Pre-requisites are OpenJDK and an IDE that can edit Java files since all of the code required to build FogTorch are in Java.

Once the program has been built, you can run start building your Fog Computing solution by following the instructions given in the GitHub page. Once you have added the necessary code, you can run it in an IDE and get your required response.

Quick Comparison between the Simulators

Table 1. Fog and Edge Simulator Tools: Comparative Study.

Attributes	FogNetSim++	iFogSim	FogTorchII	EdgeCloudSim	IOTSim	EmuFog	Fogbed
Computing paradigm (target system)	Fog computing (general)	Fog computing (general)	Fog computing (general)	Edge computing (IoT)	Edge computing (IoT)	Fog computing (general)	Fog computing (general)
Infrastructure and network level modelling	Distributed data centres Sensors Fog nodes Broker Network links Delay Handovers Bandwidth	Cloud data centres Sensors Actuators Fog devices Network links Delay Network usage Energy consumption	Latency Bandwidth	Cloud data centres Network links Edge servers WLAN and LAN delay Bandwidth	Cloud data centre Latency Bandwidth	Network links Fog nodes Routers	Virtual nodes Switches Instance API Network links
Application level modelling	Fog network	Data stream Stream-processing	Fog applications	Mobile edge	IoT	Fog	Fog network
Resource management modelling	Resource consumption (RAM and CPU)	Resource consumption Power consumption Allocation policies	Resource consumption (RAM and storage)	Resource consumption (RAM and CPU) Failure due to mobility	Resource consumption (RAM, CPU and storage)	Workload	Resource consumption (RAM and CPU) Bandwidth Workload
Mobility	Yes	No	No	Yes	No	No	No
Scalability	Yes	No	No	No	Yes (MapReduce)	No	No

Thank You!