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Fog Computing

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Introduction

- Fog computing is a term created by Cisco that refers to extending cloud computing to the edge of an enterprise network.
- It is also known as Edge computing or fogging.
- Fog computing facilitates the operations of compute, storage and networking services between end devices and cloud computing data centers.

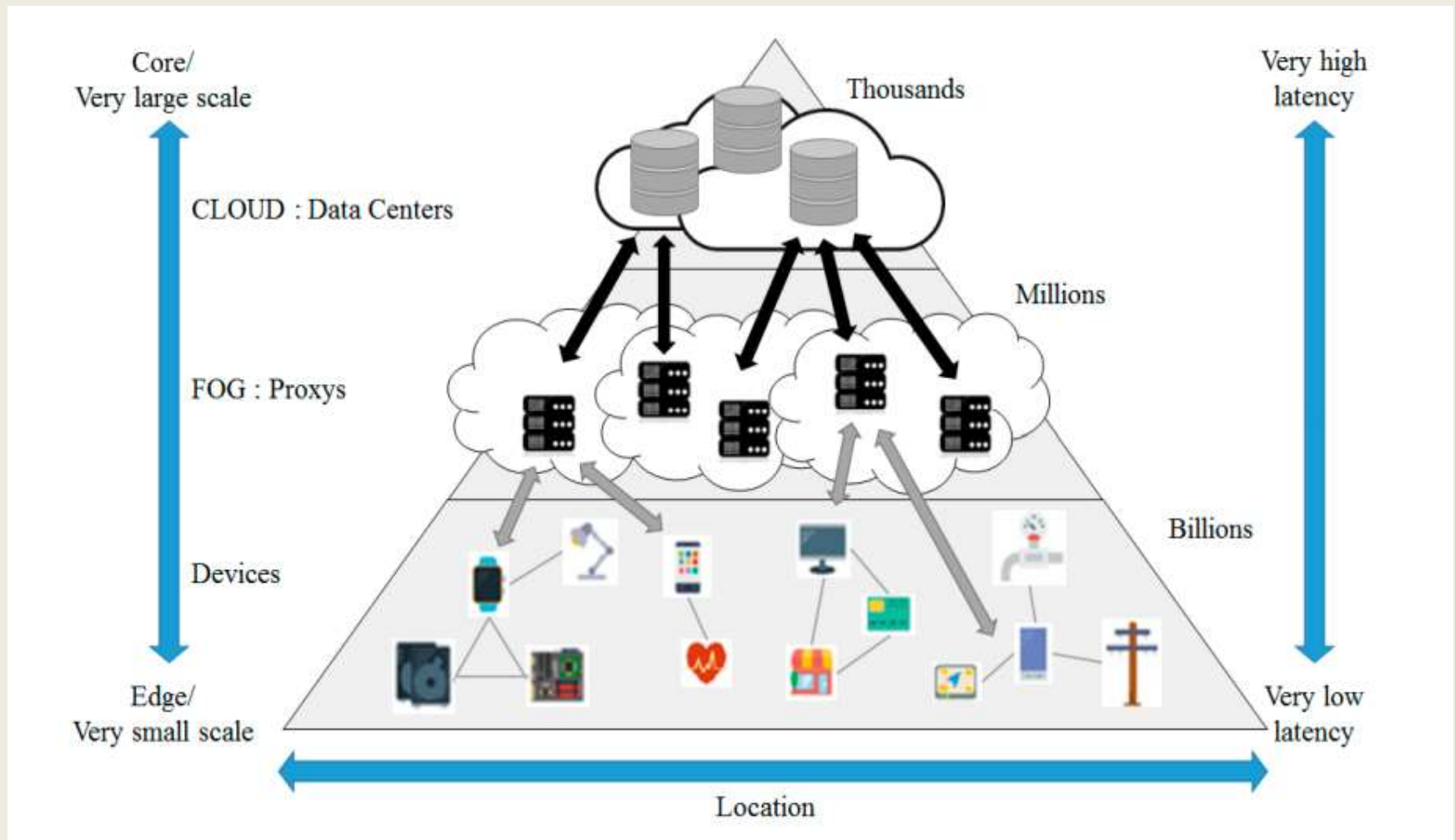
Why Fog Computing?

- There are several issues in cloud computing of which the major ones are volume, latency and bandwidth.
- Current cloud model is unable to process huge volume of data. Private firms, factories, airplane companies, healthcare sectors produces enormous amount of data every day.
- To overcome such situations Fog can be used as a middle layer between device and cloud.

Requirements of IoT

- Reduce latency of data
- Data security
- Operation reliability
- Processing of data at respective suitable place
- Monitor data across large geographical area

Structure of Fog Computing



Source: <https://www.mdpi.com/1424-8220/18/11/3633/pdf/sensors-18-03633.pdf>

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Advantages of Fog

- Security
- Low operation cost
- Reduces unwanted accidents
- Better privacy
- Greater business agility
- Supports mobility
- Deployable in remote places
- Better data handling

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Applications of Fog

- Smart Homes
- Smart Grid
- Smart Vehicle
- Smart Cities
- Smart Buildings
- Health data management
- Visual security
- Rail Monitoring
- Pipeline optimization



Challenges in Fog

- Data consistency
- Data management
- Scheduling
- Programming architecture
- Service discovery protocols
- Latency
- Power consumption

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Thank You

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