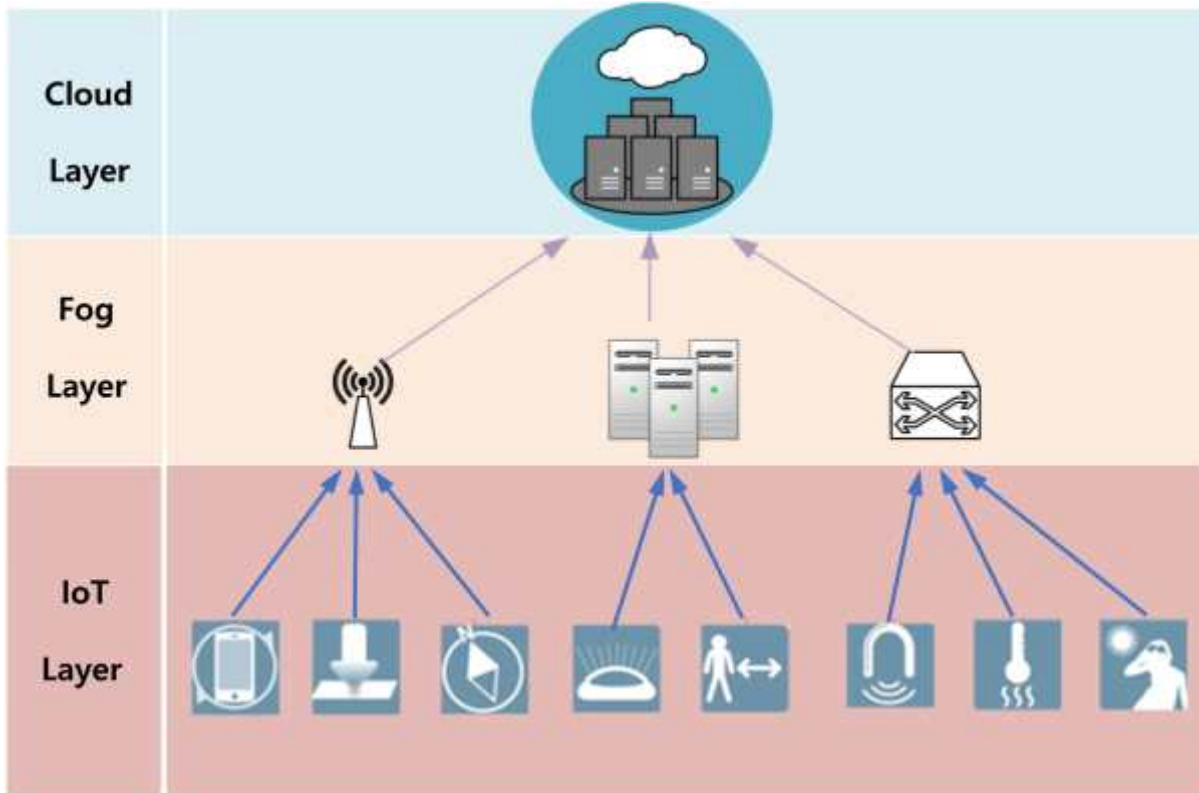
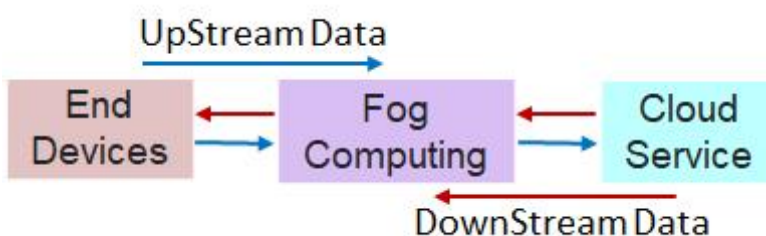


Intelligent Fog Computing

- Intelligent Fog Computing for Intelligent Service Platform(IFC-ISP) Architecture

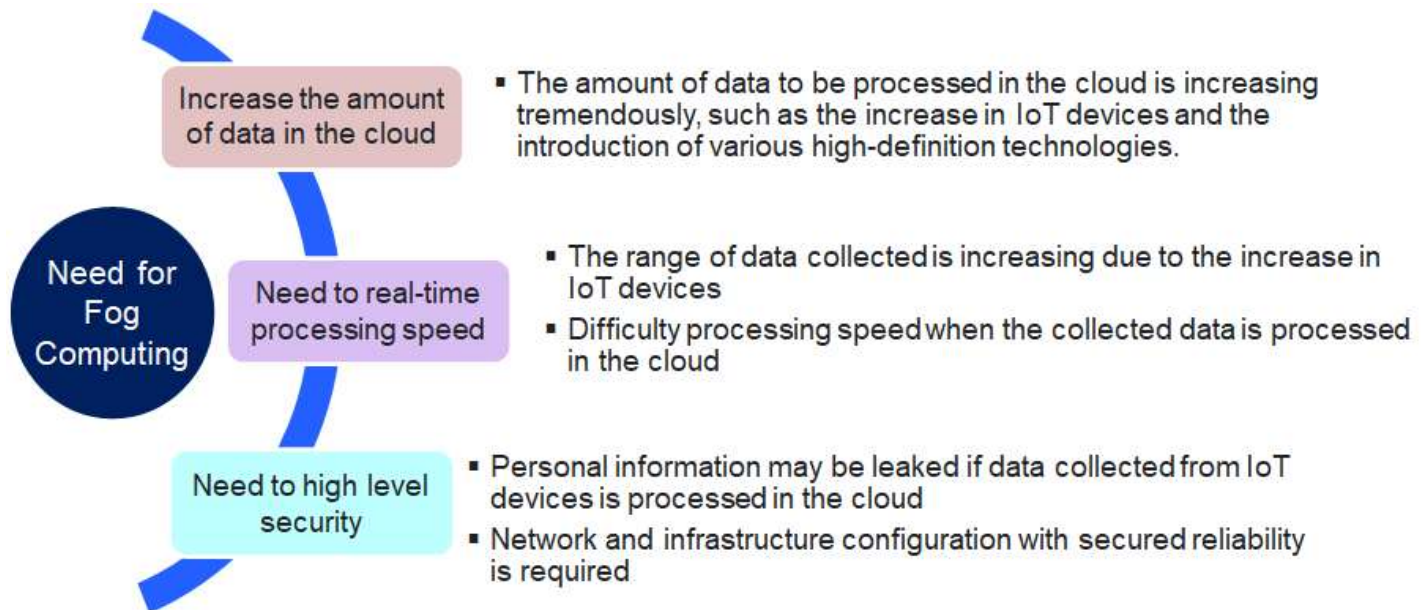


- What the Fog Computing ?



- An enabling technology which allow computation to be performed at the edge of the network
 - on downstream data on behalf of cloud services and
 - on upstream data on behalf of IoT services.
- Benefits
 - To reduce the latency lower than 1ms
 - To avoid high latency caused by offloading of certain tasks to the remote cloud
 - To overcome the restriction of limited computation capacity
 - To add mission-critical functions in the middle

- Why need Fog Computing?



- Difference between fog computing and cloud computing service when processing upstream data

Advantages of Fog Computing that complements the limitations of Cloud Computing when processing UpStream Data



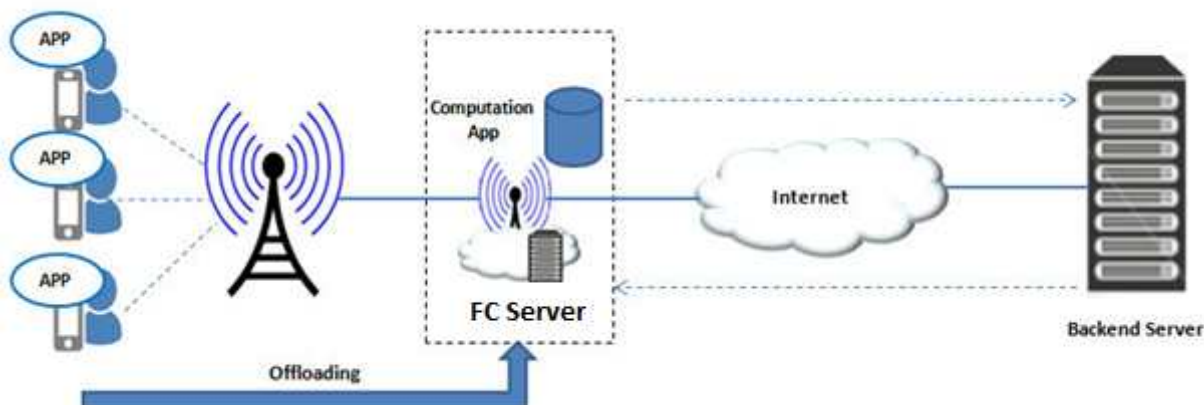
Advantages of Fog Computing	Limitations of Cloud Service
Network hops and concentrated load can be reduced	Inability to respond to critical delay sensitivity requirements
Data is located in the right place so local caching is possible	The need for massive data movement
Reduced network load due to local processing	Network bandwidth constraints
Local resource reaction possible even in emergency situations	The problem of reliability and robustness
Control over sensitive data	The problem of leakage of personal information and privacy

- Difference between fog computing and end device when processing downstream data

Advantages of Fog computing that complement the limitations of end devices when processing DownStream Data

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; background-color: #4a86e8; color: white;">End Devices</div> <div style="font-size: 2em;">←</div> <div style="border: 1px solid black; padding: 5px; background-color: #4a86e8; color: white;">Fog Computing Service</div> <div style="font-size: 2em;">←</div> <div style="border: 1px solid black; padding: 5px; background-color: #4a86e8; color: white;">Cloud Computing Service</div> </div>	
Limitations of End Device	Advantages of Fog Computing
Device power constraints	More energy can be used
Space constraints	Coverable over a wide range
Limited modularity and scalability	Modules can be added whenever needed
Environmental restrictions (heat, dust, etc)	The equipment is more robust and sturdy
Difficulty expanding storage capacity	Storage space expandable from terabytes to petabytes
The problem of reliability and security	Reliability improvement and high security due to redundant node operation

- Challenges of Fog Computing



- FC Architecture Design
- Computation Offloading
- Content Caching
- Quality of Experience

