Internet of Things data in Cloud Computing platform: Big Data based solution

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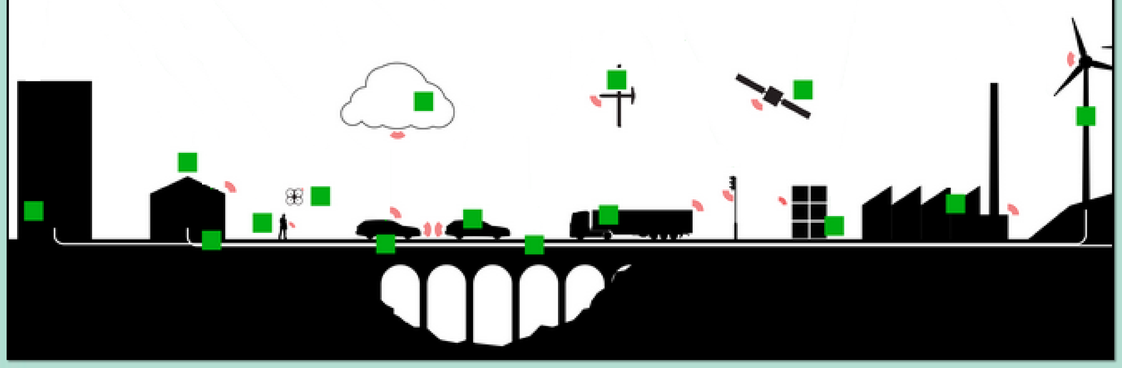
ABSTRACT

This poster intends to contribute to the design of a new approach that consists a local analysis at the object level before sending data and analysis layer at the level of cloud platform when it receives requests from end users using data mining and data warehousing services to reduce amounts of data exchanged.

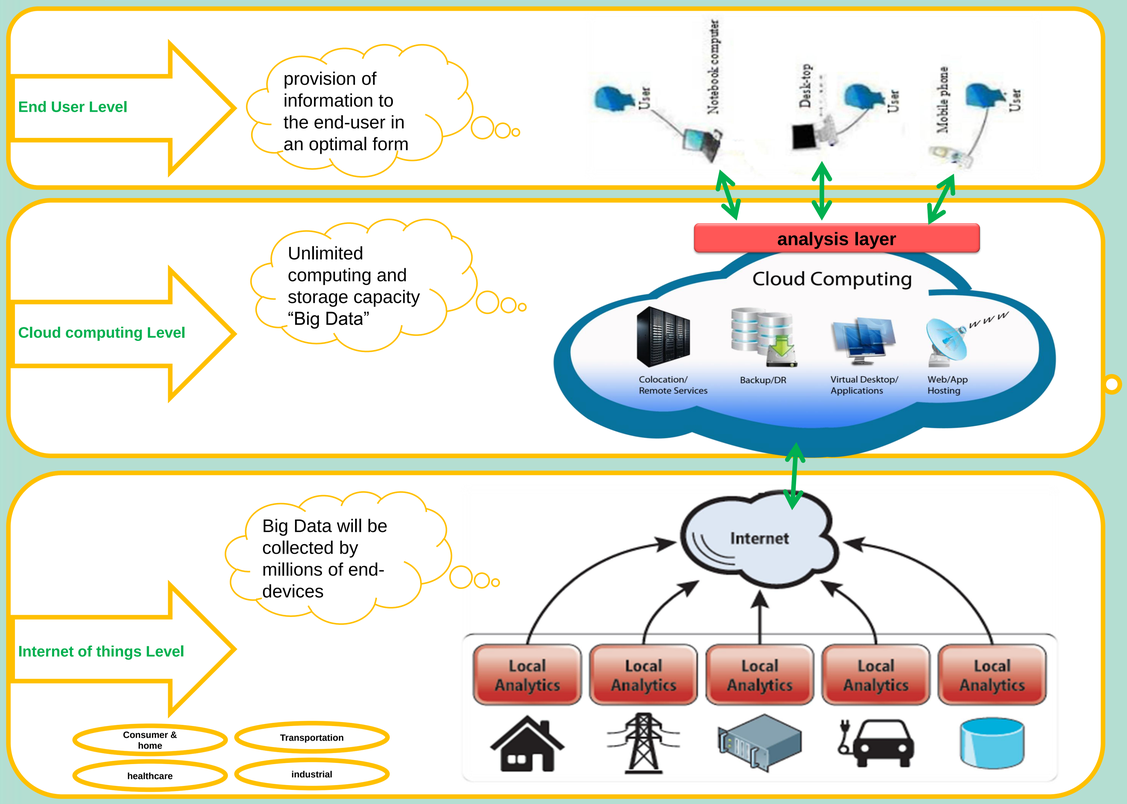
Keywords : Internet of things, Big data, Cloud Computing, Data mining, Data Warehouse.

INTRODUCTION

Increasingly, objects are equipped with communications capability. There are millions and will be billions or tens of billions tomorrow transmitting data. who need to recover, storage and especially the analysis. How to deal with this large amount of data?



The picture below is a schematic overview of the relationship among the internet of things, cloud computing, big data and the eventual analysis layer



PROBLEMATIC

❖Internet of things deployments will generate large quantities of data , given its ability to read a great number of tagged items in a very short period of time . We need to be able to collect and manage their IoT data in real-time. The sheer volume of data from human users and M2M applications will require advanced analytics capable of exploiting the Big Data and the computing power of the cloud. This applications are and will continue to be complex, using geographically dispersed devices and services, a mix of connectivity, and logic in the data center and edge devices. How to handle that diversity is one of today's major challenges.

❖The Internet of Things data has many characteristics, such as distributed storage, mass time-related and position-related data, and limited resources of nodes . These makes the problem of data mining in IoT become a challenge task

❖The data have to be stored and used intelligently, data warehouses must allow ongoing management with a real time integration of data enrolling in sets geographically distributed.

OBJECTIVES

Collecting, managing and extracting useful information from the massive volumes of Data.

Analyze the arriving sensor and device data in real-time provide comparisons against trend data by joining the real-time data with historical, stored data provide real-time dashboards and alerts for visualization provide continuous streaming integration with operational systems for process automation and will streams the data through into existing data warehouse platforms.

- Recording data in cloud computing platforms using big data solution based on data warehouse services to faster decision-making abilities for users
- Recover and analysis of the generated data from things
- Developing artificial intelligence algorithms to make sense of the collected data
- Studying and implementation various data mining algorithms for IoT
  - Multi-layer data mining model
  - Distributed data mining model
  - Grid based data mining model
  - Data mining model from multitechnology integration perspective
- Move massive amounts of data from heterogeneous sources
- Make smart interactions with users : make appropriate data analysis, filter data and present users the outcome or make smart decisions.

Finding tools that will bridge the large amount of data generated by things, Cloud computing and big data solutions

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