



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+'
Grade

Approved by AICTE, New Delhi & Affiliated to Anna University,
Chennai



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECE308- WIRELESS TECHNOLOGIES FOR IOT

III ECE / VI SEMESTER

UNIT 3 DATA COLLECTION, STORAGE AND COMPUTING USING A CLOUD

PLATFORM

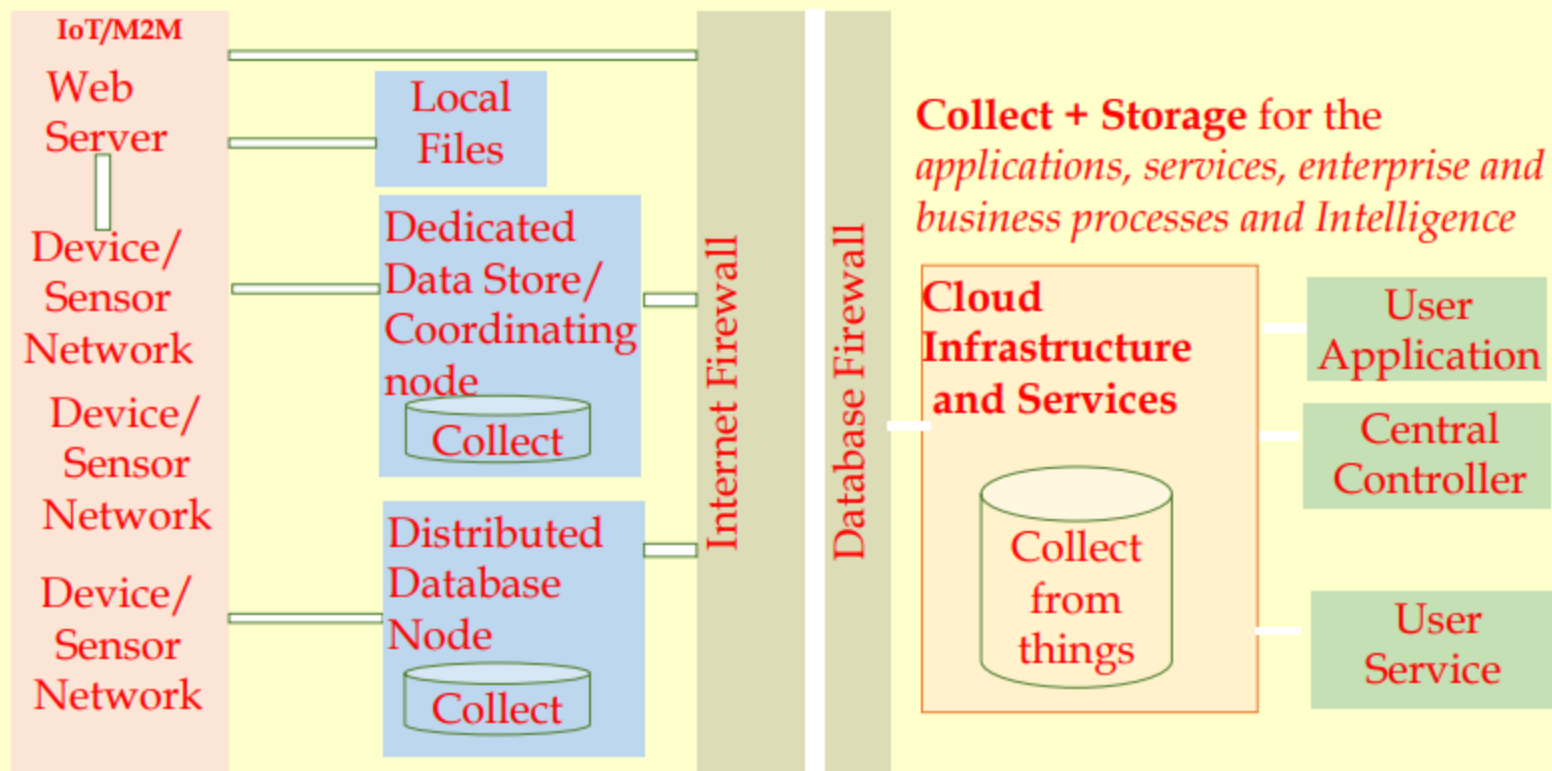
**TOPIC 1 –IoT Cloud- based data collection, storage and
computing services using Nimbits**



Cloud IoT cloud-based Service Using Server at the Edges



- A server can be deployed at the edges (device nodes) which communicates the feeds to the cloud service.
- The server also provisions for the generation and communication of alerts, triggers and feeds to the cloud service
- Server can be mirror server for the cloud server
- User applications or services use the collected data at the cloud infrastructure



Devices/Sensor Networks Data Collection at the Devices-network Web Server and at the Cloud infrastructure



Nimbits



- Enables IoT on an open source distributed cloud
- Nimbits cloud PaaS deploys an instance of Nimbits Server at the device nodes
- Functions as M2M system data store, data collector and logger and access to historical data.
- Architecture a cloud-based Google App Engine
- A class hierarchy `com.nimbits.server.system.ServerInfo` of the `java.lang.Object`



Nimbits Features



- Edge computing locally on embedded systems, built up of local applications.
- Runs the rules and pushes important data up to the cloud running when connected over Internet and
- An instance of Nimbits Server hosts at the device nodes which is when enabled



Rule Engine



- For connecting sensors, persons and software to the cloud and one another
- Rules can be for calculations, statistics, email alerts, xmpp messages, push notifications and more.



Nimbits Support



- • Multiple programming languages, including Arduino, new Arduino Library
- Push functions from Arduino cloud, JavaScript, HTML or the Nimbits.io Java library.
- Nimbits server functions as a backend platform
- Data point can relay data between the software systems, or hardware devices such as Arduino, using the cloud as a backend.
- An Open Source Java Library nimbits.io enables easy development of JAVA, Web and Android solutions (Nimbits data, alerts, messages on mobile).



Nimbits Features



- Provides a data logging service and access and stores the historical data points and data objects. •
- Storage in any format that can be serialised into a string, for example, JSON or XML. • Filters the noise and important changes sent to another larger central instance