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

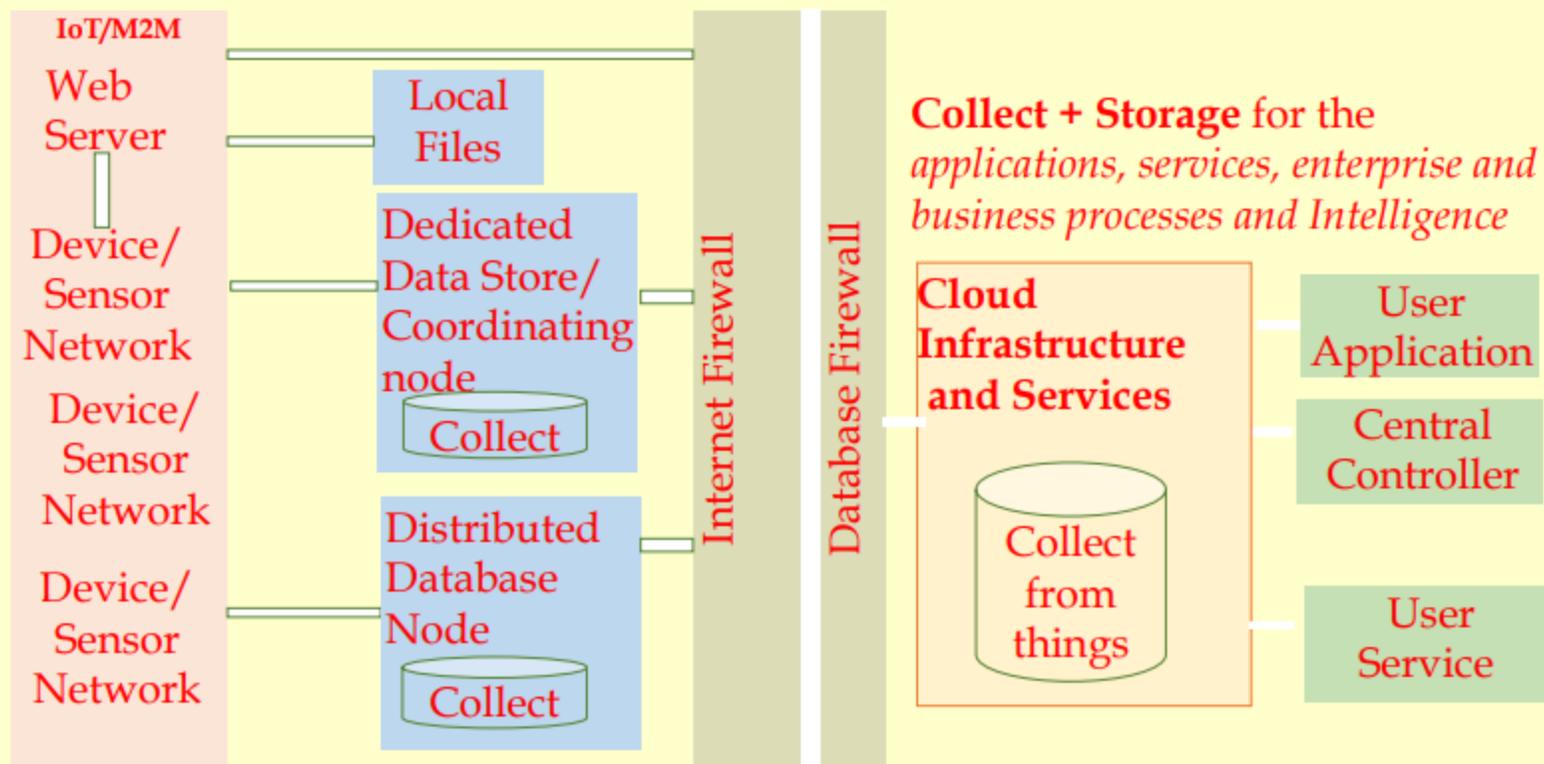UNIT 3 DATA COLLECTION, STORAGE AND COMPUTINGUSINGACLOUD

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

IoT/M2M

Web Server

Device/ Sensor Network

Device/ Sensor Network

Device/ Sensor Network

Local Files

Dedicated Data Store/ Coordinating node

Collect

Distributed Database Node

Collect

Internet Firewall

Database Firewall

Collect + Storage for the *applications, services, enterprise and business processes and Intelligence*

Cloud Infrastructure and Services

Collect from things

User Application

Central Controller

User Service

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

2017

4

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