SNS COLLEGE OF ENGINEERING

Kurumbapalayam(Po), Coimbatore – 641 107
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Department of Information Technology

Course Name – 19IT503 Internet of Things

III Year / V Semester

Unit 2 – FUNDAMENTAL MECHANISMS & KEY TECHNOLOGIES

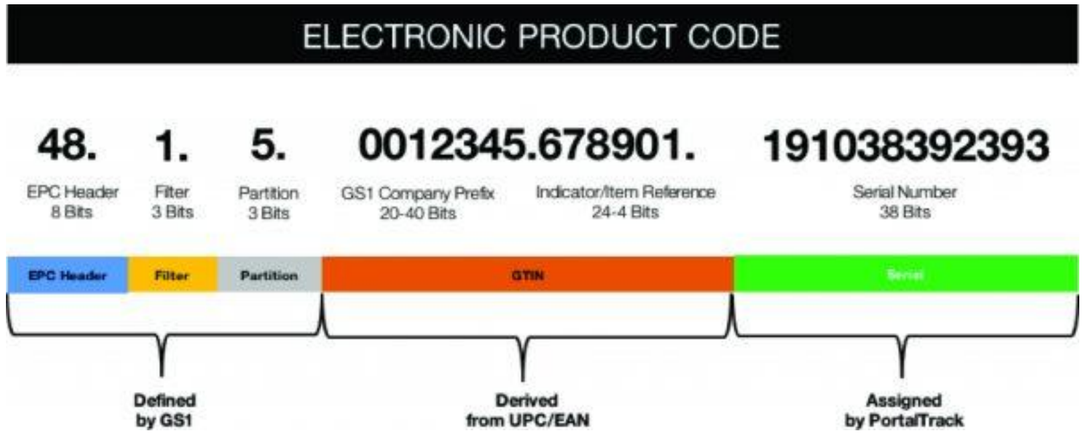
Topic 1- Identification of IoT Objects and Services

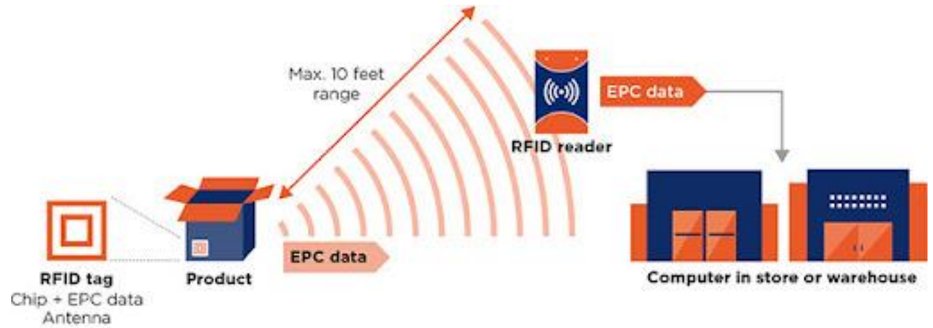
IDENTIFICATION OF IoT OBJECTS AND SERVICES

There are various types of identifiers with different purposes and practicality.

- Globally unique identifiers are highly desirable.
- Identification codes can be classified as

  (i) object IDs (OIDs) - permanent unique identifier
  Example - RFID/electronic product code (EPC), content ID, telephone number, and uniform resource identifier (URI)/uniform resource locator (URL);





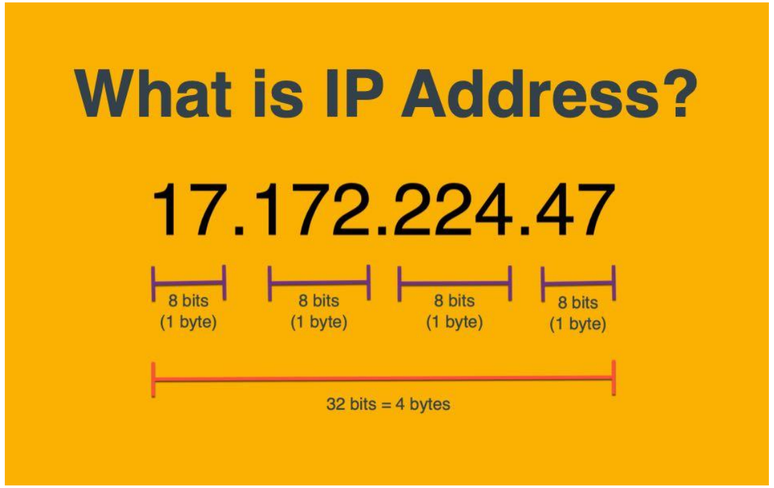
IDENTIFICATION OF IoT OBJECTS AND SERVICES

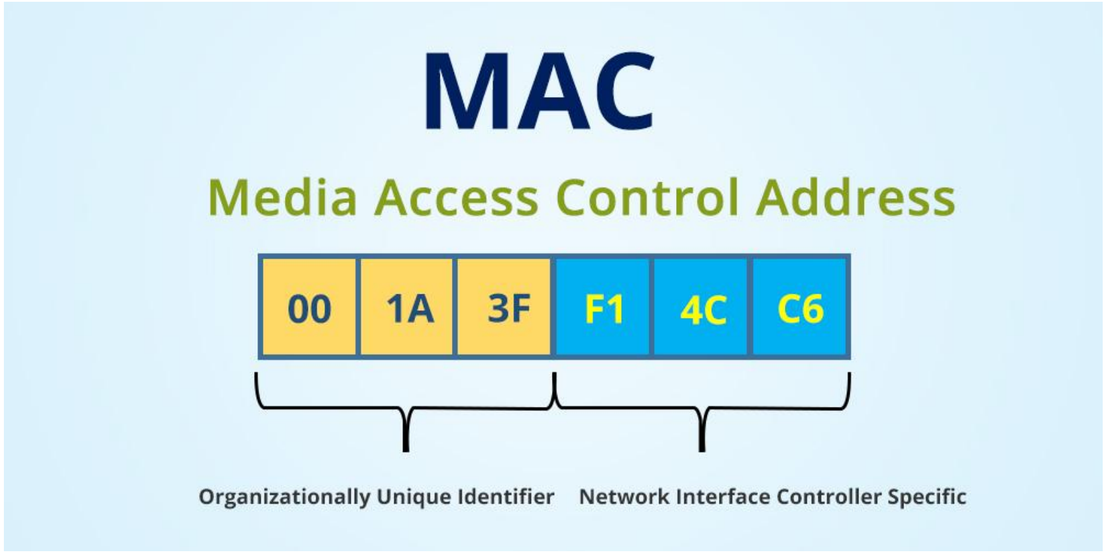
(ii) communication IDs.

media access control (MAC) address, network layer/IP address, and session/protocol ID.

Identify location - unique network address (NAdr); the IPv6 address space

Every object then has a tuple (OID, NAdr) that is always unique.





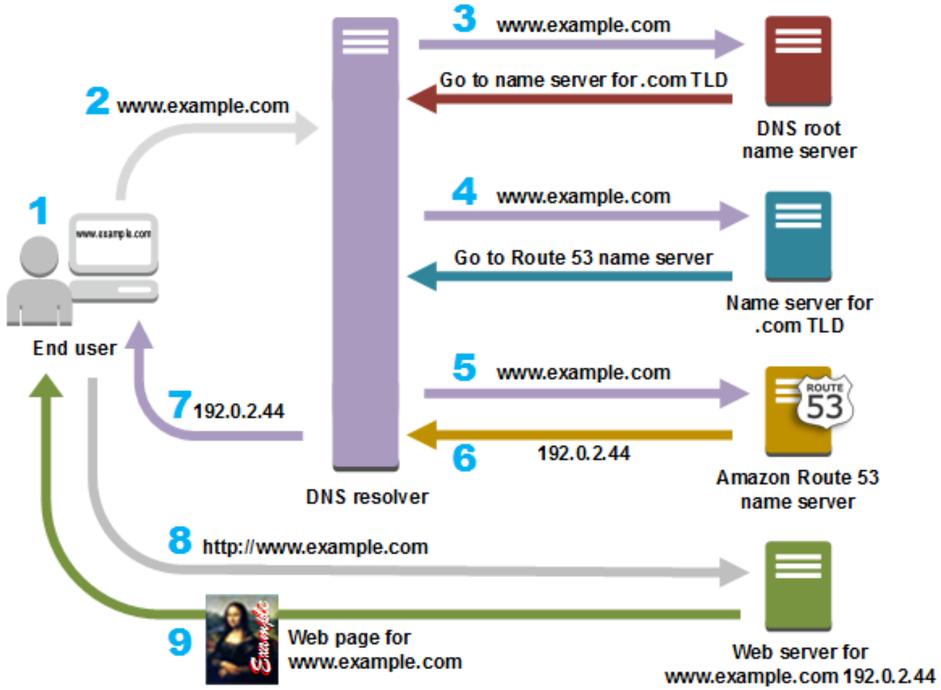
IDENTIFICATION OF IoT OBJECTS AND SERVICES

Object Naming

- DNS – Domain Name System

- DNS is used to map the “human-friendly” host names of computers to their corresponding “machine friendly” IP addresses.

- Object name service (ONS) used to map the “thing-friendly” names of object which may belong to heterogeneous name spaces (e.g., EPC, uCode, and any other self-defined code) on different networks (e.g., TCP/IP network) into their corresponding “machine-friendly” addresses or other related information of another TCP/IP network.



IDENTIFICATION OF IoT OBJECTS AND SERVICES

Web Services

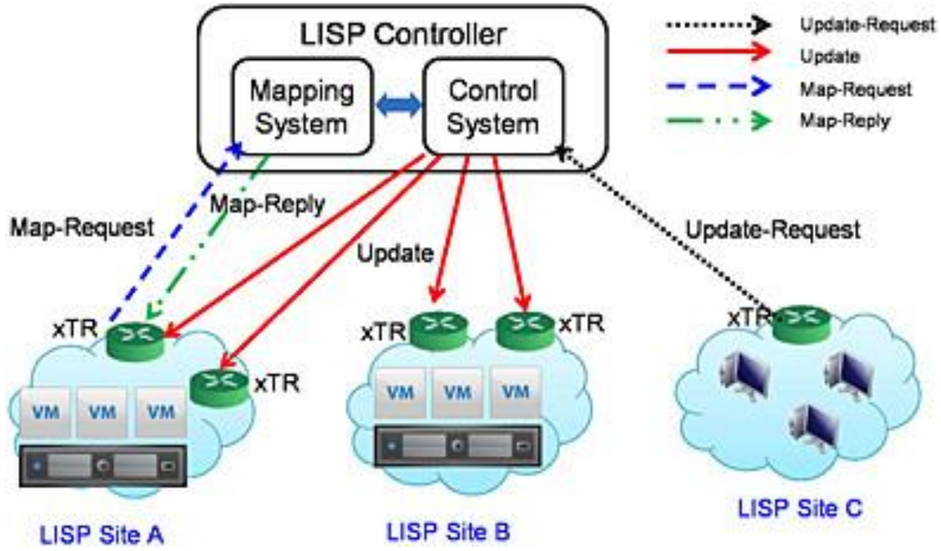
- Used for Data Exchange between two different distributed applications
- REST - Representational State Transfer (widely used now a days)
- SOAP – Simple Object Access Protocol (Classical WS)
- WSDL - Web Services Description Language (Classical WS)

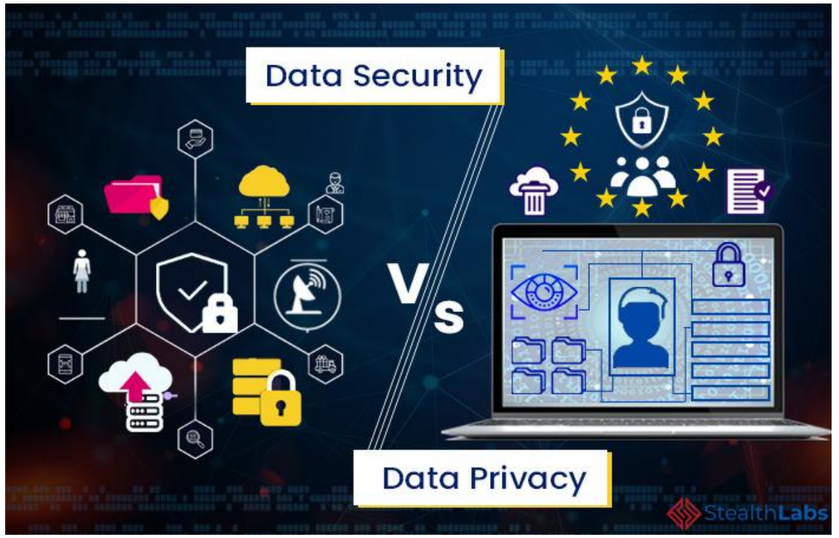
IDENTIFICATION OF IoT OBJECTS AND SERVICES

Areas of Concern

- Security and Privacy
- Precise physical location of object – May use GPS but need less expensive solution
- Scalability

  LISP - Locator/ID Separation Protocol





THANK YOU