



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 5 – DESIGN METHODOLOGY AND FUTURE
TRENDS**

Topic 1 - IoT System Management





IoT System Management



Need for IoT System Management

- IoT systems have complex software, hardware interfaces consist of many sensors, actuators, software and network resources.
- Managing multiple devices within a single system requires advanced management capabilities.

The need for managing IoT system requires following considerations

- Automating Configuration
- Monitoring Operational & Statistical Data
- Improved Reliability
- System Wide Configurations
- Multiple System Configurations
- Retrieving & Reusing Configurations



IoT System Management



Automating Configuration

- Automating the system configurations
- It is required when IoT system consist of many devices or nodes.
- It ensures all devices have same configuration
- It can avoid variations or errors of manual configurations.

Monitoring Operational & Statistical Data

- Operational data is related to system's operating parameters and collected by system at runtime.
- Statistical data describes system performance (CPU and memory usage)
- This data is useful for fault dignosis and prognosis

Improved Reliability

A management system that allows validating the system configuration before they are put into effect can help in improving the system reliability.



IoT System Management

System Wide Configurations

- IoT System consist of multiple devices or nodes so ensuring system wide configurations critical for correct functioning.
- Configuration of each system seperately (by means of manual or automated) results in system fault.
- Some system running new configuration whereas other still use old configuration.
- This results in system fault or undesirable outcome.
- To avoid this system wide configuration is required where all devices are configured in a single automic transaction.

Multiple System Configurations

- For system it may be desirable to have multiple valid configurations which are applied at different times or in certain conditions

Retrieving & Reusing Configurations

- Management systems which have the capability of retrieving configurations from the devices can help in reusing the configurations for other devices of the same type.