

oneM2M Architecture of IoT (Internet of Things)

Machine to machine, or M2M, is a term that refers to systems in which machines interact with one another autonomously and without the need for human involvement, regardless of the devices or communication channels involved.

M2M IoT Architecture

The M2M IoT architecture primarily focuses on IoT services, apps, and networks, facilitating their interoperability by providing a variety of application programming interfaces (APIs), allowing them to communicate with one another.



Application Layer

It is the oneM2M architecture's top layer. IoT applications and services reside in this layer. IoT applications may take many different forms, from industrial monitoring to smart home automation. To access and manage IoT resources and data, the application layer communicates with the services layer. The role of the IoT M2M Application Layer is to integrate IoT devices with apps, such as connecting smart devices to your phone. Additionally, it ensures that these gadgets can exchange data with other crucial systems, such as business intelligence tools.

Services Layer

The service layer acts as a connecting layer between IoT devices and communication networks. It is essential for abstracting away the difficulties of device connectivity and data transfer. This layer standardizes data formats and

communication protocols, providing interoperability across IoT platforms and devices. We can also say this layer functions as the background control hub. It manages the logical parts of the network and the rules they follow to work together efficiently.

Network Layer

All devices, or "things," connect at the network layer. It also includes the physical network connections, such as cellular or Wi-Fi networks that link them. The network layer manages the connectivity and data transmission between IoT devices. It ensures that data is sent quickly and securely between devices, the cloud, and other data processing facilities.

M2M Advantages

- **Modular Standardisation:** The framework refers to a modular standardisation plan, enabling it to support additional common service functionalities and IoT requirements in the future. Given the rapid advancement of IoT technologies, this flexibility is essential.
- **Vendor Independence:** This means that developers can use different suppliers for various parts of their project and can follow different methods to build those parts. They don't have to depend only on one supplier. It allows developers greater flexibility and independence in deciding which elements and techniques are perfect for their projects.
- **Lower costs:** OneM2M offers a toolbox of functions that programmers can use. Because of this, businesses won't need to invest as much money upfront in their IoT initiatives (smart gadgets).
- **Interoperability:** OneM2M guidelines ensure that various IoT devices and apps may communicate with one another without difficulty, much like individuals from many nations speaking a common language. As a result, any IoT app can quickly locate and interact with any IoT device, enabling smooth IoT integration.

The oneM2M IoT Standardised Architecture offers a standardized architecture that improves interoperability and makes it easier to design IoT applications. It facilitates easy connection and data sharing between IoT devices and applications from different manufacturers and domains by splitting IoT functions into three

layers: application, services, and network. The growth of IoT technology across businesses depends on the general acceptance of this standardized methodology.