**Building a Scalable, Open Source Software based IoT Stack**


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**Abstract**

Internet of Things is a growing industry segment with applications varying across manufacturing, health care, smart cities, transportation, agriculture, etc. By nature, an IoT solution is very specific to the data and use case. This project aims to build a scalable, generic solution, leaving customisation only to processing and visualisation.

The project aimed to identify the most suitable, contemporary, stable building blocks for this architecture and thereafter integrate them into a composite solution. The fundamental objectives were to minimise diversity of APIs, use open source software to the extent possible and facilitate scalability with minimum change of code using principles of distributed computing.

The starting point was to select core components with maximum interoperability and language ports. Keeping in mind the specific objectives, the most optimum solution meeting them was then arrived at. It is an advantage that many stable, open source software are available that meet the requirements of this project.

In completing the project, a generic, scalable architecture for IoT has been built completely using open source technology. The end to end data pipeline can be customised as per the sensors and visualisation requirements. The project meets all objectives stated in the scope.