**IoTIFY Network Simulator**

* A **cloud native** approach, which is horizontally scalable and could be run in any environment. The result is seamless scalability from Cloud, hybrid or event to the local desktops. The IoTIFY network simulator could truly match your IoT cloud platform and scale to test its true performance.
* **Advanced simulation** capabilities such as realistic traffic simulation, weather feeds, location functionality, and custom payload generation, with several helper libraries from a rich Node.js ecosystem.
* An **API driven** interface which can be easily integrated with existing test ecosystem and continuous Integration/ Delivery pipelines. The test results could also be exported to any database of your choice.
* **Scripting** functionality in Javascript ES6, one of the most widely used scripting languages on the planet, we could tap into a rich ecosystem of NPM package ecosystem and could easily integrate Node.js packages into IoTIFY.
* **Multiprotocol support** – The scripting is protocol agnostic, which means testers could easily create several versions of the same test with different protocols. We support COAP, MQTT, HTTP, LWM2M, TCP/UDP out of the box and many other protocols will be supported in the future.
* Native Integration with **most popular IoT cloud platform** such as AWS IoT Core and Azure IoT Hub, enabling easy configuration and provision of certificates for million of devices with ease.
* Unmatched scalability of upto **1 Million device** endpoints or more. Ability to simulate large complex scenarios such as smart city, electric vehicle charging network etc. with customized dashboards.

**Virtual Hardware and Sensors**

* Emulate the industrial controller, such as Raspberry Pi and Arduino.
* Emulate the most used peripherals in IoT such as GPIO, I2C, LEDs, SPI, USB, Ethernet etc and buses.
* By providing a comprehensive virtual environment for hardware emulation, we allow rapid prototyping of IoT applications at a fraction of the current time and cost. The application developed on virtual hardware could be transferred and run on physical hardware, matching the physical world with the virtual devel- opment. Essentially, with hardware simulation, IoTIFY allows you to:
  + Choose a suitable Industrial platform for target applications.
  + Choose the appropriate sensors, actuators and gateways for the application.
  + Boot desired operating system with web based IDE.
  + Interact with virtual hardware environment via UI and command line.
  + Validate the control action of IoT value chain by seeing the actual behavior

Hardware emulation is extremely useful when trying out custom sensors and developing firm- ware for IoT application. With hardware emulation, the time needed to build a full scale proto- type is drastically reduced from months to days. It also acts as a final stage of system validation before making physical prototypes.