**Mozilla Web of Things (WoT) Workshop 2019 Submission Paper**

Mozilla envisions an open and decentralized Internet of Things (IoT), that puts people first, where individuals can shape their own experience and are empowered, safe, and independent. To help fulfill this goal, Mozilla joined the W3C Web of Things Interest Group, with a goal of giving Things URLs on the web to make them linkable and discoverable, and to collaborate around standard data models and APIs to make them interoperable.

If most IoT data were stored and processed in the cloud, that data would either be highly silo'd  (one app/service per device) and therefore inconvenient to use at scale, or it might be aggregated among a few Internet titans who would have an unfair advantage at learning consumer habits, and could monetize insights based on the aggregated data. Mozilla's open source implementation will help broaden IoT products and services to a vast number of vendors and enable horizontal interoperability. The key to enabling a large, low-cost, and diverse product ecosystem in IoT is to emulate the success of the Internet, which is a decentralized web of services.

In this talk we present an open source implementation of an IoT Gateway (Mozilla "WebThings Gateway"), which is an important piece of Mozilla's overall Web of Things framework. Having the framework run on an always-on embedded Linux device in the home means that consumer IoT data stays local, and private. We also describe example constrained device libraries that help bridge non-IP and non-standard Things to the gateway, where they can interact with other web things.

When Things become "web things", their properties and capabilities are defined by JSON schemas that makes it easy for web developers to participate in the IoT industry, and fuel its growth. But we must be careful not to allow the Web of Things to be dominated by one or two

cloud services providers. A decentralized approach will better protect consumer privacy and security. The data can be compartmentalized and only shared in "need to know" exchanges that occur over secure oauth transactions.

Mozilla's project adopts the principles of an open and interoperable web, and applies it to the IoT. Come learn about it, join the party, and leverage this framework to build and enhance your own IoT products and services.