

ANOMALY DETECTION USING HARDWARE PERFORMANCE COUNTERS ON A LARGE SCALE IOT DEPLOYMENT

Context :

- Deployment of secure and reliable energy management devices

Issues :

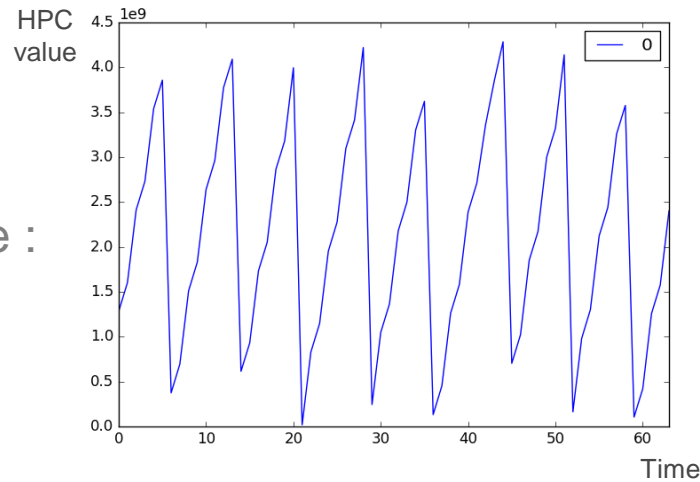
- Large scale deployment
- Resources constrained IoT devices
- Dynamic devices (updates)

Hypothesis & approach :

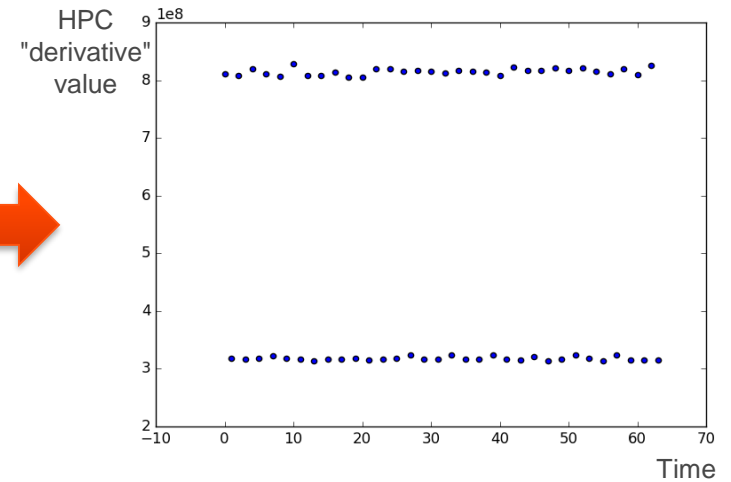
- Identical IoT devices
- Attacks on devices uses more resources
- Use HPC to characterize the software execution
- Anomaly detection based on comparative analysis only

HARDWARE PERFORMANCE COUNTERS ANALYSIS:

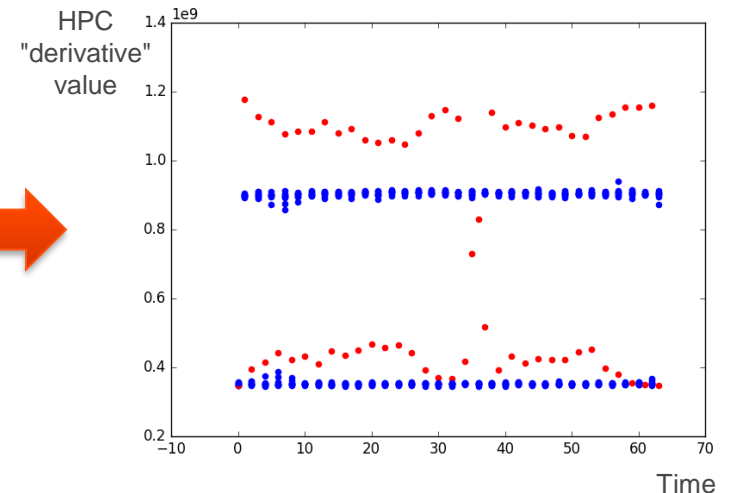
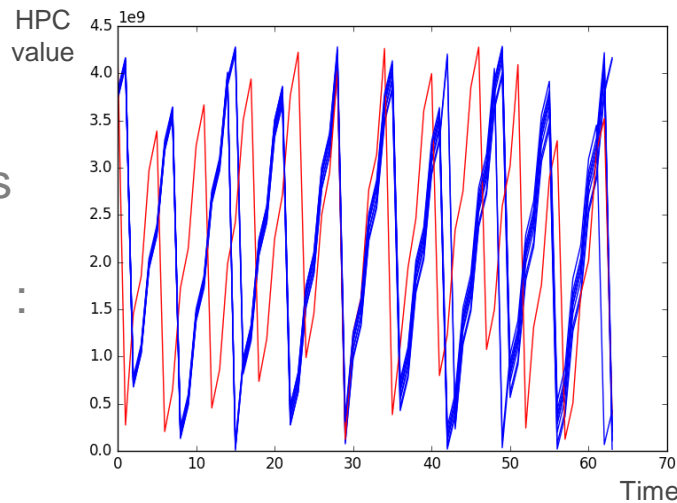
HPC raw values



HPC "derivative" values



For one device :



For ten devices including an attacked device :

ARCHITECTURE AND TESTING PLATFORM :

