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Network Streaming Analytics with IoT

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Abstract

The internet of things (IoT) is a dominant engine of the world now. It is grown to a division where it can self-ruling interface with each other and operation data with other circumstances. Nowadays IT base is increasing their complexity. So, monitoring the specific field is very important. In the past monitoring methods were used. But there's a require for flexible and scalable monitoring system. It can react rapidly changing IT infrastructure.

This research focuses on thesis design, implementation and testing open source-based Prometheus network monitoring system. We construct simple framework that based on IoT device and gather data. Prometheus collects the data and Grafana will listen the Prometheus logs and shows the analyzed data visualization.

This system performed well with nearly real-time streaming, storing the network packets in local cloud and nearly real-time network visualization. So, the user can easily understand their network traffic within a minute. Compare to the past works this system collects data in nearly real-time and visualization techniques were used to achieved fully open-source monitoring system.

Keywords: Network Monitoring, IoT, Network Streaming Analytics

List of Abbreviations

IDS - Intrusion Detection System

NIDS - Network Intrusion Detection System

GUI - Graphical User Interface

IoT - Internet of Things

SSADM - Structure System Analysis and Design Method

OOAD - Object Oriented Analysis and Design

SNMP – Simple network monitoring protocol