LFN Mentorship
Project Presentation

August 2020

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Log-Analysis and Alerting for OPNFV-VSPERF (Metrics)

› **Introduction**
  › **Name**: Aditya Srivastava
  › **Location**: Mumbai, India
  › **University**: Mumbai University
  › **Mentor(s)**: Sridhar Rao
  › **LFN Project:** OPNFV

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› **Project Description**:
  › **Overview**
    › Help user to understand the test behavior and analyze the performance results from metrics generated by VSPERF
    › Alert-Management solution to send alerts that will be notified to VSPERF.
  › **Technologies / Tools / Frameworks**
    › Prometheus
    › Alert Manager
    › Grafana
    › Kubernetes
    › Ansible
    › Jupyter Notebook

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› **Project Objectives**:

   › Understanding and Getting hands on experience on :

      › Prometheus, Alert Manager and Grafana,

      › Collectd, Collectd-Exporter, cAdvisor

   › Deployment of "Monitoring Stack"

   › Creating, configuring and testing Alerts (BM and OS)

   › Alert Notification and Handling

   › Custom analytics and complete Release of Complete Monitoring Solution

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> **Project Deliverables:**

> > Deliverable 1:
> > > Monitoring Stack deployed as docker containers

> > Deliverable 2:
> > > VSPERF specific alerts and send notifications
> > > HA deployment of Monitoring Stack on a K8S cluster.
> > > Documentaion of work done

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› **Project Deliverables:** (continued)

   › Deliverable 3:
      › Automated deployment of Monitoring Stack using Ansible
      › Custom Grafana dashboards
      › Updated Documentation

   › Deliverable 4:
      › Jupyter notebooks for analysis of VSPERF metrics.
      › Client-side deployment and configuration (collectd) using Ansible
      › Updated Documentation

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› **Project Deliverables:**

  › Client-Side Ansible Playbooks
    › Deploy and Configure agents (collectd)
  › Server-Side Ansible playbooks
    › Deploy K8S Cluster
    › Deploy and configure PAG stack
    › Alerting Configuration
  › Jupyter Notebooks
    › Metrics Analysis
 › Visualization and alert management in OPNFV airship.

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> **Accomplishments:**
> > Easy, one command deployment and clean up of monitoring stack
> > Easy, one command deployment and clean up of collectd (client agent)

> **What I Gained:**
> > Learning!
> > Happniess
> > Confidence

> **Deliverables not Completed:**
> > Visualization and alert management in OPNFV airship

> **Challenges faced:**
> > Getting familiar with the new technology and jargons.

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› **Recommendations for future work**:
  › Opnfv Airship Project:
    › Extending the work to opnfv airship proejct

  › Closed Loop Automation:
    › Step 1: If any Anomaly
    › Step 2: Find what is causing it
    › Step 3: Take action accordingly
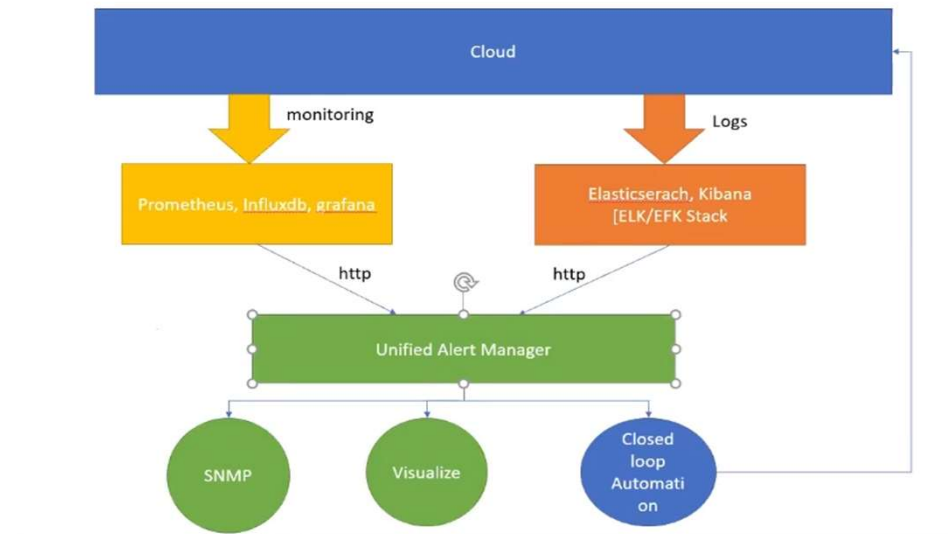
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> **Project Output or Results:**
>> **Link to code and Videos**
>>> A google doc, right now it has links to all the code I wrote directly – indirectly for OPNFV – VSPERF
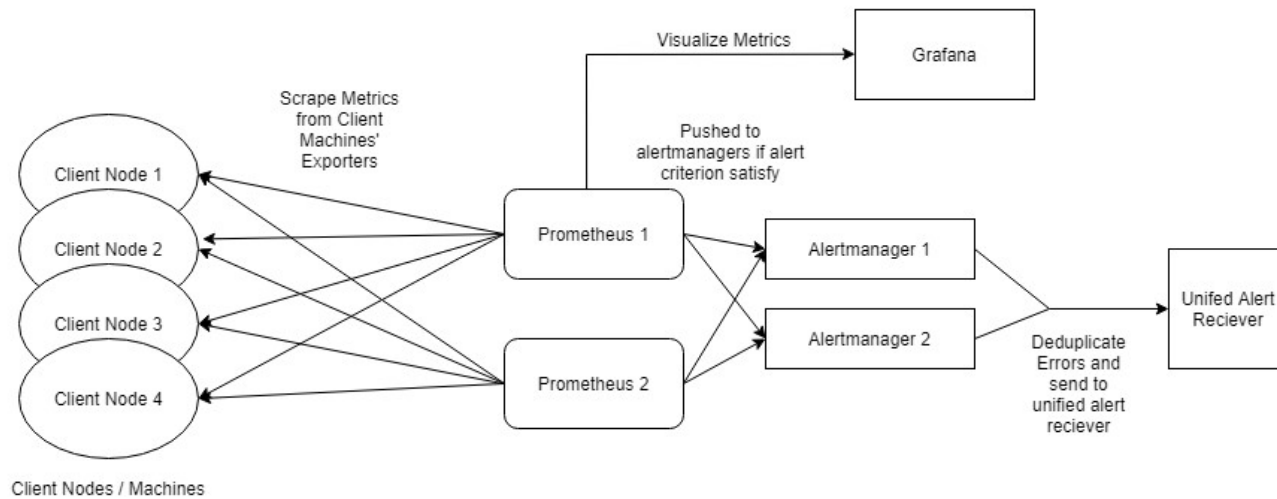>>> Video links to be added soon.

>> **Jupyter Notebook Demo**

>>> Timestamp of anomalies in logs are found (by Adarsh)
>>> Metrics fetched from Prometheus.
>>> Plotted to find insights

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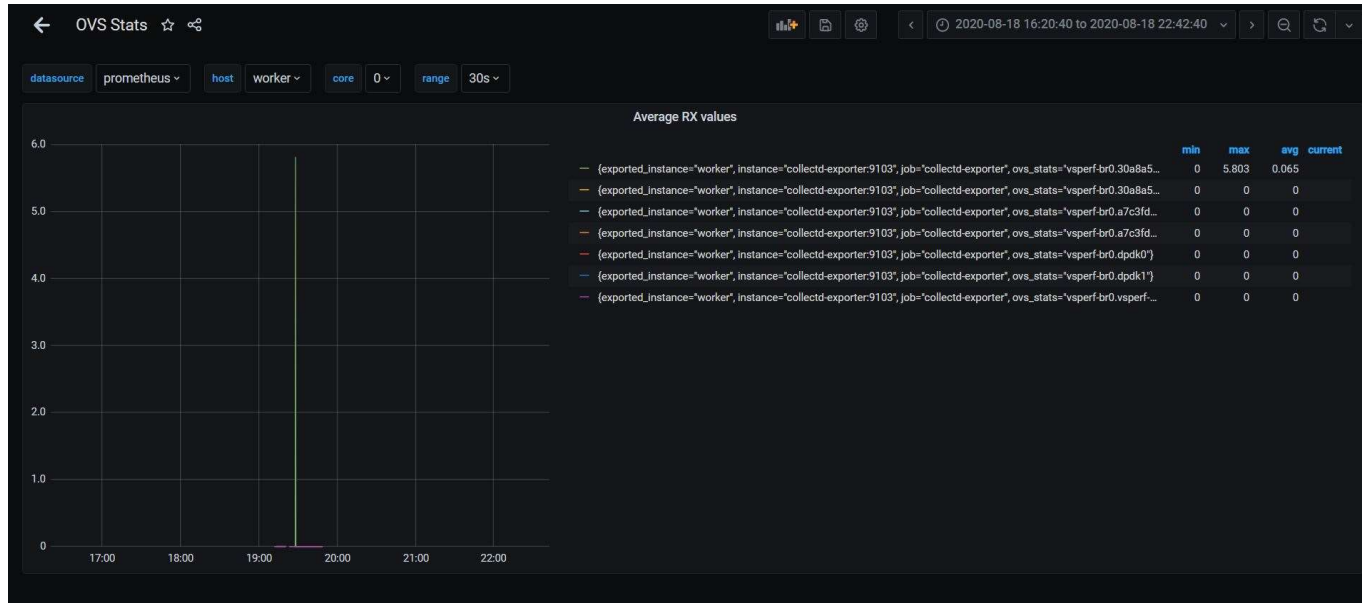
> **Project Output or Results: (continued)**

> > **Setup**

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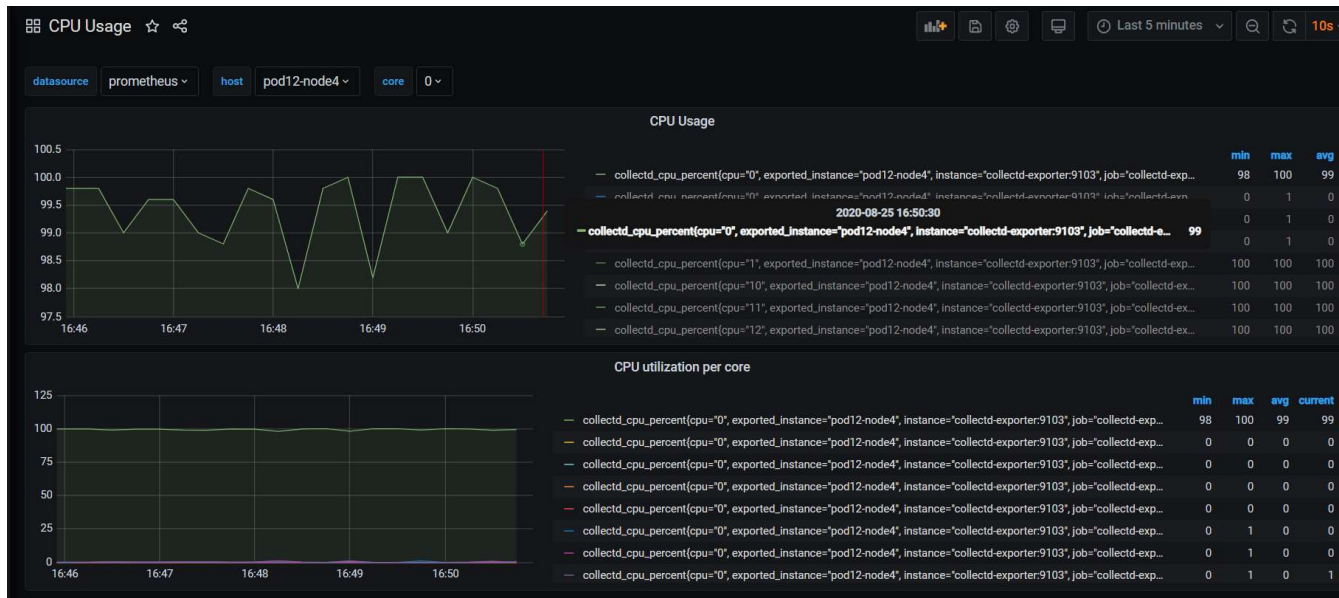› **Project Output or Results: (continued)**

    › **OVS Stats (Avg. RX values Panel)**

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› **Project Output or Results: (continued)**

› **CPU Dashboard**

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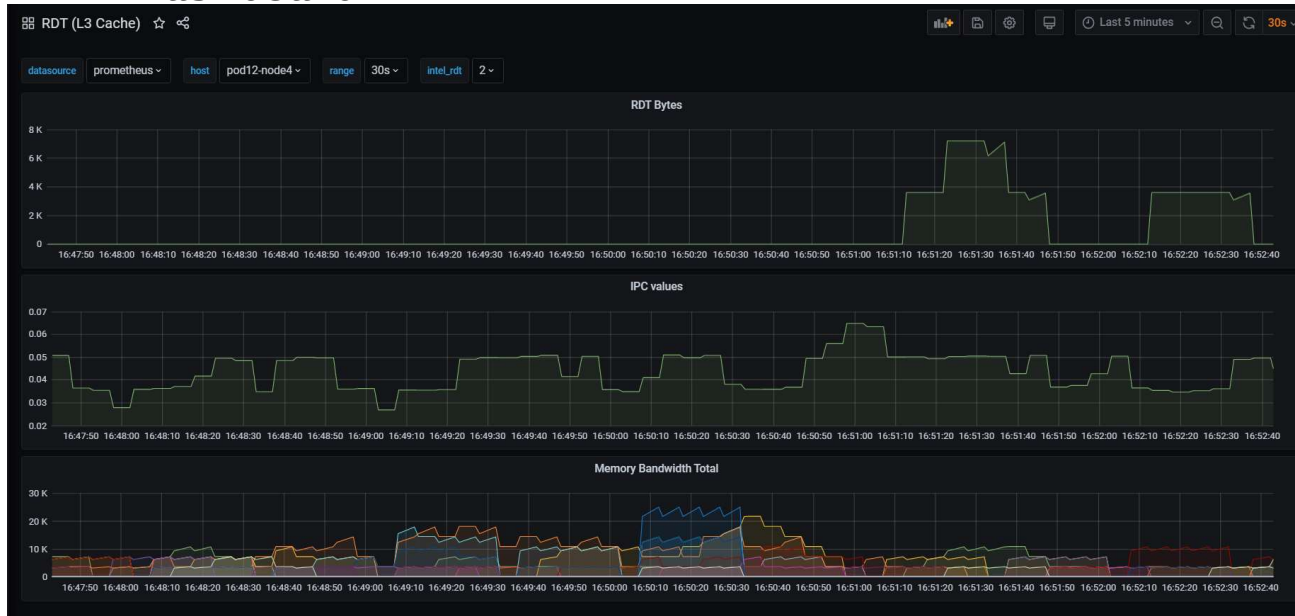
› **Project Output or Results: (continued)**

  › **Memory Panel**

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› **Project Output or Results: (continued)**

  › **RDT Dashboard**

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> **Insights Gained:**

> > Logging and Monitoring is really important.
> > Management tools and functioning of an Open Source Org.
> > Code and contributions are recognized and will be used by many
> > Meeting amazing community and networking with them.

> **Advice:**

> > **People are there to help you!** ☺
> > Keep your mentor in loop with what you're doing.

THANK YOU!

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