Log-Analysis and Alerting for OPNFV-VSPERF

Internship Projects/Mentors

Title	Log-Analysis and Alerting for OPNFV-VSPERF
Status	COMPLETED
Difficulty	LOW

Description

OPNFV VSPERF already includes comprehensive Monitoring solution. However, it lacks the Log-Analysis and Alert-Management solution. This project aims to include log and alert management solutions based on opensources - ELK Stack. This will enhance the ability of VSPERF to:

1. Perform post-test correlation/causation analysis.
2. Adapt the Test-Traffic patterns based on the Alerts.

The first aim is to create custom kibana dashboard analyzing and synthesizing VSPERF logs/events. For every test-run, VSPERF generates following logs:

1. vsperf-overall
2. vswitchd
3. trafficgen
4. host-cmds
5. guest-cmds

These logs have useful information that can help user to understand the test behavior, and analyze the performance results.

VSPERF will have Alerting from the Monitoring component, and lacks alerting from the logs. As the next step, this project aims to use the same information - The logs - and create alerts than will be notified to VSPERF. The Trafficgenerators of the VSPERF will be the main consumers of these alerts.

Additional Information

Some Links:

https://www.elastic.co/guide/en/kibana/current/dashboard-create-new-dashboard.html
https://landing.google.com/sre/sre-book/chapters/practical-alerting/
https://docs.google.com/document/d/199PqyG3UsyXlwieHaqbGiWVa8eMWi8zzAn0YfcApr8Q/preview

Tentative Process:

1. Learn about VSPERF
2. Install and run the OSS tools successfully.
3. Create sample Kibana Dashboard
4. Create sample Alert Rules.
5. Inspect the logs the tests have created
6. Build the Kibana dashboard to VSPERF's requirements & specifications
7. Create VSPERF specific alerts and send notifications.

Learning Objectives

Experience in real-world logging/monitoring/alerting domain.

Experience in creating custom dashboards in Kibana.

Experience in Authoring custom Alert-Rules.

Expected Outcomes

1. Custom Kibana Dashboards.

    2. Custom Alert Notifications.

Relation to LF Networking

OPNFV-VSPERF.

Education Level

Undergraduate

Skills

1. Python.

2. Yaml

3. Dashboard creation - handling different controls

Future plans

This project is related to larger "Performance Management" and "Analytics in Networking" . Hence, the gained experience will be very useful in the student is planning to pursue a career in these domains.

Preferred Hours and Length of Internship

Full-time (40 hours a week for 12 weeks during the summer)

Mentor(s) Names and Contact Info

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Mentee(s) Names and Contact Info

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SAMPLE LOG FILE: vsperf-overall_2019-01-12_22-50-39.log