

1.

List some logging and visualization tools available in the market with the preferred scenario to use one over other.

**Answer:**

Some of the logging and visualization tools available in the market are as follows;

- **Graylog:**  
Users will have access to numerous features, including alerts and compliance. DevOps teams can also use Graylog to look over their app performance, along with identifying security breaches. A wide range of data options is also available. Graylog is available in two different packages: Open Source and Enterprise. Pricing depends on how much logging you need each day. Companies that use under a certain amount can access Enterprise for free.
- **Splunk:**  
Splunk's log management tool focuses on enterprise customers who need exact tools for searching, diagnosing and reporting any events surrounding data logs. Splunk's software is built to support the process of indexing and deciphering logs of any type, whether structured, unstructured, or sophisticated application logs, based on a multi-line approach.
- **ELK(Elastic search, Logstash, Kibana):**  
"ELK" is the acronym for three open source softwares: Elasticsearch, Logstash, and Kibana. Elasticsearch is a search and analytics engine. Logstash is a server-side data processing pipeline that ingests data from multiple sources simultaneously, transforms it, and then sends it to a "stash" like Elasticsearch. Kibana lets users visualize data with charts and graphs in Elasticsearch.
- **Datadog:**  
Users can use the service to find all of their logs in a single interface. Moreover, the platform can help DevOps teams deal with outages that may happen across the globe. Various data related to web and app traffic is also available.
- **LOGalyze:**  
LOGalyze is an open-source management tool. LOGalyze allows DevOps teams to uncover events as they happen and break down their searches within multiple categories. LOGalyze supports various systems, including Windows, Linux, and OS. Logging customization is also available for both native and custom apps. Users can also analyze their logging data by correlating trends, understanding patterns, and individual event management.

You can also tag each event and create separate categories. LOGalyze is free to use.

- **Google Cloud Logging:**

Google Cloud Logging is a service available for DevOps teams using certain google cloud services. Looking at the features alone, it's one of the best free log visualization tools on the market. Features of Google Cloud Logging include importing custom log data, as well as real-time analysis. Teams can also use the platform to carry out audits and report problems that may arise. A wide range of third-party integrations is also available. Users can get started with Google Cloud Logging for free. After a certain level of usage, one needs to pay as per usage.

So, the above mentioned tools are some tools for logging and visualization available in the market.

## 2.

**Mention 10 best practises when logging. Why is log formatting necessary?**

**Answer:**

The 10 best practices when logging are as follows:

- Don't Log Sensitive Information
- Avoid vendor lock-in
- Don't log for troubleshooting only but can use it for auditing, profiling, statistics.
- Don't log too much or too little (log as per requirements)
- Log in machine parsable format
- Make the logs human-readable as well
- Make the log entries meaningful with context
- Use a standard date and time format
- Need to employ proper log category
- Need to log at proper level (trace, debug, info, notice, warn, error and fatal)

Log formatting is crucial to achieving readable log files. It is true that the log file should be machine-readable because it enables users to use tools that can automatically parse, process, and analyze them. As a result, users can gain valuable insights that would otherwise be lost. But the log files need to be easily readable to people, too. One of the primary purposes of logging is to enable internal debugging. Users will use the information they see there to try and reconstruct what happened with the application. That job is already hard and it will be harder by having

unreadable log files so as to make non-technical or inexperienced developers easy to understand the logs, log formatting is necessary.