**1. Mention the various container resource monitoring tools?**

The various container monitoring tools are as follows:

* **Grafana**
* Heapster
* CAdvisor
* InfluxDB
* **Prometheus**

**2. Explain Prometheus in Kubernetes?**

**Prometheus** is an open-source toolkit that is used for **metric based monitoring** and **alerting** the application. It provides a data model and a query language and can provide details and actions of metrics. It supports the instrumental application language for many languages. The Prometheus operator provides easy monitoring for **deployments** and **k8s services**, besides **Alertmanager** and **Grafana**.

**3. How to monitor the K8 cluster?**

Prometheus is used for K8 monitoring. The Prometheus ecosystem consists of multiple components.

* main Prometheus server which scrapes and stores time-series data
* client libraries for instrumenting application code
* a push gateway for supporting short-lived jobs
* special-purpose exporters for services like HAProxy, StatsD, Graphite, etc.
* an alert manager to handle alerts
* various support tools

**4. Describe the following Prometheus components:**

* **Prometheus server**
* **Push Gateway**
* **Alert Manager**
* Prometheus server is responsible for scraping and storing of the data
* Push gateway is used for short-lived jobs
* Alert manager is responsible for alerts.

**5. What’s Prometheus operator?**

The mission of the Prometheus Operator is to make running Prometheus on top of Kubernetes as easy as possible while preserving configurability as well as making the configuration Kubernetes native.

**6. Explain Continuous Monitoring.**

As the application is developed and deployed, we do need to monitor its performance. Monitoring is also very important as it might help to uncover the defects which might not have been detected earlier.

**7. Why do we need Continuous Monitoring?**

Continuous Monitoring Tools resolve any system errors (low memory, unreachable server, etc.) before they have any negative impact on your business productivity.

Important reasons to use a monitoring tool are:

* It detects any network or server problems
* It determines the root cause of any issues
* It maintains the security and availability of the service
* It monitors and troubleshoots server performance issues
* It allows us to plan for infrastructure upgrades before outdated systems cause failures
* It can respond to issues at the first sign of a problem
* It can be used to automatically fix problems when they are detected
* It ensures IT infrastructure outages have a minimal effect on your organization’s bottom line
* It can monitor your entire infrastructure and business processes

**8. How does continuous monitoring help you maintain the entire architecture of the system?**

Continuous monitoring in DevOps is a process of detecting, identifying, and reporting any faults or threats in the entire infrastructure of the system.

Ensures that all services, applications, and resources are running on the servers properly. Monitors the status of servers and determines if applications are working correctly or not. Enables continuous audit, transaction inspection, and controlled monitoring.