My preferable solution would be ELK (Elastic stack)

**Filebeat** – agent to transport local logs, should be installed on all hosts running applications we want to transport logs from. It has a load balancer mechanism, to balance log traffic to logs processor and handle high throughput.

**Logstash** – log processor/indexer. Includes different plugins in order to process different types of input files. Since it may consume a lot of memory during processing, it is preferable to install it on separate host. In addition, to handle high throughput log traffic and high availability it may have few instances and **Filebeat** may be configured to send the logs to more available instance. It has persistent queue mechanism to prevent data loss in case service is down.

* Logstash could be also considered to be log transporter instead of Filebeat, but it is known as too resource-consuming and slow in compare to lightweight Filebeat, so we wouldn’t want to install it on each of our hosts.

**RabbitMQ** – message broker or buffer is an optional instance in this design. It may improve Logstash performance by balancing logs traffic in case of sudden and excessive logging as well as be a “save” station for logs in case other services in the chain are down.

**Elasticsearch** – centralized storage, it is really fast and easily scalable by just adding nodes to the cluster. Also includes interactive data analysis. Streaming it near real-time.

**Kibana** – Logs visualization tool with different search filters.

Storage

Elasticsearch

Message broker

RabbitMQ

App2

Filebeat

App1

Filebeat

Additional points of consideration:

* Zero latency: depends on too many parameters. Filebeat can be configured to 1sec of scan frequency. All other shipping and processing depends on strong environments.
* Hardware agnostic – all services/instances deployments may be done with Ansible/SaltStack. The infra deployment may be done with Terraform of Hashicorp, it supports the configuration changes done to the infra of application and creates execution plans accordingly (Personally, I am not familiar with this tool yet and found it during a research of this assignment).