8.1 Learning Objectives

By the end of this lesson, you will be able to:

- Explain the role of continuous monitoring tools in DevOps
- Implement Nagios
- Describe Grafana
- Describe ELK Stack
- Identify the suitable continuous monitoring tool for your organization

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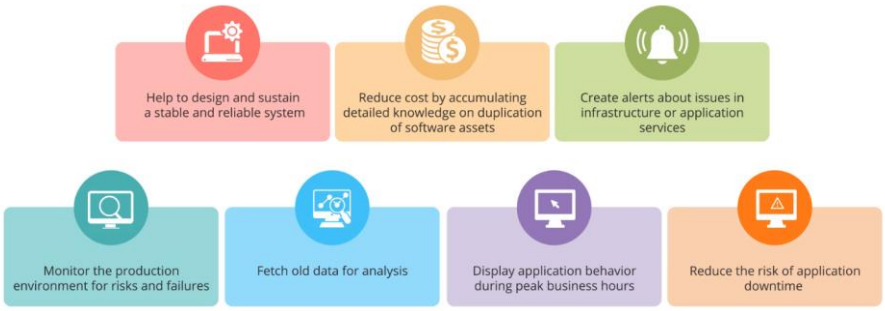
8.2 Overview of Continiuous Monitoring

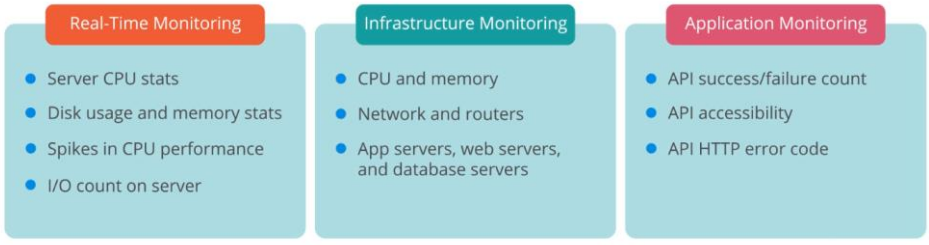
Continuos Monitoring

Role of Monitoring Systems



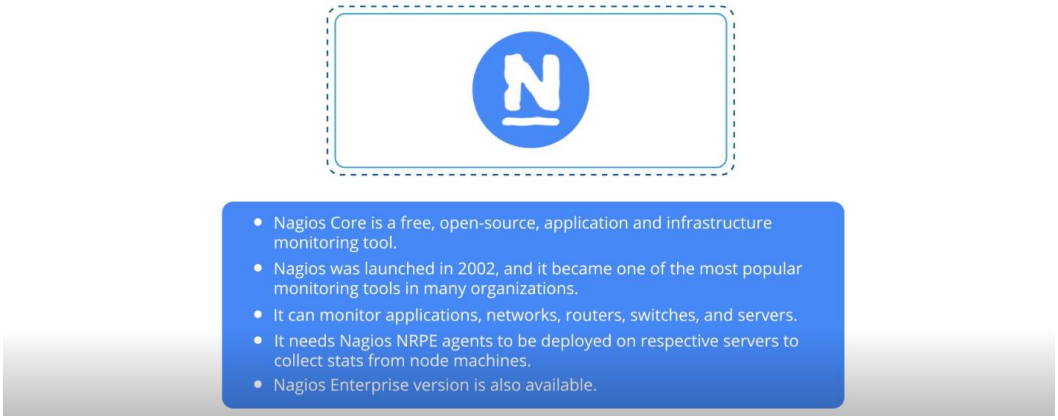
8.3 Types of Monitoring Systems

Types of Monitoring

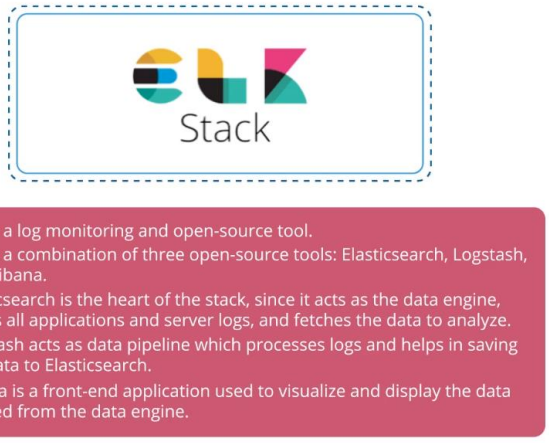


Popular Monitoring Tools

DevOps Monitoring Tools



- Nagios Core is a free, open-source, application and infrastructure monitoring tool.
- Nagios was launched in 2002, and it became one of the most popular monitoring tools in many organizations.
- It can monitor applications, networks, routers, switches, and servers.
- It needs Nagios NRPE agents to be deployed on respective servers to collect stats from node machines.
- Nagios Enterprise version is also available.



- ELK is a log monitoring and open-source tool.
- ELK is a combination of three open-source tools: Elasticsearch, Logstash, and Kibana.
- Elasticsearch is the heart of the stack, since it acts as the data engine, stores all applications and server logs, and fetches the data to analyze.
- Logstash acts as data pipeline which processes logs and helps in saving the data to Elasticsearch.
- Kibana is a front-end application used to visualize and display the data fetched from the data engine.

- Zabbix was launched in 2001 and is an open-source tool that provides similar features like Nagios.
- It needs agents to be installed on the nodes in order to monitor the data.

- Sensu is a powerful next-generation monitoring tool which is more popular compared to traditional monitoring tools.
- It was launched in 2011 as an open-source tool under MIT license. Sensu Enterprise version is available with additional features and plugins.
- It uses RabbitMQ to exchange data between nodes and the master server.
- It uses Redis as a datastore to store all the monitoring data.

- New Relic was launched in 2008 as a SAAS(Software as a service) software offering.
- It helps to monitor applications and servers in real-time. Installation of New Relic collectors in the nodes is necessary instead of installing New Relic software in the infrastructure.
- All monitoring data is transferred to New Relic, and its dashboards are used to visualize monitoring data.

- Splunk is interpreted as an application and security analytics tool.
- It collects data from each application and server and can be further analyzed to predict the future behavior for necessary precautions.
- Monitoring application failures and warning exceptions are possible. It is implemented in financial and product-based organizations to monitor the applications.

- Datadog is a cloud-based monitoring service. Datadog agent should be installed on the servers to monitor other servers within the infrastructure.
- All monitoring data is pushed to Datadog web application to visualize it.

APPDYNAMICS

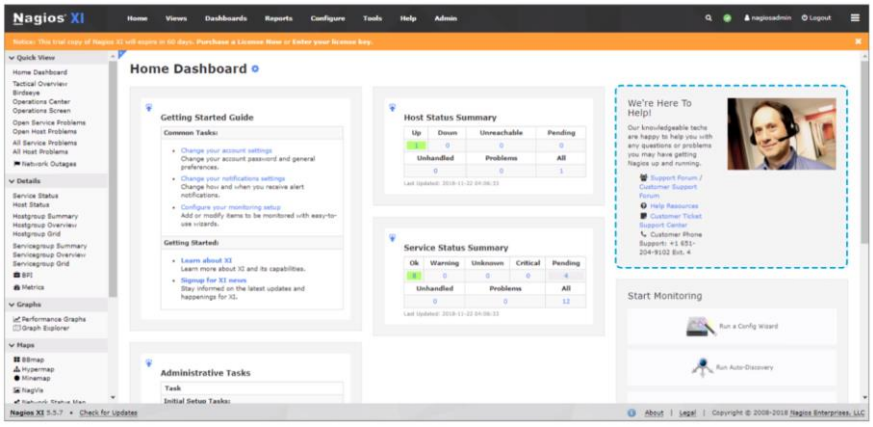
- AppDynamics tool is used to monitor the server and application performance which results in improved efficiency of the source code.
- It helps in making a suitable business decision, as it monitors both, mobile and web applications.

amazon web services™ CloudWatch

- AWS CloudWatch is one of the core services of AWS cloud. By default, all the services in AWS are monitored by CloudWatch.
- It can store logs from various serverless components in AWS. It retains and stores monitored data which is helpful to validate the stats anytime.
- It helps to create and generate alerts to users in case of issues.

8.4 Demonstrate Nagios

Übersicht



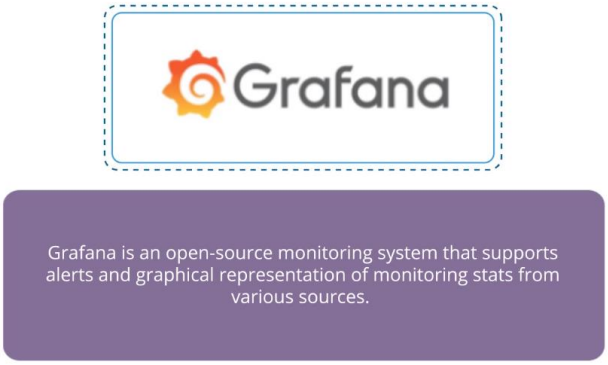
8.5 Working with Nogios Monitoring Tool

Praxisbeispiel

- Login to your Ubuntu Lab, and open the terminal.
- Download Nagios plugin source code.
- Open Admin console of Nagios to install plugins.
- Validate installation of Nagios plugin.
- Add node details in Nagios portal.
- Install Nagios agent on node machine.
- Validate node details from Nagios dashboard.

8.6. Overview of Grafana

Grafana Monitoring System



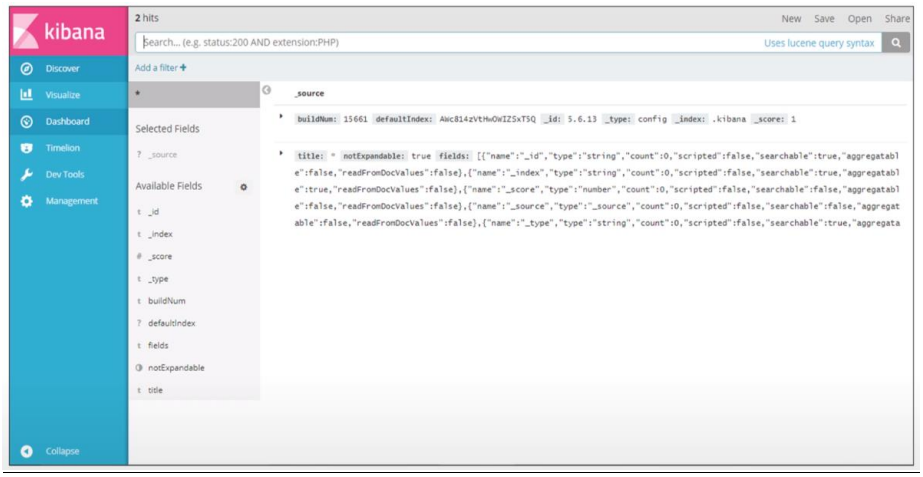
Features of Grafana Monitoring System

Grafana: Dashboard

8.7 ELK Stack

ELK Stack

Kibana Vizualizer Application



8.8 Key Takeaways

You are now able to:

- Explain the role of continuous monitoring tools in DevOps
- Implement Nagios
- Describe Grafana
- Describe ELK Stack
- Identify the suitable continuous monitoring tool for your organization