



Semester 08

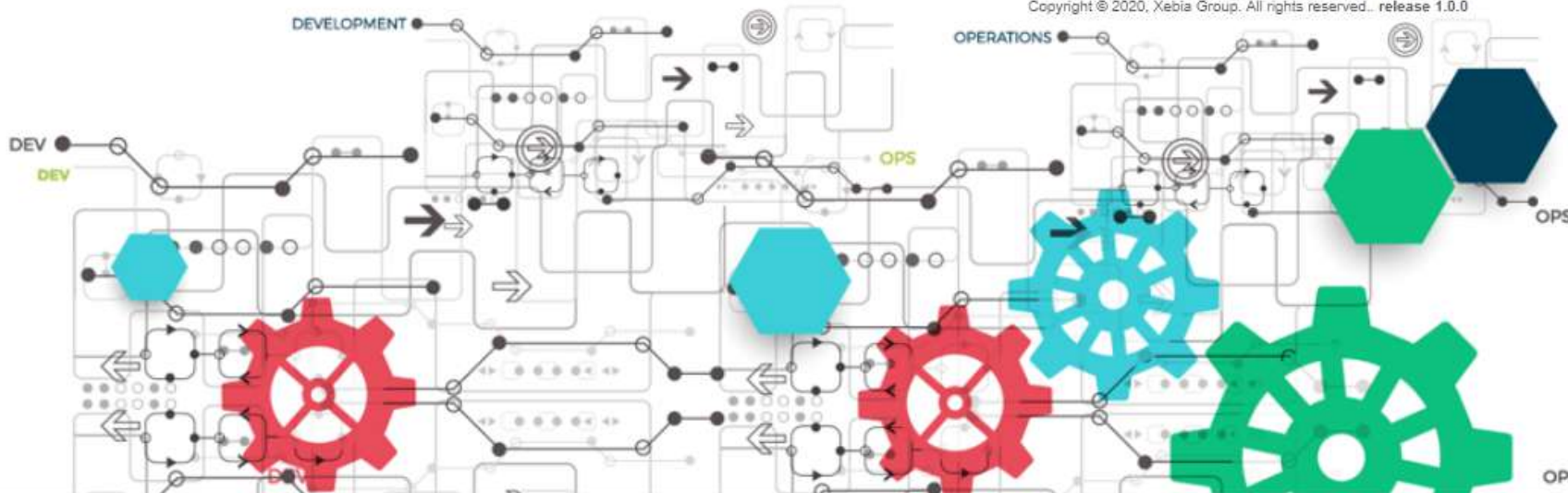
B.TECH CSE with Specialization in DevOps

Monitoring

Module # 06

Monitoring Techniques

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2. Module Objective



3. Module Topics



4. 1.1 Visualization - Dashboards



5. 1.2.1 Visualisation in End User Monitoring



6. 1.2.2 Visualisation in Infrastructure Monitoring



7. 1.2.3 Visualisation in Application Monitoring



8. 1.2.4 Visualisation in Log Monitoring



9. What did You Grasp?

Module 6: Monitoring Techniques

Module Objective

At the end of this module, you will be able to:

- Explain visualisation of monitoring data
- Describe how to set up alerts and the process of alert triage
- Dashboarding with hygieia
- Scope of AI in Monitoring - AIOps
- Identify the available tools of monitoring



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Module 6: Monitoring Techniques

Module Topics

This module covers the following topics:

- Visualization - Dashboards
- Alerts
- Alert triage process
- DevOps dashboard with Hygieia
- AI in monitoring - AIOps
- Tools overview



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Module 6: Monitoring Techniques

1.1 Visualization - Dashboards

Data visualisation can be done in various interesting formats.



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Module 6: Monitoring Techniques

1.2.1 Visualisation in End User Monitoring

The following graph displays the real user monitoring in catch point.

The graph shows the certain points, like:

- Page view
- Traffic count
- Document loaded etc.



Source: https://assets-global.website-files.com/5babb9f91ab233724e53ce0b/5f9abac870a22c5f07ba047b_Optimize%20performance.png

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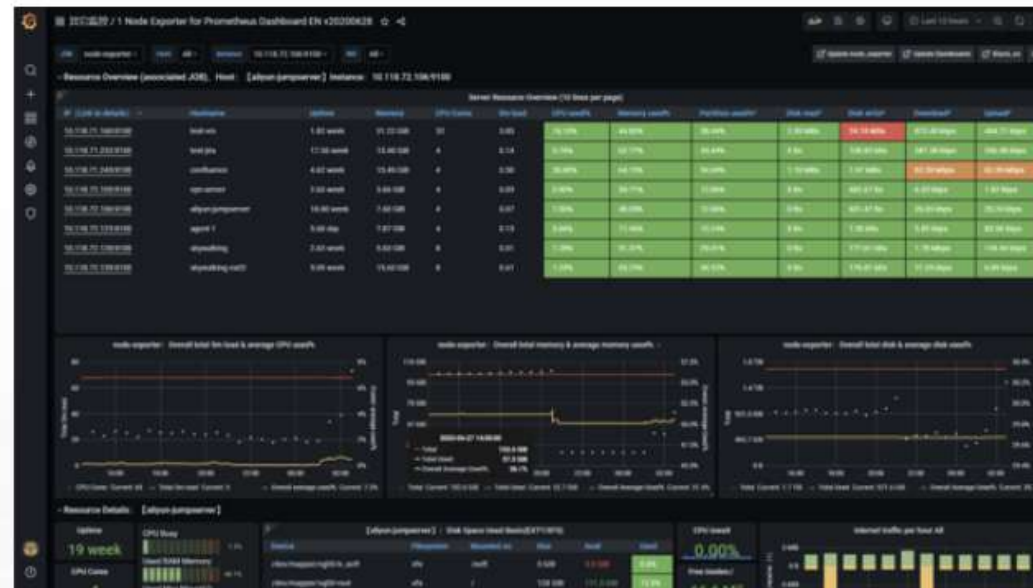
Module 6: Monitoring Techniques

1.2.2 Visualisation in Infrastructure Monitoring

The following graph displays the Prometheus monitoring visualised in Grafana dashboard.

The metrics, which are being visualised are:

- Uptime
- Memory
- CPU cores
- CPU utilisation
- Logical volume mounting
- Storage stats
- Network I/O etc.



Source: https://raw.githubusercontent.com/starsliao/Prometheus/master/node_exporter/ensa.png

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9. What did You Grasp?



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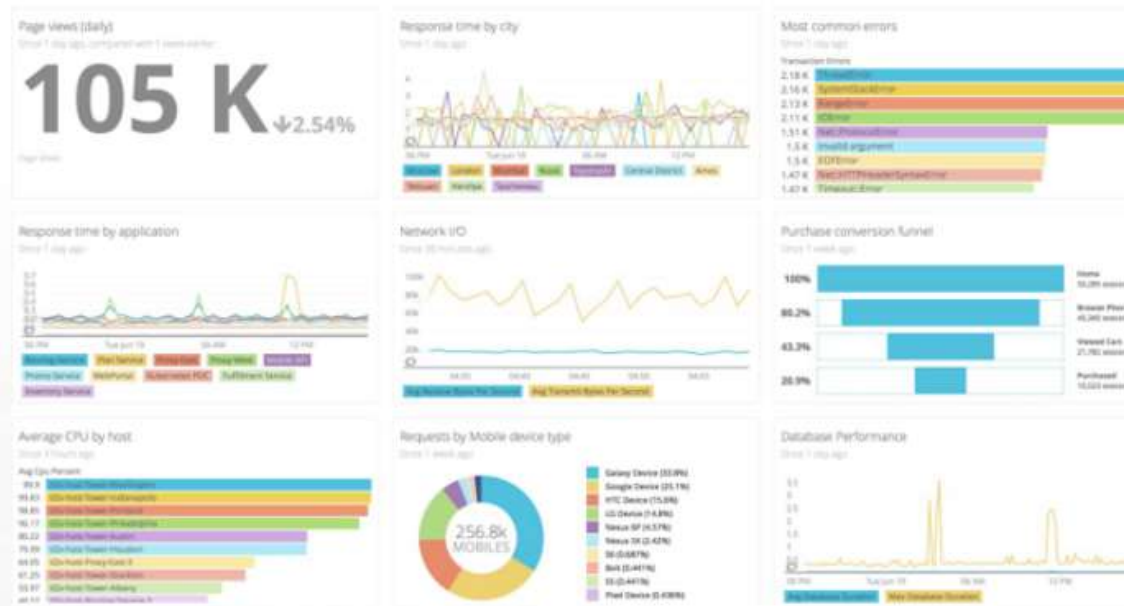
Module 6: Monitoring Techniques

1.2.3 Visualisation in Application Monitoring

The graph displays the Application Monitoring data visualised on New Relic.

The metrics, which are being visualised are:

- Active users
- Response time by application
- Avg CPU utilisation
- Request by device
- Common errors
- Database performance etc.



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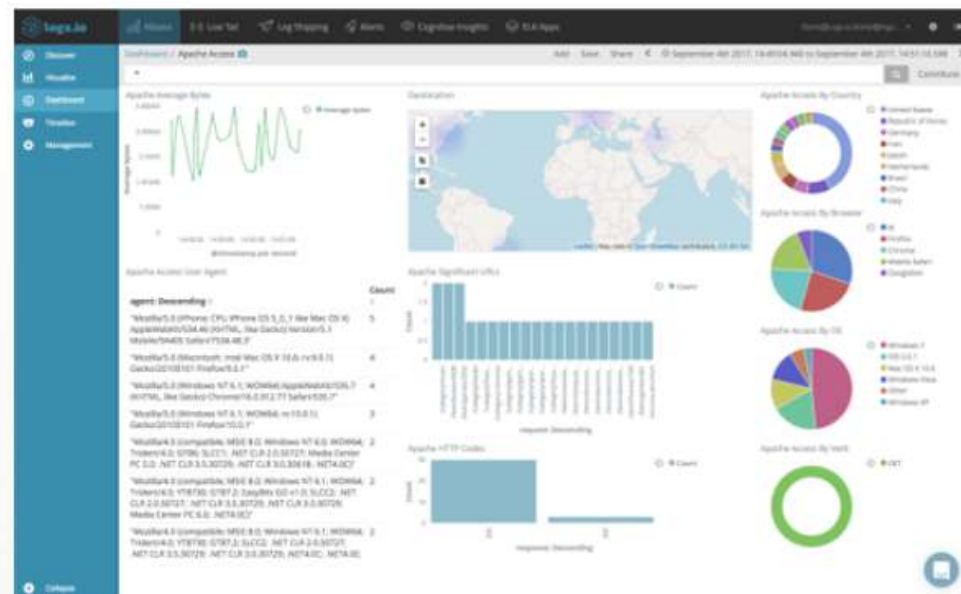
Module 6: Monitoring Techniques

1.2.4 Visualisation in Log Monitoring

Apache log metrics being visualised on Kibana collected by elastic stack.

The metrics, which are being visualised are:

- Source of request on geographical bases
- Source of request from browser
- Source of request from OS
- Apache status codes
- Request count
- Access logs etc.



Source: <https://logz.io/wp-content/uploads/2017/09/Dashboard-Art.png>

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9. What did You Grasp?



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Module 6: Monitoring Techniques

What did You Grasp?



Which visualisation tools is best suitable for logs?

- A) Grafana
- B) Catchpoint
- C) Kibana
- D) New Relic

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9. What did You Grasp?



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Module 6: Monitoring Techniques

1.3 Alerts

In case of any exception, alerting the teams is necessary.



Source: <https://www.uptrends.com/Frontend/Images/sub/features/alerting-channels.png>

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9. What did You Grasp?



10. 1.3 Alerts



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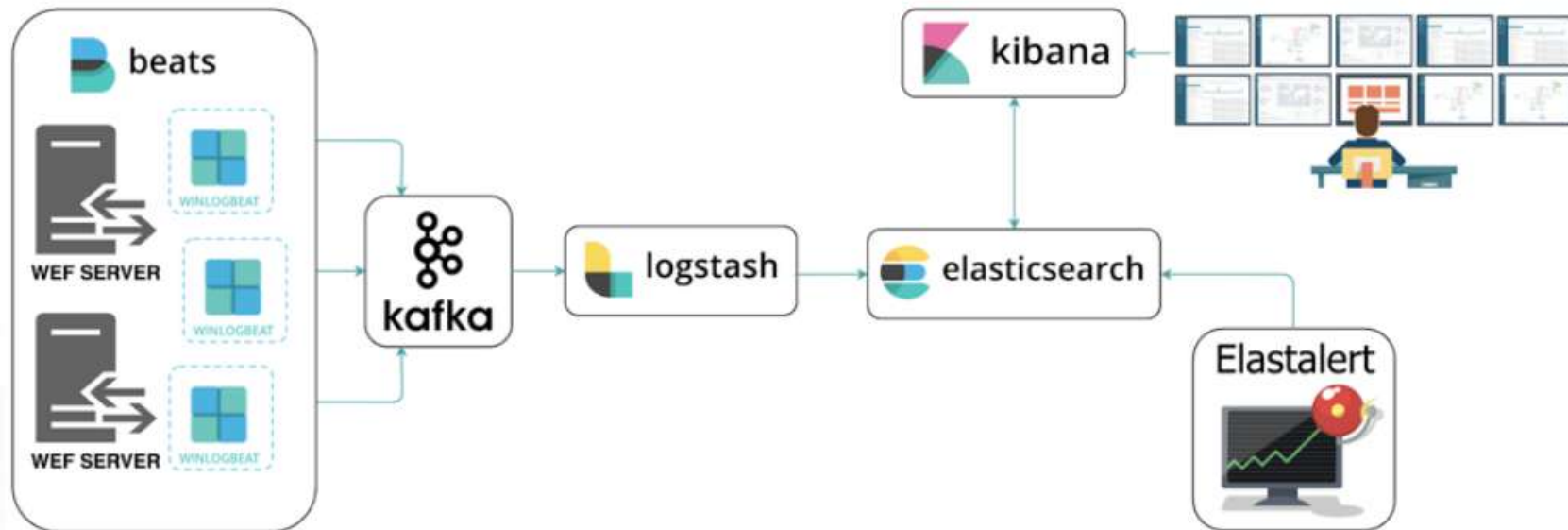
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Module 6: Monitoring Techniques

1.3.1 Alerting with Elastalert

Elastalert as alerting solution with Elastic Stack in log monitoring.



Source: https://miro.medium.com/max/3200/0*wLY_Ffptc9JeNXW9

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9. What did You Grasp?



10. 1.3 Alerts



11. 1.3.1 Alerting with Elastalert



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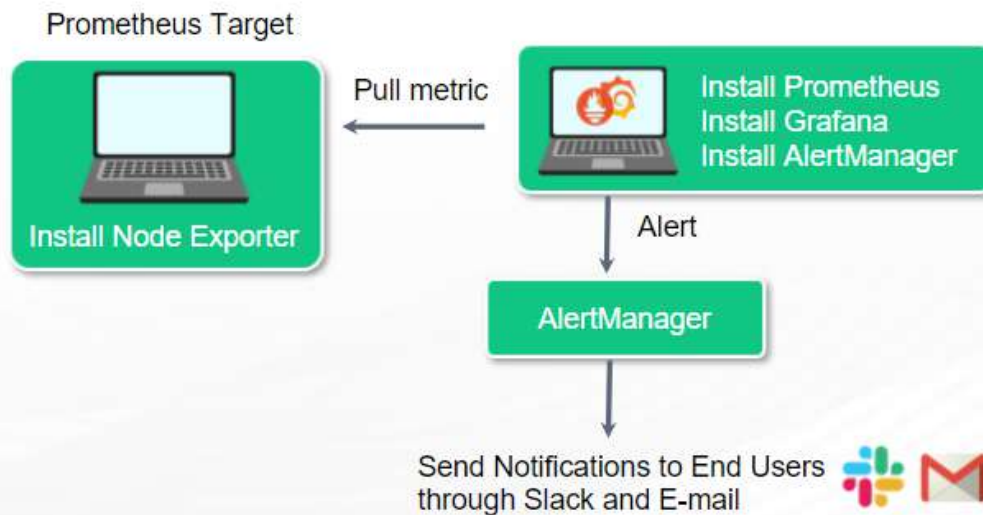
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Module 6: Monitoring Techniques

1.3.2 Alerting with Prometheus

Alert Manager as alerting solution with Prometheus monitoring.



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9. What did You Grasp?



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12. 1.3.2 Alerting with Prometheus



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What did You Grasp?



Which parameter is used log monitoring to trigger an alert?

- A) System metric
- B) Exception or error string
- C) Threshold for response time
- D) Threshold for throughput of application

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5. 1.2.1 Visualisation in End User Monitoring



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9. What did You Grasp?



10. 1.3 Alerts



11. 1.3.1 Alerting with Elastalert



12. 1.3.2 Alerting with Prometheus



13. What did You Grasp?



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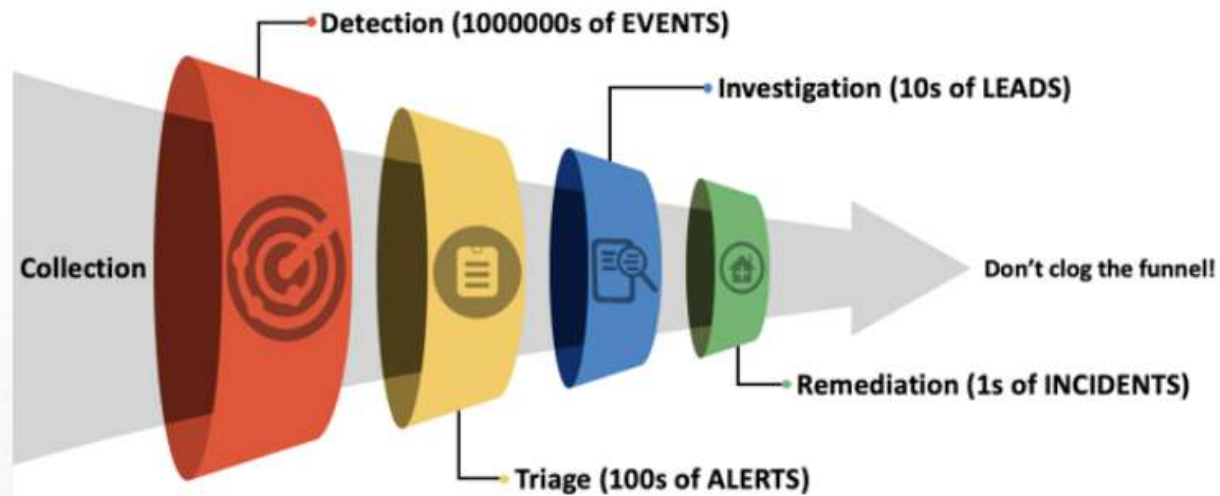
Module 6: Monitoring Techniques

1.4 Alert Triage Process

Alert Triage is the process of reducing noisy alerts.

This process includes three steps:

- Identify
- Map
- Eradicate



Source: https://miro.medium.com/max/3400/1*vS3SAuKsSAIfT7gKsJDwg.png

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6. 1.2.2 Visualisation in Infrastructure Monitoring



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13. What did You Grasp?



14. 1.4 Alert Triage Process



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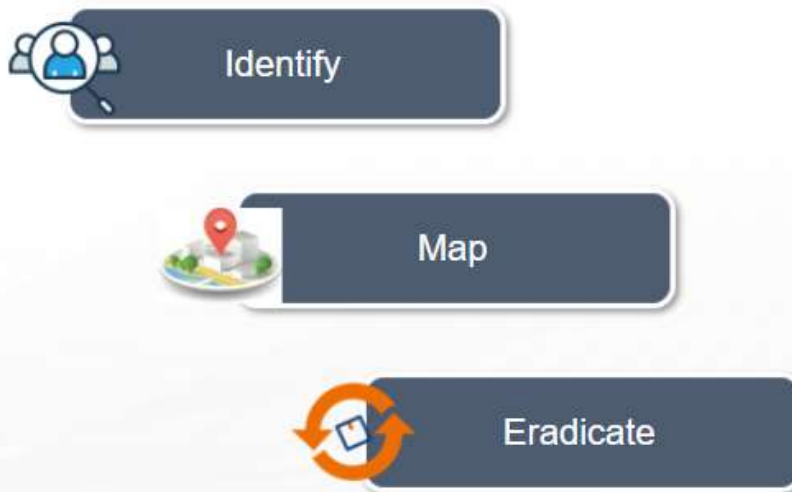
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1.4 Alert Triage Process (Contd...)

The alert triage can be done with three simple steps:



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7. 1.2.3 Visualisation in Application Monitoring



8. 1.2.4 Visualisation in Log Monitoring



9. What did You Grasp?



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13. What did You Grasp?



14. 1.4 Alert Triage Process



15. 1.4 Alert Triage Process (Contd...)



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Module 6: Monitoring Techniques

What did You Grasp?



Who will receive the alerts at very first level?

- A) Software Developer
- B) Operations team
- C) Managers
- D) NOC team

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8. 1.2.4 Visualisation in Log Monitoring



9. What did You Grasp?



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15. 1.4 Alert Triage Process (Contd...)



16. What did You Grasp?



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Module 6: Monitoring Techniques

1.5 DevOps Dashboard with Hygieia

Hygieia is a monitoring tool, which polls data from devops tools, like Jenkins.



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9. What did You Grasp?



10. 1.3 Alerts



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13. What did You Grasp?



14. 1.4 Alert Triage Process



15. 1.4 Alert Triage Process (Contd...)



16. What did You Grasp?



17. 1.5 DevOps Dashboard with Hygieia



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Module 6: Monitoring Techniques

What did You Grasp?



In which monitoring The problems are eliminated before they occur?

- A) Proactive monitoring
- B) Agentless Monitoring
- C) Agent based monitoring
- D) Reactive Monitoring

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10. 1.3 Alerts



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13. What did You Grasp?



14. 1.4 Alert Triage Process



15. 1.4 Alert Triage Process (Contd...)



16. What did You Grasp?



17. 1.5 DevOps Dashboard with Hygieia

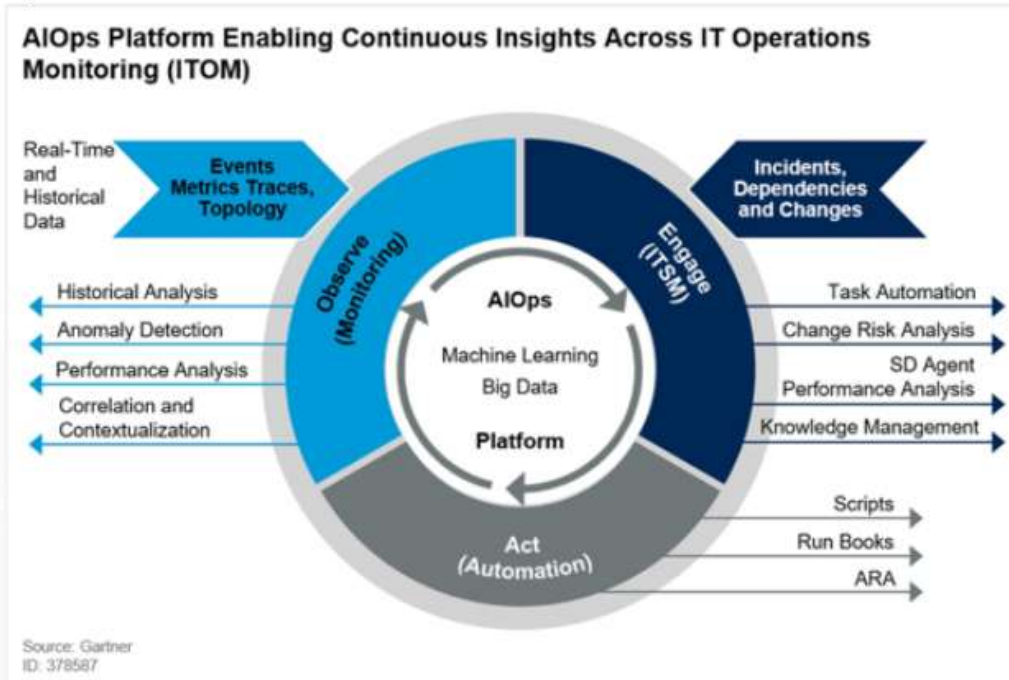


18. What did You Grasp?

Module 6: Monitoring Techniques

1.6 AI in Monitoring - AIOps

Matrix of AI and DevOps:



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11. 1.3.1 Alerting with Elastalert



12. 1.3.2 Alerting with Prometheus



13. What did You Grasp?



14. 1.4 Alert Triage Process



15. 1.4 Alert Triage Process (Contd...)



16. What did You Grasp?



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18. What did You Grasp?



19. 1.6 AI in Monitoring - AIOps



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Module 6: Monitoring Techniques

What did You Grasp?



Which monitoring suite offers a SAAS based solution?

- A) Cloud Monitoring
- B) On-Prem Monitoring
- C) Hybrid Monitoring
- D) Pay as per usage model

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12. 1.3.2 Alerting with Prometheus



13. What did You Grasp?



14. 1.4 Alert Triage Process



15. 1.4 Alert Triage Process (Contd...)



16. What did You Grasp?



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18. What did You Grasp?



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20. What did You Grasp?

Module 6: Monitoring Techniques

1.7.1 Tools Overview End User Monitoring

Some prominent end user monitoring tools available in market:



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13. What did You Grasp?



14. 1.4 Alert Triage Process



15. 1.4 Alert Triage Process (Contd...)



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21. 1.7.1 Tools Overview End User Monitoring



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Module 6: Monitoring Techniques

1.7.2 Tools Overview Infrastructure Monitoring

Some of the prominent infrastructure monitoring tools are:



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14. 1.4 Alert Triage Process



15. 1.4 Alert Triage Process (Contd...)



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Module 6: Monitoring Techniques

1.7.3 Tools Overview Application Monitoring

Some of the prominent application monitoring tools are:



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15. 1.4 Alert Triage Process (Contd...)



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Module 6: Monitoring Techniques

1.7.4 Log Monitoring Tools

Some of the prominent log monitoring tools are:



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24. 1.7.4 Log Monitoring Tools



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Module 6: Monitoring Techniques

What did You Grasp?



Which tool can provide Infrastructure as well as log monitoring?

- A) Loggly
- B) Prometheus
- C) ELK
- D) Catchpoint

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24. 1.7.4 Log Monitoring
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25. What did You Grasp?

Module 6: Monitoring Techniques

In a Nutshell



In this module, you learnt:

- Visualisation of monitoring data
- Setting up alerts
- Process of alert triage
- Dashboarding with hygieia
- Scope of AI in Monitoring - AIOps
- Brief overview of tools available

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25. What did You Grasp?



26. In a Nutshell



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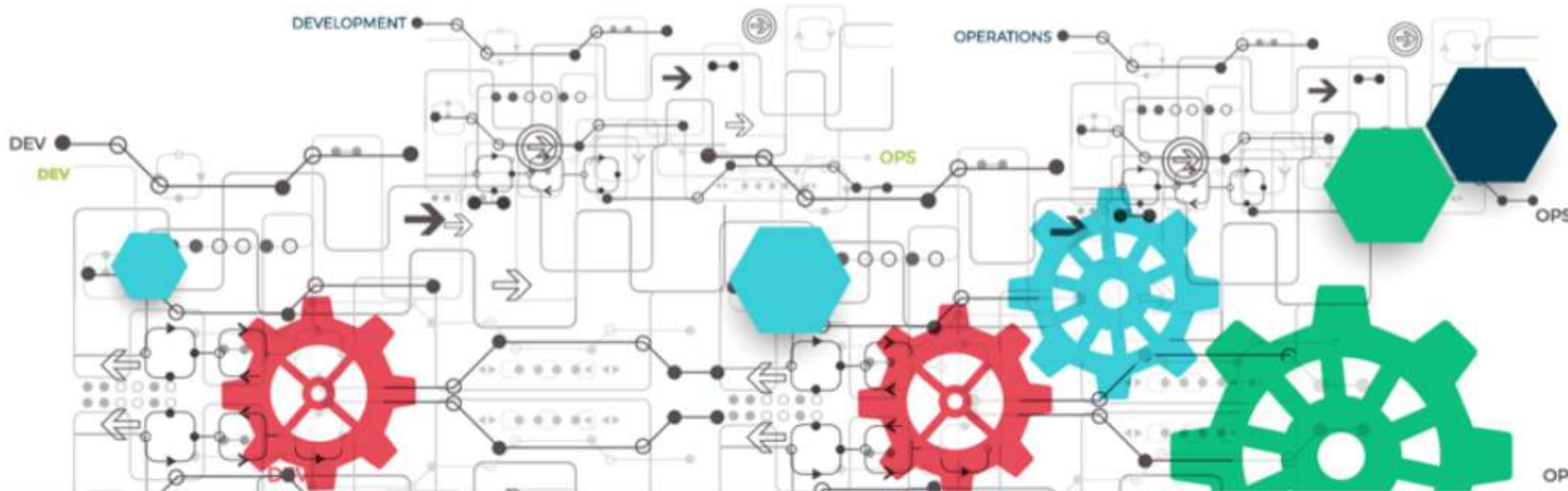


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25. What did You Grasp?



26. In a Nutshell



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