Xebia

Semester **08**

B.TECH CSE with Specialization in DevOps

Monitoring

Module # 04

Application Monitoring

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9. 1.5 Key Functionalities

Module 4: Application Monitoring

Module Objective

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

- Explain what is application monitoring
- Differentiate application and infrastructure monitoring
- Describe the components in application monitoring and metrics
- Define dependency monitoring
- Explain the available tool to do application monitoring

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Module 4: Application Monitoring

Module Topics

This module covers the following topics:

- Overview
- Application vs infrastructure monitoring
- Monitoring components and metrics
- Dependency monitoring
- Tools overview

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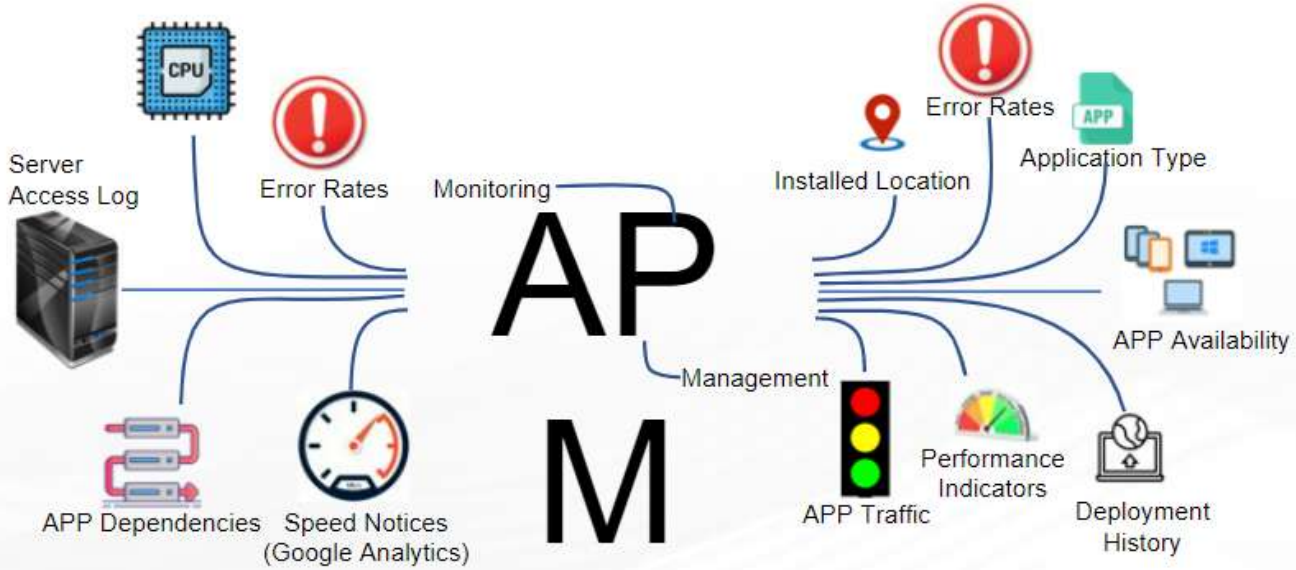
Module 4: Application Monitoring

1.1 Overview

The following image depicts the high level diagram of APM.



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1.2 Why we need APM

To get a proper understanding, let us look the reason behind APM.

*Source: https://miro.medium.com/max/6254/1*qC7t8s5dFzBYmp1ypsZJRQ.jpeg*

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1.2 Why We Need APM (Contd…)

We need APM for the following reasons:

- Customer Satisfaction
- Insight of customer experience
- Acumen at every level
- Digitalisation

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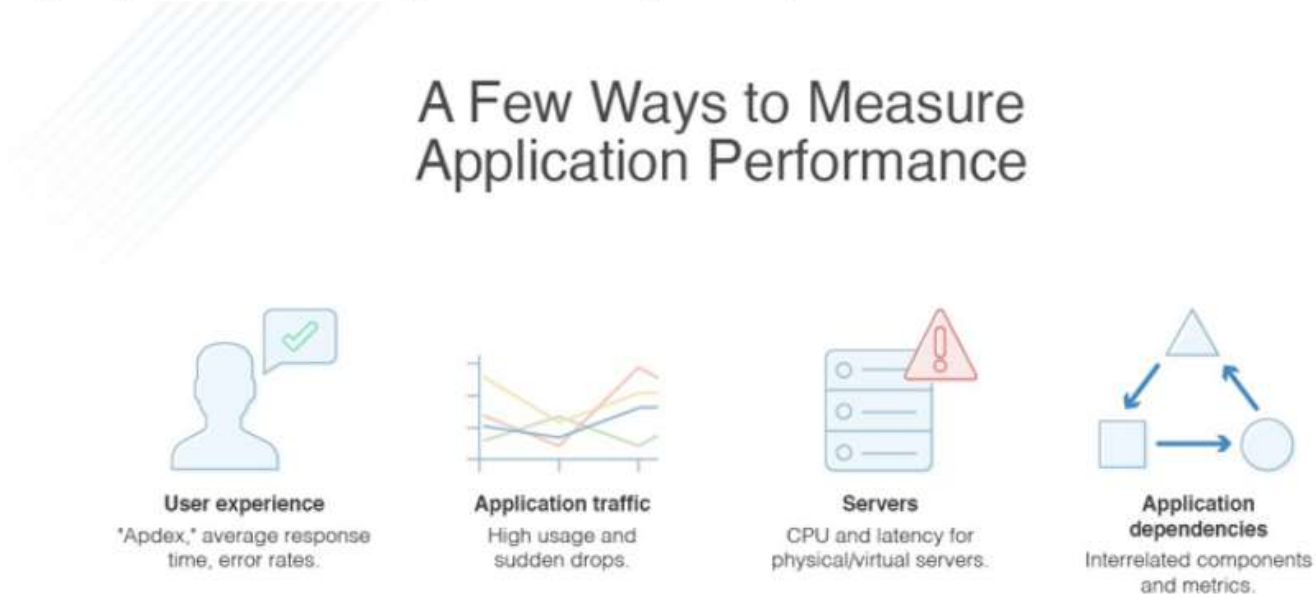
1.3 How to Measure Application Performance

The following image illustrates few ways to measure application performance.



Source: https://www.dnsstuff.com/wp-content/uploads/2020/01/How-to-Measure-Application-Performance.jpg

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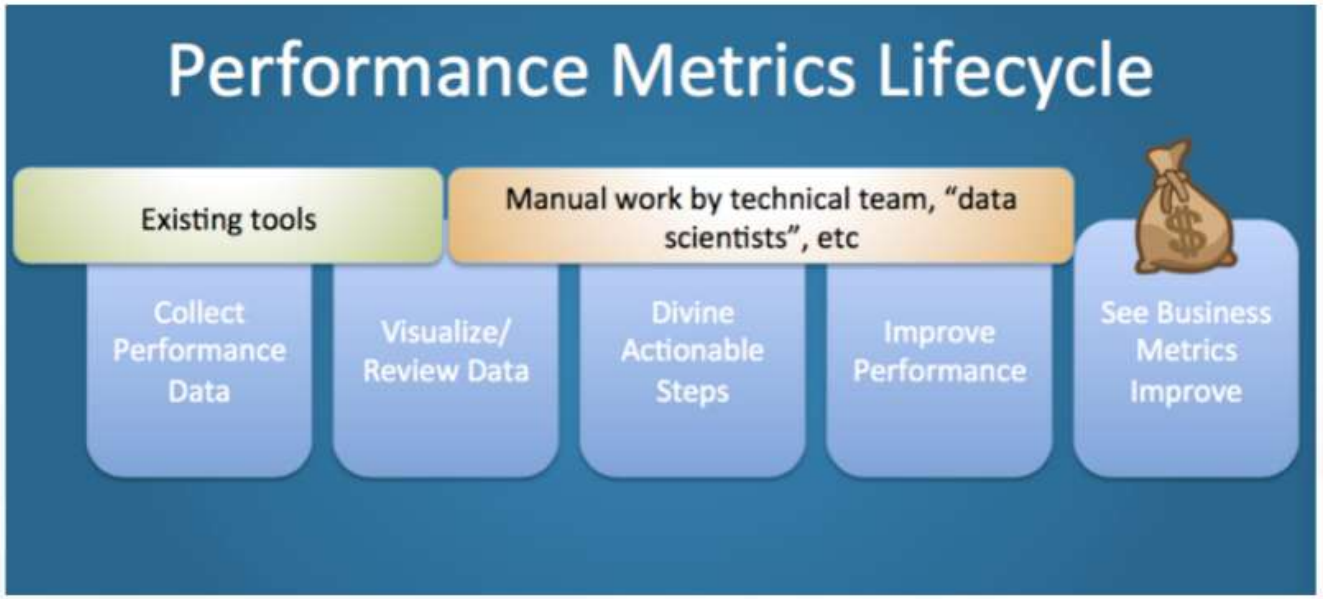
1.4 How do APM Software Works?

The APM tools are typically focussed on these functionalities:



Source: https://rigor.com/wp-content/uploads/2016/02/web-performance-metrics-1030x464.png

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1.5 Key Functionalities

The APM tools are typically focussed on these functionalities:

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What did You Grasp?

Developers typically use APM tools to track UX metrics like _____, _____and _____.

A) **Error rate, user satisfaction and usability**
B) **Net Promoter Score, task success rate and network throughput**
C) **User retention, usability and release velocity**
D) **Pupil dilation, heart rate and runtime**

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10. What did You Grasp?

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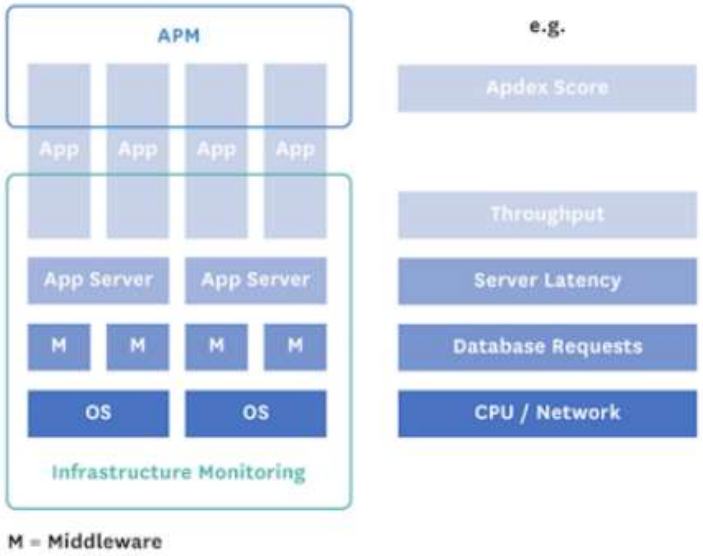
1.6.1 Application vs Infrastructure Monitoring

In this segment, we will compare APM with Infrastructure Monitoring.



Source: https://lh3.googleusercontent.com/proxy/AR3Z881tHc3Y1YqZTDWCG0tVUr5OsEQyKgpzqnr-YAxEq71qReUR4DCX0Y8wsvm3p5s8iyfZf91UrhLrhNUFU8LNPRa7yQTGHeMn7PkX-ssnj9CH5jSGEcRP

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1.6.2 Application Monitoring vs APM

The differences between APM and Infrastructure monitoring are:

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What did You Grasp?

When can an IT organization adopt APM?

A) **In Agile environments**
B) **For JavaScript applications**
C) **For web applications**
D) **For all software applications and development environments**

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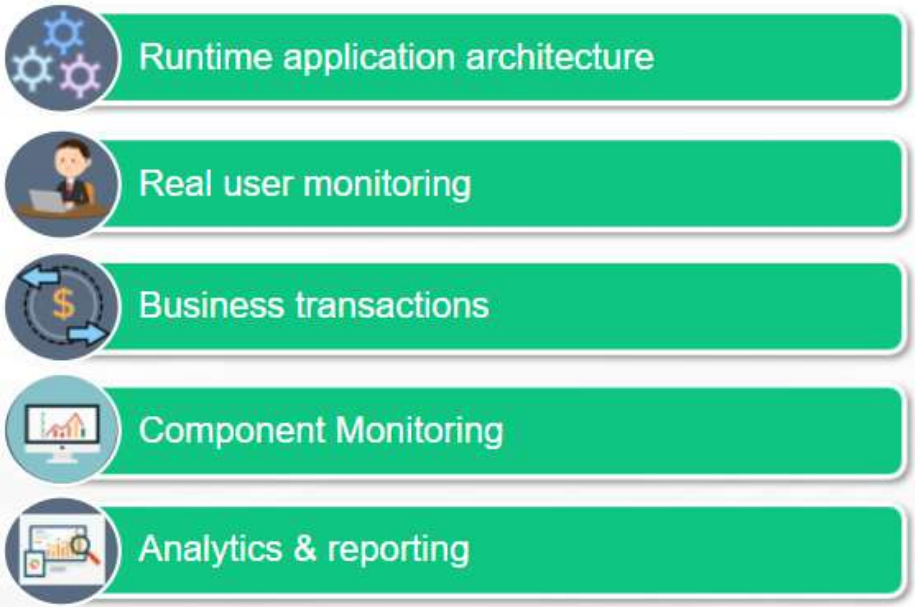
1.7 Monitoring Components

There are few components on which APM focuses:



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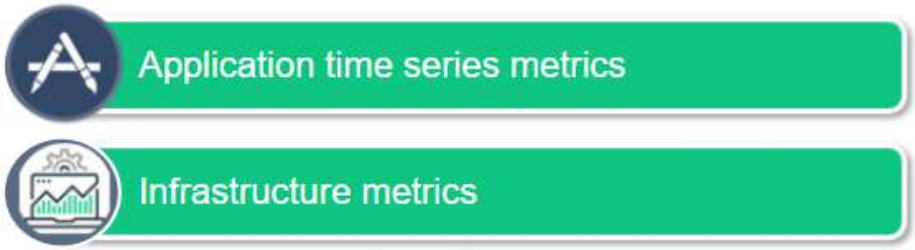
1.8 Monitoring Metrics

The following are the metrics on which APM focuses:



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14. 1.7 Monitoring Components
15. 1.8 Monitoring Metrics

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What did You Grasp?

Which parameter(s) APM looks after?

A. **Web performance monitoring**
B. **Application availability and uptime**
C. **Request rates**
D. **All of the above**

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14. 1.7 Monitoring Components

15. 1.8 Monitoring Metrics

16. What did You Grasp?

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1.9 Dependency Monitoring

The following image shows an example of dependency in application, and its monitoring.

Source: https://lh3.googleusercontent.com/proxy/AR3Z881tHc3Y1YqZTDWCG0tVUr5OsEQyKgpzqnr-YAxEq71qReUR4DCX0Y8wsvm3p5s8iyfZf91UrhLrhNUFU8LNPRa7yQTGHeMn7PkX-ssnj9CH5jSGEcRP

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What did You Grasp?

Select the term that best matches the description: This term refers to the evaluation of event data that the organization captures from the software, network or component in the IT ecosystem. Analysis of this event data reveals patterns in areas like user behavior, compliance and security, as well as performance problems.

A) Flow mapping
B) Real-user monitoring
C) Log monitoring
D) Root cause analysis

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1.10 Tools Overview

The following are some prominent application monitoring tools:

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What did You Grasp?

An APM system should reveal what performance information?

A) Conversion rate, uptime, ROI
B) Runtime, error rates, CPU usage, application availability, response time
C) Load tests, stress tests, spike tests, soak tests
D) B or C

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Module 4: Application Monitoring

In a Nutshell

In this module, you learnt:

- Overview of application monitoring
- Difference between application and infrastructure monitoring
- Components in application monitoring and metrics
- What is dependency monitoring
- Brief overview of tools available to do application monitoring

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21. In a Nutshell

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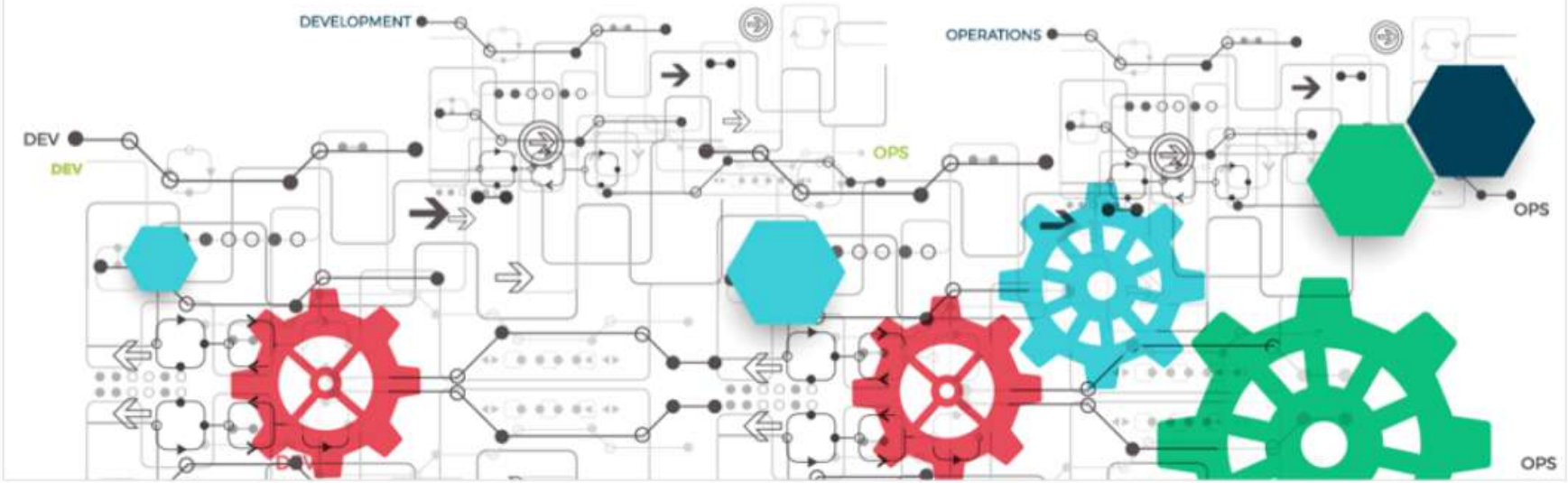
End of Module

Next Module 5: Log Monitoring and Analysis



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