AIOPS Assignment 1

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1. What is AI-ops?

Coined by Gartner, AIOps is Artificial Intelligence for IT Operations and is the application of artificial intelligence capabilities such as natural language processing and machine learning models to automate and streamline operational workflows.

2. Why do we use Ai-ops?

AIOps uses big data, analytics, and machine learning capabilities to do the following:

- Collect and aggregate huge and ever-increasing volumes of data generated by multiple IT infrastructure components, application demands, and performance-monitoring tools and service ticketing systems
- Intelligently shift 'signals' out of the 'noise' to identify significant events and patterns related to application performance and availability issues.
- Diagnose root causes and report them to IT and DevOps for rapid response and remediation or in some cases, automatically resolve these issues without human intervention.

3. What is the difference between AI-ops and ML-ops?

AIOps increases the efficiency in IT operations by using machine learning to automate incident management and machine diagnostics. MLOps is the practice of bringing machine learning models into production. It makes it easier to bridge the gap between data ops and infrastructure teams to get models into production faster.

4. What do you mean by CI-CD?

CICD stands for Continuous Integration and Continuous Delivery. It enables rapid code changes with more reliability and fewer risks. It increases the efficiency of the project and makes sure that the delivered software is of the highest quality.

- Continuous Integration (CI) is software development or coding practice in which any code changes made by the developer in his/her private workspace are committed to the central repository regularly. After this, automated builds and tests are conducted by the CI system on the code changes that helps in detecting bugs more quickly and improving software quality.
- Continuous Delivery (CD) is another practice that follows CI. Post CI, once the build stage has been completed, the CD automatically prepares the code for further release on production or staging environments. The CD process involves at least one manual approval point in which only after getting the approval from the developer or any other resource, the code changes are deployed to the production or staging or any other environments.

5. What do you mean by Bash?

Bash is a command-line interface shell program used extensively in Linux and macOS. The name Bash is an acronym for "Bourne Again Shell," developed in 1989 as a successor to the Bourne Shell.

6. What do you mean by kernels? Explain the functions of kernels.

A kernel is the core component of an operating system. Using interprocess communication and system calls, it acts as a bridge between applications and the data processing performed at the hardware level.

When an operating system is loaded into memory, the kernel loads first and remains in memory until the operating system is shut down again. The kernel is responsible for low-level tasks such as disk management, task management and memory management.

7. What are the essential elements or components of Linux?

Linux Operating System has primarily three components

- Kernel – Kernel is the core part of Linux. It is responsible for all major activities of this operating system. It consists of various modules and it interacts directly with the underlying hardware. Kernel provides the required abstraction to hide low level hardware details to system or application programs.
- System Library – System libraries are special functions or programs using which application programs or system utilities accesses the kernel's features. These libraries implement most of the functionalities of the operating system and do not require kernel module's code access rights.
- System Utility – System Utility programs are responsible to do specialized, individual level tasks.