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The global AIOps market is expected to grow at a 30 percent compound annual rate, reaching $14.3 billion by 2025, according to a recent study. The data underscores how popular AIOps is becoming within the enterprise. At the same time, AIOps is not always easy to understand especially with executives learning about it for the first time. Let's take a closer look at AIOps and its potential.

What Is AIOps?

AIOps is the infusion of artificial intelligence (AI) into IT operations. In fact, AIOps stands for "artificial intelligence for IT operations." Put another way, AIOps is about using forms of AI such as machine learning and deep learning to help IT operations make proactive, intelligent decisions. AIOps helps IT anticipate and respond to problems before they happen by:

- Collecting large amounts of operational data.
- Separating signal from noise.
- Surfacing anomalies and generating actions to automatically resolve problems that can hamstring an IT department.

AIOps does all of this by combining big data, analytics, and machine learning.

Why Are More Businesses Adopting AIOps?

As enterprises accelerate their digital transformation, applications and systems architectures are becoming more complex. We see this complexity manifested in a few important ways:

- Enterprises are moving from a monolithic application architecture into a containerized application stack that is cloud-native, modular, and micro-services based.
- They are also deploying these applications onto a mix of on-premise, managed, public and private cloud environments.

As applications and IT systems grow in their complexity, they generate enormous amounts of data. Traditional IT service management and IT operations management systems cannot keep up with this data deluge. And as a result, resources in IT operations departments are overwhelmed with more data than they can possibly handle. On the other hand, AI thrives on extremely large amounts of data. As the volume of data grows, it opens up pathways for infusion of AI into the operations.

With AIOps, the IT operations team benefits as AI sifts through large amounts of data and separates signal (useful data) from noise (useless data). In particular, machine learning and deep learning models are good at analyzing big data and generating insights that help in anomaly detection or classification or prediction tasks.

Businesses that have adopted AIOps are enjoying benefits such as frictionless experiences, a reduction in operations costs, increased speed of customer service, reduction in mean time to resolution, and a decrease in down time. On its best days, AIOps transforms IT Operations from a reactive mode into a proactive and finally predictive mode.

What Are the Components of AIOps?

In simple terms, AIOps is composed of three core components:

1 Observing, monitoring, and storing data

Observability is having complete visibility of the data generated by the systems and applications. Observability and monitoring tools observe and capture data such as application status, latency, traffic, errors, machine logs, application logs, events, and traces.

Monitoring is about understanding the data to determine if things are working as expected.

Data storage is the ability to store large amounts of big data, which could consist of historic as well as real time streaming data. Data could be structured, semi-structured or unstructured. Data lakes are ideal for storing such data.

2 Intelligent inference or generating insights and making predictions from data

The AI model draws intelligent inference using curated multi-layer machine learning models for the clustering of data and generating insights and predictions.

Once the AI model generates the inference and actionable insights, they need to be shared with IT and operations personnel, or the AIOps system needs to automatically remedy incidents.

3. User experience and automation.

A good user experience layer covers many aspects of AIOps including the visualization of an anomaly or outliers through an intuitive dashboard. The experience may permeate the automation of AIOps, too, including the creation of an incident, notifications, and actions, or the recovery of a system through an automated bot (in turn, those elements of automation also result in a better experience for everyone).

AIOps brings about a “self-healing mentality” in which AI, robotic process automation, and cognitive capabilities are utilized to automate the remediation of infrastructure or application issues before an incident occurs. Self-healing systems are the holy grail of AIOps.

What’s an Example of How a Business Might Use AIOps?

Let’s take a look at a couple of examples of how AIOps can help the enterprise’s IT Operations team.

Incident Management

Today, IT help desks that manage customer service issues are staffed mostly by human support agents. Responding to an incident requires the agent to complete a number of complicated steps that involve the handling of increasingly large amounts of data. The agent needs to first collect information about the incident. Then the agent needs to classify the incident and route it to the appropriate service personnel, who investigates the root cause and suggests a remedy or implements the remedy.

With AIOps, the help desk can respond much faster. AI, using natural language processing, can quickly understand the issue at hand, classify it, determine the root cause, and automatically respond to the user with the remedy or point to the documentation containing the remedy.

Machine learning models can be trained using historic incident data and information from a wide variety of sources (ranging from documentation, FAQs, forum postings, etc.) to find possible resolutions to the incident. Once the model is fine tuned to give accurate results, it can:

- Respond to new incidents.
- Perform root cause analysis.
- Suggest a resolution to the problem.
- Close the ticket by issuing the resolution to the originator or classify the incident and route it to the appropriate service support specialist.
- In the best case, take corrective action and automatically resolve the issue.

As a result, IT operations can address more incident tickets faster and with fewer people, while reducing mean time to resolution.

One very challenging job for any IT operations department is monitoring the performance of machines and devices and fixing potential problems before they disrupt operations. This challenge is at the heart of the massive operation under way to distribute and administer the Covid-19 vaccine. The vaccine must be stored at a very low temperature. If the temperature of the vaccine goes above a set threshold, it becomes useless and needs to be discarded. The manufacturing facilities, distribution centers, and transport vehicles that are part of the supply chain rely on hundreds of freezers for storing these vaccines at the appropriate temperature. People need to constantly monitor the freezers, which requires a tremendous amount of effort with zero margin for error. With AIOps, people could build and train a machine learning model to look for abnormalities in the temperature fluctuations, conceivably through an IoT (digital thermometer connected to the internet) device installed on every freezer, which would transmit the temperature on a regular basis. Without AIOps, an application could collect signals and report them to people doing the monitoring via a rule-based system. This process would lead to a reactive mode of operation in which people react to changes in temperature beyond a set threshold and then initiate root-cause analysis and determine a fix. With AIOps, the model could detect minute changes in temperature, look for patterns in the temperature fluctuations, and either notify appropriate personnel so that proactive actions could be taken or trigger automated processes to rectify a potential incident before it happens.

The result of AIOps would be a non-occurrence of an incident because the potential problem was predicted and the root cause rectified, thus reducing downtime and related costs.

Getting Started

Implementing and embracing AIOps is a complex journey, and it is prudent to start small. Pick a small pilot, implement, learn, tweak, adapt and then expand from there. Once the pilot proves the ROI and savings, it is easier to obtain executive buy-in for larger endeavors.

AIOps starts with good data. The first step to AIOps is to truly understand what happens within the systems and infrastructure in an enterprise. Understanding starts with observability and monitoring. Enterprises with a data driven mindset and culture find it easier to adopt AIOps as they already have a lot of data available. Once the data is collected, it needs to be cleansed, curated, and debiased. This data can then be used to train the machine learning model. The model becomes the AIOps engine powering the solution being built. And with a powerful AIOps engine, IT operations can help the enterprise achieve measurable outcomes such as improvements in productivity and decrease in cost.

Contact Centific

Centific AIOps Services enable enterprises to manage the ever-growing demands on IT Operations by utilizing AI to sift through data clutter and pinpoint actionable data. The Centific AIOps Platform accelerates the adoption of AIOps and hence delivers on its promise. We do so by leading with best-in-class, human-centered user experiences, industry-leading data engineering, and AI-driven actionable inferences and automation. That way, an enterprise's IT Service Management and IT Operations Management functions can be more proactive and effective everywhere, ranging from cybersecurity protection to customer service support. **Contact us** to learn how we can help you.

About the Author:

Shashi brings over 20 years of executive management experience, technology expertise, and business relationships from his career at leading global companies. He leads the Digital Engineering Practice at Centific, USA. His areas of focus include Experience Design, Custom Application Development, Data Modernization, Data Monetization, Engineering & Operations, Digital Platforms (B2B, B2C, B2B2C), AI, Emerging Technologies as well as Intelligent Automation.

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