

## ADVANCED LOGGING AND MONITORING STRATEGIES USING AWS CLOUDWATCH

Hrishikesh Rajesh Mane<sup>1</sup>, Sandhyarani Ganipani<sup>2</sup>, Sivaprasad Nadukuru<sup>3</sup>, Om Goel<sup>4</sup>, Niharika Singh<sup>5</sup> & Prof. Dr. Arpit Jain<sup>6</sup>

<sup>1</sup>The State University of New York at Binghamton, Binghamton New York, US

<sup>2</sup>Scholar, Jawaharlal Nehru Technological University, Hyderabad, Telangana, India - 500081

<sup>3</sup>Andhra University, Muniswara Layout, Attur, Yelahanka, Bangalore-560064

<sup>4</sup>ABES Engineering College Ghaziabad

<sup>5</sup>ABES Engineering College Ghaziabad

<sup>6</sup>KL University, Vijaywada, Andhra Pradesh

### ABSTRACT

In today's rapidly evolving digital landscape, the capability to effectively log and monitor applications is paramount. AWS CloudWatch stands as a robust solution for managing the operational health of cloud-based resources. This paper examines advanced logging and monitoring strategies using AWS CloudWatch, highlighting its potential to transform data into actionable insights. By leveraging CloudWatch's extensive suite of features—including real-time monitoring, custom metrics, alarms, and log aggregation—organizations can proactively detect issues and optimize performance across diverse environments. The discussion emphasizes the importance of integrating CloudWatch with other AWS services to create a seamless monitoring ecosystem that scales with organizational needs. Specific strategies include the centralized collection of logs from multiple sources, automated anomaly detection using machine learning capabilities, and the configuration of dynamic dashboards for a comprehensive view of system performance. The paper also explores best practices for establishing a robust alerting framework that minimizes downtime and enhances system resilience. Additionally, it provides insights into securing log data, ensuring that sensitive information remains protected while maintaining compliance with industry standards. By adopting these advanced strategies, enterprises are better positioned to respond swiftly to operational challenges, streamline incident management, and ultimately reduce operational costs. This exploration serves as a guide for IT professionals and decision makers looking to harness the full potential of AWS CloudWatch, ensuring robust system monitoring, improved operational transparency, and a proactive approach to cloud management.

**KEYWORDS:** Advanced Logging, Anomaly Detection, AWS CloudWatch, Cloud Management, Custom Metrics, Operational Resilience Real-Time Monitoring

---

### Article History

Received: 05 Feb 2020 | Revised: 14 Feb 2020 | Accepted: 18 Feb 2020

---