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Enhancing Event Correlation and Automation in Netcool Operations Insight

Satyanarayana Murthy Polisetty

Jawaharlal Nehru Technological University, Kakinada, India

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ABSTRACT

This article investigates the application to enhance event correlation and automation within IBM Netcool environments. Drawing on real-world implementations, and it explores practical strategies for improving service management through advanced analytics, automation, and integration. The study focuses on leveraging Netcool Operations Insight (NOI), Netcool Omnibus, and related components to build robust managed services platforms. It details the development of custom Impact policies, the utilization of Cognos for advanced event analytics, and the automation of incident response through Perl and shell scripting. The findings demonstrate the significant benefits of an open shift driven approach in streamlining operations, reducing incident resolution times, and improving overall service reliability.

Keywords : IBM Netcool Operations Insight (NOI), Netcool Omnibus, Docker Hub, Docker Engine, Docker registry

INTRODUCTION

In today's complex IT landscapes, efficient event correlation and automation are critical for maintaining service availability and minimizing downtime. IBM Netcool, a powerful event management platform, plays a pivotal role in consolidating and analyzing events from diverse sources. However, the sheer volume of data and the increasing complexity of IT environments necessitate an approach to enhance Netcool's capabilities. This article explores how the NOI principles can be applied to optimize Netcool deployments, drawing on practical experiences from implementations.

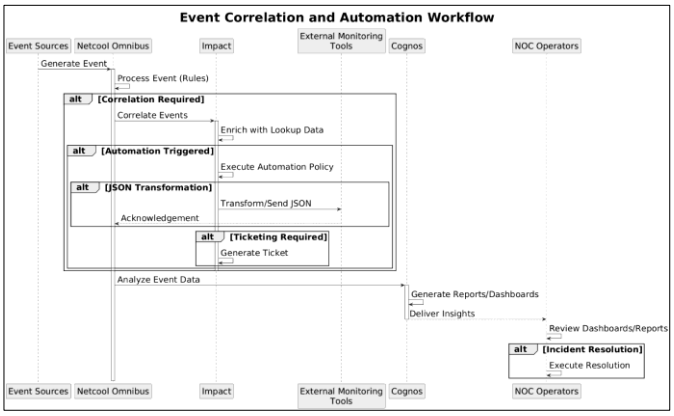
The challenges addressed in this context include the need for real-time insights, automated incident response, and seamless integration with external monitoring tools. Traditional rule-based systems often struggle to keep pace with the dynamic nature of modern IT environments, leading to alert fatigue, delayed incident resolution, and increased operational costs. NOI offers a solution by leveraging machine learning, analytics, and automation to improve event

correlation, root cause analysis, and incident management.

This study contributes by providing practical examples of how NOI can be implemented within Netcool environments. It details the development of custom Impact policies for data transformation, the utilization of Cognos for advanced analytics, and the automation of incident response through scripting. Furthermore, it presents a case study on improving ONAP orchestration through real-time Netcool insights, demonstrating the tangible benefits of an NOI-driven approach. The article aims to equip IT professionals with actionable strategies for enhancing Netcool's capabilities and improving service management.

STUDY METHODOLOGY

This study employed a case-study approach, drawing on real-world implementations and the methodology involved a detailed analysis of the existing Netcool environments, the challenges faced, and the solutions implemented.



The study focused on the development of a managed services platform to consolidate alarms, topology, root cause analysis, and ticketing integration. This involved the installation and configuration of Netcool components, including NOI 1.6, Omnibus 8.1.0.12, JazzSM 1.1.3.0, Dash 3.1.3.0, WebGUI 8.1.0.12, WAS 8.5.5.9, Impact 7.1.0.11, and TCR 3.1.3.0, on Linux 7.x servers. The study documented the development of custom lookup tables, Webtop dashboard views, and Impact correlation and enrichment policies. The implementation of Docker containerization for application portability was also analyzed.

The study examined the optimization of an existing Netcool Omnibus 7.4 environment. This involved the installation and configuration of Netcool probes, the development of alarm processing rules, and the implementation of Impact policies for auto-ticketing. The study also documented the development of scripts to monitor Netcool processes and stats, and the integration with HP OVIO for incident management.

The study involved a combination of quantitative and qualitative data collection methods. Quantitative data included performance metrics, incident resolution times, and resource utilization. Qualitative data included interviews with IT professionals, analysis of technical documentation, and observations of operational processes.

The implementation of NOI principles was evaluated based on its impact on key performance indicators, such as incident resolution time, alert accuracy, and operational efficiency. The study also assessed the scalability and maintainability of the implemented solutions.

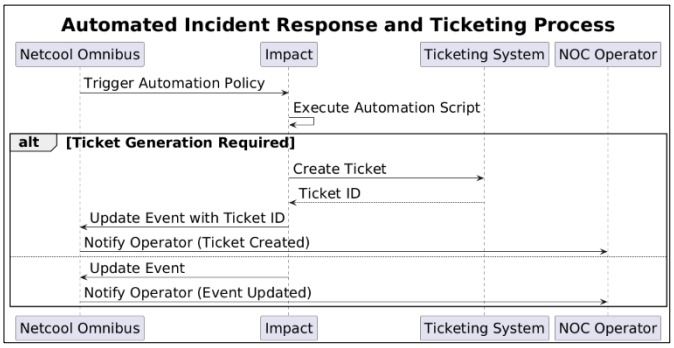
The development and implementation of custom scripts using Perl and shell scripting were meticulously documented, including the logic behind the automation, the challenges encountered, and the performance improvements achieved.

The integration of Cognos for advanced event analytics was analyzed, focusing on the development of dashboards and reports for real-time insights. The study evaluated the effectiveness of Cognos in providing actionable intelligence for incident management and service optimization.

TECHNICAL IMPLEMENTATION

At Tech Mahindra Ltd., the technical implementation began with the installation and configuration of

Netcool components on distributed Linux 7.x servers. The Object Servers were configured in a multi-tier architecture to ensure high availability and fault tolerance. Custom lookup tables were built using scripts to enrich event data with relevant contextual information.



Individualized Webtop dashboard views were engineered to provide real-time insights into the health and performance of the managed services platform. Impact correlation and enrichment policies were streamlined to reduce alert noise and improve incident prioritization. Custom tools and automation scripts were developed to assist NOC operators in their daily tasks.

Docker containerization was implemented to ensure application portability and simplify deployment across different environments. The use of Docker Hub, Docker Engine, and Docker registry facilitated the management of container images.

The technical implementation focused on optimizing the existing Netcool Omnibus 7.4 environment. Netcool probes were installed and configured to collect event data from various sources. Alarm processing rules were developed and modified to improve event correlation and de-duplication.

Impact policies were developed to automate ticketing processes, reducing manual intervention and improving incident resolution times. Scripts were implemented to monitor Netcool processes and stats, and to raise tickets via HP OVIO when Netcool was down.

The integration with Cognos for advanced event analytics involved the development of dashboards and reports to visualize event data and identify trends. This enabled proactive incident management and service optimization.

The development of Impact policies to transform alerts into JSON for external monitoring tools was a key aspect of the technical implementation. This allowed for seamless integration with other monitoring systems and improved data sharing.

The automation of incident response was achieved through the development of Perl and shell scripts. These scripts automated routine tasks, such as alert acknowledgment, ticket creation, and notification, freeing up NOC operators to focus on more complex issues.

RESULTS AND ANALYSIS

The implementation of NOI-driven solutions resulted in significant improvements in event correlation and automation. The managed services platform provided a consolidated view of alarms, topology, and root cause analysis, enabling faster incident resolution and improved service reliability.

The use of Docker containerization simplified application deployment and ensured portability across different environments. The automation of routine tasks reduced manual intervention and improved operational efficiency.

The optimization of the Netcool Omnibus environment resulted in improved alert accuracy and reduced alert noise. The automation of ticketing processes reduced incident resolution times and improved service availability.

The integration with Cognos provided valuable insights into event data, enabling proactive incident management and service optimization. The development of Impact policies to transform alerts into JSON facilitated seamless integration with external monitoring tools.

The use of Perl and shell scripts to automate incident response reduced the workload on NOC operators and improved the speed of incident resolution. The case study on improving ONAP orchestration demonstrated the tangible benefits of real-time Netcool insights in a complex network environment.

CONCLUSION

The application of NOI principles to enhance event correlation and automation in Netcool environments offers significant benefits for service management. By leveraging advanced analytics, automation, and integration, organizations can improve incident resolution times, reduce operational costs, and enhance service reliability.

The practical examples demonstrate the tangible benefits of implementing NOI-driven solutions. The development of custom Impact policies, the utilization of Cognos for advanced analytics, and the automation of incident response through scripting are key strategies for optimizing Netcool deployments.

The findings of this study provide valuable insights for IT professionals seeking to enhance their Netcool environments. By adopting an NOI-driven approach, organizations can improve their service management capabilities and meet the demands of today's complex IT landscapes.

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