Contribution ID: **211** Type: **Paper presentation**

Automation and Monitoring of Virtualized Infrastructure on Proxmox Servers

Thursday 18 September 2025 15:30 (15 minutes)

This article presents the development, implementation, and validation of an integrated monitoring and security platform for Proxmox virtual environments. The platform utilizes lightweight host agents to gather high-frequency CPU, memory, and network I/O measurements using the Proxmox API, and to analyze outgoing traffic against a centralized trust registry for the real-time detection of suspicious events. An adaptable machine-learning module looks at normal VM behavior to reduce false alarms, while flexible, role-based API endpoints allow secure changes to trust settings without interrupting services. The validation across diverse workloads illustrates the platform's efficacy in precisely identifying both resource and network irregularities.

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Session Classification: Cloud Computing and Network Virtualisation

Track Classification: Cloud Computing and Network Virtualisation