SIEM approach for a higher level of IT security in enterprise networks

Kai-Oliver Detken\textsuperscript{1}, Thomas Rix\textsuperscript{1}, Carsten Kleiner\textsuperscript{2}, Bastian Hellmann\textsuperscript{2}, Leonard Renners\textsuperscript{2}

\textsuperscript{1} DECOIT GmbH, Bremen, Germany  
\textsuperscript{2} Trust@HsH Research Group - University of Applied Sciences and Arts, Hanover, Germany

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Outline

- Motivation
- Approach and Architecture
- Demonstration (Video)
- Conclusion
Motivation

Small and medium enterprises (SME)

- IT-Security requirements changed rapidly, especially due to mobile devices
- Most times only individual solutions implemented
- Not a sufficient security strategy

Security Information and Event Management (SIEM) Systems

- Solution integrating many information sources
- Can detect more complex attacks and offer better security
- Expensive deployment and maintenance
- → Not really applicable in SME

Our Contribution

- SIMU: A system providing many SIEM-like capabilities with focus on SME environments
SIMU in a Nutshell

Data integration based on the IF-MAP specification
- Open specification to allow the exchange of information between arbitrary network components
- Homogeneous data format
- Many collecting and consuming clients (based on common and open source solutions)
- One central server

Automated Analysis and Reaction
- Central examination of the homogeneous data
- Possibility for automated enforcement
- Documentation and incident reporting
SIMU Architecture

SIMU Engine

- CBOR-Proxy
- VisITMeta
- SIMU-GUI
- Detection-Engine
- IO-Tool

MAP-Server

IF-MAP

- NCP-VPN
- NMAP
- Snort
- iptables
- Nagios
- macmon NAC

Open-Source Tools

SIMU-Collector and Flow-Controller

Legend

- Flow-Controller / Collector
- IF-MAP Publish / Subscribe
- Rule generation

- Flow-Controller
- Engine-component
- IF-MAP-Subscribe
- Events / Incidents

- Collector
- MAP-Server
- JSON
- Topology data
Short demonstration

Video
Conclusion

Summary

- Integrated security management not easily available for SME - but needed!
- SIMU: SIEM-like system, especially for SME environments
- IF-MAP as the foundation
- Graph-based pattern matching for incident detection
- Ticket management and graph visualization for incident handling
- Possibility for automated actions
Thank you for your attention!

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Further information:
http://simu-project.de  http://trust.f4.hs-hannover.de