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METHODS AND SYSTEMS FOR DETR-MINING HARDENING STRATEGIES

Tech ID # GMU 12-014 **Patent No. US 9,203,861 B2**

Description of Technology:

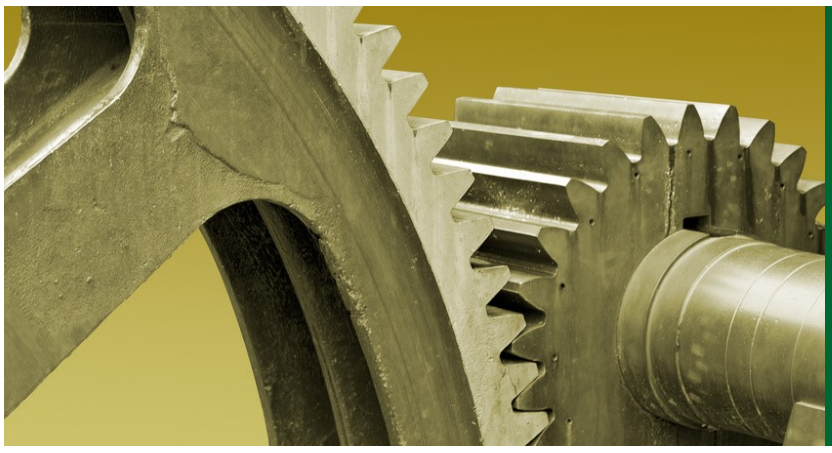
Attack graph analysis is a powerful tool for analyzing network vulnerability. Previous attack graph-based approaches to network hardening do not account for interdependencies among vulnerabilities, and are not scalable, as they look for exact solutions. Such limitations make them unrealistic and sub-optimal in their application. This new technology defines a network hardening strategy as a set of allowable atomic actions that involve hardening multiple network conditions and includes a cost model that takes into account the impact of interdependent hardening actions. The hardening algorithm scales linearly – rather than exponentially – with the size of the graphs, making it suitable for large networks.

Primary Investigator:

Sushil Jajodia is the Director of the Center for Secure Information Systems at George Mason University. Massimililiano Albanese is the Associate Director of the Center. Steven Noel is a former Associate Director and Senior Research Scientist. He is currently at The MITRE Corporation.

Advantages:

- Accounts for inter-dependencies among hardening elements
- Provides a cost model as part of the hardening analysis
- Scales to large networks



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