

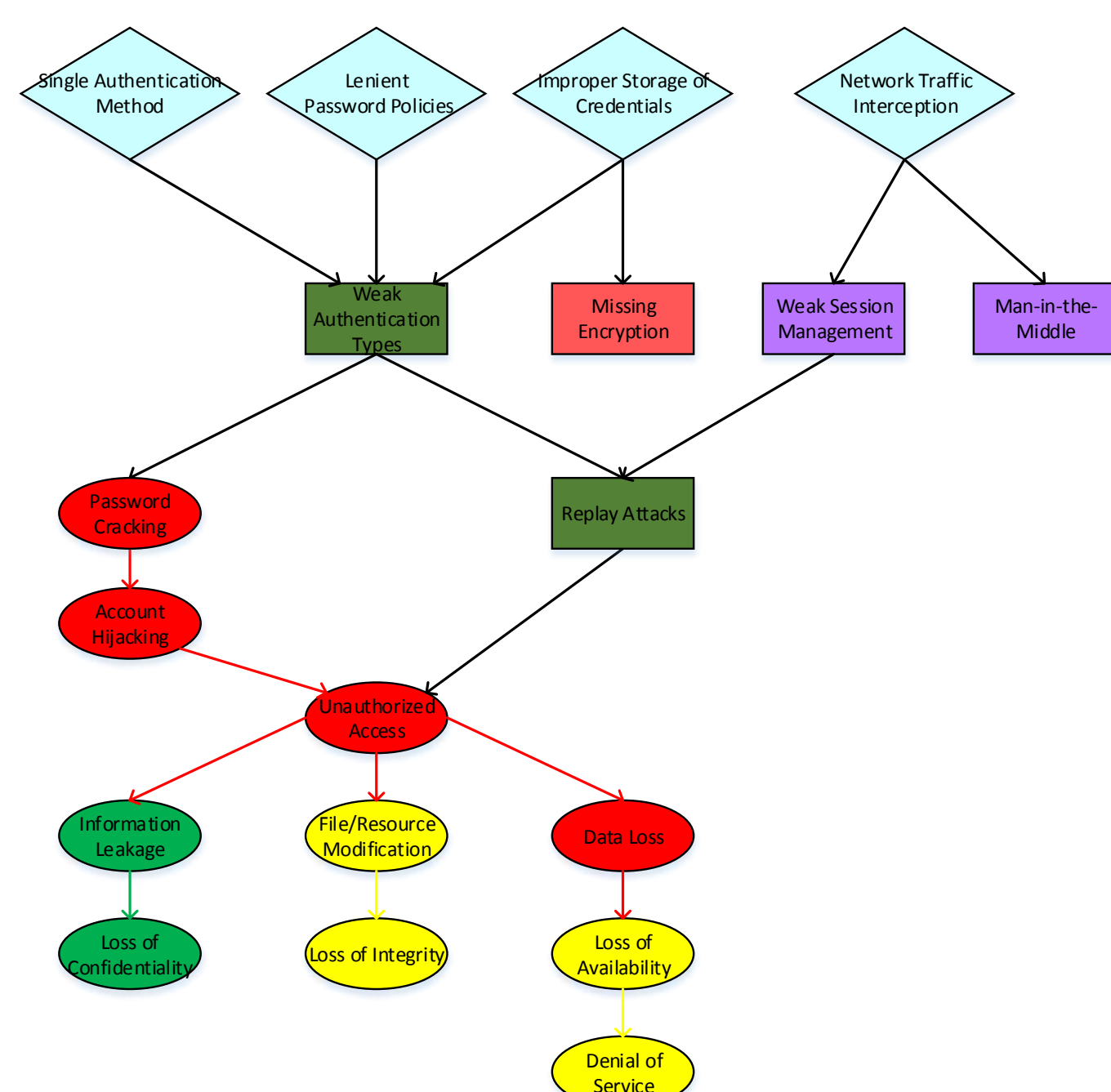
CERIAS Tech Report 2015-6
Evaluating Public Cloud Providers
by Courtney Falk
Center for Education and Research
Information Assurance and Security
Purdue University, West Lafayette, IN 47907-2086

Evaluating Public Cloud Providers

Courtney Falk

Part of the INSuRE project, solving an unclassified problem proposed by the NSA. This work builds on work from a summer research experience for undergrads (REU) conducted at Purdue.

Security for public cloud providers is an ongoing concern. Programs like FedRAMP look to certify a minimum level of compliance. **This project aims to build a tool to help decision makers compare different clouds solutions and weigh the risks against their own organizational needs.**



The model has three classes:

1. Preconditions (diamonds)
2. Vulnerabilities (rectangles)
 - Scored using the CVSS metric
3. Impacts (ovals)
 - Scored using the OWASP metric

Current work began by implementing the model in spreadsheet form. The next step is writing software to automatically perform the calculations.

	Single	Lenient	Impro	Netw	Weak	Man	Miss	Weak	Rups	Pass	Acco	Unaut	Inform	Loss	File/R	Loss	Data	Loss	Denial of Service
ACT																			
0 Single Authentication Method																			
1 Lenient Password Policies																			
0 Improper Storage of Credentials																			
1 Network Traffic Interception																			
0 Weak Session Management																			
1 Man-in-the-Middle																			
0 Missing Encryption																			
1 Weak Authentication Types																			
0 Replay Attacks																			
1 Password Cracking																			
0 Account Hijacking																			
1 Unauthorized Access																			
0 Information Leakage																			
1 Loss of Confidentiality																			
0 File/Resource Modification																			
1 Loss of Integrity																			
0 Data Loss																			
1 Loss of Availability																			
0 Denial of Service																			



INSuRE (insurehub.org) is training students in information security research with problems provided by the National Security Agency, Pacific Northwest National Labs, and the Indiana Office of Technology.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the aforementioned.

Special thanks to: Dr. Melissa Dark, Mr. Lloyd Jones, Ms. Sarah Isaacs, and Mr. Austin Klasa.