Linux Audit Visualization Tool

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Outline

1. Introduction
2. Making Graphs
3. Displaying Graphs
4. Future Work

Why visualize audit data?

Understand the behavior of applications

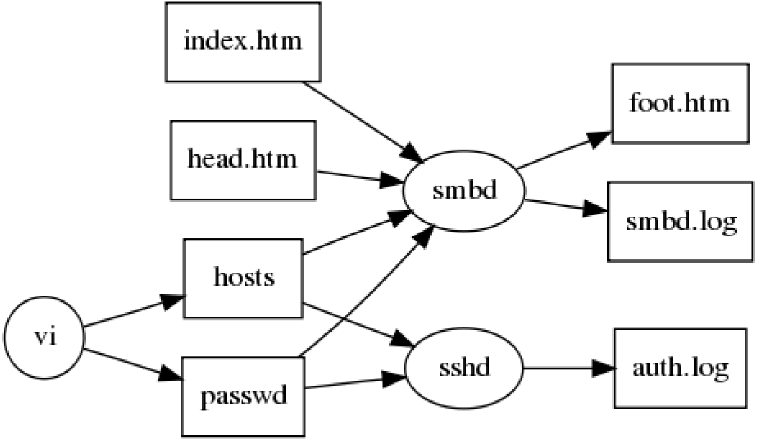
- What they influence
- How they interact with each other

The Linux Auditing Subsystem

Records system calls

- Caller
- Call name
- Files involved
- Time

A File I/O Graph



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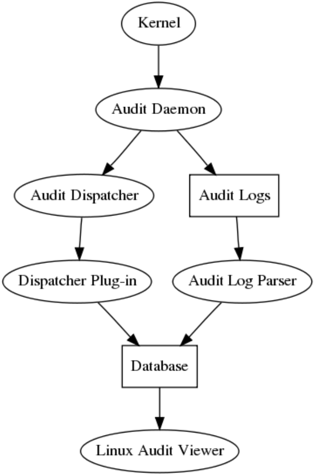
Data Collection



Collection Techniques

- Granularity
- Whitelisting system calls and files
- Blacklisting executables
  - Circularity
  - Noisy processes

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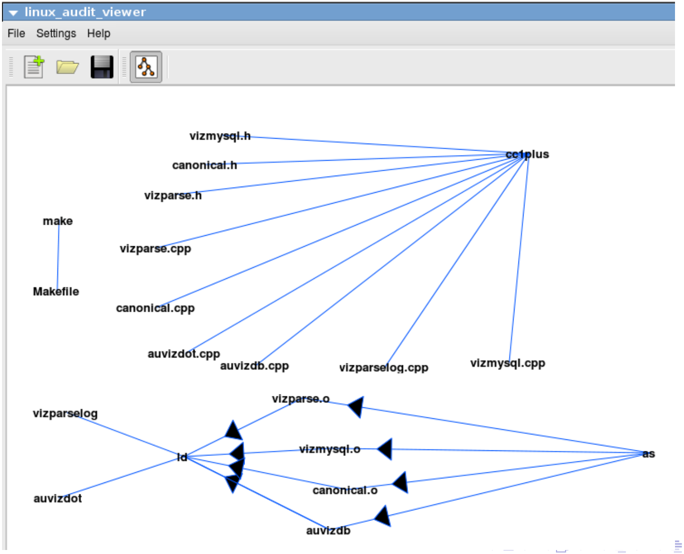
Objectives

- Variable time window
- Variable zoom
- Filtering mechanism
- Automatic layout
- Reorganize graph
- Take snapshots

GUI Overview



In Progress

- Flexible automatic layout
- Variable zoom
- Filter rule engine

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Search Filters

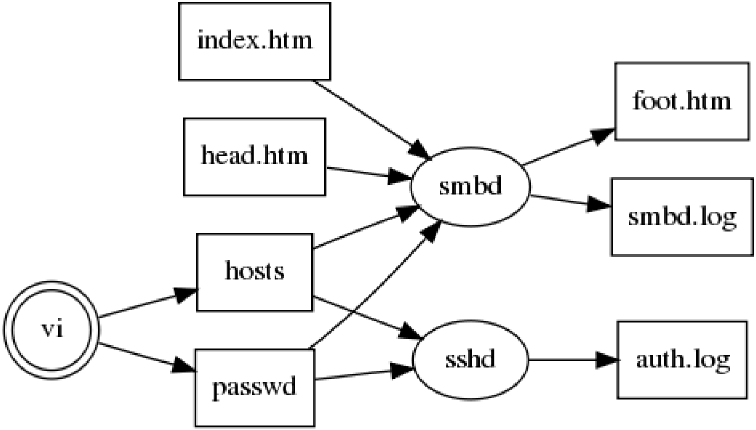


Figure: Expose k-neighborhood

Search Filters!

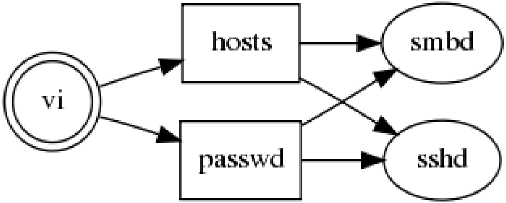
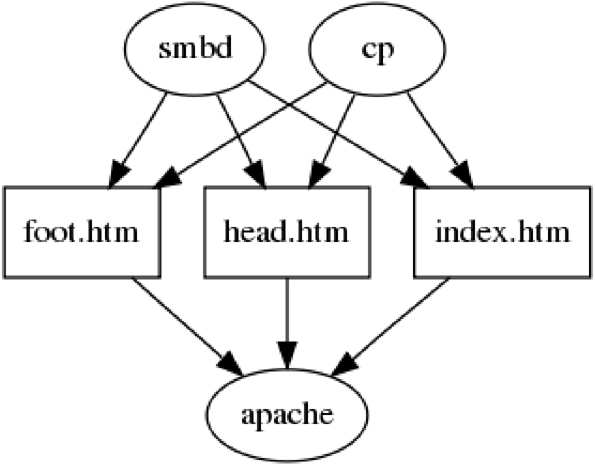


Figure: k-neighborhood of vi, k=2

Clustering



Clustering!

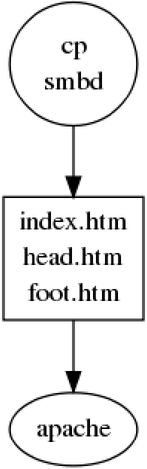


Figure: Group similar nodes

Questions?