Semi-Automatic DMCA Complaint Processing

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Copyright Violations in perspective

- Processing complaints is labor intensive
  - Before Enforcer, we conservatively estimated that each incident required two person-hours of work to resolve.
  - This was not only a significant drain on resources, but an expensive proposition.
- DMCA processing was a function of the incident response team.
  - Highly skilled labor performing data entry and tracking functions for 25-50% of their workweek.
  - DMCA processing was backlogged by higher priority security issues.
  - Internal development projects delayed.

The DMCA Enforcer is born

- Determined at meeting with OGC, DOS.
- Goals:
  - Reduce processing of complaints to data entry task so non-security staff can do it.
  - Automate tracking functions.
  - Handle all residential cases; academic and dialup cases still an exception (maybe).

Overview

- A complaint arrives from somewhere
- Operations staff associates a user with the offending system via NetReg.
- Data about the offending user is placed in a database via a web form.
- Operations manager approves entry.
- Upon approval, application mails the "offending" user with allegation details.
- The complaining site will be automatically e-mailed acknowledging receipt.

The e-mail

- User is informed of violation
  - Complaining Authority (Mediaforce, Unistudios, RIAA, etc.)
  - Information used to identify student
  - Filename(s) found in violation of copyright
  - Date and Time of violation
- User is referred to a web site to respond to the allegation.
- User is told that they have seven days to respond.
- E-mails are generated daily for six days or until the user responds.

Repeat Offenders

- Second offenders get an extra banner in their e-mails as a warning.

- For three time (and greater) offenders, the database manager notifies the Director of Consulting Services and the Dean of Students rather than the student.

- The user faces disciplinary review instead of the application.

The Web Site

- Kerberos authentication required
- Presentation of allegation.
- Resources
  - How do I turn off file sharing in this application?
    - http://security.uchicago.edu/peer-to-peer/no_fileshare.shtml
- Students may acknowledge that they received the complaint and will cease and desist.
- If student wishes to challenge the allegation they have to contact us.
- Users are "thanked" and recorded in the database as having responded to the e-mail.

What if a user doesn't respond?

- What happens if a user never visits the web page?
- At noon on the seventh day, the database manager e-mails request to have the user's kerberos password be disabled.
  - Coming soon: Automatic disables.
  - Coming soon: Network Jail!
- The user must now call or come see us.
- Users who sit in this state are noted in a daily report.

DMCA Enforcer Development

- November, 2001 meeting with OGC, DOS
- March 2002: Overall procedure determined. Presented to Security Camp.
- October 2002: Version 1.3 (pre-release)
- December 18, 2002: Version 1.5 (trial)
- January 22, 2003: Version 1.6 (production)
- April 25, 2003: Version 1.7 (bug fixes)
- October, 2003?: Version 2.0

Software Requirements

- Basically requires a LAMP box.
  - Test was p3@662MHz w/256MB, RH 7.1
- Web Server
  - Apache 1.3.26 + patches! (test: 1.3.22)
  - PHP 4.2.2 (ran on 4.1.x for awhile)
- Database Server
  - MySQL 3.22.32 (test: 3.23.51 (has LIMIT!))
- It's not really a heavyweight process in any respect.

Valuable Lessons

- The ever-expanding flowchart.
  - The flowchart will fit the process, the process will never conform to the flowchart.
- Seven days of grace.
- Kerberos v. Network disables, Network Jail
- Repeat offender logic is very tricky.
- Make the code modular
  - Re-notification process
- Audit logging and database error detection is a must.

Remaining Work (v 2.0)

- Major code cleanup (software bloat).
- Record locking and better separation of privileges.
- Better handling of offenses that occur between user notification and user response.
- Better input handling.
- Network/Kerberos status tracking overhaul
- Automatic:
  - Kerberos disables
  - Network jail activation
  - NetReg lookup
  - Complaint parsing?

Questions?

- How do I get it?
  - E-mail jacobsen@bu.edu and ask for it.
  - Free to .edu sites, otherwise not available.
  - Not clear if we'll give out v1.7 now or v2.0 later.
  - Subject to BU "copyright"
    - Notice contained in every file
    - You can't profit from our source code.
  - "As is", including documentation.
  - Please tell us about bugs, changes, improvements.