**ErsatzPasswords - Ending Password Cracking**
Christopher N. Gutierrez, Mohammed H. Almeshekah, Eugene H. Spafford, Mikhail J. Atallah, and Jeff Avery

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**PROBLEM**

Netflix passwords leaked again?

What do "laxpassword," "poorly4c" and "mundiworld" have in common? They're just three of about 500 Netflix passwords and usernames leaked online, but you may not have to worry.

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**SOLUTION**

1. Generate ersatzpassword
   - root: \texttt{s1mplePass}

2. Generate new salt and hash
   - \texttt{root: 8rki9CdA]\texttt{d50HMxCeEP5sWseX14fYz}

3. Write /etc/master.passwd
   - \texttt{root: \texttt{s1mplePass}}

No noticeable difference in password hash file

**RESULTS**

<table>
<thead>
<tr>
<th>Integration</th>
<th>Filename</th>
<th>Original LOC</th>
<th>ErsatzPassword LOC</th>
<th>Difference LOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>pam_unix</td>
<td>pam_unix.c</td>
<td>138 LOC</td>
<td>393 LOC</td>
<td>55 LOC</td>
</tr>
<tr>
<td>LDAP</td>
<td>passwd.c</td>
<td>893 LOC</td>
<td>926 LOC</td>
<td>33 LOC</td>
</tr>
<tr>
<td>Pythia PRF</td>
<td>safeid.py</td>
<td>61 LOC</td>
<td>124 LOC</td>
<td>64 LOC</td>
</tr>
</tbody>
</table>

**LDAP + ErsatzPassword Integration LOC**

- **Library LOC**
  - \texttt{pam_unix, LDAP}  
    - Language: C  
    - LOC: 255
  - Pythia PRF  
    - Language: Python  
    - LOC: 103

**Pythia + ErsatzPassword Pythia Password Authentication Library**

- **Pythia LOC**
  - Commit: 1  
    - Time: 0.1  
    - Duration: 0.1  
    - Performance: 0.1
  - **ErsatzPassword LOC**
    - Commit: 1  
      - Time: 0.1  
      - Duration: 0.1  
      - Performance: 0.1

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