iTrust

Trustworthy Distribution and Retrieval of Information over HTTP and the Internet

a presentation by Isaí Michel Lombera
Overview of iTrust

1. The need
2. Fundamental concept
3. HTTP implementation
4. User interface
5. Performance evaluation
6. Conclusion
1 The need
2 Fundamental concept

Distribution of metadata
Distribution of a request

Source of Information

Request Encounters Metadata

Requester of Information
Fundamental concept

Retrieval of information

Source of Information

Request Matched

Requerter of Information
HTTP implementation
4 user interface

iTrust, node: test.isaim.com:81

Search results

hit: 3
1. http://anguilla.isaim.com:81/resources/xtprxl8pqxic09v3_calamus.txt
4 user interface

****Trust, node: test.isaim.com:81

Tools

Database tools

- Repeate database (and delete old database) Warning: delete all resources first!
- Create new keyword(s)
- Create new node(s)

Resource tools

- Upload a resource
- Tag keywords to resource
- Delete all resources Warning: this will delete all uploaded resources and related database entries

Metadata tools
**iTrust, node: test.isaim.com:81**

### Insert resource

**Select a file below to upload to this node**

<table>
<thead>
<tr>
<th>Resource file:</th>
<th>/home/michel/apple.full.jpg</th>
<th><strong>Browse...</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Website address:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keywords you want to save to (separate with space):</td>
<td>fruit, organic</td>
<td></td>
</tr>
<tr>
<td>Days you want to keep this resource (default 7 days):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index keywords from content or metadata:</td>
<td>Contents OMetadata</td>
<td></td>
</tr>
</tbody>
</table>

**Insert**
5

performance evaluation

\[ p = 1 - \left( \frac{n-m}{n} \right) \left( \frac{n-m-1}{n-1} \right) \ldots \left( \frac{n-m-r+1}{n-r+1} \right) \]

\( n = \text{membership nodes} \)
\( m = \text{metadata nodes} \)
\( r = \text{requested nodes} \)
5 performance evaluation

\[ p = 1 - \left( \frac{n - mx}{n} \right) \left( \frac{n - mx - 1}{n - 1} \right) \ldots \left( \frac{n - mx - r + 1}{n - r + 1} \right) \]

\( n \) = membership nodes
\( m \) = metadata nodes
\( r \) = requested nodes
\( x = n \) operational nodes

Probability of a Match

Number of Nodes for Distribution of Metadata or Requests

72 Node Network with 80% of the Nodes Operational

Analysis
Simulation

internet2011 20 jun 2011 IML
6 conclusion

open source

INFORMATION LIBRE
6 conclusion
Contact information

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