Agent-based Session Information Announcement System

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Overview

• Implementation and demonstration of agent-based session information announcement system (aka Channel Reflector)

• Features and components
  – Multiple agents
  – DHT and local DB (MySQL)
  – Web-based interface
    • Apache + Perl + Catalyst + Ajax
  – SDP-based session description
Data distribution with DHT

- Scalable, low registration and retrieve latency
- Manage a large number of session information (e.g. > 1 million)
- Content control
  - Site-local session, global session
- Access control (partially future work)
  - User management, IP address range (prefix level) filtering
Registration

WebUI

LocalDB

DHT Engine

Store

Replicate

selected by DHT algorithm

for global session information
(if specify “Global”)

for local session information
(if specify “Local”)

Registration

selected by DHT algorithm
Retrieve

Request

Retrieve

Search

WebUI

LocalDB

DHT

Engine

from selected node

Search results are combined LocalDB’s and DHT’s data
Implementation

- Required Component
  - Apache
  - MySQL
  - Perl + Catalyst runtime

- Required OS / Kernel
  - CentOS5 / RHEL5 (need to install yum)
  - Linux 2.6.18
Demo

- URL: http://demo.channel-reflector.net/
  - You can try to register and search in this URL

- WebUI
  - Home
  - Timetable
  - Search
  - Program Launch
  - Admin
Home (INDEX)

- Picked up contents are shown

[Image: A screenshot showing a web interface with a thumbnail and information to be shown. Instructions: click thumbnail, and launch player.]
<table>
<thead>
<tr>
<th></th>
<th>0:00</th>
<th>1:00</th>
<th>2:00</th>
<th>3:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koto University</td>
<td>Colors of Japan</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Program Search

- [Program Search]

- Search Form
  - Contents type
  - Date/Time
  - Category
  - Language
  - Keywords ...
Search Result

• Tile View
  – Thumbnail
  – Launch player same way as Home
Search Result

- List View
Program Register

• [Admin] -> [Add New Content]

• Contents Information
  – Title
  – Date-time
  – Thumbnail Image …

• Location Information
  – URI (metafile)
  – {S,G}
  – MIME type …
Future Work

• Access control
  – User access, site-local control, content access

• More search function
  – Keyword search, search by date and time

• Handle personal taste with login function
  – Personal home page (with preferred category and language), time zone, etc.
Release Schedule

• After this meeting
  – Experimental test started on our server
    • Web-based system
    • No DHT, no agent, no access/content control, only for global session announcement

• Mid. of Jan. 2009
  – Beta-version package released
  – Web package + agent+ brand-new DHT (pastry base) implementation

• Apr. 2009 (Next I2MM)
  – Official release
    • New installation package released
  – New functions
    • Access control incl. user management (login function)
Call for Participation

• Feel free to access our server and register your global session information

• We appreciate you to participate in a beta test
  – Set up one server on your site
    • Agent, DHT node, web UI
  – A large number of participations will make good data replication and increase the robustness

• If you have comments…
• If you are interested in joining the test…

• Please contact to…
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  – Assoc. Prof. Hitoshi Asaeda <asaeda@sfc.wide.ad.jp>