Distributed Semantic MediaWiki
http://dsmw.org

Hala Skaf-Molli, Gérôme Canals and Pascal Molli
Université de Lorraine, Nancy, LORIA
INRIA Nancy-Grand Est, France
{skaf, canals, molli}@loria.fr

Loria INRIA Université HENRI POINCARÉ NANCY 1 NANCY 2 UNIVERSITE

1 Abstract

DSMW is an extension to Semantic Mediawiki (SMW). It allows to create a network of SMW servers that share common semantic wiki pages. DSMW users can create communication channels between servers and use a publish-subscribe approach to manage changes propagation. DSMW synchronizes concurrent updates of shared semantic pages to ensure their consistency. It offers new collaboration modes to semantic wiki users and supports dataflow-oriented processes.

Editing Hello

You have followed a link to a page that does not exist yet.

To create the page, start typing in the box below (see the help page for more info).

If you are here by mistake, click your browser's **back** button.

Warning: You are not logged in. Your IP address will be recorded in this page's edit history.

B I Ab A √n W

```
This is the '''Hello''' page.
This page is in the DSMW [[is in::tutorial]]
```

2 Saving pages generates patches

Saving pages generates patches represented as semantic wiki pages.

| patch | discussion | view source | history | watch |

Patch:62B95C17704EE20F248F76A8C8B432A613

DSMW Admin functions

Features

Date: Thu, 05 Nov 09 10:55:17 +0100
User: User
This is a patch of the article: Hello

Operations of the patch

Type	Content
Insert	This is the "Hello'" page.
Insert	This page is in the DSMW [[is in::tutorial]]

Previous patch(es)

Facts about 62B95C17704EE20F248F76A8C8B432A613 ⓘ RDF feed

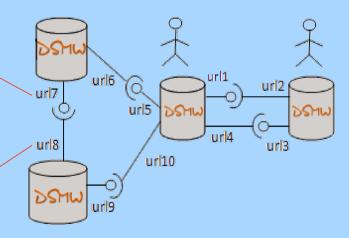| HasOperation | 62B95C17704EE20F248F76A8C8B432A614 (Insert, (334126177247187972:cc4f08240ae9a48b8318c4d45db30193), VGhpcyBpcyB0aGUgJjyJcnSGVsbG8njycgcGFnZS4=) +, and 62B95C17704EE20F248F76A8C8B432A615 (Insert, (1807426234034301202B:cc4f08240ae9a48b8318c4d45db30193), VGhpcyBwYWdlIGlzIGluIHRoZSBEBEU01XIFIbaXMgaW46OnR1dG9yaWFsXV0=) + |
OnPage	Hello +
PatchID	Patch:62B95C17704EE20F248F76A8C8B432A613 +
Previous	None +

3 Wikis publish feeds of patches, Wikis subscribe to feeds of patches

Patches can be selected through semantic queries and published in "feeds". These feeds are also semantic wiki pages.

| pushfeed | discussion | view source | history | watch |

PushFeed:PushTutorial

DSMW Admin functions

Features

Semantic query: [[is in::tutorial]]
Pages concerned: Hello, World

Actions

PUSH

The "PUSH" action publishes the (unpublished) modifications of the articles listed above.

Facts about PushTutorial

Deleted	False +
HasSemanticQuery	-5B-5Bis-20in-3A-3Atutorial-5D-5D +
Name	**PushTutorial** +

| pullfeed | discussion | view source | history | watch |

PullFeed:PullTutorial

DSMW Admin functions

Features

URL of the DSMW PushServer: http://localhost/wiki1
PushFeed name: PushFeed:PushTutorial

Actions

PULL

The "PULL" action gets the modifications published in the PushFeed of the PushFeedServer above.

Facts about PullTutorial

Deleted	False +
Name	**PullTutorial** +
PushFeedName	PushFeed:PullTutorial +
PushFeedServer	http://localhost/wiki1 +

Wikis can subscribe to any number of feeds and start synchronizing. Subscription is also represented as a semantic wiki page.

4 Develop your networks, build editable mashups

If every DSMW nodes receives all operations, then every DSMW nodes have identical copies. DSMW ensure eventual consistency, causality and Intention preservation

6 Conclusions

DSMW allows to synchronize semantic wikis. Semantic wikis can publish feeds of patches and subscribe to feed of patches. DSMW ensures eventual consistency.

Multi-synchronous Collaborative Semantic Wikis . Charbel Rahhal, Hala Skaf-Molli, Pascal Molli and Stéphane Weiss. In Wise'09: International Conference on Web Information Systems, LNCS 5802, 2009.

http://www.dsmw.org