TagFS: Organizing Information Using Tags

http://code.google.com/p/tagfilesystem

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Motivation

Bringing search into computing infrastructure
- When creating information, tag it for search
- Categorize information using tags
- Locate information by tag query

Enabling search at different scales:
- Within local machine: a tag-based filesystem, which is the TagFS here
- The Internet scale:
  - An Internet with search engines built in the infrastructure. (Relax, Google! :)
  - Using tag-servers instead of DNS naming servers

What is TagFS?

A filesystem in which:
- Directories are tags, or tags are directories.
- Files are associated with tags that can reflect their properties and contents.
- A directory path, say /Photo/Utah/Spring, is a query that has the result similar to 'select files that have tags: Photo AND Utah AND Spring'.
- Tags have no hierarchical structure like directory tree in traditional filesystem. So /Photo/Utah/Spring and /Utah/Photo/Spring have the same files.

Different from desktop search applications:
- TagFS is a real filesystem. Existing applications can benefit from it without modification. No extra syscalls and APIs introduced.
- TagFS searches user-annotated tags while desktop search applications search file contents.

Filesystem APIs

mkdir: create a new tag
rmdir: remove a tag and untag all files associated with it
creat/open: when creating a new file, the file is also tagged with the tags in the given path.
unlink: untag the file by removing tags in the given path, if no tags are left, the file is deleted.
readdir: readdir, which is the core function of ‘ls’, lists:
  - files with the given tags
  - the remaining tags of the listed files

Tags: Utah, Arch, Photo

Try TagFS

Download and install:
Go to http://code.google.com/p/tagfilesystem to download the released TagFS packages or check out the most recent sources to play with it.

Current status:
Some brave users are using TagFS to store/organize papers, music, photos and videos.