

# TWiki at CERN

## Past , Present and Future

Peter Jones IT-PES

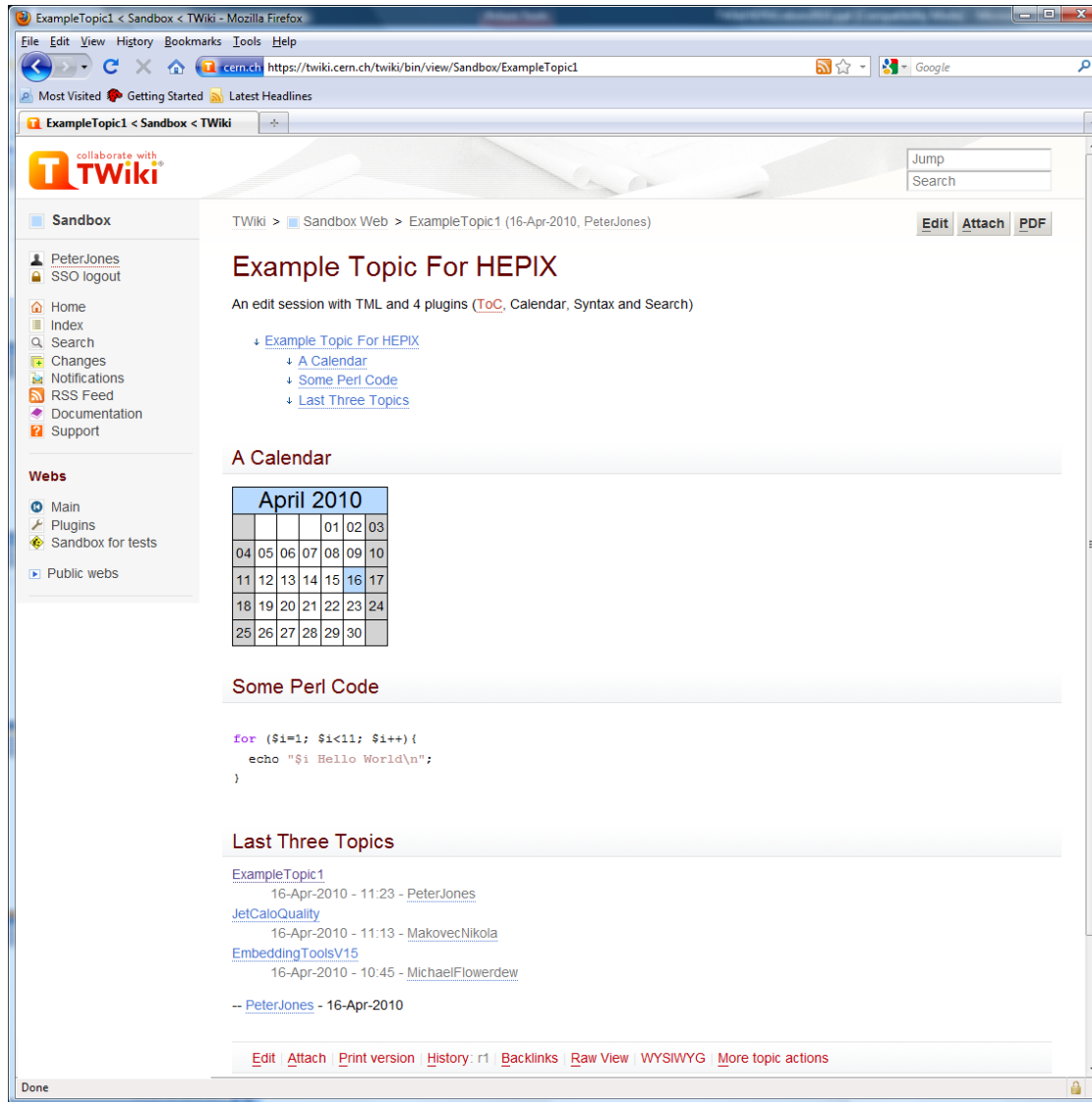
April 2010

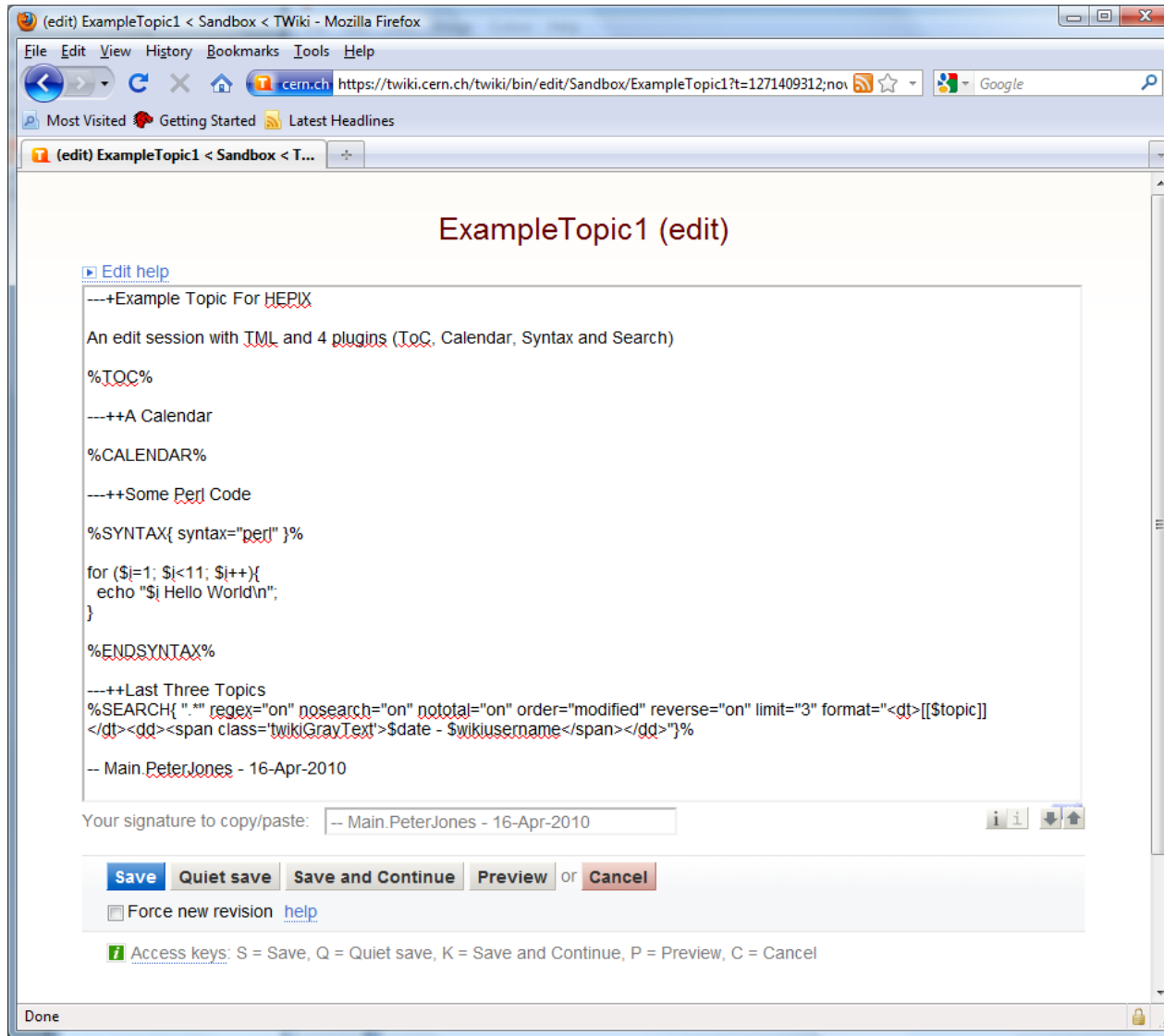
- Introduction
  - What is a wiki?
  - Why do we have TWiki?
- Overview and issues of the current service
  - Configuration
  - Performance
  - Authentication
  - Access Control
  - Authentication and Access Control Issues
  - Searching
- Future developments
- Questions

- In 2003 a group of CERN software developers requested a wiki.
- A wiki is a web page with an edit button.
- First wiki software was created by Ward Cunningham in 1995. "the simplest online database that could possibly work."
- There are many wikis available (see [www.wikmatrix.org](http://www.wikmatrix.org))
  - Confluence, MediaWiki, PhpWiki, TikiWiki, TWiki....
- TWiki was the chosen solution:
  - it matched the requirements and the CERN working environment (Perl, Linux, AFS and apache...)
  - CERN users from HIP were using TWiki at the time.

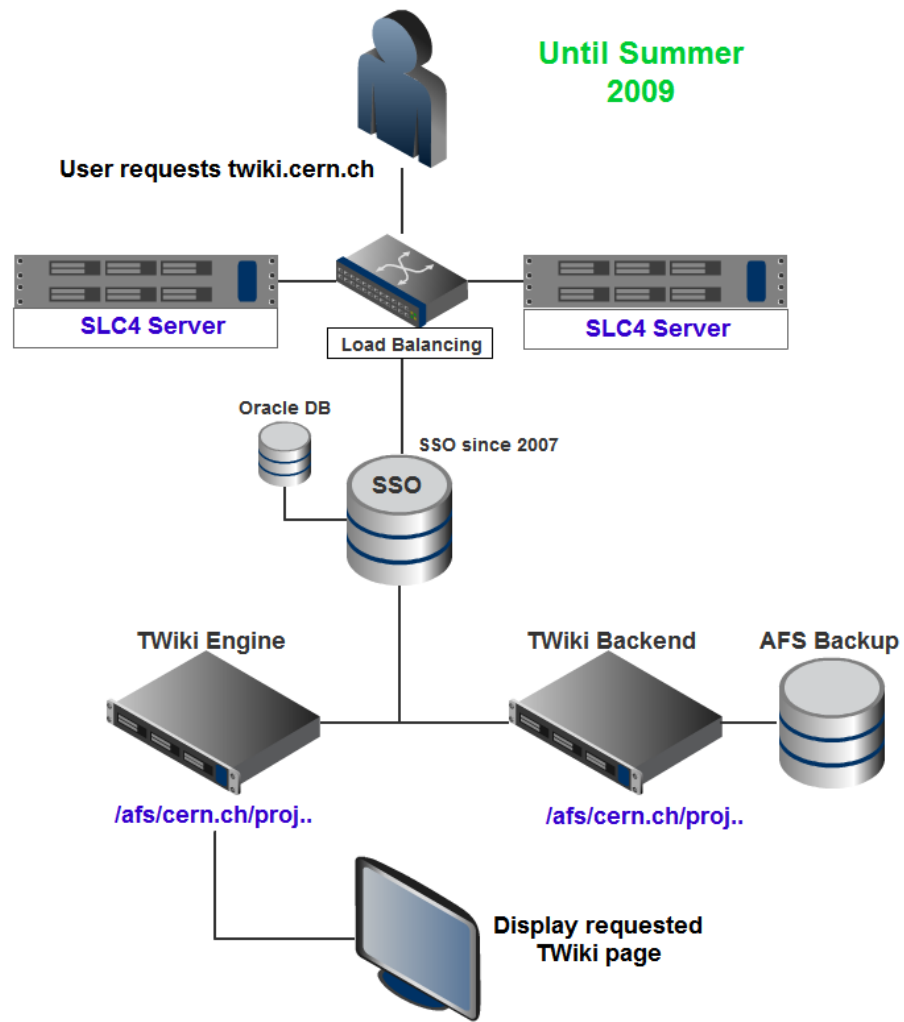
- TWiki – is a structured wiki
  - Introduced in 1998. OpenSource license (CERN input).
  - Used by: Nokia, Sony, Oracle, CISCO, EVO....
  - Perl based, plain text DB, runs on Linux and apache
  - Web and Topic hierarchy with access control
  - Revision control – all changes are tracked.
  - Extendability – over 200 plugins
  - Database like manipulation
  - Features of RSS/Atom feeds and e-mail notifications
  - Edit with HTML, TML or What You See Is What You Get (WYSIWYG) editor
  - Fast and easy to use

- TWiki has many uses:
  - Replaced many static web pages
  - Documentation, publication (PDF WorkBooks)
  - Whiteboard , Blog
  - Organiser – spreadsheet, calendars...
  - Knowledge base or FAQ
  - Software analysis and design
  - Software archive
  - Helps groups to collaborate more effectively



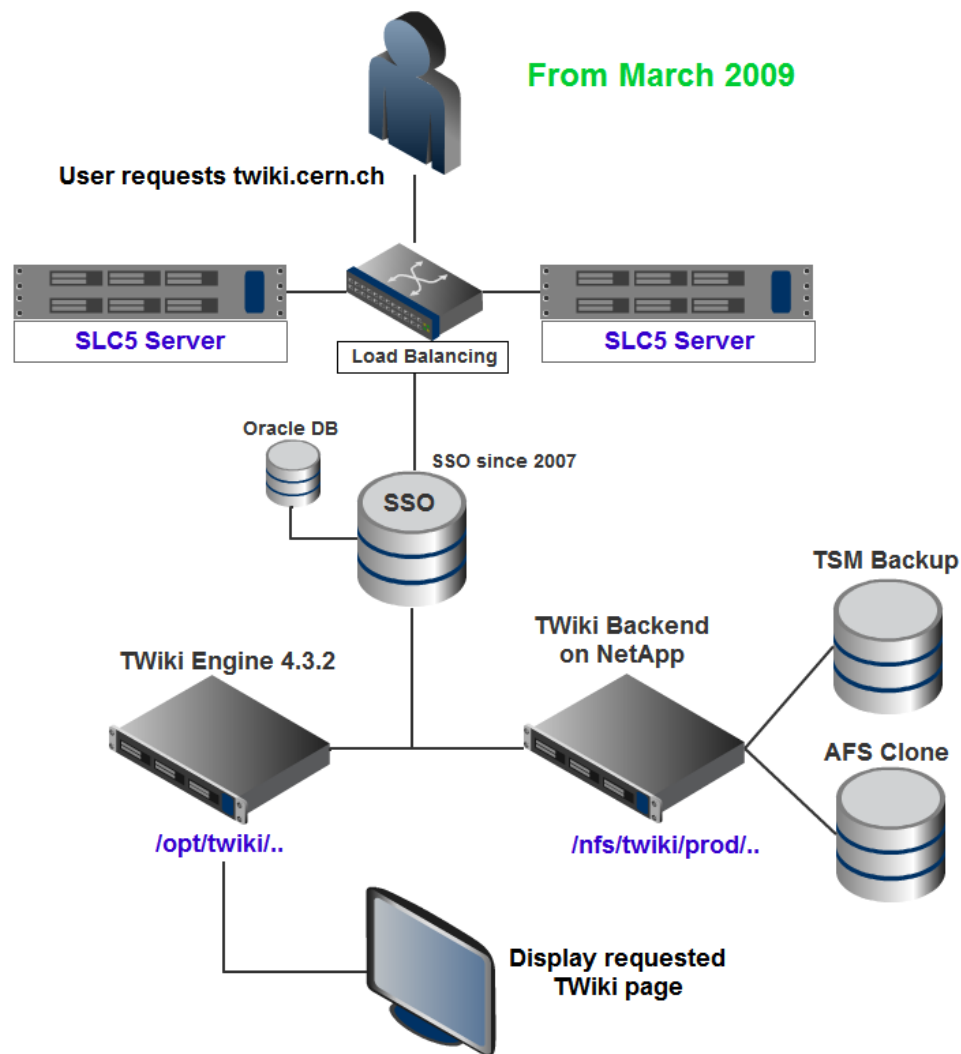


# Configuration until 2009

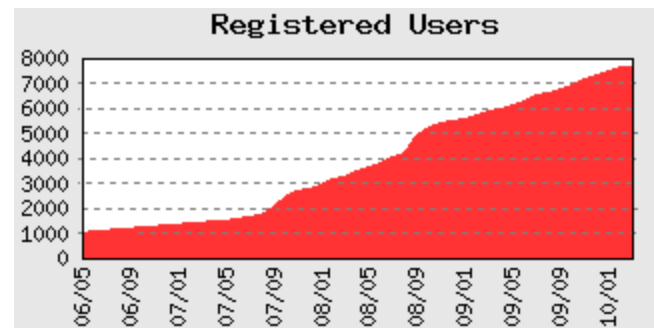




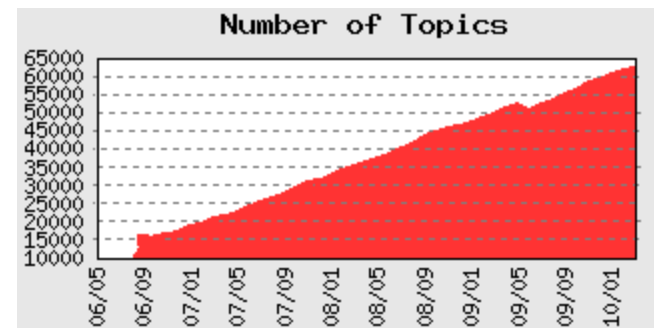
- Since 2003 TWiki has been upgraded several times
  - TWiki software Cairo -> Dakar -> Edinburgh -> Georgetown
  - To dedicated Linux servers (several upgrades)
- August 2009 installation of Georgetown (4.3.2)
  - Usability enhancements - new What You See Is What You Get editor
  - Security enhancements (reduced risk of cross site scripting)
  - SQL style query language for programmable search
  - New restore feature allows for easier rollback + over 300 bug fixes
- December 2009 upgrade of server
  - TWiki installed locally - DELL Poweredge 1950 2.33GHz, 2 CPU/8 core)
- March 2010 backend migrated from AFS->NFS
  - Service fine on AFS, however AFS has a file per directory limitation
  - Removed problem of 32K file limit (CMS web approaching this limit)
  - Removed all dependencies on AFS



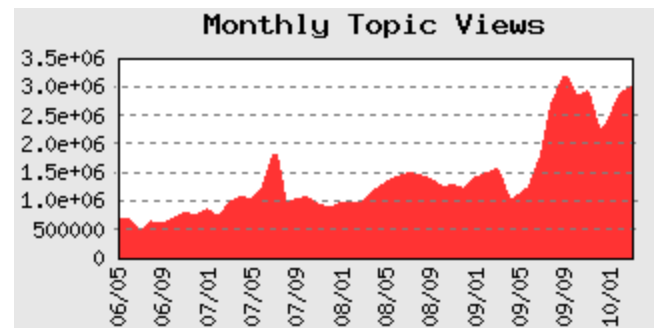
- Present Statistics:
  - 7500 registered users (does not include read-only users - TWikiGuest)
  - 190 collaboration webs
  - 60,000 topics (280,000 attachments)
  - 3,000,000 accesses/month (Mar 2010)
    - March: 50000 unique IP addresses, 10000 at CERN
  - 50,000 monthly updates
- Main users:
  - CMS, ~ 15,000 topics, 85000 attachments
  - Atlas, ~ 11000 topics, 60000 attachments
  - Others include Alice, LHCb, IT groups, Grid....



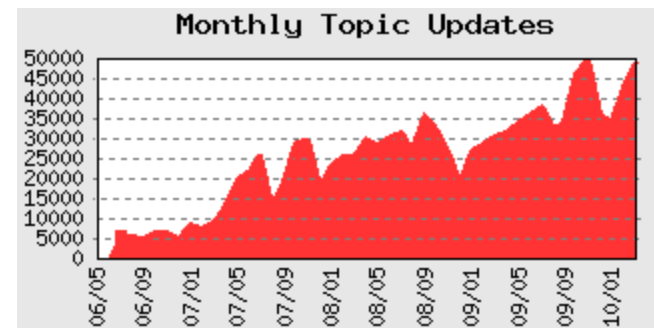
7563 users – March 2010



61743 topics – March 2010

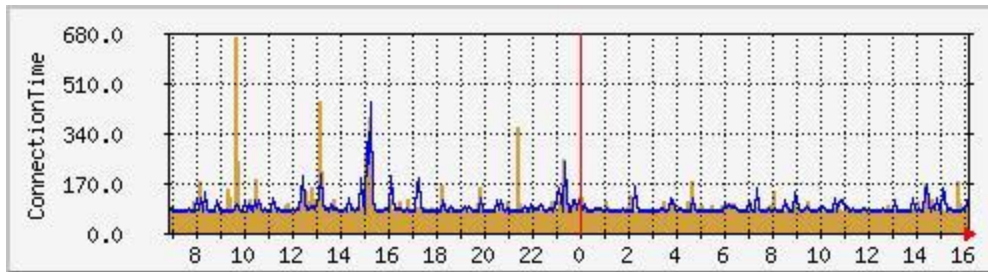


2971857 accesses – March 2010



48736 updated – March 2010

- It currently takes  $\sim 0.7$  sec to load a page.



- Issues with slow performance addressed
  - Upgraded servers (DELL Poweredge 1950 2.33GHz, 2 CPU/8 core)
  - Upgraded Software (including Plugin updates)
  - Looked at any AFS bottlenecks (afs-cache, SSD)
  - Tuning: prepare some pages in advance (menus, feeds)
  - TWiki gardening is encouraged

- SSO since October 2007 – (initially we used Kerberos)
- TWiki Registration and membership of ‘CERN Users’ group necessary:
  - for editing files
  - uploading attachments
  - authorized views
  - topic management
- All registered users have a WikiName (for signature and access control)
- TWikiName is matched to UPN email address (from SSO)
  - PeterJones = peter.l.jones@cern.ch
- All users are called TWikiGuest until logged in
- Light weight registered users are allowed in but are vetted

- Set using the TWikiName(s)
- Defined by the Admin for the site level
- Set on the web level by the coordinator
  - Ex. Set DENYWEBVIEW = list of Users and/or Groups
- Set by the user for each topic
  - Ex. Set ALLOWTOPICVIEW = list of Users and/or Groups
- TWiki groups can also be used:
  - A list of registered TWiki users
  - Created by the TWiki user
  - Also created by a script based on mailing lists or egroups
- Since Nov 2009 direct use of egroups
  - Ex. Set ALLOWTOPICVIEW = cms-web-access

- TWiki is written in OO Perl and is extendable.
- A new user mapping can inherit existing modules

```
#!/usr/bin/perl
package TWiki::Users::ADFSUserMapping;
use base 'TWiki::Users::TWikiUserMapping';
```
- Collaboration requested Access Control based on egroups
- Apache returns information about SSO session
  - \$ENV{HTTP\_ADFS\_GROUP}
- Technical Student wrote new code to handle egroups
- New access control handles TWiki and egroup entries
  - Ex - Set ALLOWTOPICVIEW = PeterJones, hepix-users-egroup
- In production since November 2009 as requested by LHC
- Work still ongoing...
- <https://twiki.cern.ch/twiki/pub/Main/EgroupTWikiIntegration/EgroupsAndTWiki.pdf>



- **Trouble-shooting for performance**
  - High loads due to erratic TWiki use (feeds, search, browser issues, recursive calls...)
  - Some groups request static exports of data in case of downtimes.
- **SSO has advantages (one login) but there are some disadvantages**
  - Modification to the code and user registration
  - User mapping uses email address, which can change
  - Some users can have more than 1 SSO account
  - Load balancing has been problematic and is currently disabled
- **Web management**
  - Change of policy with some web or topic protection
  - Large TWikiGroups need maintaining
  - Web name changes. Causes problems with backlinks
- **Search**
  - TWiki WebSearch is slow on large webs and the results are not always satisfactory
  - People want Google search but this does not work on protected data
  - CERN search is the answer and will soon be ready on protected webs.

- Re-introduce loadbalancing
- Upgrade to new servers
  - 4 Dell M610 blades – 48Gb ram
  - At least one server to be on uninterruptable power
- Complete SSO integration
  - Complete egroup integration (for sub groups and PDF)
  - Solve user mapping issues (changes of email address)
- Automize TWiki installation (Quattor) – (bare SLC5 not enough)
- Install and test Helsinki version (v5) and upgrade extensions
- Gardening – work with collaborations to maintain their pages
- Improve search feature
- Keep an eye on developments and evaluate other wiki options

- Oct -27 2008 TWiki.net took over governance of the TWiki project. (LHC started Oct 2008)
- Core contributors disagreed with the new governance model.
- TWiki is now led by TWiki.net instead of the Open Source community. However it is still Open Source
- Foswiki available since early 2009.
  - Based on TWiki core.
  - Very different look and feel to TWiki by default.
  - Latest release is 1.09
- Stability is most important for our user community so we remain with TWiki for now.

- Total effort ~ 1FTE
  - IT-PES group
    - Including: Peter Jones, Nils Høimyr, Alexander Bernegger, Juan Manuel Guijarro
  - IT-DB group
    - Including: Giacomo Tenaglia, Artur Wiecek

(The above were all in the same group until end 2009)

- TWiki installed at CERN following user requests
- TWiki quickly grew in popularity
- Complements other IT web services
- The service has adapted to user requirements
- Regular software and hardware upgrade needed to satisfy user demand
- Performance –maintain quick page load
- Continue with SSO integration
- Improve search
- Continue to be part of the TWiki.org project
- Wikis evolve and other options are monitored

- CERN
  - <https://twiki.cern.ch/>
- TWiki
  - <http://www.twiki.org/>
  - <http://www.twiki.net/>
- Other
  - <http://www.wikimatrix.org/>
  - <http://www.foswiki.org/>

Thanks For Listening....

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