Finalizing SUL, and why we're never doing it again

[[mw:User:Legoktm]]
Wikimania 2015
Each wiki had a local user table, users had to create accounts on each one individually.

User:Eloquence describes 3 strategies of SUL on foundation-l, #2 has “deferred conflict resolution” November 2004.

Single user login (SUL) introduced in 2007.

Evil plans to do a forced finalization, but never implemented.

Planned for summer 2013, then delayed.

Top WMF Engineering priority for 2014 Q1.
Terminology

- SUL – system that lets users use one username and password across multiple wikis.
- Global account - An account comprised of local accounts.
- Local account - An account on an individual wiki.
- Attached account - A local account that is linked to a global account.
- Unattached account - A local account that is not linked to a global account.
- CentralAuth – MediaWiki extension that implements SUL.
Goals

- Every user has a global account.
- Minimize the number of accounts that are forcibly renamed.
- Improve the renaming workflow for stewards.
- Reduce technical debt instead of adding to it.
Steps

- Manual migration
- Automated migration
- Global rename
- Spamming Email reminders
- Global rename request & queue
- Login with old name
- The great renaming
- Global user merge
Manual migration

- `migrateAccount.php` maintenance script
- Usually caused IRC RC bots to flood off
- Only merged based on same email address
- Could manually override winner of global account in certain circumstances
TimedMediaHandler


- Triggers autocreation of account
- Namespace missing (ns 710 doesn't exist on mediawiki.org)
- Using + for spaces instead of _
- text/x-srt is not whitelisted
- Triggers IE6 security filter, throwing HttpError
Automated migration

- We can merge unattached accounts based on same email or password
- Password is salted and hashed, so we can only use raw password during login
- Auto-attaching of accounts during login enabled May 2013.
- Auto-creation of global account if all unattached accounts match during login enabled October 2014
HHVM memory leak

- Around December 2014 users started reporting OOMs during login
- Even visiting Special:MergeAccount would OOM for some users
- Brett Simmers of Facebook found a memory leak in the bitwise xor operator
- Auto-migration re-enabled February 2015
Global rename

• Write a global version of Special:Renameuser

• At one point this was implemented through a JavaScript tool that would do local renames on individual wikis

• First version in CentralAuth used database locks, custom object cache table (December 2012-May 2013)
Global rename v2

- Used a database table to maintain state of renames
- Logged users out during the rename
- Special page for users to see the status of their rename across wikis
- October 2013-July 2014
Special:GlobalRenameUser

Rename global user

Current username: Legoktm
New username: Whaat
Reason: Wanted a new name.

- Move user pages
- Suppress creation of redirects

Submit
Global rename progress

Log entries
- 08:39, 15 May 2014 Admin (Talk | contribs | block) globally renamed Zomg to Zomg2 (dddd)

List of local accounts

<table>
<thead>
<tr>
<th>Local wiki</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>test.wikidata.org</td>
<td>In progress</td>
</tr>
<tr>
<td><a href="http://www.wikidata.org">www.wikidata.org</a></td>
<td>Queued</td>
</tr>
</tbody>
</table>
Global rename v2.5

- Moved logic out of SpecialPage class
- Split up said logic into multiple classes for easier test-ability
- Deployed July 2014
- Been used 11,500+ times
- Global renamers group to help stewards
Email reminders

- People set their email address, but never confirmed it
- In the process discovered users with invalid emails (e.g. “querty”), ended up removing 218,598 emails across all wikis
- Localized in ## languages
- Sent out ~89k emails
- Unsure of overall impact
Email reminders

Graph: exim messages out

- Messages:
  - Jul: 50
  - Aug: 100
  - Sep: 150
  - Oct: 200
  - Nov: 250
  - Dec: 300
  - Jan: 350
  - Feb: 400
  - Mar: 450
  - Apr: 500

- Dates: Jul to Jun

- Data Source: polonium.wikimedia.org last year
  - Now: 43.02
  - Min: 40.91
  - Avg: 118.46
  - Max: 413.40
Global rename request

- Simple form that works on all wikis to request a new name
- No need to deal with wikitext templates and autoclerking bots
- Localized by MediaWiki
- Works for users without a global account
- Requires confirmed email
- Automatically put into queue for global renamers and stewards to review and process
Unification rename request

Request a new username to be known by across all projects.
All of your previous contributions will be connected with this new username.
Once you have requested a new username, a notification will be sent to Wikimedia stewards to perform the rename. You will be notified by email when this process is completed.

**Current username:** Test11
This is your username now.

**Requested username:**
Enter the new username you wish to use, e.g., "Test11546".

**Email address:**
username@example.com
Enter your email address.

**Confirm email address:**
username@example.com
Enter the same email address you entered above for confirmation.

**Reason for request**

[Request name change]
### Queue view

#### Global rename request queue

<table>
<thead>
<tr>
<th>Username</th>
<th>Requested username</th>
<th>Local wiki</th>
<th>Open date</th>
<th>▼ Close date</th>
<th>Status</th>
<th>Done by</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test111</td>
<td>Test111-renamed</td>
<td></td>
<td>15:00, 8 April 2015</td>
<td>16:21, 8 April 2015</td>
<td>rejected</td>
<td>Admin</td>
<td>View</td>
</tr>
<tr>
<td>Test5945</td>
<td>Test5945896</td>
<td></td>
<td>17:09, 19 March 2015</td>
<td>17:10, 19 March 2015</td>
<td>approved</td>
<td>Test5945896</td>
<td>View</td>
</tr>
<tr>
<td>Test5</td>
<td>Test5945</td>
<td></td>
<td>16:54, 19 March 2015</td>
<td>17:06, 19 March 2015</td>
<td>approved</td>
<td>Test5945896</td>
<td>View</td>
</tr>
<tr>
<td>Test456</td>
<td>Test4566</td>
<td></td>
<td>08:19, 8 February 2015</td>
<td>08:21, 8 February 2015</td>
<td>rejected</td>
<td>Test456</td>
<td>View</td>
</tr>
<tr>
<td>Test123</td>
<td>Test1234</td>
<td></td>
<td>08:17, 8 February 2015</td>
<td>08:21, 8 February 2015</td>
<td>rejected</td>
<td>Test456</td>
<td>View</td>
</tr>
</tbody>
</table>
Rename "Admin"?

Admin is requesting a rename to Test10.
- user: Special:CentralAuth/Admin
- home wiki: centralauthtestwiki.local.wmftest.net
- new name: Special:CentralAuth/Test10

The chosen username is similar to an existing username: Test10

Reason for requesting rename
reason!!!

Notes/reasoning

Detailed reason emailed to user

Public log entry comment (if accepting)

- Move user pages
- Suppress creation of redirects

Cancel

Reject rename

Accept rename

Customizable user links

Similar usernames through AntiSpoof

Summary for Special:log/gblrename
Rename "Admin"?

Admin is requesting a rename to Test10.
- user: Special:CentralAuth/Admin
- home wiki: centralauthtest.wiki.local.wmftest.net
- new name: Special:CentralAuth/Test10

The chosen username is similar to an existing user.

Reason for requesting rename
reason!!!

Notes/reasoning

Public log entry comment (if accepting)

- Move user pages
- Suppress creation of redirects

Cancel  Reject rename  Accept rename
Login with old name

- Username is how users log in, so changing it locks them out
- Scary code in CentralAuthPlugin tries to log in as “$username~$dbname”
The great renaming
Winners and losers

- CheckUser, Oversight, Bureaucrat, Sysop groups take priority
- Edit count
- Registration (not populated for old accounts not on en.wp)
- Randomness...which was a bad idea.
Who is being renamed?

- Special:UsersWhoWillBeRenamed, not super useful for large wikis
- Notifications delivered via talk page through MassMessage...which follows redirects
- Many accounts fixed when they went to complain on Keegan's talk page
m:User talk:Keegan (WMF)
The actual great renaming

- forceRenameUsers.php script, started on test*wikis, small, medium, large, and finished on enwiki.
- Special job runner loop set up for global rename jobs
- User:Maintenance script flagged as a bot to avoid spamming RecentChanges
- Post-rename notifications sent through MassMessage
- April 15 – April 22, 2015
The actual great renaming

- S3 master had 22k queries/second, lowered concurrent renames
- Suffixes caused usernames to be longer than 64 chars. Bumped to 85 (~zh_min_nanwiktionary).
- Underscores in database names aren't valid in usernames
- User:Oversight, User:Steward were exempted from renaming
- User:UBX renamed to User:UBX~enwiki (and User:Js~ruwiki), pages manually moved back
- User:~~ on nlwiki → User:~~~nlwiki ??
What's next?
AuthManager

- MediaWiki's authentication stack sucks.
- Will enable two-factor authentication
- Better support for external auth databases (like CentralAuth!)
- Implementation in progress
GlobalUserMerge

- Will merge multiple global accounts together for people who did not have a complete SUL
- MediaWiki was not designed to do this.
- Very, very sketchy.
- We ran a production test that exposed some large bugs
Features now available to all

- GlobalCssJs
- OAuth
- GlobalUserPage
Better cross-wiki integration

- Disclaimer: I'm not promising any of these things
- Cross-wiki Echo notifications
- Cross-wiki Flow discussions
- GlobalUserPages showing up even if you don't have a local account
- GlobalPreferences??
Team effort

Aaron Schulz, Addshore, Alexandros Kosiaris, Amire80, Brad Jorsch, Brandon Harris, Brett Simmers, Brion Vibber, Bryan Davis, Chad Horohoe, Chris Steipp, DerHexer, Deskana, Erik Möller, Gergő Tisza, Giuseppe Lavagetto, Glaisher, Greg G., Hoonman, James Alexander, James F., Jeff Green, Keegan, Krenair, Legoktm, M4tx, MZMcBride, MaxSem, Microchip08, Nemo_bis, Ori Livneh, Paladox, Peter Gehres, Quiddity, Rachel diCerbo, Reedy, Risker, RobLa, Sean Pringle, Shanmugamp7, Shirayuki, Siebrand, Stefan2, Stryn, Tim Starling, Tony Thomas, Trijnstel, Umherirrender, Xeno, YuviPanda, Stewards, Global renamers, translators, tech ambassadors, and many more.