
test Documentation

Release 1

foo

Aug 31, 2017

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Try It:

Demo

Welcome to the KARL project. KARL is an open source web system for collaboration, organizational intranets, and knowledge management.

This KARL project website is designed to address the following needs:

- Give an **introduction** to the KARL application itself,
- **Demo** the features of KARL for organizations who are evaluating KARL for their knowledge management system,
- Offer information on the **hosting services** for organizations who want an out of the box knowledge management system,
- Provide **open source** developers access to KARL resources

Contact Information

Hosting Questions

If you would like more information on getting a KARL site hosted for your organization, please contact [Six Feet Up](#).

Support Questions

If you have KARL hosted with Six Feet Up and have a KARL related issue, please contact your organization's KARL point of contact or visit <http://karl-support.sixfeetup.com>.

Developer Questions

The project is hosted on Github:

- [karl package](#)
- [Buildout](#)

Please use its issue trackers there.

KARL Demo

KARL is an open source web system for collaborative intranets and knowledge management, boasting strong social networking features.

KARL's Top Features:

- Powerful Search
- Topic-based Communities

- Secured External Collaboration
- Rich Text Wiki
- Collaborative Blog
- Layered Group Calendar
- Strong Email Integration
- Outstanding Security Track

Login Information for Demo Accounts:

Admin



Username: **admin**

Password: **admin**

Staff



Username: **staff1**

Password: **staff1**

Affiliate



Username: **affiliate1**

Password: **affiliate1**

What KARL Is and Is Not

To correctly evaluate a product, it helps to get a concise, straightforward statement about what is the product. Ideally, this answer also includes, what the product does not claim to be.

KARL is:

- Simple set of well-integrated tools.

- A very lean user experience resulting from great attention to detail.
- Collaboration for project teams in a community.
- An intranet space with the “voice of the organization”.
- Simple “knowledge management” facilities that connect the dots.
- Open source software that can be run by an organization or hosted by one of the KARL hosting providers.
- Fast, stable, reliable, tested.

KARL does not try to be:

- Aimed at power users. KARL views success as much by what is left out as by what is put in.
- A generic platform for a wide-range of application types. It is an end-user product, with a specific set of goals and user interface, that can be extended by developers.
- High-end social network site. There are some social networking aspects, but under the banner of KARL’s major goals.
- A generic portal system to integrate and unify external applications.
- A classic content management system for internal workflows to publish content to external audiences.
- High-end intranet and document management system for managing desktop content.
- Sophisticated customer relationship management system.

What's New In KARL3

The work in KARL3 went into 3 major areas:

- Performance, stability, reliability, quality
- Easier customization and enhancements in the future
- UI and feature improvements made in the course of the re-write

This document gives a visual guide on a few feature changes, then tours the complete feature enhancement list as well as the architectural improvements.

Visual Guide

Tagging

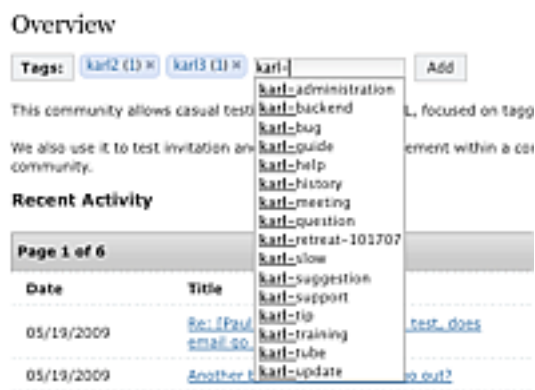


Fig. 2.1: Streamlined tag editing.

The “tagbox” allows viewing the tags listed on a resource, as well as showing who tagged applied the tag. It also allows adding a new tag via a lookup, plus deleting tags that you previously place.

The KARL3 tagbox is enhanced and streamlined to make editing your tags easier. Also, the lookup is faster and the use of colors shows tags that you have added. Finally, by popular demand, tagging is possible on add and edit screens.

Files

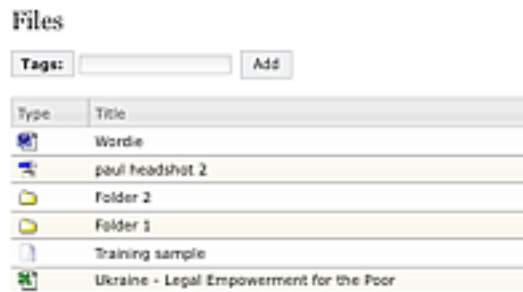


Fig. 2.2: Faster, better styled files management.

In KARL, many collections of resources are browsed using the “grid”: batches of data presented with sortable columns.

Many of the KARL3 grids have been significantly improved. The performance is higher because the entire page is not reloaded. The layout is better styled and sorting is more reliable.

Widgets

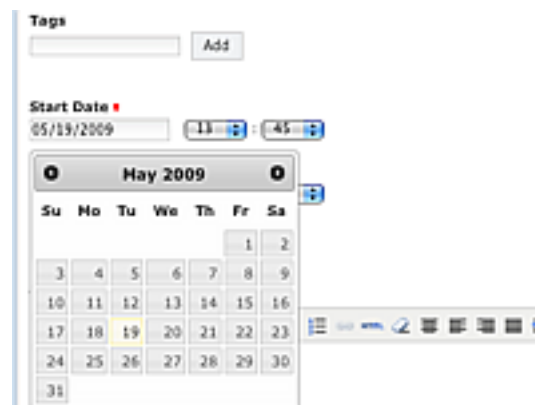


Fig. 2.3: Improved widgets such as calendar.

Like many modern web applications, KARL takes advantage of Ajax widgets for certain operations: LiveSearch, tagging, lookup tables, and navigating collections. The Ajax system has been completely overhauled in KARL3, leveraging the well-known jQuery and jQuery UI project.

As an example, the datepicker used on several calendar screens is faster and shows better styling with transition effects.

Member Management

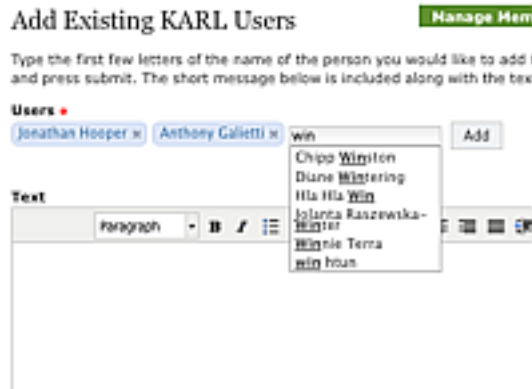


Fig. 2.4: Members can be added to a community in one batch.

Moderators of a KARL community manage the community membership by adding existing members, inviting new members, and other operations.

In KARL2, the most common operation (adding existing members to a KARL community) was cumbersome. You had to add them one at a time, including the message that for the email. In KARL3, we re-use the tagbox widget to allow selecting multiple members at once, along with typing the email text just once. They still get separate emails, but less work for the moderator.

Office Intranets

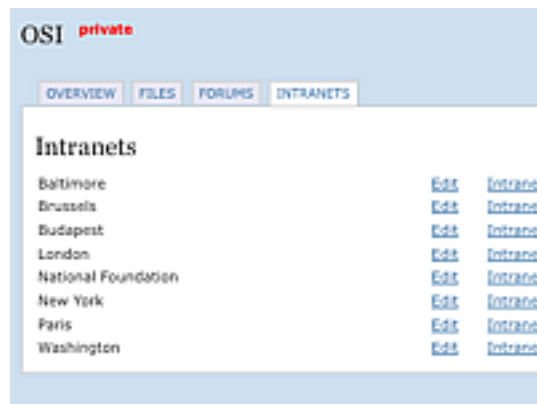


Fig. 2.5: UI for adding and editing offices.

Rather than configuring offices in code, with error-prone forums for each office, this is now part of an administrative interface.

In KARL3, administrators can add new offices and edit information such as the address, the portlets for the columns, and the navigation menu. Forums can exist either within an office or up above the offices for general-purpose forums.

Feature Improvements

- **Tagging.** You can finally tag when adding or editing a resource. The display of tags is faster and more reliable because the initial data is present on the page, rather than loaded after the page. Visual styling is much improved

through color-coded bubbles. Tag lookup is faster with an improved, more reliable Ajax infrastructure. Deleting tags is as simple as clicking the “x”.

- **Community listing.** We now show “Last Updated” in the listing of communities, making it easier to identify active communities. The pagination box at the bottom is clearer.
- **Improved community membership.** “People” has been changed to “Members” to not clash with the global “People” link. Adding existing members can be done in one step.
- **Shorter email addresses.** The email addresses used for blog comments are no longer the “32 characters of noise” variety.
- **Sane attachments.** Attachments to blog entries and blog comments are now stored directly inside the blog entry/comment, instead of mirrored in the FILES tool via a brittle lookup.
- **Auto-login after invitation.** Processing an invitation (as well as recovering a password) automatically leads to the correct screen, skipping the intermediary login.
- **Improved error screens.** In KARL2, if you did not have permission to see a resource, the system gave a “Not Found” message. Instead, KARL3 says “Forbidden” to distinguish the two cases. Also, KARL3 has a friendly “Generic Error Message” screen instead of the dreaded purple Python error screen (the actual error is in an HTML comment if needed.) The login screen has more useful error messages.
- **Useful letter links.** The letter links when browsing certain listings only show a hyperlink if there are entries that match that letter.
- **Correct years on Network News/Events.** Rather than hard-coding a list (which stopped in 2008 in KARL2), dynamically generate a list of years.
- **All content managed in KARL UI.** Some operations in KARL2 required going to the Plone or Zope UIs. All operations now have a KARL UI screen.
- **Legal text is now content.** The terms and conditions, as well as the privacy text, are now managed as content via the KARL UI, rather than being external links.
- **Better calendar widget.** The datepicker is more attractive, faster, and more reliable.
- **Faster files navigation.** The grid-oriented batches, such as folders in the files tool, are more attractive and faster to navigate between batches (as well as sorting on columns.)

Architectural Improvements

KARL3 was a complete re-write. Along the way, we eliminated painful parts and took advantage of the latest-greatest options available.

- **Performance.** Far faster performance consuming far less memory. Particularly faster on edits. Able to use multiple processors to get extra performance. Binary data stored on file system rather than in database.
- **Subsystems.** Eliminated many of the subsystems (Xapian, Tasty/Postgresql, Plone, XML/XSLT, etc.) that greatly increased complexity and decreased reliability and performance. On this front, KARL3 is lean, clean, and mean.
- **Ajax.** Switched from unmaintained, home-grown Ajax infrastructure to very-well-known, attractive, mature infrastructure. Works in Safari, faster, easier to maintain, doesn’t popup a “Install MSXML4” popup on Internet Explorer.
- **Email in/out.** Email proved a very popular, but very frustrating (performance, reliability) aspect of KARL2. This subsystem was greatly improved. Emails are now processed very quickly. Shorten the very-long email addresses on blog commenting.
- **WSGI.** Take advantage of latest Python web architecture. Move aspects to what is called “middleware” and provide an option to run directly inside Apache.

- **No more XML and Unicode errors.** By eliminating the XML/XSLT layer, we banish the aggravating “XML-SyntaxErrors” that would pop up. This also greatly decreases the chances of errors from international characters.
- **More/better background processes.** More of the periodic operations were moved out of the public app server and into “cron” jobs that run in another process. These were designed to be easier to maintain and debug, in addition to not impacting performance of the main site.
- **Faster security edits.** Changing a community of folder to private doesn’t wake up every child resource to modify its security.
- **Designed for consulting customization.** Previously, deep customization meant forking the code. Nearly all of KARL3 can be customized by overriding functionality using separate packages.

KARL Project Improvements

- **Open source.** The entire code base for KARL3 is open source. KARL3 itself is GPL.
- **Publicly managed.** The code is in a public repository, the developers share a mailing list and chat channel, and issues are tracked in launchpad.net
- **Commitment to tests.** The developers of the KARL3 project are committed to a solid regime of writing and running test suites. This is a very strong part of the development culture.
- **Diverse developers.** Developers from 7 organizations participated in the development of KARL3.

Detailed Changelogs

Package Changelogs

karl

Unreleased

3.69 (2011-08-04)

- Add in tagusers.html view for profiles
- HTML is now stripped from wiki links for the purposes of generating a title. (LP #811107)
- Hook up the *generate_stats* script for use with karlserve. (LP #812444)
- Added onChange handlers for the author and tags fields on the search results page to automatically submit their respective forms. (LP #784257)
- Added versioning and trash folder for Wiki Pages using Shane’s ‘repozitory’. Merged from ‘branches/rossi_repozitory’.
- Fixed UnicodeDecodeError encountered while reindexing text data on staging. Made improvements to the text from html extractor.
- Default to active view for /communities
- Modify advanced button text on blog page to read “Advanced” instead of “Administer”. (LP #820547)
- Fix layout issue on community search results page (LP #820523)
- Update jquery.timeago to 0.9.3 to resolve NaN date issues (LP #821014)

3.68 (2011-07-14)

- Made agility use simplejson instead of the stdlib json module for compatability with Python 2.5. simplejson is already in use elsewhere in the application.
- Fixed bug where replacing a file via the Edit File form would fail to check if a file changed from an image file to a non-image file or vice versa. (LP #807478)
- Mailed in content now gets a created timestamp set from the Date header of the incoming email instead of the current time. (LP #806066)
- Scrubbed the double parentheses from wiki links in search results for wiki pages. (LP #809969)
- Fixed ie7 issue where adding in (un)ordered lists in tinymce was broken.
- Display custom search results based on content type (LP #792333)

3.67 (2011-06-30)

- On file view, show last modified user and time also.
- Make sure inactive users aren't emailed by the email blast tool. (LP #771888)
- Wikis will now grow a new front_page if the existing front_page is removed. (LP #773480)
- Handle case of user uploading two images with identical names via imagedrawer. (LP #779870)
- Unified the search types seen on the search results page with the search categories used in live search. Added a 'Reference Manuals' search. Merged from branches/rossi_search_unification. (LP #784222)
- Changed the workflow for intranet content so that content is owned by the organization rather than by individual authors. (LP #798850)
- Created a new 'email' permission and new group, 'group.KarlCommunications' in order to allow select non-administrators to send bulk email from Karl. (LP #798415)
- Text index was not being updated when profiles changed from activate to inactive state or vice versa. (LP #803143)
- Fixed bug where the form in the show tag view was generating a bad URL. (LP #790169)
- Made the single file upload behave like the multi file upload with respect to files with duplicate names. Duplicate files are now simply renamed rather than giving the user a form validation error. (LP #790920)

3.66.1 (2011-06-24)

- Fixed mailin bug where bounced and quarantined messages generated an exception trying to email the authors. (LP #801539)

3.66 (2011-06-23)

- Fixed error in displaying forum topics with comments. (LP #798125)
- Improved text from html extraction used for extracting descriptions from document text. Weird Microsoft html is now removed. (LP #794103)
- Fixed error in search results page when search term is blank. (LP #798727)
- Made the html to text converter more tolerant of malformed html.

- Refactored outgoing email to use Karl configuration for the envelope from address. (LP #785267)
- The custom weights (1, 1/32, 1/32**2, and 1/32**3) were not being applied to text queries. Fixed.
- Added the 'Precedence: bulk' header to content alert emails. (LP #785272)
- Added 'clear log' link to error monitor view. (LP #795669)

3.65 (2011-06-15)

- Improved ranking of search results. Merged from branches/rossi_docrank.
- Pulled 'custom.css' out of the resources that are juiced. It is included in each page separately so that customization packages can override.

3.64 (2011-06-09)

- The edit blog entry form is now only associated with the IBlogEntry content type. (LP #715897)
- Removed nonsensical 'Edit' button from the root people directory admin view. (LP #715897)
- In the advanced and live searches, set the unicode_errors policy to 'ignore' in order to work around broken web browsers that send request strings in character encodings other than UTF-8. (LP #788234)
- Fixed spellcheck for Karl instances not rooted at '/'.
- Added error logging for OSError encountered when trying to run spellcheck. (LP #794279)
- Improved thread safety of LRU cache implementation. Had not previously taken into account havoc a clear() could play on reads. (LP #791177)
- Workaround for slow script execution on ie in files tool (LP #792544)

3.63 (2011-06-03)

- Fix for grid error when viewing it not within a files section. This fixes an error on the top level reference manuals page.

3.62 (2011-06-02)

- Multiple upload and file management (move/delete)
- Fixed merge bug that made repoze.pgtextindex mandatory for building Karl. repoze.pgtextindex (and psycpg2) are now optional again.

3.61 (2011-05-26)

- Livesearch result text overflow fix (LP #785450)
- Trigger search on paste - rejuice from latest bottlecap (LP #785789)

3.60 (2011-05-20)

- Fixed error in displaying forum topics with comments. (LP #798125)
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3.61 (2011-05-26)

- Liveness result text overflow fix (LP #785450)
- Trigger search on paste - rejuice from latest bottlecap (LP #785789)

3.60 (2011-05-20)

- Pagination is now reset when clicking on a facet in the search results page. (LP #785360)
- When waiting for liveness results and a user hits enter, don't display an error message.

3.59 (2011-05-19)

- Implemented better live search and search results pages. (Merged from ree-liveness-resources branch.)

3.58 (2011-05-17)

- Added support for contextual summaries in search when using repoze.pgtextindex. Had to refactor how text representations are generated for both pgtextindex and Zope text index in the process. Merged from branch, 'rossi-contextual-summaries'. (LP #707671)
- Fixed bug in distribution lists where the mail recipients were not being passed as a list. (LP #780000)
- Added a mailin trace tool. It looks like a regular blog tool but instead of saving a blog entry that is added to it, it updates the timestamp on a file in the filesystem. By sending a special tracer email to this tool at regular intervals, the health of the mailin system can be monitored by monitoring the timestamp on this external file. (LP #770428)
- Thumbnail view now raises NotFound if it can't extract a thumbnail size from the subpath. (LP #777365)
- Updated the 'Add Page' view to properly relocate temporary images uploaded via ImageDrawer. (LP #782388)

3.57 (2011-05-05)

- In mailin, multiple recipients are now allowed for single messages. (LP #773426)
- Error monitor now shows referer for Karl exceptions. (LP #777365)
- Stats view now raises NotFound if var/stats/stats.csv is not found. (LP #777363)
- Fixed error in reset password form. (LP #774110)

3.56 (2011-04-28)

- Changed text scrubber to only use In-Reply-To header when deciding whether or not to scrub text following the Outlook Express message separator as opposed to any separator that it knows about. (LP #757689)
- The `error_monitor_status.txt` view can now accept a request parameter, `subsystem`, which limits the status report to only the subsystem(s) specified. The parameter may be included more than once: `https://url.of/karl/error_monitor_status.txt?subsystem=mailin&subsystem=mailout`.

3.55 (2011-04-04)

- Added ‘karl.scripting.only_once’ API, to permit cron-driven scripts to avoid running again if an earlier instance is still running. The lockfile is named ‘<username>-<progrname>’, where ‘<username>’ is the current user’s login name, and ‘<progrname>’ is a string passed to ‘only_once’. By default, the lockfile is created in ‘/var/run/karl/’; this path can be overridden by setting ‘lockdir’ in the ‘DEFAULT’ section of the configuration file.
- Ensure that aliases for mailinglist objects are registered / deregistered when the mailinglist is added / removed. (LP #706018).
- Get rid of some deprecation warnings under Python 2.6.
- Change default “People” tab link to ‘/people’ since all instances now get a People Directory by default.
- Fix offices link in Admin UI to work when site is not rooted at ‘/’. Also only show link when there are offices.
- Fixed invalid Unicode returned by ‘pdftotext’ which was breaking pgtextindex.
- Fixed the static view of the maintenance app to work when not rooted at ‘/’.
- Added support for ‘read only’ mode.
- Refactored logout view to not rely on repoze.who redirecting form plugin, in order to be able to generate the url to redirect to at runtime. (LP #745215)
- Added default InvitationBoilerplate to allow Terms and Conditions and Privacy Policy to be set up without using a customization policy.
- Make sure templates always use \${api.app_url} in specifying hrefs. Allows Karl to be mountable at places other than ‘/’ at a particular domain.

3.54 (2011-01-19)

- Fix people report picture views, broken by addition of report-based e-mail distribution lists. (LP #705171)
- Made report-based distribution lists addressable using “pretty” aliases.
- Implemented “Distribution lists on organizational reports” blueprint; see: <https://blueprints.launchpad.net/karl3/+spec/distribution-list-organizational>
- Added fault tolerance in mailin for messages in unknown character encodings. (LP #698153)
- Quote name parts of addresses in From, To and Reply-To headers in alerts. (LP #702080)
- The default layout provider now detects when context is not contained by a community or intranet and returns the generic layout. (LP #698879)

3.53 (2010-12-20)

- Fixed bug when uploading images to new content via image drawer where the image would wind up stranded in a temp folder and would not show up in ‘My Recent’ or ‘Community’ in the image drawer. (LP #691141)

3.52 (2010-12-06)

- Remove 40-character limit for names of items inside the people directory.
- On the community members table: moved hidden inputs into a table cell, so IE doesn’t add extra random space (LP #684209).

- Add missing formish resources to a page that manually constructs its form (LP #683651).

3.51 (2010-11-30)

- Enabled adding redirector objects to peopledir sections, in order to provide backward compatibility for old URLs.
- Fix mailin for communities which contain periods in the id. (LP #673152)
- Allow embedded objects in intranets feature HTML. (LP #677497)
- Don't allow unicode value of `max_age` to propagate into cookies emitted on successful login (LP #674123).
- Fixed dump of peopledir sections without any `__acl__` (LP #672744).

3.50 (2010-11-08)

- Added basic logging configuration to console scripts. (LP #670610)
- Fixed bug which caused content feeds to break if an edited item was not contained by a community. (LP #670967)
- Add a peopledirectory report filter based on the 'is_staff' index. and configure it as an addable in a report. (LP #669523)
- Make the jQuery UI dialog on Accept Invitation show an OK button that isn't misaligned. We have some pretty horrible CSS styling going on where we have overridden `<button>` as a whole, rather than in targeted places. We have a `buttongeddon` coming at some point. (LP #651279)
- The same code is used to guess mimetypes for files uploaded to the files tool is now used to guess mimetypes for files uploaded as attachments to other content types, ie blog entries, wiki pages, et al. (LP #667494)
- Added an evolve script to update mimetypes for community files with generic, meaningless mimetypes to something more specific based on file extension. (LP #667494)
- Attendees are now converted to to UTF-8 in the ical view for calendar events. (LP #666295)

3.49 (2010-11-02)

- Harden 'deactivate_profile.html' view against missing user (LP #669451).
- Fix 'show_profile_view' for case when user has never logged in. (LP #668352)
- Suppressed "Admin" action on peopledir objects (LP #668489).
- Added evolve script to clean up logins in user database.
- Make "external" action URL detection work for HTTPS URLs (LP #661381).
- Update feed code to read unicode from config file. (LP #663403)
- Repaired busted HTML in template used to view profile. (LP #668350)

3.48 (2010-10-28)

- Improve description-extraction utility, avoiding a bug in older libxml2 and making it more lazy (LP #663399).
- Made '/people' objects editable TTW by administrators. See <https://blueprints.launchpad.net/karl3/+spec/ttw-people-configuration>

- Display last login time on main profile view, using relative time via the ‘timeago’ jQuery plugin.
- Record users’ last login time on their profile. Note that this requires taking over control of the login form POST from the `repoze.who` form plugin. See <https://blueprints.launchpad.net/karl3/+spec/last-login-date>
- Made profile’s `country` field required, and added new XX country code to account for unknown / blank items. See <https://blueprints.launchpad.net/karl3/+spec/country-required>
- Changed label of text field in calendar events to ‘Description’ for all occurrences in the user interface. (LP #629663)
- Added attachments to calendar event alerts. (LP #629663)
- Load TinyMCE JS / CSS only on pages which need it (LP #622813).
- Attempt to fix unclean kaltura embeds on IE8 (LP #658546).
- Fixed content feeds to work with an instance not rooted at ‘/’.
- When adding a new user, any previous invitations that user had are deleted. (LP #659926)
- Hide “Terms and Conditions” and “Accept Privacy Policy” fields in the accept invitation form if there is no text to display for those fields. (LP #651209)

3.47 (2010-10-07)

- gave profile body a set width, so it doesn’t fall out of its area in IE (LP #638326)
- put in correct version if corners.png, so IE will display the background on feed actions (LP #629013)
- removed IE calendar styles, that were actually breaking things (LP #629026)
- Removed Karl’s implementation of Message in favor of the implementation in `repoze.postoffice`.
- Added a UI for deleting and requeueing messages in the postoffice quarantine. (LP #613424)
- Removed unused formfield snippet from `formfields.pt`: `add_comment-field`.
- Added evolve script to remove duplicate tags. (LP #627065)
- Make sure top level validation error message shows on edit profile forms. (LP #645614)
- Make sure sequence fields can be highlighted when there are validation errors. Formish logically but not helpfully sets the ‘contains-error’ style instead of the ‘error’ style we were using in our css. Copied the .error styles for .contains-error. (LP #645614)
- Implemented workaround to what should probably be considered a bug in formish, to allow formish error messages to be visible for the websites field when editing a profile. (LP #645614)
- Added a UI for rename and merging users in the Admin UI. (LP #629625)

3.46 (2010-09-10)

- fixed community filter buttons for Safari (LP #629010)
- fixed up styles on profile page to make all browsers happy (LP #634110)
- Slightly reduced content area width to avoid content shifting while browser zooming (LP #629577)
- Fix ‘delete_resource.html’ view for content outside of communities (e.g., profile photos). (LP #634139)
- Derive `creator` for uploaded photo from the current user, rather than the container’s name. (LP #633191)
- Improve contentfeeds description of content added / modified inside a profile. (LP #628285)

- Workflow initialization is now delayed for temporary images created by Image Drawer when uploading images in the context of an 'Add Content' form. (LP #619977)
- Added fault tolerance for 'None' values from formish for blog entry attachments. (LP #618074)
- Fixed 'add_user' script to initialize workflow for new profile.
- Added form validation to catch years earlier than 1900. (LP# 632451)
- The groups KarlAdmin and KarlUserAdmin now have the same permissions on profiles of inactive users that they do on active users. This means they can now edit inactive profiles as well as see inactive users in searches and in the people directory. Updated the admin edit profile view to handle inactive users. (LP# 629612)
- Inactive users now display a badge in their title, ie 'Fred Flintstone (Inactive)'. This makes inactive users easier to notice when viewing their profiles or when they appear in searches. (LP #629612)
- Inactive users may now be reactivated via a link on the admin edit profile form. Reactivated users are sent a password reset email so they can reset their password and log into the system. (LP #629612)
- Inactive users may now be reactivated via the upload new users as CSV feature of the Admin UI. (LP #629612)
- When creating a new user using the add user form, if the entered userid or email matches that of a deactivated user, an informative error message is displayed and a link to reactivate the user is provided. (LP #629612)
- Removed cico package. It was only be used by OSI for gsa_sync. The code needed by OSI has been moved to OSI's customization package.
- Add existing members view now filters out inactive users. (LP #629612)
- In the invite new users view, if an email address matches that of a previously deactivated user a validation error is raised. (LP #629612)

3.44 (2010-09-02)

- Un-broke the `manage_tags.html` view due to clash over main template's use of top-level `tags` name. (LP #629009)
- Made sure icon is centered on filter indicator button. (LP #628833)
- Fixed filter button display in IE. (LP #628281)
- Merged `ree-jsupgrade-2-tiny` branch.
 - Upgraded TinyMCE WYSIWYG widget.
 - Upgraded jQuery libraries.
- Merged `chrissy-portlets` branch:
- Updated intranet portlets to conform to site portlet styles
- Cleaned up Active People portlet
- Added DOCTYPE, so IE displays in standards mode
- Updated styles that changed as a result of adding DOCTYPE
- Moved portlets out of `#center`, conforming styles for admin pages, community pages, generic layout
- Added `--index` option to `reindex_catalog` script, to allow rebuilding only a given index.
- Merged `content_feeds2` branch, adding top-level content feeds tab. This tab allows users to see recent changes across all communities in which they participate.

- Merged `active_communities` branch, implementing the “active communities” blueprint: <https://blueprints.launchpad.net/karl3/+spec/active-communities-tab>
- XSLT fix for people pages broken by unclosed divs. (LP #602889)
- Fixed icons on people list page when FF zooms out. (LP #624761)
- Updated styles on Community Files page, new file icons. (LP #622883)
- Tags: set label to not look like a button, made tags, input and button same height and/or centered vertically. (LP #622689)
- Tabs and newline characters in uploaded filenames are now converted to spaces. Same is also done in the `download_file_view` when setting the filename in the Content-Disposition header, in case there are files uploaded previously with newline and tab characters in the filename. (LP #616511)
- Rename user script can now rename or merge profiles which don’t have logins.

3.43 (2010-08-19)

- Changes searches so there is no label, changed buttons to say ‘search’ instead of ‘go’ (LP #616868)
- Put in deprecation notice for IE6 (yay!) (LP #616869)
- Ensured that comment alerts work for comments made against forum posts (LP #614370).
- Ensured that CSV profile import decodes attributes encoded as UTF8 or latin1 (LP #614398).
- Fixed text indexing of profiles with attributes encoded as UTF8 or latin1 (LP #614398).
- Added a community index to the tagging engine in order to speed up the community tags portlet when first loaded. On local machine loading of community tags portlet with OSI database went from 40s to 3ms.
- Wrote an evolve script to find content that is created or modified by a user no longer in the system and move that content over to a ‘former user’ profile. The ‘former user’ profile is created if and only if it is needed.
- Improved search performance by not using the catalog cache for very large result sets, as the overhead in marshalling the result set in order to cache it is much greater than the overhead of running the search. (LP #6120123)
- Added postoffice quarantine to error monitor admin ui for parallelism with the status view for monitoring. (LP #613579)
- Mailin now concatenates all ‘text/plain’ message parts when constructing the document body. Previously only the first ‘text/plain’ message part was used. This is per discussion with OSI about including forwarded messages in mailin.
- The text scrubber used for mailin now takes a new argument, ‘is_reply’, indicating whether the message is a reply to another email. This is checked by looking for the presence of the ‘In-Reply-To’ header in the message. If the message is not a reply, the text_scrubber now omits the processing where it attempts to separate the new message body from the quoted message being replied to. This processing was causing messages being forwarded to Karl communities to be stripped of content, since for some email clients (Outlook Express) the separator for replied to messages and inline forwarded messages is the same. Since a forwarded message shouldn’t have the ‘In-Reply-To’ header set, this allows forwarded messages to be properly added to Karl, while still doing the proper thing when users make comments by replying to alert emails. Based on discussion with OSI.
- Updated the ‘add comment’ form to respect the IShowSendalert adapter. (LP #602889)
- Converted retry functionality used when running console scripts as daemons to be time based rather than number of iterations based. By default, now, if a daemon script gets `ConflictErrors`, it will retry once a minute for 30 minutes. If unable to fulfill its duties for 30 minutes, it will raise an exception which will trigger all of the usual alarm bells. (LP #614368)

- Replaced the notion of deleting users with the notion of deactivating users. Deactivated users are effectively deleted except that their profiles may still be viewed by clicking a link on content which the deactivated user had authored. [LP #599805](#)
- Fixed bug (found by random code review) in community stats report where calendar events were not counted.
- Created user activity report. [LP #599804](#)

3.41 (2010-08-04)

- Fixed missing asterisk typo in ProfileEditFormController.handle_submit. ([LP #612503](#))

3.40 (2010-08-03)

- Fixed a bug in mailin where we were trying to decode headers twice, once in repoze.postoffice, and then once again in our processor.
- IE8 button display fixes ([LP #610549](#))
- Merged status views for error monitor and postoffice quarantine, for easier monitoring by SFUP.
- Fixed bug in default layout provider: wrong template being called for intranet layout. ([LP #612576](#))

3.39 (2010-07-29)

- reduced width on login username input for IE6, so it doesn't fall to the next line. Set margin on surrounding field as !important, because elements were jumping after focus was moved away ([LP #611017](#))
- removed unnecessary margin from profile image, so the middle content doesn't get pushed down ([LP #610666](#))
- fixed add tag button on edit screen for IE8 ([LP #610549](#))
- edited the admin right side portlets to match new portlet styles ([LP #610493](#))
- Added support for logging each query, to compare performance across different configurations. Keyed on the *query_log_all* parameter, defaulting to False. Entries will be added to *log/query/everything.log*.
- Fixed bug in mailin2 script that caused ZEO connections to be left open if there was a configuration error.
- Fixed bug in entity conversion where numeric entities were not converted.
- Removed a redundant copy of the text_scrubber code used by mailin.
- Add some preprocessing to the mailin text scrubber to find URLs and mark them up as links using markdown syntax. ([LP #545420](#))
- Reproduced the websites normalization performed when editing a profile via the UI in the cico XML import, so that profile websites data downloaded from GSA will also be normalized by prepending 'http://' to websites which begin with 'www.'. Also added an evolve script to normalize the websites field for existing profiles. ([LP #605203](#))
- Convert non-standard mimetypes sent by Internet Explorer for jpeg and png image files to their more standard equivalents. ([LP #608473](#))
- Made all unknown image/* types viewable in default mime info. ([LP #608473](#))
- Added a utility and console script for renaming users. ([LP #606339](#))
- Removed link to `__error_log__` from admin ui. ([LP #581949](#))

3.38 (2010-07-09)

- removed extra div#footer, so there are not multiple ids (LP #602889)
- LP #602888: Change titles on some People reports.
- LP #601109: Remove code and template for sending email after changing password.
- LP #566594: Help text for imagedrawer.
- slightly reduce margin on #right to prevent layout from breaking when font size is changed (LP #602837)
- Fix handling of 'website' in admin CSV user upload. (LP #602473)
- tempfolder: suppress sending events on add / remove, and therefore any catalog activity for objects in the temporary location. (LP #592697)

3.37 (2010-07-06)

- further cleaning up of portlet styles to make them all the same (LP #599522)
 - set up related tags portlet and its .rightcol space to be styled like the other portlets in the site.
 - removed now unused CSS code.
 - gave .rightcol a left margin to put space between the portlet and text
 - reduced space above and below portlet title
- cico people import: fixed the fix for singular 'website' element transform (LP #601205).
- tagging engine: optimized 'getFrequency' (LP #597838).
- upload users view: don't pass 'groups' to profile factory (LP #598246).
- portlet styles - cleaned up CSS for status message, applied new styles to profile tags portlet (LP #599522)
- general cleaning up of themedstyles.css for legibility
 - conformed way the code is laid out
 - fixed small errors
- Styled the site announcement to look like a status message. (LP #600765)
- Updated mailin code to respect X-Postoffice-Rejected headers coming from repoze.postoffice and special cased the bounce message when a message is rejected to due to vacation loop detection throttling. (LP #597835)
- hid the overflow on the main content area, so that when wide items are entered, the entire content area won't fall beneath the left menu in IE. (LP #576042)

3.36 (2010-06-27)

- Fixed UI bug where actions in folder views did not correspond to user's permissions. (LP #594180)
- Added evolve script to remove some broken objects that seem to be left over from the migration of profile photos to image drawer. These were blocking reindexing of profiles. (LP #594131)
- Fixed bug where profiles add via cico (OSI, using gsa_sync) were indexed with a bogus value for the 'allowed' index. Updated evolve script to reindex the people directory. (LP #594131)
- Added stub for console script, reindex_peopledir.
- Fixed bug where 'home_path' was being clobbered by edit profile form. (LP #594127)

- Updated the rss feed update code to only update a feed if the upstream feed contains entries. (LP #594352)

3.35 (2010-06-08)

- Members views were not updated to use the new websites field after multiple websites change from 3.34, which caused an unexpected parameter error when creating a new profile after invitation. Fixed and updated tests. (LP #591267)
- Fixed bug in whitelist-address matching is now normalized to be indifferent to the inclusion or exclusion of a name part with an email address. (IE, 'Fred Flintstone <test@example.com>' == 'test@example.com')

3.34 (2010-06-04)

- Updated formatting for wiki body in e-mail alerts (LP #588905)
- Added a `site_announce` script to set / clear the site announcement text from the command line (LP #579520).
- Ensured that wiki pages cannot be added outside of the wiki tool (LP #586458).
- Made profiles support multiple websites (LP #554018).
- updated maintenance page (LP #587432)
- Changed HTML ID for email icon in blog listing for customizations (LP #582500).
- Added custom.css link into `wsgi_errormsg.pt` (LP #587104).
- Duplicated views from old mailin monitor as new views which use postoffice. Admin UI will point to new views if `repoze.postoffice` is being used, otherwise it will still use the old views.
- LP #588303 Added fax to profile view.
- LP #589743 Form topic add comment form was still assuming old formencode system. It has been updated to be current.
- LP #589814 Fixed broken add user form.
- LP #554018 Added special case in `cico` for website in profile import. (Used by OSI's `gsa_sync`.)

3.33 (2010-05-24)

- Work around chameleon bug where the new `next` builtin in Python 2.6.x was shadowing the value passed from the view, breaking the Twill tests (and the reference manual views) under Python 2.6.x (LP #534599).
- Add community and profile statistics to admin UI.

3.32 (2010-05-20)

- Fixed bug where lemonade could not determine content type of reference manuals.

3.31 (2010-05-20)

- Added a hook inside `karl.models.site.Site.update_indexes` to allow extension or customization packages to extend the set of indexes used in the catalog.
- Made the “view all” view work for reference sections (LP #575712).
- Allow nesting of sub-sections within reference sections (LP #575712). Also allow adding pages and files at the root of reference manuals, making them behave like reference sections.
- The rtf converter now cleans up `pict_dir` directories left behind by `rtf2xml` (LP #579511).

3.30 (2010-05-06)

- Changed wording of title field on file edit screen to remove mention of nonexistent checkbox (LP#575789).
- Calendar event, blog entry, newsitem, page, reference add behavior tweak (LP#576033).
- Batching in syslog view (LP#563745).
- LP #575276 File view now uses generic layout when outside of a community.
- Removed deprecated code that supported old profile pictures.
- LP #571221 Cache results of file text extraction on the model, to make reindexing faster.

3.29 (2010-04-30)

- Added an “Any” option at the end of the letterbox to allow clearing any existing filter (LP#570853).
- On each communities sub-view, add a “quick links” panel on the right margin, with tabs showing tool links, recent content, and members. The last two are fetched on demand using AJAX. This panel is currently disabled unless ‘demo’ is in the query string. See <http://dev.karlproject.org/specifications/communitydiscovery.html#step-2-quick-links>
- Implemented sub-views for the ‘/communities/’ page: “Mine” (communities of which I am a member), “Active” (communities having activity within the past 30 days), and “All”. Drop the “My communities” portlet. This menu is currently disabled unless ‘demo’ is in the query string. See <http://dev.karlproject.org/specifications/communitydiscovery.html#step-one-dedicated-views>
- Add “Community” to list of types in advanced search (LP#571218).
- Add ‘fax’ field to user profiles (LP#570204).
- Don’t blow up when managing tags from profile when no tags are present for the profile (LP#558743)
- Created new version of mailin script (mailin2) which uses the experimental `repoze.postoffice` package for a central mailin depot.

3.28 (2010-04-22)

- Introduce trivial `AttachmentsSequence` widget, along with slight markup and javascript tweaks, to get the attachment field on the various formish forms to work more like the pre-formish implementation (see LP#564130).
- Get intranets root edit form to correctly default to the `sample_feature` value when the feature field is left blank.
- `TemplateAPI` object now sets an ‘error_message’ attribute for formish form submission requests w/ validation errors; templates will notice this and render a top-of-form error message (fixes LP#564134).

- Improve usability on the formish ‘sendalert’ fields (see LP#564131).
- Re-specify default ‘sendalert’ value as True on calendar event add form (fixes LP#564115).
- Add “overflow: auto” to the #right div CSS to prevent bad rendering when poorly formed (read: very long words w/ no word break, e.g. a long URL) content is pulled into a side portlet (fixes LP#540296).
- Slight tweaks to the Network Events search UI and behavior to improve user experience (see LP#554028).
- Sacrifice a chicken and provide a default value for the ‘min_pw_length’ setting since certain invocations of the test framework cause that to not yet be initialized.
- Remove FormEncode and repoze.enformed dependencies and all dependent code.
- Convert change password form to formish.
- Convert calendar setup form to not use FormEncode / repoze.enformed.
- Convert calendar event add / edit forms to formish.
- Convert comment add / edit forms to formish.
- Convert reference section add / edit forms to formish.
- Convert reference manual add / edit forms to formish.
- Convert password reset request and confirm forms to formish.
- Converted profile and news item photos to use the newer, image drawer compatible image and thumb nails. Deprecated and removed older image handling code previously used to support these.
- LP# 544199 Fixed KeyError in Admin Delete Content view when nested nodes are selected for deletion.
- LP# 544199 Added ‘path’ to content selection grid used in some admin views. Changed sort index to ‘path’ for content selection grid.
- LP# 567532 Added a ‘view’ link to the show file view, in addition to the already existing ‘download’ link.

3.27 (2010-04-08)

- Add evolve script to retroactively prepend ‘http://’ to any profile website URLs that start with ‘www.’ (see LP#554013)
- Fix profile admin edit form so that the community memberships don’t disappear when the groups are updated (fixes LP#556679)
- Slight tweak to the KarlManageMembers widget so it won’t blow up when faced with a community that has no members
- Profile ‘website’ field now requires submitted values to start with ‘http://’, ‘https://’, or ‘www.’; if the last one is used ‘http://’ will be prepended to the stored value (fixes LP#554013)
- Re-add “default tool” dropdown to the add community form (fixes LP#554031)
- In order to be able to kill runaway converter processes correctly, change `karl.utilities.baseconverter.BaseConverter.execute`: when creating a subprocess, don’t use a shell to start the process (`shell=False`), use `subprocess.PIPE` as `stdin`, use `subprocess.PIPE` as `stderr`.
- Change converters that use `execute`: don’t try to redirect `stderr` output via the command.
- Change `rtf2xml` converter to not change directory to `/tmp` (not sure why it was doing that in the first place) as part of its `execute` command.
- Change `rtf2xml` converter to not pass `--no-dtd` on the command line. This option has no effect on any recent `rtf2xml` command I can find.

- [LP #552517](#): Fixed bug where new uploads w/ the same filename would fail to actually update the stored file.
- [LP #553959](#) Fixed bug in edit_intranet form that would corrupt the portlets.
- [LP #554024](#) Changed the ‘delete community’ operation to use a new permission, ‘delete community’ rather than overload the ‘moderate’ permission.
- [LP #556673](#) Only display buttons to add calendar events if user has permission to create events in the calendar.
- [LP #556036](#) Get static revision from subversion revision, if possible.
- [LP #510248](#) Hide ‘Advanced’ button on folders outside of intranets.

3.26 (2010-03-26)

- [LP #548352](#) Fixed bug which caused alerts to fail if a community had a comma in it’s title.
- [LP #548352](#) Fixed bug in error monitor where log messages containing unknown character encoding data could render the log unviewable.

3.25 (2010-03-25)

- [LP #546902](#): Removed the 500 character limit validator from the ‘text’ field on the community member and new user invite forms.
- Fixed a failing unittest for mailin dispatcher. Did not affect production usage.

3.24 (2010-03-22)

- [LP #532879](#) Added a try/except block to catch `ParseError` exceptions in JQuery live search view to avoid contaminating error logs with ignored exceptions.
- The wiki links would not work for non-ascii characters because the title was saved as unicode and the text as html entities, causing the link matching code to return zero matches. Added function to unescape entities from links before comparison to fix this.
- [LP #530799](#) (partial): Converted the following forms to use formish instead of enformed for form generation and validations: profile edit, admin profile edit, add user, add news item, edit news item, add intranet, edit intranet, edit intranets root, add page, edit page.
- [LP #544201](#) Added check for ‘create’ permission on target for mailin.

3.23 (2010-03-16)

- [LP #538272](#): Fixed add / edit community forms to pass the `page_title` in to the `TemplateAPI` object instead of directly to the template.
- [LP #533366](#) Added simple retry capability to `run_daemon`, primarily to avoid tripping the error monitor when conflict errors occur.
- [LP #538273](#): Added a ‘-timeout’ option to ‘update_feeds’ script: if passed, sets the global socket timeout accordingly.

3.22 (2010-03-12)

- [LP #530893](#) Updated mail sending code to use repoze.sendmail 2.0.
- [LP #520570](#): redirect `/favicon.ico` requests onto the correct static URL, and `'rss_view.xml'` requests to the equivalent `'atom.xml'` URLs.
- [LP #530893](#) Added handling for RFC 2047 (Unicode) headers to all generated emails.
- [LP #530893](#) Added handling for RFC 2047 (Unicode) headers to mailin.
- [LP #531360](#) Fixed bug in people import where categories were not being properly reset at import time.

3.21 (2010-03-06)

- Created a default policy for `IShowSendalert`. Refactored code to use a utility method, `get_show_sendalert`, to get whether or not to show a send alert checkbox in a form adding content.

3.20 (2010-03-04)

- Updated bootstrap to provide new `'name'` parameter to `add_intranet_view` when creating offices.
- [LP #530966](#), CSS fix for profile bug. (Derek via Paul)

3.19 (2010-03-02)

- [LP #526574](#): Fixed the workflow association with the forum topic add and edit views so the creator of the topic will have edit / delete permissions; added `evolve6.py` function to fix existing topics. (rafrombrc)
- [LP #497017](#): Added a separate `'name'` field to the intranets add form (rafrombrc)
- [LP #528514](#): Specified the right widget type for blog post `'send email?'` field, added CSS to make the formish title fields the right size. (rafrombrc)
- Fixed bug with people import where updating a profile might use a different user id than the profile.__name__.
- [LP #522179](#): Added template slots and admin UI for generating announcement blurbs that will be exposed to all site users. (rafrombrc)
- [LP #523280](#): Rejigger formish views and templates to put `page_title` value in `TemplateAPI` object instead of passing it directly into the template (rafrombrc)
- [LP #520541](#) Updated `adduser` console script to also create a user profile. Added checks to avoid clobbering an existing user.

3.18 (2010-02-22)

- Fix for memory leak in mailin process.
- UI fixes. (ree)

3.17 (2010-02-17)

- [LP #503451](#): Calendar: Week view does not display some events
- Fixed calendar list view to correctly show “all-day” for all-day events.
- [LP #522173](#): Add a “down for maintenance” HTML page in views/static with relative links to styling and images which can be served directly by Apache.
- When importing users, using cico, any space characters in the user’s id are now elided.
- [LP #523333](#): find_contiguous_slot error error in calendar

3.16 (2010-02-12)

- Add “evolve5” step which converts calendar layers and categories to have opaque object ids.
- Made the (+) on all-day events on the calendar day and week views functional.
- Fixed links to all-day events on the calendar day view.
- [LP #510242](#): change submit buttons to say “submit” (as has been the case in previous releases) rather than “Edit” or “Add”.
- [LP #510770](#): Sort categories by title rather than path.
- [LP #510304](#): Add/edit calendar event should show default category first always.
- [LP #513340](#): Calendar event blocks not formatting correctly in IE
- [LP #510240](#): Formish edit screens have wrong heading
- [LP #506106](#): “accept invitation” refused with password length error no matter what password length provided.
- [LP #510187](#): Get the display for per-office data in People reports to match the previous layout.
- [LP #497437](#): Fixed all-day event option for calendar events.
- [LP #503442](#): Fixed hardcoded year left in calendar week view template.
- [LP #510285](#): Use opaque identifiers for new category and layer ids to make it possible to add a category with the same label as a layer and vice versa.
- [LP #509597](#): IndexError on Calendar _find_contiguous_slot_across_days
- [LP #503451](#): Fixed multi-day calendar event not on both days.
- [LP #503771](#): Fixed day links on calendar list view.
- [LP #503523](#): AttributeError: ‘CalendarEvent’ object has no attribute ‘color’
- [LP #503450](#): Fixed that the hour and minute selectors on the add calendar event page would lose their all-day state if the user entered an end date that was before the start date.
- [LP #496331](#): Calendar list view now shows a paginated listing of upcoming events with 20 events per page.
- Merged `svn+ssh://osi@osi.agendaless.com/home/osi/bfgsvn/karl/branches/formish` branch, which replaces some form-based views with formish forms.
- [LP #496381](#): Calendar event duration must be at least one minute.
- Added missing registration for IFileInfo adapter for ICommunityRootFolder.
- Fixed bug in evolve2 step that updated ‘Last Activity’ for every community.
- Added missing view registrations for mailin monitor utility.

- Fixed bug with attachments on mailin caused by a bogus assertion which would usually fail.
- Bug fix: Make sure acl's are properly set on profiles during import.
- [LP #494582](#) Added opensearch support to people directory. (Ported from OSI.)
- Bug fix: Make sure custom_folder_view uses get_layout_provider utility method.
- Explicit registration of an IFolderAddables is no longer required. A suitable default is found if there is no registration. Added 'get_folder_addables' utility method.
- Created a default footer that just contains the offices listing component of OSI's footer.
- Bug fix: Allow add/edit forms for calendar event to still work if there is no category. Categories are not used outside of the context of the calendar tool, and calendar events can appear in regular old folders in intranets. This allows to again create and edit events in the 'network-news' folder used in most intranets..
- [LP #497937](#) Corrected which tools are addable when creating a new community.
- [LP #488152](#) Made initial site_acl used in bootstrapping the same in core as what OSI uses.
- [LP #488854](#) Added link to delete user in admin edit profile view.
- [LP #505939](#) Fixed bug when trying to render edit form for calendar events that occur in a 'network-events' folder rather than a calendar.
- [LP #510194](#) Fixed people directory report columns to properly handle None values.
- [LP #510193](#) Fixed indentation for IE in people directory.
- [LP #510204](#) Removed height constraints on ui grid layouts.
- Added an administrative UI in order to have a central place for functions useful to Karl administrators.
- Added syslog functionality.
- Added a monitor utility for errors in various Karl subsystems.
- Fixed bug in workflow where unicode was breaking status messages.
- Fixed bug in karl.views.utils._get_user_homepath. Was expecting traverser to return a list for subpath but traverser was returning a tuple.
- Fixed bug displaying "system" profiles. Karl instances generally have one system profile, "admin", that does not have an entry in site.users, since the profile is not used to log into the site but only as a placeholder user profile for associating with events generated by the system, usually when bootstrapping a new Karl.
- Exclude objects which don't provide IContent from 'texts' catalog index. (Only content objects should show up in search.)
- Added specific exclusion for ICalendarLayer from 'texts' catalog index.
- Fixed bug with mailin quarantine monitor generating bad links to quarantined messages. Ended up taking entirely different approach to mounting the repoze.mailin.monitor subapplication. Implementation this time around is messy but should look prettier when BFG 1.3 is ready.
- Added daemon mode to scripts that were being called as cron jobs: mailin, qp, update_feeds, and digest.

3.15 (2009-12-14)

- [LP #496330](#): Clicking the (+) from the calendar month view now uses a default of 9:00am instead of 12:00am.
- [LP #494701](#): Editing a calendar event now populates the form with the correct times.

- [LP #492346](#): Clicking the (+) button to add a new event on the calendar views now populates a default date and time on the form based on the context of where (+) was clicked.
- [LP #491991](#): An event's calendar category is now displayed when viewing the event.
- [LP #491986](#): Constrain width of category selector on calendar setup page.
- Increase performance of jQuery selectors in calendar daily/weekly view
- Fix editing of calendar categories/layers when names have spaces
- Calendar categories and layers are now managed on the same setup page.
- Preload button images better so that they don't flicker on hover/click
- Change calendar "Add Event" button to not be an image so that it is easier to test and change the label if needed
- Speed up rendering of any page shown inside the community layout by roughly 2X.
- [LP #444502](#): Added a sample content generation script.
- "Settings" action on calendar tool now allows the choice of a color along with a virtual calendar name.
- Add a new field index named "virtual" to the catalog. The initial use for this index is to be able to query for catalog events globally for the purposes of creating a "dynamic" calendar: the `virtual` index, for catalog events, will be populated with a tuple: (`calendar_path`, `virtual_calendar_name`). This tuple can be used in queries by the dynamic catalog machinery (which will need to spell out a set of tuples naming these calendars, and query the "virtual" catalog field index using the tuples in an OR clause along with, e.g. `interfaces=(ICatalogEvent,)`).
- If a user doesn't have an associated profile, don't fail hard when trying to reindex the `peopledir` catalog.
- [LP #434879](#) Add support for pasting into `livesearch`
- The RSS icon on the new calendar views is now placed on the lower right for consistency with the other pages.
- Removed the "View Earlier Events" and "View Later Events" from the list view on the new calendar. These duplicate the functions of the forward/backward buttons and are not necessary.
- The "Settings" page of the existing calendar has been temporarily hidden on the UI until the new calendar is finished. Requested by Jason Lantz to prevent confusion.
- [LP #430037](#) In `karl.content.adapters`, use functions in `karl.utilities.converters` instead of an xslt-using function named `_html_cleaner`. The `_html_cleaner` was producing incorrect results when fed HTML provided by the rich text input widget.
- Moved "karl.content" into this package (as the content subdirectory).
- [LP #418687](#) Add better looking status messages
- [LP #418701](#) Add better styling of form buttons
- [LP #356541](#) Added better icons for file/folder listings including Folder, Reference Manual, Page, Calendar Event, and News items.
- Updated `edit_acl` view to allow workflow transitions, including re-inserting an object with a previously customized acl back into a proper workflow state.
- [LP #426385](#) Added a few extra parameters to template call for `admin_edit_profile` view. Extra parameters used by OSI custom template.
- The ID of an uploaded should not include directory names provided by the browser, if any. This was solved previously for Windows but not for POSIX (forward slash) path names.
- The new calendar pages have now replaced the original calendar.
- [LP #449690](#) Moved text scrubber utility for mailin to core. Moved mailin monitor sub-application to core.

- Removed out of date paster template. This has been superceded by KarlSample project.
- Made setting of categories via peopleconf util optional. OSI will set categories via gsa_sync, so peopleconf needs to be able to handle the categories and reports separately.
- Removed all references to ISecurityWorkflow, in favor of newer workflow system.
- [LP #449686](#) Moved workflow policy to core. All known Karl instances were using the same policy, so for maintenance it makes sense to move this to the core. Since the workflows are hooked up via ZCML these “default” workflows can always be overridden in a customization package.
- [LP #449676](#) Moved most console scripts into core to avoid duplication across all of the customization packages. Entry points are still declared in customization packages to allow partners to opt out of or replace particular console scripts.
- [LP #449683](#) Moved initial data for bootstrapping Karl in the core and made overridable via utility registrations on the interfaces in karl.bootstrapping.interfaces.
- [LP #449683](#) Moved Paste Deploy application factory (aka run.py) into core (as application.py).
- [LP #449691](#) Moved evolve script to core and updated it to use utility registrations in ZCA to find packages to evolve. This allows us to maintain a set of evolution steps inside the core that would be common to all instances of Karl while still allowing for customer specific evolutions in the customization packages.
- [LP #449683](#) Evolution DB versions are now set at bootstrap time, whether called from application.py or the startover script. The startover script has been moved to core.
- [LP #449689](#) Added standalone.zcml for running Karl without a customization package.
- Moved OSI’s notion of ‘intranets’ (aka offices) into core Karl for use by other Karl instances.
- [LP #491984](#) Fixed bug where folder contents deletion warning was being used for any folderish object rather than just folders under the Files tab.
- [LP #492382](#) Added an argument for the form class to admin_edit_profile_view, allowing third party customizations to still use the view logic and just change the form validation.

3.14 (2009-09-08)

- Hide all states in workflow UI that aren’t current and have no valid exit transitions.
- Fixed error message in error page middleware.
- Merged ‘chrism_workflow’ branch.
- [LP #418695](#) Bold communities for which logged in user is moderator in “My communities” portlet.
- [LP #422571](#) Added convert_entities function to karl.views.utils. Updated atom entry adapters to convert entities in content.
- [LP #422572](#) Made some changes to atom feed based on feed validator recommendations: Added “updated” element to feed. Added rel=”self” attribute to “link” elements.
- Fixed bug discovered in alert digests—email recipients were not being properly passed as a list. Digests could not have worked at all. Surprised there was no bug report. (15 users in OSI have alert preferences set to digest.)
- [LP #422586](#) Enabled alert digests to send attachments via email.

3.13 (2009-08-26)

- Ignore emails with a header that indicates they were auto-generated, such as out of office replies. Like Mailman, Karl now looks for the non-standard but widely supported Precedence header, as well as the new, standard Auto-Submitted field.

3.12 (2009-08-19)

- [LP #413137](#) Export as CSV was producing a unicode header; WSGI only accepts byte strings.
- [LP #399427](#) Removed send_alert field from ICommunityContent interface.
- [LP #399427](#) Allow use of default for Alerts utility, making registration unnecessary except to shim in a dummy test implementation in unittests.
- [LP #412463](#) Publish atom feeds as escaped HTML rather than embedded XHTML.

3.11 (2009-08-17)

- [LP #414799](#) Made system name configurable in Karl error page wsgi middleware.
- [LP #414799](#) Scrubbed 'KARL' from UI.

3.10 (2009-08-12)

- [LP #412478](#) In mail-in, replace empty message body with warning message.

3.9 (2009-08-11)

- [LP #408946](#): Give visual LS feedback and pause on multiple words
- [LP #409495](#): Fix broken General KARL Error Screen in IE
- Disabled browser form autocomplete in the add user form (without this, the browser fills the password field with the current user's password).
- Log more info about dropped email messages.
- Made the mail white list case-insensitive.

3.8 (2009-08-06)

- Removed OSI-specific change password link logic from edit_profile view.
- The peopleconf utility now has the option to force reindexing of the people directory catalog.
- [LP #409408](#): IE refuses to download files over HTTPS when the Cache-Control header specifies no-cache or no-store. Switched to "private, must-revalidate", which seems to be the generally recommended header for dynamic apps.
- [LP #409499](#): Reference Manual delete produces TypeError

3.7 (2009-08-04)

- [LP #407445](#): Provide rounded corners on tag boxes in IE
- [LP #403648](#): Fix right margin in IE on anonymous layout
- Use the newer ISecurityWorkflow API (pass request in to all relevant methods).
- [LP #404205](#): For the new people directory, renamed the unconfigured “All KARL” tab to “All”. Use peopledirectory.xml to configure it. Also added the ability to filter reports by arbitrary (but fixed) catalog query parameters.
- [LP #408156](#): Added a catalog index that makes it possible to show only non-staff in a people directory report.
- [LP #405361](#): Selecting a letter in the new people directory did not survive pagination.
- Partial solution to [LP #407017](#): disable autocomplete in admin_edit_profile.html and validate changes to home_path.
- Added reverse look up for countries.
- [LP #407510](#): Show all fields in admin_edit_profile.html.
- Enabled text relevance ranking in search results.

3.6 (2009-07-23)

- Use resources rooted in “static” rather than in “static/custom”; anything in static is allowed to be overridden.
- [LP #400732](#): Reorganize and cleanup CSS to reduce file size and complexity.
- Use a start-time versioned URL for static resources. This implies that the “static_postfix” setting is no longer required (the version number is generated and consumed by the system itself, rather than requiring a version number to be set in configuration).
- Use a 5 year static resource expiration time to work around browser caching bugs.
- Use “repoze.enformed” package to do form validation and rendering; “form” templates are now inlined into their constituent “real” templates.
- Made FakeEmailDelivery quiet by default.
- Better fault tolerance when killing processes using Python < 2.6 via utilities.baseconverter._ProcTimeout
- Made the name of the logo image configurable (so that it can be a PNG rather than a GIF).
- [LP #398940](#), [LP #398951](#): Added spelling checker for TinyMCE editor. This requires the `aspell` command. Please see the buildout README.txt for instructions on installing Aspell.
- Moved the `ok.html` and `zodbinfo.html` views to karl core since all partners need them.

3.5.1 (2009-07-17)

- [LP #400767](#): Fixed AttributeError on activity listings.

3.5 (2009-07-16)

- [LP #383666](#): Paste from Word to blog posts emails content but drops from blogentry

- [LP #398914](#): Scale and crop uploaded profile photos to fit 75 x 100. The original image uploads are available under the name “source_photo”, for example, /profiles/admin/source_photo .
- [LP #390767](#): In the recent activity list, show the person who edited, rather than the original creator.
- [LP #396581](#): Most links to a comment should show the comment in context.
- [LP #397196](#): Added a page that links to admin tools (/static/admin.html)
- Updated paster template.
- [LP #399396](#): Fix styling on list items.
- [LP #399408](#): Reformat Network Events portlet to better display long titles

3.4 (2009-07-09)

- [LP #394355](#): Don’t commit changes to sqlite “pending messages” table if ZODB raises a conflict error.
- [LP #391264](#): Added an administrator-level user edit view.
- [LP #391259](#): Added an administrator-level user add view.
- [LP #397030](#): Use quarantine for messages that fail to process during mail-in.
- Got rid kludgy ‘.error’ file for mail-in, since the quarantine renders it obsolete.

3.3 (2009-07-06)

- Add fault tolerance to mail-in for message bodies with unknown non-unicode character encodings.
- Add a `karl_project` paster template (unfinished) in order to bootstrap a KARL customization. The code used is an amalgam of Tres’ `non_osi_template` package updated with recent changes to the OSI package.
- Forward compat: use the “repoze.bfg.view.static” helper rather than rolling our own view to serve static files in `karl.views.site`.
- [LP #392561](#): get ‘content_modified’ set correctly on communities when adding content.
- [LP #391234](#): Use a non-forked version of the repoze.who auth_tkt plugin (repoze.who 1.0.15, now in the “lemonade” index has the “max age” feature which made this fork necessary).
- [LP #391246](#): Removed concept of “vocabularies” as a persistently stored thing with indirection. Placed countries data in core karl package as const data.
- [LP #390868](#): Updated OSI logo.
- [LP #384841](#): Add ‘use_cache’ kw argument to CachingCatalog to disable cache for particular searches.
- [LP #391377](#): Moved settings such as ‘system_email_domain’ to karl.ini.
- Stop using a custom KarlSecurityPolicy; this policy was identical to the WhoInheritingACLSecurityPolicy in repoze.bfg 0.8+. Use that one instead.
- [LP #388096](#): Made a link to the community delete operation.
- [LP #391247](#): Refactored console scripts to make them easier to test and maintain. Renamed osi.ini to karl.ini.
- [LP #391251](#): Moved osi/utilities to the karl package.
- Graceful handling if invalid ‘To:’ address in mailin.

- Mailin can now signal that it is wedged by writing a file, '.error', to its Maildir when it encounters an error. This is easier to set up monitoring for than scraping the logs. Humans will still need to read the logs when an error is found.

3.2 (2009-06-24)

- [LP #387974](#): Made 'edit_acl.html' view reindex context in the 'allowed' index, as well as invalidating any cached catalog queries.
- Added a simpler people directory implementation to the KARL core.
- For text index converters that use external programs, added a timeout thread to kill hanging processes. Process is considered hanging after 5 seconds. This is to work around an error in wvConvert such that it will hang indefinitely for certain inputs.

3.1 (2009-06-16)

- [LP #387390](#): Add / enable delete profile view, deleting the corresponding user as well.
- [LP #336714](#): Added optional 'reason' argument to 'logout_view', to enable overriding the header value passed explaining why the user landed on the login form. Use this argument when returning the logout response from another view.
- [LP #385580](#): Have the "Back to Parent" link not be full width on the <a>.
- [LP #385268](#): Email index is converted to lower case to facilitate case insensitive search.
- [LP #385636](#): Better handling of existing users in invite new users form.

3.0 (2009-06-15)

- [LP #384096](#): Intersect text index search results last for advanced search, improving relevance ranking.
- Micro-speedups for "communities" page.
- [LP #386110](#):
 - o **Filter items in showtag view according to view permission of** authenticated user.
 - o Consolidated three showtag views to use same code.
 - o Fix double slashes in profile view.
 - o Make sure new user profiles get initialized with `__acl__`.

osi-production-20090611 (2009-06-11)

- Temporarily revert commit to use "natural" order of text index committed in osi-production-20090610 because caused search queries to ignore catalog security info.

osi-production-20090610 (2009-06-10)

- [LP #384096](#): Updated code for generic search to use "natural" order of text index, where possible.
- Fixed 'karl.views.people.show_profile_view' not to blow up when `userid != login`.

- Add member_name index for text searching of just member names. NOTE: This requires running reindex_catalog -p /profiles
- Improved performance of member search widget in add_member_view

osi-production-20090608 (2009-06-08)

- Switched to using a multi-adapter for footer (replaces hard-wired OSI branding).

osi-production-20090603 (2009-06-03)

- Made the lastfirst index case-insensitive
- [LP #382857](#): Sort community members by last name / first name.
- Use get_setting instead of looking ISettings.
- [LP #382576](#): Use 'method="get"' in the advanced search form. Also, gather vars for batching from either POST or GET submissions.
- grid: Fix initial sorting direction, and direction on the first click.
- grid: Make header borders collapse, and adjust column width calculations
- Added OfflineContextURL for enabling use of model_url outside of HTTP context, and registered OfflineContextURL as an adapter for OfflineRequest.
- [LP #382572](#):
 - o Ensure that community / profile tag listings are alpha-sorted.
- [LP #381671](#):
 - o Allow narrowing tagging APIs by user.
 - o Pass user to profile-specific invocations of getFrequency.
 - o Show better breadcrumbs in tag views.
 - o Pass user to 'getRelatedTags' in 'profile_showtag_view'.
 - o Show related tag links relative to profile / community / root.
- login: Disable all validation against spaces in the username.
- tagsearch: Fix tagsearch result list to never wrap, and extend its length for longer search results.

osi-production-20090531 (2009-05-31)

- No changes to this package.

osi-production-20090528 (2009-05-28)

- Initial version rolled out to replace KARL2.

karl.external_link_ticket

Unreleased

3.4 (2011-10-27)

- Pyramid updates

3.3 (2011-10-27)

- Bring up to date with bfg 1.1a5 (merge formish branch).

3.2 (2009-07-23)

- Update index url.

3.1 (2009-06-24)

- Disabled checking of REMOTE_HOST

3.0 (2009-06-15)

- Just updated version number and tagging scheme.

osi-production-20090611 (2009-06-11)

- No changes

osi-production-20090610 (2009-06-10)

- No changes

osi-production-20090608 (2009-06-08)

- No changes in this package.

osi-production-20090603 (2009-06-03)

- Changed authenticate_ticket to be consistent with the existing client-side code by accepting the key as the variable ticket.
- Made authenticte_ticket view accessible to anonymous users.

osi-production-20090531 (2009-05-31)

- No changes to this package.

osi-production-20090528 (2009-05-28)

- Initial version rolled out to replace KARL2.

karl.peopledir

Unreleased

- ...

3.6 (2009-12-15)

- Updated sync_osi_staff to use refactored scripting helpers from core.

3.5 (2009-09-08)

- Moved workflow over to repoze.workflow based system for script adds.

3.4 (2009-08-19)

- [LP #410442](#): trigger profile workflow when importing users.

3.3 (2009-08-04)

- Fix for [LP #399419](#): Change print and export csv view to use sort order from grid
- Changed the karl.peopledir package to use the new versioned static files view.

3.2.1 (2009-07-17)

- [LP #400743](#) - Fixed GSA sync

3.2 (2009-07-16)

- [LP #399336](#) - Provide OpenSearch view with full-text on OSI karl.peopledir

3.1 (2009-06-24)

- Moved profile change subscribers and the find_peopledirectory_catalog function to the KARL core.
- Updated ICatalogSearch registrations to match the KARL core. (Stopped using multi-adaptation)

3.0 (2009-06-15)

- Just updated version number and tagging scheme.

osi-production-20090611 (2009-06-11)

- No changes

osi-production-20090610 (2009-06-10)

- Updated ‘add_peopledir’ subscriber to put minimal required keys into the faux WSGI environment.
- Fixed two sync issues:
 - Group delete was not working because it was adding the XML element object to the list instead of the group’s title
 - Category Items were not removed from a profile if the category was no longer there

osi-production-20090608 (2009-06-08)

- Switched to using a multi-adapter for footer (replaces hard-wired OSI branding).

osi-production-20090603 (2009-06-03)

- No changes in this package.

osi-production-20090531 (2009-05-31)

- Strip whitespace before checking for blank string in column value.

osi-production-20090528 (2009-05-28)

- Initial version rolled out to replace KARL2.

Frequently Asked Questions

What is a Knowledge Management System (KMS)?

The general term “Knowledge Management System” (KMS) refers to a system for supporting the creation, capture, storage and dissemination of information in organizations. A KMS enables collaboration, co-creation of content, and efficient use of information resources by systemizing activities ranging from project management to inter-office communication. A KMS also serves as a knowledge repository for the organization that is searchable and easy to access.

What is KARL?

KARL is an open source, web-based product for collaboration, organizational intranets and knowledge management. Developed by the [Open Society Foundations](#) (OSF), it was first introduced in 2008 and is now used by a broad range of international organizations including [Oxfam GB](#) and OSF.

Where does the name “KARL” come from?

Two sources. As an acronym, KARL stands for the “Knowledge And Resource Locator.” Also, Karl Popper was a primary influence on George Soros, founder of the Open Society Institute. Mr. Popper originated the ideas of an open, civil society with transparency.

Which license does KARL use?

KARL is licensed under the GPL.

Why choose KARL for your KMS?

Distributed teams need to share their critical business knowledge in order to achieve their organizations’ goals. KARL addresses this need by providing:

- A set of intuitive and well-integrated tools
- Accessibility and usability for everyone in a distributed organization
- Capability to collaborate securely with individuals who are external to an organization
- An unlimited number of communities to support organizations’ growth
- Enterprise-level quality and fast performances through a solid architecture

How does KARL support collaboration?

KARL allows collaboration within on-line spaces called “Communities”. Any employee can create a community for any number of people and there is no limit to the number of communities an organization can create. One of the greatest benefits of KARL communities is that moderators can invite individuals from outside of the organization to join. KARL communities can include partners, vendors, subject matter experts and anyone with whom there is collaboration on a project.

The following set of simple, well-integrated tools are available within each community:

- **Fully Integrated Blog** - each community has access to a shared blog, which serves as a place for users to post updates, new ideas, and other information, and where other members of the community may comment. Blogs are also integrated with email for easy content creation and alerts.
- **Layered Group Calendar** - each community has its own shared calendar so that its users can easily manage events pertaining to that specific community. The KARL calendar has convenient daily, weekly, monthly and list views and can be aggregated across community spaces.
- **Collaborative Wiki** - each community is given its own wiki where members can quickly and easily add and edit pages by using the rich text editor central to KARL. Wiki pages support images, embedded media objects, and links to other community content.
- **Secure File Sharing** - For organizations whose processes rely on a large number of documents, KARL provides the capability to securely share and store documents, pictures, and various media in a repository inside each community.

How does KARL foster intra-organization communication?

Nowadays most organizations have distributed teams and the need to disseminate information to various offices around the globe is paramount. KARL introduces the concept of “offices”, which allows users to share and view information related to a specific office.

The KARL office landing page typically consists of office-specific navigation links in the left column, office-specific content in the right column, and organization-wide content in the center. This setup allows for organization-wide communication, as well as customized communication inside each office.

These online office spaces can have their own intranet-like landing page views, and provide a dedicated space for files, forums (a feature specific to office spaces), and events. Offices can also display content from corporate or other locations via RSS feeds.

How easy is it to organize and find content in KARL?

Whenever new content is added to KARL, the content creator has the option to send an e-mail notification to all members of a community. Each member of the community also has the ability to manage the frequency of receiving such notifications.

Additionally, KARL incorporates tagging at every level of the application. Community members can tag content, files, blog posts, and wiki pages with their own custom keywords and allow others to browse content by those keywords. A tag cloud helps to aggregate content at both the community and organizational levels.

KARL also has powerful search capabilities. The application supports full-text indexing out of the box, which means that when users search a term, all KARL content—including files—is queried. KARL automatically presents search results in the form of a “live search”, or a drop-down menu listing top relevant results organized by categories, such as people, posts or files.

Users can explore what others are doing on KARL by using the “Feeds” feature. Feeds provide a real-time list of updates on KARL that refreshes automatically every 30 seconds. As members add new content or edit existing content, the feeds provide a running view of the changes being made across an entire KARL instance.

Who is using KARL?

KARL was originally developed by the Open Society Foundation, an NGO operating in over 60 countries around the world. Since the launch of KARL, several other NGO’s, both large and small, have started using KARL to manage their global operations and to communicate and collaborate more effectively. Other NGO’s that are using KARL include Oxfam GB, the Eurasia Foundation, and others working in the areas of human rights, education, and media.

Although KARL was originally developed for the needs of NGO’s, it is increasingly gaining popularity with for-profit organizations.

How scalable is KARL?

KARL was originally developed for a large, international NGO and is capable of supporting the knowledge management needs of a large organization. OSF currently has nearly 5,000 users on their KARL system.

The simplicity of the user interface and the ease of hosting an instance of KARL also makes it an appropriate solution for a small organization. Currently, a UK-based media NGO with 25 employees is using KARL to manage their project-oriented operations, which involves staff and partners at several locations in Africa, as well as in the UK.

Is KARL secure?

As demonstrated by a recent third-party security audit, KARL's security model is immune to classic threats. The application server and host system are designed in a sandboxed execution model that does not provide the breach opportunities of typical applications. Moreover, the granular security in KARL itself, with staff and affiliate roles tied to public and private communities and content, allows only authorized users to see privileged content. This granular security even extends to the search engine, a capability usually unavailable in competing systems.

What do I need to host my KARL site?

KARL is available as a hosted service and various options are available depending on the size and storage needs of the organization. *Six Feet Up* is the official hosting provider of KARL and more information can be found at <http://www.sixfeetup.com/solutions/karl>

As an open source (GPL) solution, KARL can also be downloaded for free at KARL Project and can run on Linux, Unix, Mac OS X, FreeBSD and Solaris. In order to take advantage of the seamless product updates and 24/7 customer support, most organizations elect the hosted version of KARL.

Additional support and customization services are also available directly from Six Feet Up and from a growing network of developers who are continuously working to add to and improve the features available on KARL.

Can I get hosting or consulting for KARL?

Yes to both. *Contact Six Feet Up* for recommendations based on what you would like to do.

How does KARL compare with SharePoint and Ning?

KARL is often compared to other collaboration solutions such as Ning and SharePoint. While there are many similar features available in each platform, there are also some differences.

The primary aim of Ning is to allow users to build their own social network. KARL differs in the sense that it is an enterprise-level knowledge management system with well integrated features and robust security.

The primary strengths of SharePoint are its document management and enterprise search features. The collaboration features of SharePoint are less flexible to end users. As an open source solution, KARL offers many of the same features as SharePoint, but at a much lower overall cost.

Why no Windows version?

As of the 3.0 release, KARL is focused on the needs of organizations deploying KARL (OSI and others), plus the development team that makes and customizes KARL.

Neither of these populations are Windows users. It is feasible for a competent Python developer to get KARL running under Windows, but is not part of the funded roadmap for the core development team.

The most straightforward solution on Windows is to install a virtual machine environment for Windows, such as Sun's VirtualBox. Inside of this environment, install a Linux distribution such as Ubuntu. You gain the advantage of using a configuration that is common to other users and developers.

How can I take a closer look at KARL?

A live demo of the KARL product is available online at [Demo page](#) or at <http://karldemo.com>. Actual data can be entered directly into the site to experience the user functionality and performance of KARL. Prospective KARL clients can also schedule a live web demo in order to see a fully functioning system. For any additional questions, please contact the KARL Support Team at karl-support@sixfeetup.com

Architecture and Technologies

The software stack in KARL reflects history as a [Plone](#) application, as well as the backgrounds of the team involved throughout development.

At a high level, the technology stack as of KARL 3.0 uses:

- ***nix.** Linux, FreeBSD, and other flavors of Unix such as OS X are in use by the KARL developers. Linux is used for the current hosting of KARL3 for OSI.
- **Python.** The [Python](#) programming language is used for the implementation of KARL.
- **Pyramid.** Although much of the web framework used by KARL comes from a number of popular Python tools, [Pyramid](#) is the web microframework that glues the application together.
- **ZODB object database.** Content is stored and searched using the object database from the [Zope](#) project, also used by Plone.

More detail is available on dev.karlproject.org in the [architecture guide](#).

Technologies

In development and deployment, KARL 3.0 uses a number of technologies from two basic backgrounds: Python and Zope. KARL itself has very little “framework” or architecture, which was certainly a design goal (KARL isn’t a platform, it is an end-user application.)

Python Technologies

This group of technologies are used beyond the Zope/Plone/KARL community and should be familiar to people familiar with basic Python web development.

- **WSGI** for generic Python web applications.
- **WebOb** for handling web requests and responses in a standard API.
- **Paste** to wire together application configurations in a simple, declarative format.
- **virtualenv** to give each deployment a reproducible, isolated Python environment.
- **Eggs** as the package distribution facility.
- **repoze.who** for generic authentication and group handling.
- **Supervisor** to manage server processes.
- **TinyMCE** as a widely-used (beyond Python) browser-based editor.
- **jQuery and jQuery UI** as a widely-used (beyond Python) JavaScript framework for Ajax.
- **mod_wsgi** as one deployment choice for running KARL directly inside Apache.
- **nose** for a unit testing framework.

- **Twill** to give functional testing of web requests.

Zope Technologies

Reflecting the project's background in Plone and Zope, a number of battle-tested technologies were used from the world of Zope.

- **Interfaces** as a “type” system for objects and behavior.
- **Adapters** to provide pluggable customization points.
- **Utilities** to provide pluggable services across the system.
- **Traversal** to represent hierarchies in URLs as containment in the object system.
- **Views** to interact with web requests and return a response.
- **Events** to provide uniform actions on certain kinds of operations.
- **Security** as a very rich architecture for access control, including filtering of search results and other queries.
- **ZODB** (including ZEO, middleware transactions, and blobs) to store, retrieve, index, and query schemaless objects.
- **ZPT** as the templating language, via the Chameleon implementation.
- **Catalog** as an indexing and searching facility.
- **PAS** to manage information about users and groups.
- **ZCML** to allow customization points by different deployments of KARL.
- **buildout** to give repeatable, reliable installation and ongoing updating of the software.

KARL for Developers

Developers

Code is hosted in GitHub under the [karlproject](#) project. The [dev-buildout](#) is the correct starting point.

IRC

You can find us on IRC at #karl on freenode.