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Reference Manual (Foswiki-1.0.9, Sun, 17 Jan 2010, build 6075)

This page contains all documentation topics as one long, complete reference sheet.

Related Topics: UserDocumentationCategory, AdminDocumentationCategory

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System Requirements

Server and client requirements

Low client and server base requirements are core features that keep Foswiki widely deployable, particularly across a range of browser platforms and versions. Many extensions exist which enhance and expand Foswiki's capabilities; they may have additional requirements.

Server Requirements

The code is written in Perl 5, and uses a number of shell commands from perl. The default package requires RCS (Revision Control System), a GNU Free Software package. Foswiki is developed in a basic Linux/Apache environment. It also works with Microsoft Windows, and should have no problem on any other platform that meets the requirements.

Resource	Required Server Environment *
Perl	5.6.1 or higher (5.8.4 or higher is recommended)
RCS	5.7 or higher (including GNU `diff`) Optional, Foswiki includes a pure perl implementation of RCS that can be used instead (although it's slower)
GNU `diff`	GNU `diff` 2.7 or higher is required when not using the all-Perl RcsLite. Install on PATH if not included with RCS (check version with `diff -v`) Must be the version used by RCS, to avoid problems with binary attachments - RCS may have hard-coded path to `diff`
GNU `patch`	For upgrades only: GNU `patch` is required when patching the code using patches in diff format submitted by the community.
GNU `fgrep`, `egrep`	Modify command line parameters in configure if you use non-GNU grep programs
Cron/scheduler	• Unix: `cron` • Windows: `cron` equivalents
Web server	Apache is well supported; see Foswiki:Support.InstallingOnSpecificPlatforms for alternative options.

Perl Modules

A complete list of the required and optional Perl modules can be found in `lib/DEPENDENCIES`.

Most of them will probably already be available in your installation. You can check version numbers with the `configure` script, or if you're still trying to get to that point, check from the command line like this:

```
perl -e 'use FileHandle; print $FileHandle::VERSION."\n"'
```

Client Requirements

The standard installation has relatively low browser requirements:

- HTML 4 compliant
- Cookies, if persistent sessions are required

CSS and Javascript are used in most skins. Some skins will require more recent releases of browsers. The default skin is tested on IE 6, 7, Safari 3.0, and recent Mozilla based browsers (such as Firefox).

You can easily select a balance of browser capability versus look and feel. Try the installed skins at SkinBrowser and more at Foswiki:Extensions.SkinPackage.

Important note about Plugins

- Plugins can require just about anything - browser-specific functions, stylesheets (CSS), Java applets, cookies, specific Perl modules,... - check the individual Plugin specs.

Related Topics: AdminDocumentationCategory

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Installation Guide

This guide describes the steps for manually installing Foswiki, with specific steps for installations on Linux with the Apache web server. If you are using a different web server or operating system, in addition to reviewing this document, check any additional information specific to your platform at Foswiki:Support.SupplementalDocuments. Foswiki:Support.SupplementalDocuments also has information for other scenarios, such as shared web hosting environments.

These installation instructions are also available online at Foswiki:System.InstallationGuide, and are available within your Foswiki installation at `System.InstallationGuide` (the InstallationGuide topic in the System web).

For information on upgrades, please also refer to Foswiki:System.UpgradeGuide. A static HTML version of this document, `UpgradeGuide.html`, is included in the root of your Foswiki distribution.

System Requirements

Please see the section "Foswiki system requirements" for the server and client requirements to run Foswiki, including the Perl modules required on the server. If you need to install any Perl libraries from CPAN for use by Foswiki, see Foswiki:Support.HowToInstallCpanModules for more information.

Preparing to install

Before attempting to install Foswiki, you are encouraged to review the Foswiki:System.AdminSkillsAssumptions. This guide assumes the person installing Foswiki has a basic knowledge of server administration on the system on which Foswiki is to be installed. While it is possible to install Foswiki with FTP access alone (for example, on a hosted site), it is tricky and may require additional support from your hosting service (for example, in setting file ownership and installing missing perl CPAN libraries).

If you are upgrading from a previous Foswiki version or from a TWiki installation, please refer to Foswiki:System.UpgradeGuide. A static HTML version of this document, `UpgradeGuide.html`, is included in the root of your Foswiki distribution.

Verify that your server meets the Foswiki system requirements, including having the minimum required Perl version and all required Perl modules installed. If you need to install any Perl libraries from CPAN for use by Foswiki, see Foswiki:Support.HowToInstallCpanModules for more information.

If you need help, feel free to ask a question in the Foswiki:Support web or on Foswiki:Community.InternetRelayChat (irc.freenode.net, channel #foswiki).

Basic installation: getting Foswiki up and running

To install Foswiki, complete the following steps:

1. **Download** and **unpack** the Foswiki distribution.
2. **Set the file and directory permissions** for the installation.
3. **Configure** the **locations of the Perl executable** and the **Foswiki modules**.
4. **Configure the web server**.
5. **Configure Foswiki**.
6. **Enable authentication of users** (if desired).

7. **Define the administrator users**.

Download and unpack the Foswiki distribution

Download the Foswiki distribution from http://foswiki.org/Download

Unpack the distribution file: Change to the directory where you want to place the Foswiki directory. Unzip or untar and gunzip the distribution; a new subdirectory called Foswiki-VERSION will be created. You can rename this subdirectory to a shorter name. For the rest of this document, this subdirectory is assumed to be at `/path/to/foswiki`.

- **Note:** Foswiki does not support directory paths that contain spaces, so ensure that all of its directory paths do not contain any spaces (particularly on Windows).

If you do not have shell access to your web server host, see the section "Uploading the Foswiki distribution to your web server host".

Set the file and directory permissions for the installation

Set up access file and directory rights, as well as file ownership, as required by your web server configuration so that the web server user (the user used by the web server to run CGI programs) can read and write within the `foswiki` directory tree.

Note: for more information on the appropriate permissions to ensure security for your Foswiki data, see Foswiki:Support.SecuringYourSite.

The default file and directory access permissions as set by the distribution define a reasonable security level that will work for many types of installations, including shared hosting. Nonetheless, you should verify that the web server user has read access to all files and directories beneath the `foswiki` directory, and execute access for all directories. Also verify that the `data` and `pub` directories and all the subdirectories and files beneath them allow write access for the web server user.

- **Warning:** Do not just run a `chmod -R 770 foswiki`. Providing execute access to all files is potentially dangerous. This is a common mistake made by Foswiki installers. See Foswiki:Support.SettingFileAccessRightsLinuxUnix for a sample set of Unix commands to set the file and directory permissions.

It is possible to define tighter access permissions than the default ones; how tight they should be depends on your web server environment and local needs. Typically you should limit all access from others if the web server machine has login access for users other than root and the web server administrator. For a dedicated web server that just runs Foswiki and has limited login access, the default access permissions have a good safety level.

If you have root user permissions, then for additional security, you can change the ownership of the `foswiki` directory tree to the web server user, using the command `chown -R user:group /path/to/foswiki`. The web server username varies in different installations; here are some sample commands for various Linux distributions:

- RedHat, Fedora, CentOS, Gentoo, Mandriva : `chown -R apache:apache /path/to/foswiki`
- debian/Ubuntu/Kubuntu : `chown -R www-data:www-data /path/to/foswiki`
- Suse : `chown -R wwwrun:www /path/to/foswiki`

If Foswiki stops working after you applied a change in access permissions and you wish to restore the original permissions, run the Unix commands located at Foswiki:Support.SettingFileAccessRightsLinuxUnix.

Configure the locations of the Perl executable and the Foswiki modules

Make sure the Foswiki scripts can be executed by the web server. The default location of Perl is `/usr/bin/perl`. **If it's somewhere else**, change the path to Perl in the first line of each script (you may have to give yourself write permission first) in the `bin` and `tools` directories. You can use the `tools/rewriteshbang.pl` script to do this; for example:

```
cd /path/to/foswiki/bin
/path/to/perl ../tools/rewriteshbang.pl
# At the prompt, enter the full path to the perl executable, including
# the full filename of the executable. You will be prompted twice for
# this information in order to confirm it.
cd /path/to/foswiki/tools
/path/to/perl rewriteshbang.pl
```

Some web servers require a special extension on perl script files (e.g. `.cgi` or `.pl`). This is not normally required with the Apache web server, though some hosted web servers are configured to require it. If the documentation for your web server indicates that a special extension is necessary, rename all the executable scripts in `bin`; that is, rename `bin/view` to `bin/view.pl`, and so on. When configuring Foswiki (see the section "Configure Foswiki"), set the `ScriptSuffix` option to the special extension.

Create the file LocalLib.cfg located at `bin/LocalLib.cfg`

- In the `bin` directory, copy the template file `LocalLib.cfg.txt` to `LocalLib.cfg`. Make sure the ownership and access rights of the copy are the same as LocalLib.cfg.txt.
- Edit `bin/LocalLib.cfg` so that `$foswikiLibPath` is set to the absolute file path of your `lib` directory. For example: `/path/to/foswiki/lib`.
- If you need to install additional CPAN modules, but can't update the main Perl installation files on the server, you can set `$CPANBASE` to point to your personal CPAN install. Don't forget that the web server user has to be able to read those files as well.

Configure the web server

First choose the best configuration method for your web server. With Apache, there are two ways to configure it: a config file included from httpd.conf or .htaccess files.

- **Apache config file:** The recommended method is using a config file. With a config file you can put the entire Foswiki configuration in ONE file (typically named `foswiki.conf`). Performance is much better with a config file, and one file gives the best overview and ensures that you get a safe installation . However to use a config file you need root or sudo access to stop and start Apache. The Foswiki apache config file is included from the main Apache config file http.conf. Most distributions have a directory from which any file that ends with `.conf` gets included when you restart Apache (Example RedHat/Fedora/Centos: `/etc/httpd/conf.d`). If you use a virtual host setup in Apache you should include the `foswiki.conf` file from inside the desired virtual host config in your Apache configuration.
- **.htaccess files:** This method should only be used when you cannot use a config file. Performance is slower as Apache must search through *all* applicable directories for any `.htaccess` files on each page access. Normally this is the only way to control Apache in a shared host environment where you have no root or sudo privileges.

If you are using a config file:

- The easiest and best way is to use the Foswiki:Support.ApacheConfigGenerator tool to generate a safe, working config file for your Foswiki installation, based on the options you choose in the tool.
- If you can't use the online configuration generator, a sample config file called `foswiki_httpd_conf.txt` can be found in the root of the foswiki installation.
- Ensure that web access is denied to all Foswiki subdirectories other than `bin` and `pub`. The Foswiki:Support.ApacheConfigGenerator tool will generate the appropriate settings; the `foswiki_httpd_conf.txt` file also has examples of configuring Apache appropriately.
- Ensure there is either a `ScriptAlias` directive for the `bin` subdirectory, or an `Alias` directive with `SetHandler cgi-script` and `Options ExecCGI` directives for the `bin` subdirectory, so that the `bin` scripts will be executed by Apache.
- **Note:** you must restart Apache after making changes to your config files for the changes to take effect.

If you are using a .htaccess file:

- In the root of the foswiki installation and in the `bin` directory, there are sample `.htaccess` files for various subdirectories in your installation. Each file has help text explaining how to modify it for your configuration. For more information, see Foswiki:Support.SupplementalDocuments.

location and name of sample .htaccess file	copy sample file to the following location
`foswiki/root-htaccess.txt`	`foswiki/.htaccess`
`foswiki/bin/.htaccess.txt`	`foswiki/bin/.htaccess`
`foswiki/pub-htaccess.txt`	`foswiki/pub/.htaccess`
`foswiki/subdir-htaccess.txt`	`.htaccess` in all other subdirectories below `foswiki`

- Ensure that web access is denied to all Foswiki subdirectories other than `bin` and `pub`. The sample `.htaccess` files show how to configure Apache appropriately.
- Ensure that the `foswiki/bin/.htaccess` files contains the line `SetHandler cgi-script` so that all scripts in the `bin` directory will be executed by Apache.

Turn off any kind of PHP, Perl, Python, Server Side Includes, or other software execution mechanisms supported by your web server in the `pub` directory. For example, most Linux distributions have a default Apache installation with PHP and server side include (SSI) enabled. This would allow PHP scripts uploaded as attachments to be executed, which is a security risk, so it should be disabled in the Apache configuration with `php_admin_flag engine off`.

Different script execution mechanisms are disabled in different ways; see your web server configuration and documentation for more details.

Protect the configure script: You should never leave the `configure` script open to the public. Limit access to the `bin/configure` script to either localhost, an IP address or a specific user using basic Apache authentication. The Foswiki:Support.ApacheConfigGenerator lets you setup who has access to the `configure` script. Also see the `foswiki-httpd-conf.txt` or `bin/.htaccess.txt` file for an example of the setting required to protect the `configure` script.

To limit access to a particular user, set up a `.htpasswd` file that contains the user name and password that Apache will use to authenticate the user:

- Change to the `foswiki/data` directory.
- Issue the command `htpasswd -c .htpasswd <username>`, where <username> is the name of the user you will use to access the `configure` script. *Choose the username with care:* the username cannot be an existing login name for your Foswiki installation, nor can it be used later on to register in Foswiki. Enter a password when prompted.

The Foswiki:Support.ApacheConfigGenerator tool and the sample config files and .htaccess files show how to configure Apache so that the `configure` web page will be protected using the user and password held in the

`data/.htpasswd` file. The Apache config file or .htaccess file will have a `Require user <username>` directive to restrict access to the `configure` script. Ensure the user specified in the directive matches the <username> you used when creating the .htpasswd file.

Note: In addition to any web server security protection that you have set up, when saving any configuration settings for the first time on the `configure` web page, you will be prompted to set a configuration password. This password must be entered on all subsequent configuration changes, and is also used to log in via the internal admin link (see the section "Define the administrator user(s)"). Even after a `configure` password has been set, access to the `configure` page should still be restricted by the web server, in order to avoid revealing internal information to potential attackers.

For more information, refer to Foswiki:Support.ProtectingYourConfiguration.

Configure Foswiki

Run the `configure` script from your browser: enter `http://yourdomain/foswiki/bin/configure` into your browser address bar.

- When you access the `configure` web page for the first time, you can only edit the section `General Path Settings`. Make any required changes, and save the settings, whether or not you needed to make any changes. You will be prompted to set a password for the `configure` page: this password must be entered for all subsequent configuration changes, and is also used to log in via the internal admin link (see the section "Define the administrator user(s)"). Note the configuration password is separate from any web server security you have set up for the `configure` web page (see "Protect the configure script").
- Continue configuring Foswiki. Resolve any errors or warnings highlighted on the configure page.
- If your web server can be accessed by more than one domain name make sure to add the additional alternative URLs to `{PermittedRedirectHostUrls}`
- Setup the *Mail and Proxies* section. The `{WebMasterEmail}` and `{SMTP}{MAILHOST}` settings must be defined so Foswiki can send registration emails. Many ISPs have introduced authentication when sending emails to fight spam so you may also have to set `{SMTP}{Username}` and `{SMTP}{Password}`. If you do not want to enable sending registration emails or want to enable it later you can uncheck `{EnableEmail}`. If your server is behind a firewall with a proxy, and you wish to install extensions via `configure`, you may have to set `{PROXY}{HOST}` and `{PROXY}{PORT}`.

If there is a problem with your setup that prevents you from accessing the `configure` page, you can configure Foswiki manually.

Enable authentication of users

By enabling authentication, you can control access to your site and track the activity of your users. **This is particularly important for sites that are publicly accessible on the web.** You are strongly encouraged to read System.UserAuthentication and Foswiki:Support.UserAuthenticationSupplement for further information about managing users and access controls for your Foswiki site.

The most common authentication methods used for public Foswiki installations are Template Login and Apache Login. They have the following relative advantages:

- Template Login can be set up without any web server configuration, and users can log off without restarting the browser. As the login page is just a Wiki page, you can customize it to suit your needs.

- Apache Login allows you to use any Apache-module based authentication scheme, such as `mod_auth_ldap` or `mod_auth_mysql`. However, as your browser is caching your login, you must restart the browser to log out.

Note that the password databases for both of these authentication mechanisms are compatible, so you can switch between them at a later date.

To make it easier to follow the instructions in this section, you can view this installation guide using your Foswiki site by entering `System.InstallationGuide` into the "Jump" text box. By doing this instead of using the `INSTALL.html` file from the distribution, you will be able to use the embedded hyperlinks to jump directly to the referenced pages.

Template Login authentication

With Template Login enabled, when Foswiki needs to authenticate the user, it will redirect to a login web page. A list of all users is shown in the `Main.WikiUsers` topic.

To setup Template Login, perform the following steps:

1. **Configure Template Login.** Under the `Security Settings` pane of the `configure` page:
    1. Select `Foswiki::LoginManager::TemplateLogin` for `{LoginManager}`.
    2. Select `Foswiki::Users::HtPasswdUser` for `{PasswordManager}`.
    3. Select `Foswiki::Users::TopicUserMapping` for `{UserMappingManager}`.
    4. Save your settings.
2. **Verify that registration works.** Register yourself using the `System.UserRegistration` topic in your Foswiki installation. Note if you are viewing this page via the `INSTALL.html` file, then you can access the user registration page by entering `System.UserRegistration` into the "Jump" text box at the top right of any Foswiki page in your installation.
   Check that the password manager recognizes the new user by verifying that a new line is added to the `foswiki/data/.htpassswd` file, with the username and encrypted password. If the user and password information was not added, you probably got a path wrong, or the directory permissions on `foswiki/data` or `foswiki/data/.htpasswd` may not be set to allow the web server user to modify the file.
3. **Check that authentication works.** Edit a topic by clicking on the `Edit` link at the top or bottom of a topic. If you have been authenticated, then you will see the edit page; otherwise, you will see an error message.

As Template Login uses a wiki page for its login prompt, there is a great deal of flexibility in customizing the login page for your purposes.

Apache Login authentication

With Apache Login enabled, when Foswiki needs to authenticate the user, the standard HTTP authentication mechanism is used: the browser itself will prompt for a user name and password.

Note: Apache Login is required for Apache-based login methods such as mod_ldap.

To setup Apache Login, perform the following steps:

1. **Configure Apache Login.** Under the `Security Settings` pane of the `configure` page:
    1. Select `Foswiki::LoginManager::ApacheLogin` for `{LoginManager}`.
    2. Select `Foswiki::Users::HtPasswdUser` for `{PasswordManager}`.
    3. Select `Foswiki::Users::TopicUserMapping` for `{UserMappingManager}`.
    4. Save your settings.

5. Configure your Apache settings for HTTP authentication. Use the Foswiki:Support.ApacheConfigGenerator tool or the `foswiki/bin/.htaccess` file to set the following Apache directives on the `bin` scripts:

```
<FilesMatch "(attach|edit|manage|rename|save|upload|mail|logon|rest|.*a
require valid-user
</FilesMatch>
```

   You can also refer to the sample `foswiki_httpd_conf.txt` and `bin/.htaccess.txt` files to see how the appropriate Apache directives are specified.

2. **Verify that registration works.** Register yourself using the `System.UserRegistration` topic in your Foswiki installation. Note if you are viewing this page via the `INSTALL.html` file, then you can access the user registration page by entering `System.UserRegistration` into the "Jump" text box at the top right of any Foswiki page in your installation.
   Check that the password manager recognizes the new user by verifying that a new line is added to the `foswiki/data/.htpasswd` file, with the username and encrypted password. If the user and password information was not added, you probably got a path wrong, or the directory permissions on `foswiki/data` or `foswiki/data/.htpasswd` may not be set to allow the web server user to modify the file.
3. **Check that authentication works.** Edit a topic by clicking on the `Edit` link at the top or bottom of a topic. If you have been authenticated, then you will see the edit page; otherwise, you will see an error message.

Choose search algorithm based on your platform

Under Store Settings in configure you will find the setting {RCS}{SearchAlgorithm}.

By default it is set to Foswiki::Store::SearchAlgorithms::Forking which is what you should keep if you install Foswiki in Linux or any other Unix type operating system.

If you install Foswiki on a Windows server, using an external grep program can create problems because of limitations in the length of command lines. You may be able to run with Forking in Windows if your directory path to Foswiki is kept short (short directory names and few levels). The safe setting for Windows is Foswiki::Store::SearchAlgorithms::PurePerl.

Define the administrator user(s)

Administrators have read and write access to any topic, regardless of any access controls that have been applied to the topic or its web. After installing Foswiki, you should register a user that you will use to administer Foswiki. To make this user an administrator, add the WikiName for the user to the `AdminGroup`, defined in the `Main.AdminGroup` topic in your Foswiki installation.

To make it easier to follow the instructions in this section, you can view this installation guide using your Foswiki site by entering `System.InstallationGuide` into the "Jump" text box. By doing this instead of using the `INSTALL.html` file from the distribution, you will be able to use the embedded hyperlinks to jump directly to the referenced pages.

To add an initial administrator to the `AdminGroup`, perform the following steps:

- If you are not already logged in with your WikiName, then login.
- Go to the `Main.AdminGroup` topic and select the "internal admin login" link. Login using the password you set on the `configure` page.

- After logging as the internal admin, edit the `Main.AdminGroup` topic. Follow the instructions on the page carefully and add your WikiName to the group.
- Test that you have been added successfully: On the `Main.AdminGroup` page, select the "Logout link" and logout from being the internal admin. Select the "Edit" link for the `Main.AdminGroup` page. If you successfully added yourself as an admin user, you should see the edit page.

Once the `AdminGroup` is no longer empty, then any member of the group can add subsequent members — you do not have to use the internal admin login.

To more easily debug access control issues, you may want to have a regular Foswiki user account for daily use, and a special one that belongs to the `AdminGroup` that you use only for administering your Foswiki site. See Foswiki:System.AccessControl for more information on access controls and user groups.

Congratulations!

You now have a basic installation running. At this point you can just point your Web browser at `http://yourdomain.com/foswiki/bin/view` and start using your Foswiki site.

In order to keep your user, group, and site configuration information separate from the actual content of your site, it is recommended that you create a new web in which your site's pages will reside. See Foswiki:System.ManagingWebs for more information on Wiki webs and how to create one.

Beyond the basic installation

Once you have Foswiki installed and running, you can perform one or more of the following steps to tailor your installation to your needs. Many of the references in this section refer to topics within your Foswiki installation. For example, `System.Skins` refers to the `Skins` topic in your System web. To go directly to a topic, enter the full topic name, such as `System.Skins`, into the "Jump" text box at the top right of any Foswiki page.

To make it easier to follow the instructions in this section, you can view this installation guide using your Foswiki site by entering `System.InstallationGuide` into the "Jump" text box. By doing this instead of using the `INSTALL.html` file from the distribution, you will be able to use the embedded hyperlinks to jump directly to the referenced pages.

All of the Foswiki documentation can also be found online in the Foswiki documentation section (the "System" web) of the Foswiki web site.

Note the `configure` page mentioned in this section is accessed by visiting `http://yourdomain/foswiki/bin/configure` your web browser.

Site configuration and maintenance

Set Foswiki Preferences

Preferences for customizing many aspects of Foswiki are set by editing `Main.SitePreferences`. If a given preference is not set in `Main.SitePreferences`, then a default value is picked up from `System.DefaultPreferences`, if present, or, for extensions, from the extension topics.

To simplify your upgrades, do not modify `System.DefaultPreferences`. Instead, copy any settings you want to change from `System.DefaultPreferences` to `Main.SitePreferences`.

To see the available preferences that can be set, look through `System.DefaultPreferences`.

If, for some reason, you wish to pick up default preferences from a different topic, you can set the location in the `Miscellaneous settings` pane of the `configure` page, in the `{SitePrefsTopicName}` setting (visible when Expert mode is enabled). It is recommended that you leave this setting to its default value, `DefaultPreferences`.

Select the desired security level

Foswiki has a many security features that can be enabled/disabled and adjusted to suit your needs.

In many cases enabling a security feature prevents other features. It is a balance that the administrator has to choose depending on the purpose of the Foswiki installation (confidential vs public knowledge), the type of installation (intranet vs internet), and your type of business.

A new administrator is encouraged to read Foswiki:Support.SecurityFeatures which gives a walkthrough of the different security aspects and how to set the appropriate configuration settings. Note that that some security settings are only visible in configure in "expert mode" which you enter by clicking the "Yes, I've read all the documentation" button at the top of the configure screen.

Enable Email Notification

Each web has an automatic email notification service that sends you an email with links to all of the topics modified since the last alert. To enable this service:

1. Confirm the Mail and Proxies settings on the `configure` page.
2. Setup a cron job (or equivalent) to call the `tools/mailnotify` script, as described in the System.MailerContrib topic.

Automate removal of expired sessions and lease files

By default Foswiki cleans out expired session and lease files each time any topic is viewed, but this has a performance cost. Instead you may wish to schedule a cron job (or equivalent) to run the `tools/tick_foswiki.pl` script, and set a negative value on the `configure` page for `{Sessions}{ExpireAfter}`. For more details, read System.CommandAndCGIScripts#tick_foswiki_pl.

Enable WebStatistics

You can manually or automatically generate a listing of the most popular pages for each web, based on number of visits. For information on setting up this feature, see the System.SiteTools topic.

Enable Localisation

Foswiki supports displaying national (non-ASCII) characters, and using different languages for its basic interface elements. To configure localisation, modify the `Localisation` section of the `configure` page. For more information, see Foswiki:Support.InternationalizationSupplement.

Customizing your site

Customize pages for managing personal information

If you are not using Foswiki to manage your users' passwords or email addresses, or would just like to enhance the default pages, then modify the following topics accordingly with information appropriate for your site:

- System.ChangePassword
- System.ResetPassword
- System.ChangeEmailAddress

Customize the user topic for new users

When a new user registers on your Foswiki site, a topic with a name corresponding to the user's WikiName is created in the Main web: this topic is the user's user topic. The user topic is based on the Main.NewUserTemplate? topic; if it is not present, then System.NewUserTemplate (and its associated System.UserForm) is used as a default. If you want to customize the user topic for your users, copy System.NewUserTemplate to Main.NewUserTemplate?, and System.UserForm to Main.UserForm?, and make your changes to Main.NewUserTemplate? and Main.UserForm?. (See Foswiki:System.ManagingTopics#CopyTopic for instructions on copying a topic.)

You can edit these topics to suit your needs, such as the following:

- Customize the user topic for your site.
- Add an ALLOWTOPICCHANGE preference setting to Main.NewUserTemplate? so only the user can edit their own user topic. In particular, on a public Foswiki site, restricting edit access will avoid vandalism and spam.
- Add and remove fields defined in the Main.UserForm?.

If you added or removed fields from the user form you may also need to tailor Main.UserRegistration? to match (copy over the contents from System.UserRegistration to Main.UserRegistration when creating it).

Customize the appearance of your Foswiki site

The real power of Foswiki lies in its flexibility to be customized to meet your needs. To change the look of the default skin, PatternSkin, please refer to System.PatternSkin and System.PatternSkinCustomization.

At the Foswiki website you can find more resources. A good place to start exploring is the Foswiki:Support.AdministratorsCookBook which offers tips and tricks for customizing your Foswiki site. Many of these are best done before any content has been added to your site, so immediately after installation is a good time to consider the possibilities.

Left, Top and Bottom Bars with PatternSkin

The top bar and bottom bar are common across all webs.

To customize the top bar, copy System.WebTopBarExample to System.WebTopBar?, and make your desired changes to System.WebTopBar.

To customize the bottom bar, copy System.WebBottomBarExample to System.WebBottomBar?, and make your desired changes to System.WebBottomBar.

The side bar can be customized on a per web basis. To customize the side bar, copy the WebLeftBarExample topic in the given web to WebLeftBar, and make your desired changes to WebLeftBar. If you would like to move the side bar to the right of the page, see System.PatternSkin for more details.

Copyright, License and Classification Statements

At the bottom of each topic, there is a copyright statement that is set in the `WEBCOPYRIGHT` preference. Its default is the following: `Copyright © by the contributing authors. All material on this collaboration platform is the property of the contributing authors.`

If your Foswiki site is used in an environment without public access you should replace this with your normal copyright notice. You should also consider adding a security classification (e.g., For Internal Use Only) so people do not have to add this manually to every new topic.

If your Foswiki site is publicly accessible, you need to decide which copyright and license you wish to apply to all contributions. For open source applications, licenses such as the GNU Free Documentation License, FreeBSD Documentation License, and one of the various Creative Commons licenses are possible licenses to consider. Remember that once people have started contributing, you cannot retroactively change the license (unless it has a provision for this).

To change the copyright statement, perform the following steps:

- Copy the `WEBCOPYRIGHT` preference setting from `System.DefaultPreferences` to `Main.SitePreferences`. Change the value to your desired text. This value will be your new default across all webs.
- You can create a unique message for a specific web by setting the `WEBCOPYRIGHT` preference in the `WebPreferences` topic for the given web. For example, you could add a confidential classification to a web that has restricted access.
- The `WEBCOPYRIGHT` preference setting in `System.WebPreferences` covers the documentation that comes with Foswiki, and should not be changed.

WYSIWYG vs Raw Edit

In Foswiki, the WYSIWYG editor is used by default in edit mode. An *Edit Raw* link is available for those who prefer to edit the raw topic text.

If you prefer to use the raw text editor by default and have a separate WYSIWYG button, as in TWiki 4.1, then you can modify the templates that define the edit screen as described in Foswiki:Support.FaqHowToMakeRawEditDefault.

Installing extensions

Foswiki:Extensions is an extensive library of plugins for Foswiki that enhance functionality in a huge number of ways. A few plugins are pre-installed in the Foswiki distribution.

In the *Extensions* section of the `configure` page, you can select the *Find More Extensions* button to download and install additional plugins from the foswiki.org website. If you are behind a firewall or your server has no access to the Internet, you can also install plugins manually. Installation instructions for each plugin are located in its corresponding topic on http://foswiki.org/. Additional documentation on Foswiki plugins can be found at Foswiki:Support.PluginsSupplement.

Plugins are activated in the *Plugins* section of the `configure` page. In addition, some plugins are also configured in this section.

TWiki Compatibility

Foswiki is 100% backwards compatible with TWiki® markup up to and including TWiki 4.2.4. Existing TWiki webs, topics and attachments can be used with Foswiki without requiring any changes.

To support a seamless upgrade from TWiki, Foswiki ships with a plugin called `TWikiCompatibilityPlugin`. This plugin enables most TWiki extensions to work with Foswiki, without modifications. It also maps requests for legacy TWiki web topics to their Foswiki equivalents, as defined in Foswiki:Development.TopicNameMappingTable. The `TWIKIWEB` and `MAINWEB` TWiki variables are also mapped to the new Foswiki macros `SYSTEMWEB` and `USERSWEB`.

If you are not upgrading an existing TWiki installation and do not plan to install plugins from the TWiki web site, it is recommended that you disable the TWikiCompatibilityPlugin in the *Plugins* Section on the `configure` page.

If a plugin exists both in a TWiki version and a Foswiki version, it is strongly recommended that you use the Foswiki version, as this is coded to work optimally with Foswiki. As part of the Foswiki project, the Foswiki community is evaluating all of the extensions that are available for TWiki, and porting them over to the Foswiki name space. Many of them are being enhanced through the removal of bugs and security vulnerabilities, resulting in better, more functional extensions for Foswiki.

Troubleshooting

Re-run the `configure` script and make sure you have resolved all errors and are satisfied that you understand any warnings.

Failing that, consult the topics at Foswiki:Support.SupplementalDocuments and Foswiki:Support.AskedQuestions.

If you need help, ask a question in the Foswiki:Support web or on Foswiki:Community.InternetRelayChat (irc.freenode.net, channel #foswiki).

Foswiki system requirements

Foswiki is capable of running on a variety of operating systems and supporting a wide range of browsers, due to its minimal client and server requirements.

Server requirements

Foswiki is written in Perl 5, which is supported on Microsoft Windows as well as Unix and Unix-like systems (including Linux and OSX), on which it uses a number of shell commands and RCS (Revision Control System), a GNU Free Software package. It should be able to run on any server platform that meets the following requirements.

Resource	Required Server Environment
Perl	5.8.4 or higher is recommended. Foswiki will run in perl 5.6.1 but only with Wysiwyg editor disabled. Wysiwyg requires Unicode support which is provided by perl 5.8.1 onwards.
RCS	5.7 or higher (including GNU `diff`) Optional. Foswiki includes a pure perl implementation of RCS (RcsLite) that can be used instead, at the cost of performance
GNU diff	GNU diff 2.7 or higher is required when not using the all-Perl RcsLite. Install within the PATH if not included with RCS (check version with `diff -v`) Must be the version used by RCS, to avoid problems with binary attachments - RCS may have hard-coded path to `diff`
Other external programs	`fgrep, egrep`

Resource	Required Server Environment
Cron/scheduler	• Unix: `cron` • Windows: `cron` equivalents
Web server	Apache is well supported; for information on other servers, see Foswiki:Support.InstallingOnSpecificPlatforms.

Required CPAN modules

Most of the CPAN libraries listed below are part of a standard Perl installation. See Foswiki:Support.HowToInstallCpanModules for detailed information on how to install any CPAN libraries not present in your installation.

The following Perl CPAN modules are used by Foswiki:

Module	Preferred version
Algorithm::Diff (included with Foswiki)	
CGI	Versions 2.89 and 3.37 must be avoided. Most version from 3.15 and onwards should work.
CGI::Carp	>=1.26
CGI::Session	>=4.30 (included with Foswiki) Versions 4.20 and before have Foswikitask:Item1306
Config	>=0
Cwd	>=3.05
Data::Dumper	>=2.121
Error (included)	
File::Copy	>=2.06
File::Find	>=1.05
File::Spec	>=3.05
FileHandle	>=2.01
IO::File	>=1.10
Text::Diff (included with Foswiki)	
Time::Local	>=1.11

You can check version numbers from the command line (replace "ModuleName" with the name of the module):

```
perl -le 'use ModuleName; print "ModuleName"->VERSION'
```

Optional CPAN modules

The following Perl modules may be used by Foswiki. See Foswiki:Support.HowToInstallCpanModules for detailed information on how to install CPAN libraries.

Module	Preferred version	Description
Archive::Tar		May be required by the Extensions Installer in configure if command line tar or unzip is not available
CGI::Cookie	>=1.24	Used for session support
Digest::base		
Digest::SHA1		
Jcode		Used for I18N support with perl 5.6
Locale::Maketext::Lexicon	>=0	Used for I18N support

Module	Preferred version	Description
Net::SMTP	>=2.29	Used for sending mail
Unicode::Map		Used for I18N support with perl 5.6
Unicode::Map8		Used for I18N support with perl 5.6
Unicode::MapUTF8		Used for I18N support with perl 5.6
Unicode::String		Used for I18N support with perl 5.6
URI		Used for configure

Most of these modules will probably already be present in your installation. You can check version numbers with the `configure` script, or if you're still trying to get to that point, check from the command line (replace "ModuleName" with the name of the module):

```
perl -e 'use ModuleName; print $ModuleName::VERSION."\n"'
```

Client requirements

Browser clients must support the following capabilities:

- HTML 3.2
- Cookie support enabled, if persistent sessions are required

Most skins also require CSS and Javascript support. There is a low-fat skin (Plain) that minimises these requirements. Some skins require newer browser version. The default skin (Pattern) is tested on IE 6, Safari, and Mozilla 5.0 based browsers (such as Firefox).

You can easily select a balance of browser capability versus look and feel. Try the installed skins in the skin browser and more at Foswiki:Extensions.SkinPackage.

Uploading the Foswiki distribution to your web server host

If you cannot unpack the Foswiki distribution directly in your installation directory, you can unpack the distribution on your local computer, manually create the directory structure on your host server and upload the files as follows:

- Using the table below, create a directory structure on your host server
- Upload the Foswiki files by FTP (transfer as text except for the image files in `pub` directory.)
- **Note:** Don't worry if you are not able to put the `lib` directory at the same level as the `bin` directory. You can create this directory elsewhere and configure the `bin/setlib.cfg` file.

Foswiki dir:	What it is:	Where to copy:	Example:
`foswiki`	start-up pages	root Foswiki dir	`/home/smith/public_html/foswiki/`
`foswiki/bin`	CGI bin	CGI-enabled dir	`/home/smith/public_html/foswiki/bin`
`foswiki/lib`	library files	same level as `bin`	`/home/smith/public_html/foswiki/lib`
`foswiki/locale`	language files	dir secure from public access	`/home/smith/public_html/foswiki/locale`
`foswiki/pub`	public files	htdoc enabled dir	`/home/smith/public_html/foswiki/pub`

Foswiki dir:	What it is:	Where to copy:	Example:
`foswiki/data`	topic data	dir secure from public access	`/home/smith/public_html/foswiki/data`
`foswiki/templates`	web templates	dir secure from public access	`/home/smith/public_html/foswiki/templat`
`foswiki/tools`	Foswiki utlilities	dir secure from public access	`/home/smith/public_html/foswiki/tools`

| `foswiki/working` | Temporary and internal files | dir secure from public access | `/home/smith/public_html/foswiki/working` |

Configuring Foswiki manually (without using the `configure` page)

It is highly recommended that you configure Foswiki by using your browser to access the `configure` page. However, if you are unable to get the `configure` page to display (for example, if a dependency is missing), or for some reason you do not wish to use the `configure` page, then you can configure Foswiki manually

Perform the following steps to manually configure Foswiki:

- Copy the file `lib/Foswiki.spec` to `lib/LocalSite.cfg`
- Remove the # in front of the following settings, and ensure that they are set to the correct values:

```
$Foswiki::cfg{DefaultUrlHost}
$Foswiki::cfg{ScriptUrlPath}
$Foswiki::cfg{PubUrlPath}
$Foswiki::cfg{PubDir}
$Foswiki::cfg{TemplateDir}
$Foswiki::cfg{DataDir}
$Foswiki::cfg{LocalesDir}
$Foswiki::cfg{OS}
```

- Make sure the following settings are defined:

```
$Foswiki::cfg{LoginManager}
$Foswiki::cfg{WebMasterEmail}
$Foswiki::cfg{SMTP}{MAILHOST}
$Foswiki::cfg{SMTP}{SENDERHOST}
```

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Foswiki Upgrade Guide

This guide covers upgrading from a previous version of Foswiki or TWiki (such as Cairo or TWiki4.0) to Foswiki 1.0

Overview

Foswiki is a fork from TWiki 4.2.3. Upgrades from all TWiki versions and earlier Foswiki versions are supported. Foswiki is designed to be 100% compatible with the content of TWiki sites, using the same markup language and supporting the same plugin API (through the use of a `TWikiCompatibilityPlugin`), thereby enabling a smooth transition from TWiki to Foswiki.

Upgrade requirements

- Please review the Foswiki:System.AdminSkillsAssumptions before you upgrade your site.
- To upgrade from an old TWiki Release to the latest Foswiki production release, follow the instructions below.
- Before upgrading, you may wish to make a backup of your topics.
- Once the upgrade has been applied, an existing earlier installation will still be able to read all the topics, but should not be used to write.
- Some TWiki plugins are not compatible with Foswiki (usually ones that use a private API or execute helper scripts); you may need to migrate to the equivalent extension in the Foswiki:Extensions repository.

Upgrading from TWiki to Foswiki

You are strongly advised to read the Foswiki:System.ReleaseNotes01x00 (also available in an HTML file in the root of your installation), which contains a list of changes from TWiki 4.2.3 to Foswiki 1.0. A number of system topics and macros (formerly known as TWiki variables) have been renamed, to better describe their purpose and, where appropriate, to rebrand to the Foswiki name.

Upgrading to a new patch release

To upgrade to a new patch release — for example, from Foswiki 1.0.0 to 1.0.3 — an upgrade package can be used that will not overwrite any of your customizations.

For patch releases you will find a brief upgrade procedure on the download page for the release. Follow this procedure to upgrade to the patch release. It may contain important steps that are unique to each patch release (for example, some configure settings may need to be changed).

Upgrade procedure: upgrading to a new major or minor version, or upgrading from TWiki

The following is a high level view of the upgrade procedure:

1. **Prepare** for all upgrade steps.
2. **Install the new Foswiki version** and configure it with the same settings as the old version.
3. **Install any additional extensions** (Plugins) used by your old installation. Make sure to use the latest Foswiki versions.
4. **Copy all the non-default webs** from the old installation to the new one.

5. **Copy the users, groups, and site customizations** from the old installation to the `Main` web in the new installation, including all user topics.
6. **Apply preferences** from the old installation.
7. **Apply your site customizations**: skin, logos, menu bars, forms for personal information, and so forth.
8. **Validate your Wiki** applications and other key functionality.
9. **Switch your production site** from the old installation to the new installation.

More details for each step appear in the following sections. The steps may need to be modified or otherwise tailored with specifics for your installation. In particular, you must take care to preserve any special configuration or customizations you have made, especially if you have modified any of the default software files or system topics that are contained within the installation package.

For purposes of discussion, the following conventions are used:

- `<oldwiki>` refers to the directory in which the old installation is located
- `<newwiki>` refers to the directory in which the new installation is located; it is assumed to be immediately below the root directory of your web server
- `<old_users_web>` refers to the web in which the user topics are located in the old installation. The default value is the **Main** web. The web is specified in the `Store settings` pane of the `configure` page, in the {UsersWebName} setting (visible when Expert mode is enabled).
- `<old_system_web>` refers to the web used for documentation and default preferences in the old installation. In **Foswiki**, the default value is the **System** web; in **TWiki**, the default value is the **TWiki** web. The web is specified in the `Store settings` pane of the `configure` page, in the {SystemWebName} setting (visible when Expert mode is enabled).

After the upgrade, in the new installation, the Main web is used for user topics and site preferences, and the System web is used to hold documentation and default preferences.

The `configure` page mentioned in this document is accessible via your web browser at **`http://yourdomain/<newwiki>/bin/configure`** .

Prepare for all upgrade steps

Read the Foswiki:System.ReleaseNotes01x00 and **learn about the differences** between your old installation and the new release to which you are upgrading. Take note of any areas that affect your site and what special steps you may need to take.

Check that all the extensions (plugins, contribs, skins) used by your old installation are available with the new release. Familiarize yourself with any new behaviour that you will have to adapt to or any configuration changes you will have to perform.

If you are using authentication, prepare a test plan to verify that your authentication mechanism is working correctly. Make sure you are able to test logins by a sufficient sample of users to cover all categories of users of your site. For example, users of various groups may need to be tested. In particular, ensure you test that non-admin users cannot access topics restricted to admins.

Identify all essential Wiki topics and Wiki applications that must be fully functional upon completion of the upgrade. Prepare a test plan to verify their functionality. If you are using access controls, ensure that the test plan will adequately test all categories and groups of users of your site.

If your testing will require a test environment to be set up, ensure that it is ready, with any required support infrastructure (for example, testbed authentication servers). If you need to be able to login with different users in different categories and groups, ensure that you have the required login information ready,

or you have testers from those groups available to perform the required test cases.

Download the Foswiki distribution from the following location: http://foswiki.org/Download — if you are installing your extensions manually, also download them from the repository where they are stored.

Installation

Follow the installation instructions in INSTALL.html, located in the root of the new installation. **Install the new release in a new directory.** Do not install on top of the old release.

- For public or otherwise sensitive installations, ensure that your web server configuration is set to deny access to the new Foswiki installation for anyone except you.
- **Configure Foswiki** using the `configure` page.
    - **If you are upgrading from an older Foswiki release**, first copy your `<oldwiki>/lib/LocalSite.cfg` file to `<newwiki>/lib/LocalSite.cfg` in order to preserve your existing configuration settings. Alternatively, you can reconfigure the new installation from scratch (you can use your old `LocalSite.cfg` file as a reference).
    - **If you are upgrading from a TWiki site**, you must reconfigure your Foswiki installation from scratch. You cannot copy over your old `LocalSite.cfg` file (though you can use it as a reference). Run `configure` and set the configuration values in the new installation to match those of the old installation.
    - Verify all of the configuration settings on the `configure` page, including any new settings added in the new version. Save the configuration after you have completed your changes.
    - To wipe out all your settings and start configuring from a fresh installation, just delete the `<newwiki>/lib/LocalSite.cfg` file and run `configure`.
- Additional resources
    - Foswiki:System.InstallationGuide
    - Foswiki:Support.InstallingOnSpecificPlatforms
    - Foswiki:Support.ApacheConfigGenerator
    - Foswiki:Support.SettingFileAccessRightsLinuxUnix

Test your newly-installed Foswiki site and ensure that its basic functionality works: viewing and editing topics (you can try creating and editing a topic in the Sandbox web).

To make it easier to follow the subsequent steps, you can view this upgrade guide using your new Foswiki site by entering `System.UpgradeGuide` into the "Jump" text box on the top right of any topic. By doing this instead of using the UpgradeGuide.html file from the distribution, you will be able to use the embedded hyperlinks to jump directly to the referenced pages.

Install extensions

Install all of the extensions that were installed in your old site. In particular, start with any extensions required for the authentication and authorization methods you use (if any). You can use the *Find more extensions* button in the *Extensions* section of the `configure` page to install and configure extensions from the Foswiki:Extensions repository. You can also install extensions manually; see the instructions on the extension's web page from where you obtained the extension (for Foswiki extensions, on foswiki.org).

- **Note:** some TWiki extensions may not work with Foswiki. By default, the `TWikiCompatibilityPlugin` is installed to provide backwards compatible support for TWiki plugins. However if the TWiki plugin calls private APIs or invokes helper scripts, it may still not work correctly. Check for an upgraded Foswiki version of the extension in the Foswiki:Extensions repository and install it instead.

Check the plugin topics from your old TWiki/Foswiki installation and transfer the plugin settings to the `Main.SitePreferences` topic in your new Foswiki site, prefixing each setting with the name of the plugin in uppercase followed by an underscore. For example, to copy over the `DEFAULT_TYPE` setting from the `CommentPlugin` topic in the old site to the new site, copy the value to a `COMMENTPLUGIN_DEFAULT_TYPE` setting in the `Main.SitePreferences` topic in the new site.

Commonly-customized plugin settings include the following:

- `CommentPlugin` - DEFAULT_TYPE
- `EditTablePlugin` - CHANGEROWS, QUIETSAVE, EDITBUTTON
- `InterwikiPlugin` - RULESTOPIC
- `InterWikis` - If you added your own rules, make sure you copy over the rules to the new installation.
- `SlideShowPlugin` - If you changed the embedded 'Default Slide Template', then copy your customed template to the topic in the new installation. You should prefer creating your own slide show template in a separate topic, so you will not have to take special steps over upgrades to preserve your modifications to the default slide template.
- `SmiliesPlugin` - If you added your own smileys, make sure you copy over your customizations to the topic in the new installatin.
- `TablePlugin` - TABLEATTRIBUTES

Activate, and if required, configure the installed extensions in `configure`.

Copy content from non-default webs in old installation to the new installation

If you are upgrading from TWiki Cairo or earlier, it may be necessary to unlock the rcs files in data and pub directories from the old installation using the following shell commands:

- `find data -name '*,v' -exec rcs -u -M '{}' \;`
- `find pub -name '*,v' -exec rcs -u -M '{}' \;`

Copy your local webs over to the data and pub directories of the new installation. Do not copy the default webs: <old_system_web> (by default, either System or TWiki), Main, Trash, Sandbox, _default, and _empty.

- Make sure the data and pub directories, as well as the files within them, are readable and writeable by the web server user.
- **Note:** Foswiki's `WebChanges` topics depend on the file timestamp. If you touch the .txt files make sure to preserve the timestamp, or change them in the same chronological order as the old file timestamps.

Copy users, user topics, and site customizations to `Main` web

Copy all topics and attachments from <old_users_web>: copy all files from `<oldwiki>/data/<old_users_web>/` to `<newwiki>/data/Main/`, and copy all files from `<oldwiki>/pub/<old_users_web>/` to `<newwiki>/pub/Main/` . **Do not overwrite any topics already present in the `<newwiki>/data/Main/` directory.**

- In addition to all the user topics, if you have created `<old_users_web>.NewUserTemplate` in the old installation, this step will copy over your template for user topics to the new installation.
- Ensure that the topic defining the admin group in your old installation is copied over. The admin group is defined in the `Security setup` pane of the `configure` page, in the

{SuperAdminGroup} setting (visible when Expert mode is enabled). You can do either of the following:
    - Set the {SuperAdminGroup} setting in your new installation to the old admin group.
    - Move the contents of the old admin group to the new admin group. To avoid having to change all references to the old admin group, you must still keep the old admin group defined: set it so its only member is the new admin group, and the new admin group is the only user who can change or rename the old admin group topic.
        - The default admin group with Foswiki is AdminGroup and the default admin group with TWiki is TWikiAdminGroup. So if you are upgrading from TWiki and are using the default admin groups, then in the new installation, you must copy all members from TWikiAdminGroup to AdminGroup, and change TWikiAdminGroup so its only member is AdminGroup and so it can only be modified or renamed by AdminGroup.
- If your old installation did not customize {LocalSitePreferences} on the `configure` page, or if you did customize {LocalSitePreferences} but kept your site preferences within the <old_users_web> web, then this step will also copy over your site preferences to the new installation.

For upgrades from an older Foswiki installation:

- Manually merge all users from the `<old_users_web>.WikiUsers` topic in the old installation to the `Main.WikiUsers` topic in the new installation. If the new installation does not yet have an initial `Main.WikiUsers` topic, then copy `<oldwiki>/data/<old_users_web>/WikiUsers.txt` to `<newwiki>/data/Main/WikiUsers.txt`.
- Verify that the following default users are present in the `Main.WikiUsers` topic:
    - **ProjectContributor** - the Foswiki documentation is attributed to this user
    - **RegistrationAgent** - special user used during the new user registration process
    - **UnknownUser** - used where the author of a previously stored piece of data can't be determined
    - **WikiGuest** - guest user; used as a fallback if the user can't be identified
- If any of the default users are missing, then add them in manually to `Main.WikiUsers`, using the corresponding entries in Foswiki:System.UsersTemplate as an example.
- If you use `data/.htpasswd` for authentication, copy this file from the old installation to the new one.
- If you have customized `<old_system_web>.UserRegistration`, then either copy over `<oldwiki>/data/<old_system_web>/UserRegistration.txt` and `<oldwiki>/data/<old_system_web>/UserRegistration.txt,v` to the `<newwiki>/data/System/` directory, or modify `System.UserRegistration` in the new installation to contain your customizations.

For upgrades from a TWiki installation:

- Manually merge all users from the `<old_users_web>.TWikiUsers` topic in the old installation to the `Main.WikiUsers` topic in the new installation. If the new installation does not yet have an initial `Main.WikiUsers` topic, then copy `<oldwiki>/data/<old_users_web>/TWikiUsers.txt` to `<newwiki>/data/Main/WikiUsers.txt`, and manually add the required default users (see the next steps).
- Verify that the following default users are present in the `Main.WikiUsers` topic:
    - **ProjectContributor** - the Foswiki documentation is attributed to this user
    - **RegistrationAgent** - special user used during the new user registration process
    - **UnknownUser** - used where the author of a previously stored piece of data can't be determined
    - **WikiGuest** - guest user; used as a fallback if the user can't be identified
- If any of the default users are missing, then add them in manually to `Main.WikiUsers`, using the

corresponding entries in Foswiki:System.UsersTemplate as an example.
- If you use `data/.htpasswd` for authentication, copy this file from the old installation to the new one.
- If you are upgrading from Cairo and are using the Htpasswd login manager, run the `tools/upgrade_emails.pl` script to move the user emails out of the user topics and into the password file.
- If you have customized `<old_system_web>.TWikiRegistration`, then modify `System.UserRegistration` in the new installation to contain your customizations.

Copy over any topics and attachments you want to preserve from the Sandbox web in the old installation: copy the desired files from `<oldwiki>/data/Sandbox/` to `<newwiki>/data/Sandbox` and from `<oldwiki>/pub/Sandbox/` to `<newwiki>/pub/Sandbox` . Some pages you may wish to preserve are the `WebHome` topic and the `WebLeftBar` topic (if you had created it in the old wiki installation). The Sandbox web often contains work-in-progress topics that users will want to keep.

Make sure the data and pub directories, as well as the files within them, are readable and writeable by the web server user.

Execute your test plans for authentication and authorization. Test that users that you have transferred from the old installation can login with any problems, and that access controls work appropriately: check that users are able to view and edit pages for which they have access, and are denied permission to view or edit pages for which they do not have access. Also check that pages restricted to the admin group are not accessible by non-admin users, and that administrators continue to have access.

Apply preferences from old installation

If you have not already set your desired site-wide preferences, as described in the section "Set Foswiki Preferences" in the System.InstallationGuide, then set your preferences. The location of your site preferences is specified in the `Miscellaneous settings` pane of the `configure` page, in the {LocalSitePreferences} setting (visible when Expert mode is enabled) — the default location is **Main.SitePreferences**. Copy any customized preferences from the site preferences topic in your old installation to the site preferences topic in the new installation. (Note you may have already copied over your customized preferences when you transfered the contents of the <old_users_web> web.)

If, in your old installation, you customized the default preferences in `<old_system_web>.DefaultPreferences`, then transfer your customizations from this topic to the site preferences topic instead (i.e. the topic specified in your {LocalSitePreferences} setting), so that your customizations will not get overwritten on the next upgrade.

If you are upgrading from TWiki, note that the default location of the default preferences in TWiki is `<old_system_web>.TWikiPreferences`, and the default location of the site preferences is `Main.TWikiPreferences`. Transfer any customized preferences from these topics to the site preferences topic in your new installation.

Apply additional site customizations

Modify skin with customizations for your site

If you did not already customize the appearance of your new installation, as described in the section "Customize the appearance of your Foswiki site" in the System.InstallationGuide, then reapply the customizations from your old installation to the new one. Ensure you transfer over any skin templates — .tmpl files, or topics referred to using VIEW_TEMPLATE or EDIT_TEMPLATE preferences — you need. Also ensure you transfer any style sheets or Javascript files required.

If you are upgrading from the Cairo version of TWiki: note that the skins from this release do not work well with Foswiki. Starting from TWiki 4.0.2, the default PatternSkin has been fairly stable and so your customizations should continue to work.

Customize pages for managing personal information

In your new installation, default copies of the following topics were installed:

- `System.ChangePassword`
- `System.ResetPassword`
- `System.ChangeEmailAddress`

If you customized these topics in your old installation, transfer the changes to these topics in the new installation. Use the corresponding files in the `<oldwiki>/<old_system_web>/` directory as a reference.

Validate your Wiki applications and other key functionality

Execute your test plan to validate the Wiki applications and other key functionality that need to be up and running after the upgrade.

Switch your production site from the old installation to the new installation

If you had been running your old installation in parallel with the new one during a test phase, then disable your old installation, and repeat the step "Copy content from non-default webs in old installation to the new installation".

Change your web server configuration so that the new installation is accessible to all of your users, and so the old installation is no longer accessible.

Change your web server configuration so that the new installation is accessible using the same URL prefix as your old installation. For purposes of discussion, assume that your old installation is accessible from `http://yourdomain/wiki/`. You can use one of the following approaches to make the new installation accessible using the same URL prefix:

- You can rename your `<newwiki>/` directory to `wiki/` (renaming the directory of your old installation if necessary).
- If your operating system supports links to other directories and your web server is configured to follow links, then you can create a link called `wiki/` that points to `<newwiki>/` (renaming the directory of your old installation if necessary).
- You can configure your web server so that requests to `/wiki/` are served from your `<newwiki>/` directory.

Re-execute your test plan to verify that your newly-upgraded site is accessible to your users, and that all authentication and authorization mechanisms work as expected (including denying access to those who are not authorized).

Re-execute your test plan to verify that your Wiki applications and other key functionality work as intended.

Additional steps when upgrading from TWiki Cairo

Favicon

The favicon is now configurable as a site preference or per-web preference. See `System.DefaultPreferences` for a description of the FAVICON preference. To set it for your site, add the FAVICON preference to your site preferences topic, `Main.SitePreferences` (or the topic you configured in your {LocalSitePreferences} setting in the `Miscellaneous settings` pane on the `configure` page). To set it for a web, add the FAVICON preference to the `WebPreferences` topic for that web.

Important changes since TWiki 4.0.5

Supported Perl version

To use Foswiki, you must use Perl 5.8 or higher. Foswiki no longer supports Perl version 5.6.x (the minimum version required for TWiki 4.0.5).

Template spec changed

Until TWiki 4.0.5, any text inside template definition blocks for SkinTemplates (formerly called TWikiTemplates) — that is, between %TMPL:DEF{"block"}% and %TMPL:END% — was stripped of leading and trailing white space, including newlines. This made it difficult for skin developers to include a newline before or after a block of text.

From TWiki 4.1.0 onwards, and in Foswiki 1.0, this has changed so that white space is no longer stripped. Skins like PatternSkin and NatSkin have been updated so that they work with the new behavior. If you use an older skin or have written your own you will most likely need to make some adjustments.

In general, if you get mysterious blank lines in your skin, the newline after the %TMPL:DEF{"block"}% needs to be removed: the content of the block must follow on the same line as the TMPL:DEF.

CommentPlugin templates also must be modified to remove extraneous newlines — in particular, any newline immediately after the TMPL:DEF. See the `System.CommentPluginTemplate` for examples of how comment template definitions should look like in TWiki 4.1.x.

Example: a CommentPlugin template that adds a row to a table. With versions of TWiki prior to 4.1, the following syntax can be used:

```
%TMPL:DEF{OUTPUT:tabletest}%%POS:BEFORE%
|%URLPARAM{"comment"}%| -- %WIKIUSERNAME% - %DATE% |
%TMPL:END%
```

Starting in TWiki 4.1 and continuing with Foswiki 1.0, the newline before the start of the table row must be removed:

```
%TMPL:DEF{OUTPUT:tabletest}%%POS:BEFORE%|%URLPARAM{"comment"}%| -- %WIKIUSERNAME% - %DATE%
%TMPL:END%
```

Important changes for the upgrader - since TWiki 4.1.0

New location for session and other temporary files

The directory for passthrough and session files have been replaced by a common directory for temporary files used by Foswiki. Previously the two configure settings `{PassthroughDir}` and `{Sessions}{Dir}`

were set by default to `/tmp`. These config settings have been eliminated: Foswiki creates a tmp directory and other temporary directories under the directory defined by the configure setting `{WorkingDir}`.

Important changes for the upgrader - since TWiki 4.1.2

New WYSIWYG editor

Foswiki now ships with a new WYSIWYG editor based on TinyMCE that replaces the Kupu-based editor. When TinyMCEPlugin is enabled, the Edit button will initiate WYSIWYG editing mode. A Raw Edit link has been added for users to edit the topic markup directly.

The WYSIWYG button has been removed.

NEWTOPICLINKSYMBOL removed

The NEWTOPICLINKSYMBOL preference that was deprecated in TWiki 4.1 is no longer supported. To control the appearance of new links, set the NEWLINKFORMAT preference in Main.SitePreferences (see System.DefaultPreferences for more information on NEWLINKFORMAT).

UserForm and NewUserTemplate customization

When a new user registers on Foswiki his user topic is created based on the `NewUserTemplate` and `UserForm` in the Main web, if they exist. If the topic does not exist in the Main web, then the default version from System is used. Thus on upgrades, any customizations you made to `NewUserTemplate` or `UserForm` in the Main web will be preserved.

In previous TWiki versions, only `System.NewUserTemplate` and `System.UserForm` are used; you cannot override them by creating your own version in the Main web.

WikiUsers no longer distributed

The `Main.WikiUsers` topic contains all the registered users. It is not included in the Foswiki distribution, so that your list of users will not be overwritten on upgrades. When the first user is registered in Foswiki, the `Main.WikiUsers` topic is created on demand.

New `working` directory

The configuration setting `{WorkingDir}` in the `General path settings` pane on the `configure` page defines the location of a working directory for various subdirectories for use by Foswiki. The default value for this setting is the `working` subdirectory within the installation root directory for the Foswiki installation.

The subdirectories within the working directory include the following:

- `registration_approvals` — previously located in the data/ directory
- `tmp` — avoids security issues with using the /tmp directory
- `work_areas` — previously located in the pub/ directory.

Note: Remember to restrict access to this new directory when you upgrade.

If you have your own scheduled task to delete obsolete session files, note they are now located in the `working/tmp/` subdirectory.

New internal admin login

Foswiki has a new *internal admin login* feature that lets you login as a temporary administrator, using "admin" as your user name and the password for the `configure` page. The internal admin username can be configured in the {AdminUserLogin} setting in the `Security setup` pane on the `configure` page.

In order to add an initial user to the default {SuperAdminGroup}, Main.AdminGroup, you must login as the internal admin user using the link on the Main.AdminGroup page.

Important changes for the upgrader - since Foswiki 1.0.4

An additional security feature has been added to Foswiki 1.0.5 so that saving data now requires the http method POST. This means that it is no longer possible to store data via an "<a href=..." link or img tag. It also means that if you have an application with an HTML form that creates new topics you must specify in the form tag method="post". This change is done to further tighten the security of Foswiki.

```
<form name="new" action="%SCRIPTURLPATH{save}%/Sandbox/" method="post">
    ...
</form>
```

The template webs _default and _empty are frequent targets for spammers because these webs are normally not monitored very carefully by the community around a Foswiki installation. These webs are now write protected so on an administrator can edit topics in these webs. When an administrator creates a new web it is important to remember to remove the access restriction from the WebPreferences in the new web.

Important changes for the upgrader - since Foswiki 1.0.5

Foswiki 1.0.6 introduces a major security enhancement, protecting against Cross-Site Request Forgery. The extra safe "double submit" algorithm, as recommended by the Open Web Application Security Project (OWASP) project has been used. This is the same algorithm used by several major banks and other security-conscious institutions, and requires that users have Javascript enabled.

See Foswiki:Support.SecurityFeatures for more information on these, and other, Foswiki security features. This is recommended reading for all Foswiki administrators.

If these new countermeasures against CSRF creates problems for your users and your applications, you can alter the way the protection works or disable it. These are the configure parameters you need to visit (note that some are expert settings).

- {Validation}{Method} is by default "strikeone" which is the highest level of security and requires that users have Javascript enabled. You can lower this setting to "embedded" which uses a less safe validation method but does not require javascript. If you want to disable CSRF protection set it to "none". It is highly recommended to keep it at "strikeone".
- {Validation}{ValidForTime} is the time the validation key is valid. It is by default 1 hour. If your users often edit pages longer you can increase this time. Your users can still save pages with an expired validation key but they will be asked to confirm the saving.
- {Validation}{MaxKeysPerSession} is the maximum number of validation keys to store in a session. There is one key stored for each page rendered. If the number of keys exceeds this number, the oldest keys will be force-expired to bring the number down. If you have users that are very fast at editing pages and experience expired keys, you can increase this number. The default is 1000 and should be much higher than any normal person will experience.
- {Validation}{ExpireKeyOnUse} defines if validation keys expire when they are used for storing data. This prevents an attacker from evesdropping communication between server and browser and reuse keys. Unfortunately it also means that if a user edits a page, saves it, uses the back button of the

browser, corrects his previous editing, and then saves again, he is asked to confirm that he intended to save the topic. Another use case is if you create an application with multiple forms and multiple submit buttons on a topic and you submit multiple times from this topic without navigating away from it, you will be asked to confirm the submission each time. If this is not acceptable to your use of Foswiki, you can turn off {Validation}{ExpireKeyOnUse}.

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User Authentication

Controlling who can access your site

Overview

Authentication, or "login", is the process by which a user lets Wiki know who they are.

Authentication isn't just to do with access control. Wiki uses authentication to keep track of who made changes, and manage a wide range of personal settings. With authentication enabled, users can personalise Wiki and contribute as recognised individuals, instead of shadows.

Wiki authentication is very flexible, and can either stand alone or integrate with existing authentication schemes. You can set up Wiki to require authentication for every access, or only for changes. Authentication is also essential for access control.

Quick Authentication Test - Use the %USERINFO% macro to return your current identity:

- You are guest, Main.WikiGuest,

Wiki user authentication is split into four sections; password management, user mapping, user registration, and login management. Password management deals with how users personal data is stored. Registration deals with how new users are added to the wiki. Login management deals with how users log in.

Once a user is logged on, they can be remembered using a *Client Session* stored in a cookie in the browser (or by other less elegant means if the user has disabled cookies). This avoids them having to log on again and again.

Wiki user authentication is configured through the Security Settings pane in the configure interface.

Please note FileAttachments are not protected by Wiki User Authentication.

Password Management

As shipped, Wiki supports the Apache 'htpasswd' password manager. This manager supports the use of `.htpasswd` files on the server. These files can be unique to Wiki , or can be shared with other applications (such as an Apache webserver). A variety of password encodings are supported for flexibility when re-using existing files. See the descriptive comments in the Security Settings section of the configure interface for more details.

You can easily plug in alternate password management modules to support interfaces to other third-party authentication databases.

The password manager is selected using the {PasswordManager} setting in `configure`.

User Mapping

Usually when you are using an external authentication method, you want to map from an unfriendly "login name" to a more friendly WikiName. Also, an external authentication database may well have user information you want to import to Wiki , such as user groups.

By default, Wiki supports mapping of usernames to wikinames, and supports Wiki groups internal to Wiki . If you want, you can plug in an alternate user mapping module to support import of groups etc.

The user mapping manager is selected using the {UserMappingManager} setting in `configure`.

User Registration

New user registration uses the password manager to set and change passwords and store email addresses. It is also responsible for the new user verification process. the registration process supports **single user registration** via the UserRegistration page, and **bulk user registration** via the BulkRegistration page (for admins only).

The registration process is also responsible for creating user topics, and setting up the mapping information used by the User Mapping support.

Login Management

Login management controls the way users have to log in. There are three basic options; no login, login via a Wiki login page, and login using the webserver authentication support. the login manager is selected using the {LoginManager} setting in `configure`.

No Login (select `none`)

Does exactly what it says on the tin. Forget about authentication to make your site completely public - anyone can browse and edit freely, in classic Wiki style. All visitors are given the Main.WikiGuest default identity, so you can't track individual user activity.

Note: This setup is **not** recommended on public websites for security reasons; anyone would be able to change system settings and perform tasks usually restricted to administrators.

Template Login (select `Foswiki::LoginManager::TemplateLogin`)

Template Login asks for a username and password in a web page, and processes them using whatever Password Manager you choose. Users can log in and log out. Client Sessions are used to remember users. Users can choose to have their session remembered so they will automatically be logged in the next time they start their browser.

Enabling Template Login

1. Use the configure interface to
    1. select the `Foswiki::LoginManager::TemplateLogin` login manager (on the Security Settings pane).
    2. select the appropriate password manager for your system, or provide your own.
    3. there is also an EXPERT configure setting `{TemplateLogin}{PreventBrowserRememberingPassword}` that you can set to prevent Browsers from remembering username and passwords if you are concerned about public terminal usage.
2. Register yourself in the UserRegistration topic.
   Check that the password manager recognises the new user. If you are using `.htpasswd` files,

check that a new line with the username and encrypted password is added to the `.htpasswd` file. If not, you probably got a path wrong, or the permissions may not allow the webserver user to write to that file.
3. Create a new topic to check if authentication works.
4. **Edit the Main.AdminGroup topic in the Main web to include users with system administrator status.**
   This is a very important step, as users in this group can access *all* topics, independent of Wiki access controls.

AccessControl has more information on setting up access controls.

At this time AccessControls cannot control access to files in the `pub` area, unless they are only accessed through the `viewfile` script. If your `pub` directory is set up in the webserver to allow open access you may want to add `.htaccess` files in there to restrict access.

You can create a custom version of the UserRegistration form by copying the topic, and then deleting or adding input tags in your copy. The `name=""` parameter of the input tags must start with: `"Twk0..."` (if this is an optional entry), or `"Twk1..."` (if this is a required entry). This ensures that the fields are carried over into the user home page correctly. Do **not** modify the version of UserRegistration shipped with Wiki , as your changes will be overwritten next time you upgrade.

The default new user template page is in System.NewUserTemplate. The same macros get expanded as in the template topics. You can create a custom new user home page by creating the Main.NewUserTemplate? topic, which will then override the default.

Apache Login (select `Foswiki::LoginManager::ApacheLogin`)

Using this method Wiki does not authenticate users internally. Instead it depends on the `REMOTE_USER` environment variable, which is set when you enable authentication in the webserver.

The advantage of this scheme is that if you have an existing website authentication scheme using Apache modules such as `mod_auth_ldap` or `mod_auth_mysql` you can just plug in directly to them.

The disadvantage is that because the user identity is cached in the browser, you can log in, but you can't log out again unless you restart the browser.

Wiki maps the `REMOTE_USER` that was used to log in to the webserver to a WikiName using the table in Main.WikiUsers. This table is updated whenever a user registers, so users can choose not to register (in which case their webserver login name is used for their signature) or register (in which case that login name is mapped to their WikiName).

The same private `.htpasswd` file used in Wiki Template Login can be used to authenticate Apache users, using the Apache Basic Authentication support.

Warning: Do **not** use the Apache `htpasswd` program with `.htpasswd` files generated by Wiki ! `htpasswd` wipes out email addresses that Wiki plants in the info fields of this file.

Enabling Apache Login using `mod_auth`

You can use any other Apache authentication module that sets REMOTE_USER.

1. Use configure to select the `Foswiki::LoginManager::ApacheLogin` login manager.
2. Use configure to set up Wiki to create the right kind of `.htpasswd` entries.

3. Create a `.htaccess` file in the `bin` directory.
   There is an template for this file in `bin/.htaccess.txt` that you can copy and change. The comments in the file explain what need to be done.
   If you got it right, the browser should now ask for login name and password when you click on the Edit. If `.htaccess` does not have the desired effect, you may need to "AllowOverride All" for the directory in `httpd.conf` (if you have root access; otherwise, e-mail web server support)
   At this time AccessControls do not control access to files in the `pub` area, unless they are only accessed through the `viewfile` script. If your `pub` directory is set up to allow open access you may want to add `.htaccess` files in there as well to restrict access
4. You can create a custom version of the UserRegistration form by copying the default topic, and then deleting or adding input tags in your copy. The `name=""` parameter of the input tags must start with: `"Twk0..."` (if this is an optional entry), or `"Twk1..."` (if this is a required entry). This ensures that the fields are carried over into the user home page correctly. Do **not** modify the version of UserRegistration shipped with Wiki , as your changes will be overwritten next time you upgrade. The default new user template page is in System.NewUserTemplate. The same macros get expanded as in the template topics. You can create a custom new user home page by creating the Main.NewUserTemplate? topic, which will then override the default.
5. Register yourself in the UserRegistration topic.
   Check that a new line with the username and encrypted password is added to the `.htpasswd` file. If not, you may have got a path wrong, or the permissions may not allow the webserver user to write to that file.
6. Create a new topic to check if authentication works.
7. **Edit the Main.AdminGroup topic in the Main web to include users with system administrator status.**
   This is a very important step, as users in this group can access *all* topics, independent of Wiki access controls.

AccessControl has more information on setting up access controls.

Logons via bin/logon

Any time a user requests a page that needs authentication, they will be forced to log on. It may be convenient to have a "logon" link as well, to give the system a chance to identify the user and retrieve their personal settings. It may be convenient to force them to log on.

The **`bin/logon`** script enables this. If you are using Apache Login, the **`bin/logon`** script must be setup in the **`bin/.htaccess`** file to be a script which requires a `valid user`. Once authenticated, it will redirect the user to the view URL for the page from which the `logon` script was linked.

Sessions

Wiki uses the CPAN:CGI::Session and CPAN:CGI::Cookie modules to track sessions. These modules are de facto standards for session management among Perl programmers. If you can't use Cookies for any reason, CPAN:CGI::Session also supports session tracking using the client IP address.

You don't *have* to enable sessions to support logins in Wiki . However it is **strongly** recommended. Wiki needs some way to remember the fact that you logged in from a particular browser, and it uses sessions to do this. If you don;t enable sessions, Wiki will try hard to remember you, but due to limitations in the browsers it may also forget you (and then suddenly remember you again later!). So for the best user experience, you should enable sessions.

There are a number of macros available that you can use to interrogate your current session. You can even add your own session variables to the Wiki cookie. Session variables are referred to as "sticky" variables.

Getting, Setting, and Clearing Session Variables

You can get, set, and clear session variables from within Wiki web pages or by using script parameters. This allows you to use the session as a personal "persistent memory space" that is not lost until the web browser is closed. Also note that if a session variable has the same name as a Wiki preference, the session variables value takes precedence over the Wiki preference. **This allows for per-session preferences.**

To make use of these features, use the tags:

```
%SESSION_VARIABLE{ "varName" }%
%SESSION_VARIABLE{ "varName" set="varValue" }%
%SESSION_VARIABLE{ "varName" clear="" }%
```

Note that you **cannot** override access controls preferences this way.

Cookies and Transparent Session IDs

Wiki normally uses cookies to store session information on a client computer. Cookies are a common way to pass session information from client to server. Wiki cookies simply hold a unique session identifier that is used to look up a database of session information on the Wiki server.

For a number of reasons, it may not be possible to use cookies. In this case, Wiki has a fallback mechanism; it will automatically rewrite every internal URL it sees on pages being generated to one that also passes session information.

Username vs. Login Username

This section applies only if you are using authentication with existing login names (i.e. mapping from login names to WikiNames).

Wiki internally manages two usernames: Login Username and Foswiki Username.

- **Login Username:** When you login to the intranet, you use your existing login username. This name is normally passed to Foswiki by the **`REMOTE_USER`** environment variable, and used internally. Login Usernames are maintained by your system administrator.
- **Foswiki Username:** Your name in WikiNotation, ex: **`JohnSmith`**, is recorded when you register using UserRegistration; doing so also generates a personal home page in the Main web.

Foswiki can automatically map an Intranet (Login) Username to a Foswiki Username if the {AllowLoginName} is enabled in configure. The default is to use your WikiName as a login name.

> **NOTE: To correctly enter a WikiName** - your own or someone else's - be sure to include the Main web name in front of the Wiki username, followed by a period, and no spaces, for example **`Main.WikiUsername`** or **`%USERSWEB%.WikiUsername`**. This points **`WikiUsername`** to the Main web, where user home pages are located, no matter which web it's entered in. Without the web prefix, the name appears as a NewTopic everywhere but in the Main web.

Changing Passwords

If your {PasswordManager} supports password changing, you can change and reset passwords using forms on regular pages.

- The ChangePassword form (**`Foswiki/ChangePassword`**)
- The ResetPassword form (**`Foswiki/ResetPassword`**)

Changing E-mail Addresses

If the active {PasswordManager} supports storage and retrieval of user e-mail addresses, you can change your e-mail using a regular page. As shipped, this is true only for the Apache 'htpasswd' password manager.

- The ChangeEmailAddress form (**`Foswiki/ChangeEmailAddress`**)

Controlling access to individual scripts

You may want to add or remove scripts from the list of scripts that require authentication. The method for doing this is different for each of Template Login and Apache Login.

- For Template Login, update the {AuthScripts} list using configure
- For Apache Login, add/remove the script from `.htaccess`

How to choose an authentication method

One of the key features of Foswiki is that it is possible to add HTML to topics. No authentication method is 100% secure on a website where end users can add HTML, as there is always a risk that a malicious user can add code to a topic that gathers user information, such as session IDs. The Foswiki developers have been forced to make certain tradeoffs, in the pursuit of efficiency, that may be exploited by a hacker.

This section discusses some of the known risks. You can be sure that any potential hackers have read this section as well!

At one extreme, the most secure method is to use Foswiki via SSL (Secure Sockets Layer), with a login manager installed and Client Sessions turned **off**.

Using Foswiki with sessions turned off is a pain, though, as with all the login managers there are occasions where Foswiki will forget who you are. The best user experience is achieved with sessions turned **on**.

As soon as you allow the server to maintain information about a logged-in user, you open a door to potential attacks. There are a variety of ways a malicious user can pervert Foswiki to obtain another users session ID, the most common of which is known as a cross-site scripting attack. Once a hacker has an SID they can pretend to be that user.

To help prevent these sorts of attacks, Foswiki supports **IP matching**, which ensures that the IP address of the user requesting a specific session is the same as the IP address of the user who created the session. This works well as long as IP addresses are unique to each client, and as long as the IP address of the client can't be faked.

Session IDs are usually stored by Foswiki in cookies, which are stored in the client browser. Cookies work well, but not all environments or users permit cookies to be stored in browsers. So Foswiki also supports two other methods of determining the session ID. The first method uses the client IP address to determine the session ID. The second uses a rewriting method that rewrites local URLs in Foswiki pages to include the session ID in the URL.

The first method works well as long as IP addresses are **unique** to each individual client, and client IP addresses can't be faked by a hacker. If IP addresses are unique and can't be faked, it is almost as secure as cookies + IP matching, so it ranks as the **fourth most secure method**.

If you have to turn IP matching off, and cookies can't be relied on, then you may have to rely on the second method, URL rewriting. This method exposes the session IDs very publicly, so should be regarded as "rather dodgy".

Most Foswiki sites don't use SSL, so, as is the case with **most** sites that don't use SSL, there is always a possibility that a password could be picked out of the aether. Browsers do not encrypt passwords sent over non-SSL links, so using Apache Login is no more secure than Template Login.

Of the two shipped login managers, Apache Login is probably the most useful. It lets you do this sort of thing:
`wget --http-user=RogerRabbit --http-password=i'mnottelling http://www.example.com/bin/save/Sandbox/StuffAUTOINC0?text=hohoho,%20this%20is%`
i.e. pass in a user and password to a request from the command-line. However it doesn't let you log out.

Template Login degrades to url re-writing when you use a client like dillo that does not support cookies. However, you can log out and back in as a different user.

Finally, it would be really neat if someone was to work out how to use certificates to identify users.....

See Foswiki:Support.SupplementalDocuments for more information.

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Access Control

Restricting read and write access to topics and webs, by users and groups

Access Control allows you restrict access to single topics and entire webs, by individual user and by user Groups. Access control, combined with UserAuthentication, lets you easily create and manage an extremely flexible, fine-grained privilege system.

An important control consideration

Open, freeform editing is the essence of WikiCulture - what makes Foswiki different and often more effective than other collaboration tools. For that reason, it is strongly recommended that decisions to restrict read or write access to a web or a topic are made with great care - the more restrictions, the less Wiki in the mix. Experience shows that *unrestricted write access* works very well because:

- **Peer influence** is enough to ensure that only relevant content is posted.
- **Peer editing** - the ability for anyone to rearrange all content on a page - keeps topics focused.
- In Foswiki, content is transparently preserved under **revision control**:
  - Edits can be undone by the administrator (per default a member of Main.AdminGroup; see #ManagingGroups).
  - Users are encouraged to edit and refactor (condense a long topic), since there's a safety net.

As a **collaboration guideline**:

- Create broad-based Groups (for more and varied input), and...
- Avoid creating view-only Users (if you can read it, you should be able to contribute to it).

Permissions settings of the webs on this Foswiki site

Web	Sitemap	VIEW		CHANGE		RENAME	
	Listed	DENY	ALLOW	DENY	ALLOW	DENY	ALLOW
System	on				Main.AdminGroup		Main.AdminGroup
Public	on						

Please Note:

- A blank in the the above table may mean *either* the corresponding control is absent or commented out *or* that it has been set to a null value. The two conditions have dramatically different and possibly opposed semantics.
- Main.WikiGuest is the guest account - used by unauthenticated users.
- The web must not deny view to Main.WikiGuest; otherwise, people will not be able to register.

Above table comes from SitePermissions

Authentication vs. Access Control

Authentication: Identifies who a user is based on a login procedure. See UserAuthentication.

Access control: Restrict access to content based on users and groups once a user is identified.

Users and groups

Access control is based on the familiar concept of users and groups. Users are defined by their WikiNames. They can then be organized in unlimited combinations by inclusion in one or more user Groups. For convenience, Groups can also be included in other Groups.

Managing Users

A user can create an account in UserRegistration. The following actions are performed:

- WikiName and encrypted password are recorded using the password manager if authentication is enabled.
- A confirmation e-mail is sent to the user.
- A user home page with the WikiName of the user is created in the Main web.
- The user is added to the Main.WikiUsers topic.

The default visitor name is Main.WikiGuest. This is the non-authenticated user.

Managing Groups

The following describes the standard Foswiki support for groups. Your local Foswiki may have an alternate group mapping manager installed. Check with your Wiki administrator if you are in doubt.

Groups are defined by group topics located in the **`Main`** web. To create a new group, visit Main.WikiGroups and enter the name of the new group ending in **`Group`** into the "new group" form field. This will create a new group topic with two important settings:

- **`Set GROUP = < list of users and/or groups >`**
- **`Set ALLOWTOPICCHANGE = < list of users and/or groups >`**

The GROUP setting is a comma-separated list of users and/or other groups. Example:

- **`Set GROUP = Main.SomeUser, Main.OtherUser, Main.SomeGroup`**

The ALLOWTOPICCHANGE setting defines who is allowed to change the group topic; it is a comma delimited list of users and groups. You typically want to restrict that to the members of the group itself, so it should contain the name of the topic. This prevents users not in the group from editing the topic to give themselves or others access. For example, for the KasabianGroup topic write:

- **`Set ALLOWTOPICCHANGE = Main.KasabianGroup`**

Foswiki has strict formatting rules. Make sure you have three spaces, an asterisk, and an extra space in front of any access control rule.

The Super Admin Group

A number of Foswiki functions (for example, renaming webs) are only available to administrators. Administrators are simply users who belong to the **SuperAdminGroup**. This is a standard user group, the name of which is defined by {SuperAdminGroup} setting in configure. The default name of this group is the `AdminGroup`. The system administrator may have chosen a different name for this group if your local Foswiki uses an alternate group mapping manager but for simplicity we will use the default name

AdminGroup in the rest of this topic.

You can create new administrators simply by adding them to the Main.AdminGroup topic. For example,

- `Set GROUP = Main.ElizabethWindsor, Main.TonyBlair`

A member of the Super Admin Group has unrestricted access throughout the Foswiki, so only trusted staff should be added to this group.

Restricting Access

You can define who is allowed to read or write to a web or a topic. Note that some plugins may not respect access permissions.

- Restricting VIEW blocks viewing and searching of content. When you restric VIEW to a topic or web, this also restricts INCLUDE and Formatted SEARCH from showing the content of the topics.
- Restricting CHANGE blocks creating new topics, changing topics or attaching files.
- Restricting RENAME prevents renaming of topics within a web.

There is an important distinction between CHANGE access and RENAME access. A user can CHANGE a topic, but thanks to version control their changes cannot be lost (the history of the topic before the change is recorded). However if a topic or web is renamed, that history may be lost. Typically a site will only give RENAME access to administrators and content owners.

Controlling access to a Web

You can define restrictions on who is allowed to view a Wiki web. You can restrict access to certain webs to selected users and groups, by:

- **authenticating all webs and restricting selected webs:** Topic access in all webs is authenticated, and selected webs have restricted access.
- **authenticating and restricting selected webs only:** Provide unrestricted viewing access to open webs, with authentication and restriction only on selected webs.

- You can define these settings in the WebPreferences topic, preferable towards the end of the topic:
  - `Set DENYWEBVIEW = < comma-delimited list of users and groups >`
  - `Set ALLOWWEBVIEW = < comma-delimited list of users and groups >`
  - `Set DENYWEBCHANGE = < comma-delimited list of users and groups >`
  - `Set ALLOWWEBCHANGE = < comma-delimited list of users and groups >`
  - `Set DENYWEBRENAME = < comma-delimited list of users and groups >`
  - `Set ALLOWWEBRENAME = < comma-delimited list of users and groups >`

If your site allows hierarchical webs, then access to sub-webs is determined from the access controls of the parent web, plus the access controls in the sub-web. So, if the parent web has **`ALLOWWEBVIEW`** set, this will also apply to the subweb. Also note that you will need to ensure that the parent web's **`FINALPREFERENCES`** does not include the access control settings listed above. Otherwise you will not be able override the parent web's access control settings in sub-webs.

Creation and renaming of sub-webs is controlled by the WEBCHANGE setting on the parent web (or ROOTCHANGE for root webs). Renaming is additionally restricted by the setting of WEBRENAME in the web itself.

Controlling access to a topic

- You can define these settings in any topic, preferable towards the end of the topic:
  - `Set DENYTOPICVIEW = < comma-delimited list of users and groups >`
  - `Set ALLOWTOPICVIEW = < comma-delimited list of users and groups >`
  - `Set DENYTOPICCHANGE = < comma-delimited list of users and groups >`
  - `Set ALLOWTOPICCHANGE = < comma-delimited list of users and groups >`
  - `Set DENYTOPICRENAME = < comma-delimited list of users and groups >`
  - `Set ALLOWTOPICRENAME = < comma-delimited list of users and groups >`

Remember when opening up access to specific topics within a restricted web that other topics in the web - for example, the WebLeftBar - may also be accessed when viewing the topics. The message you get when you are denied access should tell you what topic you were not permitted to access.

Be careful with empty values for any of these.

- **`Set ALLOWTOPICVIEW =`**
  This means the same as not setting it at all. (This was documented wrong in versions 4.0.X, 4.1.0 and 4.1.1)

- **`Set DENYTOPICVIEW =`**
  This means *do not deny anyone the right to view this topic*. If DENYTOPICVIEW is set to an empty value anyone has access even if ALLOWTOPICVIEW or ALLOWWEBVIEW is defined. This allows you to have very restrictive default access rights to an entire web and still allow individual topics to have more open access.

The same rules apply to ALLOWTOPICCHANGE/DENYTOPICCHANGE and APPLYTOPICRENAME/DENYTOPICRENAME. Setting ALLOWTOPICCHANGE or ALLOWTOPICRENAME to en empty value means the same as not defining it. Setting DENYTOPICCHANGE or DENYTOPICRENAME to an empty value means that anyone can edit or rename the topic.

If the same setting is defined multiple times the last one overrides the previous. They are not OR'ed together.

The setting to an empty has caused confusion and great debate and it has been decided that the empty setting syntax will be replaced by something which is easier to understand in a later version of Foswiki. A method to upgrade will be provided. Please read the release notes carefully when you upgrade.

See "How Foswiki evaluates ALLOW/DENY settings" below for more on how ALLOW and DENY interacts.

Controlling access to attachments

Attachments are referred to directly, and are not normally indirected via Foswiki scripts. This means that the above instructions for access control will *not* apply to attachments. It is possible that someone may inadvertently publicise a URL that they expected to be access-controlled.

The easiest way to apply the same access control rules for attachments as apply to topics is to use the Apache `mod_rewrite` module, and configure your webserver to redirect accesses to attachments to the Foswiki `viewfile` script. For example,

```
ScriptAlias /foswiki/bin/ /filesystem/path/to/bin/
Alias /foswiki/pub/       /filesystem/path/to/pub/

RewriteEngine on
RewriteCond %{REQUEST_URI} !^/+foswiki/+pub/+System/+.+
RewriteRule ^/+foswiki/+pub/+([^/]+)((/+([^/]+))+)/+(.+) /foswiki/bin/viewfile/$1/$2?f
```

That way all the controls that apply to the topic also apply to attachments to the topic. Other types of webserver have similar support.

Images embedded in topics will load much slower since each image will be delivered by the `viewfile` script.

Controlling who can manage top-level webs

Top level webs are a special case, because they don't have a parent web with a WebPreferences. So there has to be a special control just for the root level.

- You can define these settings in the Main.DefaultPreferences topic, preferable towards the end of the topic:
  - **`Set DENYROOTCHANGE = < comma-delimited list of users and groups >`**
  - **`Set ALLOWROOTCHANGE = < comma-delimited list of users and groups >`**

Note that you do **not** require `ROOTCHANGE` access to rename an existing top-level web. You just need `WEBCHANGE` in the web itself.

How Foswiki evaluates ALLOW/DENY settings

When deciding whether to grant access, Foswiki evaluates the following rules in order (read from the top of the list; if the logic arrives at **PERMITTED** or **DENIED** that applies immediately and no more rules are applied). You need to read the rules bearing in mind that VIEW, CHANGE and RENAME access may be granted/denied separately.

1. If the user is an administrator
   - access is **PERMITTED**.
2. If DENYTOPIC is set to a list of wikinames
   - people in the list will be **DENIED**.
3. If DENYTOPIC is set to *empty* (i.e. `Set DENYTOPIC =`)
   - access is **PERMITTED** *i.e* no-one is denied access to this topic.
     Attention: Use this with caution. This is **deprecated** and will likely change in the next release.
4. If ALLOWTOPIC is set

    1. people in the list are **PERMITTED**
    2. everyone else is **DENIED**
5. If DENYWEB is set to a list of wikinames
    - people in the list are **DENIED** access
6. If ALLOWWEB is set to a list of wikinames
    - people in the list will be **PERMITTED**
    - everyone else will be **DENIED**
7. If you got this far, access is **PERMITTED**

Access control and INCLUDE

ALLOWTOPICVIEW and ALLOWTOPICCHANGE only applies to the topic in which the settings are defined. If a topic A includes another topic B, topic A does not inherit the access rights of the included topic B.

Examples: Topic A includes topic B

- If the included topic B has ALLOWTOPICCHANGE set to block editing for a user, it does not prevent editing the including topic A.
- If the included topic B has ALLOWTOPICVIEW set to block view for a user, the user can still view topic A but he cannot see the included topic B. He will see a message *No permission to view B*

Access control quick recipes

Obfuscating webs

Another way of hiding webs is to keep them hidden by not publishing the URL and by preventing the **`all webs`** search option from accessing obfuscated webs. Do so by enabling the **`NOSEARCHALL`** setting in WebPreferences:

- **`Set NOSEARCHALL = on`**

This setup can be useful to hide a new web until content its ready for deployment, or to hide view access restricted webs.

Obfuscating a web without view access control is **very** insecure, as anyone who knows the URL can access the web.

Restrict Access to a whole Foswiki site

For a firewalled Foswiki, e.g. an intranet wiki or extranet wiki, you want to allow only invited people to access your Foswiki. In this case, enable user authentication with ApacheLogin and lock down access to the whole `bin` and `pub` directories to all but valid users. In the Apache `.htaccess` file or the appropriate `.conf` file, replace the `<FilesMatch "(attach|edit|...` section with this:

```
<FilesMatch ".*">
       require valid-user
</FilesMatch>
```

If needed, you can further restrict access to selected webs with ALLOWWEBVIEW and other access control settings.

With this configuration, someone with access to the site needs to register new users.

Authenticate all webs and restrict selected webs

Use the following setup to authenticate users for topic viewing in all webs and to restrict access to selected webs. Requires UserAuthentication to be enabled.

1. The simple way is to add this to `WebPreferences` in all webs.
   - **`Set DENYWEBVIEW = WikiGuest`**
2. **Restrict** view access to selected users and groups. Set one or both of these settings in its WebPreferences topic:
   - **`Set ALLOWWEBVIEW = < list of users and groups >`**
   - **Note:** `DENYWEBVIEW` is evaluated before `ALLOWWEBVIEW`. Access is denied if the authenticated person is in the `DENYWEBVIEW` list, or not in the `ALLOWWEBVIEW` list. Access is granted if `DENYWEBVIEW` and `ALLOWWEBVIEW` are not defined.

In rare cases it may be required to authenticate the view script. This can in some cases have a dramatic performance hit because the webserver must re-authenticate for every page view.

1. Set `require valid-user` on your `view` script in .htaccess or the appropriate Apache .conf file. This looks like: `FilesMatch "(attach|edit|manage|rename|save|view|upload|mail|logon|.*auth).*"` (normally `view` is not in that list).

Authenticate and restrict selected webs only

Use the following setup to provide unrestricted viewing access to open webs, with authentication only on selected webs. Requires UserAuthentication to be enabled.

1. **Restrict** view access to selected users and groups. Set one or both of these settings in its WebPreferences topic:
   - **`Set DENYWEBVIEW = < list of users and groups >`**
   - **`Set ALLOWWEBVIEW = < list of users and groups >`**
   - **Note:** `DENYWEBVIEW` is evaluated before `ALLOWWEBVIEW`. Access is denied if the authenticated person is in the `DENYWEBVIEW` list, or not in the `ALLOWWEBVIEW` list. Access is granted if `DENYWEBVIEW` and `ALLOWWEBVIEW` are not defined.

Hide control settings

To hide access control settings from normal browser viewing, you can put them into the *topic preference settings* by clicking the link `Edit topic preference settings` under `More topic actions` menu. Preferences set in this manner are not visible in the topic text, but take effect nevertheless. Access control settings added as topic preference settings are stored in the topic meta data and they override settings defined in the topic text.

Alternatively, place them in HTML comment markers, but this exposes the access setting during ordinary editing.

```
<!--
   * Set DENYTOPICCHANGE = Main.SomeGroup
-->
```

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Text Formatting

Working in Foswiki is as easy as typing in text. You don't need to know HTML, though you can use it if you prefer. Links to topics are created automatically when you enter WikiWords. And Foswiki shorthand gives you all the power of HTML with a simple coding system that takes no time to learn. It's all laid out below.

Editing Shorthand

Formatting Command:	You write:

Paragraphs:
Blank lines will create new paragraphs.
	`1st paragraph`
	
	`2nd paragraph`

Headings:
Three or more dashes at the beginning of a line, followed by plus signs and the heading text. One plus creates a top level heading, two pluses a second level heading, etc. The maximum heading depth is 6.
 	
You can create a table of contents with the %TOC% macro. If you want to **exclude** a heading from the TOC, put `!!` after the `---+`.
 	
Empty headings are allowed, but won't appear in the table of contents.
	`---++ Sushi`
	`---+++ Maguro`
	`---+++!! Not in TOC`

Bold Text: Words get shown in **bold** by enclosing them in `*` asterisks.	`*Bold*`
Italic Text: Words get shown in *italic* by enclosing them in `_` underscores.	`_Italic_`
Bold Italic: Words get shown in ***bold italic*** by enclosing them in `___` double-underscores.	`__Bold italic__`
Fixed Font: Words get shown in `fixed font` by enclosing them in `=` equal signs.	`=Fixed font=`
Bold Fixed Font: Words get shown in **`bold fixed font`** by enclosing them in double equal signs.	`==Bold fixed==`
You can follow the closing bold, italic, or other (`*` `_` `___` `=` `==`) indicator with normal punctuation, such as commas and full stops. Make sure there is no space between the text and the indicators.	`_This works_,` `_this does not _`

Verbatim (Literal) Text:
Surround code excerpts and other formatted text with `<verbatim>` and `</verbatim>` tags.
	`<verbatim>`
	`class CatAnimal {`
	`  void purr() {`
	`  <code here>`

<table>
<tr><th>Formatting Command:</th><th>You write:</th></tr>
<tr><td>verbatim tags disable HTML code. Use <pre> and </pre> tags instead if you want the HTML code within the tags to be interpreted.

Preferences settings (* Set NAME = value) are set within verbatim tags.</td><td><pre>
  }
}
</verbatim>
</pre></td></tr>
<tr><td>Separator (Horizontal Rule):
Three or more three dashes at the beginning of a line..</td><td><pre>

</pre></td></tr>
<tr><td>Bulleted List:
Multiple of three spaces, an asterisk, and another space.

For all the list types, you can break a list item over several lines by indenting lines after the first one by at least 3 spaces.</td><td><pre>
   * level 1
      * level 2
   * back on 1
   * A bullet
     broken over
     three lines
   * last bullet
</pre></td></tr>
<tr><td>Numbered List:
Multiple of three spaces, a type character, a dot, and another space. Several types are available besides a number:
<table>
<tr><th>Type</th><th>Generated Style</th><th>Sample Sequence</th></tr>
<tr><td>1.</td><td>Arabic numerals</td><td>1, 2, 3, 4...</td></tr>
<tr><td>A.</td><td>Uppercase letters</td><td>A, B, C, D...</td></tr>
<tr><td>a.</td><td>Lowercase letters</td><td>a, b, c, d...</td></tr>
<tr><td>I.</td><td>Uppercase Roman Numerals</td><td>I, II, III, IV...</td></tr>
<tr><td>i.</td><td>Lowercase Roman Numerals</td><td>i, ii, iii, iv...</td></tr>
</table></td><td><pre>
   1. Sushi
   1. Dim Sum
   1. Fondue

   A. Sushi
   A. Dim Sum
   A. Fondue

   i. Sushi
   i. Dim Sum
   i. Fondue
</pre></td></tr>
<tr><td>Definition List:
Three spaces, a dollar sign, the term, a colon, a space, followed by the definition.</td><td><pre>
   $ Sushi: Japan
   $ Dim Sum: S.F.
</pre></td></tr>
<tr><td>Table:
Each row of the table is a line containing of one or more cells. Each cell starts and ends with a vertical bar '|'. Any spaces at the beginning of a line are ignored.

• | *bold* | header cell with text in asterisks
• | center-aligned | cell with at least two, and equal number of spaces on either side
• | right-aligned | cell with more spaces on the left</td><td><pre>
L	*C*	*R*
A2	B2	C2
A3	B3	C3
multi span		
A5-7	5	5
^	six	six
^	seven	seven
split\
over\
3 lines
A9	B9	C9
</pre></td></tr>
</table>

Formatting Command:	You write:
• `| 2 colspan ||` and multi-span columns with multiple `|`'s right next to each other • `|^|` cell with caret indicating follow-up row of multi-span rows • You can split rows over multiple lines by putting a backslash `'\'` at the end of each line • Contents of table cells wrap automatically as determined by the browser • Use `%VBAR%` or `|` to add `|` characters in tables. • Use `%CARET%` or `^` to add `^` characters in tables. The System.TablePlugin provides the `|^|` multiple-span row functionality and additional rendering features	

WikiWord Links:
CapitalizedWordsStuckTogether (or WikiWords) will produce a link automatically if preceded by whitespace or parenthesis.
If you want to link to a topic in a different web write `Otherweb.TopicName`.
To link to a topic in a subweb write `Otherweb.Subweb.TopicName`.
The link label excludes the name of the web, e.g. only the topic name is shown. As an exception, the name of the web is shown for the WebHome topic.
Dots `'.'` are used to separate webs and subwebs from topic names and therefore cannot be used in topic names.
 	
It's generally a good idea to use the macros %SYSTEMWEB% and %USERSWEB% instead of System and Main.
	`WebStatistics`
	
	`Sandbox.WebNotify`
	
	`Sandbox.WebHome`
	
	`Sandbox.Subweb.TopicName`

Anchors:
You can define a reference inside a topic (called an anchor name) and link to that. To **define** an anchor write `#AnchorName` at the beginning of a line. The anchor name must be a WikiWord of no more than 32 characters. To **link to** an anchor name use the `[[MyTopic#MyAnchor]]` syntax. You can omit the topic name if you want to link within the same topic.
	`[[WikiWord#NotThere]]`
	
	`[[#MyAnchor][Jump]]`
	
	`#MyAnchor To here`

Forced Links:
You can create a forced internal link by enclosing words in double square brackets. Text within the brackets may contain optional spaces; the topic name is formed by capitalizing
	`[[wiki syntax]]`
	
	`[[Sandbox.My unspaced topic]]`
	
	`escaped:`
	`![[wiki syntax]]`

Formatting Command:	You write:
the initial letter and by removing the spaces; for example, `[[wiki syntax]]` links to topic WikiSyntax. You can also refer to a different web and use anchors. To "escape" double square brackets that would otherwise make a link, prefix the leading left square bracket with an exclamation point.	

Specific Links:
You can create a link where you specify the link text and the URL separately using nested square brackets `[[reference][text]]`. Internal link references (e.g. WikiSyntax) and URLs (e.g. http://foswiki.org/) are both supported. The rules described under **Forced Links** apply for internal link references.
Anchor names can be added as well, to create a link to a specific place in a topic.
	`[[WikiSyntax][wiki syntax]]`
	
	`<span class='externalLink'><span class='externalI`

Prevent a Link: Prevent a WikiWord from being linked by prepending it with an exclamation point.	`!SunOS`

Disable Links:
You can disable automatic linking of WikiWords by surrounding text with `<noautolink>` and `</noautolink>` tags.
It is possible to turn off all auto-linking with a NOAUTOLINK preferences setting.
	`<noautolink>`
	`RedHat & SuSE`
	`</noautolink>`

Mailto Links:
E-mail addresses are linked automatically. To create e-mail links that have more descriptive link text, specify subject lines or message bodies, or omit the e-mail address, you can write `[[mailto:user@domain][descriptive text]]`.
	`a@b.com`
	
	`[[mailto:a@b.com]\`
	`[Mail]]`
	
	`[[mailto:?subject=\`
	`Hi][Hi]]`

Literal content:
Foswiki generates HTML code from TML shorthand. **Experts** surround anything that must be output literally in the HTML code, without the application of shorthand rules, with `<literal>..</literal>` tags. any HTML within literal tags **must** be well formed i.e. all tags must be properly closed before the end of the literal block. Macros are expanded within literal blocks.
	`<literal>`
	`| Not | A | Table |`
	`</literal>`

Protected content:
Experts protect text from mangling by WYSIWYG editors using `<sticky>..</sticky>` tags. Sticky tags don't have any effect on normal topic display; they are only relevant when content has to be protected from a WYSIWYG editor (usually because it isn't well-formed HTML, or because it
	`<sticky>`
	`<div>`
	`This div is required`
	`</div>`
	`</sticky>`

Formatting Command:	You write:
is HTML that WYSIWYG would normally filter out or modify). Protected content appears as plain text in the WYSIWYG editor.	

Using HTML

You can use most HTML tags in topics without a problem. This is useful where you want to add some content that is formatted in a way that is not supported using shorthand, for example, you can write `<strike>deleted text</strike>` to get ~~deleted text~~.

There are a few usability and technical considerations to keep in mind:

- On collaboration pages, it's better **not** to use HTML, but to use shorthand instead - this keeps the text uncluttered and easy to edit using the plaintext editor.
- If you *must* use HTML, use XHTML 1.0 Transitional syntax.
- Use `<literal>..</literal>` tags around blocks of HTML to avoid accidental interpretation of shorthand within the HTML.
- Script tags may be filtered out, at the discretion of your Wiki administrator.

Recommendations when pasting HTML from other sources (using the plain-text editor):

- Copy only text between `<body>` and `</body>` tags.
- Remove all empty lines. Foswiki inserts `<p />` paragraph tags on empty lines, which causes problems if done between HTML tags that do not allow paragraph tags, like for example between table tags.
- Remove leading spaces. Foswiki might interpret some text as lists.
- Do not span a tag over more than one line. Foswiki requires that the opening and closing angle brackets - **<...>** - of a HTML tag are on the same line, or the tag will be broken.
- In your HTML editing program, save without hard line breaks on text wrap.

When using a WYSIWYG editor, you can just copy-paste directly into the editor, and the content will be converted to shorthand automatically when you save.

Hyperlinks

Being able to create links without any special formatting is a core Foswiki feature, made possible with WikiWords and inline URLs.

Internal Links

- GoodStyle is a WikiWord that links to the GoodStyle topic located in the current web.

- NotExistingYet is a topic waiting to be written. Create the topic by clicking on the **?**. (Try clicking, but then, **Cancel** - creating the topic would wreck this example!)

External Links

- Protocols matching the configuration parameter `LinkProtocolPattern`, which by default is set to `(file|ftp|gopher|https|http|irc|mailto|news|nntp|telnet)`, are linked automatically. You might change this setting to add more protocols (such as smb). Thus, all lines containing:

    - `file://...`
    - `ftp://...`
    - `gopher://...`
    - `https://...`
    - `http://...`
    - `irc://...`
    - `mailto:...@...`
    - `news://...`
    - `nntp://...`
    - `telnet://...` are linked automatically.

- E-mail addresses like `name@domain.com` are linked automatically.

- `[[Square bracket rules]]` let you easily create non-WikiWord links.
    - You can also write `[[http://yahoo.com Yahoo home page]]` as an easier way of doing external links with descriptive text for the link, such as Yahoo home page.

Macros

Macros are names enclosed in percent signs that are that are expanded to some other text when the topic is displayed. For example, `%TOPIC%` is expanded to MacrosQuickStart, the title of this topic.

Some macros can take arguments in curly braces - for example, `%INCLUDE{"OtherTopic" ARG="arg"}%`.

Many macro definitions are built-in, and others (preference settings) are predefined for your convenience. You can also define your own preference settings at the entire site, individual web, or individual topic level. For more information, see **Macros**

Macros are fully expanded *before* any of the text formatting rules are applied.

Documentation Graphics: There are many graphics available to use in your topics. Use `%ICON{"help"}%`, `%ICON{"tip"}%`, and `%ICON{"warning"}%` to get: , , and , respectively. DocumentGraphics lists them all.

To "escape" a macro, prefix it with an exclamation mark. Write: `!%SOMEMACRO%` to get: %SOMEMACRO%.

Plugin Formatting Extensions

Plugins can extend the functionality of Foswiki into many other areas. There are a huge number of plugins available from the foswiki site?.

Currently enabled plugins on this installation, as listed by `%PLUGINDESCRIPTIONS%`:

- System.TWikiCompatibilityPlugin (Foswiki-1.0.9, $Rev: 6017 (2010-01-11) $): add TWiki personality to Foswiki
- System.SpreadSheetPlugin (10 Nov 2009, $Rev: 5484 (2009-11-10) $): Add spreadsheet calculations like "$SUM($ABOVE())" to Foswiki tables and other topic text
- System.AutoViewTemplatePlugin (2009-09-06, $Rev: 5221 (2009-10-06) $): Automatically sets VIEW_TEMPLATE and EDIT_TEMPLATE
- System.BreadCrumbsPlugin (v2.42, 4694): A flexible way to display breadcrumbs navigation
- System.CalendarPlugin (2.000, $Rev: 8058 (2010-07-07) $): Show a monthly calendar with

highlighted events
- System.ChartPlugin (13 Mar 2010, $Rev: 6743 (2010-03-14) $): Create PNG or GIF charts to visualize Foswiki tables
- System.CommentPlugin (24 Feb 2010, $Rev: 6512 (2010-02-24) $): Quickly post comments to a page without an edit/save cycle
- System.DBCachePlugin (3.50, $Rev: 8342 (2010-07-28) $): Lightweighted frontend to the DBCacheContrib
- System.EditChapterPlugin (2.12, $Rev: 6337 (2010-02-15) $): An easy sectional edit facility
- System.EditTablePlugin (4.34, $Rev: 5854 (2009-12-23) $): Edit tables using edit fields, date pickers and drop down boxes
- System.ExplicitNumberingPlugin (1.6, $Rev: 6482 (2010-02-23) $): Use the `##.`, `##..` etc. notation to insert outline numbering sequences (1, 1.1, 2, 2.1) in topic's text. Also support numbered headings.
- System.ExternalLinkPlugin (1.21, $Rev: 5906 (2009-12-31) $): Adds a visual indicator to outgoing links
- System.FilterPlugin (2.03, $Rev: 8284 (2010-07-23) $): Substitute and extract information from content by using regular expressions
- System.FlexWebListPlugin (v1.51, $Rev: 5698 (2009-12-02) $): Flexible way to display hierarchical weblists
- System.GluePlugin (2.20, $Rev: 4420 (2009-07-03) $): Enable markup to span multiple lines
- System.HeadlinesPlugin (2.21.2, $Rev: 6822 (2010-03-21) $): Show headline news in Foswiki pages based on RSS and ATOM news feeds from external sites
- System.IfDefinedPlugin (v2.00, $Rev: 4422 (2009-07-03) $): Render content conditionally
- System.ImagePlugin (2.31, $Rev: 6307 (2010-02-12) $): Control the display and alignment of images using an easy syntax
- System.InterwikiPlugin (20 Sep 2009, $Rev: 5022 (2009-09-20) $): Link ExternalSite:Page text to external sites based on aliases defined in a rules topic
- System.JQueryLibPlugin (v1.0, $Rev: 3729 (2009-04-28) $): Provides you with the jQuery javascript library
- System.JQueryPlugin (3.51, $Rev: 20090710 (2009-07-10) $): jQuery JavaScript library for Foswiki
- System.LatexModePlugin (4.0, $Rev: 4721 (2009-08-28) $): Enables LaTeX markup (mathematics and more) in Foswiki topics
- System.LdapNgPlugin (v3.00, $Rev: 3726 (2009-04-27) $): Query and display data from an LDAP directory
- System.MathModePlugin (4.01, $Rev: 3649 (2009-04-23) $): Include LaTeX formatted math in your Foswiki pages
- System.NatEditPlugin (v4.21, $Rev: 6336 (2010-02-15) $): A Wikiwyg Editor
- System.NatSkinPlugin (3.96, $Rev: 6287 (2010-02-12) $): Theming engine for NatSkin
- System.NewUserPlugin (v2.00, $Rev: 3642 (2009-04-23) $): Create a user topic if it does not exist yet
- System.PreferencesPlugin (20 Sep 2009, $Rev: 5037 (2009-09-20) $): Allows editing of preferences using fields predefined in a form
- System.RedirectPlugin (1.1, $Rev: 7923 (2010-06-26) $): Create a redirect to another topic or website.
- System.RenderListPlugin (2.2, $Rev: 5042 (2009-09-20) $): Render bullet lists in a variety of formats
- System.RenderPlugin (3.0, 4818): Render WikiApplications asynchronously
- System.SendEmailPlugin (1.5.1, $Rev: 6581 (2010-02-28) $): Allows to send e-mails through an e-mail form.
- System.SetVariablePlugin (1.00, $Rev: 4287 (2009-06-23) $): Flexible handling of topic variables
- System.SlideShowPlugin (02 Aug 2008, $Rev: 2742 (2009-02-26) $): Create web based presentations based on topics with headings.
- System.SmiliesPlugin (20 Sep 2009, $Rev: 5046 (2009-09-20) $): Render smilies like :) as icons
- System.SubscribePlugin (03 Dec 2008, $Rev: 13787 (18 May 2007) $): Subscribe to web notification
- System.SyntaxHighlightingPlugin (1.2, $Rev: 4052 (2009-06-07) $): Highlights code fragments for

many languages using **`enscript`**.
- System.TablePlugin (1.046, $Rev: 6733 (2010-03-13) $): Control attributes of tables and sorting of table columns
- System.TagMePlugin (02 Mar 2010, $Rev: 6613 (2010-03-02) $): Tag wiki content collectively to find content by keywords
- System.TwistyPlugin (1.5.4, $Rev: 6281 (2010-02-12) $): Twisty section Javascript library to open/close content dynamically
- System.UploadPlugin (1.11, $Rev: 20090703 (2009-07-03) $): Attach multiple files to a topic in one go
- System.VarCachePlugin (29 Jan 2009, $Rev: 2215 (29 Jan 2009) $): Cache Foswiki macros in selected topics for faster page rendering
- System.VotePlugin (1.33, $Rev: 5560 (2009-11-17) $): Simple way to count votes
- System.ZonePlugin (2.1, $Rev: 6966 (2010-03-28) $): Gather content of a page in named zones while rendering it

Check on current Plugin status and settings for this site in System.Plugins.

Common Editing Errors

Foswiki formatting rules are fairly simple to use and quick to type. However, there are some things to watch out for:

- **Q:** Text enclosed in angle brackets like `<filename>` is not displayed. How can I show it as it is?
  - **A:** The `'<'` and `'>'` characters have a special meaning in HTML, they define HTML tags. You need to escape them, so write `'<'` instead of `'<'`, and `'>'` instead of `'>'`.
    Example: Type `'prog <filename>'` to get `'prog <filename>'`.

- **Q:** Why is the `'&'` character sometimes not displayed?
  - **A:** The `'&'` character has a special meaning in HTML, it starts a so called character entity, i.e. `'©'` is the © copyright character. You need to escape `'&'` to see it as it is, so write `'&'` instead of `'&'`.
    Example: Type `'This & that'` to get `'This & that'`.

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Macros

Special text strings expand on the fly to display user data or system info

Macros are text strings - `%MACRONAME%` or `%MACRONAME{ parameter="value" }%` - that expand into content whenever a topic is rendered for viewing. There are two types of macros:

1. Preference settings: Can be defined and changed by the user
2. Predefined macros: Defined by the system or by Plugins (for example, the SpreadSheetPlugin introduces a `%CALC{}%` macro)

Using Macros

To use a macro type its name. For example,

- type `%T%` to get (a preference settings)
- type `%TOPIC%` to get `Macros` (a predefined macro?)
- type `%CALC{ "$UPPER(Text)" }%` to get `TEXT` (a macro? defined by a Plugin)

Note:

- To leave a macro unexpanded, precede it with an exclamation point, e.g. type `!%TOPIC%` to get `%TOPIC%`
- Macros are expanded relative to the topic they are *used* in, not the topic they are *defined* in
- Type `%ALLVARIABLES%` to get a full listing of all macros defined for a particular topic

Macro Names

Macro names must start with a letter. The following characters can be letters, numbers and the underscore '_'. You can use both upper-case and lower-case letters and you can mix the characters. E.g. `%MYVAR%`, `%MyVar%`, `%My2ndVar%`, and `%My_Var%` are all valid macro names. Macros are case sensitive. `%MyVAR%` and `%MYVAR%` are not the same macro.

By convention all settings, predefined macros and macros used by plugins are always UPPER-CASE.

Preferences

Preferences settings are simple macros that do *not* accept parameters, and are defined in topics. A lot of the macros you will encounter are of this type.

Preferences can be defined by the user in various places.

Setting Preferences

You can set macros in all the following places:

1. default level in System.DefaultPreferences (**not** recommended)
2. plugin topics (see Plugins)
3. local site level in Main.SitePreferences
4. user level in individual user topics in Main web

5. web level in WebPreferences of a parent web
6. web level in WebPreferences of the web
7. topic level in topics in webs
8. session macros (if sessions are enabled)

Settings at higher-numbered levels override settings of the same macro at lower numbered levels, unless the macro was included in the setting of FINALPREFERENCES at a lower-numbered level, in which case it is locked at the value it has at that level.

If you are setting a preference and using it in the same topic, note that Foswiki reads all the preference settings from the saved version of the topic before it displays anything. This means you can use a macro anywhere in the topic, even if you set it somewhere inconspicuous near the end. **But beware:** it also means that if you change the setting of a macro you are using in the same topic, **`Preview`** will show the wrong thing, and you must **`Save`** the topic to see it correctly.

The syntax for setting macros is the same anywhere:
`[multiple of 3 spaces] * [space] Set [space] MACRONAME [space] = [space] value`

Examples:

- **`Set MACRONAME = value`**
  - **`Set MACRONAME = value`**

Spaces between the = sign and the value will be ignored. You can split a value over several lines by indenting following lines with spaces - as long as you don't try to use * as the first character on the following line.

Example:

```
* Set MACRONAME = value starts here
  and continues here
```

Whatever you include in your Macro will be expanded on display, exactly as if it had been entered directly.

Example: Create a custom logo macro

- To place a logo anywhere in a web by typing **`%MYLOGO%`**, define the preference settings on the web's WebPreferences topic, and upload a logo file, ex: `mylogo.gif`. You can upload by attaching the file to WebPreferences, or, to avoid clutter, to any other topic in the same web, e.g. `LogoTopic`. Sample preference setting in WebPreferences:
  - **`Set MYLOGO = %PUBURL%/%WEB%/LogoTopic/mylogo.gif`**

You can also set preference settings in a topic by clicking the link `Edit topic preference settings` under `More topic actions`. Preferences set in this manner are not visible in the topic text, but take effect nevertheless.

Access Control Settings

These are special types of preference settings to control access to content. AccessControl explains these security settings in detail.

Local values for preferences

Certain topics (a users home topic, web site and default preferences topics) have a problem; macros defined in those topics can have two meanings. For example, consider a user topic. A user may want to use a double-height edit box when they are editing their home topic - but **only** when editing their home topic. The rest of the time, they want to have a normal edit box. This separation is achieved using `Local` in place of `Set` in the macro definition. For example, if the user sets the following in their home topic:

```
* Set EDITBOXHEIGHT = 10
* Local EDITBOXHEIGHT = 20
```

Then when they are editing any other topic, they will get a 10 high edit box. However when they are editing their home topic, they will get a 20 high edit box. `Local` can be used wherever a preference needs to take a different value depending on where the current operation is being performed.

Use this powerful feature with great care! `%ALLVARIABLES%` can be used to get a listing of the values of all macros in their evaluation order, so you can see macro scope if you get confused.

Predefined Macros

Most predefined macros return values that were either set in the configuration when Foswiki was installed, or taken from server info (such as current username, or date and time). Some, like `%SEARCH%`, are powerful and general tools.

- Predefined macros can be overridden by preference settings (except TOPIC and WEB)
- Plugins may extend the set of predefined macros (see individual Plugins topics for details)
- **Take the time to thoroughly read through ALL preference macros.** If you actively configure your site, review macros periodically. They cover a wide range of functions, and it can be easy to miss the one perfect macro for something you have in mind. For example, see `%BASETOPIC%`, `%INCLUDE%`, and the mighty `%SEARCH%`.

This version of Foswiki - Foswiki-1.0.9, Sun, 17 Jan 2010, build 6075 - predefines the following macros:

ACTIVATEDPLUGINS -- list of currently activated plugins

- Syntax: `%ACTIVATEDPLUGINS%`
- Expands to: System.TWikiCompatibilityPlugin, System.SpreadSheetPlugin, System.AutoViewTemplatePlugin, System.BreadCrumbsPlugin, System.CalendarPlugin, System.ChartPlugin, System.CommentPlugin, System.DBCachePlugin, System.EditChapterPlugin, System.EditTablePlugin, System.ExplicitNumberingPlugin, System.ExternalLinkPlugin, System.FilterPlugin, System.FlexWebListPlugin, System.GluePlugin, System.HeadlinesPlugin, System.IfDefinedPlugin, System.ImagePlugin, System.InterwikiPlugin, System.JQueryLibPlugin, System.JQueryPlugin, System.LatexModePlugin, System.LdapNgPlugin, System.MathModePlugin, System.NatEditPlugin, System.NatSkinPlugin, System.NewUserPlugin, System.PreferencesPlugin, System.RedirectPlugin, System.RenderListPlugin, System.RenderPlugin, System.SendEmailPlugin, System.SetVariablePlugin, System.SlideShowPlugin, System.SmiliesPlugin, System.SubscribePlugin, System.SyntaxHighlightingPlugin, System.TablePlugin, System.TagMePlugin, System.TwistyPlugin, System.UploadPlugin, System.VarCachePlugin, System.VotePlugin, System.ZonePlugin
- Related: PLUGINDESCRIPTIONS, FAILEDPLUGINS, PLUGINVERSION

ADDTOHEAD

You can write %ADDTOHEAD{...}% in a topic or template. This variable accepts the following parameters:

- _DEFAULT optional, id of the head block. Used to generate a comment in the output HTML.
- text optional, text to use for the head block. Mutually exclusive with topic.
- topic optional, full Foswiki path name of a topic that contains the full text to use for the head block. Mutually exclusive with text. Example: topic="System.MyTopic".
- requires optional, comma-separated list of id's of other head blocks this one depends on.

%ADDTOHEAD% expands in-place to the empty string, unless there is an error in which case the variable expands to an error string.

Use %RENDERHEAD% to generate the sorted head tags.

ADDTOZONE

```
%ADDTOZONE{
  "zone"
  ...
}%
```

- zone: optional, comma-separated list of zones the content should be added to, special zones are body and head, defaults to head
- tag: optional, identificator for the material to be added, to be used in requires
- requires: comma-separated list of tags that must occur before the current material, constraints the order of all material in a zone
- text: optional, text to be added to the named zone, mutually exclusive with topic
- topic: optional, full qualified web-topic name that contains the text to be added, mutually exclusive with text
- section: optional, section of the topic to be added, defaults to the default section between STARTINCLUDE and STOPINCLUDE

Note, that using topic and section is actually a short form of

```
%ADDTOZONE{
   "myzone"
   text="$percntINCLUDE{\"topic\" section=\"section\" warn=\"off\"}$percnt"
}%
```

See also VarRENDERZONE

ALLVARIABLES -- list of currently defined macros

- Syntax: %ALLVARIABLES%
- Expands to: a table showing all defined macros in the current context

AQUA -- start aqua colored text

- AQUA is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: %AQUA% aqua text %ENDCOLOR%
- Expands to: aqua text

- %<color>% text must end with %ENDCOLOR%. If you want to switch from one color to another one you first need to end the active color with %ENDCOLOR%, e.g. write %RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

ATTACHURL -- full URL for attachments in the current topic

- Syntax: %ATTACHURL%
- Expands to: https://wiki.iac.ethz.ch/pub/System/VarATTACHURL
- Example: If you attach a file you can refer to it as %ATTACHURL%/image.gif
- Related: ATTACHURLPATH, PUBURL, PUBURLPATH, SCRIPTURL, SCRIPTURLPATH, FileAttachments

ATTACHURLPATH -- path of the attachment URL of the current topic

- Syntax: %ATTACHURLPATH%
- Expands to: /pub/System/VarATTACHURLPATH
- Related: ATTACHURL, PUBURL, PUBURLPATH, SCRIPTURL, SCRIPTURLPATH, FileAttachments

AUTHREALM -- authentication realm

- String defined as {AuthRealm} in configure. This is used in certain password encodings, and in login templates as part of the login prompt.
- Syntax: %AUTHREALM%
- Expands to: Enter your System.LoginName. (Typically First name and last name, no space, no dots, capitalized, e.g. JohnSmith, unless you chose otherwise). Visit System.UserRegistration if you do not have one.
- Related: UserAuthentication, SESSIONID, SESSIONVAR, LOGIN, LOGOUT, SESSION_VARIABLE

BASETOPIC -- base topic where an INCLUDE started

- The name of the topic where a single or nested INCLUDE started - same as %TOPIC% if there is no INCLUDE
- This *is* the name of the topic requested by the user.
- Syntax: %BASETOPIC%
- Related: BASEWEB, INCLUDINGTOPIC, INCLUDE, TOPIC

BASEWEB -- base web where an INCLUDE started

- The web name where the includes started, e.g. the web of the first topic of nested includes. Same as %WEB% in case there is no include.
- This *is* the name of the web requested by the user.
- Syntax: %BASEWEB%
- Related: BASETOPIC, INCLUDINGWEB, INCLUDE, WEB

BB -- bullet with line break

- Line break and bullet without indentation.
- Current value: BB =
  •
- Related: BR, BULLET, BB2, BB3, BB4, CARET, VBAR

BB2 -- level 2 bullet with line break

- Line break and bullet, level 2.
- Current value: BB2 =
  •
- Related: BR, BULLET, BB, BB3, BB4, VBAR

BB3 -- level 3 bullet with line break

- Line break and bullet, level 3.
- Current value: BB3 =
    •
- Related: BR, BULLET, BB, BB2, BB4, VBAR

BB4 -- level 4 bullet with line break

- Line break and bullet, level 4.
- Current value: BB4 =
      •
- Related: BR, BULLET, BB, BB2, BB3, VBAR

BLACK -- start black colored text

- `BLACK` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%BLACK% black text %ENDCOLOR%`
- Expands to: black text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

BLUE -- start blue colored text

- `BLUE` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%BLUE% blue text %ENDCOLOR%`
- Expands to: blue text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.

- Related: ENDCOLOR, DefaultPreferences, StandardColors

BR -- line break

- Current value: BR =
- Related: BULLET, BB, BB2, BB3, BB4, CARET, VBAR

BROWN -- start brown colored text

- `BROWN` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%BROWN% brown text %ENDCOLOR%`
- Expands to: brown text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

BULLET -- bullet character

- Current value: BULLET = •
- Related: BR, BB, BB2, BB3, BB4, CARET, VBAR

CALC{"formula"} -- add spreadsheet calculations to tables and outside tables

- The `%CALC{"formula"}%` macro is handled by the SpreadSheetPlugin. There are around 90 formulae, such as `$ABS()`, `$EXACT()`, `$EXISTS()`, `$GET()/$SET()`, `$IF()`, `$LOG()`, `$LOWER()`, `$PERCENTILE()`, `$TIME()`, `$VALUE()`.
- Syntax: `%CALC{"formula"}%`
- Examples:
  - `%CALC{"$SUM($ABOVE())"}%` returns the sum of all cells above the current cell
  - `%CALC{"$EXISTS(Web.SomeTopic)"}%` returns `1` if the topic exists
  - `%CALC{"$UPPER(Collaboration)"}%` returns `COLLABORATION`
- Related: IF, SpreadSheetPlugin

CARET -- caret symbol

- The CARET macro is useful in TML tables.
- Current value: CARET = ^
- Related: BR, BULLET, BB, BB2, BB3, BB4, VBAR

COMMENT{ *attributes* } -- insert an edit box into the topic to easily add comments.

- A `%COMMENT%` without parameters shows a simple text box.

- The following standard attributes are recognized

Name	Description	Default
`type`	This is the name of the template to use for this comment. Comment templates are defined in a Foswiki template - see Customisation, below. If this attribute is not defined, the type is whatever is defined by COMMENTPLUGIN_DEFAULT_TYPE, either in this topic or in your WebPreferences.	`below`
`default`	Default text to put into the textarea of the prompt.	
`target`	Name of the topic to add the comment to	the current topic
`location`	Regular expression specifying the comment location in the target topic. Read *carefully* the CommentPlugin documentation!	
`mode`	For compatibility with older versions only, synonymous with `type`	
`nonotify`	Set to "on" to disable change notification for target topics	`off`
`noform`	Set to "on" to disable the automatic form that encloses your comment block - *remember* to insert `<form>` tags yourself! See CommentPluginExamples#noform for an example.	`off`
`nopost`	Set to "on" to disable insertion of the posted text into the topic.	`off`
`remove`	Set to "on" to remove the comment prompt after the first time it is clicked.	`off`
`button`	Button label text	`Add comment`

- See CommentPlugin for more information

DATE -- signature format date

- Syntax: `%DATE%`
- Expands to: `17 May 2024`
- Date format defined as {DefaultDateFormat} in configure
- ⚠ When used in a template topic, this variable will be expanded when the template is used to create a new topic. See TemplateTopics#TemplateTopicsVars for details.
- Related: DISPLAYTIME, GMTIME{"format"}, SERVERTIME

DISPLAYTIME{"format"} -- formatted display time

- Formatted time - either GMT or Local server time, depending on {DisplayTimeValues} setting in configure. Same format qualifiers as `%GMTIME%`
- Syntax: `%DISPLAYTIME%` OR `%DISPLAYTIME{"format"}%`
- `%DISPLAYTIME%` The time is shown as hh:mm (24 hour clock)
    - ♦ Expands to: `17 May 2024 - 04:39`
- Example: `%DISPLAYTIME{"$hou:$min"}%` expands to `04:39`
- Related: GMTIME, SERVERTIME

EDITACTION -- Selects an edit template

- The EDITACTION preference setting lets you define the use of an editaction template instead of the standard edit. If EDITACTION is defined as `text`, then hide the form. If EDITACTION is defined as `form` hide the normal text area and only edit the form.
- Syntax: Set EDITACTION = textlform
- Expands to: %EDITACTION%

- Related: CommandAndCGIScripts#edit
- ⚠ When EDITACTION is defined as text or form the Edit and Edit Raw buttons simply add `;action=text` or `;action=form` to the URL for the edit script. If you have defined an EDITACTION preference setting you can still edit the topic content or the form by removing the `;action=form` or `;action=text` from the edit URL in the browser and reload.

EDITTABLE{ *attributes* } -- edit tables using edit fields and other input fields

- The `%EDITTABLE{}%` macro is handled by the EditTablePlugin
- Syntax: `%EDITTABLE{ attributes }%`

- Supported attributes:

Attribute	Comment
`header`	Specify the header format of a new table like `"|*Food*|*Drink*|"`. Useful to start a table with only a button

`format`	The format of one column when editing the table. A cell can be a text input field, or any of these edit field types:
	
	• Text input field (1 line):
	`| text, <size>, <initial value> |`
	
	• Textarea input field:
	`| textarea, <rows>x<columns>, <initial value> |`
	
	• Drop down box:
	`| select, <size>, <option 1>, <option 2>, etc* |`
	* only one item can be selected
	
	• Radio buttons:
	`| radio, <size*>, <option 1>, <option 2>, etc |`
	* size indicates the number of buttons per line in edit mode
	
	• Checkboxes:
	`| checkbox, <size*>, <option 1>, <option 2>, etc |`
	* size indicates the number of checkboxes per line in edit mode
	
	• Fixed label:
	`| label, 0, <label text> |`
	
	• Row number:
	`| row, <offset> |`
	
	• Date:
	`| date, <size>, <initial value>, <DHTML date format> |` (see Date Field Type)

`changerows`	Rows can be added and removed if `"on"` Rows can be added but not removed if `"add"` Rows cannot be added or removed if `"off"`
`quietsave`	Quiet Save button is shown if `"on"`, hidden if `"off"`
`include`	Other topic defining the `EDITTABLE` parameters. The first `%EDITTABLE%` in

Attribute	Comment
	the topic is used. This is useful if you have many topics with the same table format and you want to update the format in one place. Use `topic` or `web.topic` notation.
`helptopic`	Topic name containing help text shown below the table when editing a table. The %STARTINCLUDE% and %STOPINCLUDE% macros can be used in the topic to specify what is shown.
`headerislabel`	Table header cells are read-only (labels) if `"on"`; header cells can be edited if `"off"` or "0"
`editbutton`	Set edit button text, e.g. `"Edit this table"`; set button image with alt text, e.g. `"Edit table, %PUBURL%/%SYSTEMWEB%/DocumentGraphics/edittopic.gif"`; hide edit button at the end of the table with `"hide"` (Note: Button is automatically hidden if an edit button is present in a cell)
`buttonrow`	Set to `top` to put the edit buttons above the table.
`javascriptinterface`	Use javascript to directly move and delete row without page refresh. Enable with `"on"`, disable with `"off"`.

- Example:
```
%EDITTABLE{ format="| text, 20 | select, 1, one, two, three |"
changerows="on" }%
| *Name* | *Type* |
| Foo | two |
```
- Related: See EditTablePlugin for more details

ENCODE{"string"} -- encodes a string to HTML entities

- Encode "special" characters to HTML numeric entities. Encoded characters are:
  - all non-printable ASCII characters below space, except newline (`"\n"`) and linefeed (`"\r"`)
  - HTML special characters `"<"`, `">"`, `"&"`, single quote (`'`) and double quote (`"`)
  - TML special characters `"%"`, `"["`, `"]"`, `"@"`, `"_"`, `"*"`, `"="` and `"|"`
- Syntax: `%ENCODE{"string"}%`
- Supported parameters:

Parameter:	Description:	Default:
`"string"`	String to encode	required (can be empty)
`type="entity"` `type="safe"` `type="html"` `type="quotes"` `type="url"`	Control how special characters are encoded	`type="url"`
	`entity`: Encode special characters into HTML entities, like a double quote into `"`. Does **not** encode `\n` or `\r`.	
	`safe`: Encode characters `'"<>%` into HTML entities.	
	`html`: As `type="entity"` except it also encodes `\n` and `\r`	
	`quotes`: Escape double quotes with backslashes (`\"`), does not change other characters	
	`url`: Encode special characters for URL parameter use, like a double quote into `%22` (this is the default)	

- Example: `%ENCODE{"spaced name"}%` expands to `spaced%20name`

- ⚠ Values of HTML input fields must be entity encoded.
  Example: `<input type="text" name="address" value="%ENCODE{ "any text" type="entity" }%" />`
- ⚠ Double quotes in strings must be escaped when passed into other macros.
  Example: `%SEARCH{ "%ENCODE{ "string with "quotes"" type="quotes" }%" noheader="on" }%`
- ⚠ ENCODE can be used to filter user input from URL parameters and similer to protect against cross-site scripting. The safest approach is to use `type="entity"`. This can however prevent an application from fully working. You can then use `type="safe"` which encodes only the characters `'"<>%` into HTML entities (same as encode="safe"). When ENCODE is passing a string inside another macro always use double quotes ("") type="quote". For maximum security against cross-site scripting you are adviced to install the Foswiki:Extensions.SafeWikiPlugin.

- Related: URLPARAM

ENDCOLOR -- end colored text

- `ENDCOLOR` is a shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%RED% red text %ENDCOLOR%`
- Expands to: red text
- ⚠ `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: VarAQUA, VarBLACK, VarBLUE, VarBROWN, VarGRAY, VarGREEN, VarLIME, VarMAROON, VarNAVY, VarOLIVE, VarORANGE, VarPINK, VarPURPLE, VarRED, VarSILVER, VarTEAL, VarWHITE, VarYELLOW, DefaultPreferences, StandardColors

ENDSECTION{"name"} -- marks the end of a named section within a topic

- Syntax: `%ENDSECTION{"name"}%`
- Syntax: `%ENDSECTION{type="include"}%`
- Supported parameter:

Parameter:	Description:
`"name"`	Name of the section.
`type="..."`	Type of the section being terminated; supported types `"section"`, `"include"`, `"expandvariables"`, `"templateonly"`.

- If the `STARTSECTION` is named, the corresponding `ENDSECTION` must also be named with the same name. If the `STARTSECTION` specifies a type, then the corresponding `ENDSECTION` must also specify the same type. If the section is unnamed, `ENDSECTION` will match with the nearest unnamed `%STARTSECTION%` **of the same type** above it.
- Related: STARTSECTION

ENV{"varname"} -- inspect the value of an environment variable

- Returns the current value of the environment variable in the CGI (Common Gateway Interface) environment. This is the environment that the CommandAndCGIScripts are running in.
- **Note:** For security reasons, only those environment variables whose names match the regular expression in `{AccessibleENV}` in the **Security Settings/Miscellaneous** section of `configure`

can be displayed. Any other variable will just be shown as an empty string, irrespective of its real value.
- Example: `%ENV{MOD_PERL}%` displays as: not set
- If an environment variable is undefined (as against being set to the empty string) it will be returned as `not set`.
- Related: HTTP_HOST, REMOTE_ADDR, REMOTE_PORT, REMOTE_USER

FAILEDPLUGINS -- debugging for plugins that failed to load, and handler list

- Syntax: `%FAILEDPLUGINS%`
- Expands to: See Plugins#FAILEDPLUGINS
- Related: PLUGINDESCRIPTIONS, ACTIVATEDPLUGINS, PLUGINVERSION

FORMFIELD{"fieldname"} -- renders a field in the form attached to some topic

- Syntax: `%FORMFIELD{"fieldname"}%`
- Supported parameters:

Parameter:	Description:	Default:
`"fieldname"`	The name of a Data form field	required
`topic="..."`	Topic where form data is located. May be of the form `Web.TopicName`	Current topic
`format="..."`	Format string. `$value` expands to the field value, and `$name` expands to the field name, `$title` to the field title, `$form` to the name of the form the field is in. The standard format tokens are also expanded.	`"$value"`
`default="..."`	Text shown if the field is defined in the topic, but the field value is empty. For example, a text field for which all the content has been deleted.	`""`
`alttext="..."`	Text shown if the field is not defined in the topic (even if it is specified in the form definition). For example, this is used when a field exists in the form definition, but the referring topic hasn't been edited since it was added.	`""`

- Example: `%FORMFIELD{"ProjectName" topic="Projects.SushiProject" default="(no project name given)" alttext="ProjectName field not found in form"}%`
- Related: SEARCH

GMTIME{"format"} -- formatted GM time

- Syntax: `%GMTIME%` OR `%GMTIME{"format"}%`
- `%GMTIME%` uses the default date format defined by the {DefaultDateFormat} setting in configure
  - ♦ expands to 17 May 2024 - 02:39
- Supported special format tokens:

Token:	Unit:	Example
`$seconds`	seconds	59
`$minutes`	minutes	59
`$hours`	hours	23

Token:	Unit:	Example
$day	day of month	31
$wday	day of the Week (Sun, Mon, Tue, Wed, Thu, Fri, Sat)	Thu
$dow	day of the week (Sun = 0)	2
$week	number of week in year (ISO 8601)	34
$month	short name of month	Dec
$mo	2 digit month	12
$year	4 digit year	1999
$ye	2 digit year	99
$tz	either "GMT" (if set to gmtime), or "Local" (if set to servertime)	GMT
$iso	ISO format timestamp	2024-05-17T02:39:32Z
$rcs	RCS format timestamp	2024/05/17 02:39:32
$http	E-mail & http format timestamp	Fri, 17 May 2024 02:39:32 GMT
$epoch	Number of seconds since 00:00 on 1st January, 1970	1715913572

- Tokens can be shortened to 3 characters
- Example: `%GMTIME{"$day $month, $year - $hour:$min:$sec"}%` expands to `17 May, 2024 - 02:39:32`
- When used in a template topic, this macro will be expanded when the template is used to create a new topic. See TemplateTopics#TemplateTopicsVars for details.
- Related: GMTIME, REVINFO, SERVERTIME

GRAY -- start gray colored text

- `GRAY` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%GRAY% gray text %ENDCOLOR%`
- Expands to: gray text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

GREEN -- start green colored text

- `GREEN` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%GREEN% green text %ENDCOLOR%`
- Expands to: green text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

GROUPS -- a formatted list of groups

- Expands to a formatted list of user groups in your Wiki .
- Syntax: `%GROUPS%`

- The macro is intended to be used in Main.WikiGroups, to allow a group listing for various user mapping managers.
- Related: REMOTE_USER, USERINFO, USERNAME, WIKIUSERNAME, WIKIUSERSTOPIC

H -- help icon

- Current value: H =
- Related: I, ICON, M, N, P, Q, S, T, U, X, Y

HOMETOPIC -- home topic in each web

- Syntax: `%HOMETOPIC%`
- Expands to: `WebHome`, renders as WebHome
- Related: NOTIFYTOPIC, STATISTICSTOPIC, TOPIC

HTTP -- get HTTP headers

- Called with the name of an HTTP header field, returns its value. Capitalization and the use of hyphens versus underscores are not significant.
- Syntax: `%HTTP%`
- Syntax: `%HTTP{"Header-name"}%`
- Examples:

`%HTTP%`	
`%HTTP{"Accept-language"}%`	
`%HTTP{"User-Agent"}%`	Mozilla/5.0 AppleWebKit/537.36 (KHTML, like Gecko; compatible; ClaudeBot/1.0; +claudebot@anthropic.com)

- You can see the HTTP headers your browser sends to the server on a number of sites e.g. http://www.ericgiguere.com/tools/http-header-viewer.html
- Related: HTTPS, REMOTE_ADDR, REMOTE_PORT, REMOTE_USER

HTTP_HOST -- environment variable

- Syntax: `%HTTP_HOST%`
- Expands to: `wiki.iac.ethz.ch`
- Related: ENV, REMOTE_ADDR, REMOTE_PORT, REMOTE_USER

HTTPS -- get HTTPS headers

- The same as `%HTTP%` but operates on the HTTPS environment variables present when the SSL protocol is in effect. Can be used to determine whether SSL is turned on.
- Syntax: `%HTTPS%`
- Syntax: `%HTTPS{"Header-name"}%`
- Related: HTTP, REMOTE_ADDR, REMOTE_PORT, REMOTE_USER

I -- idea icon

- Current value: I =
- Related: H, ICON, M, N, P, Q, S, T, U, X, Y

ICON{"name"} -- small documentation graphic or icon of common attachment types

- Generates the HTML img tag of a small graphic image attached to DocumentGraphics. Images typically have a 16x16 pixel size. You can select a specific image by name, or you can give a full filename, in which case the type of the file will be used to select one of a collection of common file type icons.
- Syntax: `%ICON{"name"}%`
- Examples:
  - `%ICON{"flag-gray"}%` returns
  - `%ICON{"pdf"}%` returns
  - `%ICON{"smile.pdf"}%` returns
  - `%ICON{"/dont/you/dare/smile.pdf"}%` returns
  - `%ICON{"http://trunk.foswiki.org/pub/System/DocumentGraphics/xsl.gif"` returns
- Graphic samples: `arrowbright`, `bubble`, `choice-yes`, `hand`
- File type samples: `bmp`, `doc`, `gif`, `hlp`, `html`, `mp3`, `pdf`, `ppt`, `txt`, `xls`, `xml`, `zip`
- Related: ICONURL, ICONURLPATH, DefaultPreferences, FileAttachments, DocumentGraphics

ICONURL{"name"} -- URL of small documentation graphic or icon

- Generates the full URL of a DocumentGraphics image, which Foswiki renders as an image. The related `%ICON{"name"}%` generates the full HTML img tag. Specify image name or full filename (see ICON for details on filenames.)
- Syntax: `%ICONURL{"name"}%`
- Examples:
  - `%ICONURL{"arrowbright"}%` returns https://wiki.iac.ethz.ch/pub/System/DocumentGraphics/arrowbright.gif
  - `%ICONURL{"novel.pdf"}%` returns https://wiki.iac.ethz.ch/pub/System/DocumentGraphics/pdf.gif
  - `%ICONURL{"/queen/boheme.mp3"}%` returns https://wiki.iac.ethz.ch/pub/System/DocumentGraphics/mp3.gif
- Related: ICONURLPATH, ICON, DefaultPreferences, FileAttachments, DocumentGraphics

ICONURLPATH{"name"} -- URL path of small documentation graphic or icon

- Generates the URL path of a DocumentGraphics image, typically used in an HTML img tag. Specify image name or full filename (see ICON for details on filenames.)
- Syntax: `%ICONURLPATH{"name"}%`
- Examples:
  - `%ICONURLPATH{"locktopic"}%` returns /pub/System/DocumentGraphics/locktopic.gif
  - `%ICONURLPATH{"eggysmell.xml"}%` returns /pub/System/DocumentGraphics/xml.gif

    - ♦ `%ICONURLPATH{"/doc/xhtml.xsl"}%` returns /pub/System/DocumentGraphics/xsl.gif
- Related: ICONURL, ICON, DefaultPreferences, FileAttachments, DocumentGraphics

IF{"condition" ...} -- simple conditionals

- Evaluate a condition and show one text or another based on the result. See details in IfStatements
- Syntax: `%IF{"CONDITION" then="THEN" else="ELSE"}%` shows `"THEN"` if `"CONDITION"` evaluates to `TRUE`, otherwise `"ELSE"` will be shown
- Example: `%IF{"defined FUNFACTOR" then="FUNFACTOR is defined" else="FUNFACTOR is not defined"}%` renders as `FUNFACTOR is not defined`
- Related: $IF() of SpreadSheetPlugin

INCLUDE{"page"} -- include other topic or web page

- Syntax: `%INCLUDE{"page" ...}%`
- Supported parameters:

Parameter:	Description:	
`"SomeTopic"`	The name of a topic located in the current web, i.e. `%INCLUDE{"WebNotify"}%`	
`"Web.Topic"`	A topic in another web, i.e. `%INCLUDE{"System.SiteMap"}%`	
`"http://..."`	A full qualified URL, i.e. `%INCLUDE{"http://foswiki.org:80/index.html"}%`. Supported content types are `text/html` and `text/plain`. if the URL resolves to an attachment file on the server this will *automatically* translate to a server-side include.	
`"doc:Foswiki::..." level="3"`	Generates the embedded documentation in the given perl module. The optional =level parameter lets you define the base level for headings in the included text.	
`pattern="..."`	Include a subset of a topic or a web page. Specify a RegularExpression that scans from start (`'^'`) to end and contains the text you want to keep in parenthesis, e.g., `pattern="^.*?(from here.*?to here).*"`. IncludeTopicsAndWebPages has more.	non
`rev="2"`	Include a previous topic revision; N/A for URLs	top
`raw="on"`	When a page is included, normally Wiki will process it, doing the following: 1) Alter relative links to point back to originating host, 2) Remove some basic HTML tags (html, head, body, script) and finally 3) Remove newlines from HTML tags spanning multiple lines. If you prefer to include *exactly* what is in the source of the originating page set this to `on`. `raw="on"` is short for `disableremoveheaders="on"`, `disableremovescript="on"`, `disableremovebody="on"`, `disablecompresstags="on"` and `disablerewriteurls="on"`.	disa
`literal="on"`	While using the `raw` option will indeed include the raw content, the included content will still be processed and rendered like regular topic content. To disable parsing of the included content, set the `literal` option to `"on"`.	disa

Parameter:	Description:	
`disableremoveheaders="on"`	Bypass stripping headers from included HTML (everything until first `</head>` tag)	disa
`disableremovescript="on"`	Bypass stripping all `<script>` tags from included HTML	disa
`disableremovebody="on"`	Bypass stripping the `</body>` tag and everything around over and below it	disa
`disablecompresstags="on"`	Bypass replacing newlines in HTML tags with spaces. This compression step rewrites unmatched <'s into `<` entities unless bypassed	disa
`disablerewriteurls="on"`	Bypass rewriting relative URLs into absolute ones	disa
`warn="off"`	Warn if topic include fails: Fail silently (if `off`); output default warning (if set to `on`); else, output specific text (use `$topic` for topic name)	%IN pref
`section="name"`	Includes only the specified named section, as defined in the included topic by the STARTSECTION and ENDSECTION macros. Nothing is shown if the named section does not exists. `section=""` is equivalent to not specifying a section	
`PARONE="val 1" PARTWO="val 2"`	Any other parameter will be defined as a macro within the scope of the included topic. The example parameters on the left will result in `%PARONE%` and `%PARTWO%` being defined within the included topic.	

- JavaScript in included webpages is filtered out as a security precaution per default (disable filter with `disableremovescript` parameter)
- Examples: See IncludeTopicsAndWebPages
- Related: BASETOPIC, BASEWEB, INCLUDINGTOPIC, INCLUDINGWEB, STARTINCLUDE, STOPINCLUDE, STARTSECTION, ENDSECTION

INCLUDINGTOPIC -- name of topic that includes current topic

- The name of the topic that includes the current topic - same as `%TOPIC%` in case there is no include
- If a topic is used in a chain of INCLUDEs, INCLUDINGTOPIC is set to the topic directly INCLUDing this one, *NOT* the topic that has been requested by the user (which is set in BASETOPIC)
- ***WARNING:*** While this Macro may appear to work, unless you require the subtle difference between INCLUDINGTOPIC and BASETOPIC, you probably should use BASETOPIC.
- Syntax: `%INCLUDINGTOPIC%`
- Related: BASETOPIC, INCLUDINGWEB, INCLUDE, TOPIC

INCLUDINGWEB -- web that includes current topic

- The web name of the topic that includes the current topic - same as `%WEB%` if there is no INCLUDE.
- If a topic is used in a chain of INCLUDEs, INCLUDINGWEB is set to the topic directly INCLUDing this one, *NOT* the web that has been requested by the user (which is set in BASEWEB)
- ***WARNING:*** While this Macro may appear to work, unless you require the subtle difference between INCLUDINGWEB and BASEWEB, you probably should use BASEWEB.
- Syntax: `%INCLUDINGWEB%`
- Related: BASEWEB, INCLUDINGTOPIC, INCLUDE, WEB

LANGUAGE -- current user's language

- Returns the language code for the language used as the current user. This is the language actually used by Foswiki (e.g. in user interface).
- The language is detected from the user's browser, unless some site/web/user/session-defined setting overrides it:
  - If the `LANGUAGE` preference is set, it's used as user's language instead of any language detected from the browser.
  - Avoid defining `LANGUAGE` at a non per-user way, so each user can choose his/her preferred language.
- Related: LANGUAGES

LANGUAGES -- list available languages

- List the languages available (as `PO` files). These are the languages in which the user interface is available.
- Syntax: `%LANGUAGES{...}%`
- Supported parameters:

Parameter:	Description:	Default:
`format`	format for each item. See below for format tokens available in the format string.	`"   * $langname"`
`separator`	separator between items.	`"\n"` (newline)
`marker="selected"`	Text for `$marker` if the item matches `selection`	`"selected"`
`selection="%LANGUAGE%"`	Current language to be selected in list	`(none)`

- `format` tokens:

Token	Meaning
`$langname`	language's name, as informed by the translators
`$langtag`	language's tag. Ex: `en`, `pt-br`, etc.

- Example: `<select>%LANGUAGES{format="<option $marker value='$langtag'>$langname</option>" selection="%LANGUAGE%"}%</select>` creates an option list of the available languages with the current language selected

LIME -- start lime colored text

- `LIME` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%LIME% lime text %ENDCOLOR%`
- Expands to: lime text
- %I% `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

LOCALSITEPREFS -- web.topicname of site preferences topic

- The full name of the local site preferences topic. These local site preferences overload the system level preferences defined in System.DefaultPreferences.
- Syntax: `%LOCALSITEPREFS%`

- Expands to: `Main.SitePreferences`, renders as Main.SitePreferences

LOGIN -- present a full login link

- Syntax: `%LOGIN%`
- Expand to: Log In
- Related: UserAuthentication, SESSIONID, SESSIONVAR, LOGOUT, SESSION_VARIABLE

LOGOUT -- present a full logout link

- Syntax: `%LOGOUT%`
- Expand to:
- Related: UserAuthentication, SESSIONID, SESSIONVAR, LOGIN, SESSION_VARIABLE

M -- moved to... icon

- Current value: M =
- Related: H, I, ICON, N, P, Q, S, T, U, X, Y

MAINWEB -- synonym for USERSWEB

- **Deprecated**. Please use %USERSWEB% instead.

MAKETEXT -- creates text using Foswiki's I18N infrastructure

- Syntax: `%MAKETEXT{"string" args="..."}%`
- Supported parameters:

Parameter	Description	Default
`"text"` or `string="text"`	The text to be displayed.	*none*
`args="param1, param2"`	a comma-separated list of arguments to be interpolated in the string, replacing the `[_N]` placeholders in it.	*none*

- Examples:
  - `%MAKETEXT{string="Notes:"}%`
    expands to
    Notes:
  - `%MAKETEXT{"If you have any questions, please contact [_1]." args="%WIKIWEBMASTER%"}%`
    expands to
    If you have any questions, please contact urs.beyerle@env.ethz.ch.
  - `%MAKETEXT{"Did you want to [[[_1]][reset [_2]'s password]]?" args="%SYSTEMWEB%.ResetPassword,%WIKIUSERNAME%"}%`
    expands to
    Did you want to reset Main.WikiGuest's password?
- **Notes:**
  - Foswiki will translate the `string` to the current user's language *only* if it has such string in its translation table for that language.

- Amperstands (`&`) followed by one letter (one of a...z, A...Z) (say, `X`) in the translatable string will be translated to `<span class='foswikiAccessKey'>X</span>`. This is used to implement access keys. If you want to write an actual amperstand that stays just before a letter, write two consecutive amperstands (`&&`): they will be transformed in just one.
- translatable string starting with underscores (_) are reserved. You **cannot** use translatable phrases starting with an underscore.
- Make sure that the translatable string is *constant*. Specially, do **not** include `%MACROS%` inside the translatable strings (since they will get expanded **before** the `%MAKETEXT{...}%` itself is handled).

MAROON -- start maroon colored text

- `MAROON` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%MAROON% maroon text %ENDCOLOR%`
- Expands to: maroon text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

META -- displays meta-data

- Provided mainly for use in templates, this macro generates the parts of the topic view that relate to meta-data (attachments, forms etc.) The `formfield` item is the most likely to be useful to casual users.
- Syntax: `%META{ "item" ...}%`
- Parameters:

Item	Options	Description
`"formfield"`	`name="..."`: name of the field. The field value can be shortened as described in System.FormattedSearch for `$formfield` `newline="..."`: by default, each newline character will be rewritten to ` ` to allow metadata that contains newlines to be used in tables, etc. `$n` indicates a newline character. `bar="..."`: by default, each vertical bar is rewritten to an HTML entity so as to not be mistaken for a table separator.	Show a single form field
`"form"`	*none*	Generates the table showing the form fields. See Form Definition
`"attachments"`	`all="on"` to show hidden attachments. `title="..."` to show a title - only if attachments are displayed. `template="..."` to use a custom template for the rendering of attachments; default `attachtables` is used.	Generates the list of attachments
`"moved"`	*none*	Details of any topic moves
`"parent"`	`dontrecurse="on"`: By default recurses up tree, this has some cost. Equivalent to `depth=1`	Generates the parent link

Item	Options	Description
	depth="...": Return only the specified ancestor. nowebhome="on": Suppress WebHome. prefix="...": Prefix that goes before parents, but only if there are parents, default "". format="...": Format string used to display each parent topic where $web expands to the web name, and $topic expands to the topic name; default: "[[$web.$topic][$topic]]" suffix="...": Suffix, only appears if there are parents; default "". separator="...": Separator between parents; default " > ".	

- Related: METASEARCH

METASEARCH -- special search of meta data

- Syntax: %METASEARCH{...}%
- Supported parameters:

Parameter:	Description:	Default:
type="topicmoved"	What sort of search is required? "topicmoved" if search for a topic that may have been moved "parent" if searching for topics that have a specific parent i.e. its children "field" if searching for topics that have a particular form field value (use the name and value parameters to specify which field to search)	Required
web="%WEB%"	Wiki web to search: A web, a list of webs separated by whitespace, or all webs.	Current web
topic="%TOPIC%"	The topic the search relates to, for topicmoved and parent searches	All topics in a web
name	form field to search, for field type searches. May be a regular expression (see SEARCH).	
value	form field value, for field type searches. May be a regular expression (see SEARCH).	
title="Title"	Text that is prefixed to any search results	empty
format="..."	Custom format results. Supports same format strings as SEARCH. See **FormattedSearch** for usage & examples	Results in table
default="none"	Default text shown if no search hit	Empty

- Example: %METASEARCH{type="topicmoved" web="%WEB%" topic="%TOPIC%" title="This topic used to exist and was moved to: "}%
- Example: You may want to use this in WebTopicViewTemplate and WebTopicNonWikiTemplate: %METASEARCH{type="parent" web="%WEB%" topic="%TOPIC%" title="Children: "}%
- Example: %METASEARCH{type="field" name="Country" value="China"}%
- Related: SEARCH, META
- METASEARCH is deprecated in favour of the new and much more powerful query type search. See SEARCH and QuerySearch.

N -- "new" icon

- Current value: N = NEW
- Related: H, I, ICON, M, P, Q, S, T, U, X, Y

NAVY -- start navy blue colored text

- NAVY is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: %NAVY% navy text %ENDCOLOR%
- Expands to: navy text
- %<color>% text must end with %ENDCOLOR%. If you want to switch from one color to another one you first need to end the active color with %ENDCOLOR%, e.g. write %RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

NOP -- template text not to be expanded in instantiated topics

- Syntax: %NOP%
  - In normal topic text, expands to <nop>, which prevents expansion of adjacent macros and wikiwords
  - When the topic containing this is used as a template for another topic, it is removed.
- Syntax: %NOP{...}% **deprecated**
  - In normal topic text, expands to whatever is in the curly braces (if anything).
  - **This is deprecated.** Do not use it. Use %STARTSECTION{type="templateonly"}% .. %ENDSECTION{type="templateonly"}% instead (see TemplateTopics for more details).
- Related: STARTSECTION, TemplateTopics

NOTIFYTOPIC -- name of the notify topic

- Syntax: %NOTIFYTOPIC%
- Expands to: WebNotify, renders as WebNotify
- Related: HOMETOPIC, STATISTICSTOPIC, TOPIC

OLIVE -- start olive green colored text

- OLIVE is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: %OLIVE% olive text %ENDCOLOR%
- Expands to: olive text
- %<color>% text must end with %ENDCOLOR%. If you want to switch from one color to another one you first need to end the active color with %ENDCOLOR%, e.g. write %RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

ORANGE -- start orange colored text

- `ORANGE` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%ORANGE% orange text %ENDCOLOR%`
- Expands to: orange text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

P -- pencil icon

- Current value: P =
- Related: H, I, ICON, M, N, Q, S, T, U, X, Y

PINK -- start pink colored text

- `PINK` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%PINK% pink text %ENDCOLOR%`
- Expands to: pink text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

PLUGINDESCRIPTIONS -- list of plugin descriptions

- Syntax: `%PLUGINDESCRIPTIONS%`
- Expands to:
  - System.TWikiCompatibilityPlugin (Foswiki-1.0.9, $Rev: 6017 (2010-01-11) $): add TWiki personality to Foswiki
  - System.SpreadSheetPlugin (10 Nov 2009, $Rev: 5484 (2009-11-10) $): Add spreadsheet calculations like "$SUM($ABOVE())" to Foswiki tables and other topic text
  - System.AutoViewTemplatePlugin (2009-09-06, $Rev: 5221 (2009-10-06) $): Automatically sets VIEW_TEMPLATE and EDIT_TEMPLATE
  - System.BreadCrumbsPlugin (v2.42, 4694): A flexible way to display breadcrumbs navigation
  - System.CalendarPlugin (2.000, $Rev: 8058 (2010-07-07) $): Show a monthly calendar with highlighted events
  - System.ChartPlugin (13 Mar 2010, $Rev: 6743 (2010-03-14) $): Create PNG or GIF charts to visualize Foswiki tables
  - System.CommentPlugin (24 Feb 2010, $Rev: 6512 (2010-02-24) $): Quickly post comments to a page without an edit/save cycle
  - System.DBCachePlugin (3.50, $Rev: 8342 (2010-07-28) $): Lightweighted frontend to the DBCacheContrib
  - System.EditChapterPlugin (2.12, $Rev: 6337 (2010-02-15) $): An easy sectional edit facility
  - System.EditTablePlugin (4.34, $Rev: 5854 (2009-12-23) $): Edit tables using edit fields, date pickers and drop down boxes
  - System.ExplicitNumberingPlugin (1.6, $Rev: 6482 (2010-02-23) $): Use the **##.**, **##..** etc.

notation to insert outline numbering sequences (1, 1.1, 2, 2.1) in topic's text. Also support numbered headings.
- System.ExternalLinkPlugin (1.21, $Rev: 5906 (2009-12-31) $): Adds a visual indicator to outgoing links
- System.FilterPlugin (2.03, $Rev: 8284 (2010-07-23) $): Substitute and extract information from content by using regular expressions
- System.FlexWebListPlugin (v1.51, $Rev: 5698 (2009-12-02) $): Flexible way to display hierarchical weblists
- System.GluePlugin (2.20, $Rev: 4420 (2009-07-03) $): Enable markup to span multiple lines
- System.HeadlinesPlugin (2.21.2, $Rev: 6822 (2010-03-21) $): Show headline news in Foswiki pages based on RSS and ATOM news feeds from external sites
- System.IfDefinedPlugin (v2.00, $Rev: 4422 (2009-07-03) $): Render content conditionally
- System.ImagePlugin (2.31, $Rev: 6307 (2010-02-12) $): Control the display and alignment of images using an easy syntax
- System.InterwikiPlugin (20 Sep 2009, $Rev: 5022 (2009-09-20) $): Link ExternalSite:Page text to external sites based on aliases defined in a rules topic
- System.JQueryLibPlugin (v1.0, $Rev: 3729 (2009-04-28) $): Provides you with the jQuery javascript library
- System.JQueryPlugin (3.51, $Rev: 20090710 (2009-07-10) $): jQuery JavaScript library for Foswiki
- System.LatexModePlugin (4.0, $Rev: 4721 (2009-08-28) $): Enables LaTeX markup (mathematics and more) in Foswiki topics
- System.LdapNgPlugin (v3.00, $Rev: 3726 (2009-04-27) $): Query and display data from an LDAP directory
- System.MathModePlugin (4.01, $Rev: 3649 (2009-04-23) $): Include LaTeX formatted math in your Foswiki pages
- System.NatEditPlugin (v4.21, $Rev: 6336 (2010-02-15) $): A Wikiwyg Editor
- System.NatSkinPlugin (3.96, $Rev: 6287 (2010-02-12) $): Theming engine for NatSkin
- System.NewUserPlugin (v2.00, $Rev: 3642 (2009-04-23) $): Create a user topic if it does not exist yet
- System.PreferencesPlugin (20 Sep 2009, $Rev: 5037 (2009-09-20) $): Allows editing of preferences using fields predefined in a form
- System.RedirectPlugin (1.1, $Rev: 7923 (2010-06-26) $): Create a redirect to another topic or website.
- System.RenderListPlugin (2.2, $Rev: 5042 (2009-09-20) $): Render bullet lists in a variety of formats
- System.RenderPlugin (3.0, 4818): Render WikiApplications asynchronously
- System.SendEmailPlugin (1.5.1, $Rev: 6581 (2010-02-28) $): Allows to send e-mails through an e-mail form.
- System.SetVariablePlugin (1.00, $Rev: 4287 (2009-06-23) $): Flexible handling of topic variables
- System.SlideShowPlugin (02 Aug 2008, $Rev: 2742 (2009-02-26) $): Create web based presentations based on topics with headings.
- System.SmiliesPlugin (20 Sep 2009, $Rev: 5046 (2009-09-20) $): Render smilies like :) as icons
- System.SubscribePlugin (03 Dec 2008, $Rev: 13787 (18 May 2007) $): Subscribe to web notification
- System.SyntaxHighlightingPlugin (1.2, $Rev: 4052 (2009-06-07) $): Highlights code fragments for many languages using **`enscript`**.
- System.TablePlugin (1.046, $Rev: 6733 (2010-03-13) $): Control attributes of tables and sorting of table columns
- System.TagMePlugin (02 Mar 2010, $Rev: 6613 (2010-03-02) $): Tag wiki content collectively to find content by keywords
- System.TwistyPlugin (1.5.4, $Rev: 6281 (2010-02-12) $): Twisty section Javascript library to

open/close content dynamically
    - System.UploadPlugin (1.11, $Rev: 20090703 (2009-07-03) $): Attach multiple files to a topic in one go
    - System.VarCachePlugin (29 Jan 2009, $Rev: 2215 (29 Jan 2009) $): Cache Foswiki macros in selected topics for faster page rendering
    - System.VotePlugin (1.33, $Rev: 5560 (2009-11-17) $): Simple way to count votes
    - System.ZonePlugin (2.1, $Rev: 6966 (2010-03-28) $): Gather content of a page in named zones while rendering it
- Related: ACTIVATEDPLUGINS, FAILEDPLUGINS, PLUGINVERSION

PLUGINVERSION -- the version of a Foswiki Plugin, or the Foswiki Plugins API

- Syntax: `%PLUGINVERSION{"name"}%` to get the version of a specific plugin
- Example: `%PLUGINVERSION{"InterwikiPlugin"}%` expands to `$Rev: 5022 (2009-09-20) $`
- Syntax: `%PLUGINVERSION%` to get the version of the API
- Expands to: `2.0`
- Related: WIKIVERSION, ACTIVATEDPLUGINS, FAILEDPLUGINS, PLUGINDESCRIPTIONS

PUBURL -- the base URL of attachments

- Syntax: `%PUBURL%`
- Expands to: `https://wiki.iac.ethz.ch/pub`
- Example: You can refer to a file attached to another topic with `%PUBURL%/%WEB%/OtherTopic/image.gif`
- Related: ATTACHURL, ATTACHURLPATH, PUBURLPATH, SCRIPTURL, SCRIPTURLPATH, FileAttachments

PUBURLPATH -- the base URL path of attachments

- Syntax: `%PUBURLPATH%`
- Expands to: `/pub`
- Related: ATTACHURL, ATTACHURLPATH, PUBURL, SCRIPTURL, SCRIPTURLPATH, FileAttachments

PURPLE -- start purple colored text

- `PURPLE` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%PURPLE% purple text %ENDCOLOR%`
- Expands to: purple text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

Q -- question icon

- Current value: Q =
- Related: H, I, ICON, M, N, P, S, T, U, X, Y

QUERYPARAMS -- show paramaters to the query

- Expands the parameters to the query that was used to display the page.
- Syntax: `%QUERYPARAMS{...}%`
- Supported parameters:

Parameter:	Description:	Default:
`format="..."`	Format string for each entry	`$name=$value`
`separator="..."`	Separator string	`separator="$n"` (newline)

`encoding="entity"`
`encoding="safe"`
`encoding="html"`
`encoding="quotes"`
`encoding="url"`
	Control how special characters are encoded. If this parameter is not given, "safe" encoding is performed which HTML entity encodes the characters `'"<>%`.
	`entity`: Encode special characters into HTML entities, like a double quote into `"`. Does **not** encode `\n` or `\r`.
	`safe`: Encode characters `'"<>%` into HTML entities. (this is the default)
	`html`: As `type="entity"` except it also encodes `\n` and `\r`
	`quotes`: Escape double quotes with backslashes (`\"`), does not change other characters
	`url`: Encode special characters for URL parameter use, like a double quote into `%22`
		`type="safe"`

- The following escape sequences are expanded in the format string:

Sequence:	Expands To:
`$name`	Name of the parameter
`$value`	String value of the parameter. Multi-valued parameters will have a "row" for each value.
`$n` or `$n()`	New line. Use `$n()` if followed by alphanumeric character, e.g. write `Foo$n()Bar` instead of `Foo$nBar`
`$nop` or `$nop()`	Is a "no operation". This token gets removed; useful for nested search
`$quot`	Double quote (") (\" also works)
`$percnt`	Percent sign (%)
`$dollar`	Dollar sign ($)
`$lt`	Less than sign (<)
`$gt`	Greater than sign (>)
`$amp`	Ampersand (&)

- Example:
    - `%QUERYPARAMS{format="<input type='hidden' name='$name' value='$value' encoding="entity" />"}%`
- **Security warning!**
  Using QUERYPARAMS can easily be misused for cross-site scripting unless specific characters are entity encoded. By default QUERYPARAMS encodes the characters `'"<>%` into HTML entities (same as encoding="safe") which is relatively safe. The safest is to use encoding="entity". When passing QUERYPARAMS inside another macro always use double quotes ("") combined with using QUERYPARAMS with encoding="quote". For maximum security against cross-site scripting you are adviced to install the Foswiki:Extensions.SafeWikiPlugin.
- See also QUERYSTRING, URLPARAM

QUERYSTRING -- full, unprocessed string of parameters to this URL

- String of all the URL parameters that were on the URL used to get to the current page. For example, if you add ?name=Samantha;age=24;eyes=blue to this URL you can see this in action. This string can be appended to a URL to pass parameter values on to another page.
- URLs built this way are typically restricted in length, typically to 2048 characters. If you need more space than this, you will need to use an HTML form and `%QUERYPARAMS%`.
- Syntax: `%QUERYSTRING%`
- Expands to: `cover=print.nat;sortcol=1;table=49;up=1;skin=pattern`
- Related: QUERYPARAMS, URLPARAM

RED -- start red colored text

- `RED` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%RED% red text %ENDCOLOR%`
- Expands to: red text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.

! * Related: ENDCOLOR, DefaultPreferences, StandardColors

REMOTE_ADDR -- environment variable

- Syntax: `%REMOTE_ADDR%`
- Expands to: `3.138.137.127`
- Related: ENV, HTTP_HOST, REMOTE_PORT, REMOTE_USER

REMOTE_PORT -- environment variable

- Syntax: `%REMOTE_PORT%`
- Expands to:
- Related: ENV, HTTP_HOST, REMOTE_ADDR, REMOTE_USER

REMOTE_USER -- environment variable

- Syntax: `%REMOTE_USER%`
- Expands to:
- Related: ENV, HTTP_HOST, REMOTE_ADDR, REMOTE_PORT, USERNAME, WIKINAME, WIKIUSERNAME

RENDERLIST -- render bullet lists in a variety of formats

- The `%RENDERLIST%` macro is handled by the RenderListPlugin
- Syntax: `%RENDERLIST%`
- Syntax: `%RENDERLIST{ "org" focus="Sales.WestCoastTeam" }%`
- Example:

```
%RENDERLIST{ "org" }%
   * [[Eng.WebHome][Engineering]]
      * [[Eng.TechPubs][Tech Pubs]]
   * [[Sales.WestCoastTeam][Sales]]
      * [[Sales.EastCoastTeam][East Coast]]
      * [[Sales.WestCoastTeam][West Coast]]
```

- Related: RenderListPlugin

RENDERZONE

```
%RENDERZONE{"zone" ...}%
```

- zone: required, name of the zone to be expanded
- header: optional, prefix format string
- format: optional, format string for each item added to the zone, defaults to `$item`, any standard escapes like `$percnt`, `$dollar` etc can be used to delay evaluation order of the format parameter
- chomp: removed leading and trailing whitespace in formatted items, useful to pretty-print them one per line
- footer: optional, suffix format string
- separator: optional, put between each item of a zone

Note, that you can create as many zones as you like. The plugin does not restrict you to use it only for `body` and `head`. Interesting use cases in wiki applications:

- create a `sidebar` zone to add widgets
- create a `toolbar` zone to add buttons icons

See also VarADDTOZONE

REVINFO -- revision information of current topic

- Syntax:
- Date format defined as {DefaultDateFormat} in configure

REVINFO{"format"} -- formatted revision information of topic

- Syntax: `%REVINFO%` OR `%REVINFO{"format"}%`

- `%REVINFO%` is equivalent to `%REVINFO{format="r1.$rev - $date - $wikiusername"}%`
    - ♦ Expands to: `r1 - 09 Jan 2009 - 13:00:00 - Main.ProjectContributor`
- Supported parameters:

Parameter:	Description:	Default:
`"format"`	Format of revision information, see supported formatting tokens below	`"r1.$rev - $date - $wikiusername"`
`web="..."`	Name of web	Current web
`topic="..."`	Topic name	Current topic
`rev="1.5"`	Specific revision number	Latest revision

- Supported formatting tokens:

Token:	Unit:	Example
`$web`	Name of web	Current web
`$topic`	Topic name	Current topic
`$rev`	Revision number. Prefix `r1.` to get the usual `r1.5` format	`5`
`$username`	Login username of revision	`jsmith`
`$wikiname`	WikiName of revision	`JohnSmith`
`$wikiusername`	WikiName with Main web prefix	`Main.JohnSmith`
`$date`	Revision date. Actual date format defined as {DefaultDateFormat} in configure	`21 Sep 2006`
`$time`	Revision time	`23:24:25`
`$iso`	Revision date in ISO date format	`2006-09-22T06:24:25Z`
`$min`, `$sec`, etc.	Same date format qualifiers as GMTIME{"format"}	

- Example: `%REVINFO{"$date - $wikiusername" rev="1.1"}%` returns revision info of first revision
- Related: GMTIME{"format"}, REVINFO

S -- red star icon

- Current value: S =
- Related: H, I, ICON, M, N, P, Q, T, U, X, Y

SCRIPTNAME -- name of current script

- The name of the current script is shown, including script suffix, if any (for example `viewauth.cgi`)
- Syntax: `%SCRIPTNAME%`
- Expands to: `genpdf`
- Related: SCRIPTSUFFIX, SCRIPTURL, SCRIPTURLPATH

SCRIPTSUFFIX -- script suffix

- Some Wiki installations require a file extension for CGI scripts, such as `.pl` or `.cgi`
- Syntax: `%SCRIPTSUFFIX%`
- Expands to:
- Related: SCRIPTNAME, SCRIPTURL, SCRIPTURLPATH

SCRIPTURL{"script"} -- URL of script

- Syntax: `%SCRIPTURL%` OR `%SCRIPTURL{"script"}%`
- `%SCRIPTURL%` returns the base URL of scripts - expands to https://wiki.iac.ethz.ch/bin
- Expands to: `https://wiki.iac.ethz.ch/bin/script`
- Example: To get the authenticated version of the current topic you can write `%SCRIPTURL{"viewauth"}%/%WEB%/%TOPIC%` which expands to `https://wiki.iac.ethz.ch/bin/viewauth/System/Macros`
- In most cases you should use `%SCRIPTURLPATH{"script"}%` instead, as it works with URL rewriting much better
- The `edit` script should always be used in conjunction with `?t=%GMTIME{"$epoch"}%` to ensure pages about to be edited are not cached in the browser
- Related: PUBURL, SCRIPTNAME, SCRIPTSUFFIX, SCRIPTURLPATH

SCRIPTURLPATH{"script"} -- URL path of script

- As `%SCRIPTURL{"script"}%`, but doesn't include the protocol and host part of the URL
- Syntax: `%SCRIPTURL%` OR `%SCRIPTURLPATH{"script"}%`
- Expands to: `/bin/script`
- The `edit` script should always be used in conjunction with `?t=%GMTIME{"$epoch"}%` to ensure pages about to be edited are not cached in the browser
- Related: PUBURLPATH, SCRIPTNAME, SCRIPTSUFFIX, SCRIPTURL

SEARCH{"text"} -- search content

- Inline search, shows a search result embedded in a topic
- Syntax: `%SEARCH{"text" ...}%`
- Supported parameters:

Parameter:	Description:	Default:
`"text"`	Search term. Is a keyword search, literal search, regular expression search, or query, depending on the `type` parameter. SearchHelp has more	required
`search="text"`	(Alternative to above)	N/A

`web="Name"`
`web="Main, Know"`
`web="all"`
	Comma-separated list of webs to search. You can specifically **exclude** webs from an `all` search using a minus sign - for example, `web="all,-Secretweb"`. The special word `all` means all webs that do **not** have the `NOSEARCHALL` preference set to `on` in their WebPreferences. Note that AccessControls are respected when searching webs; it is **much** better to use them than `NOSEARCHALL`.	Current web

`topic="WebPreferences"` `topic="*Bug"`	Limit search to topics: A topic, a topic with asterisk wildcards, or a list of topics separated by comma. **Note** this is a list of **topic names** and must **not** include web names.	All topics in a web
		None

Parameter:	Description:	Default:
`excludetopic="Web*"` `excludetopic="WebHome, WebChanges"`	Exclude topics from search: A topic, a topic with asterisk wildcards, or a list of topics separated by comma. **Note** this is a list of **topic names** and must **not** include web names.	

`scope="topic"`
`scope="text"`
`scope="all"`
	Search topic name (title); the text (body) of topic; or all (title and body)	`"text"`

`type="keyword"`
`type="word"`
`type="literal"`
`type="regex"`
`type="query"`
	Control how the search is performed when `scope="text"` or `scope="all"`
	--- 	
	`keyword`: use Google-like controls as in `soap "web service" -shampoo`; searches word parts: using the example, topics with "soapsuds" will be found as well, but topics with "shampoos" will be excluded
	--- 	
	`word`: identical to `keyword` but searches whole words: topics with "soapsuds" will not be found, and topics with "shampoos" will not be excluded
	--- 	
	`literal`: search for the exact string, like `web service`
	--- 	
	`regex`: use a RegularExpression search like `soap;web service;!shampoo`; to search on whole words use `\bsoap\b`
	--- 	
	`query`: query search of form fields and other meta-data, like `(Firstname='Emma' OR Firstname='John') AND Lastname='Peel'`
		`%SEARCHVAR-DEFAULTTYPE%` preferences setting (literal)

`order="topic"`
`order="created"`
`order="modified"`
`order="editby"`
`order="formfield(name)"`
	Sort the results of search by the topic names, topic creation time, last modified time, last editor's WikiName, or named field of DataForms. The sorting is done web by web; if you want to sort across webs, create a formatted table and sort it with TablePlugin's initsort. Note that dates are sorted most recent date **last** (i.e at the bottom of the table).	Sort by topic name

`limit="all"` `limit="16"`	Limit the number of topics from which results will be returned. This is done after sorting if `order` is specified. Note that this does not limit the number of hits from the same topic when you have multiple="on".	All results

Parameter:	Description:	Default:
`date="..."`	limits the results to those pages with latest edit time in the given time interval.	All results
`reverse="on"`	Reverse the direction of the search	Ascending search
`casesensitive="on"`	Case sensitive search	Ignore case
`bookview="on"`	BookView search, e.g. show complete topic text. Very resource demanding. Use only with small result sets	Show entire topic content.
`nonoise="on"`	Shorthand for `nosummary="on" nosearch="on" nototal="on" zeroresults="off" noheader="on" noempty="on"`	Off
`nosummary="on"`	Show topic title only	Show topic summary
`nosearch="on"`	Suppress search string	Show search string
`noheader="on"`	Suppress default search header **Topics: Changed: By:** , unless a `header` is explicitly specified	Show default search header, unless search is inline and a format is specified (Cairo compatibility)
`nototal="on"`	Do not show number of topics found	Show number
`zeroresults="off"`	Suppress all output if there are no hits	`zeroresults="on"`, displays: "Number of topics: 0"
`noempty="on"`	Suppress results for webs that have no hits.	Show webs with no hits
`header="..."` `format="..."` `footer="..."`	Custom format results: see **FormattedSearch** for usage & examples	Results in table
`expandvariables="on"`	Expand embedded macros before applying a FormattedSearch on a search hit. Useful to show the expanded text, e.g. to show the result of a SpreadSheetPlugin `%CALC{}%` instead of the formula	Raw text
`multiple="on"`	Multiple hits per topic. Each hit can be formatted. The last token is used in case of a regular expression ";" *and* search	Only one hit per topic
`nofinalnewline="on"`	If `on`, the search variable does not end in a line by itself. Any text continuing immediately after the SEARCH macro on the same line will be rendered as part of the table generated by the search, if appropriate.	`off`
`recurse="on"`	Recurse into subwebs, if subwebs are enabled.	`off`
`separator=", "`	Line separator *between* search hits	`"$n"` (Newline)
`newline="%BR%"`	Line separator *within* a search hit. Useful if you want to put multi-line content into a table cell, for example if the format="" parameter contains a $pattern() that captures more than one line, or contains a $formfield() that	`"$n"` (Newline)

Parameter:	Description:	Default:
	returns a multi-line textfield.	

- Example: `%SEARCH{"wiki" web="Main" scope="topic"}%`
- Example with format: `%SEARCH{"FAQ" scope="topic" nosearch="on" nototal="on" header="| *Topic: * | *Summary: * |" format="| $topic | $summary |"}%` *(displays results in a table with header - details)*
- If the Foswiki:Extensions.TablePlugin is installed, you may put a `%TABLE{}%` macro just before the `%SEARCH{}%` to alter the output of a search. Example: `%TABLE{ tablewidth="90%" }%`
- Related: METASEARCH, TOPICLIST, WEBLIST, FormattedSearch, QuerySearch, SearchHelp, SearchPatternCookbook, RegularExpression

SERVERTIME{"format"} -- formatted server time

- Same format qualifiers as `%GMTIME%`
- Syntax: `%SERVERTIME%` OR `%SERVERTIME{"format"}%`
- `%SERVERTIME%` uses the Date format defined as {DefaultDateFormat} in configure
- Example: `%SERVERTIME{"$hou:$min"}%` expands to `04:39`
- **Note:** When used in a template topic, this macro will be expanded when the template is used to create a new topic. See TemplateTopics#TemplateTopicsVars for details.
- Related: GMTIME, SERVERTIME

SESSIONID -- unique ID for this session

- Syntax: `%SESSIONID%`
- Expand to: `1a3d8f14fd253c236b43f2c327683a7e`
- Related: UserAuthentication, AUTHREALM, SESSIONVAR, LOGIN, LOGOUT, SESSION_VARIABLE

SESSIONVAR -- name of CGI and session variable that stores the session ID

- Syntax: `%SESSIONVAR%`
- Expand to: `FOSWIKISID`
- Related: UserAuthentication, AUTHREALM, SESSIONID, LOGIN, LOGOUT, SESSION_VARIABLE

SESSION_VARIABLE -- get, set or clear a session variable

- Syntax: `%SESSION_VARIABLE{"name"}%`
- Syntax: `%SESSION_VARIABLE{"name" set="value"}%`
- Syntax: `%SESSION_VARIABLE{"name" clear=""}%`
- The users ID is in the `AUTHUSER` session variable, and is read-only
- Related: UserAuthentication, AUTHREALM, SESSIONID, SESSIONVAR, LOGIN, LOGOUT

SILVER -- start silver colored text

- `SILVER` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.

- Syntax: `%SILVER% silver text %ENDCOLOR%`
- Expands to: silver text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

SLIDESHOWEND -- end slideshow

- The `%SLIDESHOWEND%` macro is handled by the SlideShowPlugin
- Syntax: `%SLIDESHOWEND%`
- Example: See SLIDESHOWSTART
- Related: SLIDESHOWSTART, SlideShowPlugin

SLIDESHOWSTART -- convert a topic with headings into a slideshow

- The `%SLIDESHOWSTART%` macro is handled by the SlideShowPlugin
- Syntax: `%SLIDESHOWSTART%`
- Syntax: `%SLIDESHOWSTART{ template="MyOwnSlideTemplate" }%`
- Example:

```
%SLIDESHOWSTART%
---++ Sample Slide 1
    * Bullet 1
    * Bullet 2
---++ Sample Slide 2
    * Bullet 1
    * Bullet 2
%SLIDESHOWEND%
```

- Related: SLIDESHOWEND, SlideShowPlugin

SPACEDTOPIC -- topic name, spaced and URL-encoded deprecated

- The current topic name with added URL-encoded spaces, for use in regular expressions that search for backlinks to the current topic
- Syntax: `%SPACEDTOPIC%`
- Expands to: `Var%20*SPACEDTOPIC`
- **This is a deprecated macro.** It can be duplicated with `%ENCODE{%SPACEOUT{"%TOPIC%" separator=" *"}%}%`
- Related: SPACEOUT, TOPIC, ENCODE

SPACEOUT{"string"} -- renders string with spaces inserted in sensible places

- Inserts spaces after lower case letters that are followed by a digit or a capital letter, and after digits that are followed by a capital letter.
- Useful for spacing out WikiWords
- Syntax: `%SPACEOUT{ "%TOPIC%" }%`
- Expands to: `Macros`
- Supported parameters:

Parameter:	Description:	Default:
separator	The separator to put between words e.g. %SPACEOUT{"DogsCatsBudgies" separator=", "}% -> Dogs, Cats, Budgies	' '

- Spaced out WikiWords are not automatically linked. To SPACEOUT a WikiWord but preserve the link use "double bracket" format. For example, `[[WebHome][%SPACEOUT{"WebHome"}%]]` expands to Web Home
- Related: SPACEDTOPIC, $PROPERSPACE() of SpreadSheetPlugin

STARTINCLUDE -- start position of topic text if included

- If present in included topic, start to include text from this location up to the end, or up to the location of the `%STOPINCLUDE%` macro. A normal view of the topic shows everything exept the `%STARTINCLUDE%` macro itself.
- If you want more than one part of the topic included, use `%STARTSECTION{type="include"}%` instead
- Syntax: `%STARTINCLUDE%`
- Related: INCLUDE, STARTSECTION, STOPINCLUDE

STARTSECTION -- marks the start of a section within a topic

- Section boundaries are defined with `%STARTSECTION{}%` and `%ENDSECTION{}%`.
- Sections may be given a name to help identify them, and/or a type, which changes how they are used.
  - `type="section"` - the default, used for a generic section, such as a named section used by INCLUDE.
  - `type="include"` - like `%STARTINCLUDE%` ... `%STOPINCLUDE%` except that you can have as many include blocks as you want (`%STARTINCLUDE%` is restricted to only one).
  - `type="expandvariables"` - all macros inside an "expandvariables" type section gets expanded when a new topic based on the template topic is created. See TemplateTopics for more information.
  - `type="templateonly"` - start position of text to be removed when a template topic is used. This is used to embed text that you *do not* want expanded when a new topic based on the template topic is created. See TemplateTopics for more information.
- Syntax: `%STARTSECTION{"name"}% ..... %ENDSECTION{"name"}%`
- Syntax: `%STARTSECTION{type="include"}% ..... %ENDSECTION{type="include"}%`
- Syntax: `%STARTSECTION{type="expandvariables"}% ... %ENDSECTION{type="expandvariables"}%`
- Syntax: `%STARTSECTION{type="templateonly"}% ..... %ENDSECTION{type="templateonly"}%`

- Supported parameters:

Parameter:	Description:	Default
"name"	Name of the section. Must be unique inside a topic.	Generated name
type="..."	Type of the section; type "section", "expandvariables", "include" or "templateonly"	"section"

- If a section is not given a name, it will be assigned one. Unnamed sections are assigned names starting with _SECTION0 for the first unnamed section in the topic, _SECTION1 for the second, etc..
- You can define nested sections. It is not recommended to overlap sections, although it is valid in Foswiki. Use named sections to make sure that the correct START and ENDs are matched. Section

markers are **not** displayed when a topic is viewed.
- Related: ENDSECTION, INCLUDE, NOP, STARTINCLUDE, STOPINCLUDE

STATISTICSTOPIC -- name of statistics topic

- Syntax: `%STATISTICSTOPIC%`
- Expands to: `WebStatistics`, renders as WebStatistics
- Related: HOMETOPIC, NOTIFYTOPIC, TOPIC

STOPINCLUDE -- end position of topic text if included

- If present in included topic, stop to include text at this location and ignore the remaining text. A normal view of the topic shows everyting exept the `%STOPINCLUDE%` macro itself.
- Syntax: `%STOPINCLUDE%`
- Related: INCLUDE, STARTINCLUDE

SUBSCRIBE{ *attributes* } - subscribe the current user for notification of changes to the current topic

Anywhere in a topic or template:

- `%SUBSCRIBE{...}%` or simply `%SUBSCRIBE%`

Parameter	Default	Meaning
`who`	Logged-in user	Who to subscribe (wikiname, no web)
`topic`	Current topic	Topic to subscribe to. Wildcards may be used e.g. `topic="Item*"` will subscribe to all topics starting with `Item`. Use `topic="Main.*"` to subscribe to the WebNotify for that web.
`unsubscribe`	Not set	If set to "on", will **unsubscribe** the user
`format`	Simple HTML Link with an action anchor "Subscribe" or "Unsubscribe"	Defines custom look-and-feel for subscribe link using the following format variables: `$topics`, `$url`, `$wikiname`, `$action`
`formatunsubscribe`	`format`	Serves same function as `format`, but allows the user to define a different format than `subscribe`.

- The button toggles subscribe/unsubscribe if the user is already subscribed or vice versa. So after the next click on the button, the user will be unsubscribed.
- The plugin will do the best it can to optimise the subscription lists in WebNotify.

SYSTEMWEB -- name of documentation web

- The web containing all documentation and default preference settings
- Syntax: `%SYSTEMWEB%`
- Expands to: `System`
- Related: USERSWEB

T -- tip icon

- Current value: T =
- Related: H, I, ICON, M, N, P, Q, S, U, X, Y

TABLE{ *attributes* } -- control attributes of tables and sorting of table columns

- The `%TABLE{}%` macro is handled by the TablePlugin
- Syntax: `%TABLE{ attributes }%`

- Supported attributes:

Argument	Comment	Default value	Example
`sort`	Set table sorting by clicking headers `"on"` or `"off"`.	unspecified	`sort="on"`
`initsort`	Column to sort initially (`"1"` to number of columns).	unspecified	`initsort="2"`
`initdirection`	Initial sorting direction for `initsort`, set to `"up"` (descending) or `"down"` (ascending).	unspecified	`initdirection="up"`
`disableallsort`	Disable all sorting, both initsort and header sort. This is mainly used by plugins such as the EditTablePlugin to disable sorting in a table while editing the table.	unspecified	`disableallsort="on"`
`headerbg`	Header cell background colour.	`"#6b7f93"`	`headerbg="#999999"`
`headerbgsorted`	Header cell background colour of a sorted column.	the value of `headerbg`	`headerbgsorted="#32596c"`
`headercolor`	Header cell text colour.	`"#ffffff"`	`headercolor="#0000cc"`
`databg`	Data cell background colour, a comma separated list. Specify `"none"` for no colour, that is to use the colour/background of the page the table is on.	`"#edf4f9,#ffffff"`	`databg="#f2f2f2,#ffffff"`

Argument	Comment	Default value	Example
databgsorted	Data cell background colour of a sorted column; see databg.	the values of databg	databgsorted="#d4e8e4,#e5f5e
datacolor	Data cell text colour, a comma separated list.	unspecified	datacolor="#0000CC, #000000"
tableborder	Table border width (pixels).	"1"	tableborder="2"
tableframe	Table frame, set to "void" (no sides), "above" (the top side only), "below" (the bottom side only), "hsides" (the top and bottom sides only), "lhs" (the left-hand side only), "rhs" (the right-hand side only), "vsides" (the right and left sides only), "box" (all four sides), "border" (all four sides).	unspecified	tableframe="hsides"
tablerules	Table rules, set to "none" (no rules), "groups" (rules will appear between row groups and column groups only), "rows" (rules will appear between rows only), "cols" (rules will appear between columns only), "all" (rules will appear between all rows and columns).	unspecified	tablerules="rows"
cellpadding	Cell padding (pixels).	"0"	cellpadding="0"
cellspacing	Cell spacing (pixels).	"0"	cellspacing="3"
cellborder	Cell border width (pixels).	unspecified	cellborder="0"
valign	Vertical alignment of cells and headers, set to	unspecified	valign="top"

Argument	Comment	Default value	Example
	"top", "middle", "bottom" or "baseline".		
headervalign	Vertical alignment of header cells; overrides valign.	unspecified	headervalign="top"
datavalign	Vertical alignment of data cells; overrides valign.	unspecified	datavalign="top"
headeralign	Header cell alignment, one value for all columns, or a comma separated list for different alignment of individual columns. Set to "left", "center", "right" or "justify". Overrides individual cell settings.	unspecified	headeralign="left,right"
dataalign	Data cell alignment, one value for all columns, or a comma separated list for different alignment of individual columns. Set to "left", "center", "right" or "justify". Overrides individual cell settings.	unspecified	dataalign="center"
tablewidth	Table width: Percentage of window width, or absolute pixel value.	unspecified	tablewidth="100%"
columnwidths	Column widths: Comma delimited list of column widths, percentage or absolute pixel value.	unspecified	columnwidths="80%,20%"

Argument	Comment	Default value	Example
`headerrows`	Number of header rows to exclude from sort. (will be rendered in a HTML `thead` section)	`"1"`	`headerrows="1"`
`footerrows`	Number of footer rows to exclude from sort. (will be rendered in a HTML `tfoot` section)	`"0"`	`footerrows="1"`
`id`	Unique table identifier string, used for targeting a table with CSS.	`tableN` (where N is the table order number on the page)	`id="userTable"`
`summary`	Table summary used by screenreaders: A summary of what the table presents. It should provide an orientation for someone who listens to the table.	unspecified	`summary="List of subscribed users"`
`caption`	Table caption: A title that will be displayed just above the table.	unspecified	`caption="Users"`

- Example:
```
%TABLE{ tableborder="0" cellpadding="4" cellspacing="3"
cellborder="0" }%
| *A1* | *B1* |
| A2 | B2 |
```
- Related: See TablePlugin for more details

TEAL -- start teal colored text

- `TEAL` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%TEAL% teal text %ENDCOLOR%`
- Expands to: teal text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

TOC{"Topic"} -- table of contents

- Table of Contents. Shows a TOC that is generated automatically based on headings of a topic. Headings in WikiSyntax (`"---++ text"`) and HTML (`"<h2>text</h2>"`) are taken into account. Any heading text after `"!!"` is excluded from the TOC; for example, write `"---+!! text"` if you do not want to list a header in the TOC
- Syntax: `%TOC%` OR `%TOC{"SomeTopic" ...}%`
- Supported parameters:

Parameter:	Description:	Default:
`"TopicName"`	topic name	Current topic
`web="Name"`	Name of web	Current web
`depth="2"`	Limit depth of headings shown in TOC	6
`title="Some text"`	Title to appear at top of TOC	none

- Example: `%TOC{depth="2"}%`
- Example: `%TOC{"CompleteDocumentation" web="System" title="Contents:"}%`
- Example: see Foswiki:Sandbox.TestTopicInclude
- TOC will add an HTML anchor called `foswikiTOC` just before the table of contents. This enables adding a link from within a topic back to the table of contents to ease navigation. Example `[[#foswikiTOC][Back to TOC]]` creates Back to TOC.
- If multiple headers have the exact same text, the anchors for the 2nd, 3rd etc will be suffixed by _AN1, _AN2 etc so the anchors become unique.

TOPIC -- name of current topic

- `%TOPIC%` expands to the name of the topic. If you are looking at the text of an included topic, it is the name of the included topic.
- Syntax: `%TOPIC%`
- Expands to: `Macros`, renders as Macros
- Related: BASETOPIC, INCLUDINGTOPIC, TOPICLIST, WEB

TOPICLIST{"format"} -- topic index of a web

- List of all topics in a web. The "format" defines the format of one topic item. It may include formatting tokens: The `$topic` token gets expanded to the topic name, `$marker` to `marker` parameter where topic matches `selection`, and `$web` to the name of the web, or any of the standard FormatTokens.
- Syntax: `%TOPICLIST{"format" ...}%`
- Supported parameters:

Parameter:	Description:	Default:
`"format"`	Format of one line, may include `$web` (name of web), `$topic` (name of the topic), `$marker` (which expands to `marker` for the item matching `selection` only)	`"$topic"`
`format="format"`	(Alternative to above)	`"$topic"`
`separator=", "`	line separator	`"$n"` (new line)
`marker="selected"`	Text for `$marker` if the item matches `selection`	`"selected"`
`selection="TopicA, TopicB"`	Current value to be selected in list	`(none)`
`web="Name"`	Name of web	Current web

- Example: `%TOPICLIST{"   * $web.$topic"}%` creates a bullet list of all topics

- Example: `%TOPICLIST{separator=", "}%` creates a comma separated list of all topics
- Example: `%TOPICLIST{" <option>$topic</option>"}%` creates an option list (for drop down menus)
- Example: `<select>%TOPICLIST{" <option $marker value='$topic'>$topic</option>" separator=" " selection="%TOPIC%"}%</select>` creates an option list of web topics with the current topic selected
- Related: SEARCH, WEBLIST

TOPICURL -- shortcut to viewing the current topic

- This macro always expands to an url pointing to the current base topic.
- Current value: TOPICURL = https://wiki.iac.ethz.ch/System/CompleteDocumentation

TWIKIWEB -- synonym for SYSTEMWEB

- **Deprecated.** Please use `%SYSTEMWEB%` instead.

U -- "updated" icon

- Current value: U = UPDATED
- Related: H, I, ICON, M, N, P, Q, S, T, X, Y

URLPARAM{"name"} -- get value of a URL parameter

- Returns the value of a URL parameter.
- Syntax: `%URLPARAM{"name"}%`
- Supported parameters:

Parameter:	Description:	Default:
`"name"`	The name of a URL parameter	required
`default="..."`	Default value in case parameter is empty or missing	empty string
`newline=" "`	Convert newlines in textarea to other delimiters	no conversion

`encode="off"`
`encode="entity"`
`encode="safe"`
`encode="url"`
`encode="quote"`
	Control how special characters are encoded
	--- 	
	`off`: No encoding. Avoid using this when possible. See the security warning below.
	--- 	
	`entity`: Encode special characters into HTML entities. See ENCODE for more details.
	--- 	
	`safe`: Encode characters `'"<>%` into HTML entities.
	--- 	
	`url`: Encode special characters for URL parameter use, like a double quote into `%22`
	--- 	
	`quote`: Escape double quotes with backslashes (`\"`), does not change other characters; required when feeding
		"safe"

Parameter:	Description:	Default:
	URL parameters into other macros.	
`multiple="on" multiple="[[$item]]"`	If set, gets all selected elements of a `<select multiple="multiple">` tag. A format can be specified, with `$item` indicating the element, e.g. `multiple="Option: $item"`	first element
`separator=", "`	Separator between multiple selections. Only relevant if multiple is specified	`"\n"` (new line)

- Example: `%URLPARAM{"skin"}%` returns `print` for a `.../view/System/Macros?skin=print` URL
- **Notes:**
  - URL parameters passed into HTML form fields must be entity ENCODEd.
  - Double quotes in URL parameters must be escaped when passed into other macros. Example: `%SEARCH{ "%URLPARAM{ "search" encode="quote" }%" noheader="on" }%`
  - When used in a template topic, this macro will be expanded when the template is used to create a new topic. See TemplateTopics#TemplateTopicsVars for details.
  - Watch out for internal parameters, such as `rev`, `skin`, `template`, `topic`, `web`; they have a special meaning in Foswiki. Common parameters and view script specific parameters are documented at CommandAndCGIScripts.
  - If you have `%URLPARAM{` in the value of a URL parameter, it will be modified to `%<nop>URLPARAM{`. This is to prevent an infinite loop during expansion.
  - Security warning! Using URLPARAM can easily be misused for cross-site scripting unless specific characters are entity encoded. By default URLPARAM encodes the characters `'"<>%` into HTML entities (same as encode="safe") which is relatively safe. The safest is to use encode="entity". When passing URLPARAM inside another macro always use double quotes ("") combined with using URLPARAM with encode="quote". For maximum security against cross-site scripting you are adviced to install the Foswiki:Extensions.SafeWikiPlugin.
- Related: ENCODE, SEARCH, FormattedSearch, QUERYSTRING

USERINFO{"name"} -- retrieve details about a user

- Syntax: `%USERINFO%`
- Expands to: `guest, Main.WikiGuest,` (comma-separated list of the username, wikiusername, and emails)
- With formatted output, using tokens `$emails`, `$username`, `$wikiname`, `$wikiusername`, `$groups` and `$admin` ($admin returns 'true' or 'false'):
  - Example: `%USERINFO{ format="$username is really $wikiname" }%`
  - Expands to: `guest is really WikiGuest`
- Retrieve information about another user:
  - Example: `%USERINFO{ "WikiGuest" format="$username is really $wikiname" }%`
  - Expands to: `guest is really WikiGuest`
  - The parameter should be the wikiname of a user. You can also pass a login name. You can only get information about another user if the `{AntiSpam}{HideUserDetails}` configuration option is not enabled, or if you are an admin. *(User details are hidden in this site)*
- Related: USERNAME, WIKINAME, WIKIUSERNAME, UserAuthentication, ChangeEmailAddress

USERNAME -- your login username

- Foswiki makes names available in three formats: USERNAME like `jsmith`, WIKINAME like `JohnSmith` and WIKIUSERNAME like `Main.JohnSmith`. Un-authenticated users are all Main.WikiGuest.
- Syntax: `%USERNAME%`
- Expands to: `guest`
- ⚠ When used in a template topic, this macro will be expanded when the template is used to create a new topic. See TemplateTopics#TemplateTopicsVars for details.
- Related: REMOTE_USER, USERINFO, WIKINAME, WIKIUSERNAME, UserAuthentication

USERSWEB -- name of users web

- The web containing individual user topics, Main.WikiGroups, and customised site-wide preferences.
- Syntax: `%USERSWEB%`
- Expands to: `Main`
- Related: SYSTEMWEB

VAR{"NAME" web="Web"} -- get a preference value from another web

- Syntax: `%VAR{"NAME" web="Web"}%`
- Example: To get `%WEBBGCOLOR%` of the Main web write `%VAR{"WEBBGCOLOR" web="Main"}%`, which expands to `#FFEFA6`
- Related: WEBPREFSTOPIC

VBAR -- vertical bar

- The vertical bar macro can be used in TML tables.
- Current value: VBAR = |
- Related: BR, BULLET, BB, BB2, BB3, BB4, CARET

VOTE{ *attributes* } -- define a poll in a topic.

- The following standard attributes are recognized

Name	Description	Example
`id`	The identifier of the poll. You can have multiple independent votes in the same topic.	`id="Dining"`
`select`*`N`*	Defines the name of a **select** vote, where you select one from a ranges of options. `N` is a number that identifies this item within the poll e.g. `select1`, `select2` etc. You must number all `select` and `stars` parameters uniquely and sequentially (e.g. `select1 stars2 select3`	`select1="Drink"`
`options`*`N`*	Each `select`*`N`* must have a corresponding `options`*`N`* that defines a comma-separated list of the options that can be selected between.	`options1="Beer,Wine,Milk"`
`stars`*`N`*	Defines the name of a **rate** vote, where you rate something by giving it a number of stars. `N` is a number that identifies this item within the poll e.g.	`stars2="Usability"`

Name	Description	Example
	`select1`, `stars2` etc. You must number all `select` and `stars` parameters uniquely and sequentially (e.g. `select1 stars2 select3`	
`width`*N*	Each `stars`*N* must have a corresponding `width`*N*. This gives the number of stars to show e.g. `width1="5"` will show 5 stars.	`width2="10"`
`format`*N*	Defines the format of the results display. See formatting results, below.	`format="$large"`
`chart`*N*	Defines the format of a single bar in the results bar chart generated for the corresponding `select` (for `select` type only). See formatting results, below.	`chart="<p>$option $score</p>"`
`separator`	Defines the string to be used to separate each row in the result.	`separator=" "`
`global`	If set to `"off"`, this makes the `id` local to this topic (the default). If set to `"on"` it will be a global poll that can be accessed from many topics.	`global="on"`
`open`	If set to `"off"` this is a closed vote. If set to `"on"` it is open (the default)	`open="on"`
`secret`	If set to `"off"`, then the database will record who voted. If set to `"on"`, votes are secret (the default)	`secret="on"`
`saveto`	If set to the name of a topic, the poll results will be appended to the end of that topic. The results are formatted as a table for easy post-processing.	`saveto="Main.VoteResults"`
`bayesian`	If set to `"on"`, rating averages will be computed using the Bayesian average of this item against all the other items *that have the same item in their `stars` field*. This requires all the participating %VOTEs to be `global`, or to save their results to the same place using `saveto`. See http://www.thebroth.com/blog/118/bayesian-rating for more information about Bayesian rating.	`bayesian="off"`
`submit`	If set to `"off"`, this makes the %VOTE display the results of the vote without prompting for any input. This is useful when - for example - you want to show the results of a global vote, without permitting more voting.	

- See VotePlugin for more information

WEB -- name of current web

- `%WEB%` expands to the name of the web where the topic is located. If you are looking at the text of an included topic, it is the web where the included topic is located.
- Syntax: `%WEB%`
- Expands to: `System`
- Related: BASEWEB, INCLUDINGWEB, TOPIC

WEBLIST{"format"} -- index of all webs

- List of all webs. Obfusticated webs are excluded, e.g. webs with a `NOSEARCHALL = on` preference setting. The `"format"` defines the format of one web item. The `$name` gets expanded to the name of the web, `$qname` gets expanded to double quoted name, `$marker` to `marker` where web matches `selection`.
- Syntax: `%WEBLIST{"format" ...}%`
- Supported parameters:

Parameter:	Description:	Default:
`"format"`	Format of one line, may include `$name` (the name of the web), $qname (the name of the web in double quotes), `$indentedname` (the name of the web with parent web names replaced by indents, for use in indented lists), and `$marker` (which expands to `marker` for the item matching `selection` only)	`"$name"`
`format="format"`	(Alternative to above)	`"$name"`
`separator=", "`	Line separator	`"$n"` (new line)
`web=""`	if you specify `$web` in format, it will be replaced with this	`""`
`webs="public"`	Comma separated list of webs, `public` expands to all non-hidden. **NOTE:** Administrators will see all webs, not just the public ones	`"public"`
`marker="selected"`	Text for `$marker` if the item matches `selection`	`"selected"`
`selection="%WEB%"`	Current value to be selected in list	`selection="%WEB%"`
`subwebs="Sandbox"`	show webs that are a sub-web of this one (recursivly)	`""`

- Example: `%WEBLIST{"  * [[$name.WebHome]]"}%` - creates a bullet list of all webs.
- Example: `<form><select name="web"> %WEBLIST{"<option $marker value=$qname>$name</option>" webs="Trash, public" selection="%WEB%" separator=" "}% </select></form>` - creates a dropdown of all public webs + Trash web, with the current web highlighted.
- - WEBLIST will not show a web called 'TWiki' even if it exists in the file system unless the `TWikiCompatibilityPlugin` is installed and activated in configure. This is done to ensure that the TWiki compatibility components such as the TWiki web are only visible and active when needed.
- Related: TOPICLIST, SEARCH

WEBPREFSTOPIC -- name of web preferences topic

- Syntax: `%WEBPREFSTOPIC%`
- Expands to: `WebPreferences`, renders as WebPreferences
- Related: HOMETOPIC, WIKIPREFSTOPIC, VAR

WHITE -- start white colored text

- `WHITE` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%WHITE% white text %ENDCOLOR%`
- Expands to: (shown with a gray background here)

- %<color>% text must end with %ENDCOLOR%. If you want to switch from one color to another one you first need to end the active color with %ENDCOLOR%, e.g. write %RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

WIKIHOMEURL -- site home URL

- Syntax %WIKIHOMEURL%
- Expands to ==
- Normally by default set to %SCRIPTURLPATH{"view"}%
- For the top bar logo URL use %WIKILOGOURL% defined in WebPreferences instead.
- Related: WIKITOOLNAME

WIKINAME -- your Wiki username

- The WikiName is the same as %USERNAME% if not defined in the Main.WikiUsers topic
- Syntax: %WIKINAME%
- Expands to: WikiGuest
- When used in a template topic, this macro will be expanded when the template is used to create new topic. See TemplateTopics#TemplateTopicsVars for details.
- Related: REMOTE_USER, USERINFO, USERNAME, WIKIUSERNAME, WIKIUSERSTOPIC

WIKIPREFSTOPIC -- name of site-wide preferences topic

- Syntax: %WIKIPREFSTOPIC%
- Expands to: DefaultPreferences, renders as DefaultPreferences
- Related: HOMETOPIC, WEBPREFSTOPIC

WIKITOOLNAME -- name of your site

- Syntax: %WIKITOOLNAME%
- Expands to: =Wiki =
- Related: WIKIHOMEURL, WIKIVERSION

WIKIUSERNAME -- your Wiki username with web prefix

- Your %WIKINAME% with Main web prefix, useful to point to your Wiki home page
- Syntax: %WIKIUSERNAME%
- Expands to: Main.WikiGuest, renders as Main.WikiGuest
- When used in a template topic, this macro will be expanded when the template is used to create a new topic. See TemplateTopics#TemplateTopicsVars for details
- Related: REMOTE_USER, USERINFO, USERNAME, WIKINAME

WIKIUSERSTOPIC -- name of topic listing all registers users

- Syntax: %WIKIUSERSTOPIC%
- Expands to: WikiUsers, with Main prefix renders as Main.WikiUsers

- Related: WIKIUSERNAME

WIKIVERSION -- the version of the installed Foswiki engine

- Syntax: `%WIKIVERSION%`
- Expands to: `Foswiki-1.0.9, Sun, 17 Jan 2010, build 6075`
- Related: PLUGINVERSION, WIKITOOLNAME

X -- warning icon

- Current value: X =
- Related: H, I, ICON, M, N, P, Q, S, T, U, Y

Y -- "yes" icon

- Current value: Y =
- Related: H, I, ICON, M, N, P, Q, S, T, U, X

YELLOW -- start yellow colored text

- `YELLOW` is one of the shortcut macros predefined in DefaultPreferences. See the section shortcut macros in that topic for a complete list of colors.
- Syntax: `%YELLOW% yellow text %ENDCOLOR%`
- Expands to: yellow text
- `%<color>%` text must end with `%ENDCOLOR%`. If you want to switch from one color to another one you first need to end the active color with `%ENDCOLOR%`, e.g. write `%RED% some text %ENDCOLOR% %GREEN% more text %ENDCOLOR%`.
- Related: ENDCOLOR, DefaultPreferences, StandardColors

Shortcuts

The following macros are preference settings and are frequently used in topic content.

- `%BR%` - line break
- `%BULLET%` - bullet sign
- `%BB%` - line break and bullet combined
- `%BB2%` - indented line break and bullet
- `%RED% text %ENDCOLOR%` - colored text (also `%YELLOW%`, `%ORANGE%`, `%PINK%`, `%PURPLE%`, `%TEAL%`, `%NAVY%`, `%BLUE%`, `%AQUA%`, `%LIME%`, `%GREEN%`, `%OLIVE%`, `%MAROON%`, `%BROWN%`, `%BLACK%`, `%GRAY%`, `%SILVER%`, `%WHITE%`)
- `%H%` - Help icon
- `%I%` - Idea icon
- `%M%` - Moved to icon
- `%N%` - New icon
- `%P%` - Refactor icon
- `%Q%` - Question icon
- `%S%` - Pick icon
- `%T%` - Tip icon
- `%U%` - Updated icon

- %X% - Alert icon
- %Y% - Done icon

See ShortcutMacros for a full list of predefined shortcuts.

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Formatted Search

Inline search feature allows flexible formatting of search result

The default output format of a `%SEARCH{...}%` is a table consisting of topic names and topic summaries. Use the `format="..."` parameter to customize the search result. The format parameter typically defines a bullet or a table row containing macros, such as `%SEARCH{ "food" format="| $topic | $summary |" }%`. See `%SEARCH{...}%` for other search parameters, such as `separator=""`.

Syntax

Two parameters can be used to specify a customized search result:

1. `header="..."` parameter

Use the header parameter to specify the header of a search result. It should correspond to the format of the format parameter. This parameter is optional.
Example: `header="| *Topic:* | *Summary:* |"`

Format tokens that can be used in the header string:

Name:	Expands To:
`$web`	Name of the web
`$n` or `$n()`	New line. Use `$n()` if followed by alphanumeric character, e.g. write `Foo$n()Bar` instead of `Foo$nBar`
`$nop` or `$nop()`	Is a "no operation". This token gets removed; useful for nested search
`$quot`	Double quote (") (\" also works)
`$percnt`	Percent sign (`%`)
`$dollar`	Dollar sign (`$`)
`$lt`	Less than sign (<)
`$gt`	Greater than sign (>)
`$amp`	Ampersand (`&`)

2. `footer="..."` parameter

Use the footer parameter to specify the footer of a search result. It should correspond to the format of the format parameter. This parameter is optional.
Example: `footer="| *Topic* | *Summary* |"`

Format tokens that can be used in the footer string:

Name:	Expands To:
`$web`	Name of the web
`$ntopics`	Number of topics found in current web
`$nhits`	Number of hits if `multiple="on"`. Cumulative across all topics in current web. Identical to `$ntopics` unless `multiple="on"`
`$n` or `$n()`	New line. Use `$n()` if followed by alphanumeric character, e.g. write `Foo$n()Bar` instead of `Foo$nBar`
`$nop` or `$nop()`	Is a "no operation". This token gets removed; useful for nested search
`$quot`	Double quote (") (\" also works)

Name:	Expands To:
$percnt	Percent sign (%)
$dollar	Dollar sign ($)
$lt	Less than sign (<)
$gt	Greater than sign (>)
$amp	Ampersand (&)

3. format="..." parameter

Use the format parameter to specify the format of one search hit.
Example: format="| $topic | $summary |"

Format tokens that can be used in the format string:

Name:	Expands To:
$web	Name of the web
$topic	Topic name
$topic(20)	Topic name, "- " hyphenated each 20 characters
$topic(30, -)	Topic name, hyphenated each 30 characters with separator "- "
$topic(40, ...)	Topic name, shortended to 40 characters with "..." indication
$parent	Name of parent topic; empty if not set
$parent(20)	Name of parent topic, same hyphenation/shortening like $topic()
$text	Formatted topic text. In case of a multiple="on" search, it is the line found for each search hit.
$locked	LOCKED flag (if any)
$date	Time stamp of last topic update, e.g. 17 May 2024 - 02:39
$isodate	Time stamp of last topic update, e.g. 2024-05-17T02:39Z
$rev	Number of last topic revision, e.g. 4
$username	Login name of last topic update, e.g. jsmith
$wikiname	Wiki user name of last topic update, e.g. JohnSmith
$wikiusername	Wiki user name of last topic update, like Main.JohnSmith
$createdate	Time stamp of topic revision 1
$createusername	Login name of topic revision 1, e.g. jsmith
$createwikiname	Wiki user name of topic revision 1, e.g. JohnSmith
$createwikiusername	Wiki user name of topic revision 1, e.g. Main.JohnSmith
$summary	Topic summary, just the plain text, all formatting and line breaks removed; up to 162 characters
$summary(50)	Topic summary, up to 50 characters shown
$summary(showvarnames)	Topic summary, with %SOMEMACRO{...}% macros shown as SOMEMACRO{...}
$summary(noheader)	Topic summary, with leading ---+ headers removed **Note:** The tokens can be combined, for example $summary(100, showvarnames, noheader)
$changes	Summary of changes between latest rev and previous rev
$changes(n)	Summary of changes between latest rev and rev n
$formname	The name of the form attached to the topic; empty if none
$formfield(name)	The field value of a form field; for example, $formfield(TopicClassification) would get expanded to PublicFAQ. This applies only to topics that have a DataForm
$formfield(name, 10)	Form field value, "- " hyphenated each 10 characters

Name:	Expands To:
`$formfield(name, 20, - )`	Form field value, hyphenated each 20 characters with separator "- "
`$formfield(name, 30, ...)`	Form field value, shortended to 30 characters with "..." indication
`$pattern(reg-exp)`	A regular expression pattern to extract some text from a topic (does not search meta data; use `$formfield` instead). In case of a `multiple="on"` search, the pattern is applied to the line found in each search hit. • Specify a RegularExpression that covers the whole text (topic or line), which typically starts with `.*`, and must end in `.*` • Put text you want to keep in parenthesis, like `$pattern(.*?(from here.*?to here).*)` • Example: `$pattern(.*?\*.*?Email\:\s*([^\n\r]+).*)` extracts the e-mail address from a bullet of format `* Email: ...` • This example has non-greedy `.*?` patterns to scan for the first occurance of the Email bullet; use greedy `.*` patterns to scan for the last occurance • Limitation: Do not use `.*)` inside the pattern, e.g. `$pattern(.*foo(.*)bar.*)` does not work, but `$pattern(.*foo(.*?)bar.*)` does • Note: Make sure that the integrity of a web page is not compromised; for example, if you include an HTML table make sure to include everything including the table end tag
`$count(reg-exp)`	Count of number of times a regular expression pattern appears in the text of a topic (does not search meta data). Follows guidelines for use and limitations outlined above under `$pattern(reg-exp)`. Example: `$count(.*?(---[+][+][+][+]) .*)` counts the number of <H4> headers in a page.
`$ntopics`	Number of topics found in current web. This is the current topic count, not the total number of topics
`$nhits`	Number of hits if `multiple="on"`. Cumulative across all topics in current web. Identical to `$ntopics` unless `multiple="on"`
`$n` or `$n()`	New line. Use `$n()` if followed by alphanumeric character, e.g. write `Foo$n()Bar` instead of `Foo$nBar`
`$nop` or `$nop()`	Is a "no operation". This token gets removed; useful for nested search
`$quot`	Double quote (") (\" also works)
`$percnt`	Percent sign (%)
`$dollar`	Dollar sign ($)
`$lt`	Less than sign (<)
`$gt`	Greater than sign (>)
`$amp`	Ampersand (&)

Examples

Here are some samples of formatted searches. The SearchPatternCookbook has other examples, such as creating a picklist of usernames, searching for topic children and more.

Bullet list showing topic name and summary

Write this:

```
%SEARCH{ "VarREMOTE" scope="topic" nosearch="on" nototal="on" header="|
*Topic* | *Summary* |" format="| [[$topic]] | $summary |"  footer="|
*Topics found* | *$ntopics* |"  }%
```

To get this:

Topic	Summary
VarREMOTEADDR	#VarREMOTEADDR REMOTE ADDR environment variable Syntax: % nop REMOTE ADDR% Expands to: Related: ENV, HTTP HOST, REMOTE PORT, REMOTE USER
VarREMOTEPORT	#VarREMOTEPORT REMOTE PORT environment variable Syntax: % nop REMOTE PORT% Expands to: Related: ENV, HTTP HOST, REMOTE ADDR, REMOTE USER
VarREMOTEUSER	#VarREMOTEUSER REMOTE USER environment variable Syntax: % nop REMOTE USER% Expands to: Related: ENV, HTTP HOST, REMOTE ADDR, REMOTE PORT, USERNAME ...
Topics found	**3**

Table showing form field values of topics with a form

In a web where there is a form that contains a `TopicClassification` field, an `OperatingSystem` field and an `OsVersion` field we could write:

```
| *Topic:* | *OperatingSystem:* | *OsVersion:* |
%SEARCH{ "[T]opicClassification.*?value=\"[P]ublicFAQ\"" scope="text"
type="regex" nosearch="on" nototal="on" format="| [[$topic]] |
$formfield(OperatingSystem) | $formfield(OsVersion) |" }%
```

To get this:

Topic:	OperatingSystem:	OsVersion:
IncorrectDllVersionW32PTH10DLL	OsWin	95/98
WinDoze95Crash	OsWin	95

Extract some text from a topic using regular expression

Write this:

```
%SEARCH{ "\*Back to:\* FrequentlyAskedQuestions" scope="text"
type="regex" nosearch="on" nototal="on" header="FAQs:" format="   *
$pattern(.*?FAQ\:[\n\r]*([^\n\r]+).*) [[$topic][Answer...]]"
footer="Found $ntopics FAQ topics" }%
```

To get this:

FAQs:

- How can I create a simple data form based application? Answer...
- How do I delete or rename a topic? Answer...
- How do I delete or rename a file attachment? Answer...
- I would like to install Foswiki on my server. Can I get the source? Answer...
- Why does the topic revision not increase when I edit a topic? Answer...
- Foswiki has a GPL (GNU General Public License). What is GPL? Answer...

- I've problems with the WebSearch. There is no Search Result on any inquiry. By clicking the Index topic it's the same problem. Answer...
- What happens if two of us try to edit the same topic simultaneously? Answer...
- So what is this WikiWiki thing exactly? Answer...

Found 9 FAQ topics

Nested Search

Search can be nested. For example, search for some topics, then form a new search for each topic found in the first search. The idea is to build the nested search string using a formatted search in the first search.

Here is an example. Let's search for all topics that contain the word "culture" (first search), and let's find out where each topic found is linked from (second search).

- First search:
  - `%SEARCH{ "culture" format="   * $topic is referenced by: (list all references)" nosearch="on" nototal="on" }%`
- Second search. For each hit we want this search:
  - `%SEARCH{ "(topic found in first search)" format="$topic" nosearch="on" nototal="on" separator=", " }%`
- Now let's nest the two. We need to escape the second search, e.g. the first search will build a valid second search string. Note that we escape the second search so that it does not get evaluated prematurely by the first search:
  - Use `$percnt` to escape the leading percent of the second search
  - Use `\"` to escape the double quotes
  - Use `$dollar` to escape the `$` of `$topic`
  - Use `$nop` to escape the `}%` sequence

Write this:

```
%SEARCH{ "culture" format="   * $topic is referenced by:$n      * $percntSEARCH{ \"$topic\" format=\"$dollartopic\" nosearch=\"on\" nototal=\"on\" separator=\", \" }$nop%" nosearch="on" nototal="on" }%
```

To get this:

- AccessControl is referenced by:
  - CommandAndCGIScripts, CompleteDocumentation, DataForms, DefaultPreferences, DevelopingPlugins, FileAttachment, InstallationGuide, Macros, MainFeatures, ManagingTopics, ManagingUsers, ReferenceManual, ReleaseHistory, ReleaseNotes01x00, SitePermissions, SiteTools, TopicsAndWebs, TwentyMinuteTutorial, UserAuthentication, VarSEARCH, WebPreferences, WebPreferencesHelp, WikiWord
- BeginnersStartHere is referenced by:
  - MacrosQuickStart, NewUserTemplate, ReleaseNotes01x00, UsersGuide, WebLeftBarExample, WebStatistics, WelcomeGuest
- FormattedSearch is referenced by:
  - AccessControl, BookView, CommandAndCGIScripts, CompleteDocumentation, DataForms, EditTablePlugin, FormatTokens, MetaData, MySideBarTemplate, NatEditHelpText, NatEditWordHelpText, QuerySearch, ReferenceManual, ReleaseHistory, ReleaseNotes01x00, RenderListPlugin, SearchHelp, SearchPatternCookbook, SiteTools, SpreadSheetPlugin, TagMePlugin, TwistyPlugin, VarMETA, VarMETASEARCH, VarSEARCH, VarURLPARAM, WebLeftBarExample, WebStatistics
- VarCachePluginTest is referenced by:
  -

- WabiSabi is referenced by:
    - WabiSabi, WhatIsWikiWiki
- WelcomeGuest is referenced by:
    - BeginnersStartHere, MySideBarTemplate, NewUserTemplate, StartingPoints, UsersGuide, WebHome, WebPreferences, WebStatistics, WhatIsWikiWiki, YouAreHere
- WhatIsWikiWiki is referenced by:
- WikiCulture is referenced by:
    - AccessControl, BeginnersStartHere, WabiSabi, WelcomeGuest, WhatIsWikiWiki

Note: Nested search can be slow, especially if you nest more then 3 times. Nesting is limited to 16 levels. For each new nesting level you need to "escape the escapes", e.g. write `$dollarpercntSEARCH{` for level three, `$dollardollarpercntSEARCH{` for level four, etc.

Most recently changed pages

Write this:

```
%SEARCH{ "\.*" scope="topic" type="regex" nosearch="on" nototal="on"
order="modified" reverse="on"  format="| [[$topic]] | $wikiusername  |
$date |" limit="7" }%
```

To get this:

WebStatistics	Main.AdminGroup	31 Jan 2015 - 19:40
WebTopicEditTemplate	Main.UrsBeyerle	31 Jan 2015 - 15:01
WebChangesAlert	Main.UrsBeyerle	04 Sep 2012 - 11:40
WebNotify	Main.UrsBeyerle	04 Sep 2012 - 11:35
NatEditHelpText	Main.UrsBeyerle	21 Jan 2011 - 13:58
WebSearch	Main.UrsBeyerle	02 Dec 2010 - 11:51
SiteSideBar	Main.UrsBeyerle	11 Aug 2010 - 15:07

Search with conditional output

A regular expression search is flexible, but there are limitations. For example, you cannot show all topics that are up to exactly one week old, or create a report that shows all records with invalid form fields or fields within a certain range, etc. You need some additional logic to format output based on a condition:

1. Specify a search which returns more hits then you need
2. For each search hit apply a spreadsheet formula to determine if the hit is needed
3. If needed, format and output the result
4. Else supress the search hit

This requires the Foswiki:Extensions.SpreadSheetPlugin. The following example shows all topics that are up to exactly one week old.

Write this:

```
%CALC{$SET(weekold, $TIMEADD($TIME(), -7, day))}%
%SEARCH{ "." scope="topic" type="regex" nosearch="on" nototal="on"
order="modified" reverse="on" format="$percntCALC{$IF($TIME($date) <
$GET(weekold), <nop>, | [[$topic]] | $wikiusername | $date | $rev
|)}$percnt" limit="100" }%
```

- The first line sets the `weekold` variable to the serialized date of exactly one week ago
- The SEARCH has a deferred CALC. The `$percnt` makes sure that the CALC gets executed once for each search hit
- The CALC compares the date of the topic with the `weekold` date
- If topic is older, a `<nop>` is returned, which gets removed at the end of the rendering process
- Otherwise, the search hit is formatted and returned

To get this:

Embedding search forms to return a formatted result

Use an HTML form and an embedded formatted search on the same topic. You can link them together with an `%URLPARAM{"..."}%` macro. Example:

Write this:

```
<form action="%SCRIPTURLPATH{"view"}%/%WEB%/%TOPIC%">
Find Topics:
<input type="text" name="q" size="32" value="%URLPARAM{"q" encode="entity"}%" /> <inp
</form>
Result:
%SEARCH{ search="%URLPARAM{"q" encode="quote"}%" type="keyword" format="   * $web.$topic:
```

To get this:

Find Topics: Result:

Related Topics: UserDocumentationCategory, SearchHelp, Macros#VarSEARCH, SearchPatternCookbook, RegularExpression

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File Attachments

Each topic can have one or more files of any type attached to it by using the Attach screen to upload (or download) files from your local PC. Attachments are stored under revision control: uploads are automatically backed up; all previous versions of a modified file can be retrieved.

What are attachments good for?

File Attachments can be used to archive data, or to create powerful customized groupware solutions, like file sharing and document management systems, and quick Web page authoring.

Document management system

You can use Attachments to store and retrieve documents (in any format, with associated graphics, and other media files); attach documents to topics; collaborate on documents with full revision control; distribute documents on a need-to-know basis using web and topic-level access control; create a central reference library that's easy to share with an user group spread around the world.

File sharing

For file sharing, FileAttachments on a series of topics can be used to quickly create a well-documented, categorized digital download center for all types of files: documents, graphics and other media, drivers and patches, applications; anything you can safely upload!

Web authoring

Through your web browser, you can easily upload graphics (or sound files, or anything else you want to link to on a page) and place them on a single page, or use them across a web, or site-wide.

You can also add graphics - any files - directly, typically by FTP upload. This requires FTP access, and may be more convenient if you have a large number of files to load. FTP-ed files cannot be managed using browser-based attachment controls. You can use your browser to create shortcuts using Macros, like this %H% = .

Uploading files

- Click on the **`[Attach]`** link at the bottom of the page. The `Attach` screen lets you browse for a file, add a comment, and upload it. The uploaded file will show up in the file attachment table.
  - The topic must already exist. If it does not, it is a two step process: First create the topic, then add the file attachment.
  - Any type of file can be uploaded. Some files that might pose a security risk are renamed, for example: `*.php` files are renamed to `*.php.txt` so that no one can place code that would be read in a .php file.
  - Foswiki can limit the file size. This is defined by the `%ATTACHFILESIZELIMIT%` preference settings, currently set at 50000 kB.
    - It is not recommended to upload files greater than a few hundred K through a browser. Large files can be extremely slow-loading, and often time out. Use an FTP site for large file uploads.
- Automatic attachments:
  - When enabled, all files in a topic's attachment directory are shown as attachments to the topic - even if they were directly copied to the directory and never attached by using an `[Attach]` link. This is a convenient way to quickly "attach" files to a topic without

uploading them one by one; although at the cost of losing audit trail and version control.
- To enable this feature, set the {AutoAttachPubFiles} configuration option.
- The automatic attachment feature can only be used by an administrator who has access to the server's file system.

Downloading files

- Click on the file in the File Attachment table.

- There is no access control on individual attachments. If you need control over single files, create a separate topic per file and set topic-level access restrictions for each.

Moving attachment files

An attachment can be moved between topics.

- Click **[Manage]** on the Attachment to be moved.
- On the control screen, select the new web and/or topic.
- Click **[Move]**. The attachment and its version history are moved. The original location is stored as topic meta data.

Deleting attachments

Move unwanted Attachments to web `Trash`, topic `TrashAttachment`.

Linking to attached files

- Once a file is attached it can be referenced in the topic. Example:
  1. **[Attach]** a file, for example: `Sample.txt`
  2. **[Edit]** the topic you attached the file to and enter: `%ATTACHURL%/Sample.txt`
  3. **[Preview]**: the `%ATTACHURL%/Sample.txt` text appears as: /pub/System/FileAttachment/Sample.txt, a link to the text file.

- To reference an attachment located in another topic, enter:
  - `%PUBURLPATH%/%WEB%/OtherTopic/Sample.txt` (if it's within the same web)
  - `%PUBURLPATH%/Otherweb/OtherTopic/Sample.txt` (if it's in a different web)

- Attached HTML files and text files can be inlined in a topic. Example:
  1. **[Attach]** file: `Sample.txt`
  2. **[Edit]** topic and write text: `%INCLUDE{"%ATTACHURL%/Sample.txt"}%`
     - Content of attached file is shown inlined.
     - Read more about INCLUDE.

- GIF, JPG and PNG images can be attached and shown embedded in a topic. Example:
  1. **[Attach]** an image file, for example: `Smile.gif`
  2. **[Edit]** topic and write text: `%ATTACHURL%/Smile.gif`
  3. **[Preview]**: text appears as , an image.

Examples

Following you will find some examples of screens and tables related to this topic and referenced throughout the previous text. The appearance of these tables might vary, depending on what skin is used on your Foswiki installation.

File attachment table

Files attached to a topic are displayed in a directory table, showing the different file names and attributes. An `h` means the attachment is hidden and not listed when viewing a topic in normal mode.

The file attachment table is normally displayed at the bottom of the page, or optionally, hidden and accessed when you click `[Attach]`.

Topic attachments

I	Attachment	Action	Size	Date	Who	Comment
txt	Sample.txt	manage	0.1 K	22 Jul 2000 - 19:37	ProjectContributor	Just a sample
gif	Smile.gif	manage	0.1 K	22 Jul 2000 - 19:38	ProjectContributor	Smiley face

File attachment controls

Clicking on a **`[Manage]`** link takes you to a new page that looks a bit like this (depending on what skin is selected).

Here, you have different options:

- **To update an existing file**, choose the updated file on your local drive and click **`[Update file]`**. The filename of the original attachment will preserved; the filename of the local file you chose will **not** be used.
- **To change the comment** on an attachment, enter a new comment and then click **`[Change comment and properties only]`**. Note that the comment listed against the specific version will not change, however the comment displayed when viewing the topic does change.
- **To hide/unhide** an attachment, enable the **`Do not show attachment in table`** checkbox, then click **`[Change comment and properties only]`**.

Attach new file

Select a new local file to update attachment `Sample.txt`
Upload up to 10000 KB.

Comment

Describe the file so other people know what it is.

Properties

Create a link to the attached file Images will be displayed, for other attachments a link will be created.

Do not show attachment in table Attachments will not be shown in topic view page.

or Cancel

Known Issues

- Unlike topics, attachments are not locked during editing. As a workaround, you can change the comment to indicate an attachment file is being worked on - the comment on the specific version isn't lost, it's there when you list all versions of the attachment.
- Attachments are not secured. Anyone can read them if they know the name of the web, topic and attachment.

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Data Forms

Data forms allow you to add structured data to topics. The data stored in the form fields can be used to search and filter topics. The combination of structured data and search queries are the base for building database applications.

Overview

By adding form-based input to freeform content, you can structure topics with unlimited, easily searchable categories. A form is enabled for a web and can be added to a topic. The form data is shown in tabular format when the topic is viewed, and can be changed in edit mode using edit fields, radio buttons, check boxes and list boxes. Many different form types can be defined in a web, though a topic can only have one form attached to it at a time.

Typical steps to build an application based on Foswiki forms:

1. Define a form definition
2. Enable the form for a web
3. Build an HTML form to create new topics based on that template topic
4. Build a FormattedSearch to list topics that share the same form

For a step by step tutorial, see AnApplicationWithWikiForm.

Defining a form

A form definition specifies the fields in a form. A form definition is simply a page containing a Foswiki table, where each row of the table specifies one form field.

1. Create a new topic with your form name: **`YourForm`**, **`ExpenseReportForm`**, **`InfoCategoryForm`**, **`RecordReviewForm`**, whatever you need.
2. Create a TML table, with each column representing one element of an entry field: **`Name`**, **`Type`**, **`Size`**, **`Values`**, **`Tooltip message`**, and **`Attributes`** *(see sample below)*.
3. For each field, fill in a new line; for the type of field, select from the list.
4. Save the topic *(you can later choose to enable/disable individual forms)*.

Example:

```
| *Name* | *Type* | *Size* | *Values* | *Tooltip message* |
*Attributes* |
| TopicClassification | select | 1 | NoDisclosure,
PublicSupported, PublicFAQ | blah blah... |   |
| OperatingSystem | checkbox | 3 | OsHPUX, OsLinux, OsSolaris,
OsWin | blah blah... |   |
| OsVersion | text | 16 | | blah blah... |   |
```

Name	Type	Size	Values	Tooltip message	Attributes
TopicClassification	select	1	NoDisclosure, PublicSupported, PublicFAQ	blah blah...	
OperatingSystem	checkbox	3	OsHPUX, OsLinux, OsSolaris, OsWin	blah blah...	
OsVersion	text	16		blah blah...	

See structure of a form for full details of what types are available and what all the columns mean.

You can also retrieve possible values for `select`, `checkbox` or `radio` types from other topics:

Example:

- In the WebForm topic, define the form:

Name	Type	Size	Values	Tooltip message	Attributes
TopicClassification	select	1		blah blah...	
OperatingSystem	checkbox	3		blah blah...	
OsVersion	text	16		blah blah...	

  Leave the **`Values`** field **blank**.

- Then in the TopicClassification topic, define the possible values:

```
| *Name*              |
| NoDisclosure        |
| Public Supported    |
| Public FAQ          |
```

Name
NoDisclosure
Public Supported
Public FAQ

Field values can also be set using the result of expanding other macros. For example,

```
%SEARCH{"Office$" scope="topic" web="%USERSWEB%" nonoise="on"
type="regex" format="$web.$topic" separator=", " }%
```

When used in the value field of the form definition, this will find all topic names in the Main web which end in "Office" and use them as the legal field values.

Enabling forms by Web

Forms have to be enabled for each individual web. The **`WEBFORMS`** setting in WebPreferences is optional and defines a list of possible form definitions.

Example:

- Set WEBFORMS = BugForm, FeatureForm, Books.BookLoanForm

- With **`WEBFORMS`** enabled, an extra button is added to the edit view. If the topic doesn't have a Form, an **Add Form** button appears at the end of the topic. If a Form is present, a **Change** button appears in the top row of the Form. The buttons open a screen that enables selection of a form specified in `WEBFORMS`, or the **No form** option.
- You have to list the available form topics explicitly. You cannot use a `SEARCH` to define `WEBFORMS`.

Adding a form to a topic

- Edit the topic and follow the "Add form" button to add a Form. This is typically done to a template topic, either to the `WebTopicEditTemplate` topic in a web, or a new topic that serves as an application specific template topic. Initial Form values can be set there.

- Additionally a new topic can be given a Form using the `formtemplate` parameter in the (edit or save) URL. Initial values can then be provided in the URLs or as form values:
  - other than checkboxes: **`name`**, ex: **`?BugPriority=1`**
  - checkbox: **`namevalue=1`**, ex: **`?ColorRed=1`**.
    Boxes with a tick must be specified.
  - Example: This will add a textfield for the new topic name and a "Create"-Button to your topic. When the button is pressed, the topic editor will open with the form "MyForm" already attached to the new topic.

```
<form name="newtopic" action="%SCRIPTURLPATH{"edit"}%/%WEB%/">
   <input type="hidden" name="formtemplate" value="MyForm" />
   New topic name <input type="text" name="topic" size="40" />
   <input type="submit" class="foswikiSubmit" value="Create" />
</form>
```

- **Note:** You can create a topic in one step, without going through the edit screen. To do that, specify the `save` script instead of the `edit` script in the form action. When you specify the `save` script you must to use the "post" method. Example:

```
<form name="newtopic" action="%SCRIPTURLPATH{"save"}%/%WEB%/" method="post">
   .....
</form>
```

- The `edit` and `save` scripts understand many more parameters, see CommandAndCGIScripts#edit and CommandAndCGIScripts#save for details.

- **Tip:** For Wiki Applications you can automatically generate unique topicnames.

- **Note:** Initial values will **not** be set in the form of a new topic if you *only* use the formtemplate parameter.

Changing a form

- You can change a form definition, and Foswiki will try to make sure you don't lose any data from the topics that use that form.

- If you change the form definition, the changes will not take affect in a topic that uses that form until you edit and save it.

- If you add a new field to the form, then it will appear next time you edit a topic that uses the form.

- If you delete a field from the form, or change a field name, then the data will not be visible when you edit the topic (the changed form definition will be used). **If you save the topic, the old data will be lost** (though thanks to revision control, you can always see it in older versions of the topic)

- If two people edit the same topic containing a form at exactly the same time, and both change fields in the form, Foswiki will try to merge the changes so that no data is lost.

Structure of a form definition

A form definition specifies the fields in a form. A form definition is simply a TML table contained in a topic, where each row of the table specifies one form field.

Each **column** of the table is one element of an entry field: **`Name`**, **`Type`**, **`Size`**, **`Values`**, **`Tooltip message`**, and **`Attributes`**.

The `Name`, `Type` and `Size` columns are required. Other columns are optional. The form **must** have a header row (e.g. `| *Name* | *Type* | *Size* |`).

`Name` is the name of the form field.

The **`Type`**, **`Size`** and **`Value`** fields describe the legal values for this field, and how to display them.

- **`Type`** `checkbox` specifies one or more checkboxes. The `Size` field specifies how many checkboxes will be displayed on each line. The `Value` field should be a comma-separated list of item labels.
    - **`Type`** `checkbox+buttons` will add **Set** and **Clear** buttons to the basic `checkbox` type.
- **`Type`** `radio` is like `checkbox` except that radio buttons are mutually exclusive; only one can be selected.
- **`Type`** `label` specifies read-only label text. The `Value` field should contain the text of the label.
- **`Type`** `select` specifies a select box. The `Value` field should contain a comma-separated list of options for the box. The `Size` field can specify a fixed size for the box (e.g. `1`, or a range e.g. `3..10`. If you specify a range, then the box will never be smaller than 3 items, never larger than 10, and will be 5 high if there are only 5 options.
    - There are two modifiers that can be applied to the `select` type:
        - `select+multi` turns multiselect on for the select, to allow Shift+Click and Ctrl+Click to select (or deselect) multiple items.
        - `select+values` allows the definition of values that are different to the displayed text. For example:

```
| Field 9 | select+values | 5 | One, Two=2, Three=III, Four | Various
```

          shows but the values or options `Two` and `Three` are `2` and `III` respectively. You can combine these modifiers e.g. `select+multi+values`
- **`Type`** `text` specifies a one-line text field. `Size` specifies the text box width in number of characters. `Value` is the initial (default) content when a new topic is created with this form definition.
- **`Type`** `textarea` specifies a multi-line text box. The `Size` field should specify columns x rows, e.g. `80x6`; default size is 40x5. As for `text`, the `Value` field specifies the initial text
- **`Type`** `date` specifies a single-line text box and a button next to it; clicking on the button will bring up a calendar from which the user can select a date. The date can also be typed into the text box. `Size` specifies the text box width in characters. As for `text`, the `Value` field specifies the initial text

`Tooltip message` is a message that will be displayed when the cursor is hovered over the field in `edit` view.

`Attributes` specifies special attributes for the field. Multiple attributes can be entered, separated by spaces.

- An attribute `H` indicates that this field should not be shown in view mode. However, the field is available for editing and storing information.
- An attribute `M` indicates that this field is mandatory. The topic cannot be saved unless a value is provided for this field. If the field is found empty during topic save, an error is raised and the user is redirected to an `oops` page. Mandatory fields are indicated by an asterisks next to the field name.

For example, a simple form just supporting entry of a name and a date would look as follows:

```
| *Name* | *Type* | *Size* |
```

```
| Name    | text    | 80      |
| Date    | date    | 30      |
```

Field Name Notes:

- Field names have to be unique.
- A very few field names are reserved. If you try to use one of these names, Foswiki will automatically append an underscore to the name when the form is used.
- You can space out the title of the field, and it will still find the topic e.g. `Aeroplane Manufacturers` is equivalent to `AeroplaneManufacturers`.
- If a `label` field has no name, it will **not** be shown when the form is **viewed**, only when it is **edited**.
- Field names can in theory include any text, but you should stick to alphanumeric characters. If you want to use a non-wikiname for a `select`, `checkbox` or `radio` field, and want to get the values from another topic, you can use **`[[...]]`** links. This notation can also be used when referencing another topic to obtain field values, but a name other than the topic name is required as the name of the field.
- Leading and trailing spaces are *not* significant.

Field Value Notes:

- The field value will be used to initialize a field when a form is created, unless specific values are given by the topic template or query parameters. The first item in the list for a select or radio type is the default item. For `label`, `text`, and `textarea` fields the value may also contain commas. `checkbox` fields cannot be initialized through the form definition.
- Leading and trailing spaces are *not* significant.
- Field values can also be generated through a System.FormattedSearch, which must yield a suitable table as the result.
- Macros in the initial values of a form definition get expanded when the form definition is loaded.
    - If you want to use a `|` character in the initial values field, you have to precede it with a backslash, thus: `\|`.
    - You can use `<nop>` to prevent macros from being expanded.
    - The FormatTokens can be used to prevent expansion of other characters.

General Notes:

- The topic definition is not read when a topic is viewed.
- Form definition topics can be protected in the usual manner, using AccessControl, to limit who can change the form definition and/or individual value lists. Note that view access is required to be able to edit topics that use the form definition, though view access to the form definition is *not* required to view a topic where the form has been used.

Values in other topics

As described above, you can also retrieve possible values for select, checkbox or radio types from other topics. For example, if you have a rows defined like this:

```
| *Name*                 | *Type* | *Size* |
| AeroplaneManufacturers | select |        |
```

the Foswiki will look for the topic AeroplaneManufacturers to get the possible values for the `select`.

The AeroplaneManufacturers topic must contain a table, where each row of the table describes a possible value. The table only requires one column, **`Name`**. Other columns may be present, but are ignored.

For example:

```
| *Name* |
| Routan |
| Focke-Wulf |
| De Havilland |
```

Notes:

- The **`Values`** column **must be empty** in the referring form definition.

Extending the range of form data types

You can extend the range of data types accepted by forms by using Plugins. All such extended data types are single-valued (can only have one value) with the following exceptions:

- any type name starting with `checkbox`
- any type name with `+multi` anywhere in the name

Types with names like this can both take multiple values.

Hints and tips

Build an HTML form to create new form-based topics

- New topics with a form are created by simple HTML forms asking for a topic name. For example, you can have a `SubmitExpenseReport` topic where you can create new expense reports, a `SubmitVacationRequest` topic, and so on. These can specify the required template topic with its associated form. Template topics has more.

A form definition specifies the fields in a form. A form definition is simply a page containing a Foswiki table, where each row of the table specifies one form field.

Searching in form data

The best way to search in form data is using the structured query language in the SEARCH macro. See QuerySearch for more information.

Gotcha!

- Some browsers may strip linefeeds from `text` fields when a topic is saved. If you need linefeeds in a field, make sure it is a `textarea`.

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Template topics

Template topics are topics that define the default text for new topics.

Overview

There are four types of template topics:

Topic Name:	What it is:
WebCreateNewTopicTemplate	Page shown when you click on a **Create New Topic** link. It provides a form requesting the necessary information to create a new, nonexistent topic.
TopicDoesNotExistViewTemplate	Alert page shown when you try to view a nonexistent topic and usually used as a prompt to help you create this new topic. For this reason, the form of the WebCreateNewTopicTemplate is included and therefore shown, too.
WebTopicEditTemplate	Default text used in a new topic.
<MyCustomNamed>Template	Whenever you create a topic ending in the word "Template", it is automatically added to the list of available template topics in the "Use Template" drop down field on the WebCreateNewTopic page.

When you create a new topic using the `edit` script, the system locates a template topic according to the following search order:

1. A topic name specified by the `templatetopic` CGI parameter
    - if no web is specified, the current web is searched first and then the System web
2. WebTopicEditTemplate in the current web
3. WebTopicEditTemplate in the System web

Macro expansion

When the following macros are used in a template topic, they automatically get expanded when new topic is created based on it:

Macro:	Description:
`%DATE%`	Signature format date. See VarDATE
`%GMTIME%`	Date/time. See VarGMTIME
`%GMTIME{...}%`	Formatted date/time. See VarGMTIME
`%NOP%`	A no-operation macro that gets removed. Useful to prevent a SEARCH from hitting an edit template topic; also useful to escape a variable, such as `%URLPA%NOP%RAM{...}%` escaping URLPARAM
`%STARTSECTION{type="templateonly"}%` `...` `%ENDSECTION{type="templateonly"}%`	Text that gets removed when a new topic based on the template topic is created. See notes below.
`%SERVERTIME%`	Date/time. See VarSERVERTIME
`%SERVERTIME{...}%`	Formatted date/time. See VarSERVERTIME
`%USERNAME%`	Login name of user who is instantiating the new topic, e.g. guest
`%URLPARAM{"name"}%`	Value of a named URL parameter
`%WIKINAME%`	

Macro:	Description:
	WikiName of user who is creating the new topic, e.g. WikiGuest
%WIKIUSERNAME%	User name of user who is creating the new topic, e.g. Main.WikiGuest

%STARTSECTION{type="templateonly"}%
...
%ENDSECTION{type="templateonly"}% markers are used to embed text that you *do not* want expanded when a new topic based on the template topic is created. For example, you might want to write in the template topic:

```
%STARTSECTION{type="templateonly"}%
This template topic can only be changed by:
   * Set ALLOWTOPICCHANGE = Main.AdminGroup
%ENDSECTION{type="templateonly"}%
```

This will restrict who can edit the template topic, but will get removed when a new topic based on that template topic is created.

%NOP% can be used to prevent expansion of macros that would otherwise be expanded during topic creation e.g. escape %SERVERTIME% with %SER%NOP%VERTIME%.

All other macros are unchanged, e.g. are carried over "as is" into the new topic.

Specifying a form

When you create a new topic based on a template topic, you often want the new topic to have a form attached to it. You can attach a form to the template topic, in which case it will automatically be copied into the new topic.

Sometimes this isn't quite what you want, as it copies all the existing data from the template topic into the new topic. To avoid this and use the default values specified in the form definition instead, you can use the formtemplate parameter to the edit script to specify the name of a form to attach.

See CommandAndCGIScripts for information about this, and all the other parameters to edit.

Automatically generated topic names

For some applications it is useful to be able to automatically generate unique topicnames, such as BugID0001, BugID0002, etc. You can add AUTOINC<n> to the topic name in the edit and save scripts, and it will be replaced with an auto-incremented number on topic save. <n> is a number starting from 0, and may include leading zeros. Leading zeros are used to zero-pad numbers so that auto-incremented topic names can sort properly. Deleted topics are not re-used to ensure uniqueness of topic names. That is, the auto-incremented number is always higher than the existing ones, even if there are gaps in the number sequence.

Examples:

- BugAUTOINC0 - creates topic names Bug0, Bug1, Bug2, ... (does not sort properly)
- ItemAUTOINC0000 - creates topic names Item0000, Item0001, Item0002, ... (sorts properly up to 9999)
- DocIDAUTOINC10001 - start with DocID10001, DocID10002, ... (sorts properly up to 99999; auto-links)

Example link to create a new topic:

```
[[%SCRIPTURLPATH{edit}%/%WEB%/BugIDAUTOINC00001?templatetopic=BugTemplate;topicparent=%TOP
```

Template topics in action

Here is an example for creating new topics (in the Sandbox web) based on a specific template topic and form:

- New example topic:

The above form asks for a topic name. A hidden input tag named **`templatetopic`** specifies ExampleTopicTemplate as the template topic to use. Here is the HTML source of the form:

```
<form name="new" action="%SCRIPTURLPATH{edit}%/Sandbox/" method="post">
   * New example topic:
     <input type="text" name="topic" value="ExampleTopicAUTOINC0001" size="30" />
     <input type="hidden" name="templatetopic" value="ExampleTopicTemplate" />
     <input type="hidden" name="topicparent" value="%TOPIC%" />
     <input type="hidden" name="onlywikiname" value="on" />
     <input type="hidden" name="onlynewtopic" value="on" />
     <input type="submit" class="foswikiSubmit" value="Create" />
</form>
```

Note: You can create a topic in one step, without going through the edit screen. To do that, specify the `save` script instead of the `edit` script in the form action. When you specify the save script you must use the "post" method. Example:

```
<form name="new" action="%SCRIPTURLPATH{save}%/Sandbox/" method="post">
    ...
</form>
```

See CommandAndCGIScripts#edit for details of the parameters that the `edit` script understands.

You can use the `%WIKIUSERNAME%` and `%DATE%` macros in your template topics to include the signature of the person creating a new topic. The macros are expanded into fixed text when a new topic is created. The standard signature is:
`-- %WIKIUSERNAME% - %DATE%`

Using absolute vs relative URLs in templates

When you use Macros such as %PUBURL% and %PUBURLPATH% in template topics you should be aware that using %PUBURL% instead of %PUBURLPATH% puts absolute URLs in the produced HTML. This means that when a user saves a page in HTML and emails the file to someone outside a company firewall, the receiver has a severe problem viewing it. It is therefore recommended always to use the %PUBURLPATH% to refer to images, CSS, Javascript files etc so links become relative. This way browsers just give up right away and show a usable html file.

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Skin Templates

Definition of the templates used to render output

Overview

Skin Templates are plain text with embedded *template macros* that describe how to compose blocks of text together, to create something new.

Skin templates are used composing the output from all actions, like view, edit, and preview. This allows you to change the look and feel of all pages by editing just a few template files.

Skin templates are usually stored as text files with the extension `.tmpl`, though can also come from topic text in some limited circumstances. They are usually HTML with embedded *template macros*. The macros are expanded when we want to generate output, such as a user interface screen.

How Template Directives Work

- Directives are of the form **`%TMPL:<key>%`** and **`%TMPL:<key>{"attr"}%`**.
- Directives:
  - **`%TMPL:INCLUDE{"file"}%`**: Includes a template file. The file is found as described below.
  - **`%TMPL:DEF{"block"}%`**: Define a block. **All** text between this and the next `%TMPL:END%` directive is removed and saved for later use with `%TMPL:P%`.
  - **`%TMPL:END%`**: Ends a block definition.
  - **`%TMPL:P{"var"}%`**: Includes a previously defined block.
  - **`%{...}%`**: is a comment.
- Two-pass processing lets you use a defined block before or after declaring it.
- For example, you can create a skin that overloads only the `foswiki.tmpl` master skin template, like `foswiki.print.tmpl`, that redefines the header and footer.
- Use of template macros is optional: templates work without them.
- Most template macros work only for templates: they do not get processed in normal topic text. The one exception is `%TMPL:P`.

TMPL:P also supports simple parameters. For example, given the definition `%TMPL:DEF{"x"}% x%P%z%TMPL:END%` then `%TMPL:P{"x" P="y"}%` will expand to `xyz`.

Note that parameters can simply be ignored; for example, `%TMPL:P{"x"}%` will expand to x%P%z.

Any alphanumeric characters can be used in parameter names. You are highly recommended to use parameter names that cannot be confused with macros.

Note that three parameter names, `context`, `then` and `else` are **reserved**. They are used to support a limited form of "if" condition that you can use to select which of two TMPL:DEFs to use, based on a *context identifier*:

```
%TMPL:DEF{"link_inactive"}%<input type="button" disabled value="Link>%TMPL:END%
%TMPL:DEF{"link_active"}%<input type="button" onclick="link()" value="Link" />%TMPL:END%
%TMPL:P{context="inactive" then="inactive_link" else="active_link"}% for %CONTEXT%
```

When the "inactive" context is set, then this will expand the "link_inactive" TMPL:DEF; otherwise it will expand the "link_active" TMPL:DEF. See IfStatements for details of supported context identifiers.

Finding Skin Templates

The skin templates shipped with a release are stored in the `templates` directory. As an example, **`templates/view.tmpl`** is the default skin template file for the **`bin/view`** script.

You can save templates in other directories as long as they are listed in the `{TemplatePath}` configuration setting. The `{TemplatePath}` is defined in the Miscellaneous section of the configure page.

You can also save skin templates in user topics (*IF* there is no possible template match in the `templates` directory). The `{TemplatePath}` configuration setting defines which topics will be accepted as templates.

Skin templates that are included with an explicit `'.tmpl'` extension are looked for only in the `templates/` directory. For instance `%TMPL:INCLUDE{"example.tmpl"}%` will only return `templates/example.tmpl`, regardless of `{TemplatePath}` and SKIN settings.

The out-of-the-box setting of `{TemplatePath}` supports the following search order to determine which template file or topic to use for a particular script or `%TMPL:INCLUDE{"script"}%` statement. The *skin path* is set as described in Skins.

1. templates/%DARKGRAY%web/%DARKGRAY%script.%DARKGRAY%skin.tmpl for each %DARKGRAY%skin on the skin path
    - ♦ this usage is supported **for compatibility only** and is **deprecated**. Store web-specific templates in topics instead.
2. templates/script.skin.tmpl for each skin on the skin path
    - ♦ *for example templates/view.dragon.tmpl*
3. templates/%DARKGRAY%web/%DARKGRAY%script.tmpl
    - ♦ this usage is supported **for compatibility only** and is **deprecated**. Store web-specific templates in topics instead.
4. templates/script.tmpl
    - ♦ *for example templates/view.tmpl*
5. The topic aweb.atopic if the template name can be parsed into aweb.atopic
6. The topic web.SkinSkinScriptTemplate for each skin on the skin path
    - ♦ *for example DragonSkinViewTemplate in the current Web*
7. The topic web.ScriptTemplate
8. The topic %SYSTEMWEB%.SkinSkinScriptTemplate for each skin on the skin path
    - ♦ *for example System.DragonSkinViewTemplate*
9. The topic %SYSTEMWEB%.ScriptTemplate

Legend:

- script refers to the script name, e.g `view`, `edit`
- Script refers to the same, but with the first character capitalized, e.g `View`
- skin refers to a skin name, e.g `dragon`, `pattern`. All skins are checked at each stage, in the order they appear in the skin path.
- Skin refers to the same, but with the first character capitalized, e.g `Dragon`
- web refers to the current web

For example, the `example` template file will be searched for in the following places, when the current web is `Thisweb` and the skin path is `print,pattern`:

I. `templates/Thisweb/example.print.tmpl` *deprecated; don't rely on it*
II. `templates/Thisweb/example.pattern.tmpl` *deprecated; don't rely on it*
III. `templates/example.print.tmpl`
IV. `templates/example.pattern.tmpl`

V. `templates/Thisweb/example.tmpl` *deprecated; don't rely on it*
VI. `templates/example.tmpl`
VII. `Thisweb.PrintSkinExampleTemplate`
VIII. `Thisweb.PatternSkinExampleTemplate`
IX. `Thisweb.ExampleTemplate`
X. `System.PrintSkinExampleTemplate`
XI. `System.PatternSkinExampleTemplate`
XII. `System.ExampleTemplate`

Template names are usually derived from the name of the currently executing script; however it is also possible to override these settings in the `view` and `edit` scripts, for example when a topic-specific template is required. Two preference settings can be used to override the skin templates used:

- `VIEW_TEMPLATE` sets the template to be used for viewing a topic.
- `EDIT_TEMPLATE` sets the template for editing a topic.

If these preferences are set locally (using *Local* instead of *Set*) for a topic, in WebPreferences, in Main.SitePreferences, or System.DefaultPreferences (using *Set*), the indicated templates will be chosen for `view` and `edit` respectively. The template search order is as specified above.

TMPL:INCLUDE recursion for piecewise customisation, or mixing in new features

If there is recursion in the TMPL:INCLUDE chain (eg view.tmpl contains `%TMPL:INCLUDE{"foswiki"}%`, the templating system will include the next SKIN in the skin path. For example, to create a customisation of pattern skin, where you *only* want to over-ride the breadcrumbs for the view script, you can create only a view.yourlocal.tmpl:

```
%TMPL:INCLUDE{"view"}%
%TMPL:DEF{"breadcrumb"}% We don't want any crumbs %TMPL:END%
```

and then set SKIN=yourlocal,pattern

The default `{TemplatePath}` will not give you the desired result if you put these statements in the topic `Thisweb.YourlocalSkinViewTemplate`. The default `{TemplatePath}` will resolve the request to the `template/view.pattern.tmpl`, before it gets to the `Thisweb.YourlocalSkinViewTemplate` resolution. You can make it work by prefixing the `{TemplatePath}` with: `$web.YourlocalSkin$nameTemplate`.

Default master template

`foswiki.tmpl` is the default master template. It defines the following sections.

Template directive:	Defines:
`%TMPL:DEF{"sep"}%`	"|" separator
`%TMPL:DEF{"htmldoctype"}%`	Start of all HTML pages
`%TMPL:DEF{"standardheader"}%`	Standard header (ex: view, index, search)
`%TMPL:DEF{"simpleheader"}%`	Simple header with reduced links (ex: edit, attach, oops)
`%TMPL:DEF{"standardfooter"}%`	Footer, excluding revision and copyright parts

Related Topics: Skins

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Foswiki Skins

Skins overlay regular templates to give different looks and feels to Foswiki screens.

Overview

Foswiki uses skin templates as the basis of all the screens it uses to interact with users. Each screen has an associated template file that contains the basic layout of the screen. This is then filled in by the code to generate what you see in the browser.

Foswiki ships with a default set of template files that give a very basic, CSS-themable, look-and-feel. Foswiki also includes support for skins that can be selected to give different, more sophisticated, look and feel. A default Foswiki installation will usually start up with the PatternSkin already selected. Skins may also be defined by third parties and loaded into a Foswiki installation to give more options. To see how Foswiki looks when **no** skin is selected, view this topic with a non-existant skin.

Topic text is not affected by the choice of skin, though a skin can be defined to use a CSS (Cascading Style Sheet), which can sometimes give a radically different appearance to the text.

Relevant links

- Foswiki:Support.Extension - Index page for support resources related to skins.
- Foswiki:Extensions.SkinPackage - list of all contributed skin packages

See other types of extensions: ContributedAddOns, Contribs, Plugins

Changing the default skin

Wiki by default ships with the skin PatternSkin activated. You can set the skin for the whole site, a single web or topic, or for each user individually, by setting the SKIN setting to the name of a skin. If the skin you select doesn't exist, then Wiki will pick up the default templates.

Defining Skins

You may want to define your own skin, for example to comply with corporate web guidelines, or because you have a aesthetic vision that you want to share. There are a couple of places you an start doing this.

The skin templates used for skins are located in the `templates` directory and are named according to the skin: **`<scriptname>.<skin>.tmpl`**. Skin files may also be defined in Foswiki topics - see SkinTemplates for details.

To start creating a new skin, copy the default skin templates (like `view.tmpl`), or copy an existing skin to use as a base for your own skin. You should only need to copy the files you intend to customise, as Foswiki can be configured to fall back to another skin if a template is not defined in your skin. A custom skin can be as small as one file! Name your files as described above (for example `view.myskin.tmpl`).

If you use PatternSkin as your starting point, and you want to modify the layout, colors or even the templates to suit your own needs, have a look first at the topics PatternSkinCustomization and PatternSkinCssCookbook. These topics also provide practical instructions how to create custom skin template files.

Note: Don't call your skin `text` or `rss` as these two skin names have reserved meanings, see below at hard-coded meanings.

The following template files are used for Foswiki screens, and are referenced in the Foswiki core code. If a skin doesn't define its own version of a template file, then Foswiki will fall back to the next skin in the skin path, or finally, to the default version of the template file.

(Certain template files are expected to provide certain TMPL:DEFs - these are listed in sub-bullets)

- `addform` - used to select a new form for a topic
- `attachagain` - used when refreshing an existing attachment
- `attachnew` - used when attaching a new file to a topic
- `attachtables` - defines the format of attachments at the bottom of the standard topic view
  - `ATTACH:files:footer`, `ATTACH:files:header`, `ATTACH:files:row`, `ATTACH:versions:footer`, `ATTACH:versions:header`, `ATTACH:versions:row`
- `changeform` - used to change the form in a topic
- `changes` - used by the `changes` script
- `edit` - used for the edit screen
- `form`
- `formtables` - used to defined the format of forms
  - `FORM:display:footer`, `FORM:display:header`, `FORM:display:row`
- `login` - used for loggin in when using the TemplateLoginManager
  - `LOG_IN`, `LOG_IN_BANNER`, `LOG_OUT`, `LOGGED_IN_BANNER`, `NEW_USER_NOTE`, `UNRECOGNISED_USER`
- `moveattachment` - used when moving an attachment
- `oopsaccessdenied` - used to format Access Denied messages
  - `no_such_topic`, `no_such_web`, `only_group`, `topic_access`
- `oopsattention` - used to format Attention messages
  - `already_exists`, `bad_email`, `bad_ver_code`, `bad_wikiname`, `base_web_missing`, `confirm`, `created_web`, `delete_err`, `invalid_web_color`, `invalid_web_name`, `in_a_group`, `mandatory_field`, `merge_notice`, `missing_action`, `missing_fields`, `move_err`, `missing_action`, `no_form_def`, `no_users_to_reset`, `not_a_user`, `oversized_upload`, `password_changed`, `password_mismatch`, `problem_adding`, `remove_user_done`, `rename_err`, `rename_not_wikiword`, `rename_topic_exists`, `rename_web_err`, `rename_web_exists`, `rename_web_prerequisites`, `reset_bad`, `reset_ok`, `save_error`, `send_mail_error`, `thanks`, `topic_exists`, `unrecognized_action`, `upload_name_changed`, `web_creation_error`, `web_exists`, `web_missing`, `wrong_password`, `zero_size_upload`
- `oopschangelanguage` - used to prompt for a new language when internationalisation is enabled
- `oopsgeneric` - a basic dialog for user information; provides "ok" button only
- `oopslanguagechanged` - used to confirm a new language when internationalisation is enabled
- `oopsleaseconflict` - used to format lease Conflict messages
  - `lease_active`, `lease_old`
- `preview` - used for previewing edited topics before saving
- `rdiff` - used for viewing topic differences
- `registernotify` - used by the user registration system
- `registernotifyadmin` - used by the user registration system
- `rename` - used when renaming a topic
- `renameconfirm` - used when renaming a topic
- `renamedelete` - used when renaming a topic
- `renameweb` - used when renaming a web

- `renamewebconfirm` - used when renaming a web
- `renamewebdelete` - used when renaming a web
- `searchbookview` - used to format inline search results in book view
- `searchformat` - used to format inline search results
- `search` - used by the `search` CGI script
- `settings`
- `view` - used by the `view` CGI script
- `viewprint` - used to create the printable view

`foswiki.tmpl` is a master template conventionally used by other templates, but not used directly by code.

Note: Make sure templates do not end with a newline. Any newline will expand to an empty `<p />` in the generated html. It will produce invalid html, and may break the page layout.

Partial customisation, or adding in new features to an existing skin

You can use recusion in the TMPL:INCLUDE chain (eg view.tmpl contains `%TMPL:INCLUDE{"foswiki"}%`, the templating system will include the next SKIN in the skin path. For example, to create a customisation of pattern skin, where you *only* want to remove the edit & WYSIWYG buttons from view page, you create only a `view.yourlocal.tmpl`:

```
%TMPL:INCLUDE{"view"}%
%TMPL:DEF{"edit_topic_link"}%%TMPL:END%
%TMPL:DEF{"edit_wysiwyg_link"}%%TMPL:END%
```

and then set `SKIN=yourlocal,pattern`

Settings in Skins

You can use template directives, ordinary macros, and other predefined settings in your skins. Some commonly used macros in skins:

Macro:	Expanded to:
`%WEBLOGONAME%`	Filename of web logo
`%WEBLOGOIMG%`	Image URL of web logo
`%WEBLOGOURL%`	Link of web logo
`%WEBLOGOALT%`	Alt text of web logo
`%WIKILOGOURL%`	Link of page logo
`%WIKILOGOIMG%`	Image URL of page logo
`%WIKILOGOALT%`	Alt text of page logo
`%WEBBGCOLOR%`	Web-specific background color, defined in the WebPreferences
`%WIKITOOLNAME%`	The name of your Foswiki site
`%SCRIPTURL%`	The script URL of Foswiki
`%SCRIPTURLPATH%`	The script URL path
`%SCRIPTSUFFIX%`	The script suffix, ex: `.pl`, `.cgi`
`%WEB%`	The name of the current web.
`%TOPIC%`	The name of the current topic.
`%WEBTOPICLIST%`	Common links of current web, defined in the WebPreferences. It includes a Go box
`%TEXT%`	The topic text, e.g. the content that can be edited
`%META{"form"}%`	DataForm, if any
`%META{"attachments"}%`	FileAttachment table
`%META{"parent"}%`	The topic parent

Macro:	Expanded to:
%EDITTOPIC%	Edit link
%REVTITLE%	The revision title, if any, ex: (r1.6)
%REVINFO%	Revision info, ex: r1.6 - 24 Dec 2002 - 08:12 GMT - Main.WikiGuest
%WEBCOPYRIGHT%	Copyright notice, defined in the WebPreferences
%BROADCASTMESSAGE%	Broadcast message at the beginning of your view template, can be used to alert users of scheduled downtimes; can be set in Main.SitePreferences

Using Cascading Style Sheets

CSS files are gererally attachments to the skin topic that are included in the the skin templates - in the case of PatternSkin in the template css.pattern.tmpl.

- General documentation of CSS classes: CascadingStyleSheets
- To see how CSS is used in the default Foswiki skin, see: PatternSkin
- If you write a complete new skin, this is the syntax to use in a template file:

```
<style type='text/css' media='all'>@import url('%PUBURLPATH%/%SYSTEMWEB%/MySkin/mystyle.cs
```

Skin parts

The "Go" Box and Navigation Box

The default skins include a "Go" box, also called "Jump" box, to jump to a topic.

The box also understands URLs, e.g. you can type http://www.google.com/ to jump to an external web site. The feature is handy if you build a skin that has a select box of frequently used links, like Intranet home, employee database, sales database and such. A little JavaScript gets into action on the onchange method of the select tag to fill the selected URL into the "Go" box field, then submits the form.

Here is an example form that has a select box and the "Go" box for illustration purposes. You need to have JavaScript enabled for this to work:

Bare bones header, for demo only

Navigate:

Jump:

Note: Redirect to a URL only works if it is enabled in configure (Miscellaneous, {AllowRedirectUrl}).

FLASHNOTE Notifications

PatternSkin has a notification message display using the variable FLASHNOTE. For example:

- Set FLASHNOTE = Skins documentation

See the alert at the top of this topic.

While this feature is not yet used by the system, it might be a good idea to already prepare your skin.

Attachment Tables

Controlling the look and feel of attachment tables is a little bit more complex than for the rest of a skin. By default, the attachment table is a standard Foswiki table, and the look is controlled in the same way as other tables. In a very few cases you may want to change the *content* of the table as well.

The format of standard attachment tables is defined through the use of special *template directives* which by default, are defined in the `attachtables.tmpl` template using the `%TMPL:DEF` directive syntax described in SkinTemplates. These macros are:

Macro	Description
`ATTACH:files:header:A`	Title bar for upload screens, with attributes column
`ATTACH:files:header`	Standard title bar
`ATTACH:files:row`	Standard row
`ATTACH:files:row:A`	Row for upload screen
`ATTACH:files:footer`	Footer for all screens
`ATTACH:files:footer:A`	Footer for all screens

The format of tables of file versions in the Upload screen can also be changed, using the macros:

Macro	Description
`ATTACH:versions:header`	Header for versions table on upload screen
`ATTACH:versions:row`	Row format for versions table on upload screen
`ATTACH:versions:footer`	Footer for versions table on upload screen

The `ATTACH:row` macros are expanded for each file in the attachment table, using the following special tags:

Tag	Description
`%A_URL%`	`viewfile` URL that will recover the file
`%A_REV%`	Revision of this file
`%A_ICON%`	A file icon suitable for representing the attachment content
`%A_FILE%`	The name of the file. To get the 'pub' url of the file, use `%PUBURL%/%WEB%/%TOPIC%/%A_FILE%`
`%A_SIZE%`	The size of the file
`%A_DATE%`	The date the file was uploaded
`%A_USER%`	The user who uploaded it
`%A_COMMENT%`	The comment they put in when uploading it
`%A_ATTRS%`	The attributes of the file as seen on the upload screen e.g "h" for a hidden file

Packaging and Publishing Skins

See Foswiki:Extensions/SkinPackagingHowTo and Foswiki:Extensions/SkinDeveloperFAQ

For your own skin you are encouraged to show a small 80x31 pixel FOSWIKI logo at the bottom of your skin:

```
<a href="http://foswiki.org/"><img
src="%PUBURL%/%SYSTEMWEB%/ProjectLogos/foswiki-poweredby.gif" alt="This
site is powered by Foswiki" width="80" height="15" title="This site is
powered by Forwiki" border="0" /></a>
```

The standard Wiki skins show the logo in the `%WEBCOPYRIGHT%`.

Browsing Installed Skins

You can try out all installed skins in the SkinBrowser.

Activating Skins

Foswiki uses a *skin search path*, which lets you combine skins additively. The skin path is defined using a combination of macros and URL parameters.

Foswiki works by asking for a template for a particular function - for example, 'view'. The detail of how templates are searched for is described in SkinTemplates, but in summary, the templates directory is searched for a file called `view.`*skin*`.tmpl`, where *skin* is the name of the skin e.g. `pattern`. If no template is found, then the fallback is to use `view.tmpl`. Each skin on the path is searched for in turn. For example, if you have set the skin path to `local,pattern` then `view.local.tmpl` will be searched for first, then `view.pattern.tmpl` and finally `view.tmpl`.

The basic skin is defined by a `SKIN` setting:

- `Set SKIN = catskin, bearskin`

You can also add a parameter to the URL, such as `?skin=catskin,bearskin`:

- https://wiki.iac.ethz.ch/System/Skins?skin=catskin,bearskin

Setting `SKIN` (or the `?skin` parameter in the URL) replaces the existing skin path setting, for the current page only. You can also *extend* the existing skin path as well, using *covers*.

- `Set COVER = ruskin`

This pushes a different skin to the front of the skin search path (so for our example above, that final skin path will be `ruskin, catskin, bearskin`). There is also an equivalent `cover` URL parameter. The difference between setting `SKIN` vs. `COVER` is that if the chosen template is not found (e.g., for included templates), `SKIN` will fall back onto the next skin in line, or the default skin, if only one skin was present, while `COVER` will always fall back onto the current skin.

An example would be invoking the printable mode, which is achieved by applying `?cover=print`. The `view.print.tmpl` simply invokes the `viewprint` template for the current skin which then can appropriately include all other used templates for the current skin. Where the printable mode be applied by using `SKIN`, all skins would have the same printable appearance.

The full skin path is built up as follows: `SKIN` setting (or `?skin` if it is set), then `COVER` setting is added, then `?cover`.

Hard-Coded Skins

The `text` skin is reserved for Foswiki internal use.

Skin names starting with `rss` also have a special meaning; if one or more of the skins in the skin path starts with 'rss' then 8-bit characters will be encoded as XML entities in the output, and the `content-type` header will be forced to `text/xml`.

Related Topics: SkinBrowser, AdminDocumentationCategory, DeveloperDocumentationCategory

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Meta data

Additional topic data, program-generated or from DataForms, is stored embedded in the topic text using `META:` tags

Overview

By default, topics are stored in files on disk, in a really simple and obvious directory structure. The big advantage of this approach is that it makes it really easy to manipulate topics from outside, and is also very safe; there are no complex binary indexes to maintain, and moving a topic from one installation to another is as simple as copying a couple of text files.

To keep eveything together in one place, meta-data (program-generated or from DataForms) is embedded directly in topics. It does this using `META:` tags.

`META:` data includes program-generated info like FileAttachment, topic movement data and user-defined information from DataForms.

Meta data syntax

- Format is the same as in macros, except all fields have a key.
  - `%META:<type>{key1="value1" key2="value2" ...}%`
- Order of fields within the meta-data is not defined, except that if there is a field with key `name`, this appears first for easier searching (note the order of the data themselves is defined).
- Each meta-datum is on one line.
- Values in meta-data are URL encoded so that characters such as \n can be stored.

Example of Format

```
text of the topic
```

Meta data specifications

The current version of Meta Data is 1.0, with support for the following syntax.

META:TOPICINFO

Key	Comment
version	Same as SVN version
date	integer, unix time, seconds since start 1970
author	last to change topic, is the REMOTE_USER
format	Format of this topic, will be used for automatic format conversion

META:TOPICMOVED

This is optional, exists if topic has ever been moved. If a topic is moved more than once, only the most recent META:TOPICMOVED meta datum exists in the topic, older ones are to be found in the rcs history.

Key	Comment
from	Full name, i.e., web.topic
to	Full name, i.e., web.topic
by	Who did it, is the REMOTE_USER, not WikiName
date	integer, unix time, seconds since start 1970

Notes:

- at present version number is not supported directly, it can be inferred from the SVN history.
- there is only one META:TOPICMOVED in a topic, older move information can be found in the SVN history.

META:TOPICPARENT

Key	Comment
name	The topic from which this was created, typically when clicking on a `?` questionmark link, or by filling out a form. Normally just `TopicName`, but it can be a full `Web.TopicName` format if the parent is in a different Web.

META:FILEATTACHMENT

Key	Comment
name	Name of file, no path. Must be unique within topic
version	Same as SVN revision
path	Full path file was loaded from
size	In bytes
date	integer, unix time, seconds since start 1970
user	the REMOTE_USER, not WikiName
comment	As supplied when file uploaded
attr	`h` if hidden, optional

Extra fields that are added if an attachment is moved:

Key	Comment
movedfrom	full topic name - web.topic
movedby	the REMOTE_USER, not WikiName
movedto	full topic name - web.topic
moveddate	integer, unix time, seconds since start 1970

META:FORM

Key	Comment
name	A topic name - the topic represents one of the DataForms. Can optionally include the web name (i.e., web.topic), but doesn't normally

META:FIELD

Should only be present if there is a META:FORM entry. Note that this data is used when viewing a topic; the form definition is not read.

Key	Name
name	Ties to entry in DataForms template, is title with all bar alphanumerics and . removed
title	Full text from DataForms template
value	Value user has supplied via form

Recommended sequence

There is no absolute need for Meta data to be listed in a specific order within a topic, but it makes sense to do so for a couple of good reasons:

- form fields remain in the order they are defined
- the `diff` function output appears in a logical order

The recommended sequence is:

- `META:TOPICINFO`
- `META:TOPICPARENT` (optional)
- text of topic
- `META:TOPICMOVED` (optional)
- `META:FILEATTACHMENT` (0 or more entries)
- `META:FORM` (optional)
- `META:FIELD` (0 or more entries; FORM required)

Viewing meta data in page source

When viewing a topic the **`[View raw text]`** link can be clicked to show the text of a topic (i.e., as seen when editing). This is done by adding `raw=on` to URL. `raw=debug` shows the meta data as well as the topic data, ex: debug view for this topic

Rendering meta data

Meta data is rendered with the %META% macro. This is mostly used in the `view`, `preview` and `edit` scripts.

You can render form fields in topic text by using the FORMFIELD macro. Example:
`%FORMFIELD{"TopicClassification"}%`
For details, see VarFORMFIELD.

Current support covers:

Macro usage:	Comment:
`%META{"form"}%`	Show form data, see DataForms.
`%META{"formfield"}%`	Show form field value. Parameter: **`name="field_name"`**. Example: `%META{ "formfield" name="TopicClassification" }%`
`%META{"attachments"}%`	Show attachments, except for hidden ones. Options: **`all="on"`**: Show all attachments, including hidden ones.

Macro usage:	Comment:
`%META{"moved"}%`	Details of any topic moves.
`%META{"parent"}%`	Show topic parent. Options: **`dontrecurse="on"`**: By default recurses up tree, at some cost. **`nowebhome="on"`**: Suppress WebHome. **`prefix="..."`**: Prefix for parents, only if there are parents, default `""`. **`suffix="..."`**: Suffix, only appears if there are parents, default `""`. **`separator="..."`**: Separator between parents, default is `" > "`.

SEARCH can also be used to render meta data, see examples in FormattedSearch and SearchPatternCookbook.

Related Topics: DeveloperDocumentationCategory, UserDocumentationCategory

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Add-Ons

Add functionality with extensions not based on the Foswiki scripts.

Overview

An add-on runs separately from the Foswiki scripts, e.g. for data import, export to static HTML, etc. Add-Ons normally do not call any Foswiki code directly, though may invoke Foswiki scripts. There are different types of add-ons, they may be stand alone scripts, browser plugins, office tool extensions, or even a set of topics that form a wiki application.

See other types of extensions: Contribs, Plugins, Skins

Add-Ons Installed on this site

- **GenPDFAddOn**: Generate a PDF from a single Foswiki page - version 5.005 or above
  Author: Foswiki:Main/BrianSpinar, Foswiki:Main/WadeTurland, Foswiki:Main/GeorgeClark - last modified: r5 - 25 Feb 2009 - 00:57 - Main.ProjectContributor

Number of topics: 1

Installing Add-Ons

- Download an add-on from Foswiki:Extensions.AddOnPackage.
- Follow the installation instructions in the add-on topic.

Creating new Add-Ons

- Visit Foswiki:Extensions.AddOnPackageHowTo and follow the instructions.

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Foswiki Contribs

Extensions that sit close to the core, or provide services for other extensions

Overview

Foswiki contribs extend the functionality of Foswiki, in a lower-level way than plugins and add-ons. They may also provide alternative implementations for sections of the Foswiki core e.g. user management, or when an extension just can't be implemented as a plugin because it requires very close access to Foswiki internals.

An example is the MailerContrib, which implements mail notification of topics changes.

Relevant links on Foswiki.org:

- Foswiki:Extensions.ContribPackage - list of all contributed contrib packages
- Foswiki:Extensions.ContribDevelopment - discussion and feedback on contributed packages
- Foswiki:Extensions.ContribBrainstorming - open forum for new contrib ideas
- Foswiki:Extensions.ContribPackageHowTo - instructions and template to create a new contrib package

See other types of extensions: ContributedAddOns, Plugins, Skins

Foswiki Contribs Installed on this site

- **BehaviourContrib**: `Behaviour` Javascript event library to create javascript based interactions that degrade well when javascript is not available - version 5016 (2009-09-20)
  Author: Foswiki:Main.ArthurClemens - last modified: r1 - 08 Jul 2007 - 18:54 - Main.ProjectContributor
- **DBCacheContrib**: Reusable code that treats forms as if they were table rows in a database - version 5538 (2009-11-17)
  Author: Foswiki:Main/CrawfordCurrie http://c-dot.co.uk - last modified: r2 - 02 Jul 2009 - 10:12 - Main.ProjectContributor
- **DojoToolkitContrib**: Adds Dojo Toolkit javascript to Foswiki. - version 2564 (20 Feb 2009)
  Author: Foswiki:Main.SvenDowideit - SvenDowideit@fosiki.com fosiki - a WikiRing.com partner - last modified: r3 - 15 Mar 2010 - 11:30 - Main.AdminUser
- **FamFamFamContrib**: 4 great free icon sets, by Mark James http://www.famfamfam.com - version 2075

Author: - last modified: r3 - 16 Sep 2009 - 22:05 - Main.AdminUser

- **FugueIconsContrib**: 1,755 Fugue Icons from http://pinvoke.com - version 3600 (2009-04-21)

Author: - last modified: r1 - 21 Apr 2009 - 14:21 - Main.WikiGuest

- **JSCalendarContrib**: Mishoo JSCalendar, packaged for use by plugins, skins and add-ons. - version 5987 (2010-01-09)

Author: Foswiki:Main/CrawfordCurrie http://c-dot.co.uk - last modified: r1 - 17 Jan 2010 - 15:15 - Main.WikiGuest

- **LdapContrib**: LDAP services for Foswiki - version 5565 (2009-11-17)

Author: Michael Daum - last modified: r2 - 19 Oct 2009 - 19:50 - Main.ProjectContributor

- **MailerContrib**: Supports e-mail notification of changes - version 5716 (2009-12-04)

Author: Crawford Currie - last modified: r1 - 17 Jan 2010 - 15:15 - Main.WikiGuest

- **RatingContrib**: Rating widget for forms - version 4083 (2009-06-10)

Author: - last modified: r2 - 21 Jan 2010 - 11:57 - Main.AdminUser

- **TipsContrib**: Displays rotating list of "Tip-of-the-day" - version 16 Dec 2008

Author: - last modified: r0 - 05 Jan 2007 - 05:02 - Main.ProjectContributor

- **TopicUserMappingContrib**: User management using data stored in topics - version 5052 (2009-09-20)

Author: - last modified: r1 - 17 Jan 2010 - 15:16 - Main.WikiGuest

Number of topics: 11

Installing Contribs

- Download an add-on from Foswiki:Extensions.ContribPackage.
- Follow the installation instructions in the contrib topic.

Creating new Contribs

- Visit Foswiki:Extensions.ContribPackageHowTo and follow the instructions.

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Foswiki Plugins

Add functionality to Foswiki with plugins

Overview

You can add plugins to extend Foswiki functionality without altering the core code. A plug-in approach lets you:

- add virtually unlimited features while keeping the main Foswiki code compact and efficient;
- heavily customize an installation and still do clean updates to new versions of Foswiki;
- rapidly develop new Foswiki functions in Perl using the plugin API.

Everything to do with Foswiki plugins - demos, new releases, downloads, development, general discussion - is available at Foswiki.org, in the **Foswiki:Extensions** web.

Foswiki plugins are developed and contributed by interested members of the community. Plugins are provided on an 'as is' basis; they are not a part of Foswiki, but are independently developed and maintained.

Most TWiki® plugins can also be used with Foswiki if the TWikiCompatibilityPlugin is installed (it is by default).

See other types of extensions: Contribs, Skins

Installed Plugins

- System.TWikiCompatibilityPlugin (Foswiki-1.0.9, $Rev: 6017 (2010-01-11) $): add TWiki personality to Foswiki
- System.SpreadSheetPlugin (10 Nov 2009, $Rev: 5484 (2009-11-10) $): Add spreadsheet calculations like "$SUM($ABOVE())" to Foswiki tables and other topic text
- System.AutoViewTemplatePlugin (2009-09-06, $Rev: 5221 (2009-10-06) $): Automatically sets VIEW_TEMPLATE and EDIT_TEMPLATE
- System.BreadCrumbsPlugin (v2.42, 4694): A flexible way to display breadcrumbs navigation
- System.CalendarPlugin (2.000, $Rev: 8058 (2010-07-07) $): Show a monthly calendar with highlighted events
- System.ChartPlugin (13 Mar 2010, $Rev: 6743 (2010-03-14) $): Create PNG or GIF charts to visualize Foswiki tables
- System.CommentPlugin (24 Feb 2010, $Rev: 6512 (2010-02-24) $): Quickly post comments to a page without an edit/save cycle
- System.DBCachePlugin (3.50, $Rev: 8342 (2010-07-28) $): Lightweighted frontend to the DBCacheContrib
- System.EditChapterPlugin (2.12, $Rev: 6337 (2010-02-15) $): An easy sectional edit facility
- System.EditTablePlugin (4.34, $Rev: 5854 (2009-12-23) $): Edit tables using edit fields, date pickers and drop down boxes
- System.ExplicitNumberingPlugin (1.6, $Rev: 6482 (2010-02-23) $): Use the `##.`, `##..` etc. notation to insert outline numbering sequences (1, 1.1, 2, 2.1) in topic's text. Also support numbered headings.
- System.ExternalLinkPlugin (1.21, $Rev: 5906 (2009-12-31) $): Adds a visual indicator to outgoing links
- System.FilterPlugin (2.03, $Rev: 8284 (2010-07-23) $): Substitute and extract information from content by using regular expressions
- System.FlexWebListPlugin (v1.51, $Rev: 5698 (2009-12-02) $): Flexible way to display hierarchical weblists
- System.GluePlugin (2.20, $Rev: 4420 (2009-07-03) $): Enable markup to span multiple lines
- System.HeadlinesPlugin (2.21.2, $Rev: 6822 (2010-03-21) $): Show headline news in Foswiki pages based on RSS and ATOM news feeds from external sites
- System.IfDefinedPlugin (v2.00, $Rev: 4422 (2009-07-03) $): Render content conditionally
- System.ImagePlugin (2.31, $Rev: 6307 (2010-02-12) $): Control the display and alignment of images using an easy syntax
- System.InterwikiPlugin (20 Sep 2009, $Rev: 5022 (2009-09-20) $): Link ExternalSite:Page text to external sites based on aliases defined in a rules topic
- System.JQueryLibPlugin (v1.0, $Rev: 3729 (2009-04-28) $): Provides you with the jQuery javascript library
- System.JQueryPlugin (3.51, $Rev: 20090710 (2009-07-10) $): jQuery JavaScript library for Foswiki
- System.LatexModePlugin (4.0, $Rev: 4721 (2009-08-28) $): Enables LaTeX markup (mathematics and more) in Foswiki topics
- System.LdapNgPlugin (v3.00, $Rev: 3726 (2009-04-27) $): Query and display data from an LDAP directory
- System.MathModePlugin (4.01, $Rev: 3649 (2009-04-23) $): Include LaTeX formatted math in your Foswiki pages
- System.NatEditPlugin (v4.21, $Rev: 6336 (2010-02-15) $): A Wikiwyg Editor
- System.NatSkinPlugin (3.96, $Rev: 6287 (2010-02-12) $): Theming engine for NatSkin
- System.NewUserPlugin (v2.00, $Rev: 3642 (2009-04-23) $): Create a user topic if it does not exist yet
- System.PreferencesPlugin (20 Sep 2009, $Rev: 5037 (2009-09-20) $): Allows editing of preferences using fields predefined in a form
- System.RedirectPlugin (1.1, $Rev: 7923 (2010-06-26) $): Create a redirect to another topic or website.

- System.RenderListPlugin (2.2, $Rev: 5042 (2009-09-20) $): Render bullet lists in a variety of formats
- System.RenderPlugin (3.0, 4818): Render WikiApplications asynchronously
- System.SendEmailPlugin (1.5.1, $Rev: 6581 (2010-02-28) $): Allows to send e-mails through an e-mail form.
- System.SetVariablePlugin (1.00, $Rev: 4287 (2009-06-23) $): Flexible handling of topic variables
- System.SlideShowPlugin (02 Aug 2008, $Rev: 2742 (2009-02-26) $): Create web based presentations based on topics with headings.
- System.SmiliesPlugin (20 Sep 2009, $Rev: 5046 (2009-09-20) $): Render smilies like as icons
- System.SubscribePlugin (03 Dec 2008, $Rev: 13787 (18 May 2007) $): Subscribe to web notification
- System.SyntaxHighlightingPlugin (1.2, $Rev: 4052 (2009-06-07) $): Highlights code fragments for many languages using **`enscript`**.
- System.TablePlugin (1.046, $Rev: 6733 (2010-03-13) $): Control attributes of tables and sorting of table columns
- System.TagMePlugin (02 Mar 2010, $Rev: 6613 (2010-03-02) $): Tag wiki content collectively to find content by keywords
- System.TwistyPlugin (1.5.4, $Rev: 6281 (2010-02-12) $): Twisty section Javascript library to open/close content dynamically
- System.UploadPlugin (1.11, $Rev: 20090703 (2009-07-03) $): Attach multiple files to a topic in one go
- System.VarCachePlugin (29 Jan 2009, $Rev: 2215 (29 Jan 2009) $): Cache Foswiki macros in selected topics for faster page rendering
- System.VotePlugin (1.33, $Rev: 5560 (2009-11-17) $): Simple way to count votes
- System.ZonePlugin (2.1, $Rev: 6966 (2010-03-28) $): Gather content of a page in named zones while rendering it

Failed Plugins

Plugin	Errors
System.TWikiCompatibilityPlugin	none
System.SpreadSheetPlugin	none
System.AutoViewTemplatePlugin	none
System.BreadCrumbsPlugin	none
System.CalendarPlugin	none
System.ChartPlugin	none
System.CommentPlugin	none
System.DBCachePlugin	none
System.EditChapterPlugin	none
System.EditTablePlugin	none
System.ExplicitNumberingPlugin	none
System.ExternalLinkPlugin	none
System.FilterPlugin	none
System.FlexWebListPlugin	none
System.GluePlugin	none
System.HeadlinesPlugin	none
System.IfDefinedPlugin	none
System.ImagePlugin	none
System.InterwikiPlugin	none
System.JQueryLibPlugin	none
System.JQueryPlugin	none
System.LatexModePlugin	none
System.LdapNgPlugin	none
System.MathModePlugin	none
System.NatEditPlugin	none
System.NatSkinPlugin	none
System.NewUserPlugin	none
System.PreferencesPlugin	none
System.RedirectPlugin	none
System.RenderListPlugin	none
System.RenderPlugin	none
System.SendEmailPlugin	none
System.SetVariablePlugin	none
System.SlideShowPlugin	none
System.SmiliesPlugin	none
System.SubscribePlugin	none
System.SyntaxHighlightingPlugin	none
System.TablePlugin	none
System.TagMePlugin	none
System.TwistyPlugin	none
System.UploadPlugin	none
System.VarCachePlugin	none
System.VotePlugin	none

Plugin	Errors
System.ZonePlugin	none

Handler	Plugins
afterAttachmentSaveHandler	DBCachePlugin
afterCommonTagsHandler	LatexModePlugin VarCachePlugin
afterRenameHandler	DBCachePlugin
afterSaveHandler	DBCachePlugin TagMePlugin
beforeCommonTagsHandler	EditTablePlugin NewUserPlugin PreferencesPlugin VarCachePlugin
beforeSaveHandler	CommentPlugin NatEditPlugin SetVariablePlugin
commonTagsHandler	SpreadSheetPlugin ChartPlugin CommentPlugin EditChapterPlugin EditTablePlugin ExplicitNumberingPlugin ExternalLinkPlugin FilterPlugin GluePlugin HeadlinesPlugin IfDefinedPlugin LatexModePlugin MathModePlugin SlideShowPlugin SmiliesPlugin SyntaxHighlightingPlugin
completePageHandler	NatSkinPlugin ZonePlugin
earlyInitPlugin	TWikiCompatibilityPlugin
initPlugin	TWikiCompatibilityPlugin SpreadSheetPlugin AutoViewTemplatePlugin BreadCrumbsPlugin CalendarPlugin ChartPlugin CommentPlugin DBCachePlugin EditChapterPlugin EditTablePlugin ExplicitNumberingPlugin ExternalLinkPlugin FilterPlugin FlexWebListPlugin GluePlugin HeadlinesPlugin IfDefinedPlugin

Handler	Plugins
	ImagePlugin InterwikiPlugin JQueryLibPlugin JQueryPlugin LatexModePlugin LdapNgPlugin MathModePlugin NatEditPlugin NatSkinPlugin NewUserPlugin PreferencesPlugin RedirectPlugin RenderListPlugin RenderPlugin SendEmailPlugin SetVariablePlugin SlideShowPlugin SmiliesPlugin SubscribePlugin SyntaxHighlightingPlugin TablePlugin TagMePlugin TwistyPlugin UploadPlugin VarCachePlugin VotePlugin ZonePlugin
modifyHeaderHandler	JQueryPlugin
postRenderingHandler	EditChapterPlugin EditTablePlugin MathModePlugin NatSkinPlugin PreferencesPlugin
preRenderingHandler	InterwikiPlugin NatSkinPlugin SmiliesPlugin TablePlugin
renderWikiWordHandler	DBCachePlugin
startRenderingHandler	RenderListPlugin ***This handler is deprecated*** - please check for updated versions of the plugins that use it!

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Installing Plugins

Each Foswiki plugin comes with its own documentation: step-by-step installation instructions, a detailed description of any special requirements, version details, and a working example for testing. Many plugins have an install script that automates these steps for you.

Special Requirements: Some plugins need certain Perl modules to be preinstalled on the host system. Plugins may also use other resources, like graphics, other modules, applications, and templates. You should

be able to find detailed instructions in the plugin's documentation.

Each plugin has a standard release topic, located in the Foswiki:Extensions web at Foswiki.org. There's usually a number of other related topics, such as a developers page, and an appraisal page.

On-Site Pretesting

The recommended approach to testing new plugins before making them public is to create a second local Foswiki installation, and test the plugin there. You can allow selected users access to the test area. Once you are satisfied that it won't compromise your main installation, you can install it there as well.

The plugins page shows which plugins are: 1) installed, 2) loading properly, and 3) what plugin handlers they invoke. Any failures are shown in the Errors section. The `%FAILEDPLUGINS%` macro can be used to debug failures. You may also want to check your webserver error log and the various Foswiki log files.

Some Notes on Plugin Performance

The performance of the system depends to some extent on the number of plugins installed and on the plugin implementation. Some plugins impose no measurable performance decrease, some do. For example, a Plugin might use many Perl libraries that need to be initialized with each page view (unless you run mod_perl). You can only really tell the performance impact by installing the plugin and by measuring the performance with and without the new plugin, on real data.

If you need to install an "expensive" plugin, but you only need its functionality only in a subset of your data, you can disable it elsewhere by defining the %DISABLEDPLUGINS% setting.

Define `DISABLEDPLUGINS` to be a comma-separated list of names of plugins to disable. Define it in Main.SitePreferences to disable those plugins everywhere, in the WebPreferences topic to disable them in an individual web, or in a topic to disable them in that topic. For example,

```
* Set DISABLEDPLUGINS = SpreadSheetPlugin, EditTablePlugin
```

Managing Installed Plugins

Some plugins require additional settings or offer extra options that you have to select. Also, you may want to make a plugin available only in certain webs, or temporarily disable it. And may want to list all available plugins in certain topics. You can handle all of these management tasks with simple procedures:

Listing Active Plugins

Plugin status macros let you list all active plugins wherever needed.

This site is running Foswiki version **Foswiki-1.0.9, Sun, 17 Jan 2010, build 6075**, plugin API version **2.0**

- `%ACTIVATEDPLUGINS%` - shows the activated plugins
- `%PLUGINVERSION%` - shows the plugins API version
- `%FAILEDPLUGINS%` - shows what plugins failed, and why

Enabling Plugins

Plugins can be enabled and disabled with the configure script. An installed plugin needs to be enabled before it can be used.

Plugin Evaluation Order

By default, plugins are executed in alphabetical order on plugin name. It is possible to change the order, for example to evaluate database macros before the spreadsheet CALCs. This can be done with `{PluginsOrder}` in the plugins section of configure.

Plugin-Specific Settings

Some plugins are configured with plugin preference settings, newer plugins with `configure` settings.

`configure` settings are accessible though the configure interface.

Plugin preference settings are defined in the plugin topic and can be overloaded. The SHORTDESCRIPTION setting is always present, it is needed for the automation in the extensions repository. Example preference settings defined in the TablePlugin topic:

- `Set SHORTDESCRIPTION = Control attributes of tables and sorting of table columns`

Preference settings of active plugins can be retrieved anywhere in Foswiki with `%<pluginname>_<var>%`, such as `%TABLEPLUGIN_SHORTDESCRIPTION%`. They can also be redefined with the `%<pluginname>_<var>%` setting at a lower level in the Main.SitePreferences or at the web level. For an easier upgrade it is recommended to customize plugin preference settings in Main.SitePreferences only.

Installing Plugins

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Special Requirements: Some plugins need certain Perl modules to be preinstalled on the host system. Plugins may also use other resources, like graphics, other modules, applications, and templates. You should be able to find detailed instructions in the plugin's documentation.

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failures. You may also want to check your webserver error log and the various Foswiki log files.

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```
* Set DISABLEDPLUGINS = SpreadSheetPlugin, EditTablePlugin
```

The Foswiki Perl Application Programming Interface

Developing plugins provides a simple introduction to hooking into Foswiki code from your own Perl modules. Foswiki:Development.GettingStarted is the starting point for more comprehensive documentation.

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Developing Plugins

The usual way Foswiki is extended is by writing a *Plugin*. Plugins extend Foswiki by providing functions that 'listen' to events in the Foswiki core, and handling these events. These functions are called "Plugin Handlers" and they are described in depth in EmptyPlugin (`lib/Foswiki/Plugins/EmptyPlugin.pm`).

APIs available to Extensions

To be robust, extensions must avoid using any unpublished functionality from the Foswiki core. The following perl packages give access to features for extension authors. These APIs are not just for Plugins, they can be used in any type of extension. Click on the name of the package to see the full documentation.

- `Foswiki::Func` - bridge to core functions. This is the package you will use most.
- `Foswiki::Meta` - topic meta-data
- `Foswiki::OopsException` - special exception for invoking the 'oops' script
- `Foswiki::AccessControlException` - access control exception
- `Foswiki::Attrs` - parser and storage object for macro parameters
- `Foswiki::Time` - time parsing and formatting
- `Foswiki::Sandbox` - safe server-side program execution, used for calling external programs.
- Iterators - these are classes that implement the `Foswiki::Iterator` specification
    - `Foswiki::ListIterator` - utility class for iterator objects that iterate over list contents
    - `Foswiki::LineIterator` - utility class for iterator objects that iterate over lines in a block of text
    - `Foswiki::AggregateIterator` - utility class for iterator objects that aggregate other iterators into a single iteration

In addition the following global variables may be referred to:

- `$Foswiki::Plugins::VERSION` - plugin handler API version number
- `$Foswiki::Plugins::SESSION` - reference to `Foswiki` singleton object
- `$Foswiki::cfg` - reference to configuration hash
- `$Foswiki::regex` - see Standard Regular Expressions, below

Foswiki:Development.GettingStarted is the starting point for more comprehensive documentation on developing for Foswiki.

Note the APIs are available to all extensions, but rely on a `Foswiki` singleton object having been created before the APIs can be used. This will only be a problem if you are writing an extension that doesn't use the standard initialisation sequence.

Standard Regular Expressions

A number of standard regular expressions are available for use in extensions, in the `$Foswiki::regex` hash. these regular expressions are precompiled in an I18N-compatible manner. The following are guaranteed to be present. Others may exist, but their use is unsupported and they may be removed in future Foswiki versions.

In the table below, the expression marked type 'String' are intended for use within character classes (i.e. for use within square brackets inside a regular expression), for example:

```
my $isCapitalizedWord =
  ( $s =~ /[$Foswiki::regex{upperAlpha}][$Foswiki::regex{mixedAlpha}]+/ );
```

Those expressions marked type 'RE' are precompiled regular expressions that can be used outside square brackets. For example:

```
my $isWebName = ( $s =~ m/$Foswiki::regex{webNameRegex}/ );
```

Name	Matches	Type
upperAlpha	Upper case characters	String
upperAlphaNum	Upper case characters and digits	String
lowerAlpha	Lower case characters	String
lowerAlphaNum	Lower case characters and digits	String
numeric	Digits	String
mixedAlpha	Alphabetic characters	String
mixedAlphaNum	Alphanumeric characters	String
wikiWordRegex	WikiWords	RE
webNameRegex	User web names	RE
topicNameRegex	Topic names	RE
anchorRegex	#AnchorNames	RE
abbrevRegex	Abbreviations/Acronyms e.g. GOV, IRS	RE
emailAddrRegex	email@address.com	RE
tagNameRegex	Standard macro names e.g. %THIS_BIT% (THIS_BIT only)	RE

Creating New Plugins

With a reasonable knowledge of the Perl scripting language, you can create new plugins or modify and extend existing ones.

Anatomy of a Plugin

A (very) basic Foswiki plugin consists of two files:

- a Perl module, e.g. `lib/Foswiki/Plugins/MyFirstPlugin.pm`
- a documentation topic, e.g. `MyFirstPlugin.txt`

The Perl module can invoke other, non-Foswiki, elements, like other Perl modules (including other plugins), graphics, external applications, or just about anything else that Perl can call.

The plugin API handles the details of connecting your Perl module with the Foswiki core.

The Foswiki:Extensions.BuildContrib module provides a lot of support for plugins development, including a plugin creator, automatic publishing support, and automatic installation script writer. If you plan on writing more than one plugin, you probably need it.

Creating the Perl Module

Copy file `lib/Foswiki/Plugins/EmptyPlugin.pm` to `<name>Plugin.pm`. The EmptyPlugin does nothing, but it contains all the information you need to create you own custom plugin.

Writing the Documentation Topic

The plugin documentation topic contains usage instructions and version details. (The doc topic is also included *in* the distribution package.) To create a documentation topic:

1. **Copy** the plugin topic template from EmptyPlugin?
2. **Customize** your plugin topic.
    - Important: In case you plan to publish your plugin on Foswiki.org, use Interwiki names for author names and links to Foswiki.org topics, such as Foswiki:Main/WikiGuest. This is important because links should work properly in a plugin topic installed on any Foswiki, not just on Foswiki.org.
3. **Save** your topic, for use in packaging and publishing your plugin.

OUTLINE: Doc Topic Contents
Check the plugins web on Foswiki.org for the latest plugin doc topic template. Here's a quick overview of what's covered:

Syntax Rules: <*Describe any special text formatting that will be rendered.*>"

Example: <*Include an example of the plugin in action. Possibly include a static HTML version of the example to compare if the installation was a success!*>"

Plugin Settings: <*Description and settings for custom plugin settings, and those required by Foswiki.*>"

- **Plugins Preferences** <*If user settings are needed, link to preference settings and explain the role of the plugin name prefix*

Plugin Installation Instructions: <*Step-by-step set-up guide, user help, whatever it takes to install and run, goes here.*>"

Plugin Info: <*Version, credits, history, requirements - entered in a form, displayed as a table. Both are automatically generated when you create or edit a page in the Foswiki:Extensions web.*>

Packaging for Distribution

The Foswiki:Extensions.BuildContrib is a powerful build environment that is used by the Foswiki project to build Foswiki itself, as well as many of the plugins. You don't **have** to use it, but it is highly recommended!

If you don't want to (or can't) use the BuildContrib, then a minimum plugin release consists of a Perl module with a WikiName that ends in `Plugin`, ex: `MyFirstPlugin.pm`, and a documentation page with the same name(`MyFirstPlugin.txt`).

1. Distribute the plugin files in a directory structure that mirrors Foswiki. If your plugin uses additional files, include them all:
    - `lib/Foswiki/Plugins/MyFirstPlugin.pm`
    - `data/Foswiki/MyFirstPlugin.txt`
    - `pub/Foswiki/MyFirstPlugin/uparrow.gif` [a required graphic]
2. Create a zip archive with the plugin name (`MyFirstPlugin.zip`) and add the entire directory structure from Step 1. The archive should look like this:
    - `lib/Foswiki/Plugins/MyFirstPlugin.pm`
    - `data/Foswiki/MyFirstPlugin.txt`
    - `pub/Foswiki/MyFirstPlugin/uparrow.gif`

Publishing for Public Use

You can release your tested, packaged plugin to the Foswiki community through the Foswiki:Extensions web. All plugins submitted to Foswiki.org are available for public download and further development.

Publish your plugin by following these steps:

1. **Post** the plugin documentation topic to the Foswiki:Extensions web
2. **Attach** the distribution zip file(s) to the topic, eg: `MyFirstPlugin.zip`
3. Add a user support hub by visiting Foswiki:Support.CreateNewSupportHub
4. Optionally, check in the sources to the Foswiki subversion repository (see Foswiki:Development.HowToStartExtensionDevelopmentInSubversion)

NEW Once you have done the above steps once, you can use the BuildContrib to upload updates to your plugin.

Thank you very much for sharing your plugin with the Foswiki community :-)

Hints on Writing Fast Plugins

- Delay initialization as late as possible. For example, if your plugin is a simple syntax processor, you might delay loading extra Perl modules until you actually see the syntax in the text.
  - For example, use an `eval` block like this:

```
eval { require IPC::Run }
return "<font color=\"red\">SamplePlugin: Can't load required
modules ($@)</font>" if $@;
```

- Keep the main plugin package as small as possible; create other packages that are loaded if and only if they are used. For example, create sub-packages of BathPlugin in `lib/Foswiki/Plugins/BathPlugin/`.
- Avoid using preferences in the plugin topic; set `$NO_PREFS_IN_TOPIC` if you possibly can, as that will stop Foswiki from reading the plugin topic for every page. Use Config.spec instead.
- Use registered tag handlers

Security

- Badly written plugins can open security holes in Foswiki. This is especially true if care isn't taken to prevent execution of arbitrary commands on the server.
- Don't allow sensitive configuration data to be edited by users. Use the `%Foswiki::cfg` hash for configuration options. Don't ask installers to edit topics in the System web.
  - Integrating with `configure` describes the steps
  - Foswiki:Extensions.MailInContrib has an example
  - Foswiki:Extensions.BuildContrib can help you with this
- Make sure that all user input is checked and validated. Be especially careful to filter characters that might be used in perl string interpolation.
- Avoid `eval`, and if you must use it make sure you sanitise parameters
- Always use the Foswiki::sandbox to execute commands. Never use backtick or qx//.
- Use `Foswiki::Func::checkAccessPermission` to check the access rights of the current user.
- Always audit the plugins you install, and make sure you are happy with the level of security provided. While every effort is made to monitor plugin authors activities, at the end of the day they are uncontrolled user contributions.

Recommended Storage of Plugin Specific Data

Plugins sometimes need to store data. This can be plugin internal data such as cache data, or data generated for browser consumption such as images. Plugins should store data using Foswiki::Func functions that support saving and loading of topics and attachments.

Plugin Internal Data

You can create a plugin "work area" using the `Foswiki::Func::getWorkArea()` function, which gives you a persistent directory where you can store data files. By default they will not be web accessible. The directory is guaranteed to exist, and to be writable by the webserver user. For convenience, `Foswiki::Func::storeFile()` and `Foswiki::Func::readFile()` are provided to persistently store and retrieve simple data in this area.

Web Accessible Data

The internal data area is not normally made web-accessible for security reasons. If yoou want to store web accessible data, for example generated images, then you should use Foswiki's attachment mechanisms.

Topic-specific data such as generated images can be stored in the topic's attachment area, which is web accessible. Use the `Foswiki::Func::saveAttachment()` function to store the data.

Recommendation for file name:

- Prefix the filename with an underscore (the leading underscore avoids a name clash with files attached to the same topic)
- Identify where the attachment originated from, typically by including the plugin name in the file name
- Use only alphanumeric characters, underscores, dashes and periods to avoid platform dependency issues and URL issues
- Example: `_GaugePlugin_img123.gif`

Such auto-generated attachments han be hidden from users by setting the 'h' attribute in the attachment attributes.

Web specific data should be stored in the attachment area of a topic in the web that you specify for the purpose, e.g. Web.BathPlugPictures. Use the `Foswiki::Func::saveAttachment()` function to store the data in this topic.

Integrating with `configure`

Some extensions have setup requirements that are best integrated into `configure` rather than trying to use preference settings. These extensions use `Config.spec` files to publish their configuration requirements.

`Config.spec` files are read during configuration. Once a `Config.spec` has defined a configuration item, it is available for edit through the standard `configure` interface. `Config.spec` files are stored in the 'plugin directory' e.g. `lib/Foswiki/Plugins/BathPlugin/Config.spec`.

Structure of a `Config.spec` file

The `Config.spec` file for a plugin starts with the plugin announcing what it is:

```
# ---+ BathPlugin
```

```
# This plugin senses the level of water in your bath, and ensures the plug
# is not removed while the water is still warm.
```

This is followed by one or more configuration items. Each configuration item has a *type*, a *description* and a *default*. For example:

```
# **SELECT Plastic,Rubber,Metal**
# Select the plug type
$Foswiki::cfg{BathPlugin}{PlugType} = 'Plastic';

# **NUMBER**
# Enter the chain length in cm
$Foswiki::cfg{BathPlugin}{ChainLength} = '30';

# **BOOLEAN EXPERT**
# Turn this option off to disable the water temperature alarm
$Foswiki::cfg{BathPlugin}{TempSensorEnabled} = '1';
```

The type (e.g. `**SELECT**`) tells `configure` to how to prompt for the value. It also tells configure how to do some basic checking on the value you actually enter. All the comments between the type and the configuration item are taken as part of the description. The configuration item itself defines the default value for the configuration item. The above spec defines the configuration items `$Foswiki::cfg{BathPlugin}{PlugType}`, `$Foswiki::cfg{BathPlugin}{ChainLength}`, and `$Foswiki::cfg{BathPlugin}{TempSensorEnabled}` for use in your plugin. For example,

```
if( $Foswiki::cfg{BathPlugin}{TempSensorEnabled} && $curTemperature > 50 ) {
    die "The bathwater is too hot for comfort";
}
```

The `Config.spec` file is read by configure, and `configure` then writes `LocalSite.cfg` with the values chosen by the local site admin.

A range of types are available for use in `Config.spec` files:

`BOOLEAN`	A true/false value, represented as a checkbox
`COMMAND` *length*	A shell command
`LANGUAGE`	A language (selected from `{LocalesDir}`
`NUMBER`	A number
`OCTAL`	An octal number
`PASSWORD` *length*	A password (input is hidden)
`PATH` *length*	A file path
`PERL`	A simplified perl data structure, consisting of arrays, hashes and scalar values
`REGEX` *length*	A perl regular expression
`SELECT` *choices*	Pick one of a range of choices
`SELECTCLASS` *package-specifier*	Select a perl package (class) e.g. `SELECTCLASS Foswiki::Plugins::BathPlugin::*Plug` lets the user select between all packages with names ending in `Plug`, `Foswiki::Plugins::BathPlugin::RubberPlug`, `Foswiki::Plugins::BathPlugin::BrassPlug` etc.
`STRING` *length*	A string
`URL` *length*	A url
`URLPATH` *length*	A relative URL path

All types can be followed by a comma-separated list of *attributes*.

EXPERT	means this an expert option
M	means the setting is mandatory (may not be empty)
H	means the option is not visible in configure

See lib/Foswiki.spec for many more examples.

Config.spec files are also used for other (non-plugin) extensions. in this case they are stored under the Contrib directory instead of the Plugins directory.

Maintaining Plugins

Discussions and Feedback on Plugins

Usually published plugins have a support hub in the Support web on Foswiki.org.Support hubs have links to where to discuss feature enhancements and give feedback to the developer and user communities.

Maintaining Compatibility with Earlier Foswiki Versions

The plugin interface (Foswiki::Func functions and plugin handlers) evolve over time. Foswiki introduces new API functions to address the needs of plugin authors. Plugins using unofficial Foswiki internal functions may no longer work on a Foswiki upgrade.

Organizations typically do not upgrade to the latest Foswiki for many months. However, many administrators still would like to install the latest versions of a plugin on their older Foswiki installation. This need is fulfilled if plugins are maintained in a compatible manner.

Tip: Plugins can be written to be compatible with older and newer Foswiki releases. This can be done also for plugins using unofficial Foswiki internal functions of an earlier release that no longer work on the latest Foswiki codebase. Here is an example; the Foswiki:Support.PluginsSupplement has more details.

```
if( $Foswiki::Plugins::VERSION >= 1.1 ) {
    @webs = Foswiki::Func::getListOfWebs( 'user,public' );
} else {
    @webs = Foswiki::Func::getPublicWebList( );
}
```

Handling deprecated functions

From time-to-time, the Foswiki developers will add new functions to the interface (either to Foswiki::Func, or new handlers). Sometimes these improvements mean that old functions have to be deprecated to keep the code manageable. When this happens, the deprecated functions will be supported in the interface for at least one more Foswiki release, and probably longer, though this cannot be guaranteed.

When a plugin defines deprecated handlers, a warning will be shown in the list generated by %FAILEDPLUGINS%. Admins who see these warnings should check Foswiki.org and if necessary, contact the plugin author, for an updated version of the plugin.

Updated plugins may still need to define deprecated handlers for compatibility with old Foswiki versions. In this case, the plugin package that defines old handlers can suppress the warnings in %FAILEDPLUGINS%.

This is done by defining a map from the handler name to the Foswiki::Plugins version *in which the handler was first deprecated*. For example, if we need to define the endRenderingHandler for compatibility with Foswiki::Plugins versions before 1.1, we would add this to the plugin:

```
package Foswiki::Plugins::SinkPlugin;
use vars qw( %FoswikiCompatibility );
$FoswikiCompatibility{endRenderingHandler} = 1.1;
```

If the currently-running Foswiki version is 1.1 *or later*, then the *handler will not be called* and *the warning will not be issued*. Foswiki with versions of `Foswiki::Plugins` before 1.1 will still call the handler as required.

TWiki® Plugins

Most plugins written for TWiki can also be run in Foswiki, by installing the TWikiCompatibilityPlugin. See Foswiki:Extensions.TWikiCompatibilityPlugin for more information.

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CGI and Command Line Scripts

Programs on the server performing actions such as rendering, saving and renaming topics.

These scripts are located in the `bin` and `tools` directories. This topic describes the interfaces to some of those scripts. All scripts in the `bin` directory can be called from the CGI (Common Gateway Interface) environment or from the command line. The scripts in the `tools` directory can only be called from the command line.

CGI Scripts

Details on CGI scripts located in the `bin` directory.

General Information

CGI environment

In the CGI environment parameters are passed to the scripts via the URL and URL parameters. Environment variables are also used to determine the user performing the action. If the environment is not set up, the default user is used (usually `guest`).

Command-line

You **must** be have the `bin` directory on the perl path to run the scripts from the command line. To avoid issues with file permissions, run the scripts as the web server user such as `nobody` or `www`.

Parameters are passed on the command line using '-name' - for example,

```
$ cd /usr/local/foswiki/bin
$ save -topic MyWeb.MyTopic -user admin -action save -text "New text of the topic"
```

All parameters require a value, even if that is the empty string.

Common parameters

All the scripts accept a number of common parameters. The first two components of the URL after the script name are taken as the web and the topic, respectively. Standard URL parameters are:

Parameter	Description	Default
`topic`	If this is set to a URL, Wiki will immediately redirect to that URL. Otherwise it overrides the URL and is taken as the topic name (you can pass Web.TopicName)	
`user`	Command-line only; set the name of the user performing the action. Note: this usage is inherently insecure, as it bypasses webserver login constraints. For this reason only authorised users should be allowed to execute scripts from the command line.	
`skin`	Overrides the default skin path (see Skins)	
`cover`	Specifies temporary skin path to prepend to the skin path for this script only (see Skins)	
`t`	While the `t` parameter is not actively used by any scripts, it is used throughout the links like `edit` to ensure that the browser doesn't cache the reply.	generally set to current time
`logout`	requests the LoginManager to log the current user out. (happens at the begining of the request so will terminate any other operation requested)	

attach

Despite the name, this script doesn't actually attach a file to a topic - for that, use `upload`. This script is part of the transactions sequence executed when a file is uploaded from the browser. it just generates the "new attachment" page for a topic.

Parameter	Description	Default
`filename`	Name of existing attachment (if provided, this is a "manage attachment" action)	none (in which case this is a "new attachment" action)

changes

Shows all the changes in the given web.

The `changes` script can receive one parameter:

Parameter	Description	Default
`minor`	If 0, show only major changes. If 1, show all the changes (both minor and major)	0

The main difference between invoking this script and using WebChanges is that WebChanges is based on a `%SEARCH%`, while this script reads the `changes` file in each web, making it much faster.

NOTE: The result from `changes` script and the topic WebChanges can be different, if the `changes` file is deleted from a web. In particular, in new installations the `changes` script will return no results while the WebChanges topic will.

configure

`configure` is the browser script used for inspection of, and changes to, the site configuration. None of the parameters to this script are useable for any purpose except `configure`. See configure.

edit

The `edit` script understands the following parameters, typically supplied by HTML input fields:

Parameter	Description	Default
`action`	Optional. Use the editaction template instead of the standard edit. If action=text, then hide the form. If action=form hide the normal text area and only edit the form. You can change the Edit/Edit Raw buttons to always append the action parameter in skins like Pattern and Classic by setting the topic or preference setting EDITACTION to the value `text` or `form`. To edit the topic once the EDITACTION is defined as form simply remove the action=form from the browser URL of the edit script and reload the edit window	
`onlynewtopic`	If set, error if topic already exists	
`onlywikiname`	If set, error if topic name is not a WikiWord	
`templatetopic`	The name of the template topic, copied to get the initial content (new topic *only*)	
`text`	Initial text for the topic	
`topicparent`	The parent topic	
`formtemplate`	Name of the form to instantiate in the topic. Overrides the form set in the `templatetopic` if defined. (will remove the form is set to 'none')	
`contenttype`	Optional parameter that defines the application type to write into the CGI header. Defaults to `text/html`. May be used to invoke alternative client	

Parameter	Description	Default
	applications	
anyname	Any parameter can passed to the new topic; if the template topic contains %URLPARAM{"anyname"}%, it will be replaced by its value	
breaklock	If set, any lease conflicts will be ignored, and the edit will proceed even if someone is already editing the topic.	
redirectto	If the user continues from edit to save, and if the save (or cancels the edit) process is successful, save will redirect to this topic or URL. The parameter value can be a TopicName, a Web.TopicName, or a URL. **Note:** Redirect to a URL only works if it is enabled in configure (Miscellaneous {AllowRedirectUrl}).	

Form field values are passed in parameters named 'field' - for example, if I have a field Status the parameter name is Status.

1. The first sequence of ten or more X characters in the topic name will be converted on save to a number such that the resulting topic name is unique in the target web.

NOTE: most skins support the definition of EDIT_SKIN, which is used as the value of the cover parameter in edit URLs. This allows you to override the default edit skin on a web, topic or user basis.

login

Used for logging in with TemplateLoginManager.

Parameter	Description	Default
origurl	URL that was being accessed when an access violation occurred. the login process will redirect to this URL if it is successful	none
username	username of user logging in	none
password	password of user logging in	none

logon

Used for logging in when Web Server authentication is being used (e.g. ApacheLoginManager). The script does nothing; it is purely a placeholder for triggering the login process. The webserver will be set up to require a valid user to access this script, thus triggering the webserver login process.

manage

Performs a range of management functions.

Note: The manage script can only be called via HTTP POST method. Make sure you specify method="post" if you call the manage script via a form action. It is not possible to call manage from an <A href link.

Parameter	Description	Default
action	One of create, createweb, changePassowrd, resetPassword, bulkRegister, deleteUserAccount, editSettings, saveSettings, restoreRevision	none

action=create

Alternative entry point for creation, via edit, of a new topic, used by screens that support several actions using manage.

Parameter	Description	Default
topic	Name of topic to create (can be web.topic)	none

Other parameters are the same as for edit.

action=createweb

Create a new web

Parameter	Description	Default
newweb	Name of the new web	''
baseweb	Name of the web to copy to create the new web	''
webbgcolor	value for WEBBGCOLOR	''
sitemapwhat	Value for SITEMAPWHAT	''
sitemapuseto	Value for SITEMAPUSETO	''
nosearchall	Value for NOSEARCHALL	''
newtopic	Value of %TOPIC% within the web creation message. Optionally used in some skins to signify a non-default home topic.	

action=editSettings

No parameters

action=saveSettings

Parameter	Description	Default
text	Text of the topic	''
originalrev	Revision that the edit started on	Most recent revision
redirectto	If the savesettings process is successful, save will redirect to this topic or URL. The parameter value can be a TopicName, a Web.TopicName, or a URL. **Note:** Redirect to a URL only works if it is enabled in configure (Miscellaneous {AllowRedirectUrl}).	

All other parameters may be interpreted as form fields, depending on the current form definition in the topic.

action=bulkRegister

See BulkRegistration.

Parameter	Description	Default
OverwriteHomeTopics	Whether to overwrite existing home topics or not	false
EmailUsersWithDetails	Whether to mail registered users or not	false
LogTopic	Topic to save the log in	Same as topic name, with 'Result' appended.

action=changePassword

Change password, email address, or both, of a user.

Parameter	Description	Default
username	god alone knows	*none*
oldpassword	current password	*none*

Parameter	Description	Default
password	new password	*none*
passwordA	new password confirmation	*none*
email	new email address	*none*

password, =passwordA and email are optional. If neither or password and passwordA is set, then the user password is left unchanged. If email is unset, their email is left unchanged.

action=resetPassword

Reset the password for a single or multiple users

Parameter	Description	Default
LoginName	**list** of usernames to reset	none - error if not set
Introduction	message to be sent alongside the reset, most often used to announce to the user that they have been given an account.	''

This is used by BulkResetPassword and ResetPassword. Only administrators can provide a list of LoginNames, non-admins can only provide a single LoginName.

BulkRegistration provides the means to create multiple accounts but it does not announce those accounts to the users who own them. BulkResetPassword is used to assign the passwords, the Introduction is used to explain why they are receiving the mail.

action=deleteUserAccount

Unregisters (removes) the currently logged-in user.

Parameter	Description	Default
password	Users' password	none

action=restoreRevision

Alternative entry point for edit, used by screens that support several actions using manage. Parameters are as for =edit.

oops

This script is mainly used for rendering pages containing error messages, though it is also used for some functional actions such as manage pages (move topic etc).

oops templates are used with the oops script to generate system messages. This is done to make internationalisation or other local customisations simple.

The oops script supports the following parameters:

Parameter	Description	Default
template	Name of the template file to display	
def	Optional, can be set to the name of a single definition within template. This definition will be instantiated in the template wherever %INSTANTIATE% is seen. This lets you use a single template file for many messages. For an example, see oopsmanagebad.tmpl.	
paramN	Where N is an integer from 1 upwards. These values will be substituted into template for %PARAM1% etc.	

preview

This script is *deprecated*. Its functions are covered by the `save` script.

rdiff

Renders the differences between version of a topic

Parameter	Description	Default
rev1	the higher revision	
rev2	the lower revision	
render	the rendering style {sequential, sidebyside, raw, debug}	DIFFRENDERSTYLE, `sequential`
type	{history, diff, last} history diff, version to version, last version to previous	`diff`
context	number of lines of context	

TODO:

- add a {word} render style

register

Parameter	Description	Default
`action`	`register` or `verify` or `resetPassword` or `approve`	

Note: The `register` script can only be called via the HTTP POST method except when the action is `verify`. Make sure you specify `method="post"` if you call the `register` script via a form action. It is not possible to call `register` from an `<A href` link. The `verify` action is an exception as it is used to verify registration by clicking a href link from an email.

rename

Used for renaming webs, topics and attachments.

Parameter	Description	Default
`action`	`renameweb` or anything else	
`skin`	skin(s) to use	
`confirm`	if defined, requires a second level of confirmation	
`referring_topics`	(internal use only) list of topics that refer to the web or topic being renamed	
`redirectto`	If the rename process is successful, rename will redirect to this topic or URL. The parameter value can be a `TopicName`, a `Web.TopicName`, or a URL. **Note:** Redirect to a URL only works if it is enabled in `configure` (Miscellaneous `{AllowRedirectUrl}`).	

action="renameweb"

Rename a web.

Parameter	Description	Default
`newparentweb`	new parent web name	existing parent
`newsubweb`	new web name	

`action=anything else`

Rename a topic or an attachment.

Parameter	Description	Default
`newweb`	new web name	
`newtopic`	new topic name	
`attachment`	Attachment to move	`none`
`template`	template for error when an attachment doesn't exist, `deleteattachment` for when deleting an attachment	
`currentwebonly`	if defined, searches current web only for links to this topic	
`nonwikiword`	if defined, a non-wikiword is acceptable for the new topic name	

Note: The `rename` script can only be called via the HTTP POST method. Make sure you specify `method="post"` if you call the `rename` script via a form action. It is not possible to call `rename` from an `<A href` link.

`rest`

This REST (Representational State Transfer) script can be invoked via http in the same way as the other scripts (see **Invocation Examples**, below) to execute a function that is associated to a "subject" and a "verb" (see below). These functions are usually registered by plugins using the `Foswiki::Func::registerRESTHandler` method. The `rest` script will print the result directly to the browser unless the `endPoint` parameter is specified, in which case it will output a redirect to the given topic.

The `rest` script supports the following parameters:

`username`	If `TemplateLogin`, or a similar login manager not embedded in the web server, is used, then you need to pass a username and password to the server. The `username` and `password` parameters are used for this purpose.
`password`	See `username`
`topic`	If defined as the full name (including web) of a topic, then when the script starts up plugins will be passed this as the "current" topic. If not defined, then Main.WebHome will be passed to plugins.
`endPoint`	Where to redirect the response once the request is served, in the form "Web.Topic"

The function is free to use any other query parameters for its own purposes.

The `rest` script should **always** require authentication in any site that has logins. Otherwise there is a risk of opening up major security holes. So make sure you add it to the list of authenticated scripts if you are using `ApacheLogin`.

Invocation Examples

The `rest` script assumes that it will be called with URL in the form:

`http://my.host/bin/rest/<subject>/<verb>`

where `<subject>` must be the WikiWord name of one of the installed Plugins, and the `<verb>` is the alias for the function registered using the `Foswiki::Func::registerRESTHandler` method. The `<subject>` and `<verb>` are then used to lookup and call the registered function.

`<subject>` and `<verb>` are checked for illegal characters exactly in the same way as the web and topic names.

As an example, the EmptyPlugin has registered a function to be used with the `rest` script under the subject **EmptyPlugin** and the verb **example**. Click below to see the `rest` script in action (run as guest).

Call the Plugin

Note that for Plugins to register REST handlers, they must be enabled in `configure`.

Retrieving passed values

Additional parameters can be recovered via the query object in the `$session`, for example with the url:

```
http://my.host/bin/rest/MyPlugin/update?web=foo
```

The url parameters can be processed using:

```
my $query = $session->{request};
my $web = $query->{param}->{web}[0];
```

save

The `save` script performs a range of save-related functions, as selected by the `action` parameter.

Parameter	Description	Default
`action_save=1`	**default**; save, return to view, dontnotify is `off`	
`action_quietsave=1`	save, and return to view, `dontnotify` is `on`	
`action_checkpoint`	save and redirect to the edit script, `dontnotify` is `on`	
`action_cancel`	exit without save, return to view	
`action_preview`	preview edited text	
`action_addform`	Redirect to the "change form" page.	
`action_replaceform...`	Redirect to the "change form" page.	
`action_delRev`	**Administrators only** delete the most recent revision of the topic - all other parameters are ignored. You have to be an administrator to use this, and not all store implementations will support it.	
`action_repRev`	**Administrators only** replace the text of the most recent revision of the topic with the text in the `text` parameter. `text` must included embedded meta-data tags. All other parameters are ignored. You have to be an administrator to use this, and not all store implementations will support it.	
`onlynewtopic`	If set, error if topic already exists	
`onlywikiname`	If set, error if topic name is not a WikiWord	
`dontnotify`	if defined, suppress change notification	
`templatetopic`	Name of a topic to use as a template for the text and form (new topic *only*)	
`text`	New text of the topic	
`forcenewrevision`	if set, forces a revision even if Wiki thinks one isn't needed	
`topicparent`	If 'none' remove any current topic parent. If the name of a topic, set the topic parent to this.	
`formtemplate`	if defined, use the named template for the form (will remove the form is set to 'none')	
`editaction`	When action is `checkpoint`, `add form` or `replace form...`, this is used as the `action` parameter to the `edit` script that is redirected to after the save is complete.	

Parameter	Description	Default
originalrev	Revision on which the edit started.	
edit	The script to use to edit the topic when action is checkpoint	edit
editparams	The parameter string to use to edit the topic	
redirectto	The save process will redirect to this topic or URL if it is successful. (Typically this would be the URL that was being viewed when edit was invoked). The parameter value can be a TopicName, a Web.TopicName, or a URL. **Note:** Redirect to a URL only works if it is enabled in configure (Miscellaneous {AllowRedirectUrl}).	view topic being edited

Any errors will cause a redirect to an oops page.

The parameters are interpreted in according to the following rules.

1. The first sequence of ten or more X characters in the topic name will be converted to a number such that the resulting topic name is unique in the target web.
2. When the action is save, checkpoint, quietsave, or preview:
    1. The new text is taken from the text parameter, if it is defined,
        ◊ otherwise it is taken from the templatetopic, if it is defined, (new topic *only*)
        ◊ otherwise it is taken from the previous version of the topic, if any,
    2. The name of the new form is taken from the formtemplate, if defined
        ◊ otherwise it is taken from the templatetopic, if defined, (new topic *only*)
        ◊ otherwise it is taken from the previous version of the topic, if any,
        ◊ otherwise no form is attached.
    3. The value for each field in the form is taken from the query, if it is defined
        ◊ otherwise it is taken from the templatetopic, if defined, (new topic *only*)
        ◊ otherwise it is taken from the previous version of the topic, if any,
        ◊ otherwise it defaults to the empty string.

Merging is only enabled if the topic text comes from text and originalrev is > 0 and is not the same as the revision number of the most recent revision. If merging is enabled both the topic and the meta-data are merged.

Form field values are passed in parameters named 'field' - for example, if I have a field Status the parameter name is Status.

Note: The save script can only be called via HTTP POST method. Make sure you specify method="post" if you call the save script via a form action. Example:

```
<form name="new" action="%SCRIPTURLPATH{save}%/Sandbox/" method="post">
    ...
</form>
```

It is not possible to call save from an <A href link.

search

CGI gateway to the %SEARCH% functionality driven by the following CGI parameters:

Parameter:	Description:	Default:
"text"	Search term. Is a keyword search, literal search or regular expression search, depending on the type parameter. SearchHelp has more	required
search="text"	(Alternative to above)	N/A

Parameter:	Description:	Default:
`web="Name"` `web="Main, Know"` `web="all"`	Comma-separated list of webs to search. See Macros#VarSEARCH for more details.	Current web
`topic="WebPreferences"` `topic="*Bug"`	Limit search to topics: A topic, a topic with asterisk wildcards, or a list of topics separated by comma.	All topics in a web
`excludetopic="Web*"` `excludetopic="WebHome, WebChanges"`	Exclude topics from search: A topic, a topic with asterisk wildcards, or a list of topics separated by comma.	None
`type="keyword"` `type="literal"` `type="regex"`	Do a keyword search like `soap "web service" -shampoo`; a literal search like `web service`; or RegularExpression search like `soap;web service;!shampoo`	`%SEARCHVAR-DEFAULTTYPE%` preferences setting (literal)
`scope="topic"` `scope="text"` `scope="all"`	Search topic name (title); the text (body) of topic; or all (both)	`"text"`
`order="topic"` `order="created"` `order="modified"` `order="editby"` `order= "formfield(name)"`	Sort the results of search by the topic names, topic creation time, last modified time, last editor, or named field of DataForms. The sorting is done web by web; in case you want to sort across webs, create a formatted table and sort it with TablePlugin's initsort	Sort by topic name
`limit="all"` `limit="16"`	Limit the number of results returned. This is done after sorting if `order` is specified	All results
`date="..."`	limits the results to those pages with latest edit time in the given time interval.	All results
`reverse="on"`	Reverse the direction of the search	Ascending search
`casesensitive="on"`	Case sensitive search	Ignore case
`bookview="on"`	BookView search, e.g. show complete topic text. Very resource demanding. Use only with small result sets	Show entire topic content of found topics
`nonoise="on"`	Shorthand for `nosummary="on" nosearch="on" nototal="on" zeroresults="off" noheader="on" noempty="on"`	Off
`nosummary="on"`	Show topic title only	Show topic summary
`nosearch="on"`	Suppress search string	Show search string
`noheader="on"`	Suppress search header **Topics: Changed: By:**	Show search header
`nototal="on"`	Do not show number of topics found	Show number
`zeroresults="off"`	Suppress all output if there are no hits	`zeroresults="on"`, displays: "Number of topics: 0"
`noempty="on"`	Suppress results for webs that have no hits.	Show webs with no hits
`header="..."` `format="..."`	Custom format results: see **FormattedSearch** for usage & examples	Results in table
`expandvariables="on"`	Expand embedded macros before applying a FormattedSearch on a search hit. Useful to show the expanded text, e.g. to show the result of a SpreadSheetPlugin `%CALC{}%` instead of the formula	Raw text
`multiple="on"`		Only one hit per topic

Parameter:	Description:	Default:
	Multiple hits per topic. Each hit can be formatted. The last token is used in case of a regular expression ";" *and* search	
`nofinalnewline="on"`	If `on`, the result of the macro does not end in a line by itself. Any text continuing immediately after the search macro on the same line will be rendered as part of the table generated by the search, if appropriate.	`off`
`separator=", "`	Line separator between hits	Newline `"$n"`

statistics

Refresh the WebStatistics topics in range of webs.

Parameter	Description	Default
`webs`	comma-separated list of webs to run stats on	all accessible webs
`logdate`	YYYYMM to generate statistics for	current month

for example:

1. from browser https://wiki.iac.ethz.ch/bin/statistics updates *all user webs*
2. from browser https://wiki.iac.ethz.ch/bin/statistics?webs=Userweb,Sandbox updates *Userweb,Sandbox*
3. from browser https://wiki.iac.ethz.ch/bin/statistics/System updates System
4. from command line bin/statistics updates *all user webs*
5. from command line bin/statistics -webs=Userweb,Sandbox updates *Userweb,Sandbox*
6. from command line bin/statistics System.WebHome updates System

see SiteTools#WebStatistics_site_statistics for updating statistics using cron.

upload

Uploads an attachment to a topic. The HTTP request is expected to be in `multipart/form-data` format.

Parameter	Description	Default
`hidefile`	if defined, will not show file in attachment table	
`filepath`	local (client) path name of the file being uploaded. This is used to look up the data for the file in the HTTP query.	
`filename`	deprecated, do not use	
`filecomment`	Comment to associate with file in attachment table	
`createlink`	if defined, will create a link to file at end of topic	
`changeproperties`	if defined, this is a property change operation **only** - no file will be uploaded.	null
`redirectto`	URL to redirect to after upload. `{AllowRedirectUrl}` must be enabled in `configure`. The parameter value can be a `TopicName`, a `Web.TopicName`, or a URL. Redirect to a URL only works if it is enabled in `configure`, and is ignored if `noredirect` is specified. **Note:** Redirect to a URL only works if it is enabled in `configure` (Miscellaneous `{AllowRedirectUrl}`).	
`noredirect`	Normally it will redirect to 'view' when the upload is complete, but also designed to be useable for REST-style calling using the 'noredirect' parameter. If this parameter is set it will return an appropriate HTTP status	

Parameter	Description	Default
	code and print a message to STDOUT, starting with 'OK' on success and 'ERROR' on failure.	

Tips

- You can use a tool like `curl` to upload files from the command line using this script.
- You can call upload easily from XmlHttpRequest in Javascript.

Note: The `upload` script can only be called via HTTP POST method. Make sure you specify `method="post"` if you call the `upload` script via a form action. It is not possible to call `upload` from an `<A href` link.

view

Used for viewing topics.

Parameter	Description	Default
`raw=on`	Shows the text of the topic in a scrollable textarea	
`raw=debug`	As `raw=on`, but also shows the metadata (forms etc) associated with the topic.	
`raw=text`	Shows only the source of the topic, as plain text (Content-type: text/plain). Only shows the body text, **not** the form or other meta-data.	
`raw=all`	Shows only the source of the topic, as plain text (Content-type: text/plain), **with embedded meta-data**. This may be useful if you want to extract the source of a topic to a local file on disc.	
`section`	Allows to view only a part of the topic delimited by a named section (see System.VarSTARTSECTION). If the given section is not present, no topic content is displayed.	
`contenttype`	Allows you to specify a different **Content-Type:** (e.g. `contenttype=text/plain`)	
`rev`	Revision to view (e.g. `rev=45`)	
`template`	Allows you to specify a different skin template, overriding the 'view' template the view script would normally use. The default template is `view`. For example, you could specify /System/CommandAndCGIScripts?template=edit. This is mainly useful when you have specialised templates for a Wiki Application.	
`topic`	redirects (at the beging of the cgi script running) to show the spcified Web.Topic, or, redirects to a URL, if allowed by {AllowRedirectUrl} and {PermittedRedirectHostUrls}	

For historical reasons, the view script has a special interpretation of the `text` skin. This skin cannot be redefined.

viewfile

Used for viewing attachments. Normally, a site will publish the attachments (`pub`) directory using a URL. However if it contains sensitive information, you will want to protect attachments using AccessControls. In this case, you can use the `viewfile` script to give access to attachments while still checking access controls.

Parameter	Description	Default
`filename`	name of attachment	
`rev`	Revision to view	

Instead of using the `filename` parameter, you can append the attachment name to the end of the URL path (after the topic) e.g.
`https://wiki.iac.ethz.ch/bin/viewfile/Webname/TopicName/Attachment.gif`

Command Line Scripts

Details on command line scripts located in the `tools` directory.

`geturl.pl`

This is a very simple script to get the content of a web site. It is marked as *deprecated* and might be removed (or enhanced) in a future release. Its functions are covered by the standard `wget` and `curl` commands.

- Usage: `geturl.pl <host> <path> [<port> [<header>]]`
- Example: `geturl.pl some.domain /some/dir/file.html 80`
- Will get: `http://some.domain:80/some/dir/file.html`

`rewriteshebang.pl`

Simple script to rewrite the `#!/usr/bin/perl` shebang lines specific to your local Perl installation. It will rewrite the first line of all your cgi scripts so they use a different shebang line. Use it if your perl is in a non-standard location, or you want to use a different interpreter (such as 'speedy').

`tick_foswiki.pl`

This script executes a number of non-essential regular administration tasks that will help keep your site healthy and happy, such as removing expired sessions and lease files.

It is intended to be run as a cron job or a scheduled task once a week. Example crontab entry:
`0 0 * * 0 cd /usr/local/foswiki/bin && perl ../tools/tick_foswiki.pl`

Note: The script has to be run by a user who can write files created by the webserver user.

Related Topics: AdminDocumentationCategory, DeveloperDocumentationCategory

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Site Tools

Utilities for searching, navigation, and monitoring site activity

Site Tools include utilities for navigating, searching and keeping up with site activity.

In particular, you have two highly configurable, automated site monitoring tools, **WebNotify**, to e-mail alerts when topics are edited, and **WebStatistics**, to generate detailed activity reports.

WebNotify - recent changes alert

Notification Help

Each Foswiki web has an automatic e-mail notification service that sends you an e-mail with links to all of the topics modified since the last alert.

Users subscribe to email notifications using their WikiName or an alternative email address, and can specify the webs/topics they wish to track, Whole groups of users can also be subscribed for notification.

The general format of a subscription is:

three spaces `*` *subscriber* [`:` *topics*]

Where *subscriber* can be a WikiName, an E-mail address, or a group name. If *subscriber* contains any characters that are not legal in an email address, then it must be enclosed in 'single' or "double" quotes.

topics is an optional space-separated list of topics:

- ... **without** a *Web.* prefix
- ...that exist in this web.

Users may further customize the specific content they will receive using the following controls:

- **Using wild-card character in topic names** - You can use `*` in a topic name, where it is treated as a wildcard character. A `*` will match zero or more other characters - so, for example, `Fred*` will match all topic names starting with `Fred`, `*Fred` will match all topic names *ending* with `Fred`, and `*` will match *all* topic names.
- **Unsubscribing to specific topics** - Each topic may optionally be preceded by a '+' or '-' sign. The '+' sign means "subscribe to this topic". The '-' sign means "unsubscribe" or "don't send notifications regarding this particular topic". This allows users to elect to filter out certain topics. Topic filters ('-') take precedence over topic includes ('+') i.e. if you unsubscribe from a topic it will cancel out any subscriptions to that topic.
- **Including child-topics in subscription** - Each topic may optionally be followed by an integer in parentheses, indicating the depth of the tree of children below that topic. Changes in all these children will be detected and reported along with changes to the topic itself. *Note* This uses the Foswiki "Topic parent" feature.
- **Subscribing to entire topic ("news mode")** - Each topic may optionally be immediately followed by an exclamation mark ! and/or a question mark ? with no intervening spaces, indicating that the topic (and children if there is a tree depth specifier as well) should be mailed out as **complete topics** instead of change summaries. ! causes the full topic to be mailed every time *even if there have been no*

changes, and ? will mail the full topic only if there have been changes. One can limit the content of the subscribed topic to send out by inserting %STARTPUBLISH% and %STOPPUBLISH% markers within the topic. Note that the script mailnotify can be run with the options -nochanges or -nonews so that you can run the two mode on different schedules (see details).

Examples: Subscribe Daisy to all changes to topics in this web.

```
* daisy.cutter@flowers.com
```

Subscribe Daisy to all changes to topics that start with `Web`.

```
* daisy.cutter@flowers.com : Web*
```

Subscribe Daisy to changes to topics starting with `Petal`, and their immediate children, WeedKillers and children to a depth of 3, and all topics that match start with `Pretty` and end with `Flowers` e.g. `PrettyPinkFlowers`

```
* DaisyCutter: Petal* (1) WeedKillers (3) Pretty*Flowers
```

Subscribe StarTrekFan to changes to all topics that start with `Star` **except** those that end in `Wars`, `sInTheirEyes` or `shipTroopers`.

```
* StarTrekFan: Star* - *Wars - *sInTheirEyes - *shipTroopers
```

Subscribe Daisy to the full content of NewsLetter whenever it has changed

```
* daisy@flowers.com: NewsLetter?
```

Subscribe buttercup to NewsLetter and its immediate children, even if it hasn't changed.

```
* buttercup@flowers.com: NewsLetter! (1)
```

Subscribe GardenGroup (which includes Petunia) to all changed topics under AllnewsLetters to a depth of 3. Then unsubscribe Petunia from the ManureNewsLetter, which she would normally get as a member of GardenGroup:

```
* GardenGroup: AllNewsLetters? (3)
* petunia@flowers.com: - ManureNewsLetter
```

Subscribe `IT:admins` (a non-Foswiki group defined by an alternate user mapping) to all changes to Web* topics.

```
* 'IT:admins' : Web*
```

A user may be listed many times in the WebNotify topic. Where a user has several lines in WebNotify that all match the same topic, they will only be notified about *changes* that topic *once* (though they will still receive individual mails for news topics).

If a *group* is listed for notification, the group will be recursively expanded to the e-mail addresses of all members.

__ Warning: Because an email address is not linked to a user name, there is no way for Foswiki to check access controls for subscribers identified by email addresses. A subscriber identified by an email address alone will only be sent change notifications if the topic they are subscribed to is readable by guest users. You can limit what email addresses can be used in %NOTIFYTOPIC%, or even block use of emails altogther, using the `{MailerContrib}{EmailFilterIn} setting in =configure`.

Tip: List names in alphabetical order to make it easier to find the names.

Note for System Administrators: Notification is supported by an add-on to the Foswiki kernel called the MailerContrib. See the MailerContrib topic for details of how to set up this service.

Note: If you prefer a news feed, point your reader to WebRss (for RSS 1.0 feeds) or WebAtom (for ATOM 1.0 feeds). Learn more at WebRssBase and WebAtomBase, respectively.

Related topics: WebChangesAlert, Main.WikiUsers, UserRegistration

WebSearch - search the site

WebSearch is a flexible search facility, part of the core feature set. WebSearchAdvanced offers more options, including:

- topic title or full-text search
- regular expressions
- query search over form data
- search within web or site-wide
- index-style A-Z alphabetical listing sorted topic title
- many more

See also: SearchHelp for help; Macros and FormattedSearch for including hard-coded searches in text.

WebChanges - what's new

To check for the most recently edited topics while on-site, use the WebChanges link, usually located in the toolbar. It lists the most recently modified topics, newest first, along with the first couple of lines of the page content.

This is simply a preset `SEARCH`. The number of topics listed by the `limit` parameter.:

```
%SEARCH{ ".*" web="System" type="regex" nosearch="on" order="modified"
  reverse="on"
limit="50" }%
```

WebRss and WebAtom - news feeds on recent changes

You can point your news reader at WebRss and WebAtom to find out what is new in a web. WebRssBase and WebAtomBase have the details. Like WebChanges, this is based on a `%SEARCH{}%`.

WebIndex - list of topics

WebIndex lists all web topics in alphabetical order, with the first couple of lines of text. This is simply a preset `SEARCH`:

```
%SEARCH{ "\.*" scope="topic" type="regex" nosearch="on" }%
```

WebStatistics - site statistics

You can generate a listing manually, or on an automated schedule, of visits to individual pages, on a per web basis. Compiled as a running total on a monthly basis. Includes totals for Topic Views, Topic Saves, Attachment Uploads, Most Popular Topics with number of views, and Top Contributors showing total of saves and attachment uploads. Previous months are saved.

- You can create a WebStatistics link using **`%STATISTICSTOPIC%`**

Configuring for automatic operation

- You can automatically generate usage statistics for all webs. To enable this:
  - Make sure configure settings **{Log}{view}**, **{Log}{save}** and *{Log}{upload} in are set in configure. This will generate log file entries (see below).
  - The WebStatistics topic must be present in all webs where you want to have statistics. You can use the topic in the Main web as a template.
  - Call the `bin/statistics` script from a cron job, once a day is recommended. This will update the WebStatistics topics in all webs.
  - **Attention:** The script must run as the same user as the CGI scripts are running, which is user `nobody` on many systems. Example crontab entry:
    `0 0 * * * (cd /path/to/bin; ./statistics >/dev/null 2>&1)`
  - There is a workaround in case you can't run the script as user `nobody` : Run the utility `tools/geturl.pl` in your cron job and specify the URL of the `bin/statistics` script as a parameter. Example:
    `0 0 * * * (cd /path/to/tools; ./geturl.pl mydomain.com /urlpath/to/bin/statistics >/dev/null 2>&1)`
  - **NOTE:** `geturl.pl` will do a CGI request as the WikiGuest user, so if you use this workaround, the WebStatistics topics you are updating will have to be writable by WikiGuest.

When running from the command line or a cron job, you can pass parameters to the script like this:

```
./statistics -logdate 200605 -webs Userweb,Sandbox
```

Generating statistics manually by URL

- The `bin/statistics` script can also be executed as a CGI script, just enter the URL in your browser. Examples:
  - Update current month for all webs you have access to:
    `/bin/statistics`
  - Update current month for Main web only:
    `/bin/statistics/Main`
  - Update May 2024 for Main web:
    `/bin/statistics/Main?logdate=202405`
  - Update May 2024 for the ProjectX, ProjectY and ProjectZ webs:
    `/bin/statistics?logdate=202405;webs=ProjectX,ProjectY,ProjectZ`

Log Files

Foswiki generates monthly log files which are used by the statistics script

- The log file is defined by the **{LogFileName}** setting in configure
- The file name is `log<year><month>.txt`

- Example path name: `logs/log202405.txt`
- Each access gets logged as:
  `| <time> | <wikiusername> | <action> | <web>.<topic> | <extra info> | <IP address> |`
- Example log entry:
  `| 17 May 2024 - 04:39 | Main.WikiGuest | view | System.WebRss |  | 66.124.232.02 |`
- Actions are logged if enabled in configure by the **{Log}{*action*}** flags
- Logged actions:

Script	Action name	Extra info
attach	`attach`	when viewing attach screen of previous uploaded attachment: `filename`
changes	`changes`	
edit	`edit`	when editing non-existing topic: `(not exist)`
rdiff	`rdiff`	higher and lower revision numbers: `4 3`
register	`regstart`	WikiUserName, e-Mail address, LoginName: `user attempts to register`
register	`register`	E-mail address: `user successfully registers`
register	`bulkregister`	WikiUserName of new, e-mail address, admin ID
manage	`rename`	when moving topic: `moved to Newweb.NewTopic`
manage	`move`	when moving attachment: `Attachment filename moved to Newweb.NewTopic`
manage	`renameweb`	when renaming a web: `oldweb moved to newweb`
save	`save`	when replacing existing revision: `repRev 3` when user checks the minor changes box: `dontNotify` when user changes attributes to an exising attachment: `filename.ext`
save	`cmd`	special admin parameter used when saving
search	`search`	search string
upload	`upload`	filename
view	`view`	when viewing non-existing topic: `(not exist)` when viewing previous topic revision: `r3`

E-mail

Configuring outgoing mail

Outgoing mail is required for UserRegistration and for recent changes alert.

Foswiki will use the **`Net::SMTP`** module if it is installed on your system. Set this with the **`SMTPMAILHOST`** preference setting.

The notify e-mail uses the default `changes.tmpl` template, or a skin if activated by a preference setting.

mailnotify also relies on two hidden files in each `data/Web` directory: `.changes` and `.mailnotify`. Make sure both are writable by your web server process. `.changes` contains a list of changes; go ahead and make this empty. `.mailnotify` contains a timestamp of the last time notification was done.

You can use an external mail program, such as **`sendmail`**, if the `Net::SMTP` module is not installed. Set the program path in **`{MailProgram}`** in configure.

! * Net::SMTP can be easily disabled (if there is an installation error) by setting the **SMTPMAILHOST** preference setting to an empty value.

- You can set a separate **SMTPSENDERHOST** preference setting to define the mail sender host (some SMTP installations require this).

Setting the automatic e-mail schedule

For Unix platforms: Edit the `cron` table so that `mailnotify` is called in an interval of your choice. Please consult `man crontab` of how to modify the table that schedules program execution at certain intervals. Example:

```
% crontab -e
0 1 * * * (cd /path/to/bin; ./mailnotify -q)
```

The above line will run mailnotify nightly at 01:00. The `-q` switch suppresses all normal output.

For ISP installations: Many ISPs don't allow hosted accounts direct cron access, as it's often used for things that can heavily load the server. Workaround scripts are available.

On Windows: You can use a scheduled task if you have administrative privileges.

Site Permissions

- AccessControl describes how to restrict read and write access to topics and webs, by users and groups
- SitePermissions lists the permissions settings of the webs on this site

Help with crontab

The crontab command is used to schedule commands to be executed periodically.

- Wikipedia.org:Crontab - crontab documentation
- pycron - crontab for Windows

Related Topics: AdminDocumentationCategory, AdminToolsCategory

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Managing Topics

Browser-based rename, move, and delete for individual topics

Overview

You can use browser-based controls to change a name of a topic, move it to another web or delete it to a hidden `Trash` web.

How to rename, move or delete a topic

1. **Select** the **`[More actions]`** link (normally located in an action toolbar at the top or bottom of page) on the topic to be changed. Then, in the new screen, click **`[Rename, move or delete this topic]`**. You can now rename and/or move/delete in one operation:
    - **Move/Delete:** Select the target web if other than the current web - choose `Trash` to delete a topic.
    - **Rename:** Enter the new topic name - default is current name
      You'll be warned if any of the topics to be affected are locked (being edited), or if there is a name conflict.
2. **Prevent updates** by unchecking individual items on the list of referring links - these topics will NOT to be updated with the new name (by default, **only links in the same web** will be updated).
3. **Click** on **`[Rename]`**: the topic will be renamed and links to the topic updated as requested.
    - If any of the referring pages are locked then they will be listed: you can correct these later by again pressing **`[Rename]`**.
    - There is a **Put back** feature that allows you to undo a **`rename/move/delete`** action - an instruction line and an undo link will appear at the bottom of the modified topic. This allows you to revert from the *last modification only*.

How to copy a topic

1. **Select** the **`[More actions]`** link (normally located in an action toolbar at the top or bottom of page) on the topic to be changed.
2. On the "More actions" page, scroll down to the "Copy topic" section. In the "Name of copy" text box, enter in the new topic name. To copy the topic to another web, fully qualify the topic name with the web name, separating the two with a period (for example, `Web.TopicName`).
3. **Select** the **`[Copy topic]`** button. You will be directed to an edit page for the newly-created topic. You can save the new copy immediately, or make some changes and then save it.

Deleted topics: How to clear the trash

Deleted topics are moved to a special **`Trash`** web - they are NOT physically erased from the server. All webs share the same `Trash` - in case of a name conflict with a topic already existing in the `Trash` web, the user is alerted and asked to choose a new name.

The `Trash` web should be be cleared periodically, by archiving (saving) the text and RCS files if required (recommended), then deleting them from the `Trash` directory.

- This can only be done from on the server, not through the browser.
    - Since simple FTP access to the **`Trash`** directory is all that is required for maintenance, it is

possible to grant `Trash` admin privileges to multiple users, while strictly limiting server access.

Redirecting from an old topic

You can use MetaData to place a command in the System.TopicDoesNotExistViewTemplate that will indicate that a topic has been moved by searching for the tag . Customize something like this:

```
%<nop>METASEARCH{type="topicmoved" web="%WEB%" topic="%TOPIC%"
title="This topic used to exist and was moved to: "}%
```

How rename/move works

1. %SEARCH%, with a special template, finds and displays all occurrences of the topic name in other topics, either web- or site-wide. These referring links are by default automatically changed to the new topic and/or web name. This includes relevant MetaData definitions.
    - User can omit one or more topics from the update list by unchecking them.
    - `<pre>` and `<verbatim>` are honoured - no changes are made to text within these areas.
2. The topic is moved (if locks allow).
3. References are changed (locks and permissions permitting).
4. Any referring topics that cannot be changed due to locks are listed - user can take note and change them at another time.

How referring topics are found

First, matching topics in the current web are listed - matches are to **`topic`**. Next, all webs (including the current one) are listed that match **`web.topic`**. *All* webs will be searched during rename, even if `NOSEARCHALL` is defined on a web, though access permissions will of course be honoured.

Changed references are kept as short as possible, ex: `topic` is used in preference to `web.topic`.

Effect of user access settings

User permissions affect the 'rename' functions in various ways. To rename a topic, you need all of **`VIEW`**, **`CHANGE`** and **`RENAME`** access to that topic. To alter referring topics, you need **`CHANGE`** access. See AccessControl for information on setting up access permissions.

Special considerations

Consider carefully whether to make browser-based **rename/move/delete** widely available, or to restrict it to an administrator/moderator group. Allowing all users to easily manipulate topics can be extremely useful in refactoring a busy web or site. However, there are at least two significant potential drawbacks to take into account:

1. When referring links are updated, the modified topics appear in WebChanges, creating the impression that editorial changes were made. This can undermine the usefulness of WebChanges.
2. Due to current limitations, fairly heavy use of rename/move/delete functions can lead to an accumulation of minor technical problems (ex: broken links) and usability issues (ex: user confusion). If rename... is used heavily, these negatives will obviously increase, in number and effect.

Ultimately, the size, objectives, and policies of your site, the real-world behavior of your user group, and most importantly, the initial Foswiki site management leadership, will determine the most effective implementation of this feature, and the success of the site overall.

Known issues

Rename/move is fairly complicated due to the dynamic generation of links. Ideally, it would be possible to run the required part of rendering in a way that would allow identification of the text to be changed. Unfortunately, these hooks don't exist at present. Instead, %SEARCH% is used with a special template to show the text to be changed, and the selected topics are then altered. One drawback is that `search` can show matches that will not be updated due to case differences. Other mismatches with actual rendered output are also possible as the approaches are so different.

The following shows some limitations of square bracket processing.

```
[[Old Topic]]  => [[NewTopic][Old Topic]]
[[old topic]]  => [[NewTopic][old topic]]
[[old t opic]] => not changed
[[OldTopic]]   => [[NewTopic]]
```

Related Topics: UserDocumentationCategory, AdminDocumentationCategory

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Managing Webs

What are Webs?

A Foswiki site is divided into "Webs", or groups or topics - each one represents one subject, one area of collaboration. Administrators can add, rename or delete webs.
At file level, a Web is a directory located inside the `data` directory, with text files as topics.
A number of Webs are fixed: `System` for documentation, `Main` to store user pages and site-wide preferences, `Trash` for the topic recycle bin.
Other webs can be created as needed.

Webs on this site

+ Show sitemap– Hide sitemap

System

- Welcome, Registration, and other System.StartingPoints; Foswiki history & Wiki style; All the docs...
- Used to: ...discover Foswiki details, and how to start your own site.
-

Public

- Public Web that is accessible worldwide
- Used to: ...public information is visible worldwide
-

This table is updated automatically based on WebPreferences settings of the individual webs. Topic home: System.SiteMap.

Legend:
Go to the home of the web
See recent changes in the web
Search the web
Subscribe to get notified of changes by e-mail

Create a new web

To use this form you must be administrator.

Before you begin: consider that less webs are better than more webs. Cross-linking topics is easier, and searches are faster, if there are only a few larger webs.

Name of the new Web Required

Naming rule: the name must start with an upper case letter, followed by upper or lower case letters or numbers. Examples: `Learn`, `SupDocs`, `KNow3`

If you are creating a nested web (a web inside a web), use the notation `Existingweb.Newweb`.
+ More info about nested webs ...– Close info

About hierarchical webs

You can only create hierarchical webs if the `{EnableHierarchicalWebs}` setting in configure is enabled. Hierarchical webs are currently enabled .

You might not need hierarchical webs. Foswiki topics already have a parent/child relationship within a web, which is shown in the breadcrumb. Try to keep the number of webs to a minimum in order to keep search and cross-referencing simple.

Description

Enter a short description of the web. This description will be used in the SiteMap. If you are using links: write `Web.TopicName` instead of just `TopicName` for correct linking.

+ Show additional settings...– Hide additional settings

Template web

Base the new web on an existing web.
+ More info about template webs ...– Close info

About template webs

There are two methods used to create a new web.
First you can use a specially designed TemplateWeb. This is an invisible web that begins with an underscore "_" character (for example `_default`). All topics in the template web will be copied into your new web.
The second method is to use an existing web as a template web. This may be useful **if you already have a web that you would like to use as a starting point.** Only topics that have names beginning with "Web..." (like "WebHome" or "WebNotify") are copied. In either case you will want to be sure to verify that your new web has all the custom modifications that you desire.

Notes:

- You must have `ROOTCHANGE` access to create a top-level web (one with no parent)
- A new web created using the `_default` or `_empty` template webs must have their access controls set before public use
- Only the person who created it has permission to change the WebPreferences in the new web

List on SiteMap page

show hide

Should the new web be listed on SiteMap (see #SiteMap above)? Even if hidden, the web will be linkable and accessible to users.

Include in global search

include exclude

Specify if you want to exclude the web from a global search.

Web color

Displayed on SiteMap and in the left bar (Pattern Skin).

In-depth info on Webs

Subweb preferences are inherited

The preference settings of a subweb are inherited from the parent web and overridden locally. Preferences are ultimately inherited from the System.DefaultPreferences topic.

Example Preference Inheritance for `Sandbox/TestWeb/SubWeb.SubWebTopic` topic:

1. `System.DefaultPreferences` default settings
2. `Main.SitePreferences` site-wide settings inherits from and overrides settings in `System.DefaultPreferences`
3. `Sandbox.WebPreferences` inherits from and overrides settings in `Main.SitePreferences`
4. `Sandbox/TestWeb.WebPreferences` inherits from and overrides settings in `Sandbox.WebPreferences`
5. `Sandbox/TestWeb/SubWeb.WebPreferences` inherits from and overrides settings in `Sandbox/TestWeb.WebPreferences`
6. `Sandbox/TestWeb/SubWeb.SubWebTopic` inherits from and overrides settings in `Sandbox/TestWeb/SubWeb.WebPreferences`

Subweb navigation

The Pattern skin (default) indicates Subwebs by indenting them in the sidebar relative to their level in the hierarchy.

Renaming or Deleting a Web

Rename a web via the Tools section in each WebPreferences topic. You may delete a web by moving it into a Trash web.

Permissions

You may only rename a web if you have the following permissions

- You must be allowed to rename and changes topics in the web you want to rename
- You must be allowed to rename topics in the parent web of the web you want to rename
- If the web is a root web (i.e. it has no parent web) then you must have permission to both create and rename root webs. These permissions are controlled by the ALLOWROOTCHANGE preference, which can be set in Main.SitePreferences.
- If you move the web to another parent web you must be allowed to create and change topics in the new parent web. When you rename a web Foswiki will try and update all links that refer to the old web. You should note that links only get updated in topics that you are allowed to edit. If you use

access rights in the Foswiki installation it is generally best to let an administrator rename webs to avoid too many broken links.

Renaming the webs in the distribution

It is possible, though not recommended, to change the names of the webs in the distribution. If you plan to rename the Main web, remember that Foswiki stores user topics in this web. That means that every WikiName signature - `Main.SomeUserName` - points to it and would need updating (unless the macro style `%USERSWEB%.SomeUserName`, is used throughout). This potentially large change can be performed automatically if you rename the web from the Tools section of WebPreferences, as described above.

If you want to rename the System or Main webs, remember they are referred to in the Foswiki configuration. You will need to change the `{SystemWebName}`, `{UsersWebName}` and/or `{LocalSitePreferences}` settings in the configuration using the configure interface.

Renaming the webs in the distribution is not recommended because it makes upgrades much more complicated.

Related Topics: AdminDocumentationCategory, AdminToolsCategory

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Manage Users

Register users on your Foswiki site; change/reset/install passwords; remove user accounts

Some of the features below may be disabled, depending on your Foswiki configuration.

Authentication and Access Control

- UserAuthentication describes your options for user authentication
- AccessControl describes how to define groups and how to restrict access to content

Register User

You don't have to have user home pages in Foswiki for Authentication to work - see UserAuthentication for details.

- UserRegistration is used when you want new users to individually register with Foswiki by filling out a form
- You can create a custom versions of System.NewUserTemplate and System.UserForm
- BulkRegistration is used by administrators to register multiple users at the same time

Change, Reset and Install Passwords

Note that the below features are only relevant when you use an internal password manager where Foswiki can set and reset passwords.

- ChangePassword is for users who *can* remember their password and want to change it
- ResetPassword is for users who *cannot* remember their password; a system generated password is e-mailed to them
- BulkResetPassword is for administrators who want to reset many passwords at once
- ChangeEmailAddress changes the hidden email address stored in the password file

Changing User Account Names

To change the user's WikiName:

- Rename the user's Foswiki homepage in the Main web, such as from `JaneSmith` to `JaneMiller`.
    - ♦ Fix backlinks in the Main web only
    - ♦ Make sure the group topics are updated (if any.)
- Edit the Main.WikiUsers topic and move the user's entry so that the list is in proper alphabetical order.
- Recreate the old topic with a pointer to the new topic, so that links in other webs work properly. Example content:
  ```
  %M% Jane Smith is now known as JaneMiller
  ```

If external authentication is used and you want to change the login name:

- The login name needs to be changed in the authentication server (e.g. Active Directory)
- In Foswiki's Main.WikiUsers topic, fix the mapping from login name to WikiName:
  ```
  * JaneSmith - jsmith - 13 Sep 2006
  ```
  to:

```
* JaneMiller - jmiller - 13 Sep 2006
```

Removing User Accounts

To remove a user account (FredQuimby, who logs in as "fred"):

1. If you are using a `.htpasswd` file, edit the `.htpasswd` file to delete the line starting `fred:`
   - **Warning:** Do **not** use the Apache `htpasswd` program with `.htpasswd` files generated by Foswiki! `htpasswd` wipes out email addresses that Foswiki plants in the info fields of this file.
2. Remove the `FredQuimby - fred` line from the Main.WikiUsers topic
3. Remove `FredQuimby` from all groups and from all the `ALLOWWEB/ALLOWTOPIC...` declarations, if any.
   Note: If you fail to do this you risk creating a security hole, as the next user to register with the wikiname FredQuimby will inherit the old FredQuimby's permissions.
4. *[optional]* Delete their user topic Main.FredQuimby (including attachments, if any.)

Note: Consider leaving the user topic file in place so their past signatures and revision author entries don't end up looking like AnUncreatedTopic. If you want to make it clear the user is no longer around, replace the topic content with a note to that effect. The existence of the UserName topic should also prevent that user name from being re-used, sealing the potential security hole regarding inherited permissions..

Customizing registration Emails.

Foswiki's Registration can send 3 emails who's output is governed by templates:

1. User registration confirmation - `templates/registerconfirm.tmpl`
2. User registration notification - `templates/registernotify.tmpl`
3. Email to notify the Wiki admin of registration - `templates/registernotifyadmin.tmpl`

As these are SkinTemplates, they can be customized and selected using the SKIN path setting. Because there are default tmpl files in the `templates` dir, this cannot use Template topics.

These template files have a specific format that matches the raw format of emails sent via SMTP, so be careful and test your changes. It is easiest to start by copying the default templates:

```
cd templates
cp registernotify.tmpl registernotify.myskin.tmpl
cp registerconfirm.tmpl registerconfirm.myskin.tmpl
cp registernotifyadmin.tmpl registernotifyadmin.myskin.tmpl
```

then add `myskin` to the beginning of the `SKIN` setting in Main.SitePreferences.

From this point on, your myskin templates will be used for the registration emails.

To make it possible for WikiUsers to modify the email contents, you could use a parameterized `%INCLUDE%` statement in your customized version. eg:

```
From: %WIKIWEBMASTERNAME% <%WIKIWEBMASTER%>
To: %FIRSTLASTNAME% <%EMAILADDRESS%>
Subject: %MAKETEXT{"[_1] - Registration for [_2] ([_3])" args="%WIKITOOLNAME%, %WIKINAME%,
MIME-Version: 1.0
Content-Type: text/plain; charset=%CHARSET%
Content-Transfer-Encoding: 8bit

%INCLUDE{
```

```
    "%USERSWEB%.RegisterNotifyEmail"
    WIKINAME="%WIKINAME%"
    FIRSTLASTNAME="%FIRSTLASTNAME%"
    EMAILADDRESS="%EMAILADDRESS%"
}%
```

- **note the use of %WIKINAME%, %FIRSTLASTNAME%, %EMAILADDRESS% passed in from the INCLUDE so that the topic below is similar to the original template**

and then create a topic Main.RegisterNotifyEmail:

```
Welcome to %WIKITOOLNAME%.

%MAKETEXT{"Your personal [_1] topic is located at [_2]. You can customize it as you like:"

   * %MAKETEXT{"Some people turn it into a personal portal with favorite links, what they
   * %MAKETEXT{"Some add schedule information and vacation notice."}%

Regards
%WIKIWEBMASTERNAME%
Your Wiki Admin


%MAKETEXT{"Note:"}%
   2 %MAKETEXT{"You can change your password at via [_1]" args="%SCRIPTURL{"view"}%/%SYSTE
   3 %MAKETEXT{"If you haven't set a password yet or you want to reset it, go to: [_1]" ar

%MAKETEXT{"Submitted content:"}%
%FORMDATA%
```

- **remember to secure the topic appropriately to prevent attackers from getting emailed sensitive passwords.**

Related Topics: AdminDocumentationCategory

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Appendix A: Foswiki Development Time-line

Foswiki Release 1.0.9 - 17 Jan 2010

Foswiki 1.0.9 was built 17 Jan 2010. It is a patch release with more than 320 bug fixes relative to 1.0.0 and several enhancements. This release fixes many bugs in the Wysiwyg editor, bugs related to more advanced wiki applications and bugs in the Plugin API. It contains several bug fixes and enhancements related to security and spam fighting.

Foswiki Release 1.0.8 - 29 Nov 2009

Foswiki 1.0.8 was built 29 Nov 2009. It is a patch release with more than 280 bug fixes relative to 1.0.0 and some enhancements. This release fixes a short list of quite annoying old bugs incl a bug that prevented efficient use of MailerContrib for producing newsletters. The Wysiwyg editor has been upgraded with the latest Tiny MCE editor release 3.2.7.

Foswiki Release 1.0.7 - 20 Sep 2009

More than 30 new bug fixes and some enhancements.

The Wysiwyg editor has been upgraded to using Tiny MCE editor version 3.2.2 which solves many editor related bugs. The pickaxe icon has been replaced by a "Wiki Text" button as the pickaxe was hard to guess the function of.

Several bugs fixed related to the Cross-Site Request Forgery feature.

TablePlugin sorts numbers and dates better

EditTablePlugin handles SpreadSheetPlugin in footer rows correctly

Fixed a problem where Windows installations of Foswiki would create new users with non-working passwords

"Managing webs" feature redesigned for better usability

Foswiki Release 1.0.6 - 21 Jun 2009

More than 40 bugs fixed and several small enhancements.

Major security enhancement against Cross-Site Request Forgery

A central translation framework got introduced. Foswiki is already available in 20 major languages and dialects. The new translation framework will ease the translation process by allowing contributions from users.

Foswiki Release 1.0.5 - 25 Apr 2009

Additional 20 bugs fixed.

Some few minor enhancements

New security features added

Upgrade package for 1.0.5 is relative to 1.0.0.

Foswiki Release 1.0.4 - 19 Mar 2009

Small update of 1.0.3 with 33 more bugs fixed incl some severe bugs in EditTablePlugin.

Upgrade package for 1.0.4 is relative to 1.0.0.

The number of bugfixes in 1.0.4 relative to 1.0.0 is more than 100 + some bugs that were introduced and fixed in the not published 1.0.1-1.0.3. There are 5 minor enhancements.

Foswiki Release 1.0.3 - 28 Feb 2009

Both 1.0.1 ,1.0.2, and 1.0.3 were not published because they did not pass the final quality control. Another handful of bugs were fixed.

Upgrade package for 1.0.3 is relative to 1.0.0.

Foswiki Release 1.0.2 - 26 Feb 2009

Same as 1.0.1 but with a handful of additional bug fixes.

Upgrade package for 1.0.2 is relative to 1.0.0 since 1.0.1 was never published on the Foswiki website.

Foswiki Release 1.0.1 - 24 Feb 2009

Patch release containing more than 70 bug fixes and some user interface improvements of configure. Due to a bug (Item1126) the development team decide not to publish this release but instead release 1.0.2 a few days later

Bug fix highlights:

- Fixed some bugs related to expired sessions and date in session cookies.
- Fixed a number of bugs in configure related to installation of extensions
- Fixed a bug that prevented proper operation with https
- Fixed a bug related to VIEW_TEMPLATE and preview
- Enhanced the user interface of configure

Foswiki Release 1.0.0 - 09 Jan 2009

Foswiki is the old TWiki project under a new name. Restrictions on the use of the TWiki brand resulted in many of its developers continuing the project under the new Foswiki name. Foswiki is backwards compatible with all content from older TWiki installations. Foswiki 1.0.0 ships with a TWikiCompatibilityPlugin installed and activated by default, thus enabling most extensions made for TWiki to work under Foswiki.

New features and enhancements

- Foswiki 1.0.0 is built on a new platform called Foswiki Stand Alone which adds support for FastCGI and enables more optimized functionality in mod_perl and other similar runtime environments.

Foswiki Stand Alone also enables future features such as running Foswiki by itself without a separate web server (for example, from a stand alone memory key). You can ensure your applications and plugins will work properly on the new platform (and thus with any future capabilities dependent on the new architecture) by testing them out now with Foswiki 1.0.0.
- A TWikiCompatibilityPlugin has been created that enables most extensions made for TWiki to work under Foswiki, and to support seamless migrations from TWiki to Foswiki.
- The PatternSkin has been given a facelift: The PatternSkin topic offers a choice of multiple themes, the sidebar can be placed either on the left or right, a frame can be added around the main content area, and a TWiki theme is available to make it easier for those upgrading from TWiki (dimensions such as the top bar size match the dimensions in the TWiki PatternSkin).
- The "Advanced Search" page now supports a query-based search.
- A new section type, "expandvariables", adds better control over macro expansion in topic templates. You can now create template topics with sections where all macros contained within the sections are expanded.
- A "Copy topic" feature is now present in the "More topic actions" tools.
- IF conditions has been expanded with an "isempty" test condition.
- `viewfile` script can be used as a webserver *ErrorDocument* enabling both more secure attachments and user focused error dialogs.

Security Updates

Foswiki is much more secure than TWiki 4.2.4.

- Foswiki 1.0.0 has secured by default the powerful but also vulnerable URLPARAM macro against cross site scripting (XSS) attacks. URLPARAM now by default encodes a short list of unsafe characters `'"<>%` which eliminates most XSS possibilities encountered with URLPARAM. This protects all topics using the URLPARAM macro without requiring any changes to them.
- Functions QUERYPARAMS, ORIGURL (skin macro) are secured against XSS attacks. QUERYPARAMS, like URLPARAM, is now encoded with the new, safe encoding.
- The print preview link is no longer vulnerable to XSS attacks.
- Additional security fixes have been made, based on security audits performed by the Foswiki team. Sensitive data from the topic text and web client requests are validated for safety.

Terminology changes in Foswiki

As part of the first Foswiki product release, various topics and terms were changed to avoid using the TWiki brand name and to more accurately reflect their purpose, including the following:

- The TWiki web is now called System, as it contains configuration information for the entire Foswiki installation. The TWikiCompatibilityPlugin provides backwards compatible support for references to the TWiki web, in order to facilitate migrations from TWiki to Foswiki.
- The %TWIKIWEB% and %MAINWEB% variables are now called %SYSTEMWEB% and %USERSWEB%
- Topics in the Foswiki distribution have been renamed to eliminate the TWiki word and to make the titles more readable (for example, Plugins, Skins, and so forth).
- All templates, CSS and Javascript names have been changed from twikiXxxxx to foswikiXxxxx
- Key terminology changes:

TWiki term	Foswiki term
TWiki variable	Macro
preference(s) variable	preference setting, or macro when referring to expansion of same
TWiki form	Data form
TWiki Plugin	Plugin

TWiki term	Foswiki term
TWiki Template	Skin Template
Topic Template	Template Topic
TWiki Markup Language (TML)	Topic Markup Language (TML)
TWiki Application	Wiki Application

Foswiki Hall of Fame

The proud, free, independent Foswiki community.

Highlights:

- **Top 5 core contributors on SVN**: Foswiki:Main.KennethLavrsen, Foswiki:Main.CrawfordCurrie, Foswiki:Main.SvenDowideit, Foswiki:Main.ArthurClemens, Foswiki:Main.OlivierRaginel
- **Top contributors in general on SVN**: Foswiki:Main.KennethLavrsen, Foswiki:Main.CrawfordCurrie, Foswiki:Main.SvenDowideit, Foswiki:Main.ArthurClemens, Foswiki:Main.OlivierRaginel, Foswiki:Main.EugenMayer, Foswiki:Main.KoenMartens, Foswiki:Main.MichaelDaum, Foswiki:Main.GilmarSantosJr, Foswiki:Main.SebastianKlus, Foswiki:Main.WillNorris, Foswiki:Main.SeanMcCarthy, Foswiki:Main.MartinCleaver, Foswiki:Main.RobManson
- **Development Infrastructure**: Foswiki:Main.SvenDowideit, Foswiki:Main.EugenMayer, Foswiki:Main.KoenMartens, Foswiki:Main.CrawfordCurrie, Foswiki:Main.KwangErnLiew, Foswiki:Main.OliverKrueger, Foswiki:Main.OlivierRaginel, Foswiki:Main.WillNorris, Foswiki:Main.ColasNahaboo, Foswiki:Main.KennethLavrsen

TWiki Release 4.2.1 (Freetown) released 2010-01-17T14:13:06Z

Patch release following the 4.2.0 released 22 Jan 2008

New Features and Enhancements of TWiki Release 4.2

- **Easier Installation and Upgrade**
  - New Internal Admin Login feature
  - The Main.WikiUsers topic is no longer distributed as a default topic in Main web
  - A new directory `working` which per default is located in the TWiki root which contains registration_approvals, tmp, and work_areas
  - Configure can now authenticate when connecting to local plugins repository.

- **Usability Enhancements**
  - New WYSIWYG editor based on TinyMCE replaces the Kupu based editor
  - New "Restore topic" feature has been added to the *More Topic Actions* menu to easily restore an older version of a topic

- **Application Platform Enhancements**
  - Enhancements to IF: allows, ingroup, istopic, and isweb

- **Search Enhancements**
  - New `query` search mode supports SQL-style queries over form fields and other meta-data

- **Skins and Templates Enhancements**
  - The PatternSkin which is the default skin for TWiki has got a face lift

    - The default templates have been heavily refactored to make it easier to create skins reusing the default skin.

- **Miscellaneous Feature Enhancements**
    - Many new functions in the API for plugin developers
    - Table of Content (TOC) feature enhanced
    - re-architected Pluggable user mapping (between login name and WikiName) to integrate with alternative authentication and Management schemes
    - Topic based User management has been extracted into a separately update-able package (WikiUsersContrib)

- **Enhancements of Pre-installed Plugins**
    - CommentPlugin: New `templatetopic` parameter to point to custom comment template topic
    - EditTablePlugin: Move and delete rows
    - MailerContrib: Allow Exclusion Of Webs
    - SpreadSheetPlugin: 6 new math formulas; formula to format time diff

- **Bug Fixes**
    - More than 300 bugs fixes since 4.1.2

Hall of Fame of TWiki Release 4.2

Many people have been involved in creating TWiki 4.2. Special thanks go to the most active contributors in the following areas:

- Release management led by Foswiki:Main.KennethLavrsen, ably assisted by Foswiki:Main.SvenDowideit
- Design and development driven by Foswiki:Main.CrawfordCurrie, Foswiki:Main.ArthurClemens, Foswiki:Main.KennethLavrsen and Foswiki:Main.SvenDowideit
- Testing driven by Foswiki:Main.KennethLavrsen

Many thanks also to the contributors in the following areas:

- **Sponsor and facilitator:** TWiki:Main.PeterThoeny
- **Testing and bug fixing:** Foswiki:Main.KennethLavrsen, Foswiki:Main.CrawfordCurrie, Foswiki:Main.ArthurClemens, Foswiki:Main.SvenDowideit, Foswiki:Main.SteffenPoulsen, Foswiki:Main.MichaelDaum, TWiki:Main.PeterThoeny, TWiki:Main.RichardDonkin
- **Spec and code:** Foswiki:Main.CrawfordCurrie (2323), Foswiki:Main.ArthurClemens (566), Foswiki:Main.SvenDowideit (507), TWiki:Main.PeterThoeny (83), Foswiki:Main.KennethLavrsen (73), Foswiki:Main.SteffenPoulsen (72), TWiki:Main.AntonioTerceiro (63) - (3857 changes by 20 authors)
- **Templates and skins:** Foswiki:Main.ArthurClemens (587), Foswiki:Main.CrawfordCurrie (130), Foswiki:Main.AndreUlrich (73), Foswiki:Main.SvenDowideit (44) - (869 changes by 12 authors)
- **Documentation:** Foswiki:Main.ArthurClemens (460), Foswiki:Main.CrawfordCurrie (377), TWiki:Main.PeterThoeny (233), Foswiki:Main.AndreUlrich (157), Foswiki:Main.SvenDowideit (118), Foswiki:Main.KennethLavrsen (68) - (1450 changes by 14 authors)
- **Release package builds:** Foswiki:Main.SvenDowideit
- **Usability:** Foswiki:Main.CarloSchulz, Foswiki:Main.ArthurClemens
- **Translations:** Coordinated by TWiki:Main.AntonioTerceiro
    - Bulgarian: TWiki:Main.KrassimirBerov
    - Danish: Foswiki:Main.SteffenPoulsen
    - Dutch: Foswiki:Main.ArthurClemens
    - Finnish: TWiki:Main.HeikkiToivonen

    - French: TWiki:Main.BenVoui
    - German: Foswiki:Main.OliverKrueger, Foswiki:Main.AndreUlrich
    - Italian: TWiki:Main.MassimoMancini
    - Portuguese: TWiki:Main.CarlinhosCecconi
    - Simplified Chinese: TWiki:Main.CheDong
    - Swedish: TWiki:Main.ErikAman
    - Traditional Chinese: TWiki:Main.CheDong
    - Ukrainian: TWiki:Main.SerhijDubyk
- **Marketing:** TWiki:Main.RodBeckstrom, TWiki:Main.PeterThoeny, Foswiki:Main.MichaelCorbett, Foswiki:Main.KoenMartens
- **Public relations:** TWiki:Main.PeterThoeny, Foswiki:Main.MichaelCorbett
- **Meetups:** TWiki:Main.AmirShobeiri
- **TWiki.org wiki champions:** TWiki:Main.PeterThoeny, Foswiki:Main.ArthurClemens, Foswiki:Main.CrawfordCurrie, Foswiki:Main.KennethLavrsen, Foswiki:Main.SvenDowideit, Foswiki:Main.MichaelDaum, Foswiki:Main.CarloSchulz, Foswiki:Main.StephaneLenclud, TWiki:Main.RichardDonkin, Foswiki:Main.KoenMartens
- **Customer support:** TWiki:Main.PeterThoeny, Foswiki:Main.ArthurClemens, Foswiki:Main.CrawfordCurrie, Foswiki:Main.SvenDowideit, TWiki:Main.HaraldJoerg
- **System administration:** Foswiki:Main.SvenDowideit, TWiki:Main.PeterThoeny, Foswiki:Main.CrawfordCurrie

If you find an omission please fix it at TWiki:System.ReleaseHistory. For the full list of contributors see ProjectContributor.

Note: Order of contributors under "Spec and code", "Templates and skins" and "Documentation" is based on number of SVN file changes for core and default extensions from March 2007 (svn rev:13046) to Jan 2008 (svn rev:16210). (Details at TWikibug:TWiki420SvnLog). Order of contributors under "Testing and bug fixing" is based on Bugs web statistics from 2007-03 to 2007-12. Order of contributors under "TWiki.org wiki champions" and "Customer support" is based on TWiki.org web statistics from 2007-02 to 2007-12.

TWiki Release 4.1 (Edinburgh), 16 Jan 2007

New Features and Enhancements of TWiki Release 4.1

- **Easier Installation and Upgrade**
    - Plugins can now be installed from the configure script.
    - The loading of plugin preferences settings has been moved earlier in the preferences evaluation order so that plugin settings can be redefined in Main.SitePreferences, WebPreferences and in topics. To make TWiki upgrades easier, it is recommended to set the plugin settings in Main.SitePreferences, and not to customize the settings in the plugin topic. For example, to change the TEMPLATES setting of the CommentPlugin, create a new COMMENTPLUGIN_TEMPLATES setting in Main.SitePreferences.
    - Plugin settings can now be defined in configure instead of in the plugin topic (requires that the individual plugin has implemented this). TWiki performs slightly better by not looking for preferences settings in plugin topics.
    - Configure no longer shows many unnecessary errors when run first time.
    - The webmaster email address is now defined in configure instead of TWikiPreferences.
    - Default file access rights in the distribution package have been changed to be more universally defined and in line with the default access rights for new topics.

- **Usability Enhancements**
    - Redesigned result page when typing incomplete topic name into the Jump box, so that it is possible to quickly navigate to a topic, also in a very large TWiki installation. For example, "I

know there is a topic about Ajax somewhere in the Eng web. OK, let my type `Eng.ajax` into the Jump box... Here we go, the third link is the AjaxCookbook I was looking for."
- Many user documentation improvements.
- URL parameters maintained in Table of Contents links so you can stay in a temporary skin (e.g. print) and keep URLPARAM values when you click the TOC links
- Attachment tables now sorted alphabetically.
- Better printing of tables and verbatim text in PatternSkin.

- **Application Platform Enhancements**
  - Auto-incremented topic name on save with AUTOINC<n> in topic name; used by TWiki applications to create topic based database records.
  - The edit and save scripts support a `redirectto` parameter to redirect to a topic or a URL; for security, redirect to URL needs to be enabled with a `{AllowRedirectUrl}` configure flag.
  - CommentPlugin supports the `redirectto` parameter to redirect to a URL or link to TWiki topic after submitting comment.
  - The `topic` URL parameter also respects the `{AllowRedirectUrl}` configure flag so redirects to URLs can be disabled which could be abused for phishing attacks.
  - The view script supports a `section` URL parameter to view just a named section within a topic. Useful for simple AJAX type applications.
  - New plugin handler for content move.
  - Enhancements for Ajax based applications with Foswiki:Extensions/YahooUserInterfaceContrib and Foswiki:Extensions.TWikiAjaxContrib (available at twiki.org).

- **Search Enhancements**
  - METASEARCH handles a format parameter like SEARCH.
  - Topic not found / WebTopicViewTemplate search now case insensitive.
  - FormattedSearch header supporting `$nop`, `$quot`, `$percnt`, `$dollar`.
  - Add search by createdate option to SEARCH.
  - New newline option for SEARCH to protect e.g. formfields from being altered during rendering in SEARCH.

- **Skins and Templates Enhancements**
  - Support for templates to have text rendering affecting aspect outside of textarea.
  - Pattern skin dependence on TwistyPlugin instead of TwistyContrib (performance improvement.)
  - Don't strip newlines from the front of TMPL:DEFs.

- **Miscellaneous Feature Enhancements**
  - Change in WikiWord definition: Numbers are treated as lower case letters, e.g. Y2K is now a WikiWord.
  - Configurable template load path. Advanced feature for those that work with customized templates.
  - Added %VBAR% to TWikiPreferences for vertical bar symbol.
  - On topic creation, force initial letter of topic name to be upper case.
  - Allow date format in form fields.
  - Enhance REVINFO{} variable with same date qualifiers as GMTIME{}.
  - WebTopicCreator - adding ability to select a template from any topic name ending in ...Template
  - Functionality of Foswiki:Extensions.DateFieldPlugin merged into core

- **Enhancements of Pre-installed Plugins**
  - CommentPlugin: Supports removal of comment prompt after a comment is made.

    - EditTablePlugin: Default date format based on JSCalendarContrib instead of plugin topic.
    - InterwikiPlugin: Supports custom link formats.
    - SlideShowPlugin: Preserves URL parameters in slideshow
    - SpreadSheetPlugin: New functions `$LISTRAND()`, `$LISTSHUFFLE()`, `$LISTTRUNCATE()`.
    - TablePlugin: New attribute `cellborder`.
    - TablePlugin: Highlight the sorted column with custom colors; includes also a general cosmetic update of default colors.
    - TablePlugin: Support for initsort on more than one table. A table with the initsort option is initsorted UNLESS it is sorted by clicking on a column header. If you click on a header of another table all other tables goes back to the default sort defined by initsort or not sorted if no initsort, and the new table is sorted based on the user clicking on a table header.

- **Bugfixes**
    - More than 200 bugs fixed since 4.0.5

Hall of Fame of TWiki Release 4.1

Although many more people have been involved in creating TWiki-4.1, special thanks go to the most active contributors in the following areas:

- **Sponsor and facilitator:** TWiki:Main.PeterThoeny
- **Process improvement:** Foswiki:Main.KennethLavrsen, TWiki:Main.PeterThoeny, Foswiki:Main.SteffenPoulsen, Foswiki:Main.CrawfordCurrie
- **Release management:** Foswiki:Main.KennethLavrsen
- **Spec, code, testing:** Foswiki:Main.CrawfordCurrie, Foswiki:Main.ArthurClemens, Foswiki:Main.SteffenPoulsen, TWiki:Main.PeterThoeny, TWiki:Main.ThomasWeigert, Foswiki:Main.KennethLavrsen, Foswiki:Main.SvenDowideit, TWiki:Main.HaraldJoerg, Foswiki:Main.MichaelDaum, TWiki:Main.MeredithLesly, Foswiki:Main.WillNorris, TWiki:Main.RafaelAlvarez, TWiki:Main.AntonioTerceiro
- **Templates and skins:** Foswiki:Main.ArthurClemens, Foswiki:Main.MichaelDaum, Foswiki:Main.SvenDowideit
- **Documentation:** TWiki:Main.PeterThoeny, Foswiki:Main.CrawfordCurrie, Foswiki:Main.ArthurClemens, Foswiki:Main.SteffenPoulsen, Foswiki:Main.KennethLavrsen
- **Translations:** Coordinated by TWiki:Main.AntonioTerceiro
    - Chinese: TWiki:Main.CheDong
    - Czech: TWiki:Main.IvanKuncl
    - Danish: Foswiki:Main.SteffenPoulsen
    - Dutch: Foswiki:Main.ArthurClemens
    - French: TWiki:Main.BenVoui
    - German: Foswiki:Main.AndreUlrich
    - Italian: TWiki:Main.MassimoMancini
    - Polish: TWiki:Main.ZbigniewKulesza
    - Portuguese: TWiki:Main.AntonioTerceiro, TWiki:Main.CarlinhosCecconi
    - Russian: TWiki:Main.AndreyTkachenko, TWiki:Main.SergejZnamenskij, TWiki:Main.SergeyJSinx, TWiki:Main.AlexTananaev
    - Spanish: Foswiki:Main.WillNorris, TWiki:Main.MiguelABayona
    - Swedish: TWiki:Main.ErikAman
- **Public relations:** TWiki:Main.PeterThoeny, TWiki:Main.TomTansy
- **TWiki.org wiki champions:** TWiki:Main.PeterThoeny, Foswiki:Main.CrawfordCurrie, Foswiki:Main.KennethLavrsen, Foswiki:Main.SteffenPoulsen, Foswiki:Main.ArthurClemens, TWiki:Main.ThomasWeigert, Foswiki:Main.MichaelDaum
- **Customer support:** TWiki:Main.PeterThoeny, Foswiki:Main.CrawfordCurrie, Foswiki:Main.ArthurClemens, Foswiki:Main.SteffenPoulsen, TWiki:Main.SteveStark,

Foswiki:Main.MichaelDaum
- **System administration:** Foswiki:Main.SvenDowideit, TWiki:Main.PeterThoeny, Foswiki:Main.CrawfordCurrie

If you find an omission please fix it at TWiki:System.ReleaseHistory. For the full list of contributors see ProjectContributor.

Note: Sequence of contributors under "Spec, code, testing", "Templates and skins" and "Documentation" is based on number of SVN check-ins for core and default extensions from 2006-02 to 2006-12. Sequence of contributors under "TWiki.org wiki champions" and "Customer support" is based on TWiki.org web statistics from 2006-02 to 2006-12.

See more details on the TWiki 4.1 release at TWikiReleaseNotes04x01.

TWiki Release 4.0.0 (Dakar), 01 Feb 2006

Major New Features

- Much simpler install and configuration
- Integrated session support
- Webserver-independent login/logout
- Security sandbox blocking exploits for remote command execution on the server
- Edit conflict resolution with automatic merge
- Multilingual UI
- E-mail confirmations for registration
- WYSIWYG editor (beta)
- Hierarchical sub-webs (beta)

Many, many people worked on TWiki-4.0.0. The credits in the table below only list the people who worked on individual enhancements. If you find an omission please fix it at TWiki:System.ReleaseHistory. There were many other contributors; for a full list, visit ProjectContributor.

Most of the redesign, refactoring and new documentation work in Dakar release was done by Crawford Currie. Michael Sparks provided ideas and proof of concept for several improvements. Other people who gave *large* amounts of their time and patience to less sexy aspects of the work, such as testing, infrastructure and documentation, are AntonAylward, KennethLavrsen, LynnwoodBrown, MichaelDaum, Peter Thoeny, SteffenPoulsen, Sven Dowideit, WillNorris.

Installation & configuration	**Contributor**
Much simpler install and configuration	Crawford Currie, LynnwoodBrown, ArthurClemens
`mod_perl` safe code for better performance	Crawford Currie
Security	
Security sandbox blocking exploits for remote command execution on the server	Florian Weimer, Crawford Currie, Sven Dowideit
Reworked access permission model	Crawford Currie
Internationalization & localization	
User Interface Internationalisation	AntonioTerceiro
Chinese translation	CheDong
Danish translation	SteffenPoulsen
Dutch translation	ArthurClemens
French translation	BenVoui

Installation & configuration	Contributor
German translation	AndreUlrich
Italian translation	MassimoMancini
Polish translation	ZbigniewKulesza
Portuguese translation	AntonioTerceiro, CarlinhosCecconi
Spanish translation	WillNorris, MiguelABayona
Swedish translation	Erik ï¿½man
New features for users	
Edit conflict resolution with automatic merge	Crawford Currie
Fine grained change notification on page level and parent/child relationship	Crawford Currie
WYSIWYG editor	Crawford Currie, ColasNahaboo, DamienMandrioli, RomainRaugi
Integrated session support	GregAbbas, Crawford Currie
Webserver-independent login/logout	Crawford Currie
Registration process with e-mail confirmation	MartinCleaver
Tip of the Day box in TWiki Home	PaulineCheung, Peter Thoeny, AntonAylward
ATOM feeds	Peter Thoeny
"Force New Revision" check box for topic save	WillNorris
New features for Wiki administrators and wiki application developers	
Improved preferences handling	ThomasWeigert, Crawford Currie
Named include sections	RafaelAlvarez
Create topic names with consecutive numbers	Sven Dowideit
Parameterized includes	Crawford Currie
Dynamic form option definitions of DataForms with FormattedSearch	MartinCleaver
SEARCH enhancements with new parameters `excludeweb`, `newline`, `noempty`, `nofinalnewline`, `nonoise`, `recurse`, `zeroresults`	Crawford Currie, ArthurClemens, Peter Thoeny, ThomasWeigert
FormattedSearch enhancements with `$changes`, `$count`, `$formfield(name, 30, ...)`, `$summary(expandvar)`, `$summary(noheaders)`, `$summary(showvarnames)`	ColasNahaboo, Crawford Currie, Peter Thoeny, Sven Dowideit
New TWikiVariables ACTIVATEDPLUGINS?, ALLVARIABLES?, AUTHREALM?, EMAILS?, FAILEDPLUGINS?, HTTP?, HTTPS?, ICONURL?, ICONURLPATH?, IF?, LANGUAGES?, LOCALSITEPREFS?, LOGIN?, LOGOUT?, MAKETEXT?, META?, PLUGINDESCRIPTIONS?, QUERYSTRING?, STARTSECTION?/ENDSECTION?, SESSION_VARIABLE?, SESSIONID?, SESSIONVAR?, SPACEOUT?, USERLANGUAGE?, WIKIHOMEURL?	ArthurClemens, AntonioTerceiro, Crawford Currie, GregAbbas, Peter Thoeny, Sven Dowideit, WillNorris and many more
TWiki form with hidden type and other form enhancements	LynnwoodBrown, ThomasWeigert
Support topic-specific templates for TWiki applications	ThomasWeigert
Direct save feature for one-click template-based topic creation	LynnwoodBrown, Crawford Currie, ThomasWeigert
Automatic Attachments showing all files in the attachment directory	MartinCleaver
Rename, move or delete webs	PeterNixon
Hierarchical subwebs (beta)	PeterNixon
New features for Plugin developers	
REST (representational state transfer) interface for Plugins	RafaelAlvarez, TWiki:Main.MartinCleaver, Sven Dowideit

Installation & configuration	Contributor
New and improved Plugins APIs	Crawford Currie, ThomasWeigert
Improvements in the TWiki engine room	
Major OO redesign and refactoring of codebase	Crawford Currie
Automatic build system	Crawford Currie
Extensive test suite, unit tests and testcases	Crawford Currie
TWiki:Codev.DevelopBranch , DEVELOP branch Bugs system	Sven Dowideit
Documentation, logo artwork, skins:	
Documentation	Crawford Currie, LynnwoodBrown, Peter Thoeny, Sven Dowideit and others
Design of TWikiLogos with big "T" in a speech bubble	ArthurClemens, Peter Thoeny
Improved templates and PatternSkin	ArthurClemens

See more details at TWikiReleaseNotes04x00

01-Sep-2004 Release (Cairo)

Major New Features

- Automatic upgrade script, and easier first-time installation
- Attractive new skins, using a standard set of CSS classes, and a skin browser to help you choose
- New easier-to-use save options
- Many improvements to SEARCH
- Improved support for internationalisation
- Better topic management screens
- More pre-installed Plugins: CommentPlugin, EditTablePlugin, RenderListPlugin, SlideShowPlugin, SmiliesPlugin, SpreadSheetPlugin, TablePlugin
- Improved Plugins API and more Plugin callbacks
- Better support for different authentication methods
- Many user interface and usability improvements
- And many, many more enhancements

Details of New Features and Enhancements of 01-Sep-2004 Release	Developer, Sponsor
Install: Ship with an automatic upgrade script to facilitate TWiki upgrades. Details	TWiki:Main.MartinGregory Foswiki:Main.SvenDowideit
Install: New testenv function to change the locks in the TWiki database to the web server user id (automates installation step). Details	TWiki:Main.MattWilkie Foswiki:Main.SvenDowideit
Install: The shipped .htaccess.txt now needs to be edited before it is valid, to help reduce chances of error. Details	Foswiki:Main.CrawfordCurrie Foswiki:Main.SvenDowideit
Install: Configurable password file handling for different types of encryption. Details	TWiki:Main.PavelGoran Foswiki:Main.SvenDowideit
Install: Remove office locations from registration. Details	TWiki:Main.PeterThoeny
Install: Changes to support shorter URLs with Apache Rewrite rules. Details	TWiki:Main.AntonioBellezza TWiki:Main.WalterMundt
Install: Remove the Know web from the distribution. Details	TWiki:Main.PeterThoeny
Internationalization: Support use of UTF-8 URLs for I18N characters in TWiki page and attachment names. Details	TWiki:Main.RichardDonkin
Authentication: Authenticate users when creating new topic in view restricted web. Details	TWiki:Main.JonathanGraehl Foswiki:Main.SvenDowideit
Preferences: TWiki Preferences need to be secured properly. Details	TWiki:Main.PeterThoeny
Preferences: Use TWiki Forms to set user preferences. Details	TWiki:Main.JohnTalintyre

Details of New Features and Enhancements of 01-Sep-2004 Release	Developer, Sponsor
Skins: New pre-installed skins PatternSkin and DragonSkin. Details	Foswiki:Main.ArthurClemens TWiki:Main.PeterThoeny
Skins: New skin browser to choose from installed skins. Details	TWiki:Main.PeterThoeny
Skins: Documented set of CSS classes that are used in standard skins. Details	Foswiki:Main.ArthurClemens Foswiki:Main.SvenDowideit
Skins: Added CSS class names to Diff output. Details	Foswiki:Main.SvenDowideit
Skins: Templates can now be read from user topics, as well as from files in the templates diretcory. Details	Foswiki:Main.CrawfordCurrie TWiki:Main.WalterMundt
Skins: Ensure that the default template gets overridden by a template passed in. Details	TWiki:Main.MartinCleaver TWiki:Main.WalterMundt
Skin: Convey an important broadcast message to all users, e.g. scheduled server downtime. Details	TWiki:Main.PeterThoeny
Skin: Balanced pastel colors for TWiki webs. Details	Foswiki:Main.ArthurClemens
Rendering: Use exclamation point prefix to escape TWiki markup rendering. Details	Foswiki:Main.ArthurClemens
Rendering: Ordered lists with uppercase & lowercase letters, uppercase & lowercase Roman numerals. Details	TWiki:Main.DanBoitnott TWiki:Main.PeterThoeny
Rendering: Allow custom styles for the "?" of uncreated topics. Details	Foswiki:Main.SvenDowideit
Rendering: Render IRC and NNTP as a URL. Details	TWiki:Main.PeterThoeny
Rendering: Make acronym linking more strict by requiring a trailing boundary, e.g. excluding TLAfoobar. Details	Foswiki:Main.CrawfordCurrie Foswiki:Main.SvenDowideit
Rendering: TWiki Form with Label type. Details	TWiki:Main.PeterThoeny
Rendering: Web names can now be WikiWords. Details	TWiki:Main.PeterThoeny
Rendering: New syntax for definition list with dollar sign and colon. Details	TWiki:Main.AdamTheo TWiki:Main.PeterThoeny
Rendering: Table with multi-span rows, functionality provided by Table Plugin. Details	TWiki:Main.WalterMundt
Variables: New title parameter for TOC variable. Details	TWiki:Main.PeterThoeny Foswiki:Main.ArthurClemens
Variables: New REVINFO variable in templates supports flexible display of revision information. Details	TWiki:Main.PeterThoeny Foswiki:Main.SvenDowideit
Variables: Set times to be displayed as gmtime or servertime. Details	TWiki:Main.SueBlake Foswiki:Main.SvenDowideit
Variables: Properly encode parameters for form fields with ENCODE variable. Details	TWiki:Main.PeterThoeny
Variables: Expand USERNAME and WIKINAME in Template Topics. Details	TWiki:Main.PeterThoeny
Variables: Expand same variables in new user template as in template topics. Details	TWiki:Main.PeterThoeny
Variables: Optionally warn when included topic does not exist; with the option to create the included topic. Details	TWiki:Main.PeterThoeny
Variables: In topic text show file-types of attached files as icons. Details	TWiki:Main.PeterThoeny
Variables: New variable FORMFIELD returns the value of a field in the form attached to a topic.. Details	TWiki:Main.DavidSachitano Foswiki:Main.SvenDowideit
Variables: Meta data rendering for form fields with META{"formfield"}. Details	TWiki:Main.PeterThoeny
Variables: New PLUGINVERSION variable. Details	TWiki:Main.PeterThoeny
Variables: URLPARAM now has a `default="..."` argument, for when no value has been given. Details	TWiki:Main.PeterThoeny
Variables: URLPARAM variable with newline parameter. Details	TWiki:Main.PeterThoeny
Variables: URLPARAM variable with new multiple=on parameter. Details	

Details of New Features and Enhancements of 01-Sep-2004 Release	Developer, Sponsor
	TWiki:Main.PaulineCheung TWiki:Main.PeterThoeny
Search: New switch for search to perform an AND NOT search. Details	TWiki:Main.PeterThoeny
Search: Keyword search to search with implicit AND. Details	TWiki:Main.PeterThoeny
Search: Multiple searches in same topic with new multiple="on" paramter. Details	TWiki:Main.PeterThoeny
Search: Remove limitation on number of topics to search in a web. Details	TWiki:Main.PeterThoeny
Search: Exclude topics from search with an excludetopic parameter. Details	TWiki:Main.PeterThoeny
Search: Expand Variables on Formatted Search with expandvariables Flag. Details	TWiki:Main.PeterThoeny
Search: Formatted Search with Web Form variable to retrieve the name of the form attached to a topic. Details	TWiki:Main.FrankSmith TWiki:Main.PeterThoeny
Search: Formatted Search with Conditional Output. Details	TWiki:Main.PeterThoeny
Search: Formatted Search with $parent token to get the parent topic. Details	TWiki:Main.PeterThoeny
Search: New separator parameter to SEARCH supports better SEARCH embedding. Details	TWiki:Main.PeterThoeny
Search: Improved search performance when sorting result by topic name. Details	TWiki:Main.PeterThoeny
Search: New `scope=all` search parameter to search in topic name and topic text at the same time. Details	TWiki:Main.PeterThoeny
Search: New `topic` parameter for AND search on topic text and topic name. Details	TWiki:Main.PeterThoeny
Search modules uses Perl-style keyword parameters (code cleanup). Details	TWiki:Main.PeterThoeny
Search: New $wikiname variable in format parameter of formatted search. Details	Foswiki:Main.ArthurClemens
Search: Sort search by topic creation date. Details	TWiki:Main.PeterThoeny
Search: Topic creation date and user in Formatted Search. Details	TWiki:Main.CoreyFruitman Foswiki:Main.SvenDowideit
Search: Increase levels of nested search from 2 to 16. Details	TWiki:Main.PeterThoeny
Plugins: New pre-installed Plugins CommentPlugin, EditTablePlugin, RenderListPlugin, SlideShowPlugin, SmiliesPlugin, SpreadSheetPlugin, TablePlugin. Details	TWiki:Main.PeterThoeny
Plugins: New callback `afterSaveHandler`, called after a topic is saved. Details	TWiki:Main.WalterMundt
Plugins: New callbacks `beforeAttachmentSaveHandler` and `afterAttachmentSaveHandler`, used to intervene on attachment save event. Details	TWiki:Main.MartinCleaver TWiki:Main.WalterMundt
Plugins: New callbacks `beforeCommonTagsHandler` and `afterCommonTagsHandler`. Details	TWiki:Main.PeterThoeny
Plugins: New callback `renderFormFieldForEditHandler` to render form field for edit. Details	TWiki:Main.JohnTalintyre
Plugins: New callback `renderWikiWordHandler` to custom render links. Details	TWiki:Main.MartinCleaver TWiki:Main.WalterMundt
Plugins: New function `TWiki::Func::formatTime` to format time into a string. Details	Foswiki:Main.SvenDowideit
Plugins: New function `TWiki::Func::getRegularExpression` to get predefined regular expressions. Details	TWiki:Main.RichardDonkin
Plugins: New functions `TWiki::Func::getPluginPreferences*` to get Plugin preferences. Details	TWiki:Main.WalterMundt
Plugins: New function `TWiki::Func::extractParameters` to extract all parameters from a variable string. Details	TWiki:Main.PeterThoeny

Details of New Features and Enhancements of 01-Sep-2004 Release	Developer, Sponsor
Plugins: New function `TWiki::Func::checkDependencies` to check for module dependency. Details	Foswiki:Main.CrawfordCurrie Foswiki:Main.SvenDowideit
Plugins: A recommendation for where a Plugin can store its data. Details	TWiki:Main.PeterThoeny
UI: Show tool-tip topic info on WikiWord links. Details	TWiki:Main.PeterThoeny
UI: Save topic and continue edit feature. Details	TWiki:Main.ColasNahaboo
UI: Change topic with direct save (without edit/preview/save cycle) and checkpoint save. Details	TWiki:Main.MattWilkie Foswiki:Main.SvenDowideit
UI: In attachment table, change 'action' to 'manage'. Details	TWiki:Main.PeterThoeny Foswiki:Main.ArthurClemens
UI: Smaller usability enhancements on the file attachment table. Details	TWiki:Main.PeterThoeny Foswiki:Main.ArthurClemens
UI: Removes anchor links from header content and places them before the text to fix 'header becomes link'. Details	Foswiki:Main.ArthurClemens
UI: Improved functionality of the More screen. Details	TWiki:Main.PeterThoeny Foswiki:Main.ArthurClemens
UI: Quick reference chart of most used markup is now listed on the edit screen. Details	Foswiki:Main.ArthurClemens
UI: Flag for edit script to avoid overwrite of existing topic text and form data. Details	TWiki:Main.NielsKoldso TWiki:Main.PeterThoeny
UI: Disable Escape key in IE textarea to prevent it cancelling work. Details	Foswiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
UI: Improved warning message on unsaved topic. Details	TWiki:Main.MartinGregory Foswiki:Main.SvenDowideit
UI: Reverse order of words in page title for better multi-window/tab navigation. Details	Foswiki:Main.ArthurClemens
UI: Provides a framework to create and modify a topic without going through edit->preview->save sequence. Details	Foswiki:Main.AndreUlrich Foswiki:Main.SvenDowideit
UI: Set the topic parent to none in More screen, e.g. remove the current topic parent. Details	TWiki:Main.PeterThoeny
UI: Use templates to define how file attachments are displayed. Was previously hard-coded. Details	Foswiki:Main.CrawfordCurrie Foswiki:Main.SvenDowideit
UI: Topic diff shows unified diff with unchanged context. Details	Foswiki:Main.SvenDowideit
UI: Diff feature shows TWiki form changes in nice tables. Details	Foswiki:Main.SvenDowideit
Code refactoring: The log entry for a save now has a dontNotify flag in the extra field if the user checked the minor changes flag. Details	TWiki:Main.PeterThoeny
Code refactoring: Server-side include of attachments accelerates INCLUDE. Details	Foswiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
Code refactoring: Move functionality out of bin scripts and into included modules. Details	Foswiki:Main.CrawfordCurrie Foswiki:Main.SvenDowideit
Code refactoring: Move bin script functionality into TWiki::UI modules. Details	Foswiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
Code refactoring: Optimize preferences handling for better performance. Details	TWiki:Main.PavelGoran TWiki:Main.WalterMundt
Code refactoring: Refactor variable expansion for edit and register. Details	Foswiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
Code refactoring: Move savemulti script into TWiki::UI::Save. Details	TWiki:Main.MattWilkie Foswiki:Main.SvenDowideit
Code refactoring: Topic search is done natively in Perl, it does not depend anymore on system calls with pipes. Details	TWiki:Main.PeterThoeny
Code refactoring: Fix logical error in upload script which prevented MIME filename from being used. Details	TWiki:Main.WalterMundt

Bug Fixes of 01-Sep-2004 Release	Developer, Sponsor
Fix: Consistently create headings with empty anchor tags. Details	TWiki:Main.PeterThoeny
Fix: TOC does not work for headings containing & without spaces surrounding it. Details	TWiki:Main.PeterThoeny
Fix: Backslash line break breaks TWiki form definitions. Details	Foswiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
Fix: Rename fixes unrelated topic references. Details	TWiki:Main.RichardDonkin
Fix: Bug with infinite recursion in search. Details	TWiki:Main.PeterThoeny
Fix: Can't send mail with full 'From' address. Details	TWiki:Main.PeterThoeny
Fix: All scripts change to $bin before execute (for mod_perl2). Details	TWiki:Main.PeterThoeny
Fix: Several RSS readers do not show all entries seen in the WebChanges list; repeated updates to the same topics get lost. Details	Foswiki:Main.ArthurClemens
Fix: TWiki::Access::checkAccessPermission function improperly handles Main and TWiki webs. Details	Foswiki:Main.SvenDowideit
Fix: Topic save returns error CI Date precedes date in revision. Details	TWiki:Main.PeterThoeny
Fix: Double quotes got replaced by " in TWiki forms. Details	TWiki:Main.MichaelSparks TWiki:Main.PeterThoeny
Fix: Duplicated Wiki name in .htpasswd entry for sha1 encoding. Details	TWiki:Main.PeterThoeny
Fix: When viewing a previous version of a topic, the view script substitutes only one occurrence of the variable EDITTOPIC. Details	TWiki:Main.PeterThoeny
Fix: Form default values are not working for text fields. Details	TWiki:Main.ThomasWeigert Foswiki:Main.SvenDowideit
Fix: Formatted searches using a $pattern which unbalanced parenthesis crash TWiki. Details	TWiki:Main.PeterThoeny
Fix: Formatted Search uses title but should use name for formfield parameter. Details	TWiki:Main.PeterThoeny
Fix: GMTIME variable returns unwanted GMT text. Details	Foswiki:Main.SvenDowideit
Fix: Include from other Web links ACRONYMS. Details	TWiki:Main.PeterThoeny
Fix: Including an HTML file is very slow. Details	TWiki:Main.JohnTalintyre
Fix: includeUrl() mess up absolute URLs. Details	Foswiki:Main.SvenDowideit
Fix: Filter out fixed font rendering in TOC to avoid unrendered = equal signs in TOC. Details	TWiki:Main.PeterThoeny
Fix: The initializeUserHandler is broken for session Plugins. Details	TWiki:Main.JohnTalintyre
Fix: SEARCH fails with very large webs. Details	TWiki:Main.PeterThoeny
Fix: Security alert: User could gain view access rights of another user. Details	TWiki:Main.KimCovil TWiki:Main.PeterThoeny
Fix: 'print to closed file handle' error of log files are not writable. Details	TWiki:Main.MartinGregory Foswiki:Main.SvenDowideit
Fix: Meta data handler can't process CR-LF line endings. Details	TWiki:Main.PeterThoeny
Fix: METAFIELD meta data is not shown in view raw=on mode. Details	TWiki:Main.PeterThoeny
Fix: Minor XHTML non-compliance in templates and code. Details	TWiki:Main.PeterThoeny
Fix: Getting pages from virtual hosts fails. Details	TWiki:Main.JohnTalintyre
Fix: Create new web fails if RCS files do not exist. Details	TWiki:Main.ClausBrunzema Foswiki:Main.SvenDowideit
Fix: Metacharacters can be passed through to the shell in File Attach. Details	TWiki:Main.PeterThoeny
Fix: Ability to delete non-WikiWord topics without confirmation. Details	TWiki:Main.PeterThoeny
Fix: + symbol in password reset fails. Details	TWiki:Main.PeterThoeny
Fix: Pathinfo cleanup for hosted sites. Details	TWiki:Main.MikeSalisbury Foswiki:Main.SvenDowideit
Fix: Software error in SEARCH if regular expression pattern has unmached parenthesis. Details	TWiki:Main.PeterThoeny

Bug Fixes of 01-Sep-2004 Release	Developer, Sponsor
Fix: Pipe chars in the comment field of the attachment table are not escaped. Details	TWiki:Main.PeterThoeny
Fix: Link escaping in preview fails for not quoted hrefs. Details	TWiki:Main.TedPavlic TWiki:Main.PeterThoeny
Fix: Preview expands variables twice. Details	TWiki:Main.PeterThoeny
Fix: Using a proxy with TWiki fails; no proxy-HTTP request, minimal request not HTTP 1.0, requests marked 1.1 are at best 1.0. Details	TWiki:Main.MichaelSparks TWiki:Main.JohnTalintyre
Fix: Runaway view processes with TWiki::Sore::RcsLite. Details	Foswiki:Main.SvenDowideit
Fix: Regex Error in WebTopicList with topics that have meta characters in the name. Details	TWiki:Main.PeterThoeny
Fix: Rename script misses some ref-by topics. Details	TWiki:Main.JohnTalintyre
Fix: Links to self within the page being renamed are not changed. Details	Foswiki:Main.SvenDowideit
Fix: Rename topic does 'Main.Main.UserName' for attachments. Details	TWiki:Main.PeterThoeny
Fix: Revision date is set to Jan 1970 when using RCS Lite. Details	Foswiki:Main.SvenDowideit
Fix: The new dynamically-created SiteMap is very nice, but somewhat slow. Details	TWiki:Main.PeterThoeny
Fix: The makeAnchorName function did not produce the same results if called iteratively, resulting in problems trying to link to headers.. Details	TWiki:Main.WalterMundt
Fix: Statistics page does not provide links to non-wikiword topics. Details	TWiki:Main.PeterThoeny
Fix: Make TOC link URI references relative. Details	TWiki:Main.MartinGregory TWiki:Main.PeterThoeny
Fix: TWiki hangs when used on Apache 2.0. Details	Foswiki:Main.SvenDowideit
Fix: TOC incorrectly strips out links in headers. Details	TWiki:Main.PeterThoeny
Fix: The HTML tags that are generated by TOC do not close properly. Details	TWiki:Main.PeterThoeny
Fix: TOC on INCLUDEd topic ignores STOPINCLUDE. Details	Foswiki:Main.WillNorris TWiki:Main.PeterThoeny
Fix: Quotes in tooltip message can break a TWiki form. Details	TWiki:Main.PeterThoeny
Fix: Better error message if the file attachment directory is not writable. Details	Foswiki:Main.CrawfordCurrie Foswiki:Main.SvenDowideit
Fix: Image size of PNG files. Details	Foswiki:Main.ArthurClemens
Fix: The testenv script distinguishes between real user ID and effective user ID. Details	TWiki:Main.RichardDonkin
Fix: Variables in square bracket links dont work in form fields. Details	Foswiki:Main.SvenDowideit
Fix: Variable with Parameters in Form Fields Disappear. Details	TWiki:Main.PeterThoeny
Fix: Verbatim tag should escape HTML entities. Details	TWiki:Main.PeterThoeny
Fix: Field names of TWiki Forms can be WikiWords, this is used to link to a help topic. Details	TWiki:Main.PeterThoeny
Fix: Clean up the WebRssBase INCLUDES to use VARIABLES set in TWikiPreferences. Details	Foswiki:Main.SvenDowideit
Fix: Resolving variables in included topics. Details	Foswiki:Main.OliverKrueger Foswiki:Main.SvenDowideit

01-Feb-2003 Release (Beijing)

- **18 Jan 2003** - TWiki:Main.PeterThoeny
  - ♦ Support for `/bin/view/Web.TopicName` topic view URL (besides the default `/bin/view/Web/TopicName` URL); useful for InterwikiPlugin links like TWiki:Codev.ReadmeFirst
- **31 Dec 2002** - TWiki:Main.PeterThoeny
  - ♦ Enhanced Plugin API to manipulate topic data with new functions in Func.pm:

readTopicText, saveTopicText, setTopicEditLock, checkTopicEditLock

- **31 Dec 2002** - TWiki:Main.PeterThoeny
  - New %NOAUTOLINK% setting in the DefaultPreferences to disable the auto-linking of WikiWords
- **29 Dec 2002** - TWiki:Main.AndreaSterbini, TWiki:Main.PeterThoeny, TWiki:Main.RichardDonkin, Foswiki:Main.SvenDowideit
  - New Plugin hooks registrationHandler, beforeEditHandler, afterEditHandler, beforeSaveHandler, writeHeaderHandler, redirectCgiQueryHandler, getSessionValueHandler, setSessionValueHandler
- **30 Nov 2002** - TWiki:Main.RichardDonkin
  - Internationalization ('I18N') support for international characters in WikiWords, such as ISO-8859-15, KOI8-R - also supports Chinese, Japanese, etc.
- **25 Nov 2002** - TWiki:Main.PeterThoeny
  - Include previous topic revision with %INCLUDE{ "OtherTopic" rev="1.2" }%
- **15 Nov 2002** - TWiki:Main.PeterThoeny
  - The Go box understands also URLs, useful for special TWikiSkins handling
- **08 Nov 2002** - TWiki:Main.ColasNahaboo, TWiki:Main.RichardDonkin
  - In WebNotify, if only the WikiName is specified, the e-mail is taken from the user's home page; if the WikiName is a group name, a notification is sent to all members of the group
- **30 Oct 2002** - TWiki:Main.PeterThoeny
  - New %NOP{}% variable in TWikiTemplates topic gets removed at topic creation time; useful to write protect template topics
- **28 Sep 2002** - TWiki:Main.PeterThoeny
  - The %URLPARAM{}% variable in TWikiTemplates topic gets expanded at topic creation time; useful for dynamic content creation
- **28 Sep 2002** - TWiki:Main.PeterThoeny
  - New $logDir introduced in TWiki.cfg to set the log directory
- **13 Sep 2002** - TWiki:Main.PeterThoeny
  - Renamed the **Test** web to **Sandbox**
- **03 Aug 2002** - TWiki:Main.RichardDonkin
  - New setlib.cfg file in the bin directory to set the TWiki library path
- **02 Aug 2002** - TWiki:Main.PeterThoeny, TWiki:Main.RyanFreebern
  - Support for outbound HTTP proxy when including URLs based on new %PROXYHOST and %PROXYPORT% settings in the DefaultPreferences
- **12 Jul 2002** - TWiki:Main.PeterThoeny
  - The page logo is configurable with new %WIKILOGOIMG%, %TWIKILOGOURL% and %WIKILOGOALT% variables in DefaultPreferences; replacing $wikiHomeUrl in TWiki.cfg
- **12 Jun 2002** - TWiki:Main.PeterThoeny
  - New %WIKITOOLNAME% variable in DefaultPreferences; replacing $wikiToolName in TWiki.cfg
- **31 May 2002** - TWiki:Main.PeterThoeny
  - New %EDITBOXSTYLE% preferences setting which sets the edit box width automatically to the window width
- **17 May 2002** - TWiki:Main.PeterThoeny
  - New %URLENCODE{}% variable to encodes a string for using in a URL parameter, e.g. %URLENCODE{"spaced name"}% returns spaced%20name
- **17 May 2002** - TWiki:Main.PeterThoeny
  - FormattedSearch can be nested
- **05 May 2002** - TWiki:Main.PeterThoeny
  - New user home pages are now based on the NewUserTemplate, replacing the /twiki/templates/register.tmpl template file
- **26 Apr 2002** - TWiki:Main.PeterThoeny
  - New markup to exclude heading from a %TOC% table of content, e.g. ---+!! This

`heading` is not shown in a TOC
- **13 Apr 2002** - TWiki:Main.PeterThoeny
  - Form and script to create new webs, see ManagingWebs
- **01 Apr 2002** - TWiki:Main.JohnTalintyre
  - New data storage framework that lets you use external RCS commands for revision control, or a new native Perl implementation that does not depend on the external RCS commands
- **28 Mar 2002** - TWiki:Main.RichardDonkin
  - Fixed IE5/IE6-specific problem whereby going back from preview sometimes removes all edit changes
- **23 Mar 2002** - TWiki:Main.JohnTalintyre
  - New AND search; with regular expression enabled, use the semicolon ";" as the AND operator in `%SEARCH{}%` variable, FormattedSearch and WebSearch
- **21 Mar 2002** - TWiki:Main.ColasNahaboo, TWiki:Main.RichardDonkin
  - Fixed cache issue where the edit page showed outdated content
- **06 Mar 2002** - TWiki:Main.RichardDonkin
  - Improved statistics script which uses less memory to process large log files
- **09 Jan 2002** - TWiki:Main.JohnTalintyre
  - Variables inside `<verbatim>` tags are no longer expanded

01-Dec-2001 Release (Athens)

- **25 Oct 2001** - TWiki:Main.PeterThoeny
  - Added FormattedSearch to `%SEARCH{}%` variable for database like reporting.

01-Sep-2001 Release

- **30 Aug 2001** - TWiki:Main.JohnTalintyre
  - Easier install for Windows, including auto detection in `TWiki.cfg`
- **30 Aug 2001** - TWiki:Main.JohnTalintyre
  - Ability to move attachments between topics, see FileAttachments
- **21 Aug 2001** - TWiki:Main.PeterThoeny
  - Convert to XHTML 1.0 function: first step to XHTML-ifying TWiki
- **26 Jun 2001** - TWiki:Main.JohnTalintyre
  - Category information to forms using the TWikiMetaData format, see TWikiForms
- **07 Jun 2001** - TWiki:Main.PeterThoeny
  - New topic templates as topics instead of templates. Customize by editing the topic. Retired `notedited.tmpl`, `notext.tmpl` and `nofoswiki.tmpl` templates. More in TWikiTemplates.
- **07 Jun 2001** - TWiki:Main.PeterThoeny
  - New `%TOPICLIST{"format"}%` and `%WEBLIST{"format"}%` variables to get a formatted topic index and web index, respectively. More in TWikiVariables.
- **01 Jun 2001** - TWiki:Main.PeterThoeny
  - New `%URLPARAM{"name"}%` variable to query URL parameters. More in TWikiVariables.
- **01 Jun 2001** - TWiki:Main.AndreaSterbini
  - API to extend TWiki, see TWikiPluginAPI?
- **01 Jun 2001** - TWiki:Main.KlausWriessnegger, TWiki:Main.AndreaSterbini
  - Forms to change/reset/install passwords, see ChangePassword & ResetPassword
- **01 May 2001** - TWiki:Main.AndreaSterbini
  - The Main.AdminGroup (or other group) can be enabled as a SuperAdminGroup. Members have browser edit access to *all* locked topics.
- **01 May 2001** - TWiki:Main.JohnTalintyre
  - Meta information format, see TWikiMetaData

- **01 May 2001** - TWiki:Main.JohnTalintyre
  - Attachment under revision control See FileAttachment
- **01 May 2001** - TWiki:Main.JohnTalintyre
  - Ability to rename/move topics, ManagingTopics
- **27 Mar 2001** - TWiki:Main.PeterThoeny
  - The table syntax has been enhanced to (i) render `| *bold* |` cells as table headers, (ii) render space padded cells `| center aligned |` and `| right aligned |`, (iii) span multiple columns using `| empty cells |||`. More in TextFormattingRules.
- **25 Mar 2001** - TWiki:Main.PeterThoeny
  - Security fix Questionable files like PHP scripts (executables) and `.htaccess` files that are attached to a topic get a `.txt` suffix appended to the file name. See also TWiki:Codev/FileAttachmentFilterSecurityAlert
- **28 Feb 2001** - TWiki:Main.AndreaSterbini, TWiki:Main.PeterThoeny
  - New Wiki rule for headings, i.e. `---++ My Title`; and new `%TOC%` variable to build a table of content from headings in a topic. More in TWikiVariables.
- **28 Feb 2001** - TWiki:Main.PeterThoeny
  - New Wiki rule to specify arbitrary text for external links (i.e. `[[http://TWki.org][TWiki]]`) and internal links (i.e `[[WikiSyntax][syntax]]`). More in TWikiVariables.
- **28 Feb 2001** - TWiki:Main.PeterThoeny
  - New Wiki rule for named anchors, e.g. links within a topic. Define a named anchor with `#MyAnchor` at the beginning of a line, and link to it with `[[#MyAnchor]]`. More in TWikiVariables.
- **25 Feb 2001** - TWiki:Main.NicholasLee, TWiki:Main.PeterThoeny
  - Use `Net::SMTP` module instead of `sendmail` if installed.
- **01 Feb 2001** - TWiki:Main.PeterThoeny
  - Added `<verbatim>` ... `</verbatim>` tags to show source code "as is". Unlike the `<pre>` ... `</pre>` tags, it also shows <, >, & characters "as is".
- **01 Feb 2001** - TWiki:Main.PeterThoeny
  - Fixed TWiki:Codev/CreateLinkToAttachedFileBug.
- **21 Jan 2001** - TWiki:Main.PeterThoeny
  - Added a "Minor change, don't notify" checkbox in preview. More in DontNotify.
- **21 Jan 2001** - TWiki:Main.PeterThoeny
  - Added Bold Fixed formatting using double-equal signs, e.g. write `==Bold Fixed==` to get **`Bold Fixed`**.
- **20 Jan 2001** - TWiki:Main.PeterThoeny
  - Format changed of `%GMTIME{"..."}%` and `%SERVERTIME{"..."}%` variables. Format is now `"$hour:$min"` instead of `"hour:min"`. More in TWikiVariables. **Attention:** Check your existing topics when you upgrade TWiki!
- **18 Jan 2001** - TWiki:Main.PeterThoeny
  - WebChanges, WebSearch and e-mail notification indicate also the revision number of a topic (i.e. 18 Jan 2001 16:43 r1.5), or NEW for a new topic (i.e. i.e. 18 Jan 2001 16:43 **NEW**).
- **16 Jan 2001** - TWiki:Main.PeterThoeny
  - New variable `%STARTINCLUDE%` and `%STOPINCLUDE%` variables to control what gets included of a topic. More in TWikiVariables.
- **16 Jan 2001** - TWiki:Main.PeterThoeny
  - TWiki skins Define a different page layout with a customized header and footer layout, i.e. a `print` skin for a printable view of a topic. More in TWikiSkins and TWiki:Codev/TWikiSkins.
- **07 Jan 2001** - TWiki:Main.StanleyKnutson
  - Better error handling when saving a topic.
- **05 Jan 2001** - TWiki:Main.PeterThoeny
  - View authorization based on groups. Define who is allowed to see a TWiki web. More in AccessControl and TWiki:Codev/AuthenticationBasedOnGroups.

- **05 Dec 2000** - TWiki:Main.PeterThoeny
  - Improved include handling. Infinite recursion of includes are prevented; new variables `%BASEWEB%`, `%INCLUDINGWEB%`, `%BASETOPIC%` and `%INCLUDINGTOPIC%` to have more control over include handling. More in TWikiVariables and TWiki:Codev/IncludeHandlingImprovements.
- **03 Dec 2000** - TWiki:Main.PeterThoeny
  - New `noheader="on"` switch in `%SEARCH{...}%` to suppress table header. More in TWikiVariables.

01-Dec-2000 Release

- **03 Nov 2000** - TWiki:Main.PeterThoeny
  - Flag `$doHidePasswdInRegistration` in `wikicfg.pm` to hide plain text password in registration e-mail.
- **01 Nov 2000** - TWiki:Main.PeterThoeny
  - New variable `%VAR{"NAME" web="Web"}%` to get web-specific preferences. More in TWikiVariables.
- **01 Nov 2000** - TWiki:Main.PeterThoeny
  - Added a "Cancel" link in edit that releases the edit lock.
- **23 Oct 2000** - TWiki:Main.PeterThoeny
  - Authorization based on groups. Define fine graned control who is allowed to change or create topics. More in AccessControl and TWiki:Codev/AuthenticationBasedOnGroups.
- **05 Oct 2000** - TWiki:Main.PeterThoeny
  - Remember user by IP address so that `view` "knows" the user once authenticated in `edit`. More in TWikiUserAuthentication.
- **26 Sep 2000** - TWiki:Main.AlWilliams, TWiki:Main.PeterThoeny
  - Fixed TWiki:Codev/UppercaseAttachments bug and added `png` image support.
- **26 Sep 2000** - TWiki:Main.HaroldGottschalk, TWiki:Main.AndreaSterbini, TWiki:Main.PeterThoeny
  - Allow nesting of variables, i.e. `%INCLUDE{"%SYSTEMWEB%.TWikiWebsTable"}%`. More in TWiki:Codev/BetterTWikiTagTemplateProcessing.
- **20 Sep 2000** - TWiki:Main.ManpreetSingh
  - New -q switch in `mailnotify` to suppress all normal output.
- **19 Sep 2000** - TWiki:Main.PeterThoeny
  - Fixed TWiki:Codev/AttachedNotificationLinksBug.
- **18 Sep 2000** - TWiki:Main.ManpreetSingh, TWiki:Main.PeterThoeny
  - Added forced internal links. Write `[[text formatting FAQ]]` to get the link text formatting FAQ? that points to topic TextFormattingFAQ.
- **19 Aug 2000** - TWiki:Main.PeterThoeny
  - Ref-By link searches all webs (not just the current web.)
- **16 Aug 2000** - TWiki:Main.PeterThoeny
  - New TWikiPreferences settings `%HTTP_EQUIV_ON_VIEW%`, `%HTTP_EQUIV_ON_EDIT%` and `%HTTP_EQUIV_ON_PREVIEW%` that define the `<meta http-equiv="...">` meta tags for the TWiki templates. This can be used for example to set a document expiration time.
- **29 Jul 2000** - TWiki:Main.PeterThoeny
  - New variables `%GMTIME{"..."}%` and `%SERVERTIME{"..."}%`. More in TWikiVariables.
- **23 Jul 2000** - TWiki:Main.PeterThoeny
  - Changed include syntax from `%INCLUDE{"Web/TopicName.txt"}%` to `%INCLUDE{"Web.TopicName"}%`. Legacy syntax still supported.
- **23 Jul 2000** - TWiki:Main.PeterThoeny
  - BookView search allows you show a set of topics for easy printing.
- **22 Jul 2000** - TWiki:Main.PeterThoeny
  - More forgiving syntax for `*bold*`, *`italic`*, `__bold italic__` and **`fixed`**, where it is not necessary anymore to have a trailing space before `.,;:?!` characters.

- **22 Jul 2000** - TWiki:Main.PeterThoeny
  - Split the TWiki.Main web into TWiki.Main (users, company data) and TWiki.TWiki (TWiki related documentation, registration)
- **07 Jul 2000** - TWiki:Main.PeterThoeny
  - Added an "Release edit lock" checkbox in preview to let other people edit the topic immediately without the one hour lock.
- **07 Jul 2000** - TWiki:Main.PeterThoeny
  - Fixed problem of losing carriage returns when editing topics with KDE KFM browser or W3M browser.
- **21 Jun 2000** - TWiki:Main.PeterThoeny
  - Fixed problem that a page redirect on some server environments is not working (host name is needed in URL).
- **21 Jun 2000** - TWiki:Main.CrisBailiff, TWiki:Main.PeterThoeny
  - Fixed security issue to prevent a server side `%INCLUDE%` of arbitrary files.
- **29 May 2000** - TWiki:Main.PeterThoeny
  - New `%GMTIME%` variable that shows the current GM time.
- **28 May 2000** - TWiki:Main.PeterThoeny
  - Lock warning shows remaining lock time in minutes.
- **15 May 2000** - TWiki:Main.PeterFokkinga
  - Each topic can have its own template file. TWikiTemplates has more.
- **02 May 2000** - TWiki:Main.KevinKinnell, TWiki:Main.PeterThoeny
  - Advanced search features like search multiple webs; sort by topic name / modified time / author; limit the number of results returned. More in TWikiVariables.

01-May-2000 Release

- **21 Apr 2000** - TWiki:Main.PeterThoeny
  - New TWikiVariables `%HTTP_HOST%` , `%REMOTE_ADDR%` , `%REMOTE_PORT%` and `%REMOTE_USER%` .
- **21 Apr 2000** - TWiki:Main.JohnAltstadt, TWiki:Main.PeterThoeny
  - TWikiRegistration is done separately for Intranet use (depends on remote_user) or Internet use (depends on .htpasswd file).
- **20 Mar 2000** - TWiki:Main.PeterThoeny
  - Uploading a file (topic file attachment) will optionally create a link to the uploaded file at the end of the topic. The preference setting `%ATTACHLINKBOX%` controls the default state of the **link** check box in the attach file page.
- **11 Mar 2000** - TWiki:Main.PeterThoeny
  - Better security with taint checking (`Perl -T` option)
- **25 Feb 2000** - TWiki:Main.PeterThoeny
  - New preference settings `%EDITBOXWIDTH%` and `%EDITBOXHEIGHT%` to specify the edit box size.
- **25 Feb 2000** - TWiki:Main.PeterThoeny
  - Edit preferences topics to set TWiki variables. There are three level of preferences Site-level (TWikiPreferences), web-level (WebPreferences in each web) and user-level preferences (for each of the Main.WikiUsers). With this, discontinue use of server side include of `wikiwebs.inc` , `wikiwebtable.inc` , `weblist.inc` , `webcopyright.inc` and `webcolors.inc` files.
- **11 Feb 2000** - TWiki:Main.PeterThoeny
  - New variable `%SCRIPTSUFFIX%` / $scriptSuffix containing an optional file extension of the TWiki Perl script. Templates have been changed to use this variable. This allows you to rename the Perl script files to have a file extension like for example ".cgi".
- **11 Feb 2000** - TWiki:Main.PeterThoeny
  - New variable `%SCRIPTURLPATH%` / $scriptUrlPath containing the script URL without the domain name. Templates have been changed to use this variable instead of `%SCRIPTURL%` .

This is for performance reasons.

- **07 Feb 2000** - TWiki:Main.PeterThoeny
  - Changed the syntax for server side include variable from `%INCLUDE:"filename.ext"%` to `%INCLUDE{"filename.ext"}%` . (Previous syntax still supported. Change was done because of inline search syntax)
- **07 Feb 2000** - TWiki:Main.PeterThoeny
  - Inline search. New variable `%SEARCH{"str" ...}%` to show a search result embedded in a topic text. TWikiVariables has more on the syntax. Inline search combined with the category table feature can be used for example to create a simple bug tracking system.
- **04 Feb 2000** - TWiki:Main.PeterThoeny
  - Access statistics. Each web has a WebStatistics topic that shows monthy statistics with number of topic views and changes, most popular topics, and top contributors. (It needs to be enabled, CompleteDocumentation has more.)
- **29 Jan 2000** - TWiki:Main.PeterThoeny
  - Fixed bug where TWiki would not initialize correctly under certain circumstances, i.e. when running it under mod_perl. Sub `initialize` in `wiki.pm` did not handle `$thePathInfo` correctly.
- **24 Jan 2000** - TWiki:Main.PeterThoeny
  - Fixed bug where an e-mail address starting with a WikiName was rendered as an internal Wiki link instead of an e-mail address, i.e. SomeWikiName@somewhere.test .
- **10 Jan 2000** - TWiki:Main.PeterThoeny
  - No more escaping for '%' percent characters. (Number of consecutive '%' entered and displayed is identical.)
- **03 Oct 1999** - TWiki:Main.PeterThoeny
  - Limit the number of revisions shown at the bottom of the topic. Example Topic ReleaseHistory . { ..... Diffs r1.10 > r1.9 > r1.8 > r1.7 >... } Additional revisions can be selected by pressing the > . . . link.

01-Sep-1999 Release

- **31 Aug 1999** - TWiki:Main.PeterThoeny
  - Fixed Y2K bug. (Date in year 2000 had wrong format.)
- **08 Aug 1999** - TWiki:Main.PeterThoeny
  - New text formatting rule for creating tables. Text gets rendered as a table if enclosed in " " vertical bars. Example line as it is written and how it shows up
- **03 Aug 1999** - TWiki:Main.PeterThoeny
  - Online registration of new user using web form in TWikiRegistration. Authentication of users.
- **22 Jul 1999** - TWiki:Main.PeterThoeny
  - Flags `$doLogTopic*` in wikicfg.pm to selectively log topic view, edit, save, rdiff, attach, search and changes to monthly log file.
- **21 Jul 1999** - TWiki:Main.PeterThoeny
  - Flag `$doRemovePortNumber` in wikicfg.pm to optionally remove the port number from the TWiki URL. Example `www.some.domain:1234/twiki` gets `www.some.domain/twiki` .
- **15 Jul 1999** - TWiki:Main.PeterThoeny
  - Search path for include files in `%INCLUDE:"file.inc"%` variable. Search first in the current web, then in parent data directory. Useful to overload default include text in the data directory by web-specific text, like for example `webcopyright.inc` text.
- **07 Jul 1999** - TWiki:Main.ChristopheVermeulen
  - Link a plural topic to a singular topic in case the plural topic does not exist. Example `TestVersion` / `TestVersions` , `TestPolicy` / `TestPolicies` , `TestAddress` / `TestAddresses` , `TestBox` / `TestBoxes` .

01-Jul-1999 Release

- **23 Jun 1999** - TWiki:Main.PeterThoeny
  - New TextFormattingRules to write ***bold italic*** text by enclosing words with double underline characters.
- **23 Jun 1999** - TWiki:Main.PeterThoeny
  - Separate wiki.pm into configuration (wikicfg.pm) and TWiki core (wiki.pm) . This is to ease the upgrade of TWiki installations, it also allows customized extensions to TWiki without affecting the TWiki core.
- **21 May 1999** - TWiki:Main.DavidWarman
  - Externalize copyright text at the bottom of every page into a web-specific `webcopyright.inc` file. This is to easily customize the copyright text.
- **20 May 1999** - TWiki:Main.PeterThoeny
  - Added meta tag so that robots index only /view/ of topics, not /edit/, /attach/ e.t.c. Tag <META NAME="ROBOTS" CONTENT="NOINDEX">
- **20 May 1999** - TWiki:Main.PeterThoeny
  - New variables `%WIKIHOMEURL%` (link when pressing the icon on the upper left corner) and `%WIKITOOLNAME%` (the name of the wiki tool =Wiki =).
- **15 Apr 1999** - TWiki:Main.PeterThoeny
  - Topic locking Warn user if a topic has been edited by an *other* person within *one* hour. This is to prevent contention, e.g. simultaneous topic updates.
- **26 Mar 1999** - TWiki:Main.PeterThoeny
  - File attachments Upload and download any file as a topic attachment by using the browser. FileAttachment has more.
- **26 Mar 1999** - TWiki:Main.PeterThoeny
  - New variables `%PUBURL%` (Public directory URL) and `%ATTACHURL%` (URL of topic file attachment).
- **09 Feb 1999** - TWiki:Main.PeterThoeny
  - New text formatting rule for creating `fixed font text` . Words get showns in `fixed font` by enclosing them in "=" equal signs. Example Writing =fixed font= will show up as `fixed font` .
- **09 Feb 1999** - TWiki:Main.PeterThoeny
  - No new topic revision is created if the *same* person saves a topic again within *one* hour.
- **03 Feb 1999** - TWiki:Main.PeterThoeny
  - Possible to view complete revision history of a topic on one page. Access at the linked date in the Changes page, or the Diffs link at the bottom of each topic, e.g.
    Topic TWikiHistory . { Edit Ref-By Diffs r1.3 > r1.2 > r1.1 }
    Revision r1.3 1998/11/10 01:34 by PeterThoeny
- **04 Jan 1999** - TWiki:Main.PeterThoeny
  - Fixed bug when viewing differences between topic revisions that include HTML table tags like <table>, <tr>, <td>.

1998 Releases

- **08 Dec 1998** - TWiki:Main.PeterThoeny
  - Signature is shown below the text area when editing a topic. Use this to easily copy & paste your signature into the text.
- **07 Dec 1998** - TWiki:Main.PeterThoeny
  - Possible to add a category table to a TWiki topic. This permits storing and searching for more structured information. Editing a topic shows a HTML form with the usual text area and a table with selectors, checkboxes, radio buttons and text fields. CompleteDocumentation has more on setup. The TWiki.Know web uses this category table to set classification, platform and OS version.

- **18 Nov 1998** - TWiki:Main.PeterThoeny
  - Internal log of topic save actions to the file data/logYYYYMM.txt, where YYYYMM the year and month in numeric format is. Intended for auditing only, not accessible from the web.
- **10 Nov 1998** - TWiki:Main.PeterThoeny
  - The e-mail notification and the Changes topic have now a topic date that is linked. Clicking on the link will show the difference between the two most recent topic revisions.
- **10 Nov 1998** - TWiki:Main.PeterThoeny
  - View differences between topic revisions. Each topic has a list of revisions (e.g. r1.3) and differences thereof (e.g. >) at the bottom
    Topic TWikiHistory . { Edit Ref-By r1.3 > r1.2 > r1.1 }
    Revision r1.3 1998/11/10 01:34 by TWiki:Main.PeterThoeny
- **26 Oct 1998** - TWiki:Main.PeterThoeny
  - Added preview of topic changes before saving the topic. This was necessary to prevent unneeded revisions.
- **26 Oct 1998** - TWiki:Main.PeterThoeny
  - Added revision control using RCS. Each topic has now a list of revisions at the bottom and a revision info, e.g.
    Topic TWikiHistory . { Edit Ref-By r1.3 r1.2 r1.1 }
    Revision r1.3 1998/10/26 01:34:00 by TWiki:Main.PeterThoeny
- **14 Oct 1998** - TWiki:Main.PeterThoeny
  - Refered-By Find out which topics have a link to the current topic. Each topic has a Ref-By link for that. Note Only references from the current web are shown, not references from other webs.
- **13 Oct 1998** - TWiki:Main.PeterThoeny
  - Alphabetical topic index in WebSearch.
- **24 Sep 1998** - TWiki:Main.PeterThoeny
  - Corrected templates for automatic e-mail notification so that MS Outlook can display attachment as an HTML file.
- **13 Aug 1998** - TWiki:Main.PeterThoeny
  - WikiNotation allows also numbers after the AaA sequence, e.g. AaA1 is a valid TWikiTopics name, but not Aa1.
- **07 Aug 1998** - TWiki:Main.PeterThoeny
  - Automatic e-mail notification when something has changed in a TWiki web. Each web has a topic WebNotify where one can subscribe and unsubscribe.
- **06 Aug 1998** - TWiki:Main.PeterThoeny
  - Added server side include of files. Syntax is `%INCLUDE:"filename.ext"%`
- **05 Aug 1998** - TWiki:Main.PeterThoeny
  - Signature and date is inserted automatically when creating a new topic.
- **04 Aug 1998** - TWiki:Main.PeterThoeny
  - Separate templates for text of non existing topic and default text of new topic. (template file templates/Web/notedited.tmpl)
- **04 Aug 1998** - TWiki:Main.PeterThoeny
  - Warn user if new topic name is not a valid Wiki name. (template file templates/Web/nofoswiki.tmpl)
- **31 Jul 1998** - TWiki:Main.PeterThoeny
  - Support for quoted text with a '>' at the beginning of the line.
- **28 Jul 1998** - TWiki:Main.PeterThoeny
  - Added TWiki variables, enclosed in % signs `%TOPIC%` (Topic name), `%WEB%` (web name), `%SCRIPTURL%` (script URL), `%DATE%` (current date), `%WIKIWEBMASTER%` (Wiki webmaster address), `%WIKIVERSION%` (Wiki version), `%USERNAME%` (user name), `%WIKIUSERNAME%` (Wiki user name).
- **28 Jul 1998** - TWiki:Main.PeterThoeny
  - Topic WebChanges shows Wiki username instead of Intranet username, e.g. `PeterThoeny` instead of `thoeny` in case the Wiki username exists. Implementation Automatic lookup of

Wiki username in topic Main.WikiUsers.

- **28 Jul 1998** - TWiki:Main.PeterThoeny
  - Topic index. (Technically speaking a simple '.*' search on topic names.)
- **28 Jul 1998** - TWiki:Main.PeterThoeny
  - Topic WebSearch allows full text search and and topic search with/without regular expressions.
- **27 Jul 1998** - TWiki:Main.PeterThoeny
  - Added automatic links to topics in other TWiki webs by specifying <web name>.<topic name>, e.g. `Know.WebSeach` .
- **23 Jul 1998** - TWiki:Main.PeterThoeny
  - Installed initial version, based on the JOS Wiki. See WikiWikiClones for details.

Dev Flow

The typical TWiki development flow...

- TWiki:Codev.FeatureBrainstorming: open forum for new ideas
- TWiki:Codev.FeatureEnhancementRequest: specific detailed request
- TWiki:Codev.FeatureToDo: prioritized to up-next dev status
- TWiki:Codev.FeatureUnderConstruction: currently in development
- TWiki:Codev.FeatureDone: completed and implemented
- TWiki:Codev.DocRequest: request for documentation
- TWiki:Codev.DocsToDo: feature documentation pending
- TWiki:Codev.FeatureDocumented: documented feature
- ReferenceManual: reference manual for the latest TWiki

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Appendix B: Encode URLs With UTF8

Use internationalised characters within WikiWords and attachment names

Current Status

To simplify use of internationalised characters within WikiWords and attachment names, Foswiki supports UTF-8 URLs, converting on-the-fly to virtually any character set, including ISO-8859-*, KOI8-R, EUC-JP, and so on.

Support for UTF-8 URL encoding avoids having to configure the browser to turn off this encoding in URLs (the default in Internet Explorer, Opera Browser and some Mozilla Browser URLs) and enables support of browsers where only this mode is supported (e.g. Opera Browser for Symbian smartphones). A non-UTF-8 site character set (e.g. ISO-8859-*) is still used within Foswiki, and in fact pages are stored and viewed entirely in the site character set - the browser dynamically converts URLs from the site character set into UTF-8, and Foswiki converts them back again.

System requirements are updated as follows:

- ASCII or ISO-8859-1-only sites do not require any additional CPAN modules to be installed.
- Perl 5.8 sites using any character set do not require additional modules, since CPAN:Encode is installed as part of Perl.
- This feature still works on Perl 5.005_03 as per SystemRequirements, or Perl 5.6, as long as CPAN:Unicode::MapUTF8 is installed.

The following 'non-ASCII-safe' character encodings are now excluded from use as the site character set, since they interfere with Foswiki markup: ISO-2022-*, HZ-*, Shift-JIS, MS-Kanji, GB2312, GBK, GB18030, Johab and UHC. However, many multi-byte character sets work fine, e.g. EUC-JP, EUC-KR, EUC-TW, and EUC-CN. In addition, UTF-8 can already be used, with some limitations, for East Asian languages where EUC character encodings are not acceptable.

It's now possible to override the site character set defined in the `{SiteLocale}` setting in configure - this enables you to have a slightly different spelling of the character set in the server locale (e.g. 'eucjp') and the HTTP header sent to the browser (e.g. 'euc-jp').

Details of Implementation

URLs are not allowed to contain non-ASCII (8th bit set) characters:
http://www.w3.org/TR/html4/appendix/notes.html#non-ascii-chars

UTF-8 URL translation to virtually any character set is supported, but full UTF-8 support (e.g. pages in UTF-8) is not supported yet.

The code automatically detects whether a URL is UTF-8 or not, taking care to avoid over-long and illegal UTF-8 encodings that could introduce security issues (tested against a comprehensive UTF-8 test file, which IE 5.5 fails quite dangerously, and Opera Browser passes). Any non-ASCII URLs that are *not* valid UTF-8 are then assumed to be directly URL-encoded as a single-byte or multi-byte character set (as now), e.g. EUC-JP.

The main point is that you can use Foswiki with international characters in WikiWords without changing your browser setup from the default, and you can also still use Foswiki using non-UTF-8 URLs. This works on any Perl version from 5.005_03 onwards. You can have different users using different URL formats transparently on the same server.

UTF-8 URLs are automatically converted to the current {Site}{Charset}, using modules such as CPAN:Encode if needed.

Foswiki generates the whole page in the site charset, e.g. ISO-8859-1 or EUC-JP, but the browser dynamically UTF-8 encodes the attachment's URL when it's used. Since Apache serves attachment downloads without Foswiki being involved, Foswiki's code can't do its UTF-8 decoding trick, so Foswiki URL-encodes such URLs in ISO-8859-1 or whatever when generating the page, to bypass this URL encoding, ensuring that the URLs and filenames seen by Apache remain in the site charset.

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Appendix C: CSS

Listing of CSS class names emitted from Foswiki core code and standard extensions.

Who should read this document?

Skin builders and others who want to change the appearance of the default installation or any of the skins can use this document to see what styles can be created for these html elements.

Naming conventions

1. All Foswiki class names have the prefix `foswiki` - for example: `foswikiAlert`, `foswikiToc`. This makes it less likely that our CSS classes will get in conflict with other Style Sheets. Remember that CSS class names are case sensitive - Foswiki CSS uses lowercase `foswiki`.
2. If you define your own CSS classes, it is preferable that you do not use the foswiki prefix to prevent undesired overriding effects.

A wide range of standard styles are used in the Foswiki core code and topics, and more are used in extensions. The following is an exhaustive list of all styles defined by Foswiki. For the most part, the names are the only documentation of the purpose of the style. For more information on how these styles are used, read the code (sorry!)

CSS class names

Structural elements

`.foswikiPage`	The container for the complete page contents, just below the body tag (only used by default templates)
`.foswikiMain`	The container for the main contents, usually including the header (only used by default templates)
`.foswikiTopic`	The container for the topic contents
`.foswikiTable`	Tables, for instance used by TablePlugin
`.foswikiForm`	Container for data form in topic, including header; see also Data Forms below
`.foswikiAttachments`	Container for attachments table, including header
`.foswikiFormSteps`	Container around a form that contains a number of separate 'steps'; each 'step' in a separate row
`.foswikiFormStep`	Form step row
`.foswikiLast`	Last step (always in combination with `foswikiFormStep`); sometimes used as last table row
`.foswikiBroadcastMessage`	Site-wide message block; contents set in System.DefaultPreferences; custom set in Main.SitePreferences
`.foswikiNotification`	Temporary alert, for instance after user actions; used as wrapper around `%FLASHNOTE%`
`.foswikiContentHeader`	Optional container around text placed above topic text
`.foswikiContentFooter`	Optional container around text placed below topic text
`.foswikiFooterNote`	Text below topic text; for instance with parent or "topic moved" message
`#foswikiLogin`	Login box
`#foswikiLogo`	Logo

.foswikiPreviewArea	Container around topic preview
.foswikiTopicActions	Topic Actions list
.foswikiTopicInfo	Topic Info section containing REVINFO
.foswikiTopicText	The rendered Topic text

General appearance

.foswikiLeft	Left float
.foswikiRight	Right float
.foswikiClear	Clear float; usually written as <br class="foswikiClear" />
.foswikiAlert	Warnings and alert messages; general red text
.foswikiHelp	Help text block
.foswikiGrayText	Grayed out text; text of less importance
.foswikiToc	Table of Contents block
.foswikiTocTitle	Title text of Table of Contents
.foswikiHidden	Hidden elements
.foswikiSmall	Small text
.foswikiSmallish	Somewhat less smaller text; inbetween normal and small
.foswikiLarge	Large text, for instance for introduction paragraphs
.foswikiNoBreak	Causes whitespace not to create a linebreak; for instance with the dates in the attachment table
.foswikiMakeVisible	For elements that should only be visible with JavaScript on: default set to hidden, is made visible by JavaScript; defaults to inline
.foswikiMakeVisibleInline	For span elements that should only be visible with JavaScript on: default set to hidden, is made visible by JavaScript
.foswikiMakeVisibleBlock	For div elements that should only be visible with JavaScript on: default set to hidden, is made visible by JavaScript
.foswikiMakeHidden	For elements that should be hidden with JavaScript on: no default style, is made hidden by JavaScript
.foswikiImage	Holder form images; for instance to create a border around an <img> element

Links

.foswikiCurrentWebHomeLink	Used by Render.pm if a link points to the web's home topic
.foswikiCurrentTopicLink	Used by Render.pm if a link points to the current topic
.foswikiEmulatedLink	Used in the preview screen to make fake links appear as links
.foswikiLinkLabel	Text part of a link; used if a link contains more than a text label, for instance an icon
.foswikiUnvisited	Makes link appear as not visited (ignores the visited link state)
.foswikiRequiresChangePermission	To mark links to actions that the user does not have permissions for (for instance to hide action links)

Tables

.foswikiFirstCol	Leftmost column
.foswikiLastCol	Rightmost column
.foswikiSortedCol	Sorted column
.foswikiSortedAscendingCol	Sorted column, ascending

`.foswikiSortedDescendingCol`	Sorted column, descending
`.foswikiTopRow`	First row in search results; also used for styling first table rows (`td.foswikiTopRow`)
`.foswikiTableEven`	Even numbered rows
`.foswikiTableOdd`	Odd numbered rows
`.foswikiTableCol + column number`	Unique column identifier, for instance: foswikiTableCol0
`.foswikiTableRow + type + row number`	Unique row identifier, for instance: foswikiTableRowdataBg0
`.tableSortIcon`	Holder (`span`) for the table column sort icon

Data Forms

`.foswikiForm`	Container for data form in topic, including header
`.foswikiFormHolder`	Outer container for the data form in edit; contains the textarea width
`.foswikiFormTable`	Table container for (editable) form elements
`.foswikiFormTableHRow`	Table container for (editable) form elements
`.foswikiFormTableRow`	Table container for form elements
`.foswikiFormTableFooter`	Table container for form elements
`.foswikiEditForm`	Edit state of data form
`.foswikiMandaroty`	Indication of mandatory field
`.foswikiAddFormButton`	"Add form" button on edit screen

HTML Forms

`.foswikiPageForm`	Container for the form on the page
`.foswikiButton`	Normal button
`.foswikiButtonDisabled`	Disabled normal button
`.foswikiSubmit`	Submit button
`.foswikiSubmitDisabled`	Disabled submit button
`.foswikiButtonCancel`	Cancel button
`.foswikiInputField`	Text input field
`.foswikiInputFieldDisabled`	Disabled text input field
`.foswikiInputFieldReadOnly`	Read-only text input field
`.foswikiInputFieldFocus`	Text input field with insert focus; for Internet Explorer that does not recognize the `:focus` pseudo class selector
`.foswikiInputFieldBeforeFocus`	The color of the input text field when not clicked in the field; usually a grayed text color with a hint, for instance "Search"
`.foswikiFocus`	Behaviour marker so a field can be given input focus
`.foswikiRadioButton`	Radio button
`.foswikiSelect`	Select dropdown menu
`.foswikiSelectDisabled`	Disabled dropdown menu
`.foswikiOption`	Dropdown option element
`.foswikiTextarea`	Textarea
`.foswikiTextareaRawView`	Raw topic view textarea

Search

`table#foswikiSearchTable`	Table with search input form elements; used in WebSearch, WebSearchAdvanced and WebTopicViewTemplate
`.foswikiSummary`	Summary of search results
`.foswikiNew`	Identifier of new topics: topics without a revision history

.foswikiTopRow	First row in search results; also used for styling first table rows (td.foswikiTopRow)
.foswikiBottomRow	Last row in search results
.foswikiSRRev	Revision number in search results listing
.foswikiSRAuthor	Author in search results listing
.foswikiSearchResultCount	Search results count
#foswikiNumberOfResultsContainer	See Behaviour classes below
#foswikiWebSearchForm	See Behaviour classes below
#foswikiModifySearchContainer	See Behaviour classes below

History

.foswikiDiffTable	Revision table
.foswikiDiffDeletedMarker	Demarkation of part that has been deleted
.foswikiDiffDeletedText	Demarkation of part that has been deleted
.foswikiDiffAddedHeader	Demarkation of part that has been added
.foswikiDiffAddedMarker	Demarkation of part that has been added
.foswikiDiffAddedText	Demarkation of part that has been added
.foswikiDiffChangedHeader	Demarkation of part that has been changed
.foswikiDiffChangedText	Demarkation of part that has been changed
.foswikiDiffUnchangedText	Demarkation of part that has been unchanged
.foswikiDiffUnchangedTextContents	Demarkation of part that has been unchanged
.foswikiDiffLineNumberHeader	
.foswikiDiffDebug	
.foswikiDiffDebugRight	
.foswikiDiffDebugLeft	

Behaviour classes

Markers to invoke behaviour with unobtrusive JavaScript.

.foswikiPopUp	Behaviour marker so a popup-window can be invoked
.foswikiFocus	Behaviour marker so a field can be given input focus
.foswikiChangeFormButton	"Replace form" button; clicking calls JavaScript function suppressSaveValidation
#foswikiNumberOfResultsContainer	Container identifier to write the number of search results into
#foswikiWebSearchForm	Form identifier to place the "Modify search" link before
#foswikiModifySearchContainer	Container identifier to write the "Modify search" link into

Other classes

.foswikiWebIndent	Used by %WEBLIST% to indent sub-web names
.foswikiAccessKey	Access key demarkation
.foswikiSeparator	Separator element between sequential elements; usually a pipe character
.foswikiActionFormStepSign	Indicator for each form step (see foswikiFormStep)
.foswikiEditboxStyleMono	Gives the edit textarea monospaced font (not used with WYSWIWYG)
.foswikiEditboxStyleProportional	Gives the edit textarea proportional font (not used with WYSWIWYG)

p.foswikiAllowNonWikiWord	Message "Allow non WikiWord for the new topic name"

Tips

PatternSkin makes extensive use of CSS in its templates. Read the PatternSkin topic and PatternSkinCss to learn more about creating your own CSS-based skin.

Practical introduction to CSS: http://www.w3.org/Style/LieBos2e/enter/

Related Topics: Skins, PatternSkin, DeveloperDocumentationCategory, AdminDocumentationCategory

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Edit | Attach | Print version | History: %REVISIONS% | Backlinks | Raw View | More topic actions
Topic revision: r1 - 09 Jan 2009 - 13:00:00 - Main.ProjectContributor

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- Users
- Groups
- Index
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- Notifications
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- Statistics
- Preferences

- **User Reference**
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